Attachment 3

AmerGen/Exelon Calculation C-1101-900-E000-087, Revision 2,
"Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements"

(Electronic CD)

Exelon Nuclear

**ATTACHMENT 1**
**Design Analysis Major Revision Cover Sheet**

| | | | |
|---|---|---|---|
| **Design Analysis (Major Revision)** | | **Last Page No.** [1] Attachment D, Page 1000 | |
| **Analysis No.:** [1] | C-1101-900-E000-087 | **Revision:** [2] 2 | |
| **Title:** [3] | Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | | |
| **EC/ECR No.:** [4] | | **Revision:** [5] | |
| **Station(s):** [6] | TMI | **Component(s):** [7] | |
| **Unit No.:** [8] | 1 | | |
| **Discipline:** [9] | | | |
| **Descrip. Code/Keyword:** [10] | | | |
| **Safety/QA Class:** [11] | Safety Related | | |
| **System Code:** [12] | | | |
| **Structure:** [13] | Control Room, TSC | | |

**CONTROLLED DOCUMENT REFERENCES** [14]

| Document No.: | From/To | Document No.: | From/To |
|---|---|---|---|
| TMI UFSAR, Appendix 14B | To | | |
| References in Section 3 of this Calc. | From | | |
| | | | |
| | | | |

**Is this Design Analysis Safeguards Information?** [15] Yes ☐ No ☒ If yes, see SY-AA-101-106

**Does this Design Analysis contain Unverified Assumptions?** [16] Yes ☐ No ☒ If yes, ATI/AR#:

**This Design Analysis SUPERCEDES:** [17] **in its entirety.**

**Description of Revision** (list affected pages for partials): [18] Revision 2 calculates containment spray removal coefficients and airborne iodine decontamination factors using SRP 6.5.2 methodology and a sump water pH of 7.3. The change in sump water pH affects the elemental iodine spray cutoff time. Affected pages: Calc Cover Sheet; Added Owners Acceptance Review Checklist (pg 1a); pgs 4, 5, 6, 7, 8, 10, 11, 12, 13, 18, 21, 22, 24, 34, 35, 36, 37, 39, and 42. Added pgs 8a, 8b, 8c, 23a, 35a, 46a through 46f. Added Appendices Z and AA and Attachment D. Revision bars are used to identify Revision 2 changes to the calculation. Revision bars are not used for the cover sheet, the owners acceptance review checklist, newly added Appendices Z and AA, and newly added Attachment D.

| | | | |
|---|---|---|---|
| **Preparer:** [19] | Anthony G. Klazura (S&L) (Print Name) | Anthony G. Klazura (Sign Name) | 6-27-07 (Date) |
| **Method of Review:** [20] | **Detailed Review** ☒ ☐ | **Alternate Calculations (attached)** ☐ | **Testing** ☐ |
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| **Review Notes:** [22] | Independent review ☒ | Peer review ☐ | |

(For External Analyses Only)

| | | | |
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| **Exelon Reviewer:** [24] | T. J. Mccisz (Print Name) | (Sign Name) | 6-27-07 (Date) |

**Independent 3rd Party Review Reqd?** [25] Yes ☐ No ☒

| | | | |
|---|---|---|---|
| **Exelon Approver:** [26] | P. A. Bennett (Print Name) | P A Bennett (Sign Name) | 6-27-07 (Date) |

**ATTACHMENT 2**
**Owners Acceptance Review Checklist for External Design Analysis**

**DESIGN ANALYSIS NO.** C-1101-900-E000-087 **REV:** 2

| | | Yes | No | N/A |
|---|---|---|---|---|
| 1. | Do assumptions have sufficient rationale? | ☑ | ☐ | ☐ |
| 2. | Are assumptions compatible with the way the plant is operated and with the licensing basis? | ☑ | ☐ | ☐ |
| 3. | Do the design inputs have sufficient rationale? | ☑ | ☐ | ☐ |
| 4. | Are design inputs correct and reasonable? | ☑ | ☐ | ☐ |
| 5. | Are design inputs compatible with the way the plant is operated and with the licensing basis? (As proposed) | ☑ | ☐ | ☐ |
| 6. | Are Engineering Judgments clearly documented and justified? | ☑ | ☐ | ☐ |
| 7. | Are Engineering Judgments compatible with the way the plant is operated and with the licensing basis? (As proposed) | ☑ | ☐ | ☐ |
| 8. | Do the results and conclusions satisfy the purpose and objective of the Design Analysis? | ☑ | ☐ | ☐ |
| 9. | Are the results and conclusions compatible with the way the plant is operated and with the licensing basis? (As Proposed) | ☑ | ☐ | ☐ |
| 10. | Does the Design Analysis include the applicable design basis documentation? | ☑ | ☐ | ☐ |
| 11. | Have any limitations on the use of the results been identified and transmitted to the appropriate organizations? (pH requirement Stated) | ☑ | ☐ | ☐ |
| 12. | Are there any unverified assumptions? | ☐ | ☑ | ☐ |
| 13. | Do all unverified assumptions have a tracking and closure mechanism in place? | ☐ | ☐ | ☑ |
| 14. | Have all affected design analyses been documented on the Affected Documents List (ADL) for the associated Configuration Change? | ☑ | ☐ | ☐ |
| 15. | Do the sources of inputs and analysis methodology used meet current technical requirements and regulatory commitments? (If the input sources or analysis methodology are based on an out-of-date methodology or code, additional reconciliation may be required if the site has since committed to a more recent code) | ☑ | ☐ | ☐ |
| 16. | Have vendor supporting technical documents and references (including GE DRFs) been reviewed when necessary? | ☑ | ☐ | ☐ |

**EXELON REVIEWER:** T.J. Mscisz [signature] **DATE:** 6/27/07
Print / Sign

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**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 2 | System Nos. | Sheet 2 of 1000 |
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**For Containment Leakage Dose to CR, EAB, and LPZ**


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**CALCULATION SHEET**
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## 1.0 PURPOSE:

TMI Unit 1 is eliminating its containment spray sodium hydroxide (NaOH) additive system. This will affect the post-LOCA pH of the containment sump water. To maintain the containment sump water at a pH that will limit reevolution of iodine during containment spray with recirculated containment sump water, trisodium phosphate (TSP) is used. Since the iodine partition coefficient that is used to determine the elemental iodine decontamination factor is a function of the pH of the spray water, elimination of the NaOH additive and use of TSP will have an impact on the calculated spray cutoff time for elemental iodine spray removal.

The purpose of Revision 2 to this calculation is to determine the impact on post-LOCA control room, Technical Support Center (TSC), and offsite doses due to elimination of the NaOH spray additive system and use of TSP to maintain a containment sump water pH of 7.3 during recirculation. This revision to the calculation will determine containment spray iodine removal coefficients for elemental and particulate (i.e., aerosol) iodine using the methodology presented in Standard Review Plan (SRP) 6.5.2 (Revision 4) of NUREG-0800 (Ref. 3.30). The impact of Revision 2 to this calculation is limited to post-LOCA doses associated with the containment leakage release pathway. This revision to the calculation will also define and calculate the parameters that are required to determine the containment spray iodine removal coefficients and the elemental iodine decontamination factor.

TMI Unit 1 uses flashing fractions of 5% for the first 24 hours following a LOCA and 2% for the remainder of the 30-day accident evaluation. These flashing fractions are applied to leakage of containment sump water during recirculation and are used to determine the fraction of radioactive iodine in the sump water that becomes airborne. The TMI Unit 1 flashing fractions were accepted by the US NRC during the Alternative Source Term license submittal. This revision to the calculation will demonstrate that a change in the containment sump water pH, associated with removal of the NaOH spray additive system and use of TSP, will not invalidate the flashing fractions.

Evaluation considerations made during Revision 1 to this calculation remain applicable to Revision 2. Specifically, the dose consequence to the TSC is evaluated for the TSC location within the OSF Building using the Alternate Source Term (AST), Regulatory Guide (RG) 1.183 requirements, NRC sponsored computer code RADTRAD3.02 (RADTRAD, version 3.03 is used for Revision 2 analyses), and Total Effective Dose Equivalent (TEDE) dose methodology. The TSC was previously included within the control room envelope. The following post-LOCA release paths are analyzed.

A. Containment Leakage
B. Engineered Safety Feature (ESF) Leakage
C. Borated Water Storage Tank (BWST) Leakage
D. Post-LOCA Containment Purge

1.1 The containment leakage path is analyzed with the following containment spray operation:

Two spray pumps operate from t=75 sec to t=29.44 minutes and one spray pump operates from t=29.44 to 240 minutes in the sump recirc mode (see discussion in Section 6.2.1). Spray flow during both periods is at a flow rate of 800 gpm per pump. The BWST depletion time is conservatively estimated at t=29.44 minutes. This corresponds to two spray pumps operating at 1,250 gpm each.

This is conservative since faster depletion of the BWST causes ESF leakage to start earlier. The assumption of only one pump running in the sump recirculation mode is conservative. As shown in an additional RADTRAD case run (Appendix M), the containment leakage EAB dose is 15.618 Rem TEDE if two pumps are used during the sump recirc mode (21.696 Rem TEDE is calculated if one pump is assumed).

The result of the containment leakage path is added to the dose contribution from the three other release paths to obtain the total dose at the given receptor locations. The dose contributions due to direct shine from the CR filtration units as well as from external sources are also considered. A similar evaluation is performed relative to the TSC.

The above release paths are analyzed with the following assumptions to demonstrate additional conservatisms in the AST analysis:

1. The containment isolation time is currently 5.0 seconds and assumes a reactor coolant system Dose Equivalent I-131 activity of 0.35 μCi/g. However, for purposes of this analysis, this time is extended to 1.0 minute and a more conservative RCS Dose Equivalent I-131 activity of 1.0 μCi/g is used.
2. The unfiltered containment purge activity (from item 1 above) is released directly to the environment.
3. The CR unfiltered inleakage is assumed to be 1,000 cfm. Testing has measured this leakage as 233 +/- 129 cfm.
4. The CR Emergency Ventilation (CREV) system is assumed to initiate at 30 minutes after a LOCA. This assumes a manual operator action for isolation and initiation.
5. BWST depletion time is conservatively assumed at 28.19 minutes corresponding to two spray pumps operating at 1,250 gpm. The actual depletion time would be longer due to an assumed 800 gpm per pump flow rate.
6. The TSC unfiltered inleakage is assumed to be 250 cfm. This corresponds to 40% of rated filtered intake flow plus 10 cfm for TSC ingress/egress. This is conservative in that it represents approximately 40% of the rated flow.
7. The TSC HVAC system has a flow rate of 2,000 cfm. However, 600 cfm of this value is due to intake flow, leaving a net recirculation flow rate of 1,400 cfm (Ref. 3.37).
8. The TSC ventilation system is assumed to initiate 60 minutes after a LOCA. This allows for operator action to manually start the ventilation system within the allotted 60-minute TSC activation requirement. However, the TSC ventilation system (intake and recirc) is assumed to lose power for a two-hour period. This period is assumed to correspond with that two-hour sliding window with the maximum EAB dose (t = 0.8 hours to 2.8 hours) as described in Section 2 of this calculation.
9. During those periods when the TSC HVAC system is not operating, a flow rate of 300 cfm (unfiltered) is assumed in accordance with SRP 6.4 (i.e., 50% of rated flow). This is consistent with the treatment of the CR HVAC system in this calculation.

The results of the above analyses are shown in Section 2.0 below.

## 2.0 Summary of Results

The results of AST analyses are summarized in the following sections:

2.1 The post-LOCA CR, TSC, EAB, and LPZ doses are:
NOTE: Only doses due to the containment leakage pathway are affected as a result of Revision 2 to this calculation.

**Post-LOCA EAB, LPZ, CR, & TSC Doses -AST Analysis**

**Spray Pump Operation**
**Two Pumps at 800 gpm from t=75 sec to t=29.44 minutes, One Pump from 29.44 to 240 min**
**At 800 gpm, User's Specified Spray Removal Coefficients (Design Input 5.3.2.9),**
**0-24 hrs 5% Flashing, and 24-720 hrs 2% flashing (Table 18)**

| Post-LOCA Activity Release Path | Post-LOCA TEDE Dose (Rem) Receptor Location | | | |
|---|---|---|---|---|
| | **Control Room** | **EAB *** | **LPZ** | **TSC** |
| **Containment Leakage** | 6.2665E-01 | 1.9910E+01 | 5.4953E+00 | 3.0101E+00 |
| **ESF Leakage** | 4.0598E+00 | 2.6167E+00 | 1.9063E+00 | 9.5014E-01 |
| **BWST Leakage** | 3.6730E-02 | 3.0611E-02 | 4.4566E-02 | 3.1711E-02 |
| **Cont. Purge** | 3.5503E-03 | 2.6343E-02 | 4.6495E-03 | 3.8437E-03 |
| **Containment Shine** | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 | 1.8038E-01 |
| **External Cloud** | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 | 3.9537E-01 |
| **Filter Shine** | 1.1731E-02 | 0.0000E+00 | 0.0000E+00 | 6.6982E-03 |
| **Total** | 4.7385E+00 | 2.2584E+01 | 7.4508E+00 | 4.5782E+00 |
| **Allowable TEDE Limit** | 5.0000E+00 | 2.5000E+01 | 2.5000E+01 | 5.0000E+00 |
| | RADTRAD Computer Run No. | | | |
| **Containment Leakage** | Containment_Leakage pH 7_3.psf (Appendix Z) | | | CL_TSC pH 7_3.psf (Appendix AA) |
| **ESF Leakage** | ESF_Leakage.psf (Appendix F) | | | ESF_TSC.psf (Appendix O) |
| **BWST Leakage** | BWST_Leakage.psf (Appendix H) | | | BWST_TSC.psf (Appendix P) |
| **Containment Purge** | Purge.psf (Appendix J) | | | Purge_TSC.psf (Appendix Q) |

Additionally, A dose of 2.00E-03 Rem has been calculated as attributable to traveling between the control room and the TSC.

* Derivation of EAB Dose:
The most limiting 2-hr maximum EAB dose is, by far, due to containment leakage. This period starts at 0.8 hrs. and ends at 2.8 hrs. A total of 19.91 Rem TEDE due to containment leakage is received during this period. Another 2-hour period is evaluated that corresponds to the period for maximum 2-hour ESF leakage dose. This period is from 1.7 to 3.7 hours. During this period, the containment leakage contribution is determined by subtracting the accumulated dose at 1.7 hours from the dose at 3.7 hours. Using the

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**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 2 | System Nos. | Sheet 8 of 1000 |
|---|---|---|---|---|

RADTRAD output file Containment_Leakage pH 7_3.o0 (Appendix Z), this yields a net dose of 14.60 Rem TEDE (2.5948E+01 – 1.1351E+01). Since the time steps do not match exactly, a longer period (1.7 to 3.91 hours) is used for conservatism. As can be seen, the 0.8 to 2.8 hour period is limiting.

The second most significant EAB dose contributor is the dose due to ESF leakage. The 2-hr maximum EAB dose due to ESF leakage occurs between 1.7 & 3.7 hrs. As can be seen from RADTRAD output ESF_Leakage.o2 (Appendix F), the accumulated dose for this period is 2.8908 Rem TEDE. The EAB dose due to ESF leakage between 0.8 & 2.8 hrs instead of the dose between 1.7 and 3.7 hrs, 2.6167 Rem TEDE (2.7251E+00 – 1.0841E-01) is summed in the total dose to provide a consistent time basis. The 2-hr maximum EAB dose due to the BWST occurs after 302.5 hrs. Purge dose ends at t=1 minute (maximum 2-hour period begins at t=0). The relatively insignificant doses due to BWST leakage and containment purge are summed in the total without adjustment for time period for conservatism.

| | EAB Evaluation Periods (hrs) | | |
|---|---|---|---|
| | 0.8 – 2.8 | 1.7 – 3.7 | |
| Containment Leakage: | 1.9910E+01 | 1.4600E+01 | Note 1 |
| ESF Leakage: | 2.6167E+00 | 2.8908E+00 | Note 2 |
| BWST Leakage: | 3.0611E-02 | 3.0611E-02 | Note 3 |
| Containment Purge: | 2.6343E-02 | 2.6343E-02 | Note 4 |
| TOTAL (Rem TEDE): | 2.2584E+01 | 1.7548E+01 | Note 5 |

Note 1: From Appendix Z. This dose is from 1.7 to 3.91 hours since output time steps are not coordinated with ESF leakage. However, this is conservative in that it encompasses a longer period.

Note 2: From Appendix F. This dose is actually from 0.8 to 2.9 hours since time periods do not match up exactly. However, this is conservative in that it encompasses a longer period.

Note 3: From Appendix H. The maximum period is from 302.5 to 304.5 hours. Since this dose is relatively insignificant as compared to the containment leakage and ESF leakage doses, further breakdown into the two evaluation periods was not performed. The maximum 2-hour period dose (302.5 to 304.5 hours) is added to the 0.8 to 2.8 hour period, yielding a conservative dose.

Note 4: From Appendix J. This period is 0 to 2 hours. Since this dose is relatively insignificant as compared to the containment leakage and ESF leakage doses, further breakdown into the two evaluation periods was not performed. The maximum 2-hour period (0 to 2 hours) is added to the 0.8 to 2.8 hour period, yielding a conservative dose.

Note 5: As one can see, the maximum 2-hour period is from 0.8 to 2.8 hours.

Note 6: The difference between RADTRAD outputs for the maximum EAB 2-hour doses was evaluated and determined to be due to the differences in time steps between the original and TSC runs.

2.2 Impact of Revision 2 Changes on Post-LOCA Doses

Elimination of NaOH as an additive to containment spray in conjunction with use of TSP to maintain a sump water pH of 7.3 at time of sump water recirculation, and use of SRP 6.5.2 methodology for determining the elemental iodine spray removal coefficient have an impact on the post-LOCA time dependent iodine activity in containment atmosphere. As such, there is an impact on the amount of airborne iodine activity that is released from containment via containment leakage. This impacts the post-LOCA control room, TSC, EAB, and LPZ doses. Use of SRP 6.5.2 methodology for determining the elemental iodine spray removal coefficient results in larger elemental iodine removal coefficients than those calculated using ANS-56.5 methodology. This means the elemental iodine is removed quicker from containment atmosphere (i.e., the time to achieve spray cutoff is reduced) and therefore for a given elemental iodine decontamination factor there would be less airborne elemental iodine available for leakage from containment atmosphere. The reduced containment sump water pH (i.e., 8.5 to 7.3) attributed to removal of NaOH spray additive and use of TSP in containment sump water results in a smaller elemental iodine decontamination factor. A smaller elemental iodine decontamination factor means there would be greater residual airborne elemental iodine activity in the containment building atmosphere following spray cutoff.

The containment spray removal rate for particulate iodine that was calculated in the previous revision to this calculation was determined based on containment spray volume of 1.45E+06 cu ft which is 67% of the containment free air volume (Ref. 3.13). The particulate iodine spray removal coefficient was reduced to account for a reduction in the containment spray flow rate but, it was not adjusted to account for the reduction in containment spray volume from 1.45E+06 cu ft to 1,231,200 cu ft (i.e., 57% of the containment free air volume is assumed to be sprayed per Assumption 4.5). Containment spray particulate iodine removal coefficients were recalculated in Revision 2 of this calculation following the methodology of SRP 6.5.2 and using a spray volume that is 57% of the containment free air volume. The particulate iodine spray removal coefficient is inversely proportional to the containment sprayed volume (for a given spray flow rate) and thus a reduction in the containment sprayed volume results in an increase in the particulate iodine spray removal coefficient.

The combined effect of these changes to Revision 2 of this calculation results in slightly smaller post-LOCA doses to the control room, the TSC, the EAB, and the LPZ via the containment leakage pathway. The smaller post-LOCA doses are primarily due to an increase in the particulate iodine spray removal coefficient which results in quicker removal of particulate iodine from containment atmosphere. The majority of iodine in the containment atmosphere post-LOCA is particulate iodine (i.e., 95% - Table 4 of Section 5.3.1.5 to this calculation). Removal of particulate iodine from containment atmosphere continues as long as the containment spray is operating and so there is no cutoff of particulate iodine removal based on a particulate iodine decontamination factor. The increased reduction in particulate iodine from containment atmosphere more than compensates for the long term increase in airborne elemental iodine within containment due to the smaller elemental iodine decontamination factor. The post-LOCA containment leakage doses are reduced by approximately 2% to 8% (i.e., a reduction of approximately 2% to the control room and 8% to the EAB). There is a reduction in the total post-LOCA doses from all release pathways that ranges from

less than 1% to approximately 8%. These reduced doses are incorporated into the table in Section 2.1 of this calculation.

Post-LOCA doses associated with containment purge are not impacted by elimination of the NaOH containment spray additive system or the use of SRP 6.5.2 methodology for calculating the removal rate of elemental iodine from containment atmosphere. Post-LOCA doses due to containment shine are dependent on the time integrated iodine activity in containment atmosphere. The post-LOCA dose to the TSC due to the external cloud and the post-LOCA doses to the control room and the TSC due to iodine activity accumulated on filters are dependent on the amount of post-LOCA airborne iodine activity released via containment leakage. As observed from the table in Section 2.1 of this calculation, the contributions of the containment shine, external cloud, and filter shine doses are small compared to the total doses. The amount of radioactive iodine airborne in containment that is available for contributing to containment shine and available for leakage from the containment is reduced in this revision due to larger spray removal rates for the particulate iodine. The corresponding post-LOCA doses due to containment shine, external cloud, and filter shine would be smaller than those presented in the table in Section 2.1 of this calculation. Since the containment shine, external cloud, and filter shine doses are smaller for the containment spray iodine removal rates used in Revision 2 of this calculation, and since the doses due to containment shine, external cloud, and filter shine are small compared to the total doses, the larger doses that were in Revision 1 of this calculation are bounding and are maintained in this revision for conservatism.

<u>Removal of NaOH Tank as a Water Source for Containment Sump: Impact Assessment</u>

Doses due to ESF leakage outside the primary containment and due to containment sump water leakage into the BWST are determined based on a containment sump water volume of 5.4519E+04 $ft^3$ (Section 5.4.1 and Figure 3). The sump water volume is composed of the primary system water volume (10,564.4 $ft^3$, Section 7.1.1.1 of Reference 3.16), the BWST water volume (40,684.0 $ft^3$, Section 7.12 of Reference 3.16), the NaOH tank water volume (1450.6 $ft^3$, Section 7.12 of Reference 3.16), and the core flood tank water volume (1820.0 $ft^3$, Section 7.12 of Reference 3.16). Elimination of the NaOH additive system, removes the NaOH tank water volume as a contributor to the post LOCA containment sump water volume. The post LOCA containment sump water volume is thus reduced by 1450.6 $ft^3$ which is approximately 2.7% (i.e., 1450.6 $ft^3$/54,519 $ft^3$). The smaller water volume results in higher activity concentrations of post LOCA sources in the containment sump water and therefore higher post LOCA doses attributed to the ESF leakage pathway and the BWST release pathway. The post LOCA activity concentration in the containment sump water increases by approximately 2.7% as a result of eliminating the NaOH tank water volume as a source to the containment sump water volume. Doses due to ESF leakage are directly proportional to the radionuclide concentration in the containment sump water. As such, post LOCA doses attributed to releases via the ESF leakage pathway and the BWST release pathway can increase by at most 2.7%.

Post LOCA control room, TSC, EAB, and LPZ doses are calculated using conservative modeling assumptions which overestimate the amount of radioactivity released and therefore result in calculation of conservative post LOCA doses. These conservative modeling assumptions include: (1) minimizing the time to drain the BWST (i.e., the time for initiation of containment sump water

recirculation), (2) underestimating the removal of airborne iodine from containment sprayed volume, and (3) crediting removal of elemental and particulate iodine from containment spray based on one spray pump running during the containment sump water recirculation mode.

The time to drain the BWST is minimized by using a containment spray pump flow rate (i.e., 1,250 gpm per pump) that is larger than the actual flow rate of 800 gpm per pump (Section 6.2.1). The larger containment spray pump flow rate results in initiation of sump water recirculation at 29.44 minutes after the onset of the LOCA (i.e., 75 seconds for spray pump start time and 28.19 minutes pump run time (Section 6.2.1). A time of 29.44 minutes is used in this calculation for the containment sump recirculation start time. The calculated minimum time to initiate recirculation of containment sump water is 29.27 minutes after the start of the LOCA (see discussion in Section 6.2.1). The time for initiation of recirculation of containment sump water is greater than 29.44 minutes when the actual containment spray pump flow rate of 800 gpm is used. Since doses due to ESF leakage and leakage via the BWST don't begin until containment sump water recirculation initiation, using 29.44 minutes for the containment sump water recirculation start time results in overestimation of the post LOCA doses attributed to releases via the ESF leakage pathway and the BWST pathway.

Reduction of airborne radioactive iodine from the containment sprayed region is determined based on removal by containment spray. No credit is taken for removal of airborne radioactive iodine from containment sprayed regions by natural deposition. If natural deposition is included, the airborne iodine in containment that is available for release is reduced and thus post LOCA doses due to containment leakage would be reduced. It is estimated that if natural deposition from containment sprayed regions is accounted for, the total post LOCA dose from all dose contributing release pathways would be reduced by slightly less than 1% at the EAB, by approximately 10% at the LPZ, and by over 2% in the control room.

Determining removal of airborne elemental and particulate iodine from containment sprayed regions, based on one spray pump running (instead of two pumps) minimizes the rate at which airborne iodine is removed from containment atmosphere. There is thus more airborne activity in containment atmosphere available for release. This maximizes post LOCA doses due to containment airborne releases. The effect of crediting two containment spray pumps on the total post LOCA dose from all release pathways can be determined at the EAB, the LPZ and in the control room by using the information from Appendix M. The result of crediting two containment spray pumps during the recirculation phase is that the total post LOCA dose is expected to be reduced by approximately 24%, 13%, and slightly less than 2% at the EAB, LPZ, and control room, respectively.

As indicated in the discussion above, there is sufficient conservatism in the calculated post LOCA doses at the EAB, LPZ, control room and TSC to accommodate the decrease in containment sump water volume that is due to removal of the NaOH tank.

## 3.0 References

3.1. U.S. NRC Regulatory Guide 1.183, Alternative Radiological Source Terms for Evaluating Design Basis Accidents at Nuclear Power Reactors, July 2000.

3.2 S.L. Humphreys et al., "RADTRAD: A Simplified Model for Radionuclide Transport and Removal and Dose Estimation," NUREG/CR-6604, USNRC, April 1998.

3.3 USNRC, "Laboratory Testing of Nuclear-Grade Activated Charcoal," NRC Generic Letter 99-02, June 3, 1999.

3.4 AmerGen Calculation C-1101-202-E620-415, Rev. 2, "TMI-1 Isotopic Core Inventory," R. Jaffa, November 10, 2000.

3.5 Vendor Calculation G98TM-4L, Rev 0, "PLG Inc. Report dated July 23, 1998 ACCIDENT X/Q VALUES FOR TMI-1"

3.6 TMI 1 Technical Specifications:
3.6.1 Specification Bases 4.4.13(1)
3.6.2 Specification TS 3.15.1.2.a
3.6.3 Specification TS 3.15.1.2.b
3.6.4 Specification TS 3.1.4.1.a

3.7 GPUN Calculation C-1101-826-E540-020, Rev 2,"Atmospheric Transport X/Q's Using ARCON96 Code – Control Room Habitability"

3.8 AmerGen Calculation No. C-1101-826-E260-023, Rev 1, "TMI-1 Control Building Emergency Envelope Free Air Volume."

3.9 Control Room Envelope Inleakage Testing at TMI Nuclear Station Final Report, November 13, 2000

3.10 Function Test No. 826.05; Control Room Ventilation Configuration For Tracer Gas Testing, Rev. 0, 8/19/00 through 8/21/00

3.11 TMI-Unit 1, Radiological Controls Procedure No. 6610-ADM-4250.12, Rev 10, "Releasing Radioactive Gaseous Effluents – Reactor Building Purges."

3.12 GPU Calculation No. C-1101-900-E610-070, Rev 0, "Minimum Sump pH Following a MHA."

3.13 Safety Evaluation SE-000214-001, "Revision of Setpoint for Transfer from Injection to Recirculation Cooling Following LOCA."

3.14 GPUN Calculation C-1101-900-E000-072, Rev 2, "TMI-1 Dose Consequences from MHA with 15

gph ECCS Leakage."

3.15 GPU Calculation No. C-1101-210-E270-014, Rev 1, " ESF System Leakage Assumptions For Dose Consequence Analysis."

3.16 GPUN Calculation C-1101-210-E610-010, Rev 2, "Reactor Building Minimum Level During Recirculation Following a LBLOCA"

3.17 GPU Calculation No. C-1101-210-E610-013, Rev 2, "BWST Depletion Time for MHA Analysis."

3.18 GPU Calculation No. C-1101-212-5450-040, Rev 2, "BWST Minimum Usable Volume."

3.19 A conference call with NRC (Tim Colburn – Project Manager, and Jay Lee) was held on March 23, 2001, Subject: TMI-1 Licensing Amendment Request No. 290 – ESF Leakage and Control Room Habitability (Attachment A).

3.20 Control Building Concrete Drawings:
3.20.1 Drawing No. E-421-229, Rev 7, "Control Building Concrete Floor Slab Elevation355'-0"."
3.20.2 Drawing No. E-421-230, Rev 6, "Control Building Concrete Floor Slab Elevation380'-0"."
3.20.3 Drawing No. E-421-030, Rev 7, "Reactor Building External Concrete Walls."

3.21 Drawing No. AK-2543, Rev 11, "Carbon Cell Rack, Control Building."

3.22 10 CFR 50.67, "Alternate Source Term."

3.23 GPUN Calculation No. C-1101-823-5450-001, Rev 6, "TMI-1 LBLOCA EQ Temperature Profile Using the GOTHIC Computer Code.

3.24 Validation of TMI-1 Design Input Parameters Used In Post-LOCA Licensing Basis Analysis (Attachment A).

3.25 Federal Guidance Report 11, EPA-5201/1-88-020, Environmental Protection Agency.

3.26 MicroShield Computer Code, Version 5, Grove Engineering.

3.27 Exelon "Verification & Validation of RADTRAD Computer Code.

3.28 Federal Guidance Report 12, EPA-402- R-93-081, Environmental Protection Agency.

3.29 Safety Evaluation SE-135425-007, "BWST Boron Concentration – TSCR No. 225."

3.30 U.S. NRC Standard Review Plan 6.5.2, "Containment Spray as a Fission Product Cleanup System," NUREG-0800, Revision 4

3.31 System Design Basis Document, SDBD-T1-214, Revision 2, System Design Basis Document for Reactor Building Spray System (#214) TMI-1 (September 1, 1999)

3.32 Spray Engineering Company Vendor Catalog, page 15 (One-piece Medium and Narrow angle Ramp Bottom Nozzles) provided by Spraying Systems Company, P.O. Box 7900, Wheaton, IL 61189-7900 (fax copy of page 15 provided in Attachment B)

3.33 D.A. Powers et al, "A Simplified Model of Aerosol Removal by Natural Processes in Reactor Containments," NUREG/CR-6189, USNRC, July 1996.

3.34 Calculation PSAT 05656A.03, Plant-Specific Input for Calculation of TMI-1 ESF Component Leakage Iodine Release, Rev. 0.

3.35 Vendor Determination of Atmospheric Transport X/Qs Using ARCON96 – TSC Habitability (ATTACHMENT C)

3.36 GPUN Drawing 302-852, HTG Vent & Air Cond Flow Diagram, Operations Support Facility

3.37 SDD No. 184A

3.38 "RADTRAD, A Simplified Model for RADionuclide Transport and Removal And Dose Estimation," S&L Computer Program Number 03.7.720-3.03, Version 3.03

3.39 Thomas Mscisz of Exelon Corp to Anthony Klazura of S&L, E-Mail Transmittal, Subject: "Parameters," Dated 05/18/07 (Included as Attachment D)

3.40 "Flow of Fluids Through Valves, Fittings, and Pipe," Crane Technical Paper No. 410, 1981

3.41 "Fission Product Removal Effectiveness of Chemical Additives in PWR Containment Sprays," Technical Report A-3788, Prepared for the USNRC on 8-12-86, R. E. Davis, et. al.

3.42 Perry's Chemical Engineers' Handbook, Perry, Chilton, Kirkpatrick, 4th Edition

3.43 GPU Nuclear Calculation No. PSAT 05656A.04, "Calculation of TMI-1 Engineered Safety Feature Component Leakage Iodine Release," Revision 0A

3.44 ANSI/ANS-56.5-1979, "pwr and bwr containment spray system design criteria," 1979

3.45 Nuclides and Isotopes, Chart of the Nuclides, Fourteenth Edition, GE Nuclear Energy

3.46 TMI-1 Updated Final Safety Analysis Report, Update 18, April 2006

## 4.0 Assumptions

**Assumptions for Evaluating the Radiological Consequences of a Loss-of-Coolant Accident (LOCA)**

The following assumptions used in evaluating the offsite, TSC, and control room doses resulting from a LOCA are based on the requirements in the Regulatory Guide 1.183 (Ref. 3.1). These assumptions become the design inputs in Sections 5.3 through 5.7 and are incorporated in the analyses

**Source Term Assumptions**

Acceptable assumptions regarding core inventory and the release of radionuclides from the fuel are provided in Regulatory Position (RGP) 3.1 of Reference 3.1 as follows:

4.1 Core Inventory

The inventory of fission products in the reactor core and available for release to the containment is based on the maximum power level of 2,619 MWt corresponding to current fuel enrichment and fuel burnup, which is 1.02 times the current licensed rated thermal power of 2,568 MWt. The current core inventory is shown in Table 1 of Design Input 5.3.1.2.

4.2 Release Fractions and Timing

The core inventory release fractions, by radionuclide groups, for the gap release and early in-vessel damage states for DBA LOCA are listed in Table 3 of Design Input 5.3.1.4. These fractions are applied to the equilibrium core inventory described in Design Input 5.3.1.2 (Ref. 3.1, Tables 2 & 4).

4.3 Radionuclide Composition

The elements in each radionuclide group that should be considered in design basis analyses are shown in Table 2 of Design Input 5.3.1.3 (Ref. 3.1, RGP 3.4).

4.4 Chemical Form

If the sump pH is controlled at values 7.0 or greater, the chemical forms of radioiodine released to the containment should be assumed to be 95% cesium iodide (CsI), 4.85 percent elemental iodine, and 0.15 percent organic iodide (Ref. 3.1, RGP 3.5 and Appendix A) as shown in design inputs 5.3.1.5 and 5.4.4. With the exception of elemental and organic iodine and noble gases, fission products are assumed to be in particulate form (Ref. 3.1, RGP 3.5 and Appendix A). Iodine species, including those from iodine re-evolution, for sump or suppression pool pH values less than 7 will be evaluated on a case-by-case basis. Evaluations of pH should consider the effect of acids and bases created during the LOCA event, e.g., radiolysis products (Refs 3.1, RGP A.2). Reference 3.12 evaluated the TMI-1 minimum containment sump pH including the radiolysis of the chloride base hypalon insulation inside containment, which produces hydrochloric acid (HCl) and neutralizes the sump pH. The estimated quantity of hypalon in the cable was doubled to calculate a minimum sump pH of >8 (Ref. 3.12, pages 5 and 45) when a NaOH spray additive is credited. Therefore, the TMI-1 sump pH meets the regulatory requirement in the RGP A.2 of Ref. 3.1 as shown in design input 5.4.4 for

evaluations that credit the NaOH spray additive. Similarly, when the NaOH spray additive is removed and TSP is used in the containment sump, the sump pH will be greater than 7 and thus the TMI-1 sump pH will meet the regulatory guidance in RGP A.2 of Ref. 3.1.

**Assumptions on Activity Transport in Primary Containment**

4.5 The radioactivity released from the fuel is assumed to mix instantaneously and homogeneously throughout the free air volume of the primary containment. This distribution should be adjusted if there are internal compartments that have limited ventilation exchange (Ref. 3.1, RGP A3.1). Fifty seven percent (57%) of the released activity is distributed in the sprayed region and 43% of activity in the unsprayed region based on their respective volumes as shown in design inputs 5.3.2.3 & 5.3.2.4. The sprayed and unsprayed volumes previously used (67% and 33% respectively) have been modified to account for the reduction in building spray flow per section 7.7.

4.6 Reduction in airborne radioactivity in the containment by natural deposition within the containment is credited using the RADTRAD Powers model for aerosols with the removal coefficient with 10-percentile probability (Ref. 3.2 and Ref. 3.38).

4.7 The primary containment is assumed to leak at the technical specification peak pressure leak rate for the first 24 hours and 50% of TS leak rate after the first 24 hours (Refs 3.1, RGP A.3.7). The primary containment leak rate is incorporated in design input 5.3.2.5.

4.8 Since the primary containment may be purged during power operations, the release via purge system prior to containment isolation should be analyzed and resulting doses assumed with the postulated doses from other release paths (Ref 3.1, RGP A.3.8). This requirement of the containment purge is incorporated via design inputs 5.3.2.14 through 5.3.2.19. Technical Specifications require that the purge valve be closed within 5.0 seconds. This evaluation assumes this time is extended to 1.0 minute for conservatism.

**Offsite Dose Consequences**

The following assumptions are used in determining the TEDE for a maximum exposed individual at EAB and LPZ locations:

4.9 The offsite dose is determined in the TEDE, which is the sum of the committed effective dose equivalent (CEDE) from inhalation and the deep dose equivalent (DDE) from external exposure from all radionuclides that are significant with regard to dose consequences and the released radioactivity (Ref. 3.1, RGP 4.1.1, Refs 3.25 & 3.28). The RADTRAD computer code (Ref. 3.2 and Ref 3.38) performs this summation to calculate the TEDE.

4.10 The offsite dose analysis is performed using the RADTRAD code (Ref. 3.2 and Ref 3.38), which uses the Committed Effective Dose (CED) Conversion Factors for inhalation and submersion (Ref 3.1, RGP 4.1.2, Refs 3.25 & 3.28).

4.11 Since RADTRAD calculates Deep Dose Equivalent (DDE) using whole body submergence in semi-infinite cloud with appropriate credit for attenuation by body tissue, the DDE can be assumed

nominally equivalent to the effective dose equivalent (EDE) from external exposure. Therefore, the code uses DDE in lieu of EDE in determining TEDE (Ref 3.1, RGP 4.1.4).

4.12 The maximum TEDE for the EAB receptor location is determined for the two-hour period with the highest dose following the start of the radioactivity release and used in determining compliance with the dose acceptance criteria in 10 CFR 50.67 (Ref. 3.1, RGP 4.1.5 & Ref. 3.22).

EAB Dose Acceptance Criteria: 25 Rem TEDE for maximum 2-hour period (50.67(b)(2)(i))

4.13 TEDE is determined for the most limiting receptor at the outer boundary of the low population zone (LPZ) and is used in determining compliance with the dose criteria in 10 CFR 50.67 (Refs 3.1, RGP 4.1.6 & Ref. 3.22).

LPZ Dose Acceptance Criteria: 25 Rem TEDE (50.67(b)(2)(ii))

4.14 No correction is made for depletion of the effluent plume by deposition on the ground (Ref 3.1, RGP 4.1.7).

4.15 The breathing rates are used for persons at offsite locations (Ref 3.1, RGP 4.1.3), which are incorporated in design input 5.7.3:

**Control Room Dose Consequences**

The following guidance is used in determining the TEDE for maximum exposed individuals located in the control room:

4.16 The CR TEDE analysis considers the following sources of radiation that will cause exposure to control room personnel (Ref 3.1, RGP 4.2.1). See applicable design inputs 5.6.1 through 5.6.14.

- Contamination of the control room atmosphere by the intake or infiltration of the radioactive material contained in the post-accident radioactive plume released from the facility (via CR filtered air intake),
- Contamination of the control room atmosphere by the intake or infiltration of airborne radioactive material from areas and structures adjacent to the control room envelope (via CR unfiltered inleakage),
- Radiation shine from the external radioactive plume released from the facility (external airborne cloud),
- Radiation shine from radioactive material in the reactor containment (containment shine dose),
- Radiation shine from radioactive material in systems and components inside or external to the control room envelope, e.g., radioactive material buildup in recirculation filters (CR filter shine dose).

4.17 The radioactivity releases and radiation levels used for the control room dose is determined using the same source term, transport, and release assumptions used for determining the exclusion area boundary (EAB) and the low population zone (LPZ) TEDE values (Ref 3.1, RGP 4.2.2).

4.18 The occupancy and breathing rate are used for the maximum exposed individual present in the control room (Ref 3.1, RGP 4.2.6), which are incorporated in design input 5.6.12 & 5.6.13:

4.19 10 CFR 50.67 (Ref 3.22) establishes the following radiological criteria for the control room. These criteria are stated for evaluating reactor accidents of exceedingly low probability of occurrence and low risk of public exposure to radiation, e.g., a large-break LOCA (Ref 3.2, RGP 4.4).

CR Dose Acceptance Criteria: 5 Rem TEDE (50.67(b)(2)(iii))

4.20 Credit for engineered safety features that mitigate airborne activity within the control room is taken for control room isolation or pressurization, intake or recirculation filtration (Ref. 3.2, RGP 4.2.4). The control room design is often optimized for the DBA LOCA and the protection afforded for other accident sequences may not be as advantageous. In most designs, control room isolation is actuated by engineered safeguards feature (ESF) signals or radiation monitors (RMs). In some cases, the ESF signal is effective only for selected accidents, placing reliance on the RMs. Several aspects of RMs can delay the isolation, including the delay for activity to build up to concentrations equivalent to the alarm setpoint and the effects of different radionuclide accident isotopic mixes on monitor response. The TMI-1 CR emergency filtration system is conservatively assumed to isolate and initiate at 30 minutes after a LOCA per design input 5.6.5. During this 30-minute period, although the normal ventilation fans are not operating, one half of the design flow rate is assumed (unfiltered) per SRP 6.4. This is a conservative value for air intake considering that no fans will be running during this time.

4.21 No credits for KI pills or respirators are taken (Ref. 3.2, RGP 4.2.5).

**Technical Support Center (TSC) Dose Consequences**

The following guidance is used in determining the TEDE for maximum exposed individuals located in the TSC:

4.22 The TSC TEDE analysis considers the following sources of radiation that will cause exposure to TSC personnel (Ref 3.1, RGP 4.2.1). See applicable design inputs 5.8.1 through 5.8.14.

- Contamination of the TSC atmosphere by the intake or infiltration of the radioactive material contained in the post-accident radioactive plume released from the facility (via TSC filtered air intake),
- Contamination of the TSC atmosphere by the intake or infiltration of airborne radioactive material from areas and structures adjacent to the TSC envelope (via TSC unfiltered inleakage),
- Radiation shine from the external radioactive plume released from the facility (external airborne cloud),

- Radiation shine from radioactive material in the reactor containment (containment shine dose),
- Radiation shine from radioactive material in systems and components inside or external to the TSC envelope, e.g., radioactive material buildup in recirculation filters (TSC filter shine dose).

4.23 The radioactivity releases and radiation levels used for the TSC dose is determined using the same source term, transport, and release assumptions used for determining the control room, exclusion area boundary (EAB) and the low population zone (LPZ) TEDE values (Ref 3.1, RGP 4.2.2).

4.24 The occupancy and breathing rates are used for the maximum exposed individual present in the TSC (Ref 3.1, RGP 4.2.6), which are incorporated in design input 5.8.12 & 5.8.13:

4.25 10 CFR 50.67 (Ref 3.22) establishes the following radiological criteria for the control room, which is applicable to the TSC. These criteria are stated for evaluating reactor accidents of exceedingly low probability of occurrence and low risk of public exposure to radiation, e.g., a large-break LOCA (Ref 3.2, RGP 4.4).

TSC Dose Acceptance Criteria: 5 Rem TEDE (50.67(b)(2)(iii))

4.26 The TMI-1 TSC emergency filtration system is conservatively assumed to isolate and initiate at (at the earliest) 60 minutes after a LOCA per design input 5.6.5. During this 60-minute period, although the normal ventilation fans are not operating, one half of the design flow rate is assumed (unfiltered) per SRP 6.4. This is a conservative value for air intake considering that no fans will be running during this time. However, a two-hour loss of power is assumed to occur during the period with the highest EAB calculated dose (t = 0.8 to 2.8 hours). This results in a total of 2.8 hours with no powered ventilation (300 cfm unfiltered is assumed).

4.27 No credit for KI pills or respirators are taken (Ref. 3.2, RGP 4.2.5). Such credit would significantly reduce the dose.

## 5.0 Design Inputs:

### 5.1 General Considerations

### 5.1.1 Analysis Quality

The design basis accidents are postulated and analyzed to provide a conservative set of assumptions and as-built design inputs to demonstrate the performance of one or more aspects of the facility design to protect the control room operator, TSC personnel, and the health and safety of the general public. The guidance in the Regulatory Guide 1.183 (Ref. 3.1) is followed line by line along with the plant-specific design input parameters compatible with the AST and TEDE dose criteria. The numeric values of the post-accident performance of ESF components are conservatively selected to assure an appropriate and prudent safety margin against unpredicted events in the course of an accident and compensate for large uncertainties in facility parameters, accident progression, radioactive material transport, and atmospheric dispersion. However, the staff allows licensees to exercise deviations or other techniques, which can be justified based on the plant-specific designs and post-accident responses. One such justification is discussed in Section 6.2.2 based on the engineering judgment. This deviation pertains to the use of ESF flashing fractions of less than 10% per verbal agreement with NRC staff (Ref. 3.19).

### 5.1.2 Credit for Engineered Safeguard Features

Credit is taken only for those accident mitigation features that are classified as safety-related, are required to be operable by technical specifications, are powered by emergency power sources, and are either automatically actuated or, in limited cases, have actuation requirements explicitly addressed in emergency operating procedures. The single active component failures such as the operation of one fan cooler with reduced air flow and initiation of two spray trains (aligned to the BWST) to initiate the ESF leakage earlier are assumed to maximize the radiological consequences. Assumptions regarding the occurrence and timing of a loss of offsite power are selected for the CREV system with the objective of maximizing the postulated radiological consequences. The TSC ventilation system is credited, although it does not have a backup, redundant train, or operate using emergency power from the emergency diesel generator. This is acceptable since backup facilities are available (TMI Training Center or the main control room). A two-hour loss of power is assumed in the analysis. This two-hour period corresponds to that period with the maximum EAB dose for conservatism.

### 5.1.3 Assignment of Numeric Input Values

The numeric values that are chosen as inputs to the analyses required by 10 CFR 50.67 are compatible with AST and TEDE dose criteria and selected with the objective of maximizing the postulated dose. As a conservative alternative, the limiting value applicable to each portion of the analysis is used in the evaluation of that portion. The use of reduced values of fan cooler and spray pump flow rates, CR/TSC recirculation flow rate and maximum value of CR/TSC air intake flow rate and unfiltered inleakage demonstrates the inherent conservatisms in the plant design and post-accident response. For parameters addressed by technical specifications such as the containment leak rate and filter efficiencies, the values used in the

analysis are that specified in the technical specifications. Additional conservative assumptions are also considered.

### 5.1.4 Applicability of Prior Licensing Basis

The implementation of an AST is a significant change to the design basis of the facility and assumptions and design inputs used in the analyses. The characteristics of the ASTs and the revised TEDE dose calculation methodology may be incompatible with many of the analysis assumptions and methods currently used in the facility's design basis analyses. The TMI-1 plant specific design inputs and assumptions used in the TID-14844 analyses were assessed for their validity to represent the as-built condition of the plant (Ref. 3.24) and evaluated for their compatibility to meet the AST and TEDE methodology. The analysis in this calculation ensures that analysis assumptions, design inputs, and methods are compatible with the ASTs and the TEDE criteria. Note: Approval for AST has previously been granted by the NRC staff as a result of the work performed for Revision 0 of this calculation. Revision 1 addresses doses to TSC personnel and does not change any doses to control room personnel, the EAB, or LPZ.

### 5.1.5 Meteorology Considerations

Atmospheric dispersion values (X/Q) for the EAB, the LPZ, and the control room that are approved by the Staff in previous licensing proceedings are used in performing the radiological analyses identified in this calculation (Refs 3.5 & 3.7). The atmospheric dispersion factors for the CR are calculated using the methodology of the NRC computer code ARCON96, which are accepted by the Staff (see Reference 3.7). The atmospheric dispersion factor for the EAB is applied over the duration of the accident in order to determine the maximum 2-hour dose period. Atmospheric dispersion factors (X/Qs) for the TSC were likewise calculated using the ARCON96 computer code. The same meteorological data from the previous CR X/Q analysis was used in the development of the TSC X/Qs.

## 5.2 Accident-Specific Design Inputs/Assumptions

The design inputs/assumptions utilized in the EAB, LPZ, TSC, and CR habitability analyses are listed in the following sections. The design inputs are compatible with the AST and TEDE dose criteria and assumptions are consistent with those identified in Regulatory Position 3 and Appendix A of RG 1.183 (Ref. 3.1). The design inputs and assumptions in the following sections represent the as-built design of the plant.

Two sets of elemental and particulate spray removal coefficients, elemental iodine decontamination factors, and elemental iodine and particulate spray cutoff times are presented in Section 5.3.2. One set of values reflects the methodology documented in ANS-56.5 for calculating elemental and particulate iodine spray removal coefficients and they reflect an elemental iodine decontamination factor and spray cutoff times associated with the presence of a NaOH spray additive. The input values are maintained in Revision 2 of this calculation, even though the NaOH spray additive system is no longer credited, because they result in conservative calculated doses to the control room and the TSC due to containment shine and filter shine. The other set of parameters (See Section 5.3.2.20) is related to calculation of elemental and particulate spray removal coefficients using SRP 6.5.2 (Ref. 3.30) methodology and elemental iodine decontamination factor and associated spray cutoff times based on a containment sump water pH of 7.3. These parameters are used

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**CALCULATION SHEET**
**(Ref. EP-006T)**

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in Revision 2 of this calculation to calculate control room, TSC, and offsite doses due to containment atmosphere leakage.

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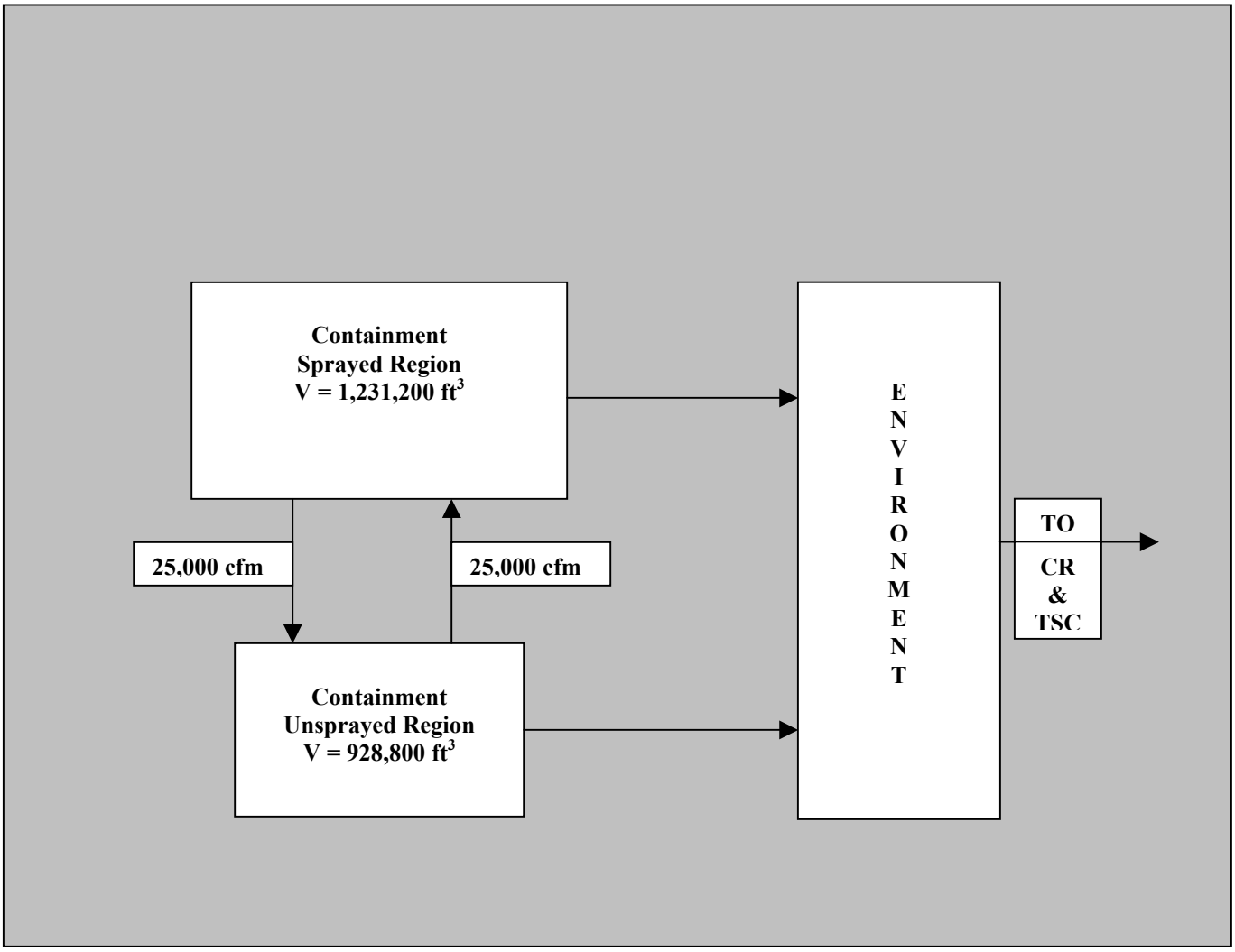


**Figure 1: TMI 1 Containment Leak RADTRAD Nodalization**

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**CALCULATION SHEET**
**(Ref. EP-006T)**

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|---|---|---|---|---|

| Design Input Parameter | Value Assigned | Reference |
|---|---|---|
| **5.3 Containment Leakage Model Parameters** | | |
| **5.3.1 Source Term** | | |
| 5.3.1.1 Power Level | 2,568 x 1.02 = 2,619 MWt | 3.4, page 2 |
| 5.3.1.2 Isotopic Core Inventory (Ci) See Below | | 3.4, Table 1 |

**Table 1**

| Isotope | Activity | Isotope | Activity | Isotope | Activity |
|---|---|---|---|---|---|
| Co-58 | 6.69E+05 | Ru-103 | 1.09E+08 | Cs-136 | 4.74E+06 |
| Co-60 | 5.11E+05 | Ru-105 | 7.27E+07 | Cs-137 | 1.15E+07 |
| Kr-85 | 1.05E+06 | Ru-106 | 4.11E+07 | Ba-139 | 1.38E+08 |
| Kr-85m | 2.33E+07 | Rh-105 | 6.86E+07 | Ba-140 | 1.33E+08 |
| Rb-86 | 1.64E+05 | Sb-127 | 7.48E+06 | La-140 | 1.35E+08 |
| Kr-87 | 4.60E+07 | Sb-129 | 2.26E+07 | La-141 | 1.26E+08 |
| Kr-88 | 6.48E+07 | Te-127m | 9.94E+05 | La-142 | 1.23E+08 |
| Sr-89 | 7.84E+07 | Te-127 | 7.41E+06 | Ce-141 | 1.22E+08 |
| Sr-90 | 8.45E+06 | Te-129m | 3.33E+06 | Ce-143 | 1.21E+08 |
| Sr-91 | 1.07E+08 | Te-129 | 2.22E+07 | Ce-144 | 9.80E+07 |
| Sr-92 | 1.12E+08 | Te-131m | 1.02E+07 | Pr-143 | 1.19E+08 |
| Y-90 | 8.72E+06 | Te-132 | 1.02E+08 | Nd-147 | 4.97E+07 |
| Y-91 | 9.59E+07 | I-131 | 7.15E+07 | Np-239 | 1.35E+09 |
| Y-92 | 1.12E+08 | I-132 | 1.03E+08 | Pu-238 | 3.86E+05 |
| Y-93 | 1.25E+08 | I-133 | 1.50E+08 | Pu-239 | 3.01E+04 |
| Zr-95 | 1.24E+08 | I-134 | 1.66E+08 | Pu-240 | 3.24E+04 |
| Zr-97 | 1.26E+08 | I-135 | 1.39E+08 | Pu-241 | 1.34E+07 |
| Nb-95 | 1.24E+08 | Xe-133 | 1.50E+08 | Am-241 | 2.06E+04 |
| Mo-99 | 1.36E+08 | Xe-135 | 5.51E+07 | Cm-242 | 4.85E+06 |
| Tc-99m | 1.19E+08 | Cs-134 | 1.71E+07 | Cm-244 | 3.93E+05 |

5.3.1.3 Radionuclide Composition

**Table 2**

| Group | Elements | |
|---|---|---|
| Noble Gases | Xe, Kr | 3.1, RGP 3.4, Table 5 |
| Halogens | I, Br | |
| Alkali Metals | Cs, Rb | |
| Tellurium Group | Te, Sb, Se | |
| Barium, Strontium | Ba, Sr | |
| Noble Metals | Ru, Rh, Pd, Mo, Tc, Co | |
| Lanthanides | La, Zr, Nd, Eu, Nb, Pm, Pr, Sm, Y, Cm, Am | |
| Cerium | Ce, Pu, Np | |

5.3.1.4 Release Fraction and Timing (Ref 3.1, Tables 2 & 4)

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**CALCULATION SHEET**
**(Ref. EP-006T)**

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| Design Input Parameter | Value Assigned | Reference |
|---|---|---|
| **Table 3** | | |
| **PWR Core Inventory Fraction Released Into Containment** | | |
| **Group** | **Gap Release Phase** | **Early In-Vessel Release Phase** |
| **Timing Duration (Hrs)** | **30 sec - 0.50 Hr** | **0.50 - 1.80 Hr** |
| Noble Gases | 0.05 | 0.95 |
| Halogens | 0.05 | 0.35 |
| Alkali Metals | 0.05 | 0.25 |
| Tellurium Metals | 0.00 | 0.05 |
| Ba, Sr | 0.00 | 0.02 |
| Noble Metals | 0.00 | 0.0025 |
| Cerium Group | 0.00 | 0.0005 |
| Lanthanides | 0.00 | 0.0002 |
| 5.3.1.5 Iodine Chemical Form | | |
| **Table 4** | | |
| **Iodine Chemical Form** | **%** | |
| Aerosol (Particulates) | 95.0% | 3.1, RGP 3.5 and Assumption 4.4 |
| Elemental | 4.85% | |
| Organic | 0.15% | |
| **5.3.2 Activity Transport in Primary Containment** | | |
| 5.3.2.1 Primary Containment Parameters | | |
| 5.3.2.2 Containment Volume | 2,160,000 $ft^3$ | 3.14, pages 9 & 10 |
| 5.3.2.3 Sprayed Volume (57%) | 1,231,200 $ft^3$ | Assumption 4.5 & Section 7.7 |
| 5.3.2.4 Unsprayed Volume (43%) | 928,800 $ft^3$ | Assumption 4.5 & Section 7.7 |
| 5.3.2.5 Containment Leak Rate | 0.1 v%/day 0-24 Hrs<br>0.05 v%/day 24-720 Hrs | 3.6.1 |
| 5.3.2.6 Flow Rate From Sprayed To Unsprayed Volume | 25,000 cfm (assumes 35-second start time) | 3.23, page 18 |
| 5.3.2.7 Flow Rate From Unsprayed To Sprayed Volume | 25,000 cfm (assumes 35-second start time) | 3.23, page 18 |
| 5.3.2.8 Spray Initiation Time | 75 sec (pump startup) | 3.23, page 9 |
| 5.3.2.9 Spray Removal Coefficients For Single Spray Pump Flow Rate @ 800 gpm | | |
| Elemental ($\lambda_{E800}$) | 4.73 $hr^{-1}$ | Section 7.3<br>The elemental iodine spray removal coefficient is calculated using ANS-56.5 methodology. The particulate coefficient is calculated using a containment sprayed volume of 1.45E+06 cu ft. |
| Particulate ($\lambda_{P800}$) (Aerosol) | 1.94 $hr^{-1}$ | |

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|---|---|---|---|---|

| Design Input Parameter | Value Assigned | Reference |
|---|---|---|
| 5.3.2.10 Decontamination Factor (DF) For Spray Cutoff Time | | |
| Elemental | 200 | Reference 3.30 (The elemental iodine decontamination factor is the maximum allowed per SRP 6.5.2. Use of the maximum allowed decontamination factor is for a spray water pH of 8.5 and is based on experimental work that demonstrated decontamination factors greater than 200 for spray pH values less than 8.5 (Ref. 3.29)). |
| Particulate (Aerosol) | 50 | |
| 5.3.2.11 Maximum Activity Occurring in Containment | 1.8 hr | Occurs @ end of early-in-vessel release phase |
| 5.3.2.12 Spray Cutoff Time For Spray Flow Rate @ 800 gpm | | |
| Elemental ($\lambda_{E800}$) | 2.92 hr (2.36 hrs for 2 pumps) | Section 7.4 |
| Particulate ($\lambda_{P800}$) (Aerosol) | 3.82 hr (2.808 hrs for 2 pumps) | |
| 5.3.2.13 Specified Spray Removal Coefficients For Spray Flow Rate @ 800 gpm for RADTRAD Input (Sections 7.3 & 7.4) | | |
| Spray Removal Coefficients ($hr^{-1}$) | | |
| Time (hr) | Aerosol | Elemental |
| 0 | 0 | 0 |
| 0.0208 | 3.88 | 9.46 |
| 0.4907 | 1.94 | 4.73 |
| 2.92 | 1.94 | 0 |
| 3.82 | 0.194 | 0 |
| 4.0 | 0 | 0 |
| 5.3.2.14 Cont. Purge flow Rate | 14,000 cfm | 3.11, Page 6 |
| 5.3.2.15 Purge Filter Efficiencies | | |
| Elemental Iodine | 70% (Not Credited in Analysis) | Not Credited in Analysis |
| Organic Iodine | 70% (Not Credited in Analysis) | |
| Particulate | 99% (Not Credited in Analysis) | |
| 5.3.2.16 RCS Volume | 10,564.4 $ft^3$ | 3.16, page 10 |
| 5.3.2.17 Normal Iodine Activity Concentration Tech Spec Limit | 0.35 μCi/g I-131 DE (NOTE: 1.0 uCi/g used in calc for conservatism) | 3.6.4 |

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| | | |
|---|---|---|
| 5.3.2.18 Purge Duration | 5 seconds per T.S.<br>(NOTE: 1.0 minute used in calc for conservatism) | Assumed (for conservatism) |
| **Design Input Parameter** | **Value Assigned** | **Reference** |

5.3.2.19 1% Failed Fuel RCS Activity

| Isotope | Activity (μCi/g) | Isotope | Activity (μCi/g) | |
|---|---|---|---|---|
| Kr-83m | 0.545 | Xe-135m | 0.485 | 3.4, Page 17, Table 4 |
| Kr-85m | 2.43 | Xe-135 | 19.17 | |
| Kr-85 | 14.72 | Xe-138 | 0.699 | |
| Kr-87 | 1.34 | I-131 | 5.71 | |
| Kr-88 | 4.15 | I-132 | 2.08 | |
| Xe-131m | 3.94 | I-133 | 6.43 | |
| Xe-133m | 5.70 | I-134 | 0.757 | |
| Xe-133 | 419.4 | I-135 | 3.08 | |

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|---|---|---|---|---|

| Design Input Parameter | Value Assigned | Reference |
|---|---|---|
| **5.3.2.20 Parameters Used in Revision 2 Analysis** | | |
| Average Spray Drop Fall Height | 96 ft | Tables 14B-1 and 14B-2 of Appendix 14B of TMI-1 UFSAR (Ref. 3.46). Use of the UFSAR values is documented in E-Mail Transmittal (Ref. 3.39) which is included as Attachment D to this calculation. |
| Containment Atmosphere Temperature | 250°F | |
| Containment Pressure | 75 psia | |
| **Spray Removal Coefficients for Single Spray Pump, Flow Rate at 800 gpm** | | |
| Elemental ($\lambda_{E800}$) | 8.51 $hr^{-1}$ | Calculated in Section 7.12. The elemental iodine spray removal coefficient is calculated using SRP 6.5.2 methodology. |
| Particulate ($\lambda_{P800}$) (Aerosol) | 2.29 $hr^{-1}$ | Calculated in Section 7.12. The particulate coefficient is calculated using SRP 6.5.2 methodology and a containment sprayed volume of 1,231,200 cu ft |
| **Spray Removal Coefficients for Two Spray Pumps Operating, Total Spray Flow Rate of 1600 gpm** | | |
| Elemental ($\lambda_{E1600}$) | 17.02 $hr^{-1}$ | Calculated in Section 7.12. Per SRP 6.5.2 (Ref. 3.30), the elemental iodine spray removal coefficient is limited to 20 per hr to prevent extrapolation beyond existing data for boric acid solutions with a pH of 5. |
| Particulate ($\lambda_{P1600}$) (Aerosol) | 4.58 $hr^{-1}$ | Calculated in Section 7.12. |
| **Decontamination Factor (DF) For Spray Cutoff Time** | | |
| Elemental Iodine | 8.77 | Calculated in Section 7.12. |
| Particulate Iodine Depletion Factor | 50 | SRP 6.5.2 |
| **Spray Cutoff Time for Spray Flow Rate at 800 gpm** | | |
| Elemental ($\lambda_{E800}$) | 2.06 | Calculated in Section 7.12. |
| Particulate ($\lambda_{P800}$) (Aerosol) | 3.51 | Calculated in Section 7.12. |
| **Summary of Spray Removal Coefficients and Spray Time Milestones** | | |
| Spray Removal Coefficients (hr-1) and Spray Time Milestones (Calculated in Section 7.12) | | |
| Time (hr) | Aerosol | Elemental |
| 0 | 0 | 0 |
| 0.0208 | 4.58 | 17.02 |
| 0.4907 | 2.29 | 8.51 |
| 2.06 | 2.29 | 0 |
| 3.51 | 0.229 | 0 |
| 4.0 | 0 | 0 |

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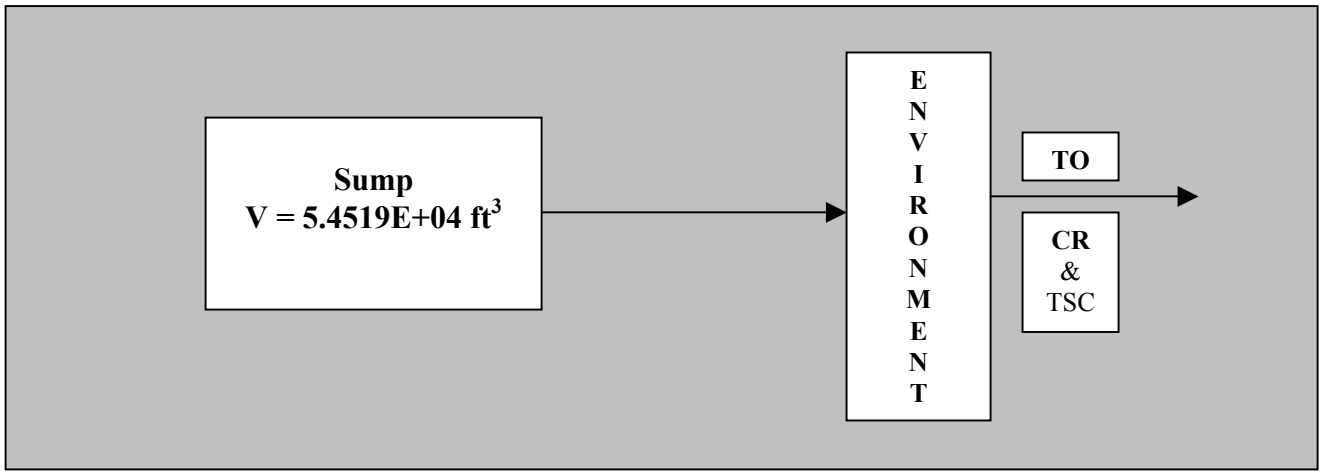


**Figure 2: TMI 1 ESF Leak RADTRAD Nodalization**

| Design Input Parameter | Value Assigned | Reference |
|---|---|---|
| **5.4 ESF Leakage Model Parameters** | | |
| 5.4.1 Sump Water Volume | 54,519 $ft^3$ (Refer to discussion at the end of Section 2.2 for an impact assessment associated with removal of the NaOH water source) | 3.16, pages 10 & 28 |
| 5.4.2 ESF Leakage | 15 gph (doubled in analysis) | 3.15, page 4 |
| 5.4.3 ESF Leakage Initiation Time | 29.44 minutes (75 seconds + 28.19 minutes spray operation) (See discussion in Section 6.2.1) | 3.17, page 4 |
| 5.4.4 Sump pH | >8.0 (> 7.0) | 3.12, page 2 (Used for evaluation that included NaOH spray additive) |
| 5.4.5 Sump Water Activity (Ref. 3.1, RGP A.5.1) | | |
| **Table 5** | | |
| **Group** | **Gap Release Phase** | **Early In-Vessel Release Phase** |
| **Timing Duration (Hrs)** | **30 sec – 0.50 Hr** | **0.50 - 1.80 Hr** |
| Halogen | 0.05 | 0.35 |
| 5.4.6 Iodine Flashing Factors | | |
| **Table 6** | | |
| **Time (Hrs)** | **Flashing Factor (%)** | |
| 0 | 5 | 3.19 (Applicability of these flashing fractions for a pH of 7.3 is documented in Ref. 3.43) |
| 24 | 2 | |
| 720 | 0 | |
| 5.4.7 Chemical Form Iodine In ESF Leakage | | |
| Elemental | 97% | 3.1, RGP A.5.6 |
| Organic | 3% | |

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**CALCULATION SHEET**
**(Ref. EP-006T)**

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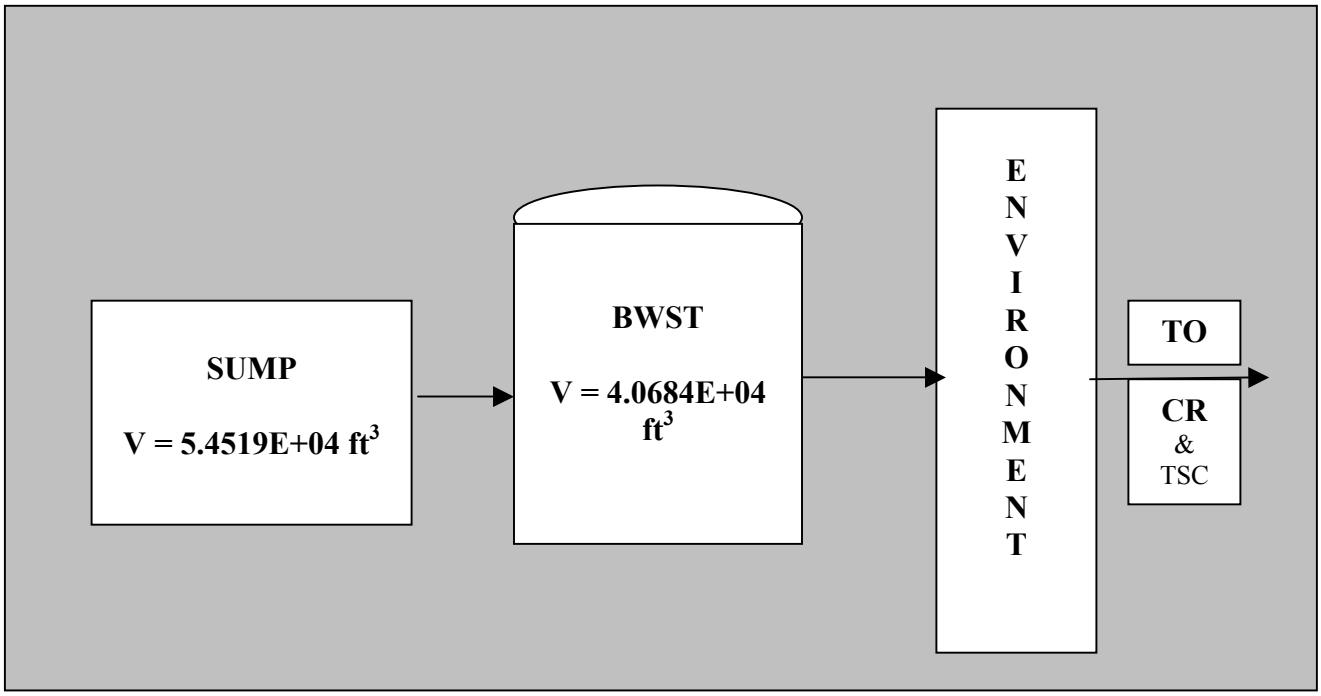


**Figure 3: TMI 1 BWST Leak RADTRAD Nodalization**

| Design Input Parameter | Value Assigned | Reference |
|---|---|---|
| **5.5 BWST Leakage Model Parameters** | | |
| 5.5.1 BWST Air Space Volume | 40,684 $ft^3$ | 3.18, page 3 & 3.16, page 28 |
| 5.5.2 BWST Leakage Flashing | 10% | 3.1, RGP A.5.5 |
| 5.5.3 BWST Leak Rate (Ref. 3.15, Table 1) | | |
| **Table 7** | | |
| **BSWT Leak Rate** | | |
| **Time (Hrs)** | **Leakage (gpm)** | **Leakage (cfm)** |
| 0-5 | 3 | 0.4010 |
| 5-24 | 1.7 | 0.2272 |
| 24-720 | 1.6 | 0.2139 |
| 5.5.4 Release Mechanism From BSWT | Natural Displacement | |
| 5.5.5 BWST Release Point | Ground Level | |
| 5.5.6 Chemical Form Iodine In BWST Leakage | | |
| Elemental | 97% | 3.1, RGP A.5.6 |
| Organic | 3% | |

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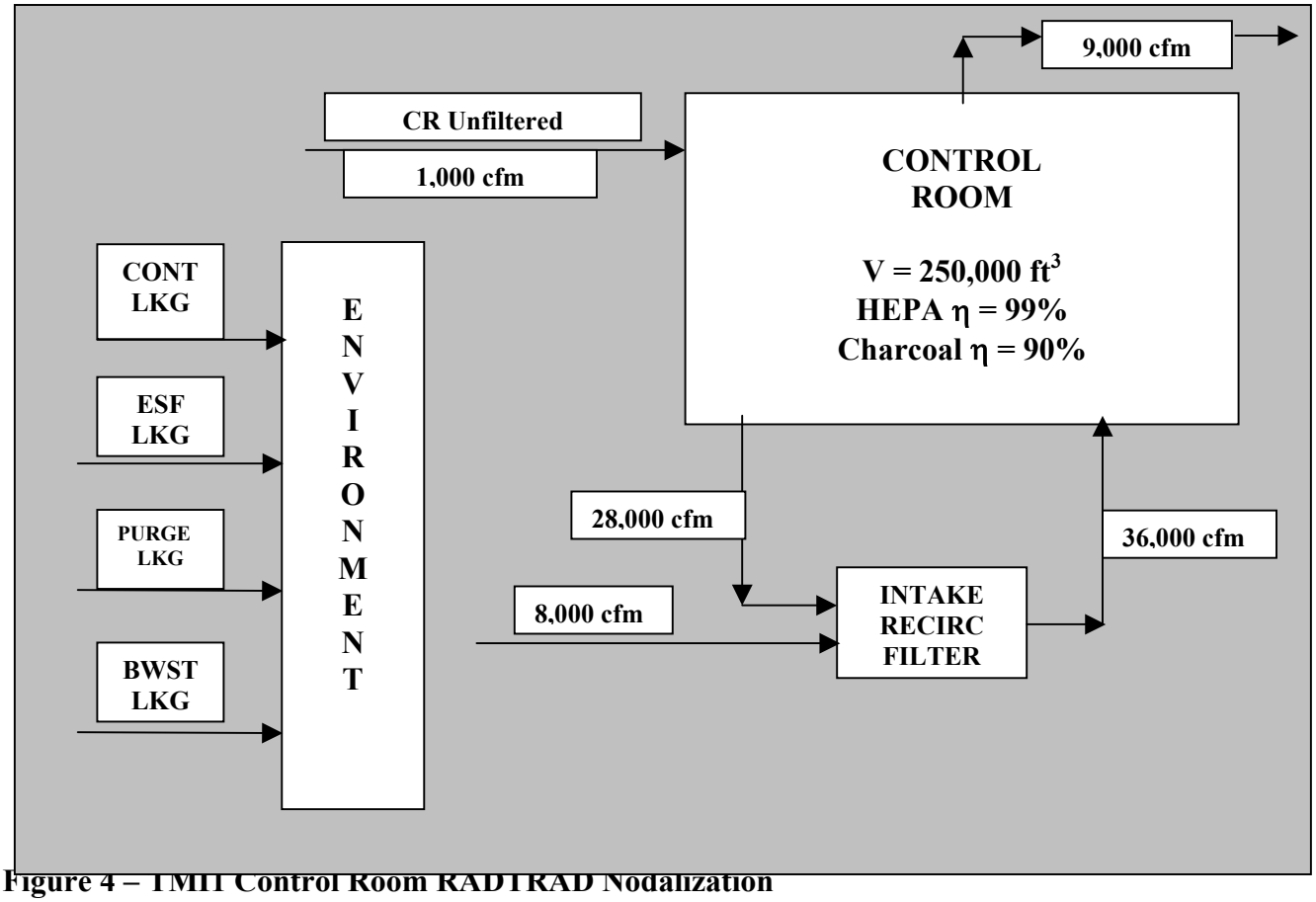


**Figure 4 – TMI1 Control Room RADTRAD Nodalization**

| Design Input Parameter | Value Assigned | Reference |
|---|---|---|
| **5.6 Control Room Model Parameters** | | |
| 5.6.1 CR Volume | 250,000 $ft^3$ | 3.8, Page 3 |
| 5.6.2 CREV System Flow Rate | 8,000 cfm (30 min to 720 hrs) | 3.9 & 3.10 |
| 5.6.3 CR Minimum Filtered Recirc Flow Rate | 28,000 cfm (30 min to 720 hrs) | 3.9 & 3.10 |
| 5.6.4 CR Unfiltered Inleakage | 4,000 cfm (0 to 30 min)<br>1,000 cfm (30 min to 720 hrs) | 3.9 & 3.10 |
| 5.6.5 CREV System Initiation Time After a LOCA | 30 minutes | Assumption 4.20 |
| 5.6.6 CR Charcoal Filter Efficiency | 90% | 3.6.3 |
| 5.6.7 CR HEPA Filter Efficiency | 99% | 3.6.2 |

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|---|---|---|---|---|

| Design Input Parameter | Value Assigned | Reference |
|---|---|---|
| 5.6.8 CR Concrete Wall, Floor, and Ceiling Thickness | | |
| Walls | 5 feet | 3.20.1 |
| Floor | 5 feet | |
| Ceiling | 5 feet | |
| 5.6.9 CR X/Qs For Containment Leakage | | |
| **Table 8** | | |
| Time | X/Q (sec/m$^3$) | |
| 0-2 | 3.40E-04 | 3.7, page 3 |
| 2-8 | 2.25E-04 | |
| 8-24 | 1.02E-04 | |
| 24-96 | 7.16E-05 | |
| 96-720 | 4.99E-05 | |
| 5.6.10 CR X/Qs For ESF Leakage | | |
| **Table 9** | | |
| Time | X/Q (sec/m$^3$) | |
| 0-2 | 3.02E-03 | 3.7, page 4 |
| 2-8 | 2.08E-03 | |
| 8-24 | 1.02E-03 | |
| 24-96 | 6.63E-04 | |
| 96-720 | 4.37E-04 | |
| 5.6.11 CR X/Qs For BWST Leakage | | |
| **Table 10** | | |
| Time | X/Q (sec/m$^3$) | |
| 0-2 | 8.45E-04 | 3.7, page 4 |
| 2-8 | 5.23E-04 | |
| 8-24 | 2.49E-04 | |
| 24-96 | 1.77E-04 | |
| 96-720 | 1.19E-04 | |
| 5.6.12 CR Occupancy Factors | | |
| **Table 11** | | |
| Time (Hr) | % | |
| 0-24 | 100 | 3.1, RGP 4.2.6 |
| 24-96 | 60 | |
| 96-720 | 40 | |

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|---|---|---|---|---|

| Design Input Parameter | Value Assigned | Reference |
|---|---|---|
| 5.6.13 CR Breathing Rate | 3.5E-04 ($m^3$/sec) | 3.1, RGP 4.2.6 |
| 5.6.14 Minimum Reactor Bldg Wall Thickness | 3'-0" | 3.20.3 |
| **5.7 Site Boundary Release Model Parameters** | | |
| 5.7.1 EAB X/Q (0-2 Hrs) | 8.0E-04 sec/$m^3$ (used over all 720 hrs to determine max 2-hr dose period) | 3.5, page 6 |
| 5.7.2 LPZ X/Qs (0-720 Hrs) | | |
| **Table 12** | | |
| Time | X/Q (sec/$m^3$) | |
| 0-2 | 1.4E-04 | 3.5, page 6 |
| 2-8 | 6.0E-05 | |
| 8-24 | 3.9E-05 | |
| 24-96 | 1.6E-05 | |
| 96-720 | 4.0E-06 | |
| 5.7.3 Offsite Breathing Rate | | |
| **Table 13** | | |
| Time | ($m^3$/sec) | |
| 0-8 | 3.5E-04 | 3.1, RGPs 4.1.3 & 4.4 |
| 8-24 | 1.8E-04 | |
| 24-720 | 2.3E-04 | |
| 5.7.4 CR Charcoal Filter Dimensions | | |
| 5.7.4.1 Depth | 8 x 2' = 16' = 487.68 cms | 3.21 |
| 5.7.4.2 Height | 15 x 2" = 30" = 76.2 cms | |
| 5.7.4.3 Width | 26-1/8" = 66.36 cms | |
| | | |

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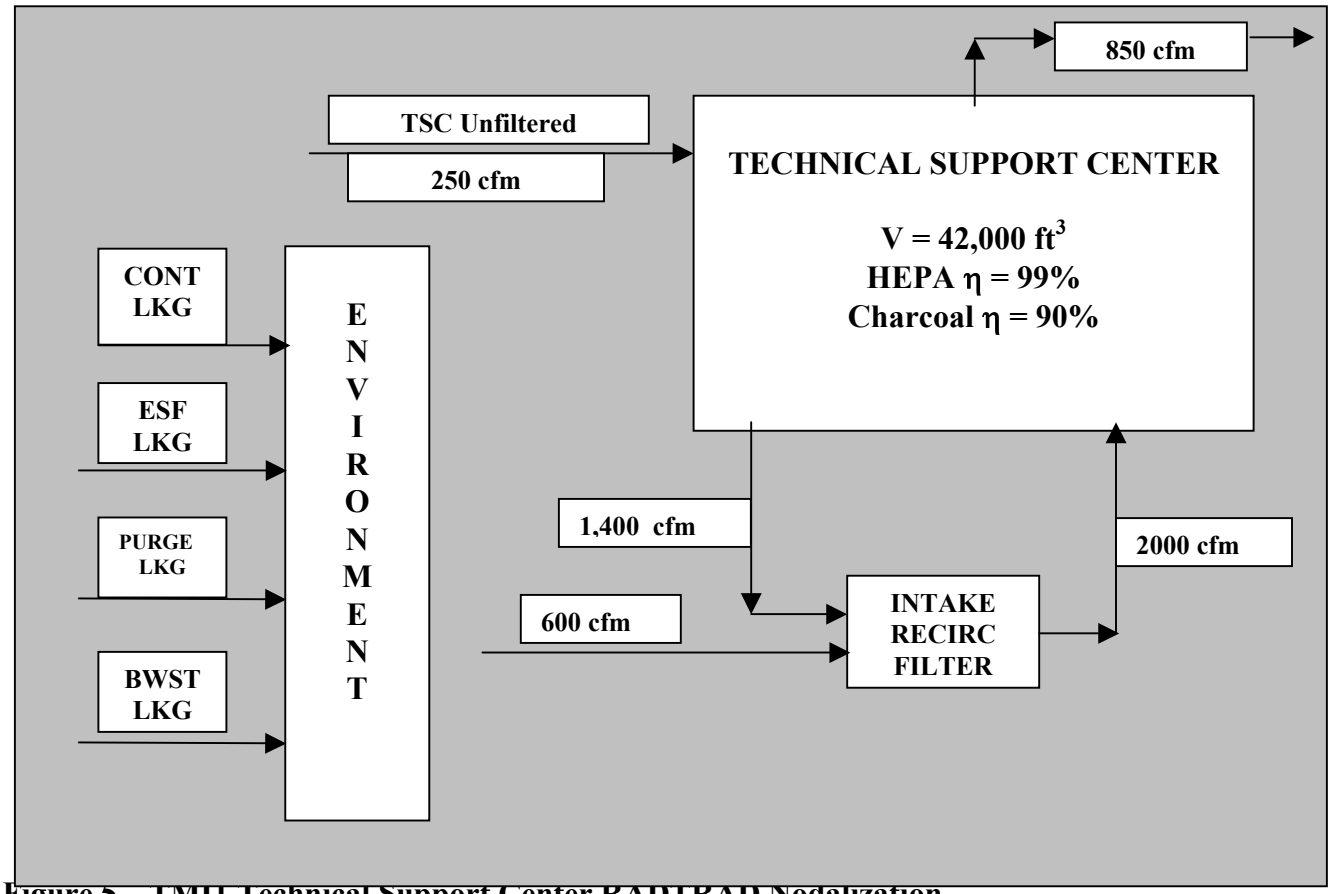


**Figure 5 – TMI1 Technical Support Center RADTRAD Nodalization**

| Design Input Parameter | Value Assigned | Reference |
|---|---|---|
| **5.8 Technical Support Center Model Parameters** | | |
| 5.8.1 TSC Volume | 42,000 $ft^3$ | 3.37 |
| 5.8.2 TSC HVAC System Flow Rate | 600 cfm (168 min to 720 hrs) | 3.36 |
| 5.8.3 TSC Minimum Filtered Recirc Flow Rate | 1400 cfm (168 min to 720 hrs) | 3.36 |
| 5.8.4 TSC Unfiltered Inleakage | 250 cfm | Assumption 4.26 |
| 5.8.5 TSC HVAC System Initiation Time After a LOCA | 60 minutes | Assumption 4.20 |
| 5.8.6 TSC Charcoal Filter Efficiency | 90% | 3.37 |

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|---|---|---|---|---|

| Design Input Parameter | Value Assigned | Reference |
|---|---|---|
| 5.8.7 TSC HEPA Filter Efficiency | 99% | 3.37 |
| 5.8.8 CR Concrete Wall, Floor, and Ceiling Thickness | | |
| Walls | 9 inches | 3.37 |
| Ceiling | 9 inches | |
| 5.8.9 TSC X/Qs For Containment Leakage | | |
| **Table 14** | | |
| Time | X/Q (sec/m$^3$) | |
| 0-2 | 2.31E-04 | 3.35 |
| 2-8 | 1.29E-04 | |
| 8-24 | 5.50E-05 | |
| 24-96 | 3.52E-05 | |
| 96-720 | 3.06E-05 | |
| 5.8.10 TSC X/Qs For ESF Leakage | | |
| **Table 15** | | |
| Time | X/Q (sec/m$^3$) | |
| 0-2 | 2.70E-04 | 3.35 |
| 2-8 | 1.54E-04 | |
| 8-24 | 5.98E-05 | |
| 24-96 | 4.03E-05 | |
| 96-720 | 3.41E-05 | |
| 5.8.11 TSC X/Qs For BWST Leakage | | |
| **Table 16** | | |
| Time | X/Q (sec/m$^3$) | |
| 0-2 | 2.97E-04 | 3.35 |
| 2-8 | 1.64E-04 | |
| 8-24 | 6.42E-05 | |
| 24-96 | 4.65E-05 | |
| 96-720 | 3.80E-05 | |
| 5.8.12 TSC Occupancy Factors | | |
| **Table 17** | | |
| Time (Hr) | % | |
| 0-24 | 100 | 3.1, RGP 4.2.6 |
| 24-96 | 60 | |
| 96-720 | 40 | |

AmerGen

**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 2 | System Nos. | Sheet 31 of 1000 |
|---|---|---|---|---|

| Design Input Parameter | Value Assigned | Reference |
|---|---|---|
| 5.8.13 TSC Breathing Rate | 3.5E-04 ($m^3$/sec) | 3.1, RGP 4.2.6 |
| 5.8.14 Minimum Reactor Bldg Wall Thickness | 3'-0" | 3.20.3 |

AmerGen

**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 2 | System Nos. | Sheet 32 of 1000 |
|---|---|---|---|---|

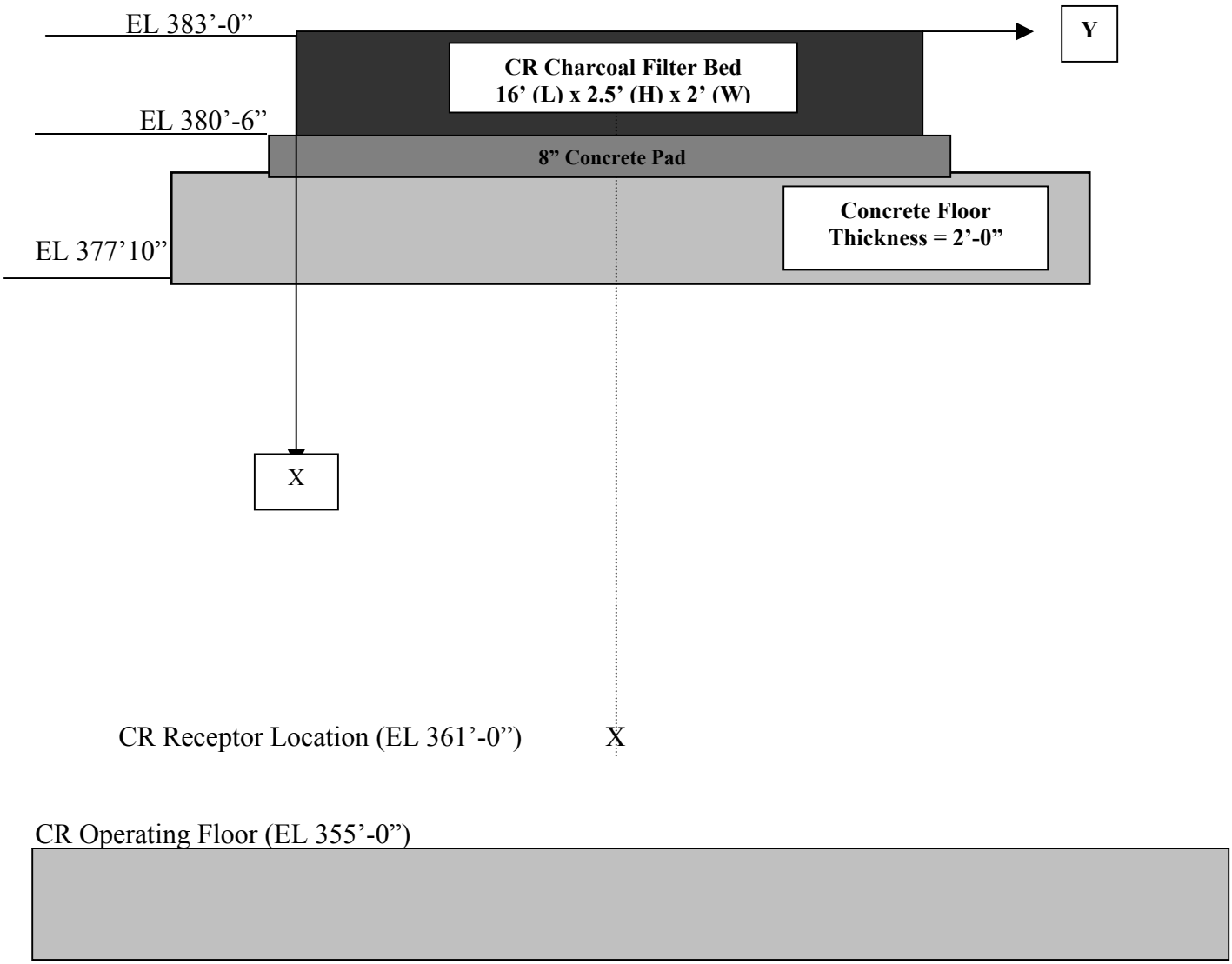
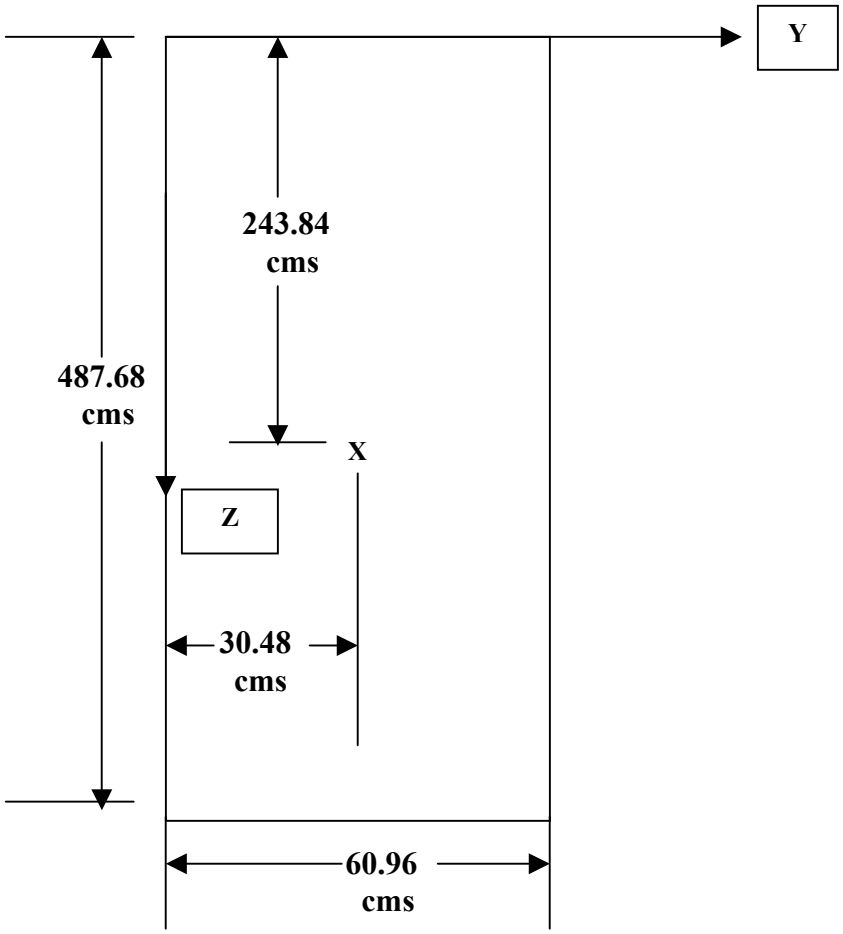



**Figure 5 – CR Filter Shine Dose**
(Elevation View)

AmerGen

**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 2 | System Nos. | Sheet 33 of 1000 |
|---|---|---|---|---|




**X Indicates Dose Point Location**

**Figure 6 – CR Filter Shine Dose**
(Plan View)

# 6. OVERALL APPROACH AND METHODOGOLY

## 6.1 Post-LOCA Containment Leakage:

### 6.1.1 Source Term:

The post-LOCA containment leakage model is shown in Figure 1. The core isotopic inventory listed in Table 1 (Section 5.3) above is released into the containment per the release timing and fractions shown in Table 3 (Ref. 3.2, RGPs 3.2 & 3.3). Per Appendix A of Regulatory Guide 1.183 (Ref. 3.1), since the post-LOCA minimum sump pH is calculated at a value of >7.0, the chemical form of radioiodine released into the containment is assumed to be 95% cesium iodide (CsI), 4.85 percent elemental iodine, and 0.15 percent organic iodide as shown in Table 4. With the exception of elemental and organic iodine and noble gases, the remaining fission products are assumed to be in particulate form. The RADTRAD Nuclide Inventory File (NIF) is modified to be consistent with the TMI-1 plant specific core inventory. The isotopic $Ci/MW_t$ is calculated in Table 14 and the RADTRAD NIF (Tmi_def.nif) is modified as shown in Appendix A and used for the containment, ESF, and BWST leakage analyses. The source term design inputs are shown in Sections 5.3.1.1 through 5.3.1.5.

### 6.1.2 Transport in Primary Containment:

The radioactivity released from the fuel is assumed to mix instantaneously and homogeneously throughout the free air volume of the primary containment as it is released. The distributions of activities are adjusted in the sprayed region (57%) and unsprayed region (43%) based on their respective volumes. The operation of one fan cooler provides an air transfer rate of 25,000 cfm to ensure a reasonably good mixing between the regions. A 35-second fan/cooler startup time is assumed. The radioactivity release into the containment is assumed to terminate at the end of the early in-vessel phase, which occurs 1.8 hrs after the onset of a LOCA (Ref. 3.2, RGP 3.3, Table 4). The design inputs for the transport in the primary containment are shown in Section 5.3.2.

### 6.1.3 Reduction in Airborne Activity inside Containment

The iodine removal from the sprayed region is performed assuming two spray pumps (while aligned to the BWST) and one fan cooler. This is more conservative than assuming one spray pump and any feasible combination of fan coolers because it initiates earlier leakage from ESF systems. Reductions in airborne radioactivity in the containment sprayed region by containment spray systems and in the unsprayed region by natural deposition using "A Simplified Model of Aerosol Removal by Natural Processes in Reactor Containments" (Ref. 3.33) are credited. Conservatively, a 10-percentile natural deposition rate (RADTRAD function) is used in the analysis. A single spray pump is operated in the sump recirculation mode.

The spray parameters (elemental and particulate removal rate coefficients, DFs, spray flow rates, and spray cutoff times) are assessed in Sections 7.3 and 7.4 (see Section 7.12 for analyses related to removal of the NaOH spray additive and the addition of TSP to the containment sump) based on the

guidance provided in SRP 6.5.2 (Ref 3.30) for various combination of spray pump operations. The spray parameters are listed in Design Inputs 5.3.2.8 through 5.3.2.13 for analyses that determine elemental iodine spray removal rates using ANS-56.5 methodology and an elemental iodine decontamination factor based on a sump water pH of 8.5. Spray removal rates, elemental iodine decontamination factor and spray cutoff times are provided in Design Input 5.3.2.20 for analyses related to removal of the NaOH spray additive and the addition of TSP to the containment sump.

Reduction in airborne radioactivity in the unsprayed regions by natural deposition is also credited. The primary containment is assumed to leak at a rate of 0.10%/day for the first 24 hours and 0.05%/day after the first 24 hours per Technical Specification (Ref. 3.6.1). Since the primary containment can be purged during power operations, releases via the purge system prior to containment isolation are analyzed.

6.1.4 Dual Containment:

The leakage from the containment is assumed to release directly to the environment as a ground-level release for the entire duration of the accident. There is no secondary containment or tall exhaust stack available at TMI-1.

The containment leakage RADTRAD input and output files are listed in the Appendices of this calculation. EAB, LPZ, TSC, and CR TEDE doses are shown in Section 2.0.

6.1.5 Containment Purging:

The TMI-1 primary containment can be purged during power operations. Therefore, the releases via the purge system prior to containment isolation are analyzed and the resulting doses summed with the postulated doses from other release paths (see Section 2.0). The purge release evaluation assumes that 100% of the radionuclide inventory in the reactor coolant system liquid is released to the containment at the initiation of the LOCA. However, the current technical specification (TS) limit for the reactor coolant system (RCS) is 0.35 μCi/g DE of I-131. The RCS iodine inventory used in this calculation is based on 1.0 μCi/g DE of I-131 as shown in Tables 15, 16 & 17. The isotopic noble gas activity is conservatively based on 1% failed fuel. The purge system is conservatively assumed to be isolated 1 minute after a LOCA. The RCS activity (Ci) is normalized to core thermal power level of 2,619 $MW_t$ in Table 17 to develop the isotopic $Ci/MW_t$ information, which is used to modify the RADTRAD NIF, TMIPURGE_def.nif, as shown in Appendix B. The RADTRAD nuclide release fraction and timing file TMIPURG.rft is modified as shown in Appendix C to demonstrate that the RCS isotopic noble gas and iodine activities are instantly released in the containment. The RCS activity is released from the containment at a purge flow rate of 14,000 cfm for one minute. The purge charcoal filter efficiencies are not credited. The core gap activity released during the first one minute of purging time is insignificant; therefore, it is not analyzed. The design inputs for the post-LOCA containment purge are shown in Sections 5.3.2.14 through 5.3.2.19.

**6.1.6** Containment Leakage Evaluation Conducted in Revision 2

Containment spray removal coefficients were calculated for elemental iodine and particulate iodine following the methodology of SRP 6.5.2 (Ref. 3.30). The decontamination factor for elemental iodine in containment atmosphere was calculated using the methodology in SRP 6.5.2 (Ref. 3.30) and an iodine partition factor associated with a sump water pH of 7.3. Containment spray shutoff time was determined for elemental iodine using the calculated elemental iodine removal rates and the elemental iodine decontamination factor. These calculations are documented in Section 7.12 of this evaluation. Included in Section 7.12 are calculations for TMI, Unit 1 parameters that are used to calculate the containment spray removal rates, the elemental iodine decontamination factor and the spray cutoff time. These parameters include the containment spray drop density, the diffusitivity, the post-LOCA containment air density, containment air viscosity, the terminal velocity of the containment spray drops, and the gas phase mass transfer coefficient.

The computer code RADTRAD, Version 3.03 (Ref. 3.38) was run to determine the post-LOCA control room, TSC, EAB and LPZ doses due to leakage of containment atmosphere. Two RADTRAD files were created. One file determines the control room, EAB, and LPZ doses and the second file determines the dose to the TSC. These files were created by editing the input to the RADTRAD, Version 3.02 files that are included in Appendix D (RADTRAD Output File Containment_Leakage.o0) and Appendix N (RADTRAD Output File CL_TSC.o0). Specifically, changes to code input are limited to the elemental and particulate iodine removal coefficients, the elemental iodine spray cutoff time, and the time for the particulate (aerosol) iodine mass to be depleted by a factor of 50. RADTRAD, Version 3.03 files are included in Appendix Z (Containment Leakage pH 7_3.o0) and Appendix AA (CL_TSC pH7_3.o0) to this calculation. The RADTRAD output files include a listing of the inputs.

RADTRAD, Version 3.03 has been verified and validaded in accordance with the S&L QA program. The code was run off S&L's Applist, on desktop computer ZD1950. The controlled file path was:

Controlled File Path: \\SNL2B\SYS3\OPS$\RAD720303\

RADTRAD calculated doses due to post-LOCA containment leakage were added to the table in Section 2.1 of this calculation and the total doses were summed over all release pathways. As indicated in Section 2.2 of this calculation, elimination of the NaOH spray additive and use of SRP 6.5.2 methodology for calculating elemental iodine spray removal coefficients, only affects post-LOCA doses that are associated with the release of post-LOCA activity in containment atmosphere leakage. This includes containment leakage and post-LOCA sources that are derived from airborne sources in containment (i.e., containment shine, external cloud, and filter shine). Post-LOCA doses due to containment shine, the external cloud, and filter shine were not recalculated in Revision 2 to this calculation since the post-LOCA dose contribution from these sources is small compared to the total post-LOCA dose and since doses calculated for a NaOH spray additive and ANS-56.5 elemental iodine removal coefficients are conservatively bounding (refer to discussion in Section 2.2).

## 6.2 Post-LOCA ESF Leakage:

The post-LOCA ESF leakage release model is shown in Figure 2. The ESF systems that recirculate sump water outside of the primary containment are assumed to leak during their intended operation. This release source includes leakage through valve packing glands, pump shaft seals, flanged connections, and other similar components. The radiological consequences from the postulated leakage are analyzed and combined with consequences from other fission product release paths to determine the total calculated radiological consequences from the LOCA (see Section 2.0 of this calc). The ESF components are located within the auxiliary building.

### 6.2.1 Source Term:

With the exception of noble gases, all the fission products released from the fuel to the containment (as defined in Sections 5.3.1.3 & 5.3.1.4) are assumed to instantaneously and homogeneously mix in the primary containment sump water at the time of release from the core. The total allowable ESF leakage from all components in the ESF recirculation systems is 15 gph. This ESF leakage is doubled and assumed to start at 29.44 minutes after onset of a LOCA. This corresponds to a 75 second building spray system startup time plus a 28.19 minute pump run time prior to BWST depletion (start of sump recirc). It should be noted that the 28.19-minute run time of the building spray pumps from the BWST is based on a pump flow rate of 1,250 gpm per pump. Assuming this while running the pumps at 800 gpm each is conservative since this causes ESF leakage to start sooner, thereby maximizing dose. As previously stated in Section 1.1, single spray pump operation in the sump recirc mode is conservative (i.e., yields higher dose). With the exception of iodine, all remaining fission products in the recirculating liquid are assumed to be retained in the liquid phase. The design inputs for the ESF leakage are shown in Sections 5.4.1 through 5.4.7. The time of 28.19 minutes to deplete the BWST is based on a previous revision of Ref. 3.17. The time to deplete the BWST could be as short as 28.02 minutes with two ECCS trains operating (Section 2.0 of Ref. 3.17). This would result in a containment sump recirculation time of 29.27 minutes (which is 10 seconds shorter than 29.44 minutes). The time of 29.27 minutes includes 75 seconds for start of containment sprays. Since the containment sump recirculation time of 29.44 minutes is determined using assumptions which minimize the time to initiate sump water recirculation, use of 29.44 minutes results in calculation of conservative post LOCA doses and is used in this calculation.

### 6.2.2 Justification For Regulatory Position A5.5

The Regulatory Position A5.5 (Ref. 3.1, Appendix A) allows the use of iodine flashing factors less than 10% if it can be justified based on the actual sump pH history and area ventilation rates. Based on a conference call with NRC, the staff suggested that TMI-1 calculate doses using a “reasonable” value of flashing factor of 5% decreasing to 2% after 24 hours (Ref. 3.19) based on engineering judgment. This is conservative based on the fact that sump temperature is less than 200 degrees after 5.5 hours (Ref. 3.34). The fractions of iodine that become airborne from the ESF leakage are calculated in Table 18 based on the flashing factors in Table 6.

6.2.3 Chemical Form

The radioiodine that is postulated to be available for release to the environment is assumed to be 97% elemental and 3% organic based on the Regulatory Position A5.6. The reduction in ESF leakage activity by dilution or holdup within buildings, or by ESF ventilation filtration systems, is not credited. The ESF leakage is assumed to release directly in the environment.

The ESF leakage RADTRAD inputs and outputs are listed in the Appendix Section of this calculation. EAB, LPZ, TSC, and CR TEDE doses are shown in the Section 2.0.

## 6.3 Post-LOCA BWST Leakage:

The post-LOCA Borated Water Storage Tank (BWST) leakage release model is shown in Figure 3. The source term assumptions are the same as those used in the ESF leakage analysis with the following exceptions:

1. The BWST leakage iodine flashing factor is assumed to be 10% per Regulatory Position 5.5 of Appendix A of RG 1.183 (Ref. 3.1).

2. The post-LOCA BWST leak rates are based on Table 7 of this Calc.

3. The iodine from BWST leakage is flashed in the BWST and released to the atmosphere from the BWST by natural displacement.

The design inputs for the BWST leakage are shown in Sections 5.5.1 through 5.5.6. The BWST leakage RADTRAD inputs and outputs are listed in the Appendix Section of this calculation. EAB, LPZ, TSC, and CR TEDE doses are shown in the Section 2.0.

## 6.4 Control Room Model

The post-LOCA control room RADTRAD nodalization is shown in Figure 4 with the design input parameters. The post-LOCA radioactive releases that contribute to the CR TEDE dose are as follows:

- Post-LOCA Containment Leakage
- Post-LOCA Containment Purge
- Post-LOCA ESF Leakage
- Post-LOCA BWST Leakage

The radioactivities from the above sources are assumed to be released into the atmosphere and transported to the CR air intake, where it may leak unfiltered into the CR envelope or be filtered by the CR intake and recirculation filter and distributed in the CR envelope. There are four major radioactive sources, which contribute to the CR TEDE dose are:

- Post-LOCA airborne activity inside the CR

- Post-LOCA airborne cloud external to CR
- Post-LOCA containment shine to CR
- Post-LOCA CR filter shine

6.4.1 Post-LOCA Airborne Activity Inside CR

The post-LOCA radioactive releases from various sources are discussed in Sections 6.1 through 6.3 above and shown in Figure 4. The activities released from the various sources are diluted by the atmospheric dispersions and carried to the CR air intake. The atmospheric dispersion factors are shown in sections 5.6.9 through 5.6.11 for the containment, ESF, and BWST leakages. The containment leakage and purge have the same release points and X/Qs. The RADTRAD release models are developed for each release path using appropriate design inputs from Sections 5.3, 5.4, and 5.5. The CR dose model is developed using the design input parameters in Sections 5.6.1 through 5.6.14. The CR airborne TEDE dose contributions from the above post-LOCA sources are calculated and tabulated in Section 2.0. The various design input parameters are conservatively varied to optimize the CR total TEDE dose.

6.4.2 Post-LOCA Airborne Cloud External to CR

The radioactive plumes released from various post-LOCA sources are carried over the CR building, submerging the CR in the radioactive cloud. The CR operator is exposed to direct radiation from the radioactive cloud external to the CR structure. The review of control building concrete structure drawings (Refs, 3.20.1 & 3.20.2) indicates that the CR is surrounded by 5 feet thick concrete walls and ceiling. The 5 feet concrete walls and ceiling provide ample shielding to reduce the CR operator external cloud dose to a negligible amount.

6.4.3 Post-LOCA Containment Shine to CR

The post-LOCA airborne activity released from the reactor core is uniformly distributed inside the containment. The airborne activity confined in the dome space of the containment building contributes direct shine dose to CR operator. The review of the containment building concrete structure drawing (Ref. 3.20.3) indicates that the minimum dome concrete thickness is 3 feet. The CR walls and ceiling are 5 feet thick (Refs. 3.20.1 &3.20.2). The total of 8 feet of concrete thickness (3’ containment dome + 5’ CR wall/ceiling = 8’) provides ample shielding to reduce the CR operator containment shine dose to an insignificant amount.

6.4.4 Post-LOCA CR Filter Shine

The CR charcoal and HEPA filters are located above the CR operating floor at elevation 380’-0” (Refs. 3.20.1 & 3.20.2). The CR operating floor is located at elevation 355’-0” (Ref. 3.20.1). The floor at EL 380’-0” is 2 feet concrete (Ref. 3.20.1, Section 44-44). The filter assembly is placed on 8” concrete pad (Ref. 3.20.1, Section 61-61). The total concrete shielding between the CR operator and filter is 2’-8” of concrete. The receptor location is assumed to be located at 6 feet above the CR operating floor immediately below at the center of charcoal filter. The iodine and aerosol activities

are conservatively collected on the charcoal bed. There are 120 trays of charcoal, each 2" thick x 24" wide x 26-1/8" deep (Ref. 3.21). The charcoal trays are arranged 15 layers high x 8 trays per layer (Ref 3.21).

6.4.5 Post-LOCA Activity

The RADTRAD code does not provide the post-LOCA iodine and aerosol activities accumulated on charcoal and HEPA filters. Therefore the iodine and aerosol activities are conservatively calculated as follows:

1. The time dependent isotopic iodine and aerosol integrated activities in the CR due to the post-LOCA containment leakage are calculated with the credit of charcoal and HEPA filters credit (RADTRAD File Containment_Leakage.psf). The time dependent integrated activities are shown in Table 24.

2. The time dependent isotopic iodine and aerosol integrated activities in the CR due to the post-LOCA containment leakage are calculated without the credit of charcoal and HEPA filters (RADTRAD File Containment_Leakage_NoFiltration.psf). The time dependent integrated activities are shown in Table 25.

3. The total isotopic iodine and aerosol activities on the CR filters due to the containment leakage are calculated in Table 26 (Case 2 – Case 1).

4. Similarly, the time dependent isotopic iodine and aerosol integrated activities in the CR due to the post-LOCA ESF and BWST leakages are calculated in Tables 27 & 28 and 29 & 30 respectively.

5. The total iodine and aerosol integrated activities on the CR filters are shown in Table 31.
6. The total isotopic activities are input into the MicroShield Computer code (Ref. 3.26) with the source geometry, dimension, and detector location to compute the direct dose rate from the CR filter. The direct dose from the CR filter shine is calculated in Section 7.6 using the CR occupancy factors.

## 6.5 Technical Support Center Model

The post-LOCA TSC RADTRAD nodalization is shown in Figure 5 with the design input parameters. The post-LOCA radioactive releases that contribute to the TSC TEDE dose are as follows:

- Post-LOCA Containment Leakage
- Post-LOCA Containment Purge
- Post-LOCA ESF Leakage
- Post-LOCA BWST Leakage

The radioactivities from the above sources are assumed to be released into the atmosphere and transported to the TSC air intake, where it may leak unfiltered into the TSC envelope or be filtered by the TSC intake and recirculation filter and distributed in the TSC envelope. There are four major radioactive sources, which contribute to the TSC TEDE dose. These are:

- Post-LOCA airborne activity inside the TSC
- Post-LOCA airborne cloud external to TSC
- Post-LOCA containment shine to TSC
- Post-LOCA TSC filter shine

6.5.1 Post-LOCA Airborne Activity Inside TSC

The post-LOCA radioactive releases from various sources are discussed in Sections 6.1 through 6.3 above and shown in Figure 5. The activities released from the various sources are diluted by the atmospheric dispersions and carried to the TSC air intake. The atmospheric dispersion factors are shown in sections 5.8.9 through 5.8.11 for the containment, ESF, and BWST leakages. The containment leakage and purge have the same effective release points and X/Qs. The RADTRAD release models are developed for each release path using appropriate design inputs from Sections 5.3, 5.4, and 5.5. The TSC dose model is developed using the design input parameters in Sections 5.8.1 through 5.8.14. The TSC airborne TEDE dose contributions from the above post-LOCA sources are calculated and tabulated in Section 2.0. The various design input parameters are conservatively varied to optimize the TSC total TEDE dose.

6.5.2 Post-LOCA Airborne Cloud External to TSC

The radioactive plumes released from various post-LOCA sources are carried over the TSC building (OSF), submerging the TSC in the radioactive cloud. The TSC response personnel are exposed to direct radiation from the radioactive cloud external to the TSC structure. The review of OSF building concrete structure drawings (Ref, 3.37) indicates that the TSC is surrounded by 9 inch thick concrete walls and ceiling. The 9 inch concrete walls and ceiling provide ample shielding to reduce TSC personnel external cloud dose to a small amount. This amount is approximated by using the whole body dose from RADTRAD, assuming no filtration and is added to the total TEDE dose for TSC personnel over the 30-day period.

6.5.3 Post-LOCA Containment Shine to TSC

The post-LOCA airborne activity released from the reactor core is uniformly distributed inside the containment. The airborne activity confined in the dome space of the containment building contributes direct shine dose to TSC personnel. The review of the containment building concrete structure drawing (Ref. 3.20.3) indicates that the minimum dome concrete thickness is 3 feet. The TSC walls and ceiling are 9 inches thick (Refs. 3.20.1 &3.20.2). The total of 3.75 feet of concrete thickness (3’ containment wall + 0.75’ TSC wall/ceiling = 3.75’) provides ample shielding to reduce the TSC personnel containment shine dose to an insignificant amount.

6.5.4 Post-LOCA TSC Filter Shine

The TSC charcoal and HEPA filters are located in a room in close proximity to the TSC operating space at elevation 301'-6" (Ref. 3.37). The floor at EL 301'-6" is a concrete slab. The filter assembly is placed on this concrete slab. The total concrete shielding between the TSC personnel and filter is 9" of concrete plus one layer of hollow construction block. The receptor location is assumed to be located at 2 feet above the TSC floor at the center of charcoal filter. The iodine and aerosol activities are conservatively collected on the filter. There are 12 trays of charcoal, each 2" thick with the total dimensions of each layer being 24" wide x 30" deep (Ref. 3.37). The charcoal trays are arranged 2 layers high x 6 trays per layer.

The TSC filtration unit is not shielded as heavily as that for the control room. This reduced shielding and distance geometries are taken into account in the MicroShield dose calculation for the TSC filter contribution.

6.5.5 Post-LOCA Activity

The TSC is only approximately one sixth the volume of the control room. The TSC filtration unit is also only a fraction of the size of the control room unit, affording less activity to be collected on the TSC filter media. The activity on the TSC filters was determined using the same process as was used for the control room evaluation.

## 7. CALCULATIONS

### 7.1 TMI-1 Plant Specific Nuclide Inventory File (NIF) For RADTRAD3.02 Input

The RADTRAD nuclide inventory file Pwr_def.nif establishes the power dependent radionuclide activity in Ci/$MW_t$ for the reactor core source term. Since these core radionuclide activities are dependent on the core thermal power level, reload design, and burnup, the NIF is modified based on the plant-specific core information. The Ci/$MW_t$ for the core radionuclides are calculated in Table 14 below and the NIF for RADTRAD input (Tmi_def.nif) is modified accordingly as shown in Appendix A.

### 7.2 RCS Activity Released In Containment During Post-LOCA Purge

The purge release evaluation assumes that 100% of the radionuclide inventory in the reactor coolant system liquid is released to the containment at the initiation of the LOCA. The current technical specification (TS) limit for the reactor coolant system (RCS) activity is 0.35 μCi/g DE of I-131. However, the RCS iodine inventory is conservatively calculated based on 1.0 μCi/g DE of I-131 in Tables 15, 16 & 17. The isotopic noble activity is conservatively based on 1% failed fuel. The purge system is conservatively assumed to be isolated 1 minute after a LOCA. The NIF for RADTRAD input for the containment purge release is modified based on Ci/$MW_t$ information developed in Table 17 as shown in Appendix B.

### 7.3 Spray Removal Coefficients (ANS-56.5 Methodology)

One spray pump operating @ 800 gpm in the sump recirculation mode

Elemental Removal Coefficient, $\lambda_E = 7.39\ hr^{-1}$ (Ref. 3.29, page 9) @ 1250 gpm
Particulate Removal Coefficient, $\lambda_P = 3.03\ hr^{-1}$ (Ref. 3.13, page 12) @ 1250 gpm
The spray mass median diameter is 1070 μm (as reported in UFSAR Appendix 14B), and is not changed by the reduction in spray flow as indicated. Vendor spray nozzle data indicates that a median diameter of 1070 μm conservatively bounds the expected nozzle performance (Ref. 3.13, page 12). Therefore, the elemental and particulate removal coefficients are directly proportional to spray flow rate (Ref. 3.13, Section 3.3.2.4, page 9).

$\lambda_{E1250} = 7.39\ hr^{-1}$
$\lambda_{E800} = 7.39\ (1 - (1250 - 800)/1250)\ hr^{-1} = 7.39\ (1 - 450/1250)\ hr^{-1}$
$= 7.39 \times 0.64 = 4.73\ hr^{-1}$

$\lambda_{P1250} = 3.03\ hr^{-1}$
$\lambda_{P800} = 3.03\ (1 - (1250 - 800)/1250)\ hr^{-1} = 3.03\ (1 - 450/1250)\ hr^{-1}$
$= 3.03 \times 0.64 = 1.94\ hr^{-1}$

7.4 Spray Removal Coefficients & Cutoff Times Used In Analysis (8.5 Sump Water pH and DF of 200):

The user's spray removal coefficients are calculated based on the spray cutoff time for spray pump operations as follows:

Two spray pumps operate from t=75 sec to t=29.44 minutes. One spray pump operates from t=29.44 minutes to t=240 minutes. All sprays are at a flow rate of 800 gpm per pump.

Elemental – single pump operation
DF for elemental spray cutoff time = 200 (Ref 3.30, page 6.5.2-12)
Spray elemental removal coefficient ($\lambda_{E800}$) = 4.73 $hr^{-1}$ (Section 7.3)
1/DF = 1/200 = 0.005 = $\mathbf{e^{-(\lambda_{E800})\,t} = e^{-(4.73)\,t}}$
ln (0.005) = -(4.73)t
-5.298 = -(4.73)t

Therefore spray elemental cutoff time t = -5.298/-4.73 = 1.12 hr
Total spray elemental cutoff time = 1.8 hr + 1.12 hr = 2.92 hr

If two spray pumps are operated in the sump recirc mode, the cutoff times are as follows:

Elemental – for 2-pump operation
DF for elemental spray cutoff time = 200 (Ref 3.30, page 6.5.2-12)
Spray elemental removal coefficient ($\lambda_{E800}$) = 9.46 $hr^{-1}$ (Section 7.3)
1/DF = 1/200 = 0.005 = $\mathbf{e^{-(\lambda_{E800})\,t} = e^{-(9.46)\,t}}$
ln (0.005) = -(9.46)t
-5.298 = -(9.46)t

Therefore spray elemental cutoff time t = -5.298/-9.46 = 0.56 hr
Total spray elemental cutoff time = 1.8 hr + 0.56 hr = 2.36 hr

Particulate (Aerosol) – single pump operation
DF for particulate spray cutoff time = 50 (Ref 3.30, page 6.5.2-12)
Spray particulate removal coefficient ($\lambda_{P800}$) = 1.94 $hr^{-1}$ (Section 7.3)
1/DF = 1/50 = 0.02 = $\mathbf{e^{-(\lambda_{P800})\,t} = e^{-(1.94)\,t}}$
ln (0.02) = -(1.94)t
-3.912 = -(1.94)t

Therefore spray particulate cutoff time t = -3.912/-1.94 = 2.017 hr
Total spray particulate cutoff time = 1.8 hr + 2.017 hr = 3.82 hr

If two spray pumps are operated in the sump recirc mode, the cutoff times are as follows:

Particulate (Aerosol) – for 2-pump operation

DF for particulate spray cutoff time = 50 (Ref 3.30, page 6.5.2-12)
Spray particulate removal coefficient ($\lambda_{P800}$) = 3.88 $hr^{-1}$ (Section 7.3)
1/DF = 1/50 = 0.02 = $e^{-(\lambda_{P800})\,t} = e^{-(3.88)\,t}$
ln (0.02) = -(3.88)t
-3.912 = -(3.88)t

Therefore spray particulate cutoff time t = -3.912/-3.88 = 1.008 hr
Total spray particulate cutoff time = 1.8 hr + 1.008 hr = 2.808 hr

7.5 ESF Leak Rates

The design basis ESF leakage of 15 gph is doubled and converted into cfm as shown Table 18 and then multiplied by the time dependent flashing factor to determine the fraction of iodine that becomes airborne as shown in Table 18.

7.6 CR Direct Dose From Filter Shine

CR Filter Shine Dose Rate = 3.7030E-02 mRem/hr
CR Operator Exposure Time
= 1 x (24 hr) + 0.60 (96 hr – 24 hr) + 0.40 (720 hr – 96 hr)
= 24 hr + 0.60 (72 hr) + 0.40 (624 hr) = 316.8 hr
Total CR Dose From Filter Shine
= 3.7030E-02 mRem/hr x 1/1000 Rem/mRem x 316.8 hr = 1.1731E-02 Rem

7.7 Spray Coverage Reduction

The reduction in spray coverage for different cone angles can be determined as a function of the spray angle. The bottom of a cone is a circle with an area calculated by;

$$A = \pi r^2 = \pi\,[x \tan(\theta/2)]^2$$

where x is the distance from the nozzle and
$\theta$ is the cone angle.

The following spray data for the model 1713 nozzle were taken from the Spray Engineering Vendor Catalog (see attached Attachment B):

| | | | |
|---|---|---|---|
| Nozzle differential pressure, psid | 5 | 10 | 50 |
| Effective angle at 2' distance | 57° | 60° | 64° |
| Flow rate, gpm | 5.4 | 7.7 | 17.5 |

A reduction in the spray coverage from 50 psid to 10 psid is calculated to be:

$$A_{10\ psi} / A_{50\ psi} = [\tan (60/2) / \tan (64/2)]^2 = 0.85.$$

Since area and volume are related in the same way, a reduction of the sprayed volume by 15 percent would be appropriate.

The design condition for this nozzle is 40 psid (see RB Spray SDBD, Ref. 3.31). Therefore, this reduction is conservative if the conditions are changed from 40 psid to greater than 10 psid. For 10 psid across the nozzle, the spray flow per RB spray train is 96*7.7 = 740 gpm. Therefore, this reduction is appropriate for a flow of 800 gpm.

The reduction of 0.85 is applied to the original assumption of 67% sprayed and 33% unsprayed volumes as follows:

Sprayed: 67% * 0.85 = 57% Therefore, 57% * 2,160,000 $ft^3$ = 1,231,200 $ft^3$

Unsprayed: 100% - 57% = 43% Therefore, 43% * 2,160,000 $ft^3$ = 928,800 $ft^3$

7.8 TSC Direct Dose From Filter Shine

From Appendix W:
TSC Filter Shine Dose Rate = 2.204E-02 mRem/hr
TSC Operator Exposure Time
= 1 x (24 hr) + 0.60 (96 hr – 24 hr) + 0.40 (720 hr – 96 hr)
= 24 hr + 0.60 (72 hr) + 0.40 (624 hr) = 316.8 hr
Total TSC Dose From Filter Shine
= 2.204E-02 mRem/hr x 1/1000 Rem/mRem x 316.8 hr = 6.6982E-03 Rem

7.9 TSC Direct Dose From Containment Shine

The core isotopic inventory listed in Table 1 was adjusted using the release fractions from Tables 2 and 3 to develop the source within the containment. Due to the relatively low contributions of the Barium/Strontium, Noble Metals, Lanthanide, and Cerium groups, they were not included. This source was then input into the MicroShield 5.03 containment model (Appendix V). A dose rate of

5.694E-01 mR/hr was obtained through the 9-inch thick concrete walls. This dose rate was evaluated over the 316.8 hours available during the 30-day mitigation period (using control room occupancy factors) as determined in Section 7.8 above. This results in a total dose of 1.8038E-01 Rem (5.694E-01 x 316.8 / 1000). If one considers the the decay over this 30-day period, a lesser total dose would be received. However, for conservatism and ease of calculation, decay was not considered.

7.10 TSC Direct Dose Due To External Plume Shine

The 9 inch concrete walls and ceiling provide ample shielding to reduce TSC personnel external cloud dose to a negligible amount. This amount is approximated by using the environment activity at 1.0 hour as determined by RADTRAD. This concentration, when input into MicroShield, yields a dose rate of 1.248 mR/hr to TSC personnel. When this value is multiplied by 316.8 hours, this equates to 3.9537E-01 Rem (1.280 x 316.8 / 1000) over the 30-day period.

7.11 Dose During Transit Between The Control Room and the TSC

The dose to personnel traveling between the control room and the TSC is evaluated here. The period during which this dose is evaluated corresponds to the time that the TSC is required to be activated (t = 1 hour). At this time, the major contributor to this dose would be the dose associated with the plume shine. The atmospheric concentration from RADTRAD at 1 hour was used as an input to MicroShield. The plume size was approximated with no shielding between the plume and the individual. Appendix Y yields 24.02 mR/hr. It is assumed that the time spent outside of buildings/structures is 5 minutes. This results in a total of 2.00 mRem (2.00E-03 Rem) exposure (24.02 * 5/60). This dose is not added to the total 30-day dose for TSC personnel, since it is insignificant and will most likely occur before the postulated release. Additionally, Radiation Protection (RP) personnel will direct personnel in the optimum transit route for ALARA purposes. Internal exposure will be minimized with the use of Self Contained Breathing Apparatus (SCBA) if required by RP.

7.12 Calculation of Parameters for Revision 2

7.12.1 Spray Drop Density

The containment atmosphere temperature is 250°F (Design Input 5.3.2.20)
At a temperature of 250 °F, the specific volume of water (at saturated conditions) is 0.017009 cu ft/lb (page A-13 of Ref. 3.40). The water density is:

Density = (1/0.017009 cu ft/lb) x (1 cu ft/(30.48 cm)$^3$) x 453.5 gm/lb = **0.942 gm/cc**

7.12.2 Diffusivity of Iodine (D) in Containment Atmosphere

The gas phase diffusivity of iodine is estimated using the methodology presented in Section 14 of the Chemical Engineers' Handbook (Ref. 3.42). This assumes that the diffusivity of iodine in the containment gas phase is approximately equal to that for iodine in air. The gas diffusivity equation is (Equation 14-57 of Ref. 3.42):

$$\boldsymbol{D} = \frac{\boldsymbol{B}\boldsymbol{T}^{3/2}\sqrt{(1/\boldsymbol{M}_1)+(1/\boldsymbol{M}_2)}}{\mathrm{P}\,(\mathrm{r}_{12})^2\,\mathrm{I}_\mathrm{D}}$$

Where: D is the gas diffusivity (cm$^2$/sec)

$B = \left(10.7 - 2.46\sqrt{1/\boldsymbol{M}_1 + 1/\boldsymbol{M}_2}\right)\boldsymbol{x}10^{-4}$

$M_1$ and $M_2$ are the molecular weights of air and iodine
($M_1$ = 28.97 for air (Table on pg A-10 of Ref. 3.40), $M_2$ = 2 x 126.9045 = 253.8 for $I_2$ where 126.9045 is the atomic weight of iodine per page 17 of Ref. 3.45)
Plugging in the values for $M_1$ and $M_2$ gives: B = 1.02E-03

T is the absolute temperature (°K) = (250°F + 459.67)/1.8 = 394.26 °K

P = absolute pressure (atm) = (75 psia/14.696 psia/atm) = 5.1

$r_{12}$ = collision diameter (Angstroms) = $((r_o)_1 + (r_o)_2)/2$

$(r_o)_1 = (r_o)$ air = 3.617 Angstrom (Table 14-44 of Ref. 3.42)

$(r_o)_2 = (r_o)$ iodine = 4.982 Angstrom (Table 14-44 of Ref. 3.42)

$r_{12}$ = (3.617 + 4.982)/2 = 4.30

$I_D$ = collision integral for diffusion = $kT/\varepsilon_{12}$

k is the Boltzmann constant, and

$\varepsilon_{12}$ energy of molecular interaction

$$\frac{\varepsilon_{12}}{k} = \sqrt{\left(\frac{\varepsilon_1}{k}\right)\left(\frac{\varepsilon_2}{k}\right)}$$

From Table 14.44 of Ref. 3.42 ($\varepsilon_1$/k) air = 97.0 °K and ($\varepsilon_2$/k) iodine = 550 °K

$$\frac{\varepsilon_{12}}{k} = \sqrt{97 \text{ x } 550} = 230.98$$

Plugging the values in for $\frac{\varepsilon_{12}}{k}$ and T into the equation for $I_D$ gives: $I_D = 1.707$

Solving for Diffusivity, D gives: D = **9.728E-03 cm$^2$/sec**

7.12.3 Containment Atmosphere Density

Containment atmosphere density is determined assuming that the containment atmosphere can be approximated by dry air. The containment atmosphere density at 250$^o$F and 75 psia can be obtained by interpolating off the table on page A-10 of Ref. 3.40. The air pressure on page A-10 of Ref. 3.40 is given in gauge pressures. 75 psia – 14.696 = 60.30 psig.

At 250$^o$F

| Weight Density of Air | Air Pressure |
|---|---|
| (lb/cu ft) | (psig) |
| 0.284 | 60 |
| X | 60.3 |
| 0.322 | 70 |

Solving for X, gives:

X = 0.284 + ((60.3 – 60)/(70 – 60)) x (0.322 – 0.284) = 0.28514 lb/ft$^3$

0.28514 lb/ ft$^3$ x (453.5 gm/lb) x (1 ft/30.48 cm)$^3$ = **4.566E-03 gm/cc**

7.12.4 Containment Air Viscosity

The viscosity of containment atmosphere is determined assuming that the containment atmosphere can be approximated by dry air. The viscosity of air at a containment temperature of 250$^o$F can be determined from the information in Table 3-263 and Figure 3-42 of the Chemical Engineers' Handbook (Ref. 3.42). For air at a temperature of 250$^o$F, the viscosity is approximately 0.022 centipoise.

0.022 centipoise x 0.01 gm/cm-sec per centipoise = **2.20E-04 gm/cm-sec**

Where: 0.01 gm/cm-sec per centipoise is from page B-3 of Ref. 3.40.

7.12.5 Terminal Velocity

The terminal velocity of liquid drops in air is a function of the drag coefficient which is dependent on the Reynolds number (Note b to Table 4 of Ref. 3.41). Since the Reynolds number is a function of the terminal velocity, calculation of the terminal velocity involves a trial and error iterative process.

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The methodology presented on page 5-61 of Ref. 3.42 can be used which eliminates the need for trial and error. This methodology solves equation 5-216 of Ref. 3.42 which is the product of the drag coefficient and Reynolds Number squared. This equation is dependent on the drop diameter but not require the terminal velocity. The product of the drag coefficient and Reynolds Number squared is used with Table 5-25 of Ref. 3.42 to obtain a value for the ratio of the drag coefficient to the Reynolds Number.

$$CN_{Re}^2 = \frac{4g\rho_g d^3(\rho_l - \rho_g)}{3\mu^2}$$

Where: g is the gravitational constant (ft/sec$^2$)

$p_g$ is the containment atmosphere density (lb/ft$^3$)
= 4.566E-03 gm/cc x (30.48 cm)$^3$/ft$^3$ x (1 lb/453.5 gm) = 0.285 lb/ft$^3$

d is the drop diameter (ft) = 0.107 cm x (1 ft/30.48 cm) = 3.51E-03 ft

$p_l$ is the liquid density (lb/ft$^3$) = 0.942 gm/cc x (30.48 cm)$^3$/ft$^3$ x (1 lb/453.5 gm)
= 58.82 lb/ft$^3$

$\mu$ is the viscosity of the containment atmosphere (lb/ft-sec)
= 2.20E-04 gm/cm-sec x (30.48 cm)/ft x (1 lb/453.5 gm)
= 1.479E-05 lb/ft-sec

Plugging in the values and solving for $CN_{Re}^2$ gives:

$CN_{Re}^2$ = 1.415E+05

The calculated value is applied with interpolation to the information in Table 5-25 of Ref. 3.42 to obtain the corresponding value of ($C/N_{Re}$).

| $CN_{Re}^2$ | $C/N_{Re}$ |
|---|---|
| 1.38E+05 | 1.1E-03 |
| 1.415E+05 | X |
| 2.45E+05 | 7.14E-04 |

Solving for 'X' gives:

X = 1.1E-03 + (7.14E-03 – 1.1E-03) x ((1.415E+05 – 1.38E+05)/(2.45E+05 – 1.38E+05))
= 1.087E-03

This value is plugged into 5-217 of Ref. 3.42 and the equation is solved for the terminal velocity.

$$\frac{C}{N_{Re}} = \frac{4g\mu(p_l - p_g)}{3p_g^2 V_t^3}$$

Where $V_t$ is the terminal velocity (ft/sec) and the other variables are as previously defined.

Solving for $V_t$ in the above equation gives:

**$V_t$ = 7.49 ft/sec (228.30 cm/sec)**

7.12.6 Gas Mass Transfer Coefficient (Kg)

$Kg = (D/d) \times (2+0.6(p_a d V_g/\mu)^{1/2}(\mu/p_a D)^{1/3})$ (Page A-22 of Ref. 3.41)

Where: D is the diffusivity of iodine ($I_2$) (9.728E-03 $cm^2$/sec)
d is the spray drop mass mean diameter, 1070 microns (0.107 cm)
$p_a$ is the containment air density (4.566E-03 gm/cc)
Vg is the terminal velocity (228.30 cm/sec)
$\mu$ is the viscosity of containment air (2.20E-04 gm/cm-sec)

Plugging the values in for Kg gives Kg = **2.27 cm/sec**

7.12.7 Spray Removal Coefficients

<u>Elemental Iodine Spray Removal Coefficient</u>

The containment spray elemental iodine removal coefficient can be determined by solving the following equation from SRP 6.5.2 (Ref. 3.30).

$$\lambda_S = \frac{6K_g TF}{Vd}$$

Where: Kg is the gas phase mass transfer coefficient (2.27 cm/sec)
T is the time of fall of the spray drops which is equal to the fall height divided by the terminal velocity as defined in SRP 6.5.2
= [(96 ft x 30.48 cm/ft) / 228.30 cm/sec] = 12.82 sec
F is the spray pump flow rate (800 gpm or 1600 gpm)
800 gpm (1.817E+08 cc/hr)
1600 gpm (3.634E+08 cc/hr)
V is the sprayed containment volume = 1,231,200 $ft^3$ (3.486E+10 cc)
d is the spray drop mean diameter (0.107 cm)

Plugging the values into the elemental iodine spray removal coefficient equation gives:

<u>One Spray Pump Operating at 800 gpm in the Sump Recirculation Mode</u>

Elemental Iodine Spray Removal Coeff $(\lambda_S)$ = **8.51 per hour**

Two Spray Pumps Operating at 800 gpm (each) in the Sump Recirculation Mode

Elemental Iodine Spray Removal Coeff $(\lambda_S)$ = **17.02 per hour**

Particulate Iodine Spray Removal Coefficient

The containment spray particulate iodine removal coefficient can be determined by solving the following equation from SRP 6.5.2 (Ref. 3.30).

$$\lambda_p = \frac{3hFE}{2Vd}$$

Where: h is the spray drop fall height (96 ft)
F is the spray pump flow rate (800 gpm or 1600 gpm)
800 gpm (1.817E+08 cc/hr)
1600 gpm (3.634E+08 cc/hr)
V is the sprayed containment volume = 1,231,200 $ft^3$ (3.486E+10 cc)
(E/d) is the ratio of a dimensionless collection efficiency (E) based on a spray drop mean diameter (d). (E/d) is 10/meter (0.1/cm) until the aerosol mass has been depleted by a factor of 50 at which time (E/d) is 1/meter (0.01/cm)

Plugging the values into the particulate iodine spray removal coefficient equation gives:

One Spray Pump Operating at 800 gpm in the Sump Recirculation Mode

Particulate Iodine Spray Removal Coeff $(\lambda_P)$ = **2.29 per hour**

Two Spray Pumps Operating at 800 gpm (each) in the Sump Recirculation Mode

Particulate Iodine Spray Removal Coeff $(\lambda_P)$ = **4.58 per hour**

7.12.8 Elemental Iodine Decontamination Factor

The elemental iodine decontamination factor can be determined by solving the following equation from SRP 6.5.2 (Ref. 3.30).

$$DF = 1 + (V_S H/V_C)$$

Where: $V_S$ is the volume of liquid in the containment sump and sump overflow (54519 $ft^3$)
$V_C$ is the containment building net free volume less $V_S$ (i.e., 2.16E+06 $ft^3$ – 54519 $ft^3$) = 2.1E+06 $ft^3$
H is the effective iodine partition coefficient (H is obtained from Figure 8.3-1 of ANS-56.5 (Ref. 3.44). For a spray pH of 7.3, H = 300)

Plugging the values into the elemental iodine decontamination equation gives:

Elemental Iodine Spray Decontamination Factor, **DF = 8.77**

7.12.9 Calculation of Spray Cutoff Times

The spray cutoff time is achieved when the iodine decontamination factor (DF) is reached. The spray cutoff time is a function of the spray removal coefficient and the DF.

The general equation used to calculate the spray cutoff time is:

$$(1/DF) = \exp(-\lambda t)$$

Where: DF is the elemental or particulate iodine decontamination factor,
$\lambda$ is the elemental or particulate spray removal coefficient, and
T is the time

The spray cutoff time is applied after all the radioactive iodine is released into containment, which is 1.8 hours after LOCA initiation.

The equation is solved for "t", i.e.,

$$t = 1.8 \text{ hr} + \ln(1/DF) / -\lambda$$

| Calculation of Spray Cutoff Times | | | |
|---|---|---|---|
| | DF | $\lambda$ | t (hours) |
| Elemental Iodine, One Pump Operating | 8.77 | 8.51 | 2.06 |
| Elemental Iodine, Two Pumps Operating | 8.77 | 17.02 | 1.93 |
| Particulate Iodine, One Pump Operating (E/D = 0.1 cm/sec) | 50 | 2.29 | 3.51 |
| Particulate Iodine, Two Pumps Operating (E/D = 0.1 cm/sec) | 50 | 4.58 | 2.66 |

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**Table 18**
**TMI-1 Plant Specific Nuclide Inventory File For RADTRAD3.02 Input**

| Isotope | Core Isotopic Activity (Ci) A | Core Thermal Power (MWt) B | Core Activity Ci/MWt A/B | Isotope | Core Isotopic Activity (Ci) A | Core Thermal Power (MWt) B | Core Activity Ci/MWt A/B |
|---|---|---|---|---|---|---|---|
| Co-58 | 6.69E+05 | 2619 | .2553E+03 | Te-131m | 1.02E+07 | 2619 | .3898E+04 |
| Co-60 | 5.11E+05 | 2619 | .1953E+03 | Te-132 | 1.02E+08 | 2619 | .3885E+05 |
| Kr-85 | 1.05E+06 | 2619 | .3991E+03 | I-131 | 7.15E+07 | 2619 | .2729E+05 |
| Kr-85m | 2.33E+07 | 2619 | .8889E+04 | I-132 | 1.03E+08 | 2619 | .3944E+05 |
| Rb-86 | 1.64E+05 | 2619 | .6270E+02 | I-133 | 1.50E+08 | 2619 | .5708E+05 |
| Kr-87 | 4.60E+07 | 2619 | .1755E+05 | I-134 | 1.66E+08 | 2619 | .6346E+05 |
| Kr-88 | 6.48E+07 | 2619 | .2475E+05 | I-135 | 1.39E+08 | 2619 | .5323E+05 |
| Sr-89 | 7.84E+07 | 2619 | .2992E+05 | Xe-133 | 1.50E+08 | 2619 | .5708E+05 |
| Sr-90 | 8.45E+06 | 2619 | .3227E+04 | Xe-135 | 5.51E+07 | 2619 | .2103E+05 |
| Sr-91 | 1.07E+08 | 2619 | .4068E+05 | Cs-134 | 1.71E+07 | 2619 | .6539E+04 |
| Sr-92 | 1.12E+08 | 2619 | .4276E+05 | Cs-136 | 4.74E+06 | 2619 | .1808E+04 |
| Y-90 | 8.72E+06 | 2619 | .3330E+04 | Cs-137 | 1.15E+07 | 2619 | .4381E+04 |
| Y-91 | 9.59E+07 | 2619 | .3662E+05 | Ba-139 | 1.38E+08 | 2619 | .5259E+05 |
| Y-92 | 1.12E+08 | 2619 | .4288E+05 | Ba-140 | 1.33E+08 | 2619 | .5070E+05 |
| Y-93 | 1.25E+08 | 2619 | .4778E+05 | La-140 | 1.35E+08 | 2619 | .5143E+05 |
| Zr-95 | 1.24E+08 | 2619 | .4717E+05 | La-141 | 1.26E+08 | 2619 | .4798E+05 |
| Zr-97 | 1.26E+08 | 2619 | .4814E+05 | La-142 | 1.23E+08 | 2619 | .4705E+05 |
| Nb-95 | 1.24E+08 | 2619 | .4754E+05 | Ce-141 | 1.22E+08 | 2619 | .4645E+05 |
| Mo-99 | 1.36E+08 | 2619 | .5183E+05 | Ce-143 | 1.21E+08 | 2619 | .4617E+05 |
| Tc-99m | 1.19E+08 | 2619 | .4537E+05 | Ce-144 | 9.80E+07 | 2619 | .3741E+05 |
| Ru-103 | 1.09E+08 | 2619 | .4168E+05 | Pr-143 | 1.19E+08 | 2619 | .4537E+05 |
| Ru-105 | 7.27E+07 | 2619 | .2777E+05 | Nd-147 | 4.97E+07 | 2619 | .1897E+05 |
| Ru-106 | 4.11E+07 | 2619 | .1570E+05 | Np-239 | 1.35E+09 | 2619 | .5139E+06 |
| Rh-105 | 6.86E+07 | 2619 | .2621E+05 | Pu-238 | 3.86E+05 | 2619 | .1475E+03 |
| Sb-127 | 7.48E+06 | 2619 | .2854E+04 | Pu-239 | 3.01E+04 | 2619 | .1148E+02 |
| Sb-129 | 2.26E+07 | 2619 | .8625E+04 | Pu-240 | 3.24E+04 | 2619 | .1238E+02 |
| Te-127 | 7.41E+06 | 2619 | .2831E+04 | Pu-241 | 1.34E+07 | 2619 | .5127E+04 |
| Te-127m | 9.94E+05 | 2619 | .3797E+03 | Am-241 | 2.06E+04 | 2619 | .7883E+01 |
| Te-129 | 2.22E+07 | 2619 | .8492E+04 | Cm-242 | 4.85E+06 | 2619 | .1853E+04 |
| Te-129M | 3.33E+06 | 2619 | .1271E+04 | Cm-244 | 3.93E+05 | 2619 | .1499E+03 |

**Table 19**
**I-131 DE For 1% Failed Fuel Iodine Activity**

| Isotope | 1% FF Iodine Activity (μCi/gm) A | ICRP 30 DCF (Rem/Ci) B | Product AxB |
|---|---|---|---|
| I-131 | 5.71 | 1.1E+06 | 6.28E+06 |
| I-132 | 2.08 | 6.3E+03 | 1.31E+04 |
| I-133 | 6.43 | 1.8E+05 | 1.16E+06 |
| I-134 | 0.757 | 1.1E+03 | 8.33E+02 |
| I-135 | 3.08 | 3.1E+04 | 9.55E+04 |
| | | Total | 7.55E+06 |

**I-131 Dose Equivalent** = 7.55E+06/1.10E+06
= 6.86E+00 μCi/g

**Reduction Factor for 1.0 μCi/g I-131 DE = 1.0/6.86**

**Table 20**
**Iodine Activity Based on 1 μCi/g DE of I-131**

| Isotope | 1% FF Iodine Activity (μCi/gm) A | I-131 DE Iodine Activity (μCi/gm) B=A/6.86 |
|---|---|---|
| I-131 | 5.71 | 0.832 |
| I-132 | 2.08 | 0.303 |
| I-133 | 6.43 | 0.937 |
| I-134 | 0.757 | 0.110 |
| I-135 | 3.08 | 0.449 |

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**Table 21**

**RCS Activity in Ci/MW$_t$ For RADTRAD Nuclide File**

| Isotope | RCS Isotopic Activity µCi/g A | RCS Mass G B* | RCS Isotopic Activity Ci C=AxB/1E6 | Core Thermal Power MW$_t$ D | RCS Activity Ci/MW$_t$ E=C/D |
|---|---|---|---|---|---|
| Kr-83m | 0.545 | 2.99E+08 | 162.74 | 2619 | .6214E-01 |
| Kr-85m | 2.43 | 2.99E+08 | 725.60 | 2619 | .2771E+00 |
| Kr-85 | 14.72 | 2.99E+08 | 4395.39 | 2619 | .1678E+01 |
| Kr-87 | 1.34 | 2.99E+08 | 400.12 | 2619 | .1528E+00 |
| Kr-88 | 4.15 | 2.99E+08 | 1239.19 | 2619 | .4732E+00 |
| Xe-131m | 3.94 | 2.99E+08 | 1176.48 | 2619 | .4492E+00 |
| Xe-133m | 5.7 | 2.99E+08 | 1702.02 | 2619 | .6499E+00 |
| Xe-133 | 419.4 | 2.99E+08 | 125232.84 | 2619 | .4782E+02 |
| Xe-135m | 0.485 | 2.99E+08 | 144.82 | 2619 | .5530E-01 |
| Xe-135 | 19.17 | 2.99E+08 | 5724.16 | 2619 | .2186E+01 |
| Xe-138 | 0.699 | 2.99E+08 | 208.72 | 2619 | .7970E-01 |
| I-131 | 0.832 | 2.99E+08 | 248.48 | 2619 | .9488E-01 |
| I-132 | 0.303 | 2.99E+08 | 90.52 | 2619 | .3456E-01 |
| I-133 | 0.937 | 2.99E+08 | 279.82 | 2619 | .1068E+00 |
| I-134 | 0.110 | 2.99E+08 | 32.94 | 2619 | .1258E-01 |
| I-135 | 0.449 | 2.99E+08 | 134.03 | 2619 | .5118E-01 |

* 10564.4 ft$^3$ x 7.481 gal/ft$^3$ x 8.33 lb/gal x 453.6 g/lb = 2.986E+08 g

**Table 22**

**Airborne Iodine Fraction - ESF Leakage**

| Post-LOCA Time (hr) | ESF Leak Rate (cfm) B* | Iodine Flashing Fraction (%) A | Fraction Iodine Becomes Airborne (BxA)/100 |
|---|---|---|---|
| 0 | 6.684E-02 | 5 | 3.340E-03 |
| 24 | 6.684E-02 | 2 | 1.336E-03 |
| 720 | 0 | 0 | 0.000E+00 |

* (15x2) gal/hr x 1/60 hr/min x 1/7.481 $ft^3$/gal = 6.684E-02 cfm

**Table 23**

**Airborne Iodine Fraction - BWST Leakage**

| Post-LOCA Time (hr) | BWST Leak Rate (gpm) A | BWST Leak Rate (cpm) B = A/7.481 | Iodine Flashing Fraction C | Fraction Iodine Becomes Airborne (BxC) |
|---|---|---|---|---|
| 0 | 3 | 4.010E-01 | 0.10 | 4.010E-02 |
| 5 | 1.7 | 2.272E-01 | 0.10 | 2.272E-02 |
| 24 | 1.6 | 2.139E-01 | 0.10 | 2.139E-02 |
| 720 | 0 | 0 | 0 | 0.000E+00 |

A From Reference 3.15, Table 1

AmerGen

**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 2 | System Nos. | Sheet 51 of 1000 |
|---|---|---|---|---|

**Table 24**

**Post-LOCA Containment Leakage Activity in CR With Charcoal/HEPA Filters**

**(Ci)**

| Isotope | 0-0.50 | 0.5-0.755 | 0.755-1.8 | 1.8-2 | 2-2.92 | 2.92-3.82 | 3.83-4.0 | 4.0-8.0 | 8.0-24 | 24-96 | 96-720 | Total |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Co-58 | 0.00E+00 | 0.00E+00 | 7.49E-07 | 7.13E-07 | 2.19E-07 | 1.02E-07 | 9.27E-08 | 7.47E-08 | 1.91E-08 | 4.76E-09 | 1.74E-10 | 1.97E-06 |
| Co-60 | 0.00E+00 | 0.00E+00 | 5.74E-07 | 5.46E-07 | 1.67E-07 | 7.79E-08 | 7.11E-08 | 5.74E-08 | 1.47E-08 | 3.78E-09 | 1.77E-10 | 1.51E-06 |
| Kr-85 | 2.89E-04 | 3.00E-04 | 1.98E-02 | 2.31E-02 | 1.98E-02 | 1.94E-02 | 1.93E-02 | 1.93E-02 | 8.73E-03 | 3.06E-03 | 2.09E-03 | 1.35E-01 |
| Kr-85m | 5.84E-03 | 6.04E-03 | 2.90E-01 | 3.24E-01 | 2.39E-01 | 2.03E-01 | 1.97E-01 | 1.06E-01 | 4.03E-03 | 2.05E-08 | 0.00E+00 | 1.38E+00 |
| Kr-87 | 9.00E-03 | 9.26E-03 | 2.01E-01 | 2.04E-01 | 1.02E-01 | 6.09E-02 | 5.51E-02 | 6.21E-03 | 4.59E-07 | 0.00E+00 | 0.00E+00 | 6.48E-01 |
| Kr-88 | 1.54E-02 | 1.59E-02 | 6.34E-01 | 6.94E-01 | 4.68E-01 | 3.66E-01 | 3.50E-01 | 1.31E-01 | 1.20E-03 | 0.00E+00 | 0.00E+00 | 2.68E+00 |
| Rb-86 | 3.38E-05 | 3.48E-05 | 2.00E-05 | 1.89E-05 | 5.78E-06 | 2.69E-06 | 2.45E-06 | 1.96E-06 | 4.93E-07 | 1.13E-07 | 2.04E-09 | 1.21E-04 |
| Sr-89 | 0.00E+00 | 0.00E+00 | 7.02E-04 | 6.68E-04 | 2.05E-04 | 9.53E-05 | 8.69E-05 | 6.99E-05 | 1.78E-05 | 4.39E-06 | 1.45E-07 | 1.85E-03 |
| Sr-90 | 0.00E+00 | 0.00E+00 | 7.58E-05 | 7.22E-05 | 2.21E-05 | 1.03E-05 | 9.40E-06 | 7.58E-06 | 1.95E-06 | 5.00E-07 | 2.36E-08 | 2.00E-04 |
| Sr-91 | 0.00E+00 | 0.00E+00 | 7.71E-04 | 7.20E-04 | 2.06E-04 | 9.00E-05 | 8.10E-05 | 4.88E-05 | 3.90E-06 | 5.24E-09 | 0.00E+00 | 1.92E-03 |
| Sr-92 | 0.00E+00 | 0.00E+00 | 4.73E-04 | 4.22E-04 | 1.02E-04 | 3.78E-05 | 3.29E-05 | 9.55E-06 | 4.10E-08 | 0.00E+00 | 0.00E+00 | 1.08E-03 |
| Y-90 | 0.00E+00 | 0.00E+00 | 7.58E-07 | 7.20E-07 | 2.18E-07 | 1.01E-07 | 9.16E-08 | 7.08E-08 | 1.53E-08 | 1.80E-09 | 0.00E+00 | 1.98E-06 |
| Y-91 | 0.00E+00 | 0.00E+00 | 8.59E-06 | 8.18E-06 | 2.51E-06 | 1.17E-06 | 1.06E-06 | 8.57E-07 | 2.18E-07 | 5.41E-08 | 1.88E-09 | 2.26E-05 |
| Y-92 | 0.00E+00 | 0.00E+00 | 5.66E-06 | 5.13E-06 | 1.31E-06 | 5.12E-07 | 4.51E-07 | 1.66E-07 | 1.86E-09 | 0.00E+00 | 0.00E+00 | 1.32E-05 |
| Y-93 | 0.00E+00 | 0.00E+00 | 9.17E-06 | 8.58E-06 | 2.47E-06 | 1.08E-06 | 9.73E-07 | 5.97E-07 | 5.11E-08 | 9.38E-11 | 0.00E+00 | 2.29E-05 |
| Zr-95 | 0.00E+00 | 0.00E+00 | 1.11E-05 | 1.05E-05 | 3.23E-06 | 1.50E-06 | 1.37E-06 | 1.10E-06 | 2.82E-07 | 7.00E-08 | 2.50E-09 | 2.92E-05 |
| Zr-97 | 0.00E+00 | 0.00E+00 | 1.00E-05 | 9.44E-06 | 2.79E-06 | 1.25E-06 | 1.13E-06 | 7.75E-07 | 1.03E-07 | 1.38E-09 | 0.00E+00 | 2.55E-05 |
| Nb-95 | 0.00E+00 | 0.00E+00 | 1.11E-05 | 1.06E-05 | 3.25E-06 | 1.51E-06 | 1.38E-06 | 1.11E-06 | 2.81E-07 | 6.81E-08 | 1.93E-09 | 2.94E-05 |
| Mo-99 | 0.00E+00 | 0.00E+00 | 1.48E-04 | 1.40E-04 | 4.26E-05 | 1.96E-05 | 1.79E-05 | 1.38E-05 | 3.00E-06 | 3.62E-07 | 2.44E-11 | 3.85E-04 |
| Tc-99m | 0.00E+00 | 0.00E+00 | 9.49E-05 | 8.77E-05 | 2.42E-05 | 1.01E-05 | 9.06E-06 | 4.62E-06 | 1.88E-07 | 0.00E+00 | 0.00E+00 | 2.31E-04 |
| Ru-103 | 0.00E+00 | 0.00E+00 | 1.22E-04 | 1.16E-04 | 3.56E-05 | 1.66E-05 | 1.51E-05 | 1.22E-05 | 3.09E-06 | 7.52E-07 | 2.25E-08 | 3.22E-04 |
| Ru-105 | 0.00E+00 | 0.00E+00 | 5.15E-05 | 4.71E-05 | 1.25E-05 | 5.06E-06 | 4.48E-06 | 1.94E-06 | 4.10E-08 | 0.00E+00 | 0.00E+00 | 1.23E-04 |
| Ru-106 | 0.00E+00 | 0.00E+00 | 4.61E-05 | 4.39E-05 | 1.35E-05 | 6.26E-06 | 5.71E-06 | 4.61E-06 | 1.18E-06 | 3.02E-07 | 1.36E-08 | 1.22E-04 |
| Rh-105 | 0.00E+00 | 0.00E+00 | 7.27E-05 | 6.88E-05 | 2.07E-05 | 9.48E-06 | 8.61E-06 | 6.43E-06 | 1.21E-06 | 7.56E-08 | 0.00E+00 | 1.88E-04 |
| Sb-127 | 0.00E+00 | 0.00E+00 | 1.64E-04 | 1.56E-04 | 4.74E-05 | 2.19E-05 | 2.00E-05 | 1.56E-05 | 3.57E-06 | 5.34E-07 | 2.34E-10 | 4.29E-04 |
| Sb-129 | 0.00E+00 | 0.00E+00 | 3.16E-04 | 2.89E-04 | 7.63E-05 | 3.07E-05 | 2.72E-05 | 1.16E-05 | 2.28E-07 | 0.00E+00 | 0.00E+00 | 7.50E-04 |
| Te-127 | 0.00E+00 | 0.00E+00 | 1.34E-04 | 1.25E-04 | 3.57E-05 | 1.56E-05 | 1.40E-05 | 8.40E-06 | 6.59E-07 | 8.14E-10 | 0.00E+00 | 3.33E-04 |
| Te-127m | 0.00E+00 | 0.00E+00 | 2.23E-05 | 2.12E-05 | 6.50E-06 | 3.03E-06 | 2.76E-06 | 2.23E-06 | 5.70E-07 | 1.43E-07 | 5.75E-09 | 5.87E-05 |
| Te-129 | 0.00E+00 | 0.00E+00 | 8.69E-05 | 7.13E-05 | 1.26E-05 | 3.42E-06 | 2.80E-06 | 2.07E-07 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 1.77E-04 |
| Te-129m | 0.00E+00 | 0.00E+00 | 7.45E-05 | 7.09E-05 | 2.17E-05 | 1.01E-05 | 9.21E-06 | 7.41E-06 | 1.88E-06 | 4.53E-07 | 1.25E-08 | 1.96E-04 |

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**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 2 | System Nos. | Sheet 52 of 1000 |
|---|---|---|---|---|

**Table 24 (Cont'd)**

**Post-LOCA Containment Leakage Activity in CR With Charcoal/HEPA Filters**

**(Ci)**

| Isotope | 0-0.33 | 0.5-0.755 | 0.755-1.8 | 1.8-2 | 2-2.92 | 2.29-3 | 08-Mar | 24-Aug | 24-96 | | 96-720 | Total |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Te-131m | 0.00E+00 | 0.00E+00 | 2.14E-04 | 2.02E-04 | 6.08E-05 | 2.77E-05 | 2.52E-05 | 1.85E-05 | 3.29E-06 | 1.60E-07 | 0.00E+00 | 5.52E-04 |
| Te-132 | 0.00E+00 | 0.00E+00 | 2.22E-03 | 2.11E-03 | 6.42E-04 | 2.97E-04 | 2.70E-04 | 2.10E-04 | 4.69E-05 | 6.36E-06 | 1.19E-09 | 5.81E-03 |
| I-131 | 1.45E-02 | 1.50E-02 | 1.20E-02 | 1.13E-02 | 3.42E-03 | 1.66E-03 | 1.53E-03 | 1.24E-03 | 3.30E-04 | 7.00E-05 | 1.54E-06 | 6.11E-02 |
| I-132 | 1.73E-02 | 1.78E-02 | 7.35E-03 | 6.42E-03 | 1.47E-03 | 5.48E-04 | 4.77E-04 | 1.18E-04 | 2.67E-07 | 0.00E+00 | 0.00E+00 | 5.15E-02 |
| I-133 | 2.98E-02 | 3.07E-02 | 2.30E-02 | 2.15E-02 | 6.34E-03 | 2.99E-03 | 2.74E-03 | 1.98E-03 | 3.26E-04 | 8.15E-06 | 5.68E-03 | 1.25E-01 |
| I-134 | 2.03E-02 | 2.07E-02 | 2.98E-03 | 2.31E-03 | 3.37E-04 | 8.05E-05 | 6.42E-05 | 2.25E-06 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 4.69E-02 |
| I-135 | 2.65E-02 | 2.73E-02 | 1.75E-02 | 1.60E-02 | 4.41E-03 | 1.96E-03 | 1.77E-03 | 9.59E-04 | 5.03E-05 | 7.28E-09 | 0.00E+00 | 9.65E-02 |
| Xe-133 | 4.12E-02 | 4.27E-02 | 2.79E+00 | 3.25E+00 | 2.77E+00 | 2.70E+00 | 2.69E+00 | 2.62E+00 | 1.09E+00 | 2.56E-01 | 0.00E+00 | 1.82E+01 |
| Xe-135 | 1.45E-02 | 1.50E-02 | 8.48E-01 | 9.69E-01 | 7.71E-01 | 7.03E-01 | 6.93E-01 | 5.09E-01 | 6.81E-02 | 9.84E-05 | 0.00E+00 | 4.59E+00 |
| Cs-134 | 3.52E-03 | 3.63E-03 | 2.10E-03 | 1.98E-03 | 6.07E-04 | 2.82E-04 | 2.57E-04 | 2.08E-04 | 5.34E-05 | 1.37E-05 | 6.30E-07 | 1.27E-02 |
| Cs-136 | 9.73E-04 | 1.00E-03 | 5.77E-04 | 5.43E-04 | 1.66E-04 | 7.72E-05 | 7.04E-05 | 5.63E-05 | 1.40E-05 | 3.06E-06 | 3.65E-08 | 3.48E-03 |
| Cs-137 | 2.36E-03 | 2.43E-03 | 1.41E-03 | 1.33E-03 | 4.06E-04 | 1.89E-04 | 1.73E-04 | 1.39E-04 | 3.58E-05 | 9.19E-06 | 4.33E-07 | 8.48E-03 |
| Ba-139 | 0.00E+00 | 0.00E+00 | 2.83E-04 | 2.38E-04 | 4.58E-05 | 1.36E-05 | 1.13E-05 | 1.22E-06 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 5.93E-04 |
| Ba-140 | 0.00E+00 | 0.00E+00 | 1.18E-03 | 1.13E-03 | 3.45E-04 | 1.60E-04 | 1.46E-04 | 1.17E-04 | 2.89E-05 | 6.31E-06 | 7.24E-08 | 3.11E-03 |
| La-140 | 0.00E+00 | 0.00E+00 | 1.15E-05 | 1.09E-05 | 3.29E-06 | 1.51E-06 | 1.37E-06 | 1.03E-06 | 2.01E-07 | 1.50E-08 | 0.00E+00 | 2.98E-05 |
| La-141 | 0.00E+00 | 0.00E+00 | 6.70E-06 | 6.10E-06 | 1.59E-06 | 6.31E-07 | 5.58E-07 | 2.22E-07 | 3.40E-09 | 0.00E+00 | 0.00E+00 | 1.58E-05 |
| La-142 | 0.00E+00 | 0.00E+00 | 3.59E-06 | 3.05E-06 | 6.17E-07 | 1.92E-07 | 1.61E-07 | 2.15E-08 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 7.63E-06 |
| Ce-141 | 0.00E+00 | 0.00E+00 | 2.72E-05 | 2.59E-05 | 7.94E-06 | 3.69E-06 | 3.37E-06 | 2.71E-06 | 6.86E-07 | 1.65E-07 | 4.48E-09 | 7.17E-05 |
| Ce-143 | 0.00E+00 | 0.00E+00 | 2.55E-05 | 2.41E-05 | 7.26E-06 | 3.32E-06 | 3.01E-06 | 2.24E-06 | 4.11E-07 | 2.32E-08 | 0.00E+00 | 6.59E-05 |
| Ce-144 | 0.00E+00 | 0.00E+00 | 2.20E-05 | 2.09E-05 | 6.41E-06 | 2.98E-06 | 2.72E-06 | 2.20E-06 | 5.63E-07 | 1.44E-07 | 6.37E-09 | 5.79E-05 |
| Pr-143 | 0.00E+00 | 0.00E+00 | 1.06E-05 | 1.01E-05 | 3.08E-06 | 1.43E-06 | 1.31E-06 | 1.05E-06 | 2.60E-07 | 5.72E-08 | 7.16E-10 | 2.79E-05 |
| Nd-147 | 0.00E+00 | 0.00E+00 | 4.42E-06 | 4.21E-06 | 1.29E-06 | 5.98E-07 | 5.45E-07 | 4.35E-07 | 1.07E-07 | 2.28E-08 | 2.09E-10 | 1.16E-05 |
| Np-239 | 0.00E+00 | 0.00E+00 | 2.91E-04 | 2.76E-04 | 8.38E-05 | 3.86E-05 | 3.51E-05 | 2.70E-05 | 5.70E-06 | 6.05E-07 | 1.36E-11 | 7.58E-04 |
| Pu-238 | 0.00E+00 | 0.00E+00 | 8.67E-08 | 8.25E-08 | 2.53E-08 | 1.18E-08 | 1.07E-08 | 8.67E-09 | 2.23E-09 | 5.72E-10 | 2.70E-11 | 2.28E-07 |
| Pu-239 | 0.00E+00 | 0.00E+00 | 6.75E-09 | 6.42E-09 | 1.97E-09 | 9.16E-10 | 8.36E-10 | 6.74E-10 | 1.73E-10 | 4.45E-11 | 2.10E-12 | 1.78E-08 |
| Pu-240 | 0.00E+00 | 0.00E+00 | 7.27E-09 | 6.92E-09 | 2.12E-09 | 9.88E-10 | 9.01E-10 | 7.27E-10 | 1.87E-10 | 4.80E-11 | 2.27E-12 | 1.92E-08 |
| Pu-241 | 0.00E+00 | 0.00E+00 | 3.01E-06 | 2.87E-06 | 8.79E-07 | 4.09E-07 | 3.73E-07 | 3.01E-07 | 7.74E-08 | 1.99E-08 | 9.36E-10 | 7.94E-06 |
| Am-241 | 0.00E+00 | 0.00E+00 | 1.85E-09 | 1.76E-09 | 5.41E-10 | 2.52E-10 | 2.30E-10 | 1.85E-10 | 4.76E-11 | 1.22E-11 | 5.78E-13 | 4.88E-09 |
| Cm-242 | 0.00E+00 | 0.00E+00 | 4.35E-07 | 4.14E-07 | 1.27E-07 | 5.91E-08 | 5.39E-08 | 4.35E-08 | 1.11E-08 | 2.82E-09 | 1.19E-10 | 1.15E-06 |
| Cm-244 | 0.00E+00 | 0.00E+00 | 3.52E-08 | 3.35E-08 | 1.03E-08 | 4.79E-09 | 4.36E-09 | 3.52E-09 | 9.05E-10 | 2.32E-10 | 1.10E-11 | 9.29E-08 |

From RADTRAD Computer Run CL_Spray_800A.psf

AmerGen

**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 2 | System Nos. | Sheet 53 of 1000 |
|---|---|---|---|---|

**Table 25**

**Post-LOCA Containment Leakage Activity in CR Without Charcoal/HEPA Filters**

**(Ci)**

| Isotope | 0-0.50 | 0.5-0.755 | 0.755-1.8 | 1.8-2 | 2-2.92 | 2.92-3.82 | 3.83-4.0 | 4.0-8.0 | 8.0-24 | 24-96 | 96-720 | Total |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Co-58 | 0.00E+00 | 0.00E+00 | 1.99E-05 | 2.15E-05 | 1.07E-05 | 5.11E-06 | 4.45E-06 | 2.58E-06 | 6.57E-07 | 1.62E-07 | 5.93E-09 | 6.51E-05 |
| Co-60 | 0.00E+00 | 0.00E+00 | 1.52E-05 | 1.65E-05 | 8.22E-06 | 3.91E-06 | 3.41E-06 | 1.98E-06 | 5.08E-07 | 1.29E-07 | 6.03E-09 | 4.99E-05 |
| Kr-85 | 2.89E-04 | 3.00E-04 | 1.98E-02 | 2.31E-02 | 1.98E-02 | 1.94E-02 | 1.93E-02 | 1.93E-02 | 8.73E-03 | 3.06E-03 | 2.09E-03 | 1.35E-01 |
| Kr-85m | 5.84E-03 | 6.04E-03 | 2.90E-01 | 3.24E-01 | 2.39E-01 | 2.03E-01 | 1.97E-01 | 1.06E-01 | 4.03E-03 | 2.05E-08 | 0.00E+00 | 1.38E+00 |
| Kr-87 | 9.00E-03 | 9.26E-03 | 2.01E-01 | 2.04E-01 | 1.02E-01 | 6.09E-02 | 5.51E-02 | 6.21E-03 | 4.59E-07 | 0.00E+00 | 0.00E+00 | 6.48E-01 |
| Kr-88 | 1.54E-02 | 1.59E-02 | 6.34E-01 | 6.94E-01 | 4.68E-01 | 3.66E-01 | 3.50E-01 | 1.31E-01 | 1.20E-03 | 0.00E+00 | 0.00E+00 | 2.68E+00 |
| Rb-86 | 3.38E-05 | 3.48E-05 | 5.58E-04 | 5.89E-04 | 2.86E-04 | 1.35E-04 | 1.18E-04 | 6.80E-05 | 1.70E-05 | 3.85E-06 | 6.93E-08 | 1.84E-03 |
| Sr-89 | 0.00E+00 | 0.00E+00 | 1.86E-02 | 2.01E-02 | 1.00E-02 | 4.78E-03 | 4.17E-03 | 2.42E-03 | 6.14E-04 | 1.49E-04 | 4.94E-06 | 6.10E-02 |
| Sr-90 | 0.00E+00 | 0.00E+00 | 2.01E-03 | 2.18E-03 | 1.09E-03 | 5.17E-04 | 4.51E-04 | 2.62E-04 | 6.72E-05 | 1.70E-05 | 8.04E-07 | 6.59E-03 |
| Sr-91 | 0.00E+00 | 0.00E+00 | 2.06E-02 | 2.19E-02 | 1.01E-02 | 4.52E-03 | 3.89E-03 | 1.69E-03 | 1.35E-04 | 1.79E-07 | 0.00E+00 | 6.29E-02 |
| Sr-92 | 0.00E+00 | 0.00E+00 | 1.29E-02 | 1.30E-02 | 5.05E-03 | 1.90E-03 | 1.58E-03 | 3.30E-04 | 1.41E-06 | 0.00E+00 | 0.00E+00 | 3.49E-02 |
| Y-90 | 0.00E+00 | 0.00E+00 | 2.01E-05 | 2.17E-05 | 1.07E-05 | 5.06E-06 | 4.40E-06 | 2.45E-06 | 5.27E-07 | 6.14E-08 | 0.00E+00 | 6.51E-05 |
| Y-91 | 0.00E+00 | 0.00E+00 | 2.28E-04 | 2.47E-04 | 1.23E-04 | 5.86E-05 | 5.11E-05 | 2.96E-05 | 7.53E-06 | 1.84E-06 | 6.40E-08 | 7.46E-04 |
| Y-92 | 0.00E+00 | 0.00E+00 | 1.54E-04 | 1.57E-04 | 6.47E-05 | 2.57E-05 | 2.17E-05 | 5.75E-06 | 6.42E-08 | 0.00E+00 | 0.00E+00 | 4.29E-04 |
| Y-93 | 0.00E+00 | 0.00E+00 | 2.45E-04 | 2.60E-04 | 1.21E-04 | 5.43E-05 | 4.68E-05 | 2.06E-05 | 1.76E-06 | 3.20E-09 | 0.00E+00 | 7.50E-04 |
| Zr-95 | 0.00E+00 | 0.00E+00 | 2.94E-04 | 3.18E-04 | 1.58E-04 | 7.54E-05 | 6.58E-05 | 3.82E-05 | 9.71E-06 | 2.38E-06 | 8.50E-08 | 9.62E-04 |
| Zr-97 | 0.00E+00 | 0.00E+00 | 2.67E-04 | 2.86E-04 | 1.37E-04 | 6.28E-05 | 5.44E-05 | 2.68E-05 | 3.56E-06 | 4.72E-08 | 0.00E+00 | 8.37E-04 |
| Nb-95 | 0.00E+00 | 0.00E+00 | 2.96E-04 | 3.20E-04 | 1.59E-04 | 7.59E-05 | 6.62E-05 | 3.83E-05 | 9.69E-06 | 2.32E-06 | 6.56E-08 | 9.68E-04 |
| Mo-99 | 0.00E+00 | 0.00E+00 | 3.92E-03 | 4.23E-03 | 2.09E-03 | 9.85E-04 | 8.58E-04 | 4.78E-04 | 1.03E-04 | 1.23E-05 | 8.30E-10 | 1.27E-02 |
| Tc-99m | 0.00E+00 | 0.00E+00 | 2.55E-03 | 2.67E-03 | 1.19E-03 | 5.10E-04 | 4.36E-04 | 1.60E-04 | 6.48E-06 | 4.13E-10 | 0.00E+00 | 7.53E-03 |
| Ru-103 | 0.00E+00 | 0.00E+00 | 3.24E-03 | 3.50E-03 | 1.75E-03 | 8.32E-04 | 7.26E-04 | 4.21E-04 | 1.06E-04 | 2.56E-05 | 7.65E-07 | 1.06E-02 |
| Ru-105 | 0.00E+00 | 0.00E+00 | 1.39E-03 | 1.44E-03 | 6.16E-04 | 2.54E-04 | 2.16E-04 | 6.70E-05 | 1.41E-06 | 0.00E+00 | 0.00E+00 | 3.99E-03 |
| Ru-106 | 0.00E+00 | 0.00E+00 | 1.22E-03 | 1.32E-03 | 6.60E-04 | 3.14E-04 | 2.74E-04 | 1.59E-04 | 4.08E-05 | 1.03E-05 | 4.63E-07 | 4.01E-03 |
| Rh-105 | 0.00E+00 | 0.00E+00 | 1.93E-03 | 2.08E-03 | 1.02E-03 | 4.76E-04 | 4.14E-04 | 2.22E-04 | 4.16E-05 | 2.57E-06 | 0.00E+00 | 6.18E-03 |
| Sb-127 | 0.00E+00 | 0.00E+00 | 4.36E-03 | 4.70E-03 | 2.33E-03 | 1.10E-03 | 9.60E-04 | 5.41E-04 | 1.23E-04 | 1.82E-05 | 7.96E-09 | 1.41E-02 |
| Sb-129 | 0.00E+00 | 0.00E+00 | 8.53E-03 | 8.83E-03 | 3.76E-03 | 1.54E-03 | 1.31E-03 | 4.00E-04 | 7.86E-06 | 0.00E+00 | 0.00E+00 | 2.44E-02 |
| Te-127 | 0.00E+00 | 0.00E+00 | 3.58E-03 | 3.79E-03 | 1.76E-03 | 7.82E-04 | 6.73E-04 | 2.91E-04 | 2.27E-05 | 2.77E-08 | 0.00E+00 | 1.09E-02 |
| Te-127m | 0.00E+00 | 0.00E+00 | 5.92E-04 | 6.40E-04 | 3.19E-04 | 1.52E-04 | 1.33E-04 | 7.70E-05 | 1.96E-05 | 4.89E-06 | 1.96E-07 | 1.94E-03 |
| Te-129 | 0.00E+00 | 0.00E+00 | 2.47E-03 | 2.27E-03 | 6.27E-04 | 1.72E-04 | 1.35E-04 | 7.16E-06 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 5.68E-03 |
| Te-129m | 0.00E+00 | 0.00E+00 | 1.98E-03 | 2.14E-03 | 1.07E-03 | 5.07E-04 | 4.42E-04 | 2.56E-04 | 6.47E-05 | 1.54E-05 | 4.27E-07 | 6.47E-03 |

AmerGen

**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 2 | System Nos. | Sheet 54 of 1000 |
|---|---|---|---|---|

**Table 25 (Cont'd)**

| Post-LOCA Containment Leakage Activity in CR Without Charcoal/HEPA Filters (Ci) | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Isotope** | **0-0.50** | **0.5-0.755** | **0.755-1.8** | **1.8-2** | **2-2.92** | **2.92-3.82** | **3.83-4.0** | **4.0-8.0** | **8.0-24** | **24-96** | **96-720** | **Total** |
| Te-131m | 0.00E+00 | 0.00E+00 | 5.69E-03 | 6.11E-03 | 2.98E-03 | 1.39E-03 | 1.21E-03 | 6.40E-04 | 1.13E-04 | 5.45E-06 | 0.00E+00 | 1.81E-02 |
| Te-132 | 0.00E+00 | 0.00E+00 | 5.91E-02 | 6.37E-02 | 3.15E-02 | 1.49E-02 | 1.30E-02 | 7.27E-03 | 1.62E-03 | 2.17E-04 | 4.06E-08 | 1.91E-01 |
| I-131 | 1.45E-02 | 1.50E-02 | 3.21E-01 | 3.41E-01 | 1.66E-01 | 7.90E-02 | 6.92E-02 | 4.06E-02 | 1.04E-02 | 2.12E-03 | 3.33E-05 | 1.06E+00 |
| I-132 | 1.73E-02 | 1.78E-02 | 2.05E-01 | 2.00E-01 | 7.21E-02 | 2.61E-02 | 2.17E-02 | 3.86E-03 | 8.39E-06 | 0.00E+00 | 0.00E+00 | 5.64E-01 |
| I-133 | 2.98E-02 | 3.07E-02 | 6.19E-01 | 6.51E-01 | 3.07E-01 | 1.43E-01 | 1.24E-01 | 6.47E-02 | 1.03E-02 | 2.47E-04 | 5.68E-03 | 1.99E+00 |
| I-134 | 2.03E-02 | 2.07E-02 | 8.86E-02 | 7.58E-02 | 1.67E-02 | 3.86E-03 | 2.93E-03 | 7.35E-05 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 2.29E-01 |
| I-135 | 2.65E-02 | 2.73E-02 | 4.74E-01 | 4.89E-01 | 2.14E-01 | 9.32E-02 | 8.01E-02 | 3.14E-02 | 1.58E-03 | 2.21E-07 | 0.00E+00 | 1.44E+00 |
| Xe-133 | 4.12E-02 | 4.27E-02 | 2.79E+00 | 3.25E+00 | 2.77E+00 | 2.70E+00 | 2.69E+00 | 2.62E+00 | 1.09E+00 | 2.56E-01 | 0.00E+00 | 1.82E+01 |
| Xe-135 | 1.45E-02 | 1.50E-02 | 8.48E-01 | 9.69E-01 | 7.71E-01 | 7.03E-01 | 6.93E-01 | 5.09E-01 | 6.81E-02 | 9.84E-05 | 0.00E+00 | 4.59E+00 |
| Cs-134 | 3.52E-03 | 3.63E-03 | 5.84E-02 | 6.17E-02 | 3.00E-02 | 1.42E-02 | 1.24E-02 | 7.19E-03 | 1.84E-03 | 4.65E-04 | 2.15E-05 | 1.93E-01 |
| Cs-136 | 9.73E-04 | 1.00E-03 | 1.61E-02 | 1.70E-02 | 8.23E-03 | 3.89E-03 | 3.39E-03 | 1.95E-03 | 4.81E-04 | 1.04E-04 | 1.24E-06 | 5.30E-02 |
| Cs-137 | 2.36E-03 | 2.43E-03 | 3.92E-02 | 4.14E-02 | 2.01E-02 | 9.53E-03 | 8.31E-03 | 4.82E-03 | 1.23E-03 | 3.13E-04 | 1.48E-05 | 1.30E-01 |
| Ba-139 | 0.00E+00 | 0.00E+00 | 7.96E-03 | 7.52E-03 | 2.28E-03 | 6.83E-04 | 5.44E-04 | 4.21E-05 | 3.46E-09 | 0.00E+00 | 0.00E+00 | 1.90E-02 |
| Ba-140 | 0.00E+00 | 0.00E+00 | 3.14E-02 | 3.39E-02 | 1.69E-02 | 8.04E-03 | 7.01E-03 | 4.04E-03 | 9.97E-04 | 2.15E-04 | 2.47E-06 | 1.03E-01 |
| La-140 | 0.00E+00 | 0.00E+00 | 3.05E-04 | 3.29E-04 | 1.61E-04 | 7.56E-05 | 6.58E-05 | 3.57E-05 | 6.93E-06 | 5.10E-07 | 0.00E+00 | 9.80E-04 |
| La-141 | 0.00E+00 | 0.00E+00 | 1.82E-04 | 1.87E-04 | 7.84E-05 | 3.17E-05 | 2.68E-05 | 7.69E-06 | 1.17E-07 | 0.00E+00 | 0.00E+00 | 5.13E-04 |
| La-142 | 0.00E+00 | 0.00E+00 | 1.00E-04 | 9.60E-05 | 3.06E-05 | 9.66E-06 | 7.76E-06 | 7.45E-07 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 2.45E-04 |
| Ce-141 | 0.00E+00 | 0.00E+00 | 7.22E-04 | 7.81E-04 | 3.89E-04 | 1.85E-04 | 1.62E-04 | 9.36E-05 | 2.36E-05 | 5.63E-06 | 1.53E-07 | 2.36E-03 |
| Ce-143 | 0.00E+00 | 0.00E+00 | 6.78E-04 | 7.29E-04 | 3.56E-04 | 1.66E-04 | 1.45E-04 | 7.73E-05 | 1.41E-05 | 7.91E-07 | 0.00E+00 | 2.17E-03 |
| Ce-144 | 0.00E+00 | 0.00E+00 | 5.83E-04 | 6.30E-04 | 3.15E-04 | 1.50E-04 | 1.31E-04 | 7.59E-05 | 1.94E-05 | 4.89E-06 | 2.17E-07 | 1.91E-03 |
| Pr-143 | 0.00E+00 | 0.00E+00 | 2.81E-04 | 3.04E-04 | 1.51E-04 | 7.20E-05 | 6.28E-05 | 3.62E-05 | 8.95E-06 | 1.95E-06 | 2.44E-08 | 9.18E-04 |
| Nd-147 | 0.00E+00 | 0.00E+00 | 1.17E-04 | 1.27E-04 | 6.32E-05 | 3.00E-05 | 2.62E-05 | 1.50E-05 | 3.69E-06 | 7.76E-07 | 7.10E-09 | 3.83E-04 |
| Np-239 | 0.00E+00 | 0.00E+00 | 7.74E-03 | 8.34E-03 | 4.11E-03 | 1.94E-03 | 1.69E-03 | 9.33E-04 | 1.96E-04 | 2.06E-05 | 4.62E-10 | 2.50E-02 |
| Pu-238 | 0.00E+00 | 0.00E+00 | 2.30E-06 | 2.49E-06 | 1.24E-06 | 5.91E-07 | 5.16E-07 | 3.00E-07 | 7.67E-08 | 1.95E-08 | 9.20E-10 | 7.53E-06 |
| Pu-239 | 0.00E+00 | 0.00E+00 | 1.79E-07 | 1.94E-07 | 9.66E-08 | 4.60E-08 | 4.01E-08 | 2.33E-08 | 5.97E-09 | 1.52E-09 | 7.16E-11 | 5.86E-07 |
| Pu-240 | 0.00E+00 | 0.00E+00 | 1.93E-07 | 2.09E-07 | 1.04E-07 | 4.96E-08 | 4.33E-08 | 2.52E-08 | 6.44E-09 | 1.63E-09 | 7.72E-11 | 6.32E-07 |
| Pu-241 | 0.00E+00 | 0.00E+00 | 7.99E-05 | 8.64E-05 | 4.31E-05 | 2.05E-05 | 1.79E-05 | 1.04E-05 | 2.67E-06 | 6.77E-07 | 3.19E-08 | 2.62E-04 |
| Am-241 | 0.00E+00 | 0.00E+00 | 4.92E-08 | 5.32E-08 | 2.65E-08 | 1.26E-08 | 1.10E-08 | 6.41E-09 | 1.64E-09 | 4.16E-10 | 1.97E-11 | 1.61E-07 |
| Cm-242 | 0.00E+00 | 0.00E+00 | 1.16E-05 | 1.25E-05 | 6.23E-06 | 2.97E-06 | 2.59E-06 | 1.50E-06 | 3.84E-07 | 9.62E-08 | 4.07E-09 | 3.78E-05 |
| Cm-244 | 0.00E+00 | 0.00E+00 | 9.35E-07 | 1.01E-06 | 5.05E-07 | 2.40E-07 | 2.10E-07 | 1.22E-07 | 3.12E-08 | 7.91E-09 | 3.73E-10 | 3.06E-06 |

From RADTRAD Computer Run CL_Spray_800A_NoFiltration.psf

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**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 2 | System Nos. | Sheet 55 of 1000 |
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**Table 26**

| Post-LOCA Cont. Leakage Iodine & Aerosol Integrated Activity On CR Charcoal Filter | | | |
|---|---|---|---|
| **Isotope** | **0-720** | **Isotope** | **0-720** |
| Co-58 | 6.31E-05 | Te-131m | 1.76E-02 |
| Co-60 | 4.83E-05 | Te-132 | 1.85E-01 |
| Kr-85 | 0.00E+00 | I-131 | 9.98E-01 |
| Kr-85m | 0.00E+00 | I-132 | 5.13E-01 |
| Kr-87 | 0.00E+00 | I-133 | 1.86E+00 |
| Kr-88 | 0.00E+00 | I-134 | 1.82E-01 |
| Rb-86 | 1.72E-03 | I-135 | 1.34E+00 |
| Sr-89 | 5.91E-02 | Xe-133 | 0.00E+00 |
| Sr-90 | 6.39E-03 | Xe-135 | 0.00E+00 |
| Sr-91 | 6.09E-02 | Cs-134 | 1.81E-01 |
| Sr-92 | 3.38E-02 | Cs-136 | 4.96E-02 |
| Y-90 | 6.31E-05 | Cs-137 | 1.21E-01 |
| Y-91 | 7.24E-04 | Ba-139 | 1.84E-02 |
| Y-92 | 4.16E-04 | Ba-140 | 9.94E-02 |
| Y-93 | 7.27E-04 | La-140 | 9.50E-04 |
| Zr-95 | 9.32E-04 | La-141 | 4.98E-04 |
| Zr-97 | 8.12E-04 | La-142 | 2.37E-04 |
| Nb-95 | 9.38E-04 | Ce-141 | 2.29E-03 |
| Mo-99 | 1.23E-02 | Ce-143 | 2.10E-03 |
| Tc-99m | 7.30E-03 | Ce-144 | 1.85E-03 |
| Ru-103 | 1.03E-02 | Pr-143 | 8.90E-04 |
| Ru-105 | 3.86E-03 | Nd-147 | 3.72E-04 |
| Ru-106 | 3.89E-03 | Np-239 | 2.42E-02 |
| Rh-105 | 6.00E-03 | Pu-238 | 7.30E-06 |
| Sb-127 | 1.37E-02 | Pu-239 | 5.68E-07 |
| Sb-129 | 2.36E-02 | Pu-240 | 6.13E-07 |
| Te-127 | 1.06E-02 | Pu-241 | 2.54E-04 |
| Te-127m | 1.88E-03 | Am-241 | 1.56E-07 |
| Te-129 | 5.51E-03 | Cm-242 | 3.67E-05 |
| Te-129m | 6.27E-03 | Cm-244 | 2.97E-06 |

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**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 2 | System Nos. | Sheet 56 of 1000 |
|---|---|---|---|---|

**Table 27**

| Post-LOCA ESF Leakage Activity in CR With Charcoal/HEPA Filters (Ci) | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| **Isotope** | **0-0.5** | **0.5-1.8** | **1.8-2** | **2-5** | **5-8** | **8-24** | **24-96** | **96-720** | **Total** |
| I-131 | 6.86E-04 | 3.00E-02 | 3.21E-02 | 2.22E-02 | 2.20E-02 | 1.02E-02 | 2.04E-03 | 1.43E-04 | 1.19E-01 |
| I-132 | 8.54E-04 | 2.53E-02 | 2.56E-02 | 7.25E-03 | 2.94E-03 | 1.16E-05 | 0.00E+00 | 0.00E+00 | 6.20E-02 |
| I-133 | 1.41E-03 | 5.94E-02 | 6.33E-02 | 4.01E-02 | 3.63E-02 | 1.04E-02 | 2.46E-04 | 0.00E+00 | 2.11E-01 |
| I-134 | 1.08E-03 | 1.69E-02 | 1.55E-02 | 1.01E-03 | 9.42E-05 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 3.46E-02 |
| I-135 | 1.27E-03 | 4.87E-02 | 5.12E-02 | 2.61E-02 | 1.91E-02 | 1.75E-03 | 2.39E-07 | 0.00E+00 | 1.48E-01 |

From RADTRAD Run ESF_Leakage

**Table 28**

| Post-LOCA ESF Leakage Activity in CR Without Charcoal/HEPA Filters (Ci) | | | | | | | | | | Net Activity C/HEPA Fltr |
|---|---|---|---|---|---|---|---|---|---|---|
| **Isotope** | **0-0.5** | **0.5-1.8** | **1.8-2** | **2-5** | **5-8** | **8-24** | **24-96** | **96-720** | **Total** | **(Ci)** |
| I-131 | 6.86E-04 | 4.37E-01 | 5.03E-01 | 4.26E-01 | 4.21E-01 | 1.94E-01 | 3.89E-02 | 2.72E-03 | 2.02E+00 | 1.91E+00 |
| I-132 | 8.54E-04 | 3.70E-01 | 4.01E-01 | 1.39E-01 | 5.62E-02 | 2.21E-04 | 0.00E+00 | 0.00E+00 | 9.67E-01 | 9.05E-01 |
| I-133 | 1.41E-03 | 8.67E-01 | 9.92E-01 | 7.68E-01 | 6.95E-01 | 1.99E-01 | 4.69E-03 | 0.00E+00 | 3.53E+00 | 3.32E+00 |
| I-134 | 1.08E-03 | 2.47E-01 | 2.42E-01 | 1.94E-02 | 1.81E-03 | 2.83E-09 | 0.00E+00 | 0.00E+00 | 5.11E-01 | 4.77E-01 |
| I-135 | 1.27E-03 | 7.11E-01 | 8.02E-01 | 5.01E-01 | 3.66E-01 | 3.33E-02 | 4.55E-06 | 0.00E+00 | 2.41E+00 | 2.27E+00 |

From RADTRAD Run ESF_Leakage_NoFiltration

AmerGen

**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 2 | System Nos. | Sheet 57 of 1000 |
|---|---|---|---|---|

**Table 29**

| Post-LOCA BWST Leakage Activity in CR With Charcoal/HEPA Filters (Ci) | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| **Isotope** | **0-0.5** | **0.5-1.8** | **1.8-2** | **2-5** | **5-8** | **8-24** | **24-96** | **96-720** | **Total** |
| I-131 | 6.32E-10 | 4.02E-06 | 5.26E-06 | 1.51E-05 | 1.23E-05 | 1.45E-05 | 2.67E-05 | 1.17E-05 | 8.95E-05 |
| I-132 | 7.88E-10 | 3.40E-06 | 4.19E-06 | 4.92E-06 | 1.65E-06 | 1.65E-08 | 0.00E+00 | 0.00E+00 | 1.42E-05 |
| I-133 | 1.30E-09 | 7.97E-06 | 1.04E-05 | 2.72E-05 | 2.03E-05 | 1.49E-05 | 3.21E-06 | 0.00E+00 | 8.40E-05 |
| I-134 | 9.92E-10 | 2.27E-06 | 2.54E-06 | 6.86E-07 | 5.29E-08 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 5.54E-06 |
| I-135 | 1.17E-09 | 6.54E-06 | 8.38E-06 | 1.77E-05 | 1.07E-05 | 2.49E-06 | 3.12E-09 | 0.00E+00 | 4.59E-05 |

From RADTRAD Run BWST_Leakage

**Table 30**

| Post-LOCA BWST Leakage Activity in CR Without Charcoal/HEPA Filters (Ci) | | | | | | | | | | | Net Activity C/HEPA Fltr |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Isotope** | **0-0.5** | **0.5-1.8** | **1.8-2** | **2.0-2.5** | **2.5-2.8** | **2.8-8** | **8-24** | **24-96** | **96-720** | **Total** | **(Ci)** |
| I-131 | 6.32E-10 | 5.04E-05 | 6.90E-05 | 8.51E-05 | 1.02E-04 | 2.27E-04 | 2.72E-04 | 5.05E-04 | 2.22E-04 | 1.53E-03 | 1.44E-03 |
| I-132 | 7.88E-10 | 4.26E-05 | 5.50E-05 | 5.84E-05 | 6.43E-05 | 3.03E-05 | 3.10E-07 | 0.00E+00 | 0.00E+00 | 2.51E-04 | 2.37E-04 |
| I-133 | 1.30E-09 | 9.99E-05 | 1.36E-04 | 1.65E-04 | 1.97E-04 | 3.74E-04 | 2.79E-04 | 6.08E-05 | 0.00E+00 | 1.31E-03 | 1.23E-03 |
| I-134 | 9.92E-10 | 2.84E-05 | 3.32E-05 | 2.76E-05 | 2.63E-05 | 9.72E-07 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 1.17E-04 | 1.11E-04 |
| I-135 | 1.17E-09 | 8.19E-05 | 1.10E-04 | 1.29E-04 | 1.50E-04 | 1.97E-04 | 4.67E-05 | 5.91E-08 | 0.00E+00 | 7.15E-04 | 6.69E-04 |

From RADTRAD Run BWST_Leakage_NoFiltration

AmerGen

**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 2 | System Nos. | Sheet 58 of 1000 |
|---|---|---|---|---|

**Table 31**
**Total Activities on CR Filters**

| Isotope | Cont Leakage A | ESF Leakage B | BWST Leakage C | Activity (Ci) D=A+B+C |
|---|---|---|---|---|
| Am-241 | 1.56E-07 | 0.00E+00 | 0.00E+00 | 1.56E-07 |
| Ba-139 | 1.84E-02 | 0.00E+00 | 0.00E+00 | 1.84E-02 |
| Ba-140 | 9.94E-02 | 0.00E+00 | 0.00E+00 | 9.94E-02 |
| Ce-141 | 2.29E-03 | 0.00E+00 | 0.00E+00 | 2.29E-03 |
| Ce-143 | 2.10E-03 | 0.00E+00 | 0.00E+00 | 2.10E-03 |
| Ce-144 | 1.85E-03 | 0.00E+00 | 0.00E+00 | 1.85E-03 |
| Cm-242 | 3.67E-05 | 0.00E+00 | 0.00E+00 | 3.67E-05 |
| Cm-244 | 2.97E-06 | 0.00E+00 | 0.00E+00 | 2.97E-06 |
| Co-58 | 6.31E-05 | 0.00E+00 | 0.00E+00 | 6.31E-05 |
| Co-60 | 4.83E-05 | 0.00E+00 | 0.00E+00 | 4.83E-05 |
| Cs-134 | 1.81E-01 | 0.00E+00 | 0.00E+00 | 1.81E-01 |
| Cs-136 | 4.96E-02 | 0.00E+00 | 0.00E+00 | 4.96E-02 |
| Cs-137 | 1.21E-01 | 0.00E+00 | 0.00E+00 | 1.21E-01 |
| I-131 | 9.98E-01 | 1.91E+00 | 1.44E-03 | 2.90E+00 |
| I-132 | 5.13E-01 | 9.05E-01 | 2.37E-04 | 1.42E+00 |
| I-133 | 1.86E+00 | 3.32E+00 | 1.23E-03 | 5.18E+00 |
| I-134 | 1.82E-01 | 4.77E-01 | 1.11E-04 | 6.59E-01 |
| I-135 | 1.34E+00 | 2.27E+00 | 6.69E-04 | 3.61E+00 |
| Kr-85 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 |
| Kr-85m | 1.41E+00 | 0.00E+00 | 0.00E+00 | 1.41E+00 |
| Kr-87 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 |
| Kr-88 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 |
| La-140 | 9.50E-04 | 0.00E+00 | 0.00E+00 | 9.50E-04 |
| La-141 | 4.98E-04 | 0.00E+00 | 0.00E+00 | 4.98E-04 |
| La-142 | 2.37E-04 | 0.00E+00 | 0.00E+00 | 2.37E-04 |
| Mo-99 | 1.23E-02 | 0.00E+00 | 0.00E+00 | 1.23E-02 |
| Nb-95 | 9.38E-04 | 0.00E+00 | 0.00E+00 | 9.38E-04 |
| Nd-147 | 3.72E-04 | 0.00E+00 | 0.00E+00 | 3.72E-04 |
| Np-239 | 2.42E-02 | 0.00E+00 | 0.00E+00 | 2.42E-02 |
| Pr-143 | 8.90E-04 | 0.00E+00 | 0.00E+00 | 8.90E-04 |

AmerGen

**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 2 | System Nos. | Sheet 59 of 1000 |
|---|---|---|---|---|

**Table 31 (Cont.)**
**Total Activities on CR Filters**

| Isotope | Cont Leakage A | ESF Leakage B | BWST Leakage C | Activity (Ci) D=A+B+C |
|---|---|---|---|---|
| Pu-238 | 7.30E-06 | 0.00E+00 | 0.00E+00 | 7.30E-06 |
| Pu-239 | 5.68E-07 | 0.00E+00 | 0.00E+00 | 5.68E-07 |
| Pu-240 | 6.13E-07 | 0.00E+00 | 0.00E+00 | 6.13E-07 |
| Pu-241 | 2.54E-04 | 0.00E+00 | 0.00E+00 | 2.54E-04 |
| Rb-86 | 1.72E-03 | 0.00E+00 | 0.00E+00 | 1.72E-03 |
| Rh-105 | 6.00E-03 | 0.00E+00 | 0.00E+00 | 6.00E-03 |
| Ru-103 | 1.03E-02 | 0.00E+00 | 0.00E+00 | 1.03E-02 |
| Ru-105 | 3.86E-03 | 0.00E+00 | 0.00E+00 | 3.86E-03 |
| Ru-106 | 3.89E-03 | 0.00E+00 | 0.00E+00 | 3.89E-03 |
| Sb-127 | 1.37E-02 | 0.00E+00 | 0.00E+00 | 1.37E-02 |
| Sb-129 | 2.36E-02 | 0.00E+00 | 0.00E+00 | 2.36E-02 |
| Sr-89 | 5.91E-02 | 0.00E+00 | 0.00E+00 | 5.91E-02 |
| Sr-90 | 6.39E-03 | 0.00E+00 | 0.00E+00 | 6.39E-03 |
| Sr-91 | 6.09E-02 | 0.00E+00 | 0.00E+00 | 6.09E-02 |
| Sr-92 | 3.38E-02 | 0.00E+00 | 0.00E+00 | 3.38E-02 |
| Tc-99m | 7.30E-03 | 0.00E+00 | 0.00E+00 | 7.30E-03 |
| Te-127 | 1.06E-02 | 0.00E+00 | 0.00E+00 | 1.06E-02 |
| Te-127m | 1.88E-03 | 0.00E+00 | 0.00E+00 | 1.88E-03 |
| Te-129 | 5.51E-03 | 0.00E+00 | 0.00E+00 | 5.51E-03 |
| Te-129m | 6.27E-03 | 0.00E+00 | 0.00E+00 | 6.27E-03 |
| Te-131m | 1.76E-02 | 0.00E+00 | 0.00E+00 | 1.76E-02 |
| Te-132 | 1.85E-01 | 0.00E+00 | 0.00E+00 | 1.85E-01 |
| Xe-133 | 5.24E-03 | 0.00E+00 | 0.00E+00 | 5.24E-03 |
| Xe-135 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 |
| Y-90 | 6.31E-05 | 0.00E+00 | 0.00E+00 | 6.31E-05 |
| Y-91 | 7.24E-04 | 0.00E+00 | 0.00E+00 | 7.24E-04 |
| Y-92 | 4.16E-04 | 0.00E+00 | 0.00E+00 | 4.16E-04 |
| Y-93 | 7.27E-04 | 0.00E+00 | 0.00E+00 | 7.27E-04 |
| Zr-95 | 9.32E-04 | 0.00E+00 | 0.00E+00 | 9.32E-04 |
| Zr-97 | 8.12E-04 | 0.00E+00 | 0.00E+00 | 8.12E-04 |

AmerGen

**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 2 | System Nos. | Sheet 60 of 1000 |
|---|---|---|---|---|

**Table 32**

**Post-LOCA Containment Leakage Activity in TSC WITHOUT Charcoal/HEPA Filters**

**(Ci)**

| | 0.0 - 0.5 | 0.5 - 0.8 | 0.8 - 0.9167 | 0.9167 - 1.0 | 1.0 - 1.8 | 1.8 - 2.0 | 2.0 - 2.8 | 2.8 - 2.92 | 2.92 - 3.82 | 3.82 - 4.0 | 4.0 - 8.0 | 8.0 - 24 | 24 - 96 | 96 - 720 | TOTAL |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Co-58 | | 6.81E-08 | 1.25E-07 | 1.73E-07 | 8.36E-07 | 9.98E-07 | 1.00E-06 | 9.57E-07 | 6.01E-07 | 5.41E-07 | 2.55E-07 | 6.03E-08 | 1.34E-08 | 6.12E-10 | 5.63E-06 |
| Co-60 | | 5.21E-08 | 9.53E-08 | 1.32E-07 | 6.40E-07 | 7.64E-07 | 7.67E-07 | 7.34E-07 | 4.61E-07 | 4.15E-07 | 1.96E-07 | 4.66E-08 | 1.06E-08 | 6.22E-10 | 4.31E-06 |
| Kr-85 | 1.66E-05 | 7.95E-05 | 1.26E-04 | 1.67E-04 | 8.17E-04 | 1.02E-03 | 1.26E-03 | 1.34E-03 | 1.68E-03 | 1.72E-03 | 1.85E-03 | 7.90E-04 | 2.52E-04 | 2.16E-04 | 1.14E-02 |
| Kr-85m | 3.34E-04 | 1.47E-03 | 2.27E-03 | 2.94E-03 | 1.21E-02 | 1.46E-02 | 1.57E-02 | 1.64E-02 | 1.77E-02 | 1.76E-02 | 1.02E-02 | 3.65E-04 | 1.69E-09 | | 1.12E-01 |
| Kr-87 | 5.14E-04 | 1.82E-03 | 2.61E-03 | 3.22E-03 | 8.64E-03 | 9.42E-03 | 7.28E-03 | 7.18E-03 | 5.35E-03 | 4.94E-03 | 5.97E-04 | 4.15E-08 | | | 5.16E-02 |
| Kr-88 | 8.79E-04 | 3.68E-03 | 5.58E-03 | 7.14E-03 | 2.66E-02 | 3.13E-02 | 3.14E-02 | 3.23E-02 | 3.20E-02 | 3.12E-02 | 1.26E-02 | 1.09E-04 | | | 2.15E-01 |
| Rb-86 | 1.94E-06 | 5.21E-06 | 7.05E-06 | 8.50E-06 | 2.59E-05 | 2.98E-05 | 2.89E-05 | 2.74E-05 | 1.66E-05 | 1.49E-05 | 6.70E-06 | 1.56E-06 | 3.19E-07 | 7.15E-09 | 1.75E-04 |
| Sr-89 | | 6.38E-05 | 1.17E-04 | 1.62E-04 | 7.84E-04 | 9.35E-04 | 9.38E-04 | 8.97E-04 | 5.63E-04 | 5.07E-04 | 2.38E-04 | 5.63E-05 | 1.24E-05 | 5.10E-07 | 5.27E-03 |
| Sr-90 | | 6.89E-06 | 1.26E-05 | 1.75E-05 | 8.47E-05 | 1.01E-04 | 1.01E-04 | 9.70E-05 | 6.09E-05 | 5.49E-05 | 2.59E-05 | 6.16E-06 | 1.41E-06 | 8.29E-08 | 5.70E-04 |
| Sr-91 | | 7.85E-05 | 1.42E-04 | 1.95E-04 | 8.73E-04 | 1.02E-03 | 9.63E-04 | 9.12E-04 | 5.34E-04 | 4.75E-04 | 1.66E-04 | 1.23E-05 | 1.48E-08 | | 5.37E-03 |
| Sr-92 | | 6.42E-05 | 1.13E-04 | 1.52E-04 | 5.55E-04 | 6.20E-04 | 5.00E-04 | 4.62E-04 | 2.27E-04 | 1.95E-04 | 3.26E-05 | 1.30E-07 | | | 2.92E-03 |
| Y-90 | | 7.00E-08 | 1.28E-07 | 1.77E-07 | 8.48E-07 | 1.01E-06 | 1.00E-06 | 9.58E-07 | 5.96E-07 | 5.35E-07 | 2.41E-07 | 4.84E-08 | 5.08E-09 | | 5.62E-06 |
| Y-91 | | 7.81E-07 | 1.43E-06 | 1.98E-06 | 9.59E-06 | 1.14E-05 | 1.15E-05 | 1.10E-05 | 6.90E-06 | 6.21E-06 | 2.92E-06 | 6.91E-07 | 1.52E-07 | 6.60E-09 | 6.46E-05 |
| Y-92 | | 6.99E-07 | 1.24E-06 | 1.68E-06 | 6.56E-06 | 7.44E-06 | 6.32E-06 | 5.89E-06 | 3.07E-06 | 2.66E-06 | 5.67E-07 | 5.89E-09 | | | 3.61E-05 |
| Y-93 | | 9.28E-07 | 1.68E-06 | 2.31E-06 | 1.04E-05 | 1.22E-05 | 1.15E-05 | 1.09E-05 | 6.41E-06 | 5.70E-06 | 2.03E-06 | 1.62E-07 | 2.64E-10 | | 6.42E-05 |
| Zr-95 | | 1.01E-06 | 1.84E-06 | 2.55E-06 | 1.24E-05 | 1.47E-05 | 1.48E-05 | 1.41E-05 | 8.88E-06 | 8.00E-06 | 3.76E-06 | 8.91E-07 | 1.97E-07 | 8.77E-09 | 8.32E-05 |
| Zr-97 | | 9.71E-07 | 1.76E-06 | 2.44E-06 | 1.13E-05 | 1.33E-05 | 1.29E-05 | 1.23E-05 | 7.41E-06 | 6.62E-06 | 2.64E-06 | 3.27E-07 | 3.90E-09 | | 7.19E-05 |
| Nb-95 | | 1.01E-06 | 1.85E-06 | 2.57E-06 | 1.24E-05 | 1.48E-05 | 1.49E-05 | 1.42E-05 | 8.94E-06 | 8.05E-06 | 3.78E-06 | 8.89E-07 | 1.92E-07 | 6.77E-09 | 8.37E-05 |
| Mo-99 | | 1.36E-05 | 2.49E-05 | 3.45E-05 | 1.65E-04 | 1.96E-04 | 1.95E-04 | 1.87E-04 | 1.16E-04 | 1.04E-04 | 4.71E-05 | 9.50E-06 | 1.02E-06 | 8.56E-11 | 1.09E-03 |
| Tc-99m | | 1.03E-05 | 1.85E-05 | 2.54E-05 | 1.08E-04 | 1.25E-04 | 1.14E-04 | 1.07E-04 | 6.04E-05 | 5.33E-05 | 1.57E-05 | 5.94E-07 | | | 6.40E-04 |
| Ru-103 | | 1.11E-05 | 2.03E-05 | 2.82E-05 | 1.36E-04 | 1.63E-04 | 1.63E-04 | 1.56E-04 | 9.80E-05 | 8.82E-05 | 4.15E-05 | 9.77E-06 | 2.12E-06 | 7.89E-08 | 9.18E-04 |
| Ru-105 | | 5.98E-06 | 1.07E-05 | 1.45E-05 | 5.92E-05 | 6.79E-05 | 5.96E-05 | 5.58E-05 | 3.02E-05 | 2.64E-05 | 6.61E-06 | 1.30E-07 | | | 3.37E-04 |
| Ru-106 | | 4.19E-06 | 7.66E-06 | 1.06E-05 | 5.15E-05 | 6.14E-05 | 6.16E-05 | 5.90E-05 | 3.70E-05 | 3.33E-05 | 1.57E-05 | 3.74E-06 | 8.51E-07 | 4.78E-08 | 3.47E-04 |
| Rh-105 | | 6.81E-06 | 1.24E-05 | 1.72E-05 | 8.14E-05 | 9.67E-05 | 9.54E-05 | 9.10E-05 | 5.61E-05 | 5.03E-05 | 2.19E-05 | 3.82E-06 | 2.13E-07 | | 5.33E-04 |
| Sb-127 | | 1.51E-05 | 2.75E-05 | 3.82E-05 | 1.83E-04 | 2.18E-04 | 2.18E-04 | 2.08E-04 | 1.30E-04 | 1.17E-04 | 5.33E-05 | 1.13E-05 | 1.50E-06 | 8.21E-10 | 1.22E-03 |
| Sb-129 | | 3.69E-05 | 6.58E-05 | 8.96E-05 | 3.64E-04 | 4.16E-04 | 3.64E-04 | 3.41E-04 | 1.84E-04 | 1.60E-04 | 3.94E-05 | 7.21E-07 | | | 2.06E-03 |
| Te-127 | | 1.36E-05 | 2.47E-05 | 3.39E-05 | 1.51E-04 | 1.77E-04 | 1.67E-04 | 1.58E-04 | 9.24E-05 | 8.21E-05 | 2.86E-05 | 2.09E-06 | 2.29E-09 | | 9.31E-04 |
| Te-127m | | 2.03E-06 | 3.70E-06 | 5.14E-06 | 2.49E-05 | 2.97E-05 | 2.98E-05 | 2.85E-05 | 1.79E-05 | 1.61E-05 | 7.59E-06 | 1.80E-06 | 4.04E-07 | 2.02E-08 | 1.68E-04 |
| Te-129 | | 1.99E-05 | 3.31E-05 | 4.29E-05 | 1.09E-04 | 1.11E-04 | 6.71E-05 | 5.93E-05 | 2.10E-05 | 1.69E-05 | 7.06E-07 | | | | 4.81E-04 |
| Te-129m | | 6.78E-06 | 1.24E-05 | 1.72E-05 | 8.32E-05 | 9.92E-05 | 9.95E-05 | 9.52E-05 | 5.97E-05 | 5.38E-05 | 2.53E-05 | 5.94E-06 | 1.28E-06 | 4.40E-08 | 5.59E-04 |

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**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 2 | System Nos. | Sheet 61 of 1000 |
|---|---|---|---|---|

**Table 32 (Continued)**
**Post-LOCA Containment Leakage Activity in TSC WITHOUT Charcoal/HEPA Filters**

| | 0.0 - 0.5 | 0.5 - 0.8 | 0.8 - 0.9167 | 0.9167 - 1.0 | 1.0 - 1.8 | 1.8 - 2.0 | 2.0 - 2.8 | 2.8 - 2.92 | 2.92 - 3.82 | 3.82 - 4.0 | 4.0 - 8.0 | 8.0 - 24 | 24 - 96 | 96 - 720 | TOTAL |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Te-131m | | 2.02E-05 | 3.67E-05 | 5.08E-05 | 2.40E-04 | 2.85E-04 | 2.80E-04 | 2.67E-04 | 1.64E-04 | 1.47E-04 | 6.31E-05 | 1.04E-05 | 4.50E-07 | | 1.56E-03 |
| Te-132 | | 2.05E-04 | 3.74E-04 | 5.18E-04 | 2.49E-03 | 2.96E-03 | 2.95E-03 | 2.82E-03 | 1.75E-03 | 1.58E-03 | 7.17E-04 | 1.48E-04 | 1.79E-05 | 4.19E-09 | 1.65E-02 |
| I-131 | 8.35E-04 | 2.53E-03 | 3.56E-03 | 4.38E-03 | 1.46E-02 | 1.69E-02 | 1.65E-02 | 1.56E-02 | 9.56E-03 | 8.60E-03 | 4.00E-03 | 9.49E-04 | 1.75E-04 | 3.43E-06 | 9.82E-02 |
| I-132 | 9.92E-04 | 2.60E-03 | 3.45E-03 | 4.09E-03 | 9.63E-03 | 1.03E-02 | 7.77E-03 | 7.08E-03 | 3.24E-03 | 2.75E-03 | 3.80E-04 | 7.69E-07 | | | 5.23E-02 |
| I-133 | 1.71E-03 | 5.11E-03 | 7.15E-03 | 8.77E-03 | 2.82E-02 | 3.24E-02 | 3.08E-02 | 2.91E-02 | 1.73E-02 | 1.55E-02 | 6.37E-03 | 9.40E-04 | 2.04E-05 | | 1.83E-01 |
| I-134 | 1.16E-03 | 2.40E-03 | 2.92E-03 | 3.26E-03 | 4.42E-03 | 4.18E-03 | 2.06E-03 | 1.76E-03 | 5.00E-04 | 3.87E-04 | 7.24E-06 | | | | 2.31E-02 |
| I-135 | 1.52E-03 | 4.39E-03 | 6.05E-03 | 7.36E-03 | 2.17E-02 | 2.46E-02 | 2.19E-02 | 2.05E-02 | 1.14E-02 | 1.00E-02 | 3.09E-03 | 1.45E-04 | 1.82E-08 | | 1.33E-01 |
| Xe-133 | 2.37E-03 | 1.13E-02 | 1.79E-02 | 2.36E-02 | 1.15E-01 | 1.44E-01 | 1.77E-01 | 1.88E-01 | 2.35E-01 | 2.39E-01 | 2.52E-01 | 9.85E-02 | 2.12E-02 | 5.85E-04 | 1.53E+00 |
| Xe-135 | 8.32E-04 | 3.82E-03 | 5.98E-03 | 7.82E-03 | 3.52E-02 | 4.32E-02 | 5.00E-02 | 5.26E-02 | 6.13E-02 | 6.16E-02 | 4.90E-02 | 6.16E-03 | 8.13E-06 | | 3.78E-01 |
| Cs-134 | 2.02E-04 | 5.45E-04 | 7.37E-04 | 8.89E-04 | 2.71E-03 | 3.13E-03 | 3.03E-03 | 2.88E-03 | 1.74E-03 | 1.56E-03 | 7.09E-04 | 1.69E-04 | 3.85E-05 | 2.22E-06 | 1.83E-02 |
| Cs-136 | 5.59E-05 | 1.50E-04 | 2.03E-04 | 2.45E-04 | 7.45E-04 | 8.59E-04 | 8.32E-04 | 7.89E-04 | 4.77E-04 | 4.27E-04 | 1.92E-04 | 4.42E-05 | 8.62E-06 | 1.28E-07 | 5.03E-03 |
| Cs-137 | 1.36E-04 | 3.65E-04 | 4.93E-04 | 5.95E-04 | 1.82E-03 | 2.09E-03 | 2.03E-03 | 1.93E-03 | 1.17E-03 | 1.05E-03 | 4.75E-04 | 1.13E-04 | 2.59E-05 | 1.52E-06 | 1.23E-02 |
| Ba-139 | | 5.61E-05 | 9.48E-05 | 1.24E-04 | 3.48E-04 | 3.65E-04 | 2.39E-04 | 2.13E-04 | 8.28E-05 | 6.79E-05 | 4.16E-06 | | | | 1.60E-03 |
| Ba-140 | | 1.08E-04 | 1.97E-04 | 2.73E-04 | 1.32E-03 | 1.58E-03 | 1.58E-03 | 1.51E-03 | 9.46E-04 | 8.52E-04 | 3.98E-04 | 9.15E-05 | 1.78E-05 | 2.55E-07 | 8.87E-03 |
| La-140 | | 1.07E-06 | 1.96E-06 | 2.71E-06 | 1.29E-05 | 1.53E-05 | 1.51E-05 | 1.44E-05 | 8.91E-06 | 8.00E-06 | 3.52E-06 | 6.36E-07 | 4.22E-08 | | 8.45E-05 |
| La-141 | | 8.03E-07 | 1.43E-06 | 1.94E-06 | 7.74E-06 | 8.83E-06 | 7.62E-06 | 7.12E-06 | 3.78E-06 | 3.29E-06 | 7.58E-07 | 1.07E-08 | | | 4.33E-05 |
| La-142 | | 6.55E-07 | 1.12E-06 | 1.47E-06 | 4.36E-06 | 4.64E-06 | 3.17E-06 | 2.86E-06 | 1.17E-06 | 9.66E-07 | 7.34E-08 | | | | 2.05E-05 |
| Ce-141 | | 2.48E-06 | 4.53E-06 | 6.28E-06 | 3.04E-05 | 3.63E-05 | 3.64E-05 | 3.48E-05 | 2.18E-05 | 1.97E-05 | 9.23E-06 | 2.17E-06 | 4.65E-07 | 1.58E-08 | 2.04E-04 |
| Ce-143 | | 2.39E-06 | 4.36E-06 | 6.04E-06 | 2.86E-05 | 3.39E-05 | 3.34E-05 | 3.19E-05 | 1.96E-05 | 1.76E-05 | 7.62E-06 | 1.30E-06 | 6.54E-08 | | 1.87E-04 |
| Ce-144 | | 2.00E-06 | 3.65E-06 | 5.06E-06 | 2.45E-05 | 2.93E-05 | 2.94E-05 | 2.81E-05 | 1.76E-05 | 1.59E-05 | 7.49E-06 | 1.78E-06 | 4.05E-07 | 2.24E-08 | 1.65E-04 |
| Pr-143 | | 9.66E-07 | 1.77E-06 | 2.45E-06 | 1.18E-05 | 1.41E-05 | 1.41E-05 | 1.35E-05 | 8.47E-06 | 7.63E-06 | 3.56E-06 | 8.21E-07 | 1.61E-07 | 2.51E-09 | 7.94E-05 |
| Nd-147 | | 4.04E-07 | 7.38E-07 | 1.02E-06 | 4.94E-06 | 5.89E-06 | 5.90E-06 | 5.64E-06 | 3.53E-06 | 3.18E-06 | 1.48E-06 | 3.39E-07 | 6.42E-08 | 7.33E-10 | 3.31E-05 |
| Np-239 | | 2.70E-05 | 4.92E-05 | 6.82E-05 | 3.26E-04 | 3.88E-04 | 3.85E-04 | 3.68E-04 | 2.28E-04 | 2.05E-04 | 9.19E-05 | 1.80E-05 | 1.70E-06 | 4.77E-11 | 2.15E-03 |
| Pu-238 | | 7.87E-09 | 1.44E-08 | 2.00E-08 | 9.67E-08 | 1.15E-07 | 1.16E-07 | 1.11E-07 | 6.96E-08 | 6.27E-08 | 2.95E-08 | 7.04E-09 | 1.61E-09 | 9.49E-11 | 6.52E-07 |
| Pu-239 | | 6.13E-10 | 1.12E-09 | 1.55E-09 | 7.53E-09 | 8.99E-09 | 9.02E-09 | 8.62E-09 | 5.42E-09 | 4.88E-09 | 2.30E-09 | 5.48E-10 | 1.25E-10 | 7.39E-12 | 5.07E-08 |
| Pu-240 | | 6.61E-10 | 1.21E-09 | 1.68E-09 | 8.12E-09 | 9.69E-09 | 9.72E-09 | 9.30E-09 | 5.84E-09 | 5.26E-09 | 2.48E-09 | 5.91E-10 | 1.35E-10 | 7.97E-12 | 5.47E-08 |
| Pu-241 | | 2.74E-07 | 5.00E-07 | 6.94E-07 | 3.36E-06 | 4.01E-06 | 4.03E-06 | 3.85E-06 | 2.42E-06 | 2.18E-06 | 1.03E-06 | 2.45E-07 | 5.60E-08 | 3.29E-09 | 2.27E-05 |
| Am-241 | | 1.68E-10 | 3.08E-10 | 4.27E-10 | 2.07E-09 | 2.47E-09 | 2.48E-09 | 2.37E-09 | 1.49E-09 | 1.34E-09 | 6.32E-10 | 1.51E-10 | 3.44E-11 | 2.03E-12 | 1.39E-08 |
| Cm-242 | | 3.96E-08 | 7.23E-08 | 1.00E-07 | 4.86E-07 | 5.80E-07 | 5.82E-07 | 5.56E-07 | 3.49E-07 | 3.15E-07 | 1.48E-07 | 3.52E-08 | 7.96E-09 | 4.20E-10 | 3.27E-06 |
| Cm-244 | | 3.20E-09 | 5.85E-09 | 8.12E-09 | 3.93E-08 | 4.69E-08 | 4.71E-08 | 4.50E-08 | 2.83E-08 | 2.55E-08 | 1.20E-08 | 2.86E-09 | 6.54E-10 | 3.85E-11 | 2.65E-07 |

**From RADTRAD File CL_TSC_NO Filtration.o0**

AmerGen

**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 2 | System Nos. | Sheet 62 of 1000 |
|---|---|---|---|---|

**Table 33**

**Post-LOCA Containment Leakage Activity in TSC WITH Charcoal/HEPA Filters**

**(Ci)**

| | 0.0 - 0.5 | 0.5 - 0.8 | 0.8 - 0.9167 | 0.9167 - 1.0 | 1.0 - 1.8 | 1.8 - 2.0 | 2.0 - 2.8 | 2.8 - 2.92 | 2.92 - 3.82 | 3.82 - 4.0 | 4.0 - 8.0 | 8.0 - 24 | 24 - 96 | 96 - 720 | TOTAL |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Co-58 | | 6.81E-08 | 1.25E-07 | 1.73E-07 | 8.36E-07 | 9.98E-07 | 1.00E-06 | 7.07E-07 | 8.11E-08 | 6.05E-08 | 2.83E-08 | 6.78E-09 | 1.53E-09 | 6.99E-11 | 4.09E-06 |
| Co-60 | | 5.21E-08 | 9.53E-08 | 1.32E-07 | 6.40E-07 | 7.64E-07 | 7.67E-07 | 5.42E-07 | 6.22E-08 | 4.64E-08 | 2.17E-08 | 5.24E-09 | 1.22E-09 | 7.10E-11 | 3.13E-06 |
| Kr-85 | 1.66E-05 | 7.95E-05 | 1.26E-04 | 1.67E-04 | 8.17E-04 | 1.02E-03 | 1.26E-03 | 1.34E-03 | 1.68E-03 | 1.72E-03 | 1.85E-03 | 7.90E-04 | 2.52E-04 | 2.16E-04 | 1.14E-02 |
| Kr-85m | 3.34E-04 | 1.47E-03 | 2.27E-03 | 2.94E-03 | 1.21E-02 | 1.46E-02 | 1.57E-02 | 1.64E-02 | 1.77E-02 | 1.76E-02 | 1.02E-02 | 3.65E-04 | 1.69E-09 | | 1.12E-01 |
| Kr-87 | 5.14E-04 | 1.82E-03 | 2.61E-03 | 3.22E-03 | 8.64E-03 | 9.42E-03 | 7.28E-03 | 7.18E-03 | 5.35E-03 | 4.94E-03 | 5.97E-04 | 4.15E-08 | | | 5.16E-02 |
| Kr-88 | 8.79E-04 | 3.68E-03 | 5.58E-03 | 7.14E-03 | 2.66E-02 | 3.13E-02 | 3.14E-02 | 3.23E-02 | 3.20E-02 | 3.12E-02 | 1.26E-02 | 1.09E-04 | | | 2.15E-01 |
| Rb-86 | 1.94E-06 | 5.21E-06 | 7.05E-06 | 8.50E-06 | 2.59E-05 | 2.98E-05 | 2.89E-05 | 2.04E-05 | 2.24E-06 | 1.65E-06 | 7.43E-07 | 1.75E-07 | 3.64E-08 | 8.17E-10 | 1.33E-04 |
| Sr-89 | | 6.38E-05 | 1.17E-04 | 1.62E-04 | 7.84E-04 | 9.35E-04 | 9.38E-04 | 6.62E-04 | 7.60E-05 | 5.67E-05 | 2.65E-05 | 6.33E-06 | 1.41E-06 | 5.83E-08 | 3.83E-03 |
| Sr-90 | | 6.89E-06 | 1.26E-05 | 1.75E-05 | 8.47E-05 | 1.01E-04 | 1.01E-04 | 7.16E-05 | 8.22E-06 | 6.13E-06 | 2.87E-06 | 6.92E-07 | 1.61E-07 | 9.47E-09 | 4.14E-04 |
| Sr-91 | | 7.85E-05 | 1.42E-04 | 1.95E-04 | 8.73E-04 | 1.02E-03 | 9.63E-04 | 6.74E-04 | 7.21E-05 | 5.30E-05 | 1.85E-05 | 1.39E-06 | 1.69E-09 | | 4.09E-03 |
| Sr-92 | | 6.42E-05 | 1.13E-04 | 1.52E-04 | 5.55E-04 | 6.20E-04 | 5.00E-04 | 3.42E-04 | 3.07E-05 | 2.17E-05 | 3.61E-06 | 1.46E-08 | | | 2.40E-03 |
| Y-90 | | 7.00E-08 | 1.28E-07 | 1.77E-07 | 8.48E-07 | 1.01E-06 | 1.00E-06 | 7.08E-07 | 8.04E-08 | 5.98E-08 | 2.68E-08 | 5.44E-09 | 5.80E-10 | | 4.12E-06 |
| Y-91 | | 7.81E-07 | 1.43E-06 | 1.98E-06 | 9.59E-06 | 1.14E-05 | 1.15E-05 | 8.11E-06 | 9.30E-07 | 6.94E-07 | 3.24E-07 | 7.76E-08 | 1.74E-08 | 7.55E-10 | 4.69E-05 |
| Y-92 | | 6.99E-07 | 1.24E-06 | 1.68E-06 | 6.56E-06 | 7.44E-06 | 6.32E-06 | 4.35E-06 | 4.14E-07 | 2.97E-07 | 6.29E-08 | 6.61E-10 | | | 2.91E-05 |
| Y-93 | | 9.28E-07 | 1.68E-06 | 2.31E-06 | 1.04E-05 | 1.22E-05 | 1.15E-05 | 8.06E-06 | 8.65E-07 | 6.37E-07 | 2.26E-07 | 1.82E-08 | | | 4.88E-05 |
| Zr-95 | | 1.01E-06 | 1.84E-06 | 2.55E-06 | 1.24E-05 | 1.47E-05 | 1.48E-05 | 1.04E-05 | 1.20E-06 | 8.94E-07 | 4.18E-07 | 1.00E-07 | 2.25E-08 | 1.00E-09 | 6.04E-05 |
| Zr-97 | | 9.71E-07 | 1.76E-06 | 2.44E-06 | 1.13E-05 | 1.33E-05 | 1.29E-05 | 9.07E-06 | 1.00E-06 | 7.40E-07 | 2.93E-07 | 3.67E-08 | 4.46E-10 | | 5.38E-05 |
| Nb-95 | | 1.01E-06 | 1.85E-06 | 2.57E-06 | 1.24E-05 | 1.48E-05 | 1.49E-05 | 1.05E-05 | 1.21E-06 | 8.99E-07 | 4.20E-07 | 9.99E-08 | 2.19E-08 | 7.73E-10 | 6.08E-05 |
| Mo-99 | | 1.36E-05 | 2.49E-05 | 3.45E-05 | 1.65E-04 | 1.96E-04 | 1.95E-04 | 1.38E-04 | 1.57E-05 | 1.17E-05 | 5.23E-06 | 1.07E-06 | 1.16E-07 | 9.78E-12 | 8.02E-04 |
| Tc-99m | | 1.03E-05 | 1.85E-05 | 2.54E-05 | 1.08E-04 | 1.25E-04 | 1.14E-04 | 7.94E-05 | 8.16E-06 | 5.95E-06 | 1.75E-06 | 6.68E-08 | | | 4.97E-04 |
| Ru-103 | | 1.11E-05 | 2.03E-05 | 2.82E-05 | 1.36E-04 | 1.63E-04 | 1.63E-04 | 1.15E-04 | 1.32E-05 | 9.86E-06 | 4.60E-06 | 1.10E-06 | 2.42E-07 | 9.02E-09 | 6.66E-04 |
| Ru-105 | | 5.98E-06 | 1.07E-05 | 1.45E-05 | 5.92E-05 | 6.79E-05 | 5.96E-05 | 4.13E-05 | 4.07E-06 | 2.95E-06 | 7.33E-07 | 1.46E-08 | | | 2.67E-04 |
| Ru-106 | | 4.19E-06 | 7.66E-06 | 1.06E-05 | 5.15E-05 | 6.14E-05 | 6.16E-05 | 4.35E-05 | 5.00E-06 | 3.73E-06 | 1.74E-06 | 4.20E-07 | 9.72E-08 | 5.46E-09 | 2.52E-04 |
| Rh-105 | | 6.81E-06 | 1.24E-05 | 1.72E-05 | 8.14E-05 | 9.67E-05 | 9.54E-05 | 6.72E-05 | 7.57E-06 | 5.62E-06 | 2.43E-06 | 4.29E-07 | 2.43E-08 | | 3.93E-04 |
| Sb-127 | | 1.51E-05 | 2.75E-05 | 3.82E-05 | 1.83E-04 | 2.18E-04 | 2.18E-04 | 1.54E-04 | 1.75E-05 | 1.30E-05 | 5.92E-06 | 1.27E-06 | 1.72E-07 | 9.38E-11 | 8.92E-04 |
| Sb-129 | | 3.69E-05 | 6.58E-05 | 8.96E-05 | 3.64E-04 | 4.16E-04 | 3.64E-04 | 2.52E-04 | 2.48E-05 | 1.79E-05 | 4.38E-06 | 8.10E-08 | | | 1.64E-03 |
| Te-127 | | 1.36E-05 | 2.47E-05 | 3.39E-05 | 1.51E-04 | 1.77E-04 | 1.67E-04 | 1.17E-04 | 1.25E-05 | 9.17E-06 | 3.18E-06 | 2.34E-07 | 2.62E-10 | | 7.09E-04 |
| Te-127m | | 2.03E-06 | 3.70E-06 | 5.14E-06 | 2.49E-05 | 2.97E-05 | 2.98E-05 | 2.10E-05 | 2.41E-06 | 1.80E-06 | 8.42E-07 | 2.02E-07 | 4.62E-08 | 2.31E-09 | 1.22E-04 |
| Te-129 | | 1.99E-05 | 3.31E-05 | 4.29E-05 | 1.09E-04 | 1.11E-04 | 6.71E-05 | 4.40E-05 | 2.84E-06 | 1.88E-06 | 7.83E-08 | | | | 4.32E-04 |
| Te-129m | | 6.78E-06 | 1.24E-05 | 1.72E-05 | 8.32E-05 | 9.92E-05 | 9.95E-05 | 7.03E-05 | 8.06E-06 | 6.01E-06 | 2.80E-06 | 6.67E-07 | 1.46E-07 | 5.03E-09 | 4.06E-04 |

AmerGen

**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 2 | System Nos. | Sheet 63 of 1000 |
|---|---|---|---|---|

**Table 33 (Continued)**
**Post-LOCA Containment Leakage Activity in TSC WITH Charcoal/HEPA Filters**

| | 0.0 - 0.5 | 0.5 - 0.8 | 0.8 - 0.9167 | 0.9167 - 1.0 | 1.0 - 1.8 | 1.8 - 2.0 | 2.0 - 2.8 | 2.8 - 2.92 | 2.92 - 3.82 | 3.82 - 4.0 | 4.0 - 8.0 | 8.0 - 24 | 24 - 96 | 96 - 720 | TOTAL |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Te-131m | | 2.02E-05 | 3.67E-05 | 5.08E-05 | 2.40E-04 | 2.85E-04 | 2.80E-04 | 1.97E-04 | 2.21E-05 | 1.64E-05 | 7.00E-06 | 1.17E-06 | 5.14E-08 | | 1.16E-03 |
| Te-132 | | 2.05E-04 | 3.74E-04 | 5.18E-04 | 2.49E-03 | 2.96E-03 | 2.95E-03 | 2.08E-03 | 2.37E-04 | 1.76E-04 | 7.96E-05 | 1.67E-05 | 2.05E-06 | 4.78E-10 | 1.21E-02 |
| I-131 | 8.35E-04 | 2.53E-03 | 3.56E-03 | 4.38E-03 | 1.46E-02 | 1.69E-02 | 1.65E-02 | 1.16E-02 | 1.31E-03 | 9.73E-04 | 4.54E-04 | 1.11E-04 | 2.09E-05 | 4.74E-07 | 7.37E-02 |
| I-132 | 9.92E-04 | 2.60E-03 | 3.45E-03 | 4.09E-03 | 9.63E-03 | 1.03E-02 | 7.77E-03 | 5.27E-03 | 4.43E-04 | 3.10E-04 | 4.31E-05 | 8.95E-08 | | | 4.49E-02 |
| I-133 | 1.71E-03 | 5.11E-03 | 7.15E-03 | 8.77E-03 | 2.82E-02 | 3.24E-02 | 3.08E-02 | 2.16E-02 | 2.36E-03 | 1.75E-03 | 7.23E-04 | 1.09E-04 | 2.44E-06 | | 1.41E-01 |
| I-134 | 1.16E-03 | 2.40E-03 | 2.92E-03 | 3.26E-03 | 4.42E-03 | 4.18E-03 | 2.06E-03 | 1.32E-03 | 6.82E-05 | 4.33E-05 | 8.20E-07 | | | | 2.18E-02 |
| I-135 | 1.52E-03 | 4.39E-03 | 6.05E-03 | 7.36E-03 | 2.17E-02 | 2.46E-02 | 2.19E-02 | 1.52E-02 | 1.55E-03 | 1.13E-03 | 3.50E-04 | 1.69E-05 | 2.18E-09 | | 1.06E-01 |
| Xe-133 | 2.37E-03 | 1.13E-02 | 1.79E-02 | 2.36E-02 | 1.15E-01 | 1.44E-01 | 1.77E-01 | 1.88E-01 | 2.35E-01 | 2.39E-01 | 2.52E-01 | 9.85E-02 | 2.12E-02 | 5.85E-04 | 1.53E+00 |
| Xe-135 | 8.32E-04 | 3.82E-03 | 5.98E-03 | 7.82E-03 | 3.52E-02 | 4.32E-02 | 5.00E-02 | 5.26E-02 | 6.13E-02 | 6.16E-02 | 4.90E-02 | 6.16E-03 | 8.13E-06 | | 3.78E-01 |
| Cs-134 | 2.02E-04 | 5.45E-04 | 7.37E-04 | 8.89E-04 | 2.71E-03 | 3.13E-03 | 3.03E-03 | 2.14E-03 | 2.35E-04 | 1.73E-04 | 7.86E-05 | 1.90E-05 | 4.40E-06 | 2.53E-07 | 1.39E-02 |
| Cs-136 | 5.59E-05 | 1.50E-04 | 2.03E-04 | 2.45E-04 | 7.45E-04 | 8.59E-04 | 8.32E-04 | 5.85E-04 | 6.43E-05 | 4.74E-05 | 2.13E-05 | 4.96E-06 | 9.85E-07 | 1.47E-08 | 3.81E-03 |
| Cs-137 | 1.36E-04 | 3.65E-04 | 4.93E-04 | 5.95E-04 | 1.82E-03 | 2.09E-03 | 2.03E-03 | 1.43E-03 | 1.57E-04 | 1.16E-04 | 5.27E-05 | 1.27E-05 | 2.96E-06 | 1.74E-07 | 9.31E-03 |
| Ba-139 | | 5.61E-05 | 9.48E-05 | 1.24E-04 | 3.48E-04 | 3.65E-04 | 2.39E-04 | 1.58E-04 | 1.12E-05 | 7.55E-06 | 4.61E-07 | | | | 1.40E-03 |
| Ba-140 | | 1.08E-04 | 1.97E-04 | 2.73E-04 | 1.32E-03 | 1.58E-03 | 1.58E-03 | 1.11E-03 | 1.28E-04 | 9.52E-05 | 4.41E-05 | 1.03E-05 | 2.03E-06 | 2.91E-08 | 6.45E-03 |
| La-140 | | 1.07E-06 | 1.96E-06 | 2.71E-06 | 1.29E-05 | 1.53E-05 | 1.51E-05 | 1.07E-05 | 1.20E-06 | 8.94E-07 | 3.90E-07 | 7.15E-08 | 4.82E-09 | | 6.22E-05 |
| La-141 | | 8.03E-07 | 1.43E-06 | 1.94E-06 | 7.74E-06 | 8.83E-06 | 7.62E-06 | 5.26E-06 | 5.09E-07 | 3.67E-07 | 8.41E-08 | 1.21E-09 | | | 3.46E-05 |
| La-142 | | 6.55E-07 | 1.12E-06 | 1.47E-06 | 4.36E-06 | 4.64E-06 | 3.17E-06 | 2.12E-06 | 1.57E-07 | 1.08E-07 | 8.15E-09 | | | | 1.78E-05 |
| Ce-141 | | 2.48E-06 | 4.53E-06 | 6.28E-06 | 3.04E-05 | 3.63E-05 | 3.64E-05 | 2.57E-05 | 2.94E-06 | 2.20E-06 | 1.02E-06 | 2.44E-07 | 5.31E-08 | 1.80E-09 | 1.48E-04 |
| Ce-143 | | 2.39E-06 | 4.36E-06 | 6.04E-06 | 2.86E-05 | 3.39E-05 | 3.34E-05 | 2.35E-05 | 2.65E-06 | 1.97E-06 | 8.46E-07 | 1.46E-07 | 7.47E-09 | | 1.38E-04 |
| Ce-144 | | 2.00E-06 | 3.65E-06 | 5.06E-06 | 2.45E-05 | 2.93E-05 | 2.94E-05 | 2.07E-05 | 2.38E-06 | 1.78E-06 | 8.31E-07 | 2.00E-07 | 4.62E-08 | 2.56E-09 | 1.20E-04 |
| Pr-143 | | 9.66E-07 | 1.77E-06 | 2.45E-06 | 1.18E-05 | 1.41E-05 | 1.41E-05 | 9.98E-06 | 1.14E-06 | 8.52E-07 | 3.96E-07 | 9.23E-08 | 1.84E-08 | 2.87E-10 | 5.77E-05 |
| Nd-147 | | 4.04E-07 | 7.38E-07 | 1.02E-06 | 4.94E-06 | 5.89E-06 | 5.90E-06 | 4.17E-06 | 4.77E-07 | 3.56E-07 | 1.65E-07 | 3.81E-08 | 7.33E-09 | 8.37E-11 | 2.41E-05 |
| Np-239 | | 2.70E-05 | 4.92E-05 | 6.82E-05 | 3.26E-04 | 3.88E-04 | 3.85E-04 | 2.71E-04 | 3.08E-05 | 2.29E-05 | 1.02E-05 | 2.02E-06 | 1.95E-07 | | 1.58E-03 |
| Pu-238 | | 7.87E-09 | 1.44E-08 | 2.00E-08 | 9.67E-08 | 1.15E-07 | 1.16E-07 | 8.18E-08 | 9.39E-09 | 7.00E-09 | 3.28E-09 | 7.91E-10 | 1.84E-10 | 1.08E-11 | 4.73E-07 |
| Pu-239 | | 6.13E-10 | 1.12E-09 | 1.55E-09 | 7.53E-09 | 8.99E-09 | 9.02E-09 | 6.37E-09 | 7.31E-10 | 5.45E-10 | 2.55E-10 | 6.16E-11 | 1.43E-11 | 8.44E-13 | 3.68E-08 |
| Pu-240 | | 6.61E-10 | 1.21E-09 | 1.68E-09 | 8.12E-09 | 9.69E-09 | 9.72E-09 | 6.87E-09 | 7.88E-10 | 5.88E-10 | 2.75E-10 | 6.64E-11 | 1.54E-11 | 9.10E-13 | 3.97E-08 |
| Pu-241 | | 2.74E-07 | 5.00E-07 | 6.94E-07 | 3.36E-06 | 4.01E-06 | 4.03E-06 | 2.84E-06 | 3.26E-07 | 2.43E-07 | 1.14E-07 | 2.75E-08 | 6.39E-09 | 3.76E-10 | 1.64E-05 |
| Am-241 | | 1.68E-10 | 3.08E-10 | 4.27E-10 | 2.07E-09 | 2.47E-09 | 2.48E-09 | 1.75E-09 | 2.01E-10 | 1.50E-10 | 7.01E-11 | 1.69E-11 | 3.93E-12 | 2.32E-13 | 1.01E-08 |
| Cm-242 | | 3.96E-08 | 7.23E-08 | 1.00E-07 | 4.86E-07 | 5.80E-07 | 5.82E-07 | 4.11E-07 | 4.72E-08 | 3.52E-08 | 1.64E-08 | 3.96E-09 | 9.09E-10 | 4.80E-11 | 2.37E-06 |
| Cm-244 | | 3.20E-09 | 5.85E-09 | 8.12E-09 | 3.93E-08 | 4.69E-08 | 4.71E-08 | 3.33E-08 | 3.82E-09 | 2.85E-09 | 1.33E-09 | 3.22E-10 | 7.48E-11 | 4.40E-12 | 1.92E-07 |

**From RADTRAD File CL_TSC.o0**

AmerGen

**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 2 | System Nos. | Sheet 64 of 1000 |
|---|---|---|---|---|

**Table 34**
**NET Activity on TSC Filters**
**(Ci)**

| | Without Filtration (Ci) | With Filtration (Ci) | Cont. Leakage Filter Activity (Ci) | | Without Filtration (Ci) | With Filtration (Ci) | Cont. Leakage Filter Activity (Ci) |
|---|---|---|---|---|---|---|---|
| Co-58 | 5.63E-06 | 4.09E-06 | 1.54E-06 | Te-131m | 1.56E-03 | 1.16E-03 | 4.08E-04 |
| Co-60 | 4.31E-06 | 3.13E-06 | 1.18E-06 | Te-132 | 1.65E-02 | 1.21E-02 | 4.44E-03 |
| Kr-85 | 1.14E-02 | 1.14E-02 | 0.00E+00 | I-131 | 9.82E-02 | 7.37E-02 | 2.45E-02 |
| Kr-85m | 1.12E-01 | 1.12E-01 | 0.00E+00 | I-132 | 5.23E-02 | 4.49E-02 | 7.39E-03 |
| Kr-87 | 5.16E-02 | 5.16E-02 | 0.00E+00 | I-133 | 1.83E-01 | 1.41E-01 | 4.26E-02 |
| Kr-88 | 2.15E-01 | 2.15E-01 | 0.00E+00 | I-134 | 2.31E-02 | 2.18E-02 | 1.22E-03 |
| Rb-86 | 1.75E-04 | 1.33E-04 | 4.23E-05 | I-135 | 1.33E-01 | 1.06E-01 | 2.68E-02 |
| Sr-89 | 5.27E-03 | 3.83E-03 | 1.45E-03 | Xe-133 | 1.53E+00 | 1.53E+00 | 0.00E+00 |
| Sr-90 | 5.70E-04 | 4.14E-04 | 1.57E-04 | Xe-135 | 3.78E-01 | 3.78E-01 | 0.00E+00 |
| Sr-91 | 5.37E-03 | 4.09E-03 | 1.28E-03 | Cs-134 | 1.83E-02 | 1.39E-02 | 4.45E-03 |
| Sr-92 | 2.92E-03 | 2.40E-03 | 5.19E-04 | Cs-136 | 5.03E-03 | 3.81E-03 | 1.21E-03 |
| Y-90 | 5.62E-06 | 4.12E-06 | 1.50E-06 | Cs-137 | 1.23E-02 | 9.31E-03 | 2.98E-03 |
| Y-91 | 6.46E-05 | 4.69E-05 | 1.77E-05 | Ba-139 | 1.60E-03 | 1.40E-03 | 1.91E-04 |
| Y-92 | 3.61E-05 | 2.91E-05 | 7.06E-06 | Ba-140 | 8.87E-03 | 6.45E-03 | 2.42E-03 |
| Y-93 | 6.42E-05 | 4.88E-05 | 1.54E-05 | La-140 | 8.45E-05 | 6.22E-05 | 2.23E-05 |
| Zr-95 | 8.32E-05 | 6.04E-05 | 2.28E-05 | La-141 | 4.33E-05 | 3.46E-05 | 8.73E-06 |
| Zr-97 | 7.19E-05 | 5.38E-05 | 1.81E-05 | La-142 | 2.05E-05 | 1.78E-05 | 2.67E-06 |
| Nb-95 | 8.37E-05 | 6.08E-05 | 2.29E-05 | Ce-141 | 2.04E-04 | 1.48E-04 | 5.60E-05 |
| Mo-99 | 1.09E-03 | 8.02E-04 | 2.93E-04 | Ce-143 | 1.87E-04 | 1.38E-04 | 4.89E-05 |
| Tc-99m | 6.40E-04 | 4.97E-04 | 1.42E-04 | Ce-144 | 1.65E-04 | 1.20E-04 | 4.53E-05 |
| Ru-103 | 9.18E-04 | 6.66E-04 | 2.51E-04 | Pr-143 | 7.94E-05 | 5.77E-05 | 2.17E-05 |
| Ru-105 | 3.37E-04 | 2.67E-04 | 7.01E-05 | Nd-147 | 3.31E-05 | 2.41E-05 | 9.04E-06 |
| Ru-106 | 3.47E-04 | 2.52E-04 | 9.52E-05 | Np-239 | 2.15E-03 | 1.58E-03 | 5.75E-04 |
| Rh-105 | 5.33E-04 | 3.93E-04 | 1.40E-04 | Pu-238 | 6.52E-07 | 4.73E-07 | 1.79E-07 |
| Sb-127 | 1.22E-03 | 8.92E-04 | 3.29E-04 | Pu-239 | 5.07E-08 | 3.68E-08 | 1.39E-08 |
| Sb-129 | 2.06E-03 | 1.64E-03 | 4.26E-04 | Pu-240 | 5.47E-08 | 3.97E-08 | 1.50E-08 |
| Te-127 | 9.31E-04 | 7.09E-04 | 2.21E-04 | Pu-241 | 2.27E-05 | 1.64E-05 | 6.22E-06 |
| Te-127m | 1.68E-04 | 1.22E-04 | 4.60E-05 | Am-241 | 1.39E-08 | 1.01E-08 | 3.82E-09 |
| Te-129 | 4.81E-04 | 4.32E-04 | 4.92E-05 | Cm-242 | 3.27E-06 | 2.37E-06 | 8.98E-07 |
| Te-129m | 5.59E-04 | 4.06E-04 | 1.53E-04 | Cm-244 | 2.65E-07 | 1.92E-07 | 7.27E-08 |

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**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 2 | System Nos. | Sheet 65 of 1000 |
|---|---|---|---|---|

**Table 35**
**Post-LOCA ESF Leakage Activity in TSC WITHOUT Charcoal/HEPA Filters**
**(Ci)**

| Isotope | 0-0.5 | 0.5-0.8 | 0.8 - 0.9167 | 0.9167 - 1.0 | 1.0 - 1.8 | 1.8 - 2.0 | 2.0 - 2.8 | 2.8 - 8.0 | 8.0 - 24 | 24 - 96 | 96 - 720 | Total |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| I-131 | 4.61E-06 | 2.61E-04 | 4.15E-04 | 5.43E-04 | 2.40E-03 | 2.97E-03 | 3.64E-03 | 5.19E-03 | 1.90E-03 | 3.96E-04 | 3.56E-05 | 1.78E-02 |
| I-132 | 5.74E-06 | 2.98E-04 | 4.57E-04 | 5.83E-04 | 2.03E-03 | 2.36E-03 | 2.28E-03 | 6.93E-04 | 2.17E-06 | | | 8.71E-03 |
| I-133 | 9.50E-06 | 5.34E-04 | 8.46E-04 | 1.10E-03 | 4.76E-03 | 5.85E-03 | 7.00E-03 | 8.56E-03 | 1.95E-03 | 4.77E-05 | | 3.07E-02 |
| I-134 | 7.23E-06 | 3.24E-04 | 4.70E-04 | 5.75E-04 | 1.35E-03 | 1.43E-03 | 9.33E-04 | 2.22E-05 | | | | 5.11E-03 |
| I-135 | 8.55E-06 | 4.70E-04 | 7.39E-04 | 9.57E-04 | 3.90E-03 | 4.73E-03 | 5.34E-03 | 4.50E-03 | 3.27E-04 | 4.63E-08 | | 2.10E-02 |

**From RADTRAD File ESF_TSC_NO Filtration.o0**

**Table 36**
**Post-LOCA ESF Leakage Activity in TSC WITH Charcoal/HEPA Filters**
**(Ci)**

| Isotope | 0-0.5 | 0.5-0.8 | 0.8 - 0.9167 | 0.9167 - 1.0 | 1.0 - 1.8 | 1.8 – 2.0 | 2.0 - 2.8 | 2.8 - 8.0 | 8.0 - 24 | 24 - 96 | 96 - 720 | Total |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| I-131 | 4.61E-06 | 2.61E-04 | 4.15E-04 | 5.43E-04 | 2.40E-03 | 2.97E-03 | 3.64E-03 | 7.63E-04 | 2.80E-04 | 5.82E-05 | 5.23E-06 | 1.13E-02 |
| I-132 | 5.74E-06 | 2.98E-04 | 4.57E-04 | 5.83E-04 | 2.03E-03 | 2.36E-03 | 2.28E-03 | 1.02E-04 | 3.18E-07 | | | 8.12E-03 |
| I-133 | 9.50E-06 | 5.34E-04 | 8.46E-04 | 1.10E-03 | 4.76E-03 | 5.85E-03 | 7.00E-03 | 1.26E-03 | 2.87E-04 | 7.01E-06 | | 2.16E-02 |
| I-134 | 7.23E-06 | 3.24E-04 | 4.70E-04 | 5.75E-04 | 1.35E-03 | 1.43E-03 | 9.33E-04 | 3.27E-06 | | | | 5.10E-03 |
| I-135 | 8.55E-06 | 4.70E-04 | 7.39E-04 | 9.57E-04 | 3.90E-03 | 4.73E-03 | 5.34E-03 | 6.62E-04 | 4.80E-05 | 6.81E-09 | | 1.69E-02 |

**From RADTRAD File ESF_TSC.o0**

**Table 37**
**Net Filter Activity Due To ESF Leakage**

| Isotope | Curies WITHOUT Filtration | Curies WITH Filtration | Curies on Filter Media |
|---|---|---|---|
| I-131 | 1.78E-02 | 1.13E-02 | 6.42E-03 |
| I-132 | 8.71E-03 | 8.12E-03 | 5.93E-04 |
| I-133 | 3.07E-02 | 2.16E-02 | 9.01E-03 |
| I-134 | 5.11E-03 | 5.10E-03 | 1.90E-05 |
| I-135 | 2.10E-02 | 1.69E-02 | 4.12E-03 |

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**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 2 | System Nos. | Sheet 66 of 1000 |
|---|---|---|---|---|

**Table 38**
**Total Activity on TSC Filter Media**

| | Cont. Leakage (Ci) | ESF Leakage (Ci) | Total TSC Filter Activity (Ci) | | Cont. Leakage (Ci) | ESF Leakage (Ci) | Total TSC Filter Activity (Ci) |
|---|---|---|---|---|---|---|---|
| Co-58 | 1.54E-06 | | 1.54E-06 | Te-131m | 4.08E-04 | | 4.08E-04 |
| Co-60 | 1.18E-06 | | 1.18E-06 | Te-132 | 4.44E-03 | | 4.44E-03 |
| Kr-85 | 0.00E+00 | | 0.00E+00 | I-131 | 2.45E-02 | 6.42E-03 | 3.09E-02 |
| Kr-85m | 0.00E+00 | | 0.00E+00 | I-132 | 7.39E-03 | 5.93E-04 | 7.98E-03 |
| Kr-87 | 0.00E+00 | | 0.00E+00 | I-133 | 4.26E-02 | 9.01E-03 | 5.16E-02 |
| Kr-88 | 0.00E+00 | | 0.00E+00 | I-134 | 1.22E-03 | 1.90E-05 | 1.24E-03 |
| Rb-86 | 4.23E-05 | | 4.23E-05 | I-135 | 2.68E-02 | 4.12E-03 | 3.10E-02 |
| Sr-89 | 1.45E-03 | | 1.45E-03 | Xe-133 | 0.00E+00 | | 0.00E+00 |
| Sr-90 | 1.57E-04 | | 1.57E-04 | Xe-135 | 0.00E+00 | | 0.00E+00 |
| Sr-91 | 1.28E-03 | | 1.28E-03 | Cs-134 | 4.45E-03 | | 4.45E-03 |
| Sr-92 | 5.19E-04 | | 5.19E-04 | Cs-136 | 1.21E-03 | | 1.21E-03 |
| Y-90 | 1.50E-06 | | 1.50E-06 | Cs-137 | 2.98E-03 | | 2.98E-03 |
| Y-91 | 1.77E-05 | | 1.77E-05 | Ba-139 | 1.91E-04 | | 1.91E-04 |
| Y-92 | 7.06E-06 | | 7.06E-06 | Ba-140 | 2.42E-03 | | 2.42E-03 |
| Y-93 | 1.54E-05 | | 1.54E-05 | La-140 | 2.23E-05 | | 2.23E-05 |
| Zr-95 | 2.28E-05 | | 2.28E-05 | La-141 | 8.73E-06 | | 8.73E-06 |
| Zr-97 | 1.81E-05 | | 1.81E-05 | La-142 | 2.67E-06 | | 2.67E-06 |
| Nb-95 | 2.29E-05 | | 2.29E-05 | Ce-141 | 5.60E-05 | | 5.60E-05 |
| Mo-99 | 2.93E-04 | | 2.93E-04 | Ce-143 | 4.89E-05 | | 4.89E-05 |
| Tc-99m | 1.42E-04 | | 1.42E-04 | Ce-144 | 4.53E-05 | | 4.53E-05 |
| Ru-103 | 2.51E-04 | | 2.51E-04 | Pr-143 | 2.17E-05 | | 2.17E-05 |
| Ru-105 | 7.01E-05 | | 7.01E-05 | Nd-147 | 9.04E-06 | | 9.04E-06 |
| Ru-106 | 9.52E-05 | | 9.52E-05 | Np-239 | 5.75E-04 | | 5.75E-04 |
| Rh-105 | 1.40E-04 | | 1.40E-04 | Pu-238 | 1.79E-07 | | 1.79E-07 |
| Sb-127 | 3.29E-04 | | 3.29E-04 | Pu-239 | 1.39E-08 | | 1.39E-08 |
| Sb-129 | 4.26E-04 | | 4.26E-04 | Pu-240 | 1.50E-08 | | 1.50E-08 |
| Te-127 | 2.21E-04 | | 2.21E-04 | Pu-241 | 6.22E-06 | | 6.22E-06 |
| Te-127m | 4.60E-05 | | 4.60E-05 | Am-241 | 3.82E-09 | | 3.82E-09 |
| Te-129 | 4.92E-05 | | 4.92E-05 | Cm-242 | 8.98E-07 | | 8.98E-07 |
| Te-129m | 1.53E-04 | | 1.53E-04 | Cm-244 | 7.27E-08 | | 7.27E-08 |

NOTE: Filter activity due to BWST leakage and Containment Purge is ignored. The BWST contribution is three orders of magnitude less than the ESF and Containment leakage contributions. The Purge event takes place very early in the event prior to the start of the TSC HVAC system. Therefore there is no significant contribution due to these two pathways.

**Appendix A**

**TMI-1 Nuclide Inventory File For RADTRAD3.02 Input**

# Tmi_def.nif

**Containment, ESF, & BWST Leakage Pathways**

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**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 1 | System Nos. | Sheet 68 of 1000 |
|---|---|---|---|---|

Nuclide Inventory Name:
TMI-1 Plant Specific Core Inventory (2619 MWth) File TMI_def.NIF
Power Level:
0.1000E+01
Nuclides:
60
Nuclide 001:
Co-58
7
0.6117120000E+07
0.5800E+02
0.2553E+03
none 0.0000E+00
none 0.0000E+00
none 0.0000E+00
Nuclide 002:
Co-60
7
0.1663401096E+09
0.6000E+02
0.1953E+03
none 0.0000E+00
none 0.0000E+00
none 0.0000E+00
Nuclide 003:
Kr-85
1
0.3382974720E+09
0.8500E+02
0.3991E+03
none 0.0000E+00
none 0.0000E+00
none 0.0000E+00
Nuclide 004:
Kr-85m
1
0.1612800000E+05
0.8500E+02
0.8889E+04
Kr-85 0.2100E+00
none 0.0000E+00
none 0.0000E+00
Nuclide 005:
Kr-87
1
0.4578000000E+04
0.8700E+02
0.1755E+05
Rb-87 0.1000E+01
none 0.0000E+00
none 0.0000E+00
Nuclide 006:
Kr-88

1
0.1022400000E+05
0.8800E+02
0.2475E+05
Rb-88 0.1000E+01
none 0.0000E+00
none 0.0000E+00
Nuclide 007:
Rb-86
3
0.1612224000E+07
0.8600E+02
0.6270E+02
none 0.0000E+00
none 0.0000E+00
none 0.0000E+00
Nuclide 008:
Sr-89
5
0.4363200000E+07
0.8900E+02
0.2992E+05
none 0.0000E+00
none 0.0000E+00
none 0.0000E+00
Nuclide 009:
Sr-90
5
0.9189573120E+09
0.9000E+02
0.3227E+04
Y-90 0.1000E+01
none 0.0000E+00
none 0.0000E+00
Nuclide 010:
Sr-91
5
0.3420000000E+05
0.9100E+02
0.4068E+05
Y-91m 0.5800E+00
Y-91 0.4200E+00
none 0.0000E+00
Nuclide 011:
Sr-92
5
0.9756000000E+04
0.9200E+02
0.4276E+05
Y-92 0.1000E+01
none 0.0000E+00
none 0.0000E+00
Nuclide 012:

Y-90
9
0.2304000000E+06
0.9000E+02
0.3330E+04
none 0.0000E+00
none 0.0000E+00
none 0.0000E+00
Nuclide 013:
Y-91
9
0.5055264000E+07
0.9100E+02
0.3662E+05
none 0.0000E+00
none 0.0000E+00
none 0.0000E+00
Nuclide 014:
Y-92
9
0.1274400000E+05
0.9200E+02
0.4288E+05
none 0.0000E+00
none 0.0000E+00
none 0.0000E+00
Nuclide 015:
Y-93
9
0.3636000000E+05
0.9300E+02
0.4778E+05
Zr-93 0.1000E+01
none 0.0000E+00
none 0.0000E+00
Nuclide 016:
Zr-95
9
0.5527872000E+07
0.9500E+02
0.4717E+05
Nb-95m 0.7000E-02
Nb-95 0.9900E+00
none 0.0000E+00
Nuclide 017:
Zr-97
9
0.6084000000E+05
0.9700E+02
0.4814E+05
Nb-97m 0.9500E+00
Nb-97 0.5300E-01
none 0.0000E+00

Nuclide 018:
Nb-95
9
0.3036960000E+07
0.9500E+02
0.4754E+05
none 0.0000E+00
none 0.0000E+00
none 0.0000E+00
Nuclide 019:
Mo-99
7
0.2376000000E+06
0.9900E+02
0.5183E+05
Tc-99m 0.8800E+00
Tc-99 0.1200E+00
none 0.0000E+00
Nuclide 020:
Tc-99m
7
0.2167200000E+05
0.9900E+02
0.4537E+05
Tc-99 0.1000E+01
none 0.0000E+00
none 0.0000E+00
Nuclide 021:
Ru-103
7
0.3393792000E+07
0.1030E+03
0.4168E+05
Rh-103m 0.1000E+01
none 0.0000E+00
none 0.0000E+00
Nuclide 022:
Ru-105
7
0.1598400000E+05
0.1050E+03
0.2777E+05
Rh-105 0.1000E+01
none 0.0000E+00
none 0.0000E+00
Nuclide 023:
Ru-106
7
0.3181248000E+08
0.1060E+03
0.1570E+05
Rh-106 0.1000E+01
none 0.0000E+00

none 0.0000E+00
Nuclide 024:
Rh-105
7
0.1272960000E+06
0.1050E+03
0.2621E+05
none 0.0000E+00
none 0.0000E+00
none 0.0000E+00
Nuclide 025:
Sb-127
4
0.3326400000E+06
0.1270E+03
0.2854E+04
Te-127m 0.1800E+00
Te-127 0.8200E+00
none 0.0000E+00
Nuclide 026:
Sb-129
4
0.1555200000E+05
0.1290E+03
0.8625E+04
Te-129m 0.2200E+00
Te-129 0.7700E+00
none 0.0000E+00
Nuclide 027:
Te-127
4
0.3366000000E+05
0.1270E+03
0.2831E+04
none 0.0000E+00
none 0.0000E+00
none 0.0000E+00
Nuclide 028:
Te-127m
4
0.9417600000E+07
0.1270E+03
0.3797E+03
Te-127 0.9800E+00
none 0.0000E+00
none 0.0000E+00
Nuclide 029:
Te-129
4
0.4176000000E+04
0.1290E+03
0.8492E+04
I-129 0.1000E+01

none 0.0000E+00
none 0.0000E+00
Nuclide 030:
Te-129m
4
0.2903040000E+07
0.1290E+04
0.1271E+04
Te-129 0.6500E+00
I-129 0.3500E+00
none 0.0000E+00
Nuclide 031:
Te-131m
4
0.1080000000E+06
0.1310E+03
0.3898E+04
Te-131 0.2200E+00
I-131 0.7800E+00
none 0.0000E+00
Nuclide 032:
Te-132
4
0.2815200000E+06
0.1320E+03
0.3885E+05
I-132 0.1000E+01
none 0.0000E+00
none 0.0000E+00
Nuclide 033:
I-131
2
0.6946560000E+06
0.1310E+03
0.2729E+05
Xe-131m 0.1100E-01
none 0.0000E+00
none 0.0000E+00
Nuclide 034:
I-132
2
0.8280000000E+04
0.1320E+03
0.3944E+05
none 0.0000E+00
none 0.0000E+00
none 0.0000E+00
Nuclide 035:
I-133
2
0.7488000000E+05
0.1330E+03
0.5708E+05

Xe-133m 0.2900E-01
Xe-133 0.9700E+00
none 0.0000E+00
Nuclide 036:
I-134
2
0.3156000000E+04
0.1340E+03
0.6346E+05
none 0.0000E+00
none 0.0000E+00
none 0.0000E+00
Nuclide 037:
I-135
2
0.2379600000E+05
0.1350E+03
0.5323E+05
Xe-135m 0.1500E+00
Xe-135 0.8500E+00
none 0.0000E+00
Nuclide 038:
Xe-133
1
0.4531680000E+06
0.1330E+03
0.5708E+05
none 0.0000E+00
none 0.0000E+00
none 0.0000E+00
Nuclide 039:
Xe-135
1
0.3272400000E+05
0.1350E+03
0.2103E+05
Cs-135 0.1000E+01
none 0.0000E+00
none 0.0000E+00
Nuclide 040:
Cs-134
3
0.6507177120E+08
0.1340E+03
0.6539E+04
none 0.0000E+00
none 0.0000E+00
none 0.0000E+00
Nuclide 041:
Cs-136
3
0.1131840000E+07
0.1360E+03

0.1808E+04
none 0.0000E+00
none 0.0000E+00
none 0.0000E+00
Nuclide 042:
Cs-137
3
0.9467280000E+09
0.1370E+03
0.4381E+04
Ba-137m 0.9500E+00
none 0.0000E+00
none 0.0000E+00
Nuclide 043:
Ba-139
6
0.4962000000E+04
0.1390E+03
0.5259E+05
none 0.0000E+00
none 0.0000E+00
none 0.0000E+00
Nuclide 044:
Ba-140
6
0.1100736000E+07
0.1400E+03
0.5070E+05
La-140 0.1000E+01
none 0.0000E+00
none 0.0000E+00
Nuclide 045:
La-140
9
0.1449792000E+06
0.1400E+03
0.5143E+05
none 0.0000E+00
none 0.0000E+00
none 0.0000E+00
Nuclide 046:
La-141
9
0.1414800000E+05
0.1410E+03
0.4798E+05
Ce-141 0.1000E+01
none 0.0000E+00
none 0.0000E+00
Nuclide 047:
La-142
9
0.5550000000E+04

0.1420E+03
0.5705E+05
none 0.0000E+00
none 0.0000E+00
none 0.0000E+00
Nuclide 048:
Ce-141
8
0.2808086400E+07
0.1410E+03
0.4645E+05
none 0.0000E+00
none 0.0000E+00
none 0.0000E+00
Nuclide 049:
Ce-143
8
0.1188000000E+06
0.1430E+03
0.4617E+05
Pr-143 0.1000E+01
none 0.0000E+00
none 0.0000E+00
Nuclide 050:
Ce-144
8
0.2456352000E+08
0.1440E+03
0.3741E+05
Pr-144m 0.1800E-01
Pr-144 0.9800E+00
none 0.0000E+00
Nuclide 051:
Pr-143
9
0.1171584000E+07
0.1430E+03
0.4537E+05
none 0.0000E+00
none 0.0000E+00
none 0.0000E+00
Nuclide 052:
Nd-147
9
0.9486720000E+06
0.1470E+03
0.1897E+05
Pm-147 0.1000E+01
none 0.0000E+00
none 0.0000E+00
Nuclide 053:
Np-239
8

0.2034720000E+06
0.2390E+03
0.5139E+06
Pu-239 0.1000E+01
none 0.0000E+00
none 0.0000E+00
Nuclide 054:
Pu-238
8
0.2768863824E+10
0.2380E+03
0.1475E+03
U-234 0.1000E+01
none 0.0000E+00
none 0.0000E+00
Nuclide 055:
Pu-239
8
0.7594336440E+12
0.2390E+03
0.1148E+02
U-235 0.1000E+01
none 0.0000E+00
none 0.0000E+00
Nuclide 056:
Pu-240
8
0.2062920312E+12
0.2400E+03
0.1238E+02
U-236 0.1000E+01
none 0.0000E+00
none 0.0000E+00
Nuclide 057:
Pu-241
8
0.4544294400E+09
0.2410E+03
0.5127E+04
U-237 0.2400E-04
Am-241 0.1000E+01
none 0.0000E+00
Nuclide 058:
Am-241
9
0.1363919472E+11
0.2410E+03
0.7883E+01
Np-237 0.1000E+01
none 0.0000E+00
none 0.0000E+00
Nuclide 059:
Cm-242

9
0.1406592000E+08
0.2420E+03
0.1853E+04
Pu-238 0.1000E+01
none 0.0000E+00
none 0.0000E+00
Nuclide 060:
Cm-244
9
0.571508136E+9
0.2440E+03
0.1499E+03
Pu-240 0.1000E+01
none 0.0000E+00
none 0.0000E+00
End of Nuclear Inventory File

**Appendix B**

**TMI-1 Nuclide Inventory File For Post-LOCA Containment Purge**

# TMIPURGE_def.nif

AmerGen

**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 1 | System Nos. | Sheet 80 of 1000 |
|---|---|---|---|---|

Nuclide Inventory Name:
TMI-1 RCS Activity In Containment During Post-LOCA Purge
Power Level:
0.1000E+01
Nuclides:
60
Nuclide 001:
Co-58
7
0.6117120000E+07
0.5800E+02
0.2553E+03
none 0.0000E+00
none 0.0000E+00
none 0.0000E+00
Nuclide 002:
Co-60
7
0.1663401096E+09
0.6000E+02
0.1953E+03
none 0.0000E+00
none 0.0000E+00
none 0.0000E+00
Nuclide 003:
Kr-85
1
0.3382974720E+09
0.8500E+02
0.1678E+01
none 0.0000E+00
none 0.0000E+00
none 0.0000E+00
Nuclide 004:
Kr-85m
1
0.1612800000E+05
0.8500E+02
0.2771E+00
Kr-85 0.2100E+00
none 0.0000E+00
none 0.0000E+00
Nuclide 005:
Kr-87
1
0.4578000000E+04
0.8700E+02
0.1528E+00
Rb-87 0.1000E+01
none 0.0000E+00
none 0.0000E+00
Nuclide 006:
Kr-88

1
0.1022400000E+05
0.8800E+02
0.4732E+00
Rb-88 0.1000E+01
none 0.0000E+00
none 0.0000E+00
Nuclide 007:
Rb-86
3
0.1612224000E+07
0.8600E+02
0.1496E+02
none 0.0000E+00
none 0.0000E+00
none 0.0000E+00
Nuclide 008:
Sr-89
5
0.4363200000E+07
0.8900E+02
0.2844E+05
none 0.0000E+00
none 0.0000E+00
none 0.0000E+00
Nuclide 009:
Sr-90
5
0.9189573120E+09
0.9000E+02
0.1535E+04
Y-90 0.1000E+01
none 0.0000E+00
none 0.0000E+00
Nuclide 010:
Sr-91
5
0.3420000000E+05
0.9100E+02
0.3656E+05
Y-91m 0.5800E+00
Y-91 0.4200E+00
none 0.0000E+00
Nuclide 011:
Sr-92
5
0.9756000000E+04
0.9200E+02
0.3805E+05
Y-92 0.1000E+01
none 0.0000E+00
none 0.0000E+00
Nuclide 012:

Y-90
9
0.2304000000E+06
0.9000E+02
0.1647E+04
none 0.0000E+00
none 0.0000E+00
none 0.0000E+00
Nuclide 013:
Y-91
9
0.5055264000E+07
0.9100E+02
0.3465E+05
none 0.0000E+00
none 0.0000E+00
none 0.0000E+00
Nuclide 014:
Y-92
9
0.1274400000E+05
0.9200E+02
0.3819E+05
none 0.0000E+00
none 0.0000E+00
none 0.0000E+00
Nuclide 015:
Y-93
9
0.3636000000E+05
0.9300E+02
0.4320E+05
Zr-93 0.1000E+01
none 0.0000E+00
none 0.0000E+00
Nuclide 016:
Zr-95
9
0.5527872000E+07
0.9500E+02
0.4377E+05
Nb-95m 0.7000E-02
Nb-95 0.9900E+00
none 0.0000E+00
Nuclide 017:
Zr-97
9
0.6084000000E+05
0.9700E+02
0.4562E+05
Nb-97m 0.9500E+00
Nb-97 0.5300E-01
none 0.0000E+00

Nuclide 018:
Nb-95
9
0.3036960000E+07
0.9500E+02
0.4138E+05
none 0.0000E+00
none 0.0000E+00
none 0.0000E+00
Nuclide 019:
Mo-99
7
0.2376000000E+06
0.9900E+02
0.4830E+05
Tc-99m 0.8800E+00
Tc-99 0.1200E+00
none 0.0000E+00
Nuclide 020:
Tc-99m
7
0.2167200000E+05
0.9900E+02
0.4169E+05
Tc-99 0.1000E+01
none 0.0000E+00
none 0.0000E+00
Nuclide 021:
Ru-103
7
0.3393792000E+07
0.1030E+03
0.3598E+05
Rh-103m 0.1000E+01
none 0.0000E+00
none 0.0000E+00
Nuclide 022:
Ru-105
7
0.1598400000E+05
0.1050E+03
0.2340E+05
Rh-105 0.1000E+01
none 0.0000E+00
none 0.0000E+00
Nuclide 023:
Ru-106
7
0.3181248000E+08
0.1060E+03
0.8175E+04
Rh-106 0.1000E+01
none 0.0000E+00

none 0.0000E+00
Nuclide 024:
Rh-105
7
0.1272960000E+06
0.1050E+03
0.1621E+05
none 0.0000E+00
none 0.0000E+00
none 0.0000E+00
Nuclide 025:
Sb-127
4
0.3326400000E+06
0.1270E+03
0.2208E+04
Te-127m 0.1800E+00
Te-127 0.8200E+00
none 0.0000E+00
Nuclide 026:
Sb-129
4
0.1555200000E+05
0.1290E+03
0.7820E+04
Te-129m 0.2200E+00
Te-129 0.7700E+00
none 0.0000E+00
Nuclide 027:
Te-127
4
0.3366000000E+05
0.1270E+03
0.2132E+04
none 0.0000E+00
none 0.0000E+00
none 0.0000E+00
Nuclide 028:
Te-127m
4
0.9417600000E+07
0.1270E+03
0.2823E+03
Te-127 0.9800E+00
none 0.0000E+00
none 0.0000E+00
Nuclide 029:
Te-129
4
0.4176000000E+04
0.1290E+03
0.7341E+04
I-129 0.1000E+01

none 0.0000E+00
none 0.0000E+00
Nuclide 030:
Te-129m
4
0.2903040000E+07
0.1290E+03
0.1935E+04
Te-129 0.6500E+00
I-129 0.3500E+00
none 0.0000E+00
Nuclide 031:
Te-131m
4
0.1080000000E+06
0.1310E+03
0.3707E+04
Te-131 0.2200E+00
I-131 0.7800E+00
none 0.0000E+00
Nuclide 032:
Te-132
4
0.2815200000E+06
0.1320E+03
0.3690E+05
I-132 0.1000E+01
none 0.0000E+00
none 0.0000E+00
Nuclide 033:
I-131
2
0.6946560000E+06
0.1310E+03
0.9488E-01
Xe-131m 0.1100E-01
none 0.0000E+00
none 0.0000E+00
Nuclide 034:
I-132
2
0.8280000000E+04
0.1320E+03
0.3456E-01
none 0.0000E+00
none 0.0000E+00
none 0.0000E+00
Nuclide 035:
I-133
2
0.7488000000E+05
0.1330E+03
0.1068E+00

Xe-133m 0.2900E-01
Xe-133 0.9700E+00
none 0.0000E+00
Nuclide 036:
I-134
2
0.3156000000E+04
0.1340E+03
0.1258E-01
none 0.0000E+00
none 0.0000E+00
none 0.0000E+00
Nuclide 037:
I-135
2
0.2379600000E+05
0.1350E+03
0.5118E-01
Xe-135m 0.1500E+00
Xe-135 0.8500E+00
none 0.0000E+00
Nuclide 038:
Xe-133
1
0.4531680000E+06
0.1330E+03
0.4782E+02
none 0.0000E+00
none 0.0000E+00
none 0.0000E+00
Nuclide 039:
Xe-135
1
0.3272400000E+05
0.1350E+03
0.2186E+01
Cs-135 0.1000E+01
none 0.0000E+00
none 0.0000E+00
Nuclide 040:
Cs-134
3
0.6507177120E+08
0.1340E+03
0.3425E+04
none 0.0000E+00
none 0.0000E+00
none 0.0000E+00
Nuclide 041:
Cs-136
3
0.1131840000E+07
0.1360E+03

0.1042E+04
none 0.0000E+00
none 0.0000E+00
none 0.0000E+00
Nuclide 042:
Cs-137
3
0.9467280000E+09
0.1370E+03
0.1915E+04
Ba-137m 0.9500E+00
none 0.0000E+00
none 0.0000E+00
Nuclide 043:
Ba-139
6
0.4962000000E+04
0.1390E+03
0.4976E+05
none 0.0000E+00
none 0.0000E+00
none 0.0000E+00
Nuclide 044:
Ba-140
6
0.1100736000E+07
0.1400E+03
0.4924E+05
La-140 0.1000E+01
none 0.0000E+00
none 0.0000E+00
Nuclide 045:
La-140
9
0.1449792000E+06
0.1400E+03
0.5032E+05
none 0.0000E+00
none 0.0000E+00
none 0.0000E+00
Nuclide 046:
La-141
9
0.1414800000E+05
0.1410E+03
0.4615E+05
Ce-141 0.1000E+01
none 0.0000E+00
none 0.0000E+00
Nuclide 047:
La-142
9
0.5550000000E+04

0.1420E+03
0.4449E+05
none 0.0000E+00
none 0.0000E+00
none 0.0000E+00
Nuclide 048:
Ce-141
8
0.2808086400E+07
0.1410E+03
0.4476E+05
none 0.0000E+00
none 0.0000E+00
none 0.0000E+00
Nuclide 049:
Ce-143
8
0.1188000000E+06
0.1430E+03
0.4352E+05
Pr-143 0.1000E+01
none 0.0000E+00
none 0.0000E+00
Nuclide 050:
Ce-144
8
0.2456352000E+08
0.1440E+03
0.2697E+05
Pr-144m 0.1800E-01
Pr-144 0.9800E+00
none 0.0000E+00
Nuclide 051:
Pr-143
9
0.1171584000E+07
0.1430E+03
0.4273E+05
none 0.0000E+00
none 0.0000E+00
none 0.0000E+00
Nuclide 052:
Nd-147
9
0.9486720000E+06
0.1470E+03
0.1911E+05
Pm-147 0.1000E+01
none 0.0000E+00
none 0.0000E+00
Nuclide 053:
Np-239
8

0.2034720000E+06
0.2390E+03
0.5120E+06
Pu-239 0.1000E+01
none 0.0000E+00
none 0.0000E+00
Nuclide 054:
Pu-238
8
0.2768863824E+10
0.2380E+03
0.2902E+02
U-234 0.1000E+01
none 0.0000E+00
none 0.0000E+00
Nuclide 055:
Pu-239
8
0.7594336440E+12
0.2390E+03
0.6545E+01
U-235 0.1000E+01
none 0.0000E+00
none 0.0000E+00
Nuclide 056:
Pu-240
8
0.2062920312E+12
0.2400E+03
0.8254E+01
U-236 0.1000E+01
none 0.0000E+00
none 0.0000E+00
Nuclide 057:
Pu-241
8
0.4544294400E+09
0.2410E+03
0.1390E+04
U-237 0.2400E-04
Am-241 0.1000E+01
none 0.0000E+00
Nuclide 058:
Am-241
9
0.1363919472E+11
0.2410E+03
0.9181E+00
Np-237 0.1000E+01
none 0.0000E+00
none 0.0000E+00
Nuclide 059:
Cm-242

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**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 1 | System Nos. | Sheet 90 of 1000 |
|---|---|---|---|---|

9
0.1406592000E+08
0.2420E+03
0.3514E+03
Pu-238 0.1000E+01
none 0.0000E+00
none 0.0000E+00
Nuclide 060:
Cm-244
9
0.571508136E+9
0.2440E+03
0.2056E+02
Pu-240 0.1000E+01
none 0.0000E+00
none 0.0000E+00
End of Nuclear Inventory File

**Appendix C**

**RADTRAD Release Fraction and Timing File**

# TMIPURGE.rft

**Post-LOCA Containment Purge**

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**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 1 | System Nos. | Sheet 92 of 1000 |
|---|---|---|---|---|

Release Fraction and Timing Name:
TMI-1 Post-LOCA Containment Purge Release Fraction & Timing
Duration (h): NON-LOCA Accident chk inventory
2.8000E-04 0.0000E+00 0.0000E+00 0.0000E+00
Noble Gases:
1.00000E+00 0.0000E+00 0.0000E+00 0.0000E+00
Iodine:
1.00000E+00 0.0000E+00 0.0000E+00 0.0000E+00
Cesium:
0.0000E+00 0.0000E+00 0.0000E+00 0.0000E+00
Tellurium:
0.0000E+00 0.0000E+00 0.0000E+00 0.0000E+00
Strontium:
0.0000E+00 0.0000E+00 0.0000E+00 0.0000E+00
Barium:
0.0000E+00 0.0000E+00 0.0000E+00 0.0000E+00
Ruthenium:
0.0000E+00 0.0000E+00 0.0000E+00 0.0000E+00
Cerium:
0.0000E+00 0.0000E+00 0.0000E+00 0.0000E+00
Lanthanum:
0.0000E+00 0.0000E+00 0.0000E+00 0.0000E+00
Non-Radioactive Aerosols (kg):
0.0000E+00 0.0000E+00 0.0000E+00 0.0000E+00
End of Release File

**Appendix D**

**RADTRAD Output File**

# Containment_Leakage.o0

**Containment Leakage Pathway**

TMI Containment Leakage Pathway AST Analysis:

CR Unfiltered Inleakage = 1,000 cfm (t=30 minutes to t=720 hours),
CR Initiation Time = 30 min (t=0 to t=30 min),
Two Spray Pumps For 28.19 min at 800 gpm each (t=75 seconds to t= 29.44 min),
One Spray Pump For t=29.44 min to t=4.0 hours @ 800 gpm

AmerGen

**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 1 | System Nos. | Sheet 94 of 1000 |
|---|---|---|---|---|

```
#######################################################################
          RADTRAD Version 3.02 run on  5/30/2001  at  7:53:11
#######################################################################

#######################################################################
                      File information
#######################################################################

Plant file name           = D:\TMI RADTRAD\Containment_Leakage.psf
Inventory file name       = d:\tmi radtrad\defaults\tmi_def.nif
Scenario file name        = D:\TMI RADTRAD\Containment_Leakage.psf
Release file name         = d:\tmi radtrad\defaults\pwr_dba.rft
Dose conversion file name = d:\tmi radtrad\defaults\fgr11&12.inp

    #####    ####   #####    #  #     #  #####   #    #  #####
    #    #  #       #        #  ##    #  #    #  #    #    #
    #    #  #       #        #  # #   #  #    #  #    #    #
    #####    ####   ####     #  #  #  #  #####   #    #    #
    #            #  #        #  #   # #  #       #    #    #
    #            #  #        #  #    ##  #       #    #    #
    #        ####   #        #  #     #  #        ####     #

Radtrad 3.02 1/5/2000
All Spray Floww at 800 gpm - 28.19 min BWST Depletion
Nuclide Inventory File:
d:\tmi radtrad\defaults\tmi_def.nif
Plant Power Level:
 2.6190E+03
Compartments:
  4
Compartment 1:
Sprayed Region
  3
 1.2310E+06
  1
  0
  0
  0
  0
Compartment 2:
Unsprayed Region
  3
 9.2880E+05
  0
  0
  0
  1
  0
Compartment 3:
Environment
  2
 0.0000E+00
  0
  0
  0
  0
```

```
  0
Compartment 4:
Control Room
  1
 2.5000E+05
  0
  0
  1
  0
  0
Pathways:
  7
Pathway 1:
Sprayed to Unsprayed
  1
  2
  2
Pathway 2:
Unsprayed to Sprayed
  2
  1
  2
Pathway 3:
Sprayed to Environment
  1
  3
  4
Pathway 4:
Unsprayed to Environment
  2
  3
  4
Pathway 5:
CR Filtered Air Intake
  3
  4
  2
Pathway 6:
CR  Unfiltered Inleakage
  3
  4
  2
Pathway 7:
CR Exhaust to Environment
  4
  3
  2
End of Plant Model File
Scenario Description Name:

Plant Model Filename:
ACCEPT\TEST24.PMF
Source Term:
  2
  1   5.7000E-01
  2   4.3000E-01
d:\tmi radtrad\defaults\fgr11&12.inp
```

```
d:\tmi radtrad\defaults\pwr_dba.rft
  0.0000E+00
  0
  9.5000E-01   4.8500E-02   1.5000E-03   1.0000E+00
Overlying Pool:
  0
  0.0000E+00
  0
  0
  0
  0
Compartments:
  4
Compartment 1:
  0
  1
  1
  0.0000E+00
  6
  0.0000E+00   0.0000E+00
  2.0800E-02   3.8800E+00
  4.9070E-01   1.9400E+00
  2.9200E+00   1.9400E+00
  3.8200E+00   1.9400E-01
  4.0000E+00   0.0000E+00
  1
  0.0000E+00
  6
  0.0000E+00   0.0000E+00
  2.0800E-02   9.4600E+00
  4.9070E-01   4.7300E+00
  2.9200E+00   0.0000E+00
  3.8200E+00   0.0000E+00
  4.0000E+00   0.0000E+00
  1
  0.0000E+00
  0
  0
  0
  0
  0
Compartment 2:
  0
  1
  0
  0
  0
  0
  0
  3
  1
  1.0000E+01
  0
Compartment 3:
  1
  1
  0
```

```
  0
  0
  0
  0
  0
  0
Compartment 4:
  1
  1
  0
  0
  0
  0
  1
  2.8000E+04
  3
  0.0000E+00   0.0000E+00   0.0000E+00   0.0000E+00
  5.0000E-01   9.9000E+01   9.0000E+01   9.0000E+01
  7.2000E+02   0.0000E+00   0.0000E+00   0.0000E+00
  0
  0
Pathways:
  7
Pathway 1:
  0
  0
  0
  0
  0
  1
  3
  0.0000E+00   0.0000E+00   0.0000E+00   0.0000E+00   0.0000E+00
  9.7000E-03   2.5000E+04   0.0000E+00   0.0000E+00   0.0000E+00
  7.2000E+02   2.5000E+04   0.0000E+00   0.0000E+00   0.0000E+00
  0
  0
  0
  0
  0
  0
Pathway 2:
  0
  0
  0
  0
  0
  1
  3
  0.0000E+00   0.0000E+00   0.0000E+00   0.0000E+00   0.0000E+00
  9.7000E-03   2.5000E+04   0.0000E+00   0.0000E+00   0.0000E+00
  7.2000E+02   2.5000E+04   0.0000E+00   0.0000E+00   0.0000E+00
  0
  0
  0
  0
  0
  0
```

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**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 1 | System Nos. | Sheet 98 of 1000 |
|---|---|---|---|---|

```
Pathway 3:
  0
  0
  0
  0
  0
  0
  0
  0
  0
  0
  1
  3
  0.0000E+00   1.0000E-01
  2.4000E+01   5.0000E-02
  7.2000E+02   0.0000E+00
  0
Pathway 4:
  0
  0
  0
  0
  0
  0
  0
  0
  0
  0
  1
  3
  0.0000E+00   1.0000E-01
  2.4000E+01   5.0000E-02
  7.2000E+02   0.0000E+00
  0
Pathway 5:
  0
  0
  0
  0
  0
  1
  3
  0.0000E+00   4.0000E+03   0.0000E+00   0.0000E+00   0.0000E+00
  5.0000E-01   8.0000E+03   9.9000E+01   9.0000E+01   9.0000E+01
  7.2000E+02   8.0000E+03   9.9000E+01   9.0000E+01   9.0000E+01
  0
  0
  0
  0
  0
  0
Pathway 6:
  0
  0
  0
  0
  0
```

```
  1
  3
  0.0000E+00   0.0000E+00   0.0000E+00   0.0000E+00   0.0000E+00
  5.0000E-01   1.0000E+03   0.0000E+00   0.0000E+00   0.0000E+00
  7.2000E+02   1.0000E+03   0.0000E+00   0.0000E+00   0.0000E+00
  0
  0
  0
  0
  0
  0
Pathway 7:
  0
  0
  0
  0
  0
  1
  3
  0.0000E+00   4.0000E+03   0.0000E+00   0.0000E+00   0.0000E+00
  5.0000E-01   9.0000E+03   0.0000E+00   0.0000E+00   0.0000E+00
  7.2000E+02   9.0000E+03   0.0000E+00   0.0000E+00   0.0000E+00
  0
  0
  0
  0
  0
  0
Dose Locations:
  3
Location 1:
Exclusion Area Boundary
  3
  1
  2
  0.0000E+00   8.0000E-04
  7.2000E+02   0.0000E+00
  1
  2
  0.0000E+00   3.5000E-04
  7.2000E+02   0.0000E+00
  0
Location 2:
Low Population Zone
  3
  1
  6
  0.0000E+00   1.4000E-04
  2.0000E+00   6.0000E-05
  8.0000E+00   3.9000E-05
  2.4000E+01   1.6000E-05
  9.6000E+01   4.0000E-06
  7.2000E+02   0.0000E+00
  1
  4
  0.0000E+00   3.5000E-04
  8.0000E+00   1.8000E-04
```

```
  2.4000E+01   2.3000E-04
  7.2000E+02   0.0000E+00
  0
Location 3:
Control Room
  4
  0
  1
  2
  0.0000E+00   3.5000E-04
  7.2000E+02   0.0000E+00
  1
  4
  0.0000E+00   1.0000E+00
  2.4000E+01   6.0000E-01
  9.6000E+01   4.0000E-01
  7.2000E+02   0.0000E+00
Effective Volume Location:
  1
  6
  0.0000E+00   3.4000E-04
  2.0000E+00   2.2500E-04
  8.0000E+00   1.0200E-04
  2.4000E+01   7.1600E-05
  9.6000E+01   4.9900E-05
  7.2000E+02   0.0000E+00
Simulation Parameters:
  7
  0.0000E+00   5.0000E-02
  1.0000E+00   1.0000E-01
  2.0000E+00   1.0000E+00
  8.0000E+00   2.0000E+00
  2.4000E+01   4.0000E+00
  9.6000E+01   8.0000E+00
  7.2000E+02   0.0000E+00
Output Filename:
D:\TMI RADTRAD\Containment_Leakage.o0
  1
  1
  1
  0
  0
End of Scenario File

##########################################################################
          RADTRAD Version 3.02 run on  5/30/2001  at  7:53:11
##########################################################################

##########################################################################
                     Plant Description
##########################################################################

Number of Nuclides =  60

Inventory Power =   1.0000E+00 MWth
Plant Power Level =   2.6190E+03 MWth
```

```
Number of compartments    =   4

Compartment information

Compartment number  1  (Source term fraction =   5.7000E-01
)
Name: Sprayed Region
Compartment volume =   1.2310E+06 (Cubic feet)
Removal devices within compartment:
     Spray(s)
Pathways into and out of compartment  1
    Pathway to compartment number   2: Sprayed to Unsprayed
    Pathway to compartment number   3: Sprayed to Environment
    Pathway from compartment number 2: Unsprayed to Sprayed

Compartment number  2  (Source term fraction =   4.3000E-01
)
Name: Unsprayed Region
Compartment volume =   9.2880E+05 (Cubic feet)
Removal devices within compartment:
     Deposition
Pathways into and out of compartment  2
    Pathway to compartment number   1: Unsprayed to Sprayed
    Pathway to compartment number   3: Unsprayed to Environment
    Pathway from compartment number 1: Sprayed to Unsprayed

Compartment number  3
Name: Environment
Pathways into and out of compartment  3
    Pathway to compartment number   4: CR Filtered Air Intake
    Pathway to compartment number   4: CR  Unfiltered Inleakage
    Pathway from compartment number 1: Sprayed to Environment
    Pathway from compartment number 2: Unsprayed to Environment
    Pathway from compartment number 4: CR Exhaust to Environment

Compartment number  4
Name: Control Room
Compartment volume =   2.5000E+05 (Cubic feet)
Removal devices within compartment:
     Filter(s)
Pathways into and out of compartment  4
    Pathway to compartment number   3: CR Exhaust to Environment
    Pathway from compartment number 3: CR Filtered Air Intake
    Pathway from compartment number 3: CR  Unfiltered Inleakage

Total number of pathways =   7

#######################################################################
          RADTRAD Version 3.02 run on  5/30/2001  at  7:53:11
#######################################################################

#######################################################################
                     Scenario Description
#######################################################################

Radioactive Decay is enabled
RELEASE_NAME = PWR, NUREG-1465, Tables 3.12 & 3.13, Jun
```

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**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 1 | System Nos. | Sheet 102 of 1000 |
|---|---|---|---|---|

```
Release Fractions and Timings
                GAP       EARLY IN-VESSEL
             0.5000 hrs     1.3000 hrs
NOBLES       5.0000E-02     9.5000E-01
IODINE       5.0000E-02     3.5000E-01
CESIUM       5.0000E-02     2.5000E-01
TELLURIUM    0.0000E+00     5.0000E-02
STRONTIUM    0.0000E+00     2.0000E-02
BARIUM       0.0000E+00     2.0000E-02
RUTHENIUM    0.0000E+00     2.5000E-03
CERIUM       0.0000E+00     5.0000E-04
LANTHANUM    0.0000E+00     2.0000E-04

Iodine fractions
     Aerosol     =   9.5000E-01
     Elemental   =   4.8500E-02
     Organic     =   1.5000E-03

COMPARTMENT DATA

Compartment number   1: Sprayed Region

     Sprays:  Aerosal Removal Data
      Time (hr)          Removal Coef. (hr^-1)
       0.0000E+00          0.0000E+00
       2.0800E-02          3.8800E+00
       4.9070E-01          1.9400E+00
       2.9200E+00          1.9400E+00
       3.8200E+00          1.9400E-01
       4.0000E+00          0.0000E+00

     Sprays:  Elemental Removal Data
      Time (hr)          Removal Coef. (hr^-1)
       0.0000E+00          0.0000E+00
       2.0800E-02          9.4600E+00
       4.9070E-01          4.7300E+00
       2.9200E+00          0.0000E+00
       3.8200E+00          0.0000E+00
       4.0000E+00          0.0000E+00

Compartment number   2: Unsprayed Region
Natural Deposition (Powers' model):  Aerosol data
      Reactor type:   1
      Percentile =  10 (%)

Compartment number   3: Environment

Compartment number   4: Control Room

     Compartment Filter Data

      Time (hr)      Flow Rate          Filter Efficiencies (%)
                       (cfm)        Aerosol     Elemental    Organic
       0.0000E+00    2.8000E+04   0.0000E+00   0.0000E+00   0.0000E+00
       5.0000E-01    2.8000E+04   9.9000E+01   9.0000E+01   9.0000E+01
       7.2000E+02    2.8000E+04   0.0000E+00   0.0000E+00   0.0000E+00
```

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**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 1 | System Nos. | Sheet 103 of 1000 |
|---|---|---|---|---|

PATHWAY DATA

Pathway number 1: Sprayed to Unsprayed

Pathway Filter: Removal Data

| Time (hr) | Flow Rate (cfm) | Filter Efficiencies (%) Aerosol | Elemental | Organic |
|---|---|---|---|---|
| 0.0000E+00 | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 |
| 9.7000E-03 | 2.5000E+04 | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 |
| 7.2000E+02 | 2.5000E+04 | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 |

Pathway number 2: Unsprayed to Sprayed

Pathway Filter: Removal Data

| Time (hr) | Flow Rate (cfm) | Filter Efficiencies (%) Aerosol | Elemental | Organic |
|---|---|---|---|---|
| 0.0000E+00 | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 |
| 9.7000E-03 | 2.5000E+04 | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 |
| 7.2000E+02 | 2.5000E+04 | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 |

Pathway number 3: Sprayed to Environment

Convection Data

| Time (hr) | Flow Rate (% / day) |
|---|---|
| 0.0000E+00 | 1.0000E-01 |
| 2.4000E+01 | 5.0000E-02 |
| 7.2000E+02 | 0.0000E+00 |

Pathway number 4: Unsprayed to Environment

Convection Data

| Time (hr) | Flow Rate (% / day) |
|---|---|
| 0.0000E+00 | 1.0000E-01 |
| 2.4000E+01 | 5.0000E-02 |
| 7.2000E+02 | 0.0000E+00 |

Pathway number 5: CR Filtered Air Intake

Pathway Filter: Removal Data

| Time (hr) | Flow Rate (cfm) | Filter Efficiencies (%) Aerosol | Elemental | Organic |
|---|---|---|---|---|
| 0.0000E+00 | 4.0000E+03 | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 |
| 5.0000E-01 | 8.0000E+03 | 9.9000E+01 | 9.0000E+01 | 9.0000E+01 |
| 7.2000E+02 | 8.0000E+03 | 9.9000E+01 | 9.0000E+01 | 9.0000E+01 |

Pathway number 6: CR Unfiltered Inleakage

Pathway Filter: Removal Data

| Time (hr) | Flow Rate (cfm) | Filter Efficiencies (%) Aerosol | Elemental | Organic |
|---|---|---|---|---|
| 0.0000E+00 | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 |
| 5.0000E-01 | 1.0000E+03 | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 |
| 7.2000E+02 | 1.0000E+03 | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 |

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**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 1 | System Nos. | Sheet 104 of 1000 |
|---|---|---|---|---|

```
Pathway number  7: CR Exhaust to Environment

     Pathway Filter: Removal Data

       Time (hr)      Flow Rate          Filter Efficiencies (%)
                       (cfm)        Aerosol     Elemental    Organic
       0.0000E+00    4.0000E+03   0.0000E+00   0.0000E+00   0.0000E+00
       5.0000E-01    9.0000E+03   0.0000E+00   0.0000E+00   0.0000E+00
       7.2000E+02    9.0000E+03   0.0000E+00   0.0000E+00   0.0000E+00

LOCATION DATA
     Location Exclusion Area Boundary     is in compartment   3

     Location X/Q Data
      Time (hr)         X/Q (s * m^-3)
       0.0000E+00          8.0000E-04
       7.2000E+02          0.0000E+00

     Location Breathing Rate Data
      Time (hr)         Breathing Rate (m^3 * sec^-1)
       0.0000E+00                3.5000E-04
       7.2000E+02                0.0000E+00
     Location Low Population Zone     is in compartment   3

     Location X/Q Data
      Time (hr)         X/Q (s * m^-3)
       0.0000E+00          1.4000E-04
       2.0000E+00          6.0000E-05
       8.0000E+00          3.9000E-05
       2.4000E+01          1.6000E-05
       9.6000E+01          4.0000E-06
       7.2000E+02          0.0000E+00

     Location Breathing Rate Data
      Time (hr)         Breathing Rate (m^3 * sec^-1)
       0.0000E+00                3.5000E-04
       8.0000E+00                1.8000E-04
       2.4000E+01                2.3000E-04
       7.2000E+02                0.0000E+00
     Location Control Room     is in compartment   4

     Location X/Q Data
      Time (hr)         X/Q (s * m^-3)
       0.0000E+00          3.4000E-04
       2.0000E+00          2.2500E-04
       8.0000E+00          1.0200E-04
       2.4000E+01          7.1600E-05
       9.6000E+01          4.9900E-05
       7.2000E+02          0.0000E+00

     Location Breathing Rate Data
      Time (hr)         Breathing Rate (m^3 * sec^-1)
       0.0000E+00                3.5000E-04
       7.2000E+02                0.0000E+00

     Location Occupancy Factor Data
```

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**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 1 | System Nos. | Sheet 105 of 1000 |
|---|---|---|---|---|

```
      Time (hr)          Occupancy Factor
       0.0000E+00            1.0000E+00
       2.4000E+01            6.0000E-01
       9.6000E+01            4.0000E-01
       7.2000E+02            0.0000E+00

USER SPECIFIED TIME STEP DATA - SUPPLEMENTAL TIME STEPS
     Time            Time step
      0.0000E+00       5.0000E-02
      1.0000E+00       1.0000E-01
      2.0000E+00       1.0000E+00
      8.0000E+00       2.0000E+00
      2.4000E+01       4.0000E+00
      9.6000E+01       8.0000E+00
      7.2000E+02       0.0000E+00

#######################################################################
          RADTRAD Version 3.02 run on  5/30/2001  at  7:53:11
#######################################################################


     ####   #    #  #####  #####   #    #  #####
    #    #  #    #    #    #    #  #    #    #
    #    #  #    #    #    #    #  #    #    #
    #    #  #    #    #    #####   #    #    #
    #    #  #    #    #    #       #    #    #
    #    #  #    #    #    #       #    #    #
     ####    ####     #    #        ####     #


####################################################################
            Dose, Detailed model and Detailed Inventory Output
####################################################################

Exclusion Area Boundary Doses:

Time (h) =   0.0097    Whole Body   Thyroid       TEDE
Delta dose (rem)        3.6011E-05  6.0580E-03  2.9131E-04
Accumulated dose (rem)  3.6011E-05  6.0580E-03  2.9131E-04

Low Population Zone Doses:

Time (h) =   0.0097    Whole Body   Thyroid       TEDE
Delta dose (rem)        6.3019E-06  1.0601E-03  5.0978E-05
Accumulated dose (rem)  6.3019E-06  1.0601E-03  5.0978E-05

Control Room Doses:

Time (h) =   0.0097    Whole Body   Thyroid       TEDE
Delta dose (rem)        3.6313E-09  1.0734E-05  4.5599E-07
Accumulated dose (rem)  3.6313E-09  1.0734E-05  4.5599E-07

Environment Integral Nuclide Release:

Time (h) =   0.0097       Ci           kg         Atoms         Bq
Kr-85                  2.0489E-04  5.2223E-10  3.6999E+15  7.5809E+06
Kr-85m                 4.5560E-03  5.5362E-13  3.9223E+12  1.6857E+08
```

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**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 1 | System Nos. | Sheet 106 of 1000 |
|---|---|---|---|---|

| | | | | |
|---|---|---|---|---|
| Kr-87 | 8.9583E-03 | 3.1626E-13 | 2.1892E+12 | 3.3146E+08 |
| Kr-88 | 1.2674E-02 | 1.0107E-12 | 6.9167E+12 | 4.6892E+08 |
| Rb-86 | 3.2188E-05 | 3.9559E-13 | 2.7701E+12 | 1.1910E+06 |
| I-131 | 1.4010E-02 | 1.1300E-10 | 5.1948E+14 | 5.1836E+08 |
| I-132 | 2.0184E-02 | 1.9554E-12 | 8.9208E+12 | 7.4679E+08 |
| I-133 | 2.9293E-02 | 2.5859E-11 | 1.1709E+14 | 1.0839E+09 |
| I-134 | 3.2309E-02 | 1.2111E-12 | 5.4430E+12 | 1.1954E+09 |
| I-135 | 2.7297E-02 | 7.7728E-12 | 3.4673E+13 | 1.0100E+09 |
| Xe-133 | 2.9302E-02 | 1.5654E-10 | 7.0881E+14 | 1.0842E+09 |
| Xe-135 | 1.0788E-02 | 4.2243E-12 | 1.8844E+13 | 3.9915E+08 |
| Cs-134 | 3.3570E-03 | 2.5946E-09 | 1.1661E+16 | 1.2421E+08 |
| Cs-136 | 9.2817E-04 | 1.2664E-11 | 5.6077E+13 | 3.4342E+07 |
| Cs-137 | 2.2491E-03 | 2.5857E-08 | 1.1366E+17 | 8.3217E+07 |

Environment Transport Group Inventory:

| Time (h) = 0.0097 | Present Release | Release Rate/s | Total Release |
|---|---|---|---|
| Noble gases (atoms) | 4.4407E+15 | 1.2717E+14 | 4.4261E+15 |
| Elemental I (atoms) | 3.3259E+13 | 9.5244E+11 | 3.3150E+13 |
| Organic I (atoms) | 1.0286E+12 | 2.9457E+10 | 1.0253E+12 |
| Aerosols (kg) | 2.8607E-08 | 8.1922E-10 | 2.8513E-08 |

CR Filtered Air Intake Transport Group Inventory:

| Time (h) = 0.0097 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 |

CR Unfiltered Inleakage Transport Group Inventory:

| Time (h) = 0.0097 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 |

CR Exhaust to Environment Transport Group Inventory:

| Time (h) = 0.0097 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 |

Control Room Compartment Nuclide Inventory:

| Time (h) = 0.0097 | Ci | kg | Atoms | Bq |
|---|---|---|---|---|
| Kr-85 | 1.3110E-07 | 3.3416E-13 | 2.3674E+12 | 4.8507E+03 |
| Kr-85m | 2.9152E-06 | 3.5423E-16 | 2.5097E+09 | 1.0786E+05 |
| Kr-87 | 5.7317E-06 | 2.0235E-16 | 1.4007E+09 | 2.1207E+05 |
| Kr-88 | 8.1091E-06 | 6.4670E-16 | 4.4256E+09 | 3.0004E+05 |

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**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 1 | System Nos. | Sheet 107 of 1000 |
|---|---|---|---|---|

| | | | | |
|---|---|---|---|---|
| Rb-86 | 2.0596E-08 | 2.5312E-16 | 1.7725E+09 | 7.6205E+02 |
| I-131 | 8.9642E-06 | 7.2307E-14 | 3.3240E+11 | 3.3168E+05 |
| I-132 | 1.2914E-05 | 1.2511E-15 | 5.7079E+09 | 4.7783E+05 |
| I-133 | 1.8744E-05 | 1.6546E-14 | 7.4920E+10 | 6.9352E+05 |
| I-134 | 2.0672E-05 | 7.7489E-16 | 3.4825E+09 | 7.6485E+05 |
| I-135 | 1.7466E-05 | 4.9735E-15 | 2.2186E+10 | 6.4625E+05 |
| Xe-133 | 1.8749E-05 | 1.0017E-13 | 4.5354E+11 | 6.9372E+05 |
| Xe-135 | 6.9026E-06 | 2.7029E-15 | 1.2057E+10 | 2.5540E+05 |
| Cs-134 | 2.1480E-06 | 1.6602E-12 | 7.4611E+12 | 7.9476E+04 |
| Cs-136 | 5.9390E-07 | 8.1033E-15 | 3.5882E+10 | 2.1974E+04 |
| Cs-137 | 1.4391E-06 | 1.6545E-11 | 7.2728E+13 | 5.3247E+04 |

Control Room Transport Group Inventory:

| Time (h) = 0.0097 | Atmosphere | Sump | Overlying Pool |
|---|---|---|---|
| Noble gases (atoms) | 2.8414E+12 | 0.0000E+00 | 0.0000E+00 |
| Elemental I (atoms) | 2.1281E+10 | 0.0000E+00 | 0.0000E+00 |
| Organic I (atoms) | 6.5818E+08 | 0.0000E+00 | 0.0000E+00 |
| Aerosols (kg) | 1.8305E-11 | 0.0000E+00 | 0.0000E+00 |

| Time (h) = 0.0097 | Deposition Surfaces | Recirculating Filter |
|---|---|---|
| Noble gases (atoms) | 0.0000E+00 | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 | 0.0000E+00 |

CR Filtered Air Intake Transport Group Inventory:

| Time (h) = 0.0097 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 |

CR Unfiltered Inleakage Transport Group Inventory:

| Time (h) = 0.0097 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 |

CR Exhaust to Environment Transport Group Inventory:

| Time (h) = 0.0097 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 |

Exclusion Area Boundary Doses:

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**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 1 | System Nos. | Sheet 108 of 1000 |
|---|---|---|---|---|

| Time (h) = 0.0208 | Whole Body | Thyroid | TEDE |
|---|---|---|---|
| Delta dose (rem) | 1.2897E-04 | 2.1793E-02 | 1.0474E-03 |
| Accumulated dose (rem) | 1.6498E-04 | 2.7851E-02 | 1.3387E-03 |

Low Population Zone Doses:

| Time (h) = 0.0208 | Whole Body | Thyroid | TEDE |
|---|---|---|---|
| Delta dose (rem) | 2.2569E-05 | 3.8138E-03 | 1.8329E-04 |
| Accumulated dose (rem) | 2.8871E-05 | 4.8739E-03 | 2.3427E-04 |

Control Room Doses:

| Time (h) = 0.0208 | Whole Body | Thyroid | TEDE |
|---|---|---|---|
| Delta dose (rem) | 2.5714E-08 | 7.6319E-05 | 3.2419E-06 |
| Accumulated dose (rem) | 2.9345E-08 | 8.7053E-05 | 3.6979E-06 |

Environment Integral Nuclide Release:

| Time (h) = 0.0208 | Ci | kg | Atoms | Bq |
|---|---|---|---|---|
| Kr-85 | 9.4212E-04 | 2.4013E-09 | 1.7013E+16 | 3.4858E+07 |
| Kr-85m | 2.0913E-02 | 2.5412E-12 | 1.8004E+13 | 7.7377E+08 |
| Kr-87 | 4.0939E-02 | 1.4453E-12 | 1.0004E+13 | 1.5147E+09 |
| Kr-88 | 5.8114E-02 | 4.6346E-12 | 3.1716E+13 | 2.1502E+09 |
| Rb-86 | 1.4800E-04 | 1.8190E-12 | 1.2737E+13 | 5.4762E+06 |
| I-131 | 6.4416E-02 | 5.1959E-10 | 2.3886E+15 | 2.3834E+09 |
| I-132 | 9.2492E-02 | 8.9605E-12 | 4.0880E+13 | 3.4222E+09 |
| I-133 | 1.3465E-01 | 1.1886E-10 | 5.3819E+14 | 4.9819E+09 |
| I-134 | 1.4724E-01 | 5.5195E-12 | 2.4805E+13 | 5.4480E+09 |
| I-135 | 1.2537E-01 | 3.5698E-11 | 1.5924E+14 | 4.6386E+09 |
| Xe-133 | 1.3473E-01 | 7.1977E-10 | 3.2590E+15 | 4.9849E+09 |
| Xe-135 | 4.9561E-02 | 1.9407E-11 | 8.6573E+13 | 1.8338E+09 |
| Cs-134 | 1.5436E-02 | 1.1930E-08 | 5.3617E+16 | 5.7113E+08 |
| Cs-136 | 4.2678E-03 | 5.8230E-11 | 2.5785E+14 | 1.5791E+08 |
| Cs-137 | 1.0342E-02 | 1.1890E-07 | 5.2263E+17 | 3.8265E+08 |

Environment Transport Group Inventory:

| Time (h) = 0.0208 | Present Release | Release Rate/s | Total Release |
|---|---|---|---|
| Noble gases (atoms) | 2.0419E+16 | 2.7269E+14 | 2.0404E+16 |
| Elemental I (atoms) | 1.5292E+14 | 2.0422E+12 | 1.5281E+14 |
| Organic I (atoms) | 4.7294E+12 | 6.3160E+10 | 4.7260E+12 |
| Aerosols (kg) | 1.3154E-07 | 1.7567E-09 | 1.3145E-07 |

CR Filtered Air Intake Transport Group Inventory:

| Time (h) = 0.0208 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 |

CR Unfiltered Inleakage Transport Group Inventory:

| Time (h) = 0.0208 | Pathway Filter |
|---|---|

| | |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 |

CR Exhaust to Environment Transport Group Inventory:

| Time (h) = 0.0208 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 |

Control Room Compartment Nuclide Inventory:

| Time (h) = 0.0208 | Ci | kg | Atoms | Bq |
|---|---|---|---|---|
| Kr-85 | 6.0069E-07 | 1.5311E-12 | 1.0847E+13 | 2.2226E+04 |
| Kr-85m | 1.3329E-05 | 1.6196E-15 | 1.1475E+10 | 4.9317E+05 |
| Kr-87 | 2.6068E-05 | 9.2028E-16 | 6.3702E+09 | 9.6450E+05 |
| Kr-88 | 3.7032E-05 | 2.9533E-15 | 2.0210E+10 | 1.3702E+06 |
| Rb-86 | 9.4367E-08 | 1.1598E-15 | 8.1212E+09 | 3.4916E+03 |
| I-131 | 4.1071E-05 | 3.3128E-13 | 1.5229E+12 | 1.5196E+06 |
| I-132 | 5.8929E-05 | 5.7090E-15 | 2.6046E+10 | 2.1804E+06 |
| I-133 | 8.5842E-05 | 7.5778E-14 | 3.4312E+11 | 3.1762E+06 |
| I-134 | 9.3699E-05 | 3.5124E-15 | 1.5785E+10 | 3.4669E+06 |
| I-135 | 7.9914E-05 | 2.2755E-14 | 1.0151E+11 | 2.9568E+06 |
| Xe-133 | 8.5900E-05 | 4.5891E-13 | 2.0779E+12 | 3.1783E+06 |
| Xe-135 | 3.1594E-05 | 1.2372E-14 | 5.5188E+10 | 1.1690E+06 |
| Cs-134 | 9.8419E-06 | 7.6068E-12 | 3.4186E+13 | 3.6415E+05 |
| Cs-136 | 2.7211E-06 | 3.7127E-14 | 1.6440E+11 | 1.0068E+05 |
| Cs-137 | 6.5939E-06 | 7.5808E-11 | 3.3323E+14 | 2.4397E+05 |

Control Room Transport Group Inventory:

| Time (h) = 0.0208 | Atmosphere | Sump | Overlying Pool |
|---|---|---|---|
| Noble gases (atoms) | 1.3019E+13 | 0.0000E+00 | 0.0000E+00 |
| Elemental I (atoms) | 9.7500E+10 | 0.0000E+00 | 0.0000E+00 |
| Organic I (atoms) | 3.0155E+09 | 0.0000E+00 | 0.0000E+00 |
| Aerosols (kg) | 8.3870E-11 | 0.0000E+00 | 0.0000E+00 |

| Time (h) = 0.0208 | Deposition Surfaces | Recirculating Filter |
|---|---|---|
| Noble gases (atoms) | 0.0000E+00 | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 | 0.0000E+00 |

CR Filtered Air Intake Transport Group Inventory:

| Time (h) = 0.0208 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 |

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**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 1 | System Nos. | Sheet 110 of 1000 |
|---|---|---|---|---|

CR Unfiltered Inleakage Transport Group Inventory:

| | Pathway Filter |
|---|---|
| Time (h) = 0.0208 | |
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 |

CR Exhaust to Environment Transport Group Inventory:

| | Pathway Filter |
|---|---|
| Time (h) = 0.0208 | |
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 |

Exclusion Area Boundary Doses:

| Time (h) = 0.4907 | Whole Body | Thyroid | TEDE |
|---|---|---|---|
| Delta dose (rem) | 6.1402E-02 | 1.1418E+01 | 5.4378E-01 |
| Accumulated dose (rem) | 6.1567E-02 | 1.1446E+01 | 5.4512E-01 |

Low Population Zone Doses:

| Time (h) = 0.4907 | Whole Body | Thyroid | TEDE |
|---|---|---|---|
| Delta dose (rem) | 1.0745E-02 | 1.9982E+00 | 9.5161E-02 |
| Accumulated dose (rem) | 1.0774E-02 | 2.0031E+00 | 9.5395E-02 |

Control Room Doses:

| Time (h) = 0.4907 | Whole Body | Thyroid | TEDE |
|---|---|---|---|
| Delta dose (rem) | 2.1943E-04 | 7.2722E-01 | 3.0932E-02 |
| Accumulated dose (rem) | 2.1946E-04 | 7.2731E-01 | 3.0935E-02 |

Environment Integral Nuclide Release:

| Time (h) = 0.4907 | Ci | kg | Atoms | Bq |
|---|---|---|---|---|
| Kr-85 | 5.2438E-01 | 1.3366E-06 | 9.4693E+18 | 1.9402E+10 |
| Kr-85m | 1.0827E+01 | 1.3156E-09 | 9.3211E+15 | 4.0060E+11 |
| Kr-87 | 1.7729E+01 | 6.2590E-10 | 4.3325E+15 | 6.5597E+11 |
| Kr-88 | 2.8868E+01 | 2.3022E-09 | 1.5755E+16 | 1.0681E+12 |
| Rb-86 | 6.1824E-02 | 7.5981E-10 | 5.3206E+15 | 2.2875E+09 |
| I-131 | 2.6626E+01 | 2.1477E-07 | 9.8730E+17 | 9.8515E+11 |
| I-132 | 3.3299E+01 | 3.2259E-09 | 1.4717E+16 | 1.2321E+12 |
| I-133 | 5.4883E+01 | 4.8449E-08 | 2.1937E+17 | 2.0307E+12 |
| I-134 | 4.2596E+01 | 1.5967E-09 | 7.1759E+15 | 1.5760E+12 |
| I-135 | 4.9421E+01 | 1.4073E-08 | 6.2775E+16 | 1.8286E+12 |
| Xe-133 | 7.4794E+01 | 3.9958E-07 | 1.8093E+18 | 2.7674E+12 |
| Xe-135 | 2.6615E+01 | 1.0422E-08 | 4.6492E+16 | 9.8477E+11 |
| Cs-134 | 6.4524E+00 | 4.9871E-06 | 2.2413E+19 | 2.3874E+11 |
| Cs-136 | 1.7822E+00 | 2.4316E-08 | 1.0767E+17 | 6.5940E+10 |
| Cs-137 | 4.3231E+00 | 4.9701E-05 | 2.1847E+20 | 1.5995E+11 |

Environment Transport Group Inventory:

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| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 1 | System Nos. | Sheet 111 of 1000 |
|---|---|---|---|---|

| Time (h) = 0.4907 | Present Release | Release Rate/s | Total Release |
|---|---|---|---|
| Noble gases (atoms) | 1.1359E+19 | 6.4304E+15 | 1.1359E+19 |
| Elemental I (atoms) | 5.0384E+16 | 2.8522E+13 | 5.0384E+16 |
| Organic I (atoms) | 2.6171E+15 | 1.4815E+12 | 2.6171E+15 |
| Aerosols (kg) | 5.4985E-05 | 3.1126E-08 | 5.4985E-05 |

CR Filtered Air Intake Transport Group Inventory:

| Time (h) = 0.4907 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 |

CR Unfiltered Inleakage Transport Group Inventory:

| Time (h) = 0.4907 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 |

CR Exhaust to Environment Transport Group Inventory:

| Time (h) = 0.4907 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 |

**Control Room Compartment Nuclide Inventory:**

| **Time (h) = 0.4907** | **Ci** | **kg** | **Atoms** | **Bq** |
|---|---|---|---|---|
| **Kr-85** | **2.8940E-04** | **7.3764E-10** | **5.2261E+15** | **1.0708E+07** |
| **Kr-85m** | **5.8400E-03** | **7.0964E-13** | **5.0277E+12** | **2.1608E+08** |
| **Kr-87** | **9.0010E-03** | **3.1777E-13** | **2.1996E+12** | **3.3304E+08** |
| **Kr-88** | **1.5362E-02** | **1.2251E-12** | **8.3838E+12** | **5.6839E+08** |
| **Rb-86** | **3.3766E-05** | **4.1498E-13** | **2.9059E+12** | **1.2493E+06** |
| **I-131** | **1.4534E-02** | **1.1724E-10** | **5.3894E+14** | **5.3777E+08** |
| **I-132** | **1.7315E-02** | **1.6774E-12** | **7.6529E+12** | **6.4065E+08** |
| **I-133** | **2.9817E-02** | **2.6322E-11** | **1.1918E+14** | **1.1032E+09** |
| **I-134** | **2.0335E-02** | **7.6227E-13** | **3.4257E+12** | **7.5239E+08** |
| **I-135** | **2.6543E-02** | **7.5581E-12** | **3.3716E+13** | **9.8209E+08** |
| **Xe-133** | **4.1246E-02** | **2.2035E-10** | **9.9773E+14** | **1.5261E+09** |
| **Xe-135** | **1.4525E-02** | **5.6878E-12** | **2.5372E+13** | **5.3743E+08** |
| **Cs-134** | **3.5249E-03** | **2.7244E-09** | **1.2244E+16** | **1.3042E+08** |
| **Cs-136** | **9.7324E-04** | **1.3279E-11** | **5.8800E+13** | **3.6010E+07** |
| **Cs-137** | **2.3617E-03** | **2.7151E-08** | **1.1935E+17** | **8.7381E+07** |

Control Room Transport Group Inventory:

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**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 1 | System Nos. | Sheet 112 of 1000 |
|---|---|---|---|---|

```
                                                Overlying
Time (h) =   0.4907    Atmosphere     Sump        Pool
Noble gases (atoms)    6.2691E+15  0.0000E+00  0.0000E+00
Elemental I (atoms)    2.7357E+13  0.0000E+00  0.0000E+00
Organic I (atoms)      1.4440E+12  0.0000E+00  0.0000E+00
Aerosols (kg)          3.0038E-08  0.0000E+00  0.0000E+00

                       Deposition Recirculating
Time (h) =   0.4907     Surfaces     Filter
Noble gases (atoms)    0.0000E+00  0.0000E+00
Elemental I (atoms)    0.0000E+00  0.0000E+00
Organic I (atoms)      0.0000E+00  0.0000E+00
Aerosols (kg)          0.0000E+00  0.0000E+00

CR Filtered Air Intake Transport Group Inventory:

                        Pathway
Time (h) =   0.4907      Filter
Noble gases (atoms)    0.0000E+00
Elemental I (atoms)    0.0000E+00
Organic I (atoms)      0.0000E+00
Aerosols (kg)          0.0000E+00

CR  Unfiltered Inleakage Transport Group Inventory:

                        Pathway
Time (h) =   0.4907      Filter
Noble gases (atoms)    0.0000E+00
Elemental I (atoms)    0.0000E+00
Organic I (atoms)      0.0000E+00
Aerosols (kg)          0.0000E+00

CR Exhaust to Environment Transport Group Inventory:

                        Pathway
Time (h) =   0.4907      Filter
Noble gases (atoms)    0.0000E+00
Elemental I (atoms)    0.0000E+00
Organic I (atoms)      0.0000E+00
Aerosols (kg)          0.0000E+00

Exclusion Area Boundary Doses:

Time (h) =   0.5000    Whole Body   Thyroid       TEDE
Delta dose (rem)        1.9238E-03  3.8394E-01  1.8153E-02
Accumulated dose (rem)  6.3491E-02  1.1830E+01  5.6327E-01

Low Population Zone Doses:

Time (h) =   0.5000    Whole Body   Thyroid       TEDE
Delta dose (rem)        3.3667E-04  6.7189E-02  3.1768E-03
Accumulated dose (rem)  1.1111E-02  2.0703E+00  9.8572E-02

Control Room Doses:

Time (h) =   0.5000    Whole Body   Thyroid       TEDE
Delta dose (rem)        1.0695E-05  3.7390E-02  1.5905E-03
```

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|---|---|---|---|---|

Accumulated dose (rem) 2.3016E-04 7.6470E-01 3.2526E-02

Environment Integral Nuclide Release:

| Time (h) = 0.5000 | Ci | kg | Atoms | Bq |
|---|---|---|---|---|
| Kr-85 | 5.4444E-01 | 1.3877E-06 | 9.8316E+18 | 2.0144E+10 |
| Kr-85m | 1.1227E+01 | 1.3642E-09 | 9.6651E+15 | 4.1538E+11 |
| Kr-87 | 1.8325E+01 | 6.4695E-10 | 4.4782E+15 | 6.7803E+11 |
| Kr-88 | 2.9911E+01 | 2.3854E-09 | 1.6324E+16 | 1.1067E+12 |
| Rb-86 | 6.3911E-02 | 7.8546E-10 | 5.5002E+15 | 2.3647E+09 |
| I-131 | 2.7523E+01 | 2.2200E-07 | 1.0206E+18 | 1.0183E+12 |
| I-132 | 3.4334E+01 | 3.3262E-09 | 1.5175E+16 | 1.2704E+12 |
| I-133 | 5.6717E+01 | 5.0068E-08 | 2.2670E+17 | 2.0985E+12 |
| I-134 | 4.3751E+01 | 1.6400E-09 | 7.3706E+15 | 1.6188E+12 |
| I-135 | 5.1041E+01 | 1.4534E-08 | 6.4833E+16 | 1.8885E+12 |
| Xe-133 | 7.7653E+01 | 4.1485E-07 | 1.8784E+18 | 2.8731E+12 |
| Xe-135 | 2.7616E+01 | 1.0814E-08 | 4.8240E+16 | 1.0218E+12 |
| Cs-134 | 6.6703E+00 | 5.1555E-06 | 2.3170E+19 | 2.4680E+11 |
| Cs-136 | 1.8423E+00 | 2.5137E-08 | 1.1131E+17 | 6.8166E+10 |
| Cs-137 | 4.4691E+00 | 5.1379E-05 | 2.2585E+20 | 1.6536E+11 |

Environment Transport Group Inventory:

| Time (h) = 0.5000 | Present Release | Release Rate/s | Total Release |
|---|---|---|---|
| Noble gases (atoms) | 1.1794E+19 | 6.5522E+15 | 1.1794E+19 |
| Elemental I (atoms) | 5.1990E+16 | 2.8883E+13 | 5.1990E+16 |
| Organic I (atoms) | 2.7169E+15 | 1.5094E+12 | 2.7169E+15 |
| Aerosols (kg) | 5.6842E-05 | 3.1579E-08 | 5.6842E-05 |

CR Filtered Air Intake Transport Group Inventory:

| Time (h) = 0.5000 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 |

CR Unfiltered Inleakage Transport Group Inventory:

| Time (h) = 0.5000 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 |

CR Exhaust to Environment Transport Group Inventory:

| Time (h) = 0.5000 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 |

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|---|---|---|---|---|

**Control Room Compartment Nuclide Inventory:**

| Time (h) = 0.5000 | Ci | kg | Atoms | Bq |
|---|---|---|---|---|
| Kr-85 | 2.9965E-04 | 7.6376E-10 | 5.4112E+15 | 1.1087E+07 |
| Kr-85m | 6.0351E-03 | 7.3335E-13 | 5.1957E+12 | 2.2330E+08 |
| Kr-87 | 9.2569E-03 | 3.2680E-13 | 2.2621E+12 | 3.4250E+08 |
| Kr-88 | 1.5857E-02 | 1.2646E-12 | 8.6543E+12 | 5.8673E+08 |
| Rb-86 | 3.4799E-05 | 4.2767E-13 | 2.9948E+12 | 1.2876E+06 |
| I-131 | 1.4978E-02 | 1.2081E-10 | 5.5538E+14 | 5.5417E+08 |
| I-132 | 1.7774E-02 | 1.7220E-12 | 7.8560E+12 | 6.5765E+08 |
| I-133 | 3.0715E-02 | 2.7114E-11 | 1.2277E+14 | 1.1365E+09 |
| I-134 | 2.0745E-02 | 7.7764E-13 | 3.4948E+12 | 7.6756E+08 |
| I-135 | 2.7317E-02 | 7.7784E-12 | 3.4698E+13 | 1.0107E+09 |
| Xe-133 | 4.2703E-02 | 2.2814E-10 | 1.0330E+15 | 1.5800E+09 |
| Xe-135 | 1.5025E-02 | 5.8836E-12 | 2.6246E+13 | 5.5593E+08 |
| Cs-134 | 3.6328E-03 | 2.8078E-09 | 1.2619E+16 | 1.3441E+08 |
| Cs-136 | 1.0030E-03 | 1.3685E-11 | 6.0599E+13 | 3.7111E+07 |
| Cs-137 | 2.4340E-03 | 2.7982E-08 | 1.2300E+17 | 9.0057E+07 |

Control Room Transport Group Inventory:

| Time (h) = 0.5000 | Atmosphere | Sump | Overlying Pool |
|---|---|---|---|
| Noble gases (atoms) | 6.4911E+15 | 0.0000E+00 | 0.0000E+00 |
| Elemental I (atoms) | 2.8140E+13 | 0.0000E+00 | 0.0000E+00 |
| Organic I (atoms) | 1.4949E+12 | 0.0000E+00 | 0.0000E+00 |
| Aerosols (kg) | 3.0957E-08 | 0.0000E+00 | 0.0000E+00 |

| Time (h) = 0.5000 | Deposition Surfaces | Recirculating Filter |
|---|---|---|
| Noble gases (atoms) | 0.0000E+00 | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 | 0.0000E+00 |

CR Filtered Air Intake Transport Group Inventory:

| Time (h) = 0.5000 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 |

CR Unfiltered Inleakage Transport Group Inventory:

| Time (h) = 0.5000 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 |

CR Exhaust to Environment Transport Group Inventory:

Pathway

AmerGen

**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 1 | System Nos. | Sheet 115 of 1000 |
|---|---|---|---|---|

```
Time (h) =   0.5000      Filter
Noble gases (atoms)    0.0000E+00
Elemental I (atoms)    0.0000E+00
Organic I (atoms)      0.0000E+00
Aerosols (kg)          0.0000E+00

Exclusion Area Boundary Doses:

Time (h) =   1.8000    Whole Body   Thyroid       TEDE
Delta dose (rem)        1.0924E+00  2.3030E+02  1.2945E+01
Accumulated dose (rem)  1.1558E+00  2.4213E+02  1.3508E+01

Low Population Zone Doses:

Time (h) =   1.8000    Whole Body   Thyroid       TEDE
Delta dose (rem)        1.9116E-01  4.0302E+01  2.2653E+00
Accumulated dose (rem)  2.0227E-01  4.2373E+01  2.3639E+00

Control Room Doses:

Time (h) =   1.8000    Whole Body   Thyroid       TEDE
Delta dose (rem)        6.6324E-03  3.0542E+00  1.5770E-01
Accumulated dose (rem)  6.8626E-03  3.8189E+00  1.9023E-01

Environment Integral Nuclide Release:

Time (h) =   1.8000       Ci           kg          Atoms         Bq
Co-58                  3.1028E-02  9.7578E-10  1.0132E+16  1.1480E+09
Co-60                  2.3757E-02  2.1017E-08  2.1095E+17  8.7902E+08
Kr-85                  3.0291E+01  7.7207E-05  5.4700E+20  1.1208E+12
Kr-85m                 4.8258E+02  5.8640E-08  4.1546E+17  1.7855E+13
Kr-87                  4.2709E+02  1.5078E-08  1.0437E+17  1.5802E+13
Kr-88                  1.1121E+03  8.8687E-08  6.0691E+17  4.1146E+13
Rb-86                  1.0047E+00  1.2348E-08  8.6465E+16  3.7174E+10
Sr-89                  2.9080E+01  1.0009E-06  6.7728E+18  1.0759E+12
Sr-90                  3.1405E+00  2.3023E-05  1.5405E+20  1.1620E+11
Sr-91                  3.3478E+01  9.2355E-09  6.1118E+16  1.2387E+12
Sr-92                  2.3293E+01  1.8531E-09  1.2130E+16  8.6183E+11
Y-90                   3.1607E-02  5.8095E-11  3.8873E+14  1.1695E+09
Y-91                   3.5598E-01  1.4516E-08  9.6060E+16  1.3171E+10
Y-92                   2.6712E-01  2.7761E-11  1.8172E+14  9.8836E+09
Y-93                   3.9713E-01  1.1903E-10  7.7079E+14  1.4694E+10
Zr-95                  4.5858E-01  2.1346E-08  1.3532E+17  1.6967E+10
Zr-97                  4.2627E-01  2.2298E-10  1.3844E+15  1.5772E+10
Nb-95                  4.6178E-01  1.1809E-08  7.4860E+16  1.7086E+10
Mo-99                  6.1541E+00  1.2831E-08  7.8053E+16  2.2770E+11
Tc-99m                 4.2394E+00  8.0624E-10  4.9044E+15  1.5686E+11
Ru-103                 5.0618E+00  1.5684E-07  9.1699E+17  1.8728E+11
Ru-105                 2.3648E+00  3.5179E-10  2.0177E+15  8.7496E+10
Ru-106                 1.9096E+00  5.7077E-07  3.2427E+18  7.0654E+10
Rh-105                 3.0475E+00  3.6105E-09  2.0708E+16  1.1276E+11
Sb-127                 6.8246E+00  2.5555E-08  1.2118E+17  2.5251E+11
Sb-129                 1.4546E+01  2.5867E-09  1.2076E+16  5.3820E+11
Te-127                 5.8090E+00  2.2011E-09  1.0437E+16  2.1493E+11
Te-127m                9.2324E-01  9.7878E-08  4.6412E+17  3.4160E+10
Te-129                 5.5011E+00  2.6268E-10  1.2263E+15  2.0354E+11
Te-129m                3.0862E+00  1.0245E-06  4.7825E+17  1.1419E+11
```

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**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 1 | System Nos. | Sheet 116 of 1000 |
|---|---|---|---|---|

| | | | | |
|---|---|---|---|---|
| Te-131m | 8.9918E+00 | 1.1276E-08 | 5.1838E+16 | 3.3270E+11 |
| Te-132 | 9.2608E+01 | 3.0504E-07 | 1.3917E+18 | 3.4265E+12 |
| I-131 | 5.6018E+02 | 4.5185E-06 | 2.0772E+19 | 2.0727E+13 |
| I-132 | 4.4558E+02 | 4.3168E-08 | 1.9694E+17 | 1.6487E+13 |
| I-133 | 1.1015E+03 | 9.7235E-07 | 4.4027E+18 | 4.0755E+13 |
| I-134 | 2.9962E+02 | 1.1232E-08 | 5.0476E+16 | 1.1086E+13 |
| I-135 | 8.8702E+02 | 2.5258E-07 | 1.1267E+18 | 3.2820E+13 |
| Xe-133 | 4.2803E+03 | 2.2867E-05 | 1.0354E+20 | 1.5837E+14 |
| Xe-135 | 1.3516E+03 | 5.2927E-07 | 2.3610E+18 | 5.0009E+13 |
| Cs-134 | 1.0510E+02 | 8.1232E-05 | 3.6507E+20 | 3.8887E+12 |
| Cs-136 | 2.8933E+01 | 3.9477E-07 | 1.7480E+18 | 1.0705E+12 |
| Cs-137 | 7.0420E+01 | 8.0960E-04 | 3.5588E+21 | 2.6055E+12 |
| Ba-139 | 1.6679E+01 | 1.0197E-09 | 4.4178E+15 | 6.1713E+11 |
| Ba-140 | 4.9083E+01 | 6.7046E-07 | 2.8840E+18 | 1.8161E+12 |
| La-140 | 4.8103E-01 | 8.6543E-10 | 3.7227E+15 | 1.7798E+10 |
| La-141 | 3.1225E-01 | 5.5214E-11 | 2.3582E+14 | 1.1553E+10 |
| La-142 | 2.0299E-01 | 1.4180E-11 | 6.0136E+13 | 7.5105E+09 |
| Ce-141 | 1.1278E+00 | 3.9581E-08 | 1.6905E+17 | 4.1729E+10 |
| Ce-143 | 1.0702E+00 | 1.6115E-09 | 6.7867E+15 | 3.9597E+10 |
| Ce-144 | 9.0997E-01 | 2.8530E-07 | 1.1931E+18 | 3.3669E+10 |
| Pr-143 | 4.3937E-01 | 6.5248E-09 | 2.7478E+16 | 1.6257E+10 |
| Nd-147 | 1.8350E-01 | 2.2682E-09 | 9.2923E+15 | 6.7894E+09 |
| Np-239 | 1.2154E+01 | 5.2391E-08 | 1.3201E+17 | 4.4971E+11 |
| Pu-238 | 3.5887E-03 | 2.0962E-07 | 5.3041E+17 | 1.3278E+08 |
| Pu-239 | 2.7931E-04 | 4.4936E-06 | 1.1323E+19 | 1.0334E+07 |
| Pu-240 | 3.0120E-04 | 1.3218E-06 | 3.3168E+18 | 1.1145E+07 |
| Pu-241 | 1.2474E-01 | 1.2109E-06 | 3.0258E+18 | 4.6153E+09 |
| Am-241 | 7.6717E-05 | 2.2352E-08 | 5.5854E+16 | 2.8385E+06 |
| Cm-242 | 1.8026E-02 | 5.4389E-09 | 1.3535E+16 | 6.6696E+08 |
| Cm-244 | 1.4588E-03 | 1.8032E-08 | 4.4504E+16 | 5.3976E+07 |

Environment Transport Group Inventory:

| Time (h) = 1.8000 | Present Release | Release Rate/s | Total Release |
|---|---|---|---|
| Noble gases (atoms) | 6.5465E+20 | 1.0103E+17 | 6.5465E+20 |
| Elemental I (atoms) | 9.5456E+17 | 1.4731E+14 | 9.5456E+17 |
| Organic I (atoms) | 6.4847E+16 | 1.0007E+13 | 6.4847E+16 |
| Aerosols (kg) | 9.3153E-04 | 1.4375E-07 | 9.3153E-04 |

CR Filtered Air Intake Transport Group Inventory:

| Time (h) = 1.8000 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 4.7760E+20 |
| Organic I (atoms) | 3.3623E+19 |
| Aerosols (kg) | 5.1135E-01 |

CR Unfiltered Inleakage Transport Group Inventory:

| Time (h) = 1.8000 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 |

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**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 1 | System Nos. | Sheet 117 of 1000 |
|---|---|---|---|---|

CR Exhaust to Environment Transport Group Inventory:

| Time (h) = 1.8000 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 |

**Control Room Compartment Nuclide Inventory:**

| Time (h) = 1.8000 | Ci | kg | Atoms | Bq |
|---|---|---|---|---|
| Co-58 | 7.4912E-07 | 2.3559E-14 | 2.4461E+11 | 2.7717E+04 |
| Co-60 | 5.7373E-07 | 5.0755E-13 | 5.0943E+12 | 2.1228E+04 |
| Kr-85 | 1.9808E-02 | 5.0488E-08 | 3.5770E+17 | 7.3290E+08 |
| Kr-85m | 2.8987E-01 | 3.5223E-11 | 2.4955E+14 | 1.0725E+10 |
| Kr-87 | 2.0113E-01 | 7.1008E-12 | 4.9152E+13 | 7.4420E+09 |
| Kr-88 | 6.3418E-01 | 5.0576E-11 | 3.4611E+14 | 2.3465E+10 |
| Rb-86 | 2.0031E-05 | 2.4618E-13 | 1.7239E+12 | 7.4115E+05 |
| Sr-89 | 7.0201E-04 | 2.4164E-11 | 1.6350E+14 | 2.5974E+07 |
| Sr-90 | 7.5842E-05 | 5.5600E-10 | 3.7203E+15 | 2.8062E+06 |
| Sr-91 | 7.7070E-04 | 2.1261E-13 | 1.4070E+12 | 2.8516E+07 |
| Sr-92 | 4.7331E-04 | 3.7656E-14 | 2.4649E+11 | 1.7512E+07 |
| Y-90 | 7.5796E-07 | 1.3931E-15 | 9.3219E+09 | 2.8045E+04 |
| Y-91 | 8.5941E-06 | 3.5044E-13 | 2.3191E+12 | 3.1798E+05 |
| Y-92 | 5.6590E-06 | 5.8811E-16 | 3.8497E+09 | 2.0938E+05 |
| Y-93 | 9.1686E-06 | 2.7481E-15 | 1.7795E+10 | 3.3924E+05 |
| Zr-95 | 1.1071E-05 | 5.1536E-13 | 3.2669E+12 | 4.0964E+05 |
| Zr-97 | 1.0022E-05 | 5.2427E-15 | 3.2549E+10 | 3.7082E+05 |
| Nb-95 | 1.1146E-05 | 2.8504E-13 | 1.8069E+12 | 4.1240E+05 |
| Mo-99 | 1.4761E-04 | 3.0777E-13 | 1.8721E+12 | 5.4616E+06 |
| Tc-99m | 9.4882E-05 | 1.8045E-14 | 1.0976E+11 | 3.5106E+06 |
| Ru-103 | 1.2218E-04 | 3.7858E-12 | 2.2134E+13 | 4.5207E+06 |
| Ru-105 | 5.1478E-05 | 7.6581E-15 | 4.3922E+10 | 1.9047E+06 |
| Ru-106 | 4.6113E-05 | 1.3783E-11 | 7.8306E+13 | 1.7062E+06 |
| Rh-105 | 7.2663E-05 | 8.6089E-14 | 4.9375E+11 | 2.6885E+06 |
| Sb-127 | 1.6401E-04 | 6.1415E-13 | 2.9122E+12 | 6.0684E+06 |
| Sb-129 | 3.1572E-04 | 5.6144E-14 | 2.6210E+11 | 1.1682E+07 |
| Te-127 | 1.3362E-04 | 5.0632E-14 | 2.4009E+11 | 4.9441E+06 |
| Te-127m | 2.2292E-05 | 2.3633E-12 | 1.1207E+13 | 8.2482E+05 |
| Te-129 | 8.6935E-05 | 4.1512E-15 | 1.9379E+10 | 3.2166E+06 |
| Te-129m | 7.4490E-05 | 2.4727E-11 | 1.1543E+13 | 2.7561E+06 |
| Te-131m | 2.1391E-04 | 2.6825E-13 | 1.2332E+12 | 7.9145E+06 |
| Te-132 | 2.2236E-03 | 7.3243E-12 | 3.3415E+13 | 8.2274E+07 |
| I-131 | 1.2000E-02 | 9.6796E-11 | 4.4498E+14 | 4.4401E+08 |
| I-132 | 7.3529E-03 | 7.1234E-13 | 3.2499E+12 | 2.7206E+08 |
| I-133 | 2.3024E-02 | 2.0325E-11 | 9.2030E+13 | 8.5190E+08 |
| I-134 | 2.9814E-03 | 1.1176E-13 | 5.0227E+11 | 1.1031E+08 |
| I-135 | 1.7455E-02 | 4.9703E-12 | 2.2172E+13 | 6.4583E+08 |
| Xe-133 | 2.7909E+00 | 1.4910E-08 | 6.7511E+16 | 1.0326E+11 |
| Xe-135 | 8.4827E-01 | 3.3217E-10 | 1.4818E+15 | 3.1386E+10 |
| Cs-134 | 2.0982E-03 | 1.6217E-09 | 7.2880E+15 | 7.7632E+07 |
| Cs-136 | 5.7652E-04 | 7.8662E-12 | 3.4832E+13 | 2.1331E+07 |

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**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 1 | System Nos. | Sheet 118 of 1000 |
|---|---|---|---|---|

| | | | | |
|---|---|---|---|---|
| Cs-137 | 1.4059E-03 | 1.6163E-08 | 7.1047E+16 | 5.2017E+07 |
| Ba-139 | 2.8325E-04 | 1.7317E-14 | 7.5024E+10 | 1.0480E+07 |
| Ba-140 | 1.1836E-03 | 1.6168E-11 | 6.9546E+13 | 4.3794E+07 |
| La-140 | 1.1487E-05 | 2.0667E-14 | 8.8901E+10 | 4.2504E+05 |
| La-141 | 6.7040E-06 | 1.1854E-15 | 5.0630E+09 | 2.4805E+05 |
| La-142 | 3.5868E-06 | 2.5056E-16 | 1.0626E+09 | 1.3271E+05 |
| Ce-141 | 2.7221E-05 | 9.5533E-13 | 4.0802E+12 | 1.0072E+06 |
| Ce-143 | 2.5494E-05 | 3.8390E-14 | 1.6167E+11 | 9.4328E+05 |
| Ce-144 | 2.1974E-05 | 6.8896E-12 | 2.8812E+13 | 8.1304E+05 |
| Pr-143 | 1.0596E-05 | 1.5736E-13 | 6.6267E+11 | 3.9206E+05 |
| Nd-147 | 4.4239E-06 | 5.4684E-14 | 2.2402E+11 | 1.6368E+05 |
| Np-239 | 2.9119E-04 | 1.2552E-12 | 3.1627E+12 | 1.0774E+07 |
| Pu-238 | 8.6665E-08 | 5.0623E-12 | 1.2809E+13 | 3.2066E+03 |
| Pu-239 | 6.7452E-09 | 1.0852E-10 | 2.7344E+14 | 2.4957E+02 |
| Pu-240 | 7.2740E-09 | 3.1922E-11 | 8.0100E+13 | 2.6914E+02 |
| Pu-241 | 3.0124E-06 | 2.9243E-11 | 7.3072E+13 | 1.1146E+05 |
| Am-241 | 1.8527E-09 | 5.3981E-13 | 1.3489E+12 | 6.8550E+01 |
| Cm-242 | 4.3527E-07 | 1.3133E-13 | 3.2682E+11 | 1.6105E+04 |
| Cm-244 | 3.5230E-08 | 4.3546E-13 | 1.0748E+12 | 1.3035E+03 |

Control Room Transport Group Inventory:

| Time (h) = 1.8000 | Atmosphere | Sump | Overlying Pool |
|---|---|---|---|
| Noble gases (atoms) | 4.2795E+17 | 0.0000E+00 | 0.0000E+00 |
| Elemental I (atoms) | 3.2915E+13 | 0.0000E+00 | 0.0000E+00 |
| Organic I (atoms) | 2.7269E+12 | 0.0000E+00 | 0.0000E+00 |
| Aerosols (kg) | 1.8746E-08 | 0.0000E+00 | 0.0000E+00 |

| Time (h) = 1.8000 | Deposition Surfaces | Recirculating Filter |
|---|---|---|
| Noble gases (atoms) | 0.0000E+00 | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 | 1.8855E+14 |
| Organic I (atoms) | 0.0000E+00 | 1.2314E+13 |
| Aerosols (kg) | 0.0000E+00 | 1.2362E-07 |

CR Filtered Air Intake Transport Group Inventory:

| Time (h) = 1.8000 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 4.7760E+20 |
| Organic I (atoms) | 3.3623E+19 |
| Aerosols (kg) | 5.1135E-01 |

CR Unfiltered Inleakage Transport Group Inventory:

| Time (h) = 1.8000 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 |

CR Exhaust to Environment Transport Group Inventory:

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**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 1 | System Nos. | Sheet 119 of 1000 |
|---|---|---|---|---|

```
                          Pathway
Time (h) =   1.8000        Filter
Noble gases (atoms)     0.0000E+00
Elemental I (atoms)     0.0000E+00
Organic I (atoms)       0.0000E+00
Aerosols (kg)           0.0000E+00

Exclusion Area Boundary Doses:

Time (h) =   2.0000     Whole Body   Thyroid       TEDE
Delta dose (rem)         2.2101E-01  4.8658E+01  2.7847E+00
Accumulated dose (rem)   1.3769E+00  2.9079E+02  1.6293E+01

Low Population Zone Doses:

Time (h) =   2.0000     Whole Body   Thyroid       TEDE
Delta dose (rem)         3.8677E-02  8.5152E+00  4.8732E-01
Accumulated dose (rem)   2.4095E-01  5.0888E+01  2.8512E+00

Control Room Doses:

Time (h) =   2.0000     Whole Body   Thyroid       TEDE
Delta dose (rem)         2.1266E-03  6.4281E-01  3.5591E-02
Accumulated dose (rem)   8.9892E-03  4.4618E+00  2.2582E-01

Environment Integral Nuclide Release:

Time (h) =   2.0000        Ci           kg         Atoms         Bq
Co-58                   3.8388E-02  1.2072E-09  1.2535E+16  1.4203E+09
Co-60                   2.9394E-02  2.6004E-08  2.6100E+17  1.0876E+09
Kr-85                   3.9010E+01  9.9431E-05  7.0445E+20  1.4434E+12
Kr-85m                  6.0462E+02  7.3470E-08  5.2052E+17  2.2371E+13
Kr-87                   5.0308E+02  1.7761E-08  1.2294E+17  1.8614E+13
Kr-88                   1.3724E+03  1.0945E-07  7.4899E+17  5.0779E+13
Rb-86                   1.1992E+00  1.4739E-08  1.0321E+17  4.4372E+10
Sr-89                   3.5976E+01  1.2383E-06  8.3791E+18  1.3311E+12
Sr-90                   3.8857E+00  2.8486E-05  1.9061E+20  1.4377E+11
Sr-91                   4.0934E+01  1.1292E-08  7.4729E+16  1.5146E+12
Sr-92                   2.7698E+01  2.2036E-09  1.4424E+16  1.0248E+12
Y-90                    3.9038E-02  7.1752E-11  4.8011E+14  1.4444E+09
Y-91                    4.4041E-01  1.7958E-08  1.1884E+17  1.6295E+10
Y-92                    3.2046E-01  3.3304E-11  2.1800E+14  1.1857E+10
Y-93                    4.8591E-01  1.4564E-10  9.4309E+14  1.7979E+10
Zr-95                   5.6735E-01  2.6409E-08  1.6741E+17  2.0992E+10
Zr-97                   5.2388E-01  2.7404E-10  1.7014E+15  1.9384E+10
Nb-95                   5.7128E-01  1.4609E-08  9.2611E+16  2.1137E+10
Mo-99                   7.6012E+00  1.5849E-08  9.6406E+16  2.8124E+11
Tc-99m                  5.1491E+00  9.7925E-10  5.9567E+15  1.9052E+11
Ru-103                  6.2621E+00  1.9403E-07  1.1344E+18  2.3170E+11
Ru-105                  2.8540E+00  4.2458E-10  2.4351E+15  1.0560E+11
Ru-106                  2.3626E+00  7.0619E-07  4.0121E+18  8.7417E+10
Rh-105                  3.7585E+00  4.4529E-09  2.5539E+16  1.3906E+11
Sb-127                  8.4334E+00  3.1580E-08  1.4975E+17  3.1204E+11
Sb-129                  1.7544E+01  3.1198E-09  1.4564E+16  6.4913E+11
Te-127                  7.1013E+00  2.6908E-09  1.2759E+16  2.6275E+11
Te-127m                 1.1423E+00  1.2110E-07  5.7422E+17  4.2264E+10
Te-129                  6.2551E+00  2.9868E-10  1.3944E+15  2.3144E+11
```

| | | | | |
|---|---|---|---|---|
| Te-129m | 3.8180E+00 | 1.2674E-06 | 5.9164E+17 | 1.4126E+11 |
| Te-131m | 1.1083E+01 | 1.3899E-08 | 6.3894E+16 | 4.1008E+11 |
| Te-132 | 1.1441E+02 | 3.7687E-07 | 1.7194E+18 | 4.2333E+12 |
| I-131 | 6.7358E+02 | 5.4332E-06 | 2.4977E+19 | 2.4922E+13 |
| I-132 | 5.1076E+02 | 4.9482E-08 | 2.2575E+17 | 1.8898E+13 |
| I-133 | 1.3177E+03 | 1.1632E-06 | 5.2668E+18 | 4.8753E+13 |
| I-134 | 3.2350E+02 | 1.2127E-08 | 5.4499E+16 | 1.1970E+13 |
| I-135 | 1.0484E+03 | 2.9853E-07 | 1.3317E+18 | 3.8790E+13 |
| Xe-133 | 5.5068E+03 | 2.9420E-05 | 1.3321E+20 | 2.0375E+14 |
| Xe-135 | 1.7169E+03 | 6.7230E-07 | 2.9990E+18 | 6.3524E+13 |
| Cs-134 | 1.2548E+02 | 9.6987E-05 | 4.3587E+20 | 4.6429E+12 |
| Cs-136 | 3.4531E+01 | 4.7115E-07 | 2.0863E+18 | 1.2777E+12 |
| Cs-137 | 8.4078E+01 | 9.6662E-04 | 4.2490E+21 | 3.1109E+12 |
| Ba-139 | 1.9184E+01 | 1.1728E-09 | 5.0812E+15 | 7.0980E+11 |
| Ba-140 | 6.0707E+01 | 8.2924E-07 | 3.5670E+18 | 2.2462E+12 |
| La-140 | 5.9349E-01 | 1.0678E-09 | 4.5930E+15 | 2.1959E+10 |
| La-141 | 3.7570E-01 | 6.6433E-11 | 2.8374E+14 | 1.3901E+10 |
| La-142 | 2.3505E-01 | 1.6420E-11 | 6.9636E+13 | 8.6970E+09 |
| Ce-141 | 1.3952E+00 | 4.8966E-08 | 2.0913E+17 | 5.1623E+10 |
| Ce-143 | 1.3196E+00 | 1.9870E-09 | 8.3680E+15 | 4.8824E+10 |
| Ce-144 | 1.1259E+00 | 3.5299E-07 | 1.4762E+18 | 4.1657E+10 |
| Pr-143 | 5.4344E-01 | 8.0702E-09 | 3.3986E+16 | 2.0107E+10 |
| Nd-147 | 2.2694E-01 | 2.8052E-09 | 1.1492E+16 | 8.3968E+09 |
| Np-239 | 1.5008E+01 | 6.4691E-08 | 1.6300E+17 | 5.5529E+11 |
| Pu-238 | 4.4402E-03 | 2.5936E-07 | 6.5626E+17 | 1.6429E+08 |
| Pu-239 | 3.4558E-04 | 5.5599E-06 | 1.4009E+19 | 1.2787E+07 |
| Pu-240 | 3.7267E-04 | 1.6355E-06 | 4.1038E+18 | 1.3789E+07 |
| Pu-241 | 1.5434E-01 | 1.4982E-06 | 3.7438E+18 | 5.7104E+09 |
| Am-241 | 9.4921E-05 | 2.7656E-08 | 6.9108E+16 | 3.5121E+06 |
| Cm-242 | 2.2303E-02 | 6.7292E-09 | 1.6746E+16 | 8.2519E+08 |
| Cm-244 | 1.8050E-03 | 2.2310E-08 | 5.5064E+16 | 6.6783E+07 |

Environment Transport Group Inventory:

| Time (h) = 2.0000 | Present Release | Release Rate/s | Total Release |
|---|---|---|---|
| Noble gases (atoms) | 8.4294E+20 | 1.1708E+17 | 8.4294E+20 |
| Elemental I (atoms) | 1.1210E+18 | 1.5569E+14 | 1.1210E+18 |
| Organic I (atoms) | 8.1700E+16 | 1.1347E+13 | 8.1700E+16 |
| Aerosols (kg) | 1.1137E-03 | 1.5469E-07 | 1.1137E-03 |

CR Filtered Air Intake Transport Group Inventory:

| Time (h) = 2.0000 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 5.8202E+20 |
| Organic I (atoms) | 4.3931E+19 |
| Aerosols (kg) | 6.3581E-01 |

CR Unfiltered Inleakage Transport Group Inventory:

| Time (h) = 2.0000 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 |

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**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 1 | System Nos. | Sheet 121 of 1000 |
|---|---|---|---|---|

```
Aerosols (kg)          0.0000E+00

CR Exhaust to Environment Transport Group Inventory:

                        Pathway
Time (h) =   2.0000      Filter
Noble gases (atoms)    0.0000E+00
Elemental I (atoms)    0.0000E+00
Organic I (atoms)      0.0000E+00
Aerosols (kg)          0.0000E+00
```

**Control Room Compartment Nuclide Inventory:**

| Time (h) = 2.0000 | Ci | kg | Atoms | Bq |
|---|---|---|---|---|
| Co-58 | 7.1299E-07 | 2.2422E-14 | 2.3281E+11 | 2.6381E+04 |
| Co-60 | 5.4611E-07 | 4.8312E-13 | 4.8490E+12 | 2.0206E+04 |
| Kr-85 | 2.3084E-02 | 5.8839E-08 | 4.1686E+17 | 8.5412E+08 |
| Kr-85m | 3.2446E-01 | 3.9427E-11 | 2.7933E+14 | 1.2005E+10 |
| Kr-87 | 2.0378E-01 | 7.1941E-12 | 4.9797E+13 | 7.5397E+09 |
| Kr-88 | 6.9366E-01 | 5.5319E-11 | 3.7857E+14 | 2.5665E+10 |
| Rb-86 | 1.8887E-05 | 2.3211E-13 | 1.6254E+12 | 6.9880E+05 |
| Sr-89 | 6.6812E-04 | 2.2997E-11 | 1.5561E+14 | 2.4720E+07 |
| Sr-90 | 7.2191E-05 | 5.2924E-10 | 3.5413E+15 | 2.6711E+06 |
| Sr-91 | 7.2017E-04 | 1.9867E-13 | 1.3147E+12 | 2.6646E+07 |
| Sr-92 | 4.2240E-04 | 3.3605E-14 | 2.1997E+11 | 1.5629E+07 |
| Y-90 | 7.1950E-07 | 1.3225E-15 | 8.8489E+09 | 2.6621E+04 |
| Y-91 | 8.1794E-06 | 3.3353E-13 | 2.2072E+12 | 3.0264E+05 |
| Y-92 | 5.1269E-06 | 5.3281E-16 | 3.4877E+09 | 1.8969E+05 |
| Y-93 | 8.5769E-06 | 2.5708E-15 | 1.6647E+10 | 3.1735E+05 |
| Zr-95 | 1.0537E-05 | 4.9049E-13 | 3.1093E+12 | 3.8988E+05 |
| Zr-97 | 9.4412E-06 | 4.9387E-15 | 3.0662E+10 | 3.4933E+05 |
| Nb-95 | 1.0607E-05 | 2.7126E-13 | 1.7196E+12 | 3.9247E+05 |
| Mo-99 | 1.4013E-04 | 2.9217E-13 | 1.7773E+12 | 5.1849E+06 |
| Tc-99m | 8.7723E-05 | 1.6683E-14 | 1.0148E+11 | 3.2457E+06 |
| Ru-103 | 1.1628E-04 | 3.6029E-12 | 2.1065E+13 | 4.3023E+06 |
| Ru-105 | 4.7105E-05 | 7.0076E-15 | 4.0191E+10 | 1.7429E+06 |
| Ru-106 | 4.3893E-05 | 1.3120E-11 | 7.4536E+13 | 1.6240E+06 |
| Rh-105 | 6.8823E-05 | 8.1539E-14 | 4.6765E+11 | 2.5465E+06 |
| Sb-127 | 1.5582E-04 | 5.8348E-13 | 2.7668E+12 | 5.7653E+06 |
| Sb-129 | 2.8858E-04 | 5.1318E-14 | 2.3957E+11 | 1.0678E+07 |
| Te-127 | 1.2483E-04 | 4.7299E-14 | 2.2428E+11 | 4.6186E+06 |
| Te-127m | 2.1218E-05 | 2.2494E-12 | 1.0666E+13 | 7.8506E+05 |
| Te-129 | 7.1275E-05 | 3.4034E-15 | 1.5888E+10 | 2.6372E+06 |
| Te-129m | 7.0889E-05 | 2.3531E-11 | 1.0985E+13 | 2.6229E+06 |
| Te-131m | 2.0242E-04 | 2.5385E-13 | 1.1670E+12 | 7.4896E+06 |
| Te-132 | 2.1118E-03 | 6.9561E-12 | 3.1735E+13 | 7.8138E+07 |
| I-131 | 1.1302E-02 | 9.1162E-11 | 4.1908E+14 | 4.1817E+08 |
| I-132 | 6.4198E-03 | 6.2195E-13 | 2.8375E+12 | 2.3753E+08 |
| I-133 | 2.1520E-02 | 1.8997E-11 | 8.6016E+13 | 7.9623E+08 |
| I-134 | 2.3050E-03 | 8.6405E-14 | 3.8831E+11 | 8.5285E+07 |
| I-135 | 1.6019E-02 | 4.5614E-12 | 2.0348E+13 | 5.9270E+08 |
| Xe-133 | 3.2478E+00 | 1.7351E-08 | 7.8564E+16 | 1.2017E+11 |
| Xe-135 | 9.6906E-01 | 3.7947E-10 | 1.6928E+15 | 3.5855E+10 |
| Cs-134 | 1.9790E-03 | 1.5296E-09 | 6.8742E+15 | 7.3225E+07 |

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**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 1 | System Nos. | Sheet 122 of 1000 |
|---|---|---|---|---|

| | | | | |
|---|---|---|---|---|
| Cs-136 | 5.4349E-04 | 7.4155E-12 | 3.2836E+13 | 2.0109E+07 |
| Cs-137 | 1.3261E-03 | 1.5245E-08 | 6.7014E+16 | 4.9064E+07 |
| Ba-139 | 2.3771E-04 | 1.4532E-14 | 6.2961E+10 | 8.7951E+06 |
| Ba-140 | 1.1260E-03 | 1.5381E-11 | 6.6160E+13 | 4.1662E+07 |
| La-140 | 1.0887E-05 | 1.9587E-14 | 8.4253E+10 | 4.0282E+05 |
| La-141 | 6.1033E-06 | 1.0792E-15 | 4.6093E+09 | 2.2582E+05 |
| La-142 | 3.0501E-06 | 2.1307E-16 | 9.0361E+08 | 1.1285E+05 |
| Ce-141 | 2.5905E-05 | 9.0914E-13 | 3.8830E+12 | 9.5847E+05 |
| Ce-143 | 2.4138E-05 | 3.6348E-14 | 1.5307E+11 | 8.9311E+05 |
| Ce-144 | 2.0916E-05 | 6.5578E-12 | 2.7425E+13 | 7.7389E+05 |
| Pr-143 | 1.0081E-05 | 1.4970E-13 | 6.3043E+11 | 3.7298E+05 |
| Nd-147 | 4.2081E-06 | 5.2017E-14 | 2.1310E+11 | 1.5570E+05 |
| Np-239 | 2.7632E-04 | 1.1911E-12 | 3.0011E+12 | 1.0224E+07 |
| Pu-238 | 8.2494E-08 | 4.8187E-12 | 1.2193E+13 | 3.0523E+03 |
| Pu-239 | 6.4206E-09 | 1.0330E-10 | 2.6028E+14 | 2.3756E+02 |
| Pu-240 | 6.9239E-09 | 3.0386E-11 | 7.6245E+13 | 2.5618E+02 |
| Pu-241 | 2.8674E-06 | 2.7835E-11 | 6.9555E+13 | 1.0609E+05 |
| Am-241 | 1.7635E-09 | 5.1382E-13 | 1.2839E+12 | 6.5251E+01 |
| Cm-242 | 4.1430E-07 | 1.2501E-13 | 3.1107E+11 | 1.5329E+04 |
| Cm-244 | 3.3534E-08 | 4.1450E-13 | 1.0230E+12 | 1.2408E+03 |

Control Room Transport Group Inventory:

| Time (h) = 2.0000 | Atmosphere | Sump | Overlying Pool |
|---|---|---|---|
| Noble gases (atoms) | 4.9865E+17 | 0.0000E+00 | 0.0000E+00 |
| Elemental I (atoms) | 2.9083E+13 | 0.0000E+00 | 0.0000E+00 |
| Organic I (atoms) | 2.9191E+12 | 0.0000E+00 | 0.0000E+00 |
| Aerosols (kg) | 1.7690E-08 | 0.0000E+00 | 0.0000E+00 |

| Time (h) = 2.0000 | Deposition Surfaces | Recirculating Filter |
|---|---|---|
| Noble gases (atoms) | 0.0000E+00 | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 | 2.2684E+14 |
| Organic I (atoms) | 0.0000E+00 | 1.5760E+13 |
| Aerosols (kg) | 0.0000E+00 | 1.4827E-07 |

CR Filtered Air Intake Transport Group Inventory:

| Time (h) = 2.0000 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 5.8202E+20 |
| Organic I (atoms) | 4.3931E+19 |
| Aerosols (kg) | 6.3581E-01 |

CR Unfiltered Inleakage Transport Group Inventory:

| Time (h) = 2.0000 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 |

CR Exhaust to Environment Transport Group Inventory:

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**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 1 | System Nos. | Sheet 123 of 1000 |
|---|---|---|---|---|

```
                          Pathway
Time (h) =   2.0000        Filter
Noble gases (atoms)     0.0000E+00
Elemental I (atoms)     0.0000E+00
Organic I (atoms)       0.0000E+00
Aerosols (kg)           0.0000E+00

Exclusion Area Boundary Doses:

Time (h) =   2.9200    Whole Body   Thyroid       TEDE
Delta dose (rem)        7.4171E-01  1.3913E+02  8.0974E+00
Accumulated dose (rem)  2.1186E+00  4.2991E+02  2.4390E+01

Low Population Zone Doses:

Time (h) =   2.9200    Whole Body   Thyroid       TEDE
Delta dose (rem)        5.5628E-02  1.0434E+01  6.0730E-01
Accumulated dose (rem)  2.9658E-01  6.1322E+01  3.4585E+00

Control Room Doses:

Time (h) =   2.9200    Whole Body   Thyroid       TEDE
Delta dose (rem)        8.1138E-03  1.4285E+00  8.2854E-02
Accumulated dose (rem)  1.7103E-02  5.8902E+00  3.0867E-01

Environment Integral Nuclide Release:

Time (h) =   2.9200       Ci           kg         Atoms         Bq
Co-58                  5.9636E-02  1.8755E-09  1.9473E+16  2.2065E+09
Co-60                  4.5672E-02  4.0404E-08  4.0553E+17  1.6899E+09
Kr-85                  7.9116E+01  2.0165E-04  1.4287E+21  2.9273E+12
Kr-85m                 1.1199E+03  1.3608E-07  9.6411E+17  4.1435E+13
Kr-87                  7.6334E+02  2.6949E-08  1.8654E+17  2.8244E+13
Kr-88                  2.4192E+03  1.9293E-07  1.3203E+18  8.9509E+13
Rb-86                  1.7613E+00  2.1646E-08  1.5158E+17  6.5169E+10
Sr-89                  5.5886E+01  1.9236E-06  1.3016E+19  2.0678E+12
Sr-90                  6.0375E+00  4.4261E-05  2.9616E+20  2.2339E+11
Sr-91                  6.1700E+01  1.7021E-08  1.1264E+17  2.2829E+12
Sr-92                  3.8923E+01  3.0967E-09  2.0270E+16  1.4402E+12
Y-90                   6.0378E-02  1.1098E-10  7.4257E+14  2.2340E+09
Y-91                   6.8416E-01  2.7898E-08  1.8462E+17  2.5314E+10
Y-92                   4.6037E-01  4.7844E-11  3.1318E+14  1.7034E+10
Y-93                   7.3370E-01  2.1991E-10  1.4240E+15  2.7147E+10
Zr-95                  8.8137E-01  4.1027E-08  2.6007E+17  3.2611E+10
Zr-97                  8.0009E-01  4.1853E-10  2.5984E+15  2.9603E+10
Nb-95                  8.8733E-01  2.2692E-08  1.4385E+17  3.2831E+10
Mo-99                  1.1758E+01  2.4516E-08  1.4913E+17  4.3505E+11
Tc-99m                 7.6309E+00  1.4512E-09  8.8278E+15  2.8234E+11
Ru-103                 9.7269E+00  3.0138E-07  1.7621E+18  3.5989E+11
Ru-105                 4.1624E+00  6.1923E-10  3.5515E+15  1.5401E+11
Ru-106                 3.6709E+00  1.0972E-06  6.2337E+18  1.3582E+11
Rh-105                 5.7916E+00  6.8616E-09  3.9354E+16  2.1429E+11
Sb-127                 1.3062E+01  4.8912E-08  2.3193E+17  4.8330E+11
Sb-129                 2.5544E+01  4.5425E-09  2.1206E+16  9.4514E+11
Te-127                 1.0699E+01  4.0539E-09  1.9223E+16  3.9585E+11
Te-127m                1.7746E+00  1.8814E-07  8.9212E+17  6.5661E+10
```

| | | | | |
|---|---|---|---|---|
| Te-129 | 7.8912E+00 | 3.7681E-10 | 1.7591E+15 | 2.9197E+11 |
| Te-129m | 5.9301E+00 | 1.9685E-06 | 9.1895E+17 | 2.1941E+11 |
| Te-131m | 1.7053E+01 | 2.1386E-08 | 9.8313E+16 | 6.3098E+11 |
| Te-132 | 1.7711E+02 | 5.8337E-07 | 2.6615E+18 | 6.5530E+12 |
| I-131 | 9.9947E+02 | 8.0619E-06 | 3.7061E+19 | 3.6980E+13 |
| I-132 | 6.7281E+02 | 6.5181E-08 | 2.9737E+17 | 2.4894E+13 |
| I-133 | 1.9298E+03 | 1.7036E-06 | 7.7137E+18 | 7.1404E+13 |
| I-134 | 3.7086E+02 | 1.3902E-08 | 6.2477E+16 | 1.3722E+13 |
| I-135 | 1.4896E+03 | 4.2415E-07 | 1.8921E+18 | 5.5114E+13 |
| Xe-133 | 1.1131E+04 | 5.9467E-05 | 2.6926E+20 | 4.1185E+14 |
| Xe-135 | 3.3271E+03 | 1.3028E-06 | 5.8118E+18 | 1.2310E+14 |
| Cs-134 | 1.8442E+02 | 1.4254E-04 | 6.4059E+20 | 6.8236E+12 |
| Cs-136 | 5.0701E+01 | 6.9177E-07 | 3.0632E+18 | 1.8759E+12 |
| Cs-137 | 1.2357E+02 | 1.4206E-03 | 6.2448E+21 | 4.5721E+12 |
| Ba-139 | 2.4862E+01 | 1.5199E-09 | 6.5851E+15 | 9.1988E+11 |
| Ba-140 | 9.4235E+01 | 1.2872E-06 | 5.5370E+18 | 3.4867E+12 |
| La-140 | 9.1546E-01 | 1.6470E-09 | 7.0847E+15 | 3.3872E+10 |
| La-141 | 5.4370E-01 | 9.6139E-11 | 4.1061E+14 | 2.0117E+10 |
| La-142 | 3.0958E-01 | 2.1626E-11 | 9.1715E+13 | 1.1454E+10 |
| Ce-141 | 2.1670E+00 | 7.6054E-08 | 3.2483E+17 | 8.0181E+10 |
| Ce-143 | 2.0322E+00 | 3.0601E-09 | 1.2887E+16 | 7.5191E+10 |
| Ce-144 | 1.7493E+00 | 5.4845E-07 | 2.2937E+18 | 6.4724E+10 |
| Pr-143 | 8.4362E-01 | 1.2528E-08 | 5.2759E+16 | 3.1214E+10 |
| Nd-147 | 3.5222E-01 | 4.3539E-09 | 1.7836E+16 | 1.3032E+10 |
| Np-239 | 2.3198E+01 | 9.9995E-08 | 2.5196E+17 | 8.5833E+11 |
| Pu-238 | 6.8991E-03 | 4.0299E-07 | 1.0197E+18 | 2.5527E+08 |
| Pu-239 | 5.3696E-04 | 8.6389E-06 | 2.1768E+19 | 1.9868E+07 |
| Pu-240 | 5.7906E-04 | 2.5412E-06 | 6.3765E+18 | 2.1425E+07 |
| Pu-241 | 2.3980E-01 | 2.3279E-06 | 5.8170E+18 | 8.8728E+09 |
| Am-241 | 1.4749E-04 | 4.2972E-08 | 1.0738E+17 | 5.4570E+06 |
| Cm-242 | 3.4651E-02 | 1.0455E-08 | 2.6017E+16 | 1.2821E+09 |
| Cm-244 | 2.8045E-03 | 3.4665E-08 | 8.5557E+16 | 1.0377E+08 |

Environment Transport Group Inventory:

| Time (h) = 2.9200 | Present Release | Release Rate/s | Total Release |
|---|---|---|---|
| Noble gases (atoms) | 1.7091E+21 | 1.6258E+17 | 1.7091E+21 |
| Elemental I (atoms) | 1.5118E+18 | 1.4381E+14 | 1.5118E+18 |
| Organic I (atoms) | 1.5922E+17 | 1.5147E+13 | 1.5922E+17 |
| Aerosols (kg) | 1.6406E-03 | 1.5607E-07 | 1.6406E-03 |

CR Filtered Air Intake Transport Group Inventory:

| Time (h) = 2.9200 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 8.2378E+20 |
| Organic I (atoms) | 9.0522E+19 |
| Aerosols (kg) | 9.9131E-01 |

CR Unfiltered Inleakage Transport Group Inventory:

| Time (h) = 2.9200 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 |

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**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 1 | System Nos. | Sheet 125 of 1000 |
|---|---|---|---|---|

```
Organic I (atoms)       0.0000E+00
Aerosols (kg)           0.0000E+00

CR Exhaust to Environment Transport Group Inventory:

                         Pathway
Time (h) =   2.9200       Filter
Noble gases (atoms)     0.0000E+00
Elemental I (atoms)     0.0000E+00
Organic I (atoms)       0.0000E+00
Aerosols (kg)           0.0000E+00
```

**Control Room Compartment Nuclide Inventory:**

| Time (h) = 2.9200 | Ci | kg | Atoms | Bq |
|---|---|---|---|---|
| Co-58 | 2.1854E-07 | 6.8727E-15 | 7.1359E+10 | 8.0859E+03 |
| Co-60 | 1.6745E-07 | 1.4814E-13 | 1.4868E+12 | 6.1957E+03 |
| Kr-85 | 1.9808E-02 | 5.0487E-08 | 3.5769E+17 | 7.3289E+08 |
| Kr-85m | 2.3906E-01 | 2.9049E-11 | 2.0581E+14 | 8.8453E+09 |
| Kr-87 | 1.0237E-01 | 3.6141E-12 | 2.5017E+13 | 3.7877E+09 |
| Kr-88 | 4.6810E-01 | 3.7331E-11 | 2.5547E+14 | 1.7320E+10 |
| Rb-86 | 5.7800E-06 | 7.1036E-14 | 4.9743E+11 | 2.1386E+05 |
| Sr-89 | 2.0475E-04 | 7.0478E-12 | 4.7689E+13 | 7.5759E+06 |
| Sr-90 | 2.2136E-05 | 1.6228E-10 | 1.0858E+15 | 8.1902E+05 |
| Sr-91 | 2.0640E-04 | 5.6938E-14 | 3.7680E+11 | 7.6367E+06 |
| Sr-92 | 1.0221E-04 | 8.1317E-15 | 5.3228E+10 | 3.7818E+06 |
| Y-90 | 2.1842E-07 | 4.0145E-16 | 2.6862E+09 | 8.0814E+03 |
| Y-91 | 2.5069E-06 | 1.0222E-13 | 6.7648E+11 | 9.2754E+04 |
| Y-92 | 1.3114E-06 | 1.3629E-16 | 8.9210E+08 | 4.8522E+04 |
| Y-93 | 2.4680E-06 | 7.3973E-16 | 4.7901E+09 | 9.1316E+04 |
| Zr-95 | 3.2296E-06 | 1.5034E-13 | 9.5299E+11 | 1.1950E+05 |
| Zr-97 | 2.7871E-06 | 1.4579E-15 | 9.0513E+09 | 1.0312E+05 |
| Nb-95 | 3.2500E-06 | 8.3113E-14 | 5.2686E+11 | 1.2025E+05 |
| Mo-99 | 4.2552E-05 | 8.8721E-14 | 5.3969E+11 | 1.5744E+06 |
| Tc-99m | 2.4178E-05 | 4.5982E-15 | 2.7970E+10 | 8.9459E+05 |
| Ru-103 | 3.5630E-05 | 1.1040E-12 | 6.4547E+12 | 1.3183E+06 |
| Ru-105 | 1.2500E-05 | 1.8595E-15 | 1.0665E+10 | 4.6249E+05 |
| Ru-106 | 1.3458E-05 | 4.0225E-12 | 2.2853E+13 | 4.9793E+05 |
| Rh-105 | 2.0723E-05 | 2.4552E-14 | 1.4082E+11 | 7.6676E+05 |
| Sb-127 | 4.7448E-05 | 1.7767E-13 | 8.4249E+11 | 1.7556E+06 |
| Sb-129 | 7.6272E-05 | 1.3563E-14 | 6.3318E+10 | 2.8220E+06 |
| Te-127 | 3.5736E-05 | 1.3541E-14 | 6.4209E+10 | 1.3222E+06 |
| Te-127m | 6.5044E-06 | 6.8956E-13 | 3.2698E+12 | 2.4066E+05 |
| Te-129 | 1.2572E-05 | 6.0030E-16 | 2.8024E+09 | 4.6515E+05 |
| Te-129m | 2.1719E-05 | 7.2096E-12 | 3.3657E+12 | 8.0361E+05 |
| Te-131m | 6.0754E-05 | 7.6190E-14 | 3.5025E+11 | 2.2479E+06 |
| Te-132 | 6.4225E-04 | 2.1155E-12 | 9.6514E+12 | 2.3763E+07 |
| I-131 | 3.4200E-03 | 2.7586E-11 | 1.2681E+14 | 1.2654E+08 |
| I-132 | 1.4746E-03 | 1.4286E-13 | 6.5176E+11 | 5.4561E+07 |
| I-133 | 6.3351E-03 | 5.5924E-12 | 2.5322E+13 | 2.3440E+08 |
| I-134 | 3.3675E-04 | 1.2623E-14 | 5.6730E+10 | 1.2460E+07 |
| I-135 | 4.4135E-03 | 1.2567E-12 | 5.6061E+12 | 1.6330E+08 |
| Xe-133 | 2.7717E+00 | 1.4808E-08 | 6.7048E+16 | 1.0255E+11 |
| Xe-135 | 7.7133E-01 | 3.0204E-10 | 1.3474E+15 | 2.8539E+10 |

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**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 1 | System Nos. | Sheet 126 of 1000 |
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| | | | | |
|---|---|---|---|---|
| Cs-134 | 6.0651E-04 | 4.6877E-10 | 2.1067E+15 | 2.2441E+07 |
| Cs-136 | 1.6623E-04 | 2.2680E-12 | 1.0043E+13 | 6.1504E+06 |
| Cs-137 | 4.0641E-04 | 4.6723E-09 | 2.0538E+16 | 1.5037E+07 |
| Ba-139 | 4.5763E-05 | 2.7978E-15 | 1.2121E+10 | 1.6932E+06 |
| Ba-140 | 3.4454E-04 | 4.7062E-12 | 2.0244E+13 | 1.2748E+07 |
| La-140 | 3.2854E-06 | 5.9109E-15 | 2.5426E+10 | 1.2156E+05 |
| La-141 | 1.5895E-06 | 2.8106E-16 | 1.2004E+09 | 5.8811E+04 |
| La-142 | 6.1686E-07 | 4.3092E-17 | 1.8275E+08 | 2.2824E+04 |
| Ce-141 | 7.9365E-06 | 2.7854E-13 | 1.1896E+12 | 2.9365E+05 |
| Ce-143 | 7.2588E-06 | 1.0931E-14 | 4.6032E+10 | 2.6858E+05 |
| Ce-144 | 6.4128E-06 | 2.0106E-12 | 8.4084E+12 | 2.3727E+05 |
| Pr-143 | 3.0849E-06 | 4.5812E-14 | 1.9293E+11 | 1.1414E+05 |
| Nd-147 | 1.2872E-06 | 1.5911E-14 | 6.5183E+10 | 4.7626E+04 |
| Np-239 | 8.3769E-05 | 3.6109E-13 | 9.0984E+11 | 3.0995E+06 |
| Pu-238 | 2.5295E-08 | 1.4775E-12 | 3.7386E+12 | 9.3591E+02 |
| Pu-239 | 1.9687E-09 | 3.1673E-11 | 7.9808E+13 | 7.2842E+01 |
| Pu-240 | 2.1231E-09 | 9.3171E-12 | 2.3379E+13 | 7.8553E+01 |
| Pu-241 | 8.7921E-07 | 8.5350E-12 | 2.1327E+13 | 3.2531E+04 |
| Am-241 | 5.4074E-10 | 1.5755E-13 | 3.9369E+11 | 2.0008E+01 |
| Cm-242 | 1.2702E-07 | 3.8324E-14 | 9.5368E+10 | 4.6996E+03 |
| Cm-244 | 1.0282E-08 | 1.2710E-13 | 3.1368E+11 | 3.8045E+02 |

Control Room Transport Group Inventory:

| Time (h) = 2.9200 | Atmosphere | Sump | Overlying Pool |
|---|---|---|---|
| Noble gases (atoms) | 4.2778E+17 | 0.0000E+00 | 0.0000E+00 |
| Elemental I (atoms) | 6.2943E+12 | 0.0000E+00 | 0.0000E+00 |
| Organic I (atoms) | 1.9627E+12 | 0.0000E+00 | 0.0000E+00 |
| Aerosols (kg) | 5.4215E-09 | 0.0000E+00 | 0.0000E+00 |

| Time (h) = 2.9200 | Deposition Surfaces | Recirculating Filter |
|---|---|---|
| Noble gases (atoms) | 0.0000E+00 | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 | 2.9861E+14 |
| Organic I (atoms) | 0.0000E+00 | 2.7377E+13 |
| Aerosols (kg) | 0.0000E+00 | 2.0310E-07 |

CR Filtered Air Intake Transport Group Inventory:

| Time (h) = 2.9200 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 8.2378E+20 |
| Organic I (atoms) | 9.0522E+19 |
| Aerosols (kg) | 9.9131E-01 |

CR Unfiltered Inleakage Transport Group Inventory:

| Time (h) = 2.9200 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 |

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**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 1 | System Nos. | Sheet 127 of 1000 |
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CR Exhaust to Environment Transport Group Inventory:

| Time (h) = 2.9200 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 |

Exclusion Area Boundary Doses:

| Time (h) = 3.8200 | Whole Body | Thyroid | TEDE |
|---|---|---|---|
| Delta dose (rem) | 4.7566E-01 | 6.2346E+01 | 3.7710E+00 |
| Accumulated dose (rem) | 2.5942E+00 | 4.9226E+02 | 2.8161E+01 |

Low Population Zone Doses:

| Time (h) = 3.8200 | Whole Body | Thyroid | TEDE |
|---|---|---|---|
| Delta dose (rem) | 3.5674E-02 | 4.6759E+00 | 2.8282E-01 |
| Accumulated dose (rem) | 3.3225E-01 | 6.5998E+01 | 3.7413E+00 |

Control Room Doses:

| Time (h) = 3.8200 | Whole Body | Thyroid | TEDE |
|---|---|---|---|
| Delta dose (rem) | 5.9134E-03 | 5.8539E-01 | 3.6546E-02 |
| Accumulated dose (rem) | 2.3016E-02 | 6.4756E+00 | 3.4522E-01 |

Environment Integral Nuclide Release:

| Time (h) = 3.8200 | Ci | kg | Atoms | Bq |
|---|---|---|---|---|
| Co-58 | 6.9175E-02 | 2.1755E-09 | 2.2588E+16 | 2.5595E+09 |
| Co-60 | 5.2983E-02 | 4.6871E-08 | 4.7044E+17 | 1.9604E+09 |
| Kr-85 | 1.1835E+02 | 3.0164E-04 | 2.1371E+21 | 4.3788E+12 |
| Kr-85m | 1.5577E+03 | 1.8928E-07 | 1.3411E+18 | 5.7636E+13 |
| Kr-87 | 9.1838E+02 | 3.2422E-08 | 2.2443E+17 | 3.3980E+13 |
| Kr-88 | 3.2393E+03 | 2.5833E-07 | 1.7678E+18 | 1.1985E+14 |
| Rb-86 | 2.0135E+00 | 2.4746E-08 | 1.7328E+17 | 7.4500E+10 |
| Sr-89 | 6.4823E+01 | 2.2312E-06 | 1.5098E+19 | 2.3984E+12 |
| Sr-90 | 7.0039E+00 | 5.1345E-05 | 3.4357E+20 | 2.5914E+11 |
| Sr-91 | 7.0426E+01 | 1.9428E-08 | 1.2857E+17 | 2.6058E+12 |
| Sr-92 | 4.2917E+01 | 3.4144E-09 | 2.2350E+16 | 1.5879E+12 |
| Y-90 | 6.9868E-02 | 1.2842E-10 | 8.5928E+14 | 2.5851E+09 |
| Y-91 | 7.9358E-01 | 3.2359E-08 | 2.1415E+17 | 2.9362E+10 |
| Y-92 | 5.1294E-01 | 5.3308E-11 | 3.4894E+14 | 1.8979E+10 |
| Y-93 | 8.3825E-01 | 2.5125E-10 | 1.6269E+15 | 3.1015E+10 |
| Zr-95 | 1.0223E+00 | 4.7588E-08 | 3.0167E+17 | 3.7827E+10 |
| Zr-97 | 9.1958E-01 | 4.8104E-10 | 2.9865E+15 | 3.4025E+10 |
| Nb-95 | 1.0292E+00 | 2.6319E-08 | 1.6684E+17 | 3.8079E+10 |
| Mo-99 | 1.3607E+01 | 2.8371E-08 | 1.7258E+17 | 5.0347E+11 |
| Tc-99m | 8.6345E+00 | 1.6421E-09 | 9.9888E+15 | 3.1948E+11 |
| Ru-103 | 1.1282E+01 | 3.4957E-07 | 2.0438E+18 | 4.1743E+11 |
| Ru-105 | 4.6722E+00 | 6.9506E-10 | 3.9864E+15 | 1.7287E+11 |
| Ru-106 | 4.2584E+00 | 1.2728E-06 | 7.2314E+18 | 1.5756E+11 |
| Rh-105 | 6.6885E+00 | 7.9243E-09 | 4.5449E+16 | 2.4748E+11 |
| Sb-127 | 1.5127E+01 | 5.6643E-08 | 2.6859E+17 | 5.5969E+11 |
| Sb-129 | 2.8649E+01 | 5.0946E-09 | 2.3783E+16 | 1.0600E+12 |
| Te-127 | 1.2209E+01 | 4.6261E-09 | 2.1936E+16 | 4.5173E+11 |

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**CALCULATION SHEET**
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| | | | | |
|---|---|---|---|---|
| Te-127m | 2.0586E+00 | 2.1824E-07 | 1.0349E+18 | 7.6167E+10 |
| Te-129 | 8.3175E+00 | 3.9716E-10 | 1.8541E+15 | 3.0775E+11 |
| Te-129m | 6.8780E+00 | 2.2831E-06 | 1.0658E+18 | 2.5448E+11 |
| Te-131m | 1.9679E+01 | 2.4679E-08 | 1.1345E+17 | 7.2812E+11 |
| Te-132 | 2.0504E+02 | 6.7537E-07 | 3.0812E+18 | 7.5864E+12 |
| I-131 | 1.1469E+03 | 9.2513E-06 | 4.2529E+19 | 4.2436E+13 |
| I-132 | 7.2868E+02 | 7.0593E-08 | 3.2206E+17 | 2.6961E+13 |
| I-133 | 2.1994E+03 | 1.9415E-06 | 8.7912E+18 | 8.1378E+13 |
| I-134 | 3.8130E+02 | 1.4293E-08 | 6.4237E+16 | 1.4108E+13 |
| I-135 | 1.6715E+03 | 4.7597E-07 | 2.1232E+18 | 6.1847E+13 |
| Xe-133 | 1.6605E+04 | 8.8712E-05 | 4.0168E+20 | 6.1439E+14 |
| Xe-135 | 4.7967E+03 | 1.8783E-06 | 8.3788E+18 | 1.7748E+14 |
| Cs-134 | 2.1090E+02 | 1.6301E-04 | 7.3257E+20 | 7.8034E+12 |
| Cs-136 | 5.7951E+01 | 7.9070E-07 | 3.5013E+18 | 2.1442E+12 |
| Cs-137 | 1.4131E+02 | 1.6246E-03 | 7.1415E+21 | 5.2286E+12 |
| Ba-139 | 2.6475E+01 | 1.6185E-09 | 7.0123E+15 | 9.7956E+11 |
| Ba-140 | 1.0926E+02 | 1.4925E-06 | 6.4199E+18 | 4.0427E+12 |
| La-140 | 1.0578E+00 | 1.9031E-09 | 8.1863E+15 | 3.9139E+10 |
| La-141 | 6.0796E-01 | 1.0750E-10 | 4.5914E+14 | 2.2494E+10 |
| La-142 | 3.3180E-01 | 2.3178E-11 | 9.8298E+13 | 1.2277E+10 |
| Ce-141 | 2.5134E+00 | 8.8209E-08 | 3.7674E+17 | 9.2995E+10 |
| Ce-143 | 2.3462E+00 | 3.5329E-09 | 1.4878E+16 | 8.6808E+10 |
| Ce-144 | 2.0292E+00 | 6.3623E-07 | 2.6607E+18 | 7.5082E+10 |
| Pr-143 | 9.7817E-01 | 1.4526E-08 | 6.1174E+16 | 3.6192E+10 |
| Nd-147 | 4.0835E-01 | 5.0477E-09 | 2.0679E+16 | 1.5109E+10 |
| Np-239 | 2.6835E+01 | 1.1567E-07 | 2.9147E+17 | 9.9291E+11 |
| Pu-238 | 8.0034E-03 | 4.6750E-07 | 1.1829E+18 | 2.9613E+08 |
| Pu-239 | 6.2291E-04 | 1.0022E-05 | 2.5252E+19 | 2.3048E+07 |
| Pu-240 | 6.7174E-04 | 2.9480E-06 | 7.3971E+18 | 2.4855E+07 |
| Pu-241 | 2.7819E-01 | 2.7005E-06 | 6.7481E+18 | 1.0293E+10 |
| Am-241 | 1.7109E-04 | 4.9850E-08 | 1.2457E+17 | 6.3305E+06 |
| Cm-242 | 4.0195E-02 | 1.2128E-08 | 3.0180E+16 | 1.4872E+09 |
| Cm-244 | 3.2534E-03 | 4.0214E-08 | 9.9252E+16 | 1.2038E+08 |

Environment Transport Group Inventory:

| Time (h) = 3.8200 | Present Release | Release Rate/s | Total Release |
|---|---|---|---|
| Noble gases (atoms) | 2.5563E+21 | 1.8588E+17 | 2.5563E+21 |
| Elemental I (atoms) | 1.7191E+18 | 1.2501E+14 | 1.7191E+18 |
| Organic I (atoms) | 2.3505E+17 | 1.7092E+13 | 2.3505E+17 |
| Aerosols (kg) | 1.8773E-03 | 1.3651E-07 | 1.8773E-03 |

CR Filtered Air Intake Transport Group Inventory:

| Time (h) = 3.8200 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 9.4611E+20 |
| Organic I (atoms) | 1.3525E+20 |
| Aerosols (kg) | 1.1469E+00 |

CR Unfiltered Inleakage Transport Group Inventory:

| Time (h) = 3.8200 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |

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```
Elemental I (atoms)     0.0000E+00
Organic I (atoms)       0.0000E+00
Aerosols (kg)           0.0000E+00

CR Exhaust to Environment Transport Group Inventory:

                         Pathway
Time (h) =   3.8200       Filter
Noble gases (atoms)     0.0000E+00
Elemental I (atoms)     0.0000E+00
Organic I (atoms)       0.0000E+00
Aerosols (kg)           0.0000E+00
```

**Control Room Compartment Nuclide Inventory:**

| Time (h) = 3.8200 | Ci | kg | Atoms | Bq |
|---|---|---|---|---|
| Co-58 | 1.0169E-07 | 3.1981E-15 | 3.3206E+10 | 3.7627E+03 |
| Co-60 | 7.7948E-08 | 6.8957E-14 | 6.9211E+11 | 2.8841E+03 |
| Kr-85 | 1.9360E-02 | 4.9346E-08 | 3.4961E+17 | 7.1633E+08 |
| Kr-85m | 2.0295E-01 | 2.4662E-11 | 1.7473E+14 | 7.5093E+09 |
| Kr-87 | 6.0921E-02 | 2.1507E-12 | 1.4887E+13 | 2.2541E+09 |
| Kr-88 | 3.6636E-01 | 2.9217E-11 | 1.9994E+14 | 1.3555E+10 |
| Rb-86 | 2.6872E-06 | 3.3025E-14 | 2.3126E+11 | 9.9425E+04 |
| Sr-89 | 9.5265E-05 | 3.2791E-12 | 2.2188E+13 | 3.5248E+06 |
| Sr-90 | 1.0304E-05 | 7.5541E-11 | 5.0546E+14 | 3.8126E+05 |
| Sr-91 | 8.9975E-05 | 2.4821E-14 | 1.6426E+11 | 3.3291E+06 |
| Sr-92 | 3.7800E-05 | 3.0073E-15 | 1.9685E+10 | 1.3986E+06 |
| Y-90 | 1.0069E-07 | 1.8507E-16 | 1.2383E+09 | 3.7254E+03 |
| Y-91 | 1.1664E-06 | 4.7563E-14 | 3.1476E+11 | 4.3158E+04 |
| Y-92 | 5.1187E-07 | 5.3196E-17 | 3.4821E+08 | 1.8939E+04 |
| Y-93 | 1.0801E-06 | 3.2373E-16 | 2.0963E+09 | 3.9963E+04 |
| Zr-95 | 1.5028E-06 | 6.9953E-14 | 4.4344E+11 | 5.5604E+04 |
| Zr-97 | 1.2504E-06 | 6.5408E-16 | 4.0608E+09 | 4.6264E+04 |
| Nb-95 | 1.5118E-06 | 3.8661E-14 | 2.4508E+11 | 5.5935E+04 |
| Mo-99 | 1.9622E-05 | 4.0912E-14 | 2.4887E+11 | 7.2601E+05 |
| Tc-99m | 1.0148E-05 | 1.9298E-15 | 1.1739E+10 | 3.7546E+05 |
| Ru-103 | 1.6575E-05 | 5.1357E-13 | 3.0027E+12 | 6.1327E+05 |
| Ru-105 | 5.0563E-06 | 7.5220E-16 | 4.3142E+09 | 1.8708E+05 |
| Ru-106 | 6.2641E-06 | 1.8724E-12 | 1.0637E+13 | 2.3177E+05 |
| Rh-105 | 9.4782E-06 | 1.1229E-14 | 6.4404E+10 | 3.5069E+05 |
| Sb-127 | 2.1939E-05 | 8.2151E-14 | 3.8955E+11 | 8.1173E+05 |
| Sb-129 | 3.0733E-05 | 5.4651E-15 | 2.5513E+10 | 1.1371E+06 |
| Te-127 | 1.5562E-05 | 5.8967E-15 | 2.7961E+10 | 5.7579E+05 |
| Te-127m | 3.0271E-06 | 3.2092E-13 | 1.5217E+12 | 1.1200E+05 |
| Te-129 | 3.4187E-06 | 1.6324E-16 | 7.6207E+08 | 1.2649E+05 |
| Te-129m | 1.0102E-05 | 3.3535E-12 | 1.5655E+12 | 3.7379E+05 |
| Te-131m | 2.7699E-05 | 3.4737E-14 | 1.5969E+11 | 1.0249E+06 |
| Te-132 | 2.9660E-04 | 9.7695E-13 | 4.4571E+12 | 1.0974E+07 |
| I-131 | 1.6600E-03 | 1.3390E-11 | 6.1553E+13 | 6.1420E+07 |
| I-132 | 5.4756E-04 | 5.3047E-14 | 2.4201E+11 | 2.0260E+07 |
| I-133 | 2.9938E-03 | 2.6428E-12 | 1.1966E+13 | 1.1077E+08 |
| I-134 | 8.0519E-05 | 3.0183E-15 | 1.3565E+10 | 2.9792E+06 |
| I-135 | 1.9557E-03 | 5.5689E-13 | 2.4842E+12 | 7.2361E+07 |
| Xe-133 | 2.6956E+00 | 1.4401E-08 | 6.5206E+16 | 9.9736E+10 |

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**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 1 | System Nos. | Sheet 130 of 1000 |
|---|---|---|---|---|

| | | | | |
|---|---|---|---|---|
| Xe-135 | 7.0333E-01 | 2.7541E-10 | 1.2286E+15 | 2.6023E+10 |
| Cs-134 | 2.8235E-04 | 2.1823E-10 | 9.8075E+14 | 1.0447E+07 |
| Cs-136 | 7.7234E-05 | 1.0538E-12 | 4.6663E+12 | 2.8577E+06 |
| Cs-137 | 1.8920E-04 | 2.1752E-09 | 9.5616E+15 | 7.0005E+06 |
| Ba-139 | 1.3551E-05 | 8.2844E-16 | 3.5892E+09 | 5.0138E+05 |
| Ba-140 | 1.6006E-04 | 2.1863E-12 | 9.4044E+12 | 5.9221E+06 |
| La-140 | 1.5059E-06 | 2.7093E-15 | 1.1654E+10 | 5.5718E+04 |
| La-141 | 6.3136E-07 | 1.1164E-16 | 4.7681E+08 | 2.3360E+04 |
| La-142 | 1.9163E-07 | 1.3386E-17 | 5.6771E+07 | 7.0902E+03 |
| Ce-141 | 3.6915E-06 | 1.2956E-13 | 5.5334E+11 | 1.3659E+05 |
| Ce-143 | 3.3158E-06 | 4.9930E-15 | 2.1027E+10 | 1.2268E+05 |
| Ce-144 | 2.9849E-06 | 9.3585E-13 | 3.9138E+12 | 1.1044E+05 |
| Pr-143 | 1.4333E-06 | 2.1285E-14 | 8.9636E+10 | 5.3032E+04 |
| Nd-147 | 5.9777E-07 | 7.3892E-15 | 3.0271E+10 | 2.2118E+04 |
| Np-239 | 3.8567E-05 | 1.6624E-13 | 4.1889E+11 | 1.4270E+06 |
| Pu-238 | 1.1775E-08 | 6.8779E-13 | 1.7403E+12 | 4.3567E+02 |
| Pu-239 | 9.1644E-10 | 1.4744E-11 | 3.7151E+13 | 3.3908E+01 |
| Pu-240 | 9.8829E-10 | 4.3371E-12 | 1.0883E+13 | 3.6567E+01 |
| Pu-241 | 4.0927E-07 | 3.9731E-12 | 9.9279E+12 | 1.5143E+04 |
| Am-241 | 2.5172E-10 | 7.3341E-14 | 1.8327E+11 | 9.3136E+00 |
| Cm-242 | 5.9117E-08 | 1.7837E-14 | 4.4387E+10 | 2.1873E+03 |
| Cm-244 | 4.7865E-09 | 5.9163E-14 | 1.4602E+11 | 1.7710E+02 |

Control Room Transport Group Inventory:

| Time (h) = 3.8200 | Atmosphere | Sump | Overlying Pool |
|---|---|---|---|
| Noble gases (atoms) | 4.1811E+17 | 0.0000E+00 | 0.0000E+00 |
| Elemental I (atoms) | 5.3662E+12 | 0.0000E+00 | 0.0000E+00 |
| Organic I (atoms) | 1.9621E+12 | 0.0000E+00 | 0.0000E+00 |
| Aerosols (kg) | 2.5240E-09 | 0.0000E+00 | 0.0000E+00 |

| Time (h) = 3.8200 | Deposition Surfaces | Recirculating Filter |
|---|---|---|
| Noble gases (atoms) | 0.0000E+00 | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 | 3.2849E+14 |
| Organic I (atoms) | 0.0000E+00 | 3.8058E+13 |
| Aerosols (kg) | 0.0000E+00 | 2.2578E-07 |

CR Filtered Air Intake Transport Group Inventory:

| Time (h) = 3.8200 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 9.4611E+20 |
| Organic I (atoms) | 1.3525E+20 |
| Aerosols (kg) | 1.1469E+00 |

CR Unfiltered Inleakage Transport Group Inventory:

| Time (h) = 3.8200 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 |

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**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 1 | System Nos. | Sheet 131 of 1000 |
|---|---|---|---|---|

CR Exhaust to Environment Transport Group Inventory:

| | Pathway Filter |
|---|---|
| Time (h) = 3.8200 | |
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 |

Exclusion Area Boundary Doses:

| Time (h) = 4.0000 | Whole Body | Thyroid | TEDE |
|---|---|---|---|
| Delta dose (rem) | 7.8390E-02 | 8.2991E+00 | 5.1458E-01 |
| Accumulated dose (rem) | 2.6726E+00 | 5.0056E+02 | 2.8675E+01 |

Low Population Zone Doses:

| Time (h) = 4.0000 | Whole Body | Thyroid | TEDE |
|---|---|---|---|
| Delta dose (rem) | 5.8793E-03 | 6.2243E-01 | 3.8593E-02 |
| Accumulated dose (rem) | 3.3813E-01 | 6.6621E+01 | 3.7799E+00 |

Control Room Doses:

| Time (h) = 4.0000 | Whole Body | Thyroid | TEDE |
|---|---|---|---|
| Delta dose (rem) | 1.0373E-03 | 7.5998E-02 | 4.9702E-03 |
| Accumulated dose (rem) | 2.4054E-02 | 6.5516E+00 | 3.5019E-01 |

Environment Integral Nuclide Release:

| Time (h) = 4.0000 | Ci | kg | Atoms | Bq |
|---|---|---|---|---|
| Co-58 | 7.0429E-02 | 2.2149E-09 | 2.2997E+16 | 2.6059E+09 |
| Co-60 | 5.3944E-02 | 4.7722E-08 | 4.7898E+17 | 1.9959E+09 |
| Kr-85 | 1.2619E+02 | 3.2164E-04 | 2.2788E+21 | 4.6691E+12 |
| Kr-85m | 1.6382E+03 | 1.9907E-07 | 1.4104E+18 | 6.0615E+13 |
| Kr-87 | 9.4130E+02 | 3.3231E-08 | 2.3003E+17 | 3.4828E+13 |
| Kr-88 | 3.3828E+03 | 2.6978E-07 | 1.8462E+18 | 1.2516E+14 |
| Rb-86 | 2.0466E+00 | 2.5153E-08 | 1.7613E+17 | 7.5726E+10 |
| Sr-89 | 6.5998E+01 | 2.2717E-06 | 1.5371E+19 | 2.4419E+12 |
| Sr-90 | 7.1310E+00 | 5.2277E-05 | 3.4980E+20 | 2.6385E+11 |
| Sr-91 | 7.1525E+01 | 1.9731E-08 | 1.3057E+17 | 2.6464E+12 |
| Sr-92 | 4.3368E+01 | 3.4503E-09 | 2.2585E+16 | 1.6046E+12 |
| Y-90 | 7.1108E-02 | 1.3070E-10 | 8.7453E+14 | 2.6310E+09 |
| Y-91 | 8.0796E-01 | 3.2946E-08 | 2.1803E+17 | 2.9895E+10 |
| Y-92 | 5.1909E-01 | 5.3947E-11 | 3.5312E+14 | 1.9206E+10 |
| Y-93 | 8.5144E-01 | 2.5520E-10 | 1.6526E+15 | 3.1503E+10 |
| Zr-95 | 1.0409E+00 | 4.8451E-08 | 3.0714E+17 | 3.8512E+10 |
| Zr-97 | 9.3492E-01 | 4.8906E-10 | 3.0363E+15 | 3.4592E+10 |
| Nb-95 | 1.0478E+00 | 2.6796E-08 | 1.6986E+17 | 3.8769E+10 |
| Mo-99 | 1.3849E+01 | 2.8875E-08 | 1.7565E+17 | 5.1241E+11 |
| Tc-99m | 8.7577E+00 | 1.6655E-09 | 1.0131E+16 | 3.2404E+11 |
| Ru-103 | 1.1486E+01 | 3.5590E-07 | 2.0808E+18 | 4.2499E+11 |
| Ru-105 | 4.7332E+00 | 7.0414E-10 | 4.0385E+15 | 1.7513E+11 |
| Ru-106 | 4.3357E+00 | 1.2959E-06 | 7.3626E+18 | 1.6042E+11 |
| Rh-105 | 6.8051E+00 | 8.0624E-09 | 4.6241E+16 | 2.5179E+11 |
| Sb-127 | 1.5397E+01 | 5.7655E-08 | 2.7339E+17 | 5.6969E+11 |
| Sb-129 | 2.9020E+01 | 5.1605E-09 | 2.4091E+16 | 1.0737E+12 |

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**CALCULATION SHEET**
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| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 1 | System Nos. | Sheet 132 of 1000 |
|---|---|---|---|---|

| | | | | |
|---|---|---|---|---|
| Te-127 | 1.2399E+01 | 4.6981E-09 | 2.2278E+16 | 4.5876E+11 |
| Te-127m | 2.0959E+00 | 2.2220E-07 | 1.0536E+18 | 7.7548E+10 |
| Te-129 | 8.3564E+00 | 3.9902E-10 | 1.8628E+15 | 3.0919E+11 |
| Te-129m | 7.0025E+00 | 2.3245E-06 | 1.0851E+18 | 2.5909E+11 |
| Te-131m | 2.0019E+01 | 2.5106E-08 | 1.1541E+17 | 7.4072E+11 |
| Te-132 | 2.0869E+02 | 6.8740E-07 | 3.1361E+18 | 7.7216E+12 |
| I-131 | 1.1667E+03 | 9.4106E-06 | 4.3261E+19 | 4.3167E+13 |
| I-132 | 7.3494E+02 | 7.1200E-08 | 3.2483E+17 | 2.7193E+13 |
| I-133 | 2.2349E+03 | 1.9729E-06 | 8.9330E+18 | 8.2691E+13 |
| I-134 | 3.8216E+02 | 1.4326E-08 | 6.4382E+16 | 1.4140E+13 |
| I-135 | 1.6945E+03 | 4.8251E-07 | 2.1524E+18 | 6.2697E+13 |
| Xe-133 | 1.7697E+04 | 9.4543E-05 | 4.2809E+20 | 6.5478E+14 |
| Xe-135 | 5.0787E+03 | 1.9888E-06 | 8.8715E+18 | 1.8791E+14 |
| Cs-134 | 2.1438E+02 | 1.6570E-04 | 7.4467E+20 | 7.9322E+12 |
| Cs-136 | 5.8904E+01 | 8.0369E-07 | 3.5588E+18 | 2.1794E+12 |
| Cs-137 | 1.4365E+02 | 1.6515E-03 | 7.2594E+21 | 5.3150E+12 |
| Ba-139 | 2.6631E+01 | 1.6281E-09 | 7.0537E+15 | 9.8534E+11 |
| Ba-140 | 1.1124E+02 | 1.5194E-06 | 6.5358E+18 | 4.1157E+12 |
| La-140 | 1.0763E+00 | 1.9364E-09 | 8.3297E+15 | 3.9824E+10 |
| La-141 | 6.1556E-01 | 1.0885E-10 | 4.6488E+14 | 2.2776E+10 |
| La-142 | 3.3402E-01 | 2.3334E-11 | 9.8957E+13 | 1.2359E+10 |
| Ce-141 | 2.5589E+00 | 8.9807E-08 | 3.8357E+17 | 9.4680E+10 |
| Ce-143 | 2.3869E+00 | 3.5943E-09 | 1.5137E+16 | 8.8317E+10 |
| Ce-144 | 2.0661E+00 | 6.4777E-07 | 2.7090E+18 | 7.6444E+10 |
| Pr-143 | 9.9585E-01 | 1.4789E-08 | 6.2279E+16 | 3.6846E+10 |
| Nd-147 | 4.1572E-01 | 5.1388E-09 | 2.1052E+16 | 1.5382E+10 |
| Np-239 | 2.7310E+01 | 1.1772E-07 | 2.9662E+17 | 1.0105E+12 |
| Pu-238 | 8.1486E-03 | 4.7598E-07 | 1.2044E+18 | 3.0150E+08 |
| Pu-239 | 6.3421E-04 | 1.0203E-05 | 2.5710E+19 | 2.3466E+07 |
| Pu-240 | 6.8393E-04 | 3.0015E-06 | 7.5313E+18 | 2.5306E+07 |
| Pu-241 | 2.8324E-01 | 2.7495E-06 | 6.8706E+18 | 1.0480E+10 |
| Am-241 | 1.7420E-04 | 5.0755E-08 | 1.2683E+17 | 6.4453E+06 |
| Cm-242 | 4.0925E-02 | 1.2348E-08 | 3.0728E+16 | 1.5142E+09 |
| Cm-244 | 3.3124E-03 | 4.0944E-08 | 1.0105E+17 | 1.2256E+08 |

Environment Transport Group Inventory:

| Time (h) = 4.0000 | Present Release | Release Rate/s | Total Release |
|---|---|---|---|
| Noble gases (atoms) | 2.7257E+21 | 1.8928E+17 | 2.7257E+21 |
| Elemental I (atoms) | 1.7606E+18 | 1.2226E+14 | 1.7606E+18 |
| Organic I (atoms) | 2.5022E+17 | 1.7376E+13 | 2.5022E+17 |
| Aerosols (kg) | 1.9084E-03 | 1.3253E-07 | 1.9084E-03 |

CR Filtered Air Intake Transport Group Inventory:

| Time (h) = 4.0000 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 9.6922E+20 |
| Organic I (atoms) | 1.4371E+20 |
| Aerosols (kg) | 1.1660E+00 |

CR Unfiltered Inleakage Transport Group Inventory:

| Time (h) = 4.0000 | Pathway Filter |
|---|---|

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**CALCULATION SHEET**
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|---|---|---|---|---|

```
Noble gases (atoms)     0.0000E+00
Elemental I (atoms)     0.0000E+00
Organic I (atoms)       0.0000E+00
Aerosols (kg)           0.0000E+00

CR Exhaust to Environment Transport Group Inventory:

                         Pathway
Time (h) =   4.0000       Filter
Noble gases (atoms)     0.0000E+00
Elemental I (atoms)     0.0000E+00
Organic I (atoms)       0.0000E+00
Aerosols (kg)           0.0000E+00
```

**Control Room Compartment Nuclide Inventory:**

| Time (h) = 4.0000 | Ci | kg | Atoms | Bq |
|---|---|---|---|---|
| Co-58 | 9.2719E-08 | 2.9159E-15 | 3.0275E+10 | 3.4306E+03 |
| Co-60 | 7.1074E-08 | 6.2876E-14 | 6.3108E+11 | 2.6297E+03 |
| Kr-85 | 1.9336E-02 | 4.9284E-08 | 3.4917E+17 | 7.1543E+08 |
| Kr-85m | 1.9712E-01 | 2.3952E-11 | 1.6970E+14 | 7.2933E+09 |
| Kr-87 | 5.5141E-02 | 1.9467E-12 | 1.3475E+13 | 2.0402E+09 |
| Kr-88 | 3.5012E-01 | 2.7922E-11 | 1.9108E+14 | 1.2954E+10 |
| Rb-86 | 2.4495E-06 | 3.0104E-14 | 2.1081E+11 | 9.0632E+04 |
| Sr-89 | 8.6855E-05 | 2.9896E-12 | 2.0229E+13 | 3.2136E+06 |
| Sr-90 | 9.3956E-06 | 6.8879E-11 | 4.6089E+14 | 3.4764E+05 |
| Sr-91 | 8.0970E-05 | 2.2337E-14 | 1.4782E+11 | 2.9959E+06 |
| Sr-92 | 3.2916E-05 | 2.6187E-15 | 1.7142E+10 | 1.2179E+06 |
| Y-90 | 9.1630E-08 | 1.6842E-16 | 1.1269E+09 | 3.3903E+03 |
| Y-91 | 1.0635E-06 | 4.3365E-14 | 2.8698E+11 | 3.9349E+04 |
| Y-92 | 4.5057E-07 | 4.6825E-17 | 3.0651E+08 | 1.6671E+04 |
| Y-93 | 9.7274E-07 | 2.9156E-16 | 1.8880E+09 | 3.5991E+04 |
| Zr-95 | 1.3702E-06 | 6.3779E-14 | 4.0430E+11 | 5.0696E+04 |
| Zr-97 | 1.1317E-06 | 5.9201E-16 | 3.6755E+09 | 4.1874E+04 |
| Nb-95 | 1.3783E-06 | 3.5247E-14 | 2.2343E+11 | 5.0995E+04 |
| Mo-99 | 1.7858E-05 | 3.7234E-14 | 2.2649E+11 | 6.6074E+05 |
| Tc-99m | 9.0630E-06 | 1.7236E-15 | 1.0484E+10 | 3.3533E+05 |
| Ru-103 | 1.5111E-05 | 4.6822E-13 | 2.7376E+12 | 5.5912E+05 |
| Ru-105 | 4.4827E-06 | 6.6687E-16 | 3.8247E+09 | 1.6586E+05 |
| Ru-106 | 5.7117E-06 | 1.7072E-12 | 9.6992E+12 | 2.1133E+05 |
| Rh-105 | 8.6119E-06 | 1.0203E-14 | 5.8518E+10 | 3.1864E+05 |
| Sb-127 | 1.9977E-05 | 7.4805E-14 | 3.5471E+11 | 7.3914E+05 |
| Sb-129 | 2.7225E-05 | 4.8413E-15 | 2.2601E+10 | 1.0073E+06 |
| Te-127 | 1.4002E-05 | 5.3054E-15 | 2.5158E+10 | 5.1806E+05 |
| Te-127m | 2.7600E-06 | 2.9260E-13 | 1.3875E+12 | 1.0212E+05 |
| Te-129 | 2.7993E-06 | 1.3367E-16 | 6.2401E+08 | 1.0358E+05 |
| Te-129m | 9.2102E-06 | 3.0573E-12 | 1.4272E+12 | 3.4078E+05 |
| Te-131m | 2.5152E-05 | 3.1542E-14 | 1.4500E+11 | 9.3062E+05 |
| Te-132 | 2.7001E-04 | 8.8938E-13 | 4.0576E+12 | 9.9903E+06 |
| I-131 | 1.5261E-03 | 1.2310E-11 | 5.6590E+13 | 5.6467E+07 |
| I-132 | 4.7714E-04 | 4.6225E-14 | 2.1089E+11 | 1.7654E+07 |
| I-133 | 2.7377E-03 | 2.4168E-12 | 1.0943E+13 | 1.0130E+08 |
| I-134 | 6.4249E-05 | 2.4084E-15 | 1.0824E+10 | 2.3772E+06 |
| I-135 | 1.7655E-03 | 5.0274E-13 | 2.2426E+12 | 6.5325E+07 |
| Xe-133 | 2.6895E+00 | 1.4369E-08 | 6.5060E+16 | 9.9512E+10 |

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**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 1 | System Nos. | Sheet 134 of 1000 |
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| | | | | |
|---|---|---|---|---|
| Xe-135 | 6.9285E-01 | 2.7131E-10 | 1.2103E+15 | 2.5635E+10 |
| Cs-134 | 2.5745E-04 | 1.9898E-10 | 8.9426E+14 | 9.5257E+06 |
| Cs-136 | 7.0395E-05 | 9.6049E-13 | 4.2531E+12 | 2.6046E+06 |
| Cs-137 | 1.7252E-04 | 1.9834E-09 | 8.7185E+15 | 6.3832E+06 |
| Ba-139 | 1.1287E-05 | 6.9001E-16 | 2.9895E+09 | 4.1760E+05 |
| Ba-140 | 1.4588E-04 | 1.9927E-12 | 8.5716E+12 | 5.3976E+06 |
| La-140 | 1.3688E-06 | 2.4627E-15 | 1.0593E+10 | 5.0647E+04 |
| La-141 | 5.5769E-07 | 9.8613E-17 | 4.2118E+08 | 2.0635E+04 |
| La-142 | 1.6114E-07 | 1.1257E-17 | 4.7740E+07 | 5.9624E+03 |
| Ce-141 | 3.3654E-06 | 1.1811E-13 | 5.0446E+11 | 1.2452E+05 |
| Ce-143 | 3.0119E-06 | 4.5355E-15 | 1.9100E+10 | 1.1144E+05 |
| Ce-144 | 2.7216E-06 | 8.5331E-13 | 3.5686E+12 | 1.0070E+05 |
| Pr-143 | 1.3064E-06 | 1.9400E-14 | 8.1700E+10 | 4.8336E+04 |
| Nd-147 | 5.4480E-07 | 6.7344E-15 | 2.7589E+10 | 2.0158E+04 |
| Np-239 | 3.5088E-05 | 1.5125E-13 | 3.8111E+11 | 1.2983E+06 |
| Pu-238 | 1.0736E-08 | 6.2714E-13 | 1.5869E+12 | 3.9725E+02 |
| Pu-239 | 8.3563E-10 | 1.3444E-11 | 3.3875E+13 | 3.0918E+01 |
| Pu-240 | 9.0114E-10 | 3.9547E-12 | 9.9232E+12 | 3.3342E+01 |
| Pu-241 | 3.7318E-07 | 3.6227E-12 | 9.0524E+12 | 1.3808E+04 |
| Am-241 | 2.2952E-10 | 6.6873E-14 | 1.6710E+11 | 8.4923E+00 |
| Cm-242 | 5.3902E-08 | 1.6263E-14 | 4.0471E+10 | 1.9944E+03 |
| Cm-244 | 4.3644E-09 | 5.3946E-14 | 1.3314E+11 | 1.6148E+02 |

Control Room Transport Group Inventory:

| Time (h) = 4.0000 | Atmosphere | Sump | Overlying Pool |
|---|---|---|---|
| Noble gases (atoms) | 4.1758E+17 | 0.0000E+00 | 0.0000E+00 |
| Elemental I (atoms) | 5.3657E+12 | 0.0000E+00 | 0.0000E+00 |
| Organic I (atoms) | 1.9621E+12 | 0.0000E+00 | 0.0000E+00 |
| Aerosols (kg) | 2.3014E-09 | 0.0000E+00 | 0.0000E+00 |

| Time (h) = 4.0000 | Deposition Surfaces | Recirculating Filter |
|---|---|---|
| Noble gases (atoms) | 0.0000E+00 | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 | 3.3434E+14 |
| Organic I (atoms) | 0.0000E+00 | 4.0194E+13 |
| Aerosols (kg) | 0.0000E+00 | 2.2864E-07 |

CR Filtered Air Intake Transport Group Inventory:

| Time (h) = 4.0000 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 9.6922E+20 |
| Organic I (atoms) | 1.4371E+20 |
| Aerosols (kg) | 1.1660E+00 |

CR Unfiltered Inleakage Transport Group Inventory:

| Time (h) = 4.0000 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 |

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**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 1 | System Nos. | Sheet 135 of 1000 |
|---|---|---|---|---|

CR Exhaust to Environment Transport Group Inventory:

| | Pathway Filter |
|---|---|
| Time (h) = 4.0000 | |
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 |

Exclusion Area Boundary Doses:

| Time (h) = 8.0000 | Whole Body | Thyroid | TEDE |
|---|---|---|---|
| Delta dose (rem) | 1.2085E+00 | 1.6297E+02 | 9.8237E+00 |
| Accumulated dose (rem) | 3.8811E+00 | 6.6353E+02 | 3.8499E+01 |

Low Population Zone Doses:

| Time (h) = 8.0000 | Whole Body | Thyroid | TEDE |
|---|---|---|---|
| Delta dose (rem) | 9.0635E-02 | 1.2223E+01 | 7.3678E-01 |
| Accumulated dose (rem) | 4.2877E-01 | 7.8844E+01 | 4.5167E+00 |

Control Room Doses:

| Time (h) = 8.0000 | Whole Body | Thyroid | TEDE |
|---|---|---|---|
| Delta dose (rem) | 1.5679E-02 | 1.4239E+00 | 8.9484E-02 |
| Accumulated dose (rem) | 3.9733E-02 | 7.9755E+00 | 4.3967E-01 |

Environment Integral Nuclide Release:

| Time (h) = 8.0000 | Ci | kg | Atoms | Bq |
|---|---|---|---|---|
| Co-58 | 9.5508E-02 | 3.0036E-09 | 3.1186E+16 | 3.5338E+09 |
| Co-60 | 7.3184E-02 | 6.4742E-08 | 6.4981E+17 | 2.7078E+09 |
| Kr-85 | 3.0052E+02 | 7.6598E-04 | 5.4269E+21 | 1.1119E+13 |
| Kr-85m | 2.9529E+03 | 3.5882E-07 | 2.5422E+18 | 1.0926E+14 |
| Kr-87 | 1.1380E+03 | 4.0174E-08 | 2.7809E+17 | 4.2105E+13 |
| Kr-88 | 5.3731E+03 | 4.2850E-07 | 2.9324E+18 | 1.9880E+14 |
| Rb-86 | 2.7077E+00 | 3.3277E-08 | 2.3302E+17 | 1.0018E+11 |
| Sr-89 | 8.9483E+01 | 3.0801E-06 | 2.0841E+19 | 3.3109E+12 |
| Sr-90 | 9.6744E+00 | 7.0923E-05 | 4.7457E+20 | 3.5795E+11 |
| Sr-91 | 9.0550E+01 | 2.4979E-08 | 1.6531E+17 | 3.3504E+12 |
| Sr-92 | 4.8960E+01 | 3.8952E-09 | 2.5497E+16 | 1.8115E+12 |
| Y-90 | 9.5386E-02 | 1.7532E-10 | 1.1731E+15 | 3.5293E+09 |
| Y-91 | 1.0956E+00 | 4.4674E-08 | 2.9564E+17 | 4.0536E+10 |
| Y-92 | 6.0383E-01 | 6.2753E-11 | 4.1077E+14 | 2.2342E+10 |
| Y-93 | 1.0819E+00 | 3.2428E-10 | 2.0998E+15 | 4.0030E+10 |
| Zr-95 | 1.4115E+00 | 6.5701E-08 | 4.1649E+17 | 5.2224E+10 |
| Zr-97 | 1.2176E+00 | 6.3693E-10 | 3.9543E+15 | 4.5051E+10 |
| Nb-95 | 1.4203E+00 | 3.6322E-08 | 2.3025E+17 | 5.2551E+10 |
| Mo-99 | 1.8584E+01 | 3.8747E-08 | 2.3570E+17 | 6.8759E+11 |
| Tc-99m | 1.0726E+01 | 2.0399E-09 | 1.2409E+16 | 3.9687E+11 |
| Ru-103 | 1.5571E+01 | 4.8246E-07 | 2.8208E+18 | 5.7613E+11 |
| Ru-105 | 5.6373E+00 | 8.3863E-10 | 4.8098E+15 | 2.0858E+11 |
| Ru-106 | 5.8816E+00 | 1.7580E-06 | 9.9878E+18 | 2.1762E+11 |
| Rh-105 | 9.0478E+00 | 1.0720E-08 | 6.1480E+16 | 3.3477E+11 |
| Sb-127 | 2.0725E+01 | 7.7606E-08 | 3.6800E+17 | 7.6682E+11 |
| Sb-129 | 3.4468E+01 | 6.1294E-09 | 2.8614E+16 | 1.2753E+12 |

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**CALCULATION SHEET**
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| | | | | |
|---|---|---|---|---|
| Te-127 | 1.5681E+01 | 5.9420E-09 | 2.8176E+16 | 5.8022E+11 |
| Te-127m | 2.8427E+00 | 3.0137E-07 | 1.4290E+18 | 1.0518E+11 |
| Te-129 | 8.6453E+00 | 4.1282E-10 | 1.9272E+15 | 3.1988E+11 |
| Te-129m | 9.4916E+00 | 3.1507E-06 | 1.4708E+18 | 3.5119E+11 |
| Te-131m | 2.6525E+01 | 3.3264E-08 | 1.5292E+17 | 9.8142E+11 |
| Te-132 | 2.8051E+02 | 9.2397E-07 | 4.2154E+18 | 1.0379E+13 |
| I-131 | 1.5618E+03 | 1.2598E-05 | 5.7912E+19 | 5.7787E+13 |
| I-132 | 8.0735E+02 | 7.8215E-08 | 3.5683E+17 | 2.9872E+13 |
| I-133 | 2.9034E+03 | 2.5630E-06 | 1.1605E+19 | 1.0743E+14 |
| I-134 | 3.8723E+02 | 1.4516E-08 | 6.5235E+16 | 1.4328E+13 |
| I-135 | 2.0708E+03 | 5.8966E-07 | 2.6304E+18 | 7.6619E+13 |
| Xe-133 | 4.1673E+04 | 2.2264E-04 | 1.0081E+21 | 1.5419E+15 |
| Xe-135 | 1.0442E+04 | 4.0888E-06 | 1.8239E+19 | 3.8634E+14 |
| Cs-134 | 2.8407E+02 | 2.1956E-04 | 9.8673E+20 | 1.0511E+13 |
| Cs-136 | 7.7877E+01 | 1.0626E-06 | 4.7051E+18 | 2.8814E+12 |
| Cs-137 | 1.9035E+02 | 2.1884E-03 | 9.6196E+21 | 7.0430E+12 |
| Ba-139 | 2.7951E+01 | 1.7088E-09 | 7.4033E+15 | 1.0342E+12 |
| Ba-140 | 1.5055E+02 | 2.0564E-06 | 8.8458E+18 | 5.5703E+12 |
| La-140 | 1.4345E+00 | 2.5808E-09 | 1.1101E+16 | 5.3076E+10 |
| La-141 | 7.2407E-01 | 1.2803E-10 | 5.4683E+14 | 2.6790E+10 |
| La-142 | 3.5433E-01 | 2.4752E-11 | 1.0497E+14 | 1.3110E+10 |
| Ce-141 | 3.4684E+00 | 1.2172E-07 | 5.1989E+17 | 1.2833E+11 |
| Ce-143 | 3.1692E+00 | 4.7722E-09 | 2.0097E+16 | 1.1726E+11 |
| Ce-144 | 2.8027E+00 | 8.7872E-07 | 3.6748E+18 | 1.0370E+11 |
| Pr-143 | 1.3480E+00 | 2.0018E-08 | 8.4302E+16 | 4.9876E+10 |
| Nd-147 | 5.6243E-01 | 6.9523E-09 | 2.8482E+16 | 2.0810E+10 |
| Np-239 | 3.6581E+01 | 1.5768E-07 | 3.9732E+17 | 1.3535E+12 |
| Pu-238 | 1.1055E-02 | 6.4575E-07 | 1.6339E+18 | 4.0904E+08 |
| Pu-239 | 8.6042E-04 | 1.3843E-05 | 3.4880E+19 | 3.1836E+07 |
| Pu-240 | 9.2788E-04 | 4.0720E-06 | 1.0218E+19 | 3.4331E+07 |
| Pu-241 | 3.8426E-01 | 3.7302E-06 | 9.3211E+18 | 1.4218E+10 |
| Am-241 | 2.3633E-04 | 6.8858E-08 | 1.7206E+17 | 8.7443E+06 |
| Cm-242 | 5.5511E-02 | 1.6749E-08 | 4.1680E+16 | 2.0539E+09 |
| Cm-244 | 4.4939E-03 | 5.5547E-08 | 1.3710E+17 | 1.6627E+08 |

Environment Transport Group Inventory:

| Time (h) = 8.0000 | Present Release | Release Rate/s | Total Release |
|---|---|---|---|
| Noble gases (atoms) | 6.4906E+21 | 2.2537E+17 | 6.4906E+21 |
| Elemental I (atoms) | 2.6822E+18 | 9.3131E+13 | 2.6822E+18 |
| Organic I (atoms) | 5.8721E+17 | 2.0389E+13 | 5.8721E+17 |
| Aerosols (kg) | 2.5314E-03 | 8.7897E-08 | 2.5314E-03 |

CR Filtered Air Intake Transport Group Inventory:

| Time (h) = 8.0000 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 1.5329E+21 |
| Organic I (atoms) | 3.4983E+20 |
| Aerosols (kg) | 1.5855E+00 |

CR Unfiltered Inleakage Transport Group Inventory:

| Time (h) = 8.0000 | Pathway Filter |
|---|---|

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|---|---|---|---|---|

```
Noble gases (atoms)    0.0000E+00
Elemental I (atoms)    0.0000E+00
Organic I (atoms)      0.0000E+00
Aerosols (kg)          0.0000E+00

CR Exhaust to Environment Transport Group Inventory:

                        Pathway
Time (h) =   8.0000      Filter
Noble gases (atoms)    0.0000E+00
Elemental I (atoms)    0.0000E+00
Organic I (atoms)      0.0000E+00
Aerosols (kg)          0.0000E+00
```

**Control Room Compartment Nuclide Inventory:**

| Time (h) = 8.0000 | Ci | kg | Atoms | Bq |
|---|---|---|---|---|
| Co-58 | 7.4709E-08 | 2.3495E-15 | 2.4395E+10 | 2.7643E+03 |
| Co-60 | 5.7359E-08 | 5.0743E-14 | 5.0930E+11 | 2.1223E+03 |
| Kr-85 | 1.9282E-02 | 4.9146E-08 | 3.4819E+17 | 7.1342E+08 |
| Kr-85m | 1.0584E-01 | 1.2861E-11 | 9.1118E+13 | 3.9161E+09 |
| Kr-87 | 6.2100E-03 | 2.1924E-13 | 1.5176E+12 | 2.2977E+08 |
| Kr-88 | 1.3149E-01 | 1.0486E-11 | 7.1760E+13 | 4.8651E+09 |
| Rb-86 | 1.9648E-06 | 2.4147E-14 | 1.6909E+11 | 7.2696E+04 |
| Sr-89 | 6.9939E-05 | 2.4074E-12 | 1.6289E+13 | 2.5877E+06 |
| Sr-90 | 7.5829E-06 | 5.5590E-11 | 3.7197E+14 | 2.8057E+05 |
| Sr-91 | 4.8808E-05 | 1.3464E-14 | 8.9104E+10 | 1.8059E+06 |
| Sr-92 | 9.5499E-06 | 7.5977E-16 | 4.9733E+09 | 3.5334E+05 |
| Y-90 | 7.0817E-08 | 1.3016E-16 | 8.7096E+08 | 2.6202E+03 |
| Y-91 | 8.5662E-07 | 3.4930E-14 | 2.3116E+11 | 3.1695E+04 |
| Y-92 | 1.6616E-07 | 1.7268E-17 | 1.1303E+08 | 6.1480E+03 |
| Y-93 | 5.9661E-07 | 1.7882E-16 | 1.1580E+09 | 2.2075E+04 |
| Zr-95 | 1.1038E-06 | 5.1382E-14 | 3.2572E+11 | 4.0842E+04 |
| Zr-97 | 7.7520E-07 | 4.0551E-16 | 2.5176E+09 | 2.8682E+04 |
| Nb-95 | 1.1087E-06 | 2.8353E-14 | 1.7974E+11 | 4.1022E+04 |
| Mo-99 | 1.3820E-05 | 2.8814E-14 | 1.7528E+11 | 5.1133E+05 |
| Tc-99m | 4.6150E-06 | 8.7766E-16 | 5.3388E+09 | 1.7075E+05 |
| Ru-103 | 1.2160E-05 | 3.7678E-13 | 2.2029E+12 | 4.4993E+05 |
| Ru-105 | 1.9376E-06 | 2.8824E-16 | 1.6532E+09 | 7.1690E+04 |
| Ru-106 | 4.6083E-06 | 1.3774E-12 | 7.8256E+12 | 1.7051E+05 |
| Rh-105 | 6.4263E-06 | 7.6137E-15 | 4.3667E+10 | 2.3777E+05 |
| Sb-127 | 1.5646E-05 | 5.8589E-14 | 2.7782E+11 | 5.7892E+05 |
| Sb-129 | 1.1565E-05 | 2.0566E-15 | 9.6009E+09 | 4.2791E+05 |
| Te-127 | 8.4006E-06 | 3.1831E-15 | 1.5094E+10 | 3.1082E+05 |
| Te-127m | 2.2252E-06 | 2.3591E-13 | 1.1186E+12 | 8.2332E+04 |
| Te-129 | 2.0699E-07 | 9.8836E-18 | 4.6140E+07 | 7.6585E+03 |
| Te-129m | 7.4079E-06 | 2.4590E-12 | 1.1479E+12 | 2.7409E+05 |
| Te-131m | 1.8508E-05 | 2.3210E-14 | 1.0670E+11 | 6.8478E+05 |
| Te-132 | 2.1033E-04 | 6.9280E-13 | 3.1607E+12 | 7.7822E+06 |
| I-131 | 1.2433E-03 | 1.0029E-11 | 4.6102E+13 | 4.6002E+07 |
| I-132 | 1.1812E-04 | 1.1444E-14 | 5.2209E+10 | 4.3706E+06 |
| I-133 | 1.9803E-03 | 1.7481E-12 | 7.9152E+12 | 7.3270E+07 |
| I-134 | 2.2468E-06 | 8.4224E-17 | 3.7851E+08 | 8.3132E+04 |
| I-135 | 9.5925E-04 | 2.7315E-13 | 1.2185E+12 | 3.5492E+07 |
| Xe-133 | 2.6236E+00 | 1.4016E-08 | 6.3464E+16 | 9.7072E+10 |

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| | | | | |
|---|---|---|---|---|
| Xe-135 | 5.0923E-01 | 1.9941E-10 | 8.8953E+14 | 1.8842E+10 |
| Cs-134 | 2.0775E-04 | 1.6057E-10 | 7.2163E+14 | 7.6869E+06 |
| Cs-136 | 5.6316E-05 | 7.6839E-13 | 3.4025E+12 | 2.0837E+06 |
| Cs-137 | 1.3924E-04 | 1.6007E-09 | 7.0364E+15 | 5.1517E+06 |
| Ba-139 | 1.2186E-06 | 7.4502E-17 | 3.2278E+08 | 4.5089E+04 |
| Ba-140 | 1.1668E-04 | 1.5937E-12 | 6.8555E+12 | 4.3170E+06 |
| La-140 | 1.0313E-06 | 1.8554E-15 | 7.9809E+09 | 3.8157E+04 |
| La-141 | 2.2229E-07 | 3.9306E-17 | 1.6788E+08 | 8.2247E+03 |
| La-142 | 2.1532E-08 | 1.5041E-18 | 6.3790E+06 | 7.9668E+02 |
| Ce-141 | 2.7066E-06 | 9.4989E-14 | 4.0570E+11 | 1.0014E+05 |
| Ce-143 | 2.2350E-06 | 3.3655E-15 | 1.4173E+10 | 8.2695E+04 |
| Ce-144 | 2.1957E-06 | 6.8841E-13 | 2.8790E+12 | 8.1240E+04 |
| Pr-143 | 1.0454E-06 | 1.5525E-14 | 6.5379E+10 | 3.8681E+04 |
| Nd-147 | 4.3510E-07 | 5.3783E-15 | 2.2033E+10 | 1.6099E+04 |
| Np-239 | 2.6964E-05 | 1.1623E-13 | 2.9286E+11 | 9.9765E+05 |
| Pu-238 | 8.6652E-09 | 5.0615E-13 | 1.2807E+12 | 3.2061E+02 |
| Pu-239 | 6.7442E-10 | 1.0850E-11 | 2.7340E+13 | 2.4954E+01 |
| Pu-240 | 7.2729E-10 | 3.1917E-12 | 8.0088E+12 | 2.6910E+01 |
| Pu-241 | 3.0118E-07 | 2.9237E-12 | 7.3059E+12 | 1.1144E+04 |
| Am-241 | 1.8524E-10 | 5.3972E-14 | 1.3487E+11 | 6.8539E+00 |
| Cm-242 | 4.3472E-08 | 1.3117E-14 | 3.2641E+10 | 1.6085E+03 |
| Cm-244 | 3.5223E-09 | 4.3538E-14 | 1.0746E+11 | 1.3033E+02 |

Control Room Transport Group Inventory:

| Time (h) = 8.0000 | Atmosphere | Sump | Overlying Pool |
|---|---|---|---|
| Noble gases (atoms) | 4.1642E+17 | 0.0000E+00 | 0.0000E+00 |
| Elemental I (atoms) | 5.3647E+12 | 0.0000E+00 | 0.0000E+00 |
| Organic I (atoms) | 1.9617E+12 | 0.0000E+00 | 0.0000E+00 |
| Aerosols (kg) | 1.8574E-09 | 0.0000E+00 | 0.0000E+00 |

| Time (h) = 8.0000 | Deposition Surfaces | Recirculating Filter |
|---|---|---|
| Noble gases (atoms) | 0.0000E+00 | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 | 4.6413E+14 |
| Organic I (atoms) | 0.0000E+00 | 8.7656E+13 |
| Aerosols (kg) | 0.0000E+00 | 2.8292E-07 |

CR Filtered Air Intake Transport Group Inventory:

| Time (h) = 8.0000 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 1.5329E+21 |
| Organic I (atoms) | 3.4983E+20 |
| Aerosols (kg) | 1.5855E+00 |

CR Unfiltered Inleakage Transport Group Inventory:

| Time (h) = 8.0000 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 |

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CR Exhaust to Environment Transport Group Inventory:

| | Pathway Filter |
|---|---|
| Time (h) = 8.0000 | |
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 |

Exclusion Area Boundary Doses:

| Time (h) = 24.0000 | Whole Body | Thyroid | TEDE |
|---|---|---|---|
| Delta dose (rem) | 1.6318E+00 | 4.2102E+02 | 2.4380E+01 |
| Accumulated dose (rem) | 5.5128E+00 | 1.0846E+03 | 6.2879E+01 |

Low Population Zone Doses:

| Time (h) = 24.0000 | Whole Body | Thyroid | TEDE |
|---|---|---|---|
| Delta dose (rem) | 7.9549E-02 | 1.0556E+01 | 6.4988E-01 |
| Accumulated dose (rem) | 5.0832E-01 | 8.9399E+01 | 5.1666E+00 |

Control Room Doses:

| Time (h) = 24.0000 | Whole Body | Thyroid | TEDE |
|---|---|---|---|
| Delta dose (rem) | 9.6796E-03 | 1.7173E+00 | 9.9863E-02 |
| Accumulated dose (rem) | 4.9412E-02 | 9.6928E+00 | 5.3954E-01 |

Environment Integral Nuclide Release:

| Time (h) = 24.0000 | Ci | kg | Atoms | Bq |
|---|---|---|---|---|
| Co-58 | 1.6438E-01 | 5.1696E-09 | 5.3676E+16 | 6.0822E+09 |
| Co-60 | 1.2623E-01 | 1.1167E-07 | 1.1208E+18 | 4.6704E+09 |
| Kr-85 | 9.9714E+02 | 2.5415E-03 | 1.8007E+22 | 3.6894E+13 |
| Kr-85m | 4.2822E+03 | 5.2035E-07 | 3.6866E+18 | 1.5844E+14 |
| Kr-87 | 1.1624E+03 | 4.1037E-08 | 2.8406E+17 | 4.3009E+13 |
| Kr-88 | 6.4870E+03 | 5.1734E-07 | 3.5403E+18 | 2.4002E+14 |
| Rb-86 | 4.5028E+00 | 5.5339E-08 | 3.8751E+17 | 1.6660E+11 |
| Sr-89 | 1.5388E+02 | 5.2965E-06 | 3.5839E+19 | 5.6934E+12 |
| Sr-90 | 1.6687E+01 | 1.2234E-04 | 8.1858E+20 | 6.1744E+11 |
| Sr-91 | 1.1756E+02 | 3.2429E-08 | 2.1461E+17 | 4.3496E+12 |
| Sr-92 | 5.1262E+01 | 4.0783E-09 | 2.6696E+16 | 1.8967E+12 |
| Y-90 | 1.5559E-01 | 2.8597E-10 | 1.9135E+15 | 5.7567E+09 |
| Y-91 | 1.8848E+00 | 7.6854E-08 | 5.0860E+17 | 6.9736E+10 |
| Y-92 | 6.5356E-01 | 6.7921E-11 | 4.4460E+14 | 2.4182E+10 |
| Y-93 | 1.4211E+00 | 4.2593E-10 | 2.7581E+15 | 5.2579E+10 |
| Zr-95 | 2.4287E+00 | 1.1305E-07 | 7.1666E+17 | 8.9863E+10 |
| Zr-97 | 1.7465E+00 | 9.1358E-10 | 5.6718E+15 | 6.4619E+10 |
| Nb-95 | 2.4391E+00 | 6.2375E-08 | 3.9540E+17 | 9.0246E+10 |
| Mo-99 | 3.0361E+01 | 6.3303E-08 | 3.8507E+17 | 1.1234E+12 |
| Tc-99m | 1.2730E+01 | 2.4209E-09 | 1.4727E+16 | 4.7101E+11 |
| Ru-103 | 2.6752E+01 | 8.2892E-07 | 4.8465E+18 | 9.8984E+11 |
| Ru-105 | 6.3243E+00 | 9.4084E-10 | 5.3961E+15 | 2.3400E+11 |
| Ru-106 | 1.0141E+01 | 3.0312E-06 | 1.7221E+19 | 3.7522E+11 |
| Rh-105 | 1.4161E+01 | 1.6777E-08 | 9.6223E+16 | 5.2395E+11 |
| Sb-127 | 3.4371E+01 | 1.2870E-07 | 6.1029E+17 | 1.2717E+12 |
| Sb-129 | 3.8489E+01 | 6.8444E-09 | 3.1952E+16 | 1.4241E+12 |

| | | | | |
|---|---|---|---|---|
| Te-127 | 2.0296E+01 | 7.6905E-09 | 3.6467E+16 | 7.5095E+11 |
| Te-127m | 4.8964E+00 | 5.1909E-07 | 2.4614E+18 | 1.8117E+11 |
| Te-129 | 8.6689E+00 | 4.1394E-10 | 1.9324E+15 | 3.2075E+11 |
| Te-129m | 1.6296E+01 | 5.4096E-06 | 2.5254E+18 | 6.0297E+11 |
| Te-131m | 4.0873E+01 | 5.1258E-08 | 2.3564E+17 | 1.5123E+12 |
| Te-132 | 4.6203E+02 | 1.5219E-06 | 6.9431E+18 | 1.7095E+13 |
| I-131 | 2.6444E+03 | 2.1330E-05 | 9.8054E+19 | 9.7841E+13 |
| I-132 | 8.3101E+02 | 8.0507E-08 | 3.6729E+17 | 3.0747E+13 |
| I-133 | 4.2815E+03 | 3.7795E-06 | 1.7113E+19 | 1.5841E+14 |
| I-134 | 3.8742E+02 | 1.4523E-08 | 6.5267E+16 | 1.4334E+13 |
| I-135 | 2.4945E+03 | 7.1031E-07 | 3.1686E+18 | 9.2296E+13 |
| Xe-133 | 1.3208E+05 | 7.0562E-04 | 3.1950E+21 | 4.8869E+15 |
| Xe-135 | 2.0642E+04 | 8.0832E-06 | 3.6058E+19 | 7.6377E+14 |
| Cs-134 | 4.7616E+02 | 3.6802E-04 | 1.6539E+21 | 1.7618E+13 |
| Cs-136 | 1.2906E+02 | 1.7610E-06 | 7.7977E+18 | 4.7753E+12 |
| Cs-137 | 3.1912E+02 | 3.6688E-03 | 1.6127E+22 | 1.1808E+13 |
| Ba-139 | 2.8113E+01 | 1.7187E-09 | 7.4464E+15 | 1.0402E+12 |
| Ba-140 | 2.5655E+02 | 3.5043E-06 | 1.5074E+19 | 9.4922E+12 |
| La-140 | 2.2698E+00 | 4.0836E-09 | 1.7566E+16 | 8.3982E+10 |
| La-141 | 7.9614E-01 | 1.4078E-10 | 6.0126E+14 | 2.9457E+10 |
| La-142 | 3.5751E-01 | 2.4974E-11 | 1.0591E+14 | 1.3228E+10 |
| Ce-141 | 5.9540E+00 | 2.0896E-07 | 8.9248E+17 | 2.2030E+11 |
| Ce-143 | 4.9290E+00 | 7.4222E-09 | 3.1257E+16 | 1.8237E+11 |
| Ce-144 | 4.8318E+00 | 1.5149E-06 | 6.3354E+18 | 1.7877E+11 |
| Pr-143 | 2.2988E+00 | 3.4137E-08 | 1.4376E+17 | 8.5054E+10 |
| Nd-147 | 9.5658E-01 | 1.1824E-08 | 4.8441E+16 | 3.5393E+10 |
| Np-239 | 5.9253E+01 | 2.5541E-07 | 6.4356E+17 | 2.1923E+12 |
| Pu-238 | 1.9069E-02 | 1.1139E-06 | 2.8184E+18 | 7.0556E+08 |
| Pu-239 | 1.4842E-03 | 2.3878E-05 | 6.0166E+19 | 5.4914E+07 |
| Pu-240 | 1.6005E-03 | 7.0240E-06 | 1.7625E+19 | 5.9220E+07 |
| Pu-241 | 6.6280E-01 | 6.4342E-06 | 1.6078E+19 | 2.4524E+10 |
| Am-241 | 4.0766E-04 | 1.1878E-07 | 2.9680E+17 | 1.5083E+07 |
| Cm-242 | 9.5661E-02 | 2.8863E-08 | 7.1826E+16 | 3.5395E+09 |
| Cm-244 | 7.7515E-03 | 9.5813E-08 | 2.3647E+17 | 2.8681E+08 |

Environment Transport Group Inventory:

| Time (h) = 24.0000 | Present Release | Release Rate/s | Total Release |
|---|---|---|---|
| Noble gases (atoms) | 2.1536E+22 | 2.4926E+17 | 2.1536E+22 |
| Elemental I (atoms) | 6.3668E+18 | 7.3690E+13 | 6.3668E+18 |
| Organic I (atoms) | 1.9346E+18 | 2.2391E+13 | 1.9346E+18 |
| Aerosols (kg) | 4.2493E-03 | 4.9182E-08 | 4.2493E-03 |

CR Filtered Air Intake Transport Group Inventory:

| Time (h) = 24.0000 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 3.1983E+22 |
| Organic I (atoms) | 1.1485E+22 |
| Aerosols (kg) | 1.6053E+01 |

CR Unfiltered Inleakage Transport Group Inventory:

| Time (h) = 24.0000 | Pathway Filter |
|---|---|

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**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 1 | System Nos. | Sheet 141 of 1000 |
|---|---|---|---|---|

```
Noble gases (atoms)     0.0000E+00
Elemental I (atoms)     0.0000E+00
Organic I (atoms)       0.0000E+00
Aerosols (kg)           0.0000E+00

CR Exhaust to Environment Transport Group Inventory:

                         Pathway
Time (h) =  24.0000       Filter
Noble gases (atoms)     0.0000E+00
Elemental I (atoms)     0.0000E+00
Organic I (atoms)       0.0000E+00
Aerosols (kg)           0.0000E+00
```

**Control Room Compartment Nuclide Inventory:**

| Time (h) = 24.0000 | Ci | kg | Atoms | Bq |
|---|---|---|---|---|
| Co-58 | 1.9079E-08 | 6.0002E-16 | 6.2300E+09 | 7.0594E+02 |
| Co-60 | 1.4741E-08 | 1.3041E-14 | 1.3089E+11 | 5.4541E+02 |
| Kr-85 | 8.7295E-03 | 2.2250E-08 | 1.5764E+17 | 3.2299E+08 |
| Kr-85m | 4.0313E-03 | 4.8985E-13 | 3.4706E+12 | 1.4916E+08 |
| Kr-87 | 4.5863E-07 | 1.6191E-17 | 1.1208E+08 | 1.6969E+04 |
| Kr-88 | 1.1991E-03 | 9.5626E-14 | 6.5440E+11 | 4.4366E+07 |
| Rb-86 | 4.9270E-07 | 6.0552E-15 | 4.2401E+10 | 1.8230E+04 |
| Sr-89 | 1.7814E-05 | 6.1319E-13 | 4.1491E+12 | 6.5913E+05 |
| Sr-90 | 1.9491E-06 | 1.4289E-11 | 9.5612E+13 | 7.2118E+04 |
| Sr-91 | 3.9041E-06 | 1.0770E-15 | 7.1273E+09 | 1.4445E+05 |
| Sr-92 | 4.0994E-08 | 3.2614E-18 | 2.1349E+07 | 1.5168E+03 |
| Y-90 | 1.5308E-08 | 2.8136E-17 | 1.8826E+08 | 5.6638E+02 |
| Y-91 | 2.1847E-07 | 8.9083E-15 | 5.8953E+10 | 8.0833E+03 |
| Y-92 | 1.8619E-09 | 1.9350E-19 | 1.2666E+06 | 6.8892E+01 |
| Y-93 | 5.1149E-08 | 1.5331E-17 | 9.9275E+07 | 1.8925E+03 |
| Zr-95 | 2.8171E-07 | 1.3113E-14 | 8.3125E+10 | 1.0423E+04 |
| Zr-97 | 1.0338E-07 | 5.4079E-17 | 3.3574E+08 | 3.8251E+03 |
| Nb-95 | 2.8128E-07 | 7.1932E-15 | 4.5598E+10 | 1.0407E+04 |
| Mo-99 | 3.0030E-06 | 6.2612E-15 | 3.8087E+10 | 1.1111E+05 |
| Tc-99m | 1.8798E-07 | 3.5750E-17 | 2.1746E+08 | 6.9553E+03 |
| Ru-103 | 3.0893E-06 | 9.5721E-14 | 5.5965E+11 | 1.1430E+05 |
| Ru-105 | 4.0972E-08 | 6.0953E-18 | 3.4959E+07 | 1.5160E+03 |
| Ru-106 | 1.1831E-06 | 3.5363E-13 | 2.0091E+12 | 4.3775E+04 |
| Rh-105 | 1.2072E-06 | 1.4302E-15 | 8.2029E+09 | 4.4666E+04 |
| Sb-127 | 3.5671E-06 | 1.3357E-14 | 6.3338E+10 | 1.3198E+05 |
| Sb-129 | 2.2817E-07 | 4.0574E-17 | 1.8941E+08 | 8.4421E+03 |
| Te-127 | 6.5949E-07 | 2.4989E-16 | 1.1849E+09 | 2.4401E+04 |
| Te-127m | 5.6958E-07 | 6.0384E-14 | 2.8633E+11 | 2.1074E+04 |
| Te-129m | 1.8782E-06 | 6.2347E-13 | 2.9105E+11 | 6.9494E+04 |
| Te-131m | 3.2872E-06 | 4.1224E-15 | 1.8951E+10 | 1.2163E+05 |
| Te-132 | 4.6917E-05 | 1.5454E-13 | 7.0505E+11 | 1.7359E+06 |
| I-131 | 3.2972E-04 | 2.6596E-12 | 1.2226E+13 | 1.2200E+07 |
| I-132 | 2.6715E-07 | 2.5881E-17 | 1.1808E+08 | 9.8845E+03 |
| I-133 | 3.2636E-04 | 2.8810E-13 | 1.3045E+12 | 1.2075E+07 |
| I-135 | 5.0327E-05 | 1.4331E-14 | 6.3927E+10 | 1.8621E+06 |
| Xe-133 | 1.0878E+00 | 5.8112E-09 | 2.6313E+16 | 4.0247E+10 |
| Xe-135 | 6.8069E-02 | 2.6655E-11 | 1.1890E+14 | 2.5186E+09 |
| Cs-134 | 5.3371E-05 | 4.1250E-11 | 1.8539E+14 | 1.9747E+06 |

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**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 1 | System Nos. | Sheet 142 of 1000 |
|---|---|---|---|---|

| | | | | |
|---|---|---|---|---|
| Cs-136 | 1.3975E-05 | 1.9067E-13 | 8.4430E+11 | 5.1706E+05 |
| Cs-137 | 3.5790E-05 | 4.1146E-10 | 1.8087E+15 | 1.3242E+06 |
| Ba-140 | 2.8924E-05 | 3.9509E-13 | 1.6995E+12 | 1.0702E+06 |
| La-140 | 2.0128E-07 | 3.6212E-16 | 1.5577E+09 | 7.4473E+03 |
| La-141 | 3.3992E-09 | 6.0106E-19 | 2.5671E+06 | 1.2577E+02 |
| Ce-141 | 6.8591E-07 | 2.4073E-14 | 1.0281E+11 | 2.5379E+04 |
| Ce-143 | 4.1053E-07 | 6.1820E-16 | 2.6034E+09 | 1.5190E+04 |
| Ce-144 | 5.6349E-07 | 1.7667E-13 | 7.3885E+11 | 2.0849E+04 |
| Pr-143 | 2.5973E-07 | 3.8570E-15 | 1.6243E+10 | 9.6099E+03 |
| Nd-147 | 1.0723E-07 | 1.3255E-15 | 5.4303E+09 | 3.9677E+03 |
| Np-239 | 5.6962E-06 | 2.4554E-14 | 6.1868E+10 | 2.1076E+05 |
| Pu-238 | 2.2274E-09 | 1.3011E-13 | 3.2921E+11 | 8.2413E+01 |
| Pu-239 | 1.7336E-10 | 2.7891E-12 | 7.0278E+12 | 6.4144E+00 |
| Pu-240 | 1.8695E-10 | 8.2045E-13 | 2.0587E+12 | 6.9173E+00 |
| Pu-241 | 7.7413E-08 | 7.5149E-13 | 1.8778E+12 | 2.8643E+03 |
| Am-241 | 4.7617E-11 | 1.3874E-14 | 3.4668E+10 | 1.7618E+00 |
| Cm-242 | 1.1143E-08 | 3.3621E-15 | 8.3666E+09 | 4.1229E+02 |
| Cm-244 | 9.0537E-10 | 1.1191E-14 | 2.7620E+10 | 3.3499E+01 |

Control Room Transport Group Inventory:

| Time (h) = 24.0000 | Atmosphere | Sump | Overlying Pool |
|---|---|---|---|
| Noble gases (atoms) | 1.8855E+17 | 0.0000E+00 | 0.0000E+00 |
| Elemental I (atoms) | 2.4303E+12 | 0.0000E+00 | 0.0000E+00 |
| Organic I (atoms) | 8.8870E+11 | 0.0000E+00 | 0.0000E+00 |
| Aerosols (kg) | 4.7746E-10 | 0.0000E+00 | 0.0000E+00 |

| Time (h) = 24.0000 | Deposition Surfaces | Recirculating Filter |
|---|---|---|
| Noble gases (atoms) | 0.0000E+00 | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 | 7.0153E+14 |
| Organic I (atoms) | 0.0000E+00 | 1.7447E+14 |
| Aerosols (kg) | 0.0000E+00 | 3.5142E-07 |

CR Filtered Air Intake Transport Group Inventory:

| Time (h) = 24.0000 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 3.1983E+22 |
| Organic I (atoms) | 1.1485E+22 |
| Aerosols (kg) | 1.6053E+01 |

CR Unfiltered Inleakage Transport Group Inventory:

| Time (h) = 24.0000 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 |

CR Exhaust to Environment Transport Group Inventory:

Pathway

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**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 1 | System Nos. | Sheet 143 of 1000 |
|---|---|---|---|---|

```
Time (h) =  24.0000      Filter
Noble gases (atoms)    0.0000E+00
Elemental I (atoms)    0.0000E+00
Organic I (atoms)      0.0000E+00
Aerosols (kg)          0.0000E+00

Exclusion Area Boundary Doses:

Time (h) =  96.0000    Whole Body   Thyroid       TEDE
Delta dose (rem)        1.1129E+00  4.8578E+02  2.9964E+01
Accumulated dose (rem)  6.6257E+00  1.5703E+03  9.2843E+01

Low Population Zone Doses:

Time (h) =  96.0000    Whole Body   Thyroid       TEDE
Delta dose (rem)        2.2257E-02  6.3846E+00  4.0145E-01
Accumulated dose (rem)  5.3057E-01  9.5784E+01  5.5680E+00

Control Room Doses:

Time (h) =  96.0000    Whole Body   Thyroid       TEDE
Delta dose (rem)        2.8489E-03  9.0685E-01  5.4047E-02
Accumulated dose (rem)  5.2261E-02  1.0600E+01  5.9358E-01

Environment Integral Nuclide Release:

Time (h) =  96.0000       Ci           kg         Atoms         Bq
Co-58                  2.6273E-01  8.2626E-09  8.5790E+16  9.7211E+09
Co-60                  2.0330E-01  1.7985E-07  1.8051E+18  7.5220E+09
Kr-85                  2.5621E+03  6.5304E-03  4.6267E+22  9.4797E+13
Kr-85m                 4.3291E+03  5.2605E-07  3.7270E+18  1.6018E+14
Kr-87                  1.1624E+03  4.1037E-08  2.8406E+17  4.3009E+13
Kr-88                  6.4942E+03  5.1791E-07  3.5442E+18  2.4029E+14
Rb-86                  6.9411E+00  8.5306E-08  5.9736E+17  2.5682E+11
Sr-89                  2.4517E+02  8.4388E-06  5.7101E+19  9.0711E+12
Sr-90                  2.6883E+01  1.9708E-04  1.3187E+21  9.9466E+11
Sr-91                  1.2122E+02  3.3439E-08  2.2129E+17  4.4850E+12
Sr-92                  5.1269E+01  4.0789E-09  2.6700E+16  1.8970E+12
Y-90                   2.1108E-01  3.8797E-10  2.5960E+15  7.8100E+09
Y-91                   3.0074E+00  1.2263E-07  8.1155E+17  1.1128E+11
Y-92                   6.5408E-01  6.7975E-11  4.4495E+14  2.4201E+10
Y-93                   1.4723E+00  4.4128E-10  2.8575E+15  5.4474E+10
Zr-95                  3.8786E+00  1.8054E-07  1.1445E+18  1.4351E+11
Zr-97                  1.9170E+00  1.0028E-09  6.2257E+15  7.0929E+10
Nb-95                  3.8676E+00  9.8908E-08  6.2699E+17  1.4310E+11
Mo-99                  4.1361E+01  8.6239E-08  5.2459E+17  1.5304E+12
Tc-99m                 1.2835E+01  2.4408E-09  1.4848E+16  4.7488E+11
Ru-103                 4.2491E+01  1.3166E-06  7.6977E+18  1.5722E+12
Ru-105                 6.3399E+00  9.4315E-10  5.4093E+15  2.3457E+11
Ru-106                 1.6313E+01  4.8759E-06  2.7701E+19  6.0357E+11
Rh-105                 1.7529E+01  2.0767E-08  1.1911E+17  6.4856E+11
Sb-127                 4.8770E+01  1.8262E-07  8.6597E+17  1.8045E+12
Sb-129                 3.8572E+01  6.8592E-09  3.2021E+16  1.4272E+12
Te-127                 2.0904E+01  7.9208E-09  3.7559E+16  7.7344E+11
Te-127m                7.8475E+00  8.3196E-07  3.9450E+18  2.9036E+11
Te-129                 8.6689E+00  4.1394E-10  1.9324E+15  3.2075E+11
Te-129m                2.5823E+01  8.5717E-06  4.0016E+18  9.5544E+11
```

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**CALCULATION SHEET**
**(Ref. EP-006T)**

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|---|---|---|---|---|

| | | | | |
|---|---|---|---|---|
| Te-131m | 4.9201E+01 | 6.1701E-08 | 2.8364E+17 | 1.8204E+12 |
| Te-132 | 6.4317E+02 | 2.1185E-06 | 9.6652E+18 | 2.3797E+13 |
| I-131 | 4.0582E+03 | 3.2734E-05 | 1.5048E+20 | 1.5015E+14 |
| I-132 | 8.3104E+02 | 8.0511E-08 | 3.6731E+17 | 3.0749E+13 |
| I-133 | 4.8727E+03 | 4.3014E-06 | 1.9477E+19 | 1.8029E+14 |
| I-134 | 3.8742E+02 | 1.4523E-08 | 6.5267E+16 | 1.4334E+13 |
| I-135 | 2.5233E+03 | 7.1850E-07 | 3.2051E+18 | 9.3361E+13 |
| Xe-133 | 2.9135E+05 | 1.5565E-03 | 7.0478E+21 | 1.0780E+16 |
| Xe-135 | 2.2537E+04 | 8.8251E-06 | 3.9367E+19 | 8.3386E+14 |
| Cs-134 | 7.5497E+02 | 5.8351E-04 | 2.6224E+21 | 2.7934E+13 |
| Cs-136 | 1.9664E+02 | 2.6830E-06 | 1.1880E+19 | 7.2756E+12 |
| Cs-137 | 5.0633E+02 | 5.8211E-03 | 2.5588E+22 | 1.8734E+13 |
| Ba-139 | 2.8113E+01 | 1.7187E-09 | 7.4464E+15 | 1.0402E+12 |
| Ba-140 | 3.9610E+02 | 5.4105E-06 | 2.3274E+19 | 1.4656E+13 |
| La-140 | 2.8711E+00 | 5.1654E-09 | 2.2219E+16 | 1.0623E+11 |
| La-141 | 7.9723E-01 | 1.4097E-10 | 6.0208E+14 | 2.9498E+10 |
| La-142 | 3.5751E-01 | 2.4974E-11 | 1.0591E+14 | 1.3228E+10 |
| Ce-141 | 9.4293E+00 | 3.3093E-07 | 1.4134E+18 | 3.4888E+11 |
| Ce-143 | 6.0303E+00 | 9.0806E-09 | 3.8241E+16 | 2.2312E+11 |
| Ce-144 | 7.7687E+00 | 2.4357E-06 | 1.0186E+19 | 2.8744E+11 |
| Pr-143 | 3.5580E+00 | 5.2837E-08 | 2.2251E+17 | 1.3165E+11 |
| Nd-147 | 1.4674E+00 | 1.8139E-08 | 7.4310E+16 | 5.4294E+10 |
| Np-239 | 7.8997E+01 | 3.4052E-07 | 8.5801E+17 | 2.9229E+12 |
| Pu-238 | 3.0721E-02 | 1.7945E-06 | 4.5405E+18 | 1.1367E+09 |
| Pu-239 | 2.3911E-03 | 3.8468E-05 | 9.6930E+19 | 8.8469E+07 |
| Pu-240 | 2.5785E-03 | 1.1316E-05 | 2.8394E+19 | 9.5405E+07 |
| Pu-241 | 1.0677E+00 | 1.0365E-05 | 2.5899E+19 | 3.9504E+10 |
| Am-241 | 6.5675E-04 | 1.9135E-07 | 4.7815E+17 | 2.4300E+07 |
| Cm-242 | 1.5358E-01 | 4.6339E-08 | 1.1531E+17 | 5.6825E+09 |
| Cm-244 | 1.2487E-02 | 1.5435E-07 | 3.8094E+17 | 4.6202E+08 |

Environment Transport Group Inventory:

| Time (h) = 96.0000 | Present Release | Release Rate/s | Total Release |
|---|---|---|---|
| Noble gases (atoms) | 5.5347E+22 | 1.6015E+17 | 5.5347E+22 |
| Elemental I (atoms) | 1.4648E+19 | 4.2385E+13 | 1.4648E+19 |
| Organic I (atoms) | 4.9629E+18 | 1.4360E+13 | 4.9629E+18 |
| Aerosols (kg) | 6.7470E-03 | 1.9523E-08 | 6.7470E-03 |

CR Filtered Air Intake Transport Group Inventory:

| Time (h) = 96.0000 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 2.3460E+23 |
| Organic I (atoms) | 8.5576E+22 |
| Aerosols (kg) | 8.3465E+01 |

CR Unfiltered Inleakage Transport Group Inventory:

| Time (h) = 96.0000 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 |

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**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 1 | System Nos. | Sheet 145 of 1000 |
|---|---|---|---|---|

CR Exhaust to Environment Transport Group Inventory:

| Time (h) = 96.0000 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 |

**Control Room Compartment Nuclide Inventory:**

| Time (h) = 96.0000 | Ci | kg | Atoms | Bq |
|---|---|---|---|---|
| Co-58 | 4.7561E-09 | 1.4957E-16 | 1.5530E+09 | 1.7598E+02 |
| Co-60 | 3.7800E-09 | 3.3440E-15 | 3.3564E+10 | 1.3986E+02 |
| Kr-85 | 3.0573E-03 | 7.7925E-09 | 5.5209E+16 | 1.1312E+08 |
| Kr-85m | 2.0513E-08 | 2.4926E-18 | 1.7660E+07 | 7.5898E+02 |
| Rb-86 | 1.1314E-07 | 1.3905E-15 | 9.7371E+09 | 4.1863E+03 |
| Sr-89 | 4.3887E-06 | 1.5106E-13 | 1.0221E+12 | 1.6238E+05 |
| Sr-90 | 5.0027E-07 | 3.6675E-12 | 2.4540E+13 | 1.8510E+04 |
| Sr-91 | 5.2417E-09 | 1.4460E-18 | 9.5693E+06 | 1.9394E+02 |
| Y-90 | 1.8017E-09 | 3.3116E-18 | 2.2159E+07 | 6.6665E+01 |
| Y-91 | 5.4125E-08 | 2.2070E-15 | 1.4605E+10 | 2.0026E+03 |
| Y-93 | 9.3827E-11 | 2.8123E-20 | 1.8211E+05 | 3.4716E+00 |
| Zr-95 | 7.0004E-08 | 3.2586E-15 | 2.0657E+10 | 2.5902E+03 |
| Zr-97 | 1.3848E-09 | 7.2440E-19 | 4.4973E+06 | 5.1238E+01 |
| Nb-95 | 6.8059E-08 | 1.7405E-15 | 1.1033E+10 | 2.5182E+03 |
| Mo-99 | 3.6191E-07 | 7.5458E-16 | 4.5901E+09 | 1.3391E+04 |
| Ru-103 | 7.5216E-07 | 2.3306E-14 | 1.3626E+11 | 2.7830E+04 |
| Ru-106 | 3.0201E-07 | 9.0270E-14 | 5.1285E+11 | 1.1174E+04 |
| Rh-105 | 7.5555E-08 | 8.9514E-17 | 5.1340E+08 | 2.7955E+03 |
| Sb-127 | 5.3357E-07 | 1.9980E-15 | 9.4741E+09 | 1.9742E+04 |
| Te-127 | 8.1388E-10 | 3.0839E-19 | 1.4623E+06 | 3.0113E+01 |
| Te-127m | 1.4345E-07 | 1.5208E-14 | 7.2115E+10 | 5.3078E+03 |
| Te-129m | 4.5322E-07 | 1.5045E-13 | 7.0233E+10 | 1.6769E+04 |
| Te-131m | 1.5988E-07 | 2.0050E-16 | 9.2172E+08 | 5.9156E+03 |
| Te-132 | 6.3623E-06 | 2.0957E-14 | 9.5609E+10 | 2.3540E+05 |
| I-131 | 7.0035E-05 | 5.6491E-13 | 2.5969E+12 | 2.5913E+06 |
| I-133 | 8.1500E-06 | 7.1945E-15 | 3.2576E+10 | 3.0155E+05 |
| I-135 | 7.2828E-09 | 2.0738E-18 | 9.2508E+06 | 2.6946E+02 |
| Xe-133 | 2.5640E-01 | 1.3698E-09 | 6.2024E+15 | 9.4869E+09 |
| Xe-135 | 9.8430E-05 | 3.8544E-14 | 1.7194E+11 | 3.6419E+06 |
| Cs-134 | 1.3663E-05 | 1.0560E-11 | 4.7459E+13 | 5.0554E+05 |
| Cs-136 | 3.0609E-06 | 4.1763E-14 | 1.8493E+11 | 1.1325E+05 |
| Cs-137 | 9.1859E-06 | 1.0561E-10 | 4.6422E+14 | 3.3988E+05 |
| Ba-140 | 6.3068E-06 | 8.6149E-14 | 3.7057E+11 | 2.3335E+05 |
| La-140 | 1.4964E-08 | 2.6922E-17 | 1.1581E+08 | 5.5367E+02 |
| Ce-141 | 1.6517E-07 | 5.7967E-15 | 2.4758E+10 | 6.1112E+03 |
| Ce-143 | 2.3227E-08 | 3.4977E-17 | 1.4730E+08 | 8.5941E+02 |
| Ce-144 | 1.4360E-07 | 4.5023E-14 | 1.8829E+11 | 5.3132E+03 |
| Pr-143 | 5.7195E-08 | 8.4937E-16 | 3.5769E+09 | 2.1162E+03 |
| Nd-147 | 2.2779E-08 | 2.8157E-16 | 1.1535E+09 | 8.4281E+02 |
| Np-239 | 6.0472E-07 | 2.6066E-15 | 6.5680E+09 | 2.2375E+04 |
| Pu-238 | 5.7176E-10 | 3.3398E-14 | 8.4506E+10 | 2.1155E+01 |

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**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 1 | System Nos. | Sheet 146 of 1000 |
|---|---|---|---|---|

| | | | | |
|---|---|---|---|---|
| **Pu-239** | **4.4504E-11** | **7.1600E-13** | **1.8041E+12** | **1.6466E+00** |
| **Pu-240** | **4.7993E-11** | **2.1062E-13** | **5.2849E+11** | **1.7757E+00** |
| **Pu-241** | **1.9865E-08** | **1.9284E-13** | **4.8187E+11** | **7.3501E+02** |
| **Am-241** | **1.2224E-11** | **3.5615E-15** | **8.8995E+09** | **4.5228E-01** |
| **Cm-242** | **2.8242E-09** | **8.5214E-16** | **2.1205E+09** | **1.0450E+02** |
| **Cm-244** | **2.3235E-10** | **2.8719E-15** | **7.0882E+09** | **8.5968E+00** |

Control Room Transport Group Inventory:

| Time (h) = 96.0000 | Atmosphere | Sump | Overlying Pool |
|---|---|---|---|
| Noble gases (atoms) | 6.6069E+16 | 0.0000E+00 | 0.0000E+00 |
| Elemental I (atoms) | 8.5171E+11 | 0.0000E+00 | 0.0000E+00 |
| Organic I (atoms) | 3.1145E+11 | 0.0000E+00 | 0.0000E+00 |
| Aerosols (kg) | 1.2257E-10 | 0.0000E+00 | 0.0000E+00 |

| Time (h) = 96.0000 | Deposition Surfaces | Recirculating Filter |
|---|---|---|
| Noble gases (atoms) | 0.0000E+00 | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 | 8.8933E+14 |
| Organic I (atoms) | 0.0000E+00 | 2.4314E+14 |
| Aerosols (kg) | 0.0000E+00 | 3.7722E-07 |

CR Filtered Air Intake Transport Group Inventory:

| Time (h) = 96.0000 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 2.3460E+23 |
| Organic I (atoms) | 8.5576E+22 |
| Aerosols (kg) | 8.3465E+01 |

CR Unfiltered Inleakage Transport Group Inventory:

| Time (h) = 96.0000 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 |

CR Exhaust to Environment Transport Group Inventory:

| Time (h) = 96.0000 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 |

Exclusion Area Boundary Doses:

| Time (h) = 720.0000 | Whole Body | Thyroid | TEDE |
|---|---|---|---|
| Delta dose (rem) | 1.8645E+00 | 6.8620E+02 | 5.7390E+01 |
| Accumulated dose (rem) | 8.4902E+00 | 2.2565E+03 | 1.5023E+02 |

**Low Population Zone Doses:**

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**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 1 | System Nos. | Sheet 147 of 1000 |
|---|---|---|---|---|

| Time (h) = 720.0000 | Whole Body | Thyroid | TEDE |
|---|---|---|---|
| Delta dose (rem) | 9.3224E-03 | 2.2547E+00 | 1.9176E-01 |
| Accumulated dose (rem) | 5.3990E-01 | 9.8039E+01 | 5.7598E+00 |

**Control Room Doses:**

| Time (h) = 720.0000 | Whole Body | Thyroid | TEDE |
|---|---|---|---|
| Delta dose (rem) | 2.1488E-03 | 6.1071E-01 | 4.6275E-02 |
| Accumulated dose (rem) | 5.4410E-02 | 1.1210E+01 | 6.3986E-01 |

Environment Integral Nuclide Release:

| Time (h) = 720.0000 | Ci | kg | Atoms | Bq |
|---|---|---|---|---|
| Co-58 | 4.9294E-01 | 1.5502E-08 | 1.6096E+17 | 1.8239E+10 |
| Co-60 | 3.9995E-01 | 3.5382E-07 | 3.5513E+18 | 1.4798E+10 |
| Kr-85 | 1.5991E+04 | 4.0760E-02 | 2.8878E+23 | 5.9168E+14 |
| Kr-85m | 4.3291E+03 | 5.2605E-07 | 3.7270E+18 | 1.6018E+14 |
| Kr-87 | 1.1624E+03 | 4.1037E-08 | 2.8406E+17 | 4.3009E+13 |
| Kr-88 | 6.4942E+03 | 5.1791E-07 | 3.5442E+18 | 2.4029E+14 |
| Rb-86 | 1.1467E+01 | 1.4092E-07 | 9.8682E+17 | 4.2427E+11 |
| Sr-89 | 4.5150E+02 | 1.5541E-05 | 1.0516E+20 | 1.6705E+13 |
| Sr-90 | 5.2969E+01 | 3.8832E-04 | 2.5983E+21 | 1.9599E+12 |
| Sr-91 | 1.2123E+02 | 3.3443E-08 | 2.2132E+17 | 4.4855E+12 |
| Sr-92 | 5.1269E+01 | 4.0789E-09 | 2.6700E+16 | 1.8970E+12 |
| Y-90 | 2.3918E-01 | 4.3961E-10 | 2.9416E+15 | 8.8496E+09 |
| Y-91 | 5.5875E+00 | 2.2784E-07 | 1.5078E+18 | 2.0674E+11 |
| Y-92 | 6.5408E-01 | 6.7975E-11 | 4.4495E+14 | 2.4201E+10 |
| Y-93 | 1.4725E+00 | 4.4136E-10 | 2.8580E+15 | 5.4484E+10 |
| Zr-95 | 7.2408E+00 | 3.3705E-07 | 2.1366E+18 | 2.6791E+11 |
| Zr-97 | 1.9238E+00 | 1.0063E-09 | 6.2478E+15 | 7.1180E+10 |
| Nb-95 | 6.9321E+00 | 1.7728E-07 | 1.1238E+18 | 2.5649E+11 |
| Mo-99 | 4.7134E+01 | 9.8274E-08 | 5.9780E+17 | 1.7439E+12 |
| Tc-99m | 1.2835E+01 | 2.4408E-09 | 1.4848E+16 | 4.7488E+11 |
| Ru-103 | 7.6863E+01 | 2.3816E-06 | 1.3925E+19 | 2.8439E+12 |
| Ru-105 | 6.3399E+00 | 9.4315E-10 | 5.4093E+15 | 2.3457E+11 |
| Ru-106 | 3.1839E+01 | 9.5166E-06 | 5.4067E+19 | 1.1780E+12 |
| Rh-105 | 1.8261E+01 | 2.1635E-08 | 1.2409E+17 | 6.7567E+11 |
| Sb-127 | 5.9501E+01 | 2.2281E-07 | 1.0565E+18 | 2.2015E+12 |
| Sb-129 | 3.8572E+01 | 6.8592E-09 | 3.2021E+16 | 1.4272E+12 |
| Te-127 | 2.0906E+01 | 7.9217E-09 | 3.7563E+16 | 7.7352E+11 |
| Te-127m | 1.4973E+01 | 1.5874E-06 | 7.5270E+18 | 5.5400E+11 |
| Te-129 | 8.6689E+00 | 4.1394E-10 | 1.9324E+15 | 3.2075E+11 |
| Te-129m | 4.6099E+01 | 1.5302E-05 | 7.1436E+18 | 1.7057E+12 |
| Te-131m | 5.0544E+01 | 6.3386E-08 | 2.9139E+17 | 1.8701E+12 |
| Te-132 | 7.5762E+02 | 2.4955E-06 | 1.1385E+19 | 2.8032E+13 |
| I-131 | 6.2201E+03 | 5.0173E-05 | 2.3065E+20 | 2.3014E+14 |
| I-132 | 8.3104E+02 | 8.0511E-08 | 3.6731E+17 | 3.0749E+13 |
| I-133 | 4.9171E+03 | 4.3406E-06 | 1.9654E+19 | 1.8193E+14 |
| I-134 | 3.8742E+02 | 1.4523E-08 | 6.5267E+16 | 1.4334E+13 |
| I-135 | 2.5233E+03 | 7.1850E-07 | 3.2051E+18 | 9.3361E+13 |
| Xe-133 | 6.0682E+05 | 3.2419E-03 | 1.4679E+22 | 2.2452E+16 |
| Xe-135 | 2.2545E+04 | 8.8282E-06 | 3.9381E+19 | 8.3415E+14 |
| Cs-134 | 1.4627E+03 | 1.1305E-03 | 5.0806E+21 | 5.4119E+13 |
| Cs-136 | 3.0756E+02 | 4.1964E-06 | 1.8582E+19 | 1.1380E+13 |
| Cs-137 | 9.8533E+02 | 1.1328E-02 | 4.9795E+22 | 3.6457E+13 |
| Ba-139 | 2.8113E+01 | 1.7187E-09 | 7.4464E+15 | 1.0402E+12 |

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**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 1 | System Nos. | Sheet 148 of 1000 |
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| | | | | |
|---|---|---|---|---|
| Ba-140 | 6.2261E+02 | 8.5046E-06 | 3.6583E+19 | 2.3037E+13 |
| La-140 | 3.0331E+00 | 5.4570E-09 | 2.3473E+16 | 1.1223E+11 |
| La-141 | 7.9723E-01 | 1.4097E-10 | 6.0208E+14 | 2.9498E+10 |
| La-142 | 3.5751E-01 | 2.4974E-11 | 1.0591E+14 | 1.3228E+10 |
| Ce-141 | 1.6782E+01 | 5.8899E-07 | 2.5156E+18 | 6.2094E+11 |
| Ce-143 | 6.2425E+00 | 9.4002E-09 | 3.9587E+16 | 2.3097E+11 |
| Ce-144 | 1.5119E+01 | 4.7404E-06 | 1.9824E+19 | 5.5942E+11 |
| Pr-143 | 5.6533E+00 | 8.3953E-08 | 3.5355E+17 | 2.0917E+11 |
| Nd-147 | 2.2448E+00 | 2.7748E-08 | 1.1367E+17 | 8.3057E+10 |
| Np-239 | 8.7587E+01 | 3.7754E-07 | 9.5131E+17 | 3.2407E+12 |
| Pu-238 | 6.0545E-02 | 3.5366E-06 | 8.9486E+18 | 2.2402E+09 |
| Pu-239 | 4.7129E-03 | 7.5823E-05 | 1.9105E+20 | 1.7438E+08 |
| Pu-240 | 5.0824E-03 | 2.2304E-05 | 5.5966E+19 | 1.8805E+08 |
| Pu-241 | 2.1030E+00 | 2.0415E-05 | 5.1013E+19 | 7.7811E+10 |
| Am-241 | 1.2945E-03 | 3.7715E-07 | 9.4244E+17 | 4.7895E+07 |
| Cm-242 | 2.9613E-01 | 8.9350E-08 | 2.2235E+17 | 1.0957E+10 |
| Cm-244 | 2.4599E-02 | 3.0406E-07 | 7.5044E+17 | 9.1016E+08 |

Environment Transport Group Inventory:

| Time (h) = 720.0000 | Present Release | Release Rate/s | Total Release |
|---|---|---|---|
| Noble gases (atoms) | 3.4623E+23 | 1.3358E+17 | 3.4623E+23 |
| Elemental I (atoms) | 8.5902E+19 | 3.3141E+13 | 8.5902E+19 |
| Organic I (atoms) | 3.1019E+19 | 1.1967E+13 | 3.1019E+19 |
| Aerosols (kg) | 1.3142E-02 | 5.0701E-09 | 1.3142E-02 |

CR Filtered Air Intake Transport Group Inventory:

| Time (h) = 720.0000 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 1.9779E+24 |
| Organic I (atoms) | 7.2306E+23 |
| Aerosols (kg) | 2.5606E+02 |

CR Unfiltered Inleakage Transport Group Inventory:

| Time (h) = 720.0000 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 |

CR Exhaust to Environment Transport Group Inventory:

| Time (h) = 720.0000 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 |

**Control Room Compartment Nuclide Inventory:**

| **Time (h) = 720.0000** | **Ci** | **kg** | **Atoms** | **Bq** |
|---|---|---|---|---|

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**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 1 | System Nos. | Sheet 149 of 1000 |
|---|---|---|---|---|

| | | | | |
|---|---|---|---|---|
| Co-58 | 1.7425E-10 | 5.4801E-18 | 5.6899E+07 | 6.4474E+00 |
| Co-60 | 1.7697E-10 | 1.5656E-16 | 1.5714E+09 | 6.5480E+00 |
| Kr-85 | 2.0933E-03 | 5.3355E-09 | 3.7801E+16 | 7.7453E+07 |
| Rb-86 | 2.0355E-09 | 2.5016E-17 | 1.7517E+08 | 7.5312E+01 |
| Sr-89 | 1.4515E-07 | 4.9963E-15 | 3.3807E+10 | 5.3706E+03 |
| Sr-90 | 2.3602E-08 | 1.7302E-13 | 1.1577E+12 | 8.7326E+02 |
| Y-91 | 1.8798E-09 | 7.6650E-17 | 5.0725E+08 | 6.9551E+01 |
| Zr-95 | 2.4961E-09 | 1.1619E-16 | 7.3655E+08 | 9.2357E+01 |
| Nb-95 | 1.9262E-09 | 4.9259E-17 | 3.1226E+08 | 7.1268E+01 |
| Mo-99 | 2.4377E-11 | 5.0825E-20 | 3.0917E+05 | 9.0193E-01 |
| Ru-103 | 2.2466E-08 | 6.9611E-16 | 4.0700E+09 | 8.3125E+02 |
| Ru-106 | 1.3590E-08 | 4.0622E-15 | 2.3079E+10 | 5.0285E+02 |
| Sb-127 | 2.3374E-10 | 8.7526E-19 | 4.1504E+06 | 8.6484E+00 |
| Te-127m | 5.7462E-09 | 6.0919E-16 | 2.8887E+09 | 2.1261E+02 |
| Te-129m | 1.2527E-08 | 4.1583E-15 | 1.9412E+09 | 4.6350E+02 |
| Te-132 | 1.1913E-09 | 3.9239E-18 | 1.7902E+07 | 4.4077E+01 |
| I-131 | 1.5436E-06 | 1.2451E-14 | 5.7239E+10 | 5.7115E+04 |
| Xe-133 | 5.6779E-03 | 3.0334E-11 | 1.3735E+14 | 2.1008E+08 |
| Cs-134 | 6.3043E-07 | 4.8726E-13 | 2.1898E+12 | 2.3326E+04 |
| Cs-136 | 3.6547E-08 | 4.9866E-16 | 2.2081E+09 | 1.3523E+03 |
| Cs-137 | 4.3339E-07 | 4.9826E-12 | 2.1902E+13 | 1.6036E+04 |
| Ba-140 | 7.2434E-08 | 9.8942E-16 | 4.2560E+09 | 2.6801E+03 |
| Ce-141 | 4.4832E-09 | 1.5734E-16 | 6.7200E+08 | 1.6588E+02 |
| Ce-144 | 6.3695E-09 | 1.9970E-15 | 8.3516E+09 | 2.3567E+02 |
| Pr-143 | 7.1555E-10 | 1.0626E-17 | 4.4750E+07 | 2.6475E+01 |
| Nd-147 | 2.0854E-10 | 2.5778E-18 | 1.0560E+07 | 7.7159E+00 |
| Np-239 | 1.3569E-11 | 5.8490E-20 | 1.4738E+05 | 5.0206E-01 |
| Pu-238 | 2.7005E-11 | 1.5774E-15 | 3.9914E+09 | 9.9918E-01 |
| Pu-239 | 2.1032E-12 | 3.3837E-14 | 8.5259E+10 | 7.7817E-02 |
| Pu-240 | 2.2680E-12 | 9.9534E-15 | 2.4975E+10 | 8.3918E-02 |
| Pu-241 | 9.3557E-10 | 9.0821E-15 | 2.2694E+10 | 3.4616E+01 |
| Am-241 | 5.7760E-13 | 1.6829E-16 | 4.2053E+08 | 2.1371E-02 |
| Cm-242 | 1.1948E-10 | 3.6051E-17 | 8.9711E+07 | 4.4208E+00 |
| Cm-244 | 1.0950E-11 | 1.3535E-16 | 3.3406E+08 | 4.0516E-01 |

Control Room Transport Group Inventory:

| Time (h) = 720.0000 | Atmosphere | Sump | Overlying Pool |
|---|---|---|---|
| Noble gases (atoms) | 4.5447E+16 | 0.0000E+00 | 0.0000E+00 |
| Elemental I (atoms) | 5.8591E+11 | 0.0000E+00 | 0.0000E+00 |
| Organic I (atoms) | 2.1425E+11 | 0.0000E+00 | 0.0000E+00 |
| Aerosols (kg) | 5.7924E-12 | 0.0000E+00 | 0.0000E+00 |

| Time (h) = 720.0000 | Deposition Surfaces | Recirculating Filter |
|---|---|---|
| Noble gases (atoms) | 0.0000E+00 | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 | 3.0849E+15 |
| Organic I (atoms) | 0.0000E+00 | 1.0460E+15 |
| Aerosols (kg) | 0.0000E+00 | 4.9492E-07 |

CR Filtered Air Intake Transport Group Inventory:

| Time (h) = 720.0000 | Pathway Filter |
|---|---|

```
Noble gases (atoms)    0.0000E+00
Elemental I (atoms)    1.9779E+24
Organic I (atoms)      7.2306E+23
Aerosols (kg)          2.5606E+02

CR  Unfiltered Inleakage Transport Group Inventory:

                        Pathway
Time (h) = 720.0000      Filter
Noble gases (atoms)    0.0000E+00
Elemental I (atoms)    0.0000E+00
Organic I (atoms)      0.0000E+00
Aerosols (kg)          0.0000E+00

CR Exhaust to Environment Transport Group Inventory:

                        Pathway
Time (h) = 720.0000      Filter
Noble gases (atoms)    0.0000E+00
Elemental I (atoms)    0.0000E+00
Organic I (atoms)      0.0000E+00
Aerosols (kg)          0.0000E+00

    325

#################################################################
                            I-131 Summary
#################################################################

              Sprayed Region       Unsprayed Region         Environment
Time (hr)    I-131 (Curies)         I-131 (Curies)       I-131 (Curies)
   0.001       2.2633E+03             1.7074E+03           4.5957E-05
   0.010       3.9516E+04             2.9810E+04           1.4010E-02
   0.021       8.4730E+04             6.3919E+04           6.4416E-02
   0.350       8.1987E+05             9.8651E+05           1.4569E+01
   0.491       9.8444E+05             1.3066E+06           2.6626E+01
   0.500       1.0120E+06             1.3252E+06           2.7523E+01
   0.800       3.2695E+06             3.4391E+06           8.5522E+01
   1.100       4.7232E+06             5.2367E+06           1.9060E+02
   1.400       5.7683E+06             6.6724E+06           3.3126E+02
   1.700       6.5550E+06             7.8020E+06           4.9923E+02
   1.800       6.7740E+06             8.1206E+06           5.6018E+02
   2.000       5.3565E+06             7.0479E+06           6.7358E+02
   2.300       3.9661E+06             5.5360E+06           8.0956E+02
   2.600       3.0197E+06             4.3056E+06           9.1409E+02
   2.900       2.3255E+06             3.3375E+06           9.9480E+02
   2.920       2.2855E+06             3.2600E+06           9.9947E+02
   3.300       1.6878E+06             2.3817E+06           1.0750E+03
   3.600       1.3314E+06             1.8561E+06           1.1202E+03
   3.820       1.1205E+06             1.5393E+06           1.1469E+03
   4.000       1.2414E+06             1.3610E+06           1.1667E+03
   4.300       1.3718E+06             1.1918E+06           1.1990E+03
   4.600       1.4149E+06             1.1111E+06           1.2308E+03
   4.900       1.4214E+06             1.0689E+06           1.2621E+03
   5.200       1.4127E+06             1.0430E+06           1.2930E+03
   5.500       1.3979E+06             1.0240E+06           1.3235E+03
   5.800       1.3806E+06             1.0080E+06           1.3536E+03
```

AmerGen

**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 1 | System Nos. | Sheet 151 of 1000 |
|---|---|---|---|---|

| | | | |
|---|---|---|---|
| 6.100 | 1.3625E+06 | 9.9336E+05 | 1.3832E+03 |
| 6.400 | 1.3442E+06 | 9.7945E+05 | 1.4125E+03 |
| 6.700 | 1.3260E+06 | 9.6593E+05 | 1.4413E+03 |
| 7.000 | 1.3079E+06 | 9.5270E+05 | 1.4697E+03 |
| 7.300 | 1.2901E+06 | 9.3970E+05 | 1.4978E+03 |
| 7.600 | 1.2725E+06 | 9.2690E+05 | 1.5255E+03 |
| 7.900 | 1.2551E+06 | 9.1429E+05 | 1.5528E+03 |
| 8.000 | 1.2494E+06 | 9.1012E+05 | 1.5618E+03 |
| 8.300 | 1.2324E+06 | 8.9776E+05 | 1.5886E+03 |
| 8.600 | 1.2156E+06 | 8.8558E+05 | 1.6150E+03 |
| 8.900 | 1.1991E+06 | 8.7357E+05 | 1.6411E+03 |
| 9.200 | 1.1828E+06 | 8.6174E+05 | 1.6669E+03 |
| 9.500 | 1.1668E+06 | 8.5008E+05 | 1.6922E+03 |
| 9.800 | 1.1509E+06 | 8.3859E+05 | 1.7173E+03 |
| 10.100 | 1.1354E+06 | 8.2726E+05 | 1.7420E+03 |
| 10.400 | 1.1200E+06 | 8.1610E+05 | 1.7663E+03 |
| 24.000 | 7.0378E+05 | 5.1708E+05 | 2.6444E+03 |
| 96.000 | 4.1203E+05 | 3.0995E+05 | 4.0582E+03 |
| 720.000 | 9.2833E+03 | 6.9977E+03 | 6.2201E+03 |

| Time (hr) | Control Room I-131 (Curies) |
|---|---|
| 0.001 | 2.9492E-08 |
| 0.010 | 8.9642E-06 |
| 0.021 | 4.1071E-05 |
| 0.350 | 8.3337E-03 |
| 0.491 | 1.4534E-02 |
| 0.500 | 1.4978E-02 |
| 0.800 | 5.3807E-03 |
| 1.100 | 7.4721E-03 |
| 1.400 | 9.7253E-03 |
| 1.700 | 1.1502E-02 |
| 1.800 | 1.2000E-02 |
| 2.000 | 1.1302E-02 |
| 2.300 | 6.1292E-03 |
| 2.600 | 4.5276E-03 |
| 2.900 | 3.4804E-03 |
| 2.920 | 3.4200E-03 |
| 3.300 | 2.5010E-03 |
| 3.600 | 1.9711E-03 |
| 3.820 | 1.6600E-03 |
| 4.000 | 1.5261E-03 |
| 4.300 | 1.4681E-03 |
| 4.600 | 1.4445E-03 |
| 4.900 | 1.4246E-03 |
| 5.200 | 1.4055E-03 |
| 5.500 | 1.3869E-03 |
| 5.800 | 1.3687E-03 |
| 6.100 | 1.3508E-03 |
| 6.400 | 1.3332E-03 |
| 6.700 | 1.3158E-03 |
| 7.000 | 1.2986E-03 |
| 7.300 | 1.2818E-03 |
| 7.600 | 1.2651E-03 |
| 7.900 | 1.2487E-03 |
| 8.000 | 1.2433E-03 |
| 8.300 | 6.0577E-04 |

**AmerGen** **CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 1 | System Nos. | Sheet 152 of 1000 |
|---|---|---|---|---|

| | |
|---|---|
| 8.600 | 5.5276E-04 |
| 8.900 | 5.4233E-04 |
| 9.200 | 5.3510E-04 |
| 9.500 | 5.2821E-04 |
| 9.800 | 5.2143E-04 |
| 10.100 | 5.1474E-04 |
| 10.400 | 5.0816E-04 |
| 24.000 | 3.2972E-04 |
| 96.000 | 7.0035E-05 |
| 720.000 | 1.5436E-06 |

```
#####################################################################
                        Cumulative Dose Summary
#####################################################################
```

| | **Exclusion Area Bounda** | | Low Population Zone | | Control Room | |
|---|---|---|---|---|---|---|
| Time (hr) | Thyroid (rem) | **TEDE (rem)** | Thyroid (rem) | TEDE (rem) | Thyroid (rem) | TEDE (rem) |
| 0.001 | 1.9873E-05 | 9.5569E-07 | 3.4777E-06 | 1.6725E-07 | 2.2518E-09 | 9.5658E-11 |
| 0.010 | 6.0580E-03 | 2.9131E-04 | 1.0601E-03 | 5.0978E-05 | 1.0734E-05 | 4.5599E-07 |
| 0.021 | 2.7851E-02 | 1.3387E-03 | 4.8739E-03 | 2.3427E-04 | 8.7053E-05 | 3.6979E-06 |
| 0.350 | 6.2747E+00 | 2.9980E-01 | 1.0981E+00 | 5.2466E-02 | 2.9107E-01 | 1.2379E-02 |
| 0.491 | 1.1446E+01 | 5.4512E-01 | 2.0031E+00 | 9.5395E-02 | 7.2731E-01 | 3.0935E-02 |
| 0.500 | 1.1830E+01 | 5.6327E-01 | 2.0703E+00 | 9.8572E-02 | 7.6470E-01 | 3.2526E-02 |
| 0.800 | 3.6970E+01 | 1.9013E+00 | 6.4697E+00 | 3.3273E-01 | 1.3905E+00 | 6.0258E-02 |
| 1.100 | 8.2601E+01 | 4.4480E+00 | 1.4455E+01 | 7.7840E-01 | 1.9115E+00 | 8.6924E-02 |
| 1.400 | 1.4351E+02 | 7.8931E+00 | 2.5114E+01 | 1.3813E+00 | 2.6235E+00 | 1.2496E-01 |
| **1.700** | **2.1593E+02** | **1.2014E+01** | **3.7788E+01** | **2.1024E+00** | **3.4981E+00** | **1.7260E-01** |
| 1.800 | 2.4213E+02 | 1.3508E+01 | 4.2373E+01 | 2.3639E+00 | 3.8189E+00 | 1.9023E-01 |
| 2.000 | 2.9079E+02 | 1.6293E+01 | 5.0888E+01 | 2.8512E+00 | 4.4618E+00 | 2.2582E-01 |
| 2.300 | 3.4899E+02 | 1.9649E+01 | 5.5253E+01 | 3.1029E+00 | 5.1217E+00 | 2.6329E-01 |
| 2.600 | 3.9360E+02 | 2.2248E+01 | 5.8599E+01 | 3.2978E+00 | 5.5491E+00 | 2.8828E-01 |
| 2.900 | 4.2793E+02 | 2.4272E+01 | 6.1174E+01 | 3.4497E+00 | 5.8716E+00 | 3.0755E-01 |
| 2.920 | 4.2991E+02 | 2.4390E+01 | 6.1322E+01 | 3.4585E+00 | 5.8902E+00 | 3.0867E-01 |
| 3.300 | 4.6194E+02 | 2.6308E+01 | 6.3725E+01 | 3.6023E+00 | 6.1901E+00 | 3.2708E-01 |
| 3.600 | 4.8099E+02 | 2.7466E+01 | 6.5153E+01 | 3.6892E+00 | 6.3691E+00 | 3.3836E-01 |
| **3.820** | **4.9226E+02** | **2.8161E+01** | **6.5998E+01** | **3.7413E+00** | **6.4756E+00** | **3.4522E-01** |
| 4.000 | 5.0056E+02 | 2.8675E+01 | 6.6621E+01 | 3.7799E+00 | 6.5516E+00 | 3.5019E-01 |
| 4.300 | 5.1409E+02 | 2.9512E+01 | 6.7636E+01 | 3.8426E+00 | 6.6705E+00 | 3.5798E-01 |
| 4.600 | 5.2738E+02 | 3.0328E+01 | 6.8632E+01 | 3.9039E+00 | 6.7863E+00 | 3.6551E-01 |
| 4.900 | 5.4045E+02 | 3.1127E+01 | 6.9612E+01 | 3.9638E+00 | 6.9001E+00 | 3.7284E-01 |
| 5.200 | 5.5329E+02 | 3.1909E+01 | 7.0576E+01 | 4.0224E+00 | 7.0120E+00 | 3.8000E-01 |
| 5.500 | 5.6592E+02 | 3.2675E+01 | 7.1523E+01 | 4.0799E+00 | 7.1222E+00 | 3.8699E-01 |
| 5.800 | 5.7835E+02 | 3.3425E+01 | 7.2455E+01 | 4.1361E+00 | 7.2306E+00 | 3.9383E-01 |
| 6.100 | 5.9058E+02 | 3.4160E+01 | 7.3372E+01 | 4.1913E+00 | 7.3373E+00 | 4.0051E-01 |
| 6.400 | 6.0260E+02 | 3.4881E+01 | 7.4274E+01 | 4.2453E+00 | 7.4423E+00 | 4.0704E-01 |
| 6.700 | 6.1443E+02 | 3.5588E+01 | 7.5161E+01 | 4.2983E+00 | 7.5457E+00 | 4.1344E-01 |
| 7.000 | 6.2607E+02 | 3.6281E+01 | 7.6034E+01 | 4.3503E+00 | 7.6475E+00 | 4.1970E-01 |
| 7.300 | 6.3752E+02 | 3.6961E+01 | 7.6893E+01 | 4.4013E+00 | 7.7477E+00 | 4.2584E-01 |
| 7.600 | 6.4879E+02 | 3.7628E+01 | 7.7738E+01 | 4.4514E+00 | 7.8463E+00 | 4.3185E-01 |
| 7.900 | 6.5988E+02 | 3.8283E+01 | 7.8570E+01 | 4.5005E+00 | 7.9434E+00 | 4.3774E-01 |
| 8.000 | 6.6353E+02 | 3.8499E+01 | 7.8844E+01 | 4.5167E+00 | 7.9755E+00 | 4.3967E-01 |
| 8.300 | 6.7438E+02 | 3.9138E+01 | 7.9116E+01 | 4.5342E+00 | 8.0383E+00 | 4.4361E-01 |
| 8.600 | 6.8506E+02 | 3.9766E+01 | 7.9384E+01 | 4.5513E+00 | 8.0822E+00 | 4.4640E-01 |
| 8.900 | 6.9557E+02 | 4.0383E+01 | 7.9647E+01 | 4.5681E+00 | 8.1241E+00 | 4.4898E-01 |
| 9.200 | 7.0591E+02 | 4.0989E+01 | 7.9906E+01 | 4.5846E+00 | 8.1653E+00 | 4.5148E-01 |
| 9.500 | 7.1609E+02 | 4.1584E+01 | 8.0162E+01 | 4.6008E+00 | 8.2059E+00 | 4.5391E-01 |

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**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 1 | System Nos. | Sheet 153 of 1000 |
|---|---|---|---|---|

```
   9.800 7.2611E+02 4.2169E+01 8.0413E+01 4.6166E+00 8.2458E+00 4.5628E-01
  10.100 7.3597E+02 4.2744E+01 8.0660E+01 4.6322E+00 8.2852E+00 4.5861E-01
  10.400 7.4568E+02 4.3309E+01 8.0903E+01 4.6474E+00 8.3240E+00 4.6090E-01
  24.000 1.0846E+03 6.2879E+01 8.9399E+01 5.1666E+00 9.6928E+00 5.3954E-01
  96.000 1.5703E+03 9.2843E+01 9.5784E+01 5.5680E+00 1.0600E+01 5.9358E-01
 720.000 2.2565E+03 1.5023E+02 9.8039E+01 5.7598E+00 1.1210E+01 6.3986E-01

#################################################################
                        Worst Two-Hour Doses
    Note: All of the dose locations are shown below but the
          worst two-hour dose is only meaningful for the EAB
          dose location.  Please disregard the two-hour worst
          doses for the other dose locations
#################################################################
```

**Exclusion Area Boundary**

| Time (hr) | Whole Body (rem) | Thyroid (rem) | TEDE (rem) |
|---|---|---|---|
| **0.8** | **1.8454E+00** | **3.7952E+02** | **2.1696E+01** |

Low Population Zone

| Time (hr) | Whole Body (rem) | Thyroid (rem) | TEDE (rem) |
|---|---|---|---|
| 0.5 | 2.6310E-01 | 5.5413E+01 | 3.1343E+00 |

Control Room

| Time (hr) | Whole Body (rem) | Thyroid (rem) | TEDE (rem) |
|---|---|---|---|
| 0.3 | 1.1932E-02 | 4.8748E+00 | 2.5279E-01 |

**Appendix E**

**RADTRAD Output File**

# Containment_Leakage_NoFiltration.o0

**(Case Analyzed To Estimate Aerosols & Iodines On CR Charcoal/HEPA Filters)**

TMI Containment Leakage Pathway AST Analysis:

CR Inleakage = 1,000 cfm (t=30 minutes to t=720 hours),
CR Initiation Time = 30 min (t=0 to t=30 min),
CR Intake = 4,000 cfm t=0 to t= 30 min; 8,000 cfm t=30 min to t=720 hrs,
Two Spray Pumps For 28.19 min at 800 gpm each (t=75 seconds to t= 29.44 min),
One Spray Pump For t=29.44 min to t=4.0 hours @ 800 gpm
No Control Room Filtration – For Filter loading analysis

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|---|---|---|---|---|

```
#######################################################################
          RADTRAD Version 3.02 run on  5/30/2001  at  7:53:11
#######################################################################

#######################################################################
                      File information
#######################################################################

Plant file name           = D:\TMI RADTRAD\Containment_Leakage_NoFiltration.psf
Inventory file name       = d:\tmi radtrad\defaults\tmi_def.nif
Scenario file name        = D:\TMI RADTRAD\Containment_Leakage_NoFiltration.psf
Release file name         = d:\tmi radtrad\defaults\pwr_dba.rft
Dose conversion file name = d:\tmi radtrad\defaults\fgr11&12.inp

    #####    ####   #####    #  #     #  #####   #    #  #####
    #    #  #       #        #  ##    #  #    #  #    #    #
    #    #  #       #        #  # #   #  #    #  #    #    #
    #####    ####   ####     #  #  #  #  #####   #    #    #
    #            #  #        #  #   # #  #       #    #    #
    #            #  #        #  #    ##  #       #    #    #
    #        ####   #        #  #     #  #        ####     #

Radtrad 3.02 1/5/2000
All Spray Flow at 800 gpm
Nuclide Inventory File:
d:\tmi radtrad\defaults\tmi_def.nif
Plant Power Level:
 2.6190E+03
Compartments:
  4
Compartment 1:
Sprayed Region
  3
 1.2310E+06
  1
  0
  0
  0
  0
Compartment 2:
Unsprayed Region
  3
 9.2880E+05
  0
  0
  0
  1
  0
Compartment 3:
Environment
  2
 0.0000E+00
  0
  0
  0
  0
  0
```

```
Compartment 4:
Control Room
  1
 2.5000E+05
  0
  0
  1
  0
  0
Pathways:
  7
Pathway 1:
Sprayed to Unsprayed
  1
  2
  2
Pathway 2:
Unsprayed to Sprayed
  2
  1
  2
Pathway 3:
Sprayed to Environment
  1
  3
  4
Pathway 4:
Unsprayed to Environment
  2
  3
  4
Pathway 5:
CR Filtered Air Intake
  3
  4
  2
Pathway 6:
CR  Unfiltered Inleakage
  3
  4
  2
Pathway 7:
CR Exhaust to Environment
  4
  3
  2
End of Plant Model File
Scenario Description Name:

Plant Model Filename:
ACCEPT\TEST24.PMF
Source Term:
  2
  1   5.7000E-01
  2   4.3000E-01
d:\tmi radtrad\defaults\fgr11&12.inp
d:\tmi radtrad\defaults\pwr_dba.rft
```

```
  0.0000E+00
  0
  9.5000E-01   4.8500E-02   1.5000E-03   1.0000E+00
Overlying Pool:
  0
  0.0000E+00
  0
  0
  0
  0
Compartments:
  4
Compartment 1:
  0
  1
  1
  0.0000E+00
  6
  0.0000E+00   0.0000E+00
  2.0800E-02   3.8800E+00
  4.9070E-01   1.9400E+00
  2.9200E+00   1.9400E+00
  3.8200E+00   1.9400E-01
  4.0000E+00   0.0000E+00
  1
  0.0000E+00
  6
  0.0000E+00   0.0000E+00
  2.0800E-02   9.4600E+00
  4.9070E-01   4.7300E+00
  2.9200E+00   0.0000E+00
  3.8200E+00   0.0000E+00
  4.0000E+00   0.0000E+00
  1
  0.0000E+00
  0
  0
  0
  0
  0
Compartment 2:
  0
  1
  0
  0
  0
  0
  0
  3
  1
  1.0000E+01
  0
Compartment 3:
  1
  1
  0
  0
```

```
  0
  0
  0
  0
  0
Compartment 4:
  1
  1
  0
  0
  0
  0
  1
  2.8000E+04
  3
  0.0000E+00   0.0000E+00   0.0000E+00   0.0000E+00
  5.0000E-01   0.0000E+00   0.0000E+00   0.0000E+00
  7.2000E+02   0.0000E+00   0.0000E+00   0.0000E+00
  0
  0
Pathways:
  7
Pathway 1:
  0
  0
  0
  0
  0
  1
  3
  0.0000E+00   0.0000E+00   0.0000E+00   0.0000E+00   0.0000E+00
  9.7000E-03   2.5000E+04   0.0000E+00   0.0000E+00   0.0000E+00
  7.2000E+02   2.5000E+04   0.0000E+00   0.0000E+00   0.0000E+00
  0
  0
  0
  0
  0
  0
Pathway 2:
  0
  0
  0
  0
  0
  1
  3
  0.0000E+00   0.0000E+00   0.0000E+00   0.0000E+00   0.0000E+00
  9.7000E-03   2.5000E+04   0.0000E+00   0.0000E+00   0.0000E+00
  7.2000E+02   2.5000E+04   0.0000E+00   0.0000E+00   0.0000E+00
  0
  0
  0
  0
  0
  0
Pathway 3:
```

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**CALCULATION SHEET**
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|---|---|---|---|---|

```
  0
  0
  0
  0
  0
  0
  0
  0
  0
  0
  1
  3
  0.0000E+00   1.0000E-01
  2.4000E+01   5.0000E-02
  7.2000E+02   0.0000E+00
  0
Pathway 4:
  0
  0
  0
  0
  0
  0
  0
  0
  0
  0
  1
  3
  0.0000E+00   1.0000E-01
  2.4000E+01   5.0000E-02
  7.2000E+02   0.0000E+00
  0
Pathway 5:
  0
  0
  0
  0
  0
  1
  3
  0.0000E+00   4.0000E+03   0.0000E+00   0.0000E+00   0.0000E+00
  5.0000E-01   8.0000E+03   0.0000E+00   0.0000E+00   0.0000E+00
  7.2000E+02   8.0000E+03   0.0000E+00   0.0000E+00   0.0000E+00
  0
  0
  0
  0
  0
  0
Pathway 6:
  0
  0
  0
  0
  0
  1
```

```
  3
  0.0000E+00   0.0000E+00   0.0000E+00   0.0000E+00   0.0000E+00
  5.0000E-01   1.0000E+03   0.0000E+00   0.0000E+00   0.0000E+00
  7.2000E+02   1.0000E+03   0.0000E+00   0.0000E+00   0.0000E+00
  0
  0
  0
  0
  0
  0
Pathway 7:
  0
  0
  0
  0
  0
  1
  3
  0.0000E+00   4.0000E+03   0.0000E+00   0.0000E+00   0.0000E+00
  5.0000E-01   9.0000E+03   0.0000E+00   0.0000E+00   0.0000E+00
  7.2000E+02   9.0000E+03   0.0000E+00   0.0000E+00   0.0000E+00
  0
  0
  0
  0
  0
  0
Dose Locations:
  3
Location 1:
Exclusion Area Boundary
  3
  1
  2
  0.0000E+00   8.0000E-04
  7.2000E+02   0.0000E+00
  1
  2
  0.0000E+00   3.5000E-04
  7.2000E+02   0.0000E+00
  0
Location 2:
Low Population Zone
  3
  1
  6
  0.0000E+00   1.4000E-04
  2.0000E+00   6.0000E-05
  8.0000E+00   3.9000E-05
  2.4000E+01   1.6000E-05
  9.6000E+01   4.0000E-06
  7.2000E+02   0.0000E+00
  1
  4
  0.0000E+00   3.5000E-04
  8.0000E+00   1.8000E-04
  2.4000E+01   2.3000E-04
```

```
  7.2000E+02   0.0000E+00
  0
Location 3:
Control Room
  4
  0
  1
  2
  0.0000E+00   3.5000E-04
  7.2000E+02   0.0000E+00
  1
  4
  0.0000E+00   1.0000E+00
  2.4000E+01   1.0000E+00
  9.6000E+01   1.0000E+00
  7.2000E+02   0.0000E+00
Effective Volume Location:
  1
  6
  0.0000E+00   3.4000E-04
  2.0000E+00   2.2500E-04
  8.0000E+00   1.0200E-04
  2.4000E+01   7.1600E-05
  9.6000E+01   4.9900E-05
  7.2000E+02   0.0000E+00
Simulation Parameters:
  7
  0.0000E+00   5.0000E-02
  1.0000E+00   1.0000E-01
  2.0000E+00   1.0000E+00
  8.0000E+00   2.0000E+00
  2.4000E+01   4.0000E+00
  9.6000E+01   8.0000E+00
  7.2000E+02   0.0000E+00
Output Filename:
D:\TMI RADTRAD\Containment_Leakage_NoFiltration.o0
  1
  1
  1
  0
  0
End of Scenario File

##################################################################
          RADTRAD Version 3.02 run on  5/30/2001  at  7:53:11
##################################################################

##################################################################
                     Plant Description
##################################################################

Number of Nuclides =  60

Inventory Power =   1.0000E+00 MWth
Plant Power Level =   2.6190E+03 MWth

Number of compartments    =   4
```

```
Compartment information

Compartment number  1  (Source term fraction =   5.7000E-01
)
Name: Sprayed Region
Compartment volume =   1.2310E+06 (Cubic feet)
Removal devices within compartment:
     Spray(s)
Pathways into and out of compartment  1
    Pathway to compartment number   2: Sprayed to Unsprayed
    Pathway to compartment number   3: Sprayed to Environment
    Pathway from compartment number 2: Unsprayed to Sprayed

Compartment number  2  (Source term fraction =   4.3000E-01
)
Name: Unsprayed Region
Compartment volume =   9.2880E+05 (Cubic feet)
Removal devices within compartment:
     Deposition
Pathways into and out of compartment  2
    Pathway to compartment number   1: Unsprayed to Sprayed
    Pathway to compartment number   3: Unsprayed to Environment
    Pathway from compartment number 1: Sprayed to Unsprayed

Compartment number  3
Name: Environment
Pathways into and out of compartment  3
    Pathway to compartment number   4: CR Filtered Air Intake
    Pathway to compartment number   4: CR  Unfiltered Inleakage
    Pathway from compartment number 1: Sprayed to Environment
    Pathway from compartment number 2: Unsprayed to Environment
    Pathway from compartment number 4: CR Exhaust to Environment

Compartment number  4
Name: Control Room
Compartment volume =   2.5000E+05 (Cubic feet)
Removal devices within compartment:
     Filter(s)
Pathways into and out of compartment  4
    Pathway to compartment number   3: CR Exhaust to Environment
    Pathway from compartment number 3: CR Filtered Air Intake
    Pathway from compartment number 3: CR  Unfiltered Inleakage

Total number of pathways =   7

#######################################################################
          RADTRAD Version 3.02 run on  5/30/2001  at  7:53:11
#######################################################################

#######################################################################
                     Scenario Description
#######################################################################

Radioactive Decay is enabled
RELEASE_NAME = PWR, NUREG-1465, Tables 3.12 & 3.13, Jun
Release Fractions and Timings
```

AmerGen

**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 1 | System Nos. | Sheet 163 of 1000 |
|---|---|---|---|---|

```
                GAP       EARLY IN-VESSEL
             0.5000 hrs     1.3000 hrs
NOBLES       5.0000E-02     9.5000E-01
IODINE       5.0000E-02     3.5000E-01
CESIUM       5.0000E-02     2.5000E-01
TELLURIUM    0.0000E+00     5.0000E-02
STRONTIUM    0.0000E+00     2.0000E-02
BARIUM       0.0000E+00     2.0000E-02
RUTHENIUM    0.0000E+00     2.5000E-03
CERIUM       0.0000E+00     5.0000E-04
LANTHANUM    0.0000E+00     2.0000E-04

Iodine fractions
     Aerosol     =   9.5000E-01
     Elemental   =   4.8500E-02
     Organic     =   1.5000E-03

COMPARTMENT DATA

Compartment number   1: Sprayed Region

     Sprays:  Aerosal Removal Data
      Time (hr)          Removal Coef. (hr^-1)
       0.0000E+00          0.0000E+00
       2.0800E-02          3.8800E+00
       4.9070E-01          1.9400E+00
       2.9200E+00          1.9400E+00
       3.8200E+00          1.9400E-01
       4.0000E+00          0.0000E+00

     Sprays:  Elemental Removal Data
      Time (hr)          Removal Coef. (hr^-1)
       0.0000E+00          0.0000E+00
       2.0800E-02          9.4600E+00
       4.9070E-01          4.7300E+00
       2.9200E+00          0.0000E+00
       3.8200E+00          0.0000E+00
       4.0000E+00          0.0000E+00

Compartment number   2: Unsprayed Region
Natural Deposition (Powers' model):  Aerosol data
      Reactor type:   1
      Percentile =  10 (%)

Compartment number   3: Environment

Compartment number   4: Control Room

     Compartment Filter Data

      Time (hr)      Flow Rate          Filter Efficiencies (%)
                       (cfm)        Aerosol     Elemental    Organic
       0.0000E+00    2.8000E+04   0.0000E+00   0.0000E+00   0.0000E+00
       5.0000E-01    2.8000E+04   0.0000E+00   0.0000E+00   0.0000E+00
       7.2000E+02    2.8000E+04   0.0000E+00   0.0000E+00   0.0000E+00

PATHWAY DATA
```

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**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 1 | System Nos. | Sheet 164 of 1000 |
|---|---|---|---|---|

Pathway number 1: Sprayed to Unsprayed

Pathway Filter: Removal Data

| Time (hr) | Flow Rate (cfm) | Filter Efficiencies (%) Aerosol | Elemental | Organic |
|---|---|---|---|---|
| 0.0000E+00 | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 |
| 9.7000E-03 | 2.5000E+04 | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 |
| 7.2000E+02 | 2.5000E+04 | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 |

Pathway number 2: Unsprayed to Sprayed

Pathway Filter: Removal Data

| Time (hr) | Flow Rate (cfm) | Filter Efficiencies (%) Aerosol | Elemental | Organic |
|---|---|---|---|---|
| 0.0000E+00 | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 |
| 9.7000E-03 | 2.5000E+04 | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 |
| 7.2000E+02 | 2.5000E+04 | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 |

Pathway number 3: Sprayed to Environment

Convection Data

| Time (hr) | Flow Rate (% / day) |
|---|---|
| 0.0000E+00 | 1.0000E-01 |
| 2.4000E+01 | 5.0000E-02 |
| 7.2000E+02 | 0.0000E+00 |

Pathway number 4: Unsprayed to Environment

Convection Data

| Time (hr) | Flow Rate (% / day) |
|---|---|
| 0.0000E+00 | 1.0000E-01 |
| 2.4000E+01 | 5.0000E-02 |
| 7.2000E+02 | 0.0000E+00 |

Pathway number 5: CR Filtered Air Intake

Pathway Filter: Removal Data

| Time (hr) | Flow Rate (cfm) | Filter Efficiencies (%) Aerosol | Elemental | Organic |
|---|---|---|---|---|
| 0.0000E+00 | 4.0000E+03 | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 |
| 5.0000E-01 | 8.0000E+03 | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 |
| 7.2000E+02 | 8.0000E+03 | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 |

Pathway number 6: CR Unfiltered Inleakage

Pathway Filter: Removal Data

| Time (hr) | Flow Rate (cfm) | Filter Efficiencies (%) Aerosol | Elemental | Organic |
|---|---|---|---|---|
| 0.0000E+00 | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 |
| 5.0000E-01 | 1.0000E+03 | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 |
| 7.2000E+02 | 1.0000E+03 | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 |

Pathway number 7: CR Exhaust to Environment

Pathway Filter: Removal Data

| Time (hr) | Flow Rate (cfm) | Filter Efficiencies (%) Aerosol | Elemental | Organic |
|---|---|---|---|---|
| 0.0000E+00 | 4.0000E+03 | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 |
| 5.0000E-01 | 9.0000E+03 | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 |
| 7.2000E+02 | 9.0000E+03 | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 |

LOCATION DATA

Location Exclusion Area Boundary is in compartment 3

Location X/Q Data

| Time (hr) | X/Q (s * m^-3) |
|---|---|
| 0.0000E+00 | 8.0000E-04 |
| 7.2000E+02 | 0.0000E+00 |

Location Breathing Rate Data

| Time (hr) | Breathing Rate (m^3 * sec^-1) |
|---|---|
| 0.0000E+00 | 3.5000E-04 |
| 7.2000E+02 | 0.0000E+00 |

Location Low Population Zone is in compartment 3

Location X/Q Data

| Time (hr) | X/Q (s * m^-3) |
|---|---|
| 0.0000E+00 | 1.4000E-04 |
| 2.0000E+00 | 6.0000E-05 |
| 8.0000E+00 | 3.9000E-05 |
| 2.4000E+01 | 1.6000E-05 |
| 9.6000E+01 | 4.0000E-06 |
| 7.2000E+02 | 0.0000E+00 |

Location Breathing Rate Data

| Time (hr) | Breathing Rate (m^3 * sec^-1) |
|---|---|
| 0.0000E+00 | 3.5000E-04 |
| 8.0000E+00 | 1.8000E-04 |
| 2.4000E+01 | 2.3000E-04 |
| 7.2000E+02 | 0.0000E+00 |

Location Control Room is in compartment 4

Location X/Q Data

| Time (hr) | X/Q (s * m^-3) |
|---|---|
| 0.0000E+00 | 3.4000E-04 |
| 2.0000E+00 | 2.2500E-04 |
| 8.0000E+00 | 1.0200E-04 |
| 2.4000E+01 | 7.1600E-05 |
| 9.6000E+01 | 4.9900E-05 |
| 7.2000E+02 | 0.0000E+00 |

Location Breathing Rate Data

| Time (hr) | Breathing Rate (m^3 * sec^-1) |
|---|---|
| 0.0000E+00 | 3.5000E-04 |
| 7.2000E+02 | 0.0000E+00 |

Location Occupancy Factor Data

| Time (hr) | Occupancy Factor |
|---|---|

```
       0.0000E+00            1.0000E+00
       2.4000E+01            1.0000E+00
       9.6000E+01            1.0000E+00
       7.2000E+02            0.0000E+00

USER SPECIFIED TIME STEP DATA - SUPPLEMENTAL TIME STEPS
     Time            Time step
      0.0000E+00       5.0000E-02
      1.0000E+00       1.0000E-01
      2.0000E+00       1.0000E+00
      8.0000E+00       2.0000E+00
      2.4000E+01       4.0000E+00
      9.6000E+01       8.0000E+00
      7.2000E+02       0.0000E+00

#######################################################################
          RADTRAD Version 3.02 run on  5/30/2001  at  7:53:11
#######################################################################

     ####   #    #  #####  #####   #    #  #####
    #    #  #    #    #    #    #  #    #    #
    #    #  #    #    #    #    #  #    #    #
    #    #  #    #    #    #####   #    #    #
    #    #  #    #    #    #       #    #    #
    #    #  #    #    #    #       #    #    #
     ####    ####     #    #        ####     #

#####################################################################
            Dose, Detailed model and Detailed Inventory Output
#####################################################################

Exclusion Area Boundary Doses:

Time (h) =   0.0097    Whole Body   Thyroid       TEDE
Delta dose (rem)        3.6011E-05  6.0580E-03  2.9131E-04
Accumulated dose (rem)  3.6011E-05  6.0580E-03  2.9131E-04

Low Population Zone Doses:

Time (h) =   0.0097    Whole Body   Thyroid       TEDE
Delta dose (rem)        6.3019E-06  1.0601E-03  5.0978E-05
Accumulated dose (rem)  6.3019E-06  1.0601E-03  5.0978E-05

Control Room Doses:

Time (h) =   0.0097    Whole Body   Thyroid       TEDE
Delta dose (rem)        3.6313E-09  1.0734E-05  4.5599E-07
Accumulated dose (rem)  3.6313E-09  1.0734E-05  4.5599E-07

Environment Integral Nuclide Release:

Time (h) =   0.0097       Ci           kg         Atoms         Bq
Kr-85                  2.0489E-04  5.2223E-10  3.6999E+15  7.5809E+06
Kr-85m                 4.5560E-03  5.5362E-13  3.9223E+12  1.6857E+08
Kr-87                  8.9583E-03  3.1626E-13  2.1892E+12  3.3146E+08
Kr-88                  1.2674E-02  1.0107E-12  6.9167E+12  4.6892E+08
Rb-86                  3.2188E-05  3.9559E-13  2.7701E+12  1.1910E+06
```

| | | | | |
|---|---|---|---|---|
| I-131 | 1.4010E-02 | 1.1300E-10 | 5.1948E+14 | 5.1836E+08 |
| I-132 | 2.0184E-02 | 1.9554E-12 | 8.9208E+12 | 7.4679E+08 |
| I-133 | 2.9293E-02 | 2.5859E-11 | 1.1709E+14 | 1.0839E+09 |
| I-134 | 3.2309E-02 | 1.2111E-12 | 5.4430E+12 | 1.1954E+09 |
| I-135 | 2.7297E-02 | 7.7728E-12 | 3.4673E+13 | 1.0100E+09 |
| Xe-133 | 2.9302E-02 | 1.5654E-10 | 7.0881E+14 | 1.0842E+09 |
| Xe-135 | 1.0788E-02 | 4.2243E-12 | 1.8844E+13 | 3.9915E+08 |
| Cs-134 | 3.3570E-03 | 2.5946E-09 | 1.1661E+16 | 1.2421E+08 |
| Cs-136 | 9.2817E-04 | 1.2664E-11 | 5.6077E+13 | 3.4342E+07 |
| Cs-137 | 2.2491E-03 | 2.5857E-08 | 1.1366E+17 | 8.3217E+07 |

Environment Transport Group Inventory:

| Time (h) = 0.0097 | Present Release | Release Rate/s | Total Release |
|---|---|---|---|
| Noble gases (atoms) | 4.4407E+15 | 1.2717E+14 | 4.4261E+15 |
| Elemental I (atoms) | 3.3259E+13 | 9.5244E+11 | 3.3150E+13 |
| Organic I (atoms) | 1.0286E+12 | 2.9457E+10 | 1.0253E+12 |
| Aerosols (kg) | 2.8607E-08 | 8.1922E-10 | 2.8513E-08 |

CR Filtered Air Intake Transport Group Inventory:

| Time (h) = 0.0097 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 |

CR Unfiltered Inleakage Transport Group Inventory:

| Time (h) = 0.0097 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 |

CR Exhaust to Environment Transport Group Inventory:

| Time (h) = 0.0097 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 |

Control Room Compartment Nuclide Inventory:

| Time (h) = 0.0097 | Ci | kg | Atoms | Bq |
|---|---|---|---|---|
| Kr-85 | 1.3110E-07 | 3.3416E-13 | 2.3674E+12 | 4.8507E+03 |
| Kr-85m | 2.9152E-06 | 3.5423E-16 | 2.5097E+09 | 1.0786E+05 |
| Kr-87 | 5.7317E-06 | 2.0235E-16 | 1.4007E+09 | 2.1207E+05 |
| Kr-88 | 8.1091E-06 | 6.4670E-16 | 4.4256E+09 | 3.0004E+05 |
| Rb-86 | 2.0596E-08 | 2.5312E-16 | 1.7725E+09 | 7.6205E+02 |
| I-131 | 8.9642E-06 | 7.2307E-14 | 3.3240E+11 | 3.3168E+05 |
| I-132 | 1.2914E-05 | 1.2511E-15 | 5.7079E+09 | 4.7783E+05 |

| | | | | |
|---|---|---|---|---|
| I-133 | 1.8744E-05 | 1.6546E-14 | 7.4920E+10 | 6.9352E+05 |
| I-134 | 2.0672E-05 | 7.7489E-16 | 3.4825E+09 | 7.6485E+05 |
| I-135 | 1.7466E-05 | 4.9735E-15 | 2.2186E+10 | 6.4625E+05 |
| Xe-133 | 1.8749E-05 | 1.0017E-13 | 4.5354E+11 | 6.9372E+05 |
| Xe-135 | 6.9026E-06 | 2.7029E-15 | 1.2057E+10 | 2.5540E+05 |
| Cs-134 | 2.1480E-06 | 1.6602E-12 | 7.4611E+12 | 7.9476E+04 |
| Cs-136 | 5.9390E-07 | 8.1033E-15 | 3.5882E+10 | 2.1974E+04 |
| Cs-137 | 1.4391E-06 | 1.6545E-11 | 7.2728E+13 | 5.3247E+04 |

Control Room Transport Group Inventory:

| Time (h) = 0.0097 | Atmosphere | Sump | Overlying Pool |
|---|---|---|---|
| Noble gases (atoms) | 2.8414E+12 | 0.0000E+00 | 0.0000E+00 |
| Elemental I (atoms) | 2.1281E+10 | 0.0000E+00 | 0.0000E+00 |
| Organic I (atoms) | 6.5818E+08 | 0.0000E+00 | 0.0000E+00 |
| Aerosols (kg) | 1.8305E-11 | 0.0000E+00 | 0.0000E+00 |

| Time (h) = 0.0097 | Deposition Surfaces | Recirculating Filter |
|---|---|---|
| Noble gases (atoms) | 0.0000E+00 | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 | 0.0000E+00 |

CR Filtered Air Intake Transport Group Inventory:

| Time (h) = 0.0097 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 |

CR Unfiltered Inleakage Transport Group Inventory:

| Time (h) = 0.0097 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 |

CR Exhaust to Environment Transport Group Inventory:

| Time (h) = 0.0097 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 |

Exclusion Area Boundary Doses:

| Time (h) = 0.0208 | Whole Body | Thyroid | TEDE |
|---|---|---|---|
| Delta dose (rem) | 1.2897E-04 | 2.1793E-02 | 1.0474E-03 |
| Accumulated dose (rem) | 1.6498E-04 | 2.7851E-02 | 1.3387E-03 |

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**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 1 | System Nos. | Sheet 169 of 1000 |
|---|---|---|---|---|

Low Population Zone Doses:

| Time (h) = 0.0208 | Whole Body | Thyroid | TEDE |
|---|---|---|---|
| Delta dose (rem) | 2.2569E-05 | 3.8138E-03 | 1.8329E-04 |
| Accumulated dose (rem) | 2.8871E-05 | 4.8739E-03 | 2.3427E-04 |

Control Room Doses:

| Time (h) = 0.0208 | Whole Body | Thyroid | TEDE |
|---|---|---|---|
| Delta dose (rem) | 2.5714E-08 | 7.6319E-05 | 3.2419E-06 |
| Accumulated dose (rem) | 2.9345E-08 | 8.7053E-05 | 3.6979E-06 |

Environment Integral Nuclide Release:

| Time (h) = 0.0208 | Ci | kg | Atoms | Bq |
|---|---|---|---|---|
| Kr-85 | 9.4212E-04 | 2.4013E-09 | 1.7013E+16 | 3.4858E+07 |
| Kr-85m | 2.0913E-02 | 2.5412E-12 | 1.8004E+13 | 7.7377E+08 |
| Kr-87 | 4.0939E-02 | 1.4453E-12 | 1.0004E+13 | 1.5147E+09 |
| Kr-88 | 5.8114E-02 | 4.6346E-12 | 3.1716E+13 | 2.1502E+09 |
| Rb-86 | 1.4800E-04 | 1.8190E-12 | 1.2737E+13 | 5.4762E+06 |
| I-131 | 6.4416E-02 | 5.1959E-10 | 2.3886E+15 | 2.3834E+09 |
| I-132 | 9.2492E-02 | 8.9605E-12 | 4.0880E+13 | 3.4222E+09 |
| I-133 | 1.3465E-01 | 1.1886E-10 | 5.3819E+14 | 4.9819E+09 |
| I-134 | 1.4724E-01 | 5.5195E-12 | 2.4805E+13 | 5.4480E+09 |
| I-135 | 1.2537E-01 | 3.5698E-11 | 1.5924E+14 | 4.6386E+09 |
| Xe-133 | 1.3473E-01 | 7.1977E-10 | 3.2590E+15 | 4.9849E+09 |
| Xe-135 | 4.9561E-02 | 1.9407E-11 | 8.6573E+13 | 1.8338E+09 |
| Cs-134 | 1.5436E-02 | 1.1930E-08 | 5.3617E+16 | 5.7113E+08 |
| Cs-136 | 4.2678E-03 | 5.8230E-11 | 2.5785E+14 | 1.5791E+08 |
| Cs-137 | 1.0342E-02 | 1.1890E-07 | 5.2263E+17 | 3.8265E+08 |

Environment Transport Group Inventory:

| Time (h) = 0.0208 | Present Release | Release Rate/s | Total Release |
|---|---|---|---|
| Noble gases (atoms) | 2.0419E+16 | 2.7269E+14 | 2.0404E+16 |
| Elemental I (atoms) | 1.5292E+14 | 2.0422E+12 | 1.5281E+14 |
| Organic I (atoms) | 4.7294E+12 | 6.3160E+10 | 4.7260E+12 |
| Aerosols (kg) | 1.3154E-07 | 1.7567E-09 | 1.3145E-07 |

CR Filtered Air Intake Transport Group Inventory:

| Time (h) = 0.0208 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 |

CR Unfiltered Inleakage Transport Group Inventory:

| Time (h) = 0.0208 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 |

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```
Aerosols (kg)          0.0000E+00

CR Exhaust to Environment Transport Group Inventory:

                        Pathway
Time (h) =   0.0208      Filter
Noble gases (atoms)    0.0000E+00
Elemental I (atoms)    0.0000E+00
Organic I (atoms)      0.0000E+00
Aerosols (kg)          0.0000E+00

Control Room Compartment Nuclide Inventory:

Time (h) =   0.0208       Ci           kg          Atoms         Bq
Kr-85                  6.0069E-07  1.5311E-12  1.0847E+13  2.2226E+04
Kr-85m                 1.3329E-05  1.6196E-15  1.1475E+10  4.9317E+05
Kr-87                  2.6068E-05  9.2028E-16  6.3702E+09  9.6450E+05
Kr-88                  3.7032E-05  2.9533E-15  2.0210E+10  1.3702E+06
Rb-86                  9.4367E-08  1.1598E-15  8.1212E+09  3.4916E+03
I-131                  4.1071E-05  3.3128E-13  1.5229E+12  1.5196E+06
I-132                  5.8929E-05  5.7090E-15  2.6046E+10  2.1804E+06
I-133                  8.5842E-05  7.5778E-14  3.4312E+11  3.1762E+06
I-134                  9.3699E-05  3.5124E-15  1.5785E+10  3.4669E+06
I-135                  7.9914E-05  2.2755E-14  1.0151E+11  2.9568E+06
Xe-133                 8.5900E-05  4.5891E-13  2.0779E+12  3.1783E+06
Xe-135                 3.1594E-05  1.2372E-14  5.5188E+10  1.1690E+06
Cs-134                 9.8419E-06  7.6068E-12  3.4186E+13  3.6415E+05
Cs-136                 2.7211E-06  3.7127E-14  1.6440E+11  1.0068E+05
Cs-137                 6.5939E-06  7.5808E-11  3.3323E+14  2.4397E+05

Control Room Transport Group Inventory:

                                                Overlying
Time (h) =   0.0208    Atmosphere     Sump        Pool
Noble gases (atoms)    1.3019E+13  0.0000E+00  0.0000E+00
Elemental I (atoms)    9.7500E+10  0.0000E+00  0.0000E+00
Organic I (atoms)      3.0155E+09  0.0000E+00  0.0000E+00
Aerosols (kg)          8.3870E-11  0.0000E+00  0.0000E+00

                       Deposition Recirculating
Time (h) =   0.0208     Surfaces     Filter
Noble gases (atoms)    0.0000E+00  0.0000E+00
Elemental I (atoms)    0.0000E+00  0.0000E+00
Organic I (atoms)      0.0000E+00  0.0000E+00
Aerosols (kg)          0.0000E+00  0.0000E+00

CR Filtered Air Intake Transport Group Inventory:

                        Pathway
Time (h) =   0.0208      Filter
Noble gases (atoms)    0.0000E+00
Elemental I (atoms)    0.0000E+00
Organic I (atoms)      0.0000E+00
Aerosols (kg)          0.0000E+00

CR  Unfiltered Inleakage Transport Group Inventory:
```

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| Time (h) = 0.0208 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 |

CR Exhaust to Environment Transport Group Inventory:

| Time (h) = 0.0208 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 |

Exclusion Area Boundary Doses:

| Time (h) = 0.4907 | Whole Body | Thyroid | TEDE |
|---|---|---|---|
| Delta dose (rem) | 6.1402E-02 | 1.1418E+01 | 5.4378E-01 |
| Accumulated dose (rem) | 6.1567E-02 | 1.1446E+01 | 5.4512E-01 |

Low Population Zone Doses:

| Time (h) = 0.4907 | Whole Body | Thyroid | TEDE |
|---|---|---|---|
| Delta dose (rem) | 1.0745E-02 | 1.9982E+00 | 9.5161E-02 |
| Accumulated dose (rem) | 1.0774E-02 | 2.0031E+00 | 9.5395E-02 |

Control Room Doses:

| Time (h) = 0.4907 | Whole Body | Thyroid | TEDE |
|---|---|---|---|
| Delta dose (rem) | 2.1943E-04 | 7.2722E-01 | 3.0932E-02 |
| Accumulated dose (rem) | 2.1946E-04 | 7.2731E-01 | 3.0935E-02 |

Environment Integral Nuclide Release:

| Time (h) = 0.4907 | Ci | kg | Atoms | Bq |
|---|---|---|---|---|
| Kr-85 | 5.2438E-01 | 1.3366E-06 | 9.4693E+18 | 1.9402E+10 |
| Kr-85m | 1.0827E+01 | 1.3156E-09 | 9.3211E+15 | 4.0060E+11 |
| Kr-87 | 1.7729E+01 | 6.2590E-10 | 4.3325E+15 | 6.5597E+11 |
| Kr-88 | 2.8868E+01 | 2.3022E-09 | 1.5755E+16 | 1.0681E+12 |
| Rb-86 | 6.1824E-02 | 7.5981E-10 | 5.3206E+15 | 2.2875E+09 |
| I-131 | 2.6626E+01 | 2.1477E-07 | 9.8730E+17 | 9.8515E+11 |
| I-132 | 3.3299E+01 | 3.2259E-09 | 1.4717E+16 | 1.2321E+12 |
| I-133 | 5.4883E+01 | 4.8449E-08 | 2.1937E+17 | 2.0307E+12 |
| I-134 | 4.2596E+01 | 1.5967E-09 | 7.1759E+15 | 1.5760E+12 |
| I-135 | 4.9421E+01 | 1.4073E-08 | 6.2775E+16 | 1.8286E+12 |
| Xe-133 | 7.4794E+01 | 3.9958E-07 | 1.8093E+18 | 2.7674E+12 |
| Xe-135 | 2.6615E+01 | 1.0422E-08 | 4.6492E+16 | 9.8477E+11 |
| Cs-134 | 6.4524E+00 | 4.9871E-06 | 2.2413E+19 | 2.3874E+11 |
| Cs-136 | 1.7822E+00 | 2.4316E-08 | 1.0767E+17 | 6.5940E+10 |
| Cs-137 | 4.3231E+00 | 4.9701E-05 | 2.1847E+20 | 1.5995E+11 |

Environment Transport Group Inventory:

| Time (h) = 0.4907 | Present Release | Release Rate/s | Total Release |
|---|---|---|---|

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| | | | |
|---|---|---|---|
| Noble gases (atoms) | 1.1359E+19 | 6.4304E+15 | 1.1359E+19 |
| Elemental I (atoms) | 5.0384E+16 | 2.8522E+13 | 5.0384E+16 |
| Organic I (atoms) | 2.6171E+15 | 1.4815E+12 | 2.6171E+15 |
| Aerosols (kg) | 5.4985E-05 | 3.1126E-08 | 5.4985E-05 |

CR Filtered Air Intake Transport Group Inventory:

| Time (h) = 0.4907 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 |

CR Unfiltered Inleakage Transport Group Inventory:

| Time (h) = 0.4907 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 |

CR Exhaust to Environment Transport Group Inventory:

| Time (h) = 0.4907 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 |

Control Room Compartment Nuclide Inventory:

| Time (h) = 0.4907 | Ci | kg | Atoms | Bq |
|---|---|---|---|---|
| Kr-85 | 2.8940E-04 | 7.3764E-10 | 5.2261E+15 | 1.0708E+07 |
| Kr-85m | 5.8400E-03 | 7.0964E-13 | 5.0277E+12 | 2.1608E+08 |
| Kr-87 | 9.0010E-03 | 3.1777E-13 | 2.1996E+12 | 3.3304E+08 |
| Kr-88 | 1.5362E-02 | 1.2251E-12 | 8.3838E+12 | 5.6839E+08 |
| Rb-86 | 3.3766E-05 | 4.1498E-13 | 2.9059E+12 | 1.2493E+06 |
| I-131 | 1.4534E-02 | 1.1724E-10 | 5.3894E+14 | 5.3777E+08 |
| I-132 | 1.7315E-02 | 1.6774E-12 | 7.6529E+12 | 6.4065E+08 |
| I-133 | 2.9817E-02 | 2.6322E-11 | 1.1918E+14 | 1.1032E+09 |
| I-134 | 2.0335E-02 | 7.6227E-13 | 3.4257E+12 | 7.5239E+08 |
| I-135 | 2.6543E-02 | 7.5581E-12 | 3.3716E+13 | 9.8209E+08 |
| Xe-133 | 4.1246E-02 | 2.2035E-10 | 9.9773E+14 | 1.5261E+09 |
| Xe-135 | 1.4525E-02 | 5.6878E-12 | 2.5372E+13 | 5.3743E+08 |
| Cs-134 | 3.5249E-03 | 2.7244E-09 | 1.2244E+16 | 1.3042E+08 |
| Cs-136 | 9.7324E-04 | 1.3279E-11 | 5.8800E+13 | 3.6010E+07 |
| Cs-137 | 2.3617E-03 | 2.7151E-08 | 1.1935E+17 | 8.7381E+07 |

Control Room Transport Group Inventory:

| Time (h) = 0.4907 | Atmosphere | Sump | Overlying Pool |
|---|---|---|---|
| Noble gases (atoms) | 6.2691E+15 | 0.0000E+00 | 0.0000E+00 |
| Elemental I (atoms) | 2.7357E+13 | 0.0000E+00 | 0.0000E+00 |

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**CALCULATION SHEET**
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```
Organic I (atoms)      1.4440E+12  0.0000E+00  0.0000E+00
Aerosols (kg)          3.0038E-08  0.0000E+00  0.0000E+00

                       Deposition Recirculating
Time (h) =   0.4907     Surfaces     Filter
Noble gases (atoms)    0.0000E+00  0.0000E+00
Elemental I (atoms)    0.0000E+00  0.0000E+00
Organic I (atoms)      0.0000E+00  0.0000E+00
Aerosols (kg)          0.0000E+00  0.0000E+00

CR Filtered Air Intake Transport Group Inventory:

                        Pathway
Time (h) =   0.4907      Filter
Noble gases (atoms)    0.0000E+00
Elemental I (atoms)    0.0000E+00
Organic I (atoms)      0.0000E+00
Aerosols (kg)          0.0000E+00

CR  Unfiltered Inleakage Transport Group Inventory:

                        Pathway
Time (h) =   0.4907      Filter
Noble gases (atoms)    0.0000E+00
Elemental I (atoms)    0.0000E+00
Organic I (atoms)      0.0000E+00
Aerosols (kg)          0.0000E+00

CR Exhaust to Environment Transport Group Inventory:

                        Pathway
Time (h) =   0.4907      Filter
Noble gases (atoms)    0.0000E+00
Elemental I (atoms)    0.0000E+00
Organic I (atoms)      0.0000E+00
Aerosols (kg)          0.0000E+00

Exclusion Area Boundary Doses:

Time (h) =   0.5000    Whole Body   Thyroid       TEDE
Delta dose (rem)        1.9238E-03  3.8394E-01  1.8153E-02
Accumulated dose (rem)  6.3491E-02  1.1830E+01  5.6327E-01

Low Population Zone Doses:

Time (h) =   0.5000    Whole Body   Thyroid       TEDE
Delta dose (rem)        3.3667E-04  6.7189E-02  3.1768E-03
Accumulated dose (rem)  1.1111E-02  2.0703E+00  9.8572E-02

Control Room Doses:

Time (h) =   0.5000    Whole Body   Thyroid       TEDE
Delta dose (rem)        1.0695E-05  3.7390E-02  1.5905E-03
Accumulated dose (rem)  2.3016E-04  7.6470E-01  3.2526E-02

Environment Integral Nuclide Release:
```

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| Time (h) = 0.5000 | Ci | kg | Atoms | Bq |
|---|---|---|---|---|
| Kr-85 | 5.4444E-01 | 1.3877E-06 | 9.8316E+18 | 2.0144E+10 |
| Kr-85m | 1.1227E+01 | 1.3642E-09 | 9.6651E+15 | 4.1538E+11 |
| Kr-87 | 1.8325E+01 | 6.4695E-10 | 4.4782E+15 | 6.7803E+11 |
| Kr-88 | 2.9911E+01 | 2.3854E-09 | 1.6324E+16 | 1.1067E+12 |
| Rb-86 | 6.3911E-02 | 7.8546E-10 | 5.5002E+15 | 2.3647E+09 |
| I-131 | 2.7523E+01 | 2.2200E-07 | 1.0206E+18 | 1.0183E+12 |
| I-132 | 3.4334E+01 | 3.3262E-09 | 1.5175E+16 | 1.2704E+12 |
| I-133 | 5.6717E+01 | 5.0068E-08 | 2.2670E+17 | 2.0985E+12 |
| I-134 | 4.3751E+01 | 1.6400E-09 | 7.3706E+15 | 1.6188E+12 |
| I-135 | 5.1041E+01 | 1.4534E-08 | 6.4833E+16 | 1.8885E+12 |
| Xe-133 | 7.7653E+01 | 4.1485E-07 | 1.8784E+18 | 2.8731E+12 |
| Xe-135 | 2.7616E+01 | 1.0814E-08 | 4.8240E+16 | 1.0218E+12 |
| Cs-134 | 6.6703E+00 | 5.1555E-06 | 2.3170E+19 | 2.4680E+11 |
| Cs-136 | 1.8423E+00 | 2.5137E-08 | 1.1131E+17 | 6.8166E+10 |
| Cs-137 | 4.4691E+00 | 5.1379E-05 | 2.2585E+20 | 1.6536E+11 |

Environment Transport Group Inventory:

| Time (h) = 0.5000 | Present Release | Release Rate/s | Total Release |
|---|---|---|---|
| Noble gases (atoms) | 1.1794E+19 | 6.5522E+15 | 1.1794E+19 |
| Elemental I (atoms) | 5.1990E+16 | 2.8883E+13 | 5.1990E+16 |
| Organic I (atoms) | 2.7169E+15 | 1.5094E+12 | 2.7169E+15 |
| Aerosols (kg) | 5.6842E-05 | 3.1579E-08 | 5.6842E-05 |

CR Filtered Air Intake Transport Group Inventory:

| Time (h) = 0.5000 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 |

CR Unfiltered Inleakage Transport Group Inventory:

| Time (h) = 0.5000 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 |

CR Exhaust to Environment Transport Group Inventory:

| Time (h) = 0.5000 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 |

**Control Room Compartment Nuclide Inventory:**

| **Time (h) = 0.5000** | **Ci** | **kg** | **Atoms** | **Bq** |
|---|---|---|---|---|
| **Kr-85** | **2.9965E-04** | **7.6376E-10** | **5.4112E+15** | **1.1087E+07** |

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| | | | | |
|---|---|---|---|---|
| Kr-85m | 6.0351E-03 | 7.3335E-13 | 5.1957E+12 | 2.2330E+08 |
| Kr-87 | 9.2569E-03 | 3.2680E-13 | 2.2621E+12 | 3.4250E+08 |
| Kr-88 | 1.5857E-02 | 1.2646E-12 | 8.6543E+12 | 5.8673E+08 |
| Rb-86 | 3.4799E-05 | 4.2767E-13 | 2.9948E+12 | 1.2876E+06 |
| I-131 | 1.4978E-02 | 1.2081E-10 | 5.5538E+14 | 5.5417E+08 |
| I-132 | 1.7774E-02 | 1.7220E-12 | 7.8560E+12 | 6.5765E+08 |
| I-133 | 3.0715E-02 | 2.7114E-11 | 1.2277E+14 | 1.1365E+09 |
| I-134 | 2.0745E-02 | 7.7764E-13 | 3.4948E+12 | 7.6756E+08 |
| I-135 | 2.7317E-02 | 7.7784E-12 | 3.4698E+13 | 1.0107E+09 |
| Xe-133 | 4.2703E-02 | 2.2814E-10 | 1.0330E+15 | 1.5800E+09 |
| Xe-135 | 1.5025E-02 | 5.8836E-12 | 2.6246E+13 | 5.5593E+08 |
| Cs-134 | 3.6328E-03 | 2.8078E-09 | 1.2619E+16 | 1.3441E+08 |
| Cs-136 | 1.0030E-03 | 1.3685E-11 | 6.0599E+13 | 3.7111E+07 |
| Cs-137 | 2.4340E-03 | 2.7982E-08 | 1.2300E+17 | 9.0057E+07 |

Control Room Transport Group Inventory:

| Time (h) = 0.5000 | Atmosphere | Sump | Overlying Pool |
|---|---|---|---|
| Noble gases (atoms) | 6.4911E+15 | 0.0000E+00 | 0.0000E+00 |
| Elemental I (atoms) | 2.8140E+13 | 0.0000E+00 | 0.0000E+00 |
| Organic I (atoms) | 1.4949E+12 | 0.0000E+00 | 0.0000E+00 |
| Aerosols (kg) | 3.0957E-08 | 0.0000E+00 | 0.0000E+00 |

| Time (h) = 0.5000 | Deposition Surfaces | Recirculating Filter |
|---|---|---|
| Noble gases (atoms) | 0.0000E+00 | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 | 0.0000E+00 |

CR Filtered Air Intake Transport Group Inventory:

| Time (h) = 0.5000 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 |

CR Unfiltered Inleakage Transport Group Inventory:

| Time (h) = 0.5000 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 |

CR Exhaust to Environment Transport Group Inventory:

| Time (h) = 0.5000 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 |

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**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 1 | System Nos. | Sheet 176 of 1000 |
|---|---|---|---|---|

Aerosols (kg) 0.0000E+00

Exclusion Area Boundary Doses:

| Time (h) = 1.8000 | Whole Body | Thyroid | TEDE |
|---|---|---|---|
| Delta dose (rem) | 1.0929E+00 | 2.3049E+02 | 1.2955E+01 |
| Accumulated dose (rem) | 1.1564E+00 | 2.4232E+02 | 1.3518E+01 |

Low Population Zone Doses:

| Time (h) = 1.8000 | Whole Body | Thyroid | TEDE |
|---|---|---|---|
| Delta dose (rem) | 1.9125E-01 | 4.0336E+01 | 2.2671E+00 |
| Accumulated dose (rem) | 2.0236E-01 | 4.2406E+01 | 2.3657E+00 |

Control Room Doses:

| Time (h) = 1.8000 | Whole Body | Thyroid | TEDE |
|---|---|---|---|
| Delta dose (rem) | 1.5301E-02 | 5.8781E+01 | 3.0010E+00 |
| Accumulated dose (rem) | 1.5531E-02 | 5.9546E+01 | 3.0336E+00 |

Environment Integral Nuclide Release:

| Time (h) = 1.8000 | Ci | kg | Atoms | Bq |
|---|---|---|---|---|
| Co-58 | 3.1052E-02 | 9.7653E-10 | 1.0139E+16 | 1.1489E+09 |
| Co-60 | 2.3776E-02 | 2.1033E-08 | 2.1111E+17 | 8.7970E+08 |
| Kr-85 | 3.0291E+01 | 7.7207E-05 | 5.4700E+20 | 1.1208E+12 |
| Kr-85m | 4.8258E+02 | 5.8640E-08 | 4.1546E+17 | 1.7855E+13 |
| Kr-87 | 4.2709E+02 | 1.5078E-08 | 1.0437E+17 | 1.5802E+13 |
| Kr-88 | 1.1121E+03 | 8.8687E-08 | 6.0691E+17 | 4.1146E+13 |
| Rb-86 | 1.0055E+00 | 1.2357E-08 | 8.6533E+16 | 3.7203E+10 |
| Sr-89 | 2.9102E+01 | 1.0017E-06 | 6.7780E+18 | 1.0768E+12 |
| Sr-90 | 3.1429E+00 | 2.3041E-05 | 1.5417E+20 | 1.1629E+11 |
| Sr-91 | 3.3504E+01 | 9.2426E-09 | 6.1165E+16 | 1.2397E+12 |
| Sr-92 | 2.3310E+01 | 1.8545E-09 | 1.2139E+16 | 8.6249E+11 |
| Y-90 | 3.1632E-02 | 5.8140E-11 | 3.8903E+14 | 1.1704E+09 |
| Y-91 | 3.5625E-01 | 1.4527E-08 | 9.6134E+16 | 1.3181E+10 |
| Y-92 | 2.6733E-01 | 2.7782E-11 | 1.8186E+14 | 9.8911E+09 |
| Y-93 | 3.9744E-01 | 1.1912E-10 | 7.7138E+14 | 1.4705E+10 |
| Zr-95 | 4.5893E-01 | 2.1363E-08 | 1.3542E+17 | 1.6980E+10 |
| Zr-97 | 4.2660E-01 | 2.2315E-10 | 1.3854E+15 | 1.5784E+10 |
| Nb-95 | 4.6214E-01 | 1.1818E-08 | 7.4918E+16 | 1.7099E+10 |
| Mo-99 | 6.1588E+00 | 1.2841E-08 | 7.8113E+16 | 2.2788E+11 |
| Tc-99m | 4.2427E+00 | 8.0686E-10 | 4.9081E+15 | 1.5698E+11 |
| Ru-103 | 5.0656E+00 | 1.5696E-07 | 9.1769E+17 | 1.8743E+11 |
| Ru-105 | 2.3666E+00 | 3.5206E-10 | 2.0192E+15 | 8.7563E+10 |
| Ru-106 | 1.9110E+00 | 5.7121E-07 | 3.2452E+18 | 7.0708E+10 |
| Rh-105 | 3.0498E+00 | 3.6133E-09 | 2.0724E+16 | 1.1284E+11 |
| Sb-127 | 6.8298E+00 | 2.5575E-08 | 1.2127E+17 | 2.5270E+11 |
| Sb-129 | 1.4557E+01 | 2.5887E-09 | 1.2085E+16 | 5.3862E+11 |
| Te-127 | 5.8135E+00 | 2.2028E-09 | 1.0445E+16 | 2.1510E+11 |
| Te-127m | 9.2395E-01 | 9.7953E-08 | 4.6448E+17 | 3.4186E+10 |
| Te-129 | 5.5052E+00 | 2.6288E-10 | 1.2272E+15 | 2.0369E+11 |
| Te-129m | 3.0886E+00 | 1.0252E-06 | 4.7862E+17 | 1.1428E+11 |
| Te-131m | 8.9987E+00 | 1.1285E-08 | 5.1877E+16 | 3.3295E+11 |
| Te-132 | 9.2679E+01 | 3.0527E-07 | 1.3927E+18 | 3.4291E+12 |
| I-131 | 5.6062E+02 | 4.5220E-06 | 2.0788E+19 | 2.0743E+13 |
| I-132 | 4.4592E+02 | 4.3201E-08 | 1.9709E+17 | 1.6499E+13 |

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**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 1 | System Nos. | Sheet 177 of 1000 |
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| | | | | |
|---|---|---|---|---|
| I-133 | 1.1023E+03 | 9.7311E-07 | 4.4061E+18 | 4.0787E+13 |
| I-134 | 2.9983E+02 | 1.1239E-08 | 5.0511E+16 | 1.1094E+13 |
| I-135 | 8.8771E+02 | 2.5278E-07 | 1.1276E+18 | 3.2845E+13 |
| Xe-133 | 4.2803E+03 | 2.2867E-05 | 1.0354E+20 | 1.5837E+14 |
| Xe-135 | 1.3516E+03 | 5.2927E-07 | 2.3610E+18 | 5.0009E+13 |
| Cs-134 | 1.0518E+02 | 8.1296E-05 | 3.6536E+20 | 3.8918E+12 |
| Cs-136 | 2.8956E+01 | 3.9508E-07 | 1.7494E+18 | 1.0714E+12 |
| Cs-137 | 7.0476E+01 | 8.1024E-04 | 3.5616E+21 | 2.6076E+12 |
| Ba-139 | 1.6692E+01 | 1.0205E-09 | 4.4211E+15 | 6.1759E+11 |
| Ba-140 | 4.9121E+01 | 6.7097E-07 | 2.8862E+18 | 1.8175E+12 |
| La-140 | 4.8140E-01 | 8.6610E-10 | 3.7255E+15 | 1.7812E+10 |
| La-141 | 3.1249E-01 | 5.5256E-11 | 2.3600E+14 | 1.1562E+10 |
| La-142 | 2.0314E-01 | 1.4191E-11 | 6.0182E+13 | 7.5162E+09 |
| Ce-141 | 1.1287E+00 | 3.9612E-08 | 1.6918E+17 | 4.1761E+10 |
| Ce-143 | 1.0710E+00 | 1.6128E-09 | 6.7919E+15 | 3.9628E+10 |
| Ce-144 | 9.1067E-01 | 2.8552E-07 | 1.1941E+18 | 3.3695E+10 |
| Pr-143 | 4.3971E-01 | 6.5298E-09 | 2.7499E+16 | 1.6269E+10 |
| Nd-147 | 1.8364E-01 | 2.2700E-09 | 9.2994E+15 | 6.7946E+09 |
| Np-239 | 1.2164E+01 | 5.2431E-08 | 1.3211E+17 | 4.5005E+11 |
| Pu-238 | 3.5914E-03 | 2.0978E-07 | 5.3082E+17 | 1.3288E+08 |
| Pu-239 | 2.7952E-04 | 4.4971E-06 | 1.1331E+19 | 1.0342E+07 |
| Pu-240 | 3.0144E-04 | 1.3229E-06 | 3.3194E+18 | 1.1153E+07 |
| Pu-241 | 1.2483E-01 | 1.2118E-06 | 3.0281E+18 | 4.6189E+09 |
| Am-241 | 7.6776E-05 | 2.2370E-08 | 5.5897E+16 | 2.8407E+06 |
| Cm-242 | 1.8040E-02 | 5.4430E-09 | 1.3545E+16 | 6.6747E+08 |
| Cm-244 | 1.4599E-03 | 1.8046E-08 | 4.4538E+16 | 5.4017E+07 |

Environment Transport Group Inventory:

| Time (h) = 1.8000 | Present Release | Release Rate/s | Total Release |
|---|---|---|---|
| Noble gases (atoms) | 6.5465E+20 | 1.0103E+17 | 6.5465E+20 |
| Elemental I (atoms) | 9.5530E+17 | 1.4742E+14 | 9.5530E+17 |
| Organic I (atoms) | 6.4894E+16 | 1.0015E+13 | 6.4894E+16 |
| Aerosols (kg) | 9.3227E-04 | 1.4387E-07 | 9.3227E-04 |

CR Filtered Air Intake Transport Group Inventory:

| Time (h) = 1.8000 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 |

CR Unfiltered Inleakage Transport Group Inventory:

| Time (h) = 1.8000 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 |

CR Exhaust to Environment Transport Group Inventory:

Pathway

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**CALCULATION SHEET**
**(Ref. EP-006T)**

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```
Time (h) =   1.8000      Filter
Noble gases (atoms)    0.0000E+00
Elemental I (atoms)    0.0000E+00
Organic I (atoms)      0.0000E+00
Aerosols (kg)          0.0000E+00
```

**Control Room Compartment Nuclide Inventory:**

| Time (h) = 1.8000 | Ci | kg | Atoms | Bq |
|---|---|---|---|---|
| Co-58 | 1.9880E-05 | 6.2521E-13 | 6.4915E+12 | 7.3557E+05 |
| Co-60 | 1.5225E-05 | 1.3469E-11 | 1.3519E+14 | 5.6333E+05 |
| Kr-85 | 1.9808E-02 | 5.0488E-08 | 3.5770E+17 | 7.3290E+08 |
| Kr-85m | 2.8987E-01 | 3.5223E-11 | 2.4955E+14 | 1.0725E+10 |
| Kr-87 | 2.0113E-01 | 7.1008E-12 | 4.9152E+13 | 7.4420E+09 |
| Kr-88 | 6.3418E-01 | 5.0576E-11 | 3.4611E+14 | 2.3465E+10 |
| Rb-86 | 5.5813E-04 | 6.8594E-12 | 4.8033E+13 | 2.0651E+07 |
| Sr-89 | 1.8630E-02 | 6.4127E-10 | 4.3391E+15 | 6.8932E+08 |
| Sr-90 | 2.0126E-03 | 1.4755E-08 | 9.8726E+16 | 7.4467E+07 |
| Sr-91 | 2.0626E-02 | 5.6898E-12 | 3.7654E+13 | 7.6315E+08 |
| Sr-92 | 1.2935E-02 | 1.0291E-12 | 6.7361E+12 | 4.7859E+08 |
| Y-90 | 2.0139E-05 | 3.7016E-14 | 2.4769E+11 | 7.4515E+05 |
| Y-91 | 2.2807E-04 | 9.3001E-12 | 6.1545E+13 | 8.4387E+06 |
| Y-92 | 1.5360E-04 | 1.5963E-14 | 1.0449E+11 | 5.6832E+06 |
| Y-93 | 2.4525E-04 | 7.3509E-14 | 4.7600E+11 | 9.0742E+06 |
| Zr-95 | 2.9382E-04 | 1.3677E-11 | 8.6698E+13 | 1.0871E+07 |
| Zr-97 | 2.6723E-04 | 1.3979E-13 | 8.6786E+11 | 9.8875E+06 |
| Nb-95 | 2.9581E-04 | 7.5648E-12 | 4.7954E+13 | 1.0945E+07 |
| Mo-99 | 3.9219E-03 | 8.1772E-12 | 4.9741E+13 | 1.4511E+08 |
| Tc-99m | 2.5516E-03 | 4.8527E-13 | 2.9519E+12 | 9.4411E+07 |
| Ru-103 | 3.2426E-03 | 1.0047E-10 | 5.8743E+14 | 1.1998E+08 |
| Ru-105 | 1.3909E-03 | 2.0692E-13 | 1.1868E+12 | 5.1464E+07 |
| Ru-106 | 1.2237E-03 | 3.6577E-10 | 2.0780E+15 | 4.5277E+07 |
| Rh-105 | 1.9327E-03 | 2.2897E-12 | 1.3132E+13 | 7.1508E+07 |
| Sb-127 | 4.3561E-03 | 1.6312E-11 | 7.7349E+13 | 1.6118E+08 |
| Sb-129 | 8.5348E-03 | 1.5177E-12 | 7.0852E+12 | 3.1579E+08 |
| Te-127 | 3.5765E-03 | 1.3552E-12 | 6.4262E+12 | 1.3233E+08 |
| Te-127m | 5.9159E-04 | 6.2717E-11 | 2.9740E+14 | 2.1889E+07 |
| Te-129 | 2.4678E-03 | 1.1784E-13 | 5.5010E+11 | 9.1308E+07 |
| Te-129m | 1.9769E-03 | 6.5623E-10 | 3.0635E+14 | 7.3146E+07 |
| Te-131m | 5.6917E-03 | 7.1377E-12 | 3.2813E+13 | 2.1059E+08 |
| Te-132 | 5.9069E-02 | 1.9457E-10 | 8.8765E+14 | 2.1855E+09 |
| I-131 | 3.2140E-01 | 2.5925E-09 | 1.1918E+16 | 1.1892E+10 |
| I-132 | 2.0500E-01 | 1.9860E-11 | 9.0605E+13 | 7.5849E+09 |
| I-133 | 6.1916E-01 | 5.4657E-10 | 2.4748E+15 | 2.2909E+10 |
| I-134 | 8.8593E-02 | 3.3210E-12 | 1.4925E+13 | 3.2779E+09 |
| I-135 | 4.7396E-01 | 1.3496E-10 | 6.0203E+14 | 1.7536E+10 |
| Xe-133 | 2.7909E+00 | 1.4910E-08 | 6.7511E+16 | 1.0326E+11 |
| Xe-135 | 8.4827E-01 | 3.3217E-10 | 1.4818E+15 | 3.1386E+10 |
| Cs-134 | 5.8449E-02 | 4.5175E-08 | 2.0302E+17 | 2.1626E+09 |
| Cs-136 | 1.6065E-02 | 2.1920E-10 | 9.7062E+14 | 5.9441E+08 |
| Cs-137 | 3.9164E-02 | 4.5025E-07 | 1.9792E+18 | 1.4491E+09 |
| Ba-139 | 7.9576E-03 | 4.8650E-13 | 2.1077E+12 | 2.9443E+08 |
| Ba-140 | 3.1418E-02 | 4.2915E-10 | 1.8460E+15 | 1.1625E+09 |
| La-140 | 3.0545E-04 | 5.4954E-13 | 2.3639E+12 | 1.1302E+07 |

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**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 1 | System Nos. | Sheet 179 of 1000 |
|---|---|---|---|---|

| | | | | |
|---|---|---|---|---|
| La-141 | 1.8156E-04 | 3.2104E-14 | 1.3712E+11 | 6.7177E+06 |
| La-142 | 1.0018E-04 | 6.9981E-15 | 2.9678E+10 | 3.7066E+06 |
| Ce-141 | 7.2243E-04 | 2.5354E-11 | 1.0829E+14 | 2.6730E+07 |
| Ce-143 | 6.7819E-04 | 1.0212E-12 | 4.3007E+12 | 2.5093E+07 |
| Ce-144 | 5.8313E-04 | 1.8283E-10 | 7.6460E+14 | 2.1576E+07 |
| Pr-143 | 2.8126E-04 | 4.1768E-12 | 1.7590E+13 | 1.0407E+07 |
| Nd-147 | 1.1743E-04 | 1.4516E-12 | 5.9467E+12 | 4.3450E+06 |
| Np-239 | 7.7384E-03 | 3.3356E-11 | 8.4049E+13 | 2.8632E+08 |
| Pu-238 | 2.2998E-06 | 1.3434E-10 | 3.3992E+14 | 8.5094E+04 |
| Pu-239 | 1.7900E-07 | 2.8798E-09 | 7.2563E+15 | 6.6229E+03 |
| Pu-240 | 1.9303E-07 | 8.4712E-10 | 2.1256E+15 | 7.1421E+03 |
| Pu-241 | 7.9940E-05 | 7.7602E-10 | 1.9391E+15 | 2.9578E+06 |
| Am-241 | 4.9165E-08 | 1.4325E-11 | 3.5795E+13 | 1.8191E+03 |
| Cm-242 | 1.1551E-05 | 3.4852E-12 | 8.6729E+12 | 4.2739E+05 |
| Cm-244 | 9.3489E-07 | 1.1556E-11 | 2.8521E+13 | 3.4591E+04 |

Control Room Transport Group Inventory:

| Time (h) = 1.8000 | Atmosphere | Sump | Overlying Pool |
|---|---|---|---|
| Noble gases (atoms) | 4.2795E+17 | 0.0000E+00 | 0.0000E+00 |
| Elemental I (atoms) | 5.2590E+14 | 0.0000E+00 | 0.0000E+00 |
| Organic I (atoms) | 3.9731E+13 | 0.0000E+00 | 0.0000E+00 |
| Aerosols (kg) | 5.2109E-07 | 0.0000E+00 | 0.0000E+00 |

| Time (h) = 1.8000 | Deposition Surfaces | Recirculating Filter |
|---|---|---|
| Noble gases (atoms) | 0.0000E+00 | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 | 0.0000E+00 |

CR Filtered Air Intake Transport Group Inventory:

| Time (h) = 1.8000 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 |

CR Unfiltered Inleakage Transport Group Inventory:

| Time (h) = 1.8000 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 |

CR Exhaust to Environment Transport Group Inventory:

| Time (h) = 1.8000 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 |

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**CALCULATION SHEET**
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|---|---|---|---|---|

```
Organic I (atoms)      0.0000E+00
Aerosols (kg)          0.0000E+00

Exclusion Area Boundary Doses:

Time (h) =   2.0000    Whole Body   Thyroid       TEDE
Delta dose (rem)        2.2115E-01  4.8718E+01  2.7879E+00
Accumulated dose (rem)  1.3775E+00  2.9104E+02  1.6306E+01

Low Population Zone Doses:

Time (h) =   2.0000    Whole Body   Thyroid       TEDE
Delta dose (rem)        3.8702E-02  8.5257E+00  4.8789E-01
Accumulated dose (rem)  2.4107E-01  5.0931E+01  2.8535E+00

Control Room Doses:

Time (h) =   2.0000    Whole Body   Thyroid       TEDE
Delta dose (rem)        4.4340E-03  1.8199E+01  9.5571E-01
Accumulated dose (rem)  1.9965E-02  7.7745E+01  3.9893E+00

Environment Integral Nuclide Release:

Time (h) =   2.0000       Ci           kg         Atoms         Bq
Co-58                  3.8420E-02  1.2083E-09  1.2545E+16  1.4215E+09
Co-60                  2.9419E-02  2.6026E-08  2.6122E+17  1.0885E+09
Kr-85                  3.9010E+01  9.9431E-05  7.0445E+20  1.4434E+12
Kr-85m                 6.0462E+02  7.3470E-08  5.2052E+17  2.2371E+13
Kr-87                  5.0308E+02  1.7761E-08  1.2294E+17  1.8614E+13
Kr-88                  1.3724E+03  1.0945E-07  7.4899E+17  5.0779E+13
Rb-86                  1.2003E+00  1.4751E-08  1.0330E+17  4.4410E+10
Sr-89                  3.6007E+01  1.2394E-06  8.3862E+18  1.3322E+12
Sr-90                  3.8890E+00  2.8510E-05  1.9077E+20  1.4389E+11
Sr-91                  4.0969E+01  1.1302E-08  7.4792E+16  1.5158E+12
Sr-92                  2.7721E+01  2.2055E-09  1.4436E+16  1.0257E+12
Y-90                   3.9071E-02  7.1813E-11  4.8052E+14  1.4456E+09
Y-91                   4.4078E-01  1.7974E-08  1.1894E+17  1.6309E+10
Y-92                   3.2073E-01  3.3332E-11  2.1818E+14  1.1867E+10
Y-93                   4.8632E-01  1.4577E-10  9.4389E+14  1.7994E+10
Zr-95                  5.6783E-01  2.6432E-08  1.6755E+17  2.1010E+10
Zr-97                  5.2433E-01  2.7428E-10  1.7028E+15  1.9400E+10
Nb-95                  5.7176E-01  1.4622E-08  9.2689E+16  2.1155E+10
Mo-99                  7.6076E+00  1.5862E-08  9.6488E+16  2.8148E+11
Tc-99m                 5.1535E+00  9.8007E-10  5.9618E+15  1.9068E+11
Ru-103                 6.2674E+00  1.9419E-07  1.1354E+18  2.3189E+11
Ru-105                 2.8564E+00  4.2494E-10  2.4372E+15  1.0569E+11
Ru-106                 2.3646E+00  7.0679E-07  4.0155E+18  8.7491E+10
Rh-105                 3.7616E+00  4.4566E-09  2.5560E+16  1.3918E+11
Sb-127                 8.4406E+00  3.1606E-08  1.4987E+17  3.1230E+11
Sb-129                 1.7559E+01  3.1225E-09  1.4577E+16  6.4968E+11
Te-127                 7.1073E+00  2.6931E-09  1.2770E+16  2.6297E+11
Te-127m                1.1432E+00  1.2120E-07  5.7471E+17  4.2299E+10
Te-129                 6.2602E+00  2.9893E-10  1.3955E+15  2.3163E+11
Te-129m                3.8212E+00  1.2684E-06  5.9214E+17  1.4138E+11
Te-131m                1.1093E+01  1.3911E-08  6.3948E+16  4.1042E+11
Te-132                 1.1451E+02  3.7719E-07  1.7208E+18  4.2369E+12
I-131                  6.7416E+02  5.4379E-06  2.4998E+19  2.4944E+13
```

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**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 1 | System Nos. | Sheet 181 of 1000 |
|---|---|---|---|---|

| | | | | |
|---|---|---|---|---|
| I-132 | 5.1118E+02 | 4.9523E-08 | 2.2594E+17 | 1.8914E+13 |
| I-133 | 1.3188E+03 | 1.1642E-06 | 5.2713E+18 | 4.8795E+13 |
| I-134 | 3.2374E+02 | 1.2136E-08 | 5.4540E+16 | 1.1979E+13 |
| I-135 | 1.0493E+03 | 2.9878E-07 | 1.3328E+18 | 3.8823E+13 |
| Xe-133 | 5.5068E+03 | 2.9420E-05 | 1.3321E+20 | 2.0375E+14 |
| Xe-135 | 1.7169E+03 | 6.7230E-07 | 2.9990E+18 | 6.3524E+13 |
| Cs-134 | 1.2559E+02 | 9.7070E-05 | 4.3625E+20 | 4.6469E+12 |
| Cs-136 | 3.4561E+01 | 4.7156E-07 | 2.0881E+18 | 1.2788E+12 |
| Cs-137 | 8.4151E+01 | 9.6745E-04 | 4.2527E+21 | 3.1136E+12 |
| Ba-139 | 1.9200E+01 | 1.1738E-09 | 5.0854E+15 | 7.1039E+11 |
| Ba-140 | 6.0759E+01 | 8.2994E-07 | 3.5700E+18 | 2.2481E+12 |
| La-140 | 5.9399E-01 | 1.0687E-09 | 4.5969E+15 | 2.1978E+10 |
| La-141 | 3.7602E-01 | 6.6489E-11 | 2.8397E+14 | 1.3913E+10 |
| La-142 | 2.3525E-01 | 1.6434E-11 | 6.9694E+13 | 8.7042E+09 |
| Ce-141 | 1.3964E+00 | 4.9008E-08 | 2.0931E+17 | 5.1667E+10 |
| Ce-143 | 1.3207E+00 | 1.9887E-09 | 8.3751E+15 | 4.8865E+10 |
| Ce-144 | 1.1268E+00 | 3.5329E-07 | 1.4775E+18 | 4.1692E+10 |
| Pr-143 | 5.4390E-01 | 8.0770E-09 | 3.4015E+16 | 2.0124E+10 |
| Nd-147 | 2.2713E-01 | 2.8076E-09 | 1.1502E+16 | 8.4039E+09 |
| Np-239 | 1.5021E+01 | 6.4746E-08 | 1.6314E+17 | 5.5576E+11 |
| Pu-238 | 4.4439E-03 | 2.5958E-07 | 6.5682E+17 | 1.6443E+08 |
| Pu-239 | 3.4587E-04 | 5.5646E-06 | 1.4021E+19 | 1.2797E+07 |
| Pu-240 | 3.7299E-04 | 1.6369E-06 | 4.1073E+18 | 1.3801E+07 |
| Pu-241 | 1.5447E-01 | 1.4995E-06 | 3.7469E+18 | 5.7153E+09 |
| Am-241 | 9.5001E-05 | 2.7680E-08 | 6.9166E+16 | 3.5150E+06 |
| Cm-242 | 2.2321E-02 | 6.7349E-09 | 1.6760E+16 | 8.2589E+08 |
| Cm-244 | 1.8065E-03 | 2.2329E-08 | 5.5110E+16 | 6.6840E+07 |

Environment Transport Group Inventory:

| Time (h) = 2.0000 | Present Release | Release Rate/s | Total Release |
|---|---|---|---|
| Noble gases (atoms) | 8.4294E+20 | 1.1708E+17 | 8.4294E+20 |
| Elemental I (atoms) | 1.1219E+18 | 1.5583E+14 | 1.1219E+18 |
| Organic I (atoms) | 8.1765E+16 | 1.1356E+13 | 8.1765E+16 |
| Aerosols (kg) | 1.1147E-03 | 1.5482E-07 | 1.1147E-03 |

CR Filtered Air Intake Transport Group Inventory:

| Time (h) = 2.0000 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 |

CR Unfiltered Inleakage Transport Group Inventory:

| Time (h) = 2.0000 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 |

CR Exhaust to Environment Transport Group Inventory:

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**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 1 | System Nos. | Sheet 182 of 1000 |
|---|---|---|---|---|

| | Pathway Filter |
|---|---|
| Time (h) = 2.0000 | |
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 |

**Control Room Compartment Nuclide Inventory:**

| Time (h) = 2.0000 | Ci | kg | Atoms | Bq |
|---|---|---|---|---|
| Co-58 | 2.1490E-05 | 6.7584E-13 | 7.0173E+12 | 7.9515E+05 |
| Co-60 | 1.6460E-05 | 1.4561E-11 | 1.4615E+14 | 6.0902E+05 |
| Kr-85 | 2.3084E-02 | 5.8839E-08 | 4.1686E+17 | 8.5412E+08 |
| Kr-85m | 3.2446E-01 | 3.9427E-11 | 2.7933E+14 | 1.2005E+10 |
| Kr-87 | 2.0378E-01 | 7.1941E-12 | 4.9797E+13 | 7.5397E+09 |
| Kr-88 | 6.9366E-01 | 5.5319E-11 | 3.7857E+14 | 2.5665E+10 |
| Rb-86 | 5.8917E-04 | 7.2409E-12 | 5.0704E+13 | 2.1799E+07 |
| Sr-89 | 2.0138E-02 | 6.9318E-10 | 4.6904E+15 | 7.4512E+08 |
| Sr-90 | 2.1759E-03 | 1.5951E-08 | 1.0673E+17 | 8.0507E+07 |
| Sr-91 | 2.1860E-02 | 6.0305E-12 | 3.9908E+13 | 8.0883E+08 |
| Sr-92 | 1.3049E-02 | 1.0382E-12 | 6.7957E+12 | 4.8283E+08 |
| Y-90 | 2.1709E-05 | 3.9901E-14 | 2.6699E+11 | 8.0322E+05 |
| Y-91 | 2.4654E-04 | 1.0053E-11 | 6.6529E+13 | 9.1220E+06 |
| Y-92 | 1.5748E-04 | 1.6366E-14 | 1.0713E+11 | 5.8267E+06 |
| Y-93 | 2.6024E-04 | 7.8001E-14 | 5.0509E+11 | 9.6288E+06 |
| Zr-95 | 3.1761E-04 | 1.4784E-11 | 9.3719E+13 | 1.1752E+07 |
| Zr-97 | 2.8570E-04 | 1.4945E-13 | 9.2783E+11 | 1.0571E+07 |
| Nb-95 | 3.1973E-04 | 8.1766E-12 | 5.1832E+13 | 1.1830E+07 |
| Mo-99 | 4.2279E-03 | 8.8152E-12 | 5.3622E+13 | 1.5643E+08 |
| Tc-99m | 2.6737E-03 | 5.0847E-13 | 3.0930E+12 | 9.8925E+07 |
| Ru-103 | 3.5049E-03 | 1.0860E-10 | 6.3495E+14 | 1.2968E+08 |
| Ru-105 | 1.4414E-03 | 2.1443E-13 | 1.2298E+12 | 5.3331E+07 |
| Ru-106 | 1.3229E-03 | 3.9543E-10 | 2.2465E+15 | 4.8949E+07 |
| Rh-105 | 2.0783E-03 | 2.4623E-12 | 1.4122E+13 | 7.6897E+07 |
| Sb-127 | 4.6999E-03 | 1.7599E-11 | 8.3452E+13 | 1.7389E+08 |
| Sb-129 | 8.8341E-03 | 1.5709E-12 | 7.3337E+12 | 3.2686E+08 |
| Te-127 | 3.7895E-03 | 1.4359E-12 | 6.8087E+12 | 1.4021E+08 |
| Te-127m | 6.3953E-04 | 6.7800E-11 | 3.2150E+14 | 2.3663E+07 |
| Te-129 | 2.2740E-03 | 1.0859E-13 | 5.0691E+11 | 8.4139E+07 |
| Te-129m | 2.1368E-03 | 7.0930E-10 | 3.3112E+14 | 7.9061E+07 |
| Te-131m | 6.1147E-03 | 7.6683E-12 | 3.5252E+13 | 2.2625E+08 |
| Te-132 | 6.3706E-02 | 2.0984E-10 | 9.5734E+14 | 2.3571E+09 |
| I-131 | 3.4076E-01 | 2.7486E-09 | 1.2636E+16 | 1.2608E+10 |
| I-132 | 2.0014E-01 | 1.9389E-11 | 8.8459E+13 | 7.4052E+09 |
| I-133 | 6.5102E-01 | 5.7470E-10 | 2.6022E+15 | 2.4088E+10 |
| I-134 | 7.5820E-02 | 2.8422E-12 | 1.2773E+13 | 2.8053E+09 |
| I-135 | 4.8852E-01 | 1.3911E-10 | 6.2053E+14 | 1.8075E+10 |
| Xe-133 | 3.2478E+00 | 1.7351E-08 | 7.8564E+16 | 1.2017E+11 |
| Xe-135 | 9.6906E-01 | 3.7947E-10 | 1.6928E+15 | 3.5855E+10 |
| Cs-134 | 6.1726E-02 | 4.7708E-08 | 2.1441E+17 | 2.2839E+09 |
| Cs-136 | 1.6955E-02 | 2.3134E-10 | 1.0244E+15 | 6.2735E+08 |
| Cs-137 | 4.1360E-02 | 4.7550E-07 | 2.0901E+18 | 1.5303E+09 |
| Ba-139 | 7.5175E-03 | 4.5959E-13 | 1.9912E+12 | 2.7815E+08 |
| Ba-140 | 3.3945E-02 | 4.6368E-10 | 1.9945E+15 | 1.2560E+09 |

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**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 1 | System Nos. | Sheet 183 of 1000 |
|---|---|---|---|---|

| | | | | |
|---|---|---|---|---|
| La-140 | 3.2868E-04 | 5.9134E-13 | 2.5437E+12 | 1.2161E+07 |
| La-141 | 1.8712E-04 | 3.3087E-14 | 1.4132E+11 | 6.9235E+06 |
| La-142 | 9.5978E-05 | 6.7047E-15 | 2.8434E+10 | 3.5512E+06 |
| Ce-141 | 7.8084E-04 | 2.7404E-11 | 1.1704E+14 | 2.8891E+07 |
| Ce-143 | 7.2901E-04 | 1.0978E-12 | 4.6230E+12 | 2.6973E+07 |
| Ce-144 | 6.3042E-04 | 1.9765E-10 | 8.2660E+14 | 2.3325E+07 |
| Pr-143 | 3.0390E-04 | 4.5129E-12 | 1.9005E+13 | 1.1244E+07 |
| Nd-147 | 1.2687E-04 | 1.5682E-12 | 6.4245E+12 | 4.6941E+06 |
| Np-239 | 8.3382E-03 | 3.5942E-11 | 9.0563E+13 | 3.0851E+08 |
| Pu-238 | 2.4864E-06 | 1.4524E-10 | 3.6749E+14 | 9.1996E+04 |
| Pu-239 | 1.9352E-07 | 3.1134E-09 | 7.8449E+15 | 7.1601E+03 |
| Pu-240 | 2.0869E-07 | 9.1583E-10 | 2.2980E+15 | 7.7215E+03 |
| Pu-241 | 8.6424E-05 | 8.3896E-10 | 2.0964E+15 | 3.1977E+06 |
| Am-241 | 5.3153E-08 | 1.5487E-11 | 3.8698E+13 | 1.9667E+03 |
| Cm-242 | 1.2487E-05 | 3.7677E-12 | 9.3760E+12 | 4.6203E+05 |
| Cm-244 | 1.0107E-06 | 1.2493E-11 | 3.0834E+13 | 3.7397E+04 |

Control Room Transport Group Inventory:

| Time (h) = 2.0000 | Atmosphere | Sump | Overlying Pool |
|---|---|---|---|
| Noble gases (atoms) | 4.9865E+17 | 0.0000E+00 | 0.0000E+00 |
| Elemental I (atoms) | 5.3478E+14 | 0.0000E+00 | 0.0000E+00 |
| Organic I (atoms) | 4.5577E+13 | 0.0000E+00 | 0.0000E+00 |
| Aerosols (kg) | 5.5088E-07 | 0.0000E+00 | 0.0000E+00 |

| Time (h) = 2.0000 | Deposition Surfaces | Recirculating Filter |
|---|---|---|
| Noble gases (atoms) | 0.0000E+00 | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 | 0.0000E+00 |

CR Filtered Air Intake Transport Group Inventory:

| Time (h) = 2.0000 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 |

CR Unfiltered Inleakage Transport Group Inventory:

| Time (h) = 2.0000 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 |

CR Exhaust to Environment Transport Group Inventory:

| Time (h) = 2.0000 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |

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**CALCULATION SHEET**
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| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 1 | System Nos. | Sheet 184 of 1000 |
|---|---|---|---|---|

```
Elemental I (atoms)    0.0000E+00
Organic I (atoms)      0.0000E+00
Aerosols (kg)          0.0000E+00

Exclusion Area Boundary Doses:

Time (h) =   2.9200    Whole Body   Thyroid       TEDE
Delta dose (rem)        7.4214E-01  1.3933E+02  8.1085E+00
Accumulated dose (rem)  2.1197E+00  4.3037E+02  2.4414E+01

Low Population Zone Doses:

Time (h) =   2.9200    Whole Body   Thyroid       TEDE
Delta dose (rem)        5.5660E-02  1.0450E+01  6.0813E-01
Accumulated dose (rem)  2.9673E-01  6.1381E+01  3.4617E+00

Control Room Doses:

Time (h) =   2.9200    Whole Body   Thyroid       TEDE
Delta dose (rem)        1.5263E-02  6.1117E+01  3.2317E+00
Accumulated dose (rem)  3.5228E-02  1.3886E+02  7.2209E+00

Environment Integral Nuclide Release:

Time (h) =   2.9200       Ci           kg         Atoms         Bq
Co-58                  5.9699E-02  1.8774E-09  1.9493E+16  2.2089E+09
Co-60                  4.5721E-02  4.0447E-08  4.0596E+17  1.6917E+09
Kr-85                  7.9116E+01  2.0165E-04  1.4287E+21  2.9273E+12
Kr-85m                 1.1199E+03  1.3608E-07  9.6411E+17  4.1435E+13
Kr-87                  7.6334E+02  2.6949E-08  1.8654E+17  2.8244E+13
Kr-88                  2.4192E+03  1.9293E-07  1.3203E+18  8.9509E+13
Rb-86                  1.7632E+00  2.1669E-08  1.5174E+17  6.5237E+10
Sr-89                  5.5945E+01  1.9257E-06  1.3030E+19  2.0700E+12
Sr-90                  6.0439E+00  4.4308E-05  2.9647E+20  2.2362E+11
Sr-91                  6.1764E+01  1.7038E-08  1.1276E+17  2.2853E+12
Sr-92                  3.8963E+01  3.0998E-09  2.0291E+16  1.4416E+12
Y-90                   6.0442E-02  1.1109E-10  7.4335E+14  2.2363E+09
Y-91                   6.8488E-01  2.7927E-08  1.8481E+17  2.5341E+10
Y-92                   4.6084E-01  4.7893E-11  3.1350E+14  1.7051E+10
Y-93                   7.3447E-01  2.2014E-10  1.4255E+15  2.7175E+10
Zr-95                  8.8230E-01  4.1070E-08  2.6035E+17  3.2645E+10
Zr-97                  8.0093E-01  4.1897E-10  2.6011E+15  2.9634E+10
Nb-95                  8.8827E-01  2.2716E-08  1.4400E+17  3.2866E+10
Mo-99                  1.1771E+01  2.4542E-08  1.4929E+17  4.3551E+11
Tc-99m                 7.6388E+00  1.4527E-09  8.8369E+15  2.8264E+11
Ru-103                 9.7371E+00  3.0170E-07  1.7640E+18  3.6027E+11
Ru-105                 4.1667E+00  6.1986E-10  3.5552E+15  1.5417E+11
Ru-106                 3.6748E+00  1.0984E-06  6.2403E+18  1.3597E+11
Rh-105                 5.7977E+00  6.8689E-09  3.9395E+16  2.1451E+11
Sb-127                 1.3076E+01  4.8964E-08  2.3218E+17  4.8381E+11
Sb-129                 2.5571E+01  4.5472E-09  2.1228E+16  9.4611E+11
Te-127                 1.0710E+01  4.0581E-09  1.9243E+16  3.9627E+11
Te-127m                1.7765E+00  1.8834E-07  8.9306E+17  6.5731E+10
Te-129                 7.8987E+00  3.7717E-10  1.7607E+15  2.9225E+11
Te-129m                5.9364E+00  1.9706E-06  9.1992E+17  2.1965E+11
Te-131m                1.7071E+01  2.1409E-08  9.8417E+16  6.3164E+11
Te-132                 1.7729E+02  5.8399E-07  2.6643E+18  6.5599E+12
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**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 1 | System Nos. | Sheet 185 of 1000 |
|---|---|---|---|---|

| | | | | |
|---|---|---|---|---|
| I-131 | 1.0005E+03 | 8.0704E-06 | 3.7100E+19 | 3.7019E+13 |
| I-132 | 6.7347E+02 | 6.5245E-08 | 2.9766E+17 | 2.4919E+13 |
| I-133 | 1.9319E+03 | 1.7054E-06 | 7.7218E+18 | 7.1479E+13 |
| I-134 | 3.7117E+02 | 1.3914E-08 | 6.2530E+16 | 1.3733E+13 |
| I-135 | 1.4911E+03 | 4.2459E-07 | 1.8940E+18 | 5.5171E+13 |
| Xe-133 | 1.1131E+04 | 5.9467E-05 | 2.6926E+20 | 4.1185E+14 |
| Xe-135 | 3.3271E+03 | 1.3028E-06 | 5.8118E+18 | 1.2310E+14 |
| Cs-134 | 1.8462E+02 | 1.4269E-04 | 6.4127E+20 | 6.8308E+12 |
| Cs-136 | 5.0754E+01 | 6.9250E-07 | 3.0664E+18 | 1.8779E+12 |
| Cs-137 | 1.2370E+02 | 1.4221E-03 | 6.2514E+21 | 4.5769E+12 |
| Ba-139 | 2.4886E+01 | 1.5214E-09 | 6.5915E+15 | 9.2078E+11 |
| Ba-140 | 9.4335E+01 | 1.2886E-06 | 5.5428E+18 | 3.4904E+12 |
| La-140 | 9.1642E-01 | 1.6487E-09 | 7.0921E+15 | 3.3907E+10 |
| La-141 | 5.4426E-01 | 9.6238E-11 | 4.1104E+14 | 2.0138E+10 |
| La-142 | 3.0988E-01 | 2.1647E-11 | 9.1805E+13 | 1.1466E+10 |
| Ce-141 | 2.1693E+00 | 7.6134E-08 | 3.2517E+17 | 8.0265E+10 |
| Ce-143 | 2.0343E+00 | 3.0634E-09 | 1.2901E+16 | 7.5270E+10 |
| Ce-144 | 1.7511E+00 | 5.4903E-07 | 2.2961E+18 | 6.4792E+10 |
| Pr-143 | 8.4451E-01 | 1.2541E-08 | 5.2815E+16 | 3.1247E+10 |
| Nd-147 | 3.5259E-01 | 4.3585E-09 | 1.7855E+16 | 1.3046E+10 |
| Np-239 | 2.3222E+01 | 1.0010E-07 | 2.5223E+17 | 8.5923E+11 |
| Pu-238 | 6.9064E-03 | 4.0342E-07 | 1.0208E+18 | 2.5554E+08 |
| Pu-239 | 5.3753E-04 | 8.6480E-06 | 2.1790E+19 | 1.9889E+07 |
| Pu-240 | 5.7967E-04 | 2.5439E-06 | 6.3832E+18 | 2.1448E+07 |
| Pu-241 | 2.4006E-01 | 2.3304E-06 | 5.8232E+18 | 8.8821E+09 |
| Am-241 | 1.4764E-04 | 4.3017E-08 | 1.0749E+17 | 5.4628E+06 |
| Cm-242 | 3.4687E-02 | 1.0466E-08 | 2.6044E+16 | 1.2834E+09 |
| Cm-244 | 2.8075E-03 | 3.4702E-08 | 8.5647E+16 | 1.0388E+08 |

Environment Transport Group Inventory:

| Time (h) = 2.9200 | Present Release | Release Rate/s | Total Release |
|---|---|---|---|
| Noble gases (atoms) | 1.7091E+21 | 1.6258E+17 | 1.7091E+21 |
| Elemental I (atoms) | 1.5134E+18 | 1.4397E+14 | 1.5134E+18 |
| Organic I (atoms) | 1.5936E+17 | 1.5160E+13 | 1.5936E+17 |
| Aerosols (kg) | 1.6423E-03 | 1.5623E-07 | 1.6423E-03 |

CR Filtered Air Intake Transport Group Inventory:

| Time (h) = 2.9200 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 |

CR Unfiltered Inleakage Transport Group Inventory:

| Time (h) = 2.9200 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 |

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**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 1 | System Nos. | Sheet 186 of 1000 |
|---|---|---|---|---|

CR Exhaust to Environment Transport Group Inventory:

| Time (h) = 2.9200 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 |

**Control Room Compartment Nuclide Inventory:**

| Time (h) = 2.9200 | Ci | kg | Atoms | Bq |
|---|---|---|---|---|
| Co-58 | 1.0723E-05 | 3.3722E-13 | 3.5014E+12 | 3.9675E+05 |
| Co-60 | 8.2161E-06 | 7.2684E-12 | 7.2952E+13 | 3.0400E+05 |
| Kr-85 | 1.9808E-02 | 5.0487E-08 | 3.5769E+17 | 7.3289E+08 |
| Kr-85m | 2.3906E-01 | 2.9049E-11 | 2.0581E+14 | 8.8453E+09 |
| Kr-87 | 1.0237E-01 | 3.6141E-12 | 2.5017E+13 | 3.7877E+09 |
| Kr-88 | 4.6810E-01 | 3.7331E-11 | 2.5547E+14 | 1.7320E+10 |
| Rb-86 | 2.8633E-04 | 3.5190E-12 | 2.4642E+13 | 1.0594E+07 |
| Sr-89 | 1.0047E-02 | 3.4581E-10 | 2.3399E+15 | 3.7173E+08 |
| Sr-90 | 1.0861E-03 | 7.9623E-09 | 5.3278E+16 | 4.0186E+07 |
| Sr-91 | 1.0148E-02 | 2.7994E-12 | 1.8525E+13 | 3.7546E+08 |
| Sr-92 | 5.0509E-03 | 4.0184E-13 | 2.6304E+12 | 1.8688E+08 |
| Y-90 | 1.0720E-05 | 1.9704E-14 | 1.3184E+11 | 3.9664E+05 |
| Y-91 | 1.2300E-04 | 5.0157E-12 | 3.3192E+13 | 4.5511E+06 |
| Y-92 | 6.4696E-05 | 6.7236E-15 | 4.4011E+10 | 2.3938E+06 |
| Y-93 | 1.2133E-04 | 3.6365E-14 | 2.3548E+11 | 4.4890E+06 |
| Zr-95 | 1.5847E-04 | 7.3764E-12 | 4.6760E+13 | 5.8633E+06 |
| Zr-97 | 1.3691E-04 | 7.1615E-14 | 4.4462E+11 | 5.0655E+06 |
| Nb-95 | 1.5947E-04 | 4.0781E-12 | 2.5852E+13 | 5.9003E+06 |
| Mo-99 | 2.0885E-03 | 4.3545E-12 | 2.6488E+13 | 7.7273E+07 |
| Tc-99m | 1.1901E-03 | 2.2634E-13 | 1.3768E+12 | 4.4035E+07 |
| Ru-103 | 1.7483E-03 | 5.4169E-11 | 3.1671E+14 | 6.4685E+07 |
| Ru-105 | 6.1599E-04 | 9.1637E-14 | 5.2557E+11 | 2.2792E+07 |
| Ru-106 | 6.6031E-04 | 1.9737E-10 | 1.1213E+15 | 2.4432E+07 |
| Rh-105 | 1.0174E-03 | 1.2053E-12 | 6.9130E+12 | 3.7642E+07 |
| Sb-127 | 2.3285E-03 | 8.7194E-12 | 4.1346E+13 | 8.6156E+07 |
| Sb-129 | 3.7591E-03 | 6.6847E-13 | 3.1206E+12 | 1.3909E+08 |
| Te-127 | 1.7570E-03 | 6.6577E-13 | 3.1570E+12 | 6.5010E+07 |
| Te-127m | 3.1914E-04 | 3.3834E-11 | 1.6044E+14 | 1.1808E+07 |
| Te-129 | 6.2715E-04 | 2.9947E-14 | 1.3980E+11 | 2.3205E+07 |
| Te-129m | 1.0657E-03 | 3.5375E-10 | 1.6514E+14 | 3.9431E+07 |
| Te-131m | 2.9829E-03 | 3.7407E-12 | 1.7196E+13 | 1.1037E+08 |
| Te-132 | 3.1520E-02 | 1.0382E-10 | 4.7367E+14 | 1.1663E+09 |
| I-131 | 1.6561E-01 | 1.3358E-09 | 6.1410E+15 | 6.1276E+09 |
| I-132 | 7.2113E-02 | 6.9863E-12 | 3.1873E+13 | 2.6682E+09 |
| I-133 | 3.0708E-01 | 2.7108E-10 | 1.2274E+15 | 1.1362E+10 |
| I-134 | 1.6737E-02 | 6.2739E-13 | 2.8196E+12 | 6.1926E+08 |
| I-135 | 2.1444E-01 | 6.1060E-11 | 2.7238E+14 | 7.9341E+09 |
| Xe-133 | 2.7717E+00 | 1.4808E-08 | 6.7048E+16 | 1.0255E+11 |
| Xe-135 | 7.7133E-01 | 3.0204E-10 | 1.3474E+15 | 2.8539E+10 |
| Cs-134 | 3.0044E-02 | 2.3221E-08 | 1.0436E+17 | 1.1116E+09 |
| Cs-136 | 8.2347E-03 | 1.1236E-10 | 4.9752E+14 | 3.0468E+08 |
| Cs-137 | 2.0132E-02 | 2.3145E-07 | 1.0174E+18 | 7.4487E+08 |

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**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 1 | System Nos. | Sheet 187 of 1000 |
|---|---|---|---|---|

| | | | | |
|---|---|---|---|---|
| Ba-139 | 2.2770E-03 | 1.3921E-13 | 6.0311E+11 | 8.4249E+07 |
| Ba-140 | 1.6906E-02 | 2.3093E-10 | 9.9335E+14 | 6.2552E+08 |
| La-140 | 1.6128E-04 | 2.9016E-13 | 1.2481E+12 | 5.9674E+06 |
| La-141 | 7.8374E-05 | 1.3858E-14 | 5.9189E+10 | 2.8998E+06 |
| La-142 | 3.0648E-05 | 2.1410E-15 | 9.0797E+09 | 1.1340E+06 |
| Ce-141 | 3.8942E-04 | 1.3667E-11 | 5.8372E+13 | 1.4409E+07 |
| Ce-143 | 3.5637E-04 | 5.3663E-13 | 2.2599E+12 | 1.3186E+07 |
| Ce-144 | 3.1465E-04 | 9.8652E-11 | 4.1257E+14 | 1.1642E+07 |
| Pr-143 | 1.5137E-04 | 2.2479E-12 | 9.4667E+12 | 5.6008E+06 |
| Nd-147 | 6.3161E-05 | 7.8075E-13 | 3.1985E+12 | 2.3370E+06 |
| Np-239 | 4.1116E-03 | 1.7723E-11 | 4.4657E+13 | 1.5213E+08 |
| Pu-238 | 1.2411E-06 | 7.2496E-11 | 1.8344E+14 | 4.5921E+04 |
| Pu-239 | 9.6597E-08 | 1.5541E-09 | 3.9159E+15 | 3.5741E+03 |
| Pu-240 | 1.0417E-07 | 4.5715E-10 | 1.1471E+15 | 3.8543E+03 |
| Pu-241 | 4.3139E-05 | 4.1878E-10 | 1.0464E+15 | 1.5962E+06 |
| Am-241 | 2.6532E-08 | 7.7304E-12 | 1.9317E+13 | 9.8169E+02 |
| Cm-242 | 6.2322E-06 | 1.8804E-12 | 4.6793E+12 | 2.3059E+05 |
| Cm-244 | 5.0451E-07 | 6.2361E-12 | 1.5391E+13 | 1.8667E+04 |

Control Room Transport Group Inventory:

| Time (h) = 2.9200 | Atmosphere | Sump | Overlying Pool |
|---|---|---|---|
| Noble gases (atoms) | 4.2778E+17 | 0.0000E+00 | 0.0000E+00 |
| Elemental I (atoms) | 2.0879E+14 | 0.0000E+00 | 0.0000E+00 |
| Organic I (atoms) | 3.8450E+13 | 0.0000E+00 | 0.0000E+00 |
| Aerosols (kg) | 2.6844E-07 | 0.0000E+00 | 0.0000E+00 |

| Time (h) = 2.9200 | Deposition Surfaces | Recirculating Filter |
|---|---|---|
| Noble gases (atoms) | 0.0000E+00 | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 | 0.0000E+00 |

CR Filtered Air Intake Transport Group Inventory:

| Time (h) = 2.9200 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 |

CR Unfiltered Inleakage Transport Group Inventory:

| Time (h) = 2.9200 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 |

CR Exhaust to Environment Transport Group Inventory:

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**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 1 | System Nos. | Sheet 188 of 1000 |
|---|---|---|---|---|

| Time (h) = 2.9200 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 |

Exclusion Area Boundary Doses:

| Time (h) = 3.8200 | Whole Body | Thyroid | TEDE |
|---|---|---|---|
| Delta dose (rem) | 4.7583E-01 | 6.2440E+01 | 3.7761E+00 |
| Accumulated dose (rem) | 2.5955E+00 | 4.9281E+02 | 2.8191E+01 |

Low Population Zone Doses:

| Time (h) = 3.8200 | Whole Body | Thyroid | TEDE |
|---|---|---|---|
| Delta dose (rem) | 3.5687E-02 | 4.6830E+00 | 2.8321E-01 |
| Accumulated dose (rem) | 3.3241E-01 | 6.6064E+01 | 3.7449E+00 |

Control Room Doses:

| Time (h) = 3.8200 | Whole Body | Thyroid | TEDE |
|---|---|---|---|
| Delta dose (rem) | 8.8320E-03 | 2.8311E+01 | 1.5080E+00 |
| Accumulated dose (rem) | 4.4060E-02 | 1.6717E+02 | 8.7289E+00 |

Environment Integral Nuclide Release:

| Time (h) = 3.8200 | Ci | kg | Atoms | Bq |
|---|---|---|---|---|
| Co-58 | 6.9252E-02 | 2.1779E-09 | 2.2613E+16 | 2.5623E+09 |
| Co-60 | 5.3042E-02 | 4.6924E-08 | 4.7097E+17 | 1.9626E+09 |
| Kr-85 | 1.1835E+02 | 3.0164E-04 | 2.1371E+21 | 4.3788E+12 |
| Kr-85m | 1.5577E+03 | 1.8928E-07 | 1.3411E+18 | 5.7636E+13 |
| Kr-87 | 9.1838E+02 | 3.2422E-08 | 2.2443E+17 | 3.3980E+13 |
| Kr-88 | 3.2393E+03 | 2.5833E-07 | 1.7678E+18 | 1.1985E+14 |
| Rb-86 | 2.0157E+00 | 2.4773E-08 | 1.7347E+17 | 7.4582E+10 |
| Sr-89 | 6.4895E+01 | 2.2337E-06 | 1.5114E+19 | 2.4011E+12 |
| Sr-90 | 7.0117E+00 | 5.1403E-05 | 3.4395E+20 | 2.5943E+11 |
| Sr-91 | 7.0504E+01 | 1.9449E-08 | 1.2871E+17 | 2.6086E+12 |
| Sr-92 | 4.2963E+01 | 3.4180E-09 | 2.2374E+16 | 1.5896E+12 |
| Y-90 | 6.9946E-02 | 1.2856E-10 | 8.6024E+14 | 2.5880E+09 |
| Y-91 | 7.9447E-01 | 3.2396E-08 | 2.1439E+17 | 2.9395E+10 |
| Y-92 | 5.1350E-01 | 5.3365E-11 | 3.4932E+14 | 1.8999E+10 |
| Y-93 | 8.3917E-01 | 2.5153E-10 | 1.6287E+15 | 3.1049E+10 |
| Zr-95 | 1.0235E+00 | 4.7642E-08 | 3.0201E+17 | 3.7869E+10 |
| Zr-97 | 9.2060E-01 | 4.8157E-10 | 2.9898E+15 | 3.4062E+10 |
| Nb-95 | 1.0303E+00 | 2.6349E-08 | 1.6703E+17 | 3.8122E+10 |
| Mo-99 | 1.3622E+01 | 2.8403E-08 | 1.7277E+17 | 5.0403E+11 |
| Tc-99m | 8.6439E+00 | 1.6439E-09 | 9.9997E+15 | 3.1983E+11 |
| Ru-103 | 1.1294E+01 | 3.4996E-07 | 2.0461E+18 | 4.1790E+11 |
| Ru-105 | 4.6772E+00 | 6.9581E-10 | 3.9907E+15 | 1.7306E+11 |
| Ru-106 | 4.2632E+00 | 1.2743E-06 | 7.2394E+18 | 1.5774E+11 |
| Rh-105 | 6.6960E+00 | 7.9331E-09 | 4.5499E+16 | 2.4775E+11 |
| Sb-127 | 1.5144E+01 | 5.6706E-08 | 2.6889E+17 | 5.6031E+11 |
| Sb-129 | 2.8680E+01 | 5.1001E-09 | 2.3809E+16 | 1.0612E+12 |
| Te-127 | 1.2222E+01 | 4.6312E-09 | 2.1961E+16 | 4.5222E+11 |
| Te-127m | 2.0609E+00 | 2.1848E-07 | 1.0360E+18 | 7.6252E+10 |
| Te-129 | 8.3257E+00 | 3.9755E-10 | 1.8559E+15 | 3.0805E+11 |

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**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 1 | System Nos. | Sheet 189 of 1000 |
|---|---|---|---|---|

| | | | | |
|---|---|---|---|---|
| Te-129m | 6.8856E+00 | 2.2857E-06 | 1.0670E+18 | 2.5477E+11 |
| Te-131m | 1.9701E+01 | 2.4706E-08 | 1.1358E+17 | 7.2893E+11 |
| Te-132 | 2.0527E+02 | 6.7612E-07 | 3.0846E+18 | 7.5948E+12 |
| I-131 | 1.1482E+03 | 9.2616E-06 | 4.2576E+19 | 4.2483E+13 |
| I-132 | 7.2943E+02 | 7.0666E-08 | 3.2239E+17 | 2.6989E+13 |
| I-133 | 2.2018E+03 | 1.9437E-06 | 8.8009E+18 | 8.1468E+13 |
| I-134 | 3.8163E+02 | 1.4306E-08 | 6.4292E+16 | 1.4120E+13 |
| I-135 | 1.6734E+03 | 4.7649E-07 | 2.1255E+18 | 6.1914E+13 |
| Xe-133 | 1.6605E+04 | 8.8712E-05 | 4.0168E+20 | 6.1439E+14 |
| Xe-135 | 4.7967E+03 | 1.8783E-06 | 8.3788E+18 | 1.7748E+14 |
| Cs-134 | 2.1114E+02 | 1.6319E-04 | 7.3339E+20 | 7.8121E+12 |
| Cs-136 | 5.8016E+01 | 7.9158E-07 | 3.5051E+18 | 2.1466E+12 |
| Cs-137 | 1.4147E+02 | 1.6265E-03 | 7.1494E+21 | 5.2345E+12 |
| Ba-139 | 2.6501E+01 | 1.6202E-09 | 7.0194E+15 | 9.8054E+11 |
| Ba-140 | 1.0938E+02 | 1.4941E-06 | 6.4271E+18 | 4.0472E+12 |
| La-140 | 1.0590E+00 | 1.9052E-09 | 8.1954E+15 | 3.9182E+10 |
| La-141 | 6.0861E-01 | 1.0762E-10 | 4.5963E+14 | 2.2519E+10 |
| La-142 | 3.3214E-01 | 2.3202E-11 | 9.8398E+13 | 1.2289E+10 |
| Ce-141 | 2.5162E+00 | 8.8308E-08 | 3.7717E+17 | 9.3099E+10 |
| Ce-143 | 2.3488E+00 | 3.5369E-09 | 1.4895E+16 | 8.6905E+10 |
| Ce-144 | 2.0315E+00 | 6.3694E-07 | 2.6637E+18 | 7.5166E+10 |
| Pr-143 | 9.7927E-01 | 1.4542E-08 | 6.1242E+16 | 3.6233E+10 |
| Nd-147 | 4.0881E-01 | 5.0533E-09 | 2.0702E+16 | 1.5126E+10 |
| Np-239 | 2.6865E+01 | 1.1580E-07 | 2.9179E+17 | 9.9402E+11 |
| Pu-238 | 8.0123E-03 | 4.6802E-07 | 1.1842E+18 | 2.9646E+08 |
| Pu-239 | 6.2361E-04 | 1.0033E-05 | 2.5280E+19 | 2.3073E+07 |
| Pu-240 | 6.7249E-04 | 2.9513E-06 | 7.4054E+18 | 2.4882E+07 |
| Pu-241 | 2.7850E-01 | 2.7035E-06 | 6.7556E+18 | 1.0304E+10 |
| Am-241 | 1.7129E-04 | 4.9906E-08 | 1.2471E+17 | 6.3375E+06 |
| Cm-242 | 4.0240E-02 | 1.2141E-08 | 3.0214E+16 | 1.4889E+09 |
| Cm-244 | 3.2570E-03 | 4.0259E-08 | 9.9363E+16 | 1.2051E+08 |

Environment Transport Group Inventory:

| Time (h) = 3.8200 | Present Release | Release Rate/s | Total Release |
|---|---|---|---|
| Noble gases (atoms) | 2.5563E+21 | 1.8588E+17 | 2.5563E+21 |
| Elemental I (atoms) | 1.7210E+18 | 1.2515E+14 | 1.7210E+18 |
| Organic I (atoms) | 2.3526E+17 | 1.7108E+13 | 2.3526E+17 |
| Aerosols (kg) | 1.8794E-03 | 1.3666E-07 | 1.8794E-03 |

CR Filtered Air Intake Transport Group Inventory:

| Time (h) = 3.8200 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 |

CR Unfiltered Inleakage Transport Group Inventory:

| Time (h) = 3.8200 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 |

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**CALCULATION SHEET**
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| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 1 | System Nos. | Sheet 190 of 1000 |
|---|---|---|---|---|

```
Aerosols (kg)          0.0000E+00

CR Exhaust to Environment Transport Group Inventory:

                        Pathway
Time (h) =   3.8200      Filter
Noble gases (atoms)    0.0000E+00
Elemental I (atoms)    0.0000E+00
Organic I (atoms)      0.0000E+00
Aerosols (kg)          0.0000E+00
```

**Control Room Compartment Nuclide Inventory:**

| Time (h) = 3.8200 | Ci | kg | Atoms | Bq |
|---|---|---|---|---|
| Co-58 | 5.1051E-06 | 1.6055E-13 | 1.6670E+12 | 1.8889E+05 |
| Co-60 | 3.9130E-06 | 3.4617E-12 | 3.4745E+13 | 1.4478E+05 |
| Kr-85 | 1.9360E-02 | 4.9346E-08 | 3.4961E+17 | 7.1633E+08 |
| Kr-85m | 2.0295E-01 | 2.4662E-11 | 1.7473E+14 | 7.5093E+09 |
| Kr-87 | 6.0921E-02 | 2.1507E-12 | 1.4887E+13 | 2.2541E+09 |
| Kr-88 | 3.6636E-01 | 2.9217E-11 | 1.9994E+14 | 1.3555E+10 |
| Rb-86 | 1.3528E-04 | 1.6626E-12 | 1.1642E+13 | 5.0055E+06 |
| Sr-89 | 4.7824E-03 | 1.6461E-10 | 1.1139E+15 | 1.7695E+08 |
| Sr-90 | 5.1728E-04 | 3.7922E-09 | 2.5375E+16 | 1.9139E+07 |
| Sr-91 | 4.5195E-03 | 1.2468E-12 | 8.2508E+12 | 1.6722E+08 |
| Sr-92 | 1.9016E-03 | 1.5129E-13 | 9.9030E+11 | 7.0359E+07 |
| Y-90 | 5.0550E-06 | 9.2913E-15 | 6.2170E+10 | 1.8704E+05 |
| Y-91 | 5.8556E-05 | 2.3877E-12 | 1.5801E+13 | 2.1666E+06 |
| Y-92 | 2.5738E-05 | 2.6748E-15 | 1.7509E+10 | 9.5229E+05 |
| Y-93 | 5.4251E-05 | 1.6261E-14 | 1.0530E+11 | 2.0073E+06 |
| Zr-95 | 7.5442E-05 | 3.5117E-12 | 2.2261E+13 | 2.7914E+06 |
| Zr-97 | 6.2792E-05 | 3.2846E-14 | 2.0392E+11 | 2.3233E+06 |
| Nb-95 | 7.5892E-05 | 1.9408E-12 | 1.2303E+13 | 2.8080E+06 |
| Mo-99 | 9.8512E-04 | 2.0540E-12 | 1.2494E+13 | 3.6449E+07 |
| Tc-99m | 5.0990E-04 | 9.6972E-14 | 5.8988E+11 | 1.8866E+07 |
| Ru-103 | 8.3208E-04 | 2.5782E-11 | 1.5074E+14 | 3.0787E+07 |
| Ru-105 | 2.5416E-04 | 3.7810E-14 | 2.1685E+11 | 9.4039E+06 |
| Ru-106 | 3.1446E-04 | 9.3994E-11 | 5.3401E+14 | 1.1635E+07 |
| Rh-105 | 4.7589E-04 | 5.6381E-13 | 3.2337E+12 | 1.7608E+07 |
| Sb-127 | 1.1014E-03 | 4.1243E-12 | 1.9557E+13 | 4.0752E+07 |
| Sb-129 | 1.5448E-03 | 2.7472E-13 | 1.2825E+12 | 5.7159E+07 |
| Te-127 | 7.8170E-04 | 2.9620E-13 | 1.4045E+12 | 2.8923E+07 |
| Te-127m | 1.5196E-04 | 1.6110E-11 | 7.6393E+13 | 5.6226E+06 |
| Te-129 | 1.7247E-04 | 8.2354E-15 | 3.8446E+10 | 6.3814E+06 |
| Te-129m | 5.0716E-04 | 1.6835E-10 | 7.8591E+13 | 1.8765E+07 |
| Te-131m | 1.3908E-03 | 1.7442E-12 | 8.0180E+12 | 5.1460E+07 |
| Te-132 | 1.4890E-02 | 4.9047E-11 | 2.2376E+14 | 5.5094E+08 |
| I-131 | 7.9027E-02 | 6.3745E-10 | 2.9304E+15 | 2.9240E+09 |
| I-132 | 2.6144E-02 | 2.5328E-12 | 1.1555E+13 | 9.6731E+08 |
| I-133 | 1.4257E-01 | 1.2585E-10 | 5.6985E+14 | 5.2750E+09 |
| I-134 | 3.8631E-03 | 1.4481E-13 | 6.5080E+11 | 1.4293E+08 |
| I-135 | 9.3197E-02 | 2.6538E-11 | 1.1838E+14 | 3.4483E+09 |
| Xe-133 | 2.6956E+00 | 1.4401E-08 | 6.5206E+16 | 9.9736E+10 |
| Xe-135 | 7.0333E-01 | 2.7541E-10 | 1.2286E+15 | 2.6023E+10 |
| Cs-134 | 1.4215E-02 | 1.0986E-08 | 4.9374E+16 | 5.2594E+08 |

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**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 1 | System Nos. | Sheet 191 of 1000 |
|---|---|---|---|---|

| | | | | |
|---|---|---|---|---|
| Cs-136 | 3.8883E-03 | 5.3053E-11 | 2.3492E+14 | 1.4387E+08 |
| Cs-137 | 9.5252E-03 | 1.0951E-07 | 4.8136E+17 | 3.5243E+08 |
| Ba-139 | 6.8309E-04 | 4.1761E-14 | 1.8093E+11 | 2.5274E+07 |
| Ba-140 | 8.0351E-03 | 1.0976E-10 | 4.7212E+14 | 2.9730E+08 |
| La-140 | 7.5607E-05 | 1.3603E-13 | 5.8512E+11 | 2.7975E+06 |
| La-141 | 3.1741E-05 | 5.6125E-15 | 2.3971E+10 | 1.1744E+06 |
| La-142 | 9.6556E-06 | 6.7450E-16 | 2.8605E+09 | 3.5726E+05 |
| Ce-141 | 1.8532E-04 | 6.5039E-12 | 2.7778E+13 | 6.8568E+06 |
| Ce-143 | 1.6648E-04 | 2.5069E-13 | 1.0557E+12 | 6.1598E+06 |
| Ce-144 | 1.4984E-04 | 4.6981E-11 | 1.9647E+14 | 5.5442E+06 |
| Pr-143 | 7.1953E-05 | 1.0685E-12 | 4.4999E+12 | 2.6623E+06 |
| Nd-147 | 3.0009E-05 | 3.7095E-13 | 1.5197E+12 | 1.1103E+06 |
| Np-239 | 1.9363E-03 | 8.3464E-12 | 2.1031E+13 | 7.1643E+07 |
| Pu-238 | 5.9110E-07 | 3.4528E-11 | 8.7366E+13 | 2.1871E+04 |
| Pu-239 | 4.6006E-08 | 7.4017E-10 | 1.8650E+15 | 1.7022E+03 |
| Pu-240 | 4.9613E-08 | 2.1773E-10 | 5.4633E+14 | 1.8357E+03 |
| Pu-241 | 2.0546E-05 | 1.9945E-10 | 4.9839E+14 | 7.6020E+05 |
| Am-241 | 1.2636E-08 | 3.6818E-12 | 9.2000E+12 | 4.6755E+02 |
| Cm-242 | 2.9677E-06 | 8.9543E-13 | 2.2283E+12 | 1.0981E+05 |
| Cm-244 | 2.4028E-07 | 2.9700E-12 | 7.3303E+12 | 8.8905E+03 |

Control Room Transport Group Inventory:

| Time (h) = 3.8200 | Atmosphere | Sump | Overlying Pool |
|---|---|---|---|
| Noble gases (atoms) | 4.1811E+17 | 0.0000E+00 | 0.0000E+00 |
| Elemental I (atoms) | 1.1735E+14 | 0.0000E+00 | 0.0000E+00 |
| Organic I (atoms) | 3.7477E+13 | 0.0000E+00 | 0.0000E+00 |
| Aerosols (kg) | 1.2705E-07 | 0.0000E+00 | 0.0000E+00 |

| Time (h) = 3.8200 | Deposition Surfaces | Recirculating Filter |
|---|---|---|
| Noble gases (atoms) | 0.0000E+00 | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 | 0.0000E+00 |

CR Filtered Air Intake Transport Group Inventory:

| Time (h) = 3.8200 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 |

CR Unfiltered Inleakage Transport Group Inventory:

| Time (h) = 3.8200 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 |

CR Exhaust to Environment Transport Group Inventory:

```
                          Pathway
Time (h) =   3.8200        Filter
Noble gases (atoms)     0.0000E+00
Elemental I (atoms)     0.0000E+00
Organic I (atoms)       0.0000E+00
Aerosols (kg)           0.0000E+00

Exclusion Area Boundary Doses:

Time (h) =   4.0000    Whole Body   Thyroid       TEDE
Delta dose (rem)        7.8411E-02  8.3109E+00  5.1522E-01
Accumulated dose (rem)  2.6739E+00  5.0112E+02  2.8706E+01

Low Population Zone Doses:

Time (h) =   4.0000    Whole Body   Thyroid       TEDE
Delta dose (rem)        5.8808E-03  6.2332E-01  3.8642E-02
Accumulated dose (rem)  3.3829E-01  6.6687E+01  3.7835E+00

Control Room Doses:

Time (h) =   4.0000    Whole Body   Thyroid       TEDE
Delta dose (rem)        1.3787E-03  3.5537E+00  1.8939E-01
Accumulated dose (rem)  4.5438E-02  1.7073E+02  8.9183E+00

Environment Integral Nuclide Release:

Time (h) =   4.0000       Ci           kg         Atoms         Bq
Co-58                  7.0508E-02  2.2174E-09  2.3023E+16  2.6088E+09
Co-60                  5.4005E-02  4.7776E-08  4.7952E+17  1.9982E+09
Kr-85                  1.2619E+02  3.2164E-04  2.2788E+21  4.6691E+12
Kr-85m                 1.6382E+03  1.9907E-07  1.4104E+18  6.0615E+13
Kr-87                  9.4130E+02  3.3231E-08  2.3003E+17  3.4828E+13
Kr-88                  3.3828E+03  2.6978E-07  1.8462E+18  1.2516E+14
Rb-86                  2.0489E+00  2.5181E-08  1.7633E+17  7.5810E+10
Sr-89                  6.6072E+01  2.2742E-06  1.5389E+19  2.4447E+12
Sr-90                  7.1390E+00  5.2336E-05  3.5019E+20  2.6414E+11
Sr-91                  7.1604E+01  1.9753E-08  1.3072E+17  2.6493E+12
Sr-92                  4.3414E+01  3.4539E-09  2.2609E+16  1.6063E+12
Y-90                   7.1188E-02  1.3084E-10  8.7551E+14  2.6339E+09
Y-91                   8.0887E-01  3.2983E-08  2.1827E+17  2.9928E+10
Y-92                   5.1965E-01  5.4005E-11  3.5351E+14  1.9227E+10
Y-93                   8.5239E-01  2.5549E-10  1.6544E+15  3.1538E+10
Zr-95                  1.0420E+00  4.8506E-08  3.0748E+17  3.8556E+10
Zr-97                  9.3596E-01  4.8960E-10  3.0397E+15  3.4631E+10
Nb-95                  1.0490E+00  2.6826E-08  1.7005E+17  3.8812E+10
Mo-99                  1.3864E+01  2.8907E-08  1.7584E+17  5.1298E+11
Tc-99m                 8.7673E+00  1.6674E-09  1.0142E+16  3.2439E+11
Ru-103                 1.1499E+01  3.5630E-07  2.0832E+18  4.2547E+11
Ru-105                 4.7384E+00  7.0491E-10  4.0429E+15  1.7532E+11
Ru-106                 4.3405E+00  1.2974E-06  7.3708E+18  1.6060E+11
Rh-105                 6.8127E+00  8.0714E-09  4.6293E+16  2.5207E+11
Sb-127                 1.5414E+01  5.7720E-08  2.7370E+17  5.7033E+11
Sb-129                 2.9051E+01  5.1662E-09  2.4117E+16  1.0749E+12
Te-127                 1.2413E+01  4.7033E-09  2.2302E+16  4.5927E+11
Te-127m                2.0982E+00  2.2245E-07  1.0548E+18  7.7635E+10
```

| | | | | |
|---|---|---|---|---|
| Te-129 | 8.3646E+00 | 3.9941E-10 | 1.8646E+15 | 3.0949E+11 |
| Te-129m | 7.0104E+00 | 2.3271E-06 | 1.0864E+18 | 2.5939E+11 |
| Te-131m | 2.0042E+01 | 2.5134E-08 | 1.1554E+17 | 7.4155E+11 |
| Te-132 | 2.0892E+02 | 6.8817E-07 | 3.1396E+18 | 7.7302E+12 |
| I-131 | 1.1680E+03 | 9.4212E-06 | 4.3310E+19 | 4.3215E+13 |
| I-132 | 7.3569E+02 | 7.1273E-08 | 3.2517E+17 | 2.7221E+13 |
| I-133 | 2.2374E+03 | 1.9751E-06 | 8.9429E+18 | 8.2783E+13 |
| I-134 | 3.8250E+02 | 1.4338E-08 | 6.4438E+16 | 1.4152E+13 |
| I-135 | 1.6964E+03 | 4.8304E-07 | 2.1548E+18 | 6.2765E+13 |
| Xe-133 | 1.7697E+04 | 9.4543E-05 | 4.2809E+20 | 6.5478E+14 |
| Xe-135 | 5.0787E+03 | 1.9888E-06 | 8.8715E+18 | 1.8791E+14 |
| Cs-134 | 2.1462E+02 | 1.6588E-04 | 7.4550E+20 | 7.9411E+12 |
| Cs-136 | 5.8969E+01 | 8.0459E-07 | 3.5628E+18 | 2.1819E+12 |
| Cs-137 | 1.4381E+02 | 1.6533E-03 | 7.2675E+21 | 5.3209E+12 |
| Ba-139 | 2.6658E+01 | 1.6297E-09 | 7.0608E+15 | 9.8633E+11 |
| Ba-140 | 1.1136E+02 | 1.5211E-06 | 6.5432E+18 | 4.1203E+12 |
| La-140 | 1.0775E+00 | 1.9386E-09 | 8.3390E+15 | 3.9869E+10 |
| La-141 | 6.1623E-01 | 1.0896E-10 | 4.6539E+14 | 2.2800E+10 |
| La-142 | 3.3436E-01 | 2.3358E-11 | 9.9058E+13 | 1.2371E+10 |
| Ce-141 | 2.5618E+00 | 8.9908E-08 | 3.8400E+17 | 9.4786E+10 |
| Ce-143 | 2.3896E+00 | 3.5984E-09 | 1.5154E+16 | 8.8416E+10 |
| Ce-144 | 2.0684E+00 | 6.4850E-07 | 2.7120E+18 | 7.6530E+10 |
| Pr-143 | 9.9696E-01 | 1.4805E-08 | 6.2349E+16 | 3.6888E+10 |
| Nd-147 | 4.1619E-01 | 5.1446E-09 | 2.1076E+16 | 1.5399E+10 |
| Np-239 | 2.7341E+01 | 1.1785E-07 | 2.9696E+17 | 1.0116E+12 |
| Pu-238 | 8.1578E-03 | 4.7651E-07 | 1.2057E+18 | 3.0184E+08 |
| Pu-239 | 6.3493E-04 | 1.0215E-05 | 2.5739E+19 | 2.3492E+07 |
| Pu-240 | 6.8470E-04 | 3.0048E-06 | 7.5398E+18 | 2.5334E+07 |
| Pu-241 | 2.8355E-01 | 2.7526E-06 | 6.8783E+18 | 1.0492E+10 |
| Am-241 | 1.7439E-04 | 5.0812E-08 | 1.2697E+17 | 6.4526E+06 |
| Cm-242 | 4.0971E-02 | 1.2362E-08 | 3.0762E+16 | 1.5159E+09 |
| Cm-244 | 3.3162E-03 | 4.0990E-08 | 1.0117E+17 | 1.2270E+08 |

Environment Transport Group Inventory:

| Time (h) = 4.0000 | Present Release | Release Rate/s | Total Release |
|---|---|---|---|
| Noble gases (atoms) | 2.7257E+21 | 1.8928E+17 | 2.7257E+21 |
| Elemental I (atoms) | 1.7626E+18 | 1.2240E+14 | 1.7626E+18 |
| Organic I (atoms) | 2.5044E+17 | 1.7392E+13 | 2.5044E+17 |
| Aerosols (kg) | 1.9106E-03 | 1.3268E-07 | 1.9106E-03 |

CR Filtered Air Intake Transport Group Inventory:

| Time (h) = 4.0000 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 |

CR Unfiltered Inleakage Transport Group Inventory:

| Time (h) = 4.0000 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 |

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**CALCULATION SHEET**
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| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 1 | System Nos. | Sheet 194 of 1000 |
|---|---|---|---|---|

```
Organic I (atoms)       0.0000E+00
Aerosols (kg)           0.0000E+00

CR Exhaust to Environment Transport Group Inventory:

                         Pathway
Time (h) =   4.0000       Filter
Noble gases (atoms)     0.0000E+00
Elemental I (atoms)     0.0000E+00
Organic I (atoms)       0.0000E+00
Aerosols (kg)           0.0000E+00
```

**Control Room Compartment Nuclide Inventory:**

| Time (h) = 4.0000 | Ci | kg | Atoms | Bq |
|---|---|---|---|---|
| Co-58 | 4.4541E-06 | 1.4008E-13 | 1.4544E+12 | 1.6480E+05 |
| Co-60 | 3.4143E-06 | 3.0205E-12 | 3.0316E+13 | 1.2633E+05 |
| Kr-85 | 1.9336E-02 | 4.9284E-08 | 3.4917E+17 | 7.1543E+08 |
| Kr-85m | 1.9712E-01 | 2.3952E-11 | 1.6970E+14 | 7.2933E+09 |
| Kr-87 | 5.5141E-02 | 1.9467E-12 | 1.3475E+13 | 2.0402E+09 |
| Kr-88 | 3.5012E-01 | 2.7922E-11 | 1.9108E+14 | 1.2954E+10 |
| Rb-86 | 1.1793E-04 | 1.4494E-12 | 1.0149E+13 | 4.3635E+06 |
| Sr-89 | 4.1725E-03 | 1.4362E-10 | 9.7180E+14 | 1.5438E+08 |
| Sr-90 | 4.5136E-04 | 3.3089E-09 | 2.2141E+16 | 1.6700E+07 |
| Sr-91 | 3.8916E-03 | 1.0735E-12 | 7.1044E+12 | 1.4399E+08 |
| Sr-92 | 1.5838E-03 | 1.2601E-13 | 8.2482E+11 | 5.8602E+07 |
| Y-90 | 4.4021E-06 | 8.0912E-15 | 5.4140E+10 | 1.6288E+05 |
| Y-91 | 5.1089E-05 | 2.0832E-12 | 1.3786E+13 | 1.8903E+06 |
| Y-92 | 2.1672E-05 | 2.2523E-15 | 1.4743E+10 | 8.0186E+05 |
| Y-93 | 4.6750E-05 | 1.4012E-14 | 9.0737E+10 | 1.7298E+06 |
| Zr-95 | 6.5822E-05 | 3.0639E-12 | 1.9422E+13 | 2.4354E+06 |
| Zr-97 | 5.4382E-05 | 2.8447E-14 | 1.7661E+11 | 2.0121E+06 |
| Nb-95 | 6.6210E-05 | 1.6932E-12 | 1.0734E+13 | 2.4498E+06 |
| Mo-99 | 8.5793E-04 | 1.7888E-12 | 1.0881E+13 | 3.1743E+07 |
| Tc-99m | 4.3570E-04 | 8.2860E-14 | 5.0403E+11 | 1.6121E+07 |
| Ru-103 | 7.2594E-04 | 2.2493E-11 | 1.3151E+14 | 2.6860E+07 |
| Ru-105 | 2.1556E-04 | 3.2068E-14 | 1.8392E+11 | 7.9757E+06 |
| Ru-106 | 2.7438E-04 | 8.2014E-11 | 4.6594E+14 | 1.0152E+07 |
| Rh-105 | 4.1376E-04 | 4.9021E-13 | 2.8115E+12 | 1.5309E+07 |
| Sb-127 | 9.5972E-04 | 3.5938E-12 | 1.7041E+13 | 3.5510E+07 |
| Sb-129 | 1.3092E-03 | 2.3281E-13 | 1.0868E+12 | 4.8440E+07 |
| Te-127 | 6.7294E-04 | 2.5499E-13 | 1.2091E+12 | 2.4899E+07 |
| Te-127m | 1.3259E-04 | 1.4056E-11 | 6.6654E+13 | 4.9058E+06 |
| Te-129 | 1.3499E-04 | 6.4460E-15 | 3.0092E+10 | 4.9948E+06 |
| Te-129m | 4.4245E-04 | 1.4687E-10 | 6.8564E+13 | 1.6371E+07 |
| Te-131m | 1.2085E-03 | 1.5155E-12 | 6.9668E+12 | 4.4713E+07 |
| Te-132 | 1.2972E-02 | 4.2728E-11 | 1.9493E+14 | 4.7996E+08 |
| I-131 | 6.9189E-02 | 5.5809E-10 | 2.5656E+15 | 2.5600E+09 |
| I-132 | 2.1680E-02 | 2.1004E-12 | 9.5823E+12 | 8.0217E+08 |
| I-133 | 1.2415E-01 | 1.0959E-10 | 4.9622E+14 | 4.5934E+09 |
| I-134 | 2.9303E-03 | 1.0984E-13 | 4.9365E+11 | 1.0842E+08 |
| I-135 | 8.0103E-02 | 2.2809E-11 | 1.0175E+14 | 2.9638E+09 |
| Xe-133 | 2.6895E+00 | 1.4369E-08 | 6.5060E+16 | 9.9512E+10 |
| Xe-135 | 6.9285E-01 | 2.7131E-10 | 1.2103E+15 | 2.5635E+10 |

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**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 1 | System Nos. | Sheet 195 of 1000 |
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| | | | | |
|---|---|---|---|---|
| Cs-134 | 1.2395E-02 | 9.5801E-09 | 4.3054E+16 | 4.5862E+08 |
| Cs-136 | 3.3893E-03 | 4.6244E-11 | 2.0477E+14 | 1.2540E+08 |
| Cs-137 | 8.3060E-03 | 9.5491E-08 | 4.1975E+17 | 3.0732E+08 |
| Ba-139 | 5.4395E-04 | 3.3255E-14 | 1.4408E+11 | 2.0126E+07 |
| Ba-140 | 7.0082E-03 | 9.5728E-11 | 4.1178E+14 | 2.5930E+08 |
| La-140 | 6.5765E-05 | 1.1832E-13 | 5.0896E+11 | 2.4333E+06 |
| La-141 | 2.6821E-05 | 4.7426E-15 | 2.0256E+10 | 9.9239E+05 |
| La-142 | 7.7636E-06 | 5.4234E-16 | 2.3000E+09 | 2.8725E+05 |
| Ce-141 | 1.6167E-04 | 5.6741E-12 | 2.4234E+13 | 5.9819E+06 |
| Ce-143 | 1.4471E-04 | 2.1791E-13 | 9.1769E+11 | 5.3543E+06 |
| Ce-144 | 1.3074E-04 | 4.0992E-11 | 1.7143E+14 | 4.8376E+06 |
| Pr-143 | 6.2759E-05 | 9.3199E-13 | 3.9249E+12 | 2.3221E+06 |
| Nd-147 | 2.6172E-05 | 3.2352E-13 | 1.3254E+12 | 9.6837E+05 |
| Np-239 | 1.6858E-03 | 7.2664E-12 | 1.8309E+13 | 6.2373E+07 |
| Pu-238 | 5.1577E-07 | 3.0127E-11 | 7.6231E+13 | 1.9084E+04 |
| Pu-239 | 4.0143E-08 | 6.4584E-10 | 1.6273E+15 | 1.4853E+03 |
| Pu-240 | 4.3290E-08 | 1.8998E-10 | 4.7670E+14 | 1.6017E+03 |
| Pu-241 | 1.7927E-05 | 1.7403E-10 | 4.3487E+14 | 6.6331E+05 |
| Am-241 | 1.1026E-08 | 3.2125E-12 | 8.0275E+12 | 4.0796E+02 |
| Cm-242 | 2.5894E-06 | 7.8129E-13 | 1.9442E+12 | 9.5808E+04 |
| Cm-244 | 2.0966E-07 | 2.5915E-12 | 6.3961E+12 | 7.7575E+03 |

Control Room Transport Group Inventory:

| Time (h) = 4.0000 | Atmosphere | Sump | Overlying Pool |
|---|---|---|---|
| Noble gases (atoms) | 4.1758E+17 | 0.0000E+00 | 0.0000E+00 |
| Elemental I (atoms) | 1.1242E+14 | 0.0000E+00 | 0.0000E+00 |
| Organic I (atoms) | 3.7424E+13 | 0.0000E+00 | 0.0000E+00 |
| Aerosols (kg) | 1.1079E-07 | 0.0000E+00 | 0.0000E+00 |

| Time (h) = 4.0000 | Deposition Surfaces | Recirculating Filter |
|---|---|---|
| Noble gases (atoms) | 0.0000E+00 | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 | 0.0000E+00 |

CR Filtered Air Intake Transport Group Inventory:

| Time (h) = 4.0000 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 |

CR Unfiltered Inleakage Transport Group Inventory:

| Time (h) = 4.0000 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 |

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**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 1 | System Nos. | Sheet 196 of 1000 |
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CR Exhaust to Environment Transport Group Inventory:

| Time (h) = 4.0000 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 |

Exclusion Area Boundary Doses:

| Time (h) = 8.0000 | Whole Body | Thyroid | TEDE |
|---|---|---|---|
| Delta dose (rem) | 1.2087E+00 | 1.6314E+02 | 9.8325E+00 |
| Accumulated dose (rem) | 3.8826E+00 | 6.6425E+02 | 3.8538E+01 |

Low Population Zone Doses:

| Time (h) = 8.0000 | Whole Body | Thyroid | TEDE |
|---|---|---|---|
| Delta dose (rem) | 9.0653E-02 | 1.2235E+01 | 7.3744E-01 |
| Accumulated dose (rem) | 4.2895E-01 | 7.8923E+01 | 4.5210E+00 |

Control Room Doses:

| Time (h) = 8.0000 | Whole Body | Thyroid | TEDE |
|---|---|---|---|
| Delta dose (rem) | 1.9665E-02 | 4.9314E+01 | 2.6300E+00 |
| Accumulated dose (rem) | 6.5104E-02 | 2.2004E+02 | 1.1548E+01 |

Environment Integral Nuclide Release:

| Time (h) = 8.0000 | Ci | kg | Atoms | Bq |
|---|---|---|---|---|
| Co-58 | 9.5613E-02 | 3.0069E-09 | 3.1220E+16 | 3.5377E+09 |
| Co-60 | 7.3264E-02 | 6.4813E-08 | 6.5052E+17 | 2.7108E+09 |
| Kr-85 | 3.0052E+02 | 7.6598E-04 | 5.4269E+21 | 1.1119E+13 |
| Kr-85m | 2.9529E+03 | 3.5882E-07 | 2.5422E+18 | 1.0926E+14 |
| Kr-87 | 1.1380E+03 | 4.0174E-08 | 2.7809E+17 | 4.2105E+13 |
| Kr-88 | 5.3731E+03 | 4.2850E-07 | 2.9324E+18 | 1.9880E+14 |
| Rb-86 | 2.7107E+00 | 3.3314E-08 | 2.3328E+17 | 1.0029E+11 |
| Sr-89 | 8.9581E+01 | 3.0834E-06 | 2.0864E+19 | 3.3145E+12 |
| Sr-90 | 9.6850E+00 | 7.1001E-05 | 4.7508E+20 | 3.5834E+11 |
| Sr-91 | 9.0649E+01 | 2.5007E-08 | 1.6549E+17 | 3.3540E+12 |
| Sr-92 | 4.9012E+01 | 3.8993E-09 | 2.5524E+16 | 1.8134E+12 |
| Y-90 | 9.5490E-02 | 1.7551E-10 | 1.1744E+15 | 3.5331E+09 |
| Y-91 | 1.0968E+00 | 4.4723E-08 | 2.9596E+17 | 4.0581E+10 |
| Y-92 | 6.0448E-01 | 6.2820E-11 | 4.1121E+14 | 2.2366E+10 |
| Y-93 | 1.0831E+00 | 3.2463E-10 | 2.1021E+15 | 4.0074E+10 |
| Zr-95 | 1.4130E+00 | 6.5773E-08 | 4.1694E+17 | 5.2281E+10 |
| Zr-97 | 1.2189E+00 | 6.3763E-10 | 3.9586E+15 | 4.5100E+10 |
| Nb-95 | 1.4219E+00 | 3.6362E-08 | 2.3050E+17 | 5.2609E+10 |
| Mo-99 | 1.8604E+01 | 3.8789E-08 | 2.3595E+17 | 6.8834E+11 |
| Tc-99m | 1.0738E+01 | 2.0421E-09 | 1.2422E+16 | 3.9730E+11 |
| Ru-103 | 1.5588E+01 | 4.8299E-07 | 2.8239E+18 | 5.7676E+11 |
| Ru-105 | 5.6433E+00 | 8.3953E-10 | 4.8150E+15 | 2.0880E+11 |
| Ru-106 | 5.8880E+00 | 1.7599E-06 | 9.9987E+18 | 2.1786E+11 |
| Rh-105 | 9.0577E+00 | 1.0731E-08 | 6.1547E+16 | 3.3514E+11 |
| Sb-127 | 2.0748E+01 | 7.7691E-08 | 3.6840E+17 | 7.6766E+11 |
| Sb-129 | 3.4505E+01 | 6.1360E-09 | 2.8645E+16 | 1.2767E+12 |
| Te-127 | 1.5699E+01 | 5.9484E-09 | 2.8207E+16 | 5.8085E+11 |

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| | | | | |
|---|---|---|---|---|
| Te-127m | 2.8458E+00 | 3.0169E-07 | 1.4306E+18 | 1.0529E+11 |
| Te-129 | 8.6539E+00 | 4.1322E-10 | 1.9291E+15 | 3.2019E+11 |
| Te-129m | 9.5019E+00 | 3.1541E-06 | 1.4725E+18 | 3.5157E+11 |
| Te-131m | 2.6554E+01 | 3.3300E-08 | 1.5308E+17 | 9.8249E+11 |
| Te-132 | 2.8082E+02 | 9.2498E-07 | 4.2200E+18 | 1.0390E+13 |
| I-131 | 1.5635E+03 | 1.2611E-05 | 5.7975E+19 | 5.7849E+13 |
| I-132 | 8.0818E+02 | 7.8296E-08 | 3.5720E+17 | 2.9903E+13 |
| I-133 | 2.9066E+03 | 2.5658E-06 | 1.1618E+19 | 1.0754E+14 |
| I-134 | 3.8757E+02 | 1.4528E-08 | 6.5292E+16 | 1.4340E+13 |
| I-135 | 2.0730E+03 | 5.9029E-07 | 2.6332E+18 | 7.6702E+13 |
| Xe-133 | 4.1673E+04 | 2.2264E-04 | 1.0081E+21 | 1.5419E+15 |
| Xe-135 | 1.0442E+04 | 4.0888E-06 | 1.8239E+19 | 3.8634E+14 |
| Cs-134 | 2.8438E+02 | 2.1980E-04 | 9.8781E+20 | 1.0522E+13 |
| Cs-136 | 7.7962E+01 | 1.0637E-06 | 4.7102E+18 | 2.8846E+12 |
| Cs-137 | 1.9056E+02 | 2.1908E-03 | 9.6300E+21 | 7.0506E+12 |
| Ba-139 | 2.7979E+01 | 1.7105E-09 | 7.4108E+15 | 1.0352E+12 |
| Ba-140 | 1.5071E+02 | 2.0587E-06 | 8.8555E+18 | 5.5764E+12 |
| La-140 | 1.4361E+00 | 2.5836E-09 | 1.1114E+16 | 5.3134E+10 |
| La-141 | 7.2484E-01 | 1.2817E-10 | 5.4741E+14 | 2.6819E+10 |
| La-142 | 3.5469E-01 | 2.4778E-11 | 1.0508E+14 | 1.3124E+10 |
| Ce-141 | 3.4721E+00 | 1.2186E-07 | 5.2046E+17 | 1.2847E+11 |
| Ce-143 | 3.1726E+00 | 4.7775E-09 | 2.0119E+16 | 1.1739E+11 |
| Ce-144 | 2.8057E+00 | 8.7968E-07 | 3.6789E+18 | 1.0381E+11 |
| Pr-143 | 1.3495E+00 | 2.0040E-08 | 8.4394E+16 | 4.9930E+10 |
| Nd-147 | 5.6305E-01 | 6.9599E-09 | 2.8513E+16 | 2.0833E+10 |
| Np-239 | 3.6621E+01 | 1.5785E-07 | 3.9775E+17 | 1.3550E+12 |
| Pu-238 | 1.1067E-02 | 6.4646E-07 | 1.6357E+18 | 4.0948E+08 |
| Pu-239 | 8.6136E-04 | 1.3858E-05 | 3.4918E+19 | 3.1870E+07 |
| Pu-240 | 9.2889E-04 | 4.0765E-06 | 1.0229E+19 | 3.4369E+07 |
| Pu-241 | 3.8468E-01 | 3.7343E-06 | 9.3313E+18 | 1.4233E+10 |
| Am-241 | 2.3659E-04 | 6.8933E-08 | 1.7225E+17 | 8.7538E+06 |
| Cm-242 | 5.5572E-02 | 1.6767E-08 | 4.1725E+16 | 2.0562E+09 |
| Cm-244 | 4.4988E-03 | 5.5608E-08 | 1.3725E+17 | 1.6646E+08 |

Environment Transport Group Inventory:

| Time (h) = 8.0000 | Present Release | Release Rate/s | Total Release |
|---|---|---|---|
| Noble gases (atoms) | 6.4906E+21 | 2.2537E+17 | 6.4906E+21 |
| Elemental I (atoms) | 2.6850E+18 | 9.3228E+13 | 2.6850E+18 |
| Organic I (atoms) | 5.8775E+17 | 2.0408E+13 | 5.8775E+17 |
| Aerosols (kg) | 2.5342E-03 | 8.7993E-08 | 2.5342E-03 |

CR Filtered Air Intake Transport Group Inventory:

| Time (h) = 8.0000 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 |

CR Unfiltered Inleakage Transport Group Inventory:

| Time (h) = 8.0000 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |

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```
Elemental I (atoms)     0.0000E+00
Organic I (atoms)       0.0000E+00
Aerosols (kg)           0.0000E+00

CR Exhaust to Environment Transport Group Inventory:

                         Pathway
Time (h) =   8.0000       Filter
Noble gases (atoms)     0.0000E+00
Elemental I (atoms)     0.0000E+00
Organic I (atoms)       0.0000E+00
Aerosols (kg)           0.0000E+00
```

**Control Room Compartment Nuclide Inventory:**

| Time (h) = 8.0000 | Ci | kg | Atoms | Bq |
|---|---|---|---|---|
| Co-58 | 2.5839E-06 | 8.1261E-14 | 8.4374E+11 | 9.5606E+04 |
| Co-60 | 1.9838E-06 | 1.7550E-12 | 1.7615E+13 | 7.3402E+04 |
| Kr-85 | 1.9282E-02 | 4.9146E-08 | 3.4819E+17 | 7.1342E+08 |
| Kr-85m | 1.0584E-01 | 1.2861E-11 | 9.1118E+13 | 3.9161E+09 |
| Kr-87 | 6.2100E-03 | 2.1924E-13 | 1.5176E+12 | 2.2977E+08 |
| Kr-88 | 1.3149E-01 | 1.0486E-11 | 7.1760E+13 | 4.8651E+09 |
| Rb-86 | 6.7954E-05 | 8.3515E-13 | 5.8481E+12 | 2.5143E+06 |
| Sr-89 | 2.4190E-03 | 8.3262E-11 | 5.6339E+14 | 8.9501E+07 |
| Sr-90 | 2.6227E-04 | 1.9227E-09 | 1.2865E+16 | 9.7039E+06 |
| Sr-91 | 1.6881E-03 | 4.6569E-13 | 3.0818E+12 | 6.2460E+07 |
| Sr-92 | 3.3030E-04 | 2.6278E-14 | 1.7201E+11 | 1.2221E+07 |
| Y-90 | 2.4493E-06 | 4.5019E-15 | 3.0124E+10 | 9.0625E+04 |
| Y-91 | 2.9628E-05 | 1.2081E-12 | 7.9950E+12 | 1.0962E+06 |
| Y-92 | 5.7469E-06 | 5.9725E-16 | 3.9095E+09 | 2.1264E+05 |
| Y-93 | 2.0635E-05 | 6.1849E-15 | 4.0050E+10 | 7.6349E+05 |
| Zr-95 | 3.8178E-05 | 1.7771E-12 | 1.1265E+13 | 1.4126E+06 |
| Zr-97 | 2.6811E-05 | 1.4025E-14 | 8.7073E+10 | 9.9202E+05 |
| Nb-95 | 3.8346E-05 | 9.8065E-13 | 6.2164E+12 | 1.4188E+06 |
| Mo-99 | 4.7798E-04 | 9.9659E-13 | 6.0622E+12 | 1.7685E+07 |
| Tc-99m | 1.5962E-04 | 3.0355E-14 | 1.8465E+11 | 5.9058E+06 |
| Ru-103 | 4.2058E-04 | 1.3032E-11 | 7.6192E+13 | 1.5561E+07 |
| Ru-105 | 6.7014E-05 | 9.9693E-15 | 5.7178E+10 | 2.4795E+06 |
| Ru-106 | 1.5939E-04 | 4.7641E-11 | 2.7066E+14 | 5.8973E+06 |
| Rh-105 | 2.2226E-04 | 2.6333E-13 | 1.5103E+12 | 8.2238E+06 |
| Sb-127 | 5.4115E-04 | 2.0264E-12 | 9.6089E+12 | 2.0023E+07 |
| Sb-129 | 4.0000E-04 | 7.1131E-14 | 3.3206E+11 | 1.4800E+07 |
| Te-127 | 2.9055E-04 | 1.1009E-13 | 5.2205E+11 | 1.0750E+07 |
| Te-127m | 7.6962E-05 | 8.1591E-12 | 3.8689E+13 | 2.8476E+06 |
| Te-129 | 7.1589E-06 | 3.4184E-16 | 1.5958E+09 | 2.6488E+05 |
| Te-129m | 2.5621E-04 | 8.5049E-11 | 3.9704E+13 | 9.4799E+06 |
| Te-131m | 6.4012E-04 | 8.0275E-13 | 3.6903E+12 | 2.3684E+07 |
| Te-132 | 7.2745E-03 | 2.3962E-11 | 1.0932E+14 | 2.6916E+08 |
| I-131 | 4.0647E-02 | 3.2787E-10 | 1.5072E+15 | 1.5040E+09 |
| I-132 | 3.8618E-03 | 3.7413E-13 | 1.7069E+12 | 1.4289E+08 |
| I-133 | 6.4741E-02 | 5.7150E-11 | 2.5877E+14 | 2.3954E+09 |
| I-134 | 7.3455E-05 | 2.7535E-15 | 1.2375E+10 | 2.7178E+06 |
| I-135 | 3.1361E-02 | 8.9300E-12 | 3.9835E+13 | 1.1604E+09 |
| Xe-133 | 2.6236E+00 | 1.4016E-08 | 6.3464E+16 | 9.7072E+10 |

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**CALCULATION SHEET**
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| | | | | |
|---|---|---|---|---|
| Xe-135 | 5.0923E-01 | 1.9941E-10 | 8.8953E+14 | 1.8842E+10 |
| Cs-134 | 7.1855E-03 | 5.5536E-09 | 2.4959E+16 | 2.6586E+08 |
| Cs-136 | 1.9478E-03 | 2.6576E-11 | 1.1768E+14 | 7.2068E+07 |
| Cs-137 | 4.8157E-03 | 5.5364E-08 | 2.4337E+17 | 1.7818E+08 |
| Ba-139 | 4.2148E-05 | 2.5768E-15 | 1.1164E+10 | 1.5595E+06 |
| Ba-140 | 4.0354E-03 | 5.5122E-11 | 2.3711E+14 | 1.4931E+08 |
| La-140 | 3.5668E-05 | 6.4171E-14 | 2.7603E+11 | 1.3197E+06 |
| La-141 | 7.6882E-06 | 1.3595E-15 | 5.8063E+09 | 2.8446E+05 |
| La-142 | 7.4472E-07 | 5.2023E-17 | 2.2063E+08 | 2.7555E+04 |
| Ce-141 | 9.3610E-05 | 3.2853E-12 | 1.4032E+13 | 3.4636E+06 |
| Ce-143 | 7.7301E-05 | 1.1640E-13 | 4.9020E+11 | 2.8601E+06 |
| Ce-144 | 7.5941E-05 | 2.3810E-11 | 9.9573E+13 | 2.8098E+06 |
| Pr-143 | 3.6157E-05 | 5.3695E-13 | 2.2612E+12 | 1.3378E+06 |
| Nd-147 | 1.5048E-05 | 1.8602E-13 | 7.6205E+11 | 5.5679E+05 |
| Np-239 | 9.3258E-04 | 4.0199E-12 | 1.0129E+13 | 3.4505E+07 |
| Pu-238 | 2.9970E-07 | 1.7506E-11 | 4.4296E+13 | 1.1089E+04 |
| Pu-239 | 2.3326E-08 | 3.7528E-10 | 9.4559E+14 | 8.6306E+02 |
| Pu-240 | 2.5155E-08 | 1.1039E-10 | 2.7700E+14 | 9.3072E+02 |
| Pu-241 | 1.0417E-05 | 1.0112E-10 | 2.5268E+14 | 3.8542E+05 |
| Am-241 | 6.4069E-09 | 1.8667E-12 | 4.6646E+12 | 2.3705E+02 |
| Cm-242 | 1.5036E-06 | 4.5366E-13 | 1.1289E+12 | 5.5632E+04 |
| Cm-244 | 1.2183E-07 | 1.5058E-12 | 3.7165E+12 | 4.5076E+03 |

Control Room Transport Group Inventory:

| Time (h) = 8.0000 | Atmosphere | Sump | Overlying Pool |
|---|---|---|---|
| Noble gases (atoms) | 4.1642E+17 | 0.0000E+00 | 0.0000E+00 |
| Elemental I (atoms) | 1.0203E+14 | 0.0000E+00 | 0.0000E+00 |
| Organic I (atoms) | 3.7307E+13 | 0.0000E+00 | 0.0000E+00 |
| Aerosols (kg) | 6.4243E-08 | 0.0000E+00 | 0.0000E+00 |

| Time (h) = 8.0000 | Deposition Surfaces | Recirculating Filter |
|---|---|---|
| Noble gases (atoms) | 0.0000E+00 | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 | 0.0000E+00 |

CR Filtered Air Intake Transport Group Inventory:

| Time (h) = 8.0000 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 |

CR Unfiltered Inleakage Transport Group Inventory:

| Time (h) = 8.0000 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 |

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CR Exhaust to Environment Transport Group Inventory:

| | Pathway Filter |
|---|---|
| Time (h) = 8.0000 | |
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 |

Exclusion Area Boundary Doses:

| Time (h) = 24.0000 | Whole Body | Thyroid | TEDE |
|---|---|---|---|
| Delta dose (rem) | 1.6319E+00 | 4.2121E+02 | 2.4391E+01 |
| Accumulated dose (rem) | 5.5145E+00 | 1.0855E+03 | 6.2929E+01 |

Low Population Zone Doses:

| Time (h) = 24.0000 | Whole Body | Thyroid | TEDE |
|---|---|---|---|
| Delta dose (rem) | 7.9557E-02 | 1.0560E+01 | 6.5015E-01 |
| Accumulated dose (rem) | 5.0850E-01 | 8.9483E+01 | 5.1711E+00 |

Control Room Doses:

| Time (h) = 24.0000 | Whole Body | Thyroid | TEDE |
|---|---|---|---|
| Delta dose (rem) | 1.2700E-02 | 5.7186E+01 | 3.1024E+00 |
| Accumulated dose (rem) | 7.7804E-02 | 2.7723E+02 | 1.4651E+01 |

Environment Integral Nuclide Release:

| Time (h) = 24.0000 | Ci | kg | Atoms | Bq |
|---|---|---|---|---|
| Co-58 | 1.6452E-01 | 5.1738E-09 | 5.3720E+16 | 6.0872E+09 |
| Co-60 | 1.2633E-01 | 1.1176E-07 | 1.1217E+18 | 4.6742E+09 |
| Kr-85 | 9.9714E+02 | 2.5415E-03 | 1.8007E+22 | 3.6894E+13 |
| Kr-85m | 4.2822E+03 | 5.2035E-07 | 3.6866E+18 | 1.5844E+14 |
| Kr-87 | 1.1624E+03 | 4.1037E-08 | 2.8406E+17 | 4.3009E+13 |
| Kr-88 | 6.4870E+03 | 5.1734E-07 | 3.5403E+18 | 2.4002E+14 |
| Rb-86 | 4.5065E+00 | 5.5385E-08 | 3.8783E+17 | 1.6674E+11 |
| Sr-89 | 1.5400E+02 | 5.3009E-06 | 3.5868E+19 | 5.6981E+12 |
| Sr-90 | 1.6701E+01 | 1.2244E-04 | 8.1925E+20 | 6.1794E+11 |
| Sr-91 | 1.1767E+02 | 3.2460E-08 | 2.1481E+17 | 4.3537E+12 |
| Sr-92 | 5.1315E+01 | 4.0825E-09 | 2.6723E+16 | 1.8987E+12 |
| Y-90 | 1.5572E-01 | 2.8621E-10 | 1.9151E+15 | 5.7615E+09 |
| Y-91 | 1.8863E+00 | 7.6917E-08 | 5.0902E+17 | 6.9793E+10 |
| Y-92 | 6.5423E-01 | 6.7991E-11 | 4.4505E+14 | 2.4207E+10 |
| Y-93 | 1.4224E+00 | 4.2633E-10 | 2.7607E+15 | 5.2628E+10 |
| Zr-95 | 2.4307E+00 | 1.1315E-07 | 7.1725E+17 | 8.9937E+10 |
| Zr-97 | 1.7480E+00 | 9.1440E-10 | 5.6769E+15 | 6.4677E+10 |
| Nb-95 | 2.4411E+00 | 6.2427E-08 | 3.9573E+17 | 9.0320E+10 |
| Mo-99 | 3.0387E+01 | 6.3356E-08 | 3.8539E+17 | 1.1243E+12 |
| Tc-99m | 1.2742E+01 | 2.4233E-09 | 1.4741E+16 | 4.7147E+11 |
| Ru-103 | 2.6775E+01 | 8.2960E-07 | 4.8505E+18 | 9.9066E+11 |
| Ru-105 | 6.3307E+00 | 9.4179E-10 | 5.4015E+15 | 2.3424E+11 |
| Ru-106 | 1.0149E+01 | 3.0337E-06 | 1.7235E+19 | 3.7553E+11 |
| Rh-105 | 1.4173E+01 | 1.6792E-08 | 9.6306E+16 | 5.2440E+11 |
| Sb-127 | 3.4399E+01 | 1.2881E-07 | 6.1080E+17 | 1.2728E+12 |
| Sb-129 | 3.8528E+01 | 6.8514E-09 | 3.1984E+16 | 1.4255E+12 |

| | | | | |
|---|---|---|---|---|
| Te-127 | 2.0315E+01 | 7.6978E-09 | 3.6502E+16 | 7.5166E+11 |
| Te-127m | 4.9004E+00 | 5.1952E-07 | 2.4635E+18 | 1.8131E+11 |
| Te-129 | 8.6774E+00 | 4.1435E-10 | 1.9343E+15 | 3.2106E+11 |
| Te-129m | 1.6310E+01 | 5.4140E-06 | 2.5274E+18 | 6.0347E+11 |
| Te-131m | 4.0909E+01 | 5.1302E-08 | 2.3584E+17 | 1.5136E+12 |
| Te-132 | 4.6241E+02 | 1.5231E-06 | 6.9489E+18 | 1.7109E+13 |
| I-131 | 2.6465E+03 | 2.1347E-05 | 9.8135E+19 | 9.7922E+13 |
| I-132 | 8.3185E+02 | 8.0589E-08 | 3.6767E+17 | 3.0779E+13 |
| I-133 | 4.2852E+03 | 3.7828E-06 | 1.7128E+19 | 1.5855E+14 |
| I-134 | 3.8775E+02 | 1.4535E-08 | 6.5324E+16 | 1.4347E+13 |
| I-135 | 2.4969E+03 | 7.1100E-07 | 3.1716E+18 | 9.2386E+13 |
| Xe-133 | 1.3208E+05 | 7.0562E-04 | 3.1950E+21 | 4.8869E+15 |
| Xe-135 | 2.0642E+04 | 8.0832E-06 | 3.6058E+19 | 7.6377E+14 |
| Cs-134 | 4.7656E+02 | 3.6833E-04 | 1.6553E+21 | 1.7633E+13 |
| Cs-136 | 1.2917E+02 | 1.7624E-06 | 7.8042E+18 | 4.7793E+12 |
| Cs-137 | 3.1939E+02 | 3.6719E-03 | 1.6141E+22 | 1.1817E+13 |
| Ba-139 | 2.8142E+01 | 1.7205E-09 | 7.4539E+15 | 1.0412E+12 |
| Ba-140 | 2.5676E+02 | 3.5072E-06 | 1.5086E+19 | 9.5000E+12 |
| La-140 | 2.2717E+00 | 4.0871E-09 | 1.7581E+16 | 8.4054E+10 |
| La-141 | 7.9695E-01 | 1.4092E-10 | 6.0187E+14 | 2.9487E+10 |
| La-142 | 3.5787E-01 | 2.5000E-11 | 1.0602E+14 | 1.3241E+10 |
| Ce-141 | 5.9589E+00 | 2.0913E-07 | 8.9322E+17 | 2.2048E+11 |
| Ce-143 | 4.9332E+00 | 7.4286E-09 | 3.1284E+16 | 1.8253E+11 |
| Ce-144 | 4.8357E+00 | 1.5161E-06 | 6.3406E+18 | 1.7892E+11 |
| Pr-143 | 2.3007E+00 | 3.4165E-08 | 1.4388E+17 | 8.5124E+10 |
| Nd-147 | 9.5737E-01 | 1.1834E-08 | 4.8481E+16 | 3.5423E+10 |
| Np-239 | 5.9303E+01 | 2.5562E-07 | 6.4410E+17 | 2.1942E+12 |
| Pu-238 | 1.9085E-02 | 1.1148E-06 | 2.8208E+18 | 7.0614E+08 |
| Pu-239 | 1.4854E-03 | 2.3898E-05 | 6.0215E+19 | 5.4960E+07 |
| Pu-240 | 1.6018E-03 | 7.0297E-06 | 1.7639E+19 | 5.9268E+07 |
| Pu-241 | 6.6335E-01 | 6.4395E-06 | 1.6091E+19 | 2.4544E+10 |
| Am-241 | 4.0799E-04 | 1.1887E-07 | 2.9704E+17 | 1.5096E+07 |
| Cm-242 | 9.5740E-02 | 2.8887E-08 | 7.1885E+16 | 3.5424E+09 |
| Cm-244 | 7.7579E-03 | 9.5892E-08 | 2.3667E+17 | 2.8704E+08 |

Environment Transport Group Inventory:

| Time (h) = 24.0000 | Present Release | Release Rate/s | Total Release |
|---|---|---|---|
| Noble gases (atoms) | 2.1536E+22 | 2.4926E+17 | 2.1536E+22 |
| Elemental I (atoms) | 6.3712E+18 | 7.3741E+13 | 6.3712E+18 |
| Organic I (atoms) | 1.9357E+18 | 2.2404E+13 | 1.9357E+18 |
| Aerosols (kg) | 4.2529E-03 | 4.9223E-08 | 4.2529E-03 |

CR Filtered Air Intake Transport Group Inventory:

| Time (h) = 24.0000 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 |

CR Unfiltered Inleakage Transport Group Inventory:

| Time (h) = 24.0000 | Pathway Filter |
|---|---|

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**CALCULATION SHEET**
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|---|---|---|---|---|

```
Noble gases (atoms)     0.0000E+00
Elemental I (atoms)     0.0000E+00
Organic I (atoms)       0.0000E+00
Aerosols (kg)           0.0000E+00

CR Exhaust to Environment Transport Group Inventory:

                         Pathway
Time (h) =  24.0000       Filter
Noble gases (atoms)     0.0000E+00
Elemental I (atoms)     0.0000E+00
Organic I (atoms)       0.0000E+00
Aerosols (kg)           0.0000E+00
```

**Control Room Compartment Nuclide Inventory:**

| Time (h) = 24.0000 | Ci | kg | Atoms | Bq |
|---|---|---|---|---|
| Co-58 | 6.5736E-07 | 2.0673E-14 | 2.1465E+11 | 2.4322E+04 |
| Co-60 | 5.0788E-07 | 4.4929E-13 | 4.5095E+12 | 1.8791E+04 |
| Kr-85 | 8.7295E-03 | 2.2250E-08 | 1.5764E+17 | 3.2299E+08 |
| Kr-85m | 4.0313E-03 | 4.8985E-13 | 3.4706E+12 | 1.4916E+08 |
| Kr-87 | 4.5863E-07 | 1.6191E-17 | 1.1208E+08 | 1.6969E+04 |
| Kr-88 | 1.1991E-03 | 9.5626E-14 | 6.5440E+11 | 4.4366E+07 |
| Rb-86 | 1.6975E-05 | 2.0862E-13 | 1.4609E+12 | 6.2808E+05 |
| Sr-89 | 6.1377E-04 | 2.1127E-11 | 1.4295E+14 | 2.2710E+07 |
| Sr-90 | 6.7155E-05 | 4.9231E-10 | 3.2942E+15 | 2.4847E+06 |
| Sr-91 | 1.3451E-04 | 3.7107E-14 | 2.4556E+11 | 4.9769E+06 |
| Sr-92 | 1.4124E-06 | 1.1237E-16 | 7.3554E+08 | 5.2259E+04 |
| Y-90 | 5.2740E-07 | 9.6938E-16 | 6.4864E+09 | 1.9514E+04 |
| Y-91 | 7.5270E-06 | 3.0693E-13 | 2.0311E+12 | 2.7850E+05 |
| Y-92 | 6.4151E-08 | 6.6669E-18 | 4.3640E+07 | 2.3736E+03 |
| Y-93 | 1.7623E-06 | 5.2821E-16 | 3.4204E+09 | 6.5205E+04 |
| Zr-95 | 9.7058E-06 | 4.5179E-13 | 2.8640E+12 | 3.5911E+05 |
| Zr-97 | 3.5618E-06 | 1.8632E-15 | 1.1568E+10 | 1.3179E+05 |
| Nb-95 | 9.6910E-06 | 2.4783E-13 | 1.5710E+12 | 3.5857E+05 |
| Mo-99 | 1.0346E-04 | 2.1572E-13 | 1.3122E+12 | 3.8281E+06 |
| Tc-99m | 6.4766E-06 | 1.2317E-15 | 7.4924E+09 | 2.3964E+05 |
| Ru-103 | 1.0644E-04 | 3.2979E-12 | 1.9282E+13 | 3.9382E+06 |
| Ru-105 | 1.4116E-06 | 2.1000E-16 | 1.2044E+09 | 5.2231E+04 |
| Ru-106 | 4.0762E-05 | 1.2184E-11 | 6.9220E+13 | 1.5082E+06 |
| Rh-105 | 4.1592E-05 | 4.9277E-14 | 2.8262E+11 | 1.5389E+06 |
| Sb-127 | 1.2290E-04 | 4.6021E-13 | 2.1822E+12 | 4.5473E+06 |
| Sb-129 | 7.8611E-06 | 1.3979E-15 | 6.5260E+09 | 2.9086E+05 |
| Te-127 | 2.2722E-05 | 8.6097E-15 | 4.0826E+10 | 8.4071E+05 |
| Te-127m | 1.9624E-05 | 2.0805E-12 | 9.8652E+12 | 7.2609E+05 |
| Te-129m | 6.4711E-05 | 2.1481E-11 | 1.0028E+13 | 2.3943E+06 |
| Te-131m | 1.1326E-04 | 1.4203E-13 | 6.5293E+11 | 4.1905E+06 |
| Te-132 | 1.6165E-03 | 5.3245E-12 | 2.4291E+13 | 5.9809E+07 |
| I-131 | 1.0361E-02 | 8.3575E-11 | 3.8420E+14 | 3.8337E+08 |
| I-132 | 8.3948E-06 | 8.1328E-16 | 3.7104E+09 | 3.1061E+05 |
| I-133 | 1.0255E-02 | 9.0531E-12 | 4.0992E+13 | 3.7945E+08 |
| I-135 | 1.5815E-03 | 4.5033E-13 | 2.0088E+12 | 5.8515E+07 |
| Xe-133 | 1.0878E+00 | 5.8112E-09 | 2.6313E+16 | 4.0247E+10 |
| Xe-135 | 6.8069E-02 | 2.6655E-11 | 1.1890E+14 | 2.5186E+09 |
| Cs-134 | 1.8388E-03 | 1.4212E-09 | 6.3872E+15 | 6.8037E+07 |

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**CALCULATION SHEET**
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|---|---|---|---|---|

| | | | | |
|---|---|---|---|---|
| Cs-136 | 4.8147E-04 | 6.5693E-12 | 2.9089E+13 | 1.7815E+07 |
| Cs-137 | 1.2331E-03 | 1.4176E-08 | 6.2315E+16 | 4.5624E+07 |
| Ba-139 | 3.4571E-09 | 2.1135E-19 | 9.1568E+05 | 1.2791E+02 |
| Ba-140 | 9.9653E-04 | 1.3612E-11 | 5.8553E+13 | 3.6872E+07 |
| La-140 | 6.9348E-06 | 1.2477E-14 | 5.3668E+10 | 2.5659E+05 |
| La-141 | 1.1712E-07 | 2.0709E-17 | 8.8447E+07 | 4.3333E+03 |
| Ce-141 | 2.3632E-05 | 8.2939E-13 | 3.5423E+12 | 8.7439E+05 |
| Ce-143 | 1.4144E-05 | 2.1299E-14 | 8.9697E+10 | 5.2334E+05 |
| Ce-144 | 1.9414E-05 | 6.0870E-12 | 2.5456E+13 | 7.1833E+05 |
| Pr-143 | 8.9485E-06 | 1.3289E-13 | 5.5963E+11 | 3.3110E+05 |
| Nd-147 | 3.6946E-06 | 4.5670E-14 | 1.8709E+11 | 1.3670E+05 |
| Np-239 | 1.9626E-04 | 8.4596E-13 | 2.1316E+12 | 7.2614E+06 |
| Pu-238 | 7.6742E-08 | 4.4827E-12 | 1.1343E+13 | 2.8394E+03 |
| Pu-239 | 5.9730E-09 | 9.6096E-11 | 2.4213E+14 | 2.2100E+02 |
| Pu-240 | 6.4412E-09 | 2.8268E-11 | 7.0930E+13 | 2.3833E+02 |
| Pu-241 | 2.6672E-06 | 2.5892E-11 | 6.4699E+13 | 9.8686E+04 |
| Am-241 | 1.6406E-09 | 4.7800E-13 | 1.1944E+12 | 6.0702E+01 |
| Cm-242 | 3.8392E-07 | 1.1584E-13 | 2.8826E+11 | 1.4205E+04 |
| Cm-244 | 3.1193E-08 | 3.8557E-13 | 9.5162E+11 | 1.1542E+03 |

Control Room Transport Group Inventory:

| Time (h) = 24.0000 | Atmosphere | Sump | Overlying Pool |
|---|---|---|---|
| Noble gases (atoms) | 1.8855E+17 | 0.0000E+00 | 0.0000E+00 |
| Elemental I (atoms) | 4.6196E+13 | 0.0000E+00 | 0.0000E+00 |
| Organic I (atoms) | 1.6893E+13 | 0.0000E+00 | 0.0000E+00 |
| Aerosols (kg) | 1.6450E-08 | 0.0000E+00 | 0.0000E+00 |

| Time (h) = 24.0000 | Deposition Surfaces | Recirculating Filter |
|---|---|---|
| Noble gases (atoms) | 0.0000E+00 | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 | 0.0000E+00 |

CR Filtered Air Intake Transport Group Inventory:

| Time (h) = 24.0000 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 |

CR Unfiltered Inleakage Transport Group Inventory:

| Time (h) = 24.0000 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 |

CR Exhaust to Environment Transport Group Inventory:

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|---|---|---|---|---|

| Time (h) = 24.0000 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 |

Exclusion Area Boundary Doses:

| Time (h) = 96.0000 | Whole Body | Thyroid | TEDE |
|---|---|---|---|
| Delta dose (rem) | 1.1129E+00 | 4.8593E+02 | 2.9973E+01 |
| Accumulated dose (rem) | 6.6275E+00 | 1.5714E+03 | 9.2902E+01 |

Low Population Zone Doses:

| Time (h) = 96.0000 | Whole Body | Thyroid | TEDE |
|---|---|---|---|
| Delta dose (rem) | 2.2259E-02 | 6.3865E+00 | 4.0156E-01 |
| Accumulated dose (rem) | 5.3076E-01 | 9.5870E+01 | 5.5727E+00 |

Control Room Doses:

| Time (h) = 96.0000 | Whole Body | Thyroid | TEDE |
|---|---|---|---|
| Delta dose (rem) | 6.1670E-03 | 4.6731E+01 | 2.7687E+00 |
| Accumulated dose (rem) | 8.3971E-02 | 3.2396E+02 | 1.7419E+01 |

Environment Integral Nuclide Release:

| Time (h) = 96.0000 | Ci | kg | Atoms | Bq |
|---|---|---|---|---|
| Co-58 | 2.6290E-01 | 8.2677E-09 | 8.5844E+16 | 9.7272E+09 |
| Co-60 | 2.0342E-01 | 1.7996E-07 | 1.8062E+18 | 7.5267E+09 |
| Kr-85 | 2.5621E+03 | 6.5304E-03 | 4.6267E+22 | 9.4797E+13 |
| Kr-85m | 4.3291E+03 | 5.2605E-07 | 3.7270E+18 | 1.6018E+14 |
| Kr-87 | 1.1624E+03 | 4.1037E-08 | 2.8406E+17 | 4.3009E+13 |
| Kr-88 | 6.4942E+03 | 5.1791E-07 | 3.5442E+18 | 2.4029E+14 |
| Rb-86 | 6.9456E+00 | 8.5361E-08 | 5.9774E+17 | 2.5699E+11 |
| Sr-89 | 2.4532E+02 | 8.4441E-06 | 5.7136E+19 | 9.0768E+12 |
| Sr-90 | 2.6899E+01 | 1.9720E-04 | 1.3195E+21 | 9.9528E+11 |
| Sr-91 | 1.2133E+02 | 3.3470E-08 | 2.2150E+17 | 4.4892E+12 |
| Sr-92 | 5.1323E+01 | 4.0831E-09 | 2.6727E+16 | 1.8989E+12 |
| Y-90 | 2.1123E-01 | 3.8824E-10 | 2.5978E+15 | 7.8155E+09 |
| Y-91 | 3.0093E+00 | 1.2271E-07 | 8.1206E+17 | 1.1134E+11 |
| Y-92 | 6.5475E-01 | 6.8045E-11 | 4.4541E+14 | 2.4226E+10 |
| Y-93 | 1.4736E+00 | 4.4169E-10 | 2.8601E+15 | 5.4524E+10 |
| Zr-95 | 3.8810E+00 | 1.8066E-07 | 1.1452E+18 | 1.4360E+11 |
| Zr-97 | 1.9186E+00 | 1.0036E-09 | 6.2310E+15 | 7.0989E+10 |
| Nb-95 | 3.8701E+00 | 9.8971E-08 | 6.2738E+17 | 1.4319E+11 |
| Mo-99 | 4.1390E+01 | 8.6299E-08 | 5.2496E+17 | 1.5314E+12 |
| Tc-99m | 1.2847E+01 | 2.4432E-09 | 1.4862E+16 | 4.7534E+11 |
| Ru-103 | 4.2518E+01 | 1.3174E-06 | 7.7025E+18 | 1.5732E+12 |
| Ru-105 | 6.3463E+00 | 9.4410E-10 | 5.4148E+15 | 2.3481E+11 |
| Ru-106 | 1.6323E+01 | 4.8789E-06 | 2.7718E+19 | 6.0394E+11 |
| Rh-105 | 1.7542E+01 | 2.0783E-08 | 1.1920E+17 | 6.4904E+11 |
| Sb-127 | 4.8803E+01 | 1.8275E-07 | 8.6656E+17 | 1.8057E+12 |
| Sb-129 | 3.8611E+01 | 6.8662E-09 | 3.2054E+16 | 1.4286E+12 |
| Te-127 | 2.0923E+01 | 7.9282E-09 | 3.7594E+16 | 7.7416E+11 |
| Te-127m | 7.8525E+00 | 8.3248E-07 | 3.9475E+18 | 2.9054E+11 |
| Te-129 | 8.6774E+00 | 4.1435E-10 | 1.9343E+15 | 3.2106E+11 |

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|---|---|---|---|---|

| | | | | |
|---|---|---|---|---|
| Te-129m | 2.5839E+01 | 8.5771E-06 | 4.0041E+18 | 9.5604E+11 |
| Te-131m | 4.9239E+01 | 6.1749E-08 | 2.8386E+17 | 1.8218E+12 |
| Te-132 | 6.4361E+02 | 2.1200E-06 | 9.6718E+18 | 2.3814E+13 |
| I-131 | 4.0608E+03 | 3.2755E-05 | 1.5058E+20 | 1.5025E+14 |
| I-132 | 8.3189E+02 | 8.0592E-08 | 3.6768E+17 | 3.0780E+13 |
| I-133 | 4.8767E+03 | 4.3049E-06 | 1.9492E+19 | 1.8044E+14 |
| I-134 | 3.8775E+02 | 1.4535E-08 | 6.5324E+16 | 1.4347E+13 |
| I-135 | 2.5257E+03 | 7.1919E-07 | 3.2082E+18 | 9.3451E+13 |
| Xe-133 | 2.9135E+05 | 1.5565E-03 | 7.0478E+21 | 1.0780E+16 |
| Xe-135 | 2.2537E+04 | 8.8251E-06 | 3.9367E+19 | 8.3386E+14 |
| Cs-134 | 7.5545E+02 | 5.8388E-04 | 2.6240E+21 | 2.7951E+13 |
| Cs-136 | 1.9676E+02 | 2.6847E-06 | 1.1888E+19 | 7.2803E+12 |
| Cs-137 | 5.0665E+02 | 5.8248E-03 | 2.5604E+22 | 1.8746E+13 |
| Ba-139 | 2.8142E+01 | 1.7205E-09 | 7.4539E+15 | 1.0412E+12 |
| Ba-140 | 3.9635E+02 | 5.4140E-06 | 2.3289E+19 | 1.4665E+13 |
| La-140 | 2.8732E+00 | 5.1692E-09 | 2.2235E+16 | 1.0631E+11 |
| La-141 | 7.9804E-01 | 1.4111E-10 | 6.0270E+14 | 2.9528E+10 |
| La-142 | 3.5787E-01 | 2.5000E-11 | 1.0602E+14 | 1.3241E+10 |
| Ce-141 | 9.4353E+00 | 3.3114E-07 | 1.4143E+18 | 3.4910E+11 |
| Ce-143 | 6.0349E+00 | 9.0875E-09 | 3.8270E+16 | 2.2329E+11 |
| Ce-144 | 7.7735E+00 | 2.4372E-06 | 1.0193E+19 | 2.8762E+11 |
| Pr-143 | 3.5603E+00 | 5.2871E-08 | 2.2265E+17 | 1.3173E+11 |
| Nd-147 | 1.4684E+00 | 1.8151E-08 | 7.4358E+16 | 5.4329E+10 |
| Np-239 | 7.9053E+01 | 3.4076E-07 | 8.5862E+17 | 2.9250E+12 |
| Pu-238 | 3.0740E-02 | 1.7956E-06 | 4.5434E+18 | 1.1374E+09 |
| Pu-239 | 2.3926E-03 | 3.8492E-05 | 9.6990E+19 | 8.8524E+07 |
| Pu-240 | 2.5801E-03 | 1.1323E-05 | 2.8412E+19 | 9.5464E+07 |
| Pu-241 | 1.0683E+00 | 1.0371E-05 | 2.5915E+19 | 3.9529E+10 |
| Am-241 | 6.5716E-04 | 1.9147E-07 | 4.7845E+17 | 2.4315E+07 |
| Cm-242 | 1.5368E-01 | 4.6368E-08 | 1.1539E+17 | 5.6860E+09 |
| Cm-244 | 1.2495E-02 | 1.5444E-07 | 3.8118E+17 | 4.6230E+08 |

Environment Transport Group Inventory:

| Time (h) = 96.0000 | Present Release | Release Rate/s | Total Release |
|---|---|---|---|
| Noble gases (atoms) | 5.5347E+22 | 1.6015E+17 | 5.5347E+22 |
| Elemental I (atoms) | 1.4655E+19 | 4.2405E+13 | 1.4655E+19 |
| Organic I (atoms) | 4.9649E+18 | 1.4366E+13 | 4.9649E+18 |
| Aerosols (kg) | 6.7513E-03 | 1.9535E-08 | 6.7513E-03 |

CR Filtered Air Intake Transport Group Inventory:

| Time (h) = 96.0000 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 |

CR Unfiltered Inleakage Transport Group Inventory:

| Time (h) = 96.0000 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 |

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**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 1 | System Nos. | Sheet 206 of 1000 |
|---|---|---|---|---|

```
Aerosols (kg)          0.0000E+00

CR Exhaust to Environment Transport Group Inventory:

                        Pathway
Time (h) =  96.0000      Filter
Noble gases (atoms)    0.0000E+00
Elemental I (atoms)    0.0000E+00
Organic I (atoms)      0.0000E+00
Aerosols (kg)          0.0000E+00
```

**Control Room Compartment Nuclide Inventory:**

| Time (h) = 96.0000 | Ci | kg | Atoms | Bq |
|---|---|---|---|---|
| Co-58 | 1.6200E-07 | 5.0947E-15 | 5.2898E+10 | 5.9940E+03 |
| Co-60 | 1.2875E-07 | 1.1390E-13 | 1.1432E+12 | 4.7639E+03 |
| Kr-85 | 3.0573E-03 | 7.7925E-09 | 5.5209E+16 | 1.1312E+08 |
| Kr-85m | 2.0513E-08 | 2.4926E-18 | 1.7660E+07 | 7.5898E+02 |
| Rb-86 | 3.8538E-06 | 4.7363E-14 | 3.3166E+11 | 1.4259E+05 |
| Sr-89 | 1.4948E-04 | 5.1454E-12 | 3.4816E+13 | 5.5309E+06 |
| Sr-90 | 1.7040E-05 | 1.2492E-10 | 8.3587E+14 | 6.3047E+05 |
| Sr-91 | 1.7854E-07 | 4.9253E-17 | 3.2594E+08 | 6.6060E+03 |
| Y-90 | 6.1370E-08 | 1.1280E-16 | 7.5477E+08 | 2.2707E+03 |
| Y-91 | 1.8436E-06 | 7.5174E-14 | 4.9748E+11 | 6.8212E+04 |
| Y-93 | 3.1959E-09 | 9.5791E-19 | 6.2028E+06 | 1.1825E+02 |
| Zr-95 | 2.3844E-06 | 1.1099E-13 | 7.0359E+11 | 8.8224E+04 |
| Zr-97 | 4.7168E-08 | 2.4674E-17 | 1.5319E+08 | 1.7452E+03 |
| Nb-95 | 2.3182E-06 | 5.9284E-14 | 3.7581E+11 | 8.5773E+04 |
| Mo-99 | 1.2327E-05 | 2.5702E-14 | 1.5634E+11 | 4.5610E+05 |
| Tc-99m | 4.1254E-10 | 7.8455E-20 | 4.7724E+05 | 1.5264E+01 |
| Ru-103 | 2.5620E-05 | 7.9382E-13 | 4.6413E+12 | 9.4793E+05 |
| Ru-106 | 1.0287E-05 | 3.0747E-12 | 1.7468E+13 | 3.8061E+05 |
| Rh-105 | 2.5735E-06 | 3.0490E-15 | 1.7487E+10 | 9.5220E+04 |
| Sb-127 | 1.8174E-05 | 6.8054E-14 | 3.2270E+11 | 6.7244E+05 |
| Te-127 | 2.7722E-08 | 1.0504E-17 | 4.9809E+07 | 1.0257E+03 |
| Te-127m | 4.8862E-06 | 5.1802E-13 | 2.4564E+12 | 1.8079E+05 |
| Te-129m | 1.5437E-05 | 5.1244E-12 | 2.3922E+12 | 5.7118E+05 |
| Te-131m | 5.4458E-06 | 6.8294E-15 | 3.1395E+10 | 2.0150E+05 |
| Te-132 | 2.1671E-04 | 7.1381E-13 | 3.2566E+12 | 8.0182E+06 |
| I-131 | 2.1220E-03 | 1.7116E-11 | 7.8685E+13 | 7.8514E+07 |
| I-133 | 2.4694E-04 | 2.1799E-13 | 9.8703E+11 | 9.1367E+06 |
| I-135 | 2.2066E-07 | 6.2833E-17 | 2.8029E+08 | 8.1645E+03 |
| Xe-133 | 2.5640E-01 | 1.3698E-09 | 6.2024E+15 | 9.4869E+09 |
| Xe-135 | 9.8430E-05 | 3.8544E-14 | 1.7194E+11 | 3.6419E+06 |
| Cs-134 | 4.6539E-04 | 3.5970E-10 | 1.6165E+15 | 1.7219E+07 |
| Cs-136 | 1.0426E-04 | 1.4225E-12 | 6.2989E+12 | 3.8575E+06 |
| Cs-137 | 3.1288E-04 | 3.5971E-09 | 1.5812E+16 | 1.1577E+07 |
| Ba-140 | 2.1482E-04 | 2.9343E-12 | 1.2622E+13 | 7.9483E+06 |
| La-140 | 5.0970E-07 | 9.1700E-16 | 3.9445E+09 | 1.8859E+04 |
| Ce-141 | 5.6258E-06 | 1.9744E-13 | 8.4328E+11 | 2.0816E+05 |
| Ce-143 | 7.9116E-07 | 1.1914E-15 | 5.0171E+09 | 2.9273E+04 |
| Ce-144 | 4.8912E-06 | 1.5335E-12 | 6.4134E+12 | 1.8098E+05 |
| Pr-143 | 1.9482E-06 | 2.8931E-14 | 1.2184E+11 | 7.2082E+04 |
| Nd-147 | 7.7588E-07 | 9.5907E-15 | 3.9290E+10 | 2.8707E+04 |

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**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 1 | System Nos. | Sheet 207 of 1000 |
|---|---|---|---|---|

| | | | | |
|---|---|---|---|---|
| **Np-239** | **2.0598E-05** | **8.8786E-14** | **2.2372E+11** | **7.6211E+05** |
| **Pu-238** | **1.9475E-08** | **1.1376E-12** | **2.8784E+12** | **7.2057E+02** |
| **Pu-239** | **1.5159E-09** | **2.4388E-11** | **6.1451E+13** | **5.6087E+01** |
| **Pu-240** | **1.6347E-09** | **7.1740E-12** | **1.8001E+13** | **6.0484E+01** |
| **Pu-241** | **6.7663E-07** | **6.5684E-12** | **1.6413E+13** | **2.5035E+04** |
| **Am-241** | **4.1636E-10** | **1.2131E-13** | **3.0313E+11** | **1.5405E+01** |
| **Cm-242** | **9.6198E-08** | **2.9025E-14** | **7.2229E+10** | **3.5593E+03** |
| **Cm-244** | **7.9140E-09** | **9.7822E-14** | **2.4143E+11** | **2.9282E+02** |

Control Room Transport Group Inventory:

| Time (h) = 96.0000 | Atmosphere | Sump | Overlying Pool |
|---|---|---|---|
| Noble gases (atoms) | 6.6069E+16 | 0.0000E+00 | 0.0000E+00 |
| Elemental I (atoms) | 1.6187E+13 | 0.0000E+00 | 0.0000E+00 |
| Organic I (atoms) | 5.9192E+12 | 0.0000E+00 | 0.0000E+00 |
| Aerosols (kg) | 4.1749E-09 | 0.0000E+00 | 0.0000E+00 |

| Time (h) = 96.0000 | Deposition Surfaces | Recirculating Filter |
|---|---|---|
| Noble gases (atoms) | 0.0000E+00 | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 | 0.0000E+00 |

CR Filtered Air Intake Transport Group Inventory:

| Time (h) = 96.0000 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 |

CR Unfiltered Inleakage Transport Group Inventory:

| Time (h) = 96.0000 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 |

CR Exhaust to Environment Transport Group Inventory:

| Time (h) = 96.0000 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 |

Exclusion Area Boundary Doses:

| Time (h) = 720.0000 | Whole Body | Thyroid | TEDE |
|---|---|---|---|
| Delta dose (rem) | 1.8646E+00 | 6.8634E+02 | 5.7401E+01 |
| Accumulated dose (rem) | 8.4920E+00 | 2.2577E+03 | 1.5030E+02 |

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**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 1 | System Nos. | Sheet 208 of 1000 |
|---|---|---|---|---|

**Low Population Zone Doses:**

| Time (h) = 720.0000 | Whole Body | Thyroid | TEDE |
|---|---|---|---|
| Delta dose (rem) | 9.3228E-03 | 2.2551E+00 | 1.9180E-01 |
| Accumulated dose (rem) | 5.4009E-01 | 9.8125E+01 | 5.7645E+00 |

**Control Room Doses:**

| Time (h) = 720.0000 | Whole Body | Thyroid | TEDE |
|---|---|---|---|
| Delta dose (rem) | 6.6542E-03 | 4.3136E+01 | 3.4940E+00 |
| Accumulated dose (rem) | 9.0625E-02 | 3.6709E+02 | 2.0913E+01 |

Environment Integral Nuclide Release:

| Time (h) = 720.0000 | Ci | kg | Atoms | Bq |
|---|---|---|---|---|
| Co-58 | 4.9316E-01 | 1.5509E-08 | 1.6103E+17 | 1.8247E+10 |
| Co-60 | 4.0012E-01 | 3.5397E-07 | 3.5527E+18 | 1.4804E+10 |
| Kr-85 | 1.5991E+04 | 4.0760E-02 | 2.8878E+23 | 5.9168E+14 |
| Kr-85m | 4.3291E+03 | 5.2605E-07 | 3.7270E+18 | 1.6018E+14 |
| Kr-87 | 1.1624E+03 | 4.1037E-08 | 2.8406E+17 | 4.3009E+13 |
| Kr-88 | 6.4942E+03 | 5.1791E-07 | 3.5442E+18 | 2.4029E+14 |
| Rb-86 | 1.1472E+01 | 1.4099E-07 | 9.8729E+17 | 4.2447E+11 |
| Sr-89 | 4.5170E+02 | 1.5548E-05 | 1.0520E+20 | 1.6713E+13 |
| Sr-90 | 5.2991E+01 | 3.8848E-04 | 2.5994E+21 | 1.9607E+12 |
| Sr-91 | 1.2134E+02 | 3.3474E-08 | 2.2152E+17 | 4.4897E+12 |
| Sr-92 | 5.1323E+01 | 4.0831E-09 | 2.6727E+16 | 1.8989E+12 |
| Y-90 | 2.3933E-01 | 4.3990E-10 | 2.9435E+15 | 8.8553E+09 |
| Y-91 | 5.5899E+00 | 2.2794E-07 | 1.5084E+18 | 2.0683E+11 |
| Y-92 | 6.5475E-01 | 6.8045E-11 | 4.4541E+14 | 2.4226E+10 |
| Y-93 | 1.4739E+00 | 4.4177E-10 | 2.8606E+15 | 5.4533E+10 |
| Zr-95 | 7.2439E+00 | 3.3719E-07 | 2.1375E+18 | 2.6802E+11 |
| Zr-97 | 1.9254E+00 | 1.0072E-09 | 6.2530E+15 | 7.1240E+10 |
| Nb-95 | 6.9352E+00 | 1.7736E-07 | 1.1243E+18 | 2.5660E+11 |
| Mo-99 | 4.7164E+01 | 9.8337E-08 | 5.9818E+17 | 1.7451E+12 |
| Tc-99m | 1.2847E+01 | 2.4432E-09 | 1.4862E+16 | 4.7534E+11 |
| Ru-103 | 7.6897E+01 | 2.3826E-06 | 1.3931E+19 | 2.8452E+12 |
| Ru-105 | 6.3463E+00 | 9.4410E-10 | 5.4148E+15 | 2.3481E+11 |
| Ru-106 | 3.1852E+01 | 9.5206E-06 | 5.4089E+19 | 1.1785E+12 |
| Rh-105 | 1.8275E+01 | 2.1651E-08 | 1.2418E+17 | 6.7617E+11 |
| Sb-127 | 5.9536E+01 | 2.2294E-07 | 1.0571E+18 | 2.2028E+12 |
| Sb-129 | 3.8611E+01 | 6.8662E-09 | 3.2054E+16 | 1.4286E+12 |
| Te-127 | 2.0925E+01 | 7.9290E-09 | 3.7598E+16 | 7.7424E+11 |
| Te-127m | 1.4979E+01 | 1.5880E-06 | 7.5302E+18 | 5.5424E+11 |
| Te-129 | 8.6774E+00 | 4.1435E-10 | 1.9343E+15 | 3.2106E+11 |
| Te-129m | 4.6119E+01 | 1.5309E-05 | 7.1468E+18 | 1.7064E+12 |
| Te-131m | 5.0582E+01 | 6.3433E-08 | 2.9161E+17 | 1.8715E+12 |
| Te-132 | 7.5809E+02 | 2.4971E-06 | 1.1392E+19 | 2.8049E+13 |
| I-131 | 6.2232E+03 | 5.0197E-05 | 2.3076E+20 | 2.3026E+14 |
| I-132 | 8.3189E+02 | 8.0592E-08 | 3.6768E+17 | 3.0780E+13 |
| I-133 | 4.9210E+03 | 4.3441E-06 | 1.9670E+19 | 1.8208E+14 |
| I-134 | 3.8775E+02 | 1.4535E-08 | 6.5324E+16 | 1.4347E+13 |
| I-135 | 2.5257E+03 | 7.1919E-07 | 3.2082E+18 | 9.3451E+13 |
| Xe-133 | 6.0682E+05 | 3.2419E-03 | 1.4679E+22 | 2.2452E+16 |
| Xe-135 | 2.2545E+04 | 8.8282E-06 | 3.9381E+19 | 8.3415E+14 |
| Cs-134 | 1.4633E+03 | 1.1310E-03 | 5.0828E+21 | 5.4142E+13 |

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**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 1 | System Nos. | Sheet 209 of 1000 |
|---|---|---|---|---|

| | | | | |
|---|---|---|---|---|
| Cs-136 | 3.0771E+02 | 4.1985E-06 | 1.8591E+19 | 1.1385E+13 |
| Cs-137 | 9.8575E+02 | 1.1333E-02 | 4.9816E+22 | 3.6473E+13 |
| Ba-139 | 2.8142E+01 | 1.7205E-09 | 7.4539E+15 | 1.0412E+12 |
| Ba-140 | 6.2291E+02 | 8.5087E-06 | 3.6600E+19 | 2.3048E+13 |
| La-140 | 3.0353E+00 | 5.4609E-09 | 2.3490E+16 | 1.1231E+11 |
| La-141 | 7.9804E-01 | 1.4111E-10 | 6.0270E+14 | 2.9528E+10 |
| La-142 | 3.5787E-01 | 2.5000E-11 | 1.0602E+14 | 1.3241E+10 |
| Ce-141 | 1.6790E+01 | 5.8925E-07 | 2.5167E+18 | 6.2122E+11 |
| Ce-143 | 6.2472E+00 | 9.4072E-09 | 3.9616E+16 | 2.3114E+11 |
| Ce-144 | 1.5126E+01 | 4.7424E-06 | 1.9833E+19 | 5.5965E+11 |
| Pr-143 | 5.6560E+00 | 8.3994E-08 | 3.5372E+17 | 2.0927E+11 |
| Nd-147 | 2.2459E+00 | 2.7762E-08 | 1.1373E+17 | 8.3097E+10 |
| Np-239 | 8.7645E+01 | 3.7779E-07 | 9.5193E+17 | 3.2429E+12 |
| Pu-238 | 6.0570E-02 | 3.5381E-06 | 8.9524E+18 | 2.2411E+09 |
| Pu-239 | 4.7149E-03 | 7.5855E-05 | 1.9113E+20 | 1.7445E+08 |
| Pu-240 | 5.0845E-03 | 2.2314E-05 | 5.5990E+19 | 1.8813E+08 |
| Pu-241 | 2.1039E+00 | 2.0424E-05 | 5.1035E+19 | 7.7844E+10 |
| Am-241 | 1.2950E-03 | 3.7731E-07 | 9.4283E+17 | 4.7915E+07 |
| Cm-242 | 2.9626E-01 | 8.9388E-08 | 2.2244E+17 | 1.0962E+10 |
| Cm-244 | 2.4609E-02 | 3.0418E-07 | 7.5075E+17 | 9.1054E+08 |

Environment Transport Group Inventory:

| Time (h) = 720.0000 | Present Release | Release Rate/s | Total Release |
|---|---|---|---|
| Noble gases (atoms) | 3.4623E+23 | 1.3358E+17 | 3.4623E+23 |
| Elemental I (atoms) | 8.5924E+19 | 3.3150E+13 | 8.5924E+19 |
| Organic I (atoms) | 3.1026E+19 | 1.1970E+13 | 3.1026E+19 |
| Aerosols (kg) | 1.3147E-02 | 5.0723E-09 | 1.3147E-02 |

CR Filtered Air Intake Transport Group Inventory:

| Time (h) = 720.0000 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 |

CR Unfiltered Inleakage Transport Group Inventory:

| Time (h) = 720.0000 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 |

CR Exhaust to Environment Transport Group Inventory:

| Time (h) = 720.0000 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 |

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**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 1 | System Nos. | Sheet 210 of 1000 |
|---|---|---|---|---|

**Control Room Compartment Nuclide Inventory:**

| Time (h) = 720.0000 | Ci | kg | Atoms | Bq |
|---|---|---|---|---|
| Co-58 | 5.9348E-09 | 1.8664E-16 | 1.9379E+09 | 2.1959E+02 |
| Co-60 | 6.0274E-09 | 5.3322E-15 | 5.3519E+10 | 2.2301E+02 |
| Kr-85 | 2.0933E-03 | 5.3355E-09 | 3.7801E+16 | 7.7453E+07 |
| Rb-86 | 6.9324E-08 | 8.5199E-16 | 5.9661E+09 | 2.5650E+03 |
| Sr-89 | 4.9436E-06 | 1.7016E-13 | 1.1514E+12 | 1.8291E+05 |
| Sr-90 | 8.0383E-07 | 5.8929E-12 | 3.9431E+13 | 2.9742E+04 |
| Y-91 | 6.4022E-08 | 2.6106E-15 | 1.7276E+10 | 2.3688E+03 |
| Zr-95 | 8.5015E-08 | 3.9573E-15 | 2.5086E+10 | 3.1455E+03 |
| Nb-95 | 6.5602E-08 | 1.6777E-15 | 1.0635E+10 | 2.4273E+03 |
| Mo-99 | 8.3022E-10 | 1.7310E-18 | 1.0530E+07 | 3.0718E+01 |
| Ru-103 | 7.6517E-07 | 2.3709E-14 | 1.3862E+11 | 2.8311E+04 |
| Ru-106 | 4.6287E-07 | 1.3835E-13 | 7.8602E+11 | 1.7126E+04 |
| Sb-127 | 7.9608E-09 | 2.9810E-17 | 1.4135E+08 | 2.9455E+02 |
| Te-127m | 1.9571E-07 | 2.0748E-14 | 9.8384E+10 | 7.2412E+03 |
| Te-129m | 4.2665E-07 | 1.4163E-13 | 6.6115E+10 | 1.5786E+04 |
| Te-132 | 4.0573E-08 | 1.3364E-16 | 6.0970E+08 | 1.5012E+03 |
| I-131 | 3.3308E-05 | 2.6867E-13 | 1.2351E+12 | 1.2324E+06 |
| Xe-133 | 5.6779E-03 | 3.0334E-11 | 1.3735E+14 | 2.1008E+08 |
| Cs-134 | 2.1471E-05 | 1.6595E-11 | 7.4581E+13 | 7.9444E+05 |
| Cs-136 | 1.2447E-06 | 1.6984E-14 | 7.5204E+10 | 4.6055E+04 |
| Cs-137 | 1.4761E-05 | 1.6970E-10 | 7.4595E+14 | 5.4614E+05 |
| Ba-140 | 2.4670E-06 | 3.3698E-14 | 1.4495E+11 | 9.1278E+04 |
| Ce-141 | 1.5269E-07 | 5.3588E-15 | 2.2887E+10 | 5.6495E+03 |
| Ce-144 | 2.1693E-07 | 6.8015E-14 | 2.8444E+11 | 8.0265E+03 |
| Pr-143 | 2.4371E-08 | 3.6191E-16 | 1.5241E+09 | 9.0171E+02 |
| Nd-147 | 7.1025E-09 | 8.7795E-17 | 3.5967E+08 | 2.6279E+02 |
| Np-239 | 4.6215E-10 | 1.9921E-18 | 5.0195E+06 | 1.7099E+01 |
| Pu-238 | 9.1975E-10 | 5.3724E-14 | 1.3594E+11 | 3.4031E+01 |
| Pu-239 | 7.1631E-11 | 1.1524E-12 | 2.9038E+12 | 2.6503E+00 |
| Pu-240 | 7.7246E-11 | 3.3900E-13 | 8.5062E+11 | 2.8581E+00 |
| Pu-241 | 3.1864E-08 | 3.0932E-13 | 7.7294E+11 | 1.1790E+03 |
| Am-241 | 1.9672E-11 | 5.7317E-15 | 1.4322E+10 | 7.2787E-01 |
| Cm-242 | 4.0694E-09 | 1.2278E-15 | 3.0554E+09 | 1.5057E+02 |
| Cm-244 | 3.7295E-10 | 4.6099E-15 | 1.1378E+10 | 1.3799E+01 |

Control Room Transport Group Inventory:

| Time (h) = 720.0000 | Atmosphere | Sump | Overlying Pool |
|---|---|---|---|
| Noble gases (atoms) | 4.5447E+16 | 0.0000E+00 | 0.0000E+00 |
| Elemental I (atoms) | 1.1135E+13 | 0.0000E+00 | 0.0000E+00 |
| Organic I (atoms) | 4.0716E+12 | 0.0000E+00 | 0.0000E+00 |
| Aerosols (kg) | 1.9728E-10 | 0.0000E+00 | 0.0000E+00 |

| Time (h) = 720.0000 | Deposition Surfaces | Recirculating Filter |
|---|---|---|
| Noble gases (atoms) | 0.0000E+00 | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 | 0.0000E+00 |

CR Filtered Air Intake Transport Group Inventory:

```
                          Pathway
Time (h) = 720.0000        Filter
Noble gases (atoms)     0.0000E+00
Elemental I (atoms)     0.0000E+00
Organic I (atoms)       0.0000E+00
Aerosols (kg)           0.0000E+00

CR  Unfiltered Inleakage Transport Group Inventory:

                          Pathway
Time (h) = 720.0000        Filter
Noble gases (atoms)     0.0000E+00
Elemental I (atoms)     0.0000E+00
Organic I (atoms)       0.0000E+00
Aerosols (kg)           0.0000E+00

CR Exhaust to Environment Transport Group Inventory:

                          Pathway
Time (h) = 720.0000        Filter
Noble gases (atoms)     0.0000E+00
Elemental I (atoms)     0.0000E+00
Organic I (atoms)       0.0000E+00
Aerosols (kg)           0.0000E+00

    325

#####################################################################
                              I-131 Summary
#####################################################################
```

| Time (hr) | Sprayed Region I-131 (Curies) | Unsprayed Region I-131 (Curies) | Environment I-131 (Curies) |
|---|---|---|---|
| 0.001 | 2.2633E+03 | 1.7074E+03 | 4.5957E-05 |
| 0.010 | 3.9516E+04 | 2.9810E+04 | 1.4010E-02 |
| 0.021 | 8.4730E+04 | 6.3919E+04 | 6.4416E-02 |
| 0.350 | 8.1987E+05 | 9.8651E+05 | 1.4569E+01 |
| 0.491 | 9.8444E+05 | 1.3066E+06 | 2.6626E+01 |
| 0.500 | 1.0120E+06 | 1.3252E+06 | 2.7523E+01 |
| 0.800 | 3.2695E+06 | 3.4391E+06 | 8.5543E+01 |
| 1.100 | 4.7232E+06 | 5.2367E+06 | 1.9069E+02 |
| 1.400 | 5.7683E+06 | 6.6724E+06 | 3.3147E+02 |
| 1.700 | 6.5550E+06 | 7.8020E+06 | 4.9960E+02 |
| 1.800 | 6.7740E+06 | 8.1206E+06 | 5.6062E+02 |
| 2.000 | 5.3565E+06 | 7.0479E+06 | 6.7416E+02 |
| 2.300 | 3.9661E+06 | 5.5360E+06 | 8.1033E+02 |
| 2.600 | 3.0197E+06 | 4.3056E+06 | 9.1502E+02 |
| 2.900 | 2.3255E+06 | 3.3375E+06 | 9.9585E+02 |
| 2.920 | 2.2855E+06 | 3.2600E+06 | 1.0005E+03 |
| 3.300 | 1.6878E+06 | 2.3817E+06 | 1.0762E+03 |
| 3.600 | 1.3314E+06 | 1.8561E+06 | 1.1214E+03 |
| 3.820 | 1.1205E+06 | 1.5393E+06 | 1.1482E+03 |
| 4.000 | 1.2414E+06 | 1.3610E+06 | 1.1680E+03 |
| 4.300 | 1.3718E+06 | 1.1918E+06 | 1.2003E+03 |
| 4.600 | 1.4149E+06 | 1.1111E+06 | 1.2322E+03 |
| 4.900 | 1.4214E+06 | 1.0689E+06 | 1.2635E+03 |

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**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 1 | System Nos. | Sheet 212 of 1000 |
|---|---|---|---|---|

| | | | |
|---|---|---|---|
| 5.200 | 1.4127E+06 | 1.0430E+06 | 1.2945E+03 |
| 5.500 | 1.3979E+06 | 1.0240E+06 | 1.3250E+03 |
| 5.800 | 1.3806E+06 | 1.0080E+06 | 1.3551E+03 |
| 6.100 | 1.3625E+06 | 9.9336E+05 | 1.3847E+03 |
| 6.400 | 1.3442E+06 | 9.7945E+05 | 1.4140E+03 |
| 6.700 | 1.3260E+06 | 9.6593E+05 | 1.4429E+03 |
| 7.000 | 1.3079E+06 | 9.5270E+05 | 1.4714E+03 |
| 7.300 | 1.2901E+06 | 9.3970E+05 | 1.4994E+03 |
| 7.600 | 1.2725E+06 | 9.2690E+05 | 1.5271E+03 |
| 7.900 | 1.2551E+06 | 9.1429E+05 | 1.5545E+03 |
| 8.000 | 1.2494E+06 | 9.1012E+05 | 1.5635E+03 |
| 8.300 | 1.2324E+06 | 8.9776E+05 | 1.5903E+03 |
| 8.600 | 1.2156E+06 | 8.8558E+05 | 1.6168E+03 |
| 8.900 | 1.1991E+06 | 8.7357E+05 | 1.6429E+03 |
| 9.200 | 1.1828E+06 | 8.6174E+05 | 1.6686E+03 |
| 9.500 | 1.1668E+06 | 8.5008E+05 | 1.6940E+03 |
| 9.800 | 1.1509E+06 | 8.3859E+05 | 1.7191E+03 |
| 10.100 | 1.1354E+06 | 8.2726E+05 | 1.7438E+03 |
| 10.400 | 1.1200E+06 | 8.1610E+05 | 1.7681E+03 |
| 24.000 | 7.0378E+05 | 5.1708E+05 | 2.6465E+03 |
| 96.000 | 4.1203E+05 | 3.0995E+05 | 4.0608E+03 |
| 720.000 | 9.2833E+03 | 6.9977E+03 | 6.2232E+03 |

| Time (hr) | Control Room I-131 (Curies) |
|---|---|
| 0.001 | 2.9492E-08 |
| 0.010 | 8.9642E-06 |
| 0.021 | 4.1071E-05 |
| 0.350 | 8.3337E-03 |
| 0.491 | 1.4534E-02 |
| 0.500 | 1.4978E-02 |
| 0.800 | 7.2570E-02 |
| 1.100 | 1.5195E-01 |
| 1.400 | 2.3074E-01 |
| 1.700 | 3.0059E-01 |
| 1.800 | 3.2140E-01 |
| 2.000 | 3.4076E-01 |
| 2.300 | 2.7245E-01 |
| 2.600 | 2.1495E-01 |
| 2.900 | 1.6837E-01 |
| 2.920 | 1.6561E-01 |
| 3.300 | 1.2108E-01 |
| 3.600 | 9.4620E-02 |
| 3.820 | 7.9027E-02 |
| 4.000 | 6.9189E-02 |
| 4.300 | 5.8866E-02 |
| 4.600 | 5.3128E-02 |
| 4.900 | 4.9807E-02 |
| 5.200 | 4.7763E-02 |
| 5.500 | 4.6394E-02 |
| 5.800 | 4.5384E-02 |
| 6.100 | 4.4566E-02 |
| 6.400 | 4.3853E-02 |
| 6.700 | 4.3199E-02 |
| 7.000 | 4.2580E-02 |
| 7.300 | 4.1984E-02 |
| 7.600 | 4.1403E-02 |

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**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 1 | System Nos. | Sheet 213 of 1000 |
|---|---|---|---|---|

```
   7.900       4.0835E-02
   8.000       4.0647E-02
   8.300       2.9785E-02
   8.600       2.3991E-02
   8.900       2.0848E-02
   9.200       1.9093E-02
   9.500       1.8064E-02
   9.800       1.7417E-02
  10.100       1.6971E-02
  10.400       1.6631E-02
  24.000       1.0361E-02
  96.000       2.1220E-03
 720.000       3.3308E-05

#####################################################################
                        Cumulative Dose Summary
#####################################################################
```

| | Exclusion Area Bounda | | Low Population Zone | | Control Room | |
|---|---|---|---|---|---|---|
| Time (hr) | Thyroid (rem) | TEDE (rem) | Thyroid (rem) | TEDE (rem) | Thyroid (rem) | TEDE (rem) |
| 0.001 | 1.9873E-05 | 9.5569E-07 | 3.4777E-06 | 1.6725E-07 | 2.2518E-09 | 9.5658E-11 |
| 0.010 | 6.0580E-03 | 2.9131E-04 | 1.0601E-03 | 5.0978E-05 | 1.0734E-05 | 4.5599E-07 |
| 0.021 | 2.7851E-02 | 1.3387E-03 | 4.8739E-03 | 2.3427E-04 | 8.7053E-05 | 3.6979E-06 |
| 0.350 | 6.2747E+00 | 2.9980E-01 | 1.0981E+00 | 5.2466E-02 | 2.9107E-01 | 1.2379E-02 |
| 0.491 | 1.1446E+01 | 5.4512E-01 | 2.0031E+00 | 9.5395E-02 | 7.2731E-01 | 3.0935E-02 |
| 0.500 | 1.1830E+01 | 5.6327E-01 | 2.0703E+00 | 9.8572E-02 | 7.6470E-01 | 3.2526E-02 |
| 0.800 | 3.6979E+01 | 1.9018E+00 | 6.4713E+00 | 3.3281E-01 | 4.0919E+00 | 1.8604E-01 |
| 1.100 | 8.2640E+01 | 4.4500E+00 | 1.4462E+01 | 7.7875E-01 | 1.3313E+01 | 6.4300E-01 |
| 1.400 | 1.4360E+02 | 7.8978E+00 | 2.5130E+01 | 1.3821E+00 | 2.9133E+01 | 1.4513E+00 |
| 1.700 | 2.1609E+02 | 1.2022E+01 | 3.7816E+01 | 2.1039E+00 | 5.1043E+01 | 2.5888E+00 |
| 1.800 | 2.4232E+02 | 1.3518E+01 | 4.2406E+01 | 2.3657E+00 | 5.9546E+01 | 3.0336E+00 |
| 2.000 | 2.9104E+02 | 1.6306E+01 | 5.0931E+01 | 2.8535E+00 | 7.7745E+01 | 3.9893E+00 |
| 2.300 | 3.4932E+02 | 1.9667E+01 | 5.5303E+01 | 3.1056E+00 | 1.0271E+02 | 5.3058E+00 |
| 2.600 | 3.9399E+02 | 2.2269E+01 | 5.8653E+01 | 3.3008E+00 | 1.2248E+02 | 6.3513E+00 |
| 2.900 | 4.2838E+02 | 2.4297E+01 | 6.1232E+01 | 3.4528E+00 | 1.3796E+02 | 7.1730E+00 |
| 2.920 | 4.3037E+02 | 2.4414E+01 | 6.1381E+01 | 3.4617E+00 | 1.3886E+02 | 7.2209E+00 |
| 3.300 | 4.6244E+02 | 2.6335E+01 | 6.3787E+01 | 3.6057E+00 | 1.5342E+02 | 7.9960E+00 |
| 3.600 | 4.8152E+02 | 2.7495E+01 | 6.5218E+01 | 3.6927E+00 | 1.6207E+02 | 8.4569E+00 |
| 3.820 | 4.9281E+02 | 2.8191E+01 | 6.6064E+01 | 3.7449E+00 | 1.6717E+02 | 8.7289E+00 |
| 4.000 | 5.0112E+02 | 2.8706E+01 | 6.6687E+01 | 3.7835E+00 | 1.7073E+02 | 8.9183E+00 |
| 4.300 | 5.1467E+02 | 2.9543E+01 | 6.7704E+01 | 3.8463E+00 | 1.7581E+02 | 9.1891E+00 |
| 4.600 | 5.2797E+02 | 3.0360E+01 | 6.8702E+01 | 3.9076E+00 | 1.8025E+02 | 9.4257E+00 |
| 4.900 | 5.4105E+02 | 3.1160E+01 | 6.9682E+01 | 3.9676E+00 | 1.8433E+02 | 9.6429E+00 |
| 5.200 | 5.5391E+02 | 3.1943E+01 | 7.0647E+01 | 4.0263E+00 | 1.8819E+02 | 9.8485E+00 |
| 5.500 | 5.6655E+02 | 3.2709E+01 | 7.1595E+01 | 4.0838E+00 | 1.9191E+02 | 1.0047E+01 |
| 5.800 | 5.7899E+02 | 3.3460E+01 | 7.2528E+01 | 4.1401E+00 | 1.9553E+02 | 1.0239E+01 |
| 6.100 | 5.9123E+02 | 3.4196E+01 | 7.3446E+01 | 4.1953E+00 | 1.9906E+02 | 1.0428E+01 |
| 6.400 | 6.0326E+02 | 3.4917E+01 | 7.4348E+01 | 4.2494E+00 | 2.0253E+02 | 1.0613E+01 |
| 6.700 | 6.1510E+02 | 3.5624E+01 | 7.5237E+01 | 4.3024E+00 | 2.0593E+02 | 1.0794E+01 |
| 7.000 | 6.2676E+02 | 3.6318E+01 | 7.6110E+01 | 4.3544E+00 | 2.0928E+02 | 1.0973E+01 |
| 7.300 | 6.3822E+02 | 3.6999E+01 | 7.6970E+01 | 4.4055E+00 | 2.1257E+02 | 1.1149E+01 |
| 7.600 | 6.4950E+02 | 3.7667E+01 | 7.7816E+01 | 4.4556E+00 | 2.1581E+02 | 1.1322E+01 |
| 7.900 | 6.6059E+02 | 3.8322E+01 | 7.8648E+01 | 4.5048E+00 | 2.1899E+02 | 1.1492E+01 |
| 8.000 | 6.6425E+02 | 3.8538E+01 | 7.8923E+01 | 4.5210E+00 | 2.2004E+02 | 1.1548E+01 |
| 8.300 | 6.7511E+02 | 3.9178E+01 | 7.9195E+01 | 4.5385E+00 | 2.2272E+02 | 1.1692E+01 |
| 8.600 | 6.8580E+02 | 3.9806E+01 | 7.9463E+01 | 4.5556E+00 | 2.2477E+02 | 1.1802E+01 |

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**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 1 | System Nos. | Sheet 214 of 1000 |
|---|---|---|---|---|

```
   8.900 6.9631E+02 4.0423E+01 7.9727E+01 4.5724E+00 2.2648E+02 1.1894E+01
   9.200 7.0666E+02 4.1029E+01 7.9986E+01 4.5889E+00 2.2801E+02 1.1975E+01
   9.500 7.1684E+02 4.1625E+01 8.0241E+01 4.6051E+00 2.2942E+02 1.2051E+01
   9.800 7.2687E+02 4.2210E+01 8.0493E+01 4.6209E+00 2.3078E+02 1.2124E+01
  10.100 7.3673E+02 4.2785E+01 8.0740E+01 4.6365E+00 2.3208E+02 1.2194E+01
  10.400 7.4644E+02 4.3351E+01 8.0983E+01 4.6518E+00 2.3336E+02 1.2263E+01
  24.000 1.0855E+03 6.2929E+01 8.9483E+01 5.1711E+00 2.7723E+02 1.4651E+01
  96.000 1.5714E+03 9.2902E+01 9.5870E+01 5.5727E+00 3.2396E+02 1.7419E+01
 720.000 2.2577E+03 1.5030E+02 9.8125E+01 5.7645E+00 3.6709E+02 2.0913E+01

#################################################################
                        Worst Two-Hour Doses
    Note: All of the dose locations are shown below but the
          worst two-hour dose is only meaningful for the EAB
          dose location.  Please disregard the two-hour worst
          doses for the other dose locations
#################################################################
```

**Exclusion Area Boundary**

| Time (hr) | Whole Body (rem) | Thyroid (rem) | TEDE (rem) |
|---|---|---|---|
| 0.8 | 1.8464E+00 | 3.7994E+02 | 2.1719E+01 |

Low Population Zone

| Time (hr) | Whole Body (rem) | Thyroid (rem) | TEDE (rem) |
|---|---|---|---|
| 0.5 | 2.6324E-01 | 5.5466E+01 | 3.1371E+00 |

Control Room

| Time (hr) | Whole Body (rem) | Thyroid (rem) | TEDE (rem) |
|---|---|---|---|
| 1.1 | 3.3516E-02 | 1.3245E+02 | 6.9451E+00 |

**Appendix F**

**RADTRAD Output File**

# ESF_Leakage.o2

**ESF Leakage Pathway**

TMI1 ESF Leakage Pathway AST Analysis:
CR Inleakage = 1,000 cfm,
CR Charcoal = 90%, HEPA = 99%,
CR Initiation = 30 Min,

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**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 1 | System Nos. | Sheet 216 of 1000 |
|---|---|---|---|---|

```
#######################################################################
          RADTRAD Version 3.02 run on  5/30/2001  at  7:53:11
#######################################################################

#######################################################################
                     File information
#######################################################################

Plant file name           = D:\TMI RADTRAD\ESF_Leakage.psf
Inventory file name       = d:\tmi radtrad\defaults\tmi_i131.nif
Scenario file name        = D:\TMI RADTRAD\ESF_Leakage.psf
Release file name         = d:\tmi radtrad\defaults\pwr_i.rft
Dose conversion file name = d:\tmi radtrad\defaults\fgr11&12.inp

    #####    ####   #####    #  #     #  #####   #    #  #####
    #    #  #       #        #  ##    #  #    #  #    #    #
    #    #  #       #        #  # #   #  #    #  #    #    #
    #####    ####   ####     #  #  #  #  #####   #    #    #
    #            #  #        #  #   # #  #       #    #    #
    #            #  #        #  #    ##  #       #    #    #
    #        ####   #        #  #     #  #        ####     #

Radtrad 3.02 1/5/2000
TMI1 ESF Leakage AST Analysis, CR Inleakage = 1,000 cfm, CR Charcoal = 90%, HEPA =
99%, CR Initiation = 30 Min, 5% Flashing For 0-24 hrs, and 2% Flashing For 24-720 hrs
Nuclide Inventory File:
d:\tmi radtrad\defaults\tmi_i131.nif
Plant Power Level:
 2.6190E+03
Compartments:
  3
Compartment 1:
Sump
  3
 5.4519E+04
  0
  0
  0
  0
  0
Compartment 2:
Environment
  2
 0.0000E+00
  0
  0
  0
  0
  0
Compartment 3:
Control Room
  1
 2.5000E+05
  0
  0
  1
  0
```

```
  0
Pathways:
  4
Pathway 1:
Sump to Environment
  1
  2
  2
Pathway 2:
Control Room Filtered Air Intake
  2
  3
  2
Pathway 3:
Control Room Unfiltered Inleakage
  2
  3
  2
Pathway 4:
Control Room Exhaust
  3
  2
  2
End of Plant Model File
Scenario Description Name:

Plant Model Filename:

Source Term:
  1
  1   1.0000E+00
d:\tmi radtrad\defaults\fgr11&12.inp
d:\tmi radtrad\defaults\pwr_i.rft
  0.0000E+00
  0
  0.0000E+00   9.7000E-01   3.0000E-02   1.0000E+00
Overlying Pool:
  0
  0.0000E+00
  0
  0
  0
  0
Compartments:
  3
Compartment 1:
  0
  1
  0
  0
  0
  0
  0
  0
  0
Compartment 2:
  1
```

```
  1
  0
  0
  0
  0
  0
  0
  0
Compartment 3:
  1
  1
  0
  0
  0
  0
  1
  2.8000E+04
  9
  0.0000E+00   0.0000E+00   0.0000E+00   0.0000E+00
  5.0000E-01   9.9000E+01   9.0000E+01   9.0000E+01
  1.8000E+00   9.9000E+01   9.0000E+01   9.0000E+01
  2.0000E+00   9.9000E+01   9.0000E+01   9.0000E+01
  5.0000E+00   9.9000E+01   9.0000E+01   9.0000E+01
  8.0000E+00   9.9000E+01   9.0000E+01   9.0000E+01
  2.4000E+01   9.9000E+01   9.0000E+01   9.0000E+01
  9.6000E+01   9.9000E+01   9.0000E+01   9.0000E+01
  7.2000E+02   0.0000E+00   0.0000E+00   0.0000E+00
  0
  0
Pathways:
  4
Pathway 1:
  0
  0
  0
  0
  0
  1
  4
  0.0000E+00   0.0000E+00   0.0000E+00   0.0000E+00   0.0000E+00
  4.9070E-01   3.3400E-03   0.0000E+00   0.0000E+00   0.0000E+00
  2.4000E+01   1.3360E-03   0.0000E+00   0.0000E+00   0.0000E+00
  7.2000E+02   0.0000E+00   0.0000E+00   0.0000E+00   0.0000E+00
  0
  0
  0
  0
  0
  0
Pathway 2:
  0
  0
  0
  0
  0
  1
  6
```

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**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 1 | System Nos. | Sheet 219 of 1000 |
|---|---|---|---|---|

```
  0.0000E+00   4.0000E+03   0.0000E+00   0.0000E+00   0.0000E+00
  5.0000E-01   8.0000E+03   9.9000E+01   9.0000E+01   9.0000E+01
  1.8000E+00   8.0000E+03   9.9000E+01   9.0000E+01   9.0000E+01
  2.0000E+00   8.0000E+03   9.9000E+01   9.0000E+01   9.0000E+01
  5.0000E+00   8.0000E+03   9.9000E+01   9.0000E+01   9.0000E+01
  7.2000E+02   0.0000E+00   0.0000E+00   0.0000E+00   0.0000E+00
  0
  0
  0
  0
  0
  0
Pathway 3:
  0
  0
  0
  0
  0
  1
  9
  0.0000E+00   0.0000E+00   0.0000E+00   0.0000E+00   0.0000E+00
  5.0000E-01   1.0000E+03   0.0000E+00   0.0000E+00   0.0000E+00
  1.8000E+00   1.0000E+03   0.0000E+00   0.0000E+00   0.0000E+00
  2.0000E+00   1.0000E+03   0.0000E+00   0.0000E+00   0.0000E+00
  5.0000E+00   1.0000E+03   0.0000E+00   0.0000E+00   0.0000E+00
  8.0000E+00   1.0000E+03   0.0000E+00   0.0000E+00   0.0000E+00
  2.4000E+01   1.0000E+03   0.0000E+00   0.0000E+00   0.0000E+00
  9.6000E+01   1.0000E+03   0.0000E+00   0.0000E+00   0.0000E+00
  7.2000E+02   0.0000E+00   0.0000E+00   0.0000E+00   0.0000E+00
  0
  0
  0
  0
  0
  0
Pathway 4:
  0
  0
  0
  0
  0
  1
  9
  0.0000E+00   4.0000E+03   0.0000E+00   0.0000E+00   0.0000E+00
  5.0000E-01   9.0000E+03   0.0000E+00   0.0000E+00   0.0000E+00
  1.8000E+00   9.0000E+03   0.0000E+00   0.0000E+00   0.0000E+00
  2.0000E+00   9.0000E+03   0.0000E+00   0.0000E+00   0.0000E+00
  5.0000E+00   9.0000E+03   0.0000E+00   0.0000E+00   0.0000E+00
  8.0000E+00   9.0000E+03   0.0000E+00   0.0000E+00   0.0000E+00
  2.4000E+01   9.0000E+03   0.0000E+00   0.0000E+00   0.0000E+00
  9.6000E+01   9.0000E+03   0.0000E+00   0.0000E+00   0.0000E+00
  7.2000E+02   0.0000E+00   0.0000E+00   0.0000E+00   0.0000E+00
  0
  0
  0
  0
  0
```

```
  0
Dose Locations:
  3
Location 1:
Exclusion Area Boundary
  2
  1
  2
  0.0000E+00   8.0000E-04
  7.2000E+02   0.0000E+00
  1
  2
  0.0000E+00   3.5000E-04
  7.2000E+02   0.0000E+00
  0
Location 2:
Low Population Zone
  2
  1
  6
  0.0000E+00   1.4000E-04
  2.0000E+00   6.0000E-05
  8.0000E+00   3.9000E-05
  2.4000E+01   1.6000E-05
  9.6000E+01   4.0000E-06
  7.2000E+02   0.0000E+00
  1
  4
  0.0000E+00   3.5000E-04
  8.0000E+00   1.8000E-04
  2.4000E+01   2.3000E-04
  7.2000E+02   0.0000E+00
  0
Location 3:
Control Room
  3
  0
  1
  2
  0.0000E+00   3.5000E-04
  7.2000E+02   0.0000E+00
  1
  4
  0.0000E+00   1.0000E+00
  2.4000E+01   6.0000E-01
  9.6000E+01   4.0000E-01
  7.2000E+02   0.0000E+00
Effective Volume Location:
  1
  6
  0.0000E+00   3.0200E-03
  2.0000E+00   2.0800E-03
  8.0000E+00   1.0200E-03
  2.4000E+01   6.6300E-04
  9.6000E+01   4.3700E-04
  7.2000E+02   0.0000E+00
Simulation Parameters:
```

```
   7
   0.0000E+00   5.0000E-02
   1.0000E+00   1.0000E-01
   2.0000E+00   1.0000E+00
   8.0000E+00   2.0000E+00
   2.4000E+01   4.0000E+00
   9.6000E+01   8.0000E+00
   7.2000E+02   0.0000E+00
 Output Filename:
 D:\TMI RADTRAD\ESF_Leakage.o2
   1
   1
   1
   0
   0
 End of Scenario File
_
_
 ######################################################################
           RADTRAD Version 3.02 run on  5/30/2001  at  7:53:11
 ######################################################################

 ######################################################################
                     Plant Description
 ######################################################################

 Number of Nuclides =  60

 Inventory Power =   1.0000E+00 MWth
 Plant Power Level =   2.6190E+03 MWth

 Number of compartments    =   3

 Compartment information

 Compartment number  1  (Source term fraction =   1.0000E+00
 )
 Name: Sump
 Compartment volume =   5.4519E+04 (Cubic feet)
 Pathways into and out of compartment  1
     Pathway to compartment number   2: Sump to Environment

 Compartment number  2
 Name: Environment
 Pathways into and out of compartment  2
     Pathway to compartment number   3: Control Room Filtered Air Intake
     Pathway to compartment number   3: Control Room Unfiltered Inleakage
     Pathway from compartment number 1: Sump to Environment
     Pathway from compartment number 3: Control Room Exhaust

 Compartment number  3
 Name: Control Room
 Compartment volume =   2.5000E+05 (Cubic feet)
 Removal devices within compartment:
      Filter(s)
 Pathways into and out of compartment  3
     Pathway to compartment number   2: Control Room Exhaust
```

```
    Pathway from compartment number 2: Control Room Filtered Air Intake
    Pathway from compartment number 2: Control Room Unfiltered Inleakage

Total number of pathways =   4

#######################################################################
          RADTRAD Version 3.02 run on  5/30/2001  at  7:53:11
#######################################################################

#######################################################################
                     Scenario Description
#######################################################################

Radioactive Decay is enabled
RELEASE_NAME = PWR, NUREG-1465, Tables 3.12 & 3.13, Jun
Release Fractions and Timings
                GAP       EARLY IN-VESSEL
             0.5000 hrs     1.3000 hrs
NOBLES       0.0000E+00     0.0000E+00
IODINE       5.0000E-02     3.5000E-01
CESIUM       0.0000E+00     0.0000E+00
TELLURIUM    0.0000E+00     0.0000E+00
STRONTIUM    0.0000E+00     0.0000E+00
BARIUM       0.0000E+00     0.0000E+00
RUTHENIUM    0.0000E+00     0.0000E+00
CERIUM       0.0000E+00     0.0000E+00
LANTHANUM    0.0000E+00     0.0000E+00

Iodine fractions
     Aerosol     =   0.0000E+00
     Elemental   =   9.7000E-01
     Organic     =   3.0000E-02

COMPARTMENT DATA

Compartment number   1: Sump

Compartment number   2: Environment

Compartment number   3: Control Room

     Compartment Filter Data

      Time (hr)      Flow Rate          Filter Efficiencies (%)
                       (cfm)         Aerosol     Elemental    Organic
       0.0000E+00    2.8000E+04   0.0000E+00   0.0000E+00   0.0000E+00
       5.0000E-01    2.8000E+04   9.9000E+01   9.0000E+01   9.0000E+01
       1.8000E+00    2.8000E+04   9.9000E+01   9.0000E+01   9.0000E+01
       2.0000E+00    2.8000E+04   9.9000E+01   9.0000E+01   9.0000E+01
       5.0000E+00    2.8000E+04   9.9000E+01   9.0000E+01   9.0000E+01
       8.0000E+00    2.8000E+04   9.9000E+01   9.0000E+01   9.0000E+01
       2.4000E+01    2.8000E+04   9.9000E+01   9.0000E+01   9.0000E+01
       9.6000E+01    2.8000E+04   9.9000E+01   9.0000E+01   9.0000E+01
       7.2000E+02    2.8000E+04   0.0000E+00   0.0000E+00   0.0000E+00

PATHWAY DATA
```

AmerGen

**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 1 | System Nos. | Sheet 223 of 1000 |
|---|---|---|---|---|

Pathway number 1: Sump to Environment

Pathway Filter: Removal Data

| Time (hr) | Flow Rate (cfm) | Filter Efficiencies (%) Aerosol | Elemental | Organic |
|---|---|---|---|---|
| 0.0000E+00 | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 |
| 4.9070E-01 | 3.3400E-03 | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 |
| 2.4000E+01 | 1.3360E-03 | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 |
| 7.2000E+02 | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 |

Pathway number 2: Control Room Filtered Air Intake

Pathway Filter: Removal Data

| Time (hr) | Flow Rate (cfm) | Filter Efficiencies (%) Aerosol | Elemental | Organic |
|---|---|---|---|---|
| 0.0000E+00 | 4.0000E+03 | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 |
| 5.0000E-01 | 8.0000E+03 | 9.9000E+01 | 9.0000E+01 | 9.0000E+01 |
| 1.8000E+00 | 8.0000E+03 | 9.9000E+01 | 9.0000E+01 | 9.0000E+01 |
| 2.0000E+00 | 8.0000E+03 | 9.9000E+01 | 9.0000E+01 | 9.0000E+01 |
| 5.0000E+00 | 8.0000E+03 | 9.9000E+01 | 9.0000E+01 | 9.0000E+01 |
| 7.2000E+02 | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 |

Pathway number 3: Control Room Unfiltered Inleakage

Pathway Filter: Removal Data

| Time (hr) | Flow Rate (cfm) | Filter Efficiencies (%) Aerosol | Elemental | Organic |
|---|---|---|---|---|
| 0.0000E+00 | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 |
| 5.0000E-01 | 1.0000E+03 | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 |
| 1.8000E+00 | 1.0000E+03 | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 |
| 2.0000E+00 | 1.0000E+03 | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 |
| 5.0000E+00 | 1.0000E+03 | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 |
| 8.0000E+00 | 1.0000E+03 | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 |
| 2.4000E+01 | 1.0000E+03 | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 |
| 9.6000E+01 | 1.0000E+03 | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 |
| 7.2000E+02 | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 |

Pathway number 4: Control Room Exhaust

Pathway Filter: Removal Data

| Time (hr) | Flow Rate (cfm) | Filter Efficiencies (%) Aerosol | Elemental | Organic |
|---|---|---|---|---|
| 0.0000E+00 | 4.0000E+03 | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 |
| 5.0000E-01 | 9.0000E+03 | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 |
| 1.8000E+00 | 9.0000E+03 | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 |
| 2.0000E+00 | 9.0000E+03 | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 |
| 5.0000E+00 | 9.0000E+03 | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 |
| 8.0000E+00 | 9.0000E+03 | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 |
| 2.4000E+01 | 9.0000E+03 | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 |
| 9.6000E+01 | 9.0000E+03 | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 |
| 7.2000E+02 | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 |

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**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 1 | System Nos. | Sheet 224 of 1000 |
|---|---|---|---|---|

```
LOCATION DATA
     Location Exclusion Area Boundary     is in compartment   2

     Location X/Q Data
      Time (hr)         X/Q (s * m^-3)
       0.0000E+00          8.0000E-04
       7.2000E+02          0.0000E+00

     Location Breathing Rate Data
      Time (hr)         Breathing Rate (m^3 * sec^-1)
       0.0000E+00                 3.5000E-04
       7.2000E+02                 0.0000E+00
     Location Low Population Zone     is in compartment   2

     Location X/Q Data
      Time (hr)         X/Q (s * m^-3)
       0.0000E+00          1.4000E-04
       2.0000E+00          6.0000E-05
       8.0000E+00          3.9000E-05
       2.4000E+01          1.6000E-05
       9.6000E+01          4.0000E-06
       7.2000E+02          0.0000E+00

     Location Breathing Rate Data
      Time (hr)         Breathing Rate (m^3 * sec^-1)
       0.0000E+00                 3.5000E-04
       8.0000E+00                 1.8000E-04
       2.4000E+01                 2.3000E-04
       7.2000E+02                 0.0000E+00
     Location Control Room     is in compartment   3

     Location X/Q Data
      Time (hr)         X/Q (s * m^-3)
       0.0000E+00          3.0200E-03
       2.0000E+00          2.0800E-03
       8.0000E+00          1.0200E-03
       2.4000E+01          6.6300E-04
       9.6000E+01          4.3700E-04
       7.2000E+02          0.0000E+00

     Location Breathing Rate Data
      Time (hr)         Breathing Rate (m^3 * sec^-1)
       0.0000E+00                 3.5000E-04
       7.2000E+02                 0.0000E+00

     Location Occupancy Factor Data
      Time (hr)         Occupancy Factor
       0.0000E+00            1.0000E+00
       2.4000E+01            6.0000E-01
       9.6000E+01            4.0000E-01
       7.2000E+02            0.0000E+00

USER SPECIFIED TIME STEP DATA - SUPPLEMENTAL TIME STEPS
     Time            Time step
      0.0000E+00       5.0000E-02
      1.0000E+00       1.0000E-01
      2.0000E+00       1.0000E+00
```

```
      8.0000E+00       2.0000E+00
      2.4000E+01       4.0000E+00
      9.6000E+01       8.0000E+00
      7.2000E+02       0.0000E+00

#######################################################################
          RADTRAD Version 3.02 run on  5/30/2001  at  7:53:11
#######################################################################

     ####   #    #  #####  #####   #    #  #####
    #    #  #    #    #    #    #  #    #    #
    #    #  #    #    #    #    #  #    #    #
    #    #  #    #    #    #####   #    #    #
    #    #  #    #    #    #       #    #    #
    #    #  #    #    #    #       #    #    #
     ####    ####     #    #        ####     #

#######################################################################
           Dose, Detailed model and Detailed Inventory Output
#######################################################################

Exclusion Area Boundary Doses:

Time (h) =   0.4907    Whole Body   Thyroid       TEDE
Delta dose (rem)        0.0000E+00  0.0000E+00  0.0000E+00
Accumulated dose (rem)  0.0000E+00  0.0000E+00  0.0000E+00

Low Population Zone Doses:

Time (h) =   0.4907    Whole Body   Thyroid       TEDE
Delta dose (rem)        0.0000E+00  0.0000E+00  0.0000E+00
Accumulated dose (rem)  0.0000E+00  0.0000E+00  0.0000E+00

Control Room Doses:

Time (h) =   0.4907    Whole Body   Thyroid       TEDE
Delta dose (rem)        0.0000E+00  0.0000E+00  0.0000E+00
Accumulated dose (rem)  0.0000E+00  0.0000E+00  0.0000E+00

Environment Integral Nuclide Release:

Time (h) =   0.4907       Ci           kg         Atoms         Bq

Environment Transport Group Inventory:

                         Present     Release      Total
Time (h) =   0.4907      Release     Rate/s      Release
Noble gases (atoms)     0.0000E+00  0.0000E+00  0.0000E+00
Elemental I (atoms)     0.0000E+00  0.0000E+00  0.0000E+00
Organic I (atoms)       0.0000E+00  0.0000E+00  0.0000E+00
Aerosols (kg)           0.0000E+00  0.0000E+00  0.0000E+00

Sump to Environment Transport Group Inventory:

                         Pathway
Time (h) =   0.4907       Filter
Noble gases (atoms)     0.0000E+00
```

```
Elemental I (atoms)    0.0000E+00
Organic I (atoms)      0.0000E+00
Aerosols (kg)          0.0000E+00

Control Room Filtered Air Intake Transport Group Inventory:

                        Pathway
Time (h) =   0.4907      Filter
Noble gases (atoms)    0.0000E+00
Elemental I (atoms)    0.0000E+00
Organic I (atoms)      0.0000E+00
Aerosols (kg)          0.0000E+00

Control Room Unfiltered Inleakage Transport Group Inventory:

                        Pathway
Time (h) =   0.4907      Filter
Noble gases (atoms)    0.0000E+00
Elemental I (atoms)    0.0000E+00
Organic I (atoms)      0.0000E+00
Aerosols (kg)          0.0000E+00

Control Room Exhaust Transport Group Inventory:

                        Pathway
Time (h) =   0.4907      Filter
Noble gases (atoms)    0.0000E+00
Elemental I (atoms)    0.0000E+00
Organic I (atoms)      0.0000E+00
Aerosols (kg)          0.0000E+00

Control Room Compartment Nuclide Inventory:

Time (h) =   0.4907       Ci           kg         Atoms         Bq

Control Room Transport Group Inventory:

                                                 Overlying
Time (h) =   0.4907    Atmosphere     Sump         Pool
Noble gases (atoms)    0.0000E+00  0.0000E+00  0.0000E+00
Elemental I (atoms)    0.0000E+00  0.0000E+00  0.0000E+00
Organic I (atoms)      0.0000E+00  0.0000E+00  0.0000E+00
Aerosols (kg)          0.0000E+00  0.0000E+00  0.0000E+00

                       Deposition Recirculating
Time (h) =   0.4907     Surfaces     Filter
Noble gases (atoms)    0.0000E+00  0.0000E+00
Elemental I (atoms)    0.0000E+00  0.0000E+00
Organic I (atoms)      0.0000E+00  0.0000E+00
Aerosols (kg)          0.0000E+00  0.0000E+00

Control Room Filtered Air Intake Transport Group Inventory:

                        Pathway
Time (h) =   0.4907      Filter
Noble gases (atoms)    0.0000E+00
Elemental I (atoms)    0.0000E+00
```

```
Organic I (atoms)      0.0000E+00
Aerosols (kg)          0.0000E+00

Control Room Unfiltered Inleakage Transport Group Inventory:

                        Pathway
Time (h) =   0.4907      Filter
Noble gases (atoms)    0.0000E+00
Elemental I (atoms)    0.0000E+00
Organic I (atoms)      0.0000E+00
Aerosols (kg)          0.0000E+00

Control Room Exhaust Transport Group Inventory:

                        Pathway
Time (h) =   0.4907      Filter
Noble gases (atoms)    0.0000E+00
Elemental I (atoms)    0.0000E+00
Organic I (atoms)      0.0000E+00
Aerosols (kg)          0.0000E+00

Exclusion Area Boundary Doses:

Time (h) =   0.5000    Whole Body   Thyroid       TEDE
Delta dose (rem)        2.0672E-04  5.1382E-02  1.8274E-03
Accumulated dose (rem)  2.0672E-04  5.1382E-02  1.8274E-03

Low Population Zone Doses:

Time (h) =   0.5000    Whole Body   Thyroid       TEDE
Delta dose (rem)        3.6176E-05  8.9919E-03  3.1979E-04
Accumulated dose (rem)  3.6176E-05  8.9919E-03  3.1979E-04

Control Room Doses:

Time (h) =   0.5000    Whole Body   Thyroid       TEDE
Delta dose (rem)        1.9737E-07  8.6203E-04  2.7386E-05
Accumulated dose (rem)  1.9737E-07  8.6203E-04  2.7386E-05

Environment Integral Nuclide Release:

Time (h) =   0.5000       Ci           kg         Atoms         Bq
I-131                  1.2081E-01  9.7450E-10  4.4798E+15  4.4701E+09
I-132                  1.5045E-01  1.4575E-11  6.6496E+13  5.5666E+09
I-133                  2.4897E-01  2.1978E-10  9.9513E+14  9.2117E+09
I-134                  1.8954E-01  7.1051E-12  3.1931E+13  7.0130E+09
I-135                  2.2401E-01  6.3788E-11  2.8455E+14  8.2886E+09

Environment Transport Group Inventory:

                        Present     Release      Total
Time (h) =   0.5000     Release     Rate/s      Release
Noble gases (atoms)    0.0000E+00  0.0000E+00  0.0000E+00
Elemental I (atoms)    5.7171E+15  3.1762E+12  5.7171E+15
Organic I (atoms)      1.7682E+14  9.8232E+10  1.7682E+14
Aerosols (kg)          0.0000E+00  0.0000E+00  0.0000E+00
```

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**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 1 | System Nos. | Sheet 228 of 1000 |
|---|---|---|---|---|

Sump to Environment Transport Group Inventory:

| Time (h) = 0.5000 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 |

Control Room Filtered Air Intake Transport Group Inventory:

| Time (h) = 0.5000 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 |

Control Room Unfiltered Inleakage Transport Group Inventory:

| Time (h) = 0.5000 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 |

Control Room Exhaust Transport Group Inventory:

| Time (h) = 0.5000 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 |

**Control Room Compartment Nuclide Inventory:**

| **Time (h) = 0.5000** | **Ci** | **kg** | **Atoms** | **Bq** |
|---|---|---|---|---|
| **I-131** | **6.8572E-04** | **5.5311E-12** | **2.5427E+13** | **2.5371E+07** |
| **I-132** | **8.5392E-04** | **8.2727E-14** | **3.7742E+11** | **3.1595E+07** |
| **I-133** | **1.4131E-03** | **1.2474E-12** | **5.6482E+12** | **5.2284E+07** |
| **I-134** | **1.0758E-03** | **4.0327E-14** | **1.8124E+11** | **3.9805E+07** |
| **I-135** | **1.2715E-03** | **3.6205E-13** | **1.6151E+12** | **4.7044E+07** |

Control Room Transport Group Inventory:

| Time (h) = 0.5000 | Atmosphere | Sump | Overlying Pool |
|---|---|---|---|
| Noble gases (atoms) | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 |
| Elemental I (atoms) | 3.2449E+13 | 0.0000E+00 | 0.0000E+00 |
| Organic I (atoms) | 1.0036E+12 | 0.0000E+00 | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 |

| Time (h) = 0.5000 | Deposition Surfaces | Recirculating Filter |
|---|---|---|
| Noble gases (atoms) | 0.0000E+00 | 0.0000E+00 |

```
Elemental I (atoms)    0.0000E+00  0.0000E+00
Organic I (atoms)      0.0000E+00  0.0000E+00
Aerosols (kg)          0.0000E+00  0.0000E+00

Control Room Filtered Air Intake Transport Group Inventory:

                        Pathway
Time (h) =   0.5000      Filter
Noble gases (atoms)    0.0000E+00
Elemental I (atoms)    0.0000E+00
Organic I (atoms)      0.0000E+00
Aerosols (kg)          0.0000E+00

Control Room Unfiltered Inleakage Transport Group Inventory:

                        Pathway
Time (h) =   0.5000      Filter
Noble gases (atoms)    0.0000E+00
Elemental I (atoms)    0.0000E+00
Organic I (atoms)      0.0000E+00
Aerosols (kg)          0.0000E+00

Control Room Exhaust Transport Group Inventory:

                        Pathway
Time (h) =   0.5000      Filter
Noble gases (atoms)    0.0000E+00
Elemental I (atoms)    0.0000E+00
Organic I (atoms)      0.0000E+00
Aerosols (kg)          0.0000E+00

Exclusion Area Boundary Doses:

Time (h) =   1.8000    Whole Body   Thyroid       TEDE
Delta dose (rem)        1.0103E-01  3.2223E+01  1.1141E+00
Accumulated dose (rem)  1.0124E-01  3.2275E+01  1.1159E+00

Low Population Zone Doses:

Time (h) =   1.8000    Whole Body   Thyroid       TEDE
Delta dose (rem)        1.7681E-02  5.6391E+00  1.9496E-01
Accumulated dose (rem)  1.7717E-02  5.6481E+00  1.9528E-01

Control Room Doses:

Time (h) =   1.8000    Whole Body   Thyroid       TEDE
Delta dose (rem)        9.6109E-04  5.4422E+00  1.7203E-01
Accumulated dose (rem)  9.6129E-04  5.4431E+00  1.7206E-01

Environment Integral Nuclide Release:

Time (h) =   1.8000       Ci           kg         Atoms         Bq
I-131                  7.6634E+01  6.1814E-07  2.8416E+18  2.8355E+12
I-132                  7.4244E+01  7.1927E-09  3.2814E+16  2.7470E+12
I-133                  1.5394E+02  1.3589E-07  6.1531E+17  5.6958E+12
I-134                  6.3429E+01  2.3777E-09  1.0686E+16  2.3469E+12
I-135                  1.3031E+02  3.7106E-08  1.6552E+17  4.8215E+12
```

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**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 1 | System Nos. | Sheet 230 of 1000 |
|---|---|---|---|---|

Environment Transport Group Inventory:

| Time (h) = 1.8000 | Present Release | Release Rate/s | Total Release |
|---|---|---|---|
| Noble gases (atoms) | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 |
| Elemental I (atoms) | 3.5982E+18 | 5.5527E+14 | 3.5982E+18 |
| Organic I (atoms) | 1.1128E+17 | 1.7173E+13 | 1.1128E+17 |
| Aerosols (kg) | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 |

Sump to Environment Transport Group Inventory:

| Time (h) = 1.8000 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 |

Control Room Filtered Air Intake Transport Group Inventory:

| Time (h) = 1.8000 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 1.9449E+21 |
| Organic I (atoms) | 6.0151E+19 |
| Aerosols (kg) | 0.0000E+00 |

Control Room Unfiltered Inleakage Transport Group Inventory:

| Time (h) = 1.8000 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 |

Control Room Exhaust Transport Group Inventory:

| Time (h) = 1.8000 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 |

**Control Room Compartment Nuclide Inventory:**

| **Time (h) = 1.8000** | **Ci** | **kg** | **Atoms** | **Bq** |
|---|---|---|---|---|
| **I-131** | **2.9977E-02** | **2.4180E-10** | **1.1116E+15** | **1.1091E+09** |
| **I-132** | **2.5348E-02** | **2.4556E-12** | **1.1203E+13** | **9.3786E+08** |
| **I-133** | **5.9432E-02** | **5.2464E-11** | **2.3755E+14** | **2.1990E+09** |
| **I-134** | **1.6905E-02** | **6.3368E-13** | **2.8479E+12** | **6.2547E+08** |
| **I-135** | **4.8727E-02** | **1.3875E-11** | **6.1894E+13** | **1.8029E+09** |

Control Room Transport Group Inventory:

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**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 1 | System Nos. | Sheet 231 of 1000 |
|---|---|---|---|---|

```
                                                Overlying
Time (h) =   1.8000    Atmosphere     Sump        Pool
Noble gases (atoms)    0.0000E+00  0.0000E+00  0.0000E+00
Elemental I (atoms)    1.4043E+15  0.0000E+00  0.0000E+00
Organic I (atoms)      4.3433E+13  0.0000E+00  0.0000E+00
Aerosols (kg)          0.0000E+00  0.0000E+00  0.0000E+00

                       Deposition Recirculating
Time (h) =   1.8000     Surfaces     Filter
Noble gases (atoms)    0.0000E+00  0.0000E+00
Elemental I (atoms)    0.0000E+00  5.7802E+15
Organic I (atoms)      0.0000E+00  1.7877E+14
Aerosols (kg)          0.0000E+00  0.0000E+00

Control Room Filtered Air Intake Transport Group Inventory:

                        Pathway
Time (h) =   1.8000      Filter
Noble gases (atoms)    0.0000E+00
Elemental I (atoms)    1.9449E+21
Organic I (atoms)      6.0151E+19
Aerosols (kg)          0.0000E+00

Control Room Unfiltered Inleakage Transport Group Inventory:

                        Pathway
Time (h) =   1.8000      Filter
Noble gases (atoms)    0.0000E+00
Elemental I (atoms)    0.0000E+00
Organic I (atoms)      0.0000E+00
Aerosols (kg)          0.0000E+00

Control Room Exhaust Transport Group Inventory:

                        Pathway
Time (h) =   1.8000      Filter
Noble gases (atoms)    0.0000E+00
Elemental I (atoms)    0.0000E+00
Organic I (atoms)      0.0000E+00
Aerosols (kg)          0.0000E+00

Exclusion Area Boundary Doses:

Time (h) =   2.0000    Whole Body   Thyroid       TEDE
Delta dose (rem)        2.3152E-02  8.7333E+00  2.9716E-01
Accumulated dose (rem)  1.2439E-01  4.1008E+01  1.4130E+00

Low Population Zone Doses:

Time (h) =   2.0000    Whole Body   Thyroid       TEDE
Delta dose (rem)        4.0516E-03  1.5283E+00  5.2003E-02
Accumulated dose (rem)  2.1769E-02  7.1764E+00  2.4728E-01

Control Room Doses:

Time (h) =   2.0000    Whole Body   Thyroid       TEDE
Delta dose (rem)        2.5059E-04  1.6613E+00  5.2375E-02
```

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**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 1 | System Nos. | Sheet 232 of 1000 |
|---|---|---|---|---|

```
Accumulated dose (rem)  1.2119E-03  7.1044E+00  2.2443E-01

Environment Integral Nuclide Release:

Time (h) =   2.0000       Ci           kg          Atoms         Bq
I-131                  9.7518E+01  7.8660E-07  3.6160E+18  3.6082E+12
I-132                  9.1133E+01  8.8289E-09  4.0279E+16  3.3719E+12
I-133                  1.9516E+02  1.7228E-07  7.8007E+17  7.2210E+12
I-134                  7.3902E+01  2.7703E-09  1.2450E+16  2.7344E+12
I-135                  1.6375E+02  4.6627E-08  2.0799E+17  6.0586E+12

Environment Transport Group Inventory:

                        Present     Release      Total
Time (h) =   2.0000     Release     Rate/s      Release
Noble gases (atoms)    0.0000E+00  0.0000E+00  0.0000E+00
Elemental I (atoms)    4.5760E+18  6.3556E+14  4.5760E+18
Organic I (atoms)      1.4153E+17  1.9657E+13  1.4153E+17
Aerosols (kg)          0.0000E+00  0.0000E+00  0.0000E+00

Sump to Environment Transport Group Inventory:

                        Pathway
Time (h) =   2.0000      Filter
Noble gases (atoms)    0.0000E+00
Elemental I (atoms)    0.0000E+00
Organic I (atoms)      0.0000E+00
Aerosols (kg)          0.0000E+00

Control Room Filtered Air Intake Transport Group Inventory:

                        Pathway
Time (h) =   2.0000      Filter
Noble gases (atoms)    0.0000E+00
Elemental I (atoms)    2.5430E+21
Organic I (atoms)      7.8649E+19
Aerosols (kg)          0.0000E+00

Control Room Unfiltered Inleakage Transport Group Inventory:

                        Pathway
Time (h) =   2.0000      Filter
Noble gases (atoms)    0.0000E+00
Elemental I (atoms)    0.0000E+00
Organic I (atoms)      0.0000E+00
Aerosols (kg)          0.0000E+00

Control Room Exhaust Transport Group Inventory:

                        Pathway
Time (h) =   2.0000      Filter
Noble gases (atoms)    0.0000E+00
Elemental I (atoms)    0.0000E+00
Organic I (atoms)      0.0000E+00
Aerosols (kg)          0.0000E+00
```

**Control Room Compartment Nuclide Inventory:**

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**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 1 | System Nos. | Sheet 233 of 1000 |
|---|---|---|---|---|

| Time (h) = 2.0000 | Ci | kg | Atoms | Bq |
|---|---|---|---|---|
| I-131 | 3.2114E-02 | 2.5903E-10 | 1.1908E+15 | 1.1882E+09 |
| I-132 | 2.5585E-02 | 2.4786E-12 | 1.1308E+13 | 9.4663E+08 |
| I-133 | 6.3292E-02 | 5.5871E-11 | 2.5298E+14 | 2.3418E+09 |
| I-134 | 1.5472E-02 | 5.7998E-13 | 2.6065E+12 | 5.7247E+08 |
| I-135 | 5.1154E-02 | 1.4566E-11 | 6.4977E+13 | 1.8927E+09 |

Control Room Transport Group Inventory:

| Time (h) = 2.0000 | Atmosphere | Sump | Overlying Pool |
|---|---|---|---|
| Noble gases (atoms) | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 |
| Elemental I (atoms) | 1.5043E+15 | 0.0000E+00 | 0.0000E+00 |
| Organic I (atoms) | 4.6524E+13 | 0.0000E+00 | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 |

| Time (h) = 2.0000 | Deposition Surfaces | Recirculating Filter |
|---|---|---|
| Noble gases (atoms) | 0.0000E+00 | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 | 7.5558E+15 |
| Organic I (atoms) | 0.0000E+00 | 2.3368E+14 |
| Aerosols (kg) | 0.0000E+00 | 0.0000E+00 |

Control Room Filtered Air Intake Transport Group Inventory:

| Time (h) = 2.0000 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 2.5430E+21 |
| Organic I (atoms) | 7.8649E+19 |
| Aerosols (kg) | 0.0000E+00 |

Control Room Unfiltered Inleakage Transport Group Inventory:

| Time (h) = 2.0000 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 |

Control Room Exhaust Transport Group Inventory:

| Time (h) = 2.0000 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 |

Exclusion Area Boundary Doses:

| Time (h) = 5.0000 | Whole Body | Thyroid | TEDE |
|---|---|---|---|
| Delta dose (rem) | 2.5195E-01 | 1.2795E+02 | 4.2521E+00 |
| Accumulated dose (rem) | 3.7634E-01 | 1.6896E+02 | 5.6651E+00 |

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**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 1 | System Nos. | Sheet 234 of 1000 |
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Low Population Zone Doses:

| Time (h) = 5.0000 | Whole Body | Thyroid | TEDE |
|---|---|---|---|
| Delta dose (rem) | 1.8896E-02 | 9.5962E+00 | 3.1890E-01 |
| Accumulated dose (rem) | 4.0665E-02 | 1.6773E+01 | 5.6619E-01 |

Control Room Doses:

| Time (h) = 5.0000 | Whole Body | Thyroid | TEDE |
|---|---|---|---|
| Delta dose (rem) | 2.0090E-03 | 1.7837E+01 | 5.5969E-01 |
| Accumulated dose (rem) | 3.2209E-03 | 2.4942E+01 | 7.8413E-01 |

Environment Integral Nuclide Release:

| Time (h) = 5.0000 | Ci | kg | Atoms | Bq |
|---|---|---|---|---|
| I-131 | 4.0893E+02 | 3.2985E-06 | 1.5163E+19 | 1.5130E+13 |
| I-132 | 2.5289E+02 | 2.4499E-08 | 1.1177E+17 | 9.3568E+12 |
| I-133 | 7.8151E+02 | 6.8989E-07 | 3.1237E+18 | 2.8916E+13 |
| I-134 | 1.2932E+02 | 4.8478E-09 | 2.1787E+16 | 4.7850E+12 |
| I-135 | 5.8948E+02 | 1.6785E-07 | 7.4877E+17 | 2.1811E+13 |

Environment Transport Group Inventory:

| Time (h) = 5.0000 | Present Release | Release Rate/s | Total Release |
|---|---|---|---|
| Noble gases (atoms) | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 |
| Elemental I (atoms) | 1.9242E+19 | 1.0690E+15 | 1.9242E+19 |
| Organic I (atoms) | 5.9511E+17 | 3.3061E+13 | 5.9511E+17 |
| Aerosols (kg) | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 |

Sump to Environment Transport Group Inventory:

| Time (h) = 5.0000 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 |

Control Room Filtered Air Intake Transport Group Inventory:

| Time (h) = 5.0000 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 1.1513E+22 |
| Organic I (atoms) | 3.5608E+20 |
| Aerosols (kg) | 0.0000E+00 |

Control Room Unfiltered Inleakage Transport Group Inventory:

| Time (h) = 5.0000 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 |

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**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 1 | System Nos. | Sheet 235 of 1000 |
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Control Room Exhaust Transport Group Inventory:

| Time (h) = 5.0000 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 |

**Control Room Compartment Nuclide Inventory:**

| **Time (h) = 5.0000** | **Ci** | **kg** | **Atoms** | **Bq** |
|---|---|---|---|---|
| **I-131** | **2.2230E-02** | **1.7931E-10** | **8.2429E+14** | **8.2250E+08** |
| **I-132** | **7.2487E-03** | **7.0224E-13** | **3.2038E+12** | **2.6820E+08** |
| **I-133** | **4.0073E-02** | **3.5375E-11** | **1.6018E+14** | **1.4827E+09** |
| **I-134** | **1.0100E-03** | **3.7862E-14** | **1.7016E+11** | **3.7371E+07** |
| **I-135** | **2.6133E-02** | **7.4412E-12** | **3.3194E+13** | **9.6690E+08** |

Control Room Transport Group Inventory:

| Time (h) = 5.0000 | Atmosphere | Sump | Overlying Pool |
|---|---|---|---|
| Noble gases (atoms) | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 |
| Elemental I (atoms) | 1.0524E+15 | 0.0000E+00 | 0.0000E+00 |
| Organic I (atoms) | 3.2548E+13 | 0.0000E+00 | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 |

| Time (h) = 5.0000 | Deposition Surfaces | Recirculating Filter |
|---|---|---|
| Noble gases (atoms) | 0.0000E+00 | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 | 2.6980E+16 |
| Organic I (atoms) | 0.0000E+00 | 8.3445E+14 |
| Aerosols (kg) | 0.0000E+00 | 0.0000E+00 |

Control Room Filtered Air Intake Transport Group Inventory:

| Time (h) = 5.0000 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 1.1513E+22 |
| Organic I (atoms) | 3.5608E+20 |
| Aerosols (kg) | 0.0000E+00 |

Control Room Unfiltered Inleakage Transport Group Inventory:

| Time (h) = 5.0000 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 |

Control Room Exhaust Transport Group Inventory:

| Time (h) = 5.0000 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |

```
Elemental I (atoms)    0.0000E+00
Organic I (atoms)      0.0000E+00
Aerosols (kg)          0.0000E+00

Exclusion Area Boundary Doses:

Time (h) =   8.0000    Whole Body   Thyroid       TEDE
Delta dose (rem)        1.6457E-01  1.2291E+02  3.9897E+00
Accumulated dose (rem)  5.4091E-01  2.9186E+02  9.6548E+00

Low Population Zone Doses:

Time (h) =   8.0000    Whole Body   Thyroid       TEDE
Delta dose (rem)        1.2343E-02  9.2180E+00  2.9923E-01
Accumulated dose (rem)  5.3007E-02  2.5991E+01  8.6541E-01

Control Room Doses:

Time (h) =   8.0000    Whole Body   Thyroid       TEDE
Delta dose (rem)        1.2816E-03  1.6819E+01  5.2472E-01
Accumulated dose (rem)  4.5025E-03  4.1761E+01  1.3088E+00

Environment Integral Nuclide Release:

Time (h) =   8.0000       Ci           kg         Atoms         Bq
I-131                  7.1700E+02  5.7834E-06  2.6587E+19  2.6529E+13
I-132                  3.1838E+02  3.0844E-08  1.4072E+17  1.1780E+13
I-133                  1.3121E+03  1.1582E-06  5.2444E+18  4.8546E+13
I-134                  1.3450E+02  5.0417E-09  2.2658E+16  4.9763E+12
I-135                  9.0030E+02  2.5636E-07  1.1436E+18  3.3311E+13

Environment Transport Group Inventory:

                        Present     Release      Total
Time (h) =   8.0000     Release     Rate/s      Release
Noble gases (atoms)    0.0000E+00  0.0000E+00  0.0000E+00
Elemental I (atoms)    3.3907E+19  1.1773E+15  3.3907E+19
Organic I (atoms)      1.0487E+18  3.6412E+13  1.0487E+18
Aerosols (kg)          0.0000E+00  0.0000E+00  0.0000E+00

Sump to Environment Transport Group Inventory:

                        Pathway
Time (h) =   8.0000      Filter
Noble gases (atoms)    0.0000E+00
Elemental I (atoms)    0.0000E+00
Organic I (atoms)      0.0000E+00
Aerosols (kg)          0.0000E+00

Control Room Filtered Air Intake Transport Group Inventory:

                        Pathway
Time (h) =   8.0000      Filter
Noble gases (atoms)    0.0000E+00
Elemental I (atoms)    2.0483E+22
Organic I (atoms)      6.3350E+20
Aerosols (kg)          0.0000E+00
```

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**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 1 | System Nos. | Sheet 237 of 1000 |
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Control Room Unfiltered Inleakage Transport Group Inventory:

| Time (h) = 8.0000 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 |

Control Room Exhaust Transport Group Inventory:

| Time (h) = 8.0000 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 |

**Control Room Compartment Nuclide Inventory:**

| **Time (h) = 8.0000** | **Ci** | **kg** | **Atoms** | **Bq** |
|---|---|---|---|---|
| **I-131** | **2.1991E-02** | **1.7739E-10** | **8.1545E+14** | **8.1368E+08** |
| **I-132** | **2.9350E-03** | **2.8434E-13** | **1.2972E+12** | **1.0859E+08** |
| **I-133** | **3.6260E-02** | **3.2009E-11** | **1.4494E+14** | **1.3416E+09** |
| **I-134** | **9.4229E-05** | **3.5323E-15** | **1.5875E+10** | **3.4865E+06** |
| **I-135** | **1.9079E-02** | **5.4327E-12** | **2.4234E+13** | **7.0592E+08** |

Control Room Transport Group Inventory:

| Time (h) = 8.0000 | Atmosphere | Sump | Overlying Pool |
|---|---|---|---|
| Noble gases (atoms) | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 |
| Elemental I (atoms) | 1.0524E+15 | 0.0000E+00 | 0.0000E+00 |
| Organic I (atoms) | 3.2547E+13 | 0.0000E+00 | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 |

| Time (h) = 8.0000 | Deposition Surfaces | Recirculating Filter |
|---|---|---|
| Noble gases (atoms) | 0.0000E+00 | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 | 4.6075E+16 |
| Organic I (atoms) | 0.0000E+00 | 1.4250E+15 |
| Aerosols (kg) | 0.0000E+00 | 0.0000E+00 |

Control Room Filtered Air Intake Transport Group Inventory:

| Time (h) = 8.0000 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 2.0483E+22 |
| Organic I (atoms) | 6.3350E+20 |
| Aerosols (kg) | 0.0000E+00 |

Control Room Unfiltered Inleakage Transport Group Inventory:

| Time (h) = 8.0000 | Pathway Filter |
|---|---|

```
Noble gases (atoms)    0.0000E+00
Elemental I (atoms)    0.0000E+00
Organic I (atoms)      0.0000E+00
Aerosols (kg)          0.0000E+00

Control Room Exhaust Transport Group Inventory:

                        Pathway
Time (h) =   8.0000      Filter
Noble gases (atoms)    0.0000E+00
Elemental I (atoms)    0.0000E+00
Organic I (atoms)      0.0000E+00
Aerosols (kg)          0.0000E+00

Exclusion Area Boundary Doses:

Time (h) =  24.0000    Whole Body   Thyroid       TEDE
Delta dose (rem)        4.6514E-01  5.9530E+02  1.8869E+01
Accumulated dose (rem)  1.0060E+00  8.8717E+02  2.8524E+01

Low Population Zone Doses:

Time (h) =  24.0000    Whole Body   Thyroid       TEDE
Delta dose (rem)        2.2675E-02  1.4925E+01  4.8409E-01
Accumulated dose (rem)  7.5683E-02  4.0916E+01  1.3495E+00

Control Room Doses:

Time (h) =  24.0000    Whole Body   Thyroid       TEDE
Delta dose (rem)        1.8000E-03  4.0308E+01  1.2480E+00
Accumulated dose (rem)  6.3024E-03  8.2069E+01  2.5568E+00

Environment Integral Nuclide Release:

Time (h) =  24.0000       Ci           kg         Atoms         Bq
I-131                  2.3012E+03  1.8562E-05  8.5328E+19  8.5143E+13
I-132                  3.6037E+02  3.4912E-08  1.5928E+17  1.3334E+13
I-133                  3.3578E+03  2.9642E-06  1.3422E+19  1.2424E+14
I-134                  1.3502E+02  5.0614E-09  2.2747E+16  4.9958E+12
I-135                  1.5531E+03  4.4225E-07  1.9728E+18  5.7465E+13

Environment Transport Group Inventory:

                        Present     Release      Total
Time (h) =  24.0000     Release     Rate/s      Release
Noble gases (atoms)    0.0000E+00  0.0000E+00  0.0000E+00
Elemental I (atoms)    1.1210E+20  1.2975E+15  1.1210E+20
Organic I (atoms)      3.4671E+18  4.0128E+13  3.4671E+18
Aerosols (kg)          0.0000E+00  0.0000E+00  0.0000E+00

Sump to Environment Transport Group Inventory:

                        Pathway
Time (h) =  24.0000      Filter
Noble gases (atoms)    0.0000E+00
Elemental I (atoms)    0.0000E+00
Organic I (atoms)      0.0000E+00
```

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**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 1 | System Nos. | Sheet 239 of 1000 |
|---|---|---|---|---|

```
Aerosols (kg)          0.0000E+00

Control Room Filtered Air Intake Transport Group Inventory:

                        Pathway
Time (h) =  24.0000      Filter
Noble gases (atoms)    0.0000E+00
Elemental I (atoms)    6.6674E+23
Organic I (atoms)      2.0621E+22
Aerosols (kg)          0.0000E+00

Control Room Unfiltered Inleakage Transport Group Inventory:

                        Pathway
Time (h) =  24.0000      Filter
Noble gases (atoms)    0.0000E+00
Elemental I (atoms)    0.0000E+00
Organic I (atoms)      0.0000E+00
Aerosols (kg)          0.0000E+00

Control Room Exhaust Transport Group Inventory:

                        Pathway
Time (h) =  24.0000      Filter
Noble gases (atoms)    0.0000E+00
Elemental I (atoms)    0.0000E+00
Organic I (atoms)      0.0000E+00
Aerosols (kg)          0.0000E+00
```

**Control Room Compartment Nuclide Inventory:**

| **Time (h) = 24.0000** | **Ci** | **kg** | **Atoms** | **Bq** |
|---|---|---|---|---|
| **I-131** | **1.0179E-02** | **8.2104E-11** | **3.7744E+14** | **3.7662E+08** |
| **I-132** | **1.1585E-05** | **1.1223E-15** | **5.1203E+09** | **4.2864E+05** |
| **I-133** | **1.0430E-02** | **9.2071E-12** | **4.1689E+13** | **3.8590E+08** |
| **I-135** | **1.7470E-03** | **4.9746E-13** | **2.2191E+12** | **6.4639E+07** |

```
Control Room Transport Group Inventory:

                                                Overlying
Time (h) =  24.0000    Atmosphere     Sump        Pool
Noble gases (atoms)    0.0000E+00  0.0000E+00  0.0000E+00
Elemental I (atoms)    5.1591E+14  0.0000E+00  0.0000E+00
Organic I (atoms)      1.5956E+13  0.0000E+00  0.0000E+00
Aerosols (kg)          0.0000E+00  0.0000E+00  0.0000E+00

                       Deposition Recirculating
Time (h) =  24.0000     Surfaces     Filter
Noble gases (atoms)    0.0000E+00  0.0000E+00
Elemental I (atoms)    0.0000E+00  9.6391E+16
Organic I (atoms)      0.0000E+00  2.9812E+15
Aerosols (kg)          0.0000E+00  0.0000E+00

Control Room Filtered Air Intake Transport Group Inventory:

                        Pathway
Time (h) =  24.0000      Filter
```

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**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 1 | System Nos. | Sheet 240 of 1000 |
|---|---|---|---|---|

```
Noble gases (atoms)    0.0000E+00
Elemental I (atoms)    6.6674E+23
Organic I (atoms)      2.0621E+22
Aerosols (kg)          0.0000E+00

Control Room Unfiltered Inleakage Transport Group Inventory:

                        Pathway
Time (h) =  24.0000      Filter
Noble gases (atoms)    0.0000E+00
Elemental I (atoms)    0.0000E+00
Organic I (atoms)      0.0000E+00
Aerosols (kg)          0.0000E+00

Control Room Exhaust Transport Group Inventory:

                        Pathway
Time (h) =  24.0000      Filter
Noble gases (atoms)    0.0000E+00
Elemental I (atoms)    0.0000E+00
Organic I (atoms)      0.0000E+00
Aerosols (kg)          0.0000E+00

Exclusion Area Boundary Doses:

Time (h) =  96.0000    Whole Body   Thyroid       TEDE
Delta dose (rem)        2.5201E-01  8.0410E+02  2.4859E+01
Accumulated dose (rem)  1.2581E+00  1.6913E+03  5.3383E+01

Low Population Zone Doses:

Time (h) =  96.0000    Whole Body   Thyroid       TEDE
Delta dose (rem)        5.0402E-03  1.0568E+01  3.2844E-01
Accumulated dose (rem)  8.0723E-02  5.1484E+01  1.6779E+00

Control Room Doses:

Time (h) =  96.0000    Whole Body   Thyroid       TEDE
Delta dose (rem)        4.3601E-04  2.3087E+01  7.0731E-01
Accumulated dose (rem)  6.7384E-03  1.0516E+02  3.2642E+00

Environment Integral Nuclide Release:

Time (h) =  96.0000       Ci           kg         Atoms         Bq
I-131                  4.7302E+03  3.8154E-05  1.7540E+20  1.7502E+14
I-132                  3.6045E+02  3.4920E-08  1.5931E+17  1.3337E+13
I-133                  4.3657E+03  3.8539E-06  1.7450E+19  1.6153E+14
I-134                  1.3502E+02  5.0614E-09  2.2747E+16  4.9958E+12
I-135                  1.6039E+03  4.5671E-07  2.0373E+18  5.9344E+13

Environment Transport Group Inventory:

                        Present     Release      Total
Time (h) =  96.0000     Release     Rate/s      Release
Noble gases (atoms)    0.0000E+00  0.0000E+00  0.0000E+00
Elemental I (atoms)    2.5283E+20  7.3156E+14  2.5283E+20
Organic I (atoms)      7.8194E+18  2.2626E+13  7.8194E+18
```

```
Aerosols (kg)          0.0000E+00  0.0000E+00  0.0000E+00

Sump to Environment Transport Group Inventory:

                        Pathway
Time (h) =  96.0000      Filter
Noble gases (atoms)    0.0000E+00
Elemental I (atoms)    0.0000E+00
Organic I (atoms)      0.0000E+00
Aerosols (kg)          0.0000E+00

Control Room Filtered Air Intake Transport Group Inventory:

                        Pathway
Time (h) =  96.0000      Filter
Noble gases (atoms)    0.0000E+00
Elemental I (atoms)    4.1098E+24
Organic I (atoms)      1.2711E+23
Aerosols (kg)          0.0000E+00

Control Room Unfiltered Inleakage Transport Group Inventory:

                        Pathway
Time (h) =  96.0000      Filter
Noble gases (atoms)    0.0000E+00
Elemental I (atoms)    0.0000E+00
Organic I (atoms)      0.0000E+00
Aerosols (kg)          0.0000E+00

Control Room Exhaust Transport Group Inventory:

                        Pathway
Time (h) =  96.0000      Filter
Noble gases (atoms)    0.0000E+00
Elemental I (atoms)    0.0000E+00
Organic I (atoms)      0.0000E+00
Aerosols (kg)          0.0000E+00
```

**Control Room Compartment Nuclide Inventory:**

| **Time (h) = 96.0000** | **Ci** | **kg** | **Atoms** | **Bq** |
|---|---|---|---|---|
| **I-131** | **2.0430E-03** | **1.6479E-11** | **7.5755E+13** | **7.5591E+07** |
| **I-133** | **2.4612E-04** | **2.1726E-13** | **9.8375E+11** | **9.1064E+06** |
| **I-135** | **2.3889E-07** | **6.8023E-17** | **3.0344E+08** | **8.8388E+03** |

```
Control Room Transport Group Inventory:

                                              Overlying
Time (h) =  96.0000    Atmosphere     Sump       Pool
Noble gases (atoms)    0.0000E+00  0.0000E+00  0.0000E+00
Elemental I (atoms)    1.3411E+14  0.0000E+00  0.0000E+00
Organic I (atoms)      4.1478E+12  0.0000E+00  0.0000E+00
Aerosols (kg)          0.0000E+00  0.0000E+00  0.0000E+00

                       Deposition Recirculating
Time (h) =  96.0000     Surfaces     Filter
Noble gases (atoms)    0.0000E+00  0.0000E+00
```

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**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 1 | System Nos. | Sheet 242 of 1000 |
|---|---|---|---|---|

```
Elemental I (atoms)    0.0000E+00  1.1042E+17
Organic I (atoms)      0.0000E+00  3.4150E+15
Aerosols (kg)          0.0000E+00  0.0000E+00

Control Room Filtered Air Intake Transport Group Inventory:

                        Pathway
Time (h) =  96.0000      Filter
Noble gases (atoms)    0.0000E+00
Elemental I (atoms)    4.1098E+24
Organic I (atoms)      1.2711E+23
Aerosols (kg)          0.0000E+00

Control Room Unfiltered Inleakage Transport Group Inventory:

                        Pathway
Time (h) =  96.0000      Filter
Noble gases (atoms)    0.0000E+00
Elemental I (atoms)    0.0000E+00
Organic I (atoms)      0.0000E+00
Aerosols (kg)          0.0000E+00

Control Room Exhaust Transport Group Inventory:

                        Pathway
Time (h) =  96.0000      Filter
Noble gases (atoms)    0.0000E+00
Elemental I (atoms)    0.0000E+00
Organic I (atoms)      0.0000E+00
Aerosols (kg)          0.0000E+00

Exclusion Area Boundary Doses:

Time (h) = 720.0000    Whole Body   Thyroid       TEDE
Delta dose (rem)        4.1179E-01  2.2619E+03  6.9289E+01
Accumulated dose (rem)  1.6698E+00  3.9532E+03  1.2267E+02

Low Population Zone Doses:

Time (h) = 720.0000    Whole Body   Thyroid       TEDE
Delta dose (rem)        2.0590E-03  7.4321E+00  2.2837E-01
Accumulated dose (rem)  8.2782E-02  5.8916E+01  1.9063E+00

Control Room Doses:

Time (h) = 720.0000    Whole Body   Thyroid       TEDE
Delta dose (rem)        2.7080E-04  2.6121E+01  7.9569E-01
Accumulated dose (rem)  7.0092E-03  1.3128E+02  4.0598E+00

Environment Integral Nuclide Release:

Time (h) = 720.0000       Ci           kg         Atoms         Bq
I-131                  1.2082E+04  9.7454E-05  4.4800E+20  4.4703E+14
I-132                  3.6045E+02  3.4920E-08  1.5931E+17  1.3337E+13
I-133                  4.4663E+03  3.9427E-06  1.7852E+19  1.6525E+14
I-134                  1.3502E+02  5.0614E-09  2.2747E+16  4.9958E+12
```

```
I-135                  1.6039E+03  4.5671E-07  2.0373E+18  5.9345E+13

Environment Transport Group Inventory:

                        Present     Release      Total
Time (h) = 720.0000     Release     Rate/s      Release
Noble gases (atoms)    0.0000E+00  0.0000E+00  0.0000E+00
Elemental I (atoms)    1.4718E+21  5.6782E+14  1.4718E+21
Organic I (atoms)      4.5519E+19  1.7561E+13  4.5519E+19
Aerosols (kg)          0.0000E+00  0.0000E+00  0.0000E+00

Sump to Environment Transport Group Inventory:

                        Pathway
Time (h) = 720.0000      Filter
Noble gases (atoms)    0.0000E+00
Elemental I (atoms)    0.0000E+00
Organic I (atoms)      0.0000E+00
Aerosols (kg)          0.0000E+00

Control Room Filtered Air Intake Transport Group Inventory:

                        Pathway
Time (h) = 720.0000      Filter
Noble gases (atoms)    0.0000E+00
Elemental I (atoms)    3.3932E+25
Organic I (atoms)      1.0495E+24
Aerosols (kg)          0.0000E+00

Control Room Unfiltered Inleakage Transport Group Inventory:

                        Pathway
Time (h) = 720.0000      Filter
Noble gases (atoms)    0.0000E+00
Elemental I (atoms)    0.0000E+00
Organic I (atoms)      0.0000E+00
Aerosols (kg)          0.0000E+00

Control Room Exhaust Transport Group Inventory:

                        Pathway
Time (h) = 720.0000      Filter
Noble gases (atoms)    0.0000E+00
Elemental I (atoms)    0.0000E+00
Organic I (atoms)      0.0000E+00
Aerosols (kg)          0.0000E+00

Control Room Compartment Nuclide Inventory:

Time (h) = 720.0000       Ci          kg          Atoms        Bq
I-131                  1.4300E-04  1.1535E-12  5.3025E+12  5.2910E+06

Control Room Transport Group Inventory:

                                                Overlying
Time (h) = 720.0000    Atmosphere     Sump        Pool
Noble gases (atoms)    0.0000E+00  0.0000E+00  0.0000E+00
```

```
Elemental I (atoms)    8.8310E+13  0.0000E+00  0.0000E+00
Organic I (atoms)      2.7312E+12  0.0000E+00  0.0000E+00
Aerosols (kg)          0.0000E+00  0.0000E+00  0.0000E+00

                       Deposition Recirculating
Time (h) = 720.0000     Surfaces     Filter
Noble gases (atoms)    0.0000E+00  0.0000E+00
Elemental I (atoms)    0.0000E+00  4.3854E+17
Organic I (atoms)      0.0000E+00  1.3563E+16
Aerosols (kg)          0.0000E+00  0.0000E+00

Control Room Filtered Air Intake Transport Group Inventory:

                        Pathway
Time (h) = 720.0000      Filter
Noble gases (atoms)    0.0000E+00
Elemental I (atoms)    3.3932E+25

Organic I (atoms)      1.0495E+24
Aerosols (kg)          0.0000E+00

Control Room Unfiltered Inleakage Transport Group Inventory:

                        Pathway
Time (h) = 720.0000      Filter
Noble gases (atoms)    0.0000E+00
Elemental I (atoms)    0.0000E+00
Organic I (atoms)      0.0000E+00
Aerosols (kg)          0.0000E+00

Control Room Exhaust Transport Group Inventory:

                        Pathway
Time (h) = 720.0000      Filter
Noble gases (atoms)    0.0000E+00
Elemental I (atoms)    0.0000E+00
Organic I (atoms)      0.0000E+00
Aerosols (kg)          0.0000E+00

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#####################################################################
                            I-131 Summary
#####################################################################

                   Sump              Environment          Control Room
Time (hr)    I-131 (Curies)         I-131 (Curies)       I-131 (Curies)
   0.001       3.9707E+03            0.0000E+00           0.0000E+00
   0.300       2.1419E+06            0.0000E+00           0.0000E+00
   0.491       3.5010E+06            0.0000E+00           0.0000E+00
   0.500       3.5672E+06            1.2081E-01           6.8572E-04
   0.800       9.3196E+06            7.2296E+00           7.9635E-03
   1.100       1.5060E+07            2.0678E+01           1.4622E-02
   1.400       2.0787E+07            4.0452E+01           2.1215E-02
   1.700       2.6502E+07            6.6538E+01           2.7789E-02
   1.800       2.8405E+07            7.6634E+01           2.9977E-02
   2.000       2.8384E+07            9.7518E+01           3.2114E-02
```

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**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 1 | System Nos. | Sheet 245 of 1000 |
|---|---|---|---|---|

| | | | |
|---|---|---|---|
| 2.300 | 2.8354E+07 | 1.2881E+02 | 2.3269E-02 |
| 2.600 | 2.8323E+07 | 1.6007E+02 | 2.2493E-02 |
| 2.900 | 2.8293E+07 | 1.9130E+02 | 2.2404E-02 |
| 3.200 | 2.8262E+07 | 2.2249E+02 | 2.2375E-02 |
| 3.500 | 2.8232E+07 | 2.5365E+02 | 2.2350E-02 |
| 3.800 | 2.8201E+07 | 2.8477E+02 | 2.2326E-02 |
| 4.100 | 2.8171E+07 | 3.1586E+02 | 2.2302E-02 |
| 4.400 | 2.8140E+07 | 3.4692E+02 | 2.2278E-02 |
| 4.700 | 2.8110E+07 | 3.7794E+02 | 2.2254E-02 |
| 5.000 | 2.8080E+07 | 4.0893E+02 | 2.2230E-02 |
| 5.300 | 2.8049E+07 | 4.3989E+02 | 2.2206E-02 |
| 5.600 | 2.8019E+07 | 4.7081E+02 | 2.2182E-02 |
| 5.900 | 2.7989E+07 | 5.0170E+02 | 2.2158E-02 |
| 6.200 | 2.7959E+07 | 5.3256E+02 | 2.2134E-02 |
| 6.500 | 2.7929E+07 | 5.6338E+02 | 2.2110E-02 |
| 6.800 | 2.7899E+07 | 5.9417E+02 | 2.2086E-02 |
| 7.100 | 2.7868E+07 | 6.2493E+02 | 2.2063E-02 |
| 7.400 | 2.7838E+07 | 6.5565E+02 | 2.2039E-02 |
| 7.700 | 2.7808E+07 | 6.8634E+02 | 2.2015E-02 |
| 8.000 | 2.7778E+07 | 7.1700E+02 | 2.1991E-02 |
| 8.300 | 2.7748E+07 | 7.4762E+02 | 1.1725E-02 |
| 8.600 | 2.7719E+07 | 7.7820E+02 | 1.0840E-02 |
| 8.900 | 2.7689E+07 | 8.0875E+02 | 1.0754E-02 |
| 9.200 | 2.7659E+07 | 8.3927E+02 | 1.0736E-02 |
| 9.500 | 2.7629E+07 | 8.6976E+02 | 1.0724E-02 |
| 9.800 | 2.7599E+07 | 9.0021E+02 | 1.0712E-02 |
| 10.100 | 2.7569E+07 | 9.3063E+02 | 1.0701E-02 |
| 10.400 | 2.7540E+07 | 9.6102E+02 | 1.0689E-02 |
| 24.000 | 2.6225E+07 | 2.3012E+03 | 1.0179E-02 |
| 96.000 | 2.0247E+07 | 4.7302E+03 | 2.0430E-03 |
| 720.000 | 2.1502E+06 | 1.2082E+04 | 1.4300E-04 |

```
#####################################################################
                        Cumulative Dose Summary
#####################################################################
```

| | Exclusion Area Bounda | | Low Population Zone | | Control Room | |
|---|---|---|---|---|---|---|
| Time (hr) | Thyroid (rem) | TEDE (rem) | Thyroid (rem) | TEDE (rem) | Thyroid (rem) | TEDE (rem) |
| 0.001 | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 |
| 0.300 | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 |
| 0.491 | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 |
| 0.500 | 5.1382E-02 | 1.8274E-03 | 8.9919E-03 | 3.1979E-04 | 8.6203E-04 | 2.7386E-05 |
| **0.800** | **3.0689E+00** | **1.0841E-01** | **5.3705E-01** | **1.8972E-02** | **3.6062E-01** | **1.1442E-02** |
| 1.100 | 8.7569E+00 | 3.0714E-01 | 1.5325E+00 | 5.3749E-02 | 1.2722E+00 | 4.0316E-02 |
| 1.400 | 1.7091E+01 | 5.9559E-01 | 2.9910E+00 | 1.0423E-01 | 2.7123E+00 | 8.5855E-02 |
| 1.700 | 2.8045E+01 | 9.7147E-01 | 4.9079E+00 | 1.7001E-01 | 4.6741E+00 | 1.4780E-01 |
| 1.800 | 3.2275E+01 | 1.1159E+00 | 5.6481E+00 | 1.9528E-01 | 5.4431E+00 | 1.7206E-01 |
| 2.000 | 4.1008E+01 | 1.4130E+00 | 7.1764E+00 | 2.4728E-01 | 7.1044E+00 | 2.2443E-01 |
| 2.300 | 5.4056E+01 | 1.8547E+00 | 8.1550E+00 | 2.8041E-01 | 9.1906E+00 | 2.9014E-01 |
| 2.600 | 6.7045E+01 | 2.2919E+00 | 9.1292E+00 | 3.1320E-01 | 1.0993E+01 | 3.4686E-01 |
| **2.900** | **7.9975E+01** | **2.7251E+00** | **1.0099E+01** | **3.4568E-01** | **1.2765E+01** | **4.0254E-01** |
| 3.200 | 9.2849E+01 | 3.1545E+00 | 1.1064E+01 | 3.7789E-01 | 1.4527E+01 | 4.5787E-01 |
| 3.500 | 1.0567E+02 | 3.5804E+00 | 1.2026E+01 | 4.0984E-01 | 1.6281E+01 | 5.1291E-01 |
| 3.800 | 1.1843E+02 | 4.0032E+00 | 1.2983E+01 | 4.4154E-01 | 1.8028E+01 | 5.6767E-01 |
| 4.100 | 1.3114E+02 | 4.4228E+00 | 1.3936E+01 | 4.7302E-01 | 1.9767E+01 | 6.2217E-01 |
| 4.400 | 1.4380E+02 | 4.8396E+00 | 1.4886E+01 | 5.0428E-01 | 2.1499E+01 | 6.7641E-01 |

AmerGen

**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 1 | System Nos. | Sheet 246 of 1000 |
|---|---|---|---|---|

```
   4.700 1.5640E+02 5.2537E+00 1.5831E+01 5.3533E-01 2.3224E+01 7.3039E-01
   5.000 1.6896E+02 5.6651E+00 1.6773E+01 5.6619E-01 2.4942E+01 7.8413E-01
   5.300 1.8146E+02 6.0740E+00 1.7710E+01 5.9686E-01 2.6653E+01 8.3762E-01
   5.600 1.9392E+02 6.4805E+00 1.8645E+01 6.2734E-01 2.8357E+01 8.9087E-01
   5.900 2.0632E+02 6.8847E+00 1.9575E+01 6.5766E-01 3.0055E+01 9.4389E-01
   6.200 2.1868E+02 7.2867E+00 2.0502E+01 6.8780E-01 3.1746E+01 9.9668E-01
   6.500 2.3099E+02 7.6864E+00 2.1425E+01 7.1779E-01 3.3431E+01 1.0492E+00
   6.800 2.4326E+02 8.0841E+00 2.2345E+01 7.4761E-01 3.5109E+01 1.1016E+00
   7.100 2.5548E+02 8.4797E+00 2.3262E+01 7.7728E-01 3.6781E+01 1.1537E+00
   7.400 2.6765E+02 8.8733E+00 2.4175E+01 8.0680E-01 3.8447E+01 1.2056E+00
   7.700 2.7978E+02 9.2650E+00 2.5084E+01 8.3618E-01 4.0107E+01 1.2573E+00
   8.000 2.9186E+02 9.6548E+00 2.5991E+01 8.6541E-01 4.1761E+01 1.3088E+00
   8.300 3.0390E+02 1.0043E+01 2.6292E+01 8.7547E-01 4.2898E+01 1.3443E+00
   8.600 3.1590E+02 1.0429E+01 2.6593E+01 8.8546E-01 4.3731E+01 1.3702E+00
   8.900 3.2785E+02 1.0813E+01 2.6893E+01 8.9541E-01 4.4536E+01 1.3952E+00
   9.200 3.3976E+02 1.1195E+01 2.7192E+01 9.0530E-01 4.5335E+01 1.4201E+00
   9.500 3.5163E+02 1.1576E+01 2.7489E+01 9.1514E-01 4.6132E+01 1.4448E+00
   9.800 3.6346E+02 1.1955E+01 2.7786E+01 9.2494E-01 4.6925E+01 1.4695E+00
  10.100 3.7525E+02 1.2333E+01 2.8081E+01 9.3469E-01 4.7716E+01 1.4941E+00
  10.400 3.8700E+02 1.2709E+01 2.8376E+01 9.4439E-01 4.8505E+01 1.5186E+00
  24.000 8.8717E+02 2.8524E+01 4.0916E+01 1.3495E+00 8.2069E+01 2.5568E+00
  96.000 1.6913E+03 5.3383E+01 5.1484E+01 1.6779E+00 1.0516E+02 3.2642E+00
 720.000 3.9532E+03 1.2267E+02 5.8916E+01 1.9063E+00 1.3128E+02 4.0598E+00

#################################################################
                        Worst Two-Hour Doses
    Note: All of the dose locations are shown below but the
          worst two-hour dose is only meaningful for the EAB
          dose location.  Please disregard the two-hour worst
          doses for the other dose locations
#################################################################
```

**Exclusion Area Boundary**

| Time (hr) | Whole Body (rem) | Thyroid (rem) | TEDE (rem) |
|---|---|---|---|
| 1.7 | 1.9378E-01 | 8.6130E+01 | 2.8908E+00 |

Low Population Zone

| Time (hr) | Whole Body (rem) | Thyroid (rem) | TEDE (rem) |
|---|---|---|---|
| 0.8 | 2.5855E-02 | 9.2386E+00 | 3.1588E-01 |

Control Room

| Time (hr) | Whole Body (rem) | Thyroid (rem) | TEDE (rem) |
|---|---|---|---|
| 1.4 | 1.7911E-03 | 1.2984E+01 | 4.0871E-01 |

**Appendix G**

**RADTRAD Output File**

# ESF_Leakage_NoFiltration.o1

**ESF Leakage Pathway Without CR Charcoal/HEPA Filters**
**(Case Analyzed To Estimate Aerosols & Iodines On CR Charcoal/HEPA Filters)**

TMI1 ESF Leakage Pathway AST Analysis,
CR Inleakage = 1,000 cfm,
5% Flashing For 0-24 hrs, and 2% Flashing For 24-720 hrs,
Without CR Filtration

AmerGen

**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 1 | System Nos. | Sheet 248 of 1000 |
|---|---|---|---|---|

```
#######################################################################
          RADTRAD Version 3.02 run on  5/30/2001  at  7:53:11
#######################################################################

#######################################################################
                     File information
#######################################################################

Plant file name           = D:\TMI RADTRAD\ESF_Leakage_NoFiltration.psf
Inventory file name       = d:\tmi radtrad\defaults\tmi_i131.nif
Scenario file name        = D:\TMI RADTRAD\ESF_Leakage_NoFiltration.psf
Release file name         = d:\tmi radtrad\defaults\pwr_i.rft
Dose conversion file name = d:\tmi radtrad\defaults\fgr11&12.inp

    #####    ####   #####    #  #     #  #####   #    #  #####
    #    #  #       #        #  ##    #  #    #  #    #    #
    #    #  #       #        #  # #   #  #    #  #    #    #
    #####    ####   ####     #  #  #  #  #####   #    #    #
    #            #  #        #  #   # #  #       #    #    #
    #            #  #        #  #    ##  #       #    #    #
    #        ####   #        #  #     #  #        ####     #

Radtrad 3.02 1/5/2000
CR Filter Activities Due to ESF Leakave
Nuclide Inventory File:
d:\tmi radtrad\defaults\tmi_i131.nif
Plant Power Level:
 2.6190E+03
Compartments:
  3
Compartment 1:
Sump
  3
 5.4519E+04
  0
  0
  0
  0
  0
Compartment 2:
Environment
  2
 0.0000E+00
  0
  0
  0
  0
  0
Compartment 3:
Control Room
  1
 2.5000E+05
  0
  0
  1
  0
  0
```

```
Pathways:
  4
Pathway 1:
Sump to Environment
  1
  2
  2
Pathway 2:
Control Room Filtered Air Intake
  2
  3
  2
Pathway 3:
Control Room Unfiltered Inleakage
  2
  3
  2
Pathway 4:
Control Room Exhaust
  3
  2
  2
End of Plant Model File
Scenario Description Name:

Plant Model Filename:

Source Term:
  1
  1   1.0000E+00
d:\tmi radtrad\defaults\fgr11&12.inp
d:\tmi radtrad\defaults\pwr_i.rft
  0.0000E+00
  0
  0.0000E+00   9.7000E-01   3.0000E-02   1.0000E+00
Overlying Pool:
  0
  0.0000E+00
  0
  0
  0
  0
Compartments:
  3
Compartment 1:
  0
  1
  0
  0
  0
  0
  0
  0
  0
Compartment 2:
  1
  1
```

```
  0
  0
  0
  0
  0
  0
  0
Compartment 3:
  1
  1
  0
  0
  0
  0
  1
  2.8000E+04
  9
  0.0000E+00   0.0000E+00   0.0000E+00   0.0000E+00
  5.0000E-01   0.0000E+00   0.0000E+00   0.0000E+00
  1.8000E+00   0.0000E+00   0.0000E+00   0.0000E+00
  2.0000E+00   0.0000E+00   0.0000E+00   0.0000E+00
  5.0000E+00   0.0000E+00   0.0000E+00   0.0000E+00
  8.0000E+00   0.0000E+00   0.0000E+00   0.0000E+00
  2.4000E+01   0.0000E+00   0.0000E+00   0.0000E+00
  9.6000E+01   0.0000E+00   0.0000E+00   0.0000E+00
  7.2000E+02   0.0000E+00   0.0000E+00   0.0000E+00
  0
  0
Pathways:
  4
Pathway 1:
  0
  0
  0
  0
  0
  1
  4
  0.0000E+00   0.0000E+00   0.0000E+00   0.0000E+00   0.0000E+00
  4.9070E-01   3.3400E-03   0.0000E+00   0.0000E+00   0.0000E+00
  2.4000E+01   1.3360E-03   0.0000E+00   0.0000E+00   0.0000E+00
  7.2000E+02   0.0000E+00   0.0000E+00   0.0000E+00   0.0000E+00
  0
  0
  0
  0
  0
  0
Pathway 2:
  0
  0
  0
  0
  0
  1
  9
  0.0000E+00   4.0000E+03   0.0000E+00   0.0000E+00   0.0000E+00
```

```
  5.0000E-01   8.0000E+03   0.0000E+00   0.0000E+00   0.0000E+00
  1.8000E+00   8.0000E+03   0.0000E+00   0.0000E+00   0.0000E+00
  2.0000E+00   8.0000E+03   0.0000E+00   0.0000E+00   0.0000E+00
  5.0000E+00   8.0000E+03   0.0000E+00   0.0000E+00   0.0000E+00
  8.0000E+00   8.0000E+03   0.0000E+00   0.0000E+00   0.0000E+00
  2.4000E+01   8.0000E+03   0.0000E+00   0.0000E+00   0.0000E+00
  9.6000E+01   8.0000E+03   0.0000E+00   0.0000E+00   0.0000E+00
  7.2000E+02   0.0000E+00   0.0000E+00   0.0000E+00   0.0000E+00
  0
  0
  0
  0
  0
  0
Pathway 3:
  0
  0
  0
  0
  0
  1
  9
  0.0000E+00   0.0000E+00   0.0000E+00   0.0000E+00   0.0000E+00
  5.0000E-01   1.0000E+03   0.0000E+00   0.0000E+00   0.0000E+00
  1.8000E+00   1.0000E+03   0.0000E+00   0.0000E+00   0.0000E+00
  2.0000E+00   1.0000E+03   0.0000E+00   0.0000E+00   0.0000E+00
  5.0000E+00   1.0000E+03   0.0000E+00   0.0000E+00   0.0000E+00
  8.0000E+00   1.0000E+03   0.0000E+00   0.0000E+00   0.0000E+00
  2.4000E+01   1.0000E+03   0.0000E+00   0.0000E+00   0.0000E+00
  9.6000E+01   1.0000E+03   0.0000E+00   0.0000E+00   0.0000E+00
  7.2000E+02   0.0000E+00   0.0000E+00   0.0000E+00   0.0000E+00
  0
  0
  0
  0
  0
  0
Pathway 4:
  0
  0
  0
  0
  0
  1
  9
  0.0000E+00   4.0000E+03   0.0000E+00   0.0000E+00   0.0000E+00
  5.0000E-01   9.0000E+03   0.0000E+00   0.0000E+00   0.0000E+00
  1.8000E+00   9.0000E+03   0.0000E+00   0.0000E+00   0.0000E+00
  2.0000E+00   9.0000E+03   0.0000E+00   0.0000E+00   0.0000E+00
  5.0000E+00   9.0000E+03   0.0000E+00   0.0000E+00   0.0000E+00
  8.0000E+00   9.0000E+03   0.0000E+00   0.0000E+00   0.0000E+00
  2.4000E+01   9.0000E+03   0.0000E+00   0.0000E+00   0.0000E+00
  9.6000E+01   9.0000E+03   0.0000E+00   0.0000E+00   0.0000E+00
  7.2000E+02   0.0000E+00   0.0000E+00   0.0000E+00   0.0000E+00
  0
  0
  0
```

```
  0
  0
  0
Dose Locations:
  3
Location 1:
Exclusion Area Boundary
  2
  1
  2
  0.0000E+00   8.0000E-04
  7.2000E+02   0.0000E+00
  1
  2
  0.0000E+00   3.5000E-04
  7.2000E+02   0.0000E+00
  0
Location 2:
Low Population Zone
  2
  1
  6
  0.0000E+00   1.4000E-04
  2.0000E+00   6.0000E-05
  8.0000E+00   3.9000E-05
  2.4000E+01   1.6000E-05
  9.6000E+01   4.0000E-06
  7.2000E+02   0.0000E+00
  1
  4
  0.0000E+00   3.5000E-04
  8.0000E+00   1.8000E-04
  2.4000E+01   2.3000E-04
  7.2000E+02   0.0000E+00
  0
Location 3:
Control Room
  3
  0
  1
  2
  0.0000E+00   3.5000E-04
  7.2000E+02   0.0000E+00
  1
  4
  0.0000E+00   1.0000E+00
  2.4000E+01   6.0000E-01
  9.6000E+01   4.0000E-01
  7.2000E+02   0.0000E+00
Effective Volume Location:
  1
  6
  0.0000E+00   3.0200E-03
  2.0000E+00   2.0800E-03
  8.0000E+00   1.0200E-03
  2.4000E+01   6.6300E-04
  9.6000E+01   4.3700E-04
```

```
  7.2000E+02   0.0000E+00
 Simulation Parameters:
  7
  0.0000E+00   5.0000E-02
  1.0000E+00   1.0000E-01
  2.0000E+00   1.0000E+00
  8.0000E+00   2.0000E+00
  2.4000E+01   4.0000E+00
  9.6000E+01   8.0000E+00
  7.2000E+02   0.0000E+00
 Output Filename:
 D:\TMI RADTRAD\ESF_Leakage_NoFiltration.o1
  1
  1
  1
  0
  0
 End of Scenario File

#######################################################################
           RADTRAD Version 3.02 run on  5/30/2001  at  7:53:11
 #######################################################################

 #######################################################################
                     Plant Description
 #######################################################################

 Number of Nuclides =  60

 Inventory Power =   1.0000E+00 MWth
 Plant Power Level =   2.6190E+03 MWth

 Number of compartments    =   3

 Compartment information

 Compartment number  1  (Source term fraction =   1.0000E+00
 )
 Name: Sump
 Compartment volume =   5.4519E+04 (Cubic feet)
 Pathways into and out of compartment  1
     Pathway to compartment number   2: Sump to Environment

 Compartment number  2
 Name: Environment
 Pathways into and out of compartment  2
     Pathway to compartment number   3: Control Room Filtered Air Intake
     Pathway to compartment number   3: Control Room Unfiltered Inleakage
     Pathway from compartment number 1: Sump to Environment
     Pathway from compartment number 3: Control Room Exhaust

 Compartment number  3
 Name: Control Room
 Compartment volume =   2.5000E+05 (Cubic feet)
 Removal devices within compartment:
      Filter(s)
 Pathways into and out of compartment  3
```

```
     Pathway to compartment number   2: Control Room Exhaust
     Pathway from compartment number 2: Control Room Filtered Air Intake
     Pathway from compartment number 2: Control Room Unfiltered Inleakage

 Total number of pathways =   4

 ######################################################################
           RADTRAD Version 3.02 run on  5/30/2001  at  7:53:11
 ######################################################################

 ######################################################################
                      Scenario Description
 ######################################################################

 Radioactive Decay is enabled
 RELEASE_NAME = PWR, NUREG-1465, Tables 3.12 & 3.13, Jun
 Release Fractions and Timings
                GAP       EARLY IN-VESSEL
             0.5000 hrs     1.3000 hrs
 NOBLES      0.0000E+00     0.0000E+00
 IODINE      5.0000E-02     3.5000E-01
 CESIUM      0.0000E+00     0.0000E+00
 TELLURIUM   0.0000E+00     0.0000E+00
 STRONTIUM   0.0000E+00     0.0000E+00
 BARIUM      0.0000E+00     0.0000E+00
 RUTHENIUM   0.0000E+00     0.0000E+00
 CERIUM      0.0000E+00     0.0000E+00
 LANTHANUM   0.0000E+00     0.0000E+00

 Iodine fractions
      Aerosol     =   0.0000E+00
      Elemental   =   9.7000E-01
      Organic     =   3.0000E-02

 COMPARTMENT DATA

 Compartment number   1: Sump

 Compartment number   2: Environment

 Compartment number   3: Control Room

      Compartment Filter Data

       Time (hr)      Flow Rate          Filter Efficiencies (%)
                        (cfm)         Aerosol     Elemental    Organic
        0.0000E+00    2.8000E+04   0.0000E+00   0.0000E+00   0.0000E+00
        5.0000E-01    2.8000E+04   0.0000E+00   0.0000E+00   0.0000E+00
        1.8000E+00    2.8000E+04   0.0000E+00   0.0000E+00   0.0000E+00
        2.0000E+00    2.8000E+04   0.0000E+00   0.0000E+00   0.0000E+00
        5.0000E+00    2.8000E+04   0.0000E+00   0.0000E+00   0.0000E+00
        8.0000E+00    2.8000E+04   0.0000E+00   0.0000E+00   0.0000E+00
        2.4000E+01    2.8000E+04   0.0000E+00   0.0000E+00   0.0000E+00
        9.6000E+01    2.8000E+04   0.0000E+00   0.0000E+00   0.0000E+00
        7.2000E+02    2.8000E+04   0.0000E+00   0.0000E+00   0.0000E+00

 PATHWAY DATA
```

AmerGen

**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 1 | System Nos. | Sheet 255 of 1000 |
|---|---|---|---|---|

Pathway number 1: Sump to Environment

Pathway Filter: Removal Data

| Time (hr) | Flow Rate (cfm) | Filter Efficiencies (%) Aerosol | Elemental | Organic |
|---|---|---|---|---|
| 0.0000E+00 | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 |
| 4.9070E-01 | 3.3400E-03 | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 |
| 2.4000E+01 | 1.3360E-03 | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 |
| 7.2000E+02 | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 |

Pathway number 2: Control Room Filtered Air Intake

Pathway Filter: Removal Data

| Time (hr) | Flow Rate (cfm) | Filter Efficiencies (%) Aerosol | Elemental | Organic |
|---|---|---|---|---|
| 0.0000E+00 | 4.0000E+03 | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 |
| 5.0000E-01 | 8.0000E+03 | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 |
| 1.8000E+00 | 8.0000E+03 | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 |
| 2.0000E+00 | 8.0000E+03 | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 |
| 5.0000E+00 | 8.0000E+03 | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 |
| 8.0000E+00 | 8.0000E+03 | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 |
| 2.4000E+01 | 8.0000E+03 | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 |
| 9.6000E+01 | 8.0000E+03 | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 |
| 7.2000E+02 | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 |

Pathway number 3: Control Room Unfiltered Inleakage

Pathway Filter: Removal Data

| Time (hr) | Flow Rate (cfm) | Filter Efficiencies (%) Aerosol | Elemental | Organic |
|---|---|---|---|---|
| 0.0000E+00 | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 |
| 5.0000E-01 | 1.0000E+03 | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 |
| 1.8000E+00 | 1.0000E+03 | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 |
| 2.0000E+00 | 1.0000E+03 | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 |
| 5.0000E+00 | 1.0000E+03 | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 |
| 8.0000E+00 | 1.0000E+03 | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 |
| 2.4000E+01 | 1.0000E+03 | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 |
| 9.6000E+01 | 1.0000E+03 | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 |
| 7.2000E+02 | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 |

Pathway number 4: Control Room Exhaust

Pathway Filter: Removal Data

| Time (hr) | Flow Rate (cfm) | Filter Efficiencies (%) Aerosol | Elemental | Organic |
|---|---|---|---|---|
| 0.0000E+00 | 4.0000E+03 | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 |
| 5.0000E-01 | 9.0000E+03 | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 |
| 1.8000E+00 | 9.0000E+03 | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 |
| 2.0000E+00 | 9.0000E+03 | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 |
| 5.0000E+00 | 9.0000E+03 | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 |
| 8.0000E+00 | 9.0000E+03 | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 |
| 2.4000E+01 | 9.0000E+03 | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 |

```
        9.6000E+01    9.0000E+03   0.0000E+00   0.0000E+00   0.0000E+00
        7.2000E+02    0.0000E+00   0.0000E+00   0.0000E+00   0.0000E+00

LOCATION DATA
     Location Exclusion Area Boundary     is in compartment   2

     Location X/Q Data
      Time (hr)         X/Q (s * m^-3)
       0.0000E+00          8.0000E-04
       7.2000E+02          0.0000E+00

     Location Breathing Rate Data
      Time (hr)         Breathing Rate (m^3 * sec^-1)
       0.0000E+00                3.5000E-04
       7.2000E+02                0.0000E+00
     Location Low Population Zone     is in compartment   2

     Location X/Q Data
      Time (hr)         X/Q (s * m^-3)
       0.0000E+00          1.4000E-04
       2.0000E+00          6.0000E-05
       8.0000E+00          3.9000E-05
       2.4000E+01          1.6000E-05
       9.6000E+01          4.0000E-06
       7.2000E+02          0.0000E+00

     Location Breathing Rate Data
      Time (hr)         Breathing Rate (m^3 * sec^-1)
       0.0000E+00                3.5000E-04
       8.0000E+00                1.8000E-04
       2.4000E+01                2.3000E-04
       7.2000E+02                0.0000E+00
     Location Control Room     is in compartment   3

     Location X/Q Data
      Time (hr)         X/Q (s * m^-3)
       0.0000E+00          3.0200E-03
       2.0000E+00          2.0800E-03
       8.0000E+00          1.0200E-03
       2.4000E+01          6.6300E-04
       9.6000E+01          4.3700E-04
       7.2000E+02          0.0000E+00

     Location Breathing Rate Data
      Time (hr)         Breathing Rate (m^3 * sec^-1)
       0.0000E+00                3.5000E-04
       7.2000E+02                0.0000E+00

     Location Occupancy Factor Data
      Time (hr)         Occupancy Factor
       0.0000E+00           1.0000E+00
       2.4000E+01           6.0000E-01
       9.6000E+01           4.0000E-01
       7.2000E+02           0.0000E+00

USER SPECIFIED TIME STEP DATA - SUPPLEMENTAL TIME STEPS
     Time            Time step
```

```
      0.0000E+00       5.0000E-02
      1.0000E+00       1.0000E-01
      2.0000E+00       1.0000E+00
      8.0000E+00       2.0000E+00
      2.4000E+01       4.0000E+00
      9.6000E+01       8.0000E+00
      7.2000E+02       0.0000E+00

#######################################################################
          RADTRAD Version 3.02 run on  5/30/2001  at  7:53:11
#######################################################################

     ####   #    #  #####  #####   #    #  #####
    #    #  #    #    #    #    #  #    #    #
    #    #  #    #    #    #    #  #    #    #
    #    #  #    #    #    #####   #    #    #
    #    #  #    #    #    #       #    #    #
    #    #  #    #    #    #       #    #    #
     ####    ####     #    #        ####     #

#######################################################################
           Dose, Detailed model and Detailed Inventory Output
#######################################################################

Exclusion Area Boundary Doses:

Time (h) =   0.4907    Whole Body   Thyroid       TEDE
Delta dose (rem)        0.0000E+00  0.0000E+00  0.0000E+00
Accumulated dose (rem)  0.0000E+00  0.0000E+00  0.0000E+00

Low Population Zone Doses:

Time (h) =   0.4907    Whole Body   Thyroid       TEDE
Delta dose (rem)        0.0000E+00  0.0000E+00  0.0000E+00
Accumulated dose (rem)  0.0000E+00  0.0000E+00  0.0000E+00

Control Room Doses:

Time (h) =   0.4907    Whole Body   Thyroid       TEDE
Delta dose (rem)        0.0000E+00  0.0000E+00  0.0000E+00
Accumulated dose (rem)  0.0000E+00  0.0000E+00  0.0000E+00

Environment Integral Nuclide Release:

Time (h) =   0.4907       Ci           kg         Atoms         Bq

Environment Transport Group Inventory:

                         Present     Release      Total
Time (h) =   0.4907      Release     Rate/s      Release
Noble gases (atoms)     0.0000E+00  0.0000E+00  0.0000E+00
Elemental I (atoms)     0.0000E+00  0.0000E+00  0.0000E+00
Organic I (atoms)       0.0000E+00  0.0000E+00  0.0000E+00
Aerosols (kg)           0.0000E+00  0.0000E+00  0.0000E+00

Sump to Environment Transport Group Inventory:
```

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**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 1 | System Nos. | Sheet 258 of 1000 |
|---|---|---|---|---|

```
                          Pathway
Time (h) =   0.4907        Filter
Noble gases (atoms)     0.0000E+00
Elemental I (atoms)     0.0000E+00
Organic I (atoms)       0.0000E+00
Aerosols (kg)           0.0000E+00

Control Room Filtered Air Intake Transport Group Inventory:

                          Pathway
Time (h) =   0.4907        Filter
Noble gases (atoms)     0.0000E+00
Elemental I (atoms)     0.0000E+00
Organic I (atoms)       0.0000E+00
Aerosols (kg)           0.0000E+00

Control Room Unfiltered Inleakage Transport Group Inventory:

                          Pathway
Time (h) =   0.4907        Filter
Noble gases (atoms)     0.0000E+00
Elemental I (atoms)     0.0000E+00
Organic I (atoms)       0.0000E+00
Aerosols (kg)           0.0000E+00

Control Room Exhaust Transport Group Inventory:

                          Pathway
Time (h) =   0.4907        Filter
Noble gases (atoms)     0.0000E+00
Elemental I (atoms)     0.0000E+00
Organic I (atoms)       0.0000E+00
Aerosols (kg)           0.0000E+00

Control Room Compartment Nuclide Inventory:

Time (h) =   0.4907       Ci           kg         Atoms         Bq

Control Room Transport Group Inventory:

                                                 Overlying
Time (h) =   0.4907     Atmosphere     Sump         Pool
Noble gases (atoms)     0.0000E+00  0.0000E+00  0.0000E+00
Elemental I (atoms)     0.0000E+00  0.0000E+00  0.0000E+00
Organic I (atoms)       0.0000E+00  0.0000E+00  0.0000E+00
Aerosols (kg)           0.0000E+00  0.0000E+00  0.0000E+00

                        Deposition Recirculating
Time (h) =   0.4907      Surfaces     Filter
Noble gases (atoms)     0.0000E+00  0.0000E+00
Elemental I (atoms)     0.0000E+00  0.0000E+00
Organic I (atoms)       0.0000E+00  0.0000E+00
Aerosols (kg)           0.0000E+00  0.0000E+00

Control Room Filtered Air Intake Transport Group Inventory:

                          Pathway
```

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**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 1 | System Nos. | Sheet 259 of 1000 |
|---|---|---|---|---|

```
Time (h) =   0.4907      Filter
Noble gases (atoms)    0.0000E+00
Elemental I (atoms)    0.0000E+00
Organic I (atoms)      0.0000E+00
Aerosols (kg)          0.0000E+00

Control Room Unfiltered Inleakage Transport Group Inventory:

                        Pathway
Time (h) =   0.4907      Filter
Noble gases (atoms)    0.0000E+00
Elemental I (atoms)    0.0000E+00
Organic I (atoms)      0.0000E+00
Aerosols (kg)          0.0000E+00

Control Room Exhaust Transport Group Inventory:

                        Pathway
Time (h) =   0.4907      Filter
Noble gases (atoms)    0.0000E+00
Elemental I (atoms)    0.0000E+00
Organic I (atoms)      0.0000E+00
Aerosols (kg)          0.0000E+00

Exclusion Area Boundary Doses:

Time (h) =   0.5000    Whole Body   Thyroid       TEDE
Delta dose (rem)        2.0672E-04  5.1382E-02  1.8274E-03
Accumulated dose (rem)  2.0672E-04  5.1382E-02  1.8274E-03

Low Population Zone Doses:

Time (h) =   0.5000    Whole Body   Thyroid       TEDE
Delta dose (rem)        3.6176E-05  8.9919E-03  3.1979E-04
Accumulated dose (rem)  3.6176E-05  8.9919E-03  3.1979E-04

Control Room Doses:

Time (h) =   0.5000    Whole Body   Thyroid       TEDE
Delta dose (rem)        1.9737E-07  8.6203E-04  2.7386E-05
Accumulated dose (rem)  1.9737E-07  8.6203E-04  2.7386E-05

Environment Integral Nuclide Release:

Time (h) =   0.5000       Ci           kg         Atoms         Bq
I-131                  1.2081E-01  9.7450E-10  4.4798E+15  4.4701E+09
I-132                  1.5045E-01  1.4575E-11  6.6496E+13  5.5666E+09
I-133                  2.4897E-01  2.1978E-10  9.9513E+14  9.2117E+09
I-134                  1.8954E-01  7.1051E-12  3.1931E+13  7.0130E+09
I-135                  2.2401E-01  6.3788E-11  2.8455E+14  8.2886E+09

Environment Transport Group Inventory:

                        Present     Release      Total
Time (h) =   0.5000     Release     Rate/s      Release
Noble gases (atoms)    0.0000E+00  0.0000E+00  0.0000E+00
Elemental I (atoms)    5.7171E+15  3.1762E+12  5.7171E+15
```

| | | | |
|---|---|---|---|
| Organic I (atoms) | 1.7682E+14 | 9.8232E+10 | 1.7682E+14 |
| Aerosols (kg) | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 |

Sump to Environment Transport Group Inventory:

| Time (h) = 0.5000 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 |

Control Room Filtered Air Intake Transport Group Inventory:

| Time (h) = 0.5000 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 |

Control Room Unfiltered Inleakage Transport Group Inventory:

| Time (h) = 0.5000 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 |

Control Room Exhaust Transport Group Inventory:

| Time (h) = 0.5000 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 |

**Control Room Compartment Nuclide Inventory:**

| **Time (h) = 0.5000** | **Ci** | **kg** | **Atoms** | **Bq** |
|---|---|---|---|---|
| **I-131** | **6.8572E-04** | **5.5311E-12** | **2.5427E+13** | **2.5371E+07** |
| **I-132** | **8.5392E-04** | **8.2727E-14** | **3.7742E+11** | **3.1595E+07** |
| **I-133** | **1.4131E-03** | **1.2474E-12** | **5.6482E+12** | **5.2284E+07** |
| **I-134** | **1.0758E-03** | **4.0327E-14** | **1.8124E+11** | **3.9805E+07** |
| **I-135** | **1.2715E-03** | **3.6205E-13** | **1.6151E+12** | **4.7044E+07** |

Control Room Transport Group Inventory:

| Time (h) = 0.5000 | Atmosphere | Sump | Overlying Pool |
|---|---|---|---|
| Noble gases (atoms) | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 |
| Elemental I (atoms) | 3.2449E+13 | 0.0000E+00 | 0.0000E+00 |
| Organic I (atoms) | 1.0036E+12 | 0.0000E+00 | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 |

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**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 1 | System Nos. | Sheet 261 of 1000 |
|---|---|---|---|---|

```
                        Deposition Recirculating
Time (h) =   0.5000      Surfaces     Filter
Noble gases (atoms)     0.0000E+00  0.0000E+00
Elemental I (atoms)     0.0000E+00  0.0000E+00
Organic I (atoms)       0.0000E+00  0.0000E+00
Aerosols (kg)           0.0000E+00  0.0000E+00

Control Room Filtered Air Intake Transport Group Inventory:

                         Pathway
Time (h) =   0.5000       Filter
Noble gases (atoms)     0.0000E+00
Elemental I (atoms)     0.0000E+00
Organic I (atoms)       0.0000E+00
Aerosols (kg)           0.0000E+00

Control Room Unfiltered Inleakage Transport Group Inventory:

                         Pathway
Time (h) =   0.5000       Filter
Noble gases (atoms)     0.0000E+00
Elemental I (atoms)     0.0000E+00
Organic I (atoms)       0.0000E+00
Aerosols (kg)           0.0000E+00

Control Room Exhaust Transport Group Inventory:

                         Pathway
Time (h) =   0.5000       Filter
Noble gases (atoms)     0.0000E+00
Elemental I (atoms)     0.0000E+00
Organic I (atoms)       0.0000E+00
Aerosols (kg)           0.0000E+00

Exclusion Area Boundary Doses:

Time (h) =   1.8000    Whole Body   Thyroid       TEDE
Delta dose (rem)        1.0168E-01  3.2437E+01  1.1214E+00
Accumulated dose (rem)  1.0189E-01  3.2488E+01  1.1232E+00

Low Population Zone Doses:

Time (h) =   1.8000    Whole Body   Thyroid       TEDE
Delta dose (rem)        1.7795E-02  5.6764E+00  1.9625E-01
Accumulated dose (rem)  1.7831E-02  5.6854E+00  1.9657E-01

Control Room Doses:

Time (h) =   1.8000    Whole Body   Thyroid       TEDE
Delta dose (rem)        1.1862E-02  6.8180E+01  2.1546E+00
Accumulated dose (rem)  1.1863E-02  6.8181E+01  2.1547E+00

Environment Integral Nuclide Release:

Time (h) =   1.8000       Ci           kg         Atoms         Bq
I-131                   7.7141E+01  6.2223E-07  2.8604E+18  2.8542E+12
I-132                   7.4721E+01  7.2389E-09  3.3026E+16  2.7647E+12
```

| | | | | |
|---|---|---|---|---|
| I-133 | 1.5495E+02 | 1.3679E-07 | 6.1937E+17 | 5.7333E+12 |
| I-134 | 6.3816E+01 | 2.3922E-09 | 1.0751E+16 | 2.3612E+12 |
| I-135 | 1.3116E+02 | 3.7349E-08 | 1.6661E+17 | 4.8531E+12 |

Environment Transport Group Inventory:

| Time (h) = 1.8000 | Present Release | Release Rate/s | Total Release |
|---|---|---|---|
| Noble gases (atoms) | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 |
| Elemental I (atoms) | 3.6220E+18 | 5.5895E+14 | 3.6220E+18 |
| Organic I (atoms) | 1.1202E+17 | 1.7287E+13 | 1.1202E+17 |
| Aerosols (kg) | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 |

Sump to Environment Transport Group Inventory:

| Time (h) = 1.8000 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 |

Control Room Filtered Air Intake Transport Group Inventory:

| Time (h) = 1.8000 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 |

Control Room Unfiltered Inleakage Transport Group Inventory:

| Time (h) = 1.8000 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 |

Control Room Exhaust Transport Group Inventory:

| Time (h) = 1.8000 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 |

**Control Room Compartment Nuclide Inventory:**

| **Time (h) = 1.8000** | **Ci** | **kg** | **Atoms** | **Bq** |
|---|---|---|---|---|
| **I-131** | **4.3737E-01** | **3.5279E-09** | **1.6218E+16** | **1.6183E+10** |
| **I-132** | **3.6983E-01** | **3.5829E-11** | **1.6346E+14** | **1.3684E+10** |
| **I-133** | **8.6714E-01** | **7.6548E-10** | **3.4660E+15** | **3.2084E+10** |
| **I-134** | **2.4665E-01** | **9.2457E-12** | **4.1551E+13** | **9.1259E+09** |
| **I-135** | **7.1095E-01** | **2.0244E-10** | **9.0307E+14** | **2.6305E+10** |

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**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 1 | System Nos. | Sheet 263 of 1000 |
|---|---|---|---|---|

Control Room Transport Group Inventory:

| Time (h) = 1.8000 | Atmosphere | Sump | Overlying Pool |
|---|---|---|---|
| Noble gases (atoms) | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 |
| Elemental I (atoms) | 2.0527E+16 | 0.0000E+00 | 0.0000E+00 |
| Organic I (atoms) | 6.3485E+14 | 0.0000E+00 | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 |

| Time (h) = 1.8000 | Deposition Surfaces | Recirculating Filter |
|---|---|---|
| Noble gases (atoms) | 0.0000E+00 | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 | 0.0000E+00 |

Control Room Filtered Air Intake Transport Group Inventory:

| Time (h) = 1.8000 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 |

Control Room Unfiltered Inleakage Transport Group Inventory:

| Time (h) = 1.8000 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 |

Control Room Exhaust Transport Group Inventory:

| Time (h) = 1.8000 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 |

Exclusion Area Boundary Doses:

| Time (h) = 2.0000 | Whole Body | Thyroid | TEDE |
|---|---|---|---|
| Delta dose (rem) | 2.3363E-02 | 8.8130E+00 | 2.9987E-01 |
| Accumulated dose (rem) | 1.2526E-01 | 4.1301E+01 | 1.4231E+00 |

Low Population Zone Doses:

| Time (h) = 2.0000 | Whole Body | Thyroid | TEDE |
|---|---|---|---|
| Delta dose (rem) | 4.0886E-03 | 1.5423E+00 | 5.2478E-02 |
| Accumulated dose (rem) | 2.1920E-02 | 7.2277E+00 | 2.4904E-01 |

Control Room Doses:

```
Time (h) =   2.0000    Whole Body   Thyroid       TEDE
Delta dose (rem)        3.7840E-03  2.5092E+01  7.9105E-01
Accumulated dose (rem)  1.5647E-02  9.3273E+01  2.9457E+00

Environment Integral Nuclide Release:

Time (h) =   2.0000       Ci           kg         Atoms         Bq
I-131                  9.8216E+01  7.9222E-07  3.6419E+18  3.6340E+12
I-132                  9.1765E+01  8.8901E-09  4.0559E+16  3.3953E+12
I-133                  1.9655E+02  1.7351E-07  7.8563E+17  7.2724E+12
I-134                  7.4385E+01  2.7884E-09  1.2531E+16  2.7523E+12
I-135                  1.6491E+02  4.6957E-08  2.0947E+17  6.1015E+12

Environment Transport Group Inventory:

                        Present     Release      Total
Time (h) =   2.0000     Release     Rate/s      Release
Noble gases (atoms)    0.0000E+00  0.0000E+00  0.0000E+00
Elemental I (atoms)    4.6088E+18  6.4011E+14  4.6088E+18
Organic I (atoms)      1.4254E+17  1.9797E+13  1.4254E+17
Aerosols (kg)          0.0000E+00  0.0000E+00  0.0000E+00

Sump to Environment Transport Group Inventory:

                        Pathway
Time (h) =   2.0000      Filter
Noble gases (atoms)    0.0000E+00
Elemental I (atoms)    0.0000E+00
Organic I (atoms)      0.0000E+00
Aerosols (kg)          0.0000E+00

Control Room Filtered Air Intake Transport Group Inventory:

                        Pathway
Time (h) =   2.0000      Filter
Noble gases (atoms)    0.0000E+00
Elemental I (atoms)    0.0000E+00
Organic I (atoms)      0.0000E+00
Aerosols (kg)          0.0000E+00

Control Room Unfiltered Inleakage Transport Group Inventory:

                        Pathway
Time (h) =   2.0000      Filter
Noble gases (atoms)    0.0000E+00
Elemental I (atoms)    0.0000E+00
Organic I (atoms)      0.0000E+00
Aerosols (kg)          0.0000E+00

Control Room Exhaust Transport Group Inventory:

                        Pathway
Time (h) =   2.0000      Filter
Noble gases (atoms)    0.0000E+00
Elemental I (atoms)    0.0000E+00
Organic I (atoms)      0.0000E+00
```

Aerosols (kg) 0.0000E+00

**Control Room Compartment Nuclide Inventory:**

| Time (h) = 2.0000 | Ci | kg | Atoms | Bq |
|---|---|---|---|---|
| I-131 | 5.0323E-01 | 4.0592E-09 | 1.8660E+16 | 1.8620E+10 |
| I-132 | 4.0092E-01 | 3.8841E-11 | 1.7720E+14 | 1.4834E+10 |
| I-133 | 9.9180E-01 | 8.7552E-10 | 3.9643E+15 | 3.6697E+10 |
| I-134 | 2.4245E-01 | 9.0885E-12 | 4.0845E+13 | 8.9707E+09 |
| I-135 | 8.0160E-01 | 2.2826E-10 | 1.0182E+15 | 2.9659E+10 |

Control Room Transport Group Inventory:

| Time (h) = 2.0000 | Atmosphere | Sump | Overlying Pool |
|---|---|---|---|
| Noble gases (atoms) | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 |
| Elemental I (atoms) | 2.3606E+16 | 0.0000E+00 | 0.0000E+00 |
| Organic I (atoms) | 7.3008E+14 | 0.0000E+00 | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 |

| Time (h) = 2.0000 | Deposition Surfaces | Recirculating Filter |
|---|---|---|
| Noble gases (atoms) | 0.0000E+00 | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 | 0.0000E+00 |

Control Room Filtered Air Intake Transport Group Inventory:

| Time (h) = 2.0000 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 |

Control Room Unfiltered Inleakage Transport Group Inventory:

| Time (h) = 2.0000 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 |

Control Room Exhaust Transport Group Inventory:

| Time (h) = 2.0000 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 |

Exclusion Area Boundary Doses:

| Time (h) = 5.0000 | Whole Body | Thyroid | TEDE |
|---|---|---|---|

```
Delta dose (rem)        2.5414E-01  1.2906E+02  4.2889E+00
Accumulated dose (rem)  3.7940E-01  1.7036E+02  5.7120E+00

Low Population Zone Doses:

Time (h) =   5.0000    Whole Body   Thyroid       TEDE
Delta dose (rem)        1.9061E-02  9.6795E+00  3.2167E-01
Accumulated dose (rem)  4.0980E-02  1.6907E+01  5.7071E-01

Control Room Doses:

Time (h) =   5.0000    Whole Body   Thyroid       TEDE
Delta dose (rem)        3.8792E-02  3.4445E+02  1.0808E+01
Accumulated dose (rem)  5.4439E-02  4.3772E+02  1.3754E+01

Environment Integral Nuclide Release:

Time (h) =   5.0000       Ci           kg         Atoms         Bq
I-131                  4.1233E+02  3.3259E-06  1.5289E+19  1.5256E+13
I-132                  2.5493E+02  2.4697E-08  1.1268E+17  9.4324E+12
I-133                  7.8799E+02  6.9561E-07  3.1496E+18  2.9156E+13
I-134                  1.3030E+02  4.8844E-09  2.1951E+16  4.8211E+12
I-135                  5.9434E+02  1.6924E-07  7.5495E+17  2.1991E+13

Environment Transport Group Inventory:

                        Present     Release      Total
Time (h) =   5.0000     Release     Rate/s      Release
Noble gases (atoms)    0.0000E+00  0.0000E+00  0.0000E+00
Elemental I (atoms)    1.9402E+19  1.0779E+15  1.9402E+19
Organic I (atoms)      6.0005E+17  3.3336E+13  6.0005E+17
Aerosols (kg)          0.0000E+00  0.0000E+00  0.0000E+00

Sump to Environment Transport Group Inventory:

                        Pathway
Time (h) =   5.0000      Filter
Noble gases (atoms)    0.0000E+00
Elemental I (atoms)    0.0000E+00
Organic I (atoms)      0.0000E+00
Aerosols (kg)          0.0000E+00

Control Room Filtered Air Intake Transport Group Inventory:

                        Pathway
Time (h) =   5.0000      Filter
Noble gases (atoms)    0.0000E+00
Elemental I (atoms)    0.0000E+00
Organic I (atoms)      0.0000E+00
Aerosols (kg)          0.0000E+00

Control Room Unfiltered Inleakage Transport Group Inventory:

                        Pathway
Time (h) =   5.0000      Filter
Noble gases (atoms)    0.0000E+00
Elemental I (atoms)    0.0000E+00
```

```
Organic I (atoms)      0.0000E+00
Aerosols (kg)          0.0000E+00

Control Room Exhaust Transport Group Inventory:

                        Pathway
Time (h) =   5.0000      Filter
Noble gases (atoms)    0.0000E+00
Elemental I (atoms)    0.0000E+00
Organic I (atoms)      0.0000E+00
Aerosols (kg)          0.0000E+00
```

**Control Room Compartment Nuclide Inventory:**

| Time (h) = 5.0000 | Ci | kg | Atoms | Bq |
|---|---|---|---|---|
| I-131 | 4.2605E-01 | 3.4366E-09 | 1.5798E+16 | 1.5764E+10 |
| I-132 | 1.3893E-01 | 1.3459E-11 | 6.1403E+13 | 5.1402E+09 |
| I-133 | 7.6803E-01 | 6.7799E-10 | 3.0699E+15 | 2.8417E+10 |
| I-134 | 1.9358E-02 | 7.2565E-13 | 3.2611E+12 | 7.1624E+08 |
| I-135 | 5.0085E-01 | 1.4262E-10 | 6.3619E+14 | 1.8531E+10 |

```
Control Room Transport Group Inventory:

                                                Overlying
Time (h) =   5.0000    Atmosphere     Sump        Pool
Noble gases (atoms)    0.0000E+00  0.0000E+00  0.0000E+00
Elemental I (atoms)    2.0169E+16  0.0000E+00  0.0000E+00
Organic I (atoms)      6.2380E+14  0.0000E+00  0.0000E+00
Aerosols (kg)          0.0000E+00  0.0000E+00  0.0000E+00

                       Deposition Recirculating
Time (h) =   5.0000     Surfaces     Filter
Noble gases (atoms)    0.0000E+00  0.0000E+00
Elemental I (atoms)    0.0000E+00  0.0000E+00
Organic I (atoms)      0.0000E+00  0.0000E+00
Aerosols (kg)          0.0000E+00  0.0000E+00

Control Room Filtered Air Intake Transport Group Inventory:

                        Pathway
Time (h) =   5.0000      Filter
Noble gases (atoms)    0.0000E+00
Elemental I (atoms)    0.0000E+00
Organic I (atoms)      0.0000E+00
Aerosols (kg)          0.0000E+00

Control Room Unfiltered Inleakage Transport Group Inventory:

                        Pathway
Time (h) =   5.0000      Filter
Noble gases (atoms)    0.0000E+00
Elemental I (atoms)    0.0000E+00
Organic I (atoms)      0.0000E+00
Aerosols (kg)          0.0000E+00

Control Room Exhaust Transport Group Inventory:
```

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**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 1 | System Nos. | Sheet 268 of 1000 |
|---|---|---|---|---|

```
                          Pathway
Time (h) =   5.0000        Filter
Noble gases (atoms)     0.0000E+00
Elemental I (atoms)     0.0000E+00
Organic I (atoms)       0.0000E+00
Aerosols (kg)           0.0000E+00

Exclusion Area Boundary Doses:

Time (h) =   8.0000     Whole Body   Thyroid       TEDE
Delta dose (rem)         1.6596E-01  1.2394E+02  4.0234E+00
Accumulated dose (rem)   5.4535E-01  2.9430E+02  9.7354E+00

Low Population Zone Doses:

Time (h) =   8.0000     Whole Body   Thyroid       TEDE
Delta dose (rem)         1.2447E-02  9.2958E+00  3.0175E-01
Accumulated dose (rem)   5.3427E-02  2.6203E+01  8.7247E-01

Control Room Doses:

Time (h) =   8.0000     Whole Body   Thyroid       TEDE
Delta dose (rem)         2.4557E-02  3.2227E+02  1.0054E+01
Accumulated dose (rem)   7.8996E-02  7.5999E+02  2.3808E+01

Environment Integral Nuclide Release:

Time (h) =   8.0000        Ci           kg         Atoms         Bq
I-131                   7.2300E+02  5.8318E-06  2.6809E+19  2.6751E+13
I-132                   3.2098E+02  3.1096E-08  1.4187E+17  1.1876E+13
I-133                   1.3230E+03  1.1679E-06  5.2882E+18  4.8952E+13
I-134                   1.3551E+02  5.0798E-09  2.2829E+16  5.0140E+12
I-135                   9.0779E+02  2.5849E-07  1.1531E+18  3.3588E+13

Environment Transport Group Inventory:

                          Present     Release      Total
Time (h) =   8.0000       Release     Rate/s      Release
Noble gases (atoms)     0.0000E+00  0.0000E+00  0.0000E+00
Elemental I (atoms)     3.4191E+19  1.1872E+15  3.4191E+19
Organic I (atoms)       1.0575E+18  3.6717E+13  1.0575E+18
Aerosols (kg)           0.0000E+00  0.0000E+00  0.0000E+00

Sump to Environment Transport Group Inventory:

                          Pathway
Time (h) =   8.0000        Filter
Noble gases (atoms)     0.0000E+00
Elemental I (atoms)     0.0000E+00
Organic I (atoms)       0.0000E+00
Aerosols (kg)           0.0000E+00

Control Room Filtered Air Intake Transport Group Inventory:

                          Pathway
Time (h) =   8.0000        Filter
Noble gases (atoms)     0.0000E+00
```

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**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 1 | System Nos. | Sheet 269 of 1000 |
|---|---|---|---|---|

```
Elemental I (atoms)    0.0000E+00
Organic I (atoms)      0.0000E+00
Aerosols (kg)          0.0000E+00

Control Room Unfiltered Inleakage Transport Group Inventory:

                        Pathway
Time (h) =   8.0000      Filter
Noble gases (atoms)    0.0000E+00
Elemental I (atoms)    0.0000E+00
Organic I (atoms)      0.0000E+00
Aerosols (kg)          0.0000E+00

Control Room Exhaust Transport Group Inventory:

                        Pathway
Time (h) =   8.0000      Filter
Noble gases (atoms)    0.0000E+00
Elemental I (atoms)    0.0000E+00
Organic I (atoms)      0.0000E+00
Aerosols (kg)          0.0000E+00
```

**Control Room Compartment Nuclide Inventory:**

| **Time (h) = 8.0000** | **Ci** | **kg** | **Atoms** | **Bq** |
|---|---|---|---|---|
| **I-131** | **4.2136E-01** | **3.3988E-09** | **1.5624E+16** | **1.5590E+10** |
| **I-132** | **5.6236E-02** | **5.4480E-12** | **2.4855E+13** | **2.0807E+09** |
| **I-133** | **6.9477E-01** | **6.1331E-10** | **2.7770E+15** | **2.5706E+10** |
| **I-134** | **1.8055E-03** | **6.7680E-14** | **3.0416E+11** | **6.6803E+07** |
| **I-135** | **3.6556E-01** | **1.0409E-10** | **4.6434E+14** | **1.3526E+10** |

```
Control Room Transport Group Inventory:

                                                Overlying
Time (h) =   8.0000    Atmosphere     Sump        Pool
Noble gases (atoms)    0.0000E+00  0.0000E+00  0.0000E+00
Elemental I (atoms)    2.0164E+16  0.0000E+00  0.0000E+00
Organic I (atoms)      6.2362E+14  0.0000E+00  0.0000E+00
Aerosols (kg)          0.0000E+00  0.0000E+00  0.0000E+00

                       Deposition Recirculating
Time (h) =   8.0000     Surfaces     Filter
Noble gases (atoms)    0.0000E+00  0.0000E+00
Elemental I (atoms)    0.0000E+00  0.0000E+00
Organic I (atoms)      0.0000E+00  0.0000E+00
Aerosols (kg)          0.0000E+00  0.0000E+00

Control Room Filtered Air Intake Transport Group Inventory:

                        Pathway
Time (h) =   8.0000      Filter
Noble gases (atoms)    0.0000E+00
Elemental I (atoms)    0.0000E+00
Organic I (atoms)      0.0000E+00
Aerosols (kg)          0.0000E+00

Control Room Unfiltered Inleakage Transport Group Inventory:
```

```
                          Pathway
Time (h) =   8.0000        Filter
Noble gases (atoms)     0.0000E+00
Elemental I (atoms)     0.0000E+00
Organic I (atoms)       0.0000E+00
Aerosols (kg)           0.0000E+00

Control Room Exhaust Transport Group Inventory:

                          Pathway
Time (h) =   8.0000        Filter
Noble gases (atoms)     0.0000E+00
Elemental I (atoms)     0.0000E+00
Organic I (atoms)       0.0000E+00
Aerosols (kg)           0.0000E+00

Exclusion Area Boundary Doses:

Time (h) =  24.0000    Whole Body   Thyroid       TEDE
Delta dose (rem)        4.6715E-01  5.9784E+02  1.8950E+01
Accumulated dose (rem)  1.0125E+00  8.9214E+02  2.8685E+01

Low Population Zone Doses:

Time (h) =  24.0000    Whole Body   Thyroid       TEDE
Delta dose (rem)        2.2774E-02  1.4989E+01  4.8616E-01
Accumulated dose (rem)  7.6201E-02  4.1192E+01  1.3586E+00

Control Room Doses:

Time (h) =  24.0000    Whole Body   Thyroid       TEDE
Delta dose (rem)        3.5492E-02  7.8719E+02  2.4375E+01
Accumulated dose (rem)  1.1449E-01  1.5472E+03  4.8183E+01

Environment Integral Nuclide Release:

Time (h) =  24.0000       Ci           kg         Atoms         Bq
I-131                  2.3139E+03  1.8664E-05  8.5801E+19  8.5614E+13
I-132                  3.6317E+02  3.5183E-08  1.6051E+17  1.3437E+13
I-133                  3.3776E+03  2.9816E-06  1.3500E+19  1.2497E+14
I-134                  1.3604E+02  5.0997E-09  2.2919E+16  5.0336E+12
I-135                  1.5635E+03  4.4520E-07  1.9859E+18  5.7848E+13

Environment Transport Group Inventory:

                          Present     Release      Total
Time (h) =  24.0000       Release     Rate/s      Release
Noble gases (atoms)     0.0000E+00  0.0000E+00  0.0000E+00
Elemental I (atoms)     1.1272E+20  1.3046E+15  1.1272E+20
Organic I (atoms)       3.4861E+18  4.0349E+13  3.4861E+18
Aerosols (kg)           0.0000E+00  0.0000E+00  0.0000E+00

Sump to Environment Transport Group Inventory:

                          Pathway
Time (h) =  24.0000        Filter
```

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**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 1 | System Nos. | Sheet 271 of 1000 |
|---|---|---|---|---|

```
Noble gases (atoms)    0.0000E+00
Elemental I (atoms)    0.0000E+00
Organic I (atoms)      0.0000E+00
Aerosols (kg)          0.0000E+00

Control Room Filtered Air Intake Transport Group Inventory:

                        Pathway
Time (h) =  24.0000      Filter
Noble gases (atoms)    0.0000E+00
Elemental I (atoms)    0.0000E+00
Organic I (atoms)      0.0000E+00
Aerosols (kg)          0.0000E+00

Control Room Unfiltered Inleakage Transport Group Inventory:

                        Pathway
Time (h) =  24.0000      Filter
Noble gases (atoms)    0.0000E+00
Elemental I (atoms)    0.0000E+00
Organic I (atoms)      0.0000E+00
Aerosols (kg)          0.0000E+00

Control Room Exhaust Transport Group Inventory:

                        Pathway
Time (h) =  24.0000      Filter
Noble gases (atoms)    0.0000E+00
Elemental I (atoms)    0.0000E+00
Organic I (atoms)      0.0000E+00
Aerosols (kg)          0.0000E+00
```

**Control Room Compartment Nuclide Inventory:**

| **Time (h) = 24.0000** | **Ci** | **kg** | **Atoms** | **Bq** |
|---|---|---|---|---|
| **I-131** | **1.9420E-01** | **1.5664E-09** | **7.2009E+15** | **7.1852E+09** |
| **I-132** | **2.2102E-04** | **2.1412E-14** | **9.7687E+10** | **8.1777E+06** |
| **I-133** | **1.9898E-01** | **1.7566E-10** | **7.9536E+14** | **7.3624E+09** |
| **I-134** | **2.8252E-09** | **1.0591E-19** | **4.7595E+05** | **1.0453E+02** |
| **I-135** | **3.3330E-02** | **9.4907E-12** | **4.2337E+13** | **1.2332E+09** |

Control Room Transport Group Inventory:

| Time (h) = 24.0000 | Atmosphere | Sump | Overlying Pool |
|---|---|---|---|
| Noble gases (atoms) | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 |
| Elemental I (atoms) | 9.8427E+15 | 0.0000E+00 | 0.0000E+00 |
| Organic I (atoms) | 3.0441E+14 | 0.0000E+00 | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 |

| Time (h) = 24.0000 | Deposition Surfaces | Recirculating Filter |
|---|---|---|
| Noble gases (atoms) | 0.0000E+00 | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 | 0.0000E+00 |

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**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 1 | System Nos. | Sheet 272 of 1000 |
|---|---|---|---|---|

Control Room Filtered Air Intake Transport Group Inventory:

| | Pathway Filter |
|---|---|
| Time (h) = 24.0000 | |
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 |

Control Room Unfiltered Inleakage Transport Group Inventory:

| | Pathway Filter |
|---|---|
| Time (h) = 24.0000 | |
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 |

Control Room Exhaust Transport Group Inventory:

| | Pathway Filter |
|---|---|
| Time (h) = 24.0000 | |
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 |

Exclusion Area Boundary Doses:

| Time (h) = 96.0000 | Whole Body | Thyroid | TEDE |
|---|---|---|---|
| Delta dose (rem) | 2.5271E-01 | 8.0630E+02 | 2.4927E+01 |
| Accumulated dose (rem) | 1.2652E+00 | 1.6984E+03 | 5.3612E+01 |

Low Population Zone Doses:

| Time (h) = 96.0000 | Whole Body | Thyroid | TEDE |
|---|---|---|---|
| Delta dose (rem) | 5.0542E-03 | 1.0597E+01 | 3.2934E-01 |
| Accumulated dose (rem) | 8.1255E-02 | 5.1789E+01 | 1.6880E+00 |

Control Room Doses:

| Time (h) = 96.0000 | Whole Body | Thyroid | TEDE |
|---|---|---|---|
| Delta dose (rem) | 8.3091E-03 | 4.3992E+02 | 1.3478E+01 |
| Accumulated dose (rem) | 1.2280E-01 | 1.9871E+03 | 6.1661E+01 |

Environment Integral Nuclide Release:

| Time (h) = 96.0000 | Ci | kg | Atoms | Bq |
|---|---|---|---|---|
| I-131 | 4.7496E+03 | 3.8311E-05 | 1.7612E+20 | 1.7573E+14 |
| I-132 | 3.6324E+02 | 3.5191E-08 | 1.6055E+17 | 1.3440E+13 |
| I-133 | 4.3883E+03 | 3.8738E-06 | 1.7540E+19 | 1.6237E+14 |
| I-134 | 1.3604E+02 | 5.0997E-09 | 2.2919E+16 | 5.0336E+12 |
| I-135 | 1.6144E+03 | 4.5970E-07 | 2.0506E+18 | 5.9732E+13 |

Environment Transport Group Inventory:

| | Present | Release | Total |
|---|---|---|---|

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**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 1 | System Nos. | Sheet 273 of 1000 |
|---|---|---|---|---|

```
Time (h) =  96.0000     Release     Rate/s      Release
Noble gases (atoms)    0.0000E+00  0.0000E+00  0.0000E+00
Elemental I (atoms)    2.5383E+20  7.3446E+14  2.5383E+20
Organic I (atoms)      7.8504E+18  2.2715E+13  7.8504E+18
Aerosols (kg)          0.0000E+00  0.0000E+00  0.0000E+00
```

Sump to Environment Transport Group Inventory:

```
                        Pathway
Time (h) =  96.0000      Filter
Noble gases (atoms)    0.0000E+00
Elemental I (atoms)    0.0000E+00
Organic I (atoms)      0.0000E+00
Aerosols (kg)          0.0000E+00
```

Control Room Filtered Air Intake Transport Group Inventory:

```
                        Pathway
Time (h) =  96.0000      Filter
Noble gases (atoms)    0.0000E+00
Elemental I (atoms)    0.0000E+00
Organic I (atoms)      0.0000E+00
Aerosols (kg)          0.0000E+00
```

Control Room Unfiltered Inleakage Transport Group Inventory:

```
                        Pathway
Time (h) =  96.0000      Filter
Noble gases (atoms)    0.0000E+00
Elemental I (atoms)    0.0000E+00
Organic I (atoms)      0.0000E+00
Aerosols (kg)          0.0000E+00
```

Control Room Exhaust Transport Group Inventory:

```
                        Pathway
Time (h) =  96.0000      Filter
Noble gases (atoms)    0.0000E+00
Elemental I (atoms)    0.0000E+00
Organic I (atoms)      0.0000E+00
Aerosols (kg)          0.0000E+00
```

**Control Room Compartment Nuclide Inventory:**

| **Time (h) = 96.0000** | **Ci** | **kg** | **Atoms** | **Bq** |
|---|---|---|---|---|
| **I-131** | **3.8921E-02** | **3.1394E-10** | **1.4432E+15** | **1.4401E+09** |
| **I-133** | **4.6888E-03** | **4.1391E-12** | **1.8741E+13** | **1.7348E+08** |
| **I-135** | **4.5510E-06** | **1.2959E-15** | **5.7808E+09** | **1.6839E+05** |

Control Room Transport Group Inventory:

```
                                          Overlying
Time (h) =  96.0000    Atmosphere     Sump        Pool
Noble gases (atoms)    0.0000E+00  0.0000E+00  0.0000E+00
Elemental I (atoms)    2.5549E+15  0.0000E+00  0.0000E+00
Organic I (atoms)      7.9018E+13  0.0000E+00  0.0000E+00
Aerosols (kg)          0.0000E+00  0.0000E+00  0.0000E+00
```

```
                        Deposition Recirculating
Time (h) =  96.0000      Surfaces     Filter
Noble gases (atoms)     0.0000E+00  0.0000E+00
Elemental I (atoms)     0.0000E+00  0.0000E+00
Organic I (atoms)       0.0000E+00  0.0000E+00
Aerosols (kg)           0.0000E+00  0.0000E+00

Control Room Filtered Air Intake Transport Group Inventory:

                         Pathway
Time (h) =  96.0000       Filter
Noble gases (atoms)     0.0000E+00
Elemental I (atoms)     0.0000E+00
Organic I (atoms)       0.0000E+00
Aerosols (kg)           0.0000E+00

Control Room Unfiltered Inleakage Transport Group Inventory:

                         Pathway
Time (h) =  96.0000       Filter
Noble gases (atoms)     0.0000E+00
Elemental I (atoms)     0.0000E+00
Organic I (atoms)       0.0000E+00
Aerosols (kg)           0.0000E+00

Control Room Exhaust Transport Group Inventory:

                         Pathway
Time (h) =  96.0000       Filter
Noble gases (atoms)     0.0000E+00
Elemental I (atoms)     0.0000E+00
Organic I (atoms)       0.0000E+00
Aerosols (kg)           0.0000E+00

Exclusion Area Boundary Doses:

Time (h) = 720.0000     Whole Body   Thyroid       TEDE
Delta dose (rem)         4.1252E-01  2.2659E+03  6.9411E+01
Accumulated dose (rem)   1.6777E+00  3.9644E+03  1.2302E+02

Low Population Zone Doses:

Time (h) = 720.0000     Whole Body   Thyroid       TEDE
Delta dose (rem)         2.0626E-03  7.4452E+00  2.2877E-01
Accumulated dose (rem)   8.3317E-02  5.9234E+01  1.9167E+00

Control Room Doses:

Time (h) = 720.0000     Whole Body   Thyroid       TEDE
Delta dose (rem)         5.1543E-03  4.9719E+02  1.5145E+01
Accumulated dose (rem)   1.2795E-01  2.4843E+03  7.6806E+01

Environment Integral Nuclide Release:

Time (h) = 720.0000       Ci           kg         Atoms         Bq
```

| | | | | |
|---|---|---|---|---|
| I-131 | 1.2114E+04 | 9.7715E-05 | 4.4920E+20 | 4.4822E+14 |
| I-132 | 3.6324E+02 | 3.5191E-08 | 1.6055E+17 | 1.3440E+13 |
| I-133 | 4.4891E+03 | 3.9628E-06 | 1.7943E+19 | 1.6610E+14 |
| I-134 | 1.3604E+02 | 5.0997E-09 | 2.2919E+16 | 5.0336E+12 |
| I-135 | 1.6144E+03 | 4.5971E-07 | 2.0507E+18 | 5.9733E+13 |

Environment Transport Group Inventory:

| Time (h) = 720.0000 | Present Release | Release Rate/s | Total Release |
|---|---|---|---|
| Noble gases (atoms) | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 |
| Elemental I (atoms) | 1.4749E+21 | 5.6903E+14 | 1.4749E+21 |
| Organic I (atoms) | 4.5616E+19 | 1.7599E+13 | 4.5616E+19 |
| Aerosols (kg) | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 |

Sump to Environment Transport Group Inventory:

| Time (h) = 720.0000 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 |

Control Room Filtered Air Intake Transport Group Inventory:

| Time (h) = 720.0000 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 |

Control Room Unfiltered Inleakage Transport Group Inventory:

| Time (h) = 720.0000 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 |

Control Room Exhaust Transport Group Inventory:

| Time (h) = 720.0000 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 |

**Control Room Compartment Nuclide Inventory:**

| **Time (h) = 720.0000** | **Ci** | **kg** | **Atoms** | **Bq** |
|---|---|---|---|---|
| **I-131** | **2.7218E-03** | **2.1954E-11** | **1.0092E+14** | **1.0071E+08** |

Control Room Transport Group Inventory:

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**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 1 | System Nos. | Sheet 276 of 1000 |
|---|---|---|---|---|

```
                                                  Overlying
Time (h) = 720.0000    Atmosphere     Sump         Pool
Noble gases (atoms)    0.0000E+00  0.0000E+00  0.0000E+00
Elemental I (atoms)    1.6809E+15  0.0000E+00  0.0000E+00
Organic I (atoms)      5.1985E+13  0.0000E+00  0.0000E+00
Aerosols (kg)          0.0000E+00  0.0000E+00  0.0000E+00

                       Deposition Recirculating
Time (h) = 720.0000     Surfaces     Filter
Noble gases (atoms)    0.0000E+00  0.0000E+00
Elemental I (atoms)    0.0000E+00  0.0000E+00
Organic I (atoms)      0.0000E+00  0.0000E+00
Aerosols (kg)          0.0000E+00  0.0000E+00

Control Room Filtered Air Intake Transport Group Inventory:

                        Pathway
Time (h) = 720.0000      Filter
Noble gases (atoms)    0.0000E+00
Elemental I (atoms)    0.0000E+00
Organic I (atoms)      0.0000E+00
Aerosols (kg)          0.0000E+00

Control Room Unfiltered Inleakage Transport Group Inventory:

                        Pathway
Time (h) = 720.0000      Filter
Noble gases (atoms)    0.0000E+00
Elemental I (atoms)    0.0000E+00
Organic I (atoms)      0.0000E+00
Aerosols (kg)          0.0000E+00

Control Room Exhaust Transport Group Inventory:

                        Pathway
Time (h) = 720.0000      Filter
Noble gases (atoms)    0.0000E+00
Elemental I (atoms)    0.0000E+00
Organic I (atoms)      0.0000E+00
Aerosols (kg)          0.0000E+00

    321

#####################################################################
                             I-131 Summary
#####################################################################

                   Sump                Environment          Control Room
Time (hr)    I-131 (Curies)          I-131 (Curies)       I-131 (Curies)
   0.001       3.9707E+03             0.0000E+00           0.0000E+00
   0.300       2.1419E+06             0.0000E+00           0.0000E+00
   0.491       3.5010E+06             0.0000E+00           0.0000E+00
   0.500       3.5672E+06             1.2081E-01           6.8572E-04
   0.800       9.3196E+06             7.2479E+00           7.0855E-02
   1.100       1.5060E+07             2.0766E+01           1.6783E-01
   1.400       2.0787E+07             4.0672E+01           2.7881E-01
```

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**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 1 | System Nos. | Sheet 277 of 1000 |
|---|---|---|---|---|

| | | | |
|---|---|---|---|
| 1.700 | 2.6502E+07 | 6.6961E+01 | 3.9703E-01 |
| 1.800 | 2.8405E+07 | 7.7141E+01 | 4.3737E-01 |
| 2.000 | 2.8384E+07 | 9.8216E+01 | 5.0323E-01 |
| 2.300 | 2.8354E+07 | 1.2981E+02 | 4.6828E-01 |
| 2.600 | 2.8323E+07 | 1.6135E+02 | 4.4970E-01 |
| 2.900 | 2.8293E+07 | 1.9285E+02 | 4.3971E-01 |
| 3.200 | 2.8262E+07 | 2.2431E+02 | 4.3424E-01 |
| 3.500 | 2.8232E+07 | 2.5573E+02 | 4.3115E-01 |
| 3.800 | 2.8201E+07 | 2.8712E+02 | 4.2931E-01 |
| 4.100 | 2.8171E+07 | 3.1847E+02 | 4.2812E-01 |
| 4.400 | 2.8140E+07 | 3.4979E+02 | 4.2728E-01 |
| 4.700 | 2.8110E+07 | 3.8108E+02 | 4.2662E-01 |
| 5.000 | 2.8080E+07 | 4.1233E+02 | 4.2605E-01 |
| 5.300 | 2.8049E+07 | 4.4355E+02 | 4.2554E-01 |
| 5.600 | 2.8019E+07 | 4.7473E+02 | 4.2505E-01 |
| 5.900 | 2.7989E+07 | 5.0588E+02 | 4.2458E-01 |
| 6.200 | 2.7959E+07 | 5.3700E+02 | 4.2411E-01 |
| 6.500 | 2.7929E+07 | 5.6808E+02 | 4.2365E-01 |
| 6.800 | 2.7899E+07 | 5.9913E+02 | 4.2319E-01 |
| 7.100 | 2.7868E+07 | 6.3015E+02 | 4.2273E-01 |
| 7.400 | 2.7838E+07 | 6.6113E+02 | 4.2228E-01 |
| 7.700 | 2.7808E+07 | 6.9208E+02 | 4.2182E-01 |
| 8.000 | 2.7778E+07 | 7.2300E+02 | 4.2136E-01 |
| 8.300 | 2.7748E+07 | 7.5384E+02 | 3.1848E-01 |
| 8.600 | 2.7719E+07 | 7.8461E+02 | 2.6447E-01 |
| 8.900 | 2.7689E+07 | 8.1531E+02 | 2.3606E-01 |
| 9.200 | 2.7659E+07 | 8.4597E+02 | 2.2107E-01 |
| 9.500 | 2.7629E+07 | 8.7659E+02 | 2.1311E-01 |
| 9.800 | 2.7599E+07 | 9.0717E+02 | 2.0883E-01 |
| 10.100 | 2.7569E+07 | 9.3772E+02 | 2.0649E-01 |
| 10.400 | 2.7540E+07 | 9.6823E+02 | 2.0515E-01 |
| 24.000 | 2.6225E+07 | 2.3139E+03 | 1.9420E-01 |
| 96.000 | 2.0247E+07 | 4.7496E+03 | 3.8921E-02 |
| 720.000 | 2.1502E+06 | 1.2114E+04 | 2.7218E-03 |

```
#####################################################################
                        Cumulative Dose Summary
#####################################################################
```

| | Exclusion Area Bounda | | Low Population Zone | | Control Room | |
|---|---|---|---|---|---|---|
| Time (hr) | Thyroid (rem) | TEDE (rem) | Thyroid (rem) | TEDE (rem) | Thyroid (rem) | TEDE (rem) |
| 0.001 | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 |
| 0.300 | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 |
| 0.491 | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 |
| 0.500 | 5.1382E-02 | 1.8274E-03 | 8.9919E-03 | 3.1979E-04 | 8.6203E-04 | 2.7386E-05 |
| 0.800 | 3.0767E+00 | 1.0869E-01 | 5.3841E-01 | 1.9020E-02 | 2.6580E+00 | 8.4329E-02 |
| 1.100 | 8.7939E+00 | 3.0843E-01 | 1.5389E+00 | 5.3976E-02 | 1.2161E+01 | 3.8532E-01 |
| 1.400 | 1.7184E+01 | 5.9881E-01 | 3.0072E+00 | 1.0479E-01 | 3.0048E+01 | 9.5095E-01 |
| 1.700 | 2.8223E+01 | 9.7762E-01 | 4.9391E+00 | 1.7108E-01 | 5.7073E+01 | 1.8042E+00 |
| 1.800 | 3.2488E+01 | 1.1232E+00 | 5.6854E+00 | 1.9657E-01 | 6.8181E+01 | 2.1547E+00 |
| 2.000 | 4.1301E+01 | 1.4231E+00 | 7.2277E+00 | 2.4904E-01 | 9.3273E+01 | 2.9457E+00 |
| 2.300 | 5.4473E+01 | 1.8690E+00 | 8.2156E+00 | 2.8248E-01 | 1.3176E+02 | 4.1579E+00 |
| 2.600 | 6.7578E+01 | 2.3101E+00 | 9.1985E+00 | 3.1557E-01 | 1.6806E+02 | 5.2998E+00 |
| 2.900 | 8.0622E+01 | 2.7470E+00 | 1.0177E+01 | 3.4834E-01 | 2.0313E+02 | 6.4022E+00 |
| 3.200 | 9.3606E+01 | 3.1802E+00 | 1.1151E+01 | 3.8082E-01 | 2.3750E+02 | 7.4815E+00 |
| 3.500 | 1.0653E+02 | 3.6098E+00 | 1.2120E+01 | 4.1304E-01 | 2.7143E+02 | 8.5462E+00 |

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**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 1 | System Nos. | Sheet 278 of 1000 |
|---|---|---|---|---|

| | | | | | | |
|---|---|---|---|---|---|---|
| 3.800 | 1.1941E+02 | 4.0361E+00 | 1.3086E+01 | 4.4501E-01 | 3.0507E+02 | 9.6008E+00 |
| 4.100 | 1.3222E+02 | 4.4593E+00 | 1.4047E+01 | 4.7676E-01 | 3.3848E+02 | 1.0648E+01 |
| 4.400 | 1.4499E+02 | 4.8796E+00 | 1.5004E+01 | 5.0828E-01 | 3.7171E+02 | 1.1688E+01 |
| 4.700 | 1.5770E+02 | 5.2971E+00 | 1.5958E+01 | 5.3960E-01 | 4.0479E+02 | 1.2724E+01 |
| 5.000 | 1.7036E+02 | 5.7120E+00 | 1.6907E+01 | 5.7071E-01 | 4.3772E+02 | 1.3754E+01 |
| 5.300 | 1.8297E+02 | 6.1244E+00 | 1.7853E+01 | 6.0164E-01 | 4.7051E+02 | 1.4779E+01 |
| 5.600 | 1.9553E+02 | 6.5344E+00 | 1.8795E+01 | 6.3239E-01 | 5.0317E+02 | 1.5799E+01 |
| 5.900 | 2.0804E+02 | 6.9420E+00 | 1.9733E+01 | 6.6296E-01 | 5.3570E+02 | 1.6815E+01 |
| 6.200 | 2.2050E+02 | 7.3473E+00 | 2.0668E+01 | 6.9336E-01 | 5.6811E+02 | 1.7827E+01 |
| 6.500 | 2.3292E+02 | 7.7505E+00 | 2.1599E+01 | 7.2359E-01 | 6.0039E+02 | 1.8834E+01 |
| 6.800 | 2.4529E+02 | 8.1515E+00 | 2.2527E+01 | 7.5367E-01 | 6.3255E+02 | 1.9837E+01 |
| 7.100 | 2.5761E+02 | 8.5504E+00 | 2.3451E+01 | 7.8359E-01 | 6.6458E+02 | 2.0836E+01 |
| 7.400 | 2.6989E+02 | 8.9474E+00 | 2.4372E+01 | 8.1336E-01 | 6.9650E+02 | 2.1830E+01 |
| 7.700 | 2.8212E+02 | 9.3424E+00 | 2.5289E+01 | 8.4299E-01 | 7.2830E+02 | 2.2821E+01 |
| 8.000 | 2.9430E+02 | 9.7354E+00 | 2.6203E+01 | 8.7247E-01 | 7.5999E+02 | 2.3808E+01 |
| 8.300 | 3.0643E+02 | 1.0126E+01 | 2.6507E+01 | 8.8259E-01 | 7.8736E+02 | 2.4660E+01 |
| 8.600 | 3.1850E+02 | 1.0514E+01 | 2.6810E+01 | 8.9265E-01 | 8.0896E+02 | 2.5332E+01 |
| 8.900 | 3.3051E+02 | 1.0901E+01 | 2.7111E+01 | 9.0265E-01 | 8.2753E+02 | 2.5910E+01 |
| 9.200 | 3.4248E+02 | 1.1285E+01 | 2.7411E+01 | 9.1258E-01 | 8.4449E+02 | 2.6437E+01 |
| 9.500 | 3.5440E+02 | 1.1667E+01 | 2.7710E+01 | 9.2247E-01 | 8.6058E+02 | 2.6938E+01 |
| 9.800 | 3.6628E+02 | 1.2048E+01 | 2.8007E+01 | 9.3231E-01 | 8.7619E+02 | 2.7423E+01 |
| 10.100 | 3.7812E+02 | 1.2427E+01 | 2.8304E+01 | 9.4209E-01 | 8.9152E+02 | 2.7899E+01 |
| 10.400 | 3.8991E+02 | 1.2805E+01 | 2.8600E+01 | 9.5183E-01 | 9.0669E+02 | 2.8371E+01 |
| 24.000 | 8.9214E+02 | 2.8685E+01 | 4.1192E+01 | 1.3586E+00 | 1.5472E+03 | 4.8183E+01 |
| 96.000 | 1.6984E+03 | 5.3612E+01 | 5.1789E+01 | 1.6880E+00 | 1.9871E+03 | 6.1661E+01 |
| 720.000 | 3.9644E+03 | 1.2302E+02 | 5.9234E+01 | 1.9167E+00 | 2.4843E+03 | 7.6806E+01 |

```
#################################################################
                        Worst Two-Hour Doses
    Note: All of the dose locations are shown below but the
          worst two-hour dose is only meaningful for the EAB
          dose location.  Please disregard the two-hour worst
          doses for the other dose locations
#################################################################
```

**Exclusion Area Boundary**

| Time (hr) | Whole Body (rem) | Thyroid (rem) | TEDE (rem) |
|---|---|---|---|
| **1.7** | **1.9550E-01** | **8.6892E+01** | **2.9163E+00** |

Low Population Zone

| Time (hr) | Whole Body (rem) | Thyroid (rem) | TEDE (rem) |
|---|---|---|---|
| 0.8 | 2.6057E-02 | 9.3122E+00 | 3.1839E-01 |

Control Room

| Time (hr) | Whole Body (rem) | Thyroid (rem) | TEDE (rem) |
|---|---|---|---|
| 1.8 | 2.9875E-02 | 2.3688E+02 | 7.4462E+00 |

**Appendix H**

**RADTRAD Output File**

# BWST_Leakage.o1

**BWST Leakage Pathway**

BWST Bypass Leakage Pathway AST Analysis:
CR Inleakage = 1,000 cfm,
CR Initiation = 30 minutes

AmerGen

**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 1 | System Nos. | Sheet 280 of 1000 |
|---|---|---|---|---|

```
 ######################################################################
          RADTRAD Version 3.02 run on  5/29/2001  at  9:12:28
 ######################################################################

 ######################################################################
                      File information
 ######################################################################

 Plant file name           = D:\TMI RADTRAD\BWST_Leakage.psf
 Inventory file name       = D:\TMI RADTRAD\Defaults\tmi_i131.nif
 Scenario file name        = D:\TMI RADTRAD\BWST_Leakage.psf
 Release file name         = d:\tmi radtrad\defaults\pwr_i.rft
 Dose conversion file name = d:\tmi radtrad\defaults\fgr11&12.inp

     #####    ####   #####    #  #     #  #####   #    #  #####
     #    #  #       #        #  ##    #  #    #  #    #    #
     #    #  #       #        #  # #   #  #    #  #    #    #
     #####    ####   ####     #  #  #  #  #####   #    #    #
     #            #  #        #  #   # #  #       #    #    #
     #            #  #        #  #    ##  #       #    #    #
     #        ####   #        #  #     #  #        ####     #

 Radtrad 3.02 1/5/2000
 BWST Bypass Leakage  AST Analysis, CR Inleakage = 1,000 cfm, CR Initiation = 30
minutes, 10% Flashing For 0-720 hrs
 Nuclide Inventory File:
 D:\TMI RADTRAD\Defaults\tmi_i131.nif
 Plant Power Level:
  2.6190E+03
 Compartments:
   4
 Compartment 1:
 Sump
   3
  5.4519E+04
   0
   0
   0
   0
   0
 Compartment 2:
 BWST
   3
  4.0684E+04
   0
   0
   0
   0
   0
 Compartment 3:
 Environment
   2
  0.0000E+00
   0
   0
   0
   0
```

```
  0
Compartment 4:
Control Room
  1
 2.5000E+05
  0
  0
  1
  0
  0
Pathways:
  5
Pathway 1:
Sump to BWST
  1
  2
  2
Pathway 2:
BWST to Environment
  2
  3
  2
Pathway 3:
Control Room Filtered Air Intake
  3
  4
  2
Pathway 4:
Control Room Unfiltered Inleakage
  3
  4
  2
Pathway 5:
Control Room Exhaust to Environment
  4
  3
  2
End of Plant Model File
Scenario Description Name:

Plant Model Filename:

Source Term:
  1
  1   1.0000E+00
d:\tmi radtrad\defaults\fgr11&12.inp
d:\tmi radtrad\defaults\pwr_i.rft
  0.0000E+00
  0
  0.0000E+00   9.7000E-01   3.0000E-02   1.0000E+00
Overlying Pool:
  0
  0.0000E+00
  0
  0
  0
  0
```

```
Compartments:
  4
Compartment 1:
  0
  1
  0
  0
  0
  0
  0
  0
  0
Compartment 2:
  0
  1
  0
  0
  0
  0
  0
  0
  0
Compartment 3:
  1
  1
  0
  0
  0
  0
  0
  0
  0
Compartment 4:
  1
  1
  0
  0
  0
  0
  1
  2.8000E+04
  3
  0.0000E+00   0.0000E+00   0.0000E+00   0.0000E+00
  5.0000E-01   9.9000E+01   9.0000E+01   9.0000E+01
  7.2000E+02   9.9000E+01   9.0000E+01   9.0000E+01
  0
  0
Pathways:
  5
Pathway 1:
  0
  0
  0
  0
  0
  1
  5
```

```
  0.0000E+00   0.0000E+00   0.0000E+00   0.0000E+00   0.0000E+00
  4.9070E-01   4.0100E-01   9.0000E+01   9.0000E+01   9.0000E+01
  5.0000E+00   2.2720E-01   9.0000E+01   9.0000E+01   9.0000E+01
  2.4000E+01   2.1390E-01   9.0000E+01   9.0000E+01   9.0000E+01
  7.2000E+02   0.0000E+00   0.0000E+00   0.0000E+00   0.0000E+00
  0
  0
  0
  0
  0
  0
Pathway 2:
  0
  0
  0
  0
  0
  1
  4
  0.0000E+00   0.0000E+00   0.0000E+00   0.0000E+00   0.0000E+00
  4.9070E-01   4.0100E-01   9.0000E+01   9.0000E+01   9.0000E+01
  5.0000E+00   2.2720E-01   9.0000E+01   9.0000E+01   9.0000E+01
  2.4000E+01   2.1390E-01   9.0000E+01   9.0000E+01   9.0000E+01
  0
  0
  0
  0
  0
  0
Pathway 3:
  0
  0
  0
  0
  0
  1
  3
  0.0000E+00   4.0000E+03   0.0000E+00   0.0000E+00   0.0000E+00
  5.0000E-01   8.0000E+03   9.9000E+01   9.0000E+01   9.0000E+01
  7.2000E+02   8.0000E+03   9.9000E+01   9.0000E+01   9.0000E+01
  0
  0
  0
  0
  0
  0
Pathway 4:
  0
  0
  0
  0
  0
  1
  3
  0.0000E+00   0.0000E+00   0.0000E+00   0.0000E+00   0.0000E+00
  5.0000E-01   1.0000E+03   0.0000E+00   0.0000E+00   0.0000E+00
  7.2000E+02   1.0000E+03   0.0000E+00   0.0000E+00   0.0000E+00
```

```
  0
  0
  0
  0
  0
  0
Pathway 5:
  0
  0
  0
  0
  0
  1
  3
  0.0000E+00   4.0000E+03   0.0000E+00   0.0000E+00   0.0000E+00
  5.0000E-01   9.0000E+03   0.0000E+00   0.0000E+00   0.0000E+00
  7.2000E+02   9.0000E+03   0.0000E+00   0.0000E+00   0.0000E+00
  0
  0
  0
  0
  0
  0
Dose Locations:
  3
Location 1:
Exclusion Area Boundary
  3
  1
  2
  0.0000E+00   8.0000E-04
  7.2000E+02   0.0000E+00
  1
  2
  0.0000E+00   3.5000E-04
  7.2000E+02   0.0000E+00
  0
Location 2:
Low Population Zone
  3
  1
  6
  0.0000E+00   1.4000E-04
  2.0000E+00   6.0000E-05
  8.0000E+00   3.9000E-05
  2.4000E+01   1.6000E-05
  9.6000E+01   4.0000E-06
  7.2000E+02   0.0000E+00
  1
  4
  0.0000E+00   3.5000E-04
  8.0000E+00   1.8000E-04
  2.4000E+01   2.3000E-04
  7.2000E+02   0.0000E+00
  0
Location 3:
Control Room
```

```
   4
   0
   1
   2
   0.0000E+00   3.5000E-04
   7.2000E+02   0.0000E+00
   1
   4
   0.0000E+00   1.0000E+00
   2.4000E+01   6.0000E-01
   9.6000E+01   4.0000E-01
   7.2000E+02   0.0000E+00
 Effective Volume Location:
   1
   6
   0.0000E+00   8.4500E-04
   2.0000E+00   5.2300E-04
   8.0000E+00   2.4900E-04
   2.4000E+01   1.7700E-04
   9.6000E+01   1.1900E-04
   7.2000E+02   0.0000E+00
 Simulation Parameters:
   7
   0.0000E+00   5.0000E-02
   1.0000E+00   1.0000E-01
   2.0000E+00   1.0000E+00
   8.0000E+00   2.0000E+00
   2.4000E+01   4.0000E+00
   9.6000E+01   8.0000E+00
   7.2000E+02   0.0000E+00
 Output Filename:
 D:\TMI RADTRAD\BWST_Leakage.o1
   1
   1
   1
   0
   0
 End of Scenario File
_
_
 ######################################################################
           RADTRAD Version 3.02 run on  5/29/2001  at  9:12:28
 ######################################################################

 ######################################################################
                     Plant Description
 ######################################################################

 Number of Nuclides =  60

 Inventory Power =   1.0000E+00 MWth
 Plant Power Level =   2.6190E+03 MWth

 Number of compartments    =   4

 Compartment information
```

```
Compartment number  1  (Source term fraction =   1.0000E+00
)
Name: Sump
Compartment volume =   5.4519E+04 (Cubic feet)
Pathways into and out of compartment  1
    Pathway to compartment number   2: Sump to BWST

Compartment number  2
Name: BWST
Compartment volume =   4.0684E+04 (Cubic feet)
Pathways into and out of compartment  2
    Pathway to compartment number   3: BWST to Environment
    Pathway from compartment number 1: Sump to BWST

Compartment number  3
Name: Environment
Pathways into and out of compartment  3
    Pathway to compartment number   4: Control Room Filtered Air Intake
    Pathway to compartment number   4: Control Room Unfiltered Inleakage
    Pathway from compartment number 2: BWST to Environment
    Pathway from compartment number 4: Control Room Exhaust to Environment

Compartment number  4
Name: Control Room
Compartment volume =   2.5000E+05 (Cubic feet)
Removal devices within compartment:
     Filter(s)
Pathways into and out of compartment  4
    Pathway to compartment number   3: Control Room Exhaust to Environment
    Pathway from compartment number 3: Control Room Filtered Air Intake
    Pathway from compartment number 3: Control Room Unfiltered Inleakage

Total number of pathways =   5


_
#######################################################################
          RADTRAD Version 3.02 run on  5/29/2001  at  9:12:28
#######################################################################

#######################################################################
                    Scenario Description
#######################################################################

Radioactive Decay is enabled
RELEASE_NAME = PWR, NUREG-1465, Tables 3.12 & 3.13, Jun
Release Fractions and Timings
                GAP       EARLY IN-VESSEL
             0.5000 hrs     1.3000 hrs
NOBLES       0.0000E+00     0.0000E+00
IODINE       5.0000E-02     3.5000E-01
CESIUM       0.0000E+00     0.0000E+00
TELLURIUM    0.0000E+00     0.0000E+00
STRONTIUM    0.0000E+00     0.0000E+00
BARIUM       0.0000E+00     0.0000E+00
RUTHENIUM    0.0000E+00     0.0000E+00
CERIUM       0.0000E+00     0.0000E+00
LANTHANUM    0.0000E+00     0.0000E+00
```

```
Iodine fractions
     Aerosol     =   0.0000E+00
     Elemental   =   9.7000E-01
     Organic     =   3.0000E-02

COMPARTMENT DATA

Compartment number   1: Sump

Compartment number   2: BWST

Compartment number   3: Environment

Compartment number   4: Control Room

     Compartment Filter Data

      Time (hr)      Flow Rate          Filter Efficiencies (%)
                       (cfm)        Aerosol     Elemental    Organic
       0.0000E+00    2.8000E+04   0.0000E+00   0.0000E+00   0.0000E+00
       5.0000E-01    2.8000E+04   9.9000E+01   9.0000E+01   9.0000E+01
       7.2000E+02    2.8000E+04   9.9000E+01   9.0000E+01   9.0000E+01

PATHWAY DATA

Pathway number  1: Sump to BWST

     Pathway Filter: Removal Data

       Time (hr)      Flow Rate          Filter Efficiencies (%)
                       (cfm)        Aerosol     Elemental    Organic
       0.0000E+00    0.0000E+00   0.0000E+00   0.0000E+00   0.0000E+00
       4.9070E-01    4.0100E-01   9.0000E+01   9.0000E+01   9.0000E+01
       5.0000E+00    2.2720E-01   9.0000E+01   9.0000E+01   9.0000E+01
       2.4000E+01    2.1390E-01   9.0000E+01   9.0000E+01   9.0000E+01
       7.2000E+02    0.0000E+00   0.0000E+00   0.0000E+00   0.0000E+00

Pathway number  2: BWST to Environment

     Pathway Filter: Removal Data

       Time (hr)      Flow Rate          Filter Efficiencies (%)
                       (cfm)        Aerosol     Elemental    Organic
       0.0000E+00    0.0000E+00   0.0000E+00   0.0000E+00   0.0000E+00
       4.9070E-01    4.0100E-01   9.0000E+01   9.0000E+01   9.0000E+01
       5.0000E+00    2.2720E-01   9.0000E+01   9.0000E+01   9.0000E+01
       2.4000E+01    2.1390E-01   9.0000E+01   9.0000E+01   9.0000E+01

Pathway number  3: Control Room Filtered Air Intake

     Pathway Filter: Removal Data

       Time (hr)      Flow Rate          Filter Efficiencies (%)
                       (cfm)        Aerosol     Elemental    Organic
       0.0000E+00    4.0000E+03   0.0000E+00   0.0000E+00   0.0000E+00
       5.0000E-01    8.0000E+03   9.9000E+01   9.0000E+01   9.0000E+01
```

```
       7.2000E+02    8.0000E+03   9.9000E+01   9.0000E+01   9.0000E+01

Pathway number  4: Control Room Unfiltered Inleakage

     Pathway Filter: Removal Data

       Time (hr)      Flow Rate          Filter Efficiencies (%)
                       (cfm)        Aerosol     Elemental    Organic
       0.0000E+00    0.0000E+00   0.0000E+00   0.0000E+00   0.0000E+00
       5.0000E-01    1.0000E+03   0.0000E+00   0.0000E+00   0.0000E+00
       7.2000E+02    1.0000E+03   0.0000E+00   0.0000E+00   0.0000E+00

Pathway number  5: Control Room Exhaust to Environment

     Pathway Filter: Removal Data

       Time (hr)      Flow Rate          Filter Efficiencies (%)
                       (cfm)        Aerosol     Elemental    Organic
       0.0000E+00    4.0000E+03   0.0000E+00   0.0000E+00   0.0000E+00
       5.0000E-01    9.0000E+03   0.0000E+00   0.0000E+00   0.0000E+00
       7.2000E+02    9.0000E+03   0.0000E+00   0.0000E+00   0.0000E+00

LOCATION DATA
     Location Exclusion Area Boundary     is in compartment   3

     Location X/Q Data
      Time (hr)         X/Q (s * m^-3)
       0.0000E+00          8.0000E-04
       7.2000E+02          0.0000E+00

     Location Breathing Rate Data
      Time (hr)         Breathing Rate (m^3 * sec^-1)
       0.0000E+00                 3.5000E-04
       7.2000E+02                 0.0000E+00
     Location Low Population Zone     is in compartment   3

     Location X/Q Data
      Time (hr)         X/Q (s * m^-3)
       0.0000E+00          1.4000E-04
       2.0000E+00          6.0000E-05
       8.0000E+00          3.9000E-05
       2.4000E+01          1.6000E-05
       9.6000E+01          4.0000E-06
       7.2000E+02          0.0000E+00

     Location Breathing Rate Data
      Time (hr)         Breathing Rate (m^3 * sec^-1)
       0.0000E+00                 3.5000E-04
       8.0000E+00                 1.8000E-04
       2.4000E+01                 2.3000E-04
       7.2000E+02                 0.0000E+00
     Location Control Room     is in compartment   4

     Location X/Q Data
      Time (hr)         X/Q (s * m^-3)
       0.0000E+00          8.4500E-04
       2.0000E+00          5.2300E-04
```

```
        8.0000E+00          2.4900E-04
        2.4000E+01          1.7700E-04
        9.6000E+01          1.1900E-04
        7.2000E+02          0.0000E+00

      Location Breathing Rate Data
       Time (hr)         Breathing Rate (m^3 * sec^-1)
        0.0000E+00                 3.5000E-04
        7.2000E+02                 0.0000E+00

      Location Occupancy Factor Data
       Time (hr)         Occupancy Factor
        0.0000E+00            1.0000E+00
        2.4000E+01            6.0000E-01
        9.6000E+01            4.0000E-01
        7.2000E+02            0.0000E+00

 USER SPECIFIED TIME STEP DATA - SUPPLEMENTAL TIME STEPS
      Time            Time step
       0.0000E+00       5.0000E-02
       1.0000E+00       1.0000E-01
       2.0000E+00       1.0000E+00
       8.0000E+00       2.0000E+00
       2.4000E+01       4.0000E+00
       9.6000E+01       8.0000E+00
       7.2000E+02       0.0000E+00

 ######################################################################
           RADTRAD Version 3.02 run on  5/29/2001  at  9:12:28
 ######################################################################

      ####   #    #  #####  #####   #    #  #####
     #    #  #    #    #    #    #  #    #    #
     #    #  #    #    #    #    #  #    #    #
     #    #  #    #    #    #####   #    #    #
     #    #  #    #    #    #       #    #    #
     #    #  #    #    #    #       #    #    #
      ####    ####     #    #        ####     #

 ######################################################################
            Dose, Detailed model and Detailed Inventory Output
 ######################################################################

 Exclusion Area Boundary Doses:

 Time (h) =   0.4907    Whole Body   Thyroid       TEDE
 Delta dose (rem)        0.0000E+00  0.0000E+00  0.0000E+00
 Accumulated dose (rem)  0.0000E+00  0.0000E+00  0.0000E+00

 Low Population Zone Doses:

 Time (h) =   0.4907    Whole Body   Thyroid       TEDE
 Delta dose (rem)        0.0000E+00  0.0000E+00  0.0000E+00
 Accumulated dose (rem)  0.0000E+00  0.0000E+00  0.0000E+00

 Control Room Doses:
```

```
Time (h) =   0.4907    Whole Body   Thyroid       TEDE
Delta dose (rem)        0.0000E+00  0.0000E+00  0.0000E+00
Accumulated dose (rem)  0.0000E+00  0.0000E+00  0.0000E+00

Environment Integral Nuclide Release:

Time (h) =   0.4907       Ci           kg         Atoms         Bq

Environment Transport Group Inventory:

                        Present     Release      Total
Time (h) =   0.4907     Release     Rate/s      Release
Noble gases (atoms)    0.0000E+00  0.0000E+00  0.0000E+00
Elemental I (atoms)    0.0000E+00  0.0000E+00  0.0000E+00
Organic I (atoms)      0.0000E+00  0.0000E+00  0.0000E+00
Aerosols (kg)          0.0000E+00  0.0000E+00  0.0000E+00

BWST to Environment Transport Group Inventory:

                        Pathway
Time (h) =   0.4907      Filter
Noble gases (atoms)    0.0000E+00
Elemental I (atoms)    0.0000E+00
Organic I (atoms)      0.0000E+00
Aerosols (kg)          0.0000E+00

Control Room Filtered Air Intake Transport Group Inventory:

                        Pathway
Time (h) =   0.4907      Filter
Noble gases (atoms)    0.0000E+00
Elemental I (atoms)    0.0000E+00
Organic I (atoms)      0.0000E+00
Aerosols (kg)          0.0000E+00

Control Room Unfiltered Inleakage Transport Group Inventory:

                        Pathway
Time (h) =   0.4907      Filter
Noble gases (atoms)    0.0000E+00
Elemental I (atoms)    0.0000E+00
Organic I (atoms)      0.0000E+00
Aerosols (kg)          0.0000E+00

Control Room Exhaust to Environment Transport Group Inventory:

                        Pathway
Time (h) =   0.4907      Filter
Noble gases (atoms)    0.0000E+00
Elemental I (atoms)    0.0000E+00
Organic I (atoms)      0.0000E+00
Aerosols (kg)          0.0000E+00

Control Room Compartment Nuclide Inventory:

Time (h) =   0.4907       Ci           kg         Atoms         Bq
```

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**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 1 | System Nos. | Sheet 291 of 1000 |
|---|---|---|---|---|

Control Room Transport Group Inventory:

| Time (h) = 0.4907 | Atmosphere | Sump | Overlying Pool |
|---|---|---|---|
| Noble gases (atoms) | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 |

| Time (h) = 0.4907 | Deposition Surfaces | Recirculating Filter |
|---|---|---|
| Noble gases (atoms) | 0.0000E+00 | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 | 0.0000E+00 |

Control Room Filtered Air Intake Transport Group Inventory:

| Time (h) = 0.4907 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 |

Control Room Unfiltered Inleakage Transport Group Inventory:

| Time (h) = 0.4907 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 |

Control Room Exhaust to Environment Transport Group Inventory:

| Time (h) = 0.4907 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 |

Exclusion Area Boundary Doses:

| Time (h) = 0.5000 | Whole Body | Thyroid | TEDE |
|---|---|---|---|
| Delta dose (rem) | 6.8036E-10 | 1.6911E-07 | 6.0141E-09 |
| Accumulated dose (rem) | 6.8036E-10 | 1.6911E-07 | 6.0141E-09 |

Low Population Zone Doses:

| Time (h) = 0.5000 | Whole Body | Thyroid | TEDE |
|---|---|---|---|
| Delta dose (rem) | 1.1906E-10 | 2.9594E-08 | 1.0525E-09 |
| Accumulated dose (rem) | 1.1906E-10 | 2.9594E-08 | 1.0525E-09 |

Control Room Doses:

| Time (h) = 0.5000 | Whole Body | Thyroid | TEDE |
|---|---|---|---|
| Delta dose (rem) | 1.8202E-13 | 7.9500E-10 | 2.5257E-11 |
| Accumulated dose (rem) | 1.8202E-13 | 7.9500E-10 | 2.5257E-11 |

Environment Integral Nuclide Release:

| Time (h) = 0.5000 | Ci | kg | Atoms | Bq |
|---|---|---|---|---|
| I-131 | 3.9762E-07 | 3.2073E-15 | 1.4744E+10 | 1.4712E+04 |
| I-132 | 4.9515E-07 | 4.7970E-17 | 2.1885E+08 | 1.8321E+04 |
| I-133 | 8.1939E-07 | 7.2333E-16 | 3.2752E+09 | 3.0317E+04 |
| I-134 | 6.2381E-07 | 2.3384E-17 | 1.0509E+08 | 2.3081E+04 |
| I-135 | 7.3727E-07 | 2.0994E-16 | 9.3650E+08 | 2.7279E+04 |

Environment Transport Group Inventory:

| Time (h) = 0.5000 | Present Release | Release Rate/s | Total Release |
|---|---|---|---|
| Noble gases (atoms) | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 |
| Elemental I (atoms) | 1.8816E+10 | 1.0454E+07 | 1.8816E+10 |
| Organic I (atoms) | 5.8195E+08 | 3.2331E+05 | 5.8195E+08 |
| Aerosols (kg) | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 |

BWST to Environment Transport Group Inventory:

| Time (h) = 0.5000 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 1.6935E+11 |
| Organic I (atoms) | 5.2375E+09 |
| Aerosols (kg) | 0.0000E+00 |

Control Room Filtered Air Intake Transport Group Inventory:

| Time (h) = 0.5000 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 |

Control Room Unfiltered Inleakage Transport Group Inventory:

| Time (h) = 0.5000 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 |

Control Room Exhaust to Environment Transport Group Inventory:

| Time (h) = 0.5000 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 |

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**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 1 | System Nos. | Sheet 293 of 1000 |
|---|---|---|---|---|

**Control Room Compartment Nuclide Inventory:**

| Time (h) = 0.5000 | Ci | kg | Atoms | Bq |
|---|---|---|---|---|
| I-131 | 6.3239E-10 | 5.1010E-18 | 2.3449E+07 | 2.3399E+01 |
| I-132 | 7.8752E-10 | 7.6294E-20 | 3.4807E+05 | 2.9138E+01 |
| I-133 | 1.3032E-09 | 1.1504E-18 | 5.2090E+06 | 4.8218E+01 |
| I-134 | 9.9214E-10 | 3.7191E-20 | 1.6714E+05 | 3.6709E+01 |
| I-135 | 1.1726E-09 | 3.3390E-19 | 1.4895E+06 | 4.3386E+01 |

Control Room Transport Group Inventory:

| Time (h) = 0.5000 | Atmosphere | Sump | Overlying Pool |
|---|---|---|---|
| Noble gases (atoms) | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 |
| Elemental I (atoms) | 2.9927E+07 | 0.0000E+00 | 0.0000E+00 |
| Organic I (atoms) | 9.2556E+05 | 0.0000E+00 | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 |

| Time (h) = 0.5000 | Deposition Surfaces | Recirculating Filter |
|---|---|---|
| Noble gases (atoms) | 0.0000E+00 | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 | 0.0000E+00 |

Control Room Filtered Air Intake Transport Group Inventory:

| Time (h) = 0.5000 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 |

Control Room Unfiltered Inleakage Transport Group Inventory:

| Time (h) = 0.5000 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 |

Control Room Exhaust to Environment Transport Group Inventory:

| Time (h) = 0.5000 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 |

Exclusion Area Boundary Doses:

| Time (h) = 1.8000 | Whole Body | Thyroid | TEDE |
|---|---|---|---|
| Delta dose (rem) | 3.3295E-05 | 1.1033E-02 | 3.7997E-04 |

```
Accumulated dose (rem)  3.3295E-05  1.1033E-02  3.7998E-04

Low Population Zone Doses:

Time (h) =   1.8000    Whole Body   Thyroid       TEDE
Delta dose (rem)        5.8265E-06  1.9307E-03  6.6495E-05
Accumulated dose (rem)  5.8267E-06  1.9307E-03  6.6496E-05

Control Room Doses:

Time (h) =   1.8000    Whole Body   Thyroid       TEDE
Delta dose (rem)        8.2325E-08  4.8294E-04  1.5257E-05
Accumulated dose (rem)  8.2325E-08  4.8294E-04  1.5257E-05

Environment Integral Nuclide Release:

Time (h) =   1.8000       Ci           kg         Atoms         Bq
I-131                  2.6236E-02  2.1162E-10  9.7284E+14  9.7073E+08
I-132                  2.4435E-02  2.3672E-12  1.0800E+13  9.0410E+08
I-133                  5.2503E-02  4.6348E-11  2.0986E+14  1.9426E+09
I-134                  1.9413E-02  7.2772E-13  3.2705E+12  7.1829E+08
I-135                  4.4036E-02  1.2539E-11  5.5936E+13  1.6293E+09

Environment Transport Group Inventory:

                        Present     Release      Total
Time (h) =   1.8000     Release     Rate/s      Release
Noble gases (atoms)    0.0000E+00  0.0000E+00  0.0000E+00
Elemental I (atoms)    1.2355E+15  1.9066E+11  1.2355E+15
Organic I (atoms)      3.8211E+13  5.8968E+09  3.8211E+13
Aerosols (kg)          0.0000E+00  0.0000E+00  0.0000E+00

BWST to Environment Transport Group Inventory:

                        Pathway
Time (h) =   1.8000      Filter
Noble gases (atoms)    0.0000E+00
Elemental I (atoms)    1.1118E+16
Organic I (atoms)      3.4385E+14
Aerosols (kg)          0.0000E+00

Control Room Filtered Air Intake Transport Group Inventory:

                        Pathway
Time (h) =   1.8000      Filter
Noble gases (atoms)    0.0000E+00
Elemental I (atoms)    7.0152E+17
Organic I (atoms)      2.1696E+16
Aerosols (kg)          0.0000E+00

Control Room Unfiltered Inleakage Transport Group Inventory:

                        Pathway
Time (h) =   1.8000      Filter
Noble gases (atoms)    0.0000E+00
Elemental I (atoms)    0.0000E+00
Organic I (atoms)      0.0000E+00
```

```
Aerosols (kg)          0.0000E+00

Control Room Exhaust to Environment Transport Group Inventory:

                        Pathway
Time (h) =   1.8000      Filter
Noble gases (atoms)    0.0000E+00
Elemental I (atoms)    0.0000E+00
Organic I (atoms)      0.0000E+00
Aerosols (kg)          0.0000E+00
```

**Control Room Compartment Nuclide Inventory:**

| Time (h) = 1.8000 | Ci | kg | Atoms | Bq |
|---|---|---|---|---|
| I-131 | 4.0221E-06 | 3.2443E-14 | 1.4914E+11 | 1.4882E+05 |
| I-132 | 3.4010E-06 | 3.2948E-16 | 1.5032E+09 | 1.2584E+05 |
| I-133 | 7.9742E-06 | 7.0393E-15 | 3.1873E+10 | 2.9504E+05 |
| I-134 | 2.2681E-06 | 8.5023E-17 | 3.8210E+08 | 8.3921E+04 |
| I-135 | 6.5378E-06 | 1.8616E-15 | 8.3045E+09 | 2.4190E+05 |

```
Control Room Transport Group Inventory:

                                                Overlying
Time (h) =   1.8000    Atmosphere     Sump        Pool
Noble gases (atoms)    0.0000E+00  0.0000E+00  0.0000E+00
Elemental I (atoms)    1.8927E+11  0.0000E+00  0.0000E+00
Organic I (atoms)      5.8538E+09  0.0000E+00  0.0000E+00
Aerosols (kg)          0.0000E+00  0.0000E+00  0.0000E+00

                       Deposition Recirculating
Time (h) =   1.8000     Surfaces     Filter
Noble gases (atoms)    0.0000E+00  0.0000E+00
Elemental I (atoms)    0.0000E+00  5.1404E+11
Organic I (atoms)      0.0000E+00  1.5898E+10
Aerosols (kg)          0.0000E+00  0.0000E+00

Control Room Filtered Air Intake Transport Group Inventory:

                        Pathway
Time (h) =   1.8000      Filter
Noble gases (atoms)    0.0000E+00
Elemental I (atoms)    7.0152E+17
Organic I (atoms)      2.1696E+16
Aerosols (kg)          0.0000E+00

Control Room Unfiltered Inleakage Transport Group Inventory:

                        Pathway
Time (h) =   1.8000      Filter
Noble gases (atoms)    0.0000E+00
Elemental I (atoms)    0.0000E+00
Organic I (atoms)      0.0000E+00
Aerosols (kg)          0.0000E+00

Control Room Exhaust to Environment Transport Group Inventory:

                        Pathway
```

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**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 1 | System Nos. | Sheet 296 of 1000 |
|---|---|---|---|---|

```
Time (h) =   1.8000      Filter
Noble gases (atoms)    0.0000E+00
Elemental I (atoms)    0.0000E+00
Organic I (atoms)      0.0000E+00
Aerosols (kg)          0.0000E+00

Exclusion Area Boundary Doses:

Time (h) =   2.0000    Whole Body   Thyroid       TEDE
Delta dose (rem)        1.3659E-05  5.1560E-03  1.7543E-04
Accumulated dose (rem)  4.6954E-05  1.6189E-02  5.5541E-04

Low Population Zone Doses:

Time (h) =   2.0000    Whole Body   Thyroid       TEDE
Delta dose (rem)        2.3902E-06  9.0231E-04  3.0700E-05
Accumulated dose (rem)  8.2169E-06  2.8330E-03  9.7196E-05

Control Room Doses:

Time (h) =   2.0000    Whole Body   Thyroid       TEDE
Delta dose (rem)        3.7154E-08  2.4647E-04  7.7702E-06
Accumulated dose (rem)  1.1948E-07  7.2942E-04  2.3027E-05

Environment Integral Nuclide Release:

Time (h) =   2.0000       Ci           kg         Atoms         Bq
I-131                  3.8566E-02  3.1108E-10  1.4301E+15  1.4269E+09
I-132                  3.4398E-02  3.3324E-12  1.5203E+13  1.2727E+09
I-133                  7.6838E-02  6.7830E-11  3.0713E+14  2.8430E+09
I-134                  2.5582E-02  9.5898E-13  4.3098E+12  9.4655E+08
I-135                  6.3771E-02  1.8159E-11  8.1003E+13  2.3595E+09

Environment Transport Group Inventory:

                        Present     Release      Total
Time (h) =   2.0000     Release     Rate/s      Release
Noble gases (atoms)    0.0000E+00  0.0000E+00  0.0000E+00
Elemental I (atoms)    1.8153E+15  2.5213E+11  1.8153E+15
Organic I (atoms)      5.6144E+13  7.7978E+09  5.6144E+13
Aerosols (kg)          0.0000E+00  0.0000E+00  0.0000E+00

BWST to Environment Transport Group Inventory:

                        Pathway
Time (h) =   2.0000      Filter
Noble gases (atoms)    0.0000E+00
Elemental I (atoms)    1.6335E+16
Organic I (atoms)      5.0522E+14
Aerosols (kg)          0.0000E+00

Control Room Filtered Air Intake Transport Group Inventory:

                        Pathway
Time (h) =   2.0000      Filter
Noble gases (atoms)    0.0000E+00
Elemental I (atoms)    1.0491E+18
```

```
Organic I (atoms)      3.2446E+16
Aerosols (kg)          0.0000E+00

Control Room Unfiltered Inleakage Transport Group Inventory:

                        Pathway
Time (h) =   2.0000      Filter
Noble gases (atoms)    0.0000E+00
Elemental I (atoms)    0.0000E+00
Organic I (atoms)      0.0000E+00
Aerosols (kg)          0.0000E+00

Control Room Exhaust to Environment Transport Group Inventory:

                        Pathway
Time (h) =   2.0000      Filter
Noble gases (atoms)    0.0000E+00
Elemental I (atoms)    0.0000E+00
Organic I (atoms)      0.0000E+00
Aerosols (kg)          0.0000E+00
```

**Control Room Compartment Nuclide Inventory:**

| Time (h) = 2.0000 | Ci | kg | Atoms | Bq |
|---|---|---|---|---|
| I-131 | 5.2620E-06 | 4.2444E-14 | 1.9512E+11 | 1.9469E+05 |
| I-132 | 4.1921E-06 | 4.0613E-16 | 1.8529E+09 | 1.5511E+05 |
| I-133 | 1.0371E-05 | 9.1547E-15 | 4.1452E+10 | 3.8371E+05 |
| I-134 | 2.5352E-06 | 9.5032E-17 | 4.2709E+08 | 9.3801E+04 |
| I-135 | 8.3818E-06 | 2.3867E-15 | 1.0647E+10 | 3.1013E+05 |

```
Control Room Transport Group Inventory:

                                                Overlying
Time (h) =   2.0000    Atmosphere     Sump        Pool
Noble gases (atoms)    0.0000E+00  0.0000E+00  0.0000E+00
Elemental I (atoms)    2.4750E+11  0.0000E+00  0.0000E+00
Organic I (atoms)      7.6548E+09  0.0000E+00  0.0000E+00
Aerosols (kg)          0.0000E+00  0.0000E+00  0.0000E+00

                       Deposition Recirculating
Time (h) =   2.0000     Surfaces     Filter
Noble gases (atoms)    0.0000E+00  0.0000E+00
Elemental I (atoms)    0.0000E+00  7.7781E+11
Organic I (atoms)      0.0000E+00  2.4056E+10
Aerosols (kg)          0.0000E+00  0.0000E+00

Control Room Filtered Air Intake Transport Group Inventory:

                        Pathway
Time (h) =   2.0000      Filter
Noble gases (atoms)    0.0000E+00
Elemental I (atoms)    1.0491E+18
Organic I (atoms)      3.2446E+16
Aerosols (kg)          0.0000E+00

Control Room Unfiltered Inleakage Transport Group Inventory:
```

| | Pathway Filter |
|---|---|
| Time (h) = 2.0000 | |
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 |

Control Room Exhaust to Environment Transport Group Inventory:

| | Pathway Filter |
|---|---|
| Time (h) = 2.0000 | |
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 |

Exclusion Area Boundary Doses:

| Time (h) = 5.0000 | Whole Body | Thyroid | TEDE |
|---|---|---|---|
| Delta dose (rem) | 4.0994E-04 | 2.1961E-01 | 7.2715E-03 |
| Accumulated dose (rem) | 4.5690E-04 | 2.3580E-01 | 7.8269E-03 |

Low Population Zone Doses:

| Time (h) = 5.0000 | Whole Body | Thyroid | TEDE |
|---|---|---|---|
| Delta dose (rem) | 3.0746E-05 | 1.6471E-02 | 5.4536E-04 |
| Accumulated dose (rem) | 3.8963E-05 | 1.9304E-02 | 6.4256E-04 |

Control Room Doses:

| Time (h) = 5.0000 | Whole Body | Thyroid | TEDE |
|---|---|---|---|
| Delta dose (rem) | 7.6995E-07 | 7.2451E-03 | 2.2714E-04 |
| Accumulated dose (rem) | 8.8943E-07 | 7.9746E-03 | 2.5017E-04 |

Environment Integral Nuclide Release:

| Time (h) = 5.0000 | Ci | kg | Atoms | Bq |
|---|---|---|---|---|
| I-131 | 5.7483E-01 | 4.6367E-09 | 2.1315E+16 | 2.1269E+10 |
| I-132 | 2.8774E-01 | 2.7876E-11 | 1.2717E+14 | 1.0646E+10 |
| I-133 | 1.0773E+00 | 9.5100E-10 | 4.3061E+15 | 3.9860E+10 |
| I-134 | 9.9807E-02 | 3.7413E-12 | 1.6814E+13 | 3.6929E+09 |
| I-135 | 7.7407E-01 | 2.2042E-10 | 9.8324E+14 | 2.8641E+10 |

Environment Transport Group Inventory:

| Time (h) = 5.0000 | Present Release | Release Rate/s | Total Release |
|---|---|---|---|
| Noble gases (atoms) | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 |
| Elemental I (atoms) | 2.7135E+16 | 1.5075E+12 | 2.7135E+16 |
| Organic I (atoms) | 8.3923E+14 | 4.6624E+10 | 8.3923E+14 |
| Aerosols (kg) | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 |

BWST to Environment Transport Group Inventory:

| | Pathway Filter |
|---|---|
| Time (h) = 5.0000 | |
| Noble gases (atoms) | 0.0000E+00 |

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**CALCULATION SHEET**
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| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 1 | System Nos. | Sheet 299 of 1000 |
|---|---|---|---|---|

```
Elemental I (atoms)    2.4419E+17
Organic I (atoms)      7.5522E+15
Aerosols (kg)          0.0000E+00

Control Room Filtered Air Intake Transport Group Inventory:

                        Pathway
Time (h) =   5.0000      Filter
Noble gases (atoms)    0.0000E+00
Elemental I (atoms)    1.6430E+19
Organic I (atoms)      5.0814E+17
Aerosols (kg)          0.0000E+00

Control Room Unfiltered Inleakage Transport Group Inventory:

                        Pathway
Time (h) =   5.0000      Filter
Noble gases (atoms)    0.0000E+00
Elemental I (atoms)    0.0000E+00
Organic I (atoms)      0.0000E+00
Aerosols (kg)          0.0000E+00

Control Room Exhaust to Environment Transport Group Inventory:

                        Pathway
Time (h) =   5.0000      Filter
Noble gases (atoms)    0.0000E+00
Elemental I (atoms)    0.0000E+00
Organic I (atoms)      0.0000E+00
Aerosols (kg)          0.0000E+00
```

**Control Room Compartment Nuclide Inventory:**

| **Time (h) = 5.0000** | **Ci** | **kg** | **Atoms** | **Bq** |
|---|---|---|---|---|
| **I-131** | **1.5088E-05** | **1.2170E-13** | **5.5946E+11** | **5.5824E+05** |
| **I-132** | **4.9198E-06** | **4.7662E-16** | **2.1745E+09** | **1.8203E+05** |
| **I-133** | **2.7198E-05** | **2.4010E-14** | **1.0871E+11** | **1.0063E+06** |
| **I-134** | **6.8552E-07** | **2.5697E-17** | **1.1549E+08** | **2.5364E+04** |
| **I-135** | **1.7736E-05** | **5.0505E-15** | **2.2529E+10** | **6.5625E+05** |

```
Control Room Transport Group Inventory:

                                              Overlying
Time (h) =   5.0000    Atmosphere     Sump       Pool
Noble gases (atoms)    0.0000E+00  0.0000E+00  0.0000E+00
Elemental I (atoms)    7.1492E+11  0.0000E+00  0.0000E+00
Organic I (atoms)      2.2111E+10  0.0000E+00  0.0000E+00
Aerosols (kg)          0.0000E+00  0.0000E+00  0.0000E+00

                       Deposition Recirculating
Time (h) =   5.0000     Surfaces     Filter
Noble gases (atoms)    0.0000E+00  0.0000E+00
Elemental I (atoms)    0.0000E+00  8.7218E+12
Organic I (atoms)      0.0000E+00  2.6975E+11
Aerosols (kg)          0.0000E+00  0.0000E+00

Control Room Filtered Air Intake Transport Group Inventory:
```

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**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 1 | System Nos. | Sheet 300 of 1000 |
|---|---|---|---|---|

```
                          Pathway
Time (h) =   5.0000        Filter
Noble gases (atoms)     0.0000E+00
Elemental I (atoms)     1.6430E+19
Organic I (atoms)       5.0814E+17
Aerosols (kg)           0.0000E+00

Control Room Unfiltered Inleakage Transport Group Inventory:

                          Pathway
Time (h) =   5.0000        Filter
Noble gases (atoms)     0.0000E+00
Elemental I (atoms)     0.0000E+00
Organic I (atoms)       0.0000E+00
Aerosols (kg)           0.0000E+00

Control Room Exhaust to Environment Transport Group Inventory:

                          Pathway
Time (h) =   5.0000        Filter
Noble gases (atoms)     0.0000E+00
Elemental I (atoms)     0.0000E+00
Organic I (atoms)       0.0000E+00
Aerosols (kg)           0.0000E+00

Exclusion Area Boundary Doses:

Time (h) =   8.0000    Whole Body   Thyroid       TEDE
Delta dose (rem)        3.1266E-04  2.3552E-01  7.6418E-03
Accumulated dose (rem)  7.6956E-04  4.7132E-01  1.5469E-02

Low Population Zone Doses:

Time (h) =   8.0000    Whole Body   Thyroid       TEDE
Delta dose (rem)        2.3450E-05  1.7664E-02  5.7313E-04
Accumulated dose (rem)  6.2412E-05  3.6968E-02  1.2157E-03

Control Room Doses:

Time (h) =   8.0000    Whole Body   Thyroid       TEDE
Delta dose (rem)        6.2182E-07  8.1988E-03  2.5577E-04
Accumulated dose (rem)  1.5113E-06  1.6173E-02  5.0594E-04

Environment Integral Nuclide Release:

Time (h) =   8.0000       Ci           kg         Atoms         Bq
I-131                  1.1656E+00  9.4022E-09  4.3222E+16  4.3128E+10
I-132                  4.1007E-01  3.9727E-11  1.8124E+14  1.5173E+10
I-133                  2.0921E+00  1.8468E-09  8.3623E+15  7.7408E+10
I-134                  1.0909E-01  4.0893E-12  1.8378E+13  4.0363E+09
I-135                  1.3648E+00  3.8863E-10  1.7336E+15  5.0498E+10

Environment Transport Group Inventory:

                          Present     Release      Total
Time (h) =   8.0000       Release     Rate/s      Release
```

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**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 1 | System Nos. | Sheet 301 of 1000 |
|---|---|---|---|---|

| | | | |
|---|---|---|---|
| Noble gases (atoms) | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 |
| Elemental I (atoms) | 5.5290E+16 | 1.9198E+12 | 5.5290E+16 |
| Organic I (atoms) | 1.7100E+15 | 5.9375E+10 | 1.7100E+15 |
| Aerosols (kg) | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 |

BWST to Environment Transport Group Inventory:

| Time (h) = 8.0000 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 4.9755E+17 |
| Organic I (atoms) | 1.5388E+16 |
| Aerosols (kg) | 0.0000E+00 |

Control Room Filtered Air Intake Transport Group Inventory:

| Time (h) = 8.0000 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 3.3617E+19 |
| Organic I (atoms) | 1.0397E+18 |
| Aerosols (kg) | 0.0000E+00 |

Control Room Unfiltered Inleakage Transport Group Inventory:

| Time (h) = 8.0000 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 |

Control Room Exhaust to Environment Transport Group Inventory:

| Time (h) = 8.0000 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 |

**Control Room Compartment Nuclide Inventory:**

| **Time (h) = 8.0000** | **Ci** | **kg** | **Atoms** | **Bq** |
|---|---|---|---|---|
| **I-131** | **1.2335E-05** | **9.9498E-14** | **4.5740E+11** | **4.5640E+05** |
| **I-132** | **1.6463E-06** | **1.5949E-16** | **7.2762E+08** | **6.0912E+04** |
| **I-133** | **2.0339E-05** | **1.7954E-14** | **8.1296E+10** | **7.5254E+05** |
| **I-134** | **5.2855E-08** | **1.9813E-18** | **8.9042E+06** | **1.9556E+03** |
| **I-135** | **1.0702E-05** | **3.0473E-15** | **1.3593E+10** | **3.9596E+05** |

Control Room Transport Group Inventory:

| Time (h) = 8.0000 | Atmosphere | Sump | Overlying Pool |
|---|---|---|---|
| Noble gases (atoms) | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 |
| Elemental I (atoms) | 5.9066E+11 | 0.0000E+00 | 0.0000E+00 |
| Organic I (atoms) | 1.8268E+10 | 0.0000E+00 | 0.0000E+00 |

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**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 1 | System Nos. | Sheet 302 of 1000 |
|---|---|---|---|---|

```
Aerosols (kg)          0.0000E+00  0.0000E+00  0.0000E+00

                       Deposition Recirculating
Time (h) =   8.0000     Surfaces     Filter
Noble gases (atoms)    0.0000E+00  0.0000E+00
Elemental I (atoms)    0.0000E+00  1.8029E+13
Organic I (atoms)      0.0000E+00  5.5759E+11
Aerosols (kg)          0.0000E+00  0.0000E+00

Control Room Filtered Air Intake Transport Group Inventory:

                        Pathway
Time (h) =   8.0000      Filter
Noble gases (atoms)    0.0000E+00
Elemental I (atoms)    3.3617E+19
Organic I (atoms)      1.0397E+18
Aerosols (kg)          0.0000E+00

Control Room Unfiltered Inleakage Transport Group Inventory:

                        Pathway
Time (h) =   8.0000      Filter
Noble gases (atoms)    0.0000E+00
Elemental I (atoms)    0.0000E+00
Organic I (atoms)      0.0000E+00
Aerosols (kg)          0.0000E+00

Control Room Exhaust to Environment Transport Group Inventory:

                        Pathway
Time (h) =   8.0000      Filter
Noble gases (atoms)    0.0000E+00
Elemental I (atoms)    0.0000E+00
Organic I (atoms)      0.0000E+00
Aerosols (kg)          0.0000E+00

Exclusion Area Boundary Doses:

Time (h) =  24.0000    Whole Body   Thyroid       TEDE
Delta dose (rem)        1.7684E-03  2.3944E+00  7.5745E-02
Accumulated dose (rem)  2.5379E-03  2.8657E+00  9.1214E-02

Low Population Zone Doses:

Time (h) =  24.0000    Whole Body   Thyroid       TEDE
Delta dose (rem)        8.6207E-05  6.0031E-02  1.9409E-03
Accumulated dose (rem)  1.4862E-04  9.6998E-02  3.1566E-03

Control Room Doses:

Time (h) =  24.0000    Whole Body   Thyroid       TEDE
Delta dose (rem)        1.6503E-06  3.9163E-02  1.2117E-03
Accumulated dose (rem)  3.1615E-06  5.5336E-02  1.7176E-03

Environment Integral Nuclide Release:

Time (h) =  24.0000       Ci           kg         Atoms         Bq
```

| | | | | |
|---|---|---|---|---|
| I-131 | 7.5772E+00 | 6.1119E-08 | 2.8097E+17 | 2.8036E+11 |
| I-132 | 5.3285E-01 | 5.1622E-11 | 2.3551E+14 | 1.9716E+10 |
| I-133 | 1.0059E+01 | 8.8796E-09 | 4.0206E+16 | 3.7218E+11 |
| I-134 | 1.1042E-01 | 4.1394E-12 | 1.8603E+13 | 4.0857E+09 |
| I-135 | 3.6794E+00 | 1.0477E-09 | 4.6736E+15 | 1.3614E+11 |

Environment Transport Group Inventory:

| Time (h) = 24.0000 | Present Release | Release Rate/s | Total Release |
|---|---|---|---|
| Noble gases (atoms) | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 |
| Elemental I (atoms) | 3.7332E+17 | 4.3209E+12 | 3.7332E+17 |
| Organic I (atoms) | 1.1546E+16 | 1.3364E+11 | 1.1546E+16 |
| Aerosols (kg) | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 |

BWST to Environment Transport Group Inventory:

| Time (h) = 24.0000 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 3.3597E+18 |
| Organic I (atoms) | 1.0391E+17 |
| Aerosols (kg) | 0.0000E+00 |

Control Room Filtered Air Intake Transport Group Inventory:

| Time (h) = 24.0000 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 2.9827E+21 |
| Organic I (atoms) | 9.2248E+19 |
| Aerosols (kg) | 0.0000E+00 |

Control Room Unfiltered Inleakage Transport Group Inventory:

| Time (h) = 24.0000 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 |

Control Room Exhaust to Environment Transport Group Inventory:

| Time (h) = 24.0000 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 |

**Control Room Compartment Nuclide Inventory:**

| **Time (h) = 24.0000** | **Ci** | **kg** | **Atoms** | **Bq** |
|---|---|---|---|---|
| **I-131** | **1.4511E-05** | **1.1705E-13** | **5.3809E+11** | **5.3692E+05** |
| **I-132** | **1.6516E-08** | **1.6000E-18** | **7.2997E+06** | **6.1109E+02** |
| **I-133** | **1.4869E-05** | **1.3126E-14** | **5.9433E+10** | **5.5016E+05** |

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**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 1 | System Nos. | Sheet 304 of 1000 |
|---|---|---|---|---|

| | | | | |
|---|---|---|---|---|
| **I-135** | **2.4906E-06** | **7.0920E-16** | **3.1636E+09** | **9.2152E+04** |

Control Room Transport Group Inventory:

| Time (h) = 24.0000 | Atmosphere | Sump | Overlying Pool |
|---|---|---|---|
| Noble gases (atoms) | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 |
| Elemental I (atoms) | 7.3568E+11 | 0.0000E+00 | 0.0000E+00 |
| Organic I (atoms) | 2.2753E+10 | 0.0000E+00 | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 |

| Time (h) = 24.0000 | Deposition Surfaces | Recirculating Filter |
|---|---|---|
| Noble gases (atoms) | 0.0000E+00 | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 | 6.7489E+13 |
| Organic I (atoms) | 0.0000E+00 | 2.0873E+12 |
| Aerosols (kg) | 0.0000E+00 | 0.0000E+00 |

Control Room Filtered Air Intake Transport Group Inventory:

| Time (h) = 24.0000 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 2.9827E+21 |
| Organic I (atoms) | 9.2248E+19 |
| Aerosols (kg) | 0.0000E+00 |

Control Room Unfiltered Inleakage Transport Group Inventory:

| Time (h) = 24.0000 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 |

Control Room Exhaust to Environment Transport Group Inventory:

| Time (h) = 24.0000 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 |

Exclusion Area Boundary Doses:

| Time (h) = 96.0000 | Whole Body | Thyroid | TEDE |
|---|---|---|---|
| Delta dose (rem) | 6.9452E-03 | 2.4373E+01 | 7.5211E-01 |
| Accumulated dose (rem) | 9.4831E-03 | 2.7239E+01 | 8.4332E-01 |

Low Population Zone Doses:

| Time (h) = 96.0000 | Whole Body | Thyroid | TEDE |
|---|---|---|---|
| Delta dose (rem) | 1.3890E-04 | 3.2034E-01 | 9.9325E-03 |
| Accumulated dose (rem) | 2.8752E-04 | 4.1733E-01 | 1.3089E-02 |

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**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 1 | System Nos. | Sheet 305 of 1000 |
|---|---|---|---|---|

Control Room Doses:

| Time (h) = 96.0000 | Whole Body | Thyroid | TEDE |
|---|---|---|---|
| Delta dose (rem) | 2.7942E-06 | 1.7126E-01 | 5.2389E-03 |
| Accumulated dose (rem) | 5.9557E-06 | 2.2659E-01 | 6.9565E-03 |

Environment Integral Nuclide Release:

| Time (h) = 96.0000 | Ci | kg | Atoms | Bq |
|---|---|---|---|---|
| I-131 | 8.2220E+01 | 6.6320E-07 | 3.0488E+18 | 3.0422E+12 |
| I-132 | 5.3403E-01 | 5.1736E-11 | 2.3603E+14 | 1.9759E+10 |
| I-133 | 3.5324E+01 | 3.1183E-08 | 1.4119E+17 | 1.3070E+12 |
| I-134 | 1.1042E-01 | 4.1394E-12 | 1.8603E+13 | 4.0857E+09 |
| I-135 | 4.6228E+00 | 1.3163E-09 | 5.8720E+15 | 1.7104E+11 |

Environment Transport Group Inventory:

| Time (h) = 96.0000 | Present Release | Release Rate/s | Total Release |
|---|---|---|---|
| Noble gases (atoms) | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 |
| Elemental I (atoms) | 4.8044E+18 | 1.3902E+13 | 4.8044E+18 |
| Organic I (atoms) | 1.4859E+17 | 4.2995E+11 | 1.4859E+17 |
| Aerosols (kg) | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 |

BWST to Environment Transport Group Inventory:

| Time (h) = 96.0000 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 4.3238E+19 |
| Organic I (atoms) | 1.3372E+18 |
| Aerosols (kg) | 0.0000E+00 |

Control Room Filtered Air Intake Transport Group Inventory:

| Time (h) = 96.0000 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 1.1027E+23 |
| Organic I (atoms) | 3.4105E+21 |
| Aerosols (kg) | 0.0000E+00 |

Control Room Unfiltered Inleakage Transport Group Inventory:

| Time (h) = 96.0000 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 |

Control Room Exhaust to Environment Transport Group Inventory:

| Time (h) = 96.0000 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 |

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**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 1 | System Nos. | Sheet 306 of 1000 |
|---|---|---|---|---|

```
Organic I (atoms)       0.0000E+00
Aerosols (kg)           0.0000E+00
```

**Control Room Compartment Nuclide Inventory:**

| Time (h) = 96.0000 | Ci | kg | Atoms | Bq |
|---|---|---|---|---|
| I-131 | 2.6652E-05 | 2.1498E-13 | 9.8828E+11 | 9.8614E+05 |
| I-133 | 3.2108E-06 | 2.8344E-15 | 1.2834E+10 | 1.1880E+05 |
| I-135 | 3.1165E-09 | 8.8741E-19 | 3.9586E+06 | 1.1531E+02 |

Control Room Transport Group Inventory:

| Time (h) = 96.0000 | Atmosphere | Sump | Overlying Pool |
|---|---|---|---|
| Noble gases (atoms) | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 |
| Elemental I (atoms) | 1.7497E+12 | 0.0000E+00 | 0.0000E+00 |
| Organic I (atoms) | 5.4114E+10 | 0.0000E+00 | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 |

| Time (h) = 96.0000 | Deposition Surfaces | Recirculating Filter |
|---|---|---|
| Noble gases (atoms) | 0.0000E+00 | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 | 5.2922E+14 |
| Organic I (atoms) | 0.0000E+00 | 1.6368E+13 |
| Aerosols (kg) | 0.0000E+00 | 0.0000E+00 |

Control Room Filtered Air Intake Transport Group Inventory:

| Time (h) = 96.0000 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 1.1027E+23 |
| Organic I (atoms) | 3.4105E+21 |
| Aerosols (kg) | 0.0000E+00 |

Control Room Unfiltered Inleakage Transport Group Inventory:

| Time (h) = 96.0000 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 |

Control Room Exhaust to Environment Transport Group Inventory:

| Time (h) = 96.0000 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 |

Exclusion Area Boundary Doses:

| Time (h) = 720.0000 | Whole Body | Thyroid | TEDE |
|---|---|---|---|
| Delta dose (rem) | 5.6099E-02 | 3.1184E+02 | 9.5508E+00 |

```
Accumulated dose (rem)  6.5582E-02  3.3908E+02  1.0394E+01
```

**Low Population Zone Doses:**

| Time (h) = 720.0000 | Whole Body | Thyroid | TEDE |
|---|---|---|---|
| Delta dose (rem) | 2.8049E-04 | 1.0246E+00 | 3.1477E-02 |
| Accumulated dose (rem) | 5.6802E-04 | 1.4419E+00 | 4.4566E-02 |

**Control Room Doses:**

| Time (h) = 720.0000 | Whole Body | Thyroid | TEDE |
|---|---|---|---|
| Delta dose (rem) | 1.0010E-05 | 9.7754E-01 | 2.9774E-02 |
| Accumulated dose (rem) | 1.5966E-05 | 1.2041E+00 | 3.6730E-02 |

Environment Integral Nuclide Release:

| Time (h) = 720.0000 | Ci | kg | Atoms | Bq |
|---|---|---|---|---|
| I-131 | 1.0971E+03 | 8.8498E-06 | 4.0683E+19 | 4.0594E+13 |
| I-132 | 5.3403E-01 | 5.1736E-11 | 2.3603E+14 | 1.9759E+10 |
| I-133 | 4.1668E+01 | 3.6783E-08 | 1.6655E+17 | 1.5417E+12 |
| I-134 | 1.1042E-01 | 4.1394E-12 | 1.8603E+13 | 4.0857E+09 |
| I-135 | 4.6242E+00 | 1.3168E-09 | 5.8738E+15 | 1.7110E+11 |

Environment Transport Group Inventory:

| Time (h) = 720.0000 | Present Release | Release Rate/s | Total Release |
|---|---|---|---|
| Noble gases (atoms) | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 |
| Elemental I (atoms) | 2.2653E+20 | 8.7396E+13 | 2.2653E+20 |
| Organic I (atoms) | 7.0061E+18 | 2.7030E+12 | 7.0061E+18 |
| Aerosols (kg) | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 |

BWST to Environment Transport Group Inventory:

| Time (h) = 720.0000 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 2.0387E+21 |
| Organic I (atoms) | 6.3053E+19 |
| Aerosols (kg) | 0.0000E+00 |

Control Room Filtered Air Intake Transport Group Inventory:

| Time (h) = 720.0000 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 5.5270E+24 |
| Organic I (atoms) | 1.7094E+23 |
| Aerosols (kg) | 0.0000E+00 |

Control Room Unfiltered Inleakage Transport Group Inventory:

| Time (h) = 720.0000 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 |

```
Organic I (atoms)      0.0000E+00
Aerosols (kg)          0.0000E+00

Control Room Exhaust to Environment Transport Group Inventory:

                        Pathway
Time (h) = 720.0000      Filter
Noble gases (atoms)    0.0000E+00
Elemental I (atoms)    0.0000E+00
Organic I (atoms)      0.0000E+00
Aerosols (kg)          0.0000E+00
```

**Control Room Compartment Nuclide Inventory:**

| **Time (h) = 720.0000** | **Ci** | **kg** | **Atoms** | **Bq** |
|---|---|---|---|---|
| **I-131** | **1.1671E-05** | **9.4142E-14** | **4.3277E+11** | **4.3183E+05** |

```
Control Room Transport Group Inventory:

                                              Overlying
Time (h) = 720.0000    Atmosphere     Sump       Pool
Noble gases (atoms)    0.0000E+00  0.0000E+00  0.0000E+00
Elemental I (atoms)    7.2077E+12  0.0000E+00  0.0000E+00
Organic I (atoms)      2.2292E+11  0.0000E+00  0.0000E+00
Aerosols (kg)          0.0000E+00  0.0000E+00  0.0000E+00

                       Deposition Recirculating
Time (h) = 720.0000     Surfaces     Filter
Noble gases (atoms)    0.0000E+00  0.0000E+00
Elemental I (atoms)    0.0000E+00  1.6974E+16
Organic I (atoms)      0.0000E+00  5.2497E+14
Aerosols (kg)          0.0000E+00  0.0000E+00

Control Room Filtered Air Intake Transport Group Inventory:

                        Pathway
Time (h) = 720.0000      Filter
Noble gases (atoms)    0.0000E+00
Elemental I (atoms)    5.5270E+24
Organic I (atoms)      1.7094E+23
Aerosols (kg)          0.0000E+00

Control Room Unfiltered Inleakage Transport Group Inventory:

                        Pathway
Time (h) = 720.0000      Filter
Noble gases (atoms)    0.0000E+00
Elemental I (atoms)    0.0000E+00
Organic I (atoms)      0.0000E+00
Aerosols (kg)          0.0000E+00

Control Room Exhaust to Environment Transport Group Inventory:

                        Pathway
Time (h) = 720.0000      Filter
Noble gases (atoms)    0.0000E+00
Elemental I (atoms)    0.0000E+00
```

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**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 1 | System Nos. | Sheet 309 of 1000 |
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```
Organic I (atoms)       0.0000E+00
Aerosols (kg)           0.0000E+00

    321

#####################################################################
                              I-131 Summary
#####################################################################
```

| Time (hr) | Sump I-131 (Curies) | BWST I-131 (Curies) | Environment I-131 (Curies) |
|---|---|---|---|
| 0.001 | 3.9707E+03 | 0.0000E+00 | 0.0000E+00 |
| 0.300 | 2.1419E+06 | 0.0000E+00 | 0.0000E+00 |
| 0.491 | 3.5010E+06 | 0.0000E+00 | 0.0000E+00 |
| 0.500 | 3.5672E+06 | 1.4504E+00 | 3.9762E-07 |
| 0.800 | 9.3187E+06 | 8.6719E+01 | 6.7011E-04 |
| 1.100 | 1.5057E+07 | 2.4789E+02 | 3.5264E-03 |
| 1.400 | 2.0782E+07 | 4.8470E+02 | 9.9132E-03 |
| 1.700 | 2.6494E+07 | 7.9688E+02 | 2.1170E-02 |
| 1.800 | 2.8396E+07 | 9.1764E+02 | 2.6236E-02 |
| 2.000 | 2.8373E+07 | 1.1673E+03 | 3.8566E-02 |
| 2.300 | 2.8338E+07 | 1.5410E+03 | 6.2591E-02 |
| 2.600 | 2.8304E+07 | 1.9138E+03 | 9.3237E-02 |
| 2.900 | 2.8270E+07 | 2.2857E+03 | 1.3049E-01 |
| 3.200 | 2.8236E+07 | 2.6566E+03 | 1.7433E-01 |
| 3.500 | 2.8202E+07 | 3.0266E+03 | 2.2474E-01 |
| 3.800 | 2.8167E+07 | 3.3958E+03 | 2.8171E-01 |
| 4.100 | 2.8133E+07 | 3.7640E+03 | 3.4522E-01 |
| 4.400 | 2.8099E+07 | 4.1312E+03 | 4.1525E-01 |
| 4.700 | 2.8065E+07 | 4.4976E+03 | 4.9180E-01 |
| 5.000 | 2.8031E+07 | 4.8631E+03 | 5.7483E-01 |
| 5.300 | 2.7999E+07 | 5.0674E+03 | 6.2474E-01 |
| 5.600 | 2.7967E+07 | 5.2712E+03 | 6.7670E-01 |
| 5.900 | 2.7935E+07 | 5.4745E+03 | 7.3070E-01 |
| 6.200 | 2.7902E+07 | 5.6774E+03 | 7.8675E-01 |
| 6.500 | 2.7870E+07 | 5.8798E+03 | 8.4483E-01 |
| 6.800 | 2.7838E+07 | 6.0817E+03 | 9.0495E-01 |
| 7.100 | 2.7806E+07 | 6.2831E+03 | 9.6709E-01 |
| 7.400 | 2.7774E+07 | 6.4840E+03 | 1.0313E+00 |
| 7.700 | 2.7742E+07 | 6.6845E+03 | 1.0974E+00 |
| 8.000 | 2.7710E+07 | 6.8845E+03 | 1.1656E+00 |
| 8.300 | 2.7678E+07 | 7.0840E+03 | 1.2358E+00 |
| 8.600 | 2.7646E+07 | 7.2830E+03 | 1.3080E+00 |
| 8.900 | 2.7615E+07 | 7.4816E+03 | 1.3822E+00 |
| 9.200 | 2.7583E+07 | 7.6797E+03 | 1.4584E+00 |
| 9.500 | 2.7551E+07 | 7.8773E+03 | 1.5366E+00 |
| 9.800 | 2.7519E+07 | 8.0745E+03 | 1.6168E+00 |
| 10.100 | 2.7487E+07 | 8.2711E+03 | 1.6989E+00 |
| 10.400 | 2.7456E+07 | 8.4673E+03 | 1.7830E+00 |
| 24.000 | 2.6058E+07 | 1.6883E+04 | 7.5772E+00 |
| 96.000 | 1.9781E+07 | 4.6174E+04 | 8.2220E+01 |
| 720.000 | 1.8154E+06 | 3.0043E+04 | 1.0971E+03 |

| Time (hr) | Control Room I-131 (Curies) |
|---|---|
| 0.001 | 0.0000E+00 |
| 0.300 | 0.0000E+00 |

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**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 1 | System Nos. | Sheet 310 of 1000 |
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```
   0.491        0.0000E+00
   0.500        6.3239E-10
   0.800        2.5673E-07
   1.100        9.2869E-07
   1.400        1.9942E-06
   1.700        3.4502E-06
   1.800        4.0221E-06
   2.000        5.2620E-06
   2.300        4.6174E-06
   2.600        5.6547E-06
   2.900        6.8326E-06
   3.200        8.0197E-06
   3.500        9.2049E-06
   3.800        1.0387E-05
   4.100        1.1567E-05
   4.400        1.2743E-05
   4.700        1.3917E-05
   5.000        1.5088E-05
   5.300        9.5843E-06
   5.600        9.4539E-06
   5.900        9.7803E-06
   6.200        1.0145E-05
   6.500        1.0512E-05
   6.800        1.0878E-05
   7.100        1.1244E-05
   7.400        1.1608E-05
   7.700        1.1972E-05
   8.000        1.2335E-05
   8.300        6.5951E-06
   8.600        6.2636E-06
   8.900        6.3923E-06
   9.200        6.5598E-06
   9.500        6.7303E-06
   9.800        6.9006E-06
  10.100        7.0705E-06
  10.400        7.2401E-06
  24.000        1.4511E-05
  96.000        2.6652E-05
 720.000        1.1671E-05

#####################################################################
                        Cumulative Dose Summary
#####################################################################

         Exclusion Area Bounda  Low Population Zone      Control Room
  Time    Thyroid      TEDE     Thyroid      TEDE     Thyroid      TEDE
  (hr)     (rem)       (rem)     (rem)       (rem)     (rem)       (rem)
   0.001 0.0000E+00 0.0000E+00 0.0000E+00 0.0000E+00 0.0000E+00 0.0000E+00
   0.300 0.0000E+00 0.0000E+00 0.0000E+00 0.0000E+00 0.0000E+00 0.0000E+00
   0.491 0.0000E+00 0.0000E+00 0.0000E+00 0.0000E+00 0.0000E+00 0.0000E+00
   0.500 1.6911E-07 6.0141E-09 2.9594E-08 1.0525E-09 7.9500E-10 2.5257E-11
   0.800 2.8432E-04 1.0029E-05 4.9756E-05 1.7550E-06 7.4637E-06 2.3677E-07
   1.100 1.4922E-03 5.2212E-05 2.6113E-04 9.1371E-06 5.2734E-05 1.6706E-06
   1.400 4.1839E-03 1.4535E-04 7.3218E-04 2.5436E-05 1.6784E-04 5.3103E-06
   1.700 8.9107E-03 3.0752E-04 1.5594E-03 5.3816E-05 3.8347E-04 1.2118E-05
   1.800 1.1033E-02 3.7998E-04 1.9307E-03 6.6496E-05 4.8294E-04 1.5257E-05
   2.000 1.6189E-02 5.5541E-04 2.8330E-03 9.7196E-05 7.2942E-04 2.3027E-05
```

AmerGen

**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 1 | System Nos. | Sheet 311 of 1000 |
|---|---|---|---|---|

| | | | | | | |
|---|---|---|---|---|---|---|
| 2.300 | 2.6205E-02 | 8.9441E-04 | 3.5843E-03 | 1.2262E-04 | 1.0980E-03 | 3.4637E-05 |
| 2.600 | 3.8938E-02 | 1.3230E-03 | 4.5392E-03 | 1.5476E-04 | 1.5029E-03 | 4.7374E-05 |
| **2.900** | **5.4363E-02** | **1.8397E-03** | **5.6961E-03** | **1.9352E-04** | **1.9957E-03** | **6.2862E-05** |
| 3.200 | 7.2457E-02 | 2.4432E-03 | 7.0532E-03 | 2.3878E-04 | 2.5801E-03 | 8.1213E-05 |
| 3.500 | 9.3196E-02 | 3.1324E-03 | 8.6086E-03 | 2.9047E-04 | 3.2556E-03 | 1.0241E-04 |
| **3.800** | **1.1656E-01** | **3.9060E-03** | **1.0361E-02** | **3.4849E-04** | **4.0215E-03** | **1.2643E-04** |
| 4.100 | 1.4252E-01 | 4.7633E-03 | 1.2308E-02 | 4.1279E-04 | 4.8771E-03 | 1.5324E-04 |
| 4.400 | 1.7106E-01 | 5.7031E-03 | 1.4449E-02 | 4.8327E-04 | 5.8217E-03 | 1.8281E-04 |
| 4.700 | 2.0216E-01 | 6.7246E-03 | 1.6781E-02 | 5.5989E-04 | 6.8544E-03 | 2.1513E-04 |
| 5.000 | 2.3580E-01 | 7.8269E-03 | 1.9304E-02 | 6.4256E-04 | 7.9746E-03 | 2.5017E-04 |
| 5.300 | 2.5596E-01 | 8.4862E-03 | 2.0816E-02 | 6.9201E-04 | 8.8503E-03 | 2.7754E-04 |
| 5.600 | 2.7689E-01 | 9.1693E-03 | 2.2385E-02 | 7.4323E-04 | 9.5750E-03 | 3.0019E-04 |
| 5.900 | 2.9858E-01 | 9.8759E-03 | 2.4012E-02 | 7.9623E-04 | 1.0311E-02 | 3.2317E-04 |
| 6.200 | 3.2103E-01 | 1.0606E-02 | 2.5696E-02 | 8.5099E-04 | 1.1072E-02 | 3.4692E-04 |
| 6.500 | 3.4423E-01 | 1.1359E-02 | 2.7436E-02 | 9.0749E-04 | 1.1858E-02 | 3.7146E-04 |
| 6.800 | 3.6817E-01 | 1.2136E-02 | 2.9232E-02 | 9.6572E-04 | 1.2670E-02 | 3.9679E-04 |
| 7.100 | 3.9286E-01 | 1.2935E-02 | 3.1083E-02 | 1.0257E-03 | 1.3508E-02 | 4.2291E-04 |
| 7.400 | 4.1828E-01 | 1.3757E-02 | 3.2990E-02 | 1.0873E-03 | 1.4371E-02 | 4.4981E-04 |
| 7.700 | 4.4444E-01 | 1.4602E-02 | 3.4952E-02 | 1.1507E-03 | 1.5260E-02 | 4.7749E-04 |
| 8.000 | 4.7132E-01 | 1.5469E-02 | 3.6968E-02 | 1.2157E-03 | 1.6173E-02 | 5.0594E-04 |
| 8.300 | 4.9892E-01 | 1.6358E-02 | 3.7660E-02 | 1.2387E-03 | 1.6810E-02 | 5.2576E-04 |
| 8.600 | 5.2724E-01 | 1.7269E-02 | 3.8370E-02 | 1.2623E-03 | 1.7285E-02 | 5.4053E-04 |
| 8.900 | 5.5627E-01 | 1.8202E-02 | 3.9097E-02 | 1.2865E-03 | 1.7756E-02 | 5.5520E-04 |
| 9.200 | 5.8600E-01 | 1.9157E-02 | 3.9843E-02 | 1.3112E-03 | 1.8238E-02 | 5.7019E-04 |
| 9.500 | 6.1644E-01 | 2.0134E-02 | 4.0606E-02 | 1.3364E-03 | 1.8731E-02 | 5.8552E-04 |
| 9.800 | 6.4758E-01 | 2.1132E-02 | 4.1387E-02 | 1.3622E-03 | 1.9236E-02 | 6.0121E-04 |
| 10.100 | 6.7941E-01 | 2.2152E-02 | 4.2185E-02 | 1.3885E-03 | 1.9752E-02 | 6.1725E-04 |
| 10.400 | 7.1194E-01 | 2.3192E-02 | 4.3000E-02 | 1.4154E-03 | 2.0280E-02 | 6.3364E-04 |
| 24.000 | 2.8657E+00 | 9.1214E-02 | 9.6998E-02 | 3.1566E-03 | 5.5336E-02 | 1.7176E-03 |
| 96.000 | 2.7239E+01 | 8.4332E-01 | 4.1733E-01 | 1.3089E-02 | 2.2659E-01 | 6.9565E-03 |
| 720.000 | 3.3908E+02 | 1.0394E+01 | 1.4419E+00 | 4.4566E-02 | 1.2041E+00 | 3.6730E-02 |

```
#################################################################
                        Worst Two-Hour Doses
    Note: All of the dose locations are shown below but the
          worst two-hour dose is only meaningful for the EAB
          dose location.  Please disregard the two-hour worst
          doses for the other dose locations
#################################################################
```

**Exclusion Area Boundary**

| Time (hr) | Whole Body (rem) | Thyroid (rem) | TEDE (rem) |
|---|---|---|---|
| **302.5** | **1.7980E-04** | **9.9948E-01** | **3.0611E-02** |

Low Population Zone

| Time (hr) | Whole Body (rem) | Thyroid (rem) | TEDE (rem) |
|---|---|---|---|
| 3.2 | 2.2845E-05 | 1.3259E-02 | 4.3674E-04 |

Control Room

| Time (hr) | Whole Body (rem) | Thyroid (rem) | TEDE (rem) |
|---|---|---|---|
| 3.5 | 5.7498E-07 | 6.0778E-03 | 1.9023E-04 |

**Appendix I**

**RADTRAD Output File**

# BWST_Leakage_NoFiltration.o1

**BWST Leakage Pathway Without CR Charcoal/HEPA Filters**
**(Case Analyzed To Estimate Aerosols & Iodines On CR Charcoal/HEPA Filters)**

TMI1 BWST Bypass Leakage Pathway AST Analysis:
CR Inleakage = 1,000 cfm,
CR Initiation = 30 minutes Without CR Filtration

AmerGen

**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 1 | System Nos. | Sheet 313 of 1000 |
|---|---|---|---|---|

```
 ######################################################################
          RADTRAD Version 3.02 run on  5/30/2001  at  7:53:11
 ######################################################################

 ######################################################################
                      File information
 ######################################################################

 Plant file name           = D:\TMI RADTRAD\BWST_Leakage_NoFiltration.psf
 Inventory file name       = d:\tmi radtrad\defaults\tmi_i131.nif
 Scenario file name        = D:\TMI RADTRAD\BWST_Leakage_NoFiltration.psf
 Release file name         = d:\tmi radtrad\defaults\pwr_i.rft
 Dose conversion file name = d:\tmi radtrad\defaults\fgr11&12.inp

     #####    ####   #####    #  #     #  #####   #    #  #####
     #    #  #       #        #  ##    #  #    #  #    #    #
     #    #  #       #        #  # #   #  #    #  #    #    #
     #####    ####   ####     #  #  #  #  #####   #    #    #
     #            #  #        #  #   # #  #       #    #    #
     #            #  #        #  #    ##  #       #    #    #
     #        ####   #        #  #     #  #        ####     #

 Radtrad 3.02 1/5/2000
 BWST Bypass Leakage  AST Analysis, CR Inleakage = 1,000 cfm, CR Initiation = 30
minutes, 10% Flashing For 0-720 hrs
 Nuclide Inventory File:
 d:\tmi radtrad\defaults\tmi_i131.nif
 Plant Power Level:
  2.6190E+03
 Compartments:
   4
 Compartment 1:
 Sump
   3
  5.4519E+04
   0
   0
   0
   0
   0
 Compartment 2:
 BWST
   3
  4.0684E+04
   0
   0
   0
   0
   0
 Compartment 3:
 Environment
   2
  0.0000E+00
   0
   0
   0
   0
```

```
  0
Compartment 4:
Control Room
  1
 2.5000E+05
  0
  0
  1
  0
  0
Pathways:
  5
Pathway 1:
Sump to BWST
  1
  2
  2
Pathway 2:
BWST to Environment
  2
  3
  2
Pathway 3:
Control Room Filtered Air Intake
  3
  4
  2
Pathway 4:
Control Room Unfiltered Inleakage
  3
  4
  2
Pathway 5:
Control Room Exhaust to Environment
  4
  3
  2
End of Plant Model File
Scenario Description Name:

Plant Model Filename:

Source Term:
  1
  1   1.0000E+00
d:\tmi radtrad\defaults\fgr11&12.inp
d:\tmi radtrad\defaults\pwr_i.rft
  0.0000E+00
  0
  0.0000E+00   9.7000E-01   3.0000E-02   1.0000E+00
Overlying Pool:
  0
  0.0000E+00
  0
  0
  0
  0
```

```
Compartments:
  4
Compartment 1:
  0
  1
  0
  0
  0
  0
  0
  0
  0
Compartment 2:
  0
  1
  0
  0
  0
  0
  0
  0
  0
Compartment 3:
  1
  1
  0
  0
  0
  0
  0
  0
  0
Compartment 4:
  1
  1
  0
  0
  0
  0
  1
  2.8000E+04
  8
  0.0000E+00   0.0000E+00   0.0000E+00   0.0000E+00
  5.0000E-01   0.0000E+00   0.0000E+00   0.0000E+00
  1.8000E+00   0.0000E+00   0.0000E+00   0.0000E+00
  2.0000E+00   0.0000E+00   0.0000E+00   0.0000E+00
  2.5000E+00   0.0000E+00   0.0000E+00   0.0000E+00
  2.8000E+00   0.0000E+00   0.0000E+00   0.0000E+00
  8.0000E+00   0.0000E+00   0.0000E+00   0.0000E+00
  7.2000E+02   0.0000E+00   0.0000E+00   0.0000E+00
  0
  0
Pathways:
  5
Pathway 1:
  0
  0
```

```
  0
  0
  0
  1
  5
  0.0000E+00   0.0000E+00   0.0000E+00   0.0000E+00   0.0000E+00
  4.9070E-01   4.0100E-01   9.0000E+01   9.0000E+01   9.0000E+01
  5.0000E+00   2.2720E-01   9.0000E+01   9.0000E+01   9.0000E+01
  2.4000E+01   2.1390E-01   9.0000E+01   9.0000E+01   9.0000E+01
  7.2000E+02   0.0000E+00   0.0000E+00   0.0000E+00   0.0000E+00
  0
  0
  0
  0
  0
  0
Pathway 2:
  0
  0
  0
  0
  0
  1
  4
  0.0000E+00   0.0000E+00   0.0000E+00   0.0000E+00   0.0000E+00
  4.9070E-01   4.0100E-01   9.0000E+01   9.0000E+01   9.0000E+01
  5.0000E+00   2.2720E-01   9.0000E+01   9.0000E+01   9.0000E+01
  2.4000E+01   2.1390E-01   9.0000E+01   9.0000E+01   9.0000E+01
  0
  0
  0
  0
  0
  0
Pathway 3:
  0
  0
  0
  0
  0
  1
  8
  0.0000E+00   4.0000E+03   0.0000E+00   0.0000E+00   0.0000E+00
  5.0000E-01   8.0000E+03   0.0000E+00   0.0000E+00   0.0000E+00
  1.8000E+00   8.0000E+03   0.0000E+00   0.0000E+00   0.0000E+00
  2.0000E+00   8.0000E+03   0.0000E+00   0.0000E+00   0.0000E+00
  2.8000E+00   8.0000E+03   0.0000E+00   0.0000E+00   0.0000E+00
  8.0000E+00   8.0000E+03   0.0000E+00   0.0000E+00   0.0000E+00
  2.4000E+01   8.0000E+03   0.0000E+00   0.0000E+00   0.0000E+00
  7.2000E+02   0.0000E+00   0.0000E+00   0.0000E+00   0.0000E+00
  0
  0
  0
  0
  0
  0
Pathway 4:
```

```
  0
  0
  0
  0
  0
  1
  8
  0.0000E+00   0.0000E+00   0.0000E+00   0.0000E+00   0.0000E+00
  5.0000E-01   1.0000E+03   0.0000E+00   0.0000E+00   0.0000E+00
  1.8000E+00   1.0000E+03   0.0000E+00   0.0000E+00   0.0000E+00
  2.0000E+00   1.0000E+03   0.0000E+00   0.0000E+00   0.0000E+00
  2.8000E+00   1.0000E+03   0.0000E+00   0.0000E+00   0.0000E+00
  8.0000E+00   1.0000E+03   0.0000E+00   0.0000E+00   0.0000E+00
  2.4000E+01   1.0000E+03   0.0000E+00   0.0000E+00   0.0000E+00
  7.2000E+02   0.0000E+00   0.0000E+00   0.0000E+00   0.0000E+00
  0
  0
  0
  0
  0
  0
Pathway 5:
  0
  0
  0
  0
  0
  1
  8
  0.0000E+00   4.0000E+03   0.0000E+00   0.0000E+00   0.0000E+00
  5.0000E-01   9.0000E+03   0.0000E+00   0.0000E+00   0.0000E+00
  1.8000E+00   9.0000E+03   0.0000E+00   0.0000E+00   0.0000E+00
  2.0000E+00   9.0000E+03   0.0000E+00   0.0000E+00   0.0000E+00
  2.8000E+00   9.0000E+03   0.0000E+00   0.0000E+00   0.0000E+00
  8.0000E+00   9.0000E+03   0.0000E+00   0.0000E+00   0.0000E+00
  2.4000E+01   9.0000E+03   0.0000E+00   0.0000E+00   0.0000E+00
  7.2000E+02   0.0000E+00   0.0000E+00   0.0000E+00   0.0000E+00
  0
  0
  0
  0
  0
  0
Dose Locations:
  3
Location 1:
Exclusion Area Boundary
  3
  1
  2
  0.0000E+00   8.0000E-04
  7.2000E+02   0.0000E+00
  1
  2
  0.0000E+00   3.5000E-04
  7.2000E+02   0.0000E+00
  0
```

```
Location 2:
Low Population Zone
  3
  1
  6
  0.0000E+00   1.4000E-04
  2.0000E+00   6.0000E-05
  8.0000E+00   3.9000E-05
  2.4000E+01   1.6000E-05
  9.6000E+01   4.0000E-06
  7.2000E+02   0.0000E+00
  1
  4
  0.0000E+00   3.5000E-04
  8.0000E+00   1.8000E-04
  2.4000E+01   2.3000E-04
  7.2000E+02   0.0000E+00
  0
Location 3:
Control Room
  4
  0
  1
  2
  0.0000E+00   3.5000E-04
  7.2000E+02   0.0000E+00
  1
  4
  0.0000E+00   1.0000E+00
  2.4000E+01   6.0000E-01
  9.6000E+01   4.0000E-01
  7.2000E+02   0.0000E+00
Effective Volume Location:
  1
  6
  0.0000E+00   8.4500E-04
  2.0000E+00   5.2300E-04
  8.0000E+00   2.4900E-04
  2.4000E+01   1.7700E-04
  9.6000E+01   1.1900E-04
  7.2000E+02   0.0000E+00
Simulation Parameters:
  7
  0.0000E+00   5.0000E-02
  1.0000E+00   1.0000E-01
  2.0000E+00   1.0000E+00
  8.0000E+00   2.0000E+00
  2.4000E+01   4.0000E+00
  9.6000E+01   8.0000E+00
  7.2000E+02   0.0000E+00
Output Filename:
D:\TMI RADTRAD\BWST_Leakage_NoFiltration.o1
  1
  1
  1
  0
  0
```

AmerGen

**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 1 | System Nos. | Sheet 319 of 1000 |
|---|---|---|---|---|

```
End of Scenario File

##################################################################
          RADTRAD Version 3.02 run on  5/30/2001  at  7:53:11
##################################################################

##################################################################
                     Plant Description
##################################################################

Number of Nuclides =  60

Inventory Power =   1.0000E+00 MWth
Plant Power Level =   2.6190E+03 MWth

Number of compartments    =   4

Compartment information

Compartment number  1  (Source term fraction =   1.0000E+00
)
Name: Sump
Compartment volume =   5.4519E+04 (Cubic feet)
Pathways into and out of compartment  1
    Pathway to compartment number   2: Sump to BWST

Compartment number  2
Name: BWST
Compartment volume =   4.0684E+04 (Cubic feet)
Pathways into and out of compartment  2
    Pathway to compartment number   3: BWST to Environment
    Pathway from compartment number 1: Sump to BWST

Compartment number  3
Name: Environment
Pathways into and out of compartment  3
    Pathway to compartment number   4: Control Room Filtered Air Intake
    Pathway to compartment number   4: Control Room Unfiltered Inleakage
    Pathway from compartment number 2: BWST to Environment
    Pathway from compartment number 4: Control Room Exhaust to Environment

Compartment number  4
Name: Control Room
Compartment volume =   2.5000E+05 (Cubic feet)
Removal devices within compartment:
     Filter(s)
Pathways into and out of compartment  4
    Pathway to compartment number   3: Control Room Exhaust to Environment
    Pathway from compartment number 3: Control Room Filtered Air Intake
    Pathway from compartment number 3: Control Room Unfiltered Inleakage

Total number of pathways =   5

##################################################################
          RADTRAD Version 3.02 run on  5/30/2001  at  7:53:11
##################################################################
```

```
#######################################################################
                    Scenario Description
#######################################################################

Radioactive Decay is enabled
RELEASE_NAME = PWR, NUREG-1465, Tables 3.12 & 3.13, Jun
Release Fractions and Timings
                GAP       EARLY IN-VESSEL
            0.5000 hrs     1.3000 hrs
NOBLES      0.0000E+00     0.0000E+00
IODINE      5.0000E-02     3.5000E-01
CESIUM      0.0000E+00     0.0000E+00
TELLURIUM   0.0000E+00     0.0000E+00
STRONTIUM   0.0000E+00     0.0000E+00
BARIUM      0.0000E+00     0.0000E+00
RUTHENIUM   0.0000E+00     0.0000E+00
CERIUM      0.0000E+00     0.0000E+00
LANTHANUM   0.0000E+00     0.0000E+00

Iodine fractions
     Aerosol     =   0.0000E+00
     Elemental   =   9.7000E-01
     Organic     =   3.0000E-02

COMPARTMENT DATA

Compartment number   1: Sump

Compartment number   2: BWST

Compartment number   3: Environment

Compartment number   4: Control Room

     Compartment Filter Data

      Time (hr)      Flow Rate          Filter Efficiencies (%)
                       (cfm)        Aerosol     Elemental    Organic
       0.0000E+00    2.8000E+04   0.0000E+00   0.0000E+00   0.0000E+00
       5.0000E-01    2.8000E+04   0.0000E+00   0.0000E+00   0.0000E+00
       1.8000E+00    2.8000E+04   0.0000E+00   0.0000E+00   0.0000E+00
       2.0000E+00    2.8000E+04   0.0000E+00   0.0000E+00   0.0000E+00
       2.5000E+00    2.8000E+04   0.0000E+00   0.0000E+00   0.0000E+00
       2.8000E+00    2.8000E+04   0.0000E+00   0.0000E+00   0.0000E+00
       8.0000E+00    2.8000E+04   0.0000E+00   0.0000E+00   0.0000E+00
       7.2000E+02    2.8000E+04   0.0000E+00   0.0000E+00   0.0000E+00

PATHWAY DATA

Pathway number  1: Sump to BWST

     Pathway Filter: Removal Data

       Time (hr)      Flow Rate          Filter Efficiencies (%)
                       (cfm)        Aerosol     Elemental    Organic
       0.0000E+00    0.0000E+00   0.0000E+00   0.0000E+00   0.0000E+00
       4.9070E-01    4.0100E-01   9.0000E+01   9.0000E+01   9.0000E+01
```

| | | | | |
|---|---|---|---|---|
| 5.0000E+00 | 2.2720E-01 | 9.0000E+01 | 9.0000E+01 | 9.0000E+01 |
| 2.4000E+01 | 2.1390E-01 | 9.0000E+01 | 9.0000E+01 | 9.0000E+01 |
| 7.2000E+02 | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 |

Pathway number 2: BWST to Environment

Pathway Filter: Removal Data

| Time (hr) | Flow Rate (cfm) | Filter Efficiencies (%) Aerosol | Elemental | Organic |
|---|---|---|---|---|
| 0.0000E+00 | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 |
| 4.9070E-01 | 4.0100E-01 | 9.0000E+01 | 9.0000E+01 | 9.0000E+01 |
| 5.0000E+00 | 2.2720E-01 | 9.0000E+01 | 9.0000E+01 | 9.0000E+01 |
| 2.4000E+01 | 2.1390E-01 | 9.0000E+01 | 9.0000E+01 | 9.0000E+01 |

Pathway number 3: Control Room Filtered Air Intake

Pathway Filter: Removal Data

| Time (hr) | Flow Rate (cfm) | Filter Efficiencies (%) Aerosol | Elemental | Organic |
|---|---|---|---|---|
| 0.0000E+00 | 4.0000E+03 | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 |
| 5.0000E-01 | 8.0000E+03 | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 |
| 1.8000E+00 | 8.0000E+03 | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 |
| 2.0000E+00 | 8.0000E+03 | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 |
| 2.8000E+00 | 8.0000E+03 | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 |
| 8.0000E+00 | 8.0000E+03 | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 |
| 2.4000E+01 | 8.0000E+03 | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 |
| 7.2000E+02 | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 |

Pathway number 4: Control Room Unfiltered Inleakage

Pathway Filter: Removal Data

| Time (hr) | Flow Rate (cfm) | Filter Efficiencies (%) Aerosol | Elemental | Organic |
|---|---|---|---|---|
| 0.0000E+00 | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 |
| 5.0000E-01 | 1.0000E+03 | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 |
| 1.8000E+00 | 1.0000E+03 | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 |
| 2.0000E+00 | 1.0000E+03 | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 |
| 2.8000E+00 | 1.0000E+03 | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 |
| 8.0000E+00 | 1.0000E+03 | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 |
| 2.4000E+01 | 1.0000E+03 | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 |
| 7.2000E+02 | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 |

Pathway number 5: Control Room Exhaust to Environment

Pathway Filter: Removal Data

| Time (hr) | Flow Rate (cfm) | Filter Efficiencies (%) Aerosol | Elemental | Organic |
|---|---|---|---|---|
| 0.0000E+00 | 4.0000E+03 | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 |
| 5.0000E-01 | 9.0000E+03 | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 |
| 1.8000E+00 | 9.0000E+03 | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 |
| 2.0000E+00 | 9.0000E+03 | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 |
| 2.8000E+00 | 9.0000E+03 | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 |
| 8.0000E+00 | 9.0000E+03 | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 |

```
        2.4000E+01    9.0000E+03   0.0000E+00   0.0000E+00   0.0000E+00
        7.2000E+02    0.0000E+00   0.0000E+00   0.0000E+00   0.0000E+00

LOCATION DATA
     Location Exclusion Area Boundary     is in compartment   3

     Location X/Q Data
      Time (hr)         X/Q (s * m^-3)
       0.0000E+00          8.0000E-04
       7.2000E+02          0.0000E+00

     Location Breathing Rate Data
      Time (hr)         Breathing Rate (m^3 * sec^-1)
       0.0000E+00                3.5000E-04
       7.2000E+02                0.0000E+00
     Location Low Population Zone     is in compartment   3

     Location X/Q Data
      Time (hr)         X/Q (s * m^-3)
       0.0000E+00          1.4000E-04
       2.0000E+00          6.0000E-05
       8.0000E+00          3.9000E-05
       2.4000E+01          1.6000E-05
       9.6000E+01          4.0000E-06
       7.2000E+02          0.0000E+00

     Location Breathing Rate Data
      Time (hr)         Breathing Rate (m^3 * sec^-1)
       0.0000E+00                3.5000E-04
       8.0000E+00                1.8000E-04
       2.4000E+01                2.3000E-04
       7.2000E+02                0.0000E+00
     Location Control Room     is in compartment   4

     Location X/Q Data
      Time (hr)         X/Q (s * m^-3)
       0.0000E+00          8.4500E-04
       2.0000E+00          5.2300E-04
       8.0000E+00          2.4900E-04
       2.4000E+01          1.7700E-04
       9.6000E+01          1.1900E-04
       7.2000E+02          0.0000E+00

     Location Breathing Rate Data
      Time (hr)         Breathing Rate (m^3 * sec^-1)
       0.0000E+00                3.5000E-04
       7.2000E+02                0.0000E+00

     Location Occupancy Factor Data
      Time (hr)         Occupancy Factor
       0.0000E+00           1.0000E+00
       2.4000E+01           6.0000E-01
       9.6000E+01           4.0000E-01
       7.2000E+02           0.0000E+00

USER SPECIFIED TIME STEP DATA - SUPPLEMENTAL TIME STEPS
     Time            Time step
```

```
      0.0000E+00       5.0000E-02
      1.0000E+00       1.0000E-01
      2.0000E+00       1.0000E+00
      8.0000E+00       2.0000E+00
      2.4000E+01       4.0000E+00
      9.6000E+01       8.0000E+00
      7.2000E+02       0.0000E+00

#######################################################################
          RADTRAD Version 3.02 run on  5/30/2001  at  7:53:11
#######################################################################

     ####   #    #  #####  #####   #    #  #####
    #    #  #    #    #    #    #  #    #    #
    #    #  #    #    #    #    #  #    #    #
    #    #  #    #    #    #####   #    #    #
    #    #  #    #    #    #       #    #    #
    #    #  #    #    #    #       #    #    #
     ####    ####     #    #        ####     #

#######################################################################
           Dose, Detailed model and Detailed Inventory Output
#######################################################################

Exclusion Area Boundary Doses:

Time (h) =   0.4907    Whole Body   Thyroid       TEDE
Delta dose (rem)        0.0000E+00  0.0000E+00  0.0000E+00
Accumulated dose (rem)  0.0000E+00  0.0000E+00  0.0000E+00

Low Population Zone Doses:

Time (h) =   0.4907    Whole Body   Thyroid       TEDE
Delta dose (rem)        0.0000E+00  0.0000E+00  0.0000E+00
Accumulated dose (rem)  0.0000E+00  0.0000E+00  0.0000E+00

Control Room Doses:

Time (h) =   0.4907    Whole Body   Thyroid       TEDE
Delta dose (rem)        0.0000E+00  0.0000E+00  0.0000E+00
Accumulated dose (rem)  0.0000E+00  0.0000E+00  0.0000E+00

Environment Integral Nuclide Release:

Time (h) =   0.4907       Ci           kg         Atoms         Bq

Environment Transport Group Inventory:

                         Present     Release      Total
Time (h) =   0.4907      Release     Rate/s      Release
Noble gases (atoms)     0.0000E+00  0.0000E+00  0.0000E+00
Elemental I (atoms)     0.0000E+00  0.0000E+00  0.0000E+00
Organic I (atoms)       0.0000E+00  0.0000E+00  0.0000E+00
Aerosols (kg)           0.0000E+00  0.0000E+00  0.0000E+00

BWST to Environment Transport Group Inventory:
```

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**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 1 | System Nos. | Sheet 324 of 1000 |
|---|---|---|---|---|

```
                          Pathway
Time (h) =   0.4907        Filter
Noble gases (atoms)     0.0000E+00
Elemental I (atoms)     0.0000E+00
Organic I (atoms)       0.0000E+00
Aerosols (kg)           0.0000E+00

Control Room Filtered Air Intake Transport Group Inventory:

                          Pathway
Time (h) =   0.4907        Filter
Noble gases (atoms)     0.0000E+00
Elemental I (atoms)     0.0000E+00
Organic I (atoms)       0.0000E+00
Aerosols (kg)           0.0000E+00

Control Room Unfiltered Inleakage Transport Group Inventory:

                          Pathway
Time (h) =   0.4907        Filter
Noble gases (atoms)     0.0000E+00
Elemental I (atoms)     0.0000E+00
Organic I (atoms)       0.0000E+00
Aerosols (kg)           0.0000E+00

Control Room Exhaust to Environment Transport Group Inventory:

                          Pathway
Time (h) =   0.4907        Filter
Noble gases (atoms)     0.0000E+00
Elemental I (atoms)     0.0000E+00
Organic I (atoms)       0.0000E+00
Aerosols (kg)           0.0000E+00

Control Room Compartment Nuclide Inventory:

Time (h) =   0.4907       Ci           kg         Atoms         Bq

Control Room Transport Group Inventory:

                                                 Overlying
Time (h) =   0.4907     Atmosphere     Sump         Pool
Noble gases (atoms)     0.0000E+00  0.0000E+00  0.0000E+00
Elemental I (atoms)     0.0000E+00  0.0000E+00  0.0000E+00
Organic I (atoms)       0.0000E+00  0.0000E+00  0.0000E+00
Aerosols (kg)           0.0000E+00  0.0000E+00  0.0000E+00

                        Deposition Recirculating
Time (h) =   0.4907      Surfaces     Filter
Noble gases (atoms)     0.0000E+00  0.0000E+00
Elemental I (atoms)     0.0000E+00  0.0000E+00
Organic I (atoms)       0.0000E+00  0.0000E+00
Aerosols (kg)           0.0000E+00  0.0000E+00

Control Room Filtered Air Intake Transport Group Inventory:

                          Pathway
```

```
Time (h) =   0.4907      Filter
Noble gases (atoms)    0.0000E+00
Elemental I (atoms)    0.0000E+00
Organic I (atoms)      0.0000E+00
Aerosols (kg)          0.0000E+00

Control Room Unfiltered Inleakage Transport Group Inventory:

                        Pathway
Time (h) =   0.4907      Filter
Noble gases (atoms)    0.0000E+00
Elemental I (atoms)    0.0000E+00
Organic I (atoms)      0.0000E+00
Aerosols (kg)          0.0000E+00

Control Room Exhaust to Environment Transport Group Inventory:

                        Pathway
Time (h) =   0.4907      Filter
Noble gases (atoms)    0.0000E+00
Elemental I (atoms)    0.0000E+00
Organic I (atoms)      0.0000E+00
Aerosols (kg)          0.0000E+00

Exclusion Area Boundary Doses:

Time (h) =   0.5000    Whole Body   Thyroid       TEDE
Delta dose (rem)        6.8036E-10  1.6911E-07  6.0141E-09
Accumulated dose (rem)  6.8036E-10  1.6911E-07  6.0141E-09

Low Population Zone Doses:

Time (h) =   0.5000    Whole Body   Thyroid       TEDE
Delta dose (rem)        1.1906E-10  2.9594E-08  1.0525E-09
Accumulated dose (rem)  1.1906E-10  2.9594E-08  1.0525E-09

Control Room Doses:

Time (h) =   0.5000    Whole Body   Thyroid       TEDE
Delta dose (rem)        1.8202E-13  7.9500E-10  2.5257E-11
Accumulated dose (rem)  1.8202E-13  7.9500E-10  2.5257E-11

Environment Integral Nuclide Release:

Time (h) =   0.5000       Ci           kg         Atoms         Bq
I-131                  3.9762E-07  3.2073E-15  1.4744E+10  1.4712E+04
I-132                  4.9515E-07  4.7970E-17  2.1885E+08  1.8321E+04
I-133                  8.1939E-07  7.2333E-16  3.2752E+09  3.0317E+04
I-134                  6.2381E-07  2.3384E-17  1.0509E+08  2.3081E+04
I-135                  7.3727E-07  2.0994E-16  9.3650E+08  2.7279E+04

Environment Transport Group Inventory:

                        Present     Release      Total
Time (h) =   0.5000     Release     Rate/s      Release
Noble gases (atoms)    0.0000E+00  0.0000E+00  0.0000E+00
Elemental I (atoms)    1.8816E+10  1.0454E+07  1.8816E+10
```

| | | | |
|---|---|---|---|
| Organic I (atoms) | 5.8195E+08 | 3.2331E+05 | 5.8195E+08 |
| Aerosols (kg) | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 |

BWST to Environment Transport Group Inventory:

| Time (h) = 0.5000 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 1.6935E+11 |
| Organic I (atoms) | 5.2375E+09 |
| Aerosols (kg) | 0.0000E+00 |

Control Room Filtered Air Intake Transport Group Inventory:

| Time (h) = 0.5000 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 |

Control Room Unfiltered Inleakage Transport Group Inventory:

| Time (h) = 0.5000 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 |

Control Room Exhaust to Environment Transport Group Inventory:

| Time (h) = 0.5000 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 |

**Control Room Compartment Nuclide Inventory:**

| **Time (h) = 0.5000** | **Ci** | **kg** | **Atoms** | **Bq** |
|---|---|---|---|---|
| **I-131** | **6.3239E-10** | **5.1010E-18** | **2.3449E+07** | **2.3399E+01** |
| **I-132** | **7.8752E-10** | **7.6294E-20** | **3.4807E+05** | **2.9138E+01** |
| **I-133** | **1.3032E-09** | **1.1504E-18** | **5.2090E+06** | **4.8218E+01** |
| **I-134** | **9.9214E-10** | **3.7191E-20** | **1.6714E+05** | **3.6709E+01** |
| **I-135** | **1.1726E-09** | **3.3390E-19** | **1.4895E+06** | **4.3386E+01** |

Control Room Transport Group Inventory:

| Time (h) = 0.5000 | Atmosphere | Sump | Overlying Pool |
|---|---|---|---|
| Noble gases (atoms) | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 |
| Elemental I (atoms) | 2.9927E+07 | 0.0000E+00 | 0.0000E+00 |
| Organic I (atoms) | 9.2556E+05 | 0.0000E+00 | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 |

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**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 1 | System Nos. | Sheet 327 of 1000 |
|---|---|---|---|---|

```
                        Deposition Recirculating
Time (h) =   0.5000      Surfaces     Filter
Noble gases (atoms)     0.0000E+00  0.0000E+00
Elemental I (atoms)     0.0000E+00  0.0000E+00
Organic I (atoms)       0.0000E+00  0.0000E+00
Aerosols (kg)           0.0000E+00  0.0000E+00

Control Room Filtered Air Intake Transport Group Inventory:

                         Pathway
Time (h) =   0.5000       Filter
Noble gases (atoms)     0.0000E+00
Elemental I (atoms)     0.0000E+00
Organic I (atoms)       0.0000E+00
Aerosols (kg)           0.0000E+00

Control Room Unfiltered Inleakage Transport Group Inventory:

                         Pathway
Time (h) =   0.5000       Filter
Noble gases (atoms)     0.0000E+00
Elemental I (atoms)     0.0000E+00
Organic I (atoms)       0.0000E+00
Aerosols (kg)           0.0000E+00

Control Room Exhaust to Environment Transport Group Inventory:

                         Pathway
Time (h) =   0.5000       Filter
Noble gases (atoms)     0.0000E+00
Elemental I (atoms)     0.0000E+00
Organic I (atoms)       0.0000E+00
Aerosols (kg)           0.0000E+00

Exclusion Area Boundary Doses:

Time (h) =   1.8000     Whole Body   Thyroid       TEDE
Delta dose (rem)         3.3344E-05  1.1049E-02  3.8055E-04
Accumulated dose (rem)   3.3345E-05  1.1050E-02  3.8056E-04

Low Population Zone Doses:

Time (h) =   1.8000     Whole Body   Thyroid       TEDE
Delta dose (rem)         5.8353E-06  1.9336E-03  6.6596E-05
Accumulated dose (rem)   5.8354E-06  1.9337E-03  6.6597E-05

Control Room Doses:

Time (h) =   1.8000     Whole Body   Thyroid       TEDE
Delta dose (rem)         9.1991E-07  5.4397E-03  1.7182E-04
Accumulated dose (rem)   9.1991E-07  5.4397E-03  1.7182E-04

Environment Integral Nuclide Release:

Time (h) =   1.8000        Ci           kg         Atoms         Bq
I-131                   2.6276E-02  2.1195E-10  9.7432E+14  9.7221E+08
I-132                   2.4472E-02  2.3708E-12  1.0816E+13  9.0545E+08
```

| | | | | |
|---|---|---|---|---|
| I-133 | 5.2583E-02 | 4.6418E-11 | 2.1018E+14 | 1.9456E+09 |
| I-134 | 1.9441E-02 | 7.2877E-13 | 3.2752E+12 | 7.1933E+08 |
| I-135 | 4.4103E-02 | 1.2558E-11 | 5.6020E+13 | 1.6318E+09 |

Environment Transport Group Inventory:

| Time (h) = 1.8000 | Present Release | Release Rate/s | Total Release |
|---|---|---|---|
| Noble gases (atoms) | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 |
| Elemental I (atoms) | 1.2374E+15 | 1.9095E+11 | 1.2374E+15 |
| Organic I (atoms) | 3.8270E+13 | 5.9058E+09 | 3.8270E+13 |
| Aerosols (kg) | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 |

BWST to Environment Transport Group Inventory:

| Time (h) = 1.8000 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 1.1118E+16 |
| Organic I (atoms) | 3.4385E+14 |
| Aerosols (kg) | 0.0000E+00 |

Control Room Filtered Air Intake Transport Group Inventory:

| Time (h) = 1.8000 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 |

Control Room Unfiltered Inleakage Transport Group Inventory:

| Time (h) = 1.8000 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 |

Control Room Exhaust to Environment Transport Group Inventory:

| Time (h) = 1.8000 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 |

**Control Room Compartment Nuclide Inventory:**

| **Time (h) = 1.8000** | **Ci** | **kg** | **Atoms** | **Bq** |
|---|---|---|---|---|
| **I-131** | **5.0380E-05** | **4.0638E-13** | **1.8681E+12** | **1.8641E+06** |
| **I-132** | **4.2600E-05** | **4.1271E-15** | **1.8829E+10** | **1.5762E+06** |
| **I-133** | **9.9885E-05** | **8.8174E-14** | **3.9925E+11** | **3.6957E+06** |
| **I-134** | **2.8411E-05** | **1.0650E-15** | **4.7862E+09** | **1.0512E+06** |
| **I-135** | **8.1893E-05** | **2.3319E-14** | **1.0402E+11** | **3.0300E+06** |

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**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 1 | System Nos. | Sheet 329 of 1000 |
|---|---|---|---|---|

Control Room Transport Group Inventory:

| Time (h) = 1.8000 | Atmosphere | Sump | Overlying Pool |
|---|---|---|---|
| Noble gases (atoms) | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 |
| Elemental I (atoms) | 2.3730E+12 | 0.0000E+00 | 0.0000E+00 |
| Organic I (atoms) | 7.3392E+10 | 0.0000E+00 | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 |

| Time (h) = 1.8000 | Deposition Surfaces | Recirculating Filter |
|---|---|---|
| Noble gases (atoms) | 0.0000E+00 | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 | 0.0000E+00 |

Control Room Filtered Air Intake Transport Group Inventory:

| Time (h) = 1.8000 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 |

Control Room Unfiltered Inleakage Transport Group Inventory:

| Time (h) = 1.8000 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 |

Control Room Exhaust to Environment Transport Group Inventory:

| Time (h) = 1.8000 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 |

Exclusion Area Boundary Doses:

| Time (h) = 2.0000 | Whole Body | Thyroid | TEDE |
|---|---|---|---|
| Delta dose (rem) | 1.3685E-05 | 5.1659E-03 | 1.7577E-04 |
| Accumulated dose (rem) | 4.7030E-05 | 1.6216E-02 | 5.5632E-04 |

Low Population Zone Doses:

| Time (h) = 2.0000 | Whole Body | Thyroid | TEDE |
|---|---|---|---|
| Delta dose (rem) | 2.3948E-06 | 9.0404E-04 | 3.0759E-05 |
| Accumulated dose (rem) | 8.2302E-06 | 2.8377E-03 | 9.7356E-05 |

Control Room Doses:

```
Time (h) =   2.0000    Whole Body   Thyroid       TEDE
Delta dose (rem)        4.7688E-07  3.1640E-03  9.9747E-05
Accumulated dose (rem)  1.3968E-06  8.6037E-03  2.7157E-04

Environment Integral Nuclide Release:

Time (h) =   2.0000       Ci           kg         Atoms         Bq
I-131                 3.8630E-02  3.1159E-10  1.4324E+15  1.4293E+09
I-132                 3.4454E-02  3.3378E-12  1.5228E+13  1.2748E+09
I-133                 7.6965E-02  6.7942E-11  3.0764E+14  2.8477E+09
I-134                 2.5622E-02  9.6048E-13  4.3165E+12  9.4803E+08
I-135                 6.3876E-02  1.8189E-11  8.1136E+13  2.3634E+09

Environment Transport Group Inventory:

                       Present     Release      Total
Time (h) =   2.0000    Release     Rate/s      Release
Noble gases (atoms)   0.0000E+00  0.0000E+00  0.0000E+00
Elemental I (atoms)   1.8183E+15  2.5255E+11  1.8183E+15
Organic I (atoms)     5.6237E+13  7.8107E+09  5.6237E+13
Aerosols (kg)         0.0000E+00  0.0000E+00  0.0000E+00

BWST to Environment Transport Group Inventory:

                       Pathway
Time (h) =   2.0000     Filter
Noble gases (atoms)   0.0000E+00
Elemental I (atoms)   1.6335E+16
Organic I (atoms)     5.0522E+14
Aerosols (kg)         0.0000E+00

Control Room Filtered Air Intake Transport Group Inventory:

                       Pathway
Time (h) =   2.0000     Filter
Noble gases (atoms)   0.0000E+00
Elemental I (atoms)   0.0000E+00
Organic I (atoms)     0.0000E+00
Aerosols (kg)         0.0000E+00

Control Room Unfiltered Inleakage Transport Group Inventory:

                       Pathway
Time (h) =   2.0000     Filter
Noble gases (atoms)   0.0000E+00
Elemental I (atoms)   0.0000E+00
Organic I (atoms)     0.0000E+00
Aerosols (kg)         0.0000E+00

Control Room Exhaust to Environment Transport Group Inventory:

                       Pathway
Time (h) =   2.0000     Filter
Noble gases (atoms)   0.0000E+00
Elemental I (atoms)   0.0000E+00
Organic I (atoms)     0.0000E+00
```

Aerosols (kg) 0.0000E+00

**Control Room Compartment Nuclide Inventory:**

| Time (h) = 2.0000 | Ci | kg | Atoms | Bq |
|---|---|---|---|---|
| I-131 | 6.8993E-05 | 5.5651E-13 | 2.5583E+12 | 2.5528E+06 |
| I-132 | 5.4966E-05 | 5.3251E-15 | 2.4294E+10 | 2.0337E+06 |
| I-133 | 1.3598E-04 | 1.2003E-13 | 5.4351E+11 | 5.0311E+06 |
| I-134 | 3.3240E-05 | 1.2460E-15 | 5.5999E+09 | 1.2299E+06 |
| I-135 | 1.0990E-04 | 3.1294E-14 | 1.3960E+11 | 4.0663E+06 |

Control Room Transport Group Inventory:

| Time (h) = 2.0000 | Atmosphere | Sump | Overlying Pool |
|---|---|---|---|
| Noble gases (atoms) | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 |
| Elemental I (atoms) | 3.2482E+12 | 0.0000E+00 | 0.0000E+00 |
| Organic I (atoms) | 1.0046E+11 | 0.0000E+00 | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 |

| Time (h) = 2.0000 | Deposition Surfaces | Recirculating Filter |
|---|---|---|
| Noble gases (atoms) | 0.0000E+00 | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 | 0.0000E+00 |

Control Room Filtered Air Intake Transport Group Inventory:

| Time (h) = 2.0000 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 |

Control Room Unfiltered Inleakage Transport Group Inventory:

| Time (h) = 2.0000 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 |

Control Room Exhaust to Environment Transport Group Inventory:

| Time (h) = 2.0000 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 |

Exclusion Area Boundary Doses:

| Time (h) = 2.5000 | Whole Body | Thyroid | TEDE |
|---|---|---|---|

```
Delta dose (rem)        4.4337E-05  1.8236E-02  6.1593E-04
Accumulated dose (rem)  9.1367E-05  3.4452E-02  1.1722E-03

Low Population Zone Doses:

Time (h) =   2.5000    Whole Body   Thyroid       TEDE
Delta dose (rem)        3.3253E-06  1.3677E-03  4.6194E-05
Accumulated dose (rem)  1.1556E-05  4.2054E-03  1.4355E-04

Control Room Doses:

Time (h) =   2.5000    Whole Body   Thyroid       TEDE
Delta dose (rem)        1.3791E-06  9.9486E-03  3.1321E-04
Accumulated dose (rem)  2.7759E-06  1.8552E-02  5.8478E-04

Environment Integral Nuclide Release:

Time (h) =   2.5000       Ci           kg         Atoms         Bq
I-131                  8.2427E-02  6.6487E-10  3.0564E+15  3.0498E+09
I-132                  6.6233E-02  6.4166E-12  2.9274E+13  2.4506E+09
I-133                  1.6247E-01  1.4343E-10  6.4942E+14  6.0115E+09
I-134                  4.2167E-02  1.5807E-12  7.1038E+12  1.5602E+09
I-135                  1.3144E-01  3.7429E-11  1.6696E+14  4.8634E+09

Environment Transport Group Inventory:

                        Present     Release      Total
Time (h) =   2.5000     Release     Rate/s      Release
Noble gases (atoms)    0.0000E+00  0.0000E+00  0.0000E+00
Elemental I (atoms)    3.8780E+15  4.3089E+11  3.8780E+15
Organic I (atoms)      1.1994E+14  1.3326E+10  1.1994E+14
Aerosols (kg)          0.0000E+00  0.0000E+00  0.0000E+00

BWST to Environment Transport Group Inventory:

                        Pathway
Time (h) =   2.5000      Filter
Noble gases (atoms)    0.0000E+00
Elemental I (atoms)    3.4838E+16
Organic I (atoms)      1.0775E+15
Aerosols (kg)          0.0000E+00

Control Room Filtered Air Intake Transport Group Inventory:

                        Pathway
Time (h) =   2.5000      Filter
Noble gases (atoms)    0.0000E+00
Elemental I (atoms)    0.0000E+00
Organic I (atoms)      0.0000E+00
Aerosols (kg)          0.0000E+00

Control Room Unfiltered Inleakage Transport Group Inventory:

                        Pathway
Time (h) =   2.5000      Filter
Noble gases (atoms)    0.0000E+00
Elemental I (atoms)    0.0000E+00
```

```
Organic I (atoms)      0.0000E+00
Aerosols (kg)          0.0000E+00

Control Room Exhaust to Environment Transport Group Inventory:

                         Pathway
Time (h) =   2.5000       Filter
Noble gases (atoms)    0.0000E+00
Elemental I (atoms)    0.0000E+00
Organic I (atoms)      0.0000E+00
Aerosols (kg)          0.0000E+00
```

**Control Room Compartment Nuclide Inventory:**

| Time (h) = 2.5000 | Ci | kg | Atoms | Bq |
|---|---|---|---|---|
| I-131 | 8.5059E-05 | 6.8610E-13 | 3.1540E+12 | 3.1472E+06 |
| I-132 | 5.8391E-05 | 5.6569E-15 | 2.5808E+10 | 2.1605E+06 |
| I-133 | 1.6516E-04 | 1.4580E-13 | 6.6018E+11 | 6.1111E+06 |
| I-134 | 2.7648E-05 | 1.0364E-15 | 4.6578E+09 | 1.0230E+06 |
| I-135 | 1.2880E-04 | 3.6676E-14 | 1.6361E+11 | 4.7656E+06 |

```
Control Room Transport Group Inventory:

                                                Overlying
Time (h) =   2.5000    Atmosphere     Sump        Pool
Noble gases (atoms)    0.0000E+00  0.0000E+00  0.0000E+00
Elemental I (atoms)    4.0049E+12  0.0000E+00  0.0000E+00
Organic I (atoms)      1.2386E+11  0.0000E+00  0.0000E+00
Aerosols (kg)          0.0000E+00  0.0000E+00  0.0000E+00

                       Deposition Recirculating
Time (h) =   2.5000     Surfaces     Filter
Noble gases (atoms)    0.0000E+00  0.0000E+00
Elemental I (atoms)    0.0000E+00  0.0000E+00
Organic I (atoms)      0.0000E+00  0.0000E+00
Aerosols (kg)          0.0000E+00  0.0000E+00

Control Room Filtered Air Intake Transport Group Inventory:

                         Pathway
Time (h) =   2.5000       Filter
Noble gases (atoms)    0.0000E+00
Elemental I (atoms)    0.0000E+00
Organic I (atoms)      0.0000E+00
Aerosols (kg)          0.0000E+00

Control Room Unfiltered Inleakage Transport Group Inventory:

                         Pathway
Time (h) =   2.5000       Filter
Noble gases (atoms)    0.0000E+00
Elemental I (atoms)    0.0000E+00
Organic I (atoms)      0.0000E+00
Aerosols (kg)          0.0000E+00

Control Room Exhaust to Environment Transport Group Inventory:
```

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**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 1 | System Nos. | Sheet 334 of 1000 |
|---|---|---|---|---|

```
                          Pathway
Time (h) =   2.5000        Filter
Noble gases (atoms)     0.0000E+00
Elemental I (atoms)     0.0000E+00
Organic I (atoms)       0.0000E+00
Aerosols (kg)           0.0000E+00

Exclusion Area Boundary Doses:

Time (h) =   2.8000     Whole Body   Thyroid       TEDE
Delta dose (rem)         3.2534E-05  1.4554E-02  4.8827E-04
Accumulated dose (rem)   1.2390E-04  4.9006E-02  1.6605E-03

Low Population Zone Doses:

Time (h) =   2.8000     Whole Body   Thyroid       TEDE
Delta dose (rem)         2.4401E-06  1.0916E-03  3.6620E-05
Accumulated dose (rem)   1.3996E-05  5.2970E-03  1.8017E-04

Control Room Doses:

Time (h) =   2.8000     Whole Body   Thyroid       TEDE
Delta dose (rem)         9.3999E-07  7.3888E-03  2.3231E-04
Accumulated dose (rem)   3.7159E-06  2.5941E-02  8.1708E-04

Environment Integral Nuclide Release:

Time (h) =   2.8000        Ci           kg         Atoms         Bq
I-131                   1.1753E-01  9.4805E-10  4.3583E+15  4.3488E+09
I-132                   8.8919E-02  8.6144E-12  3.9301E+13  3.2900E+09
I-133                   2.3023E-01  2.0324E-10  9.2026E+14  8.5186E+09
I-134                   5.1905E-02  1.9457E-12  8.7443E+12  1.9205E+09
I-135                   1.8352E-01  5.2257E-11  2.3311E+14  6.7902E+09

Environment Transport Group Inventory:

                          Present     Release      Total
Time (h) =   2.8000       Release     Rate/s      Release
Noble gases (atoms)     0.0000E+00  0.0000E+00  0.0000E+00
Elemental I (atoms)     5.5301E+15  5.4862E+11  5.5301E+15
Organic I (atoms)       1.7103E+14  1.6968E+10  1.7103E+14
Aerosols (kg)           0.0000E+00  0.0000E+00  0.0000E+00

BWST to Environment Transport Group Inventory:

                          Pathway
Time (h) =   2.8000        Filter
Noble gases (atoms)     0.0000E+00
Elemental I (atoms)     4.9681E+16
Organic I (atoms)       1.5365E+15
Aerosols (kg)           0.0000E+00

Control Room Filtered Air Intake Transport Group Inventory:

                          Pathway
Time (h) =   2.8000        Filter
Noble gases (atoms)     0.0000E+00
```

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**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 1 | System Nos. | Sheet 335 of 1000 |
|---|---|---|---|---|

```
Elemental I (atoms)    0.0000E+00
Organic I (atoms)      0.0000E+00
Aerosols (kg)          0.0000E+00

Control Room Unfiltered Inleakage Transport Group Inventory:

                        Pathway
Time (h) =   2.8000      Filter
Noble gases (atoms)    0.0000E+00
Elemental I (atoms)    0.0000E+00
Organic I (atoms)      0.0000E+00
Aerosols (kg)          0.0000E+00

Control Room Exhaust to Environment Transport Group Inventory:

                        Pathway
Time (h) =   2.8000      Filter
Noble gases (atoms)    0.0000E+00
Elemental I (atoms)    0.0000E+00
Organic I (atoms)      0.0000E+00
Aerosols (kg)          0.0000E+00
```

**Control Room Compartment Nuclide Inventory:**

| **Time (h) = 2.8000** | **Ci** | **kg** | **Atoms** | **Bq** |
|---|---|---|---|---|
| **I-131** | **1.0241E-04** | **8.2604E-13** | **3.7973E+12** | **3.7891E+06** |
| **I-132** | **6.4293E-05** | **6.2286E-15** | **2.8416E+10** | **2.3788E+06** |
| **I-133** | **1.9709E-04** | **1.7398E-13** | **7.8777E+11** | **7.2922E+06** |
| **I-134** | **2.6287E-05** | **9.8537E-16** | **4.4284E+09** | **9.7260E+05** |
| **I-135** | **1.5043E-04** | **4.2835E-14** | **1.9108E+11** | **5.5660E+06** |

```
Control Room Transport Group Inventory:

                                                Overlying
Time (h) =   2.8000    Atmosphere     Sump        Pool
Noble gases (atoms)    0.0000E+00  0.0000E+00  0.0000E+00
Elemental I (atoms)    4.8233E+12  0.0000E+00  0.0000E+00
Organic I (atoms)      1.4918E+11  0.0000E+00  0.0000E+00
Aerosols (kg)          0.0000E+00  0.0000E+00  0.0000E+00

                       Deposition Recirculating
Time (h) =   2.8000     Surfaces     Filter
Noble gases (atoms)    0.0000E+00  0.0000E+00
Elemental I (atoms)    0.0000E+00  0.0000E+00
Organic I (atoms)      0.0000E+00  0.0000E+00
Aerosols (kg)          0.0000E+00  0.0000E+00

Control Room Filtered Air Intake Transport Group Inventory:

                        Pathway
Time (h) =   2.8000      Filter
Noble gases (atoms)    0.0000E+00
Elemental I (atoms)    0.0000E+00
Organic I (atoms)      0.0000E+00
Aerosols (kg)          0.0000E+00

Control Room Unfiltered Inleakage Transport Group Inventory:
```

```
                          Pathway
Time (h) =   2.8000        Filter
Noble gases (atoms)     0.0000E+00
Elemental I (atoms)     0.0000E+00
Organic I (atoms)       0.0000E+00
Aerosols (kg)           0.0000E+00

Control Room Exhaust to Environment Transport Group Inventory:

                          Pathway
Time (h) =   2.8000        Filter
Noble gases (atoms)     0.0000E+00
Elemental I (atoms)     0.0000E+00
Organic I (atoms)       0.0000E+00
Aerosols (kg)           0.0000E+00

Exclusion Area Boundary Doses:

Time (h) =   5.0000    Whole Body   Thyroid       TEDE
Delta dose (rem)        3.3378E-04  1.8721E-01  6.1801E-03
Accumulated dose (rem)  4.5769E-04  2.3621E-01  7.8406E-03

Low Population Zone Doses:

Time (h) =   5.0000    Whole Body   Thyroid       TEDE
Delta dose (rem)        2.5034E-05  1.4040E-02  4.6350E-04
Accumulated dose (rem)  3.9029E-05  1.9337E-02  6.4367E-04

Control Room Doses:

Time (h) =   5.0000    Whole Body   Thyroid       TEDE
Delta dose (rem)        1.0422E-05  1.0306E-01  3.2289E-03
Accumulated dose (rem)  1.4138E-05  1.2900E-01  4.0460E-03

Environment Integral Nuclide Release:

Time (h) =   5.0000       Ci           kg         Atoms         Bq
I-131                  5.7583E-01  4.6447E-09  2.1352E+16  2.1306E+10
I-132                  2.8823E-01  2.7924E-11  1.2739E+14  1.0665E+10
I-133                  1.0792E+00  9.5266E-10  4.3136E+15  3.9930E+10
I-134                  9.9975E-02  3.7476E-12  1.6842E+13  3.6991E+09
I-135                  7.7542E-01  2.2080E-10  9.8495E+14  2.8690E+10

Environment Transport Group Inventory:

                          Present     Release      Total
Time (h) =   5.0000       Release     Rate/s      Release
Noble gases (atoms)     0.0000E+00  0.0000E+00  0.0000E+00
Elemental I (atoms)     2.7182E+16  1.5101E+12  2.7182E+16
Organic I (atoms)       8.4069E+14  4.6705E+10  8.4069E+14
Aerosols (kg)           0.0000E+00  0.0000E+00  0.0000E+00

BWST to Environment Transport Group Inventory:

                          Pathway
Time (h) =   5.0000        Filter
```

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**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 1 | System Nos. | Sheet 337 of 1000 |
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```
Noble gases (atoms)    0.0000E+00
Elemental I (atoms)    2.4419E+17
Organic I (atoms)      7.5522E+15
Aerosols (kg)          0.0000E+00

Control Room Filtered Air Intake Transport Group Inventory:

                        Pathway
Time (h) =   5.0000      Filter
Noble gases (atoms)    0.0000E+00
Elemental I (atoms)    0.0000E+00
Organic I (atoms)      0.0000E+00
Aerosols (kg)          0.0000E+00

Control Room Unfiltered Inleakage Transport Group Inventory:

                        Pathway
Time (h) =   5.0000      Filter
Noble gases (atoms)    0.0000E+00
Elemental I (atoms)    0.0000E+00
Organic I (atoms)      0.0000E+00
Aerosols (kg)          0.0000E+00

Control Room Exhaust to Environment Transport Group Inventory:

                        Pathway
Time (h) =   5.0000      Filter
Noble gases (atoms)    0.0000E+00
Elemental I (atoms)    0.0000E+00
Organic I (atoms)      0.0000E+00
Aerosols (kg)          0.0000E+00

Control Room Compartment Nuclide Inventory:

Time (h) =   5.0000       Ci           kg          Atoms         Bq
I-131                  2.6157E-04  2.1098E-12  9.6990E+12  9.6779E+06
I-132                  8.5291E-05  8.2629E-15  3.7697E+10  3.1558E+06
I-133                  4.7152E-04  4.1624E-13  1.8847E+12  1.7446E+07
I-134                  1.1884E-05  4.4550E-16  2.0021E+09  4.3972E+05
I-135                  3.0749E-04  8.7557E-14  3.9058E+11  1.1377E+07

Control Room Transport Group Inventory:

                                              Overlying
Time (h) =   5.0000    Atmosphere     Sump       Pool
Noble gases (atoms)    0.0000E+00  0.0000E+00  0.0000E+00
Elemental I (atoms)    1.2395E+13  0.0000E+00  0.0000E+00
Organic I (atoms)      3.8336E+11  0.0000E+00  0.0000E+00
Aerosols (kg)          0.0000E+00  0.0000E+00  0.0000E+00

                       Deposition Recirculating
Time (h) =   5.0000     Surfaces     Filter
Noble gases (atoms)    0.0000E+00  0.0000E+00
Elemental I (atoms)    0.0000E+00  0.0000E+00
Organic I (atoms)      0.0000E+00  0.0000E+00
Aerosols (kg)          0.0000E+00  0.0000E+00
```

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**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 1 | System Nos. | Sheet 338 of 1000 |
|---|---|---|---|---|

Control Room Filtered Air Intake Transport Group Inventory:

| Time (h) = 5.0000 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 |

Control Room Unfiltered Inleakage Transport Group Inventory:

| Time (h) = 5.0000 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 |

Control Room Exhaust to Environment Transport Group Inventory:

| Time (h) = 5.0000 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 |

Exclusion Area Boundary Doses:

| Time (h) = 8.0000 | Whole Body | Thyroid | TEDE |
|---|---|---|---|
| Delta dose (rem) | 3.1335E-04 | 2.3603E-01 | 7.6583E-03 |
| Accumulated dose (rem) | 7.7103E-04 | 4.7224E-01 | 1.5499E-02 |

Low Population Zone Doses:

| Time (h) = 8.0000 | Whole Body | Thyroid | TEDE |
|---|---|---|---|
| Delta dose (rem) | 2.3501E-05 | 1.7702E-02 | 5.7437E-04 |
| Accumulated dose (rem) | 6.2531E-05 | 3.7039E-02 | 1.2180E-03 |

Control Room Doses:

| Time (h) = 8.0000 | Whole Body | Thyroid | TEDE |
|---|---|---|---|
| Delta dose (rem) | 1.2060E-05 | 1.5828E-01 | 4.9380E-03 |
| Accumulated dose (rem) | 2.6199E-05 | 2.8728E-01 | 8.9840E-03 |

Environment Integral Nuclide Release:

| Time (h) = 8.0000 | Ci | kg | Atoms | Bq |
|---|---|---|---|---|
| I-131 | 1.1679E+00 | 9.4206E-09 | 4.3307E+16 | 4.3213E+10 |
| I-132 | 4.1084E-01 | 3.9801E-11 | 1.8158E+14 | 1.5201E+10 |
| I-133 | 2.0962E+00 | 1.8504E-09 | 8.3786E+15 | 7.7559E+10 |
| I-134 | 1.0928E-01 | 4.0964E-12 | 1.8410E+13 | 4.0433E+09 |
| I-135 | 1.3674E+00 | 3.8938E-10 | 1.7370E+15 | 5.0596E+10 |

Environment Transport Group Inventory:

| | Present | Release | Total |
|---|---|---|---|

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**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 1 | System Nos. | Sheet 339 of 1000 |
|---|---|---|---|---|

```
Time (h) =   8.0000     Release     Rate/s      Release
Noble gases (atoms)    0.0000E+00  0.0000E+00  0.0000E+00
Elemental I (atoms)    5.5398E+16  1.9235E+12  5.5398E+16
Organic I (atoms)      1.7133E+15  5.9491E+10  1.7133E+15
Aerosols (kg)          0.0000E+00  0.0000E+00  0.0000E+00
```

BWST to Environment Transport Group Inventory:

```
                        Pathway
Time (h) =   8.0000      Filter
Noble gases (atoms)    0.0000E+00
Elemental I (atoms)    4.9755E+17
Organic I (atoms)      1.5388E+16
Aerosols (kg)          0.0000E+00
```

Control Room Filtered Air Intake Transport Group Inventory:

```
                        Pathway
Time (h) =   8.0000      Filter
Noble gases (atoms)    0.0000E+00
Elemental I (atoms)    0.0000E+00
Organic I (atoms)      0.0000E+00
Aerosols (kg)          0.0000E+00
```

Control Room Unfiltered Inleakage Transport Group Inventory:

```
                        Pathway
Time (h) =   8.0000      Filter
Noble gases (atoms)    0.0000E+00
Elemental I (atoms)    0.0000E+00
Organic I (atoms)      0.0000E+00
Aerosols (kg)          0.0000E+00
```

Control Room Exhaust to Environment Transport Group Inventory:

```
                        Pathway
Time (h) =   8.0000      Filter
Noble gases (atoms)    0.0000E+00
Elemental I (atoms)    0.0000E+00
Organic I (atoms)      0.0000E+00
Aerosols (kg)          0.0000E+00
```

**Control Room Compartment Nuclide Inventory:**

| **Time (h) = 8.0000** | **Ci** | **kg** | **Atoms** | **Bq** |
|---|---|---|---|---|
| **I-131** | **2.2686E-04** | **1.8299E-12** | **8.4122E+12** | **8.3939E+06** |
| **I-132** | **3.0277E-05** | **2.9332E-15** | **1.3382E+10** | **1.1203E+06** |
| **I-133** | **3.7406E-04** | **3.3021E-13** | **1.4951E+12** | **1.3840E+07** |
| **I-134** | **9.7207E-07** | **3.6439E-17** | **1.6376E+08** | **3.5967E+04** |
| **I-135** | **1.9682E-04** | **5.6044E-14** | **2.5000E+11** | **7.2822E+06** |

Control Room Transport Group Inventory:

```
                                            Overlying
Time (h) =   8.0000    Atmosphere     Sump       Pool
Noble gases (atoms)    0.0000E+00  0.0000E+00  0.0000E+00
Elemental I (atoms)    1.0863E+13  0.0000E+00  0.0000E+00
```

```
Organic I (atoms)      3.3598E+11  0.0000E+00  0.0000E+00
Aerosols (kg)          0.0000E+00  0.0000E+00  0.0000E+00

                       Deposition Recirculating
Time (h) =   8.0000     Surfaces     Filter
Noble gases (atoms)    0.0000E+00  0.0000E+00
Elemental I (atoms)    0.0000E+00  0.0000E+00
Organic I (atoms)      0.0000E+00  0.0000E+00
Aerosols (kg)          0.0000E+00  0.0000E+00

Control Room Filtered Air Intake Transport Group Inventory:

                        Pathway
Time (h) =   8.0000      Filter
Noble gases (atoms)    0.0000E+00
Elemental I (atoms)    0.0000E+00
Organic I (atoms)      0.0000E+00
Aerosols (kg)          0.0000E+00

Control Room Unfiltered Inleakage Transport Group Inventory:

                        Pathway
Time (h) =   8.0000      Filter
Noble gases (atoms)    0.0000E+00
Elemental I (atoms)    0.0000E+00
Organic I (atoms)      0.0000E+00
Aerosols (kg)          0.0000E+00

Control Room Exhaust to Environment Transport Group Inventory:

                        Pathway
Time (h) =   8.0000      Filter
Noble gases (atoms)    0.0000E+00
Elemental I (atoms)    0.0000E+00
Organic I (atoms)      0.0000E+00
Aerosols (kg)          0.0000E+00

Exclusion Area Boundary Doses:

Time (h) =  24.0000    Whole Body   Thyroid       TEDE
Delta dose (rem)        1.7701E-03  2.3968E+00  7.5820E-02
Accumulated dose (rem)  2.5412E-03  2.8690E+00  9.1319E-02

Low Population Zone Doses:

Time (h) =  24.0000    Whole Body   Thyroid       TEDE
Delta dose (rem)        8.6294E-05  6.0090E-02  1.9428E-03
Accumulated dose (rem)  1.4882E-04  9.7130E-02  3.1609E-03

Control Room Doses:

Time (h) =  24.0000    Whole Body   Thyroid       TEDE
Delta dose (rem)        3.1373E-05  7.4038E-01  2.2908E-02
Accumulated dose (rem)  5.7572E-05  1.0277E+00  3.1892E-02

Environment Integral Nuclide Release:
```

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**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 1 | System Nos. | Sheet 341 of 1000 |
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| Time (h) = 24.0000 | Ci | kg | Atoms | Bq |
|---|---|---|---|---|
| I-131 | 7.5859E+00 | 6.1189E-08 | 2.8129E+17 | 2.8068E+11 |
| I-132 | 5.3375E-01 | 5.1710E-11 | 2.3591E+14 | 1.9749E+10 |
| I-133 | 1.0071E+01 | 8.8902E-09 | 4.0254E+16 | 3.7263E+11 |
| I-134 | 1.1062E-01 | 4.1465E-12 | 1.8635E+13 | 4.0928E+09 |
| I-135 | 3.6844E+00 | 1.0491E-09 | 4.6800E+15 | 1.3632E+11 |

Environment Transport Group Inventory:

| Time (h) = 24.0000 | Present Release | Release Rate/s | Total Release |
|---|---|---|---|
| Noble gases (atoms) | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 |
| Elemental I (atoms) | 3.7375E+17 | 4.3258E+12 | 3.7375E+17 |
| Organic I (atoms) | 1.1559E+16 | 1.3379E+11 | 1.1559E+16 |
| Aerosols (kg) | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 |

BWST to Environment Transport Group Inventory:

| Time (h) = 24.0000 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 3.3597E+18 |
| Organic I (atoms) | 1.0391E+17 |
| Aerosols (kg) | 0.0000E+00 |

Control Room Filtered Air Intake Transport Group Inventory:

| Time (h) = 24.0000 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 |

Control Room Unfiltered Inleakage Transport Group Inventory:

| Time (h) = 24.0000 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 |

Control Room Exhaust to Environment Transport Group Inventory:

| Time (h) = 24.0000 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 |

**Control Room Compartment Nuclide Inventory:**

| **Time (h) = 24.0000** | **Ci** | **kg** | **Atoms** | **Bq** |
|---|---|---|---|---|
| **I-131** | **2.7237E-04** | **2.1970E-12** | **1.0100E+13** | **1.0078E+07** |
| **I-132** | **3.0999E-07** | **3.0032E-17** | **1.3701E+08** | **1.1470E+04** |

| | | | | |
|---|---|---|---|---|
| I-133 | 2.7908E-04 | 2.4636E-13 | 1.1155E+12 | 1.0326E+07 |
| I-135 | 4.6747E-05 | 1.3311E-14 | 5.9379E+10 | 1.7296E+06 |

Control Room Transport Group Inventory:

| Time (h) = 24.0000 | Atmosphere | Sump | Overlying Pool |
|---|---|---|---|
| Noble gases (atoms) | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 |
| Elemental I (atoms) | 1.3808E+13 | 0.0000E+00 | 0.0000E+00 |
| Organic I (atoms) | 4.2706E+11 | 0.0000E+00 | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 |

| Time (h) = 24.0000 | Deposition Surfaces | Recirculating Filter |
|---|---|---|
| Noble gases (atoms) | 0.0000E+00 | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 | 0.0000E+00 |

Control Room Filtered Air Intake Transport Group Inventory:

| Time (h) = 24.0000 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 |

Control Room Unfiltered Inleakage Transport Group Inventory:

| Time (h) = 24.0000 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 |

Control Room Exhaust to Environment Transport Group Inventory:

| Time (h) = 24.0000 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 |

Exclusion Area Boundary Doses:

| Time (h) = 96.0000 | Whole Body | Thyroid | TEDE |
|---|---|---|---|
| Delta dose (rem) | 6.9501E-03 | 2.4391E+01 | 7.5264E-01 |
| Accumulated dose (rem) | 9.4912E-03 | 2.7260E+01 | 8.4396E-01 |

Low Population Zone Doses:

| Time (h) = 96.0000 | Whole Body | Thyroid | TEDE |
|---|---|---|---|
| Delta dose (rem) | 1.3900E-04 | 3.2056E-01 | 9.9395E-03 |
| Accumulated dose (rem) | 2.8783E-04 | 4.1769E-01 | 1.3100E-02 |

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**CALCULATION SHEET**
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| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 1 | System Nos. | Sheet 343 of 1000 |
|---|---|---|---|---|

Control Room Doses:

| Time (h) = 96.0000 | Whole Body | Thyroid | TEDE |
|---|---|---|---|
| Delta dose (rem) | 5.2798E-05 | 3.2381E+00 | 9.9054E-02 |
| Accumulated dose (rem) | 1.1037E-04 | 4.2657E+00 | 1.3095E-01 |

Environment Integral Nuclide Release:

| Time (h) = 96.0000 | Ci | kg | Atoms | Bq |
|---|---|---|---|---|
| I-131 | 8.2282E+01 | 6.6370E-07 | 3.0511E+18 | 3.0444E+12 |
| I-132 | 5.3493E-01 | 5.1823E-11 | 2.3643E+14 | 1.9792E+10 |
| I-133 | 3.5354E+01 | 3.1209E-08 | 1.4131E+17 | 1.3081E+12 |
| I-134 | 1.1062E-01 | 4.1465E-12 | 1.8635E+13 | 4.0928E+09 |
| I-135 | 4.6285E+00 | 1.3180E-09 | 5.8792E+15 | 1.7125E+11 |

Environment Transport Group Inventory:

| Time (h) = 96.0000 | Present Release | Release Rate/s | Total Release |
|---|---|---|---|
| Noble gases (atoms) | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 |
| Elemental I (atoms) | 4.8079E+18 | 1.3912E+13 | 4.8079E+18 |
| Organic I (atoms) | 1.4870E+17 | 4.3026E+11 | 1.4870E+17 |
| Aerosols (kg) | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 |

BWST to Environment Transport Group Inventory:

| Time (h) = 96.0000 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 4.3238E+19 |
| Organic I (atoms) | 1.3372E+18 |
| Aerosols (kg) | 0.0000E+00 |

Control Room Filtered Air Intake Transport Group Inventory:

| Time (h) = 96.0000 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 |

Control Room Unfiltered Inleakage Transport Group Inventory:

| Time (h) = 96.0000 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 |

Control Room Exhaust to Environment Transport Group Inventory:

| Time (h) = 96.0000 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |

| | |
|---|---|
| Elemental I (atoms) | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 |

**Control Room Compartment Nuclide Inventory:**

| **Time (h) = 96.0000** | **Ci** | **kg** | **Atoms** | **Bq** |
|---|---|---|---|---|
| **I-131** | **5.0506E-04** | **4.0739E-12** | **1.8728E+13** | **1.8687E+07** |
| **I-133** | **6.0845E-05** | **5.3711E-14** | **2.4320E+11** | **2.2513E+06** |
| **I-135** | **5.9057E-08** | **1.6816E-17** | **7.5015E+07** | **2.1851E+03** |

Control Room Transport Group Inventory:

| Time (h) = 96.0000 | Atmosphere | Sump | Overlying Pool |
|---|---|---|---|
| Noble gases (atoms) | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 |
| Elemental I (atoms) | 3.3157E+13 | 0.0000E+00 | 0.0000E+00 |
| Organic I (atoms) | 1.0255E+12 | 0.0000E+00 | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 |

| Time (h) = 96.0000 | Deposition Surfaces | Recirculating Filter |
|---|---|---|
| Noble gases (atoms) | 0.0000E+00 | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 | 0.0000E+00 |

Control Room Filtered Air Intake Transport Group Inventory:

| Time (h) = 96.0000 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 |

Control Room Unfiltered Inleakage Transport Group Inventory:

| Time (h) = 96.0000 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 |

Control Room Exhaust to Environment Transport Group Inventory:

| Time (h) = 96.0000 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 |

Exclusion Area Boundary Doses:

| Time (h) = 720.0000 | Whole Body | Thyroid | TEDE |
|---|---|---|---|

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**(Ref. EP-006T)**

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| | | | |
|---|---|---|---|
| Delta dose (rem) | 5.6126E-02 | 3.1199E+02 | 9.5553E+00 |
| Accumulated dose (rem) | 6.5617E-02 | 3.3925E+02 | 1.0399E+01 |

**Low Population Zone Doses:**

| **Time (h) = 720.0000** | **Whole Body** | **Thyroid** | **TEDE** |
|---|---|---|---|
| **Delta dose (rem)** | **2.8063E-04** | **1.0251E+00** | **3.1492E-02** |
| **Accumulated dose (rem)** | **5.6845E-04** | **1.4428E+00** | **4.4593E-02** |

**Control Room Doses:**

| **Time (h) = 720.0000** | **Whole Body** | **Thyroid** | **TEDE** |
|---|---|---|---|
| **Delta dose (rem)** | **1.9008E-04** | **1.8562E+01** | **5.6537E-01** |
| **Accumulated dose (rem)** | **3.0045E-04** | **2.2828E+01** | **6.9632E-01** |

Environment Integral Nuclide Release:

| Time (h) = 720.0000 | Ci | kg | Atoms | Bq |
|---|---|---|---|---|
| I-131 | 1.0977E+03 | 8.8542E-06 | 4.0703E+19 | 4.0615E+13 |
| I-132 | 5.3493E-01 | 5.1823E-11 | 2.3643E+14 | 1.9792E+10 |
| I-133 | 4.1701E+01 | 3.6812E-08 | 1.6668E+17 | 1.5429E+12 |
| I-134 | 1.1062E-01 | 4.1465E-12 | 1.8635E+13 | 4.0928E+09 |
| I-135 | 4.6299E+00 | 1.3184E-09 | 5.8810E+15 | 1.7131E+11 |

Environment Transport Group Inventory:

| Time (h) = 720.0000 | Present Release | Release Rate/s | Total Release |
|---|---|---|---|
| Noble gases (atoms) | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 |
| Elemental I (atoms) | 2.2664E+20 | 8.7438E+13 | 2.2664E+20 |
| Organic I (atoms) | 7.0095E+18 | 2.7043E+12 | 7.0095E+18 |
| Aerosols (kg) | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 |

BWST to Environment Transport Group Inventory:

| Time (h) = 720.0000 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 2.0387E+21 |
| Organic I (atoms) | 6.3053E+19 |
| Aerosols (kg) | 0.0000E+00 |

Control Room Filtered Air Intake Transport Group Inventory:

| Time (h) = 720.0000 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 |

Control Room Unfiltered Inleakage Transport Group Inventory:

| Time (h) = 720.0000 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |

```
Elemental I (atoms)    0.0000E+00
Organic I (atoms)      0.0000E+00
Aerosols (kg)          0.0000E+00

Control Room Exhaust to Environment Transport Group Inventory:

                        Pathway
Time (h) = 720.0000      Filter
Noble gases (atoms)    0.0000E+00
Elemental I (atoms)    0.0000E+00
Organic I (atoms)      0.0000E+00
Aerosols (kg)          0.0000E+00
```

**Control Room Compartment Nuclide Inventory:**

| **Time (h) = 720.0000** | **Ci** | **kg** | **Atoms** | **Bq** |
|---|---|---|---|---|
| **I-131** | **2.2178E-04** | **1.7889E-12** | **8.2235E+12** | **8.2057E+06** |

```
Control Room Transport Group Inventory:

                                                Overlying
Time (h) = 720.0000    Atmosphere     Sump        Pool
Noble gases (atoms)    0.0000E+00  0.0000E+00  0.0000E+00
Elemental I (atoms)    1.3696E+14  0.0000E+00  0.0000E+00
Organic I (atoms)      4.2359E+12  0.0000E+00  0.0000E+00
Aerosols (kg)          0.0000E+00  0.0000E+00  0.0000E+00

                       Deposition Recirculating
Time (h) = 720.0000     Surfaces     Filter
Noble gases (atoms)    0.0000E+00  0.0000E+00
Elemental I (atoms)    0.0000E+00  0.0000E+00
Organic I (atoms)      0.0000E+00  0.0000E+00
Aerosols (kg)          0.0000E+00  0.0000E+00

Control Room Filtered Air Intake Transport Group Inventory:

                        Pathway
Time (h) = 720.0000      Filter
Noble gases (atoms)    0.0000E+00
Elemental I (atoms)    0.0000E+00
Organic I (atoms)      0.0000E+00
Aerosols (kg)          0.0000E+00

Control Room Unfiltered Inleakage Transport Group Inventory:

                        Pathway
Time (h) = 720.0000      Filter
Noble gases (atoms)    0.0000E+00
Elemental I (atoms)    0.0000E+00
Organic I (atoms)      0.0000E+00
Aerosols (kg)          0.0000E+00

Control Room Exhaust to Environment Transport Group Inventory:

                        Pathway
Time (h) = 720.0000      Filter
Noble gases (atoms)    0.0000E+00
```

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```
Elemental I (atoms)    0.0000E+00
Organic I (atoms)      0.0000E+00
Aerosols (kg)          0.0000E+00

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#####################################################################
                          I-131 Summary
#####################################################################
```

| Time (hr) | Sump I-131 (Curies) | BWST I-131 (Curies) | Environment I-131 (Curies) |
|---|---|---|---|
| 0.001 | 3.9707E+03 | 0.0000E+00 | 0.0000E+00 |
| 0.300 | 2.1419E+06 | 0.0000E+00 | 0.0000E+00 |
| 0.491 | 3.5010E+06 | 0.0000E+00 | 0.0000E+00 |
| 0.500 | 3.5672E+06 | 1.4504E+00 | 3.9762E-07 |
| 0.800 | 9.3187E+06 | 8.6719E+01 | 6.7047E-04 |
| 1.100 | 1.5057E+07 | 2.4789E+02 | 3.5296E-03 |
| 1.400 | 2.0782E+07 | 4.8470E+02 | 9.9253E-03 |
| 1.700 | 2.6494E+07 | 7.9688E+02 | 2.1201E-02 |
| 1.800 | 2.8396E+07 | 9.1764E+02 | 2.6276E-02 |
| 2.000 | 2.8373E+07 | 1.1673E+03 | 3.8630E-02 |
| 2.300 | 2.8338E+07 | 1.5410E+03 | 6.2698E-02 |
| 2.500 | 2.8316E+07 | 1.7896E+03 | 8.2427E-02 |
| 2.800 | 2.8281E+07 | 2.1618E+03 | 1.1753E-01 |
| 3.100 | 2.8247E+07 | 2.5331E+03 | 1.5925E-01 |
| 3.400 | 2.8213E+07 | 2.9034E+03 | 2.0755E-01 |
| 3.700 | 2.8179E+07 | 3.2728E+03 | 2.6243E-01 |
| 4.000 | 2.8145E+07 | 3.6413E+03 | 3.2387E-01 |
| 4.300 | 2.8111E+07 | 4.0089E+03 | 3.9185E-01 |
| 4.600 | 2.8077E+07 | 4.3756E+03 | 4.6636E-01 |
| 4.900 | 2.8043E+07 | 4.7414E+03 | 5.4738E-01 |
| 5.000 | 2.8031E+07 | 4.8631E+03 | 5.7583E-01 |
| 5.300 | 2.7999E+07 | 5.0674E+03 | 6.2589E-01 |
| 5.600 | 2.7967E+07 | 5.2712E+03 | 6.7798E-01 |
| 5.900 | 2.7935E+07 | 5.4745E+03 | 7.3210E-01 |
| 6.200 | 2.7902E+07 | 5.6774E+03 | 7.8827E-01 |
| 6.500 | 2.7870E+07 | 5.8798E+03 | 8.4647E-01 |
| 6.800 | 2.7838E+07 | 6.0817E+03 | 9.0671E-01 |
| 7.100 | 2.7806E+07 | 6.2831E+03 | 9.6897E-01 |
| 7.400 | 2.7774E+07 | 6.4840E+03 | 1.0333E+00 |
| 7.700 | 2.7742E+07 | 6.6845E+03 | 1.0996E+00 |
| 8.000 | 2.7710E+07 | 6.8845E+03 | 1.1679E+00 |
| 8.300 | 2.7678E+07 | 7.0840E+03 | 1.2382E+00 |
| 8.600 | 2.7646E+07 | 7.2830E+03 | 1.3105E+00 |
| 8.900 | 2.7615E+07 | 7.4816E+03 | 1.3848E+00 |
| 9.200 | 2.7583E+07 | 7.6797E+03 | 1.4611E+00 |
| 9.500 | 2.7551E+07 | 7.8773E+03 | 1.5394E+00 |
| 9.800 | 2.7519E+07 | 8.0745E+03 | 1.6196E+00 |
| 10.100 | 2.7487E+07 | 8.2711E+03 | 1.7018E+00 |
| 10.400 | 2.7456E+07 | 8.4673E+03 | 1.7860E+00 |
| 24.000 | 2.6058E+07 | 1.6883E+04 | 7.5859E+00 |
| 96.000 | 1.9781E+07 | 4.6174E+04 | 8.2282E+01 |
| 720.000 | 1.8154E+06 | 3.0043E+04 | 1.0977E+03 |

| Time (hr) | Control Room I-131 (Curies) |
|---|---|

```
   0.001       0.0000E+00
   0.300       0.0000E+00
   0.491       0.0000E+00
   0.500       6.3239E-10
   0.800       1.9864E-06
   1.100       8.9960E-06
   1.400       2.2189E-05
   1.700       4.2160E-05
   1.800       5.0380E-05
   2.000       6.8993E-05
   2.300       7.5971E-05
   2.500       8.5059E-05
   2.800       1.0241E-04
   3.100       1.2227E-04
   3.400       1.4342E-04
   3.700       1.6521E-04
   4.000       1.8732E-04
   4.300       2.0957E-04
   4.600       2.3186E-04
   4.900       2.5414E-04
   5.000       2.6157E-04
   5.300       2.1867E-04
   5.600       1.9957E-04
   5.900       1.9293E-04
   6.200       1.9279E-04
   6.500       1.9604E-04
   6.800       2.0107E-04
   7.100       2.0701E-04
   7.400       2.1343E-04
   7.700       2.2009E-04
   8.000       2.2686E-04
   8.300       1.7335E-04
   8.600       1.4692E-04
   8.900       1.3466E-04
   9.200       1.2980E-04
   9.500       1.2880E-04
   9.800       1.2983E-04
  10.100       1.3190E-04
  10.400       1.3453E-04
  24.000       2.7237E-04
  96.000       5.0506E-04
 720.000       2.2178E-04

#####################################################################
                        Cumulative Dose Summary
#####################################################################

         Exclusion Area Bounda  Low Population Zone      Control Room
  Time    Thyroid      TEDE     Thyroid      TEDE     Thyroid      TEDE
  (hr)     (rem)       (rem)     (rem)       (rem)     (rem)       (rem)
   0.001 0.0000E+00 0.0000E+00 0.0000E+00 0.0000E+00 0.0000E+00 0.0000E+00
   0.300 0.0000E+00 0.0000E+00 0.0000E+00 0.0000E+00 0.0000E+00 0.0000E+00
   0.491 0.0000E+00 0.0000E+00 0.0000E+00 0.0000E+00 0.0000E+00 0.0000E+00
   0.500 1.6911E-07 6.0141E-09 2.9594E-08 1.0525E-09 7.9500E-10 2.5257E-11
   0.800 2.8447E-04 1.0034E-05 4.9782E-05 1.7560E-06 5.3041E-05 1.6826E-06
   1.100 1.4936E-03 5.2260E-05 2.6137E-04 9.1455E-06 4.5941E-04 1.4553E-05
   1.400 4.1890E-03 1.4553E-04 7.3307E-04 2.5467E-05 1.6733E-03 5.2936E-05
```

AmerGen

**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 1 | System Nos. | Sheet 349 of 1000 |
|---|---|---|---|---|

| | | | | | | |
|---|---|---|---|---|---|---|
| 1.700 | 8.9236E-03 | 3.0797E-04 | 1.5616E-03 | 5.3894E-05 | 4.2078E-03 | 1.3296E-04 |
| 1.800 | 1.1050E-02 | 3.8056E-04 | 1.9337E-03 | 6.6597E-05 | 5.4397E-03 | 1.7182E-04 |
| 2.000 | 1.6216E-02 | 5.5632E-04 | 2.8377E-03 | 9.7356E-05 | 8.6037E-03 | 2.7157E-04 |
| 2.300 | 2.6250E-02 | 8.9593E-04 | 3.5903E-03 | 1.2283E-04 | 1.4306E-02 | 4.5116E-04 |
| 2.500 | 3.4452E-02 | 1.1722E-03 | 4.2054E-03 | 1.4355E-04 | 1.8552E-02 | 5.8478E-04 |
| 2.800 | 4.9006E-02 | 1.6605E-03 | 5.2970E-03 | 1.8017E-04 | 2.5941E-02 | 8.1708E-04 |
| 3.100 | 6.6241E-02 | 2.2362E-03 | 6.5896E-03 | 2.2334E-04 | 3.4781E-02 | 1.0947E-03 |
| 3.400 | 8.6134E-02 | 2.8980E-03 | 8.0816E-03 | 2.7298E-04 | 4.5206E-02 | 1.4220E-03 |
| 3.700 | 1.0866E-01 | 3.6449E-03 | 9.7712E-03 | 3.2900E-04 | 5.7282E-02 | 1.8007E-03 |
| 4.000 | 1.3380E-01 | 4.4759E-03 | 1.1657E-02 | 3.9132E-04 | 7.1034E-02 | 2.2317E-03 |
| 4.300 | 1.6154E-01 | 5.3899E-03 | 1.3737E-02 | 4.5987E-04 | 8.6469E-02 | 2.7151E-03 |
| 4.600 | 1.9184E-01 | 6.3861E-03 | 1.6010E-02 | 5.3459E-04 | 1.0358E-01 | 3.2508E-03 |
| 4.900 | 2.2470E-01 | 7.4635E-03 | 1.8474E-02 | 6.1539E-04 | 1.2237E-01 | 3.8386E-03 |
| 5.000 | 2.3621E-01 | 7.8406E-03 | 1.9337E-02 | 6.4367E-04 | 1.2900E-01 | 4.0460E-03 |
| 5.300 | 2.5643E-01 | 8.5018E-03 | 2.0854E-02 | 6.9327E-04 | 1.4732E-01 | 4.6184E-03 |
| 5.600 | 2.7741E-01 | 9.1865E-03 | 2.2427E-02 | 7.4462E-04 | 1.6328E-01 | 5.1172E-03 |
| 5.900 | 2.9915E-01 | 9.8947E-03 | 2.4058E-02 | 7.9774E-04 | 1.7826E-01 | 5.5850E-03 |
| 6.200 | 3.2164E-01 | 1.0626E-02 | 2.5745E-02 | 8.5261E-04 | 1.9296E-01 | 6.0439E-03 |
| 6.500 | 3.4489E-01 | 1.1381E-02 | 2.7488E-02 | 9.0922E-04 | 2.0775E-01 | 6.5054E-03 |
| 6.800 | 3.6888E-01 | 1.2159E-02 | 2.9288E-02 | 9.6757E-04 | 2.2282E-01 | 6.9756E-03 |
| 7.100 | 3.9362E-01 | 1.2960E-02 | 3.1143E-02 | 1.0276E-03 | 2.3828E-01 | 7.4573E-03 |
| 7.400 | 4.1910E-01 | 1.3784E-02 | 3.3054E-02 | 1.0894E-03 | 2.5416E-01 | 7.9522E-03 |
| 7.700 | 4.4530E-01 | 1.4630E-02 | 3.5019E-02 | 1.1529E-03 | 2.7049E-01 | 8.4610E-03 |
| 8.000 | 4.7224E-01 | 1.5499E-02 | 3.7039E-02 | 1.2180E-03 | 2.8728E-01 | 8.9840E-03 |
| 8.300 | 4.9989E-01 | 1.6390E-02 | 3.7733E-02 | 1.2411E-03 | 3.0208E-01 | 9.4447E-03 |
| 8.600 | 5.2824E-01 | 1.7302E-02 | 3.8444E-02 | 1.2648E-03 | 3.1395E-01 | 9.8141E-03 |
| 8.900 | 5.5731E-01 | 1.8236E-02 | 3.9172E-02 | 1.2889E-03 | 3.2440E-01 | 1.0139E-02 |
| 9.200 | 5.8708E-01 | 1.9192E-02 | 3.9919E-02 | 1.3137E-03 | 3.3421E-01 | 1.0444E-02 |
| 9.500 | 6.1755E-01 | 2.0170E-02 | 4.0683E-02 | 1.3389E-03 | 3.4379E-01 | 1.0742E-02 |
| 9.800 | 6.4872E-01 | 2.1169E-02 | 4.1464E-02 | 1.3648E-03 | 3.5336E-01 | 1.1040E-02 |
| 10.100 | 6.8058E-01 | 2.2190E-02 | 4.2263E-02 | 1.3911E-03 | 3.6303E-01 | 1.1340E-02 |
| 10.400 | 7.1313E-01 | 2.3231E-02 | 4.3079E-02 | 1.4180E-03 | 3.7285E-01 | 1.1645E-02 |
| 24.000 | 2.8690E+00 | 9.1319E-02 | 9.7130E-02 | 3.1609E-03 | 1.0277E+00 | 3.1892E-02 |
| 96.000 | 2.7260E+01 | 8.4396E-01 | 4.1769E-01 | 1.3100E-02 | 4.2657E+00 | 1.3095E-01 |
| 720.000 | 3.3925E+02 | 1.0399E+01 | 1.4428E+00 | 4.4593E-02 | 2.2828E+01 | 6.9632E-01 |

```
#################################################################
                        Worst Two-Hour Doses
    Note: All of the dose locations are shown below but the
          worst two-hour dose is only meaningful for the EAB
          dose location.  Please disregard the two-hour worst
          doses for the other dose locations
#################################################################
```

**Exclusion Area Boundary**

| Time (hr) | Whole Body (rem) | Thyroid (rem) | TEDE (rem) |
|---|---|---|---|
| 510.4 | 1.7989E-04 | 9.9995E-01 | 3.0626E-02 |

Low Population Zone

| Time (hr) | Whole Body (rem) | Thyroid (rem) | TEDE (rem) |
|---|---|---|---|
| 3.4 | 2.2421E-05 | 1.3297E-02 | 4.3740E-04 |

Control Room

| Time (hr) | Whole Body (rem) | Thyroid (rem) | TEDE (rem) |
|---|---|---|---|

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**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 1 | System Nos. | Sheet 350 of 1000 |
|---|---|---|---|---|

```
4.0   9.9944E-06   1.1212E-01   3.5063E-03
```

**Appendix J**

# Purge.o0

**Containment Purge Pathway**

TMI Containment Unfiltered Purge Pathway AST Analysis:

CR Inleakage = 1,000 cfm,
CR Initiation Time = 30 minutes
CR Charcoal = 90%, HEPA = 99%,

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**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 1 | System Nos. | Sheet 352 of 1000 |
|---|---|---|---|---|

```
 ######################################################################
          RADTRAD Version 3.02 run on  5/29/2001  at  9:12:28
 ######################################################################

 ######################################################################
                      File information
 ######################################################################

 Plant file name           = D:\TMI RADTRAD\Purge.psf
 Inventory file name       = d:\tmi radtrad\defaults\tmipurge_def.nif
 Scenario file name        = D:\TMI RADTRAD\Purge.psf
 Release file name         = d:\tmi radtrad\defaults\tmipurge.rft
 Dose conversion file name = d:\tmi radtrad\defaults\fgr11&12.inp

     #####    ####   #####    #  #     #  #####   #    #  #####
     #    #  #       #        #  ##    #  #    #  #    #    #
     #    #  #       #        #  # #   #  #    #  #    #    #
     #####    ####   ####     #  #  #  #  #####   #    #    #
     #            #  #        #  #   # #  #       #    #    #
     #            #  #        #  #    ##  #       #    #    #
     #        ####   #        #  #     #  #        ####     #

 Radtrad 3.02 1/5/2000
 TMI Cont.Unfiltered Purge AST Analysis - CR Inleakage = 1,000 cfm, CR Initiation Time
= 30 minutes
 Nuclide Inventory File:
 d:\tmi radtrad\defaults\tmipurge_def.nif
 Plant Power Level:
  2.6190E+03
 Compartments:
   3
 Compartment 1:
 Containment
   3
  2.1600E+06
   0
   0
   0
   0
   0
 Compartment 2:
 Environment
   2
  0.0000E+00
   0
   0
   0
   0
   0
 Compartment 3:
 Control Room
   1
  2.5000E+05
   0
   0
   1
   0
```

```
  0
Pathways:
  4
Pathway 1:
Containment Leakage to Environment
  1
  2
  2
Pathway 2:
CR Filtered Air Intake
  2
  3
  2
Pathway 3:
CR  Unfiltered Inleakage
  2
  3
  2
Pathway 4:
CR Exhaust to Environment
  3
  2
  2
End of Plant Model File
Scenario Description Name:

Plant Model Filename:
ACCEPT\TEST24.PMF
Source Term:
  1
  1   1.0000E+00
d:\tmi radtrad\defaults\fgr11&12.inp
d:\tmi radtrad\defaults\tmipurge.rft
  0.0000E+00
  0
  9.5000E-01   4.8500E-02   1.5000E-03   1.0000E+00
Overlying Pool:
  0
  0.0000E+00
  0
  0
  0
  0
Compartments:
  3
Compartment 1:
  0
  1
  0
  0
  0
  0
  0
  0
  0
Compartment 2:
  0
```

```
  1
  0
  0
  0
  0
  0
  0
  0
Compartment 3:
  1
  1
  0
  0
  0
  0
  1
  2.8000E+04
  3
  0.0000E+00   0.0000E+00   0.0000E+00   0.0000E+00
  5.0000E-01   9.9000E+01   9.0000E+01   9.0000E+01
  7.2000E+02   9.9000E+01   9.0000E+01   9.0000E+01
  0
  0
Pathways:
  4
Pathway 1:
  0
  0
  0
  0
  0
  1
  2
  0.0000E+00   1.4000E+04   0.0000E+00   0.0000E+00   0.0000E+00
  1.6700E-02   0.0000E+00   0.0000E+00   0.0000E+00   0.0000E+00
  0
  0
  0
  0
  0
  0
Pathway 2:
  0
  0
  0
  0
  0
  1
  3
  0.0000E+00   4.0000E+03   0.0000E+00   0.0000E+00   0.0000E+00
  5.0000E-01   8.0000E+03   9.9000E+01   9.0000E+01   9.0000E+01
  7.2000E+02   8.0000E+03   9.9000E+01   9.0000E+01   9.0000E+01
  0
  0
  0
  0
  0
```

```
  0
Pathway 3:
  0
  0
  0
  0
  0
  1
  3
  0.0000E+00   0.0000E+00   0.0000E+00   0.0000E+00   0.0000E+00
  5.0000E-01   1.0000E+03   0.0000E+00   0.0000E+00   0.0000E+00
  7.2000E+02   0.0000E+00   0.0000E+00   0.0000E+00   0.0000E+00
  0
  0
  0
  0
  0
  0
Pathway 4:
  0
  0
  0
  0
  0
  1
  3
  0.0000E+00   4.0000E+03   0.0000E+00   0.0000E+00   0.0000E+00
  5.0000E-01   9.0000E+03   0.0000E+00   0.0000E+00   0.0000E+00
  7.2000E+02   9.0000E+03   0.0000E+00   0.0000E+00   0.0000E+00
  0
  0
  0
  0
  0
  0
Dose Locations:
  3
Location 1:
Exclusion Area Boundary
  2
  1
  2
  0.0000E+00   8.0000E-04
  7.2000E+02   0.0000E+00
  1
  2
  0.0000E+00   3.5000E-04
  2.0000E+00   0.0000E+00
  0
Location 2:
Low Population Zone
  2
  1
  6
  0.0000E+00   1.4000E-04
  2.0000E+00   6.0000E-05
  8.0000E+00   3.9000E-05
```

```
  2.4000E+01   1.6000E-05
  9.6000E+01   4.0000E-06
  7.2000E+02   0.0000E+00
  1
  4
  0.0000E+00   3.5000E-04
  8.0000E+00   1.8000E-04
  2.4000E+01   2.3000E-04
  7.2000E+02   0.0000E+00
  0
Location 3:
Control Room
  3
  0
  1
  2
  0.0000E+00   3.5000E-04
  7.2000E+02   0.0000E+00
  1
  4
  0.0000E+00   1.0000E+00
  2.4000E+01   6.0000E-01
  9.6000E+01   4.0000E-01
  7.2000E+02   0.0000E+00
Effective Volume Location:
  1
  6
  0.0000E+00   3.4000E-04
  2.0000E+00   2.2500E-04
  8.0000E+00   1.0200E-04
  2.4000E+01   7.1600E-05
  9.6000E+01   4.9900E-05
  7.2000E+02   0.0000E+00
Simulation Parameters:
  7
  0.0000E+00   5.0000E-01
  1.0000E+00   1.0000E-01
  2.0000E+00   1.0000E+00
  8.0000E+00   2.0000E+00
  2.4000E+01   4.0000E+00
  9.6000E+01   8.0000E+00
  7.2000E+02   0.0000E+00
Output Filename:
D:\TMI RADTRAD\Purge.o0
  1
  1
  1
  0
  0
End of Scenario File

##########################################################################
          RADTRAD Version 3.02 run on  5/29/2001  at  9:12:28
##########################################################################

##########################################################################
                     Plant Description
```

AmerGen

**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 1 | System Nos. | Sheet 357 of 1000 |
|---|---|---|---|---|

```
#######################################################################

Number of Nuclides =  60

Inventory Power =   1.0000E+00 MWth
Plant Power Level =   2.6190E+03 MWth

Number of compartments    =   3

Compartment information

Compartment number  1  (Source term fraction =   1.0000E+00
)
Name: Containment
Compartment volume =   2.1600E+06 (Cubic feet)
Pathways into and out of compartment  1
    Pathway to compartment number   2: Containment Leakage to Environment

Compartment number  2
Name: Environment
Pathways into and out of compartment  2
    Pathway to compartment number   3: CR Filtered Air Intake
    Pathway to compartment number   3: CR  Unfiltered Inleakage
    Pathway from compartment number 1: Containment Leakage to Environment
    Pathway from compartment number 3: CR Exhaust to Environment

Compartment number  3
Name: Control Room
Compartment volume =   2.5000E+05 (Cubic feet)
Removal devices within compartment:
     Filter(s)
Pathways into and out of compartment  3
    Pathway to compartment number   2: CR Exhaust to Environment
    Pathway from compartment number 2: CR Filtered Air Intake
    Pathway from compartment number 2: CR  Unfiltered Inleakage

Total number of pathways =   4


#######################################################################
          RADTRAD Version 3.02 run on  5/29/2001  at  9:12:28
#######################################################################

#######################################################################
                    Scenario Description
#######################################################################

Radioactive Decay is enabled
RELEASE_NAME = TMI-1 Post-LOCA Containment Purge Releas
Release Fractions and Timings
                GAP       EARLY IN-VESSEL
             0.0003 hrs     0.0000 hrs
NOBLES       1.0000E+00     0.0000E+00
IODINE       1.0000E+00     0.0000E+00
CESIUM       0.0000E+00     0.0000E+00
TELLURIUM    0.0000E+00     0.0000E+00
STRONTIUM    0.0000E+00     0.0000E+00
```

AmerGen

**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 1 | System Nos. | Sheet 358 of 1000 |
|---|---|---|---|---|

```
BARIUM       0.0000E+00     0.0000E+00
RUTHENIUM    0.0000E+00     0.0000E+00
CERIUM       0.0000E+00     0.0000E+00
LANTHANUM    0.0000E+00     0.0000E+00

Iodine fractions
     Aerosol     =   9.5000E-01
     Elemental   =   4.8500E-02
     Organic     =   1.5000E-03

COMPARTMENT DATA

Compartment number   1: Containment

Compartment number   2: Environment

Compartment number   3: Control Room

     Compartment Filter Data

      Time (hr)      Flow Rate          Filter Efficiencies (%)
                       (cfm)        Aerosol     Elemental    Organic
       0.0000E+00    2.8000E+04   0.0000E+00   0.0000E+00   0.0000E+00
       5.0000E-01    2.8000E+04   9.9000E+01   9.0000E+01   9.0000E+01
       7.2000E+02    2.8000E+04   9.9000E+01   9.0000E+01   9.0000E+01

PATHWAY DATA

Pathway number  1: Containment Leakage to Environment

     Pathway Filter: Removal Data

       Time (hr)      Flow Rate          Filter Efficiencies (%)
                       (cfm)        Aerosol     Elemental    Organic
       0.0000E+00    1.4000E+04   0.0000E+00   0.0000E+00   0.0000E+00
       1.6700E-02    0.0000E+00   0.0000E+00   0.0000E+00   0.0000E+00

Pathway number  2: CR Filtered Air Intake

     Pathway Filter: Removal Data

       Time (hr)      Flow Rate          Filter Efficiencies (%)
                       (cfm)        Aerosol     Elemental    Organic
       0.0000E+00    4.0000E+03   0.0000E+00   0.0000E+00   0.0000E+00
       5.0000E-01    8.0000E+03   9.9000E+01   9.0000E+01   9.0000E+01
       7.2000E+02    8.0000E+03   9.9000E+01   9.0000E+01   9.0000E+01

Pathway number  3: CR  Unfiltered Inleakage

     Pathway Filter: Removal Data

       Time (hr)      Flow Rate          Filter Efficiencies (%)
                       (cfm)        Aerosol     Elemental    Organic
       0.0000E+00    0.0000E+00   0.0000E+00   0.0000E+00   0.0000E+00
       5.0000E-01    1.0000E+03   0.0000E+00   0.0000E+00   0.0000E+00
       7.2000E+02    0.0000E+00   0.0000E+00   0.0000E+00   0.0000E+00
```

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**CALCULATION SHEET**
**(Ref. EP-006T)**

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|---|---|---|---|---|

```
Pathway number  4: CR Exhaust to Environment

     Pathway Filter: Removal Data

       Time (hr)      Flow Rate          Filter Efficiencies (%)
                       (cfm)        Aerosol     Elemental    Organic
       0.0000E+00    4.0000E+03   0.0000E+00   0.0000E+00   0.0000E+00
       5.0000E-01    9.0000E+03   0.0000E+00   0.0000E+00   0.0000E+00
       7.2000E+02    9.0000E+03   0.0000E+00   0.0000E+00   0.0000E+00

LOCATION DATA
     Location Exclusion Area Boundary     is in compartment   2

     Location X/Q Data
      Time (hr)         X/Q (s * m^-3)
       0.0000E+00          8.0000E-04
       7.2000E+02          0.0000E+00

     Location Breathing Rate Data
      Time (hr)         Breathing Rate (m^3 * sec^-1)
       0.0000E+00                3.5000E-04
       2.0000E+00                0.0000E+00
     Location Low Population Zone     is in compartment   2

     Location X/Q Data
      Time (hr)         X/Q (s * m^-3)
       0.0000E+00          1.4000E-04
       2.0000E+00          6.0000E-05
       8.0000E+00          3.9000E-05
       2.4000E+01          1.6000E-05
       9.6000E+01          4.0000E-06
       7.2000E+02          0.0000E+00

     Location Breathing Rate Data
      Time (hr)         Breathing Rate (m^3 * sec^-1)
       0.0000E+00                3.5000E-04
       8.0000E+00                1.8000E-04
       2.4000E+01                2.3000E-04
       7.2000E+02                0.0000E+00
     Location Control Room     is in compartment   3

     Location X/Q Data
      Time (hr)         X/Q (s * m^-3)
       0.0000E+00          3.4000E-04
       2.0000E+00          2.2500E-04
       8.0000E+00          1.0200E-04
       2.4000E+01          7.1600E-05
       9.6000E+01          4.9900E-05
       7.2000E+02          0.0000E+00

     Location Breathing Rate Data
      Time (hr)         Breathing Rate (m^3 * sec^-1)
       0.0000E+00                3.5000E-04
       7.2000E+02                0.0000E+00

     Location Occupancy Factor Data
      Time (hr)         Occupancy Factor
```

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```
        0.0000E+00            1.0000E+00
        2.4000E+01            6.0000E-01
        9.6000E+01            4.0000E-01
        7.2000E+02            0.0000E+00

 USER SPECIFIED TIME STEP DATA - SUPPLEMENTAL TIME STEPS
      Time            Time step
       0.0000E+00       5.0000E-01
       1.0000E+00       1.0000E-01
       2.0000E+00       1.0000E+00
       8.0000E+00       2.0000E+00
       2.4000E+01       4.0000E+00
       9.6000E+01       8.0000E+00
       7.2000E+02       0.0000E+00

 ######################################################################
           RADTRAD Version 3.02 run on  5/29/2001  at  9:12:28
 ######################################################################

      ####   #    #  #####  #####   #    #  #####
     #    #  #    #    #    #    #  #    #    #
     #    #  #    #    #    #    #  #    #    #
     #    #  #    #    #    #####   #    #    #
     #    #  #    #    #    #       #    #    #
     #    #  #    #    #    #       #    #    #
      ####    ####     #    #        ####     #

 ####################################################################
            Dose, Detailed model and Detailed Inventory Output
 ####################################################################

 Exclusion Area Boundary Doses:

 Time (h) =   0.0003    Whole Body   Thyroid       TEDE
 Delta dose (rem)        7.2620E-05  4.9326E-03  2.2525E-04
 Accumulated dose (rem)  7.2620E-05  4.9326E-03  2.2525E-04

 Low Population Zone Doses:

 Time (h) =   0.0003    Whole Body   Thyroid       TEDE
 Delta dose (rem)        1.2709E-05  8.6321E-04  3.9418E-05
 Accumulated dose (rem)  1.2709E-05  8.6321E-04  3.9418E-05

 Control Room Doses:

 Time (h) =   0.0003    Whole Body   Thyroid       TEDE
 Delta dose (rem)        2.3604E-10  2.8173E-07  8.9533E-09
 Accumulated dose (rem)  2.3604E-10  2.8173E-07  8.9533E-09

 Control Room Compartment Nuclide Inventory:

 Time (h) =   0.0003       Ci           kg         Atoms         Bq
 Kr-85                  1.5355E-04  3.9138E-10  2.7729E+15  5.6815E+06
 Kr-85m                 2.5356E-05  3.0811E-15  2.1829E+10  9.3818E+05
 Kr-87                  1.3981E-05  4.9357E-16  3.4165E+09  5.1728E+05
 Kr-88                  4.3299E-05  3.4531E-15  2.3631E+10  1.6021E+06
 I-131                  8.6824E-06  7.0034E-14  3.2195E+11  3.2125E+05
```

| | | | | |
|---|---|---|---|---|
| I-132 | 3.1623E-06 | 3.0636E-16 | 1.3977E+09 | 1.1701E+05 |
| I-133 | 9.7731E-06 | 8.6273E-15 | 3.9064E+10 | 3.6161E+05 |
| I-134 | 1.1509E-06 | 4.3144E-17 | 1.9389E+08 | 4.2585E+04 |
| I-135 | 4.6833E-06 | 1.3336E-15 | 5.9489E+09 | 1.7328E+05 |
| Xe-133 | 4.3760E-03 | 2.3378E-11 | 1.0585E+14 | 1.6191E+08 |
| Xe-135 | 2.0004E-04 | 7.8331E-14 | 3.4942E+11 | 7.4013E+06 |

Control Room Transport Group Inventory:

| Time (h) = 0.0003 | Atmosphere | Sump | Overlying Pool |
|---|---|---|---|
| Noble gases (atoms) | 2.8792E+15 | 0.0000E+00 | 0.0000E+00 |
| Elemental I (atoms) | 1.7875E+10 | 0.0000E+00 | 0.0000E+00 |
| Organic I (atoms) | 5.5283E+08 | 0.0000E+00 | 0.0000E+00 |
| Aerosols (kg) | 7.6327E-14 | 0.0000E+00 | 0.0000E+00 |

| Time (h) = 0.0003 | Deposition Surfaces | Recirculating Filter |
|---|---|---|
| Noble gases (atoms) | 0.0000E+00 | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 | 0.0000E+00 |

CR Filtered Air Intake Transport Group Inventory:

| Time (h) = 0.0003 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 |

CR Unfiltered Inleakage Transport Group Inventory:

| Time (h) = 0.0003 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 |

CR Exhaust to Environment Transport Group Inventory:

| Time (h) = 0.0003 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 |

Exclusion Area Boundary Doses:

| Time (h) = 0.0167 | Whole Body | Thyroid | TEDE |
|---|---|---|---|
| Delta dose (rem) | 8.4892E-03 | 5.7667E-01 | 2.6333E-02 |
| Accumulated dose (rem) | 8.5618E-03 | 5.8160E-01 | 2.6558E-02 |

Low Population Zone Doses:

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| Time (h) = 0.0167 | Whole Body | Thyroid | TEDE |
|---|---|---|---|
| Delta dose (rem) | 1.4856E-03 | 1.0092E-01 | 4.6082E-03 |
| Accumulated dose (rem) | 1.4983E-03 | 1.0178E-01 | 4.6476E-03 |

Control Room Doses:

| Time (h) = 0.0167 | Whole Body | Thyroid | TEDE |
|---|---|---|---|
| Delta dose (rem) | 1.6336E-06 | 1.9500E-03 | 6.1970E-05 |
| Accumulated dose (rem) | 1.6339E-06 | 1.9503E-03 | 6.1979E-05 |

Control Room Compartment Nuclide Inventory:

| Time (h) = 0.0167 | Ci | kg | Atoms | Bq |
|---|---|---|---|---|
| Kr-85 | 1.7964E-02 | 4.5787E-08 | 3.2439E+17 | 6.6466E+08 |
| Kr-85m | 2.9588E-03 | 3.5954E-13 | 2.5473E+12 | 1.0948E+08 |
| Kr-87 | 1.6210E-03 | 5.7227E-14 | 3.9612E+11 | 5.9976E+07 |
| Kr-88 | 5.0452E-03 | 4.0236E-13 | 2.7535E+12 | 1.8667E+08 |
| I-131 | 1.0157E-03 | 8.1926E-12 | 3.7662E+13 | 3.7580E+07 |
| I-132 | 3.6812E-04 | 3.5664E-14 | 1.6271E+11 | 1.3621E+07 |
| I-133 | 1.1427E-03 | 1.0087E-12 | 4.5675E+12 | 4.2280E+07 |
| I-134 | 1.3291E-04 | 4.9822E-15 | 2.2391E+10 | 4.9176E+06 |
| I-135 | 5.4695E-04 | 1.5574E-13 | 6.9475E+11 | 2.0237E+07 |
| Xe-133 | 5.1189E-01 | 2.7347E-09 | 1.2383E+16 | 1.8940E+10 |
| Xe-135 | 2.3372E-02 | 9.1523E-12 | 4.0827E+13 | 8.6478E+08 |

Control Room Transport Group Inventory:

| Time (h) = 0.0167 | Atmosphere | Sump | Overlying Pool |
|---|---|---|---|
| Noble gases (atoms) | 3.3683E+17 | 0.0000E+00 | 0.0000E+00 |
| Elemental I (atoms) | 2.0911E+12 | 0.0000E+00 | 0.0000E+00 |
| Organic I (atoms) | 6.4675E+10 | 0.0000E+00 | 0.0000E+00 |
| Aerosols (kg) | 8.9293E-12 | 0.0000E+00 | 0.0000E+00 |

| Time (h) = 0.0167 | Deposition Surfaces | Recirculating Filter |
|---|---|---|
| Noble gases (atoms) | 0.0000E+00 | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 | 0.0000E+00 |

CR Filtered Air Intake Transport Group Inventory:

| Time (h) = 0.0167 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 |

CR Unfiltered Inleakage Transport Group Inventory:

| Time (h) = 0.0167 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 |

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**CALCULATION SHEET**
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```
Organic I (atoms)      0.0000E+00
Aerosols (kg)          0.0000E+00

CR Exhaust to Environment Transport Group Inventory:

                        Pathway
Time (h) =   0.0167      Filter
Noble gases (atoms)    0.0000E+00
Elemental I (atoms)    0.0000E+00
Organic I (atoms)      0.0000E+00
Aerosols (kg)          0.0000E+00

Exclusion Area Boundary Doses:

Time (h) =   0.5000    Whole Body   Thyroid       TEDE
Delta dose (rem)        1.9791E-06  1.3723E-04  6.2243E-06
Accumulated dose (rem)  8.5638E-03  5.8174E-01  2.6564E-02

Low Population Zone Doses:

Time (h) =   0.5000    Whole Body   Thyroid       TEDE
Delta dose (rem)        3.4634E-07  2.4016E-05  1.0893E-06
Accumulated dose (rem)  1.4987E-03  1.0180E-01  4.6487E-03

Control Room Doses:

Time (h) =   0.5000    Whole Body   Thyroid       TEDE
Delta dose (rem)        7.4632E-05  9.0936E-02  2.8877E-03
Accumulated dose (rem)  7.6266E-05  9.2886E-02  2.9497E-03

Control Room Compartment Nuclide Inventory:

Time (h) =   0.5000       Ci           kg         Atoms         Bq
Kr-85                  1.1299E-02  2.8799E-08  2.0403E+17  4.1805E+08
Kr-85m                 1.7269E-03  2.0985E-13  1.4867E+12  6.3897E+07
Kr-87                  7.8343E-04  2.7658E-14  1.9145E+11  2.8987E+07
Kr-88                  2.8202E-03  2.2491E-13  1.5392E+12  1.0435E+08
I-131                  6.3772E-04  5.1440E-12  2.3647E+13  2.3596E+07
I-132                  2.0016E-04  1.9391E-14  8.8466E+10  7.4058E+06
I-133                  7.0725E-04  6.2433E-13  2.8269E+12  2.6168E+07
I-134                  5.7046E-05  2.1384E-15  9.6104E+09  2.1107E+06
I-135                  3.2701E-04  9.3117E-14  4.1538E+11  1.2100E+07
Xe-133                 3.2111E-01  1.7155E-09  7.7676E+15  1.1881E+10
Xe-135                 1.4169E-02  5.5482E-12  2.4750E+13  5.2424E+08

Control Room Transport Group Inventory:

                                              Overlying
Time (h) =   0.5000    Atmosphere     Sump       Pool
Noble gases (atoms)    2.1185E+17  0.0000E+00  0.0000E+00
Elemental I (atoms)    1.3153E+12  0.0000E+00  0.0000E+00
Organic I (atoms)      4.0678E+10  0.0000E+00  0.0000E+00
Aerosols (kg)          5.6163E-12  0.0000E+00  0.0000E+00

                       Deposition Recirculating
Time (h) =   0.5000     Surfaces     Filter
Noble gases (atoms)    0.0000E+00  0.0000E+00
```

```
Elemental I (atoms)    0.0000E+00  0.0000E+00
Organic I (atoms)      0.0000E+00  0.0000E+00
Aerosols (kg)          0.0000E+00  0.0000E+00

CR Filtered Air Intake Transport Group Inventory:

                        Pathway
Time (h) =   0.5000      Filter
Noble gases (atoms)    0.0000E+00
Elemental I (atoms)    0.0000E+00
Organic I (atoms)      0.0000E+00
Aerosols (kg)          0.0000E+00

CR  Unfiltered Inleakage Transport Group Inventory:

                        Pathway
Time (h) =   0.5000      Filter
Noble gases (atoms)    0.0000E+00
Elemental I (atoms)    0.0000E+00
Organic I (atoms)      0.0000E+00
Aerosols (kg)          0.0000E+00

CR Exhaust to Environment Transport Group Inventory:

                        Pathway
Time (h) =   0.5000      Filter
Noble gases (atoms)    0.0000E+00
Elemental I (atoms)    0.0000E+00
Organic I (atoms)      0.0000E+00
Aerosols (kg)          0.0000E+00

Exclusion Area Boundary Doses:

Time (h) =   2.0000    Whole Body   Thyroid       TEDE
Delta dose (rem)        2.8251E-06  5.6979E-05  4.5869E-06
Accumulated dose (rem)  8.5666E-03  5.8180E-01  2.6569E-02

Low Population Zone Doses:

Time (h) =   2.0000    Whole Body   Thyroid       TEDE
Delta dose (rem)        4.9440E-07  9.9713E-06  8.0271E-07
Accumulated dose (rem)  1.4992E-03  1.0181E-01  4.6495E-03

Control Room Doses:

Time (h) =   2.0000    Whole Body   Thyroid       TEDE
Delta dose (rem)        4.7563E-05  1.7832E-02  5.9894E-04
Accumulated dose (rem)  1.2383E-04  1.1072E-01  3.5486E-03

Control Room Compartment Nuclide Inventory:

Time (h) =   2.0000       Ci           kg         Atoms         Bq
Kr-85                  4.4457E-04  1.1331E-09  8.0282E+15  1.6449E+07
Kr-85m                 5.3877E-05  6.5468E-15  4.6383E+10  1.9935E+06
Kr-87                  1.3609E-05  4.8046E-16  3.3257E+09  5.0355E+05
Kr-88                  7.6950E-05  6.1367E-15  4.1996E+10  2.8471E+06
I-131                  1.2373E-09  9.9804E-18  4.5880E+07  4.5781E+01
```

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```
I-132                  2.4845E-10  2.4069E-20  1.0981E+05  9.1925E+00
I-133                  1.3124E-09  1.1585E-18  5.2456E+06  4.8557E+01
I-135                  5.4506E-10  1.5520E-19  6.9234E+05  2.0167E+01
Xe-133                 1.2531E-02  6.6945E-11  3.0312E+14  4.6364E+08
Xe-135                 4.9725E-04  1.9471E-13  8.6859E+11  1.8398E+07

Control Room Transport Group Inventory:

                                                Overlying
Time (h) =   2.0000    Atmosphere     Sump        Pool
Noble gases (atoms)    8.3359E+15  0.0000E+00  0.0000E+00
Elemental I (atoms)    5.9209E+06  0.0000E+00  0.0000E+00
Organic I (atoms)      1.8312E+05  0.0000E+00  0.0000E+00
Aerosols (kg)          1.0202E-17  0.0000E+00  0.0000E+00

                       Deposition Recirculating
Time (h) =   2.0000     Surfaces     Filter
Noble gases (atoms)    0.0000E+00  0.0000E+00
Elemental I (atoms)    0.0000E+00  9.6125E+11
Organic I (atoms)      0.0000E+00  2.9729E+10
Aerosols (kg)          0.0000E+00  4.1967E-12

CR Filtered Air Intake Transport Group Inventory:

                        Pathway
Time (h) =   2.0000      Filter
Noble gases (atoms)    0.0000E+00
Elemental I (atoms)    2.4460E+14
Organic I (atoms)      7.5649E+12
Aerosols (kg)          1.0819E-09

CR  Unfiltered Inleakage Transport Group Inventory:

                        Pathway
Time (h) =   2.0000      Filter
Noble gases (atoms)    0.0000E+00
Elemental I (atoms)    0.0000E+00
Organic I (atoms)      0.0000E+00
Aerosols (kg)          0.0000E+00

CR Exhaust to Environment Transport Group Inventory:

                        Pathway
Time (h) =   2.0000      Filter
Noble gases (atoms)    0.0000E+00
Elemental I (atoms)    0.0000E+00
Organic I (atoms)      0.0000E+00
Aerosols (kg)          0.0000E+00

Exclusion Area Boundary Doses:

Time (h) =   8.0000    Whole Body   Thyroid       TEDE
Delta dose (rem)        9.8561E-08  0.0000E+00  9.8561E-08
Accumulated dose (rem)  8.5667E-03  5.8180E-01  2.6569E-02

Low Population Zone Doses:
```

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```
Time (h) =   8.0000    Whole Body   Thyroid       TEDE
Delta dose (rem)        7.3921E-09  8.2558E-12  7.3923E-09
Accumulated dose (rem)  1.4992E-03  1.0181E-01  4.6495E-03

Control Room Doses:

Time (h) =   8.0000    Whole Body   Thyroid       TEDE
Delta dose (rem)        1.6571E-06  3.4431E-08  1.6582E-06
Accumulated dose (rem)  1.2549E-04  1.1072E-01  3.5503E-03

Control Room Compartment Nuclide Inventory:

Time (h) =   8.0000       Ci           kg         Atoms         Bq
Kr-85                  1.0589E-09  2.6989E-15  1.9121E+10  3.9178E+01
Xe-133                 2.8877E-08  1.5427E-16  6.9854E+08  1.0685E+03
Xe-135                 7.4954E-10  2.9351E-19  1.3093E+06  2.7733E+01

Control Room Transport Group Inventory:

                                                Overlying
Time (h) =   8.0000    Atmosphere     Sump        Pool
Noble gases (atoms)    1.9855E+10  0.0000E+00  0.0000E+00
Elemental I (atoms)    2.4284E-15  0.0000E+00  0.0000E+00
Organic I (atoms)      7.5106E-17  0.0000E+00  0.0000E+00
Aerosols (kg)          1.1097E-40  0.0000E+00  0.0000E+00

                       Deposition Recirculating
Time (h) =   8.0000     Surfaces     Filter
Noble gases (atoms)    0.0000E+00  0.0000E+00
Elemental I (atoms)    0.0000E+00  9.6126E+11
Organic I (atoms)      0.0000E+00  2.9730E+10
Aerosols (kg)          0.0000E+00  4.1967E-12

CR Filtered Air Intake Transport Group Inventory:

                        Pathway
Time (h) =   8.0000      Filter
Noble gases (atoms)    0.0000E+00
Elemental I (atoms)    2.4460E+14

Organic I (atoms)      7.5649E+12
Aerosols (kg)          1.0819E-09

CR  Unfiltered Inleakage Transport Group Inventory:

                        Pathway
Time (h) =   8.0000      Filter
Noble gases (atoms)    0.0000E+00
Elemental I (atoms)    0.0000E+00
Organic I (atoms)      0.0000E+00
Aerosols (kg)          0.0000E+00

CR Exhaust to Environment Transport Group Inventory:

                        Pathway
Time (h) =   8.0000      Filter
Noble gases (atoms)    0.0000E+00
```

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**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 1 | System Nos. | Sheet 367 of 1000 |
|---|---|---|---|---|

```
Elemental I (atoms)    0.0000E+00
Organic I (atoms)      0.0000E+00
Aerosols (kg)          0.0000E+00

Exclusion Area Boundary Doses:

Time (h) =  24.0000    Whole Body   Thyroid       TEDE
Delta dose (rem)        1.7189E-13  0.0000E+00  1.7189E-13
Accumulated dose (rem)  8.5667E-03  5.8180E-01  2.6569E-02

Low Population Zone Doses:

Time (h) =  24.0000    Whole Body   Thyroid       TEDE
Delta dose (rem)        8.3798E-15  1.5701E-34  8.3798E-15
Accumulated dose (rem)  1.4992E-03  1.0181E-01  4.6495E-03

Control Room Doses:

Time (h) =  24.0000    Whole Body   Thyroid       TEDE
Delta dose (rem)        2.8900E-12  1.9478E-30  2.8900E-12
Accumulated dose (rem)  1.2549E-04  1.1072E-01  3.5503E-03

Control Room Compartment Nuclide Inventory:

Time (h) =  24.0000       Ci           kg         Atoms         Bq

Control Room Transport Group Inventory:

                                                Overlying
Time (h) =  24.0000    Atmosphere     Sump        Pool
Noble gases (atoms)    1.9731E-05  0.0000E+00  0.0000E+00
Elemental I (atoms)    2.2468E-72  0.0000E+00  0.0000E+00
Organic I (atoms)      6.9489E-74  0.0000E+00  0.0000E+00
Aerosols (kg)          6.4316-102  0.0000E+00  0.0000E+00

                       Deposition Recirculating
Time (h) =  24.0000     Surfaces     Filter
Noble gases (atoms)    0.0000E+00  0.0000E+00
Elemental I (atoms)    0.0000E+00  9.6126E+11
Organic I (atoms)      0.0000E+00  2.9730E+10
Aerosols (kg)          0.0000E+00  4.1967E-12

CR Filtered Air Intake Transport Group Inventory:

                        Pathway
Time (h) =  24.0000      Filter
Noble gases (atoms)    0.0000E+00
Elemental I (atoms)    2.4460E+14
Organic I (atoms)      7.5649E+12
Aerosols (kg)          1.0819E-09

CR  Unfiltered Inleakage Transport Group Inventory:

                        Pathway
Time (h) =  24.0000      Filter
Noble gases (atoms)    0.0000E+00
Elemental I (atoms)    0.0000E+00
```

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**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 1 | System Nos. | Sheet 368 of 1000 |
|---|---|---|---|---|

```
Organic I (atoms)      0.0000E+00
Aerosols (kg)          0.0000E+00

CR Exhaust to Environment Transport Group Inventory:

                        Pathway
Time (h) =  24.0000      Filter
Noble gases (atoms)    0.0000E+00
Elemental I (atoms)    0.0000E+00
Organic I (atoms)      0.0000E+00
Aerosols (kg)          0.0000E+00

Exclusion Area Boundary Doses:

Time (h) =  96.0000    Whole Body   Thyroid       TEDE
Delta dose (rem)        1.2984E-28  0.0000E+00  1.2984E-28
Accumulated dose (rem)  8.5667E-03  5.8180E-01  2.6569E-02

Low Population Zone Doses:

Time (h) =  96.0000    Whole Body   Thyroid       TEDE
Delta dose (rem)        2.5968E-30  5.7258E-92  2.5968E-30
Accumulated dose (rem)  1.4992E-03  1.0181E-01  4.6495E-03

Control Room Doses:

Time (h) =  96.0000    Whole Body   Thyroid       TEDE
Delta dose (rem)        5.6367E-27  1.2628E-86  5.6367E-27
Accumulated dose (rem)  1.2549E-04  1.1072E-01  3.5503E-03

Control Room Compartment Nuclide Inventory:

Time (h) =  96.0000       Ci           kg         Atoms         Bq

Control Room Transport Group Inventory:

                                                Overlying
Time (h) =  96.0000    Atmosphere     Sump        Pool
Noble gases (atoms)    5.9454E-73  0.0000E+00  0.0000E+00
Elemental I (atoms)    0.0000E+00  0.0000E+00  0.0000E+00
Organic I (atoms)      0.0000E+00  0.0000E+00  0.0000E+00
Aerosols (kg)          0.0000E+00  0.0000E+00  0.0000E+00

                       Deposition Recirculating
Time (h) =  96.0000     Surfaces     Filter
Noble gases (atoms)    0.0000E+00  0.0000E+00
Elemental I (atoms)    0.0000E+00  9.6126E+11
Organic I (atoms)      0.0000E+00  2.9730E+10
Aerosols (kg)          0.0000E+00  4.1967E-12

CR Filtered Air Intake Transport Group Inventory:

                        Pathway
Time (h) =  96.0000      Filter
Noble gases (atoms)    0.0000E+00
Elemental I (atoms)    2.4460E+14
Organic I (atoms)      7.5649E+12
```

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**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 1 | System Nos. | Sheet 369 of 1000 |
|---|---|---|---|---|

```
Aerosols (kg)          1.0819E-09

CR  Unfiltered Inleakage Transport Group Inventory:

                        Pathway
Time (h) =  96.0000      Filter
Noble gases (atoms)    0.0000E+00
Elemental I (atoms)    0.0000E+00
Organic I (atoms)      0.0000E+00
Aerosols (kg)          0.0000E+00

CR Exhaust to Environment Transport Group Inventory:

                        Pathway
Time (h) =  96.0000      Filter
Noble gases (atoms)    0.0000E+00
Elemental I (atoms)    0.0000E+00
Organic I (atoms)      0.0000E+00
Aerosols (kg)          0.0000E+00

Exclusion Area Boundary Doses:

Time (h) = 720.0000    Whole Body   Thyroid       TEDE
Delta dose (rem)        2.4721E-96  0.0000E+00  2.4721E-96
Accumulated dose (rem)  8.5667E-03  5.8180E-01  2.6569E-02
```

**Low Population Zone Doses:**

| **Time (h) = 720.0000** | **Whole Body** | **Thyroid** | **TEDE** |
|---|---|---|---|
| **Delta dose (rem)** | **1.2360E-98** | **0.0000E+00** | **1.2360E-98** |
| **Accumulated dose (rem)** | **1.4992E-03** | **1.0181E-01** | **4.6495E-03** |

**Control Room Doses:**

| **Time (h) = 720.0000** | **Whole Body** | **Thyroid** | **TEDE** |
|---|---|---|---|
| **Delta dose (rem)** | **7.1553E-95** | **0.0000E+00** | **7.1553E-95** |
| **Accumulated dose (rem)** | **1.2549E-04** | **1.1072E-01** | **3.5503E-03** |

```
Control Room Compartment Nuclide Inventory:

Time (h) = 720.0000       Ci           kg         Atoms         Bq

Control Room Transport Group Inventory:

                                                Overlying
Time (h) = 720.0000    Atmosphere     Sump        Pool
Noble gases (atoms)    0.0000E+00  0.0000E+00  0.0000E+00
Elemental I (atoms)    0.0000E+00  0.0000E+00  0.0000E+00
Organic I (atoms)      0.0000E+00  0.0000E+00  0.0000E+00
Aerosols (kg)          0.0000E+00  0.0000E+00  0.0000E+00

                       Deposition Recirculating
Time (h) = 720.0000     Surfaces     Filter
Noble gases (atoms)    0.0000E+00  0.0000E+00
Elemental I (atoms)    0.0000E+00  9.6126E+11
Organic I (atoms)      0.0000E+00  2.9730E+10
```

```
Aerosols (kg)          0.0000E+00  4.1967E-12

CR Filtered Air Intake Transport Group Inventory:

                        Pathway
Time (h) = 720.0000      Filter
Noble gases (atoms)    0.0000E+00
Elemental I (atoms)    2.4460E+14
Organic I (atoms)      7.5649E+12
Aerosols (kg)          1.0819E-09

CR  Unfiltered Inleakage Transport Group Inventory:

                        Pathway
Time (h) = 720.0000      Filter
Noble gases (atoms)    0.0000E+00
Elemental I (atoms)    0.0000E+00
Organic I (atoms)      0.0000E+00
Aerosols (kg)          0.0000E+00

CR Exhaust to Environment Transport Group Inventory:

                        Pathway
Time (h) = 720.0000      Filter
Noble gases (atoms)    0.0000E+00
Elemental I (atoms)    0.0000E+00
Organic I (atoms)      0.0000E+00
Aerosols (kg)          0.0000E+00

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#####################################################################
                            I-131 Summary
#####################################################################
```

| Time (hr) | Containment I-131 (Curies) | Environment I-131 (Curies) | Control Room I-131 (Curies) |
|---|---|---|---|
| 0.000 | 2.4848E+02 | 1.3528E-02 | 8.6824E-06 |
| 0.017 | 2.4688E+02 | 1.5951E+00 | 1.0157E-03 |
| 0.417 | 2.4653E+02 | 1.5954E+00 | 6.9099E-04 |
| 0.500 | 2.4645E+02 | 1.5954E+00 | 6.3772E-04 |
| 0.800 | 2.4619E+02 | 1.5956E+00 | 4.5741E-05 |
| 1.100 | 2.4592E+02 | 1.5956E+00 | 3.2869E-06 |
| 1.400 | 2.4566E+02 | 1.5956E+00 | 2.3670E-07 |
| 1.700 | 2.4539E+02 | 1.5956E+00 | 1.7089E-08 |
| 2.000 | 2.4513E+02 | 1.5956E+00 | 1.2373E-09 |
| 2.300 | 2.4486E+02 | 1.5956E+00 | 8.9887E-11 |
| 2.600 | 2.4460E+02 | 1.5956E+00 | 6.5553E-12 |
| 2.900 | 2.4434E+02 | 1.5956E+00 | 4.8016E-13 |
| 3.200 | 2.4407E+02 | 1.5956E+00 | 3.5345E-14 |
| 3.500 | 2.4381E+02 | 1.5956E+00 | 2.6161E-15 |
| 3.800 | 2.4355E+02 | 1.5956E+00 | 1.9482E-16 |
| 4.100 | 2.4329E+02 | 1.5956E+00 | 1.4604E-17 |
| 4.400 | 2.4302E+02 | 1.5956E+00 | 1.1026E-18 |
| 4.700 | 2.4276E+02 | 1.5956E+00 | 8.3881E-20 |
| 5.000 | 2.4250E+02 | 1.5956E+00 | 6.4317E-21 |
| 5.300 | 2.4224E+02 | 1.5956E+00 | 4.9718E-22 |

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**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 1 | System Nos. | Sheet 371 of 1000 |
|---|---|---|---|---|

| | | | |
|---|---|---|---|
| 5.600 | 2.4198E+02 | 1.5956E+00 | 3.8750E-23 |
| 5.900 | 2.4172E+02 | 1.5956E+00 | 3.0450E-24 |
| 6.200 | 2.4146E+02 | 1.5956E+00 | 2.4120E-25 |
| 6.500 | 2.4120E+02 | 1.5956E+00 | 1.9254E-26 |
| 6.800 | 2.4094E+02 | 1.5956E+00 | 1.5483E-27 |
| 7.100 | 2.4068E+02 | 1.5956E+00 | 1.2536E-28 |
| 7.400 | 2.4042E+02 | 1.5956E+00 | 1.0215E-29 |
| 7.700 | 2.4016E+02 | 1.5956E+00 | 8.3711E-31 |
| 8.000 | 2.3990E+02 | 1.5956E+00 | 6.8960E-32 |
| 8.300 | 2.3964E+02 | 1.5956E+00 | 5.7068E-33 |
| 8.600 | 2.3938E+02 | 1.5956E+00 | 4.7421E-34 |
| 8.900 | 2.3913E+02 | 1.5956E+00 | 3.9545E-35 |
| 9.200 | 2.3887E+02 | 1.5956E+00 | 3.3080E-36 |
| 9.500 | 2.3861E+02 | 1.5956E+00 | 2.7747E-37 |
| 9.800 | 2.3836E+02 | 1.5956E+00 | 2.3327E-38 |
| 10.100 | 2.3810E+02 | 1.5956E+00 | 1.9650E-39 |
| 10.400 | 2.3784E+02 | 1.5956E+00 | 1.6581E-40 |
| 24.000 | 2.2650E+02 | 1.5956E+00 | 5.0061E-89 |
| 96.000 | 1.7488E+02 | 1.5956E+00 | 0.0000E+00 |
| 720.000 | 1.8589E+01 | 1.5956E+00 | 0.0000E+00 |

```
#####################################################################
                        Cumulative Dose Summary
#####################################################################
```

| | Exclusion Area Bounda | | Low Population Zone | | Control Room | |
|---|---|---|---|---|---|---|
| Time (hr) | Thyroid (rem) | TEDE (rem) | Thyroid (rem) | TEDE (rem) | Thyroid (rem) | TEDE (rem) |
| 0.000 | 4.9326E-03 | 2.2525E-04 | 8.6321E-04 | 3.9418E-05 | 2.8173E-07 | 8.9533E-09 |
| 0.017 | 5.8160E-01 | 2.6558E-02 | 1.0178E-01 | 4.6476E-03 | 1.9503E-03 | 6.1979E-05 |
| 0.417 | 5.8172E-01 | 2.6563E-02 | 1.0180E-01 | 4.6486E-03 | 8.0092E-02 | 2.5438E-03 |
| 0.500 | 5.8174E-01 | 2.6564E-02 | 1.0180E-01 | 4.6487E-03 | 9.2886E-02 | 2.9497E-03 |
| 0.800 | 5.8179E-01 | 2.6567E-02 | 1.0181E-01 | 4.6493E-03 | 1.0944E-01 | 3.4862E-03 |
| 1.100 | 5.8180E-01 | 2.6568E-02 | 1.0181E-01 | 4.6494E-03 | 1.1063E-01 | 3.5350E-03 |
| 1.400 | 5.8180E-01 | 2.6568E-02 | 1.0181E-01 | 4.6495E-03 | 1.1071E-01 | 3.5437E-03 |
| 1.700 | 5.8180E-01 | 2.6569E-02 | 1.0181E-01 | 4.6495E-03 | 1.1072E-01 | 3.5470E-03 |
| 2.000 | 5.8180E-01 | 2.6569E-02 | 1.0181E-01 | 4.6495E-03 | 1.1072E-01 | 3.5486E-03 |
| 2.300 | 5.8180E-01 | 2.6569E-02 | 1.0181E-01 | 4.6495E-03 | 1.1072E-01 | 3.5494E-03 |
| 2.600 | 5.8180E-01 | 2.6569E-02 | 1.0181E-01 | 4.6495E-03 | 1.1072E-01 | 3.5498E-03 |
| 2.900 | 5.8180E-01 | 2.6569E-02 | 1.0181E-01 | 4.6495E-03 | 1.1072E-01 | 3.5500E-03 |
| 3.200 | 5.8180E-01 | 2.6569E-02 | 1.0181E-01 | 4.6495E-03 | 1.1072E-01 | 3.5501E-03 |
| 3.500 | 5.8180E-01 | 2.6569E-02 | 1.0181E-01 | 4.6495E-03 | 1.1072E-01 | 3.5502E-03 |
| 3.800 | 5.8180E-01 | 2.6569E-02 | 1.0181E-01 | 4.6495E-03 | 1.1072E-01 | 3.5502E-03 |
| 4.100 | 5.8180E-01 | 2.6569E-02 | 1.0181E-01 | 4.6495E-03 | 1.1072E-01 | 3.5502E-03 |
| 4.400 | 5.8180E-01 | 2.6569E-02 | 1.0181E-01 | 4.6495E-03 | 1.1072E-01 | 3.5503E-03 |
| 4.700 | 5.8180E-01 | 2.6569E-02 | 1.0181E-01 | 4.6495E-03 | 1.1072E-01 | 3.5503E-03 |
| 5.000 | 5.8180E-01 | 2.6569E-02 | 1.0181E-01 | 4.6495E-03 | 1.1072E-01 | 3.5503E-03 |
| 5.300 | 5.8180E-01 | 2.6569E-02 | 1.0181E-01 | 4.6495E-03 | 1.1072E-01 | 3.5503E-03 |
| 5.600 | 5.8180E-01 | 2.6569E-02 | 1.0181E-01 | 4.6495E-03 | 1.1072E-01 | 3.5503E-03 |
| 5.900 | 5.8180E-01 | 2.6569E-02 | 1.0181E-01 | 4.6495E-03 | 1.1072E-01 | 3.5503E-03 |
| 6.200 | 5.8180E-01 | 2.6569E-02 | 1.0181E-01 | 4.6495E-03 | 1.1072E-01 | 3.5503E-03 |
| 6.500 | 5.8180E-01 | 2.6569E-02 | 1.0181E-01 | 4.6495E-03 | 1.1072E-01 | 3.5503E-03 |
| 6.800 | 5.8180E-01 | 2.6569E-02 | 1.0181E-01 | 4.6495E-03 | 1.1072E-01 | 3.5503E-03 |
| 7.100 | 5.8180E-01 | 2.6569E-02 | 1.0181E-01 | 4.6495E-03 | 1.1072E-01 | 3.5503E-03 |
| 7.400 | 5.8180E-01 | 2.6569E-02 | 1.0181E-01 | 4.6495E-03 | 1.1072E-01 | 3.5503E-03 |
| 7.700 | 5.8180E-01 | 2.6569E-02 | 1.0181E-01 | 4.6495E-03 | 1.1072E-01 | 3.5503E-03 |
| 8.000 | 5.8180E-01 | 2.6569E-02 | 1.0181E-01 | 4.6495E-03 | 1.1072E-01 | 3.5503E-03 |

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**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 1 | System Nos. | Sheet 372 of 1000 |
|---|---|---|---|---|

```
   8.300 5.8180E-01 2.6569E-02 1.0181E-01 4.6495E-03 1.1072E-01 3.5503E-03
   8.600 5.8180E-01 2.6569E-02 1.0181E-01 4.6495E-03 1.1072E-01 3.5503E-03
   8.900 5.8180E-01 2.6569E-02 1.0181E-01 4.6495E-03 1.1072E-01 3.5503E-03
   9.200 5.8180E-01 2.6569E-02 1.0181E-01 4.6495E-03 1.1072E-01 3.5503E-03
   9.500 5.8180E-01 2.6569E-02 1.0181E-01 4.6495E-03 1.1072E-01 3.5503E-03
   9.800 5.8180E-01 2.6569E-02 1.0181E-01 4.6495E-03 1.1072E-01 3.5503E-03
  10.100 5.8180E-01 2.6569E-02 1.0181E-01 4.6495E-03 1.1072E-01 3.5503E-03
  10.400 5.8180E-01 2.6569E-02 1.0181E-01 4.6495E-03 1.1072E-01 3.5503E-03
  24.000 5.8180E-01 2.6569E-02 1.0181E-01 4.6495E-03 1.1072E-01 3.5503E-03
  96.000 5.8180E-01 2.6569E-02 1.0181E-01 4.6495E-03 1.1072E-01 3.5503E-03
 720.000 5.8180E-01 2.6569E-02 1.0181E-01 4.6495E-03 1.1072E-01 3.5503E-03

#################################################################
                        Worst Two-Hour Doses
    Note: All of the dose locations are shown below but the
          worst two-hour dose is only meaningful for the EAB
          dose location.  Please disregard the two-hour worst
          doses for the other dose locations
#################################################################
```

**Exclusion Area Boundary**

| Time (hr) | Whole Body (rem) | Thyroid (rem) | TEDE (rem) |
|---|---|---|---|
| 0.0 | 8.4940E-03 | 5.7686E-01 | 2.6343E-02 |

Low Population Zone

| Time (hr) | Whole Body (rem) | Thyroid (rem) | TEDE (rem) |
|---|---|---|---|
| 0.0 | 1.4865E-03 | 1.0095E-01 | 4.6101E-03 |

Control Room

| Time (hr) | Whole Body (rem) | Thyroid (rem) | TEDE (rem) |
|---|---|---|---|
| 0.0 | 1.2383E-04 | 1.1072E-01 | 3.5486E-03 |

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**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 1 | System Nos. | Sheet 373 of 1000 |
|---|---|---|---|---|

**Appendix K**

**MicroShield Input File**

# TMI.ms5

**CR Filter Shine Dose**

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**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 1 | System Nos. | Sheet 374 of 1000 |
|---|---|---|---|---|

```
MicroShield v5.03
Licensed To: PECO Energy
With Serial: 5.03-00095
TMI1 Case 1
The execution time was: 00:05:18
This case was run on Wednesday, May 30, 2001 at 1:54:01 PM
CR Direct Dose From Charcoal/HEPA Filter
 1
 13  GEOMETRY
670.56 X
30.48 Y
243.84 Z
76.2 Length
0 Radius
487.68 Width
60.96 Height
0 Angle
SHIELD ARRAY:
81.28 Shield No:  1 thickness
0 Shield No:  2 thickness
0 Shield No:  3 thickness
0 Shield No:  4 thickness
0 Shield No:  5 thickness
0 Shield No:  6 thickness
0 Shield No:  7 thickness
0 Shield No:  8 thickness
0 Shield No:  9 thickness
0 Shield No:  10 thickness
513.08 Air gap thickness
0 Wall Cladding thickness
0 Top Cladding thickness
0 Transition Shield #
Sensitivity variable index (or 0):
0 SenseVar
1 # saved results or 1
# sensitivity cycles or 1 if none:
0 CURIESCONSTANT
1 NCycles
12 Number of Materials
15 shields for material #1:
0
0
0
0
0
0
0
0
0
0
0
0.00122
0
0
0
15 shields for material #2:
0
```

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**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 1 | System Nos. | Sheet 375 of 1000 |
|---|---|---|---|---|

```
0
0
0
0
0
0
0
0
0
0
0
0
0
15 shields for material #3:
0.45
0
0
0
0
0
0
0
0
0
0
0
0
0
15 shields for material #4:
0
2.24
0
0
0
0
0
0
0
0
0
0
0
0
0
15 shields for material #5:
0
0
0
0
0
0
0
0
0
0
0
```

```
0
0
0
0
0
15 shields for material #6:
0
0
0
0
0
0
0
0
0
0
0
0
0
0
15 shields for material #7:
0
0
0
0
0
0
0
0
0
0
0
0
0
0
15 shields for material #8:
0
0
0
0
0
0
0
0
0
0
0
0
0
0
15 shields for material #9:
0
0
0
```

AmerGen

**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 1 | System Nos. | Sheet 377 of 1000 |
|---|---|---|---|---|

```
0
0
0
0
0
0
0
0
0
0
0
15 shields for material #10:
0
0
0
0
0
0
0
0
0
0
0
0
0
15 shields for material #11:
0
0
0
0
0
0
0
0
0
0
0
0
0
0
15 shields for material #12:
0
0
0
0
0
0
0
0
0
0
0
0
```

```
0
0
0
BUILDUP MATERIAL INFORMATION
2, Case Buildup Material
1, GROUPING METHOD
25, DEFAULT GROUPS
0.015, LOWER MEV CUTOFF
0, PHOTONS BELOW
58, NUMBER OF ISOTOPES
Source input in curies: (or concentration) for infinite geometries.
13 0.000000156 ofAm-241
40 0 ofBa-137m
41 0.0184 ofBa-139
42 0.0994 ofBa-140
81 0.00229 ofCe-141
82 0.0021 ofCe-143
83 0.00185 ofCe-144
93 0.0000367 ofCm-242
95 0.00000297 ofCm-244
104 0.0000631 ofCo-58
106 0.0000483 ofCo-60
115 0.181 ofCs-134
118 0.0496 ofCs-136
119 0.121 ofCs-137
175 2.9 ofI-131
176 1.42 ofI-132
177 5.18 ofI-133
178 0.659 ofI-134
179 3.61 ofI-135
209 0.00095 ofLa-140
210 0.000498 ofLa-141
211 0.000237 ofLa-142
224 0.0124 ofMo-99
238 0.000938 ofNb-95
243 0.000372 ofNd-147
255 0.0242 ofNp-239
302 0.00089 ofPr-143
303 0 ofPr-144
313 0.0000073 ofPu-238
314 0.000000568 ofPu-239
315 0.000000613 ofPu-240
316 0.000254 ofPu-241
332 0.00172 ofRb-86
346 0 ofRh-103m
347 0.006 ofRh-105
349 0 ofRh-106
355 0.0103 ofRu-103
356 0.00386 ofRu-105
357 0.00389 ofRu-106
365 0.0137 ofSb-127
366 0.0236 ofSb-129
391 0.0591 ofSr-89
392 0.00639 ofSr-90
393 0.0609 ofSr-91
394 0.0338 ofSr-92
408 0.0073 ofTc-99m
```

```
415 0.0106 ofTe-127
416 0.00188 ofTe-127m
417 0.00551 ofTe-129
418 0.00627 ofTe-129m
420 0.0176 ofTe-131m
421 0.185 ofTe-132
480 0.0000631 ofY-90
482 0.000724 ofY-91
484 0.000416 ofY-92
485 0.000727 ofY-93
496 0.000932 ofZr-95
497 0.000812 ofZr-97
25 energies:
0.015
0.02
0.03
0.04
0.05
0.06
0.08
0.1
0.15
0.2
0.3
0.4
0.5
0.6
0.8
1
1.5
2
3
4
5
6
8
10
15
25 activities:
53367.1294499999
39206362.6454498
12694247571.7785
167595170.14359
899835748.019808
255353616.588104
2954494277.87039
975932384.790042
2258362173.49999
10340251840.4608
16161867736.1514
99680684101.3049
197940784570.58
95565541463.0229
129980098157.636
88263161624.7093
90032847906.7821
18423591266.4853
```

```
3654758.61999999
230186.249999999
0
0
0
0
0
End of source inputs.
50 Numerical Quadrature Order - Level  1
50 Numerical Quadrature Order - Level  2
50 Numerical Quadrature Order - Level  3
1, 1 = RESULTS EXIST  0 = NO
25 Results - reference (or single) case:
0
1.0977109625124E-279
2.74679349340039E-89
1.56972403062742E-45
1.42999864094608E-28
6.87304224914576E-22
7.76389411038723E-15
6.74557082738686E-13
4.87930715293699E-10
3.77014901332441E-08
1.78458445774715E-06
1.02087316049611E-04
1.04995887993857E-03
1.83540271950188E-03
1.72403538047055E-02
4.80728256704053E-02
0.507555050956465
0.431103099149875
4.47814809614727E-04
7.19477082432926E-05
0
0
0
0
0
9.87428220458735E-29
8.561071561189E-26
4.08629469802297E-23
1.07298103151481E-24
1.50666961780126E-23
2.89437968179945E-20
5.696705438709E-13
1.00838882934237E-10
1.3592926699897E-07
1.14942359266783E-05
3.85821233782545E-04
1.43434550609389E-02
0.101292470199398
0.128346184814294
0.726485143422911
1.38126739945144
7.67454303279795
4.44027592469633
2.87999295962079E-03
```

```
3.47283513406317E-04
0
0
0
0
0
End of MicroShield 5 Case File: C:\MS5\TMI1.MS5
```

**Appendix L**

**MicroShield Output**

# (TMI.ms5)

**CR Filter Shine Dose**

**AmerGen**

**CALCULATION SHEET**
**(Ref. EP-006T)**

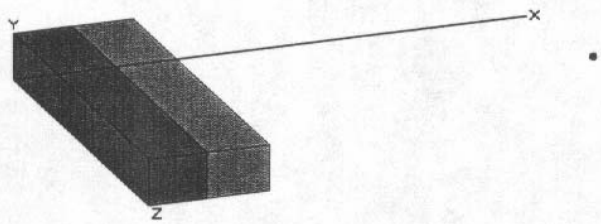
| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 1 | System Nos. | Sheet 382 of 1000 |
|---|---|---|---|---|

**MicroShield v5.03 (5.03-00095)**
**PECO Energy**

Page : 1
DOS File : TMI1.MS5
Run Date: May 30, 2001
Run Time: 1:54:01 PM
Duration : 00:05:18

File Ref: _____
Date: _____
By: _____
Checked: _____

**Case Title: TMI1 Case 1**
**Description: CR Direct Dose From Charcoal/HEPA Filter**
**Geometry: 13 - Rectangular Volume**




**Source Dimensions**

| | | |
|---|---|---|
| Length | 76.2 cm | 2 ft 6.0 in |
| Width | 487.68 cm | 16 ft |
| Height | 60.96 cm | 2 ft |

**Dose Points**

| | X | Y | Z |
|---|---|---|---|
| # 1 | 670.56 cm | 30.48 cm | 243.84 cm |
| | 22 ft | 1 ft | 8 ft |

**Shields**

| Shield Name | Dimension | Material | Density |
|---|---|---|---|
| Source | 2.27e+06 cm³ | Carbon | 0.45 |
| Shield 1 | 81.28 cm | Concrete | 2.24 |
| Air Gap | | Air | 0.00122 |

**Source Input**
**Grouping Method : Standard Indices**
**Number of Groups : 25**
**Lower Energy Cutoff : 0.015**
**Photons < 0.015 : Excluded**
**Library : Grove**

| Nuclide | curies | becquerels | µCi/cm³ | Bq/cm³ |
|---|---|---|---|---|
| Am-241 | 1.5600e-007 | 5.7720e+003 | 6.8864e-008 | 2.5480e-003 |
| Ba-137m | | | | |
| Ba-139 | 1.8400e-002 | 6.8080e+008 | 8.1224e-003 | 3.0053e+002 |
| Ba-140 | 9.9400e-002 | 3.6778e+009 | 4.3878e-002 | 1.6235e+003 |
| Ce-141 | 2.2900e-003 | 8.4730e+007 | 1.0109e-003 | 3.7403e+001 |
| Ce-143 | 2.1000e-003 | 7.7700e+007 | 9.2701e-004 | 3.4299e+001 |
| Ce-144 | 1.8500e-003 | 6.8450e+007 | 8.1665e-004 | 3.0216e+001 |
| Cm-242 | 3.6700e-005 | 1.3579e+006 | 1.6201e-005 | 5.9942e-001 |
| Cm-244 | 2.9700e-006 | 1.0989e+005 | 1.3111e-006 | 4.8509e-002 |
| Co-58 | 6.3100e-005 | 2.3347e+006 | 2.7854e-005 | 1.0306e+000 |
| Co-60 | 4.8300e-005 | 1.7871e+006 | 2.1321e-005 | 7.8889e-001 |
| Cs-134 | 1.8100e-001 | 6.6970e+009 | 7.9899e-002 | 2.9563e+003 |
| Cs-136 | 4.9600e-002 | 1.8352e+009 | 2.1895e-002 | 8.1012e+002 |
| Cs-137 | 1.2100e-001 | 4.4770e+009 | 5.3413e-002 | 1.9763e+003 |
| I-131 | 2.9000e+000 | 1.0730e+011 | 1.2802e+000 | 4.7366e+004 |
| I-132 | 1.4200e+000 | 5.2540e+010 | 6.2684e-001 | 2.3193e+004 |
| I-133 | 5.1800e+000 | 1.9166e+011 | 2.2866e+000 | 8.4605e+004 |

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**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 1 | System Nos. | Sheet 383 of 1000 |
|---|---|---|---|---|

Page : 2
DOS File : TMI1.MS5
Run Date: May 30, 2001
Run Time: 1:54:01 PM
Duration : 00:05:18

| Nuclide | curies | becquerels | µCi/cm³ | Bq/cm³ |
|---|---|---|---|---|
| I-134 | 6.5900e-001 | 2.4383e+010 | 2.9090e-001 | 1.0763e+004 |
| I-135 | 3.6100e+000 | 1.3357e+011 | 1.5936e+000 | 5.8962e+004 |
| La-140 | 9.5000e-004 | 3.5150e+007 | 4.1936e-004 | 1.5516e+001 |
| La-141 | 4.9800e-004 | 1.8426e+007 | 2.1983e-004 | 8.1339e+000 |
| La-142 | 2.3700e-004 | 8.7690e+006 | 1.0462e-004 | 3.8709e+000 |
| Mo-99 | 1.2400e-002 | 4.5880e+008 | 5.4738e-003 | 2.0253e+002 |
| Nb-95 | 9.3800e-004 | 3.4706e+007 | 4.1406e-004 | 1.5320e+001 |
| Nd-147 | 3.7200e-004 | 1.3764e+007 | 1.6421e-004 | 6.0759e+000 |
| Np-239 | 2.4200e-002 | 8.9540e+008 | 1.0683e-002 | 3.9526e+002 |
| Pr-143 | 8.9000e-004 | 3.2930e+007 | 3.9288e-004 | 1.4536e+001 |
| Pr-144 | | | | |
| Pu-238 | 7.3000e-006 | 2.7010e+005 | 3.2225e-006 | 1.1923e-001 |
| Pu-239 | 5.6800e-007 | 2.1016e+004 | 2.5073e-007 | 9.2772e-003 |
| Pu-240 | 6.1300e-007 | 2.2681e+004 | 2.7060e-007 | 1.0012e-002 |
| Pu-241 | 2.5400e-004 | 9.3980e+006 | 1.1212e-004 | 4.1486e+000 |
| Rb-86 | 1.7200e-003 | 6.3640e+007 | 7.5927e-004 | 2.8093e+001 |
| Rh-103m | | | | |
| Rh-105 | 6.0000e-003 | 2.2200e+008 | 2.6486e-003 | 9.7998e+001 |
| Rh-106 | | | | |
| Ru-103 | 1.0300e-002 | 3.8110e+008 | 4.5468e-003 | 1.6823e+002 |
| Ru-105 | 3.8600e-003 | 1.4282e+008 | 1.7039e-003 | 6.3046e+001 |
| Ru-106 | 3.8900e-003 | 1.4393e+008 | 1.7172e-003 | 6.3535e+001 |
| Sb-127 | 1.3700e-002 | 5.0690e+008 | 6.0476e-003 | 2.2376e+002 |
| Sb-129 | 2.3600e-002 | 8.7320e+008 | 1.0418e-002 | 3.8546e+002 |
| Sr-89 | 5.9100e-002 | 2.1867e+009 | 2.6089e-002 | 9.6528e+002 |
| Sr-90 | 6.3900e-003 | 2.3643e+008 | 2.8208e-003 | 1.0437e+002 |
| Sr-91 | 6.0900e-002 | 2.2533e+009 | 2.6883e-002 | 9.9468e+002 |
| Sr-92 | 3.3800e-002 | 1.2506e+009 | 1.4920e-002 | 5.5206e+002 |
| Tc-99m | 7.3000e-003 | 2.7010e+008 | 3.2225e-003 | 1.1923e+002 |
| Te-127 | 1.0600e-002 | 3.9220e+008 | 4.6792e-003 | 1.7313e+002 |
| Te-127m | 1.8800e-003 | 6.9560e+007 | 8.2989e-004 | 3.0706e+001 |
| Te-129 | 5.5100e-003 | 2.0387e+008 | 2.4323e-003 | 8.9995e+001 |
| Te-129m | 6.2700e-003 | 2.3199e+008 | 2.7678e-003 | 1.0241e+002 |
| Te-131m | 1.7600e-002 | 6.5120e+008 | 7.7692e-003 | 2.8746e+002 |
| Te-132 | 1.8500e-001 | 6.8450e+009 | 8.1665e-002 | 3.0216e+003 |
| Y-90 | 6.3100e-005 | 2.3347e+006 | 2.7854e-005 | 1.0306e+000 |
| Y-91 | 7.2400e-004 | 2.6788e+007 | 3.1960e-004 | 1.1825e+001 |
| Y-92 | 4.1600e-004 | 1.5392e+007 | 1.8364e-004 | 6.7945e+000 |
| Y-93 | 7.2700e-004 | 2.6899e+007 | 3.2092e-004 | 1.1874e+001 |
| Zr-95 | 9.3200e-004 | 3.4484e+007 | 4.1142e-004 | 1.5222e+001 |
| Zr-97 | 8.1200e-004 | 3.0044e+007 | 3.5844e-004 | 1.3262e+001 |

**Buildup**
**The material reference is : Shield 1**

**Integration Parameters**
X Direction 50

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**CALCULATION SHEET**
**(Ref. EP-006T)**

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|---|---|---|---|---|

Page : 3
DOS File : TMI1.MS5
Run Date: May 30, 2001
Run Time: 1:54:01 PM
Duration : 00:05:18

Y Direction 50
Z Direction 50

**Results**

| Energy MeV | Activity photons/sec | Fluence Rate MeV/cm²/sec No Buildup | Fluence Rate MeV/cm²/sec With Buildup | Exposure Rate mR/hr No Buildup | Exposure Rate mR/hr With Buildup |
|---|---|---|---|---|---|
| 0.015 | 5.337e+04 | 0.000e+00 | 1.481e-30 | 0.000e+00 | 1.270e-31 |
| 0.02 | 3.921e+07 | 2.195e-281 | 1.712e-27 | 7.605e-283 | 5.931e-29 |
| 0.03 | 1.269e+10 | 8.240e-91 | 1.226e-24 | 8.167e-93 | 1.215e-26 |
| 0.04 | 1.676e+08 | 6.279e-47 | 4.292e-26 | 2.777e-49 | 1.898e-28 |
| 0.05 | 8.998e+08 | 7.150e-30 | 7.533e-25 | 1.905e-32 | 2.007e-27 |
| 0.06 | 2.554e+08 | 4.124e-23 | 1.737e-21 | 8.191e-26 | 3.449e-24 |
| 0.08 | 2.954e+09 | 6.211e-16 | 4.557e-14 | 9.829e-19 | 7.212e-17 |
| 0.1 | 9.759e+08 | 6.746e-14 | 1.008e-11 | 1.032e-16 | 1.543e-14 |
| 0.15 | 2.258e+09 | 7.319e-11 | 2.039e-08 | 1.205e-13 | 3.358e-11 |
| 0.2 | 1.034e+10 | 7.540e-09 | 2.299e-06 | 1.331e-11 | 4.057e-09 |
| 0.3 | 1.616e+10 | 5.354e-07 | 1.157e-04 | 1.016e-09 | 2.196e-07 |
| 0.4 | 9.968e+10 | 4.083e-05 | 5.737e-03 | 7.956e-08 | 1.118e-05 |
| 0.5 | 1.979e+11 | 5.250e-04 | 5.065e-02 | 1.030e-06 | 9.941e-05 |
| 0.6 | 9.557e+10 | 1.101e-03 | 7.701e-02 | 2.150e-06 | 1.503e-04 |
| 0.8 | 1.300e+11 | 1.379e-02 | 5.812e-01 | 2.623e-05 | 1.105e-03 |
| 1.0 | 8.826e+10 | 4.807e-02 | 1.381e+00 | 8.861e-05 | 2.546e-03 |
| 1.5 | 9.003e+10 | 7.613e-01 | 1.151e+01 | 1.281e-03 | 1.937e-02 |
| 2.0 | 1.842e+10 | 8.622e-01 | 8.881e+00 | 1.333e-03 | 1.373e-02 |
| 3.0 | 3.655e+06 | 1.343e-03 | 8.640e-03 | 1.823e-06 | 1.172e-05 |
| 4.0 | 2.302e+05 | 2.878e-04 | 1.389e-03 | 3.560e-07 | 1.719e-06 |
| TOTALS: | 7.666e+11 | 1.689e+00 | 2.250e+01 | 2.735e-03 | 3.703e-02 |

**Appendix M**

**RADTRAD Output File**

# Containment_Leakage – 2 pumps.o0

**Containment Leakage Pathway (Additional Case)**

TMI Containment Leakage Pathway AST Analysis:

CR Unfiltered Inleakage = 1,000 cfm (t=30 minutes to t=720 hours),
CR Initiation Time = 30 min (t=0 to t=30 min),
Two Spray Pumps For 28.19 min at 800 gpm each (t=75 seconds to t= 29.44 min),
Two Spray Pump For t=29.44 min to t=4.0 hours @ 800 gpm each

NOTE: This case is run to verify that one spray pump operation in the sump recirc mode is a conservative assumption. As can be seen in the output, this assumption has been verified.

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**CALCULATION SHEET**
**(Ref. EP-006T)**

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|---|---|---|---|---|

```
#######################################################################
          RADTRAD Version 3.02 run on  6/12/2001  at  8:51:44
#######################################################################

#######################################################################
                     File information
#######################################################################

Plant file name           = D:\TMI RADTRAD\Containment_Leakage - 2 pumps.psf
Inventory file name       = d:\tmi radtrad\defaults\tmi_def.nif
Scenario file name        = D:\TMI RADTRAD\Containment_Leakage - 2 pumps.psf
Release file name         = d:\tmi radtrad\defaults\pwr_dba.rft
Dose conversion file name = d:\tmi radtrad\defaults\fgr11&12.inp

    #####    ####   #####    #  #     #  #####   #    #  #####
    #    #  #       #        #  ##    #  #    #  #    #    #
    #    #  #       #        #  # #   #  #    #  #    #    #
    #####    ####   ####     #  #  #  #  #####   #    #    #
    #            #  #        #  #   # #  #       #    #    #
    #            #  #        #  #    ##  #       #    #    #
    #        ####   #        #  #     #  #        ####     #


Radtrad 3.02 1/5/2000
All Spray Floww at 800 gpm - 28.19 min BWST Depletion
Nuclide Inventory File:
d:\tmi radtrad\defaults\tmi_def.nif
Plant Power Level:
 2.6190E+03
Compartments:
  4
Compartment 1:
Sprayed Region
  3
 1.2310E+06
  1
  0
  0
  0
  0
Compartment 2:
Unsprayed Region
  3
 9.2880E+05
  0
  0
  0
  1
  0
Compartment 3:
Environment
  2
 0.0000E+00
  0
  0
  0
```

```
  0
  0
Compartment 4:
Control Room
  1
 2.5000E+05
  0
  0
  1
  0
  0
Pathways:
  7
Pathway 1:
Sprayed to Unsprayed
  1
  2
  2
Pathway 2:
Unsprayed to Sprayed
  2
  1
  2
Pathway 3:
Sprayed to Environment
  1
  3
  4
Pathway 4:
Unsprayed to Environment
  2
  3
  4
Pathway 5:
CR Filtered Air Intake
  3
  4
  2
Pathway 6:
CR  Unfiltered Inleakage
  3
  4
  2
Pathway 7:
CR Exhaust to Environment
  4
  3
  2
End of Plant Model File
Scenario Description Name:

Plant Model Filename:
ACCEPT\TEST24.PMF
Source Term:
  2
  1   5.7000E-01
  2   4.3000E-01
```

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**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 1 | System Nos. | Sheet 388 of 1000 |
|---|---|---|---|---|

```
d:\tmi radtrad\defaults\fgr11&12.inp
d:\tmi radtrad\defaults\pwr_dba.rft
  0.0000E+00
  0
  9.5000E-01   4.8500E-02   1.5000E-03   1.0000E+00
Overlying Pool:
  0
  0.0000E+00
  0
  0
  0
  0
Compartments:
  4
Compartment 1:
  0
  1
  1
  0.0000E+00
  6
  0.0000E+00   0.0000E+00
  2.0800E-02   3.8800E+00
  4.9070E-01   3.8800E+00
  2.3600E+00   3.8800E+00
  2.8082E+00   3.8800E-01
  4.0000E+00   0.0000E+00
  1
  0.0000E+00
  6
  0.0000E+00   0.0000E+00
  2.0800E-02   9.4600E+00
  4.9070E-01   9.4600E+00
  2.3600E+00   0.0000E+00
  2.8082E+00   0.0000E+00
  4.0000E+00   0.0000E+00
  1
  0.0000E+00
  0
  0
  0
  0
  0
Compartment 2:
  0
  1
  0
  0
  0
  0
  0
  3
  1
  1.0000E+01
  0
Compartment 3:
  1
  1
```

```
  0
  0
  0
  0
  0
  0
  0
Compartment 4:
  1
  1
  0
  0
  0
  0
  1
  2.8000E+04
  3
  0.0000E+00   0.0000E+00   0.0000E+00   0.0000E+00
  5.0000E-01   9.9000E+01   9.0000E+01   9.0000E+01
  7.2000E+02   0.0000E+00   0.0000E+00   0.0000E+00
  0
  0
Pathways:
  7
Pathway 1:
  0
  0
  0
  0
  0
  1
  3
  0.0000E+00   0.0000E+00   0.0000E+00   0.0000E+00   0.0000E+00
  9.7000E-03   2.5000E+04   0.0000E+00   0.0000E+00   0.0000E+00
  7.2000E+02   2.5000E+04   0.0000E+00   0.0000E+00   0.0000E+00
  0
  0
  0
  0
  0
  0
Pathway 2:
  0
  0
  0
  0
  0
  1
  3
  0.0000E+00   0.0000E+00   0.0000E+00   0.0000E+00   0.0000E+00
  9.7000E-03   2.5000E+04   0.0000E+00   0.0000E+00   0.0000E+00
  7.2000E+02   2.5000E+04   0.0000E+00   0.0000E+00   0.0000E+00
  0
  0
  0
  0
  0
```

AmerGen

**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 1 | System Nos. | Sheet 390 of 1000 |
|---|---|---|---|---|

```
  0
Pathway 3:
  0
  0
  0
  0
  0
  0
  0
  0
  0
  0
  1
  3
  0.0000E+00   1.0000E-01
  2.4000E+01   5.0000E-02
  7.2000E+02   0.0000E+00
  0
Pathway 4:
  0
  0
  0
  0
  0
  0
  0
  0
  0
  0
  1
  3
  0.0000E+00   1.0000E-01
  2.4000E+01   5.0000E-02
  7.2000E+02   0.0000E+00
  0
Pathway 5:
  0
  0
  0
  0
  0
  1
  3
  0.0000E+00   4.0000E+03   0.0000E+00   0.0000E+00   0.0000E+00
  5.0000E-01   8.0000E+03   9.9000E+01   9.0000E+01   9.0000E+01
  7.2000E+02   8.0000E+03   9.9000E+01   9.0000E+01   9.0000E+01
  0
  0
  0
  0
  0
  0
Pathway 6:
  0
  0
  0
  0
```

```
  0
  1
  3
  0.0000E+00   0.0000E+00   0.0000E+00   0.0000E+00   0.0000E+00
  5.0000E-01   1.0000E+03   0.0000E+00   0.0000E+00   0.0000E+00
  7.2000E+02   1.0000E+03   0.0000E+00   0.0000E+00   0.0000E+00
  0
  0
  0
  0
  0
  0
Pathway 7:
  0
  0
  0
  0
  0
  1
  3
  0.0000E+00   4.0000E+03   0.0000E+00   0.0000E+00   0.0000E+00
  5.0000E-01   9.0000E+03   0.0000E+00   0.0000E+00   0.0000E+00
  7.2000E+02   9.0000E+03   0.0000E+00   0.0000E+00   0.0000E+00
  0
  0
  0
  0
  0
  0
Dose Locations:
  3
Location 1:
Exclusion Area Boundary
  3
  1
  2
  0.0000E+00   8.0000E-04
  7.2000E+02   0.0000E+00
  1
  2
  0.0000E+00   3.5000E-04
  7.2000E+02   0.0000E+00
  0
Location 2:
Low Population Zone
  3
  1
  6
  0.0000E+00   1.4000E-04
  2.0000E+00   6.0000E-05
  8.0000E+00   3.9000E-05
  2.4000E+01   1.6000E-05
  9.6000E+01   4.0000E-06
  7.2000E+02   0.0000E+00
  1
  4
  0.0000E+00   3.5000E-04
```

```
  8.0000E+00   1.8000E-04
  2.4000E+01   2.3000E-04
  7.2000E+02   0.0000E+00
  0
Location 3:
Control Room
  4
  0
  1
  2
  0.0000E+00   3.5000E-04
  7.2000E+02   0.0000E+00
  1
  4
  0.0000E+00   1.0000E+00
  2.4000E+01   6.0000E-01
  9.6000E+01   4.0000E-01
  7.2000E+02   0.0000E+00
Effective Volume Location:
  1
  6
  0.0000E+00   3.4000E-04
  2.0000E+00   2.2500E-04
  8.0000E+00   1.0200E-04
  2.4000E+01   7.1600E-05
  9.6000E+01   4.9900E-05
  7.2000E+02   0.0000E+00
Simulation Parameters:
  7
  0.0000E+00   5.0000E-02
  1.0000E+00   1.0000E-01
  2.0000E+00   1.0000E+00
  8.0000E+00   2.0000E+00
  2.4000E+01   4.0000E+00
  9.6000E+01   8.0000E+00
  7.2000E+02   0.0000E+00
Output Filename:
D:\TMI RADTRAD\Containment_Leakage - 2 pumps.o2
  1
  1
  1
  0
  0
End of Scenario File
_
_
 ######################################################################
           RADTRAD Version 3.02 run on  6/12/2001  at  8:51:44
 ######################################################################

 ######################################################################
                      Plant Description
 ######################################################################

 Number of Nuclides =  60

 Inventory Power =   1.0000E+00 MWth
```

AmerGen

**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 1 | System Nos. | Sheet 393 of 1000 |
|---|---|---|---|---|

```
Plant Power Level =   2.6190E+03 MWth

Number of compartments    =   4

Compartment information

Compartment number  1  (Source term fraction =   5.7000E-01
)
Name: Sprayed Region
Compartment volume =   1.2310E+06 (Cubic feet)
Removal devices within compartment:
     Spray(s)
Pathways into and out of compartment  1
    Pathway to compartment number   2: Sprayed to Unsprayed
    Pathway to compartment number   3: Sprayed to Environment
    Pathway from compartment number 2: Unsprayed to Sprayed

Compartment number  2  (Source term fraction =   4.3000E-01
)
Name: Unsprayed Region
Compartment volume =   9.2880E+05 (Cubic feet)
Removal devices within compartment:
     Deposition
Pathways into and out of compartment  2
    Pathway to compartment number   1: Unsprayed to Sprayed
    Pathway to compartment number   3: Unsprayed to Environment
    Pathway from compartment number 1: Sprayed to Unsprayed

Compartment number  3
Name: Environment
Pathways into and out of compartment  3
    Pathway to compartment number   4: CR Filtered Air Intake
    Pathway to compartment number   4: CR  Unfiltered Inleakage
    Pathway from compartment number 1: Sprayed to Environment
    Pathway from compartment number 2: Unsprayed to Environment
    Pathway from compartment number 4: CR Exhaust to Environment

Compartment number  4
Name: Control Room
Compartment volume =   2.5000E+05 (Cubic feet)
Removal devices within compartment:
     Filter(s)
Pathways into and out of compartment  4
    Pathway to compartment number   3: CR Exhaust to Environment
    Pathway from compartment number 3: CR Filtered Air Intake
    Pathway from compartment number 3: CR  Unfiltered Inleakage

Total number of pathways =   7


##########################################################################
           RADTRAD Version 3.02 run on  6/12/2001  at  8:51:44
##########################################################################

##########################################################################
                      Scenario Description
##########################################################################
```

AmerGen

**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 1 | System Nos. | Sheet 394 of 1000 |
|---|---|---|---|---|

```
Radioactive Decay is enabled
RELEASE_NAME = PWR, NUREG-1465, Tables 3.12 & 3.13, Jun
Release Fractions and Timings
                GAP       EARLY IN-VESSEL
             0.5000 hrs     1.3000 hrs
NOBLES       5.0000E-02     9.5000E-01
IODINE       5.0000E-02     3.5000E-01
CESIUM       5.0000E-02     2.5000E-01
TELLURIUM    0.0000E+00     5.0000E-02
STRONTIUM    0.0000E+00     2.0000E-02
BARIUM       0.0000E+00     2.0000E-02
RUTHENIUM    0.0000E+00     2.5000E-03
CERIUM       0.0000E+00     5.0000E-04
LANTHANUM    0.0000E+00     2.0000E-04

Iodine fractions
     Aerosol     =   9.5000E-01
     Elemental   =   4.8500E-02
     Organic     =   1.5000E-03

COMPARTMENT DATA

Compartment number   1: Sprayed Region

     Sprays:  Aerosal Removal Data
      Time (hr)          Removal Coef. (hr^-1)
       0.0000E+00          0.0000E+00
       2.0800E-02          3.8800E+00
       4.9070E-01          3.8800E+00
       2.3600E+00          3.8800E+00
       2.8082E+00          3.8800E-01
       4.0000E+00          0.0000E+00

     Sprays:  Elemental Removal Data
      Time (hr)          Removal Coef. (hr^-1)
       0.0000E+00          0.0000E+00
       2.0800E-02          9.4600E+00
       4.9070E-01          9.4600E+00
       2.3600E+00          0.0000E+00
       2.8082E+00          0.0000E+00
       4.0000E+00          0.0000E+00

Compartment number   2: Unsprayed Region
Natural Deposition (Powers' model):  Aerosol data
      Reactor type:   1
      Percentile =  10 (%)

Compartment number   3: Environment

Compartment number   4: Control Room

     Compartment Filter Data

      Time (hr)      Flow Rate          Filter Efficiencies (%)
                       (cfm)        Aerosol     Elemental    Organic
       0.0000E+00    2.8000E+04   0.0000E+00   0.0000E+00   0.0000E+00
```

```
       5.0000E-01    2.8000E+04   9.9000E+01   9.0000E+01   9.0000E+01
       7.2000E+02    2.8000E+04   0.0000E+00   0.0000E+00   0.0000E+00

PATHWAY DATA

Pathway number  1: Sprayed to Unsprayed

     Pathway Filter: Removal Data

       Time (hr)      Flow Rate          Filter Efficiencies (%)
                       (cfm)        Aerosol     Elemental    Organic
       0.0000E+00    0.0000E+00   0.0000E+00   0.0000E+00   0.0000E+00
       9.7000E-03    2.5000E+04   0.0000E+00   0.0000E+00   0.0000E+00
       7.2000E+02    2.5000E+04   0.0000E+00   0.0000E+00   0.0000E+00

Pathway number  2: Unsprayed to Sprayed

     Pathway Filter: Removal Data

       Time (hr)      Flow Rate          Filter Efficiencies (%)
                       (cfm)        Aerosol     Elemental    Organic
       0.0000E+00    0.0000E+00   0.0000E+00   0.0000E+00   0.0000E+00
       9.7000E-03    2.5000E+04   0.0000E+00   0.0000E+00   0.0000E+00
       7.2000E+02    2.5000E+04   0.0000E+00   0.0000E+00   0.0000E+00

Pathway number  3: Sprayed to Environment

     Convection Data
      Time (hr)          Flow Rate (% / day)
       0.0000E+00             1.0000E-01
       2.4000E+01             5.0000E-02
       7.2000E+02             0.0000E+00

Pathway number  4: Unsprayed to Environment

     Convection Data
      Time (hr)          Flow Rate (% / day)
       0.0000E+00             1.0000E-01
       2.4000E+01             5.0000E-02
       7.2000E+02             0.0000E+00

Pathway number  5: CR Filtered Air Intake

     Pathway Filter: Removal Data

       Time (hr)      Flow Rate          Filter Efficiencies (%)
                       (cfm)        Aerosol     Elemental    Organic
       0.0000E+00    4.0000E+03   0.0000E+00   0.0000E+00   0.0000E+00
       5.0000E-01    8.0000E+03   9.9000E+01   9.0000E+01   9.0000E+01
       7.2000E+02    8.0000E+03   9.9000E+01   9.0000E+01   9.0000E+01

Pathway number  6: CR  Unfiltered Inleakage

     Pathway Filter: Removal Data

       Time (hr)      Flow Rate          Filter Efficiencies (%)
                       (cfm)        Aerosol     Elemental    Organic
```

```
      0.0000E+00    0.0000E+00   0.0000E+00   0.0000E+00   0.0000E+00
      5.0000E-01    1.0000E+03   0.0000E+00   0.0000E+00   0.0000E+00
      7.2000E+02    1.0000E+03   0.0000E+00   0.0000E+00   0.0000E+00

Pathway number  7: CR Exhaust to Environment

     Pathway Filter: Removal Data

      Time (hr)      Flow Rate          Filter Efficiencies (%)
                      (cfm)        Aerosol     Elemental    Organic
      0.0000E+00    4.0000E+03   0.0000E+00   0.0000E+00   0.0000E+00
      5.0000E-01    9.0000E+03   0.0000E+00   0.0000E+00   0.0000E+00
      7.2000E+02    9.0000E+03   0.0000E+00   0.0000E+00   0.0000E+00

LOCATION DATA
     Location Exclusion Area Boundary     is in compartment   3

     Location X/Q Data
      Time (hr)         X/Q (s * m^-3)
       0.0000E+00          8.0000E-04
       7.2000E+02          0.0000E+00

     Location Breathing Rate Data
      Time (hr)         Breathing Rate (m^3 * sec^-1)
       0.0000E+00                3.5000E-04
       7.2000E+02                0.0000E+00
     Location Low Population Zone     is in compartment   3

     Location X/Q Data
      Time (hr)         X/Q (s * m^-3)
       0.0000E+00          1.4000E-04
       2.0000E+00          6.0000E-05
       8.0000E+00          3.9000E-05
       2.4000E+01          1.6000E-05
       9.6000E+01          4.0000E-06
       7.2000E+02          0.0000E+00

     Location Breathing Rate Data
      Time (hr)         Breathing Rate (m^3 * sec^-1)
       0.0000E+00                3.5000E-04
       8.0000E+00                1.8000E-04
       2.4000E+01                2.3000E-04
       7.2000E+02                0.0000E+00
     Location Control Room     is in compartment   4

     Location X/Q Data
      Time (hr)         X/Q (s * m^-3)
       0.0000E+00          3.4000E-04
       2.0000E+00          2.2500E-04
       8.0000E+00          1.0200E-04
       2.4000E+01          7.1600E-05
       9.6000E+01          4.9900E-05
       7.2000E+02          0.0000E+00

     Location Breathing Rate Data
      Time (hr)         Breathing Rate (m^3 * sec^-1)
       0.0000E+00                3.5000E-04
```

```
        7.2000E+02                0.0000E+00

      Location Occupancy Factor Data
       Time (hr)         Occupancy Factor
        0.0000E+00           1.0000E+00
        2.4000E+01           6.0000E-01
        9.6000E+01           4.0000E-01
        7.2000E+02           0.0000E+00

 USER SPECIFIED TIME STEP DATA - SUPPLEMENTAL TIME STEPS
      Time            Time step
       0.0000E+00       5.0000E-02
       1.0000E+00       1.0000E-01
       2.0000E+00       1.0000E+00
       8.0000E+00       2.0000E+00
       2.4000E+01       4.0000E+00
       9.6000E+01       8.0000E+00
       7.2000E+02       0.0000E+00

 ######################################################################
           RADTRAD Version 3.02 run on  6/12/2001  at  8:51:44
 ######################################################################

      ####   #    #  #####  #####   #    #  #####
     #    #  #    #    #    #    #  #    #    #
     #    #  #    #    #    #    #  #    #    #
     #    #  #    #    #    #####   #    #    #
     #    #  #    #    #    #       #    #    #
     #    #  #    #    #    #       #    #    #
      ####    ####     #    #        ####     #

 ######################################################################
             Dose, Detailed model and Detailed Inventory Output
 ######################################################################

 Exclusion Area Boundary Doses:

 Time (h) =   0.0097    Whole Body   Thyroid       TEDE
 Delta dose (rem)        3.6011E-05  6.0580E-03  2.9131E-04
 Accumulated dose (rem)  3.6011E-05  6.0580E-03  2.9131E-04

 Low Population Zone Doses:

 Time (h) =   0.0097    Whole Body   Thyroid       TEDE
 Delta dose (rem)        6.3019E-06  1.0601E-03  5.0978E-05
 Accumulated dose (rem)  6.3019E-06  1.0601E-03  5.0978E-05

 Control Room Doses:

 Time (h) =   0.0097    Whole Body   Thyroid       TEDE
 Delta dose (rem)        3.6313E-09  1.0734E-05  4.5599E-07
 Accumulated dose (rem)  3.6313E-09  1.0734E-05  4.5599E-07

 Environment Integral Nuclide Release:

 Time (h) =   0.0097       Ci           kg         Atoms         Bq
 Kr-85                  2.0489E-04  5.2223E-10  3.6999E+15  7.5809E+06
```

| | | | | |
|---|---|---|---|---|
| Kr-85m | 4.5560E-03 | 5.5362E-13 | 3.9223E+12 | 1.6857E+08 |
| Kr-87 | 8.9583E-03 | 3.1626E-13 | 2.1892E+12 | 3.3146E+08 |
| Kr-88 | 1.2674E-02 | 1.0107E-12 | 6.9167E+12 | 4.6892E+08 |
| Rb-86 | 3.2188E-05 | 3.9559E-13 | 2.7701E+12 | 1.1910E+06 |
| I-131 | 1.4010E-02 | 1.1300E-10 | 5.1948E+14 | 5.1836E+08 |
| I-132 | 2.0184E-02 | 1.9554E-12 | 8.9208E+12 | 7.4679E+08 |
| I-133 | 2.9293E-02 | 2.5859E-11 | 1.1709E+14 | 1.0839E+09 |
| I-134 | 3.2309E-02 | 1.2111E-12 | 5.4430E+12 | 1.1954E+09 |
| I-135 | 2.7297E-02 | 7.7728E-12 | 3.4673E+13 | 1.0100E+09 |
| Xe-133 | 2.9302E-02 | 1.5654E-10 | 7.0881E+14 | 1.0842E+09 |
| Xe-135 | 1.0788E-02 | 4.2243E-12 | 1.8844E+13 | 3.9915E+08 |
| Cs-134 | 3.3570E-03 | 2.5946E-09 | 1.1661E+16 | 1.2421E+08 |
| Cs-136 | 9.2817E-04 | 1.2664E-11 | 5.6077E+13 | 3.4342E+07 |
| Cs-137 | 2.2491E-03 | 2.5857E-08 | 1.1366E+17 | 8.3217E+07 |

Environment Transport Group Inventory:

| Time (h) = 0.0097 | Present Release | Release Rate/s | Total Release |
|---|---|---|---|
| Noble gases (atoms) | 4.4407E+15 | 1.2717E+14 | 4.4261E+15 |
| Elemental I (atoms) | 3.3259E+13 | 9.5244E+11 | 3.3150E+13 |
| Organic I (atoms) | 1.0286E+12 | 2.9457E+10 | 1.0253E+12 |
| Aerosols (kg) | 2.8607E-08 | 8.1922E-10 | 2.8513E-08 |

CR Filtered Air Intake Transport Group Inventory:

| Time (h) = 0.0097 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 |

CR Unfiltered Inleakage Transport Group Inventory:

| Time (h) = 0.0097 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 |

CR Exhaust to Environment Transport Group Inventory:

| Time (h) = 0.0097 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 |

Control Room Compartment Nuclide Inventory:

| Time (h) = 0.0097 | Ci | kg | Atoms | Bq |
|---|---|---|---|---|
| Kr-85 | 1.3110E-07 | 3.3416E-13 | 2.3674E+12 | 4.8507E+03 |
| Kr-85m | 2.9152E-06 | 3.5423E-16 | 2.5097E+09 | 1.0786E+05 |
| Kr-87 | 5.7317E-06 | 2.0235E-16 | 1.4007E+09 | 2.1207E+05 |

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**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 1 | System Nos. | Sheet 399 of 1000 |
|---|---|---|---|---|

| | | | | |
|---|---|---|---|---|
| Kr-88 | 8.1091E-06 | 6.4670E-16 | 4.4256E+09 | 3.0004E+05 |
| Rb-86 | 2.0596E-08 | 2.5312E-16 | 1.7725E+09 | 7.6205E+02 |
| I-131 | 8.9642E-06 | 7.2307E-14 | 3.3240E+11 | 3.3168E+05 |
| I-132 | 1.2914E-05 | 1.2511E-15 | 5.7079E+09 | 4.7783E+05 |
| I-133 | 1.8744E-05 | 1.6546E-14 | 7.4920E+10 | 6.9352E+05 |
| I-134 | 2.0672E-05 | 7.7489E-16 | 3.4825E+09 | 7.6485E+05 |
| I-135 | 1.7466E-05 | 4.9735E-15 | 2.2186E+10 | 6.4625E+05 |
| Xe-133 | 1.8749E-05 | 1.0017E-13 | 4.5354E+11 | 6.9372E+05 |
| Xe-135 | 6.9026E-06 | 2.7029E-15 | 1.2057E+10 | 2.5540E+05 |
| Cs-134 | 2.1480E-06 | 1.6602E-12 | 7.4611E+12 | 7.9476E+04 |
| Cs-136 | 5.9390E-07 | 8.1033E-15 | 3.5882E+10 | 2.1974E+04 |
| Cs-137 | 1.4391E-06 | 1.6545E-11 | 7.2728E+13 | 5.3247E+04 |

Control Room Transport Group Inventory:

| Time (h) = 0.0097 | Atmosphere | Sump | Overlying Pool |
|---|---|---|---|
| Noble gases (atoms) | 2.8414E+12 | 0.0000E+00 | 0.0000E+00 |
| Elemental I (atoms) | 2.1281E+10 | 0.0000E+00 | 0.0000E+00 |
| Organic I (atoms) | 6.5818E+08 | 0.0000E+00 | 0.0000E+00 |
| Aerosols (kg) | 1.8305E-11 | 0.0000E+00 | 0.0000E+00 |

| Time (h) = 0.0097 | Deposition Surfaces | Recirculating Filter |
|---|---|---|
| Noble gases (atoms) | 0.0000E+00 | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 | 0.0000E+00 |

CR Filtered Air Intake Transport Group Inventory:

| Time (h) = 0.0097 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 |

CR Unfiltered Inleakage Transport Group Inventory:

| Time (h) = 0.0097 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 |

CR Exhaust to Environment Transport Group Inventory:

| Time (h) = 0.0097 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 |

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**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 1 | System Nos. | Sheet 400 of 1000 |
|---|---|---|---|---|

Exclusion Area Boundary Doses:

| Time (h) = 0.0208 | Whole Body | Thyroid | TEDE |
|---|---|---|---|
| Delta dose (rem) | 1.2897E-04 | 2.1793E-02 | 1.0474E-03 |
| Accumulated dose (rem) | 1.6498E-04 | 2.7851E-02 | 1.3387E-03 |

Low Population Zone Doses:

| Time (h) = 0.0208 | Whole Body | Thyroid | TEDE |
|---|---|---|---|
| Delta dose (rem) | 2.2569E-05 | 3.8138E-03 | 1.8329E-04 |
| Accumulated dose (rem) | 2.8871E-05 | 4.8739E-03 | 2.3427E-04 |

Control Room Doses:

| Time (h) = 0.0208 | Whole Body | Thyroid | TEDE |
|---|---|---|---|
| Delta dose (rem) | 2.5714E-08 | 7.6319E-05 | 3.2419E-06 |
| Accumulated dose (rem) | 2.9345E-08 | 8.7053E-05 | 3.6979E-06 |

Environment Integral Nuclide Release:

| Time (h) = 0.0208 | Ci | kg | Atoms | Bq |
|---|---|---|---|---|
| Kr-85 | 9.4212E-04 | 2.4013E-09 | 1.7013E+16 | 3.4858E+07 |
| Kr-85m | 2.0913E-02 | 2.5412E-12 | 1.8004E+13 | 7.7377E+08 |
| Kr-87 | 4.0939E-02 | 1.4453E-12 | 1.0004E+13 | 1.5147E+09 |
| Kr-88 | 5.8114E-02 | 4.6346E-12 | 3.1716E+13 | 2.1502E+09 |
| Rb-86 | 1.4800E-04 | 1.8190E-12 | 1.2737E+13 | 5.4762E+06 |
| I-131 | 6.4416E-02 | 5.1959E-10 | 2.3886E+15 | 2.3834E+09 |
| I-132 | 9.2492E-02 | 8.9605E-12 | 4.0880E+13 | 3.4222E+09 |
| I-133 | 1.3465E-01 | 1.1886E-10 | 5.3819E+14 | 4.9819E+09 |
| I-134 | 1.4724E-01 | 5.5195E-12 | 2.4805E+13 | 5.4480E+09 |
| I-135 | 1.2537E-01 | 3.5698E-11 | 1.5924E+14 | 4.6386E+09 |
| Xe-133 | 1.3473E-01 | 7.1977E-10 | 3.2590E+15 | 4.9849E+09 |
| Xe-135 | 4.9561E-02 | 1.9407E-11 | 8.6573E+13 | 1.8338E+09 |
| Cs-134 | 1.5436E-02 | 1.1930E-08 | 5.3617E+16 | 5.7113E+08 |
| Cs-136 | 4.2678E-03 | 5.8230E-11 | 2.5785E+14 | 1.5791E+08 |
| Cs-137 | 1.0342E-02 | 1.1890E-07 | 5.2263E+17 | 3.8265E+08 |

Environment Transport Group Inventory:

| Time (h) = 0.0208 | Present Release | Release Rate/s | Total Release |
|---|---|---|---|
| Noble gases (atoms) | 2.0419E+16 | 2.7269E+14 | 2.0404E+16 |
| Elemental I (atoms) | 1.5292E+14 | 2.0422E+12 | 1.5281E+14 |
| Organic I (atoms) | 4.7294E+12 | 6.3160E+10 | 4.7260E+12 |
| Aerosols (kg) | 1.3154E-07 | 1.7567E-09 | 1.3145E-07 |

CR Filtered Air Intake Transport Group Inventory:

| Time (h) = 0.0208 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 |

CR Unfiltered Inleakage Transport Group Inventory:

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**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 1 | System Nos. | Sheet 401 of 1000 |
|---|---|---|---|---|

| Time (h) = 0.0208 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 |

CR Exhaust to Environment Transport Group Inventory:

| Time (h) = 0.0208 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 |

Control Room Compartment Nuclide Inventory:

| Time (h) = 0.0208 | Ci | kg | Atoms | Bq |
|---|---|---|---|---|
| Kr-85 | 6.0069E-07 | 1.5311E-12 | 1.0847E+13 | 2.2226E+04 |
| Kr-85m | 1.3329E-05 | 1.6196E-15 | 1.1475E+10 | 4.9317E+05 |
| Kr-87 | 2.6068E-05 | 9.2028E-16 | 6.3702E+09 | 9.6450E+05 |
| Kr-88 | 3.7032E-05 | 2.9533E-15 | 2.0210E+10 | 1.3702E+06 |
| Rb-86 | 9.4367E-08 | 1.1598E-15 | 8.1212E+09 | 3.4916E+03 |
| I-131 | 4.1071E-05 | 3.3128E-13 | 1.5229E+12 | 1.5196E+06 |
| I-132 | 5.8929E-05 | 5.7090E-15 | 2.6046E+10 | 2.1804E+06 |
| I-133 | 8.5842E-05 | 7.5778E-14 | 3.4312E+11 | 3.1762E+06 |
| I-134 | 9.3699E-05 | 3.5124E-15 | 1.5785E+10 | 3.4669E+06 |
| I-135 | 7.9914E-05 | 2.2755E-14 | 1.0151E+11 | 2.9568E+06 |
| Xe-133 | 8.5900E-05 | 4.5891E-13 | 2.0779E+12 | 3.1783E+06 |
| Xe-135 | 3.1594E-05 | 1.2372E-14 | 5.5188E+10 | 1.1690E+06 |
| Cs-134 | 9.8419E-06 | 7.6068E-12 | 3.4186E+13 | 3.6415E+05 |
| Cs-136 | 2.7211E-06 | 3.7127E-14 | 1.6440E+11 | 1.0068E+05 |
| Cs-137 | 6.5939E-06 | 7.5808E-11 | 3.3323E+14 | 2.4397E+05 |

Control Room Transport Group Inventory:

| Time (h) = 0.0208 | Atmosphere | Sump | Overlying Pool |
|---|---|---|---|
| Noble gases (atoms) | 1.3019E+13 | 0.0000E+00 | 0.0000E+00 |
| Elemental I (atoms) | 9.7500E+10 | 0.0000E+00 | 0.0000E+00 |
| Organic I (atoms) | 3.0155E+09 | 0.0000E+00 | 0.0000E+00 |
| Aerosols (kg) | 8.3870E-11 | 0.0000E+00 | 0.0000E+00 |

| Time (h) = 0.0208 | Deposition Surfaces | Recirculating Filter |
|---|---|---|
| Noble gases (atoms) | 0.0000E+00 | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 | 0.0000E+00 |

CR Filtered Air Intake Transport Group Inventory:

| Time (h) = 0.0208 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 |

```
Organic I (atoms)      0.0000E+00
Aerosols (kg)          0.0000E+00

CR  Unfiltered Inleakage Transport Group Inventory:

                        Pathway
Time (h) =   0.0208      Filter
Noble gases (atoms)    0.0000E+00
Elemental I (atoms)    0.0000E+00
Organic I (atoms)      0.0000E+00
Aerosols (kg)          0.0000E+00

CR Exhaust to Environment Transport Group Inventory:

                        Pathway
Time (h) =   0.0208      Filter
Noble gases (atoms)    0.0000E+00
Elemental I (atoms)    0.0000E+00
Organic I (atoms)      0.0000E+00
Aerosols (kg)          0.0000E+00

Exclusion Area Boundary Doses:

Time (h) =   0.4907    Whole Body   Thyroid       TEDE
Delta dose (rem)        6.1402E-02  1.1418E+01  5.4378E-01
Accumulated dose (rem)  6.1567E-02  1.1446E+01  5.4512E-01

Low Population Zone Doses:

Time (h) =   0.4907    Whole Body   Thyroid       TEDE
Delta dose (rem)        1.0745E-02  1.9982E+00  9.5161E-02
Accumulated dose (rem)  1.0774E-02  2.0031E+00  9.5395E-02

Control Room Doses:

Time (h) =   0.4907    Whole Body   Thyroid       TEDE
Delta dose (rem)        2.1943E-04  7.2722E-01  3.0932E-02
Accumulated dose (rem)  2.1946E-04  7.2731E-01  3.0935E-02

Environment Integral Nuclide Release:

Time (h) =   0.4907       Ci           kg         Atoms         Bq
Kr-85                  5.2438E-01  1.3366E-06  9.4693E+18  1.9402E+10
Kr-85m                 1.0827E+01  1.3156E-09  9.3211E+15  4.0060E+11
Kr-87                  1.7729E+01  6.2590E-10  4.3325E+15  6.5597E+11
Kr-88                  2.8868E+01  2.3022E-09  1.5755E+16  1.0681E+12
Rb-86                  6.1824E-02  7.5981E-10  5.3206E+15  2.2875E+09
I-131                  2.6626E+01  2.1477E-07  9.8730E+17  9.8515E+11
I-132                  3.3299E+01  3.2259E-09  1.4717E+16  1.2321E+12
I-133                  5.4883E+01  4.8449E-08  2.1937E+17  2.0307E+12
I-134                  4.2596E+01  1.5967E-09  7.1759E+15  1.5760E+12
I-135                  4.9421E+01  1.4073E-08  6.2775E+16  1.8286E+12
Xe-133                 7.4794E+01  3.9958E-07  1.8093E+18  2.7674E+12
Xe-135                 2.6615E+01  1.0422E-08  4.6492E+16  9.8477E+11
Cs-134                 6.4524E+00  4.9871E-06  2.2413E+19  2.3874E+11
Cs-136                 1.7822E+00  2.4316E-08  1.0767E+17  6.5940E+10
Cs-137                 4.3231E+00  4.9701E-05  2.1847E+20  1.5995E+11
```

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**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 1 | System Nos. | Sheet 403 of 1000 |
|---|---|---|---|---|

Environment Transport Group Inventory:

| Time (h) = 0.4907 | Present Release | Release Rate/s | Total Release |
|---|---|---|---|
| Noble gases (atoms) | 1.1359E+19 | 6.4304E+15 | 1.1359E+19 |
| Elemental I (atoms) | 5.0384E+16 | 2.8522E+13 | 5.0384E+16 |
| Organic I (atoms) | 2.6171E+15 | 1.4815E+12 | 2.6171E+15 |
| Aerosols (kg) | 5.4985E-05 | 3.1126E-08 | 5.4985E-05 |

CR Filtered Air Intake Transport Group Inventory:

| Time (h) = 0.4907 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 |

CR Unfiltered Inleakage Transport Group Inventory:

| Time (h) = 0.4907 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 |

CR Exhaust to Environment Transport Group Inventory:

| Time (h) = 0.4907 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 |

Control Room Compartment Nuclide Inventory:

| Time (h) = 0.4907 | Ci | kg | Atoms | Bq |
|---|---|---|---|---|
| Kr-85 | 2.8940E-04 | 7.3764E-10 | 5.2261E+15 | 1.0708E+07 |
| Kr-85m | 5.8400E-03 | 7.0964E-13 | 5.0277E+12 | 2.1608E+08 |
| Kr-87 | 9.0010E-03 | 3.1777E-13 | 2.1996E+12 | 3.3304E+08 |
| Kr-88 | 1.5362E-02 | 1.2251E-12 | 8.3838E+12 | 5.6839E+08 |
| Rb-86 | 3.3766E-05 | 4.1498E-13 | 2.9059E+12 | 1.2493E+06 |
| I-131 | 1.4534E-02 | 1.1724E-10 | 5.3894E+14 | 5.3777E+08 |
| I-132 | 1.7315E-02 | 1.6774E-12 | 7.6529E+12 | 6.4065E+08 |
| I-133 | 2.9817E-02 | 2.6322E-11 | 1.1918E+14 | 1.1032E+09 |
| I-134 | 2.0335E-02 | 7.6227E-13 | 3.4257E+12 | 7.5239E+08 |
| I-135 | 2.6543E-02 | 7.5581E-12 | 3.3716E+13 | 9.8209E+08 |
| Xe-133 | 4.1246E-02 | 2.2035E-10 | 9.9773E+14 | 1.5261E+09 |
| Xe-135 | 1.4525E-02 | 5.6878E-12 | 2.5372E+13 | 5.3743E+08 |
| Cs-134 | 3.5249E-03 | 2.7244E-09 | 1.2244E+16 | 1.3042E+08 |
| Cs-136 | 9.7324E-04 | 1.3279E-11 | 5.8800E+13 | 3.6010E+07 |
| Cs-137 | 2.3617E-03 | 2.7151E-08 | 1.1935E+17 | 8.7381E+07 |

Control Room Transport Group Inventory:

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**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 1 | System Nos. | Sheet 404 of 1000 |
|---|---|---|---|---|

```
                                                Overlying
Time (h) =   0.4907    Atmosphere     Sump        Pool
Noble gases (atoms)    6.2691E+15  0.0000E+00  0.0000E+00
Elemental I (atoms)    2.7357E+13  0.0000E+00  0.0000E+00
Organic I (atoms)      1.4440E+12  0.0000E+00  0.0000E+00
Aerosols (kg)          3.0038E-08  0.0000E+00  0.0000E+00

                       Deposition Recirculating
Time (h) =   0.4907     Surfaces     Filter
Noble gases (atoms)    0.0000E+00  0.0000E+00
Elemental I (atoms)    0.0000E+00  0.0000E+00
Organic I (atoms)      0.0000E+00  0.0000E+00
Aerosols (kg)          0.0000E+00  0.0000E+00

CR Filtered Air Intake Transport Group Inventory:

                        Pathway
Time (h) =   0.4907      Filter
Noble gases (atoms)    0.0000E+00
Elemental I (atoms)    0.0000E+00
Organic I (atoms)      0.0000E+00
Aerosols (kg)          0.0000E+00

CR  Unfiltered Inleakage Transport Group Inventory:

                        Pathway
Time (h) =   0.4907      Filter
Noble gases (atoms)    0.0000E+00
Elemental I (atoms)    0.0000E+00
Organic I (atoms)      0.0000E+00
Aerosols (kg)          0.0000E+00

CR Exhaust to Environment Transport Group Inventory:

                        Pathway
Time (h) =   0.4907      Filter
Noble gases (atoms)    0.0000E+00
Elemental I (atoms)    0.0000E+00
Organic I (atoms)      0.0000E+00
Aerosols (kg)          0.0000E+00

Exclusion Area Boundary Doses:

Time (h) =   0.5000    Whole Body   Thyroid       TEDE
Delta dose (rem)        1.9180E-03  3.8242E-01  1.8084E-02
Accumulated dose (rem)  6.3485E-02  1.1829E+01  5.6320E-01

Low Population Zone Doses:

Time (h) =   0.5000    Whole Body   Thyroid       TEDE
Delta dose (rem)        3.3565E-04  6.6923E-02  3.1646E-03
Accumulated dose (rem)  1.1110E-02  2.0700E+00  9.8560E-02

Control Room Doses:

Time (h) =   0.5000    Whole Body   Thyroid       TEDE
```

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**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 1 | System Nos. | Sheet 405 of 1000 |
|---|---|---|---|---|

| | | | |
|---|---|---|---|
| Delta dose (rem) | 1.0694E-05 | 3.7387E-02 | 1.5903E-03 |
| Accumulated dose (rem) | 2.3015E-04 | 7.6469E-01 | 3.2526E-02 |

Environment Integral Nuclide Release:

| Time (h) = 0.5000 | Ci | kg | Atoms | Bq |
|---|---|---|---|---|
| Kr-85 | 5.4444E-01 | 1.3877E-06 | 9.8316E+18 | 2.0144E+10 |
| Kr-85m | 1.1227E+01 | 1.3642E-09 | 9.6651E+15 | 4.1538E+11 |
| Kr-87 | 1.8325E+01 | 6.4695E-10 | 4.4782E+15 | 6.7803E+11 |
| Kr-88 | 2.9911E+01 | 2.3854E-09 | 1.6324E+16 | 1.1067E+12 |
| Rb-86 | 6.3903E-02 | 7.8536E-10 | 5.4995E+15 | 2.3644E+09 |
| I-131 | 2.7519E+01 | 2.2197E-07 | 1.0204E+18 | 1.0182E+12 |
| I-132 | 3.4330E+01 | 3.3258E-09 | 1.5173E+16 | 1.2702E+12 |
| I-133 | 5.6710E+01 | 5.0061E-08 | 2.2667E+17 | 2.0983E+12 |
| I-134 | 4.3747E+01 | 1.6399E-09 | 7.3698E+15 | 1.6186E+12 |
| I-135 | 5.1035E+01 | 1.4532E-08 | 6.4825E+16 | 1.8883E+12 |
| Xe-133 | 7.7653E+01 | 4.1485E-07 | 1.8784E+18 | 2.8731E+12 |
| Xe-135 | 2.7616E+01 | 1.0814E-08 | 4.8240E+16 | 1.0218E+12 |
| Cs-134 | 6.6695E+00 | 5.1549E-06 | 2.3167E+19 | 2.4677E+11 |
| Cs-136 | 1.8421E+00 | 2.5134E-08 | 1.1129E+17 | 6.8157E+10 |
| Cs-137 | 4.4685E+00 | 5.1373E-05 | 2.2582E+20 | 1.6533E+11 |

Environment Transport Group Inventory:

| Time (h) = 0.5000 | Present Release | Release Rate/s | Total Release |
|---|---|---|---|
| Noble gases (atoms) | 1.1794E+19 | 6.5522E+15 | 1.1794E+19 |
| Elemental I (atoms) | 5.1979E+16 | 2.8877E+13 | 5.1979E+16 |
| Organic I (atoms) | 2.7169E+15 | 1.5094E+12 | 2.7169E+15 |
| Aerosols (kg) | 5.6835E-05 | 3.1575E-08 | 5.6835E-05 |

CR Filtered Air Intake Transport Group Inventory:

| Time (h) = 0.5000 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 |

CR Unfiltered Inleakage Transport Group Inventory:

| Time (h) = 0.5000 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 |

CR Exhaust to Environment Transport Group Inventory:

| Time (h) = 0.5000 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 |

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**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 1 | System Nos. | Sheet 406 of 1000 |
|---|---|---|---|---|

Control Room Compartment Nuclide Inventory:

| Time (h) = 0.5000 | Ci | kg | Atoms | Bq |
|---|---|---|---|---|
| Kr-85 | 2.9965E-04 | 7.6376E-10 | 5.4112E+15 | 1.1087E+07 |
| Kr-85m | 6.0351E-03 | 7.3335E-13 | 5.1957E+12 | 2.2330E+08 |
| Kr-87 | 9.2569E-03 | 3.2680E-13 | 2.2621E+12 | 3.4250E+08 |
| Kr-88 | 1.5857E-02 | 1.2646E-12 | 8.6543E+12 | 5.8673E+08 |
| Rb-86 | 3.4793E-05 | 4.2761E-13 | 2.9943E+12 | 1.2874E+06 |
| I-131 | 1.4975E-02 | 1.2079E-10 | 5.5529E+14 | 5.5409E+08 |
| I-132 | 1.7772E-02 | 1.7217E-12 | 7.8548E+12 | 6.5756E+08 |
| I-133 | 3.0711E-02 | 2.7110E-11 | 1.2275E+14 | 1.1363E+09 |
| I-134 | 2.0742E-02 | 7.7753E-13 | 3.4943E+12 | 7.6745E+08 |
| I-135 | 2.7313E-02 | 7.7773E-12 | 3.4693E+13 | 1.0106E+09 |
| Xe-133 | 4.2703E-02 | 2.2814E-10 | 1.0330E+15 | 1.5800E+09 |
| Xe-135 | 1.5025E-02 | 5.8836E-12 | 2.6246E+13 | 5.5593E+08 |
| Cs-134 | 3.6323E-03 | 2.8074E-09 | 1.2617E+16 | 1.3439E+08 |
| Cs-136 | 1.0029E-03 | 1.3683E-11 | 6.0590E+13 | 3.7106E+07 |
| Cs-137 | 2.4336E-03 | 2.7978E-08 | 1.2298E+17 | 9.0043E+07 |

Control Room Transport Group Inventory:

| Time (h) = 0.5000 | Atmosphere | Sump | Overlying Pool |
|---|---|---|---|
| Noble gases (atoms) | 6.4911E+15 | 0.0000E+00 | 0.0000E+00 |
| Elemental I (atoms) | 2.8133E+13 | 0.0000E+00 | 0.0000E+00 |
| Organic I (atoms) | 1.4949E+12 | 0.0000E+00 | 0.0000E+00 |
| Aerosols (kg) | 3.0953E-08 | 0.0000E+00 | 0.0000E+00 |

| Time (h) = 0.5000 | Deposition Surfaces | Recirculating Filter |
|---|---|---|
| Noble gases (atoms) | 0.0000E+00 | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 | 0.0000E+00 |

CR Filtered Air Intake Transport Group Inventory:

| Time (h) = 0.5000 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 |

CR Unfiltered Inleakage Transport Group Inventory:

| Time (h) = 0.5000 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 |

CR Exhaust to Environment Transport Group Inventory:

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**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 1 | System Nos. | Sheet 407 of 1000 |
|---|---|---|---|---|

| Time (h) = 0.5000 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 |

Exclusion Area Boundary Doses:

| Time (h) = 1.8000 | Whole Body | Thyroid | TEDE |
|---|---|---|---|
| Delta dose (rem) | 9.6309E-01 | 1.8255E+02 | 1.0366E+01 |
| Accumulated dose (rem) | 1.0266E+00 | 1.9438E+02 | 1.0929E+01 |

Low Population Zone Doses:

| Time (h) = 1.8000 | Whole Body | Thyroid | TEDE |
|---|---|---|---|
| Delta dose (rem) | 1.6854E-01 | 3.1947E+01 | 1.8140E+00 |
| Accumulated dose (rem) | 1.7965E-01 | 3.4017E+01 | 1.9126E+00 |

Control Room Doses:

| Time (h) = 1.8000 | Whole Body | Thyroid | TEDE |
|---|---|---|---|
| Delta dose (rem) | 6.5531E-03 | 2.5377E+00 | 1.3148E-01 |
| Accumulated dose (rem) | 6.7833E-03 | 3.3024E+00 | 1.6401E-01 |

Environment Integral Nuclide Release:

| Time (h) = 1.8000 | Ci | kg | Atoms | Bq |
|---|---|---|---|---|
| Co-58 | 2.4717E-02 | 7.7730E-10 | 8.0707E+15 | 9.1451E+08 |
| Co-60 | 1.8925E-02 | 1.6742E-08 | 1.6804E+17 | 7.0022E+08 |
| Kr-85 | 3.0291E+01 | 7.7207E-05 | 5.4700E+20 | 1.1208E+12 |
| Kr-85m | 4.8258E+02 | 5.8640E-08 | 4.1546E+17 | 1.7855E+13 |
| Kr-87 | 4.2709E+02 | 1.5078E-08 | 1.0437E+17 | 1.5802E+13 |
| Kr-88 | 1.1121E+03 | 8.8687E-08 | 6.0691E+17 | 4.1146E+13 |
| Rb-86 | 8.0802E-01 | 9.9305E-09 | 6.9538E+16 | 2.9897E+10 |
| Sr-89 | 2.3165E+01 | 7.9734E-07 | 5.3952E+18 | 8.5709E+11 |
| Sr-90 | 2.5017E+00 | 1.8340E-05 | 1.2272E+20 | 9.2562E+10 |
| Sr-91 | 2.6672E+01 | 7.3579E-09 | 4.8693E+16 | 9.8687E+11 |
| Sr-92 | 1.8573E+01 | 1.4776E-09 | 9.6723E+15 | 6.8720E+11 |
| Y-90 | 2.5179E-02 | 4.6279E-11 | 3.0966E+14 | 9.3161E+08 |
| Y-91 | 2.8357E-01 | 1.1563E-08 | 7.6521E+16 | 1.0492E+10 |
| Y-92 | 2.1292E-01 | 2.2128E-11 | 1.4484E+14 | 7.8781E+09 |
| Y-93 | 3.1639E-01 | 9.4833E-11 | 6.1408E+14 | 1.1707E+10 |
| Zr-95 | 3.6530E-01 | 1.7004E-08 | 1.0779E+17 | 1.3516E+10 |
| Zr-97 | 3.3958E-01 | 1.7764E-10 | 1.1028E+15 | 1.2565E+10 |
| Nb-95 | 3.6785E-01 | 9.4072E-09 | 5.9633E+16 | 1.3610E+10 |
| Mo-99 | 4.9024E+00 | 1.0221E-08 | 6.2177E+16 | 1.8139E+11 |
| Tc-99m | 3.3780E+00 | 6.4242E-10 | 3.9078E+15 | 1.2499E+11 |
| Ru-103 | 4.0322E+00 | 1.2494E-07 | 7.3046E+17 | 1.4919E+11 |
| Ru-105 | 1.8846E+00 | 2.8036E-10 | 1.6079E+15 | 6.9729E+10 |
| Ru-106 | 1.5211E+00 | 4.5467E-07 | 2.5831E+18 | 5.6282E+10 |
| Rh-105 | 2.4277E+00 | 2.8762E-09 | 1.6496E+16 | 8.9824E+10 |
| Sb-127 | 5.4364E+00 | 2.0357E-08 | 9.6530E+16 | 2.0115E+11 |
| Sb-129 | 1.1592E+01 | 2.0615E-09 | 9.6236E+15 | 4.2892E+11 |
| Te-127 | 4.6281E+00 | 1.7536E-09 | 8.3155E+15 | 1.7124E+11 |
| Te-127m | 7.3545E-01 | 7.7969E-08 | 3.6972E+17 | 2.7212E+10 |
| Te-129 | 4.4016E+00 | 2.1018E-10 | 9.8119E+14 | 1.6286E+11 |

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**CALCULATION SHEET**
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| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 1 | System Nos. | Sheet 408 of 1000 |
|---|---|---|---|---|

| | | | | |
|---|---|---|---|---|
| Te-129m | 2.4584E+00 | 8.1607E-07 | 3.8097E+17 | 9.0962E+10 |
| Te-131m | 7.1630E+00 | 8.9828E-09 | 4.1295E+16 | 2.6503E+11 |
| Te-132 | 7.3771E+01 | 2.4299E-07 | 1.1086E+18 | 2.7295E+12 |
| I-131 | 4.4967E+02 | 3.6271E-06 | 1.6674E+19 | 1.6638E+13 |
| I-132 | 3.6113E+02 | 3.4986E-08 | 1.5962E+17 | 1.3362E+13 |
| I-133 | 8.8485E+02 | 7.8111E-07 | 3.5368E+18 | 3.2739E+13 |
| I-134 | 2.4902E+02 | 9.3346E-09 | 4.1951E+16 | 9.2136E+12 |
| I-135 | 7.1399E+02 | 2.0331E-07 | 9.0693E+17 | 2.6418E+13 |
| Xe-133 | 4.2803E+03 | 2.2867E-05 | 1.0354E+20 | 1.5837E+14 |
| Xe-135 | 1.3516E+03 | 5.2927E-07 | 2.3610E+18 | 5.0009E+13 |
| Cs-134 | 8.4522E+01 | 6.5327E-05 | 2.9359E+20 | 3.1273E+12 |
| Cs-136 | 2.3269E+01 | 3.1749E-07 | 1.4059E+18 | 8.6097E+11 |
| Cs-137 | 5.6632E+01 | 6.5108E-04 | 2.8619E+21 | 2.0954E+12 |
| Ba-139 | 1.3330E+01 | 8.1493E-10 | 3.5307E+15 | 4.9320E+11 |
| Ba-140 | 3.9100E+01 | 5.3408E-07 | 2.2974E+18 | 1.4467E+12 |
| La-140 | 3.8319E-01 | 6.8941E-10 | 2.9655E+15 | 1.4178E+10 |
| La-141 | 2.4887E-01 | 4.4006E-11 | 1.8795E+14 | 9.2082E+09 |
| La-142 | 1.6213E-01 | 1.1326E-11 | 4.8032E+13 | 5.9987E+09 |
| Ce-141 | 8.9840E-01 | 3.1530E-08 | 1.3467E+17 | 3.3241E+10 |
| Ce-143 | 8.5253E-01 | 1.2838E-09 | 5.4063E+15 | 3.1544E+10 |
| Ce-144 | 7.2487E-01 | 2.2727E-07 | 9.5045E+17 | 2.6820E+10 |
| Pr-143 | 3.5000E-01 | 5.1976E-09 | 2.1889E+16 | 1.2950E+10 |
| Nd-147 | 1.4617E-01 | 1.8069E-09 | 7.4022E+15 | 5.4084E+09 |
| Np-239 | 9.6821E+00 | 4.1735E-08 | 1.0516E+17 | 3.5824E+11 |
| Pu-238 | 2.8587E-03 | 1.6698E-07 | 4.2252E+17 | 1.0577E+08 |
| Pu-239 | 2.2249E-04 | 3.5796E-06 | 9.0195E+18 | 8.2323E+06 |
| Pu-240 | 2.3994E-04 | 1.0530E-06 | 2.6421E+18 | 8.8777E+06 |
| Pu-241 | 9.9365E-02 | 9.6459E-07 | 2.4103E+18 | 3.6765E+09 |
| Am-241 | 6.1112E-05 | 1.7806E-08 | 4.4493E+16 | 2.2612E+06 |
| Cm-242 | 1.4359E-02 | 4.3325E-09 | 1.0781E+16 | 5.3130E+08 |
| Cm-244 | 1.1621E-03 | 1.4364E-08 | 3.5451E+16 | 4.2997E+07 |

Environment Transport Group Inventory:

| Time (h) = 1.8000 | Present Release | Release Rate/s | Total Release |
|---|---|---|---|
| Noble gases (atoms) | 6.5465E+20 | 1.0103E+17 | 6.5465E+20 |
| Elemental I (atoms) | 7.5910E+17 | 1.1714E+14 | 7.5910E+17 |
| Organic I (atoms) | 6.4847E+16 | 1.0007E+13 | 6.4847E+16 |
| Aerosols (kg) | 7.4886E-04 | 1.1556E-07 | 7.4886E-04 |

CR Filtered Air Intake Transport Group Inventory:

| Time (h) = 1.8000 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 3.7093E+20 |
| Organic I (atoms) | 3.3623E+19 |
| Aerosols (kg) | 3.9963E-01 |

CR Unfiltered Inleakage Transport Group Inventory:

| Time (h) = 1.8000 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 |

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**CALCULATION SHEET**
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| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 1 | System Nos. | Sheet 409 of 1000 |
|---|---|---|---|---|

Aerosols (kg) 0.0000E+00

CR Exhaust to Environment Transport Group Inventory:

| Time (h) = 1.8000 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 |

Control Room Compartment Nuclide Inventory:

| Time (h) = 1.8000 | Ci | kg | Atoms | Bq |
|---|---|---|---|---|
| Co-58 | 5.6149E-07 | 1.7658E-14 | 1.8334E+11 | 2.0775E+04 |
| Co-60 | 4.3004E-07 | 3.8043E-13 | 3.8184E+12 | 1.5911E+04 |
| Kr-85 | 1.9808E-02 | 5.0488E-08 | 3.5770E+17 | 7.3290E+08 |
| Kr-85m | 2.8987E-01 | 3.5223E-11 | 2.4955E+14 | 1.0725E+10 |
| Kr-87 | 2.0113E-01 | 7.1008E-12 | 4.9152E+13 | 7.4420E+09 |
| Kr-88 | 6.3418E-01 | 5.0576E-11 | 3.4611E+14 | 2.3465E+10 |
| Rb-86 | 1.4753E-05 | 1.8132E-13 | 1.2697E+12 | 5.4587E+05 |
| Sr-89 | 5.2617E-04 | 1.8111E-11 | 1.2255E+14 | 1.9468E+07 |
| Sr-90 | 5.6847E-05 | 4.1675E-10 | 2.7886E+15 | 2.1033E+06 |
| Sr-91 | 5.7558E-04 | 1.5878E-13 | 1.0508E+12 | 2.1296E+07 |
| Sr-92 | 3.5025E-04 | 2.7865E-14 | 1.8240E+11 | 1.2959E+07 |
| Y-90 | 5.6782E-07 | 1.0437E-15 | 6.9834E+09 | 2.1009E+04 |
| Y-91 | 6.4415E-06 | 2.6266E-13 | 1.7382E+12 | 2.3833E+05 |
| Y-92 | 4.2004E-06 | 4.3653E-16 | 2.8574E+09 | 1.5541E+05 |
| Y-93 | 6.8488E-06 | 2.0528E-15 | 1.3293E+10 | 2.5341E+05 |
| Zr-95 | 8.2983E-06 | 3.8627E-13 | 2.4486E+12 | 3.0704E+05 |
| Zr-97 | 7.4968E-06 | 3.9216E-15 | 2.4347E+10 | 2.7738E+05 |
| Nb-95 | 8.3541E-06 | 2.1364E-13 | 1.3543E+12 | 3.0910E+05 |
| Mo-99 | 1.1058E-04 | 2.3057E-13 | 1.4025E+12 | 4.0916E+06 |
| Tc-99m | 7.0712E-05 | 1.3448E-14 | 8.1802E+10 | 2.6163E+06 |
| Ru-103 | 9.1578E-05 | 2.8375E-12 | 1.6590E+13 | 3.3884E+06 |
| Ru-105 | 3.8286E-05 | 5.6956E-15 | 3.2666E+10 | 1.4166E+06 |
| Ru-106 | 3.4564E-05 | 1.0331E-11 | 5.8694E+13 | 1.2789E+06 |
| Rh-105 | 5.4411E-05 | 6.4464E-14 | 3.6973E+11 | 2.0132E+06 |
| Sb-127 | 1.2289E-04 | 4.6016E-13 | 2.1820E+12 | 4.5468E+06 |
| Sb-129 | 2.3476E-04 | 4.1746E-14 | 1.9489E+11 | 8.6860E+06 |
| Te-127 | 9.9788E-05 | 3.7811E-14 | 1.7929E+11 | 3.6921E+06 |
| Te-127m | 1.6709E-05 | 1.7714E-12 | 8.3997E+12 | 6.1823E+05 |
| Te-129 | 6.3227E-05 | 3.0191E-15 | 1.4094E+10 | 2.3394E+06 |
| Te-129m | 5.5831E-05 | 1.8533E-11 | 8.6518E+12 | 2.0657E+06 |
| Te-131m | 1.6015E-04 | 2.0084E-13 | 9.2326E+11 | 5.9255E+06 |
| Te-132 | 1.6660E-03 | 5.4875E-12 | 2.5035E+13 | 6.1641E+07 |
| I-131 | 8.9030E-03 | 7.1813E-11 | 3.3013E+14 | 3.2941E+08 |
| I-132 | 5.3628E-03 | 5.1954E-13 | 2.3703E+12 | 1.9842E+08 |
| I-133 | 1.7053E-02 | 1.5054E-11 | 6.8162E+13 | 6.3096E+08 |
| I-134 | 2.1130E-03 | 7.9208E-14 | 3.5597E+11 | 7.8181E+07 |
| I-135 | 1.2876E-02 | 3.6663E-12 | 1.6355E+13 | 4.7640E+08 |
| Xe-133 | 2.7909E+00 | 1.4910E-08 | 6.7511E+16 | 1.0326E+11 |
| Xe-135 | 8.4827E-01 | 3.3217E-10 | 1.4818E+15 | 3.1386E+10 |
| Cs-134 | 1.5455E-03 | 1.1945E-09 | 5.3682E+15 | 5.7182E+07 |
| Cs-136 | 4.2460E-04 | 5.7933E-12 | 2.5653E+13 | 1.5710E+07 |
| Cs-137 | 1.0355E-03 | 1.1905E-08 | 5.2332E+16 | 3.8315E+07 |
| Ba-139 | 2.0700E-04 | 1.2655E-14 | 5.4827E+10 | 7.6589E+06 |

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**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 1 | System Nos. | Sheet 410 of 1000 |
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| | | | | |
|---|---|---|---|---|
| Ba-140 | 8.8707E-04 | 1.2117E-11 | 5.2122E+13 | 3.2822E+07 |
| La-140 | 8.6030E-06 | 1.5478E-14 | 6.6578E+10 | 3.1831E+05 |
| La-141 | 4.9809E-06 | 8.8074E-16 | 3.7616E+09 | 1.8429E+05 |
| La-142 | 2.6284E-06 | 1.8361E-16 | 7.7867E+08 | 9.7249E+04 |
| Ce-141 | 2.0402E-05 | 7.1603E-13 | 3.0582E+12 | 7.5488E+05 |
| Ce-143 | 1.9089E-05 | 2.8745E-14 | 1.2105E+11 | 7.0629E+05 |
| Ce-144 | 1.6471E-05 | 5.1640E-12 | 2.1596E+13 | 6.0941E+05 |
| Pr-143 | 7.9414E-06 | 1.1793E-13 | 4.9665E+11 | 2.9383E+05 |
| Nd-147 | 3.3155E-06 | 4.0983E-14 | 1.6789E+11 | 1.2267E+05 |
| Np-239 | 2.1813E-04 | 9.4025E-13 | 2.3692E+12 | 8.0708E+06 |
| Pu-238 | 6.4960E-08 | 3.7944E-12 | 9.6011E+12 | 2.4035E+03 |
| Pu-239 | 5.0558E-09 | 8.1341E-11 | 2.0496E+14 | 1.8707E+02 |
| Pu-240 | 5.4522E-09 | 2.3927E-11 | 6.0039E+13 | 2.0173E+02 |
| Pu-241 | 2.2579E-06 | 2.1919E-11 | 5.4771E+13 | 8.3543E+04 |
| Am-241 | 1.3887E-09 | 4.0461E-13 | 1.0110E+12 | 5.1381E+01 |
| Cm-242 | 3.2625E-07 | 9.8438E-14 | 2.4496E+11 | 1.2071E+04 |
| Cm-244 | 2.6406E-08 | 3.2640E-13 | 8.0558E+11 | 9.7703E+02 |

Control Room Transport Group Inventory:

| Time (h) = 1.8000 | Atmosphere | Sump | Overlying Pool |
|---|---|---|---|
| Noble gases (atoms) | 4.2795E+17 | 0.0000E+00 | 0.0000E+00 |
| Elemental I (atoms) | 2.4753E+13 | 0.0000E+00 | 0.0000E+00 |
| Organic I (atoms) | 2.7269E+12 | 0.0000E+00 | 0.0000E+00 |
| Aerosols (kg) | 1.3819E-08 | 0.0000E+00 | 0.0000E+00 |

| Time (h) = 1.8000 | Deposition Surfaces | Recirculating Filter |
|---|---|---|
| Noble gases (atoms) | 0.0000E+00 | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 | 1.5296E+14 |
| Organic I (atoms) | 0.0000E+00 | 1.2314E+13 |
| Aerosols (kg) | 0.0000E+00 | 1.0344E-07 |

CR Filtered Air Intake Transport Group Inventory:

| Time (h) = 1.8000 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 3.7093E+20 |
| Organic I (atoms) | 3.3623E+19 |
| Aerosols (kg) | 3.9963E-01 |

CR Unfiltered Inleakage Transport Group Inventory:

| Time (h) = 1.8000 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 |

CR Exhaust to Environment Transport Group Inventory:

| Time (h) = 1.8000 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |

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**CALCULATION SHEET**
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|---|---|---|---|---|

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Elemental I (atoms)    0.0000E+00
Organic I (atoms)      0.0000E+00
Aerosols (kg)          0.0000E+00

Exclusion Area Boundary Doses:

Time (h) =   2.0000    Whole Body   Thyroid       TEDE
Delta dose (rem)        1.8706E-01  3.3888E+01  1.9752E+00
Accumulated dose (rem)  1.2136E+00  2.2827E+02  1.2904E+01

Low Population Zone Doses:

Time (h) =   2.0000    Whole Body   Thyroid       TEDE
Delta dose (rem)        3.2735E-02  5.9305E+00  3.4567E-01
Accumulated dose (rem)  2.1239E-01  3.9947E+01  2.2582E+00

Control Room Doses:

Time (h) =   2.0000    Whole Body   Thyroid       TEDE
Delta dose (rem)        2.1031E-03  4.6420E-01  2.6297E-02
Accumulated dose (rem)  8.8864E-03  3.7666E+00  1.9030E-01

Environment Integral Nuclide Release:

Time (h) =   2.0000       Ci           kg         Atoms         Bq
Co-58                  2.9893E-02  9.4010E-10  9.7610E+15  1.1060E+09
Co-60                  2.2890E-02  2.0250E-08  2.0324E+17  8.4693E+08
Kr-85                  3.9010E+01  9.9431E-05  7.0445E+20  1.4434E+12
Kr-85m                 6.0462E+02  7.3470E-08  5.2052E+17  2.2371E+13
Kr-87                  5.0308E+02  1.7761E-08  1.2294E+17  1.8614E+13
Kr-88                  1.3724E+03  1.0945E-07  7.4899E+17  5.0779E+13
Rb-86                  9.4266E-01  1.1585E-08  8.1125E+16  3.4878E+10
Sr-89                  2.8015E+01  9.6431E-07  6.5250E+18  1.0366E+12
Sr-90                  3.0258E+00  2.2182E-05  1.4843E+20  1.1196E+11
Sr-91                  3.1897E+01  8.7991E-09  5.8230E+16  1.1802E+12
Sr-92                  2.1631E+01  1.7209E-09  1.1265E+16  8.0034E+11
Y-90                   3.0402E-02  5.5879E-11  3.7390E+14  1.1249E+09
Y-91                   3.4296E-01  1.3985E-08  9.2546E+16  1.2689E+10
Y-92                   2.5006E-01  2.5988E-11  1.7011E+14  9.2523E+09
Y-93                   3.7862E-01  1.1348E-10  7.3485E+14  1.4009E+10
Zr-95                  4.4181E-01  2.0565E-08  1.3037E+17  1.6347E+10
Zr-97                  4.0810E-01  2.1348E-10  1.3254E+15  1.5100E+10
Nb-95                  4.4486E-01  1.1377E-08  7.2118E+16  1.6460E+10
Mo-99                  5.9197E+00  1.2343E-08  7.5079E+16  2.1903E+11
Tc-99m                 4.0141E+00  7.6339E-10  4.6437E+15  1.4852E+11
Ru-103                 4.8764E+00  1.5109E-07  8.8341E+17  1.8043E+11
Ru-105                 2.2260E+00  3.3114E-10  1.8992E+15  8.2360E+10
Ru-106                 1.8398E+00  5.4992E-07  3.1243E+18  6.8073E+10
Rh-105                 2.9272E+00  3.4681E-09  1.9891E+16  1.0831E+11
Sb-127                 6.5677E+00  2.4593E-08  1.1662E+17  2.4300E+11
Sb-129                 1.3684E+01  2.4334E-09  1.1360E+16  5.0630E+11
Te-127                 5.5336E+00  2.0968E-09  9.9425E+15  2.0474E+11
Te-127m                8.8950E-01  9.4301E-08  4.4716E+17  3.2911E+10
Te-129                 4.9156E+00  2.3472E-10  1.0958E+15  1.8188E+11
Te-129m                2.9731E+00  9.8692E-07  4.6073E+17  1.1001E+11
Te-131m                8.6323E+00  1.0825E-08  4.9765E+16  3.1939E+11
Te-132                 8.9103E+01  2.9349E-07  1.3390E+18  3.2968E+12
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**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 1 | System Nos. | Sheet 412 of 1000 |
|---|---|---|---|---|

| | | | | |
|---|---|---|---|---|
| I-131 | 5.2867E+02 | 4.2644E-06 | 1.9604E+19 | 1.9561E+13 |
| I-132 | 4.0575E+02 | 3.9308E-08 | 1.7933E+17 | 1.5013E+13 |
| I-133 | 1.0352E+03 | 9.1384E-07 | 4.1378E+18 | 3.8302E+13 |
| I-134 | 2.6488E+02 | 9.9291E-09 | 4.4623E+16 | 9.8004E+12 |
| I-135 | 8.2576E+02 | 2.3513E-07 | 1.0489E+18 | 3.0553E+13 |
| Xe-133 | 5.5068E+03 | 2.9420E-05 | 1.3321E+20 | 2.0375E+14 |
| Xe-135 | 1.7169E+03 | 6.7230E-07 | 2.9990E+18 | 6.3524E+13 |
| Cs-134 | 9.8631E+01 | 7.6232E-05 | 3.4260E+20 | 3.6493E+12 |
| Cs-136 | 2.7144E+01 | 3.7036E-07 | 1.6400E+18 | 1.0043E+12 |
| Cs-137 | 6.6086E+01 | 7.5976E-04 | 3.3397E+21 | 2.4452E+12 |
| Ba-139 | 1.5046E+01 | 9.1983E-10 | 3.9852E+15 | 5.5669E+11 |
| Ba-140 | 4.7275E+01 | 6.4575E-07 | 2.7777E+18 | 1.7492E+12 |
| La-140 | 4.6222E-01 | 8.3159E-10 | 3.5771E+15 | 1.7102E+10 |
| La-141 | 2.9309E-01 | 5.1826E-11 | 2.2135E+14 | 1.0844E+10 |
| La-142 | 1.8416E-01 | 1.2865E-11 | 5.4558E+13 | 6.8139E+09 |
| Ce-141 | 1.0865E+00 | 3.8131E-08 | 1.6286E+17 | 4.0200E+10 |
| Ce-143 | 1.0277E+00 | 1.5476E-09 | 6.5174E+15 | 3.8027E+10 |
| Ce-144 | 8.7673E-01 | 2.7488E-07 | 1.1496E+18 | 3.2439E+10 |
| Pr-143 | 4.2319E-01 | 6.2845E-09 | 2.6466E+16 | 1.5658E+10 |
| Nd-147 | 1.7673E-01 | 2.1845E-09 | 8.9493E+15 | 6.5388E+09 |
| Np-239 | 1.1688E+01 | 5.0381E-08 | 1.2695E+17 | 4.3246E+11 |
| Pu-238 | 3.4576E-03 | 2.0197E-07 | 5.1104E+17 | 1.2793E+08 |
| Pu-239 | 2.6911E-04 | 4.3296E-06 | 1.0909E+19 | 9.9571E+06 |
| Pu-240 | 2.9021E-04 | 1.2736E-06 | 3.1957E+18 | 1.0738E+07 |
| Pu-241 | 1.2018E-01 | 1.1667E-06 | 2.9153E+18 | 4.4468E+09 |
| Am-241 | 7.3916E-05 | 2.1536E-08 | 5.3815E+16 | 2.7349E+06 |
| Cm-242 | 1.7367E-02 | 5.2401E-09 | 1.3040E+16 | 6.4259E+08 |
| Cm-244 | 1.4055E-03 | 1.7373E-08 | 4.2879E+16 | 5.2005E+07 |

Environment Transport Group Inventory:

| Time (h) = 2.0000 | Present Release | Release Rate/s | Total Release |
|---|---|---|---|
| Noble gases (atoms) | 8.4294E+20 | 1.1708E+17 | 8.4294E+20 |
| Elemental I (atoms) | 8.7850E+17 | 1.2201E+14 | 8.7850E+17 |
| Organic I (atoms) | 8.1700E+16 | 1.1347E+13 | 8.1700E+16 |
| Aerosols (kg) | 8.7508E-04 | 1.2154E-07 | 8.7508E-04 |

CR Filtered Air Intake Transport Group Inventory:

| Time (h) = 2.0000 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 4.4637E+20 |
| Organic I (atoms) | 4.3931E+19 |
| Aerosols (kg) | 4.8658E-01 |

CR Unfiltered Inleakage Transport Group Inventory:

| Time (h) = 2.0000 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 |

CR Exhaust to Environment Transport Group Inventory:

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**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 1 | System Nos. | Sheet 413 of 1000 |
|---|---|---|---|---|

| Time (h) = 2.0000 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 |

Control Room Compartment Nuclide Inventory:

| Time (h) = 2.0000 | Ci | kg | Atoms | Bq |
|---|---|---|---|---|
| Co-58 | 5.0168E-07 | 1.5777E-14 | 1.6381E+11 | 1.8562E+04 |
| Co-60 | 3.8427E-07 | 3.3995E-13 | 3.4120E+12 | 1.4218E+04 |
| Kr-85 | 2.3084E-02 | 5.8839E-08 | 4.1686E+17 | 8.5412E+08 |
| Kr-85m | 3.2446E-01 | 3.9427E-11 | 2.7933E+14 | 1.2005E+10 |
| Kr-87 | 2.0378E-01 | 7.1941E-12 | 4.9797E+13 | 7.5397E+09 |
| Kr-88 | 6.9366E-01 | 5.5319E-11 | 3.7857E+14 | 2.5665E+10 |
| Rb-86 | 1.3077E-05 | 1.6072E-13 | 1.1254E+12 | 4.8385E+05 |
| Sr-89 | 4.7011E-04 | 1.6181E-11 | 1.0949E+14 | 1.7394E+07 |
| Sr-90 | 5.0797E-05 | 3.7239E-10 | 2.4918E+15 | 1.8795E+06 |
| Sr-91 | 5.0489E-04 | 1.3928E-13 | 9.2173E+11 | 1.8681E+07 |
| Sr-92 | 2.9339E-04 | 2.3342E-14 | 1.5279E+11 | 1.0855E+07 |
| Y-90 | 5.0600E-07 | 9.3003E-16 | 6.2231E+09 | 1.8722E+04 |
| Y-91 | 5.7552E-06 | 2.3468E-13 | 1.5530E+12 | 2.1294E+05 |
| Y-92 | 3.5720E-06 | 3.7122E-16 | 2.4299E+09 | 1.3216E+05 |
| Y-93 | 6.0144E-06 | 1.8027E-15 | 1.1673E+10 | 2.2253E+05 |
| Zr-95 | 7.4143E-06 | 3.4513E-13 | 2.1878E+12 | 2.7433E+05 |
| Zr-97 | 6.6296E-06 | 3.4680E-15 | 2.1531E+10 | 2.4530E+05 |
| Nb-95 | 7.4634E-06 | 1.9087E-13 | 1.2099E+12 | 2.7615E+05 |
| Mo-99 | 9.8551E-05 | 2.0548E-13 | 1.2499E+12 | 3.6464E+06 |
| Tc-99m | 6.1369E-05 | 1.1671E-14 | 7.0995E+10 | 2.2707E+06 |
| Ru-103 | 8.1816E-05 | 2.5351E-12 | 1.4822E+13 | 3.0272E+06 |
| Ru-105 | 3.2885E-05 | 4.8922E-15 | 2.8058E+10 | 1.2168E+06 |
| Ru-106 | 3.0885E-05 | 9.2315E-12 | 5.2447E+13 | 1.1427E+06 |
| Rh-105 | 4.8379E-05 | 5.7318E-14 | 3.2874E+11 | 1.7900E+06 |
| Sb-127 | 1.0960E-04 | 4.1041E-13 | 1.9461E+12 | 4.0552E+06 |
| Sb-129 | 2.0142E-04 | 3.5819E-14 | 1.6721E+11 | 7.4526E+06 |
| Te-127 | 8.7507E-05 | 3.3158E-14 | 1.5723E+11 | 3.2378E+06 |
| Te-127m | 1.4930E-05 | 1.5828E-12 | 7.5053E+12 | 5.5240E+05 |
| Te-129 | 4.8635E-05 | 2.3224E-15 | 1.0842E+10 | 1.7995E+06 |
| Te-129m | 4.9878E-05 | 1.6557E-11 | 7.7293E+12 | 1.8455E+06 |
| Te-131m | 1.4227E-04 | 1.7841E-13 | 8.2018E+11 | 5.2639E+06 |
| Te-132 | 1.4853E-03 | 4.8925E-12 | 2.2321E+13 | 5.4957E+07 |
| I-131 | 7.8929E-03 | 6.3666E-11 | 2.9267E+14 | 2.9204E+08 |
| I-132 | 4.4067E-03 | 4.2692E-13 | 1.9477E+12 | 1.6305E+08 |
| I-133 | 1.5004E-02 | 1.3245E-11 | 5.9971E+13 | 5.5513E+08 |
| I-134 | 1.5363E-03 | 5.7589E-14 | 2.5881E+11 | 5.6843E+07 |
| I-135 | 1.1123E-02 | 3.1672E-12 | 1.4128E+13 | 4.1154E+08 |
| Xe-133 | 3.2478E+00 | 1.7351E-08 | 7.8564E+16 | 1.2017E+11 |
| Xe-135 | 9.6906E-01 | 3.7947E-10 | 1.6928E+15 | 3.5855E+10 |
| Cs-134 | 1.3704E-03 | 1.0592E-09 | 4.7601E+15 | 5.0705E+07 |
| Cs-136 | 3.7629E-04 | 5.1343E-12 | 2.2735E+13 | 1.3923E+07 |
| Cs-137 | 9.1825E-04 | 1.0557E-08 | 4.6405E+16 | 3.3975E+07 |
| Ba-139 | 1.6301E-04 | 9.9656E-15 | 4.3176E+10 | 6.0312E+06 |
| Ba-140 | 7.9221E-04 | 1.0821E-11 | 4.6548E+13 | 2.9312E+07 |
| La-140 | 7.6539E-06 | 1.3770E-14 | 5.9233E+10 | 2.8320E+05 |
| La-141 | 4.2565E-06 | 7.5265E-16 | 3.2146E+09 | 1.5749E+05 |

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**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 1 | System Nos. | Sheet 414 of 1000 |
|---|---|---|---|---|

| | | | | |
|---|---|---|---|---|
| La-142 | 2.0974E-06 | 1.4652E-16 | 6.2137E+08 | 7.7604E+04 |
| Ce-141 | 1.8227E-05 | 6.3969E-13 | 2.7321E+12 | 6.7439E+05 |
| Ce-143 | 1.6967E-05 | 2.5549E-14 | 1.0759E+11 | 6.2777E+05 |
| Ce-144 | 1.4717E-05 | 4.6143E-12 | 1.9297E+13 | 5.4454E+05 |
| Pr-143 | 7.0924E-06 | 1.0532E-13 | 4.4355E+11 | 2.6242E+05 |
| Nd-147 | 2.9606E-06 | 3.6597E-14 | 1.4993E+11 | 1.0954E+05 |
| Np-239 | 1.9431E-04 | 8.3757E-13 | 2.1104E+12 | 7.1894E+06 |
| Pu-238 | 5.8046E-08 | 3.3906E-12 | 8.5793E+12 | 2.1477E+03 |
| Pu-239 | 4.5178E-09 | 7.2684E-11 | 1.8314E+14 | 1.6716E+02 |
| Pu-240 | 4.8720E-09 | 2.1381E-11 | 5.3649E+13 | 1.8026E+02 |
| Pu-241 | 2.0176E-06 | 1.9586E-11 | 4.8942E+13 | 7.4652E+04 |
| Am-241 | 1.2409E-09 | 3.6155E-13 | 9.0344E+11 | 4.5913E+01 |
| Cm-242 | 2.9152E-07 | 8.7958E-14 | 2.1888E+11 | 1.0786E+04 |
| Cm-244 | 2.3596E-08 | 2.9166E-13 | 7.1984E+11 | 8.7305E+02 |

Control Room Transport Group Inventory:

| Time (h) = 2.0000 | Atmosphere | Sump | Overlying Pool |
|---|---|---|---|
| Noble gases (atoms) | 4.9865E+17 | 0.0000E+00 | 0.0000E+00 |
| Elemental I (atoms) | 2.0945E+13 | 0.0000E+00 | 0.0000E+00 |
| Organic I (atoms) | 2.9191E+12 | 0.0000E+00 | 0.0000E+00 |
| Aerosols (kg) | 1.2258E-08 | 0.0000E+00 | 0.0000E+00 |

| Time (h) = 2.0000 | Deposition Surfaces | Recirculating Filter |
|---|---|---|
| Noble gases (atoms) | 0.0000E+00 | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 | 1.8123E+14 |
| Organic I (atoms) | 0.0000E+00 | 1.5760E+13 |
| Aerosols (kg) | 0.0000E+00 | 1.2115E-07 |

CR Filtered Air Intake Transport Group Inventory:

| Time (h) = 2.0000 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 4.4637E+20 |
| Organic I (atoms) | 4.3931E+19 |
| Aerosols (kg) | 4.8658E-01 |

CR Unfiltered Inleakage Transport Group Inventory:

| Time (h) = 2.0000 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 |

CR Exhaust to Environment Transport Group Inventory:

| Time (h) = 2.0000 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 |

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**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 1 | System Nos. | Sheet 415 of 1000 |
|---|---|---|---|---|

Exclusion Area Boundary Doses:

| Time (h) = 2.3600 | Whole Body | Thyroid | TEDE |
|---|---|---|---|
| Delta dose (rem) | 2.7844E-01 | 4.2302E+01 | 2.5125E+00 |
| Accumulated dose (rem) | 1.4921E+00 | 2.7057E+02 | 1.5417E+01 |

Low Population Zone Doses:

| Time (h) = 2.3600 | Whole Body | Thyroid | TEDE |
|---|---|---|---|
| Delta dose (rem) | 2.0883E-02 | 3.1726E+00 | 1.8844E-01 |
| Accumulated dose (rem) | 2.3327E-01 | 4.3120E+01 | 2.4467E+00 |

Control Room Doses:

| Time (h) = 2.3600 | Whole Body | Thyroid | TEDE |
|---|---|---|---|
| Delta dose (rem) | 3.5339E-03 | 5.0053E-01 | 2.9665E-02 |
| Accumulated dose (rem) | 1.2420E-02 | 4.2671E+00 | 2.1997E-01 |

Environment Integral Nuclide Release:

| Time (h) = 2.3600 | Ci | kg | Atoms | Bq |
|---|---|---|---|---|
| Co-58 | 3.6369E-02 | 1.1437E-09 | 1.1876E+16 | 1.3456E+09 |
| Co-60 | 2.7850E-02 | 2.4638E-08 | 2.4729E+17 | 1.0305E+09 |
| Kr-85 | 5.4705E+01 | 1.3943E-04 | 9.8787E+20 | 2.0241E+12 |
| Kr-85m | 8.1511E+02 | 9.9047E-08 | 7.0174E+17 | 3.0159E+13 |
| Kr-87 | 6.2083E+02 | 2.1918E-08 | 1.5171E+17 | 2.2971E+13 |
| Kr-88 | 1.8105E+03 | 1.4439E-07 | 9.8808E+17 | 6.6988E+13 |
| Rb-86 | 1.1114E+00 | 1.3659E-08 | 9.5648E+16 | 4.1122E+10 |
| Sr-89 | 3.4083E+01 | 1.1732E-06 | 7.9382E+18 | 1.2611E+12 |
| Sr-90 | 3.6816E+00 | 2.6990E-05 | 1.8059E+20 | 1.3622E+11 |
| Sr-91 | 3.8312E+01 | 1.0569E-08 | 6.9941E+16 | 1.4175E+12 |
| Sr-92 | 2.5214E+01 | 2.0060E-09 | 1.3131E+16 | 9.3291E+11 |
| Y-90 | 3.6918E-02 | 6.7857E-11 | 4.5405E+14 | 1.3660E+09 |
| Y-91 | 4.1724E-01 | 1.7014E-08 | 1.1259E+17 | 1.5438E+10 |
| Y-92 | 2.9425E-01 | 3.0580E-11 | 2.0017E+14 | 1.0887E+10 |
| Y-93 | 4.5510E-01 | 1.3641E-10 | 8.8330E+14 | 1.6839E+10 |
| Zr-95 | 5.3751E-01 | 2.5020E-08 | 1.5861E+17 | 1.9888E+10 |
| Zr-97 | 4.9292E-01 | 2.5785E-10 | 1.6008E+15 | 1.8238E+10 |
| Nb-95 | 5.4119E-01 | 1.3840E-08 | 8.7734E+16 | 2.0024E+10 |
| Mo-99 | 7.1890E+00 | 1.4989E-08 | 9.1178E+16 | 2.6599E+11 |
| Tc-99m | 4.7867E+00 | 9.1032E-10 | 5.5374E+15 | 1.7711E+11 |
| Ru-103 | 5.9324E+00 | 1.8381E-07 | 1.0747E+18 | 2.1950E+11 |
| Ru-105 | 2.6363E+00 | 3.9219E-10 | 2.2493E+15 | 9.7543E+10 |
| Ru-106 | 2.2385E+00 | 6.6909E-07 | 3.8013E+18 | 8.2825E+10 |
| Rh-105 | 3.5491E+00 | 4.2048E-09 | 2.4116E+16 | 1.3132E+11 |
| Sb-127 | 7.9802E+00 | 2.9882E-08 | 1.4170E+17 | 2.9527E+11 |
| Sb-129 | 1.6195E+01 | 2.8799E-09 | 1.3444E+16 | 5.9921E+11 |
| Te-127 | 6.6451E+00 | 2.5179E-09 | 1.1940E+16 | 2.4587E+11 |
| Te-127m | 1.0822E+00 | 1.1473E-07 | 5.4404E+17 | 4.0042E+10 |
| Te-129 | 5.4677E+00 | 2.6108E-10 | 1.2188E+15 | 2.0230E+11 |
| Te-129m | 3.6169E+00 | 1.2006E-06 | 5.6049E+17 | 1.3382E+11 |
| Te-131m | 1.0460E+01 | 1.3117E-08 | 6.0300E+16 | 3.8700E+11 |
| Te-132 | 1.0824E+02 | 3.5653E-07 | 1.6266E+18 | 4.0049E+12 |
| I-131 | 6.2758E+02 | 5.0621E-06 | 2.3271E+19 | 2.3220E+13 |
| I-132 | 4.5751E+02 | 4.4323E-08 | 2.0221E+17 | 1.6928E+13 |
| I-133 | 1.2220E+03 | 1.0787E-06 | 4.8844E+18 | 4.5214E+13 |

| | | | | |
|---|---|---|---|---|
| I-134 | 2.8114E+02 | 1.0539E-08 | 4.7362E+16 | 1.0402E+13 |
| I-135 | 9.6209E+02 | 2.7395E-07 | 1.2221E+18 | 3.5597E+13 |
| Xe-133 | 7.7112E+03 | 4.1196E-05 | 1.8653E+20 | 2.8532E+14 |
| Xe-135 | 2.3606E+03 | 9.2438E-07 | 4.1235E+18 | 8.7342E+13 |
| Cs-134 | 1.1632E+02 | 8.9905E-05 | 4.0404E+20 | 4.3039E+12 |
| Cs-136 | 3.1999E+01 | 4.3660E-07 | 1.9333E+18 | 1.1840E+12 |
| Cs-137 | 7.7939E+01 | 8.9604E-04 | 3.9388E+21 | 2.8838E+12 |
| Ba-139 | 1.6934E+01 | 1.0353E-09 | 4.4852E+15 | 6.2654E+11 |
| Ba-140 | 5.7496E+01 | 7.8537E-07 | 3.3783E+18 | 2.1274E+12 |
| La-140 | 5.6066E-01 | 1.0087E-09 | 4.3389E+15 | 2.0744E+10 |
| La-141 | 3.4597E-01 | 6.1176E-11 | 2.6128E+14 | 1.2801E+10 |
| La-142 | 2.0873E-01 | 1.4581E-11 | 6.1837E+13 | 7.7229E+09 |
| Ce-141 | 1.3217E+00 | 4.6387E-08 | 1.9812E+17 | 4.8904E+10 |
| Ce-143 | 1.2458E+00 | 1.8759E-09 | 7.9001E+15 | 4.6093E+10 |
| Ce-144 | 1.0667E+00 | 3.3445E-07 | 1.3987E+18 | 3.9468E+10 |
| Pr-143 | 5.1470E-01 | 7.6435E-09 | 3.2189E+16 | 1.9044E+10 |
| Nd-147 | 2.1492E-01 | 2.6567E-09 | 1.0884E+16 | 7.9521E+09 |
| Np-239 | 1.4190E+01 | 6.1165E-08 | 1.5412E+17 | 5.2502E+11 |
| Pu-238 | 4.2070E-03 | 2.4574E-07 | 6.2179E+17 | 1.5566E+08 |
| Pu-239 | 3.2743E-04 | 5.2678E-06 | 1.3274E+19 | 1.2115E+07 |
| Pu-240 | 3.5310E-04 | 1.5496E-06 | 3.8883E+18 | 1.3065E+07 |
| Pu-241 | 1.4623E-01 | 1.4195E-06 | 3.5471E+18 | 5.4105E+09 |
| Am-241 | 8.9935E-05 | 2.6204E-08 | 6.5478E+16 | 3.3276E+06 |
| Cm-242 | 2.1130E-02 | 6.3756E-09 | 1.5866E+16 | 7.8183E+08 |
| Cm-244 | 1.7102E-03 | 2.1138E-08 | 5.2171E+16 | 6.3276E+07 |

Environment Transport Group Inventory:

| Time (h) = 2.3600 | Present Release | Release Rate/s | Total Release |
|---|---|---|---|
| Noble gases (atoms) | 1.1819E+21 | 1.3911E+17 | 1.1819E+21 |
| Elemental I (atoms) | 1.0185E+18 | 1.1988E+14 | 1.0185E+18 |
| Organic I (atoms) | 1.1203E+17 | 1.3187E+13 | 1.1203E+17 |
| Aerosols (kg) | 1.0333E-03 | 1.2162E-07 | 1.0333E-03 |

CR Filtered Air Intake Transport Group Inventory:

| Time (h) = 2.3600 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 5.2938E+20 |
| Organic I (atoms) | 6.1248E+19 |
| Aerosols (kg) | 5.8933E-01 |

CR Unfiltered Inleakage Transport Group Inventory:

| Time (h) = 2.3600 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 |

CR Exhaust to Environment Transport Group Inventory:

| Time (h) = 2.3600 | Pathway Filter |
|---|---|

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**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 1 | System Nos. | Sheet 417 of 1000 |
|---|---|---|---|---|

| | |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 |

Control Room Compartment Nuclide Inventory:

| Time (h) = 2.3600 | Ci | kg | Atoms | Bq |
|---|---|---|---|---|
| Co-58 | 2.2255E-07 | 6.9987E-15 | 7.2668E+10 | 8.2342E+03 |
| Co-60 | 1.7049E-07 | 1.5082E-13 | 1.5138E+12 | 6.3080E+03 |
| Kr-85 | 2.1033E-02 | 5.3610E-08 | 3.7982E+17 | 7.7822E+08 |
| Kr-85m | 2.7797E-01 | 3.3777E-11 | 2.3930E+14 | 1.0285E+10 |
| Kr-87 | 1.4959E-01 | 5.2811E-12 | 3.6556E+13 | 5.5348E+09 |
| Kr-88 | 5.7355E-01 | 4.5740E-11 | 3.1302E+14 | 2.1221E+10 |
| Rb-86 | 5.8004E-06 | 7.1287E-14 | 4.9919E+11 | 2.1462E+05 |
| Sr-89 | 2.0853E-04 | 7.1776E-12 | 4.8567E+13 | 7.7155E+06 |
| Sr-90 | 2.2537E-05 | 1.6522E-10 | 1.1055E+15 | 8.3387E+05 |
| Sr-91 | 2.1817E-04 | 6.0184E-14 | 3.9828E+11 | 8.0722E+06 |
| Sr-92 | 1.1867E-04 | 9.4409E-15 | 6.1798E+10 | 4.3907E+06 |
| Y-90 | 2.2362E-07 | 4.1101E-16 | 2.7502E+09 | 8.2738E+03 |
| Y-91 | 2.5529E-06 | 1.0410E-13 | 6.8891E+11 | 9.4459E+04 |
| Y-92 | 1.4764E-06 | 1.5344E-16 | 1.0044E+09 | 5.4627E+04 |
| Y-93 | 2.6029E-06 | 7.8018E-16 | 5.0520E+09 | 9.6308E+04 |
| Zr-95 | 3.2889E-06 | 1.5310E-13 | 9.7049E+11 | 1.2169E+05 |
| Zr-97 | 2.8980E-06 | 1.5160E-15 | 9.4117E+09 | 1.0723E+05 |
| Nb-95 | 3.3103E-06 | 8.4655E-14 | 5.3664E+11 | 1.2248E+05 |
| Mo-99 | 4.3558E-05 | 9.0818E-14 | 5.5244E+11 | 1.6116E+06 |
| Tc-99m | 2.6117E-05 | 4.9668E-15 | 3.0213E+10 | 9.6632E+05 |
| Ru-103 | 3.6289E-05 | 1.1244E-12 | 6.5742E+12 | 1.3427E+06 |
| Ru-105 | 1.3789E-05 | 2.0513E-15 | 1.1765E+10 | 5.1019E+05 |
| Ru-106 | 1.3702E-05 | 4.0956E-12 | 2.3268E+13 | 5.0698E+05 |
| Rh-105 | 2.1313E-05 | 2.5250E-14 | 1.4482E+11 | 7.8857E+05 |
| Sb-127 | 4.8494E-05 | 1.8159E-13 | 8.6107E+11 | 1.7943E+06 |
| Sb-129 | 8.4325E-05 | 1.4995E-14 | 7.0004E+10 | 3.1200E+06 |
| Te-127 | 3.7797E-05 | 1.4322E-14 | 6.7911E+10 | 1.3985E+06 |
| Te-127m | 6.6231E-06 | 7.0215E-13 | 3.3295E+12 | 2.4506E+05 |
| Te-129 | 1.7387E-05 | 8.3023E-16 | 3.8758E+09 | 6.4332E+05 |
| Te-129m | 2.2122E-05 | 7.3435E-12 | 3.4282E+12 | 8.1853E+05 |
| Te-131m | 6.2594E-05 | 7.8497E-14 | 3.6086E+11 | 2.3160E+06 |
| Te-132 | 6.5688E-04 | 2.1637E-12 | 9.8712E+12 | 2.4304E+07 |
| I-131 | 3.5015E-03 | 2.8243E-11 | 1.2984E+14 | 1.2955E+08 |
| I-132 | 1.7554E-03 | 1.7006E-13 | 7.7586E+11 | 6.4950E+07 |
| I-133 | 6.5847E-03 | 5.8127E-12 | 2.6320E+13 | 2.4363E+08 |
| I-134 | 5.1292E-04 | 1.9227E-14 | 8.6410E+10 | 1.8978E+07 |
| I-135 | 4.7568E-03 | 1.3545E-12 | 6.0422E+12 | 1.7600E+08 |
| Xe-133 | 2.9527E+00 | 1.5774E-08 | 7.1426E+16 | 1.0925E+11 |
| Xe-135 | 8.5652E-01 | 3.3540E-10 | 1.4962E+15 | 3.1691E+10 |
| Cs-134 | 6.0819E-04 | 4.7007E-10 | 2.1126E+15 | 2.2503E+07 |
| Cs-136 | 1.6687E-04 | 2.2768E-12 | 1.0082E+13 | 6.1741E+06 |
| Cs-137 | 4.0753E-04 | 4.6852E-09 | 2.0595E+16 | 1.5078E+07 |
| Ba-139 | 6.0300E-05 | 3.6865E-15 | 1.5972E+10 | 2.2311E+06 |
| Ba-140 | 3.5119E-04 | 4.7971E-12 | 2.0635E+13 | 1.2994E+07 |
| La-140 | 3.3747E-06 | 6.0715E-15 | 2.6117E+10 | 1.2486E+05 |
| La-141 | 1.7717E-06 | 3.1329E-16 | 1.3381E+09 | 6.5555E+04 |
| La-142 | 7.9095E-07 | 5.5253E-17 | 2.3433E+08 | 2.9265E+04 |
| Ce-141 | 8.0840E-06 | 2.8371E-13 | 1.2118E+12 | 2.9911E+05 |
| Ce-143 | 7.4706E-06 | 1.1249E-14 | 4.7375E+10 | 2.7641E+05 |

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**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 1 | System Nos. | Sheet 418 of 1000 |
|---|---|---|---|---|

| | | | | |
|---|---|---|---|---|
| Ce-144 | 6.5293E-06 | 2.0471E-12 | 8.5612E+12 | 2.4158E+05 |
| Pr-143 | 3.1442E-06 | 4.6693E-14 | 1.9664E+11 | 1.1634E+05 |
| Nd-147 | 1.3123E-06 | 1.6221E-14 | 6.6454E+10 | 4.8554E+04 |
| Np-239 | 8.5827E-05 | 3.6996E-13 | 9.3219E+11 | 3.1756E+06 |
| Pu-238 | 2.5753E-08 | 1.5043E-12 | 3.8063E+12 | 9.5287E+02 |
| Pu-239 | 2.0044E-09 | 3.2247E-11 | 8.1255E+13 | 7.4162E+01 |
| Pu-240 | 2.1615E-09 | 9.4859E-12 | 2.3802E+13 | 7.9976E+01 |
| Pu-241 | 8.9515E-07 | 8.6897E-12 | 2.1714E+13 | 3.3120E+04 |
| Am-241 | 5.5054E-10 | 1.6041E-13 | 4.0083E+11 | 2.0370E+01 |
| Cm-242 | 1.2933E-07 | 3.9022E-14 | 9.7105E+10 | 4.7852E+03 |
| Cm-244 | 1.0469E-08 | 1.2940E-13 | 3.1937E+11 | 3.8734E+02 |

Control Room Transport Group Inventory:

| Time (h) = 2.3600 | Atmosphere | Sump | Overlying Pool |
|---|---|---|---|
| Noble gases (atoms) | 4.5428E+17 | 0.0000E+00 | 0.0000E+00 |
| Elemental I (atoms) | 8.7398E+12 | 0.0000E+00 | 0.0000E+00 |
| Organic I (atoms) | 2.0120E+12 | 0.0000E+00 | 0.0000E+00 |
| Aerosols (kg) | 5.4403E-09 | 0.0000E+00 | 0.0000E+00 |

| Time (h) = 2.3600 | Deposition Surfaces | Recirculating Filter |
|---|---|---|
| Noble gases (atoms) | 0.0000E+00 | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 | 2.0990E+14 |
| Organic I (atoms) | 0.0000E+00 | 2.0695E+13 |
| Aerosols (kg) | 0.0000E+00 | 1.3997E-07 |

CR Filtered Air Intake Transport Group Inventory:

| Time (h) = 2.3600 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 5.2938E+20 |
| Organic I (atoms) | 6.1248E+19 |
| Aerosols (kg) | 5.8933E-01 |

CR Unfiltered Inleakage Transport Group Inventory:

| Time (h) = 2.3600 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 |

CR Exhaust to Environment Transport Group Inventory:

| Time (h) = 2.3600 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 |

Exclusion Area Boundary Doses:

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**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 1 | System Nos. | Sheet 419 of 1000 |
|---|---|---|---|---|

| Time (h) = 2.8082 | Whole Body | Thyroid | TEDE |
|---|---|---|---|
| Delta dose (rem) | 2.7869E-01 | 3.2362E+01 | 1.9827E+00 |
| Accumulated dose (rem) | 1.7708E+00 | 3.0293E+02 | 1.7399E+01 |

Low Population Zone Doses:

| Time (h) = 2.8082 | Whole Body | Thyroid | TEDE |
|---|---|---|---|
| Delta dose (rem) | 2.0902E-02 | 2.4272E+00 | 1.4870E-01 |
| Accumulated dose (rem) | 2.5417E-01 | 4.5547E+01 | 2.5954E+00 |

Control Room Doses:

| Time (h) = 2.8082 | Whole Body | Thyroid | TEDE |
|---|---|---|---|
| Delta dose (rem) | 3.6770E-03 | 3.2330E-01 | 2.0512E-02 |
| Accumulated dose (rem) | 1.6097E-02 | 4.5904E+00 | 2.4048E-01 |

Environment Integral Nuclide Release:

| Time (h) = 2.8082 | Ci | kg | Atoms | Bq |
|---|---|---|---|---|
| Co-58 | 4.1291E-02 | 1.2985E-09 | 1.3483E+16 | 1.5278E+09 |
| Co-60 | 3.1622E-02 | 2.7974E-08 | 2.8077E+17 | 1.1700E+09 |
| Kr-85 | 7.4243E+01 | 1.8923E-04 | 1.3407E+21 | 2.7470E+12 |
| Kr-85m | 1.0613E+03 | 1.2896E-07 | 9.1364E+17 | 3.9266E+13 |
| Kr-87 | 7.3850E+02 | 2.6072E-08 | 1.8047E+17 | 2.7325E+13 |
| Kr-88 | 2.3046E+03 | 1.8379E-07 | 1.2578E+18 | 8.5272E+13 |
| Rb-86 | 1.2397E+00 | 1.5236E-08 | 1.0669E+17 | 4.5871E+10 |
| Sr-89 | 3.8695E+01 | 1.3319E-06 | 9.0124E+18 | 1.4317E+12 |
| Sr-90 | 4.1801E+00 | 3.0644E-05 | 2.0505E+20 | 1.5466E+11 |
| Sr-91 | 4.3050E+01 | 1.1876E-08 | 7.8592E+16 | 1.5929E+12 |
| Sr-92 | 2.7677E+01 | 2.2019E-09 | 1.4413E+16 | 1.0240E+12 |
| Y-90 | 4.1851E-02 | 7.6924E-11 | 5.1472E+14 | 1.5485E+09 |
| Y-91 | 4.7371E-01 | 1.9316E-08 | 1.2783E+17 | 1.7527E+10 |
| Y-92 | 3.2536E-01 | 3.3813E-11 | 2.2133E+14 | 1.2038E+10 |
| Y-93 | 5.1170E-01 | 1.5337E-10 | 9.9315E+14 | 1.8933E+10 |
| Zr-95 | 6.1025E-01 | 2.8406E-08 | 1.8007E+17 | 2.2579E+10 |
| Zr-97 | 5.5637E-01 | 2.9104E-10 | 1.8069E+15 | 2.0586E+10 |
| Nb-95 | 6.1440E-01 | 1.5712E-08 | 9.9602E+16 | 2.2733E+10 |
| Mo-99 | 8.1499E+00 | 1.6993E-08 | 1.0337E+17 | 3.0155E+11 |
| Tc-99m | 5.3480E+00 | 1.0171E-09 | 6.1868E+15 | 1.9788E+11 |
| Ru-103 | 6.7350E+00 | 2.0868E-07 | 1.2201E+18 | 2.4919E+11 |
| Ru-105 | 2.9297E+00 | 4.3583E-10 | 2.4997E+15 | 1.0840E+11 |
| Ru-106 | 2.5416E+00 | 7.5968E-07 | 4.3160E+18 | 9.4039E+10 |
| Rh-105 | 4.0182E+00 | 4.7606E-09 | 2.7304E+16 | 1.4867E+11 |
| Sb-127 | 9.0509E+00 | 3.3892E-08 | 1.6071E+17 | 3.3488E+11 |
| Sb-129 | 1.7987E+01 | 3.1986E-09 | 1.4932E+16 | 6.6552E+11 |
| Te-127 | 7.4658E+00 | 2.8289E-09 | 1.3414E+16 | 2.7624E+11 |
| Te-127m | 1.2287E+00 | 1.3026E-07 | 6.1768E+17 | 4.5462E+10 |
| Te-129 | 5.7997E+00 | 2.7694E-10 | 1.2928E+15 | 2.1459E+11 |
| Te-129m | 4.1061E+00 | 1.3630E-06 | 6.3630E+17 | 1.5193E+11 |
| Te-131m | 1.1836E+01 | 1.4843E-08 | 6.8236E+16 | 4.3794E+11 |
| Te-132 | 1.2274E+02 | 4.0428E-07 | 1.8444E+18 | 4.5413E+12 |
| I-131 | 7.0358E+02 | 5.6752E-06 | 2.6089E+19 | 2.6033E+13 |
| I-132 | 4.9289E+02 | 4.7751E-08 | 2.1785E+17 | 1.8237E+13 |
| I-133 | 1.3639E+03 | 1.2040E-06 | 5.4514E+18 | 5.0463E+13 |
| I-134 | 2.9032E+02 | 1.0883E-08 | 4.8909E+16 | 1.0742E+13 |
| I-135 | 1.0628E+03 | 3.0262E-07 | 1.3499E+18 | 3.9322E+13 |
| Xe-133 | 1.0449E+04 | 5.5825E-05 | 2.5277E+20 | 3.8663E+14 |

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**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 1 | System Nos. | Sheet 420 of 1000 |
|---|---|---|---|---|

| | | | | |
|---|---|---|---|---|
| Xe-135 | 3.1377E+03 | 1.2287E-06 | 5.4809E+18 | 1.1609E+14 |
| Cs-134 | 1.2978E+02 | 1.0031E-04 | 4.5080E+20 | 4.8019E+12 |
| Cs-136 | 3.5690E+01 | 4.8697E-07 | 2.1563E+18 | 1.3205E+12 |
| Cs-137 | 8.6959E+01 | 9.9974E-04 | 4.3946E+21 | 3.2175E+12 |
| Ba-139 | 1.8112E+01 | 1.1073E-09 | 4.7973E+15 | 6.7014E+11 |
| Ba-140 | 6.5260E+01 | 8.9143E-07 | 3.8345E+18 | 2.4146E+12 |
| La-140 | 6.3499E-01 | 1.1424E-09 | 4.9141E+15 | 2.3494E+10 |
| La-141 | 3.8348E-01 | 6.7808E-11 | 2.8961E+14 | 1.4189E+10 |
| La-142 | 2.2438E-01 | 1.5675E-11 | 6.6476E+13 | 8.3022E+09 |
| Ce-141 | 1.5005E+00 | 5.2661E-08 | 2.2492E+17 | 5.5519E+10 |
| Ce-143 | 1.4102E+00 | 2.1235E-09 | 8.9425E+15 | 5.2176E+10 |
| Ce-144 | 1.2111E+00 | 3.7973E-07 | 1.5880E+18 | 4.4812E+10 |
| Pr-143 | 5.8422E-01 | 8.6758E-09 | 3.6536E+16 | 2.1616E+10 |
| Nd-147 | 2.4393E-01 | 3.0153E-09 | 1.2353E+16 | 9.0254E+09 |
| Np-239 | 1.6082E+01 | 6.9323E-08 | 1.7467E+17 | 5.9505E+11 |
| Pu-238 | 4.7766E-03 | 2.7901E-07 | 7.0599E+17 | 1.7673E+08 |
| Pu-239 | 3.7177E-04 | 5.9812E-06 | 1.5071E+19 | 1.3755E+07 |
| Pu-240 | 4.0091E-04 | 1.7594E-06 | 4.4148E+18 | 1.4834E+07 |
| Pu-241 | 1.6603E-01 | 1.6117E-06 | 4.0274E+18 | 6.1431E+09 |
| Am-241 | 1.0211E-04 | 2.9752E-08 | 7.4344E+16 | 3.7782E+06 |
| Cm-242 | 2.3991E-02 | 7.2387E-09 | 1.8013E+16 | 8.8767E+08 |
| Cm-244 | 1.9417E-03 | 2.4001E-08 | 5.9236E+16 | 7.1844E+07 |

Environment Transport Group Inventory:

| Time (h) = 2.8082 | Present Release | Release Rate/s | Total Release |
|---|---|---|---|
| Noble gases (atoms) | 1.6038E+21 | 1.5864E+17 | 1.6038E+21 |
| Elemental I (atoms) | 1.1518E+18 | 1.1393E+14 | 1.1518E+18 |
| Organic I (atoms) | 1.4980E+17 | 1.4818E+13 | 1.4980E+17 |
| Aerosols (kg) | 1.1537E-03 | 1.1412E-07 | 1.1537E-03 |

CR Filtered Air Intake Transport Group Inventory:

| Time (h) = 2.8082 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 6.0639E+20 |
| Organic I (atoms) | 8.3061E+19 |
| Aerosols (kg) | 6.6839E-01 |

CR Unfiltered Inleakage Transport Group Inventory:

| Time (h) = 2.8082 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 |

CR Exhaust to Environment Transport Group Inventory:

| Time (h) = 2.8082 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 |

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**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 1 | System Nos. | Sheet 421 of 1000 |
|---|---|---|---|---|

Aerosols (kg) 0.0000E+00

Control Room Compartment Nuclide Inventory:

| Time (h) = 2.8082 | Ci | kg | Atoms | Bq |
|---|---|---|---|---|
| Co-58 | 1.2497E-07 | 3.9300E-15 | 4.0805E+10 | 4.6238E+03 |
| Co-60 | 9.5750E-08 | 8.4706E-14 | 8.5018E+11 | 3.5428E+03 |
| Kr-85 | 1.9950E-02 | 5.0850E-08 | 3.6027E+17 | 7.3816E+08 |
| Kr-85m | 2.4511E-01 | 2.9784E-11 | 2.1101E+14 | 9.0689E+09 |
| Kr-87 | 1.0978E-01 | 3.8755E-12 | 2.6826E+13 | 4.0617E+09 |
| Kr-88 | 4.8489E-01 | 3.8670E-11 | 2.6463E+14 | 1.7941E+10 |
| Rb-86 | 3.2576E-06 | 4.0036E-14 | 2.8035E+11 | 1.2053E+05 |
| Sr-89 | 1.1709E-04 | 4.0302E-12 | 2.7270E+13 | 4.3322E+06 |
| Sr-90 | 1.2657E-05 | 9.2792E-11 | 6.2090E+14 | 4.6833E+05 |
| Sr-91 | 1.1861E-04 | 3.2721E-14 | 2.1654E+11 | 4.3887E+06 |
| Sr-92 | 5.9472E-05 | 4.7315E-15 | 3.0972E+10 | 2.2005E+06 |
| Y-90 | 1.2499E-07 | 2.2973E-16 | 1.5372E+09 | 4.6245E+03 |
| Y-91 | 1.4335E-06 | 5.8453E-14 | 3.8683E+11 | 5.3040E+04 |
| Y-92 | 7.5996E-07 | 7.8979E-17 | 5.1698E+08 | 2.8119E+04 |
| Y-93 | 1.4179E-06 | 4.2499E-16 | 2.7520E+09 | 5.2462E+04 |
| Zr-95 | 1.8468E-06 | 8.5966E-14 | 5.4495E+11 | 6.8332E+04 |
| Zr-97 | 1.5982E-06 | 8.3601E-16 | 5.1902E+09 | 5.9132E+04 |
| Nb-95 | 1.8585E-06 | 4.7528E-14 | 3.0128E+11 | 6.8764E+04 |
| Mo-99 | 2.4349E-05 | 5.0769E-14 | 3.0882E+11 | 9.0093E+05 |
| Tc-99m | 1.3935E-05 | 2.6501E-15 | 1.6121E+10 | 5.1559E+05 |
| Ru-103 | 2.0375E-05 | 6.3131E-13 | 3.6911E+12 | 7.5386E+05 |
| Ru-105 | 7.2243E-06 | 1.0747E-15 | 6.1639E+09 | 2.6730E+05 |
| Ru-106 | 7.6953E-06 | 2.3001E-12 | 1.3068E+13 | 2.8473E+05 |
| Rh-105 | 1.1866E-05 | 1.4058E-14 | 8.0629E+10 | 4.3904E+05 |
| Sb-127 | 2.7145E-05 | 1.0165E-13 | 4.8200E+11 | 1.0044E+06 |
| Sb-129 | 4.4094E-05 | 7.8412E-15 | 3.6605E+10 | 1.6315E+06 |
| Te-127 | 2.0538E-05 | 7.7824E-15 | 3.6903E+10 | 7.5992E+05 |
| Te-127m | 3.7193E-06 | 3.9431E-13 | 1.8697E+12 | 1.3762E+05 |
| Te-129 | 7.4836E-06 | 3.5734E-16 | 1.6682E+09 | 2.7689E+05 |
| Te-129m | 1.2420E-05 | 4.1228E-12 | 1.9246E+12 | 4.5954E+05 |
| Te-131m | 3.4795E-05 | 4.3635E-14 | 2.0059E+11 | 1.2874E+06 |
| Te-132 | 3.6747E-04 | 1.2104E-12 | 5.5221E+12 | 1.3596E+07 |
| I-131 | 2.0253E-03 | 1.6336E-11 | 7.5098E+13 | 7.4935E+07 |
| I-132 | 8.8928E-04 | 8.6153E-14 | 3.9305E+11 | 3.2904E+07 |
| I-133 | 3.7585E-03 | 3.3179E-12 | 1.5023E+13 | 1.3907E+08 |
| I-134 | 2.0899E-04 | 7.8342E-15 | 3.5208E+10 | 7.7326E+06 |
| I-135 | 2.6301E-03 | 7.4891E-13 | 3.3408E+12 | 9.7312E+07 |
| Xe-133 | 2.7934E+00 | 1.4924E-08 | 6.7573E+16 | 1.0336E+11 |
| Xe-135 | 7.8373E-01 | 3.0689E-10 | 1.3690E+15 | 2.8998E+10 |
| Cs-134 | 3.4180E-04 | 2.6417E-10 | 1.1872E+15 | 1.2646E+07 |
| Cs-136 | 9.3688E-05 | 1.2783E-12 | 5.6604E+12 | 3.4665E+06 |
| Cs-137 | 2.2903E-04 | 2.6331E-09 | 1.1574E+16 | 8.4741E+06 |
| Ba-139 | 2.7071E-05 | 1.6550E-15 | 7.1704E+09 | 1.0016E+06 |
| Ba-140 | 1.9704E-04 | 2.6915E-12 | 1.1577E+13 | 7.2905E+06 |
| La-140 | 1.8809E-06 | 3.3839E-15 | 1.4556E+10 | 6.9593E+04 |
| La-141 | 9.1991E-07 | 1.6266E-16 | 6.9473E+08 | 3.4037E+04 |
| La-142 | 3.6362E-07 | 2.5401E-17 | 1.0773E+08 | 1.3454E+04 |
| Ce-141 | 4.5385E-06 | 1.5928E-13 | 6.8029E+11 | 1.6792E+05 |
| Ce-143 | 4.1567E-06 | 6.2593E-15 | 2.6360E+10 | 1.5380E+05 |
| Ce-144 | 3.6669E-06 | 1.1497E-12 | 4.8080E+12 | 1.3568E+05 |
| Pr-143 | 1.7642E-06 | 2.6200E-14 | 1.1033E+11 | 6.5277E+04 |
| Nd-147 | 7.3616E-07 | 9.0998E-15 | 3.7279E+10 | 2.7238E+04 |

| | | | | |
|---|---|---|---|---|
| Np-239 | 4.7941E-05 | 2.0665E-13 | 5.2070E+11 | 1.7738E+06 |
| Pu-238 | 1.4464E-08 | 8.4487E-13 | 2.1378E+12 | 5.3516E+02 |
| Pu-239 | 1.1257E-09 | 1.8111E-11 | 4.5635E+13 | 4.1652E+01 |
| Pu-240 | 1.2140E-09 | 5.3276E-12 | 1.3368E+13 | 4.4917E+01 |
| Pu-241 | 5.0274E-07 | 4.8804E-12 | 1.2195E+13 | 1.8602E+04 |
| Am-241 | 3.0920E-10 | 9.0090E-14 | 2.2512E+11 | 1.1441E+01 |
| Cm-242 | 7.2630E-08 | 2.1914E-14 | 5.4533E+10 | 2.6873E+03 |
| Cm-244 | 5.8796E-09 | 7.2675E-14 | 1.7937E+11 | 2.1754E+02 |

Control Room Transport Group Inventory:

| Time (h) = 2.8082 | Atmosphere | Sump | Overlying Pool |
|---|---|---|---|
| Noble gases (atoms) | 4.3086E+17 | 0.0000E+00 | 0.0000E+00 |
| Elemental I (atoms) | 6.9734E+12 | 0.0000E+00 | 0.0000E+00 |
| Organic I (atoms) | 1.9634E+12 | 0.0000E+00 | 0.0000E+00 |
| Aerosols (kg) | 3.0573E-09 | 0.0000E+00 | 0.0000E+00 |

| Time (h) = 2.8082 | Deposition Surfaces | Recirculating Filter |
|---|---|---|
| Noble gases (atoms) | 0.0000E+00 | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 | 2.2997E+14 |
| Organic I (atoms) | 0.0000E+00 | 2.6050E+13 |
| Aerosols (kg) | 0.0000E+00 | 1.5219E-07 |

CR Filtered Air Intake Transport Group Inventory:

| Time (h) = 2.8082 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 6.0639E+20 |
| Organic I (atoms) | 8.3061E+19 |
| Aerosols (kg) | 6.6839E-01 |

CR Unfiltered Inleakage Transport Group Inventory:

| Time (h) = 2.8082 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 |

CR Exhaust to Environment Transport Group Inventory:

| Time (h) = 2.8082 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 |

Exclusion Area Boundary Doses:

| Time (h) = 4.0000 | Whole Body | Thyroid | TEDE |
|---|---|---|---|
| Delta dose (rem) | 5.8013E-01 | 5.7884E+01 | 3.6102E+00 |
| Accumulated dose (rem) | 2.3509E+00 | 3.6082E+02 | 2.1009E+01 |

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**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 1 | System Nos. | Sheet 423 of 1000 |
|---|---|---|---|---|

Low Population Zone Doses:

| Time (h) = 4.0000 | Whole Body | Thyroid | TEDE |
|---|---|---|---|
| Delta dose (rem) | 4.3510E-02 | 4.3413E+00 | 2.7076E-01 |
| Accumulated dose (rem) | 2.9768E-01 | 4.9888E+01 | 2.8661E+00 |

Control Room Doses:

| Time (h) = 4.0000 | Whole Body | Thyroid | TEDE |
|---|---|---|---|
| Delta dose (rem) | 7.7661E-03 | 5.2277E-01 | 3.4622E-02 |
| Accumulated dose (rem) | 2.3863E-02 | 5.1132E+00 | 2.7510E-01 |

Environment Integral Nuclide Release:

| Time (h) = 4.0000 | Ci | kg | Atoms | Bq |
|---|---|---|---|---|
| Co-58 | 4.9988E-02 | 1.5721E-09 | 1.6323E+16 | 1.8496E+09 |
| Co-60 | 3.8287E-02 | 3.3871E-08 | 3.3996E+17 | 1.4166E+09 |
| Kr-85 | 1.2619E+02 | 3.2164E-04 | 2.2788E+21 | 4.6691E+12 |
| Kr-85m | 1.6382E+03 | 1.9907E-07 | 1.4104E+18 | 6.0615E+13 |
| Kr-87 | 9.4140E+02 | 3.3235E-08 | 2.3005E+17 | 3.4832E+13 |
| Kr-88 | 3.3829E+03 | 2.6978E-07 | 1.8462E+18 | 1.2517E+14 |
| Rb-86 | 1.4663E+00 | 1.8021E-08 | 1.2619E+17 | 5.4254E+10 |
| Sr-89 | 4.6843E+01 | 1.6124E-06 | 1.0910E+19 | 1.7332E+12 |
| Sr-90 | 5.0612E+00 | 3.7104E-05 | 2.4827E+20 | 1.8727E+11 |
| Sr-91 | 5.0946E+01 | 1.4054E-08 | 9.3006E+16 | 1.8850E+12 |
| Sr-92 | 3.1225E+01 | 2.4842E-09 | 1.6261E+16 | 1.1553E+12 |
| Y-90 | 5.0494E-02 | 9.2809E-11 | 6.2101E+14 | 1.8683E+09 |
| Y-91 | 5.7347E-01 | 2.3384E-08 | 1.5475E+17 | 2.1218E+10 |
| Y-92 | 3.7233E-01 | 3.8695E-11 | 2.5329E+14 | 1.3776E+10 |
| Y-93 | 6.0633E-01 | 1.8174E-10 | 1.1768E+15 | 2.2434E+10 |
| Zr-95 | 7.3878E-01 | 3.4389E-08 | 2.1800E+17 | 2.7335E+10 |
| Zr-97 | 6.6485E-01 | 3.4778E-10 | 2.1592E+15 | 2.4599E+10 |
| Nb-95 | 7.4371E-01 | 1.9019E-08 | 1.2056E+17 | 2.7517E+10 |
| Mo-99 | 9.8340E+00 | 2.0504E-08 | 1.2472E+17 | 3.6386E+11 |
| Tc-99m | 6.2521E+00 | 1.1890E-09 | 7.2327E+15 | 2.3133E+11 |
| Ru-103 | 8.1527E+00 | 2.5261E-07 | 1.4769E+18 | 3.0165E+11 |
| Ru-105 | 3.3870E+00 | 5.0386E-10 | 2.8898E+15 | 1.2532E+11 |
| Ru-106 | 3.0773E+00 | 9.1980E-07 | 5.2256E+18 | 1.1386E+11 |
| Rh-105 | 4.8343E+00 | 5.7275E-09 | 3.2849E+16 | 1.7887E+11 |
| Sb-127 | 1.0932E+01 | 4.0935E-08 | 1.9411E+17 | 4.0448E+11 |
| Sb-129 | 2.0771E+01 | 3.6937E-09 | 1.7243E+16 | 7.6853E+11 |
| Te-127 | 8.8320E+00 | 3.3466E-09 | 1.5869E+16 | 3.2678E+11 |
| Te-127m | 1.4876E+00 | 1.5771E-07 | 7.4782E+17 | 5.5041E+10 |
| Te-129 | 6.1673E+00 | 2.9449E-10 | 1.3748E+15 | 2.2819E+11 |
| Te-129m | 4.9703E+00 | 1.6499E-06 | 7.7021E+17 | 1.8390E+11 |
| Te-131m | 1.4224E+01 | 1.7838E-08 | 8.2002E+16 | 5.2629E+11 |
| Te-132 | 1.4818E+02 | 4.8808E-07 | 2.2267E+18 | 5.4826E+12 |
| I-131 | 8.4075E+02 | 6.7816E-06 | 3.1175E+19 | 3.1108E+13 |
| I-132 | 5.4324E+02 | 5.2628E-08 | 2.4010E+17 | 2.0100E+13 |
| I-133 | 1.6138E+03 | 1.4246E-06 | 6.4504E+18 | 5.9710E+13 |
| I-134 | 2.9932E+02 | 1.1220E-08 | 5.0426E+16 | 1.1075E+13 |
| I-135 | 1.2302E+03 | 3.5029E-07 | 1.5626E+18 | 4.5516E+13 |
| Xe-133 | 1.7697E+04 | 9.4543E-05 | 4.2809E+20 | 6.5478E+14 |
| Xe-135 | 5.0787E+03 | 1.9887E-06 | 8.8715E+18 | 1.8791E+14 |
| Cs-134 | 1.5358E+02 | 1.1870E-04 | 5.3345E+20 | 5.6823E+12 |
| Cs-136 | 4.2204E+01 | 5.7584E-07 | 2.5498E+18 | 1.5615E+12 |

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**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 1 | System Nos. | Sheet 424 of 1000 |
|---|---|---|---|---|

| | | | | |
|---|---|---|---|---|
| Cs-137 | 1.0290E+02 | 1.1830E-03 | 5.2004E+21 | 3.8074E+12 |
| Ba-139 | 1.9513E+01 | 1.1930E-09 | 5.1685E+15 | 7.2199E+11 |
| Ba-140 | 7.8958E+01 | 1.0785E-06 | 4.6393E+18 | 2.9214E+12 |
| La-140 | 7.6454E-01 | 1.3755E-09 | 5.9167E+15 | 2.8288E+10 |
| La-141 | 4.4101E-01 | 7.7981E-11 | 3.3306E+14 | 1.6317E+10 |
| La-142 | 2.4378E-01 | 1.7030E-11 | 7.2222E+13 | 9.0199E+09 |
| Ce-141 | 1.8163E+00 | 6.3743E-08 | 2.7225E+17 | 6.7202E+10 |
| Ce-143 | 1.6958E+00 | 2.5536E-09 | 1.0754E+16 | 6.2744E+10 |
| Ce-144 | 1.4664E+00 | 4.5976E-07 | 1.9227E+18 | 5.4256E+10 |
| Pr-143 | 7.0687E-01 | 1.0497E-08 | 4.4207E+16 | 2.6154E+10 |
| Nd-147 | 2.9509E-01 | 3.6477E-09 | 1.4944E+16 | 1.0918E+10 |
| Np-239 | 1.9394E+01 | 8.3600E-08 | 2.1065E+17 | 7.1760E+11 |
| Pu-238 | 5.7835E-03 | 3.3783E-07 | 8.5481E+17 | 2.1399E+08 |
| Pu-239 | 4.5013E-04 | 7.2419E-06 | 1.8248E+19 | 1.6655E+07 |
| Pu-240 | 4.8542E-04 | 2.1303E-06 | 5.3454E+18 | 1.7961E+07 |
| Pu-241 | 2.0103E-01 | 1.9515E-06 | 4.8764E+18 | 7.4380E+09 |
| Am-241 | 1.2364E-04 | 3.6023E-08 | 9.0015E+16 | 4.5746E+06 |
| Cm-242 | 2.9047E-02 | 8.7640E-09 | 2.1809E+16 | 1.0747E+09 |
| Cm-244 | 2.3510E-03 | 2.9060E-08 | 7.1722E+16 | 8.6988E+07 |

Environment Transport Group Inventory:

| Time (h) = 4.0000 | Present Release | Release Rate/s | Total Release |
|---|---|---|---|
| Noble gases (atoms) | 2.7257E+21 | 1.8928E+17 | 2.7257E+21 |
| Elemental I (atoms) | 1.5063E+18 | 1.0461E+14 | 1.5063E+18 |
| Organic I (atoms) | 2.5022E+17 | 1.7376E+13 | 2.5022E+17 |
| Aerosols (kg) | 1.3666E-03 | 9.4901E-08 | 1.3666E-03 |

CR Filtered Air Intake Transport Group Inventory:

| Time (h) = 4.0000 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 8.2187E+20 |
| Organic I (atoms) | 1.4409E+20 |
| Aerosols (kg) | 8.1113E-01 |

CR Unfiltered Inleakage Transport Group Inventory:

| Time (h) = 4.0000 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 |

CR Exhaust to Environment Transport Group Inventory:

| Time (h) = 4.0000 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 |

Control Room Compartment Nuclide Inventory:

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**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 1 | System Nos. | Sheet 425 of 1000 |
|---|---|---|---|---|

| Time (h) = 4.0000 | Ci | kg | Atoms | Bq |
|---|---|---|---|---|
| Co-58 | 8.4464E-08 | 2.6563E-15 | 2.7580E+10 | 3.1252E+03 |
| Co-60 | 6.4747E-08 | 5.7279E-14 | 5.7490E+11 | 2.3956E+03 |
| Kr-85 | 1.9336E-02 | 4.9284E-08 | 3.4917E+17 | 7.1543E+08 |
| Kr-85m | 1.9712E-01 | 2.3952E-11 | 1.6970E+14 | 7.2933E+09 |
| Kr-87 | 5.5141E-02 | 1.9467E-12 | 1.3475E+13 | 2.0402E+09 |
| Kr-88 | 3.5012E-01 | 2.7922E-11 | 1.9108E+14 | 1.2954E+10 |
| Rb-86 | 2.1990E-06 | 2.7025E-14 | 1.8924E+11 | 8.1362E+04 |
| Sr-89 | 7.9122E-05 | 2.7234E-12 | 1.8428E+13 | 2.9275E+06 |
| Sr-90 | 8.5593E-06 | 6.2748E-11 | 4.1986E+14 | 3.1669E+05 |
| Sr-91 | 7.3531E-05 | 2.0285E-14 | 1.3424E+11 | 2.7207E+06 |
| Sr-92 | 2.9653E-05 | 2.3591E-15 | 1.5442E+10 | 1.0971E+06 |
| Y-90 | 8.3435E-08 | 1.5335E-16 | 1.0261E+09 | 3.0871E+03 |
| Y-91 | 9.6880E-07 | 3.9504E-14 | 2.6143E+11 | 3.5846E+04 |
| Y-92 | 4.0698E-07 | 4.2295E-17 | 2.7685E+08 | 1.5058E+04 |
| Y-93 | 8.8353E-07 | 2.6482E-16 | 1.7148E+09 | 3.2691E+04 |
| Zr-95 | 1.2482E-06 | 5.8101E-14 | 3.6831E+11 | 4.6183E+04 |
| Zr-97 | 1.0292E-06 | 5.3837E-16 | 3.3424E+09 | 3.8080E+04 |
| Nb-95 | 1.2555E-06 | 3.2108E-14 | 2.0354E+11 | 4.6454E+04 |
| Mo-99 | 1.6261E-05 | 3.3904E-14 | 2.0624E+11 | 6.0165E+05 |
| Tc-99m | 8.2152E-06 | 1.5623E-15 | 9.5037E+09 | 3.0396E+05 |
| Ru-103 | 1.3766E-05 | 4.2653E-13 | 2.4938E+12 | 5.0933E+05 |
| Ru-105 | 4.0561E-06 | 6.0340E-16 | 3.4607E+09 | 1.5008E+05 |
| Ru-106 | 5.2032E-06 | 1.5553E-12 | 8.8358E+12 | 1.9252E+05 |
| Rh-105 | 7.8387E-06 | 9.2870E-15 | 5.3264E+10 | 2.9003E+05 |
| Sb-127 | 1.8193E-05 | 6.8125E-14 | 3.2304E+11 | 6.7313E+05 |
| Sb-129 | 2.4629E-05 | 4.3798E-15 | 2.0446E+10 | 9.1128E+05 |
| Te-127 | 1.2715E-05 | 4.8177E-15 | 2.2845E+10 | 4.7044E+05 |
| Te-127m | 2.5143E-06 | 2.6656E-13 | 1.2640E+12 | 9.3029E+04 |
| Te-129 | 2.4833E-06 | 1.1858E-16 | 5.5355E+08 | 9.1881E+04 |
| Te-129m | 8.3901E-06 | 2.7851E-12 | 1.3002E+12 | 3.1043E+05 |
| Te-131m | 2.2890E-05 | 2.8706E-14 | 1.3196E+11 | 8.4694E+05 |
| Te-132 | 2.4588E-04 | 8.0991E-13 | 3.6950E+12 | 9.0976E+06 |
| I-131 | 1.4234E-03 | 1.1482E-11 | 5.2781E+13 | 5.2667E+07 |
| I-132 | 4.3835E-04 | 4.2467E-14 | 1.9374E+11 | 1.6219E+07 |
| I-133 | 2.5497E-03 | 2.2508E-12 | 1.0191E+13 | 9.4339E+07 |
| I-134 | 5.7510E-05 | 2.1558E-15 | 9.6885E+09 | 2.1279E+06 |
| I-135 | 1.6384E-03 | 4.6653E-13 | 2.0811E+12 | 6.0621E+07 |
| Xe-133 | 2.6895E+00 | 1.4369E-08 | 6.5060E+16 | 9.9512E+10 |
| Xe-135 | 6.9285E-01 | 2.7131E-10 | 1.2103E+15 | 2.5635E+10 |
| Cs-134 | 2.3114E-04 | 1.7865E-10 | 8.0286E+14 | 8.5521E+06 |
| Cs-136 | 6.3193E-05 | 8.6222E-13 | 3.8180E+12 | 2.3381E+06 |
| Cs-137 | 1.5489E-04 | 1.7807E-09 | 7.8274E+15 | 5.7308E+06 |
| Ba-139 | 1.0055E-05 | 6.1474E-16 | 2.6634E+09 | 3.7205E+05 |
| Ba-140 | 1.3288E-04 | 1.8151E-12 | 7.8078E+12 | 4.9167E+06 |
| La-140 | 1.2461E-06 | 2.2418E-15 | 9.6433E+09 | 4.6105E+04 |
| La-141 | 5.0417E-07 | 8.9149E-17 | 3.8076E+08 | 1.8654E+04 |
| La-142 | 1.4391E-07 | 1.0053E-17 | 4.2636E+07 | 5.3248E+03 |
| Ce-141 | 3.0658E-06 | 1.0760E-13 | 4.5954E+11 | 1.1343E+05 |
| Ce-143 | 2.7414E-06 | 4.1281E-15 | 1.7384E+10 | 1.0143E+05 |
| Ce-144 | 2.4794E-06 | 7.7735E-13 | 3.2509E+12 | 9.1736E+04 |
| Pr-143 | 1.1900E-06 | 1.7672E-14 | 7.4421E+10 | 4.4030E+04 |
| Nd-147 | 4.9625E-07 | 6.1342E-15 | 2.5130E+10 | 1.8361E+04 |
| Np-239 | 3.1948E-05 | 1.3771E-13 | 3.4700E+11 | 1.1821E+06 |
| Pu-238 | 9.7808E-09 | 5.7132E-13 | 1.4456E+12 | 3.6189E+02 |
| Pu-239 | 7.6125E-10 | 1.2247E-11 | 3.0860E+13 | 2.8166E+01 |

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**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 1 | System Nos. | Sheet 426 of 1000 |
|---|---|---|---|---|

| | | | | |
|---|---|---|---|---|
| Pu-240 | 8.2093E-10 | 3.6027E-12 | 9.0399E+12 | 3.0374E+01 |
| Pu-241 | 3.3996E-07 | 3.3002E-12 | 8.2466E+12 | 1.2579E+04 |
| Am-241 | 2.0909E-10 | 6.0921E-14 | 1.5223E+11 | 7.7363E+00 |
| Cm-242 | 4.9104E-08 | 1.4816E-14 | 3.6869E+10 | 1.8168E+03 |
| Cm-244 | 3.9759E-09 | 4.9144E-14 | 1.2129E+11 | 1.4711E+02 |

Control Room Transport Group Inventory:

| Time (h) = 4.0000 | Atmosphere | Sump | Overlying Pool |
|---|---|---|---|
| Noble gases (atoms) | 4.1758E+17 | 0.0000E+00 | 0.0000E+00 |
| Elemental I (atoms) | 6.9273E+12 | 0.0000E+00 | 0.0000E+00 |
| Organic I (atoms) | 1.9621E+12 | 0.0000E+00 | 0.0000E+00 |
| Aerosols (kg) | 2.0676E-09 | 0.0000E+00 | 0.0000E+00 |

| Time (h) = 4.0000 | Deposition Surfaces | Recirculating Filter |
|---|---|---|
| Noble gases (atoms) | 0.0000E+00 | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 | 2.7993E+14 |
| Organic I (atoms) | 0.0000E+00 | 4.0194E+13 |
| Aerosols (kg) | 0.0000E+00 | 1.7136E-07 |

CR Filtered Air Intake Transport Group Inventory:

| Time (h) = 4.0000 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 8.2187E+20 |
| Organic I (atoms) | 1.4409E+20 |
| Aerosols (kg) | 8.1113E-01 |

CR Unfiltered Inleakage Transport Group Inventory:

| Time (h) = 4.0000 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 |

CR Exhaust to Environment Transport Group Inventory:

| Time (h) = 4.0000 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 |

Exclusion Area Boundary Doses:

| Time (h) = 8.0000 | Whole Body | Thyroid | TEDE |
|---|---|---|---|
| Delta dose (rem) | 1.1897E+00 | 1.5110E+02 | 9.1252E+00 |
| Accumulated dose (rem) | 3.5406E+00 | 5.1191E+02 | 3.0135E+01 |

Low Population Zone Doses:

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**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 1 | System Nos. | Sheet 427 of 1000 |
|---|---|---|---|---|

| Time (h) = 8.0000 | Whole Body | Thyroid | TEDE |
|---|---|---|---|
| Delta dose (rem) | 8.9228E-02 | 1.1332E+01 | 6.8439E-01 |
| Accumulated dose (rem) | 3.8691E-01 | 6.1220E+01 | 3.5505E+00 |

Control Room Doses:

| Time (h) = 8.0000 | Whole Body | Thyroid | TEDE |
|---|---|---|---|
| Delta dose (rem) | 1.5671E-02 | 1.3391E+00 | 8.4250E-02 |
| Accumulated dose (rem) | 3.9534E-02 | 6.4523E+00 | 3.5935E-01 |

Environment Integral Nuclide Release:

| Time (h) = 8.0000 | Ci | kg | Atoms | Bq |
|---|---|---|---|---|
| Co-58 | 7.3000E-02 | 2.2957E-09 | 2.3837E+16 | 2.7010E+09 |
| Co-60 | 5.5941E-02 | 4.9488E-08 | 4.9671E+17 | 2.0698E+09 |
| Kr-85 | 3.0052E+02 | 7.6598E-04 | 5.4269E+21 | 1.1119E+13 |
| Kr-85m | 2.9529E+03 | 3.5882E-07 | 2.5422E+18 | 1.0926E+14 |
| Kr-87 | 1.1381E+03 | 4.0178E-08 | 2.7811E+17 | 4.2108E+13 |
| Kr-88 | 5.3731E+03 | 4.2851E-07 | 2.9324E+18 | 1.9881E+14 |
| Rb-86 | 2.0641E+00 | 2.5367E-08 | 1.7763E+17 | 7.6370E+10 |
| Sr-89 | 6.8393E+01 | 2.3541E-06 | 1.5929E+19 | 2.5305E+12 |
| Sr-90 | 7.3950E+00 | 5.4213E-05 | 3.6275E+20 | 2.7362E+11 |
| Sr-91 | 6.8348E+01 | 1.8855E-08 | 1.2477E+17 | 2.5289E+12 |
| Sr-92 | 3.6299E+01 | 2.8879E-09 | 1.8904E+16 | 1.3431E+12 |
| Y-90 | 7.2761E-02 | 1.3374E-10 | 8.9486E+14 | 2.6921E+09 |
| Y-91 | 8.3737E-01 | 3.4145E-08 | 2.2596E+17 | 3.0983E+10 |
| Y-92 | 4.4943E-01 | 4.6706E-11 | 3.0573E+14 | 1.6629E+10 |
| Y-93 | 8.1716E-01 | 2.4493E-10 | 1.5860E+15 | 3.0235E+10 |
| Zr-95 | 1.0788E+00 | 5.0217E-08 | 3.1833E+17 | 3.9916E+10 |
| Zr-97 | 9.2377E-01 | 4.8323E-10 | 3.0001E+15 | 3.4180E+10 |
| Nb-95 | 1.0855E+00 | 2.7760E-08 | 1.7597E+17 | 4.0163E+10 |
| Mo-99 | 1.4176E+01 | 2.9558E-08 | 1.7980E+17 | 5.2453E+11 |
| Tc-99m | 8.0493E+00 | 1.5308E-09 | 9.3118E+15 | 2.9782E+11 |
| Ru-103 | 1.1901E+01 | 3.6874E-07 | 2.1559E+18 | 4.4032E+11 |
| Ru-105 | 4.2108E+00 | 6.2642E-10 | 3.5928E+15 | 1.5580E+11 |
| Ru-106 | 4.4958E+00 | 1.3438E-06 | 7.6345E+18 | 1.6634E+11 |
| Rh-105 | 6.8905E+00 | 8.1635E-09 | 4.6821E+16 | 2.5495E+11 |
| Sb-127 | 1.5819E+01 | 5.9236E-08 | 2.8089E+17 | 5.8531E+11 |
| Sb-129 | 2.5735E+01 | 4.5764E-09 | 2.1364E+16 | 9.5220E+11 |
| Te-127 | 1.1834E+01 | 4.4842E-09 | 2.1264E+16 | 4.3787E+11 |
| Te-127m | 2.1728E+00 | 2.3035E-07 | 1.0923E+18 | 8.0393E+10 |
| Te-129 | 6.4254E+00 | 3.0681E-10 | 1.4323E+15 | 2.3774E+11 |
| Te-129m | 7.2540E+00 | 2.4080E-06 | 1.1241E+18 | 2.6840E+11 |
| Te-131m | 2.0187E+01 | 2.5316E-08 | 1.1638E+17 | 7.4693E+11 |
| Te-132 | 2.1405E+02 | 7.0507E-07 | 3.2167E+18 | 7.9200E+12 |
| I-131 | 1.2074E+03 | 9.7393E-06 | 4.4772E+19 | 4.4675E+13 |
| I-132 | 6.0940E+02 | 5.9038E-08 | 2.6934E+17 | 2.2548E+13 |
| I-133 | 2.2332E+03 | 1.9714E-06 | 8.9264E+18 | 8.2630E+13 |
| I-134 | 3.0383E+02 | 1.1389E-08 | 5.1186E+16 | 1.1242E+13 |
| I-135 | 1.5775E+03 | 4.4920E-07 | 2.0038E+18 | 5.8369E+13 |
| Xe-133 | 4.1673E+04 | 2.2264E-04 | 1.0081E+21 | 1.5419E+15 |
| Xe-135 | 1.0442E+04 | 4.0888E-06 | 1.8239E+19 | 3.8634E+14 |
| Cs-134 | 2.1660E+02 | 1.6741E-04 | 7.5235E+20 | 8.0140E+12 |
| Cs-136 | 5.9359E+01 | 8.0991E-07 | 3.5863E+18 | 2.1963E+12 |
| Cs-137 | 1.4514E+02 | 1.6686E-03 | 7.3346E+21 | 5.3700E+12 |
| Ba-139 | 2.0698E+01 | 1.2654E-09 | 5.4822E+15 | 7.6581E+11 |
| Ba-140 | 1.1503E+02 | 1.5712E-06 | 6.7587E+18 | 4.2560E+12 |

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**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 1 | System Nos. | Sheet 428 of 1000 |
|---|---|---|---|---|

| | | | | |
|---|---|---|---|---|
| La-140 | 1.0929E+00 | 1.9663E-09 | 8.4581E+15 | 4.0438E+10 |
| La-141 | 5.3980E-01 | 9.5450E-11 | 4.0767E+14 | 1.9973E+10 |
| La-142 | 2.6205E-01 | 1.8306E-11 | 7.7633E+13 | 9.6957E+09 |
| Ce-141 | 2.6507E+00 | 9.3029E-08 | 3.9733E+17 | 9.8077E+10 |
| Ce-143 | 2.4129E+00 | 3.6334E-09 | 1.5301E+16 | 8.9277E+10 |
| Ce-144 | 2.1423E+00 | 6.7167E-07 | 2.8090E+18 | 7.9265E+10 |
| Pr-143 | 1.0300E+00 | 1.5295E-08 | 6.4413E+16 | 3.8109E+10 |
| Nd-147 | 4.2970E-01 | 5.3116E-09 | 2.1760E+16 | 1.5899E+10 |
| Np-239 | 2.7897E+01 | 1.2025E-07 | 3.0299E+17 | 1.0322E+12 |
| Pu-238 | 8.4504E-03 | 4.9361E-07 | 1.2490E+18 | 3.1266E+08 |
| Pu-239 | 6.5770E-04 | 1.0581E-05 | 2.6662E+19 | 2.4335E+07 |
| Pu-240 | 7.0926E-04 | 3.1126E-06 | 7.8103E+18 | 2.6243E+07 |
| Pu-241 | 2.9372E-01 | 2.8513E-06 | 7.1249E+18 | 1.0868E+10 |
| Am-241 | 1.8065E-04 | 5.2634E-08 | 1.3152E+17 | 6.6840E+06 |
| Cm-242 | 4.2431E-02 | 1.2802E-08 | 3.1858E+16 | 1.5699E+09 |
| Cm-244 | 3.4351E-03 | 4.2460E-08 | 1.0479E+17 | 1.2710E+08 |

Environment Transport Group Inventory:

| Time (h) = 8.0000 | Present Release | Release Rate/s | Total Release |
|---|---|---|---|
| Noble gases (atoms) | 6.4906E+21 | 2.2537E+17 | 6.4906E+21 |
| Elemental I (atoms) | 2.6961E+18 | 9.3616E+13 | 2.6961E+18 |
| Organic I (atoms) | 5.8721E+17 | 2.0389E+13 | 5.8721E+17 |
| Aerosols (kg) | 1.9303E-03 | 6.7026E-08 | 1.9303E-03 |

CR Filtered Air Intake Transport Group Inventory:

| Time (h) = 8.0000 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 1.5496E+21 |
| Organic I (atoms) | 3.5021E+20 |
| Aerosols (kg) | 1.1907E+00 |

CR Unfiltered Inleakage Transport Group Inventory:

| Time (h) = 8.0000 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 |

CR Exhaust to Environment Transport Group Inventory:

| Time (h) = 8.0000 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 |

Control Room Compartment Nuclide Inventory:

| Time (h) = 8.0000 | Ci | kg | Atoms | Bq |
|---|---|---|---|---|
| Co-58 | 6.8565E-08 | 2.1563E-15 | 2.2389E+10 | 2.5369E+03 |

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**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 1 | System Nos. | Sheet 429 of 1000 |
|---|---|---|---|---|

| | | | | |
|---|---|---|---|---|
| Co-60 | 5.2643E-08 | 4.6570E-14 | 4.6742E+11 | 1.9478E+03 |
| Kr-85 | 1.9282E-02 | 4.9146E-08 | 3.4819E+17 | 7.1342E+08 |
| Kr-85m | 1.0584E-01 | 1.2861E-11 | 9.1118E+13 | 3.9161E+09 |
| Kr-87 | 6.2100E-03 | 2.1924E-13 | 1.5176E+12 | 2.2977E+08 |
| Kr-88 | 1.3149E-01 | 1.0486E-11 | 7.1760E+13 | 4.8651E+09 |
| Rb-86 | 1.7769E-06 | 2.1839E-14 | 1.5292E+11 | 6.5747E+04 |
| Sr-89 | 6.4187E-05 | 2.2094E-12 | 1.4950E+13 | 2.3749E+06 |
| Sr-90 | 6.9594E-06 | 5.1020E-11 | 3.4139E+14 | 2.5750E+05 |
| Sr-91 | 4.4654E-05 | 1.2318E-14 | 8.1520E+10 | 1.6522E+06 |
| Sr-92 | 8.6672E-06 | 6.8955E-16 | 4.5137E+09 | 3.2069E+05 |
| Y-90 | 6.4964E-08 | 1.1941E-16 | 7.9898E+08 | 2.4037E+03 |
| Y-91 | 7.8617E-07 | 3.2057E-14 | 2.1215E+11 | 2.9088E+04 |
| Y-92 | 1.5120E-07 | 1.5714E-17 | 1.0286E+08 | 5.5946E+03 |
| Y-93 | 5.4594E-07 | 1.6364E-16 | 1.0596E+09 | 2.0200E+04 |
| Zr-95 | 1.0131E-06 | 4.7157E-14 | 2.9893E+11 | 3.7483E+04 |
| Zr-97 | 7.1020E-07 | 3.7151E-16 | 2.3065E+09 | 2.6278E+04 |
| Nb-95 | 1.0175E-06 | 2.6021E-14 | 1.6495E+11 | 3.7648E+04 |
| Mo-99 | 1.2678E-05 | 2.6433E-14 | 1.6079E+11 | 4.6908E+05 |
| Tc-99m | 4.2144E-06 | 8.0149E-16 | 4.8754E+09 | 1.5593E+05 |
| Ru-103 | 1.1160E-05 | 3.4579E-13 | 2.0217E+12 | 4.1292E+05 |
| Ru-105 | 1.7663E-06 | 2.6276E-16 | 1.5070E+09 | 6.5351E+04 |
| Ru-106 | 4.2294E-06 | 1.2642E-12 | 7.1821E+12 | 1.5649E+05 |
| Rh-105 | 5.8930E-06 | 6.9818E-15 | 4.0043E+10 | 2.1804E+05 |
| Sb-127 | 1.4355E-05 | 5.3754E-14 | 2.5490E+11 | 5.3114E+05 |
| Sb-129 | 1.0540E-05 | 1.8744E-15 | 8.7503E+09 | 3.9000E+05 |
| Te-127 | 7.6853E-06 | 2.9121E-15 | 1.3809E+10 | 2.8436E+05 |
| Te-127m | 2.0422E-06 | 2.1651E-13 | 1.0266E+12 | 7.5562E+04 |
| Te-129 | 1.8498E-07 | 8.8329E-18 | 4.1235E+07 | 6.8443E+03 |
| Te-129m | 6.7985E-06 | 2.2567E-12 | 1.0535E+12 | 2.5154E+05 |
| Te-131m | 1.6969E-05 | 2.1280E-14 | 9.7827E+10 | 6.2786E+05 |
| Te-132 | 1.9296E-04 | 6.3559E-13 | 2.8997E+12 | 7.1396E+06 |
| I-131 | 1.1752E-03 | 9.4791E-12 | 4.3576E+13 | 4.3481E+07 |
| I-132 | 1.0998E-04 | 1.0654E-14 | 4.8608E+10 | 4.0691E+06 |
| I-133 | 1.8690E-03 | 1.6499E-12 | 7.4705E+12 | 6.9153E+07 |
| I-134 | 2.0381E-06 | 7.6401E-17 | 3.4336E+08 | 7.5411E+04 |
| I-135 | 9.0212E-04 | 2.5688E-13 | 1.1459E+12 | 3.3378E+07 |
| Xe-133 | 2.6236E+00 | 1.4016E-08 | 6.3464E+16 | 9.7072E+10 |
| Xe-135 | 5.0923E-01 | 1.9941E-10 | 8.8953E+14 | 1.8842E+10 |
| Cs-134 | 1.8791E-04 | 1.4523E-10 | 6.5270E+14 | 6.9526E+06 |
| Cs-136 | 5.0931E-05 | 6.9491E-13 | 3.0771E+12 | 1.8844E+06 |
| Cs-137 | 1.2594E-04 | 1.4478E-09 | 6.3643E+15 | 4.6597E+06 |
| Ba-139 | 1.0938E-06 | 6.6870E-17 | 2.8971E+08 | 4.0470E+04 |
| Ba-140 | 1.0707E-04 | 1.4626E-12 | 6.2912E+12 | 3.9617E+06 |
| La-140 | 9.4577E-07 | 1.7016E-15 | 7.3193E+09 | 3.4994E+04 |
| La-141 | 2.0245E-07 | 3.5799E-17 | 1.5290E+08 | 7.4908E+03 |
| La-142 | 1.9373E-08 | 1.3533E-18 | 5.7394E+06 | 7.1680E+02 |
| Ce-141 | 2.4839E-06 | 8.7175E-14 | 3.7233E+11 | 9.1905E+04 |
| Ce-143 | 2.0494E-06 | 3.0860E-15 | 1.2996E+10 | 7.5827E+04 |
| Ce-144 | 2.0151E-06 | 6.3180E-13 | 2.6422E+12 | 7.4560E+04 |
| Pr-143 | 9.5937E-07 | 1.4247E-14 | 5.9998E+10 | 3.5497E+04 |
| Nd-147 | 3.9928E-07 | 4.9355E-15 | 2.0219E+10 | 1.4773E+04 |
| Np-239 | 2.4733E-05 | 1.0661E-13 | 2.6864E+11 | 9.1514E+05 |
| Pu-238 | 7.9527E-09 | 4.6453E-13 | 1.1754E+12 | 2.9425E+02 |
| Pu-239 | 6.1897E-10 | 9.9582E-12 | 2.5092E+13 | 2.2902E+01 |
| Pu-240 | 6.6749E-10 | 2.9293E-12 | 7.3503E+12 | 2.4697E+01 |
| Pu-241 | 2.7642E-07 | 2.6833E-12 | 6.7052E+12 | 1.0227E+04 |
| Am-241 | 1.7001E-10 | 4.9534E-14 | 1.2378E+11 | 6.2904E+00 |

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**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 1 | System Nos. | Sheet 430 of 1000 |
|---|---|---|---|---|

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Cm-242                  3.9898E-08  1.2038E-14  2.9957E+10  1.4762E+03
Cm-244                  3.2327E-09  3.9958E-14  9.8621E+10  1.1961E+02

Control Room Transport Group Inventory:

                                                Overlying
Time (h) =   8.0000    Atmosphere     Sump        Pool
Noble gases (atoms)    4.1642E+17  0.0000E+00  0.0000E+00
Elemental I (atoms)    6.9261E+12  0.0000E+00  0.0000E+00
Organic I (atoms)      1.9617E+12  0.0000E+00  0.0000E+00
Aerosols (kg)          1.6812E-09  0.0000E+00  0.0000E+00

                       Deposition Recirculating
Time (h) =   8.0000     Surfaces     Filter
Noble gases (atoms)    0.0000E+00  0.0000E+00
Elemental I (atoms)    0.0000E+00  4.4750E+14
Organic I (atoms)      0.0000E+00  8.7656E+13
Aerosols (kg)          0.0000E+00  2.2046E-07

CR Filtered Air Intake Transport Group Inventory:

                        Pathway
Time (h) =   8.0000      Filter
Noble gases (atoms)    0.0000E+00
Elemental I (atoms)    1.5496E+21
Organic I (atoms)      3.5021E+20
Aerosols (kg)          1.1907E+00

CR  Unfiltered Inleakage Transport Group Inventory:

                        Pathway
Time (h) =   8.0000      Filter
Noble gases (atoms)    0.0000E+00
Elemental I (atoms)    0.0000E+00
Organic I (atoms)      0.0000E+00
Aerosols (kg)          0.0000E+00

CR Exhaust to Environment Transport Group Inventory:

                        Pathway
Time (h) =   8.0000      Filter
Noble gases (atoms)    0.0000E+00
Elemental I (atoms)    0.0000E+00
Organic I (atoms)      0.0000E+00
Aerosols (kg)          0.0000E+00

Exclusion Area Boundary Doses:

Time (h) =  24.0000    Whole Body   Thyroid       TEDE
Delta dose (rem)        1.6028E+00  3.9375E+02  2.2659E+01
Accumulated dose (rem)  5.1434E+00  9.0567E+02  5.2794E+01

Low Population Zone Doses:

Time (h) =  24.0000    Whole Body   Thyroid       TEDE
Delta dose (rem)        7.8135E-02  9.8720E+00  6.0604E-01
Accumulated dose (rem)  4.6504E-01  7.1092E+01  4.1566E+00
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**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 1 | System Nos. | Sheet 431 of 1000 |
|---|---|---|---|---|

Control Room Doses:

| Time (h) = 24.0000 | Whole Body | Thyroid | TEDE |
|---|---|---|---|
| Delta dose (rem) | 9.6743E-03 | 1.6372E+00 | 9.4142E-02 |
| Accumulated dose (rem) | 4.9209E-02 | 8.0894E+00 | 4.5350E-01 |

Environment Integral Nuclide Release:

| Time (h) = 24.0000 | Ci | kg | Atoms | Bq |
|---|---|---|---|---|
| Co-58 | 1.3621E-01 | 4.2836E-09 | 4.4477E+16 | 5.0398E+09 |
| Co-60 | 1.0462E-01 | 9.2555E-08 | 9.2897E+17 | 3.8710E+09 |
| Kr-85 | 9.9714E+02 | 2.5415E-03 | 1.8007E+22 | 3.6894E+13 |
| Kr-85m | 4.2822E+03 | 5.2035E-07 | 3.6866E+18 | 1.5844E+14 |
| Kr-87 | 1.1625E+03 | 4.1041E-08 | 2.8408E+17 | 4.3013E+13 |
| Kr-88 | 6.4870E+03 | 5.1734E-07 | 3.5403E+18 | 2.4002E+14 |
| Rb-86 | 3.6875E+00 | 4.5320E-08 | 3.1735E+17 | 1.3644E+11 |
| Sr-89 | 1.2749E+02 | 4.3883E-06 | 2.9693E+19 | 4.7171E+12 |
| Sr-90 | 1.3831E+01 | 1.0140E-04 | 6.7848E+20 | 5.1176E+11 |
| Sr-91 | 9.3055E+01 | 2.5670E-08 | 1.6988E+17 | 3.4430E+12 |
| Sr-92 | 3.8388E+01 | 3.0541E-09 | 1.9991E+16 | 1.4204E+12 |
| Y-90 | 1.2799E-01 | 2.3524E-10 | 1.5741E+15 | 4.7355E+09 |
| Y-91 | 1.5616E+00 | 6.3678E-08 | 4.2141E+17 | 5.7781E+10 |
| Y-92 | 4.9468E-01 | 5.1409E-11 | 3.3651E+14 | 1.8303E+10 |
| Y-93 | 1.1275E+00 | 3.3795E-10 | 2.1884E+15 | 4.1718E+10 |
| Zr-95 | 2.0124E+00 | 9.3675E-08 | 5.9382E+17 | 7.4460E+10 |
| Zr-97 | 1.4083E+00 | 7.3668E-10 | 4.5736E+15 | 5.2107E+10 |
| Nb-95 | 2.0205E+00 | 5.1670E-08 | 3.2754E+17 | 7.4757E+10 |
| Mo-99 | 2.4981E+01 | 5.2085E-08 | 3.1683E+17 | 9.2428E+11 |
| Tc-99m | 9.8791E+00 | 1.8788E-09 | 1.1429E+16 | 3.6553E+11 |
| Ru-103 | 2.2162E+01 | 6.8670E-07 | 4.0149E+18 | 8.2001E+11 |
| Ru-105 | 4.8372E+00 | 7.1960E-10 | 4.1272E+15 | 1.7897E+11 |
| Ru-106 | 8.4050E+00 | 2.5123E-06 | 1.4273E+19 | 3.1099E+11 |
| Rh-105 | 1.1579E+01 | 1.3718E-08 | 7.8680E+16 | 4.2843E+11 |
| Sb-127 | 2.8339E+01 | 1.0612E-07 | 5.0319E+17 | 1.0485E+12 |
| Sb-129 | 2.9400E+01 | 5.2281E-09 | 2.4407E+16 | 1.0878E+12 |
| Te-127 | 1.6056E+01 | 6.0839E-09 | 2.8849E+16 | 5.9407E+11 |
| Te-127m | 4.0576E+00 | 4.3017E-07 | 2.0398E+18 | 1.5013E+11 |
| Te-129 | 6.4464E+00 | 3.0782E-10 | 1.4370E+15 | 2.3852E+11 |
| Te-129m | 1.3499E+01 | 4.4810E-06 | 2.0919E+18 | 4.9947E+11 |
| Te-131m | 3.3343E+01 | 4.1814E-08 | 1.9222E+17 | 1.2337E+12 |
| Te-132 | 3.8058E+02 | 1.2536E-06 | 5.7192E+18 | 1.4081E+13 |
| I-131 | 2.2212E+03 | 1.7916E-05 | 8.2362E+19 | 8.2183E+13 |
| I-132 | 6.3113E+02 | 6.1143E-08 | 2.7895E+17 | 2.3352E+13 |
| I-133 | 3.5210E+03 | 3.1082E-06 | 1.4074E+19 | 1.3028E+14 |
| I-134 | 3.0400E+02 | 1.1396E-08 | 5.1214E+16 | 1.1248E+13 |
| I-135 | 1.9715E+03 | 5.6139E-07 | 2.5043E+18 | 7.2947E+13 |
| Xe-133 | 1.3208E+05 | 7.0562E-04 | 3.1950E+21 | 4.8869E+15 |
| Xe-135 | 2.0642E+04 | 8.0832E-06 | 3.6058E+19 | 7.6377E+14 |
| Cs-134 | 3.9033E+02 | 3.0169E-04 | 1.3558E+21 | 1.4442E+13 |
| Cs-136 | 1.0565E+02 | 1.4415E-06 | 6.3832E+18 | 3.9091E+12 |
| Cs-137 | 2.6161E+02 | 3.0076E-03 | 1.3221E+22 | 9.6795E+12 |
| Ba-139 | 2.0843E+01 | 1.2743E-09 | 5.5208E+15 | 7.7121E+11 |
| Ba-140 | 2.1230E+02 | 2.8999E-06 | 1.2474E+19 | 7.8551E+12 |
| La-140 | 1.8590E+00 | 3.3445E-09 | 1.4386E+16 | 6.8782E+10 |
| La-141 | 6.0544E-01 | 1.0706E-10 | 4.5724E+14 | 2.2401E+10 |
| La-142 | 2.6490E-01 | 1.8505E-11 | 7.8480E+13 | 9.8014E+09 |

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**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 1 | System Nos. | Sheet 432 of 1000 |
|---|---|---|---|---|

| | | | | |
|---|---|---|---|---|
| Ce-141 | 4.9319E+00 | 1.7309E-07 | 7.3927E+17 | 1.8248E+11 |
| Ce-143 | 4.0265E+00 | 6.0633E-09 | 2.5534E+16 | 1.4898E+11 |
| Ce-144 | 4.0045E+00 | 1.2555E-06 | 5.2507E+18 | 1.4817E+11 |
| Pr-143 | 1.9025E+00 | 2.8252E-08 | 1.1898E+17 | 7.0392E+10 |
| Nd-147 | 7.9140E-01 | 9.7826E-09 | 4.0076E+16 | 2.9282E+10 |
| Np-239 | 4.8693E+01 | 2.0989E-07 | 5.2887E+17 | 1.8016E+12 |
| Pu-238 | 1.5806E-02 | 9.2324E-07 | 2.3361E+18 | 5.8481E+08 |
| Pu-239 | 1.2302E-03 | 1.9791E-05 | 4.9869E+19 | 4.5516E+07 |
| Pu-240 | 1.3266E-03 | 5.8219E-06 | 1.4608E+19 | 4.9084E+07 |
| Pu-241 | 5.4936E-01 | 5.3330E-06 | 1.3326E+19 | 2.0326E+10 |
| Am-241 | 3.3789E-04 | 9.8447E-08 | 2.4600E+17 | 1.2502E+07 |
| Cm-242 | 7.9279E-02 | 2.3920E-08 | 5.9526E+16 | 2.9333E+09 |
| Cm-244 | 6.4249E-03 | 7.9415E-08 | 1.9600E+17 | 2.3772E+08 |

Environment Transport Group Inventory:

| Time (h) = 24.0000 | Present Release | Release Rate/s | Total Release |
|---|---|---|---|
| Noble gases (atoms) | 2.1536E+22 | 2.4926E+17 | 2.1536E+22 |
| Elemental I (atoms) | 7.4532E+18 | 8.6264E+13 | 7.4532E+18 |
| Organic I (atoms) | 1.9346E+18 | 2.2391E+13 | 1.9346E+18 |
| Aerosols (kg) | 3.4852E-03 | 4.0338E-08 | 3.4852E-03 |

CR Filtered Air Intake Transport Group Inventory:

| Time (h) = 24.0000 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 4.0862E+22 |
| Organic I (atoms) | 1.1485E+22 |
| Aerosols (kg) | 1.4285E+01 |

CR Unfiltered Inleakage Transport Group Inventory:

| Time (h) = 24.0000 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 |

CR Exhaust to Environment Transport Group Inventory:

| Time (h) = 24.0000 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 |

Control Room Compartment Nuclide Inventory:

| Time (h) = 24.0000 | Ci | kg | Atoms | Bq |
|---|---|---|---|---|
| Co-58 | 1.7510E-08 | 5.5068E-16 | 5.7177E+09 | 6.4789E+02 |
| Co-60 | 1.3529E-08 | 1.1968E-14 | 1.2012E+11 | 5.0056E+02 |
| Kr-85 | 8.7295E-03 | 2.2250E-08 | 1.5764E+17 | 3.2299E+08 |
| Kr-85m | 4.0313E-03 | 4.8985E-13 | 3.4706E+12 | 1.4916E+08 |

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**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 1 | System Nos. | Sheet 433 of 1000 |
|---|---|---|---|---|

| | | | | |
|---|---|---|---|---|
| Kr-87 | 4.5863E-07 | 1.6191E-17 | 1.1208E+08 | 1.6969E+04 |
| Kr-88 | 1.1991E-03 | 9.5626E-14 | 6.5440E+11 | 4.4366E+07 |
| Rb-86 | 4.4560E-07 | 5.4764E-15 | 3.8348E+10 | 1.6487E+04 |
| Sr-89 | 1.6349E-05 | 5.6275E-13 | 3.8078E+12 | 6.0492E+05 |
| Sr-90 | 1.7889E-06 | 1.3114E-11 | 8.7751E+13 | 6.6188E+04 |
| Sr-91 | 3.5718E-06 | 9.8534E-16 | 6.5207E+09 | 1.3216E+05 |
| Sr-92 | 3.7206E-08 | 2.9600E-18 | 1.9376E+07 | 1.3766E+03 |
| Y-90 | 1.4042E-08 | 2.5810E-17 | 1.7270E+08 | 5.1957E+02 |
| Y-91 | 2.0050E-07 | 8.1757E-15 | 5.4105E+10 | 7.4185E+03 |
| Y-92 | 1.6943E-09 | 1.7608E-19 | 1.1526E+06 | 6.2691E+01 |
| Y-93 | 4.6805E-08 | 1.4029E-17 | 9.0843E+07 | 1.7318E+03 |
| Zr-95 | 2.5854E-07 | 1.2035E-14 | 7.6288E+10 | 9.5659E+03 |
| Zr-97 | 9.4713E-08 | 4.9545E-17 | 3.0759E+08 | 3.5044E+03 |
| Nb-95 | 2.5814E-07 | 6.6015E-15 | 4.1848E+10 | 9.5512E+03 |
| Mo-99 | 2.7548E-06 | 5.7438E-15 | 3.4939E+10 | 1.0193E+05 |
| Tc-99m | 1.7167E-07 | 3.2647E-17 | 1.9859E+08 | 6.3517E+03 |
| Ru-103 | 2.8352E-06 | 8.7848E-14 | 5.1362E+11 | 1.0490E+05 |
| Ru-105 | 3.7350E-08 | 5.5563E-18 | 3.1867E+07 | 1.3819E+03 |
| Ru-106 | 1.0858E-06 | 3.2456E-13 | 1.8439E+12 | 4.0176E+04 |
| Rh-105 | 1.1070E-06 | 1.3115E-15 | 7.5221E+09 | 4.0959E+04 |
| Sb-127 | 3.2727E-06 | 1.2255E-14 | 5.8111E+10 | 1.2109E+05 |
| Sb-129 | 2.0795E-07 | 3.6980E-17 | 1.7263E+08 | 7.6942E+03 |
| Te-127 | 6.0333E-07 | 2.2861E-16 | 1.0840E+09 | 2.2323E+04 |
| Te-127m | 5.2274E-07 | 5.5418E-14 | 2.6279E+11 | 1.9341E+04 |
| Te-129m | 1.7237E-06 | 5.7218E-13 | 2.6711E+11 | 6.3778E+04 |
| Te-131m | 3.0139E-06 | 3.7797E-15 | 1.7375E+10 | 1.1152E+05 |
| Te-132 | 4.3043E-05 | 1.4178E-13 | 6.4683E+11 | 1.5926E+06 |
| I-131 | 3.1919E-04 | 2.5747E-12 | 1.1836E+13 | 1.1810E+07 |
| I-132 | 2.5474E-07 | 2.4679E-17 | 1.1259E+08 | 9.4253E+03 |
| I-133 | 3.1547E-04 | 2.7849E-13 | 1.2610E+12 | 1.1672E+07 |
| I-135 | 4.8474E-05 | 1.3803E-14 | 6.1573E+10 | 1.7935E+06 |
| Xe-133 | 1.0878E+00 | 5.8112E-09 | 2.6313E+16 | 4.0247E+10 |
| Xe-135 | 6.8069E-02 | 2.6655E-11 | 1.1890E+14 | 2.5186E+09 |
| Cs-134 | 4.8273E-05 | 3.7310E-11 | 1.6768E+14 | 1.7861E+06 |
| Cs-136 | 1.2638E-05 | 1.7244E-13 | 7.6357E+11 | 4.6762E+05 |
| Cs-137 | 3.2371E-05 | 3.7216E-10 | 1.6359E+15 | 1.1977E+06 |
| Ba-140 | 2.6543E-05 | 3.6256E-13 | 1.5596E+12 | 9.8209E+05 |
| La-140 | 1.8459E-07 | 3.3210E-16 | 1.4286E+09 | 6.8299E+03 |
| La-141 | 3.0959E-09 | 5.4742E-19 | 2.3381E+06 | 1.1455E+02 |
| Ce-141 | 6.2949E-07 | 2.2092E-14 | 9.4357E+10 | 2.3291E+04 |
| Ce-143 | 3.7644E-07 | 5.6685E-16 | 2.3872E+09 | 1.3928E+04 |
| Ce-144 | 5.1716E-07 | 1.6214E-13 | 6.7810E+11 | 1.9135E+04 |
| Pr-143 | 2.3835E-07 | 3.5396E-15 | 1.4906E+10 | 8.8189E+03 |
| Nd-147 | 9.8406E-08 | 1.2164E-15 | 4.9833E+09 | 3.6410E+03 |
| Np-239 | 5.2251E-06 | 2.2523E-14 | 5.6751E+10 | 1.9333E+05 |
| Pu-238 | 2.0442E-09 | 1.1941E-13 | 3.0214E+11 | 7.5637E+01 |
| Pu-239 | 1.5911E-10 | 2.5598E-12 | 6.4500E+12 | 5.8870E+00 |
| Pu-240 | 1.7158E-10 | 7.5299E-13 | 1.8894E+12 | 6.3485E+00 |
| Pu-241 | 7.1048E-08 | 6.8970E-13 | 1.7234E+12 | 2.6288E+03 |
| Am-241 | 4.3702E-11 | 1.2733E-14 | 3.1817E+10 | 1.6170E+00 |
| Cm-242 | 1.0227E-08 | 3.0857E-15 | 7.6786E+09 | 3.7839E+02 |
| Cm-244 | 8.3093E-10 | 1.0271E-14 | 2.5349E+10 | 3.0744E+01 |

Control Room Transport Group Inventory:

| Time (h) = 24.0000 | Atmosphere | Sump | Overlying Pool |
|---|---|---|---|

```
Noble gases (atoms)    1.8855E+17  0.0000E+00  0.0000E+00
Elemental I (atoms)    3.1377E+12  0.0000E+00  0.0000E+00
Organic I (atoms)      8.8870E+11  0.0000E+00  0.0000E+00
Aerosols (kg)          4.3215E-10  0.0000E+00  0.0000E+00

                       Deposition Recirculating
Time (h) =  24.0000     Surfaces     Filter
Noble gases (atoms)    0.0000E+00  0.0000E+00
Elemental I (atoms)    0.0000E+00  7.5400E+14
Organic I (atoms)      0.0000E+00  1.7447E+14
Aerosols (kg)          0.0000E+00  2.8246E-07

CR Filtered Air Intake Transport Group Inventory:

                        Pathway
Time (h) =  24.0000      Filter
Noble gases (atoms)    0.0000E+00
Elemental I (atoms)    4.0862E+22
Organic I (atoms)      1.1485E+22
Aerosols (kg)          1.4285E+01

CR  Unfiltered Inleakage Transport Group Inventory:

                        Pathway
Time (h) =  24.0000      Filter
Noble gases (atoms)    0.0000E+00
Elemental I (atoms)    0.0000E+00
Organic I (atoms)      0.0000E+00
Aerosols (kg)          0.0000E+00

CR Exhaust to Environment Transport Group Inventory:

                        Pathway
Time (h) =  24.0000      Filter
Noble gases (atoms)    0.0000E+00
Elemental I (atoms)    0.0000E+00
Organic I (atoms)      0.0000E+00
Aerosols (kg)          0.0000E+00

Exclusion Area Boundary Doses:

Time (h) =  96.0000    Whole Body   Thyroid       TEDE
Delta dose (rem)        1.0944E+00  4.6062E+02  2.7955E+01
Accumulated dose (rem)  6.2378E+00  1.3663E+03  8.0749E+01

Low Population Zone Doses:

Time (h) =  96.0000    Whole Body   Thyroid       TEDE
Delta dose (rem)        2.1888E-02  6.0539E+00  3.7492E-01
Accumulated dose (rem)  4.8693E-01  7.7146E+01  4.5315E+00

Control Room Doses:

Time (h) =  96.0000    Whole Body   Thyroid       TEDE
Delta dose (rem)        2.8474E-03  8.8207E-01  5.1242E-02
Accumulated dose (rem)  5.2056E-02  8.9715E+00  5.0474E-01
```

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**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 1 | System Nos. | Sheet 435 of 1000 |
|---|---|---|---|---|

Environment Integral Nuclide Release:

| Time (h) = 96.0000 | Ci | kg | Atoms | Bq |
|---|---|---|---|---|
| Co-58 | 2.2647E-01 | 7.1222E-09 | 7.3950E+16 | 8.3795E+09 |
| Co-60 | 1.7536E-01 | 1.5513E-07 | 1.5570E+18 | 6.4882E+09 |
| Kr-85 | 2.5621E+03 | 6.5304E-03 | 4.6267E+22 | 9.4797E+13 |
| Kr-85m | 4.3291E+03 | 5.2605E-07 | 3.7270E+18 | 1.6018E+14 |
| Kr-87 | 1.1625E+03 | 4.1041E-08 | 2.8408E+17 | 4.3013E+13 |
| Kr-88 | 6.4943E+03 | 5.1792E-07 | 3.5443E+18 | 2.4029E+14 |
| Rb-86 | 5.8928E+00 | 7.2423E-08 | 5.0714E+17 | 2.1803E+11 |
| Sr-89 | 2.1127E+02 | 7.2721E-06 | 4.9206E+19 | 7.8170E+12 |
| Sr-90 | 2.3188E+01 | 1.6999E-04 | 1.1375E+21 | 8.5797E+11 |
| Sr-91 | 9.6404E+01 | 2.6594E-08 | 1.7599E+17 | 3.5670E+12 |
| Sr-92 | 3.8395E+01 | 3.0546E-09 | 1.9995E+16 | 1.4206E+12 |
| Y-90 | 1.7889E-01 | 3.2881E-10 | 2.2002E+15 | 6.6191E+09 |
| Y-91 | 2.5920E+00 | 1.0569E-07 | 6.9945E+17 | 9.5904E+10 |
| Y-92 | 4.9515E-01 | 5.1458E-11 | 3.3683E+14 | 1.8320E+10 |
| Y-93 | 1.1744E+00 | 3.5199E-10 | 2.2793E+15 | 4.3452E+10 |
| Zr-95 | 3.3430E+00 | 1.5561E-07 | 9.8645E+17 | 1.2369E+11 |
| Zr-97 | 1.5645E+00 | 8.1841E-10 | 5.0810E+15 | 5.7888E+10 |
| Nb-95 | 3.3315E+00 | 8.5198E-08 | 5.4008E+17 | 1.2327E+11 |
| Mo-99 | 3.5072E+01 | 7.3126E-08 | 4.4482E+17 | 1.2977E+12 |
| Tc-99m | 9.9747E+00 | 1.8970E-09 | 1.1539E+16 | 3.6906E+11 |
| Ru-103 | 3.6606E+01 | 1.1342E-06 | 6.6316E+18 | 1.3544E+12 |
| Ru-105 | 4.8513E+00 | 7.2170E-10 | 4.1392E+15 | 1.7950E+11 |
| Ru-106 | 1.4069E+01 | 4.2053E-06 | 2.3891E+19 | 5.2055E+11 |
| Rh-105 | 1.4667E+01 | 1.7377E-08 | 9.9665E+16 | 5.4269E+11 |
| Sb-127 | 4.1550E+01 | 1.5559E-07 | 7.3777E+17 | 1.5373E+12 |
| Sb-129 | 2.9476E+01 | 5.2416E-09 | 2.4470E+16 | 1.0906E+12 |
| Te-127 | 1.6612E+01 | 6.2946E-09 | 2.9848E+16 | 6.1465E+11 |
| Te-127m | 6.7661E+00 | 7.1731E-07 | 3.4014E+18 | 2.5035E+11 |
| Te-129 | 6.4464E+00 | 3.0782E-10 | 1.4370E+15 | 2.3852E+11 |
| Te-129m | 2.2242E+01 | 7.3831E-06 | 3.4467E+18 | 8.2295E+11 |
| Te-131m | 4.0978E+01 | 5.1389E-08 | 2.3624E+17 | 1.5162E+12 |
| Te-132 | 5.4677E+02 | 1.8010E-06 | 8.2165E+18 | 2.0230E+13 |
| I-131 | 3.5639E+03 | 2.8747E-05 | 1.3215E+20 | 1.3187E+14 |
| I-132 | 6.3116E+02 | 6.1146E-08 | 2.7896E+17 | 2.3353E+13 |
| I-133 | 4.0807E+03 | 3.6023E-06 | 1.6311E+19 | 1.5098E+14 |
| I-134 | 3.0400E+02 | 1.1396E-08 | 5.1214E+16 | 1.1248E+13 |
| I-135 | 1.9986E+03 | 5.6910E-07 | 2.5387E+18 | 7.3949E+13 |
| Xe-133 | 2.9135E+05 | 1.5565E-03 | 7.0478E+21 | 1.0780E+16 |
| Xe-135 | 2.2537E+04 | 8.8251E-06 | 3.9367E+19 | 8.3386E+14 |
| Cs-134 | 6.4251E+02 | 4.9660E-04 | 2.2318E+21 | 2.3773E+13 |
| Cs-136 | 1.6676E+02 | 2.2754E-06 | 1.0075E+19 | 6.1702E+12 |
| Cs-137 | 4.3093E+02 | 4.9543E-03 | 2.1778E+22 | 1.5944E+13 |
| Ba-139 | 2.0843E+01 | 1.2743E-09 | 5.5208E+15 | 7.7121E+11 |
| Ba-140 | 3.4037E+02 | 4.6493E-06 | 1.9999E+19 | 1.2594E+13 |
| La-140 | 2.4104E+00 | 4.3366E-09 | 1.8654E+16 | 8.9185E+10 |
| La-141 | 6.0644E-01 | 1.0723E-10 | 4.5799E+14 | 2.2438E+10 |
| La-142 | 2.6490E-01 | 1.8505E-11 | 7.8480E+13 | 9.8014E+09 |
| Ce-141 | 8.1213E+00 | 2.8502E-07 | 1.2173E+18 | 3.0049E+11 |
| Ce-143 | 5.0364E+00 | 7.5840E-09 | 3.1938E+16 | 1.8635E+11 |
| Ce-144 | 6.7000E+00 | 2.1006E-06 | 8.7849E+18 | 2.4790E+11 |
| Pr-143 | 3.0581E+00 | 4.5413E-08 | 1.9125E+17 | 1.1315E+11 |
| Nd-147 | 1.2602E+00 | 1.5577E-08 | 6.3815E+16 | 4.6627E+10 |
| Np-239 | 6.6804E+01 | 2.8796E-07 | 7.2558E+17 | 2.4718E+12 |
| Pu-238 | 2.6499E-02 | 1.5479E-06 | 3.9166E+18 | 9.8046E+08 |

| | | | | |
|---|---|---|---|---|
| Pu-239 | 2.0625E-03 | 3.3182E-05 | 8.3610E+19 | 7.6312E+07 |
| Pu-240 | 2.2242E-03 | 9.7609E-06 | 2.4492E+19 | 8.2295E+07 |
| Pu-241 | 9.2095E-01 | 8.9402E-06 | 2.2340E+19 | 3.4075E+10 |
| Am-241 | 5.6650E-04 | 1.6506E-07 | 4.1244E+17 | 2.0960E+07 |
| Cm-242 | 1.3244E-01 | 3.9959E-08 | 9.9437E+16 | 4.9001E+09 |
| Cm-244 | 1.0771E-02 | 1.3313E-07 | 3.2859E+17 | 3.9852E+08 |

Environment Transport Group Inventory:

| Time (h) = 96.0000 | Present Release | Release Rate/s | Total Release |
|---|---|---|---|
| Noble gases (atoms) | 5.5347E+22 | 1.6015E+17 | 5.5347E+22 |
| Elemental I (atoms) | 1.8145E+19 | 5.2503E+13 | 1.8145E+19 |
| Organic I (atoms) | 4.9629E+18 | 1.4360E+13 | 4.9629E+18 |
| Aerosols (kg) | 5.7458E-03 | 1.6626E-08 | 5.7458E-03 |

CR Filtered Air Intake Transport Group Inventory:

| Time (h) = 96.0000 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 3.0245E+23 |
| Organic I (atoms) | 8.5576E+22 |
| Aerosols (kg) | 7.5299E+01 |

CR Unfiltered Inleakage Transport Group Inventory:

| Time (h) = 96.0000 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 |

CR Exhaust to Environment Transport Group Inventory:

| Time (h) = 96.0000 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 |

Control Room Compartment Nuclide Inventory:

| Time (h) = 96.0000 | Ci | kg | Atoms | Bq |
|---|---|---|---|---|
| Co-58 | 4.3650E-09 | 1.3727E-16 | 1.4253E+09 | 1.6151E+02 |
| Co-60 | 3.4692E-09 | 3.0691E-15 | 3.0804E+10 | 1.2836E+02 |
| Kr-85 | 3.0573E-03 | 7.7925E-09 | 5.5209E+16 | 1.1312E+08 |
| Kr-85m | 2.0513E-08 | 2.4926E-18 | 1.7660E+07 | 7.5898E+02 |
| Rb-86 | 1.0233E-07 | 1.2576E-15 | 8.8063E+09 | 3.7861E+03 |
| Sr-89 | 4.0277E-06 | 1.3864E-13 | 9.3808E+11 | 1.4903E+05 |
| Sr-90 | 4.5913E-07 | 3.3659E-12 | 2.2522E+13 | 1.6988E+04 |
| Sr-91 | 4.7956E-09 | 1.3229E-18 | 8.7548E+06 | 1.7744E+02 |
| Y-90 | 1.6528E-09 | 3.0379E-18 | 2.0328E+07 | 6.1155E+01 |
| Y-91 | 4.9673E-08 | 2.0255E-15 | 1.3404E+10 | 1.8379E+03 |
| Y-93 | 8.5858E-11 | 2.5734E-20 | 1.6664E+05 | 3.1767E+00 |

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**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 1 | System Nos. | Sheet 437 of 1000 |
|---|---|---|---|---|

| | | | | |
|---|---|---|---|---|
| Zr-95 | 6.4247E-08 | 2.9906E-15 | 1.8958E+10 | 2.3771E+03 |
| Zr-97 | 1.2687E-09 | 6.6366E-19 | 4.1203E+06 | 4.6942E+01 |
| Nb-95 | 6.2461E-08 | 1.5973E-15 | 1.0126E+10 | 2.3110E+03 |
| Mo-99 | 3.3200E-07 | 6.9222E-16 | 4.2108E+09 | 1.2284E+04 |
| Ru-103 | 6.9030E-07 | 2.1389E-14 | 1.2505E+11 | 2.5541E+04 |
| Ru-106 | 2.7717E-07 | 8.2848E-14 | 4.7068E+11 | 1.0255E+04 |
| Rh-105 | 6.9284E-08 | 8.2085E-17 | 4.7079E+08 | 2.5635E+03 |
| Sb-127 | 4.8954E-07 | 1.8331E-15 | 8.6923E+09 | 1.8113E+04 |
| Te-127 | 7.4457E-10 | 2.8213E-19 | 1.3378E+06 | 2.7549E+01 |
| Te-127m | 1.3166E-07 | 1.3958E-14 | 6.6185E+10 | 4.8713E+03 |
| Te-129m | 4.1594E-07 | 1.3807E-13 | 6.4456E+10 | 1.5390E+04 |
| Te-131m | 1.4659E-07 | 1.8383E-16 | 8.4510E+08 | 5.4239E+03 |
| Te-132 | 5.8369E-06 | 1.9226E-14 | 8.7714E+10 | 2.1597E+05 |
| I-131 | 6.8953E-05 | 5.5618E-13 | 2.5568E+12 | 2.5513E+06 |
| I-133 | 8.0122E-06 | 7.0729E-15 | 3.2025E+10 | 2.9645E+05 |
| I-135 | 7.1341E-09 | 2.0314E-18 | 9.0618E+06 | 2.6396E+02 |
| Xe-133 | 2.5640E-01 | 1.3698E-09 | 6.2024E+15 | 9.4869E+09 |
| Xe-135 | 9.8430E-05 | 3.8544E-14 | 1.7194E+11 | 3.6419E+06 |
| Cs-134 | 1.2358E-05 | 9.5516E-12 | 4.2926E+13 | 4.5725E+05 |
| Cs-136 | 2.7682E-06 | 3.7770E-14 | 1.6725E+11 | 1.0242E+05 |
| Cs-137 | 8.3085E-06 | 9.5520E-11 | 4.1988E+14 | 3.0741E+05 |
| Ba-140 | 5.7877E-06 | 7.9058E-14 | 3.4007E+11 | 2.1415E+05 |
| La-140 | 1.3723E-08 | 2.4690E-17 | 1.0621E+08 | 5.0777E+02 |
| Ce-141 | 1.5158E-07 | 5.3199E-15 | 2.2721E+10 | 5.6085E+03 |
| Ce-143 | 2.1298E-08 | 3.2072E-17 | 1.3506E+08 | 7.8804E+02 |
| Ce-144 | 1.3179E-07 | 4.1321E-14 | 1.7281E+11 | 4.8763E+03 |
| Pr-143 | 5.2488E-08 | 7.7946E-16 | 3.2825E+09 | 1.9420E+03 |
| Nd-147 | 2.0903E-08 | 2.5839E-16 | 1.0585E+09 | 7.7343E+02 |
| Np-239 | 5.5470E-07 | 2.3910E-15 | 6.0248E+09 | 2.0524E+04 |
| Pu-238 | 5.2475E-10 | 3.0652E-14 | 7.7558E+10 | 1.9416E+01 |
| Pu-239 | 4.0845E-11 | 6.5713E-13 | 1.6558E+12 | 1.5113E+00 |
| Pu-240 | 4.4047E-11 | 1.9330E-13 | 4.8504E+11 | 1.6297E+00 |
| Pu-241 | 1.8232E-08 | 1.7698E-13 | 4.4225E+11 | 6.7457E+02 |
| Am-241 | 1.1219E-11 | 3.2687E-15 | 8.1678E+09 | 4.1509E-01 |
| Cm-242 | 2.5920E-09 | 7.8207E-16 | 1.9462E+09 | 9.5904E+01 |
| Cm-244 | 2.1324E-10 | 2.6358E-15 | 6.5053E+09 | 7.8899E+00 |

Control Room Transport Group Inventory:

| Time (h) = 96.0000 | Atmosphere | Sump | Overlying Pool |
|---|---|---|---|
| Noble gases (atoms) | 6.6069E+16 | 0.0000E+00 | 0.0000E+00 |
| Elemental I (atoms) | 1.0996E+12 | 0.0000E+00 | 0.0000E+00 |
| Organic I (atoms) | 3.1145E+11 | 0.0000E+00 | 0.0000E+00 |
| Aerosols (kg) | 1.1094E-10 | 0.0000E+00 | 0.0000E+00 |

| Time (h) = 96.0000 | Deposition Surfaces | Recirculating Filter |
|---|---|---|
| Noble gases (atoms) | 0.0000E+00 | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 | 9.9645E+14 |
| Organic I (atoms) | 0.0000E+00 | 2.4314E+14 |
| Aerosols (kg) | 0.0000E+00 | 3.0582E-07 |

CR Filtered Air Intake Transport Group Inventory:

| Time (h) = 96.0000 | Pathway Filter |
|---|---|

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**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 1 | System Nos. | Sheet 438 of 1000 |
|---|---|---|---|---|

```
Noble gases (atoms)    0.0000E+00
Elemental I (atoms)    3.0245E+23
Organic I (atoms)      8.5576E+22
Aerosols (kg)          7.5299E+01

CR  Unfiltered Inleakage Transport Group Inventory:

                        Pathway
Time (h) =  96.0000      Filter
Noble gases (atoms)    0.0000E+00
Elemental I (atoms)    0.0000E+00
Organic I (atoms)      0.0000E+00
Aerosols (kg)          0.0000E+00

CR Exhaust to Environment Transport Group Inventory:

                        Pathway
Time (h) =  96.0000      Filter
Noble gases (atoms)    0.0000E+00
Elemental I (atoms)    0.0000E+00
Organic I (atoms)      0.0000E+00
Aerosols (kg)          0.0000E+00

Exclusion Area Boundary Doses:

Time (h) = 720.0000    Whole Body   Thyroid       TEDE
Delta dose (rem)        1.8397E+00  6.7785E+02  5.4086E+01
Accumulated dose (rem)  8.0775E+00  2.0441E+03  1.3483E+02

Low Population Zone Doses:

Time (h) = 720.0000    Whole Body   Thyroid       TEDE
Delta dose (rem)        9.1985E-03  2.2272E+00  1.8086E-01
Accumulated dose (rem)  4.9613E-01  7.9373E+01  4.7123E+00

Control Room Doses:

Time (h) = 720.0000    Whole Body   Thyroid       TEDE
Delta dose (rem)        2.1480E-03  6.2672E-01  4.4532E-02
Accumulated dose (rem)  5.4204E-02  9.5982E+00  5.4927E-01

Environment Integral Nuclide Release:

Time (h) = 720.0000       Ci           kg         Atoms         Bq
Co-58                  4.3775E-01  1.3767E-08  1.4294E+17  1.6197E+10
Co-60                  3.5584E-01  3.1480E-07  3.1596E+18  1.3166E+10
Kr-85                  1.5991E+04  4.0760E-02  2.8878E+23  5.9168E+14
Kr-85m                 4.3291E+03  5.2605E-07  3.7270E+18  1.6018E+14
Kr-87                  1.1625E+03  4.1041E-08  2.8408E+17  4.3013E+13
Kr-88                  6.4943E+03  5.1792E-07  3.5443E+18  2.4029E+14
Rb-86                  9.9857E+00  1.2272E-07  8.5937E+17  3.6947E+11
Sr-89                  4.0063E+02  1.3790E-05  9.3310E+19  1.4823E+13
Sr-90                  4.7130E+01  3.4551E-04  2.3119E+21  1.7438E+12
Sr-91                  9.6417E+01  2.6598E-08  1.7602E+17  3.5674E+12
Sr-92                  3.8395E+01  3.0546E-09  1.9995E+16  1.4206E+12
Y-90                   2.0467E-01  3.7618E-10  2.5172E+15  7.5727E+09
Y-91                   4.9599E+00  2.0225E-07  1.3384E+18  1.8352E+11
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**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 1 | System Nos. | Sheet 439 of 1000 |
|---|---|---|---|---|

| | | | | |
|---|---|---|---|---|
| Y-92 | 4.9515E-01 | 5.1458E-11 | 3.3683E+14 | 1.8320E+10 |
| Y-93 | 1.1746E+00 | 3.5207E-10 | 2.2798E+15 | 4.3461E+10 |
| Zr-95 | 6.4287E+00 | 2.9925E-07 | 1.8970E+18 | 2.3786E+11 |
| Zr-97 | 1.5708E+00 | 8.2166E-10 | 5.1012E+15 | 5.8118E+10 |
| Nb-95 | 6.1439E+00 | 1.5712E-07 | 9.9601E+17 | 2.2733E+11 |
| Mo-99 | 4.0367E+01 | 8.4166E-08 | 5.1198E+17 | 1.4936E+12 |
| Tc-99m | 9.9747E+00 | 1.8970E-09 | 1.1539E+16 | 3.6906E+11 |
| Ru-103 | 6.8152E+01 | 2.1117E-06 | 1.2346E+19 | 2.5216E+12 |
| Ru-105 | 4.8513E+00 | 7.2170E-10 | 4.1392E+15 | 1.7950E+11 |
| Ru-106 | 2.8318E+01 | 8.4645E-06 | 4.8089E+19 | 1.0478E+12 |
| Rh-105 | 1.5339E+01 | 1.8173E-08 | 1.0423E+17 | 5.6756E+11 |
| Sb-127 | 5.1395E+01 | 1.9245E-07 | 9.1258E+17 | 1.9016E+12 |
| Sb-129 | 2.9476E+01 | 5.2416E-09 | 2.4470E+16 | 1.0906E+12 |
| Te-127 | 1.6614E+01 | 6.2953E-09 | 2.9851E+16 | 6.1472E+11 |
| Te-127m | 1.3306E+01 | 1.4106E-06 | 6.6888E+18 | 4.9231E+11 |
| Te-129 | 6.4464E+00 | 3.0782E-10 | 1.4370E+15 | 2.3852E+11 |
| Te-129m | 4.0850E+01 | 1.3560E-05 | 6.3303E+18 | 1.5115E+12 |
| Te-131m | 4.2210E+01 | 5.2934E-08 | 2.4334E+17 | 1.5618E+12 |
| Te-132 | 6.5177E+02 | 2.1469E-06 | 9.7944E+18 | 2.4115E+13 |
| I-131 | 5.7049E+03 | 4.6017E-05 | 2.1154E+20 | 2.1108E+14 |
| I-132 | 6.3116E+02 | 6.1146E-08 | 2.7896E+17 | 2.3353E+13 |
| I-133 | 4.1232E+03 | 3.6398E-06 | 1.6481E+19 | 1.5256E+14 |
| I-134 | 3.0400E+02 | 1.1396E-08 | 5.1214E+16 | 1.1248E+13 |
| I-135 | 1.9986E+03 | 5.6911E-07 | 2.5387E+18 | 7.3949E+13 |
| Xe-133 | 6.0682E+05 | 3.2419E-03 | 1.4679E+22 | 2.2452E+16 |
| Xe-135 | 2.2545E+04 | 8.8281E-06 | 3.9381E+19 | 8.3415E+14 |
| Cs-134 | 1.2826E+03 | 9.9134E-04 | 4.4552E+21 | 4.7457E+13 |
| Cs-136 | 2.6708E+02 | 3.6441E-06 | 1.6136E+19 | 9.8819E+12 |
| Cs-137 | 8.6418E+02 | 9.9352E-03 | 4.3673E+22 | 3.1975E+13 |
| Ba-139 | 2.0843E+01 | 1.2743E-09 | 5.5208E+15 | 7.7121E+11 |
| Ba-140 | 5.4823E+02 | 7.4886E-06 | 3.2213E+19 | 2.0285E+13 |
| La-140 | 2.5591E+00 | 4.6040E-09 | 1.9804E+16 | 9.4685E+10 |
| La-141 | 6.0644E-01 | 1.0723E-10 | 4.5799E+14 | 2.2438E+10 |
| La-142 | 2.6490E-01 | 1.8505E-11 | 7.8480E+13 | 9.8014E+09 |
| Ce-141 | 1.4869E+01 | 5.2186E-07 | 2.2289E+18 | 5.5017E+11 |
| Ce-143 | 5.2310E+00 | 7.8770E-09 | 3.3172E+16 | 1.9355E+11 |
| Ce-144 | 1.3446E+01 | 4.2158E-06 | 1.7631E+19 | 4.9751E+11 |
| Pr-143 | 4.9809E+00 | 7.3968E-08 | 3.1150E+17 | 1.8429E+11 |
| Nd-147 | 1.9735E+00 | 2.4395E-08 | 9.9940E+16 | 7.3021E+10 |
| Np-239 | 7.4684E+01 | 3.2193E-07 | 8.1116E+17 | 2.7633E+12 |
| Pu-238 | 5.3871E-02 | 3.1467E-06 | 7.9622E+18 | 1.9932E+09 |
| Pu-239 | 4.1934E-03 | 6.7466E-05 | 1.6999E+20 | 1.5516E+08 |
| Pu-240 | 4.5222E-03 | 1.9846E-05 | 4.9797E+19 | 1.6732E+08 |
| Pu-241 | 1.8712E+00 | 1.8164E-05 | 4.5389E+19 | 6.9233E+10 |
| Am-241 | 1.1518E-03 | 3.3558E-07 | 8.3856E+17 | 4.2616E+07 |
| Cm-242 | 2.6327E-01 | 7.9434E-08 | 1.9767E+17 | 9.7408E+09 |
| Cm-244 | 2.1887E-02 | 2.7053E-07 | 6.6770E+17 | 8.0982E+08 |

Environment Transport Group Inventory:

| Time (h) = 720.0000 | Present Release | Release Rate/s | Total Release |
|---|---|---|---|
| Noble gases (atoms) | 3.4623E+23 | 1.3358E+17 | 3.4623E+23 |
| Elemental I (atoms) | 1.1014E+20 | 4.2491E+13 | 1.1014E+20 |
| Organic I (atoms) | 3.1019E+19 | 1.1967E+13 | 3.1019E+19 |
| Aerosols (kg) | 1.1534E-02 | 4.4497E-09 | 1.1534E-02 |

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**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 1 | System Nos. | Sheet 440 of 1000 |
|---|---|---|---|---|

CR Filtered Air Intake Transport Group Inventory:

| Time (h) = 720.0000 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 2.5531E+24 |
| Organic I (atoms) | 7.2306E+23 |
| Aerosols (kg) | 2.3151E+02 |

CR Unfiltered Inleakage Transport Group Inventory:

| Time (h) = 720.0000 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 |

CR Exhaust to Environment Transport Group Inventory:

| Time (h) = 720.0000 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 |

Control Room Compartment Nuclide Inventory:

| Time (h) = 720.0000 | Ci | kg | Atoms | Bq |
|---|---|---|---|---|
| Co-58 | 1.5992E-10 | 5.0294E-18 | 5.2220E+07 | 5.9172E+00 |
| Co-60 | 1.6242E-10 | 1.4369E-16 | 1.4422E+09 | 6.0096E+00 |
| Kr-85 | 2.0933E-03 | 5.3355E-09 | 3.7801E+16 | 7.7453E+07 |
| Rb-86 | 1.8409E-09 | 2.2624E-17 | 1.5843E+08 | 6.8113E+01 |
| Sr-89 | 1.3321E-07 | 4.5853E-15 | 3.1026E+10 | 4.9289E+03 |
| Sr-90 | 2.1661E-08 | 1.5880E-13 | 1.0626E+12 | 8.0146E+02 |
| Y-91 | 1.7252E-09 | 7.0346E-17 | 4.6553E+08 | 6.3831E+01 |
| Zr-95 | 2.2909E-09 | 1.0664E-16 | 6.7598E+08 | 8.4762E+01 |
| Nb-95 | 1.7677E-09 | 4.5207E-17 | 2.8657E+08 | 6.5406E+01 |
| Mo-99 | 2.2362E-11 | 4.6625E-20 | 2.8362E+05 | 8.2740E-01 |
| Ru-103 | 2.0618E-08 | 6.3886E-16 | 3.7352E+09 | 7.6288E+02 |
| Ru-106 | 1.2473E-08 | 3.7282E-15 | 2.1181E+10 | 4.6150E+02 |
| Sb-127 | 2.1445E-10 | 8.0304E-19 | 3.8079E+06 | 7.9348E+00 |
| Te-127m | 5.2737E-09 | 5.5909E-16 | 2.6511E+09 | 1.9513E+02 |
| Te-129m | 1.1497E-08 | 3.8163E-15 | 1.7816E+09 | 4.2537E+02 |
| Te-132 | 1.0929E-09 | 3.5999E-18 | 1.6424E+07 | 4.0437E+01 |
| I-131 | 1.7940E-06 | 1.4471E-14 | 6.6523E+10 | 6.6379E+04 |
| Xe-133 | 5.6779E-03 | 3.0334E-11 | 1.3735E+14 | 2.1008E+08 |
| Cs-134 | 5.7021E-07 | 4.4072E-13 | 1.9806E+12 | 2.1098E+04 |
| Cs-136 | 3.3053E-08 | 4.5098E-16 | 1.9969E+09 | 1.2229E+03 |
| Cs-137 | 3.9200E-07 | 4.5067E-12 | 1.9810E+13 | 1.4504E+04 |
| Ba-140 | 6.6472E-08 | 9.0797E-16 | 3.9057E+09 | 2.4595E+03 |
| Ce-141 | 4.1144E-09 | 1.4440E-16 | 6.1673E+08 | 1.5223E+02 |
| Ce-144 | 5.8457E-09 | 1.8328E-15 | 7.6649E+09 | 2.1629E+02 |
| Pr-143 | 6.5666E-10 | 9.7516E-18 | 4.1067E+07 | 2.4296E+01 |
| Nd-147 | 1.9137E-10 | 2.3655E-18 | 9.6909E+06 | 7.0807E+00 |
| Np-239 | 1.2447E-11 | 5.3653E-20 | 1.3519E+05 | 4.6054E-01 |

```
Pu-238                  2.4785E-11  1.4477E-15  3.6632E+09  9.1703E-01
Pu-239                  1.9302E-12  3.1055E-14  7.8249E+10  7.1419E-02
Pu-240                  2.0816E-12  9.1350E-15  2.2922E+10  7.7018E-02
Pu-241                  8.5865E-10  8.3354E-15  2.0828E+10  3.1770E+01
Am-241                  5.3011E-13  1.5445E-16  3.8595E+08  1.9614E-02
Cm-242                  1.0966E-10  3.3086E-17  8.2334E+07  4.0573E+00
Cm-244                  1.0050E-11  1.2422E-16  3.0659E+08  3.7185E-01

Control Room Transport Group Inventory:

                                                Overlying
Time (h) = 720.0000    Atmosphere     Sump        Pool
Noble gases (atoms)    4.5447E+16  0.0000E+00  0.0000E+00
Elemental I (atoms)    7.5643E+11  0.0000E+00  0.0000E+00
Organic I (atoms)      2.1425E+11  0.0000E+00  0.0000E+00
Aerosols (kg)          5.2427E-12  0.0000E+00  0.0000E+00

                       Deposition Recirculating
Time (h) = 720.0000     Surfaces     Filter
Noble gases (atoms)    0.0000E+00  0.0000E+00
Elemental I (atoms)    0.0000E+00  3.8311E+15
Organic I (atoms)      0.0000E+00  1.0460E+15
Aerosols (kg)          0.0000E+00  4.1234E-07

CR Filtered Air Intake Transport Group Inventory:

                        Pathway
Time (h) = 720.0000      Filter
Noble gases (atoms)    0.0000E+00
Elemental I (atoms)    2.5531E+24
Organic I (atoms)      7.2306E+23
Aerosols (kg)          2.3151E+02

CR  Unfiltered Inleakage Transport Group Inventory:

                        Pathway
Time (h) = 720.0000      Filter
Noble gases (atoms)    0.0000E+00
Elemental I (atoms)    0.0000E+00
Organic I (atoms)      0.0000E+00
Aerosols (kg)          0.0000E+00

CR Exhaust to Environment Transport Group Inventory:

                        Pathway
Time (h) = 720.0000      Filter
Noble gases (atoms)    0.0000E+00
Elemental I (atoms)    0.0000E+00
Organic I (atoms)      0.0000E+00
Aerosols (kg)          0.0000E+00

    324

#################################################################
                          I-131 Summary
#################################################################
```

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**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 1 | System Nos. | Sheet 442 of 1000 |
|---|---|---|---|---|

| Time (hr) | Sprayed Region I-131 (Curies) | Unsprayed Region I-131 (Curies) | Environment I-131 (Curies) |
|---|---|---|---|
| 0.001 | 2.2633E+03 | 1.7074E+03 | 4.5957E-05 |
| 0.010 | 3.9516E+04 | 2.9810E+04 | 1.4010E-02 |
| 0.021 | 8.4730E+04 | 6.3919E+04 | 6.4416E-02 |
| 0.350 | 8.1987E+05 | 9.8651E+05 | 1.4569E+01 |
| 0.491 | 9.8444E+05 | 1.3066E+06 | 2.6626E+01 |
| 0.500 | 9.9379E+05 | 1.3251E+06 | 2.7519E+01 |
| 0.800 | 2.4922E+06 | 3.3192E+06 | 8.0211E+01 |
| 1.100 | 3.2196E+06 | 4.8220E+06 | 1.6768E+02 |
| 1.400 | 3.6733E+06 | 5.8901E+06 | 2.7827E+02 |
| 1.700 | 3.9805E+06 | 6.6430E+06 | 4.0482E+02 |
| 1.800 | 4.0604E+06 | 6.8402E+06 | 4.4967E+02 |
| 2.000 | 2.6705E+06 | 5.5656E+06 | 5.2867E+02 |
| 2.300 | 1.6864E+06 | 3.9375E+06 | 6.1404E+02 |
| 2.360 | 1.5560E+06 | 3.6566E+06 | 6.2758E+02 |
| 2.660 | 1.1125E+06 | 2.5756E+06 | 6.8264E+02 |
| 2.808 | 9.5042E+05 | 2.1571E+06 | 7.0358E+02 |
| 3.200 | 1.3479E+06 | 1.5397E+06 | 7.5261E+02 |
| 3.500 | 1.3833E+06 | 1.3197E+06 | 7.8754E+02 |
| 3.800 | 1.3406E+06 | 1.1838E+06 | 8.2020E+02 |
| 4.000 | 1.2952E+06 | 1.1131E+06 | 8.4075E+02 |
| 4.300 | 1.3321E+06 | 1.0416E+06 | 8.7063E+02 |
| 4.600 | 1.3369E+06 | 1.0039E+06 | 9.0009E+02 |
| 4.900 | 1.3284E+06 | 9.8051E+05 | 9.2915E+02 |
| 5.200 | 1.3145E+06 | 9.6318E+05 | 9.5781E+02 |
| 5.500 | 1.2985E+06 | 9.4851E+05 | 9.8608E+02 |
| 5.800 | 1.2817E+06 | 9.3507E+05 | 1.0140E+03 |
| 6.100 | 1.2648E+06 | 9.2224E+05 | 1.0415E+03 |
| 6.400 | 1.2479E+06 | 9.0977E+05 | 1.0686E+03 |
| 6.700 | 1.2313E+06 | 8.9756E+05 | 1.0954E+03 |
| 7.000 | 1.2148E+06 | 8.8556E+05 | 1.1219E+03 |
| 7.300 | 1.1986E+06 | 8.7375E+05 | 1.1479E+03 |
| 7.600 | 1.1826E+06 | 8.6211E+05 | 1.1737E+03 |
| 7.900 | 1.1668E+06 | 8.5064E+05 | 1.1990E+03 |
| 8.000 | 1.1616E+06 | 8.4685E+05 | 1.2074E+03 |
| 8.300 | 1.1461E+06 | 8.3561E+05 | 1.2324E+03 |
| 8.600 | 1.1308E+06 | 8.2452E+05 | 1.2570E+03 |
| 8.900 | 1.1158E+06 | 8.1360E+05 | 1.2812E+03 |
| 9.200 | 1.1010E+06 | 8.0284E+05 | 1.3052E+03 |
| 9.500 | 1.0864E+06 | 7.9223E+05 | 1.3288E+03 |
| 9.800 | 1.0720E+06 | 7.8177E+05 | 1.3522E+03 |
| 10.100 | 1.0578E+06 | 7.7147E+05 | 1.3752E+03 |
| 10.400 | 1.0439E+06 | 7.6131E+05 | 1.3979E+03 |
| 24.000 | 6.6466E+05 | 4.8885E+05 | 2.2212E+03 |
| 96.000 | 3.9390E+05 | 2.9636E+05 | 3.5639E+03 |
| 720.000 | 1.0508E+04 | 7.9221E+03 | 5.7049E+03 |

| Time (hr) | Control Room I-131 (Curies) |
|---|---|
| 0.001 | 2.9492E-08 |
| 0.010 | 8.9642E-06 |
| 0.021 | 4.1071E-05 |
| 0.350 | 8.3337E-03 |
| 0.491 | 1.4534E-02 |
| 0.500 | 1.4975E-02 |
| 0.800 | 4.9019E-03 |

AmerGen

**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 1 | System Nos. | Sheet 443 of 1000 |
|---|---|---|---|---|

| | |
|---|---|
| 1.100 | 6.1715E-03 |
| 1.400 | 7.6026E-03 |
| 1.700 | 8.6330E-03 |
| 1.800 | 8.9030E-03 |
| 2.000 | 7.8929E-03 |
| 2.300 | 3.8415E-03 |
| 2.360 | 3.5015E-03 |
| 2.660 | 2.3944E-03 |
| 2.808 | 2.0253E-03 |
| 3.200 | 1.6913E-03 |
| 3.500 | 1.5856E-03 |
| 3.800 | 1.4869E-03 |
| 4.000 | 1.4234E-03 |
| 4.300 | 1.3777E-03 |
| 4.600 | 1.3576E-03 |
| 4.900 | 1.3399E-03 |
| 5.200 | 1.3228E-03 |
| 5.500 | 1.3059E-03 |
| 5.800 | 1.2894E-03 |
| 6.100 | 1.2731E-03 |
| 6.400 | 1.2570E-03 |
| 6.700 | 1.2412E-03 |
| 7.000 | 1.2256E-03 |
| 7.300 | 1.2102E-03 |
| 7.600 | 1.1950E-03 |
| 7.900 | 1.1801E-03 |
| 8.000 | 1.1752E-03 |
| 8.300 | 5.7313E-04 |
| 8.600 | 5.2301E-04 |
| 8.900 | 5.1335E-04 |
| 9.200 | 5.0675E-04 |
| 9.500 | 5.0047E-04 |
| 9.800 | 4.9429E-04 |
| 10.100 | 4.8820E-04 |
| 10.400 | 4.8220E-04 |
| 24.000 | 3.1919E-04 |
| 96.000 | 6.8953E-05 |
| 720.000 | 1.7940E-06 |

##################################################################
Cumulative Dose Summary
##################################################################

| | Exclusion Area Bounda | | Low Population Zone | | Control Room | |
|---|---|---|---|---|---|---|
| Time (hr) | Thyroid (rem) | TEDE (rem) | Thyroid (rem) | TEDE (rem) | Thyroid (rem) | TEDE (rem) |
| 0.001 | 1.9873E-05 | 9.5569E-07 | 3.4777E-06 | 1.6725E-07 | 2.2518E-09 | 9.5658E-11 |
| 0.010 | 6.0580E-03 | 2.9131E-04 | 1.0601E-03 | 5.0978E-05 | 1.0734E-05 | 4.5599E-07 |
| 0.021 | 2.7851E-02 | 1.3387E-03 | 4.8739E-03 | 2.3427E-04 | 8.7053E-05 | 3.6979E-06 |
| 0.350 | 6.2747E+00 | 2.9980E-01 | 1.0981E+00 | 5.2466E-02 | 2.9107E-01 | 1.2379E-02 |
| 0.491 | 1.1446E+01 | 5.4512E-01 | 2.0031E+00 | 9.5395E-02 | 7.2731E-01 | 3.0935E-02 |
| 0.500 | 1.1829E+01 | 5.6320E-01 | 2.0700E+00 | 9.8560E-02 | 7.6469E-01 | 3.2526E-02 |
| 0.800 | 3.4672E+01 | 1.7845E+00 | 6.0676E+00 | 3.1228E-01 | 1.3754E+00 | 5.9557E-02 |
| 1.100 | 7.2667E+01 | 3.9253E+00 | 1.2717E+01 | 6.8693E-01 | 1.8235E+00 | 8.2646E-02 |
| 1.400 | 1.2056E+02 | 6.6669E+00 | 2.1098E+01 | 1.1667E+00 | 2.3941E+00 | 1.1353E-01 |
| 1.700 | 1.7511E+02 | 9.8136E+00 | 3.0644E+01 | 1.7174E+00 | 3.0631E+00 | 1.5060E-01 |
| 1.800 | 1.9438E+02 | 1.0929E+01 | 3.4017E+01 | 1.9126E+00 | 3.3024E+00 | 1.6401E-01 |

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**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 1 | System Nos. | Sheet 444 of 1000 |
|---|---|---|---|---|

| | | | | | | |
|---|---|---|---|---|---|---|
| 2.000 | 2.2827E+02 | 1.2904E+01 | 3.9947E+01 | 2.2582E+00 | 3.7666E+00 | 1.9030E-01 |
| 2.300 | 2.6479E+02 | 1.5069E+01 | 4.2686E+01 | 2.4206E+00 | 4.2074E+00 | 2.1631E-01 |
| 2.360 | 2.7057E+02 | 1.5417E+01 | 4.3120E+01 | 2.4467E+00 | 4.2671E+00 | 2.1997E-01 |
| 2.660 | 2.9403E+02 | 1.6847E+01 | 4.4879E+01 | 2.5539E+00 | 4.5022E+00 | 2.3476E-01 |
| 2.808 | 3.0293E+02 | 1.7399E+01 | 4.5547E+01 | 2.5954E+00 | 4.5904E+00 | 2.4048E-01 |
| 3.200 | 3.2370E+02 | 1.8697E+01 | 4.7105E+01 | 2.6927E+00 | 4.7812E+00 | 2.5312E-01 |
| 3.500 | 3.3845E+02 | 1.9616E+01 | 4.8211E+01 | 2.7616E+00 | 4.9127E+00 | 2.6184E-01 |
| 3.800 | 3.5219E+02 | 2.0472E+01 | 4.9241E+01 | 2.8258E+00 | 5.0357E+00 | 2.6998E-01 |
| 4.000 | 3.6082E+02 | 2.1009E+01 | 4.9888E+01 | 2.8661E+00 | 5.1132E+00 | 2.7510E-01 |
| 4.300 | 3.7333E+02 | 2.1786E+01 | 5.0827E+01 | 2.9244E+00 | 5.2244E+00 | 2.8243E-01 |
| 4.600 | 3.8563E+02 | 2.2545E+01 | 5.1749E+01 | 2.9813E+00 | 5.3330E+00 | 2.8952E-01 |
| 4.900 | 3.9773E+02 | 2.3288E+01 | 5.2656E+01 | 3.0370E+00 | 5.4398E+00 | 2.9643E-01 |
| 5.200 | 4.0963E+02 | 2.4014E+01 | 5.3549E+01 | 3.0915E+00 | 5.5450E+00 | 3.0318E-01 |
| 5.500 | 4.2134E+02 | 2.4726E+01 | 5.4427E+01 | 3.1449E+00 | 5.6485E+00 | 3.0977E-01 |
| 5.800 | 4.3286E+02 | 2.5423E+01 | 5.5291E+01 | 3.1971E+00 | 5.7505E+00 | 3.1620E-01 |
| 6.100 | 4.4419E+02 | 2.6106E+01 | 5.6141E+01 | 3.2484E+00 | 5.8508E+00 | 3.2249E-01 |
| 6.400 | 4.5534E+02 | 2.6775E+01 | 5.6978E+01 | 3.2986E+00 | 5.9497E+00 | 3.2865E-01 |
| 6.700 | 4.6632E+02 | 2.7432E+01 | 5.7801E+01 | 3.3478E+00 | 6.0470E+00 | 3.3467E-01 |
| 7.000 | 4.7712E+02 | 2.8075E+01 | 5.8611E+01 | 3.3961E+00 | 6.1429E+00 | 3.4056E-01 |
| 7.300 | 4.8775E+02 | 2.8707E+01 | 5.9408E+01 | 3.4434E+00 | 6.2374E+00 | 3.4633E-01 |
| 7.600 | 4.9822E+02 | 2.9326E+01 | 6.0193E+01 | 3.4899E+00 | 6.3304E+00 | 3.5199E-01 |
| 7.900 | 5.0852E+02 | 2.9934E+01 | 6.0966E+01 | 3.5355E+00 | 6.4220E+00 | 3.5753E-01 |
| 8.000 | 5.1191E+02 | 3.0135E+01 | 6.1220E+01 | 3.5505E+00 | 6.4523E+00 | 3.5935E-01 |
| 8.300 | 5.2200E+02 | 3.0728E+01 | 6.1473E+01 | 3.5668E+00 | 6.5116E+00 | 3.6307E-01 |
| 8.600 | 5.3192E+02 | 3.1311E+01 | 6.1722E+01 | 3.5828E+00 | 6.5531E+00 | 3.6569E-01 |
| 8.900 | 5.4169E+02 | 3.1883E+01 | 6.1967E+01 | 3.5985E+00 | 6.5927E+00 | 3.6813E-01 |
| 9.200 | 5.5131E+02 | 3.2446E+01 | 6.2208E+01 | 3.6139E+00 | 6.6316E+00 | 3.7048E-01 |
| 9.500 | 5.6078E+02 | 3.2998E+01 | 6.2446E+01 | 3.6289E+00 | 6.6700E+00 | 3.7277E-01 |
| 9.800 | 5.7011E+02 | 3.3541E+01 | 6.2679E+01 | 3.6437E+00 | 6.7078E+00 | 3.7500E-01 |
| 10.100 | 5.7928E+02 | 3.4075E+01 | 6.2909E+01 | 3.6582E+00 | 6.7450E+00 | 3.7720E-01 |
| 10.400 | 5.8832E+02 | 3.4600E+01 | 6.3136E+01 | 3.6724E+00 | 6.7818E+00 | 3.7935E-01 |
| 24.000 | 9.0567E+02 | 5.2794E+01 | 7.1092E+01 | 4.1566E+00 | 8.0894E+00 | 4.5350E-01 |
| 96.000 | 1.3663E+03 | 8.0749E+01 | 7.7146E+01 | 4.5315E+00 | 8.9715E+00 | 5.0474E-01 |
| 720.000 | 2.0441E+03 | 1.3483E+02 | 7.9373E+01 | 4.7123E+00 | 9.5982E+00 | 5.4927E-01 |

```
#####################################################################
                        Worst Two-Hour Doses
    Note: All of the dose locations are shown below but the
          worst two-hour dose is only meaningful for the EAB
          dose location.  Please disregard the two-hour worst
          doses for the other dose locations
#####################################################################
```

**Exclusion Area Boundary**

| Time (hr) | Whole Body (rem) | Thyroid (rem) | TEDE (rem) |
|---|---|---|---|
| 0.7 | 1.5644E+00 | 2.6938E+02 | 1.5618E+01 |

Low Population Zone

| Time (hr) | Whole Body (rem) | Thyroid (rem) | TEDE (rem) |
|---|---|---|---|
| 0.5 | 2.2892E-01 | 4.1871E+01 | 2.3982E+00 |

Control Room

| Time (hr) | Whole Body (rem) | Thyroid (rem) | TEDE (rem) |
|---|---|---|---|
| 0.3 | 1.1801E-02 | 3.9606E+00 | 2.0581E-01 |

AmerGen

**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. | Rev. No. | System Nos. | Sheet |
|---|---|---|---|---|
| | C-1101-900-E000-087 | 1 | | 445 of 1000 |

**Appendix N**

**RADTRAD Output File**

# CL_TSC.o0

**Containment Leakage Pathway (For TSC Dose)**

TMI Containment Leakage Pathway AST Analysis: (Same inputs as for CR & Offsite Dose)

CR Unfiltered Inleakage = 1,000 cfm (t=30 minutes to t=720 hours),
CR Initiation Time = 30 min (t=0 to t=30 min),
Two Spray Pumps For 28.19 min at 800 gpm each (t=75 seconds to t= 29.44 min),
Two Spray Pump For t=29.44 min to t=4.0 hours @ 800 gpm each

AmerGen

**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 1 | System Nos. | Sheet 447 of 1000 |
|---|---|---|---|---|

```
 ######################################################################
           RADTRAD Version 3.02 run on  5/15/2002  at  7:25:29
 ######################################################################

 ######################################################################
                      File information
 ######################################################################

 Plant file name           = C:\Documents and Settings\u004tjm\My Documents\TMI
RADTRAD\CL_TSC.psf
 Inventory file name       = c:\documents and settings\u004tjm\my documents\tmi
radtrad\defaults\tmi_def.nif
 Scenario file name        = C:\Documents and Settings\u004tjm\My Documents\TMI
RADTRAD\CL_TSC.psf
 Release file name         = c:\documents and settings\u004tjm\my documents\tmi
radtrad\defaults\pwr_dba.rft
 Dose conversion file name = c:\documents and settings\u004tjm\my documents\tmi
radtrad\defaults\fgr11&12.inp




     #####    ####   #####    #  #     #  #####   #    #  #####
     #    #  #       #        #  ##    #  #    #  #    #    #
     #    #  #       #        #  # #   #  #    #  #    #    #
     #####    ####   ####     #  #  #  #  #####   #    #    #
     #            #  #        #  #   # #  #       #    #    #
     #            #  #        #  #    ##  #       #    #    #
     #        ####   #        #  #     #  #        ####     #


 Radtrad 3.02 1/5/2000
 TSC Dose Due To Containment Leakage - NO HVAC for 2 hours - 250 cfm Unfiltered
Inleakage (.8 - 2.8 max)
 Nuclide Inventory File:
 c:\documents and settings\u004tjm\my documents\tmi radtrad\defaults\tmi_def.nif
 Plant Power Level:
  2.6190E+03
 Compartments:
   4
 Compartment 1:
 Sprayed Region
   3
  1.2310E+06
   1
   0
   0
   0
   0
 Compartment 2:
 Unsprayed Region
   3
  9.2880E+05
```

```
  0


  0
  0
  1
  0
Compartment 3:
Environment
  2
 0.0000E+00
  0
  0
  0
  0
  0
Compartment 4:
TSC
  1
 4.2000E+04
  0
  0
  1
  0
  0
Pathways:
  7
Pathway 1:
Sprayed to Unsprayed
  1
  2
  2
Pathway 2:
Unsprayed to Sprayed
  2
  1
  2
Pathway 3:
Sprayed to Environment
  1
  3
  4
Pathway 4:
Unsprayed to Environment
  2
  3
  4
Pathway 5:
TSC Filtered Air Intake
  3
  4
  2
Pathway 6:
TSC Unfiltered Inleakage
  3
  4
  2
```

```
Pathway 7:
TSC Exhaust to Environment
  4
  3
  2
End of Plant Model File
Scenario Description Name:

Plant Model Filename:
ACCEPT\TEST24.PMF
Source Term:
  2
  1   5.7000E-01
  2   4.3000E-01
c:\documents and settings\u004tjm\my documents\tmi radtrad\defaults\fgr11&12.inp
c:\documents and settings\u004tjm\my documents\tmi radtrad\defaults\pwr_dba.rft
  0.0000E+00
  0
  9.5000E-01   4.8500E-02   1.5000E-03   1.0000E+00
Overlying Pool:
  0
  0.0000E+00
  0
  0
  0
  0
Compartments:
  4
Compartment 1:
  0
  1
  1
  0.0000E+00
  6
  0.0000E+00   0.0000E+00
  2.0800E-02   3.8800E+00
  4.9070E-01   1.9400E+00
  2.9200E+00   1.9400E+00
  3.8200E+00   1.9400E-01
  4.0000E+00   0.0000E+00
  1
  0.0000E+00
  6
  0.0000E+00   0.0000E+00
  2.0800E-02   9.4600E+00
  4.9070E-01   4.7300E+00
  2.9200E+00   0.0000E+00
  3.8200E+00   0.0000E+00
  4.0000E+00   0.0000E+00
  1
  0.0000E+00
  0
  0
  0
  0
  0
Compartment 2:
```

```
  0


  1
  0
  0
  0
  0
  0
  3
  1
  1.0000E+01
  0
Compartment 3:
  1
  1
  0
  0
  0
  0
  0
  0
  0
Compartment 4:
  1
  1
  0
  0
  0
  0
  1
  1.4000E+03
  5
  0.0000E+00   0.0000E+00   0.0000E+00   0.0000E+00
  8.0000E-01   0.0000E+00   0.0000E+00   0.0000E+00
  1.0000E+00   0.0000E+00   0.0000E+00   0.0000E+00
  2.8000E+00   9.9000E+01   9.0000E+01   9.0000E+01
  7.2000E+02   0.0000E+00   0.0000E+00   0.0000E+00
  0
  0
Pathways:
  7
Pathway 1:
  0
  0
  0
  0
  0
  1
  3
  0.0000E+00   0.0000E+00   0.0000E+00   0.0000E+00   0.0000E+00
  9.7000E-03   2.5000E+04   0.0000E+00   0.0000E+00   0.0000E+00
  7.2000E+02   2.5000E+04   0.0000E+00   0.0000E+00   0.0000E+00
  0
  0
  0
  0
```

```
  0
  0


Pathway 2:
  0
  0
  0
  0
  0
  1
  3
  0.0000E+00   0.0000E+00   0.0000E+00   0.0000E+00   0.0000E+00
  9.7000E-03   2.5000E+04   0.0000E+00   0.0000E+00   0.0000E+00
  7.2000E+02   2.5000E+04   0.0000E+00   0.0000E+00   0.0000E+00
  0
  0
  0
  0
  0
  0
Pathway 3:
  0
  0
  0
  0
  0
  0
  0
  0
  0
  0
  1
  3
  0.0000E+00   1.0000E-01
  2.4000E+01   5.0000E-02
  7.2000E+02   0.0000E+00
  0
Pathway 4:
  0
  0
  0
  0
  0
  0
  0
  0
  0
  0
  1
  3
  0.0000E+00   1.0000E-01
  2.4000E+01   5.0000E-02
  7.2000E+02   0.0000E+00
  0
Pathway 5:
  0
```

```
  0
  0
  0


  0
  1
  5
  0.0000E+00   3.0000E+02   0.0000E+00   0.0000E+00   0.0000E+00
  8.0000E-01   3.0000E+02   0.0000E+00   0.0000E+00   0.0000E+00
  1.0000E+00   3.0000E+02   0.0000E+00   0.0000E+00   0.0000E+00
  2.8000E+00   6.0000E+02   9.9000E+01   9.0000E+01   9.0000E+01
  7.2000E+02   0.0000E+00   0.0000E+00   0.0000E+00   0.0000E+00
  0
  0
  0
  0
  0
  0
Pathway 6:
  0
  0
  0
  0
  0
  1
  5
  0.0000E+00   0.0000E+00   0.0000E+00   0.0000E+00   0.0000E+00
  8.0000E-01   0.0000E+00   0.0000E+00   0.0000E+00   0.0000E+00
  1.0000E+00   0.0000E+00   0.0000E+00   0.0000E+00   0.0000E+00
  2.8000E+00   2.5000E+02   0.0000E+00   0.0000E+00   0.0000E+00
  7.2000E+02   0.0000E+00   0.0000E+00   0.0000E+00   0.0000E+00
  0
  0
  0
  0
  0
  0
Pathway 7:
  0
  0
  0
  0
  0
  1
  5
  0.0000E+00   3.0000E+02   0.0000E+00   0.0000E+00   0.0000E+00
  8.0000E-01   3.0000E+02   0.0000E+00   0.0000E+00   0.0000E+00
  1.0000E+00   3.0000E+02   0.0000E+00   0.0000E+00   0.0000E+00
  2.8000E+00   8.5000E+02   0.0000E+00   0.0000E+00   0.0000E+00
  7.2000E+02   0.0000E+00   0.0000E+00   0.0000E+00   0.0000E+00
  0
  0
  0
  0
  0
  0
```

AmerGen

**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 1 | System Nos. | Sheet 453 of 1000 |
|---|---|---|---|---|

```
Dose Locations:
  4
Location 1:
Exclusion Area Boundary


  3
  1
  2
  0.0000E+00   8.0000E-04
  7.2000E+02   0.0000E+00
  1
  2
  0.0000E+00   3.5000E-04
  7.2000E+02   0.0000E+00
  0
Location 2:
Low Population Zone
  3
  1
  6
  0.0000E+00   1.4000E-04
  2.0000E+00   6.0000E-05
  8.0000E+00   3.9000E-05
  2.4000E+01   1.6000E-05
  9.6000E+01   4.0000E-06
  7.2000E+02   0.0000E+00
  1
  4
  0.0000E+00   3.5000E-04
  8.0000E+00   1.8000E-04
  2.4000E+01   2.3000E-04
  7.2000E+02   0.0000E+00
  0
Location 3:
TSC
  4
  0
  1
  2
  0.0000E+00   3.5000E-04
  7.2000E+02   0.0000E+00
  1
  4
  0.0000E+00   1.0000E+00
  2.4000E+01   6.0000E-01
  9.6000E+01   4.0000E-01
  7.2000E+02   0.0000E+00
Location 4:
Travel Path
  3
  1
  3
  0.0000E+00   0.0000E+00
  9.1670E-01   8.0000E-04
  1.0000E+00   0.0000E+00
  1
```

```
  4
  0.0000E+00   3.4700E-04
  8.0000E+00   1.7500E-04
  2.4000E+01   2.3200E-04
  7.2000E+02   0.0000E+00


  0
Effective Volume Location:
  1
  6
  0.0000E+00   2.3100E-04
  2.0000E+00   1.2900E-04
  8.0000E+00   5.5000E-05
  2.4000E+01   3.5200E-05
  9.6000E+01   3.0600E-05
  7.2000E+02   0.0000E+00
Simulation Parameters:
  7
  0.0000E+00   5.0000E-02
  1.0000E+00   1.0000E-01
  2.0000E+00   1.0000E+00
  8.0000E+00   2.0000E+00
  2.4000E+01   4.0000E+00
  9.6000E+01   8.0000E+00
  7.2000E+02   0.0000E+00
Output Filename:
C:\Documents and Settings\u004tjm\My Documents\TMI RADTRAD\CL_TSC.o0
  1
  1
  1
  0
  0
End of Scenario File

#######################################################################
          RADTRAD Version 3.02 run on  5/15/2002  at  7:25:29
#######################################################################

#######################################################################
                    Plant Description
#######################################################################

Number of Nuclides =  60

Inventory Power =   1.0000E+00 MWth
Plant Power Level =   2.6190E+03 MWth

Number of compartments    =   4

Compartment information

Compartment number  1  (Source term fraction =   5.7000E-01
)
Name: Sprayed Region
Compartment volume =   1.2310E+06 (Cubic feet)
Removal devices within compartment:
```

```
     Spray(s)
Pathways into and out of compartment  1
    Pathway to compartment number   2: Sprayed to Unsprayed
    Pathway to compartment number   3: Sprayed to Environment
    Pathway from compartment number 2: Unsprayed to Sprayed



Compartment number  2  (Source term fraction =   4.3000E-01
)
Name: Unsprayed Region
Compartment volume =   9.2880E+05 (Cubic feet)
Removal devices within compartment:
     Deposition
Pathways into and out of compartment  2
    Pathway to compartment number   1: Unsprayed to Sprayed
    Pathway to compartment number   3: Unsprayed to Environment
    Pathway from compartment number 1: Sprayed to Unsprayed

Compartment number  3
Name: Environment
Pathways into and out of compartment  3
    Pathway to compartment number   4: TSC Filtered Air Intake
    Pathway to compartment number   4: TSC Unfiltered Inleakage
    Pathway from compartment number 1: Sprayed to Environment
    Pathway from compartment number 2: Unsprayed to Environment
    Pathway from compartment number 4: TSC Exhaust to Environment

Compartment number  4
Name: TSC
Compartment volume =   4.2000E+04 (Cubic feet)
Removal devices within compartment:
     Filter(s)
Pathways into and out of compartment  4
    Pathway to compartment number   3: TSC Exhaust to Environment
    Pathway from compartment number 3: TSC Filtered Air Intake
    Pathway from compartment number 3: TSC Unfiltered Inleakage

Total number of pathways =   7


#######################################################################
          RADTRAD Version 3.02 run on  5/15/2002  at  7:25:29
#######################################################################

#######################################################################
                     Scenario Description
#######################################################################

Radioactive Decay is enabled
RELEASE_NAME = PWR, NUREG-1465, Tables 3.12 & 3.13, Jun
Release Fractions and Timings
                GAP       EARLY IN-VESSEL
             0.5000 hrs     1.3000 hrs
NOBLES       5.0000E-02     9.5000E-01
IODINE       5.0000E-02     3.5000E-01
CESIUM       5.0000E-02     2.5000E-01
```

```
TELLURIUM    0.0000E+00     5.0000E-02
STRONTIUM    0.0000E+00     2.0000E-02
BARIUM       0.0000E+00     2.0000E-02
RUTHENIUM    0.0000E+00     2.5000E-03
CERIUM       0.0000E+00     5.0000E-04
LANTHANUM    0.0000E+00     2.0000E-04



Iodine fractions
     Aerosol     =   9.5000E-01
     Elemental   =   4.8500E-02
     Organic     =   1.5000E-03

COMPARTMENT DATA

Compartment number   1: Sprayed Region

     Sprays:  Aerosal Removal Data
      Time (hr)          Removal Coef. (hr^-1)
       0.0000E+00          0.0000E+00
       2.0800E-02          3.8800E+00
       4.9070E-01          1.9400E+00
       2.9200E+00          1.9400E+00
       3.8200E+00          1.9400E-01
       4.0000E+00          0.0000E+00

     Sprays:  Elemental Removal Data
      Time (hr)          Removal Coef. (hr^-1)
       0.0000E+00          0.0000E+00
       2.0800E-02          9.4600E+00
       4.9070E-01          4.7300E+00
       2.9200E+00          0.0000E+00
       3.8200E+00          0.0000E+00
       4.0000E+00          0.0000E+00

Compartment number   2: Unsprayed Region
Natural Deposition (Powers' model):  Aerosol data
      Reactor type:   1
      Percentile =  10 (%)

Compartment number   3: Environment

Compartment number   4: TSC

     Compartment Filter Data

      Time (hr)      Flow Rate          Filter Efficiencies (%)
                       (cfm)        Aerosol     Elemental    Organic
       0.0000E+00    1.4000E+03   0.0000E+00   0.0000E+00   0.0000E+00
       8.0000E-01    1.4000E+03   0.0000E+00   0.0000E+00   0.0000E+00
       1.0000E+00    1.4000E+03   0.0000E+00   0.0000E+00   0.0000E+00
       2.8000E+00    1.4000E+03   9.9000E+01   9.0000E+01   9.0000E+01
       7.2000E+02    1.4000E+03   0.0000E+00   0.0000E+00   0.0000E+00

PATHWAY DATA
```

AmerGen

**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 1 | System Nos. | Sheet 457 of 1000 |
|---|---|---|---|---|

Pathway number 1: Sprayed to Unsprayed

Pathway Filter: Removal Data

| Time (hr) | Flow Rate (cfm) | Filter Efficiencies (%) Aerosol | Elemental | Organic |
|---|---|---|---|---|
| 0.0000E+00 | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 |
| 9.7000E-03 | 2.5000E+04 | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 |
| 7.2000E+02 | 2.5000E+04 | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 |

Pathway number 2: Unsprayed to Sprayed

Pathway Filter: Removal Data

| Time (hr) | Flow Rate (cfm) | Filter Efficiencies (%) Aerosol | Elemental | Organic |
|---|---|---|---|---|
| 0.0000E+00 | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 |
| 9.7000E-03 | 2.5000E+04 | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 |
| 7.2000E+02 | 2.5000E+04 | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 |

Pathway number 3: Sprayed to Environment

Convection Data

| Time (hr) | Flow Rate (% / day) |
|---|---|
| 0.0000E+00 | 1.0000E-01 |
| 2.4000E+01 | 5.0000E-02 |
| 7.2000E+02 | 0.0000E+00 |

Pathway number 4: Unsprayed to Environment

Convection Data

| Time (hr) | Flow Rate (% / day) |
|---|---|
| 0.0000E+00 | 1.0000E-01 |
| 2.4000E+01 | 5.0000E-02 |
| 7.2000E+02 | 0.0000E+00 |

Pathway number 5: TSC Filtered Air Intake

Pathway Filter: Removal Data

| Time (hr) | Flow Rate (cfm) | Filter Efficiencies (%) Aerosol | Elemental | Organic |
|---|---|---|---|---|
| 0.0000E+00 | 3.0000E+02 | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 |
| 8.0000E-01 | 3.0000E+02 | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 |
| 1.0000E+00 | 3.0000E+02 | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 |
| 2.8000E+00 | 6.0000E+02 | 9.9000E+01 | 9.0000E+01 | 9.0000E+01 |
| 7.2000E+02 | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 |

Pathway number 6: TSC Unfiltered Inleakage

Pathway Filter: Removal Data

| Time (hr) | Flow Rate (cfm) | Filter Efficiencies (%) Aerosol | Elemental | Organic |
|---|---|---|---|---|
| 0.0000E+00 | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 |

```
  8.0000E-01    0.0000E+00   0.0000E+00   0.0000E+00   0.0000E+00
  1.0000E+00    0.0000E+00   0.0000E+00   0.0000E+00   0.0000E+00
  2.8000E+00    2.5000E+02   0.0000E+00   0.0000E+00   0.0000E+00
  7.2000E+02    0.0000E+00   0.0000E+00   0.0000E+00   0.0000E+00

Pathway number  7: TSC Exhaust to Environment

     Pathway Filter: Removal Data



      Time (hr)      Flow Rate          Filter Efficiencies (%)
                       (cfm)        Aerosol     Elemental    Organic
       0.0000E+00    3.0000E+02   0.0000E+00   0.0000E+00   0.0000E+00
       8.0000E-01    3.0000E+02   0.0000E+00   0.0000E+00   0.0000E+00
       1.0000E+00    3.0000E+02   0.0000E+00   0.0000E+00   0.0000E+00
       2.8000E+00    8.5000E+02   0.0000E+00   0.0000E+00   0.0000E+00
       7.2000E+02    0.0000E+00   0.0000E+00   0.0000E+00   0.0000E+00

LOCATION DATA
     Location Exclusion Area Boundary     is in compartment   3

     Location X/Q Data
      Time (hr)         X/Q (s * m^-3)
       0.0000E+00          8.0000E-04
       7.2000E+02          0.0000E+00

     Location Breathing Rate Data
      Time (hr)         Breathing Rate (m^3 * sec^-1)
       0.0000E+00                 3.5000E-04
       7.2000E+02                 0.0000E+00
     Location Low Population Zone     is in compartment   3

     Location X/Q Data
      Time (hr)         X/Q (s * m^-3)
       0.0000E+00          1.4000E-04
       2.0000E+00          6.0000E-05
       8.0000E+00          3.9000E-05
       2.4000E+01          1.6000E-05
       9.6000E+01          4.0000E-06
       7.2000E+02          0.0000E+00

     Location Breathing Rate Data
      Time (hr)         Breathing Rate (m^3 * sec^-1)
       0.0000E+00                 3.5000E-04
       8.0000E+00                 1.8000E-04
       2.4000E+01                 2.3000E-04
       7.2000E+02                 0.0000E+00
     Location TSC     is in compartment   4

     Location X/Q Data
      Time (hr)         X/Q (s * m^-3)
       0.0000E+00          2.3100E-04
       2.0000E+00          1.2900E-04
       8.0000E+00          5.5000E-05
       2.4000E+01          3.5200E-05
       9.6000E+01          3.0600E-05
```

```
        7.2000E+02          0.0000E+00

      Location Breathing Rate Data
       Time (hr)         Breathing Rate (m^3 * sec^-1)
        0.0000E+00                 3.5000E-04
        7.2000E+02                 0.0000E+00

      Location Occupancy Factor Data
       Time (hr)         Occupancy Factor
        0.0000E+00           1.0000E+00


        2.4000E+01           6.0000E-01
        9.6000E+01           4.0000E-01
        7.2000E+02           0.0000E+00
      Location Travel Path     is in compartment   3

      Location X/Q Data
       Time (hr)         X/Q (s * m^-3)
        0.0000E+00          0.0000E+00
        9.1670E-01          8.0000E-04
        1.0000E+00          0.0000E+00

      Location Breathing Rate Data
       Time (hr)         Breathing Rate (m^3 * sec^-1)
        0.0000E+00                 3.4700E-04
        8.0000E+00                 1.7500E-04
        2.4000E+01                 2.3200E-04
        7.2000E+02                 0.0000E+00

USER SPECIFIED TIME STEP DATA - SUPPLEMENTAL TIME STEPS
      Time            Time step
       0.0000E+00       5.0000E-02
       1.0000E+00       1.0000E-01
       2.0000E+00       1.0000E+00
       8.0000E+00       2.0000E+00
       2.4000E+01       4.0000E+00
       9.6000E+01       8.0000E+00
       7.2000E+02       0.0000E+00


#######################################################################
          RADTRAD Version 3.02 run on  5/15/2002  at  7:25:29
#######################################################################




      ####   #    #  #####  #####   #    #  #####
     #    #  #    #    #    #    #  #    #    #
     #    #  #    #    #    #    #  #    #    #
     #    #  #    #    #    #####   #    #    #
     #    #  #    #    #    #       #    #    #
     #    #  #    #    #    #       #    #    #
      ####    ####     #    #        ####     #
```

AmerGen

**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 1 | System Nos. | Sheet 460 of 1000 |
|---|---|---|---|---|

```
#################################################################
          Dose, Detailed model and Detailed Inventory Output
#################################################################

Exclusion Area Boundary Doses:

Time (h) =   0.0097    Whole Body   Thyroid       TEDE
Delta dose (rem)        3.6011E-05  6.0579E-03  2.9130E-04
Accumulated dose (rem)  3.6011E-05  6.0579E-03  2.9130E-04



Low Population Zone Doses:

Time (h) =   0.0097    Whole Body   Thyroid       TEDE
Delta dose (rem)        6.3019E-06  1.0601E-03  5.0978E-05
Accumulated dose (rem)  6.3019E-06  1.0601E-03  5.0978E-05

TSC Doses:

Time (h) =   0.0097    Whole Body   Thyroid       TEDE
Delta dose (rem)        6.0372E-10  3.2613E-06  1.3804E-07
Accumulated dose (rem)  6.0372E-10  3.2613E-06  1.3804E-07

Travel Path Doses:

Time (h) =   0.0097    Whole Body   Thyroid       TEDE
Delta dose (rem)        0.0000E+00  0.0000E+00  0.0000E+00
Accumulated dose (rem)  0.0000E+00  0.0000E+00  0.0000E+00

Environment Integral Nuclide Release:

Time (h) =   0.0097       Ci           kg         Atoms         Bq
Kr-85                  2.0489E-04  5.2223E-10  3.6999E+15  7.5809E+06
Kr-85m                 4.5560E-03  5.5362E-13  3.9223E+12  1.6857E+08
Kr-87                  8.9583E-03  3.1626E-13  2.1892E+12  3.3146E+08
Kr-88                  1.2674E-02  1.0107E-12  6.9166E+12  4.6892E+08
Rb-86                  3.2188E-05  3.9559E-13  2.7701E+12  1.1910E+06
I-131                  1.4010E-02  1.1300E-10  5.1948E+14  5.1835E+08
I-132                  2.0184E-02  1.9554E-12  8.9208E+12  7.4679E+08
I-133                  2.9293E-02  2.5859E-11  1.1709E+14  1.0839E+09
I-134                  3.2309E-02  1.2111E-12  5.4430E+12  1.1954E+09
I-135                  2.7297E-02  7.7728E-12  3.4673E+13  1.0100E+09
Xe-133                 2.9302E-02  1.5654E-10  7.0881E+14  1.0842E+09
Xe-135                 1.0788E-02  4.2243E-12  1.8844E+13  3.9914E+08
Cs-134                 3.3570E-03  2.5946E-09  1.1661E+16  1.2421E+08
Cs-136                 9.2817E-04  1.2664E-11  5.6077E+13  3.4342E+07
Cs-137                 2.2491E-03  2.5857E-08  1.1366E+17  8.3217E+07

Environment Transport Group Inventory:

                        Present     Release      Total
Time (h) =   0.0097     Release     Rate/s      Release
Noble gases (atoms)    4.4407E+15  1.2717E+14  4.4261E+15
Elemental I (atoms)    3.3259E+13  9.5244E+11  3.3150E+13
Organic I (atoms)      1.0286E+12  2.9457E+10  1.0253E+12
```

| | | | |
|---|---|---|---|
| Aerosols (kg) | 2.8607E-08 | 8.1922E-10 | 2.8513E-08 |

TSC Filtered Air Intake Transport Group Inventory:

| Time (h) = 0.0097 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 |

TSC Unfiltered Inleakage Transport Group Inventory:

| Time (h) = 0.0097 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 |

TSC Exhaust to Environment Transport Group Inventory:

| Time (h) = 0.0097 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 |

TSC Compartment Nuclide Inventory:

| Time (h) = 0.0097 | Ci | kg | Atoms | Bq |
|---|---|---|---|---|
| Kr-85 | 6.6918E-09 | 1.7056E-14 | 1.2084E+11 | 2.4760E+02 |
| Kr-85m | 1.4880E-07 | 1.8081E-17 | 1.2810E+08 | 5.5056E+03 |
| Kr-87 | 2.9257E-07 | 1.0329E-17 | 7.1495E+07 | 1.0825E+04 |
| Kr-88 | 4.1392E-07 | 3.3010E-17 | 2.2590E+08 | 1.5315E+04 |
| Rb-86 | 1.0513E-09 | 1.2920E-17 | 9.0474E+07 | 3.8898E+01 |
| I-131 | 4.5756E-07 | 3.6908E-15 | 1.6967E+10 | 1.6930E+04 |
| I-132 | 6.5919E-07 | 6.3861E-17 | 2.9135E+08 | 2.4390E+04 |
| I-133 | 9.5674E-07 | 8.4457E-16 | 3.8242E+09 | 3.5399E+04 |
| I-134 | 1.0551E-06 | 3.9553E-17 | 1.7776E+08 | 3.9040E+04 |
| I-135 | 8.9153E-07 | 2.5386E-16 | 1.1324E+09 | 3.2987E+04 |
| Xe-133 | 9.5702E-07 | 5.1128E-15 | 2.3150E+10 | 3.5410E+04 |
| Xe-135 | 3.5233E-07 | 1.3797E-16 | 6.1545E+08 | 1.3036E+04 |
| Cs-134 | 1.0964E-07 | 8.4742E-14 | 3.8084E+11 | 4.0567E+03 |
| Cs-136 | 3.0315E-08 | 4.1362E-16 | 1.8315E+09 | 1.1216E+03 |
| Cs-137 | 7.3458E-08 | 8.4452E-13 | 3.7123E+12 | 2.7179E+03 |

TSC Transport Group Inventory:

| Time (h) = 0.0097 | Atmosphere | Sump | Overlying Pool |
|---|---|---|---|
| Noble gases (atoms) | 1.4504E+11 | 0.0000E+00 | 0.0000E+00 |
| Elemental I (atoms) | 1.0863E+09 | 0.0000E+00 | 0.0000E+00 |
| Organic I (atoms) | 3.3596E+07 | 0.0000E+00 | 0.0000E+00 |
| Aerosols (kg) | 9.3433E-13 | 0.0000E+00 | 0.0000E+00 |

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**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 1 | System Nos. | Sheet 462 of 1000 |
|---|---|---|---|---|

```
                        Deposition Recirculating
Time (h) =   0.0097      Surfaces     Filter
Noble gases (atoms)    0.0000E+00  0.0000E+00
Elemental I (atoms)    0.0000E+00  0.0000E+00
Organic I (atoms)      0.0000E+00  0.0000E+00
Aerosols (kg)          0.0000E+00  0.0000E+00

TSC Filtered Air Intake Transport Group Inventory:

                        Pathway
Time (h) =   0.0097      Filter



Noble gases (atoms)    0.0000E+00
Elemental I (atoms)    0.0000E+00
Organic I (atoms)      0.0000E+00
Aerosols (kg)          0.0000E+00

TSC Unfiltered Inleakage Transport Group Inventory:

                        Pathway
Time (h) =   0.0097      Filter
Noble gases (atoms)    0.0000E+00
Elemental I (atoms)    0.0000E+00
Organic I (atoms)      0.0000E+00
Aerosols (kg)          0.0000E+00

TSC Exhaust to Environment Transport Group Inventory:

                        Pathway
Time (h) =   0.0097      Filter
Noble gases (atoms)    0.0000E+00
Elemental I (atoms)    0.0000E+00
Organic I (atoms)      0.0000E+00
Aerosols (kg)          0.0000E+00

Exclusion Area Boundary Doses:

Time (h) =   0.0208    Whole Body   Thyroid       TEDE
Delta dose (rem)        1.2897E-04  2.1793E-02  1.0474E-03
Accumulated dose (rem)  1.6498E-04  2.7851E-02  1.3387E-03

Low Population Zone Doses:

Time (h) =   0.0208    Whole Body   Thyroid       TEDE
Delta dose (rem)        2.2569E-05  3.8137E-03  1.8329E-04
Accumulated dose (rem)  2.8871E-05  4.8739E-03  2.3427E-04

TSC Doses:

Time (h) =   0.0208    Whole Body   Thyroid       TEDE
Delta dose (rem)        4.2820E-09  2.3225E-05  9.8303E-07
Accumulated dose (rem)  4.8857E-09  2.6486E-05  1.1211E-06

Travel Path Doses:
```

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**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 1 | System Nos. | Sheet 463 of 1000 |
|---|---|---|---|---|

```
Time (h) =   0.0208    Whole Body   Thyroid       TEDE
Delta dose (rem)        0.0000E+00  0.0000E+00  0.0000E+00
Accumulated dose (rem)  0.0000E+00  0.0000E+00  0.0000E+00

Environment Integral Nuclide Release:

Time (h) =   0.0208       Ci           kg         Atoms         Bq
Kr-85                  9.4211E-04  2.4013E-09  1.7013E+16  3.4858E+07
Kr-85m                 2.0913E-02  2.5412E-12  1.8004E+13  7.7376E+08
Kr-87                  4.0939E-02  1.4453E-12  1.0004E+13  1.5147E+09
Kr-88                  5.8114E-02  4.6346E-12  3.1716E+13  2.1502E+09
Rb-86                  1.4800E-04  1.8190E-12  1.2737E+13  5.4762E+06
I-131                  6.4415E-02  5.1959E-10  2.3886E+15  2.3834E+09


I-132                  9.2491E-02  8.9605E-12  4.0880E+13  3.4222E+09
I-133                  1.3464E-01  1.1886E-10  5.3818E+14  4.9818E+09
I-134                  1.4724E-01  5.5195E-12  2.4805E+13  5.4479E+09
I-135                  1.2537E-01  3.5698E-11  1.5924E+14  4.6386E+09
Xe-133                 1.3473E-01  7.1976E-10  3.2590E+15  4.9849E+09
Xe-135                 4.9561E-02  1.9407E-11  8.6572E+13  1.8337E+09
Cs-134                 1.5436E-02  1.1930E-08  5.3617E+16  5.7113E+08
Cs-136                 4.2677E-03  5.8230E-11  2.5785E+14  1.5791E+08
Cs-137                 1.0342E-02  1.1890E-07  5.2263E+17  3.8264E+08

Environment Transport Group Inventory:

                        Present     Release      Total
Time (h) =   0.0208     Release     Rate/s      Release
Noble gases (atoms)    2.0419E+16  2.7269E+14  2.0404E+16
Elemental I (atoms)    1.5292E+14  2.0422E+12  1.5281E+14
Organic I (atoms)      4.7294E+12  6.3159E+10  4.7260E+12
Aerosols (kg)          1.3154E-07  1.7567E-09  1.3145E-07

TSC Filtered Air Intake Transport Group Inventory:

                        Pathway
Time (h) =   0.0208      Filter
Noble gases (atoms)    0.0000E+00
Elemental I (atoms)    0.0000E+00
Organic I (atoms)      0.0000E+00
Aerosols (kg)          0.0000E+00

TSC Unfiltered Inleakage Transport Group Inventory:

                        Pathway
Time (h) =   0.0208      Filter
Noble gases (atoms)    0.0000E+00
Elemental I (atoms)    0.0000E+00
Organic I (atoms)      0.0000E+00
Aerosols (kg)          0.0000E+00

TSC Exhaust to Environment Transport Group Inventory:

                        Pathway
Time (h) =   0.0208      Filter
```

| | |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 |

TSC Compartment Nuclide Inventory:

| Time (h) = 0.0208 | Ci | kg | Atoms | Bq |
|---|---|---|---|---|
| Kr-85 | 3.0721E-08 | 7.8304E-14 | 5.5477E+11 | 1.1367E+03 |
| Kr-85m | 6.8168E-07 | 8.2833E-17 | 5.8686E+08 | 2.5222E+04 |
| Kr-87 | 1.3332E-06 | 4.7066E-17 | 3.2579E+08 | 4.9328E+04 |
| Kr-88 | 1.8939E-06 | 1.5104E-16 | 1.0336E+09 | 7.0075E+04 |
| Rb-86 | 4.8262E-09 | 5.9314E-17 | 4.1535E+08 | 1.7857E+02 |
| I-131 | 2.1005E-06 | 1.6943E-14 | 7.7888E+10 | 7.7719E+04 |
| I-132 | 3.0138E-06 | 2.9198E-16 | 1.3321E+09 | 1.1151E+05 |
| I-133 | 4.3903E-06 | 3.8756E-15 | 1.7548E+10 | 1.6244E+05 |
| I-134 | 4.7921E-06 | 1.7964E-16 | 8.0731E+08 | 1.7731E+05 |
| I-135 | 4.0870E-06 | 1.1638E-15 | 5.1915E+09 | 1.5122E+05 |
| Xe-133 | 4.3932E-06 | 2.3470E-14 | 1.0627E+11 | 1.6255E+05 |
| Xe-135 | 1.6158E-06 | 6.3273E-16 | 2.8225E+09 | 5.9785E+04 |
| Cs-134 | 5.0335E-07 | 3.8904E-13 | 1.7484E+12 | 1.8624E+04 |
| Cs-136 | 1.3917E-07 | 1.8988E-15 | 8.4080E+09 | 5.1491E+03 |
| Cs-137 | 3.3723E-07 | 3.8771E-12 | 1.7042E+13 | 1.2478E+04 |

TSC Transport Group Inventory:

| Time (h) = 0.0208 | Atmosphere | Sump | Overlying Pool |
|---|---|---|---|
| Noble gases (atoms) | 6.6584E+11 | 0.0000E+00 | 0.0000E+00 |
| Elemental I (atoms) | 4.9865E+09 | 0.0000E+00 | 0.0000E+00 |
| Organic I (atoms) | 1.5422E+08 | 0.0000E+00 | 0.0000E+00 |
| Aerosols (kg) | 4.2894E-12 | 0.0000E+00 | 0.0000E+00 |

| Time (h) = 0.0208 | Deposition Surfaces | Recirculating Filter |
|---|---|---|
| Noble gases (atoms) | 0.0000E+00 | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 | 0.0000E+00 |

TSC Filtered Air Intake Transport Group Inventory:

| Time (h) = 0.0208 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 |

TSC Unfiltered Inleakage Transport Group Inventory:

| Time (h) = 0.0208 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 |

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**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 1 | System Nos. | Sheet 465 of 1000 |
|---|---|---|---|---|

```
Organic I (atoms)      0.0000E+00
Aerosols (kg)          0.0000E+00

TSC Exhaust to Environment Transport Group Inventory:

                        Pathway
Time (h) =   0.0208      Filter
Noble gases (atoms)    0.0000E+00
Elemental I (atoms)    0.0000E+00
Organic I (atoms)      0.0000E+00
Aerosols (kg)          0.0000E+00

Exclusion Area Boundary Doses:

Time (h) =   0.4907    Whole Body   Thyroid       TEDE



Delta dose (rem)        6.1397E-02  1.1417E+01  5.4373E-01
Accumulated dose (rem)  6.1562E-02  1.1445E+01  5.4506E-01

Low Population Zone Doses:

Time (h) =   0.4907    Whole Body   Thyroid       TEDE
Delta dose (rem)        1.0744E-02  1.9980E+00  9.5152E-02
Accumulated dose (rem)  1.0773E-02  2.0029E+00  9.5386E-02

TSC Doses:

Time (h) =   0.4907    Whole Body   Thyroid       TEDE
Delta dose (rem)        3.8835E-05  2.3534E-01  9.9777E-03
Accumulated dose (rem)  3.8840E-05  2.3537E-01  9.9788E-03

Travel Path Doses:

Time (h) =   0.4907    Whole Body   Thyroid       TEDE
Delta dose (rem)        0.0000E+00  0.0000E+00  0.0000E+00
Accumulated dose (rem)  0.0000E+00  0.0000E+00  0.0000E+00

Environment Integral Nuclide Release:

Time (h) =   0.4907       Ci           kg         Atoms         Bq
Kr-85                  5.2433E-01  1.3364E-06  9.4685E+18  1.9400E+10
Kr-85m                 1.0826E+01  1.3155E-09  9.3202E+15  4.0056E+11
Kr-87                  1.7727E+01  6.2584E-10  4.3321E+15  6.5591E+11
Kr-88                  2.8865E+01  2.3020E-09  1.5753E+16  1.0680E+12
Rb-86                  6.1818E-02  7.5974E-10  5.3201E+15  2.2873E+09
I-131                  2.6623E+01  2.1475E-07  9.8721E+17  9.8506E+11
I-132                  3.3296E+01  3.2256E-09  1.4716E+16  1.2319E+12
I-133                  5.4878E+01  4.8444E-08  2.1935E+17  2.0305E+12
I-134                  4.2592E+01  1.5966E-09  7.1753E+15  1.5759E+12
I-135                  4.9416E+01  1.4071E-08  6.2770E+16  1.8284E+12
Xe-133                 7.4788E+01  3.9955E-07  1.8091E+18  2.7671E+12
Xe-135                 2.6613E+01  1.0421E-08  4.6488E+16  9.8469E+11
Cs-134                 6.4518E+00  4.9866E-06  2.2410E+19  2.3872E+11
Cs-136                 1.7820E+00  2.4314E-08  1.0766E+17  6.5934E+10
Cs-137                 4.3227E+00  4.9696E-05  2.1845E+20  1.5994E+11
```

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**CALCULATION SHEET**
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| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 1 | System Nos. | Sheet 466 of 1000 |
|---|---|---|---|---|

Environment Transport Group Inventory:

| Time (h) = 0.4907 | Present Release | Release Rate/s | Total Release |
|---|---|---|---|
| Noble gases (atoms) | 1.1358E+19 | 6.4298E+15 | 1.1358E+19 |
| Elemental I (atoms) | 5.0379E+16 | 2.8519E+13 | 5.0379E+16 |
| Organic I (atoms) | 2.6169E+15 | 1.4814E+12 | 2.6168E+15 |
| Aerosols (kg) | 5.4980E-05 | 3.1123E-08 | 5.4980E-05 |

TSC Filtered Air Intake Transport Group Inventory:

| Time (h) = 0.4907 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 |

TSC Unfiltered Inleakage Transport Group Inventory:

| Time (h) = 0.4907 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 |

TSC Exhaust to Environment Transport Group Inventory:

| Time (h) = 0.4907 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 |

TSC Compartment Nuclide Inventory:

| Time (h) = 0.4907 | Ci | kg | Atoms | Bq |
|---|---|---|---|---|
| Kr-85 | 1.6007E-05 | 4.0800E-11 | 2.8906E+14 | 5.9227E+05 |
| Kr-85m | 3.2318E-04 | 3.9271E-14 | 2.7823E+11 | 1.1958E+07 |
| Kr-87 | 4.9873E-04 | 1.7607E-14 | 1.2188E+11 | 1.8453E+07 |
| Kr-88 | 8.5036E-04 | 6.7816E-14 | 4.6409E+11 | 3.1463E+07 |
| Rb-86 | 1.8780E-06 | 2.3081E-14 | 1.6162E+11 | 6.9487E+04 |
| I-131 | 8.0849E-04 | 6.5214E-12 | 2.9979E+13 | 2.9914E+07 |
| I-132 | 9.6431E-04 | 9.3422E-14 | 4.2621E+11 | 3.5680E+07 |
| I-133 | 1.6588E-03 | 1.4644E-12 | 6.6305E+12 | 6.1377E+07 |
| I-134 | 1.1347E-03 | 4.2534E-14 | 1.9116E+11 | 4.1983E+07 |
| I-135 | 1.4771E-03 | 4.2060E-13 | 1.8762E+12 | 5.4652E+07 |
| Xe-133 | 2.2814E-03 | 1.2188E-11 | 5.5187E+13 | 8.4411E+07 |
| Xe-135 | 8.0360E-04 | 3.1468E-13 | 1.4037E+12 | 2.9733E+07 |
| Cs-134 | 1.9605E-04 | 1.5153E-10 | 6.8099E+14 | 7.2539E+06 |
| Cs-136 | 5.4132E-05 | 7.3858E-13 | 3.2705E+12 | 2.0029E+06 |
| Cs-137 | 1.3135E-04 | 1.5101E-09 | 6.6381E+15 | 4.8601E+06 |

TSC Transport Group Inventory:

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**CALCULATION SHEET**
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| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 1 | System Nos. | Sheet 467 of 1000 |
|---|---|---|---|---|

```
                                                Overlying
Time (h) =   0.4907    Atmosphere     Sump        Pool
Noble gases (atoms)    3.4676E+14  0.0000E+00  0.0000E+00
Elemental I (atoms)    1.5266E+12  0.0000E+00  0.0000E+00
Organic I (atoms)      7.9880E+10  0.0000E+00  0.0000E+00
Aerosols (kg)          1.6707E-09  0.0000E+00  0.0000E+00

                       Deposition Recirculating
Time (h) =   0.4907     Surfaces     Filter
Noble gases (atoms)    0.0000E+00  0.0000E+00
Elemental I (atoms)    0.0000E+00  0.0000E+00
Organic I (atoms)      0.0000E+00  0.0000E+00
Aerosols (kg)          0.0000E+00  0.0000E+00

TSC Filtered Air Intake Transport Group Inventory:



                        Pathway
Time (h) =   0.4907      Filter
Noble gases (atoms)    0.0000E+00
Elemental I (atoms)    0.0000E+00
Organic I (atoms)      0.0000E+00
Aerosols (kg)          0.0000E+00

TSC Unfiltered Inleakage Transport Group Inventory:

                        Pathway
Time (h) =   0.4907      Filter
Noble gases (atoms)    0.0000E+00
Elemental I (atoms)    0.0000E+00
Organic I (atoms)      0.0000E+00
Aerosols (kg)          0.0000E+00

TSC Exhaust to Environment Transport Group Inventory:

                        Pathway
Time (h) =   0.4907      Filter
Noble gases (atoms)    0.0000E+00
Elemental I (atoms)    0.0000E+00
Organic I (atoms)      0.0000E+00
Aerosols (kg)          0.0000E+00

Exclusion Area Boundary Doses:

Time (h) =   0.5000    Whole Body   Thyroid       TEDE
Delta dose (rem)        1.9235E-03  3.8388E-01  1.8151E-02
Accumulated dose (rem)  6.3485E-02  1.1829E+01  5.6322E-01

Low Population Zone Doses:

Time (h) =   0.5000    Whole Body   Thyroid       TEDE
Delta dose (rem)        3.3662E-04  6.7179E-02  3.1764E-03
Accumulated dose (rem)  1.1110E-02  2.0701E+00  9.8563E-02
```

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| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 1 | System Nos. | Sheet 468 of 1000 |
|---|---|---|---|---|

TSC Doses:

| Time (h) = 0.5000 | Whole Body | Thyroid | TEDE |
|---|---|---|---|
| Delta dose (rem) | 1.9395E-06 | 1.2391E-02 | 5.2546E-04 |
| Accumulated dose (rem) | 4.0780E-05 | 2.4776E-01 | 1.0504E-02 |

Travel Path Doses:

| Time (h) = 0.5000 | Whole Body | Thyroid | TEDE |
|---|---|---|---|
| Delta dose (rem) | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 |
| Accumulated dose (rem) | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 |

Environment Integral Nuclide Release:

| Time (h) = 0.5000 | Ci | kg | Atoms | Bq |
|---|---|---|---|---|
| Kr-85 | 5.4439E-01 | 1.3876E-06 | 9.8308E+18 | 2.0143E+10 |
| Kr-85m | 1.1226E+01 | 1.3641E-09 | 9.6642E+15 | 4.1535E+11 |
| Kr-87 | 1.8323E+01 | 6.4689E-10 | 4.4778E+15 | 6.7797E+11 |
| Kr-88 | 2.9908E+01 | 2.3852E-09 | 1.6322E+16 | 1.1066E+12 |
| Rb-86 | 6.3905E-02 | 7.8539E-10 | 5.4997E+15 | 2.3645E+09 |
| I-131 | 2.7520E+01 | 2.2198E-07 | 1.0205E+18 | 1.0182E+12 |
| I-132 | 3.4331E+01 | 3.3259E-09 | 1.5174E+16 | 1.2702E+12 |
| I-133 | 5.6712E+01 | 5.0063E-08 | 2.2668E+17 | 2.0983E+12 |
| I-134 | 4.3747E+01 | 1.6399E-09 | 7.3699E+15 | 1.6186E+12 |
| I-135 | 5.1036E+01 | 1.4533E-08 | 6.4827E+16 | 1.8883E+12 |
| Xe-133 | 7.7646E+01 | 4.1481E-07 | 1.8782E+18 | 2.8729E+12 |
| Xe-135 | 2.7614E+01 | 1.0813E-08 | 4.8235E+16 | 1.0217E+12 |
| Cs-134 | 6.6697E+00 | 5.1550E-06 | 2.3167E+19 | 2.4678E+11 |
| Cs-136 | 1.8421E+00 | 2.5135E-08 | 1.1130E+17 | 6.8159E+10 |
| Cs-137 | 4.4687E+00 | 5.1375E-05 | 2.2583E+20 | 1.6534E+11 |

Environment Transport Group Inventory:

| Time (h) = 0.5000 | Present Release | Release Rate/s | Total Release |
|---|---|---|---|
| Noble gases (atoms) | 1.1793E+19 | 6.5516E+15 | 1.1793E+19 |
| Elemental I (atoms) | 5.1985E+16 | 2.8880E+13 | 5.1985E+16 |
| Organic I (atoms) | 2.7166E+15 | 1.5092E+12 | 2.7166E+15 |
| Aerosols (kg) | 5.6837E-05 | 3.1576E-08 | 5.6836E-05 |

TSC Filtered Air Intake Transport Group Inventory:

| Time (h) = 0.5000 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 |

TSC Unfiltered Inleakage Transport Group Inventory:

| Time (h) = 0.5000 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 |

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**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 1 | System Nos. | Sheet 469 of 1000 |
|---|---|---|---|---|

```
Organic I (atoms)      0.0000E+00
Aerosols (kg)          0.0000E+00

TSC Exhaust to Environment Transport Group Inventory:

                        Pathway
Time (h) =   0.5000      Filter
Noble gases (atoms)    0.0000E+00
Elemental I (atoms)    0.0000E+00
Organic I (atoms)      0.0000E+00
Aerosols (kg)          0.0000E+00

TSC Compartment Nuclide Inventory:

Time (h) =   0.5000       Ci           kg         Atoms         Bq
Kr-85                  1.6598E-05  4.2307E-11  2.9974E+14  6.1414E+05
Kr-85m                 3.3447E-04  4.0643E-14  2.8795E+11  1.2376E+07
Kr-87                  5.1369E-04  1.8135E-14  1.2553E+11  1.9007E+07
Kr-88                  8.7911E-04  7.0108E-14  4.7978E+11  3.2527E+07
Rb-86                  1.9387E-06  2.3826E-14  1.6684E+11  7.1730E+04


I-131                  8.3451E-04  6.7313E-12  3.0944E+13  3.0877E+07
I-132                  9.9157E-04  9.6063E-14  4.3826E+11  3.6688E+07
I-133                  1.7116E-03  1.5109E-12  6.8413E+12  6.3329E+07
I-134                  1.1596E-03  4.3469E-14  1.9535E+11  4.2905E+07
I-135                  1.5227E-03  4.3358E-13  1.9341E+12  5.6339E+07
Xe-133                 2.3655E-03  1.2637E-11  5.7221E+13  8.7523E+07
Xe-135                 8.3249E-04  3.2599E-13  1.4542E+12  3.0802E+07
Cs-134                 2.0238E-04  1.5642E-10  7.0298E+14  7.4882E+06
Cs-136                 5.5878E-05  7.6242E-13  3.3760E+12  2.0675E+06
Cs-137                 1.3560E-04  1.5589E-09  6.8525E+15  5.0171E+06

TSC Transport Group Inventory:

                                                Overlying
Time (h) =   0.5000    Atmosphere     Sump        Pool
Noble gases (atoms)    3.5956E+14  0.0000E+00  0.0000E+00
Elemental I (atoms)    1.5730E+12  0.0000E+00  0.0000E+00
Organic I (atoms)      8.2820E+10  0.0000E+00  0.0000E+00
Aerosols (kg)          1.7246E-09  0.0000E+00  0.0000E+00

                       Deposition Recirculating
Time (h) =   0.5000     Surfaces     Filter
Noble gases (atoms)    0.0000E+00  0.0000E+00
Elemental I (atoms)    0.0000E+00  0.0000E+00
Organic I (atoms)      0.0000E+00  0.0000E+00
Aerosols (kg)          0.0000E+00  0.0000E+00

TSC Filtered Air Intake Transport Group Inventory:

                        Pathway
Time (h) =   0.5000      Filter
Noble gases (atoms)    0.0000E+00
Elemental I (atoms)    0.0000E+00
Organic I (atoms)      0.0000E+00
Aerosols (kg)          0.0000E+00
```

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**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 1 | System Nos. | Sheet 470 of 1000 |
|---|---|---|---|---|

TSC Unfiltered Inleakage Transport Group Inventory:

| Time (h) = 0.5000 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 |

TSC Exhaust to Environment Transport Group Inventory:

| Time (h) = 0.5000 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 |

Exclusion Area Boundary Doses:

| Time (h) = 0.8000 | Whole Body | Thyroid | TEDE |
|---|---|---|---|
| Delta dose (rem) | 1.2850E-01 | 2.5138E+01 | 1.3380E+00 |
| Accumulated dose (rem) | 1.9199E-01 | 3.6967E+01 | 1.9012E+00 |

Low Population Zone Doses:

| Time (h) = 0.8000 | Whole Body | Thyroid | TEDE |
|---|---|---|---|
| Delta dose (rem) | 2.2488E-02 | 4.3991E+00 | 2.3414E-01 |
| Accumulated dose (rem) | 3.3598E-02 | 6.4692E+00 | 3.3271E-01 |

TSC Doses:

| Time (h) = 0.8000 | Whole Body | Thyroid | TEDE |
|---|---|---|---|
| Delta dose (rem) | 1.1619E-04 | 7.5952E-01 | 3.4042E-02 |
| Accumulated dose (rem) | 1.5697E-04 | 1.0073E+00 | 4.4546E-02 |

Travel Path Doses:

| Time (h) = 0.8000 | Whole Body | Thyroid | TEDE |
|---|---|---|---|
| Delta dose (rem) | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 |
| Accumulated dose (rem) | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 |

Environment Integral Nuclide Release:

| Time (h) = 0.8000 | Ci | kg | Atoms | Bq |
|---|---|---|---|---|
| Co-58 | 2.1747E-03 | 6.8392E-11 | 7.1012E+14 | 8.0465E+07 |
| Co-60 | 1.6645E-03 | 1.4725E-09 | 1.4779E+16 | 6.1586E+07 |
| Kr-85 | 2.6298E+00 | 6.7030E-06 | 4.7490E+19 | 9.7303E+10 |
| Kr-85m | 4.9975E+01 | 6.0727E-09 | 4.3024E+16 | 1.8491E+12 |
| Kr-87 | 6.7037E+01 | 2.3667E-09 | 1.6382E+16 | 2.4804E+12 |
| Kr-88 | 1.2714E+02 | 1.0139E-08 | 6.9386E+16 | 4.7041E+12 |
| Rb-86 | 1.7734E-01 | 2.1795E-09 | 1.5262E+16 | 6.5617E+09 |
| Sr-89 | 2.0385E+00 | 7.0167E-08 | 4.7478E+17 | 7.5425E+10 |
| Sr-90 | 2.2003E-01 | 1.6130E-06 | 1.0793E+19 | 8.1409E+09 |

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**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 1 | System Nos. | Sheet 471 of 1000 |
|---|---|---|---|---|

| | | | | |
|---|---|---|---|---|
| Sr-91 | 2.5228E+00 | 6.9594E-10 | 4.6056E+15 | 9.3343E+10 |
| Sr-92 | 2.0918E+00 | 1.6642E-10 | 1.0894E+15 | 7.7398E+10 |
| Y-90 | 2.2388E-03 | 4.1149E-12 | 2.7534E+13 | 8.2834E+07 |
| Y-91 | 2.4953E-02 | 1.0175E-09 | 6.7334E+15 | 9.2325E+08 |
| Y-92 | 2.2673E-02 | 2.3563E-12 | 1.5424E+13 | 8.3890E+08 |
| Y-93 | 2.9798E-02 | 8.9315E-12 | 5.7835E+13 | 1.1025E+09 |
| Zr-95 | 3.2143E-02 | 1.4962E-09 | 9.4846E+15 | 1.1893E+09 |
| Zr-97 | 3.1119E-02 | 1.6279E-11 | 1.0106E+14 | 1.1514E+09 |
| Nb-95 | 3.2380E-02 | 8.2806E-10 | 5.2491E+15 | 1.1980E+09 |
| Mo-99 | 4.3575E-01 | 9.0854E-10 | 5.5266E+15 | 1.6123E+10 |
| Tc-99m | 3.3296E-01 | 6.3322E-11 | 3.8518E+14 | 1.2320E+10 |
| Ru-103 | 3.5489E-01 | 1.0996E-08 | 6.4292E+16 | 1.3131E+10 |
| Ru-105 | 1.9324E-01 | 2.8748E-11 | 1.6488E+14 | 7.1500E+09 |
| Ru-106 | 1.3380E-01 | 3.9992E-08 | 2.2720E+17 | 4.9504E+09 |
| Rh-105 | 2.1776E-01 | 2.5800E-10 | 1.4797E+15 | 8.0573E+09 |
| Sb-127 | 4.8176E-01 | 1.8040E-09 | 8.5543E+15 | 1.7825E+10 |
| Sb-129 | 1.1936E+00 | 2.1226E-10 | 9.9091E+14 | 4.4165E+10 |
| Te-127 | 4.3825E-01 | 1.6606E-10 | 7.8743E+14 | 1.6215E+10 |
| Te-127m | 6.4700E-02 | 6.8592E-09 | 3.2525E+16 | 2.3939E+09 |
| Te-129 | 6.6749E-01 | 3.1873E-11 | 1.4879E+14 | 2.4697E+10 |
| Te-129m | 2.1641E-01 | 7.1836E-08 | 3.3536E+16 | 8.0071E+09 |
| Te-131m | 6.4479E-01 | 8.0860E-10 | 3.7172E+15 | 2.3857E+10 |
| Te-132 | 6.5464E+00 | 2.1563E-08 | 9.8376E+16 | 2.4222E+11 |
| I-131 | 8.5514E+01 | 6.8977E-07 | 3.1709E+18 | 3.1640E+12 |
| I-132 | 9.4259E+01 | 9.1317E-09 | 4.1661E+16 | 3.4876E+12 |
| I-133 | 1.7399E+02 | 1.5359E-07 | 6.9546E+17 | 6.4377E+12 |
| I-134 | 9.9919E+01 | 3.7456E-09 | 1.6833E+16 | 3.6970E+12 |
| I-135 | 1.5190E+02 | 4.3255E-08 | 1.9295E+17 | 5.6204E+12 |
| Xe-133 | 3.7399E+02 | 1.9980E-06 | 9.0467E+18 | 1.3837E+13 |
| Xe-135 | 1.2810E+02 | 5.0161E-08 | 2.2376E+17 | 4.7396E+12 |
| Cs-134 | 1.8520E+01 | 1.4314E-05 | 6.4329E+19 | 6.8523E+11 |
| Cs-136 | 5.1108E+00 | 6.9733E-08 | 3.0878E+17 | 1.8910E+11 |
| Cs-137 | 1.2408E+01 | 1.4265E-04 | 6.2707E+20 | 4.5911E+11 |
| Ba-139 | 1.8685E+00 | 1.1423E-10 | 4.9491E+14 | 6.9135E+10 |
| Ba-140 | 3.4467E+00 | 4.7080E-08 | 2.0252E+17 | 1.2753E+11 |
| La-140 | 3.4291E-02 | 6.1693E-11 | 2.6537E+14 | 1.2688E+09 |
| La-141 | 2.6017E-02 | 4.6005E-12 | 1.9649E+13 | 9.6264E+08 |
| La-142 | 2.1715E-02 | 1.5169E-12 | 6.4332E+12 | 8.0346E+08 |
| Ce-141 | 7.9086E-02 | 2.7756E-09 | 1.1855E+16 | 2.9262E+09 |
| Ce-143 | 7.6581E-02 | 1.1532E-10 | 4.8564E+14 | 2.8335E+09 |
| Ce-144 | 6.3760E-02 | 1.9991E-08 | 8.3601E+16 | 2.3591E+09 |
| Pr-143 | 3.0849E-02 | 4.5812E-10 | 1.9293E+15 | 1.1414E+09 |
| Nd-147 | 1.2890E-02 | 1.5934E-10 | 6.5276E+14 | 4.7694E+08 |
| Np-239 | 8.6213E-01 | 3.7162E-09 | 9.3638E+15 | 3.1899E+10 |
| Pu-238 | 2.5142E-04 | 1.4686E-08 | 3.7161E+16 | 9.3027E+06 |
| Pu-239 | 1.9569E-05 | 3.1483E-07 | 7.9328E+17 | 7.2403E+05 |
| Pu-240 | 2.1103E-05 | 9.2610E-08 | 2.3238E+17 | 7.8080E+05 |
| Pu-241 | 8.7393E-03 | 8.4837E-08 | 2.1199E+17 | 3.2335E+08 |
| Am-241 | 5.3749E-06 | 1.5660E-09 | 3.9132E+15 | 1.9887E+05 |
| Cm-242 | 1.2631E-03 | 3.8112E-10 | 9.4841E+14 | 4.6736E+07 |
| Cm-244 | 1.0221E-04 | 1.2633E-09 | 3.1180E+15 | 3.7816E+06 |

Environment Transport Group Inventory:

| | Present | Release | Total |
|---|---|---|---|

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**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 1 | System Nos. | Sheet 472 of 1000 |
|---|---|---|---|---|

| Time (h) = 0.8000 | Release | Rate/s | Release |
|---|---|---|---|
| Noble gases (atoms) | 5.6916E+19 | 1.9762E+16 | 5.6916E+19 |
| Elemental I (atoms) | 1.6179E+17 | 5.6177E+13 | 1.6179E+17 |
| Organic I (atoms) | 8.5521E+15 | 2.9695E+12 | 8.5521E+15 |
| Aerosols (kg) | 1.6034E-04 | 5.5672E-08 | 1.6034E-04 |

TSC Filtered Air Intake Transport Group Inventory:

| Time (h) = 0.8000 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 |

TSC Unfiltered Inleakage Transport Group Inventory:

| Time (h) = 0.8000 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 |

TSC Exhaust to Environment Transport Group Inventory:

| Time (h) = 0.8000 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 |

TSC Compartment Nuclide Inventory:

| Time (h) = 0.8000 | Ci | kg | Atoms | Bq |
|---|---|---|---|---|
| Co-58 | 6.8099E-08 | 2.1416E-15 | 2.2236E+10 | 2.5197E+03 |
| Co-60 | 5.2123E-08 | 4.6111E-14 | 4.6281E+11 | 1.9285E+03 |
| Kr-85 | 7.9541E-05 | 2.0274E-10 | 1.4364E+15 | 2.9430E+06 |
| Kr-85m | 1.4699E-03 | 1.7861E-13 | 1.2654E+12 | 5.4386E+07 |
| Kr-87 | 1.8213E-03 | 6.4298E-14 | 4.4507E+11 | 6.7387E+07 |
| Kr-88 | 3.6763E-03 | 2.9318E-13 | 2.0063E+12 | 1.3602E+08 |
| Rb-86 | 5.2132E-06 | 6.4070E-14 | 4.4865E+11 | 1.9289E+05 |
| Sr-89 | 6.3833E-05 | 2.1972E-12 | 1.4867E+13 | 2.3618E+06 |
| Sr-90 | 6.8901E-06 | 5.0511E-11 | 3.3798E+14 | 2.5493E+05 |
| Sr-91 | 7.8539E-05 | 2.1666E-14 | 1.4338E+11 | 2.9059E+06 |
| Sr-92 | 6.4158E-05 | 5.1043E-15 | 3.3412E+10 | 2.3738E+06 |
| Y-90 | 7.0045E-08 | 1.2874E-16 | 8.6147E+08 | 2.5917E+03 |
| Y-91 | 7.8135E-07 | 3.1861E-14 | 2.1085E+11 | 2.8910E+04 |
| Y-92 | 6.9884E-07 | 7.2627E-17 | 4.7540E+08 | 2.5857E+04 |
| Y-93 | 9.2800E-07 | 2.7815E-16 | 1.8011E+09 | 3.4336E+04 |
| Zr-95 | 1.0065E-06 | 4.6852E-14 | 2.9700E+11 | 3.7241E+04 |
| Zr-97 | 9.7130E-07 | 5.0809E-16 | 3.1544E+09 | 3.5938E+04 |
| Nb-95 | 1.0139E-06 | 2.5929E-14 | 1.6436E+11 | 3.7514E+04 |
| Mo-99 | 1.3634E-05 | 2.8427E-14 | 1.7292E+11 | 5.0446E+05 |
| Tc-99m | 1.0330E-05 | 1.9646E-15 | 1.1951E+10 | 3.8222E+05 |

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**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 1 | System Nos. | Sheet 473 of 1000 |
|---|---|---|---|---|

| | | | | |
|---|---|---|---|---|
| Ru-103 | 1.1113E-05 | 3.4433E-13 | 2.0132E+12 | 4.1117E+05 |
| Ru-105 | 5.9756E-06 | 8.8895E-16 | 5.0985E+09 | 2.2110E+05 |
| Ru-106 | 4.1897E-06 | 1.2523E-12 | 7.1148E+12 | 1.5502E+05 |
| Rh-105 | 6.8086E-06 | 8.0665E-15 | 4.6264E+10 | 2.5192E+05 |
| Sb-127 | 1.5077E-05 | 5.6458E-14 | 2.6772E+11 | 5.5786E+05 |
| Sb-129 | 3.6897E-05 | 6.5614E-15 | 3.0631E+10 | 1.3652E+06 |
| Te-127 | 1.3642E-05 | 5.1692E-15 | 2.4512E+10 | 5.0476E+05 |
| Te-127m | 2.0260E-06 | 2.1479E-13 | 1.0185E+12 | 7.4963E+04 |
| Te-129 | 1.9891E-05 | 9.4981E-16 | 4.4340E+09 | 7.3598E+05 |
| Te-129m | 6.7763E-06 | 2.2494E-12 | 1.0501E+12 | 2.5072E+05 |
| Te-131m | 2.0154E-05 | 2.5274E-14 | 1.1619E+11 | 7.4570E+05 |
| Te-132 | 2.0485E-04 | 6.7477E-13 | 3.0784E+12 | 7.5796E+06 |
| I-131 | 2.5302E-03 | 2.0409E-11 | 9.3821E+13 | 9.3617E+07 |
| I-132 | 2.5953E-03 | 2.5143E-13 | 1.1471E+12 | 9.6025E+07 |
| I-133 | 5.1131E-03 | 4.5136E-12 | 2.0437E+13 | 1.8918E+08 |
| I-134 | 2.3987E-03 | 8.9919E-14 | 4.0411E+11 | 8.8753E+07 |
| I-135 | 4.3900E-03 | 1.2500E-12 | 5.5763E+12 | 1.6243E+08 |
| Xe-133 | 1.1301E-02 | 6.0372E-11 | 2.7336E+14 | 4.1812E+08 |
| Xe-135 | 3.8223E-03 | 1.4968E-12 | 6.6768E+12 | 1.4143E+08 |
| Cs-134 | 5.4461E-04 | 4.2093E-10 | 1.8917E+15 | 2.0151E+07 |
| Cs-136 | 1.5022E-04 | 2.0496E-12 | 9.0756E+12 | 5.5580E+06 |
| Cs-137 | 3.6490E-04 | 4.1951E-09 | 1.8440E+16 | 1.3501E+07 |
| Ba-139 | 5.6134E-05 | 3.4318E-15 | 1.4868E+10 | 2.0770E+06 |
| Ba-140 | 1.0791E-04 | 1.4740E-12 | 6.3407E+12 | 3.9928E+06 |
| La-140 | 1.0723E-06 | 1.9292E-15 | 8.2987E+09 | 3.9676E+04 |
| La-141 | 8.0319E-07 | 1.4202E-16 | 6.0658E+08 | 2.9718E+04 |
| La-142 | 6.5532E-07 | 4.5778E-17 | 1.9414E+08 | 2.4247E+04 |
| Ce-141 | 2.4764E-06 | 8.6911E-14 | 3.7120E+11 | 9.1626E+04 |
| Ce-143 | 2.3941E-06 | 3.6051E-15 | 1.5182E+10 | 8.8581E+04 |
| Ce-144 | 1.9966E-06 | 6.2599E-13 | 2.6179E+12 | 7.3874E+04 |
| Pr-143 | 9.6587E-07 | 1.4343E-14 | 6.0404E+10 | 3.5737E+04 |
| Nd-147 | 4.0357E-07 | 4.9886E-15 | 2.0437E+10 | 1.4932E+04 |
| Np-239 | 2.6971E-05 | 1.1626E-13 | 2.9294E+11 | 9.9792E+05 |
| Pu-238 | 7.8733E-09 | 4.5990E-13 | 1.1637E+12 | 2.9131E+02 |
| Pu-239 | 6.1278E-10 | 9.8587E-12 | 2.4841E+13 | 2.2673E+01 |
| Pu-240 | 6.6082E-10 | 2.9000E-12 | 7.2769E+12 | 2.4450E+01 |
| Pu-241 | 2.7367E-07 | 2.6567E-12 | 6.6385E+12 | 1.0126E+04 |
| Am-241 | 1.6831E-10 | 4.9040E-14 | 1.2254E+11 | 6.2276E+00 |
| Cm-242 | 3.9554E-08 | 1.1934E-14 | 2.9699E+10 | 1.4635E+03 |
| Cm-244 | 3.2005E-09 | 3.9561E-14 | 9.7639E+10 | 1.1842E+02 |

TSC Transport Group Inventory:

| Time (h) = 0.8000 | Atmosphere | Sump | Overlying Pool |
|---|---|---|---|
| Noble gases (atoms) | 1.7214E+15 | 0.0000E+00 | 0.0000E+00 |
| Elemental I (atoms) | 4.7868E+12 | 0.0000E+00 | 0.0000E+00 |
| Organic I (atoms) | 2.5362E+11 | 0.0000E+00 | 0.0000E+00 |
| Aerosols (kg) | 4.7199E-09 | 0.0000E+00 | 0.0000E+00 |

| Time (h) = 0.8000 | Deposition Surfaces | Recirculating Filter |
|---|---|---|
| Noble gases (atoms) | 0.0000E+00 | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 | 0.0000E+00 |

```
Organic I (atoms)      0.0000E+00  0.0000E+00
Aerosols (kg)          0.0000E+00  0.0000E+00

TSC Filtered Air Intake Transport Group Inventory:

                        Pathway
Time (h) =   0.8000      Filter
Noble gases (atoms)    0.0000E+00
Elemental I (atoms)    0.0000E+00
Organic I (atoms)      0.0000E+00
Aerosols (kg)          0.0000E+00

TSC Unfiltered Inleakage Transport Group Inventory:

                        Pathway
Time (h) =   0.8000      Filter
Noble gases (atoms)    0.0000E+00
Elemental I (atoms)    0.0000E+00
Organic I (atoms)      0.0000E+00
Aerosols (kg)          0.0000E+00

TSC Exhaust to Environment Transport Group Inventory:

                        Pathway
Time (h) =   0.8000      Filter


Noble gases (atoms)    0.0000E+00
Elemental I (atoms)    0.0000E+00
Organic I (atoms)      0.0000E+00
Aerosols (kg)          0.0000E+00

Exclusion Area Boundary Doses:

Time (h) =   0.9167    Whole Body   Thyroid       TEDE
Delta dose (rem)        7.8450E-02  1.5645E+01  8.6652E-01
Accumulated dose (rem)  2.7044E-01  5.2611E+01  2.7677E+00

Low Population Zone Doses:

Time (h) =   0.9167    Whole Body   Thyroid       TEDE
Delta dose (rem)        1.3729E-02  2.7378E+00  1.5164E-01
Accumulated dose (rem)  4.7326E-02  9.2070E+00  4.8435E-01

TSC Doses:

Time (h) =   0.9167    Whole Body   Thyroid       TEDE
Delta dose (rem)        8.6400E-05  5.7747E-01  2.7344E-02
Accumulated dose (rem)  2.4337E-04  1.5847E+00  7.1890E-02

Travel Path Doses:

Time (h) =   0.9167    Whole Body   Thyroid       TEDE
Delta dose (rem)        0.0000E+00  0.0000E+00  0.0000E+00
Accumulated dose (rem)  0.0000E+00  0.0000E+00  0.0000E+00

Environment Integral Nuclide Release:
```

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**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 1 | System Nos. | Sheet 475 of 1000 |
|---|---|---|---|---|

| Time (h) = 0.9167 | Ci | kg | Atoms | Bq |
|---|---|---|---|---|
| Co-58 | 4.0451E-03 | 1.2721E-10 | 1.3208E+15 | 1.4967E+08 |
| Co-60 | 3.0962E-03 | 2.7390E-09 | 2.7491E+16 | 1.1456E+08 |
| Kr-85 | 4.2149E+00 | 1.0743E-05 | 7.6113E+19 | 1.5595E+11 |
| Kr-85m | 7.8109E+01 | 9.4913E-09 | 6.7244E+16 | 2.8900E+12 |
| Kr-87 | 9.8500E+01 | 3.4774E-09 | 2.4071E+16 | 3.6445E+12 |
| Kr-88 | 1.9588E+02 | 1.5621E-08 | 1.0690E+17 | 7.2474E+12 |
| Rb-86 | 2.4283E-01 | 2.9843E-09 | 2.0898E+16 | 8.9845E+09 |
| Sr-89 | 3.7917E+00 | 1.3051E-07 | 8.8310E+17 | 1.4029E+11 |
| Sr-90 | 4.0928E-01 | 3.0004E-06 | 2.0077E+19 | 1.5143E+10 |
| Sr-91 | 4.6535E+00 | 1.2837E-09 | 8.4954E+15 | 1.7218E+11 |
| Sr-92 | 3.7796E+00 | 3.0070E-10 | 1.9683E+15 | 1.3985E+11 |
| Y-90 | 4.1592E-03 | 7.6447E-12 | 5.1152E+13 | 1.5389E+08 |
| Y-91 | 4.6412E-02 | 1.8925E-09 | 1.2524E+16 | 1.7173E+09 |
| Y-92 | 4.1244E-02 | 4.2862E-12 | 2.8057E+13 | 1.5260E+09 |
| Y-93 | 5.4993E-02 | 1.6483E-11 | 1.0674E+14 | 2.0347E+09 |
| Zr-95 | 5.9787E-02 | 2.7830E-09 | 1.7642E+16 | 2.2121E+09 |
| Zr-97 | 5.7613E-02 | 3.0138E-11 | 1.8711E+14 | 2.1317E+09 |
| Nb-95 | 6.0225E-02 | 1.5401E-09 | 9.7631E+15 | 2.2283E+09 |
| Mo-99 | 8.0957E-01 | 1.6880E-09 | 1.0268E+16 | 2.9954E+10 |
| Tc-99m | 6.1123E-01 | 1.1624E-10 | 7.0710E+14 | 2.2616E+10 |
| Ru-103 | 6.6009E-01 | 2.0453E-08 | 1.1958E+17 | 2.4423E+10 |
| Ru-105 | 3.5310E-01 | 5.2529E-11 | 3.0127E+14 | 1.3065E+10 |
| Ru-106 | 2.4887E-01 | 7.4389E-08 | 4.2262E+17 | 9.2084E+09 |
| Rh-105 | 4.0416E-01 | 4.7883E-10 | 2.7463E+15 | 1.4954E+10 |
| Sb-127 | 8.9537E-01 | 3.3528E-09 | 1.5898E+16 | 3.3129E+10 |
| Sb-129 | 2.1800E+00 | 3.8766E-10 | 1.8097E+15 | 8.0659E+10 |
| Te-127 | 8.0828E-01 | 3.0627E-10 | 1.4523E+15 | 2.9906E+10 |
| Te-127m | 1.2035E-01 | 1.2759E-08 | 6.0500E+16 | 4.4529E+09 |
| Te-129 | 1.1618E+00 | 5.5478E-11 | 2.5899E+14 | 4.2988E+10 |
| Te-129m | 4.0251E-01 | 1.3361E-07 | 6.2374E+16 | 1.4893E+10 |
| Te-131m | 1.1962E+00 | 1.5001E-09 | 6.8961E+15 | 4.4259E+10 |
| Te-132 | 1.2165E+01 | 4.0069E-08 | 1.8280E+17 | 4.5010E+11 |
| I-131 | 1.2152E+02 | 9.8024E-07 | 4.5062E+18 | 4.4964E+12 |
| I-132 | 1.2808E+02 | 1.2408E-08 | 5.6609E+16 | 4.7390E+12 |
| I-133 | 2.4613E+02 | 2.1727E-07 | 9.8378E+17 | 9.1067E+12 |
| I-134 | 1.2697E+02 | 4.7597E-09 | 2.1391E+16 | 4.6980E+12 |
| I-135 | 2.1254E+02 | 6.0520E-08 | 2.6997E+17 | 7.8639E+12 |
| Xe-133 | 5.9886E+02 | 3.1993E-06 | 1.4486E+19 | 2.2158E+13 |
| Xe-135 | 2.0277E+02 | 7.9402E-08 | 3.5420E+17 | 7.5025E+12 |
| Cs-134 | 2.5364E+01 | 1.9604E-05 | 8.8101E+19 | 9.3846E+11 |
| Cs-136 | 6.9973E+00 | 9.5473E-08 | 4.2276E+17 | 2.5890E+11 |
| Cs-137 | 1.6994E+01 | 1.9537E-04 | 8.5880E+20 | 6.2877E+11 |
| Ba-139 | 3.2856E+00 | 2.0087E-10 | 8.7026E+14 | 1.2157E+11 |
| Ba-140 | 6.4096E+00 | 8.7553E-08 | 3.7661E+17 | 2.3716E+11 |
| La-140 | 6.3659E-02 | 1.1453E-10 | 4.9265E+14 | 2.3554E+09 |
| La-141 | 4.7431E-02 | 8.3869E-12 | 3.5820E+13 | 1.7549E+09 |
| La-142 | 3.8406E-02 | 2.6829E-12 | 1.1378E+13 | 1.4210E+09 |
| Ce-141 | 1.4710E-01 | 5.1624E-09 | 2.2049E+16 | 5.4425E+09 |
| Ce-143 | 1.4211E-01 | 2.1399E-10 | 9.0116E+14 | 5.2579E+09 |
| Ce-144 | 1.1860E-01 | 3.7185E-08 | 1.5551E+17 | 4.3882E+09 |
| Pr-143 | 5.7369E-02 | 8.5195E-10 | 3.5878E+15 | 2.1227E+09 |
| Nd-147 | 2.3970E-02 | 2.9630E-10 | 1.2138E+15 | 8.8689E+08 |
| Np-239 | 1.6014E+00 | 6.9029E-09 | 1.7393E+16 | 5.9252E+10 |

| | | | | |
|---|---|---|---|---|
| Pu-238 | 4.6768E-04 | 2.7318E-08 | 6.9124E+16 | 1.7304E+07 |
| Pu-239 | 3.6400E-05 | 5.8562E-07 | 1.4756E+18 | 1.3468E+06 |
| Pu-240 | 3.9254E-05 | 1.7227E-07 | 4.3225E+17 | 1.4524E+06 |
| Pu-241 | 1.6256E-02 | 1.5781E-07 | 3.9433E+17 | 6.0148E+08 |
| Am-241 | 9.9980E-06 | 2.9130E-09 | 7.2791E+15 | 3.6992E+05 |
| Cm-242 | 2.3496E-03 | 7.0892E-10 | 1.7641E+15 | 8.6934E+07 |
| Cm-244 | 1.9012E-04 | 2.3499E-09 | 5.7999E+15 | 7.0343E+06 |

Environment Transport Group Inventory:

| Time (h) = 0.9167 | Present Release | Release Rate/s | Total Release |
|---|---|---|---|
| Noble gases (atoms) | 9.1198E+19 | 2.7635E+16 | 9.1198E+19 |
| Elemental I (atoms) | 2.2790E+17 | 6.9059E+13 | 2.2790E+17 |
| Organic I (atoms) | 1.2213E+16 | 3.7007E+12 | 1.2213E+16 |
| Aerosols (kg) | 2.2082E-04 | 6.6914E-08 | 2.2082E-04 |

TSC Filtered Air Intake Transport Group Inventory:

| Time (h) = 0.9167 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 |

TSC Unfiltered Inleakage Transport Group Inventory:

| Time (h) = 0.9167 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 |

TSC Exhaust to Environment Transport Group Inventory:

| Time (h) = 0.9167 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 |

TSC Compartment Nuclide Inventory:

| Time (h) = 0.9167 | Ci | kg | Atoms | Bq |
|---|---|---|---|---|
| Co-58 | 1.2451E-07 | 3.9156E-15 | 4.0656E+10 | 4.6068E+03 |
| Co-60 | 9.5304E-08 | 8.4312E-14 | 8.4623E+11 | 3.5263E+03 |
| Kr-85 | 1.2628E-04 | 3.2188E-10 | 2.2805E+15 | 4.6725E+06 |
| Kr-85m | 2.2669E-03 | 2.7546E-13 | 1.9516E+12 | 8.3877E+07 |
| Kr-87 | 2.6118E-03 | 9.2205E-14 | 6.3824E+11 | 9.6636E+07 |
| Kr-88 | 5.5758E-03 | 4.4467E-13 | 3.0430E+12 | 2.0630E+08 |
| Rb-86 | 7.0483E-06 | 8.6623E-14 | 6.0658E+11 | 2.6079E+05 |
| Sr-89 | 1.1671E-04 | 4.0171E-12 | 2.7181E+13 | 4.3181E+06 |
| Sr-90 | 1.2598E-05 | 9.2357E-11 | 6.1799E+14 | 4.6613E+05 |

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**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 1 | System Nos. | Sheet 477 of 1000 |
|---|---|---|---|---|

| | | | | |
|---|---|---|---|---|
| Sr-91 | 1.4196E-04 | 3.9160E-14 | 2.5915E+11 | 5.2524E+06 |
| Sr-92 | 1.1267E-04 | 8.9637E-15 | 5.8674E+10 | 4.1687E+06 |
| Y-90 | 1.2786E-07 | 2.3500E-16 | 1.5725E+09 | 4.7307E+03 |
| Y-91 | 1.4286E-06 | 5.8252E-14 | 3.8550E+11 | 5.2857E+04 |
| Y-92 | 1.2389E-06 | 1.2875E-16 | 8.4277E+08 | 4.5838E+04 |
| Y-93 | 1.6785E-06 | 5.0309E-16 | 3.2577E+09 | 6.2104E+04 |
| Zr-95 | 1.8402E-06 | 8.5661E-14 | 5.4301E+11 | 6.8089E+04 |
| Zr-97 | 1.7645E-06 | 9.2301E-16 | 5.7304E+09 | 6.5286E+04 |
| Nb-95 | 1.8536E-06 | 4.7403E-14 | 3.0049E+11 | 6.8584E+04 |
| Mo-99 | 2.4888E-05 | 5.1891E-14 | 3.1565E+11 | 9.2085E+05 |
| Tc-99m | 1.8548E-05 | 3.5274E-15 | 2.1457E+10 | 6.8626E+05 |
| Ru-103 | 2.0317E-05 | 6.2951E-13 | 3.6806E+12 | 7.5173E+05 |
| Ru-105 | 1.0660E-05 | 1.5858E-15 | 9.0951E+09 | 3.9441E+05 |
| Ru-106 | 7.6607E-06 | 2.2898E-12 | 1.3009E+13 | 2.8345E+05 |
| Rh-105 | 1.2411E-05 | 1.4704E-14 | 8.4330E+10 | 4.5919E+05 |
| Sb-127 | 2.7536E-05 | 1.0311E-13 | 4.8893E+11 | 1.0188E+06 |
| Sb-129 | 6.5775E-05 | 1.1697E-14 | 5.4604E+10 | 2.4337E+06 |
| Te-127 | 2.4653E-05 | 9.3415E-15 | 4.4296E+10 | 9.1217E+05 |
| Te-127m | 3.7044E-06 | 3.9272E-13 | 1.8622E+12 | 1.3706E+05 |
| Te-129 | 3.3112E-05 | 1.5811E-15 | 7.3812E+09 | 1.2252E+06 |
| Te-129m | 1.2389E-05 | 4.1124E-12 | 1.9198E+12 | 4.5838E+05 |
| Te-131m | 3.6716E-05 | 4.6044E-14 | 2.1167E+11 | 1.3585E+06 |
| Te-132 | 3.7404E-04 | 1.2321E-12 | 5.6209E+12 | 1.3840E+07 |
| I-131 | 3.5553E-03 | 2.8677E-11 | 1.3183E+14 | 1.3155E+08 |
| I-132 | 3.4518E-03 | 3.3441E-13 | 1.5256E+12 | 1.2772E+08 |
| I-133 | 7.1451E-03 | 6.3074E-12 | 2.8559E+13 | 2.6437E+08 |
| I-134 | 2.9205E-03 | 1.0948E-13 | 4.9201E+11 | 1.0806E+08 |
| I-135 | 6.0538E-03 | 1.7238E-12 | 7.6897E+12 | 2.2399E+08 |
| Xe-133 | 1.7923E-02 | 9.5752E-11 | 4.3356E+14 | 6.6315E+08 |
| Xe-135 | 5.9823E-03 | 2.3426E-12 | 1.0450E+13 | 2.2135E+08 |
| Cs-134 | 7.3652E-04 | 5.6926E-10 | 2.5583E+15 | 2.7251E+07 |
| Cs-136 | 2.0307E-04 | 2.7707E-12 | 1.2269E+13 | 7.5135E+06 |
| Cs-137 | 4.9348E-04 | 5.6734E-09 | 2.4939E+16 | 1.8259E+07 |
| Ba-139 | 9.4834E-05 | 5.7978E-15 | 2.5119E+10 | 3.5089E+06 |
| Ba-140 | 1.9724E-04 | 2.6943E-12 | 1.1589E+13 | 7.2980E+06 |
| La-140 | 1.9554E-06 | 3.5179E-15 | 1.5132E+10 | 7.2349E+04 |
| La-141 | 1.4282E-06 | 2.5254E-16 | 1.0786E+09 | 5.2845E+04 |
| La-142 | 1.1164E-06 | 7.7985E-17 | 3.3073E+08 | 4.1305E+04 |
| Ce-141 | 4.5273E-06 | 1.5889E-13 | 6.7862E+11 | 1.6751E+05 |
| Ce-143 | 4.3629E-06 | 6.5699E-15 | 2.7668E+10 | 1.6143E+05 |
| Ce-144 | 3.6507E-06 | 1.1446E-12 | 4.7867E+12 | 1.3507E+05 |
| Pr-143 | 1.7655E-06 | 2.6218E-14 | 1.1041E+11 | 6.5322E+04 |
| Nd-147 | 7.3760E-07 | 9.1176E-15 | 3.7352E+10 | 2.7291E+04 |
| Np-239 | 4.9219E-05 | 2.1216E-13 | 5.3459E+11 | 1.8211E+06 |
| Pu-238 | 1.4396E-08 | 8.4090E-13 | 2.1277E+12 | 5.3265E+02 |
| Pu-239 | 1.1205E-09 | 1.8026E-11 | 4.5421E+13 | 4.1457E+01 |
| Pu-240 | 1.2083E-09 | 5.3026E-12 | 1.3305E+13 | 4.4707E+01 |
| Pu-241 | 5.0039E-07 | 4.8576E-12 | 1.2138E+13 | 1.8515E+04 |
| Am-241 | 3.0775E-10 | 8.9667E-14 | 2.2406E+11 | 1.1387E+01 |
| Cm-242 | 7.2322E-08 | 2.1821E-14 | 5.4302E+10 | 2.6759E+03 |
| Cm-244 | 5.8521E-09 | 7.2335E-14 | 1.7853E+11 | 2.1653E+02 |

TSC Transport Group Inventory:

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**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 1 | System Nos. | Sheet 478 of 1000 |
|---|---|---|---|---|

```
                                                Overlying
Time (h) =   0.9167    Atmosphere     Sump        Pool
Noble gases (atoms)    2.7323E+15  0.0000E+00  0.0000E+00
Elemental I (atoms)    6.6637E+12  0.0000E+00  0.0000E+00
Organic I (atoms)      3.5814E+11  0.0000E+00  0.0000E+00
Aerosols (kg)          6.4206E-09  0.0000E+00  0.0000E+00

                       Deposition Recirculating
Time (h) =   0.9167     Surfaces     Filter
Noble gases (atoms)    0.0000E+00  0.0000E+00
Elemental I (atoms)    0.0000E+00  0.0000E+00
Organic I (atoms)      0.0000E+00  0.0000E+00
Aerosols (kg)          0.0000E+00  0.0000E+00

TSC Filtered Air Intake Transport Group Inventory:

                        Pathway
Time (h) =   0.9167      Filter
Noble gases (atoms)    0.0000E+00
Elemental I (atoms)    0.0000E+00
Organic I (atoms)      0.0000E+00
Aerosols (kg)          0.0000E+00

TSC Unfiltered Inleakage Transport Group Inventory:

                        Pathway
Time (h) =   0.9167      Filter
Noble gases (atoms)    0.0000E+00
Elemental I (atoms)    0.0000E+00


Organic I (atoms)      0.0000E+00
Aerosols (kg)          0.0000E+00

TSC Exhaust to Environment Transport Group Inventory:

                        Pathway
Time (h) =   0.9167      Filter
Noble gases (atoms)    0.0000E+00
Elemental I (atoms)    0.0000E+00
Organic I (atoms)      0.0000E+00
Aerosols (kg)          0.0000E+00

Exclusion Area Boundary Doses:

Time (h) =   1.0000    Whole Body   Thyroid       TEDE
Delta dose (rem)        6.3483E-02  1.2852E+01  7.1769E-01
Accumulated dose (rem)  3.3392E-01  6.5464E+01  3.4854E+00

Low Population Zone Doses:

Time (h) =   1.0000    Whole Body   Thyroid       TEDE
Delta dose (rem)        1.1109E-02  2.2491E+00  1.2560E-01
Accumulated dose (rem)  5.8436E-02  1.1456E+01  6.0994E-01

TSC Doses:
```

AmerGen

**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 1 | System Nos. | Sheet 479 of 1000 |
|---|---|---|---|---|

| Time (h) = 1.0000 | Whole Body | Thyroid | TEDE |
|---|---|---|---|
| Delta dose (rem) | 7.9658E-05 | 5.3940E-01 | 2.6046E-02 |
| Accumulated dose (rem) | 3.2302E-04 | 2.1241E+00 | 9.7936E-02 |

Travel Path Doses:

| Time (h) = 1.0000 | Whole Body | Thyroid | TEDE |
|---|---|---|---|
| Delta dose (rem) | 6.3483E-02 | 1.2742E+01 | 7.1208E-01 |
| Accumulated dose (rem) | 6.3483E-02 | 1.2742E+01 | 7.1208E-01 |

Environment Integral Nuclide Release:

| Time (h) = 1.0000 | Ci | kg | Atoms | Bq |
|---|---|---|---|---|
| Co-58 | 5.6791E-03 | 1.7860E-10 | 1.8544E+15 | 2.1013E+08 |
| Co-60 | 4.3470E-03 | 3.8456E-09 | 3.8598E+16 | 1.6084E+08 |
| Kr-85 | 5.6114E+00 | 1.4303E-05 | 1.0133E+20 | 2.0762E+11 |
| Kr-85m | 1.0231E+02 | 1.2432E-08 | 8.8081E+16 | 3.7855E+12 |
| Kr-87 | 1.2400E+02 | 4.3778E-09 | 3.0303E+16 | 4.5882E+12 |
| Kr-88 | 2.5421E+02 | 2.0273E-08 | 1.3873E+17 | 9.4056E+12 |
| Rb-86 | 2.9578E-01 | 3.6351E-09 | 2.5455E+16 | 1.0944E+10 |
| Sr-89 | 5.3232E+00 | 1.8323E-07 | 1.2398E+18 | 1.9696E+11 |
| Sr-90 | 5.7462E-01 | 4.2126E-06 | 2.8187E+19 | 2.1261E+10 |
| Sr-91 | 6.4943E+00 | 1.7915E-09 | 1.1856E+16 | 2.4029E+11 |
| Sr-92 | 5.1974E+00 | 4.1350E-10 | 2.7067E+15 | 1.9231E+11 |
| Y-90 | 5.8342E-03 | 1.0723E-11 | 7.1753E+13 | 2.1587E+08 |
| Y-91 | 6.5160E-02 | 2.6570E-09 | 1.7583E+16 | 2.4109E+09 |
| Y-92 | 5.6987E-02 | 5.9224E-12 | 3.8767E+13 | 2.1085E+09 |
| Y-93 | 7.6774E-02 | 2.3012E-11 | 1.4901E+14 | 2.8406E+09 |
| Zr-95 | 8.3938E-02 | 3.9072E-09 | 2.4768E+16 | 3.1057E+09 |
| Zr-97 | 8.0615E-02 | 4.2170E-11 | 2.6181E+14 | 2.9828E+09 |
| Nb-95 | 8.4550E-02 | 2.1622E-09 | 1.3707E+16 | 3.1283E+09 |
| Mo-99 | 1.1357E+00 | 2.3678E-09 | 1.4403E+16 | 4.2019E+10 |
| Tc-99m | 8.5008E-01 | 1.6167E-10 | 9.8341E+14 | 3.1453E+10 |
| Ru-103 | 9.2672E-01 | 2.8714E-08 | 1.6788E+17 | 3.4288E+10 |
| Ru-105 | 4.8945E-01 | 7.2813E-11 | 4.1761E+14 | 1.8110E+10 |
| Ru-106 | 3.4942E-01 | 1.0444E-07 | 5.9336E+17 | 1.2928E+10 |
| Rh-105 | 5.6651E-01 | 6.7118E-10 | 3.8495E+15 | 2.0961E+10 |
| Sb-127 | 1.2563E+00 | 4.7044E-09 | 2.2307E+16 | 4.6484E+10 |
| Sb-129 | 3.0207E+00 | 5.3717E-10 | 2.5077E+15 | 1.1177E+11 |
| Te-127 | 1.1279E+00 | 4.2738E-10 | 2.0266E+15 | 4.1733E+10 |
| Te-127m | 1.6896E-01 | 1.7913E-08 | 8.4940E+16 | 6.2517E+09 |
| Te-129 | 1.5561E+00 | 7.4306E-11 | 3.4688E+14 | 5.7577E+10 |
| Te-129m | 5.6508E-01 | 1.8758E-07 | 8.7567E+16 | 2.0908E+10 |
| Te-131m | 1.6762E+00 | 2.1021E-09 | 9.6636E+15 | 6.2021E+10 |
| Te-132 | 1.7067E+01 | 5.6216E-08 | 2.5647E+17 | 6.3147E+11 |
| I-131 | 1.5112E+02 | 1.2190E-06 | 5.6038E+18 | 5.5916E+12 |
| I-132 | 1.5457E+02 | 1.4974E-08 | 6.8316E+16 | 5.7190E+12 |
| I-133 | 3.0513E+02 | 2.6936E-07 | 1.2196E+18 | 1.1290E+13 |
| I-134 | 1.4657E+02 | 5.4944E-09 | 2.4693E+16 | 5.4232E+12 |
| I-135 | 2.6156E+02 | 7.4480E-08 | 3.3224E+17 | 9.6778E+12 |
| Xe-133 | 7.9681E+02 | 4.2569E-06 | 1.9275E+19 | 2.9482E+13 |
| Xe-135 | 2.6779E+02 | 1.0486E-07 | 4.6778E+17 | 9.9083E+12 |
| Cs-134 | 3.0900E+01 | 2.3882E-05 | 1.0733E+20 | 1.1433E+12 |
| Cs-136 | 8.5227E+00 | 1.1629E-07 | 5.1492E+17 | 3.1534E+11 |
| Cs-137 | 2.0703E+01 | 2.3802E-04 | 1.0463E+21 | 7.6601E+11 |

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**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 1 | System Nos. | Sheet 480 of 1000 |
|---|---|---|---|---|

| | | | | |
|---|---|---|---|---|
| Ba-139 | 4.4321E+00 | 2.7096E-10 | 1.1739E+15 | 1.6399E+11 |
| Ba-140 | 8.9975E+00 | 1.2290E-07 | 5.2866E+17 | 3.3291E+11 |
| La-140 | 8.9249E-02 | 1.6057E-10 | 6.9070E+14 | 3.3022E+09 |
| La-141 | 6.5639E-02 | 1.1606E-11 | 4.9571E+13 | 2.4286E+09 |
| La-142 | 5.2018E-02 | 3.6338E-12 | 1.5411E+13 | 1.9247E+09 |
| Ce-141 | 2.0651E-01 | 7.2475E-09 | 3.0954E+16 | 7.6408E+09 |
| Ce-143 | 1.9917E-01 | 2.9992E-10 | 1.2630E+15 | 7.3693E+09 |
| Ce-144 | 1.6651E-01 | 5.2207E-08 | 2.1833E+17 | 6.1610E+09 |
| Pr-143 | 8.0532E-02 | 1.1959E-09 | 5.0364E+15 | 2.9797E+09 |
| Nd-147 | 3.3647E-02 | 4.1591E-10 | 1.7039E+15 | 1.2449E+09 |
| Np-239 | 2.2461E+00 | 9.6818E-09 | 2.4395E+16 | 8.3105E+10 |
| Pu-238 | 6.5663E-04 | 3.8355E-08 | 9.7050E+16 | 2.4295E+07 |
| Pu-239 | 5.1106E-05 | 8.2221E-07 | 2.0717E+18 | 1.8909E+06 |
| Pu-240 | 5.5112E-05 | 2.4186E-07 | 6.0689E+17 | 2.0392E+06 |
| Pu-241 | 2.2824E-02 | 2.2156E-07 | 5.5364E+17 | 8.4448E+08 |
| Am-241 | 1.4037E-05 | 4.0899E-09 | 1.0220E+16 | 5.1937E+05 |
| Cm-242 | 3.2987E-03 | 9.9531E-10 | 2.4768E+15 | 1.2205E+08 |
| Cm-244 | 2.6692E-04 | 3.2993E-09 | 8.1430E+15 | 9.8762E+06 |

Environment Transport Group Inventory:

| Time (h) = 1.0000 | Present Release | Release Rate/s | Total Release |
|---|---|---|---|
| Noble gases (atoms) | 1.2140E+20 | 3.3721E+16 | 1.2140E+20 |
| Elemental I (atoms) | 2.8103E+17 | 7.8063E+13 | 2.8103E+17 |
| Organic I (atoms) | 1.5300E+16 | 4.2499E+12 | 1.5300E+16 |
| Aerosols (kg) | 2.6989E-04 | 7.4970E-08 | 2.6989E-04 |

TSC Filtered Air Intake Transport Group Inventory:

| Time (h) = 1.0000 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 |

TSC Unfiltered Inleakage Transport Group Inventory:

| Time (h) = 1.0000 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 |

TSC Exhaust to Environment Transport Group Inventory:

| Time (h) = 1.0000 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 |

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**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 1 | System Nos. | Sheet 481 of 1000 |
|---|---|---|---|---|

TSC Compartment Nuclide Inventory:

| Time (h) = 1.0000 | Ci | kg | Atoms | Bq |
|---|---|---|---|---|
| Co-58 | 1.7266E-07 | 5.4299E-15 | 5.6379E+10 | 6.3884E+03 |
| Co-60 | 1.3217E-07 | 1.1692E-13 | 1.1735E+12 | 4.8902E+03 |
| Kr-85 | 1.6674E-04 | 4.2501E-10 | 3.0111E+15 | 6.1695E+06 |
| Kr-85m | 2.9351E-03 | 3.5665E-13 | 2.5268E+12 | 1.0860E+08 |
| Kr-87 | 3.2195E-03 | 1.1366E-13 | 7.8675E+11 | 1.1912E+08 |
| Kr-88 | 7.1382E-03 | 5.6927E-13 | 3.8957E+12 | 2.6411E+08 |
| Rb-86 | 8.5021E-06 | 1.0449E-13 | 7.3169E+11 | 3.1458E+05 |
| Sr-89 | 1.6184E-04 | 5.5705E-12 | 3.7693E+13 | 5.9879E+06 |
| Sr-90 | 1.7471E-05 | 1.2808E-10 | 8.5702E+14 | 6.4643E+05 |
| Sr-91 | 1.9523E-04 | 5.3858E-14 | 3.5642E+11 | 7.2236E+06 |
| Sr-92 | 1.5177E-04 | 1.2075E-14 | 7.9039E+10 | 5.6156E+06 |
| Y-90 | 1.7709E-07 | 3.2550E-16 | 2.1780E+09 | 6.5524E+03 |
| Y-91 | 1.9810E-06 | 8.0779E-14 | 5.3457E+11 | 7.3298E+04 |
| Y-92 | 1.6802E-06 | 1.7462E-16 | 1.1430E+09 | 6.2168E+04 |
| Y-93 | 2.3096E-06 | 6.9225E-16 | 4.4826E+09 | 8.5454E+04 |
| Zr-95 | 2.5519E-06 | 1.1879E-13 | 7.5301E+11 | 9.4421E+04 |
| Zr-97 | 2.4356E-06 | 1.2740E-15 | 7.9098E+09 | 9.0116E+04 |
| Nb-95 | 2.5704E-06 | 6.5733E-14 | 4.1669E+11 | 9.5103E+04 |
| Mo-99 | 3.4473E-05 | 7.1876E-14 | 4.3722E+11 | 1.2755E+06 |
| Tc-99m | 2.5387E-05 | 4.8280E-15 | 2.9368E+10 | 9.3930E+05 |
| Ru-103 | 2.8173E-05 | 8.7294E-13 | 5.1038E+12 | 1.0424E+06 |
| Ru-105 | 1.4522E-05 | 2.1604E-15 | 1.2391E+10 | 5.3733E+05 |
| Ru-106 | 1.0624E-05 | 3.1755E-12 | 1.8041E+13 | 3.9308E+05 |
| Rh-105 | 1.7172E-05 | 2.0345E-14 | 1.1669E+11 | 6.3538E+05 |
| Sb-127 | 3.8153E-05 | 1.4287E-13 | 6.7746E+11 | 1.4117E+06 |
| Sb-129 | 8.9566E-05 | 1.5927E-14 | 7.4354E+10 | 3.3139E+06 |
| Te-127 | 3.3901E-05 | 1.2846E-14 | 6.0912E+10 | 1.2543E+06 |
| Te-127m | 5.1371E-06 | 5.4461E-13 | 2.5824E+12 | 1.9007E+05 |
| Te-129 | 4.2926E-05 | 2.0497E-15 | 9.5688E+09 | 1.5883E+06 |
| Te-129m | 1.7179E-05 | 5.7024E-12 | 2.6621E+12 | 6.3562E+05 |
| Te-131m | 5.0784E-05 | 6.3686E-14 | 2.9277E+11 | 1.8790E+06 |
| Te-132 | 5.1820E-04 | 1.7069E-12 | 7.7872E+12 | 1.9173E+07 |
| I-131 | 4.3808E-03 | 3.5336E-11 | 1.6244E+14 | 1.6209E+08 |
| I-132 | 4.0944E-03 | 3.9666E-13 | 1.8097E+12 | 1.5149E+08 |
| I-133 | 8.7705E-03 | 7.7423E-12 | 3.5056E+13 | 3.2451E+08 |
| I-134 | 3.2585E-03 | 1.2215E-13 | 5.4894E+11 | 1.2056E+08 |
| I-135 | 7.3630E-03 | 2.0966E-12 | 9.3527E+12 | 2.7243E+08 |
| Xe-133 | 2.3649E-02 | 1.2634E-10 | 5.7207E+14 | 8.7501E+08 |
| Xe-135 | 7.8229E-03 | 3.0633E-12 | 1.3665E+13 | 2.8945E+08 |
| Cs-134 | 8.8861E-04 | 6.8680E-10 | 3.0866E+15 | 3.2878E+07 |
| Cs-136 | 2.4493E-04 | 3.3419E-12 | 1.4798E+13 | 9.0625E+06 |
| Cs-137 | 5.9538E-04 | 6.8449E-09 | 3.0088E+16 | 2.2029E+07 |
| Ba-139 | 1.2425E-04 | 7.5959E-15 | 3.2909E+10 | 4.5971E+06 |
| Ba-140 | 2.7347E-04 | 3.7354E-12 | 1.6068E+13 | 1.0118E+07 |
| La-140 | 2.7064E-06 | 4.8691E-15 | 2.0945E+10 | 1.0014E+05 |
| La-141 | 1.9413E-06 | 3.4327E-16 | 1.4661E+09 | 7.1828E+04 |
| La-142 | 1.4714E-06 | 1.0278E-16 | 4.3590E+08 | 5.4440E+04 |
| Ce-141 | 6.2779E-06 | 2.2033E-13 | 9.4102E+11 | 2.3228E+05 |
| Ce-143 | 6.0360E-06 | 9.0893E-15 | 3.8277E+10 | 2.2333E+05 |
| Ce-144 | 5.0627E-06 | 1.5873E-12 | 6.6381E+12 | 1.8732E+05 |
| Pr-143 | 2.4477E-06 | 3.6350E-14 | 1.5308E+11 | 9.0566E+04 |
| Nd-147 | 1.0226E-06 | 1.2640E-14 | 5.1784E+10 | 3.7836E+04 |

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**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 1 | System Nos. | Sheet 482 of 1000 |
|---|---|---|---|---|

| | | | | |
|---|---|---|---|---|
| Np-239 | 6.8162E-05 | 2.9381E-13 | 7.4032E+11 | 2.5220E+06 |
| Pu-238 | 1.9964E-08 | 1.1662E-12 | 2.9508E+12 | 7.3868E+02 |
| Pu-239 | 1.5538E-09 | 2.4999E-11 | 6.2990E+13 | 5.7492E+01 |
| Pu-240 | 1.6757E-09 | 7.3537E-12 | 1.8452E+13 | 6.1999E+01 |
| Pu-241 | 6.9394E-07 | 6.7365E-12 | 1.6833E+13 | 2.5676E+04 |
| Am-241 | 4.2679E-10 | 1.2435E-13 | 3.1073E+11 | 1.5791E+01 |
| Cm-242 | 1.0029E-07 | 3.0261E-14 | 7.5304E+10 | 3.7109E+03 |
| Cm-244 | 8.1156E-09 | 1.0031E-13 | 2.4758E+11 | 3.0028E+02 |

TSC Transport Group Inventory:

| Time (h) = 1.0000 | Atmosphere | Sump | Overlying Pool |
|---|---|---|---|
| Noble gases (atoms) | 3.6072E+15 | 0.0000E+00 | 0.0000E+00 |
| Elemental I (atoms) | 8.1374E+12 | 0.0000E+00 | 0.0000E+00 |
| Organic I (atoms) | 4.4479E+11 | 0.0000E+00 | 0.0000E+00 |
| Aerosols (kg) | 7.7724E-09 | 0.0000E+00 | 0.0000E+00 |

| Time (h) = 1.0000 | Deposition Surfaces | Recirculating Filter |
|---|---|---|
| Noble gases (atoms) | 0.0000E+00 | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 | 0.0000E+00 |

TSC Filtered Air Intake Transport Group Inventory:

| Time (h) = 1.0000 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 |

TSC Unfiltered Inleakage Transport Group Inventory:

| Time (h) = 1.0000 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 |

TSC Exhaust to Environment Transport Group Inventory:

| Time (h) = 1.0000 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 |

Exclusion Area Boundary Doses:

| Time (h) = 1.8000 | Whole Body | Thyroid | TEDE |
|---|---|---|---|
| Delta dose (rem) | 8.2130E-01 | 1.7665E+02 | 1.0021E+01 |

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**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 1 | System Nos. | Sheet 483 of 1000 |
|---|---|---|---|---|

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Accumulated dose (rem)  1.1552E+00  2.4212E+02  1.3507E+01

Low Population Zone Doses:

Time (h) =   1.8000    Whole Body   Thyroid       TEDE
Delta dose (rem)        1.4373E-01  3.0915E+01  1.7537E+00
Accumulated dose (rem)  2.0216E-01  4.2371E+01  2.3637E+00

TSC Doses:

Time (h) =   1.8000    Whole Body   Thyroid       TEDE
Delta dose (rem)        1.6632E-03  1.2053E+01  6.1083E-01
Accumulated dose (rem)  1.9862E-03  1.4177E+01  7.0877E-01

Travel Path Doses:

Time (h) =   1.8000    Whole Body   Thyroid       TEDE
Delta dose (rem)        0.0000E+00  0.0000E+00  0.0000E+00
Accumulated dose (rem)  6.3483E-02  1.2742E+01  7.1208E-01

Environment Integral Nuclide Release:

Time (h) =   1.8000       Ci           kg         Atoms         Bq
Co-58                  3.1027E-02  9.7576E-10  1.0131E+16  1.1480E+09
Co-60                  2.3757E-02  2.1017E-08  2.1094E+17  8.7900E+08
Kr-85                  3.0268E+01  7.7147E-05  5.4658E+20  1.1199E+12
Kr-85m                 4.8220E+02  5.8593E-08  4.1513E+17  1.7841E+13
Kr-87                  4.2675E+02  1.5066E-08  1.0429E+17  1.5790E+13
Kr-88                  1.1112E+03  8.8615E-08  6.0643E+17  4.1113E+13
Rb-86                  1.0047E+00  1.2347E-08  8.6461E+16  3.7172E+10
Sr-89                  2.9079E+01  1.0009E-06  6.7727E+18  1.0759E+12
Sr-90                  3.1404E+00  2.3022E-05  1.5405E+20  1.1620E+11
Sr-91                  3.3477E+01  9.2351E-09  6.1116E+16  1.2387E+12
Sr-92                  2.3291E+01  1.8530E-09  1.2129E+16  8.6177E+11


Y-90                   3.1607E-02  5.8094E-11  3.8872E+14  1.1694E+09
Y-91                   3.5597E-01  1.4515E-08  9.6058E+16  1.3171E+10
Y-92                   2.6711E-01  2.7759E-11  1.8171E+14  9.8830E+09
Y-93                   3.9712E-01  1.1903E-10  7.7076E+14  1.4693E+10
Zr-95                  4.5857E-01  2.1346E-08  1.3531E+17  1.6967E+10
Zr-97                  4.2626E-01  2.2298E-10  1.3843E+15  1.5771E+10
Nb-95                  4.6177E-01  1.1809E-08  7.4859E+16  1.7086E+10
Mo-99                  6.1540E+00  1.2831E-08  7.8051E+16  2.2770E+11
Tc-99m                 4.2392E+00  8.0621E-10  4.9041E+15  1.5685E+11
Ru-103                 5.0616E+00  1.5683E-07  9.1697E+17  1.8728E+11
Ru-105                 2.3646E+00  3.5177E-10  2.0175E+15  8.7491E+10
Ru-106                 1.9095E+00  5.7076E-07  3.2426E+18  7.0652E+10
Rh-105                 3.0474E+00  3.6104E-09  2.0707E+16  1.1275E+11
Sb-127                 6.8244E+00  2.5555E-08  1.2118E+17  2.5250E+11
Sb-129                 1.4545E+01  2.5866E-09  1.2075E+16  5.3817E+11
Te-127                 5.8088E+00  2.2010E-09  1.0437E+16  2.1493E+11
Te-127m                9.2322E-01  9.7876E-08  4.6411E+17  3.4159E+10
Te-129                 5.5006E+00  2.6266E-10  1.2262E+15  2.0352E+11
Te-129m                3.0861E+00  1.0244E-06  4.7824E+17  1.1419E+11
Te-131m                8.9915E+00  1.1276E-08  5.1836E+16  3.3269E+11
Te-132                 9.2605E+01  3.0503E-07  1.3916E+18  3.4264E+12
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**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 1 | System Nos. | Sheet 484 of 1000 |
|---|---|---|---|---|

| | | | | |
|---|---|---|---|---|
| I-131 | 5.6016E+02 | 4.5183E-06 | 2.0771E+19 | 2.0726E+13 |
| I-132 | 4.4556E+02 | 4.3165E-08 | 1.9693E+17 | 1.6486E+13 |
| I-133 | 1.1014E+03 | 9.7231E-07 | 4.4025E+18 | 4.0753E+13 |
| I-134 | 2.9963E+02 | 1.1232E-08 | 5.0477E+16 | 1.1086E+13 |
| I-135 | 8.8698E+02 | 2.5257E-07 | 1.1267E+18 | 3.2818E+13 |
| Xe-133 | 4.2770E+03 | 2.2849E-05 | 1.0346E+20 | 1.5825E+14 |
| Xe-135 | 1.3505E+03 | 5.2885E-07 | 2.3591E+18 | 4.9970E+13 |
| Cs-134 | 1.0510E+02 | 8.1229E-05 | 3.6505E+20 | 3.8886E+12 |
| Cs-136 | 2.8932E+01 | 3.9475E-07 | 1.7480E+18 | 1.0705E+12 |
| Cs-137 | 7.0417E+01 | 8.0956E-04 | 3.5586E+21 | 2.6054E+12 |
| Ba-139 | 1.6678E+01 | 1.0196E-09 | 4.4174E+15 | 6.1707E+11 |
| Ba-140 | 4.9082E+01 | 6.7044E-07 | 2.8839E+18 | 1.8161E+12 |
| La-140 | 4.8102E-01 | 8.6541E-10 | 3.7226E+15 | 1.7798E+10 |
| La-141 | 3.1223E-01 | 5.5210E-11 | 2.3580E+14 | 1.1553E+10 |
| La-142 | 2.0297E-01 | 1.4179E-11 | 6.0131E+13 | 7.5098E+09 |
| Ce-141 | 1.1278E+00 | 3.9581E-08 | 1.6905E+17 | 4.1728E+10 |
| Ce-143 | 1.0702E+00 | 1.6115E-09 | 6.7865E+15 | 3.9596E+10 |
| Ce-144 | 9.0995E-01 | 2.8530E-07 | 1.1931E+18 | 3.3668E+10 |
| Pr-143 | 4.3936E-01 | 6.5247E-09 | 2.7477E+16 | 1.6256E+10 |
| Nd-147 | 1.8349E-01 | 2.2682E-09 | 9.2921E+15 | 6.7893E+09 |
| Np-239 | 1.2154E+01 | 5.2390E-08 | 1.3201E+17 | 4.4970E+11 |
| Pu-238 | 3.5886E-03 | 2.0962E-07 | 5.3040E+17 | 1.3278E+08 |
| Pu-239 | 2.7930E-04 | 4.4935E-06 | 1.1322E+19 | 1.0334E+07 |
| Pu-240 | 3.0120E-04 | 1.3218E-06 | 3.3167E+18 | 1.1144E+07 |
| Pu-241 | 1.2474E-01 | 1.2109E-06 | 3.0257E+18 | 4.6152E+09 |
| Am-241 | 7.6716E-05 | 2.2352E-08 | 5.5853E+16 | 2.8385E+06 |
| Cm-242 | 1.8026E-02 | 5.4387E-09 | 1.3534E+16 | 6.6695E+08 |
| Cm-244 | 1.4588E-03 | 1.8031E-08 | 4.4503E+16 | 5.3975E+07 |

Environment Transport Group Inventory:

| Time (h) = 1.8000 | Present Release | Release Rate/s | Total Release |
|---|---|---|---|
| Noble gases (atoms) | 6.5414E+20 | 1.0095E+17 | 6.5414E+20 |
| Elemental I (atoms) | 9.5447E+17 | 1.4729E+14 | 9.5447E+17 |
| Organic I (atoms) | 6.4841E+16 | 1.0006E+13 | 6.4841E+16 |
| Aerosols (kg) | 9.3150E-04 | 1.4375E-07 | 9.3150E-04 |

TSC Filtered Air Intake Transport Group Inventory:

| Time (h) = 1.8000 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 |

TSC Unfiltered Inleakage Transport Group Inventory:

| Time (h) = 1.8000 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 |

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**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 1 | System Nos. | Sheet 485 of 1000 |
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Aerosols (kg) 0.0000E+00

TSC Exhaust to Environment Transport Group Inventory:

| Time (h) = 1.8000 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 |

TSC Compartment Nuclide Inventory:

| Time (h) = 1.8000 | Ci | kg | Atoms | Bq |
|---|---|---|---|---|
| Co-58 | 8.3624E-07 | 2.6299E-14 | 2.7306E+11 | 3.0941E+04 |
| Co-60 | 6.4040E-07 | 5.6654E-13 | 5.6863E+12 | 2.3695E+04 |
| Kr-85 | 8.1712E-04 | 2.0827E-09 | 1.4756E+16 | 3.0233E+07 |
| Kr-85m | 1.2097E-02 | 1.4699E-12 | 1.0414E+13 | 4.4758E+08 |
| Kr-87 | 8.6379E-03 | 3.0495E-13 | 2.1109E+12 | 3.1960E+08 |
| Kr-88 | 2.6641E-02 | 2.1246E-12 | 1.4540E+13 | 9.8572E+08 |
| Rb-86 | 2.5893E-05 | 3.1823E-13 | 2.2284E+12 | 9.5805E+05 |
| Sr-89 | 7.8367E-04 | 2.6975E-11 | 1.8252E+14 | 2.8996E+07 |
| Sr-90 | 8.4655E-05 | 6.2061E-10 | 4.1527E+15 | 3.1323E+06 |
| Sr-91 | 8.7262E-04 | 2.4072E-13 | 1.5931E+12 | 3.2287E+07 |
| Sr-92 | 5.5519E-04 | 4.4170E-14 | 2.8913E+11 | 2.0542E+07 |
| Y-90 | 8.4784E-07 | 1.5583E-15 | 1.0427E+10 | 3.1370E+04 |
| Y-91 | 9.5937E-06 | 3.9120E-13 | 2.5888E+12 | 3.5497E+05 |
| Y-92 | 6.5620E-06 | 6.8195E-16 | 4.4639E+09 | 2.4279E+05 |
| Y-93 | 1.0372E-05 | 3.1089E-15 | 2.0132E+10 | 3.8378E+05 |
| Zr-95 | 1.2359E-05 | 5.7530E-13 | 3.6469E+12 | 4.5728E+05 |
| Zr-97 | 1.1277E-05 | 5.8991E-15 | 3.6624E+10 | 4.1726E+05 |
| Nb-95 | 1.2443E-05 | 3.1822E-13 | 2.0172E+12 | 4.6040E+05 |
| Mo-99 | 1.6510E-04 | 3.4424E-13 | 2.0940E+12 | 6.1088E+06 |
| Tc-99m | 1.0832E-04 | 2.0599E-14 | 1.2531E+11 | 4.0077E+06 |
| Ru-103 | 1.3640E-04 | 4.2263E-12 | 2.4710E+13 | 5.0468E+06 |
| Ru-105 | 5.9236E-05 | 8.8122E-15 | 5.0541E+10 | 2.1917E+06 |
| Ru-106 | 5.1472E-05 | 1.5385E-11 | 8.7408E+13 | 1.9045E+06 |
| Rh-105 | 8.1420E-05 | 9.6463E-14 | 5.5325E+11 | 3.0125E+06 |
| Sb-127 | 1.8334E-04 | 6.8653E-13 | 3.2554E+12 | 6.7836E+06 |
| Sb-129 | 3.6360E-04 | 6.4659E-14 | 3.0185E+11 | 1.3453E+07 |
| Te-127 | 1.5133E-04 | 5.7342E-14 | 2.7190E+11 | 5.5992E+06 |
| Te-127m | 2.4884E-05 | 2.6381E-12 | 1.2509E+13 | 9.2071E+05 |
| Te-129 | 1.0873E-04 | 5.1919E-15 | 2.4238E+10 | 4.0230E+06 |
| Te-129m | 8.3160E-05 | 2.7605E-11 | 1.2887E+13 | 3.0769E+06 |
| Te-131m | 2.3985E-04 | 3.0079E-13 | 1.3827E+12 | 8.8744E+06 |
| Te-132 | 2.4863E-03 | 8.1897E-12 | 3.7363E+13 | 9.1994E+07 |
| I-131 | 1.4568E-02 | 1.1750E-10 | 5.4017E+14 | 5.3900E+08 |
| I-132 | 9.6348E-03 | 9.3341E-13 | 4.2584E+12 | 3.5649E+08 |
| I-133 | 2.8164E-02 | 2.4862E-11 | 1.1258E+14 | 1.0421E+09 |
| I-134 | 4.4217E-03 | 1.6575E-13 | 7.4491E+11 | 1.6360E+08 |
| I-135 | 2.1748E-02 | 6.1927E-12 | 2.7624E+13 | 8.0467E+08 |
| Xe-133 | 1.1518E-01 | 6.1531E-10 | 2.7861E+15 | 4.2615E+09 |
| Xe-135 | 3.5193E-02 | 1.3781E-11 | 6.1475E+13 | 1.3021E+09 |
| Cs-134 | 2.7111E-03 | 2.0954E-09 | 9.4169E+15 | 1.0031E+08 |
| Cs-136 | 7.4537E-04 | 1.0170E-11 | 4.5033E+13 | 2.7579E+07 |

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**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 1 | System Nos. | Sheet 486 of 1000 |
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| | | | | |
|---|---|---|---|---|
| Cs-137 | 1.8165E-03 | 2.0884E-08 | 9.1801E+16 | 6.7212E+07 |
| Ba-139 | 3.4812E-04 | 2.1283E-14 | 9.2207E+10 | 1.2880E+07 |
| Ba-140 | 1.3217E-03 | 1.8054E-11 | 7.7662E+13 | 4.8905E+07 |
| La-140 | 1.2866E-05 | 2.3147E-14 | 9.9567E+10 | 4.7603E+05 |
| La-141 | 7.7446E-06 | 1.3694E-15 | 5.8488E+09 | 2.8655E+05 |
| La-142 | 4.3647E-06 | 3.0490E-16 | 1.2931E+09 | 1.6149E+05 |
| Ce-141 | 3.0389E-05 | 1.0665E-12 | 4.5552E+12 | 1.1244E+06 |
| Ce-143 | 2.8574E-05 | 4.3028E-14 | 1.8120E+11 | 1.0572E+06 |
| Ce-144 | 2.4528E-05 | 7.6903E-12 | 3.2161E+13 | 9.0754E+05 |
| Pr-143 | 1.1832E-05 | 1.7571E-13 | 7.3999E+11 | 4.3780E+05 |
| Nd-147 | 4.9405E-06 | 6.1070E-14 | 2.5019E+11 | 1.8280E+05 |
| Np-239 | 3.2581E-04 | 1.4044E-12 | 3.5388E+12 | 1.2055E+07 |
| Pu-238 | 9.6737E-08 | 5.6506E-12 | 1.4298E+13 | 3.5793E+03 |
| Pu-239 | 7.5291E-09 | 1.2113E-10 | 3.0522E+14 | 2.7858E+02 |
| Pu-240 | 8.1193E-09 | 3.5632E-11 | 8.9408E+13 | 3.0042E+02 |
| Pu-241 | 3.3625E-06 | 3.2641E-11 | 8.1564E+13 | 1.2441E+05 |
| Am-241 | 2.0680E-09 | 6.0253E-13 | 1.5056E+12 | 7.6516E+01 |
| Cm-242 | 4.8587E-07 | 1.4660E-13 | 3.6481E+11 | 1.7977E+04 |
| Cm-244 | 3.9324E-08 | 4.8606E-13 | 1.1996E+12 | 1.4550E+03 |

TSC Transport Group Inventory:

| Time (h) = 1.8000 | Atmosphere | Sump | Overlying Pool |
|---|---|---|---|
| Noble gases (atoms) | 1.7658E+16 | 0.0000E+00 | 0.0000E+00 |
| Elemental I (atoms) | 2.4608E+13 | 0.0000E+00 | 0.0000E+00 |
| Organic I (atoms) | 1.7157E+12 | 0.0000E+00 | 0.0000E+00 |
| Aerosols (kg) | 2.4071E-08 | 0.0000E+00 | 0.0000E+00 |

| Time (h) = 1.8000 | Deposition Surfaces | Recirculating Filter |
|---|---|---|
| Noble gases (atoms) | 0.0000E+00 | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 | 0.0000E+00 |

TSC Filtered Air Intake Transport Group Inventory:

| Time (h) = 1.8000 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 |

TSC Unfiltered Inleakage Transport Group Inventory:

| Time (h) = 1.8000 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 |

TSC Exhaust to Environment Transport Group Inventory:

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**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 1 | System Nos. | Sheet 487 of 1000 |
|---|---|---|---|---|

```
                          Pathway
Time (h) =   1.8000        Filter
Noble gases (atoms)     0.0000E+00
Elemental I (atoms)     0.0000E+00
Organic I (atoms)       0.0000E+00
Aerosols (kg)           0.0000E+00

Exclusion Area Boundary Doses:

Time (h) =   2.0000    Whole Body   Thyroid       TEDE
Delta dose (rem)        2.2087E-01  4.8657E+01  2.7845E+00
Accumulated dose (rem)  1.3761E+00  2.9077E+02  1.6291E+01

Low Population Zone Doses:

Time (h) =   2.0000    Whole Body   Thyroid       TEDE
Delta dose (rem)        3.8653E-02  8.5150E+00  4.8728E-01
Accumulated dose (rem)  2.4082E-01  5.0886E+01  2.8510E+00

TSC Doses:

Time (h) =   2.0000    Whole Body   Thyroid       TEDE
Delta dose (rem)        6.6718E-04  5.1283E+00  2.6523E-01
Accumulated dose (rem)  2.6534E-03  1.9306E+01  9.7400E-01

Travel Path Doses:

Time (h) =   2.0000    Whole Body   Thyroid       TEDE
Delta dose (rem)        0.0000E+00  0.0000E+00  0.0000E+00
Accumulated dose (rem)  6.3483E-02  1.2742E+01  7.1208E-01

Environment Integral Nuclide Release:

Time (h) =   2.0000       Ci           kg         Atoms         Bq
Co-58                  3.8387E-02  1.2072E-09  1.2534E+16  1.4203E+09
Co-60                  2.9394E-02  2.6003E-08  2.6099E+17  1.0876E+09
Kr-85                  3.8978E+01  9.9348E-05  7.0386E+20  1.4422E+12


Kr-85m                 6.0410E+02  7.3406E-08  5.2007E+17  2.2352E+13
Kr-87                  5.0264E+02  1.7745E-08  1.2283E+17  1.8598E+13
Kr-88                  1.3712E+03  1.0935E-07  7.4833E+17  5.0734E+13
Rb-86                  1.1992E+00  1.4738E-08  1.0320E+17  4.4370E+10
Sr-89                  3.5976E+01  1.2383E-06  8.3789E+18  1.3311E+12
Sr-90                  3.8856E+00  2.8485E-05  1.9060E+20  1.4377E+11
Sr-91                  4.0932E+01  1.1292E-08  7.4726E+16  1.5145E+12
Sr-92                  2.7696E+01  2.2034E-09  1.4423E+16  1.0247E+12
Y-90                   3.9037E-02  7.1750E-11  4.8010E+14  1.4444E+09
Y-91                   4.4040E-01  1.7958E-08  1.1884E+17  1.6295E+10
Y-92                   3.2044E-01  3.3302E-11  2.1799E+14  1.1856E+10
Y-93                   4.8589E-01  1.4564E-10  9.4306E+14  1.7978E+10
Zr-95                  5.6734E-01  2.6409E-08  1.6741E+17  2.0991E+10
Zr-97                  5.2387E-01  2.7404E-10  1.7013E+15  1.9383E+10
Nb-95                  5.7126E-01  1.4609E-08  9.2609E+16  2.1137E+10
Mo-99                  7.6010E+00  1.5848E-08  9.6404E+16  2.8124E+11
Tc-99m                 5.1489E+00  9.7920E-10  5.9564E+15  1.9051E+11
```

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**CALCULATION SHEET**
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| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 1 | System Nos. | Sheet 488 of 1000 |
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| | | | | |
|---|---|---|---|---|
| Ru-103 | 6.2619E+00 | 1.9402E-07 | 1.1344E+18 | 2.3169E+11 |
| Ru-105 | 2.8539E+00 | 4.2456E-10 | 2.4350E+15 | 1.0559E+11 |
| Ru-106 | 2.3626E+00 | 7.0618E-07 | 4.0120E+18 | 8.7415E+10 |
| Rh-105 | 3.7584E+00 | 4.4527E-09 | 2.5538E+16 | 1.3906E+11 |
| Sb-127 | 8.4333E+00 | 3.1579E-08 | 1.4974E+17 | 3.1203E+11 |
| Sb-129 | 1.7543E+01 | 3.1197E-09 | 1.4564E+16 | 6.4909E+11 |
| Te-127 | 7.1011E+00 | 2.6907E-09 | 1.2759E+16 | 2.6274E+11 |
| Te-127m | 1.1422E+00 | 1.2109E-07 | 5.7421E+17 | 4.2263E+10 |
| Te-129 | 6.2545E+00 | 2.9865E-10 | 1.3942E+15 | 2.3142E+11 |
| Te-129m | 3.8179E+00 | 1.2673E-06 | 5.9163E+17 | 1.4126E+11 |
| Te-131m | 1.1083E+01 | 1.3899E-08 | 6.3893E+16 | 4.1006E+11 |
| Te-132 | 1.1441E+02 | 3.7686E-07 | 1.7193E+18 | 4.2332E+12 |
| I-131 | 6.7356E+02 | 5.4330E-06 | 2.4976E+19 | 2.4922E+13 |
| I-132 | 5.1073E+02 | 4.9479E-08 | 2.2573E+17 | 1.8897E+13 |
| I-133 | 1.3176E+03 | 1.1631E-06 | 5.2666E+18 | 4.8752E+13 |
| I-134 | 3.2350E+02 | 1.2127E-08 | 5.4499E+16 | 1.1969E+13 |
| I-135 | 1.0483E+03 | 2.9851E-07 | 1.3316E+18 | 3.8789E+13 |
| Xe-133 | 5.5022E+03 | 2.9395E-05 | 1.3310E+20 | 2.0358E+14 |
| Xe-135 | 1.7154E+03 | 6.7172E-07 | 2.9965E+18 | 6.3470E+13 |
| Cs-134 | 1.2548E+02 | 9.6983E-05 | 4.3586E+20 | 4.6427E+12 |
| Cs-136 | 3.4530E+01 | 4.7114E-07 | 2.0862E+18 | 1.2776E+12 |
| Cs-137 | 8.4075E+01 | 9.6659E-04 | 4.2488E+21 | 3.1108E+12 |
| Ba-139 | 1.9182E+01 | 1.1727E-09 | 5.0807E+15 | 7.0973E+11 |
| Ba-140 | 6.0706E+01 | 8.2922E-07 | 3.5669E+18 | 2.2461E+12 |
| La-140 | 5.9347E-01 | 1.0677E-09 | 4.5928E+15 | 2.1958E+10 |
| La-141 | 3.7568E-01 | 6.6429E-11 | 2.8372E+14 | 1.3900E+10 |
| La-142 | 2.3503E-01 | 1.6418E-11 | 6.9629E+13 | 8.6961E+09 |
| Ce-141 | 1.3952E+00 | 4.8965E-08 | 2.0913E+17 | 5.1622E+10 |
| Ce-143 | 1.3195E+00 | 1.9870E-09 | 8.3678E+15 | 4.8823E+10 |
| Ce-144 | 1.1258E+00 | 3.5299E-07 | 1.4762E+18 | 4.1656E+10 |
| Pr-143 | 5.4343E-01 | 8.0700E-09 | 3.3985E+16 | 2.0107E+10 |
| Nd-147 | 2.2693E-01 | 2.8052E-09 | 1.1492E+16 | 8.3966E+09 |
| Np-239 | 1.5008E+01 | 6.4690E-08 | 1.6300E+17 | 5.5528E+11 |
| Pu-238 | 4.4401E-03 | 2.5936E-07 | 6.5625E+17 | 1.6428E+08 |
| Pu-239 | 3.4557E-04 | 5.5598E-06 | 1.4009E+19 | 1.2786E+07 |
| Pu-240 | 3.7267E-04 | 1.6355E-06 | 4.1037E+18 | 1.3789E+07 |
| Pu-241 | 1.5433E-01 | 1.4982E-06 | 3.7437E+18 | 5.7103E+09 |
| Am-241 | 9.4919E-05 | 2.7656E-08 | 6.9106E+16 | 3.5120E+06 |
| Cm-242 | 2.2302E-02 | 6.7291E-09 | 1.6745E+16 | 8.2518E+08 |
| Cm-244 | 1.8049E-03 | 2.2310E-08 | 5.5063E+16 | 6.6782E+07 |

Environment Transport Group Inventory:

| Time (h) = 2.0000 | Present Release | Release Rate/s | Total Release |
|---|---|---|---|
| Noble gases (atoms) | 8.4224E+20 | 1.1698E+17 | 8.4224E+20 |
| Elemental I (atoms) | 1.1209E+18 | 1.5568E+14 | 1.1209E+18 |
| Organic I (atoms) | 8.1693E+16 | 1.1346E+13 | 8.1693E+16 |
| Aerosols (kg) | 1.1137E-03 | 1.5468E-07 | 1.1137E-03 |

TSC Filtered Air Intake Transport Group Inventory:

| Time (h) = 2.0000 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |

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**CALCULATION SHEET**
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```
Elemental I (atoms)    0.0000E+00
Organic I (atoms)      0.0000E+00
Aerosols (kg)          0.0000E+00

TSC Unfiltered Inleakage Transport Group Inventory:

                        Pathway
Time (h) =   2.0000      Filter
Noble gases (atoms)    0.0000E+00
Elemental I (atoms)    0.0000E+00
Organic I (atoms)      0.0000E+00
Aerosols (kg)          0.0000E+00

TSC Exhaust to Environment Transport Group Inventory:

                        Pathway
Time (h) =   2.0000      Filter
Noble gases (atoms)    0.0000E+00
Elemental I (atoms)    0.0000E+00
Organic I (atoms)      0.0000E+00
Aerosols (kg)          0.0000E+00

TSC Compartment Nuclide Inventory:

Time (h) =   2.0000       Ci           kg          Atoms         Bq
Co-58                  9.9786E-07  3.1381E-14  3.2583E+11  3.6921E+04
Co-60                  7.6425E-07  6.7610E-13  6.7859E+12  2.8277E+04
Kr-85                  1.0230E-03  2.6075E-09  1.8474E+16  3.7851E+07
Kr-85m                 1.4556E-02  1.7688E-12  1.2531E+13  5.3857E+08
Kr-87                  9.4233E-03  3.3268E-13  2.3028E+12  3.4866E+08
Kr-88                  3.1338E-02  2.4992E-12  1.7103E+13  1.1595E+09
Rb-86                  2.9848E-05  3.6683E-13  2.5687E+12  1.1044E+06
Sr-89                  9.3509E-04  3.2187E-11  2.1779E+14  3.4598E+07
Sr-90                  1.0103E-04  7.4063E-10  4.9558E+15  3.7380E+06
Sr-91                  1.0218E-03  2.8188E-13  1.8654E+12  3.7807E+07
Sr-92                  6.2022E-04  4.9344E-14  3.2299E+11  2.2948E+07
Y-90                   1.0090E-06  1.8545E-15  1.2409E+10  3.7332E+04
Y-91                   1.1448E-05  4.6679E-13  3.0891E+12  4.2356E+05
Y-92                   7.4441E-06  7.7363E-16  5.0640E+09  2.7543E+05
Y-93                   1.2160E-05  3.6446E-15  2.3600E+10  4.4990E+05


Zr-95                  1.4747E-05  6.8648E-13  4.3516E+12  5.4566E+05
Zr-97                  1.3315E-05  6.9653E-15  4.3243E+10  4.9267E+05
Nb-95                  1.4847E-05  3.7968E-13  2.4068E+12  5.4932E+05
Mo-99                  1.9649E-04  4.0969E-13  2.4921E+12  7.2703E+06
Tc-99m                 1.2546E-04  2.3860E-14  1.4514E+11  4.6420E+06
Ru-103                 1.6275E-04  5.0427E-12  2.9483E+13  6.0217E+06
Ru-105                 6.7889E-05  1.0100E-14  5.7924E+10  2.5119E+06
Ru-106                 6.1426E-05  1.8360E-11  1.0431E+14  2.2728E+06
Rh-105                 9.6671E-05  1.1453E-13  6.5688E+11  3.5768E+06
Sb-127                 2.1837E-04  8.1770E-13  3.8774E+12  8.0797E+06
Sb-129                 4.1625E-04  7.4021E-14  3.4555E+11  1.5401E+07
Te-127                 1.7715E-04  6.7125E-14  3.1830E+11  6.5546E+06
Te-127m                2.9695E-05  3.1481E-12  1.4928E+13  1.0987E+06
Te-129                 1.1142E-04  5.3204E-15  2.4837E+10  4.1226E+06
Te-129m                9.9221E-05  3.2936E-11  1.5376E+13  3.6712E+06
```

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**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 1 | System Nos. | Sheet 490 of 1000 |
|---|---|---|---|---|

| | | | | |
|---|---|---|---|---|
| Te-131m | 2.8452E-04 | 3.5680E-13 | 1.6402E+12 | 1.0527E+07 |
| Te-132 | 2.9603E-03 | 9.7510E-12 | 4.4486E+13 | 1.0953E+08 |
| I-131 | 1.6910E-02 | 1.3640E-10 | 6.2704E+14 | 6.2568E+08 |
| I-132 | 1.0334E-02 | 1.0012E-12 | 4.5675E+12 | 3.8236E+08 |
| I-133 | 3.2434E-02 | 2.8632E-11 | 1.2964E+14 | 1.2001E+09 |
| I-134 | 4.1814E-03 | 1.5674E-13 | 7.0443E+11 | 1.5471E+08 |
| I-135 | 2.4570E-02 | 6.9964E-12 | 3.1210E+13 | 9.0910E+08 |
| Xe-133 | 1.4399E-01 | 7.6926E-10 | 3.4831E+15 | 5.3277E+09 |
| Xe-135 | 4.3205E-02 | 1.6919E-11 | 7.5471E+13 | 1.5986E+09 |
| Cs-134 | 3.1264E-03 | 2.4164E-09 | 1.0860E+16 | 1.1568E+08 |
| Cs-136 | 8.5907E-04 | 1.1721E-11 | 5.1902E+13 | 3.1785E+07 |
| Cs-137 | 2.0949E-03 | 2.4084E-08 | 1.0587E+17 | 7.7510E+07 |
| Ba-139 | 3.6529E-04 | 2.2332E-14 | 9.6754E+10 | 1.3516E+07 |
| Ba-140 | 1.5764E-03 | 2.1533E-11 | 9.2627E+13 | 5.8328E+07 |
| La-140 | 1.5285E-05 | 2.7500E-14 | 1.1829E+11 | 5.6556E+05 |
| La-141 | 8.8297E-06 | 1.5613E-15 | 6.6684E+09 | 3.2670E+05 |
| La-142 | 4.6418E-06 | 3.2426E-16 | 1.3752E+09 | 1.7175E+05 |
| Ce-141 | 3.6258E-05 | 1.2725E-12 | 5.4349E+12 | 1.3415E+06 |
| Ce-143 | 3.3914E-05 | 5.1069E-14 | 2.1507E+11 | 1.2548E+06 |
| Ce-144 | 2.9271E-05 | 9.1774E-12 | 3.8380E+13 | 1.0830E+06 |
| Pr-143 | 1.4113E-05 | 2.0958E-13 | 8.8261E+11 | 5.2218E+05 |
| Nd-147 | 5.8919E-06 | 7.2831E-14 | 2.9837E+11 | 2.1800E+05 |
| Np-239 | 3.8759E-04 | 1.6707E-12 | 4.2097E+12 | 1.4341E+07 |
| Pu-238 | 1.1545E-07 | 6.7434E-12 | 1.7063E+13 | 4.2715E+03 |
| Pu-239 | 8.9852E-09 | 1.4456E-10 | 3.6424E+14 | 3.3245E+02 |
| Pu-240 | 9.6896E-09 | 4.2523E-11 | 1.0670E+14 | 3.5851E+02 |
| Pu-241 | 4.0127E-06 | 3.8954E-11 | 9.7338E+13 | 1.4847E+05 |
| Am-241 | 2.4679E-09 | 7.1906E-13 | 1.7968E+12 | 9.1314E+01 |
| Cm-242 | 5.7981E-07 | 1.7494E-13 | 4.3534E+11 | 2.1453E+04 |
| Cm-244 | 4.6929E-08 | 5.8007E-13 | 1.4317E+12 | 1.7364E+03 |

TSC Transport Group Inventory:

| Time (h) = 2.0000 | Atmosphere | Sump | Overlying Pool |
|---|---|---|---|
| Noble gases (atoms) | 2.2103E+16 | 0.0000E+00 | 0.0000E+00 |
| Elemental I (atoms) | 2.7791E+13 | 0.0000E+00 | 0.0000E+00 |
| Organic I (atoms) | 2.1030E+12 | 0.0000E+00 | 0.0000E+00 |
| Aerosols (kg) | 2.7798E-08 | 0.0000E+00 | 0.0000E+00 |

Deposition Recirculating

| Time (h) = 2.0000 | Surfaces | Filter |
|---|---|---|
| Noble gases (atoms) | 0.0000E+00 | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 | 0.0000E+00 |

TSC Filtered Air Intake Transport Group Inventory:

| Time (h) = 2.0000 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 |

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**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 1 | System Nos. | Sheet 491 of 1000 |
|---|---|---|---|---|

TSC Unfiltered Inleakage Transport Group Inventory:

| Time (h) = 2.0000 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 |

TSC Exhaust to Environment Transport Group Inventory:

| Time (h) = 2.0000 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 |

Exclusion Area Boundary Doses:

| Time (h) = 2.8000 | Whole Body | Thyroid | TEDE |
|---|---|---|---|
| Delta dose (rem) | 6.6331E-01 | 1.2668E+02 | 7.3590E+00 |
| Accumulated dose (rem) | 2.0394E+00 | 4.1745E+02 | 2.3650E+01 |

Low Population Zone Doses:

| Time (h) = 2.8000 | Whole Body | Thyroid | TEDE |
|---|---|---|---|
| Delta dose (rem) | 4.9749E-02 | 9.5007E+00 | 5.5193E-01 |
| Accumulated dose (rem) | 2.9056E-01 | 6.0386E+01 | 3.4029E+00 |

TSC Doses:

| Time (h) = 2.8000 | Whole Body | Thyroid | TEDE |
|---|---|---|---|
| Delta dose (rem) | 2.7391E-03 | 2.1933E+01 | 1.1427E+00 |
| Accumulated dose (rem) | 5.3925E-03 | 4.1239E+01 | 2.1167E+00 |

Travel Path Doses:

| Time (h) = 2.8000 | Whole Body | Thyroid | TEDE |
|---|---|---|---|
| Delta dose (rem) | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 |
| Accumulated dose (rem) | 6.3483E-02 | 1.2742E+01 | 7.1208E-01 |

Environment Integral Nuclide Release:

| Time (h) = 2.8000 | Ci | kg | Atoms | Bq |
|---|---|---|---|---|
| Co-58 | 5.7719E-02 | 1.8152E-09 | 1.8847E+16 | 2.1356E+09 |
| Co-60 | 4.4204E-02 | 3.9105E-08 | 3.9249E+17 | 1.6355E+09 |
| Kr-85 | 7.3817E+01 | 1.8815E-04 | 1.3330E+21 | 2.7312E+12 |
| Kr-85m | 1.0557E+03 | 1.2828E-07 | 9.0884E+17 | 3.9060E+13 |
| Kr-87 | 7.3549E+02 | 2.5966E-08 | 1.7973E+17 | 2.7213E+13 |
| Kr-88 | 2.2931E+03 | 1.8288E-07 | 1.2515E+18 | 8.4846E+13 |
| Rb-86 | 1.7106E+00 | 2.1023E-08 | 1.4721E+17 | 6.3292E+10 |
| Sr-89 | 5.4090E+01 | 1.8618E-06 | 1.2598E+19 | 2.0013E+12 |
| Sr-90 | 5.8434E+00 | 4.2838E-05 | 2.8664E+20 | 2.1620E+11 |

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**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 1 | System Nos. | Sheet 492 of 1000 |
|---|---|---|---|---|

| | | | | |
|---|---|---|---|---|
| Sr-91 | 5.9886E+01 | 1.6520E-08 | 1.0933E+17 | 2.2158E+12 |
| Sr-92 | 3.8020E+01 | 3.0248E-09 | 1.9800E+16 | 1.4068E+12 |
| Y-90 | 5.8462E-02 | 1.0745E-10 | 7.1900E+14 | 2.1631E+09 |
| Y-91 | 6.6217E-01 | 2.7001E-08 | 1.7869E+17 | 2.4500E+10 |
| Y-92 | 4.4881E-01 | 4.6642E-11 | 3.0531E+14 | 1.6606E+10 |
| Y-93 | 7.1202E-01 | 2.1341E-10 | 1.3819E+15 | 2.6345E+10 |
| Zr-95 | 8.5304E-01 | 3.9708E-08 | 2.5171E+17 | 3.1563E+10 |
| Zr-97 | 7.7562E-01 | 4.0573E-10 | 2.5189E+15 | 2.8698E+10 |
| Nb-95 | 8.5883E-01 | 2.1963E-08 | 1.3923E+17 | 3.1777E+10 |
| Mo-99 | 1.1385E+01 | 2.3737E-08 | 1.4439E+17 | 4.2124E+11 |
| Tc-99m | 7.4182E+00 | 1.4108E-09 | 8.5817E+15 | 2.7447E+11 |
| Ru-103 | 9.4144E+00 | 2.9170E-07 | 1.7055E+18 | 3.4833E+11 |
| Ru-105 | 4.0523E+00 | 6.0285E-10 | 3.4575E+15 | 1.4994E+11 |
| Ru-106 | 3.5529E+00 | 1.0620E-06 | 6.0333E+18 | 1.3146E+11 |
| Rh-105 | 5.6097E+00 | 6.6462E-09 | 3.8118E+16 | 2.0756E+11 |
| Sb-127 | 1.2646E+01 | 4.7354E-08 | 2.2454E+17 | 4.6790E+11 |
| Sb-129 | 2.4872E+01 | 4.4230E-09 | 2.0648E+16 | 9.2028E+11 |
| Te-127 | 1.0385E+01 | 3.9349E-09 | 1.8659E+16 | 3.8423E+11 |
| Te-127m | 1.7176E+00 | 1.8209E-07 | 8.6344E+17 | 6.3551E+10 |
| Te-129 | 7.7788E+00 | 3.7144E-10 | 1.7340E+15 | 2.8782E+11 |
| Te-129m | 5.7396E+00 | 1.9053E-06 | 8.8943E+17 | 2.1237E+11 |
| Te-131m | 1.6520E+01 | 2.0718E-08 | 9.5240E+16 | 6.1125E+11 |
| Te-132 | 1.7147E+02 | 5.6481E-07 | 2.5768E+18 | 6.3445E+12 |
| I-131 | 9.7015E+02 | 7.8254E-06 | 3.5974E+19 | 3.5895E+13 |
| I-132 | 6.6006E+02 | 6.3946E-08 | 2.9174E+17 | 2.4422E+13 |
| I-133 | 1.8755E+03 | 1.6556E-06 | 7.4964E+18 | 6.9392E+13 |
| I-134 | 3.6792E+02 | 1.3792E-08 | 6.1982E+16 | 1.3613E+13 |
| I-135 | 1.4516E+03 | 4.1335E-07 | 1.8439E+18 | 5.3710E+13 |
| Xe-133 | 1.0390E+04 | 5.5505E-05 | 2.5132E+20 | 3.8441E+14 |
| Xe-135 | 3.1204E+03 | 1.2219E-06 | 5.4507E+18 | 1.1545E+14 |
| Cs-134 | 1.7910E+02 | 1.3843E-04 | 6.2211E+20 | 6.6267E+12 |
| Cs-136 | 4.9242E+01 | 6.7187E-07 | 2.9751E+18 | 1.8220E+12 |
| Cs-137 | 1.2000E+02 | 1.3797E-03 | 6.0646E+21 | 4.4402E+12 |
| Ba-139 | 2.4454E+01 | 1.4950E-09 | 6.4772E+15 | 9.0480E+11 |
| Ba-140 | 9.1213E+01 | 1.2459E-06 | 5.3594E+18 | 3.3749E+12 |
| La-140 | 8.8663E-01 | 1.5951E-09 | 6.8616E+15 | 3.2805E+10 |
| La-141 | 5.2969E-01 | 9.3662E-11 | 4.0003E+14 | 1.9599E+10 |
| La-142 | 3.0409E-01 | 2.1243E-11 | 9.0090E+13 | 1.1251E+10 |
| Ce-141 | 2.0974E+00 | 7.3611E-08 | 3.1439E+17 | 7.7605E+10 |
| Ce-143 | 1.9685E+00 | 2.9642E-09 | 1.2483E+16 | 7.2834E+10 |
| Ce-144 | 1.6930E+00 | 5.3082E-07 | 2.2199E+18 | 6.2643E+10 |
| Pr-143 | 8.1656E-01 | 1.2126E-08 | 5.1067E+16 | 3.0213E+10 |
| Nd-147 | 3.4093E-01 | 4.2143E-09 | 1.7265E+16 | 1.2614E+10 |
| Np-239 | 2.2463E+01 | 9.6827E-08 | 2.4398E+17 | 8.3114E+11 |
| Pu-238 | 6.6772E-03 | 3.9003E-07 | 9.8690E+17 | 2.4706E+08 |
| Pu-239 | 5.1969E-04 | 8.3611E-06 | 2.1068E+19 | 1.9229E+07 |
| Pu-240 | 5.6044E-04 | 2.4595E-06 | 6.1714E+18 | 2.0736E+07 |
| Pu-241 | 2.3209E-01 | 2.2531E-06 | 5.6300E+18 | 8.5875E+09 |
| Am-241 | 1.4274E-04 | 4.1590E-08 | 1.0393E+17 | 5.2815E+06 |
| Cm-242 | 3.3537E-02 | 1.0119E-08 | 2.5181E+16 | 1.2409E+09 |
| Cm-244 | 2.7143E-03 | 3.3551E-08 | 8.2806E+16 | 1.0043E+08 |

Environment Transport Group Inventory:

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**CALCULATION SHEET**
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|---|---|---|---|---|

| Time (h) = 2.8000 | Present Release | Release Rate/s | Total Release |
|---|---|---|---|
| Noble gases (atoms) | 1.5946E+21 | 1.5820E+17 | 1.5946E+21 |
| Elemental I (atoms) | 1.4819E+18 | 1.4701E+14 | 1.4819E+18 |
| Organic I (atoms) | 1.4910E+17 | 1.4791E+13 | 1.4910E+17 |
| Aerosols (kg) | 1.5930E-03 | 1.5804E-07 | 1.5930E-03 |

TSC Filtered Air Intake Transport Group Inventory:

| Time (h) = 2.8000 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 |

TSC Unfiltered Inleakage Transport Group Inventory:

| Time (h) = 2.8000 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 |

TSC Exhaust to Environment Transport Group Inventory:

| Time (h) = 2.8000 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 |

TSC Compartment Nuclide Inventory:

| Time (h) = 2.8000 | Ci | kg | Atoms | Bq |
|---|---|---|---|---|
| Co-58 | 1.0010E-06 | 3.1481E-14 | 3.2687E+11 | 3.7039E+04 |
| Co-60 | 7.6695E-07 | 6.7849E-13 | 6.8099E+12 | 2.8377E+04 |
| Kr-85 | 1.2648E-03 | 3.2237E-09 | 2.2839E+16 | 4.6796E+07 |
| Kr-85m | 1.5738E-02 | 1.9124E-12 | 1.3549E+13 | 5.8232E+08 |
| Kr-87 | 7.2764E-03 | 2.5689E-13 | 1.7782E+12 | 2.6923E+08 |
| Kr-88 | 3.1365E-02 | 2.5013E-12 | 1.7118E+13 | 1.1605E+09 |
| Rb-86 | 2.8907E-05 | 3.5527E-13 | 2.4877E+12 | 1.0696E+06 |
| Sr-89 | 9.3795E-04 | 3.2285E-11 | 2.1845E+14 | 3.4704E+07 |
| Sr-90 | 1.0139E-04 | 7.4325E-10 | 4.9733E+15 | 3.7512E+06 |
| Sr-91 | 9.6327E-04 | 2.6573E-13 | 1.7585E+12 | 3.5641E+07 |
| Sr-92 | 5.0000E-04 | 3.9779E-14 | 2.6039E+11 | 1.8500E+07 |
| Y-90 | 1.0032E-06 | 1.8439E-15 | 1.2338E+10 | 3.7117E+04 |
| Y-91 | 1.1483E-05 | 4.6825E-13 | 3.0987E+12 | 4.2488E+05 |
| Y-92 | 6.3170E-06 | 6.5649E-16 | 4.2972E+09 | 2.3373E+05 |
| Y-93 | 1.1505E-05 | 3.4485E-15 | 2.2331E+10 | 4.2570E+05 |
| Zr-95 | 1.4794E-05 | 6.8864E-13 | 4.3653E+12 | 5.4738E+05 |
| Zr-97 | 1.2901E-05 | 6.7484E-15 | 4.1896E+10 | 4.7732E+05 |
| Nb-95 | 1.4889E-05 | 3.8075E-13 | 2.4136E+12 | 5.5088E+05 |

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**CALCULATION SHEET**
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|---|---|---|---|---|

| | | | | |
|---|---|---|---|---|
| Mo-99 | 1.9542E-04 | 4.0746E-13 | 2.4785E+12 | 7.2306E+06 |
| Tc-99m | 1.1407E-04 | 2.1694E-14 | 1.3196E+11 | 4.2207E+06 |
| Ru-103 | 1.6322E-04 | 5.0574E-12 | 2.9569E+13 | 6.0392E+06 |
| Ru-105 | 5.9600E-05 | 8.8663E-15 | 5.0852E+10 | 2.2052E+06 |
| Ru-106 | 6.1639E-05 | 1.8424E-11 | 1.0467E+14 | 2.2807E+06 |
| Rh-105 | 9.5396E-05 | 1.1302E-13 | 6.4822E+11 | 3.5297E+06 |
| Sb-127 | 2.1774E-04 | 8.1534E-13 | 3.8662E+12 | 8.0563E+06 |
| Sb-129 | 3.6407E-04 | 6.4742E-14 | 3.0224E+11 | 1.3471E+07 |
| Te-127 | 1.6683E-04 | 6.3215E-14 | 2.9976E+11 | 6.1728E+06 |
| Te-127m | 2.9793E-05 | 3.1585E-12 | 1.4977E+13 | 1.1023E+06 |
| Te-129 | 6.7120E-05 | 3.2050E-15 | 1.4962E+10 | 2.4835E+06 |
| Te-129m | 9.9499E-05 | 3.3028E-11 | 1.5419E+13 | 3.6814E+06 |
| Te-131m | 2.7992E-04 | 3.5104E-13 | 1.6138E+12 | 1.0357E+07 |
| Te-132 | 2.9483E-03 | 9.7114E-12 | 4.4306E+13 | 1.0909E+08 |
| I-131 | 1.6457E-02 | 1.3275E-10 | 6.1025E+14 | 6.0892E+08 |
| I-132 | 7.7683E-03 | 7.5259E-13 | 3.4335E+12 | 2.8743E+08 |
| I-133 | 3.0760E-02 | 2.7154E-11 | 1.2295E+14 | 1.1381E+09 |
| I-134 | 2.0617E-03 | 7.7284E-14 | 3.4732E+11 | 7.6282E+07 |
| I-135 | 2.1899E-02 | 6.2358E-12 | 2.7817E+13 | 8.1027E+08 |
| Xe-133 | 1.7717E-01 | 9.4652E-10 | 4.2858E+15 | 6.5553E+09 |
| Xe-135 | 4.9999E-02 | 1.9579E-11 | 8.7338E+13 | 1.8500E+09 |
| Cs-134 | 3.0318E-03 | 2.3433E-09 | 1.0531E+16 | 1.1218E+08 |
| Cs-136 | 8.3150E-04 | 1.1345E-11 | 5.0237E+13 | 3.0766E+07 |
| Cs-137 | 2.0315E-03 | 2.3356E-08 | 1.0267E+17 | 7.5167E+07 |
| Ba-139 | 2.3851E-04 | 1.4581E-14 | 6.3173E+10 | 8.8247E+06 |
| Ba-140 | 1.5789E-03 | 2.1568E-11 | 9.2774E+13 | 5.8421E+07 |
| La-140 | 1.5115E-05 | 2.7193E-14 | 1.1697E+11 | 5.5924E+05 |
| La-141 | 7.6184E-06 | 1.3471E-15 | 5.7535E+09 | 2.8188E+05 |
| La-142 | 3.1715E-06 | 2.2155E-16 | 9.3957E+08 | 1.1734E+05 |
| Ce-141 | 3.6359E-05 | 1.2760E-12 | 5.4500E+12 | 1.3453E+06 |
| Ce-143 | 3.3427E-05 | 5.0335E-14 | 2.1198E+11 | 1.2368E+06 |
| Ce-144 | 2.9372E-05 | 9.2091E-12 | 3.8513E+13 | 1.0868E+06 |
| Pr-143 | 1.4137E-05 | 2.0994E-13 | 8.8412E+11 | 5.2307E+05 |
| Nd-147 | 5.8995E-06 | 7.2924E-14 | 2.9875E+11 | 2.1828E+05 |
| Np-239 | 3.8489E-04 | 1.6591E-12 | 4.1804E+12 | 1.4241E+07 |
| Pu-238 | 1.1585E-07 | 6.7673E-12 | 1.7123E+13 | 4.2866E+03 |
| Pu-239 | 9.0170E-09 | 1.4507E-10 | 3.6553E+14 | 3.3363E+02 |
| Pu-240 | 9.7239E-09 | 4.2674E-11 | 1.0708E+14 | 3.5978E+02 |
| Pu-241 | 4.0269E-06 | 3.9092E-11 | 9.7682E+13 | 1.4900E+05 |
| Am-241 | 2.4767E-09 | 7.2161E-13 | 1.8032E+12 | 9.1637E+01 |
| Cm-242 | 5.8178E-07 | 1.7554E-13 | 4.3682E+11 | 2.1526E+04 |
| Cm-244 | 4.7095E-08 | 5.8212E-13 | 1.4367E+12 | 1.7425E+03 |

TSC Transport Group Inventory:

| Time (h) = 2.8000 | Atmosphere | Sump | Overlying Pool |
|---|---|---|---|
| Noble gases (atoms) | 2.7321E+16 | 0.0000E+00 | 0.0000E+00 |
| Elemental I (atoms) | 2.5152E+13 | 0.0000E+00 | 0.0000E+00 |
| Organic I (atoms) | 2.5348E+12 | 0.0000E+00 | 0.0000E+00 |
| Aerosols (kg) | 2.6996E-08 | 0.0000E+00 | 0.0000E+00 |

| Time (h) = 2.8000 | Deposition Surfaces | Recirculating Filter |
|---|---|---|
| Noble gases (atoms) | 0.0000E+00 | 0.0000E+00 |

```
Elemental I (atoms)    0.0000E+00  0.0000E+00
Organic I (atoms)      0.0000E+00  0.0000E+00
Aerosols (kg)          0.0000E+00  0.0000E+00

TSC Filtered Air Intake Transport Group Inventory:

                        Pathway
Time (h) =   2.8000      Filter
Noble gases (atoms)    0.0000E+00
Elemental I (atoms)    0.0000E+00
Organic I (atoms)      0.0000E+00
Aerosols (kg)          0.0000E+00

TSC Unfiltered Inleakage Transport Group Inventory:

                        Pathway
Time (h) =   2.8000      Filter
Noble gases (atoms)    0.0000E+00
Elemental I (atoms)    0.0000E+00
Organic I (atoms)      0.0000E+00
Aerosols (kg)          0.0000E+00

TSC Exhaust to Environment Transport Group Inventory:

                        Pathway
Time (h) =   2.8000      Filter
Noble gases (atoms)    0.0000E+00
Elemental I (atoms)    0.0000E+00
Organic I (atoms)      0.0000E+00
Aerosols (kg)          0.0000E+00

Exclusion Area Boundary Doses:

Time (h) =   2.9200    Whole Body   Thyroid       TEDE
Delta dose (rem)        7.7868E-02  1.2450E+01  7.3783E-01
Accumulated dose (rem)  2.1173E+00  4.2990E+02  2.4388E+01

Low Population Zone Doses:

Time (h) =   2.9200    Whole Body   Thyroid       TEDE
Delta dose (rem)        5.8401E-03  9.3377E-01  5.5337E-02
Accumulated dose (rem)  2.9640E-01  6.1320E+01  3.4582E+00

TSC Doses:

Time (h) =   2.9200    Whole Body   Thyroid       TEDE
Delta dose (rem)        3.6036E-04  2.6940E+00  1.4099E-01

Accumulated dose (rem)  5.7529E-03  4.3933E+01  2.2577E+00

Travel Path Doses:

Time (h) =   2.9200    Whole Body   Thyroid       TEDE
Delta dose (rem)        0.0000E+00  0.0000E+00  0.0000E+00
Accumulated dose (rem)  6.3483E-02  1.2742E+01  7.1208E-01

Environment Integral Nuclide Release:
```

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**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 1 | System Nos. | Sheet 496 of 1000 |
|---|---|---|---|---|

| Time (h) = 2.9200 | Ci | kg | Atoms | Bq |
|---|---|---|---|---|
| Co-58 | 5.9635E-02 | 1.8754E-09 | 1.9473E+16 | 2.2065E+09 |
| Co-60 | 4.5672E-02 | 4.0404E-08 | 4.0553E+17 | 1.6899E+09 |
| Kr-85 | 7.9042E+01 | 2.0147E-04 | 1.4274E+21 | 2.9246E+12 |
| Kr-85m | 1.1188E+03 | 1.3595E-07 | 9.6317E+17 | 4.1395E+13 |
| Kr-87 | 7.6256E+02 | 2.6921E-08 | 1.8635E+17 | 2.8215E+13 |
| Kr-88 | 2.4168E+03 | 1.9274E-07 | 1.3190E+18 | 8.9420E+13 |
| Rb-86 | 1.7613E+00 | 2.1646E-08 | 1.5158E+17 | 6.5167E+10 |
| Sr-89 | 5.5885E+01 | 1.9236E-06 | 1.3016E+19 | 2.0678E+12 |
| Sr-90 | 6.0374E+00 | 4.4260E-05 | 2.9616E+20 | 2.2338E+11 |
| Sr-91 | 6.1698E+01 | 1.7020E-08 | 1.1263E+17 | 2.2828E+12 |
| Sr-92 | 3.8920E+01 | 3.0964E-09 | 2.0269E+16 | 1.4401E+12 |
| Y-90 | 6.0377E-02 | 1.1097E-10 | 7.4256E+14 | 2.2340E+09 |
| Y-91 | 6.8415E-01 | 2.7897E-08 | 1.8462E+17 | 2.5314E+10 |
| Y-92 | 4.6034E-01 | 4.7841E-11 | 3.1316E+14 | 1.7033E+10 |
| Y-93 | 7.3368E-01 | 2.1991E-10 | 1.4240E+15 | 2.7146E+10 |
| Zr-95 | 8.8136E-01 | 4.1026E-08 | 2.6007E+17 | 3.2610E+10 |
| Zr-97 | 8.0007E-01 | 4.1852E-10 | 2.5983E+15 | 2.9603E+10 |
| Nb-95 | 8.8732E-01 | 2.2692E-08 | 1.4385E+17 | 3.2831E+10 |
| Mo-99 | 1.1758E+01 | 2.4515E-08 | 1.4913E+17 | 4.3504E+11 |
| Tc-99m | 7.6305E+00 | 1.4512E-09 | 8.8274E+15 | 2.8233E+11 |
| Ru-103 | 9.7267E+00 | 3.0138E-07 | 1.7621E+18 | 3.5989E+11 |
| Ru-105 | 4.1622E+00 | 6.1919E-10 | 3.5513E+15 | 1.5400E+11 |
| Ru-106 | 3.6709E+00 | 1.0972E-06 | 6.2336E+18 | 1.3582E+11 |
| Rh-105 | 5.7915E+00 | 6.8615E-09 | 3.9353E+16 | 2.1429E+11 |
| Sb-127 | 1.3062E+01 | 4.8911E-08 | 2.3193E+17 | 4.8329E+11 |
| Sb-129 | 2.5543E+01 | 4.5423E-09 | 2.1205E+16 | 9.4509E+11 |
| Te-127 | 1.0698E+01 | 4.0538E-09 | 1.9222E+16 | 3.9584E+11 |
| Te-127m | 1.7746E+00 | 1.8814E-07 | 8.9211E+17 | 6.5661E+10 |
| Te-129 | 7.8901E+00 | 3.7676E-10 | 1.7588E+15 | 2.9194E+11 |
| Te-129m | 5.9301E+00 | 1.9685E-06 | 9.1894E+17 | 2.1941E+11 |
| Te-131m | 1.7053E+01 | 2.1386E-08 | 9.8311E+16 | 6.3097E+11 |
| Te-132 | 1.7711E+02 | 5.8336E-07 | 2.6614E+18 | 6.5529E+12 |
| I-131 | 9.9945E+02 | 8.0617E-06 | 3.7060E+19 | 3.6980E+13 |
| I-132 | 6.7276E+02 | 6.5176E-08 | 2.9735E+17 | 2.4892E+13 |
| I-133 | 1.9298E+03 | 1.7035E-06 | 7.7135E+18 | 7.1402E+13 |
| I-134 | 3.7084E+02 | 1.3901E-08 | 6.2474E+16 | 1.3721E+13 |
| I-135 | 1.4895E+03 | 4.2413E-07 | 1.8920E+18 | 5.5111E+13 |
| Xe-133 | 1.1121E+04 | 5.9412E-05 | 2.6901E+20 | 4.1147E+14 |
| Xe-135 | 3.3239E+03 | 1.3016E-06 | 5.8063E+18 | 1.2299E+14 |
| Cs-134 | 1.8442E+02 | 1.4254E-04 | 6.4058E+20 | 6.8235E+12 |
| Cs-136 | 5.0700E+01 | 6.9176E-07 | 3.0631E+18 | 1.8759E+12 |
| Cs-137 | 1.2357E+02 | 1.4206E-03 | 6.2446E+21 | 4.5720E+12 |
| Ba-139 | 2.4859E+01 | 1.5198E-09 | 6.5843E+15 | 9.1977E+11 |
| Ba-140 | 9.4234E+01 | 1.2872E-06 | 5.5369E+18 | 3.4867E+12 |
| La-140 | 9.1544E-01 | 1.6470E-09 | 7.0845E+15 | 3.3871E+10 |
| La-141 | 5.4367E-01 | 9.6134E-11 | 4.1059E+14 | 2.0116E+10 |
| La-142 | 3.0954E-01 | 2.1623E-11 | 9.1704E+13 | 1.1453E+10 |
| Ce-141 | 2.1670E+00 | 7.6053E-08 | 3.2482E+17 | 8.0180E+10 |
| Ce-143 | 2.0321E+00 | 3.0601E-09 | 1.2887E+16 | 7.5189E+10 |
| Ce-144 | 1.7493E+00 | 5.4845E-07 | 2.2936E+18 | 6.4723E+10 |
| Pr-143 | 8.4361E-01 | 1.2528E-08 | 5.2758E+16 | 3.1214E+10 |
| Nd-147 | 3.5222E-01 | 4.3538E-09 | 1.7836E+16 | 1.3032E+10 |
| Np-239 | 2.3198E+01 | 9.9994E-08 | 2.5196E+17 | 8.5832E+11 |

| | | | | |
|---|---|---|---|---|
| Pu-238 | 6.8990E-03 | 4.0299E-07 | 1.0197E+18 | 2.5526E+08 |
| Pu-239 | 5.3696E-04 | 8.6388E-06 | 2.1767E+19 | 1.9867E+07 |
| Pu-240 | 5.7905E-04 | 2.5412E-06 | 6.3764E+18 | 2.1425E+07 |
| Pu-241 | 2.3980E-01 | 2.3279E-06 | 5.8169E+18 | 8.8727E+09 |
| Am-241 | 1.4748E-04 | 4.2971E-08 | 1.0738E+17 | 5.4569E+06 |
| Cm-242 | 3.4650E-02 | 1.0455E-08 | 2.6017E+16 | 1.2821E+09 |
| Cm-244 | 2.8045E-03 | 3.4665E-08 | 8.5556E+16 | 1.0377E+08 |

Environment Transport Group Inventory:

| Time (h) = 2.9200 | Present Release | Release Rate/s | Total Release |
|---|---|---|---|
| Noble gases (atoms) | 1.7075E+21 | 1.6243E+17 | 1.7075E+21 |
| Elemental I (atoms) | 1.5116E+18 | 1.4380E+14 | 1.5116E+18 |
| Organic I (atoms) | 1.5921E+17 | 1.5145E+13 | 1.5921E+17 |
| Aerosols (kg) | 1.6406E-03 | 1.5606E-07 | 1.6406E-03 |

TSC Filtered Air Intake Transport Group Inventory:

| Time (h) = 2.9200 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 1.2171E+18 |
| Organic I (atoms) | 4.0197E+17 |
| Aerosols (kg) | 2.1220E-03 |

TSC Unfiltered Inleakage Transport Group Inventory:

| Time (h) = 2.9200 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 |

TSC Exhaust to Environment Transport Group Inventory:

| Time (h) = 2.9200 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 |

TSC Compartment Nuclide Inventory:

| Time (h) = 2.9200 | Ci | kg | Atoms | Bq |
|---|---|---|---|---|
| Co-58 | 7.0700E-07 | 2.2234E-14 | 2.3086E+11 | 2.6159E+04 |
| Co-60 | 5.4169E-07 | 4.7921E-13 | 4.8098E+12 | 2.0043E+04 |
| Kr-85 | 1.3449E-03 | 3.4280E-09 | 2.4287E+16 | 4.9762E+07 |
| Kr-85m | 1.6385E-02 | 1.9910E-12 | 1.4106E+13 | 6.0626E+08 |
| Kr-87 | 7.1833E-03 | 2.5360E-13 | 1.7554E+12 | 2.6578E+08 |
| Kr-88 | 3.2258E-02 | 2.5726E-12 | 1.7605E+13 | 1.1935E+09 |
| Rb-86 | 2.0353E-05 | 2.5014E-13 | 1.7516E+12 | 7.5307E+05 |
| Sr-89 | 6.6242E-04 | 2.2801E-11 | 1.5428E+14 | 2.4510E+07 |

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**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 1 | System Nos. | Sheet 498 of 1000 |
|---|---|---|---|---|

| | | | | |
|---|---|---|---|---|
| Sr-90 | 7.1608E-05 | 5.2496E-10 | 3.5126E+15 | 2.6495E+06 |
| Sr-91 | 6.7419E-04 | 1.8598E-13 | 1.2308E+12 | 2.4945E+07 |
| Sr-92 | 3.4206E-04 | 2.7214E-14 | 1.7814E+11 | 1.2656E+07 |
| Y-90 | 7.0758E-07 | 1.3005E-15 | 8.7023E+09 | 2.6180E+04 |
| Y-91 | 8.1101E-06 | 3.3070E-13 | 2.1885E+12 | 3.0007E+05 |
| Y-92 | 4.3540E-06 | 4.5249E-16 | 2.9619E+09 | 1.6110E+05 |
| Y-93 | 8.0569E-06 | 2.4149E-15 | 1.5638E+10 | 2.9811E+05 |
| Zr-95 | 1.0448E-05 | 4.8636E-13 | 3.0831E+12 | 3.8659E+05 |
| Zr-97 | 9.0652E-06 | 4.7420E-15 | 2.9440E+10 | 3.3541E+05 |
| Nb-95 | 1.0515E-05 | 2.6890E-13 | 1.7046E+12 | 3.8904E+05 |
| Mo-99 | 1.3785E-04 | 2.8741E-13 | 1.7483E+12 | 5.1003E+06 |
| Tc-99m | 7.9420E-05 | 1.5104E-14 | 9.1877E+10 | 2.9385E+06 |
| Ru-103 | 1.1527E-04 | 3.5717E-12 | 2.0883E+13 | 4.2651E+06 |
| Ru-105 | 4.1283E-05 | 6.1415E-15 | 3.5224E+10 | 1.5275E+06 |
| Ru-106 | 4.3535E-05 | 1.3013E-11 | 7.3929E+13 | 1.6108E+06 |
| Rh-105 | 6.7214E-05 | 7.9632E-14 | 4.5672E+11 | 2.4869E+06 |
| Sb-127 | 1.5364E-04 | 5.7533E-13 | 2.7281E+12 | 5.6848E+06 |
| Sb-129 | 2.5205E-04 | 4.4821E-14 | 2.0924E+11 | 9.3257E+06 |
| Te-127 | 1.1675E-04 | 4.4238E-14 | 2.0977E+11 | 4.3197E+06 |
| Te-127m | 2.1042E-05 | 2.2308E-12 | 1.0578E+13 | 7.7855E+05 |
| Te-129 | 4.4006E-05 | 2.1013E-15 | 9.8094E+09 | 1.6282E+06 |
| Te-129m | 7.0268E-05 | 2.3325E-11 | 1.0889E+13 | 2.5999E+06 |
| Te-131m | 1.9714E-04 | 2.4723E-13 | 1.1365E+12 | 7.2942E+06 |
| Te-132 | 2.0801E-03 | 6.8516E-12 | 3.1259E+13 | 7.6963E+07 |
| I-131 | 1.1602E-02 | 9.3580E-11 | 4.3019E+14 | 4.2926E+08 |
| I-132 | 5.2748E-03 | 5.1102E-13 | 2.3314E+12 | 1.9517E+08 |
| I-133 | 2.1603E-02 | 1.9071E-11 | 8.6351E+13 | 7.9933E+08 |
| I-134 | 1.3165E-03 | 4.9349E-14 | 2.2178E+11 | 4.8710E+07 |
| I-135 | 1.5242E-02 | 4.3402E-12 | 1.9361E+13 | 5.6396E+08 |
| Xe-133 | 1.8826E-01 | 1.0058E-09 | 4.5540E+15 | 6.9656E+09 |
| Xe-135 | 5.2616E-02 | 2.0604E-11 | 9.1909E+13 | 1.9468E+09 |
| Cs-134 | 2.1351E-03 | 1.6502E-09 | 7.4163E+15 | 7.8999E+07 |
| Cs-136 | 5.8541E-04 | 7.9874E-12 | 3.5369E+13 | 2.1660E+07 |
| Cs-137 | 1.4307E-03 | 1.6448E-08 | 7.2301E+16 | 5.2935E+07 |
| Ba-139 | 1.5822E-04 | 9.6730E-15 | 4.1908E+10 | 5.8542E+06 |
| Ba-140 | 1.1149E-03 | 1.5229E-11 | 6.5508E+13 | 4.1251E+07 |
| La-140 | 1.0653E-05 | 1.9165E-14 | 8.2440E+10 | 3.9414E+05 |
| La-141 | 5.2637E-06 | 9.3075E-16 | 3.9753E+09 | 1.9476E+05 |
| La-142 | 2.1179E-06 | 1.4795E-16 | 6.2745E+08 | 7.8362E+04 |
| Ce-141 | 2.5677E-05 | 9.0116E-13 | 3.8489E+12 | 9.5006E+05 |
| Ce-143 | 2.3547E-05 | 3.5459E-14 | 1.4933E+11 | 8.7125E+05 |
| Ce-144 | 2.0745E-05 | 6.5043E-12 | 2.7201E+13 | 7.6757E+05 |
| Pr-143 | 9.9823E-06 | 1.4824E-13 | 6.2428E+11 | 3.6935E+05 |
| Nd-147 | 4.1654E-06 | 5.1490E-14 | 2.1094E+11 | 1.5412E+05 |
| Np-239 | 2.7143E-04 | 1.1700E-12 | 2.9481E+12 | 1.0043E+07 |
| Pu-238 | 8.1827E-08 | 4.7797E-12 | 1.2094E+13 | 3.0276E+03 |
| Pu-239 | 6.3687E-09 | 1.0246E-10 | 2.5818E+14 | 2.3564E+02 |
| Pu-240 | 6.8680E-09 | 3.0140E-11 | 7.5629E+13 | 2.5411E+02 |
| Pu-241 | 2.8442E-06 | 2.7610E-11 | 6.8993E+13 | 1.0524E+05 |
| | | | | |
| Am-241 | 1.7493E-09 | 5.0967E-13 | 1.2736E+12 | 6.4723E+01 |
| Cm-242 | 4.1090E-07 | 1.2398E-13 | 3.0852E+11 | 1.5203E+04 |
| Cm-244 | 3.3263E-08 | 4.1115E-13 | 1.0148E+12 | 1.2307E+03 |

TSC Transport Group Inventory:

AmerGen

**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 1 | System Nos. | Sheet 499 of 1000 |
|---|---|---|---|---|

```
                                                Overlying
Time (h) =   2.9200    Atmosphere     Sump        Pool
Noble gases (atoms)    2.9051E+16  0.0000E+00  0.0000E+00
Elemental I (atoms)    1.7987E+13  0.0000E+00  0.0000E+00
Organic I (atoms)      1.9256E+12  0.0000E+00  0.0000E+00
Aerosols (kg)          1.9014E-08  0.0000E+00  0.0000E+00

                       Deposition Recirculating
Time (h) =   2.9200     Surfaces     Filter
Noble gases (atoms)    0.0000E+00  0.0000E+00
Elemental I (atoms)    0.0000E+00  4.6126E+12
Organic I (atoms)      0.0000E+00  4.7764E+11
Aerosols (kg)          0.0000E+00  5.4052E-09

TSC Filtered Air Intake Transport Group Inventory:

                        Pathway
Time (h) =   2.9200      Filter
Noble gases (atoms)    0.0000E+00
Elemental I (atoms)    1.2171E+18
Organic I (atoms)      4.0197E+17
Aerosols (kg)          2.1220E-03

TSC Unfiltered Inleakage Transport Group Inventory:

                        Pathway
Time (h) =   2.9200      Filter
Noble gases (atoms)    0.0000E+00
Elemental I (atoms)    0.0000E+00
Organic I (atoms)      0.0000E+00
Aerosols (kg)          0.0000E+00

TSC Exhaust to Environment Transport Group Inventory:

                        Pathway
Time (h) =   2.9200      Filter
Noble gases (atoms)    0.0000E+00
Elemental I (atoms)    0.0000E+00
Organic I (atoms)      0.0000E+00
Aerosols (kg)          0.0000E+00

Exclusion Area Boundary Doses:

Time (h) =   3.8200    Whole Body   Thyroid       TEDE
Delta dose (rem)        4.7529E-01  6.2346E+01  3.7707E+00
Accumulated dose (rem)  2.5926E+00  4.9225E+02  2.8159E+01

Low Population Zone Doses:

Time (h) =   3.8200    Whole Body   Thyroid       TEDE


Delta dose (rem)        3.5646E-02  4.6760E+00  2.8280E-01
Accumulated dose (rem)  3.3205E-01  6.5996E+01  3.7410E+00

TSC Doses:
```

AmerGen

**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 1 | System Nos. | Sheet 500 of 1000 |
|---|---|---|---|---|

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Time (h) =   3.8200    Whole Body   Thyroid       TEDE
Delta dose (rem)        1.8914E-03  6.3672E+00  3.3494E-01
Accumulated dose (rem)  7.6443E-03  5.0300E+01  2.5926E+00

Travel Path Doses:

Time (h) =   3.8200    Whole Body   Thyroid       TEDE
Delta dose (rem)        0.0000E+00  0.0000E+00  0.0000E+00
Accumulated dose (rem)  6.3483E-02  1.2742E+01  7.1208E-01

Environment Integral Nuclide Release:

Time (h) =   3.8200       Ci           kg         Atoms         Bq
Co-58                  6.9174E-02  2.1754E-09  2.2588E+16  2.5595E+09
Co-60                  5.2982E-02  4.6871E-08  4.7044E+17  1.9603E+09
Kr-85                  1.1824E+02  3.0136E-04  2.1351E+21  4.3747E+12
Kr-85m                 1.5562E+03  1.8910E-07  1.3397E+18  5.7579E+13
Kr-87                  9.1743E+02  3.2389E-08  2.2419E+17  3.3945E+13
Kr-88                  3.2360E+03  2.5807E-07  1.7661E+18  1.1973E+14
Rb-86                  2.0135E+00  2.4745E-08  1.7328E+17  7.4498E+10
Sr-89                  6.4822E+01  2.2312E-06  1.5097E+19  2.3984E+12
Sr-90                  7.0038E+00  5.1345E-05  3.4356E+20  2.5914E+11
Sr-91                  7.0424E+01  1.9427E-08  1.2856E+17  2.6057E+12
Sr-92                  4.2914E+01  3.4141E-09  2.2348E+16  1.5878E+12
Y-90                   6.9867E-02  1.2842E-10  8.5927E+14  2.5851E+09
Y-91                   7.9357E-01  3.2359E-08  2.1414E+17  2.9362E+10
Y-92                   5.1291E-01  5.3304E-11  3.4892E+14  1.8978E+10
Y-93                   8.3822E-01  2.5124E-10  1.6269E+15  3.1014E+10
Zr-95                  1.0223E+00  4.7588E-08  3.0167E+17  3.7826E+10
Zr-97                  9.1956E-01  4.8103E-10  2.9864E+15  3.4024E+10
Nb-95                  1.0292E+00  2.6319E-08  1.6684E+17  3.8079E+10
Mo-99                  1.3607E+01  2.8371E-08  1.7258E+17  5.0346E+11
Tc-99m                 8.6341E+00  1.6420E-09  9.9884E+15  3.1946E+11
Ru-103                 1.1282E+01  3.4956E-07  2.0438E+18  4.1743E+11
Ru-105                 4.6719E+00  6.9502E-10  3.9862E+15  1.7286E+11
Ru-106                 4.2584E+00  1.2728E-06  7.2313E+18  1.5756E+11
Rh-105                 6.6884E+00  7.9242E-09  4.5448E+16  2.4747E+11
Sb-127                 1.5127E+01  5.6643E-08  2.6859E+17  5.5968E+11
Sb-129                 2.8647E+01  5.0943E-09  2.3782E+16  1.0599E+12
Te-127                 1.2208E+01  4.6260E-09  2.1936E+16  4.5171E+11
Te-127m                2.0585E+00  2.1824E-07  1.0348E+18  7.6166E+10
Te-129                 8.3164E+00  3.9711E-10  1.8538E+15  3.0771E+11
Te-129m                6.8779E+00  2.2831E-06  1.0658E+18  2.5448E+11
Te-131m                1.9679E+01  2.4678E-08  1.1345E+17  7.2811E+11
Te-132                 2.0503E+02  6.7536E-07  3.0811E+18  7.5863E+12
I-131                  1.1469E+03  9.2511E-06  4.2528E+19  4.2435E+13
I-132                  7.2862E+02  7.0588E-08  3.2204E+17  2.6959E+13
I-133                  2.1994E+03  1.9415E-06  8.7910E+18  8.1376E+13
I-134                  3.8128E+02  1.4293E-08  6.4233E+16  1.4107E+13
I-135                  1.6715E+03  4.7595E-07  2.1232E+18  6.1845E+13
Xe-133                 1.6590E+04  8.8630E-05  4.0131E+20  6.1382E+14


Xe-135                 4.7921E+03  1.8765E-06  8.3709E+18  1.7731E+14
Cs-134                 2.1090E+02  1.6300E-04  7.3256E+20  7.8032E+12
Cs-136                 5.7950E+01  7.9069E-07  3.5012E+18  2.1442E+12
Cs-137                 1.4131E+02  1.6246E-03  7.1414E+21  5.2286E+12
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**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 1 | System Nos. | Sheet 501 of 1000 |
|---|---|---|---|---|

| | | | | |
|---|---|---|---|---|
| Ba-139 | 2.6471E+01 | 1.6183E-09 | 7.0114E+15 | 9.7943E+11 |
| Ba-140 | 1.0926E+02 | 1.4925E-06 | 6.4198E+18 | 4.0426E+12 |
| La-140 | 1.0578E+00 | 1.9031E-09 | 8.1862E+15 | 3.9138E+10 |
| La-141 | 6.0792E-01 | 1.0749E-10 | 4.5911E+14 | 2.2493E+10 |
| La-142 | 3.3176E-01 | 2.3176E-11 | 9.8286E+13 | 1.2275E+10 |
| Ce-141 | 2.5134E+00 | 8.8209E-08 | 3.7674E+17 | 9.2995E+10 |
| Ce-143 | 2.3461E+00 | 3.5329E-09 | 1.4878E+16 | 8.6807E+10 |
| Ce-144 | 2.0292E+00 | 6.3622E-07 | 2.6607E+18 | 7.5081E+10 |
| Pr-143 | 9.7816E-01 | 1.4526E-08 | 6.1173E+16 | 3.6192E+10 |
| Nd-147 | 4.0835E-01 | 5.0476E-09 | 2.0679E+16 | 1.5109E+10 |
| Np-239 | 2.6835E+01 | 1.1567E-07 | 2.9146E+17 | 9.9290E+11 |
| Pu-238 | 8.0033E-03 | 4.6749E-07 | 1.1829E+18 | 2.9612E+08 |
| Pu-239 | 6.2290E-04 | 1.0022E-05 | 2.5252E+19 | 2.3047E+07 |
| Pu-240 | 6.7174E-04 | 2.9479E-06 | 7.3971E+18 | 2.4854E+07 |
| Pu-241 | 2.7819E-01 | 2.7005E-06 | 6.7480E+18 | 1.0293E+10 |
| Am-241 | 1.7109E-04 | 4.9850E-08 | 1.2456E+17 | 6.3304E+06 |
| Cm-242 | 4.0195E-02 | 1.2128E-08 | 3.0180E+16 | 1.4872E+09 |
| Cm-244 | 3.2534E-03 | 4.0214E-08 | 9.9251E+16 | 1.2038E+08 |

Environment Transport Group Inventory:

| Time (h) = 3.8200 | Present Release | Release Rate/s | Total Release |
|---|---|---|---|
| Noble gases (atoms) | 2.5539E+21 | 1.8571E+17 | 2.5539E+21 |
| Elemental I (atoms) | 1.7190E+18 | 1.2500E+14 | 1.7190E+18 |
| Organic I (atoms) | 2.3504E+17 | 1.7091E+13 | 2.3504E+17 |
| Aerosols (kg) | 1.8773E-03 | 1.3651E-07 | 1.8773E-03 |

TSC Filtered Air Intake Transport Group Inventory:

| Time (h) = 3.8200 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 1.0392E+19 |
| Organic I (atoms) | 3.7568E+18 |
| Aerosols (kg) | 1.3792E-02 |

TSC Unfiltered Inleakage Transport Group Inventory:

| Time (h) = 3.8200 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 |

TSC Exhaust to Environment Transport Group Inventory:

| Time (h) = 3.8200 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 |

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**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 1 | System Nos. | Sheet 502 of 1000 |
|---|---|---|---|---|

TSC Compartment Nuclide Inventory:

| Time (h) = 3.8200 | Ci | kg | Atoms | Bq |
|---|---|---|---|---|
| Co-58 | 8.1119E-08 | 2.5511E-15 | 2.6488E+10 | 3.0014E+03 |
| Co-60 | 6.2176E-08 | 5.5005E-14 | 5.5208E+11 | 2.3005E+03 |
| Kr-85 | 1.6846E-03 | 4.2937E-09 | 3.0420E+16 | 6.2329E+07 |
| Kr-85m | 1.7708E-02 | 2.1517E-12 | 1.5245E+13 | 6.5518E+08 |
| Kr-87 | 5.3519E-03 | 1.8894E-13 | 1.3078E+12 | 1.9802E+08 |
| Kr-88 | 3.2014E-02 | 2.5531E-12 | 1.7472E+13 | 1.1845E+09 |
| Rb-86 | 2.2366E-06 | 2.7488E-14 | 1.9248E+11 | 8.2754E+04 |
| Sr-89 | 7.5993E-05 | 2.6157E-12 | 1.7699E+13 | 2.8117E+06 |
| Sr-90 | 8.2194E-06 | 6.0256E-11 | 4.0319E+14 | 3.0412E+05 |
| Sr-91 | 7.2112E-05 | 1.9893E-14 | 1.3165E+11 | 2.6681E+06 |
| Sr-92 | 3.0660E-05 | 2.4393E-15 | 1.5967E+10 | 1.1344E+06 |
| Y-90 | 8.0372E-08 | 1.4772E-16 | 9.8847E+08 | 2.9738E+03 |
| Y-91 | 9.3046E-07 | 3.7941E-14 | 2.5108E+11 | 3.4427E+04 |
| Y-92 | 4.1355E-07 | 4.2978E-17 | 2.8133E+08 | 1.5301E+04 |
| Y-93 | 8.6539E-07 | 2.5939E-16 | 1.6796E+09 | 3.2020E+04 |
| Zr-95 | 1.1988E-06 | 5.5801E-14 | 3.5373E+11 | 4.4355E+04 |
| Zr-97 | 1.0001E-06 | 5.2313E-16 | 3.2478E+09 | 3.7002E+04 |
| Nb-95 | 1.2060E-06 | 3.0840E-14 | 1.9550E+11 | 4.4620E+04 |
| Mo-99 | 1.5662E-05 | 3.2656E-14 | 1.9865E+11 | 5.7951E+05 |
| Tc-99m | 8.1553E-06 | 1.5510E-15 | 9.4344E+09 | 3.0175E+05 |
| Ru-103 | 1.3222E-05 | 4.0968E-13 | 2.3953E+12 | 4.8921E+05 |
| Ru-105 | 4.0745E-06 | 6.0615E-16 | 3.4765E+09 | 1.5076E+05 |
| Ru-106 | 4.9967E-06 | 1.4935E-12 | 8.4851E+12 | 1.8488E+05 |
| Rh-105 | 7.5701E-06 | 8.9687E-15 | 5.1439E+10 | 2.8009E+05 |
| Sb-127 | 1.7508E-05 | 6.5561E-14 | 3.1088E+11 | 6.4780E+05 |
| Sb-129 | 2.4772E-05 | 4.4052E-15 | 2.0565E+10 | 9.1657E+05 |
| Te-127 | 1.2473E-05 | 4.7263E-15 | 2.2412E+10 | 4.6151E+05 |
| Te-127m | 2.4146E-06 | 2.5599E-13 | 1.2139E+12 | 8.9342E+04 |
| Te-129 | 2.8363E-06 | 1.3543E-16 | 6.3224E+08 | 1.0494E+05 |
| Te-129m | 8.0589E-06 | 2.6751E-12 | 1.2488E+12 | 2.9818E+05 |
| Te-131m | 2.2128E-05 | 2.7750E-14 | 1.2757E+11 | 8.1874E+05 |
| Te-132 | 2.3672E-04 | 7.7973E-13 | 3.5573E+12 | 8.7587E+06 |
| I-131 | 1.3061E-03 | 1.0535E-11 | 4.8431E+13 | 4.8326E+07 |
| I-132 | 4.4257E-04 | 4.2876E-14 | 1.9561E+11 | 1.6375E+07 |
| I-133 | 2.3617E-03 | 2.0849E-12 | 9.4401E+12 | 8.7385E+07 |
| I-134 | 6.8187E-05 | 2.5561E-15 | 1.1487E+10 | 2.5229E+06 |
| I-135 | 1.5527E-03 | 4.4212E-13 | 1.9722E+12 | 5.7449E+07 |
| Xe-133 | 2.3457E-01 | 1.2532E-09 | 5.6742E+15 | 8.6790E+09 |
| Xe-135 | 6.1280E-02 | 2.3996E-11 | 1.0704E+14 | 2.2674E+09 |
| Cs-134 | 2.3498E-04 | 1.8161E-10 | 8.1619E+14 | 8.6941E+06 |
| Cs-136 | 6.4288E-05 | 8.7716E-13 | 3.8841E+12 | 2.3787E+06 |
| Cs-137 | 1.5746E-04 | 1.8102E-09 | 7.9572E+15 | 5.8259E+06 |
| Ba-139 | 1.1172E-05 | 6.8302E-16 | 2.9592E+09 | 4.1337E+05 |
| Ba-140 | 1.2769E-04 | 1.7442E-12 | 7.5027E+12 | 4.7245E+06 |
| La-140 | 1.2025E-06 | 2.1635E-15 | 9.3064E+09 | 4.4494E+04 |
| La-141 | 5.0944E-07 | 9.0081E-17 | 3.8474E+08 | 1.8849E+04 |
| La-142 | 1.5743E-07 | 1.0998E-17 | 4.6641E+07 | 5.8250E+03 |
| Ce-141 | 2.9448E-06 | 1.0335E-13 | 4.4141E+11 | 1.0896E+05 |
| Ce-143 | 2.6485E-06 | 3.9882E-15 | 1.6795E+10 | 9.7994E+04 |
| Ce-144 | 2.3810E-06 | 7.4650E-13 | 3.1219E+12 | 8.8096E+04 |
| Pr-143 | 1.1434E-06 | 1.6980E-14 | 7.1510E+10 | 4.2307E+04 |
| Nd-147 | 4.7691E-07 | 5.8951E-15 | 2.4150E+10 | 1.7645E+04 |

| | | | | |
|---|---|---|---|---|
| Np-239 | 3.0788E-05 | 1.3271E-13 | 3.3440E+11 | 1.1392E+06 |
| Pu-238 | 9.3924E-09 | 5.4863E-13 | 1.3882E+12 | 3.4752E+02 |
| Pu-239 | 7.3102E-10 | 1.1761E-11 | 2.9634E+13 | 2.7048E+01 |
| Pu-240 | 7.8833E-10 | 3.4596E-12 | 8.6809E+12 | 2.9168E+01 |
| Pu-241 | 3.2646E-07 | 3.1692E-12 | 7.9192E+12 | 1.2079E+04 |
| Am-241 | 2.0079E-10 | 5.8502E-14 | 1.4618E+11 | 7.4291E+00 |
| Cm-242 | 4.7156E-08 | 1.4228E-14 | 3.5406E+10 | 1.7448E+03 |
| Cm-244 | 3.8180E-09 | 4.7193E-14 | 1.1648E+11 | 1.4127E+02 |

TSC Transport Group Inventory:

| Time (h) = 3.8200 | Atmosphere | Sump | Overlying Pool |
|---|---|---|---|
| Noble gases (atoms) | 3.6382E+16 | 0.0000E+00 | 0.0000E+00 |
| Elemental I (atoms) | 2.5403E+12 | 0.0000E+00 | 0.0000E+00 |
| Organic I (atoms) | 6.2028E+11 | 0.0000E+00 | 0.0000E+00 |
| Aerosols (kg) | 2.0965E-09 | 0.0000E+00 | 0.0000E+00 |

| Time (h) = 3.8200 | Deposition Surfaces | Recirculating Filter |
|---|---|---|
| Noble gases (atoms) | 0.0000E+00 | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 | 1.6171E+13 |
| Organic I (atoms) | 0.0000E+00 | 2.1114E+12 |
| Aerosols (kg) | 0.0000E+00 | 1.8174E-08 |

TSC Filtered Air Intake Transport Group Inventory:

| Time (h) = 3.8200 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 1.0392E+19 |
| Organic I (atoms) | 3.7568E+18 |
| Aerosols (kg) | 1.3792E-02 |

TSC Unfiltered Inleakage Transport Group Inventory:

| Time (h) = 3.8200 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 |

TSC Exhaust to Environment Transport Group Inventory:

| Time (h) = 3.8200 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 |

Exclusion Area Boundary Doses:

| Time (h) = 4.0000 | Whole Body | Thyroid | TEDE |
|---|---|---|---|

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**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 1 | System Nos. | Sheet 504 of 1000 |
|---|---|---|---|---|

| | | | |
|---|---|---|---|
| Delta dose (rem) | 7.8326E-02 | 8.2991E+00 | 5.1451E-01 |
| Accumulated dose (rem) | 2.6709E+00 | 5.0055E+02 | 2.8673E+01 |

Low Population Zone Doses:

| Time (h) = 4.0000 | Whole Body | Thyroid | TEDE |
|---|---|---|---|
| Delta dose (rem) | 5.8744E-03 | 6.2243E-01 | 3.8588E-02 |
| Accumulated dose (rem) | 3.3793E-01 | 6.6618E+01 | 3.7796E+00 |

TSC Doses:

| Time (h) = 4.0000 | Whole Body | Thyroid | TEDE |
|---|---|---|---|
| Delta dose (rem) | 3.1350E-04 | 3.2280E-01 | 1.7231E-02 |
| Accumulated dose (rem) | 7.9578E-03 | 5.0623E+01 | 2.6099E+00 |

Travel Path Doses:

| Time (h) = 4.0000 | Whole Body | Thyroid | TEDE |
|---|---|---|---|
| Delta dose (rem) | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 |
| Accumulated dose (rem) | 6.3483E-02 | 1.2742E+01 | 7.1208E-01 |

Environment Integral Nuclide Release:

| Time (h) = 4.0000 | Ci | kg | Atoms | Bq |
|---|---|---|---|---|
| Co-58 | 7.0429E-02 | 2.2149E-09 | 2.2997E+16 | 2.6059E+09 |
| Co-60 | 5.3944E-02 | 4.7722E-08 | 4.7898E+17 | 1.9959E+09 |
| Kr-85 | 1.2607E+02 | 3.2134E-04 | 2.2767E+21 | 4.6647E+12 |
| Kr-85m | 1.6366E+03 | 1.9887E-07 | 1.4090E+18 | 6.0556E+13 |
| Kr-87 | 9.4032E+02 | 3.3197E-08 | 2.2979E+17 | 3.4792E+13 |
| Kr-88 | 3.3794E+03 | 2.6951E-07 | 1.8443E+18 | 1.2504E+14 |
| Rb-86 | 2.0466E+00 | 2.5153E-08 | 1.7613E+17 | 7.5724E+10 |
| Sr-89 | 6.5997E+01 | 2.2717E-06 | 1.5371E+19 | 2.4419E+12 |
| Sr-90 | 7.1309E+00 | 5.2277E-05 | 3.4980E+20 | 2.6384E+11 |
| Sr-91 | 7.1523E+01 | 1.9730E-08 | 1.3057E+17 | 2.6463E+12 |
| Sr-92 | 4.3364E+01 | 3.4500E-09 | 2.2583E+16 | 1.6045E+12 |
| Y-90 | 7.1107E-02 | 1.3070E-10 | 8.7452E+14 | 2.6310E+09 |
| Y-91 | 8.0796E-01 | 3.2946E-08 | 2.1803E+17 | 2.9894E+10 |
| Y-92 | 5.1906E-01 | 5.3943E-11 | 3.5310E+14 | 1.9205E+10 |
| Y-93 | 8.5142E-01 | 2.5520E-10 | 1.6525E+15 | 3.1503E+10 |
| Zr-95 | 1.0409E+00 | 4.8451E-08 | 3.0713E+17 | 3.8512E+10 |
| Zr-97 | 9.3490E-01 | 4.8905E-10 | 3.0362E+15 | 3.4591E+10 |
| Nb-95 | 1.0478E+00 | 2.6796E-08 | 1.6986E+17 | 3.8769E+10 |
| Mo-99 | 1.3849E+01 | 2.8875E-08 | 1.7564E+17 | 5.1240E+11 |
| Tc-99m | 8.7574E+00 | 1.6655E-09 | 1.0131E+16 | 3.2402E+11 |
| Ru-103 | 1.1486E+01 | 3.5590E-07 | 2.0808E+18 | 4.2499E+11 |
| Ru-105 | 4.7330E+00 | 7.0410E-10 | 4.0383E+15 | 1.7512E+11 |
| Ru-106 | 4.3356E+00 | 1.2959E-06 | 7.3625E+18 | 1.6042E+11 |
| Rh-105 | 6.8050E+00 | 8.0623E-09 | 4.6240E+16 | 2.5179E+11 |
| Sb-127 | 1.5397E+01 | 5.7655E-08 | 2.7339E+17 | 5.6968E+11 |
| Sb-129 | 2.9018E+01 | 5.1603E-09 | 2.4090E+16 | 1.0737E+12 |
| Te-127 | 1.2398E+01 | 4.6980E-09 | 2.2277E+16 | 4.5874E+11 |
| Te-127m | 2.0959E+00 | 2.2220E-07 | 1.0536E+18 | 7.7547E+10 |
| Te-129 | 8.3553E+00 | 3.9897E-10 | 1.8625E+15 | 3.0914E+11 |
| Te-129m | 7.0025E+00 | 2.3245E-06 | 1.0851E+18 | 2.5909E+11 |
| Te-131m | 2.0019E+01 | 2.5105E-08 | 1.1541E+17 | 7.4071E+11 |

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**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 1 | System Nos. | Sheet 505 of 1000 |
|---|---|---|---|---|

| | | | | |
|---|---|---|---|---|
| Te-132 | 2.0869E+02 | 6.8740E-07 | 3.1361E+18 | 7.7215E+12 |
| I-131 | 1.1667E+03 | 9.4105E-06 | 4.3260E+19 | 4.3166E+13 |
| I-132 | 7.3488E+02 | 7.1195E-08 | 3.2481E+17 | 2.7191E+13 |
| I-133 | 2.2348E+03 | 1.9728E-06 | 8.9328E+18 | 8.2689E+13 |
| I-134 | 3.8214E+02 | 1.4325E-08 | 6.4378E+16 | 1.4139E+13 |
| I-135 | 1.6944E+03 | 4.8249E-07 | 2.1523E+18 | 6.2694E+13 |
| Xe-133 | 1.7680E+04 | 9.4456E-05 | 4.2769E+20 | 6.5417E+14 |
| Xe-135 | 5.0739E+03 | 1.9869E-06 | 8.8631E+18 | 1.8773E+14 |
| Cs-134 | 2.1438E+02 | 1.6569E-04 | 7.4465E+20 | 7.9321E+12 |
| Cs-136 | 5.8903E+01 | 8.0368E-07 | 3.5587E+18 | 2.1794E+12 |
| Cs-137 | 1.4365E+02 | 1.6514E-03 | 7.2593E+21 | 5.3149E+12 |
| Ba-139 | 2.6627E+01 | 1.6279E-09 | 7.0528E+15 | 9.8521E+11 |
| Ba-140 | 1.1123E+02 | 1.5194E-06 | 6.5358E+18 | 4.1157E+12 |
| La-140 | 1.0763E+00 | 1.9364E-09 | 8.3296E+15 | 3.9824E+10 |
| La-141 | 6.1552E-01 | 1.0884E-10 | 4.6485E+14 | 2.2774E+10 |
| La-142 | 3.3398E-01 | 2.3331E-11 | 9.8945E+13 | 1.2357E+10 |
| Ce-141 | 2.5589E+00 | 8.9807E-08 | 3.8357E+17 | 9.4679E+10 |
| Ce-143 | 2.3869E+00 | 3.5943E-09 | 1.5137E+16 | 8.8316E+10 |
| Ce-144 | 2.0660E+00 | 6.4776E-07 | 2.7090E+18 | 7.6443E+10 |
| Pr-143 | 9.9584E-01 | 1.4788E-08 | 6.2278E+16 | 3.6846E+10 |
| Nd-147 | 4.1572E-01 | 5.1388E-09 | 2.1052E+16 | 1.5382E+10 |
| Np-239 | 2.7310E+01 | 1.1772E-07 | 2.9662E+17 | 1.0105E+12 |
| Pu-238 | 8.1486E-03 | 4.7598E-07 | 1.2044E+18 | 3.0150E+08 |
| Pu-239 | 6.3421E-04 | 1.0203E-05 | 2.5710E+19 | 2.3466E+07 |
| Pu-240 | 6.8393E-04 | 3.0014E-06 | 7.5313E+18 | 2.5305E+07 |
| Pu-241 | 2.8323E-01 | 2.7495E-06 | 6.8705E+18 | 1.0480E+10 |
| Am-241 | 1.7420E-04 | 5.0754E-08 | 1.2683E+17 | 6.4453E+06 |
| Cm-242 | 4.0924E-02 | 1.2348E-08 | 3.0727E+16 | 1.5142E+09 |
| Cm-244 | 3.3124E-03 | 4.0943E-08 | 1.0105E+17 | 1.2256E+08 |

Environment Transport Group Inventory:

| Time (h) = 4.0000 | Present Release | Release Rate/s | Total Release |
|---|---|---|---|
| Noble gases (atoms) | 2.7232E+21 | 1.8911E+17 | 2.7232E+21 |
| Elemental I (atoms) | 1.7605E+18 | 1.2226E+14 | 1.7605E+18 |
| Organic I (atoms) | 2.5020E+17 | 1.7375E+13 | 2.5020E+17 |
| Aerosols (kg) | 1.9084E-03 | 1.3253E-07 | 1.9084E-03 |

TSC Filtered Air Intake Transport Group Inventory:

| Time (h) = 4.0000 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 1.2125E+19 |
| Organic I (atoms) | 4.3906E+18 |
| Aerosols (kg) | 1.5226E-02 |

TSC Unfiltered Inleakage Transport Group Inventory:

| Time (h) = 4.0000 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 |

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**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 1 | System Nos. | Sheet 506 of 1000 |
|---|---|---|---|---|

TSC Exhaust to Environment Transport Group Inventory:

| Time (h) = 4.0000 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 |

TSC Compartment Nuclide Inventory:

| Time (h) = 4.0000 | Ci | kg | Atoms | Bq |
|---|---|---|---|---|
| Co-58 | 6.0495E-08 | 1.9025E-15 | 1.9753E+10 | 2.2383E+03 |
| Co-60 | 4.6371E-08 | 4.1023E-14 | 4.1174E+11 | 1.7157E+03 |
| Kr-85 | 1.7182E-03 | 4.3794E-09 | 3.1027E+16 | 6.3573E+07 |
| Kr-85m | 1.7554E-02 | 2.1330E-12 | 1.5112E+13 | 6.4948E+08 |
| Kr-87 | 4.9373E-03 | 1.7431E-13 | 1.2065E+12 | 1.8268E+08 |
| Kr-88 | 3.1218E-02 | 2.4896E-12 | 1.7037E+13 | 1.1551E+09 |
| Rb-86 | 1.6506E-06 | 2.0285E-14 | 1.4205E+11 | 6.1071E+04 |
| Sr-89 | 5.6670E-05 | 1.9506E-12 | 1.3199E+13 | 2.0968E+06 |
| Sr-90 | 6.1301E-06 | 4.4939E-11 | 3.0070E+14 | 2.2681E+05 |
| Sr-91 | 5.3018E-05 | 1.4626E-14 | 9.6788E+10 | 1.9617E+06 |
| Sr-92 | 2.1748E-05 | 1.7303E-15 | 1.1326E+10 | 8.0469E+05 |
| Y-90 | 5.9815E-08 | 1.0994E-16 | 7.3564E+08 | 2.2131E+03 |
| Y-91 | 6.9388E-07 | 2.8294E-14 | 1.8724E+11 | 2.5673E+04 |
| Y-92 | 2.9682E-07 | 3.0847E-17 | 2.0192E+08 | 1.0982E+04 |
| Y-93 | 6.3679E-07 | 1.9087E-16 | 1.2359E+09 | 2.3561E+04 |
| Zr-95 | 8.9397E-07 | 4.1613E-14 | 2.6379E+11 | 3.3077E+04 |
| Zr-97 | 7.3987E-07 | 3.8703E-16 | 2.4028E+09 | 2.7375E+04 |
| Nb-95 | 8.9926E-07 | 2.2997E-14 | 1.4578E+11 | 3.3273E+04 |
| Mo-99 | 1.1657E-05 | 2.4305E-14 | 1.4785E+11 | 4.3131E+05 |
| Tc-99m | 5.9466E-06 | 1.1309E-15 | 6.8792E+09 | 2.2002E+05 |
| Ru-103 | 9.8596E-06 | 3.0550E-13 | 1.7862E+12 | 3.6481E+05 |
| Ru-105 | 2.9472E-06 | 4.3844E-16 | 2.5146E+09 | 1.0905E+05 |
| Ru-106 | 3.7265E-06 | 1.1139E-12 | 6.3282E+12 | 1.3788E+05 |
| Rh-105 | 5.6242E-06 | 6.6633E-15 | 3.8216E+10 | 2.0809E+05 |
| Sb-127 | 1.3039E-05 | 4.8824E-14 | 2.3151E+11 | 4.8243E+05 |
| Sb-129 | 1.7903E-05 | 3.1837E-15 | 1.4863E+10 | 6.6242E+05 |
| Te-127 | 9.1685E-06 | 3.4741E-15 | 1.6474E+10 | 3.3923E+05 |
| Te-127m | 1.8008E-06 | 1.9091E-13 | 9.0526E+11 | 6.6628E+04 |
| Te-129 | 1.8815E-06 | 8.9844E-17 | 4.1942E+08 | 6.9617E+04 |
| Te-129m | 6.0094E-06 | 1.9948E-12 | 9.3123E+11 | 2.2235E+05 |
| Te-131m | 1.6429E-05 | 2.0603E-14 | 9.4712E+10 | 6.0786E+05 |
| Te-132 | 1.7624E-04 | 5.8052E-13 | 2.6485E+12 | 6.5209E+06 |
| I-131 | 9.7285E-04 | 7.8472E-12 | 3.6074E+13 | 3.5996E+07 |
| I-132 | 3.1042E-04 | 3.0073E-14 | 1.3720E+11 | 1.1486E+07 |
| I-133 | 1.7487E-03 | 1.5436E-12 | 6.9895E+12 | 6.4700E+07 |
| I-134 | 4.3316E-05 | 1.6237E-15 | 7.2973E+09 | 1.6027E+06 |
| I-135 | 1.1331E-03 | 3.2266E-13 | 1.4393E+12 | 4.1926E+07 |
| Xe-133 | 2.3901E-01 | 1.2769E-09 | 5.7816E+15 | 8.8433E+09 |
| Xe-135 | 6.1632E-02 | 2.4134E-11 | 1.0766E+14 | 2.2804E+09 |
| Cs-134 | 1.7346E-04 | 1.3407E-10 | 6.0252E+14 | 6.4180E+06 |
| Cs-136 | 4.7437E-05 | 6.4724E-13 | 2.8660E+12 | 1.7552E+06 |
| Cs-137 | 1.1624E-04 | 1.3363E-09 | 5.8741E+15 | 4.3007E+06 |
| Ba-139 | 7.5501E-06 | 4.6158E-16 | 1.9998E+09 | 2.7935E+05 |

| | | | | |
|---|---|---|---|---|
| Ba-140 | 9.5190E-05 | 1.3003E-12 | 5.5931E+12 | 3.5220E+06 |
| La-140 | 8.9384E-07 | 1.6081E-15 | 6.9174E+09 | 3.3072E+04 |
| La-141 | 3.6703E-07 | 6.4900E-17 | 2.7719E+08 | 1.3580E+04 |
| La-142 | 1.0751E-07 | 7.5102E-18 | 3.1850E+07 | 3.9778E+03 |
| Ce-141 | 2.1959E-06 | 7.7065E-14 | 3.2915E+11 | 8.1246E+04 |
| Ce-143 | 1.9671E-06 | 2.9622E-15 | 1.2475E+10 | 7.2784E+04 |
| Ce-144 | 1.7757E-06 | 5.5674E-13 | 2.3283E+12 | 6.5701E+04 |
| Pr-143 | 8.5243E-07 | 1.2659E-14 | 5.3310E+10 | 3.1540E+04 |
| Nd-147 | 3.5550E-07 | 4.3943E-15 | 1.8002E+10 | 1.3153E+04 |
| Np-239 | 2.2907E-05 | 9.8740E-14 | 2.4880E+11 | 8.4755E+05 |
| Pu-238 | 7.0049E-09 | 4.0917E-13 | 1.0353E+12 | 2.5918E+02 |
| Pu-239 | 5.4520E-10 | 8.7714E-12 | 2.2101E+13 | 2.0172E+01 |
| Pu-240 | 5.8794E-10 | 2.5802E-12 | 6.4743E+12 | 2.1754E+01 |
| Pu-241 | 2.4348E-07 | 2.3636E-12 | 5.9062E+12 | 9.0088E+03 |
| Am-241 | 1.4975E-10 | 4.3631E-14 | 1.0903E+11 | 5.5407E+00 |
| Cm-242 | 3.5168E-08 | 1.0611E-14 | 2.6405E+10 | 1.3012E+03 |
| Cm-244 | 2.8475E-09 | 3.5197E-14 | 8.6869E+10 | 1.0536E+02 |

TSC Transport Group Inventory:

| Time (h) = 4.0000 | Atmosphere | Sump | Overlying Pool |
|---|---|---|---|
| Noble gases (atoms) | 3.7108E+16 | 0.0000E+00 | 0.0000E+00 |
| Elemental I (atoms) | 2.0807E+12 | 0.0000E+00 | 0.0000E+00 |
| Organic I (atoms) | 5.8143E+11 | 0.0000E+00 | 0.0000E+00 |
| Aerosols (kg) | 1.5483E-09 | 0.0000E+00 | 0.0000E+00 |

| Time (h) = 4.0000 | Deposition Surfaces | Recirculating Filter |
|---|---|---|
| Noble gases (atoms) | 0.0000E+00 | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 | 1.6913E+13 |
| Organic I (atoms) | 0.0000E+00 | 2.3055E+12 |
| Aerosols (kg) | 0.0000E+00 | 1.8815E-08 |

TSC Filtered Air Intake Transport Group Inventory:

| Time (h) = 4.0000 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 1.2125E+19 |
| Organic I (atoms) | 4.3906E+18 |
| Aerosols (kg) | 1.5226E-02 |

TSC Unfiltered Inleakage Transport Group Inventory:

| Time (h) = 4.0000 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 |

TSC Exhaust to Environment Transport Group Inventory:

Pathway

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**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 1 | System Nos. | Sheet 508 of 1000 |
|---|---|---|---|---|

```
Time (h) =   4.0000      Filter


Noble gases (atoms)    0.0000E+00
Elemental I (atoms)    0.0000E+00
Organic I (atoms)      0.0000E+00
Aerosols (kg)          0.0000E+00

Exclusion Area Boundary Doses:

Time (h) =   8.0000    Whole Body   Thyroid       TEDE
Delta dose (rem)        1.2075E+00  1.6297E+02  9.8226E+00
Accumulated dose (rem)  3.8784E+00  6.6352E+02  3.8496E+01

Low Population Zone Doses:

Time (h) =   8.0000    Whole Body   Thyroid       TEDE
Delta dose (rem)        9.0562E-02  1.2223E+01  7.3670E-01
Accumulated dose (rem)  4.2849E-01  7.8841E+01  4.5163E+00

TSC Doses:

Time (h) =   8.0000    Whole Body   Thyroid       TEDE
Delta dose (rem)        4.9386E-03  3.3183E+00  1.7918E-01
Accumulated dose (rem)  1.2896E-02  5.3941E+01  2.7890E+00

Travel Path Doses:

Time (h) =   8.0000    Whole Body   Thyroid       TEDE
Delta dose (rem)        0.0000E+00  0.0000E+00  0.0000E+00
Accumulated dose (rem)  6.3483E-02  1.2742E+01  7.1208E-01

Environment Integral Nuclide Release:

Time (h) =   8.0000       Ci           kg         Atoms         Bq
Co-58                  9.5508E-02  3.0036E-09  3.1186E+16  3.5338E+09
Co-60                  7.3183E-02  6.4742E-08  6.4981E+17  2.7078E+09
Kr-85                  3.0025E+02  7.6528E-04  5.4219E+21  1.1109E+13
Kr-85m                 2.9500E+03  3.5847E-07  2.5397E+18  1.0915E+14
Kr-87                  1.1368E+03  4.0132E-08  2.7779E+17  4.2060E+13
Kr-88                  5.3677E+03  4.2807E-07  2.9294E+18  1.9861E+14
Rb-86                  2.7077E+00  3.3277E-08  2.3302E+17  1.0018E+11
Sr-89                  8.9483E+01  3.0801E-06  2.0841E+19  3.3109E+12
Sr-90                  9.6743E+00  7.0923E-05  4.7456E+20  3.5795E+11
Sr-91                  9.0548E+01  2.4979E-08  1.6530E+17  3.3503E+12
Sr-92                  4.8956E+01  3.8948E-09  2.5495E+16  1.8114E+12
Y-90                   9.5385E-02  1.7532E-10  1.1731E+15  3.5292E+09
Y-91                   1.0956E+00  4.4673E-08  2.9564E+17  4.0536E+10
Y-92                   6.0379E-01  6.2749E-11  4.1074E+14  2.2340E+10
Y-93                   1.0819E+00  3.2427E-10  2.0998E+15  4.0029E+10
Zr-95                  1.4114E+00  6.5701E-08  4.1648E+17  5.2223E+10
Zr-97                  1.2176E+00  6.3692E-10  3.9542E+15  4.5050E+10
Nb-95                  1.4203E+00  3.6322E-08  2.3025E+17  5.2551E+10
Mo-99                  1.8583E+01  3.8746E-08  2.3569E+17  6.8758E+11
Tc-99m                 1.0726E+01  2.0398E-09  1.2408E+16  3.9685E+11
Ru-103                 1.5571E+01  4.8246E-07  2.8208E+18  5.7612E+11
Ru-105                 5.6370E+00  8.3858E-10  4.8096E+15  2.0857E+11
```

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**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 1 | System Nos. | Sheet 509 of 1000 |
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| | | | | |
|---|---|---|---|---|
| Ru-106 | 5.8816E+00 | 1.7580E-06 | 9.9877E+18 | 2.1762E+11 |
| Rh-105 | 9.0477E+00 | 1.0719E-08 | 6.1480E+16 | 3.3477E+11 |
| Sb-127 | 2.0725E+01 | 7.7606E-08 | 3.6799E+17 | 7.6682E+11 |
| Sb-129 | 3.4466E+01 | 6.1290E-09 | 2.8612E+16 | 1.2752E+12 |
| Te-127 | 1.5681E+01 | 5.9418E-09 | 2.8175E+16 | 5.8020E+11 |
| Te-127m | 2.8426E+00 | 3.0136E-07 | 1.4290E+18 | 1.0518E+11 |
| Te-129 | 8.6441E+00 | 4.1276E-10 | 1.9269E+15 | 3.1983E+11 |
| Te-129m | 9.4915E+00 | 3.1507E-06 | 1.4708E+18 | 3.5118E+11 |
| Te-131m | 2.6524E+01 | 3.3263E-08 | 1.5291E+17 | 9.8140E+11 |
| Te-132 | 2.8051E+02 | 9.2396E-07 | 4.2153E+18 | 1.0379E+13 |
| I-131 | 1.5618E+03 | 1.2598E-05 | 5.7912E+19 | 5.7786E+13 |
| I-132 | 8.0728E+02 | 7.8209E-08 | 3.5681E+17 | 2.9869E+13 |
| I-133 | 2.9033E+03 | 2.5630E-06 | 1.1605E+19 | 1.0742E+14 |
| I-134 | 3.8721E+02 | 1.4515E-08 | 6.5232E+16 | 1.4327E+13 |
| I-135 | 2.0707E+03 | 5.8963E-07 | 2.6303E+18 | 7.6616E+13 |
| Xe-133 | 4.1635E+04 | 2.2243E-04 | 1.0072E+21 | 1.5405E+15 |
| Xe-135 | 1.0432E+04 | 4.0849E-06 | 1.8222E+19 | 3.8598E+14 |
| Cs-134 | 2.8407E+02 | 2.1956E-04 | 9.8672E+20 | 1.0511E+13 |
| Cs-136 | 7.7876E+01 | 1.0626E-06 | 4.7050E+18 | 2.8814E+12 |
| Cs-137 | 1.9035E+02 | 2.1884E-03 | 9.6194E+21 | 7.0429E+12 |
| Ba-139 | 2.7947E+01 | 1.7086E-09 | 7.4024E+15 | 1.0340E+12 |
| Ba-140 | 1.5055E+02 | 2.0564E-06 | 8.8457E+18 | 5.5703E+12 |
| La-140 | 1.4345E+00 | 2.5808E-09 | 1.1101E+16 | 5.3075E+10 |
| La-141 | 7.2402E-01 | 1.2802E-10 | 5.4679E+14 | 2.6789E+10 |
| La-142 | 3.5429E-01 | 2.4749E-11 | 1.0496E+14 | 1.3109E+10 |
| Ce-141 | 3.4683E+00 | 1.2172E-07 | 5.1989E+17 | 1.2833E+11 |
| Ce-143 | 3.1691E+00 | 4.7722E-09 | 2.0097E+16 | 1.1726E+11 |
| Ce-144 | 2.8026E+00 | 8.7871E-07 | 3.6748E+18 | 1.0370E+11 |
| Pr-143 | 1.3480E+00 | 2.0018E-08 | 8.4302E+16 | 4.9876E+10 |
| Nd-147 | 5.6243E-01 | 6.9523E-09 | 2.8481E+16 | 2.0810E+10 |
| Np-239 | 3.6581E+01 | 1.5768E-07 | 3.9731E+17 | 1.3535E+12 |
| Pu-238 | 1.1055E-02 | 6.4575E-07 | 1.6339E+18 | 4.0903E+08 |
| Pu-239 | 8.6042E-04 | 1.3843E-05 | 3.4880E+19 | 3.1835E+07 |
| Pu-240 | 9.2787E-04 | 4.0720E-06 | 1.0218E+19 | 3.4331E+07 |
| Pu-241 | 3.8426E-01 | 3.7302E-06 | 9.3210E+18 | 1.4217E+10 |
| Am-241 | 2.3633E-04 | 6.8857E-08 | 1.7206E+17 | 8.7442E+06 |
| Cm-242 | 5.5511E-02 | 1.6749E-08 | 4.1679E+16 | 2.0539E+09 |
| Cm-244 | 4.4939E-03 | 5.5547E-08 | 1.3709E+17 | 1.6627E+08 |

Environment Transport Group Inventory:

| Time (h) = 8.0000 | Present Release | Release Rate/s | Total Release |
|---|---|---|---|
| Noble gases (atoms) | 6.4846E+21 | 2.2516E+17 | 6.4846E+21 |
| Elemental I (atoms) | 2.6820E+18 | 9.3125E+13 | 2.6820E+18 |
| Organic I (atoms) | 5.8717E+17 | 2.0388E+13 | 5.8717E+17 |
| Aerosols (kg) | 2.5314E-03 | 8.7896E-08 | 2.5314E-03 |

TSC Filtered Air Intake Transport Group Inventory:

| Time (h) = 8.0000 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 5.4398E+19 |
| Organic I (atoms) | 1.9849E+19 |

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**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 1 | System Nos. | Sheet 510 of 1000 |
|---|---|---|---|---|

Aerosols (kg) 4.6688E-02

TSC Unfiltered Inleakage Transport Group Inventory:

| Time (h) = 8.0000 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 |

TSC Exhaust to Environment Transport Group Inventory:

| Time (h) = 8.0000 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 |

TSC Compartment Nuclide Inventory:

| Time (h) = 8.0000 | Ci | kg | Atoms | Bq |
|---|---|---|---|---|
| Co-58 | 2.8269E-08 | 8.8901E-16 | 9.2306E+09 | 1.0459E+03 |
| Co-60 | 2.1704E-08 | 1.9200E-14 | 1.9271E+11 | 8.0303E+02 |
| Kr-85 | 1.8545E-03 | 4.7268E-09 | 3.3488E+16 | 6.8615E+07 |
| Kr-85m | 1.0179E-02 | 1.2369E-12 | 8.7632E+12 | 3.7663E+08 |
| Kr-87 | 5.9717E-04 | 2.1082E-14 | 1.4593E+11 | 2.2095E+07 |
| Kr-88 | 1.2645E-02 | 1.0085E-12 | 6.9013E+12 | 4.6788E+08 |
| Rb-86 | 7.4343E-07 | 9.1367E-15 | 6.3980E+10 | 2.7507E+04 |
| Sr-89 | 2.6464E-05 | 9.1090E-13 | 6.1636E+12 | 9.7916E+05 |
| Sr-90 | 2.8692E-06 | 2.1034E-11 | 1.4075E+14 | 1.0616E+05 |
| Sr-91 | 1.8468E-05 | 5.0946E-15 | 3.3715E+10 | 6.8331E+05 |
| Sr-92 | 3.6132E-06 | 2.8746E-16 | 1.8816E+09 | 1.3369E+05 |
| Y-90 | 2.6796E-08 | 4.9252E-17 | 3.2956E+08 | 9.9145E+02 |
| Y-91 | 3.2413E-07 | 1.3217E-14 | 8.7467E+10 | 1.1993E+04 |
| Y-92 | 6.2868E-08 | 6.5336E-18 | 4.2767E+07 | 2.3261E+03 |
| Y-93 | 2.2574E-07 | 6.7663E-17 | 4.3814E+08 | 8.3525E+03 |
| Zr-95 | 4.1767E-07 | 1.9442E-14 | 1.2325E+11 | 1.5454E+04 |
| Zr-97 | 2.9332E-07 | 1.5344E-16 | 9.5259E+08 | 1.0853E+04 |
| Nb-95 | 4.1952E-07 | 1.0728E-14 | 6.8009E+10 | 1.5522E+04 |
| Mo-99 | 5.2291E-06 | 1.0903E-14 | 6.6321E+10 | 1.9348E+05 |
| Tc-99m | 1.7461E-06 | 3.3208E-16 | 2.0200E+09 | 6.4608E+04 |
| Ru-103 | 4.6012E-06 | 1.4257E-13 | 8.3356E+11 | 1.7025E+05 |
| Ru-105 | 7.3311E-07 | 1.0906E-16 | 6.2550E+08 | 2.7125E+04 |
| Ru-106 | 1.7437E-06 | 5.2120E-13 | 2.9611E+12 | 6.4517E+04 |
| Rh-105 | 2.4316E-06 | 2.8809E-15 | 1.6523E+10 | 8.9969E+04 |
| Sb-127 | 5.9203E-06 | 2.2169E-14 | 1.0512E+11 | 2.1905E+05 |
| Sb-129 | 4.3758E-06 | 7.7814E-16 | 3.6326E+09 | 1.6190E+05 |
| Te-127 | 3.1786E-06 | 1.2044E-15 | 5.7111E+09 | 1.1761E+05 |
| Te-127m | 8.4198E-07 | 8.9263E-14 | 4.2327E+11 | 3.1153E+04 |
| Te-129 | 7.8301E-08 | 3.7389E-18 | 1.7454E+07 | 2.8971E+03 |
| Te-129m | 2.8030E-06 | 9.3045E-13 | 4.3436E+11 | 1.0371E+05 |
| Te-131m | 7.0029E-06 | 8.7822E-15 | 4.0372E+10 | 2.5911E+05 |
| Te-132 | 7.9585E-05 | 2.6214E-13 | 1.1960E+12 | 2.9446E+06 |

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**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 1 | System Nos. | Sheet 511 of 1000 |
|---|---|---|---|---|

| | | | | |
|---|---|---|---|---|
| I-131 | 4.5388E-04 | 3.6611E-12 | 1.6830E+13 | 1.6794E+07 |
| I-132 | 4.3118E-05 | 4.1772E-15 | 1.9058E+10 | 1.5954E+06 |
| I-133 | 7.2291E-04 | 6.3816E-13 | 2.8895E+12 | 2.6748E+07 |
| I-134 | 8.1999E-07 | 3.0738E-17 | 1.3814E+08 | 3.0339E+04 |
| I-135 | 3.5018E-04 | 9.9713E-14 | 4.4480E+11 | 1.2957E+07 |
| Xe-133 | 2.5233E-01 | 1.3481E-09 | 6.1039E+15 | 9.3363E+09 |
| Xe-135 | 4.8976E-02 | 1.9178E-11 | 8.5552E+13 | 1.8121E+09 |
| Cs-134 | 7.8610E-05 | 6.0758E-11 | 2.7305E+14 | 2.9086E+06 |
| Cs-136 | 2.1309E-05 | 2.9074E-13 | 1.2874E+12 | 7.8843E+05 |
| Cs-137 | 5.2684E-05 | 6.0569E-10 | 2.6625E+15 | 1.9493E+06 |
| Ba-139 | 4.6102E-07 | 2.8185E-17 | 1.2211E+08 | 1.7058E+04 |
| Ba-140 | 4.4148E-05 | 6.0304E-13 | 2.5940E+12 | 1.6335E+06 |
| La-140 | 3.9021E-07 | 7.0204E-16 | 3.0198E+09 | 1.4438E+04 |
| La-141 | 8.4105E-08 | 1.4872E-17 | 6.3518E+07 | 3.1119E+03 |
| La-142 | 8.1459E-09 | 5.6905E-19 | 2.4133E+06 | 3.0140E+02 |
| Ce-141 | 1.0241E-06 | 3.5942E-14 | 1.5351E+11 | 3.7892E+04 |
| Ce-143 | 8.4568E-07 | 1.2735E-15 | 5.3629E+09 | 3.1290E+04 |
| Ce-144 | 8.3081E-07 | 2.6048E-13 | 1.0894E+12 | 3.0740E+04 |
| Pr-143 | 3.9557E-07 | 5.8743E-15 | 2.4738E+10 | 1.4636E+04 |
| Nd-147 | 1.6463E-07 | 2.0351E-15 | 8.3370E+09 | 6.0914E+03 |
| Np-239 | 1.0203E-05 | 4.3978E-14 | 1.1081E+11 | 3.7749E+05 |
| Pu-238 | 3.2787E-09 | 1.9152E-13 | 4.8460E+11 | 1.2131E+02 |
| Pu-239 | 2.5519E-10 | 4.1056E-12 | 1.0345E+13 | 9.4420E+00 |
| Pu-240 | 2.7519E-10 | 1.2077E-12 | 3.0304E+12 | 1.0182E+01 |
| Pu-241 | 1.1396E-07 | 1.1063E-12 | 2.7644E+12 | 4.2166E+03 |
| Am-241 | 7.0092E-11 | 2.0422E-14 | 5.1031E+10 | 2.5934E+00 |
| Cm-242 | 1.6449E-08 | 4.9631E-15 | 1.2351E+10 | 6.0862E+02 |
| Cm-244 | 1.3328E-09 | 1.6474E-14 | 4.0660E+10 | 4.9313E+01 |

TSC Transport Group Inventory:

| Time (h) = 8.0000 | Atmosphere | Sump | Overlying Pool |
|---|---|---|---|
| Noble gases (atoms) | 4.0050E+16 | 0.0000E+00 | 0.0000E+00 |
| Elemental I (atoms) | 1.4424E+12 | 0.0000E+00 | 0.0000E+00 |
| Organic I (atoms) | 5.2743E+11 | 0.0000E+00 | 0.0000E+00 |
| Aerosols (kg) | 7.0282E-10 | 0.0000E+00 | 0.0000E+00 |

| Time (h) = 8.0000 | Deposition Surfaces | Recirculating Filter |
|---|---|---|
| Noble gases (atoms) | 0.0000E+00 | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 | 2.7679E+13 |
| Organic I (atoms) | 0.0000E+00 | 6.1355E+12 |
| Aerosols (kg) | 0.0000E+00 | 2.5357E-08 |

TSC Filtered Air Intake Transport Group Inventory:

| Time (h) = 8.0000 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 5.4398E+19 |
| Organic I (atoms) | 1.9849E+19 |
| Aerosols (kg) | 4.6688E-02 |

TSC Unfiltered Inleakage Transport Group Inventory:

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**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 1 | System Nos. | Sheet 512 of 1000 |
|---|---|---|---|---|

```
                          Pathway
Time (h) =   8.0000        Filter
Noble gases (atoms)     0.0000E+00
Elemental I (atoms)     0.0000E+00


Organic I (atoms)       0.0000E+00
Aerosols (kg)           0.0000E+00

TSC Exhaust to Environment Transport Group Inventory:

                          Pathway
Time (h) =   8.0000        Filter
Noble gases (atoms)     0.0000E+00
Elemental I (atoms)     0.0000E+00
Organic I (atoms)       0.0000E+00
Aerosols (kg)           0.0000E+00

Exclusion Area Boundary Doses:

Time (h) =  24.0000    Whole Body   Thyroid       TEDE
Delta dose (rem)        1.6312E+00  4.2102E+02  2.4380E+01
Accumulated dose (rem)  5.5095E+00  1.0845E+03  6.2875E+01

Low Population Zone Doses:

Time (h) =  24.0000    Whole Body   Thyroid       TEDE
Delta dose (rem)        7.9519E-02  1.0556E+01  6.4986E-01
Accumulated dose (rem)  5.0801E-01  8.9397E+01  5.1662E+00

TSC Doses:

Time (h) =  24.0000    Whole Body   Thyroid       TEDE
Delta dose (rem)        3.0964E-03  3.5583E+00  1.9333E-01
Accumulated dose (rem)  1.5993E-02  5.7499E+01  2.9824E+00

Travel Path Doses:

Time (h) =  24.0000    Whole Body   Thyroid       TEDE
Delta dose (rem)        0.0000E+00  0.0000E+00  0.0000E+00
Accumulated dose (rem)  6.3483E-02  1.2742E+01  7.1208E-01

Environment Integral Nuclide Release:

Time (h) =  24.0000       Ci           kg         Atoms         Bq
Co-58                   1.6438E-01  5.1696E-09  5.3676E+16  6.0821E+09
Co-60                   1.2623E-01  1.1167E-07  1.1208E+18  4.6704E+09
Kr-85                   9.9657E+02  2.5401E-03  1.7996E+22  3.6873E+13
Kr-85m                  4.2787E+03  5.1992E-07  3.6835E+18  1.5831E+14
Kr-87                   1.1612E+03  4.0994E-08  2.8376E+17  4.2964E+13
Kr-88                   6.4810E+03  5.1686E-07  3.5370E+18  2.3980E+14
Rb-86                   4.5027E+00  5.5338E-08  3.8751E+17  1.6660E+11
Sr-89                   1.5388E+02  5.2965E-06  3.5839E+19  5.6934E+12
Sr-90                   1.6687E+01  1.2234E-04  8.1858E+20  6.1744E+11
Sr-91                   1.1755E+02  3.2428E-08  2.1460E+17  4.3494E+12
Sr-92                   5.1258E+01  4.0780E-09  2.6694E+16  1.8965E+12
```

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**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 1 | System Nos. | Sheet 513 of 1000 |
|---|---|---|---|---|

| | | | | |
|---|---|---|---|---|
| Y-90 | 1.5559E-01 | 2.8597E-10 | 1.9135E+15 | 5.7567E+09 |
| Y-91 | 1.8848E+00 | 7.6854E-08 | 5.0860E+17 | 6.9736E+10 |
| Y-92 | 6.5352E-01 | 6.7917E-11 | 4.4457E+14 | 2.4180E+10 |
| Y-93 | 1.4210E+00 | 4.2592E-10 | 2.7580E+15 | 5.2578E+10 |
| Zr-95 | 2.4287E+00 | 1.1305E-07 | 7.1666E+17 | 8.9863E+10 |
| Zr-97 | 1.7464E+00 | 9.1356E-10 | 5.6718E+15 | 6.4618E+10 |
| Nb-95 | 2.4391E+00 | 6.2375E-08 | 3.9540E+17 | 9.0246E+10 |
| Mo-99 | 3.0361E+01 | 6.3302E-08 | 3.8507E+17 | 1.1233E+12 |
| Tc-99m | 1.2729E+01 | 2.4208E-09 | 1.4726E+16 | 4.7099E+11 |
| Ru-103 | 2.6752E+01 | 8.2892E-07 | 4.8465E+18 | 9.8984E+11 |
| Ru-105 | 6.3240E+00 | 9.4079E-10 | 5.3958E+15 | 2.3399E+11 |
| Ru-106 | 1.0141E+01 | 3.0312E-06 | 1.7221E+19 | 3.7522E+11 |
| Rh-105 | 1.4161E+01 | 1.6777E-08 | 9.6222E+16 | 5.2394E+11 |
| Sb-127 | 3.4370E+01 | 1.2870E-07 | 6.1029E+17 | 1.2717E+12 |
| Sb-129 | 3.8487E+01 | 6.8440E-09 | 3.1950E+16 | 1.4240E+12 |
| Te-127 | 2.0295E+01 | 7.6903E-09 | 3.6466E+16 | 7.5093E+11 |
| Te-127m | 4.8964E+00 | 5.1909E-07 | 2.4614E+18 | 1.8117E+11 |
| Te-129 | 8.6676E+00 | 4.1388E-10 | 1.9321E+15 | 3.2070E+11 |
| Te-129m | 1.6296E+01 | 5.4095E-06 | 2.5254E+18 | 6.0297E+11 |
| Te-131m | 4.0873E+01 | 5.1257E-08 | 2.3563E+17 | 1.5123E+12 |
| Te-132 | 4.6202E+02 | 1.5219E-06 | 6.9430E+18 | 1.7095E+13 |
| I-131 | 2.6443E+03 | 2.1330E-05 | 9.8053E+19 | 9.7840E+13 |
| I-132 | 8.3094E+02 | 8.0501E-08 | 3.6726E+17 | 3.0745E+13 |
| I-133 | 4.2814E+03 | 3.7794E-06 | 1.7113E+19 | 1.5841E+14 |
| I-134 | 3.8740E+02 | 1.4522E-08 | 6.5263E+16 | 1.4334E+13 |
| I-135 | 2.4944E+03 | 7.1028E-07 | 3.1684E+18 | 9.2293E+13 |
| Xe-133 | 1.3200E+05 | 7.0521E-04 | 3.1931E+21 | 4.8841E+15 |
| Xe-135 | 2.0628E+04 | 8.0775E-06 | 3.6032E+19 | 7.6323E+14 |
| Cs-134 | 4.7616E+02 | 3.6802E-04 | 1.6539E+21 | 1.7618E+13 |
| Cs-136 | 1.2906E+02 | 1.7610E-06 | 7.7976E+18 | 4.7753E+12 |
| Cs-137 | 3.1912E+02 | 3.6688E-03 | 1.6127E+22 | 1.1807E+13 |
| Ba-139 | 2.8110E+01 | 1.7185E-09 | 7.4454E+15 | 1.0401E+12 |
| Ba-140 | 2.5655E+02 | 3.5043E-06 | 1.5074E+19 | 9.4922E+12 |
| La-140 | 2.2698E+00 | 4.0836E-09 | 1.7566E+16 | 8.3981E+10 |
| La-141 | 7.9609E-01 | 1.4077E-10 | 6.0122E+14 | 2.9455E+10 |
| La-142 | 3.5746E-01 | 2.4971E-11 | 1.0590E+14 | 1.3226E+10 |
| Ce-141 | 5.9540E+00 | 2.0896E-07 | 8.9248E+17 | 2.2030E+11 |
| Ce-143 | 4.9289E+00 | 7.4222E-09 | 3.1257E+16 | 1.8237E+11 |
| Ce-144 | 4.8317E+00 | 1.5149E-06 | 6.3354E+18 | 1.7877E+11 |
| Pr-143 | 2.2988E+00 | 3.4137E-08 | 1.4376E+17 | 8.5054E+10 |
| Nd-147 | 9.5658E-01 | 1.1824E-08 | 4.8441E+16 | 3.5393E+10 |
| Np-239 | 5.9252E+01 | 2.5541E-07 | 6.4356E+17 | 2.1923E+12 |
| Pu-238 | 1.9069E-02 | 1.1139E-06 | 2.8184E+18 | 7.0556E+08 |
| Pu-239 | 1.4842E-03 | 2.3878E-05 | 6.0166E+19 | 5.4914E+07 |
| Pu-240 | 1.6005E-03 | 7.0240E-06 | 1.7625E+19 | 5.9220E+07 |
| Pu-241 | 6.6280E-01 | 6.4342E-06 | 1.6078E+19 | 2.4524E+10 |
| Am-241 | 4.0766E-04 | 1.1877E-07 | 2.9680E+17 | 1.5083E+07 |
| Cm-242 | 9.5661E-02 | 2.8863E-08 | 7.1826E+16 | 3.5395E+09 |
| Cm-244 | 7.7515E-03 | 9.5813E-08 | 2.3647E+17 | 2.8681E+08 |

Environment Transport Group Inventory:

| Time (h) = 24.0000 | Present Release | Release Rate/s | Total Release |
|---|---|---|---|
| Noble gases (atoms) | 2.1524E+22 | 2.4912E+17 | 2.1524E+22 |

| | | | |
|---|---|---|---|
| Elemental I (atoms) | 6.3665E+18 | 7.3687E+13 | 6.3665E+18 |
| Organic I (atoms) | 1.9345E+18 | 2.2390E+13 | 1.9345E+18 |
| Aerosols (kg) | 4.2493E-03 | 4.9182E-08 | 4.2493E-03 |

TSC Filtered Air Intake Transport Group Inventory:

| | Pathway |
|---|---|
| Time (h) = 24.0000 | Filter |
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 2.3381E+21 |
| Organic I (atoms) | 8.5493E+20 |
| Aerosols (kg) | 1.1318E+00 |

TSC Unfiltered Inleakage Transport Group Inventory:

| | Pathway |
|---|---|
| Time (h) = 24.0000 | Filter |
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 |

TSC Exhaust to Environment Transport Group Inventory:

| | Pathway |
|---|---|
| Time (h) = 24.0000 | Filter |
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 |

TSC Compartment Nuclide Inventory:

| Time (h) = 24.0000 | Ci | kg | Atoms | Bq |
|---|---|---|---|---|
| Co-58 | 6.7774E-09 | 2.1314E-16 | 2.2130E+09 | 2.5076E+02 |
| Co-60 | 5.2362E-09 | 4.6322E-15 | 4.6493E+10 | 1.9374E+02 |
| Kr-85 | 7.9048E-04 | 2.0148E-09 | 1.4275E+16 | 2.9248E+07 |
| Kr-85m | 3.6502E-04 | 4.4355E-14 | 3.1425E+11 | 1.3506E+07 |
| Kr-87 | 4.1520E-08 | 1.4658E-18 | 1.0146E+07 | 1.5362E+03 |
| Kr-88 | 1.0857E-04 | 8.6582E-15 | 5.9251E+10 | 4.0170E+06 |
| Rb-86 | 1.7501E-07 | 2.1509E-15 | 1.5062E+10 | 6.4755E+03 |
| Sr-89 | 6.3280E-06 | 2.1781E-13 | 1.4738E+12 | 2.3414E+05 |
| Sr-90 | 6.9237E-07 | 5.0758E-12 | 3.3963E+13 | 2.5618E+04 |
| Sr-91 | 1.3868E-06 | 3.8256E-16 | 2.5317E+09 | 5.1311E+04 |
| Sr-92 | 1.4561E-08 | 1.1584E-18 | 7.5827E+06 | 5.3874E+02 |
| Y-90 | 5.4375E-09 | 9.9943E-18 | 6.6874E+07 | 2.0119E+02 |
| Y-91 | 7.7603E-08 | 3.1644E-15 | 2.0941E+10 | 2.8713E+03 |
| Y-92 | 6.6135E-10 | 6.8731E-20 | 4.4990E+05 | 2.4470E+01 |
| Y-93 | 1.8169E-08 | 5.4457E-18 | 3.5263E+07 | 6.7224E+02 |
| Zr-95 | 1.0007E-07 | 4.6580E-15 | 2.9527E+10 | 3.7025E+03 |
| Zr-97 | 3.6722E-08 | 1.9209E-17 | 1.1926E+08 | 1.3587E+03 |
| Nb-95 | 9.9914E-08 | 2.5552E-15 | 1.6197E+10 | 3.6968E+03 |
| Mo-99 | 1.0667E-06 | 2.2241E-15 | 1.3529E+10 | 3.9468E+04 |
| Tc-99m | 6.6771E-08 | 1.2698E-17 | 7.7244E+07 | 2.4705E+03 |
| Ru-103 | 1.0974E-06 | 3.4002E-14 | 1.9880E+11 | 4.0603E+04 |

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**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 1 | System Nos. | Sheet 515 of 1000 |
|---|---|---|---|---|

| | | | | |
|---|---|---|---|---|
| Ru-105 | 1.4553E-08 | 2.1650E-18 | 1.2417E+07 | 5.3847E+02 |
| Ru-106 | 4.2026E-07 | 1.2562E-13 | 7.1366E+11 | 1.5550E+04 |
| Rh-105 | 4.2881E-07 | 5.0804E-16 | 2.9138E+09 | 1.5866E+04 |
| Sb-127 | 1.2671E-06 | 4.7447E-15 | 2.2499E+10 | 4.6882E+04 |
| Sb-129 | 8.1044E-08 | 1.4412E-17 | 6.7279E+07 | 2.9986E+03 |
| Te-127 | 2.3426E-07 | 8.8763E-17 | 4.2090E+08 | 8.6674E+03 |
| Te-127m | 2.0232E-07 | 2.1449E-14 | 1.0171E+11 | 7.4860E+03 |
| Te-129m | 6.6717E-07 | 2.2147E-13 | 1.0339E+11 | 2.4685E+04 |
| Te-131m | 1.1677E-06 | 1.4643E-15 | 6.7316E+09 | 4.3204E+04 |
| Te-132 | 1.6666E-05 | 5.4895E-14 | 2.5044E+11 | 6.1663E+05 |
| I-131 | 1.1050E-04 | 8.9134E-13 | 4.0976E+12 | 4.0887E+06 |
| I-132 | 8.9523E-08 | 8.6729E-18 | 3.9568E+07 | 3.3123E+03 |
| I-133 | 1.0938E-04 | 9.6552E-14 | 4.3718E+11 | 4.0469E+06 |
| I-135 | 1.6866E-05 | 4.8026E-15 | 2.1424E+10 | 6.2405E+05 |
| Xe-133 | 9.8499E-02 | 5.2622E-10 | 2.3827E+15 | 3.6445E+09 |
| Xe-135 | 6.1636E-03 | 2.4136E-12 | 1.0767E+13 | 2.2805E+08 |
| Cs-134 | 1.8958E-05 | 1.4653E-11 | 6.5852E+13 | 7.0146E+05 |
| Cs-136 | 4.9640E-06 | 6.7730E-14 | 2.9991E+11 | 1.8367E+05 |
| Cs-137 | 1.2713E-05 | 1.4616E-10 | 6.4247E+14 | 4.7038E+05 |
| Ba-140 | 1.0274E-05 | 1.4034E-13 | 6.0368E+11 | 3.8015E+05 |
| La-140 | 7.1497E-08 | 1.2863E-16 | 5.5331E+08 | 2.6454E+03 |
| La-141 | 1.2074E-09 | 2.1349E-19 | 9.1183E+05 | 4.4673E+01 |
| Ce-141 | 2.4365E-07 | 8.5510E-15 | 3.6521E+10 | 9.0149E+03 |
| Ce-143 | 1.4583E-07 | 2.1959E-16 | 9.2477E+08 | 5.3956E+03 |
| Ce-144 | 2.0016E-07 | 6.2757E-14 | 2.6245E+11 | 7.4060E+03 |
| Pr-143 | 9.2259E-08 | 1.3701E-15 | 5.7698E+09 | 3.4136E+03 |
| Nd-147 | 3.8091E-08 | 4.7085E-16 | 1.9289E+09 | 1.4094E+03 |
| Np-239 | 2.0234E-06 | 8.7218E-15 | 2.1977E+10 | 7.4865E+04 |
| Pu-238 | 7.9121E-10 | 4.6216E-14 | 1.1694E+11 | 2.9275E+01 |
| Pu-239 | 6.1581E-11 | 9.9075E-13 | 2.4964E+12 | 2.2785E+00 |
| Pu-240 | 6.6409E-11 | 2.9144E-13 | 7.3129E+11 | 2.4571E+00 |
| Pu-241 | 2.7499E-08 | 2.6694E-13 | 6.6704E+11 | 1.0174E+03 |
| Am-241 | 1.6914E-11 | 4.9282E-15 | 1.2315E+10 | 6.2583E-01 |
| Cm-242 | 3.9582E-09 | 1.1943E-15 | 2.9720E+09 | 1.4645E+02 |
| Cm-244 | 3.2160E-10 | 3.9752E-15 | 9.8112E+09 | 1.1899E+01 |

TSC Transport Group Inventory:

| Time (h) = 24.0000 | Atmosphere | Sump | Overlying Pool |
|---|---|---|---|
| Noble gases (atoms) | 1.7074E+16 | 0.0000E+00 | 0.0000E+00 |
| Elemental I (atoms) | 6.1455E+11 | 0.0000E+00 | 0.0000E+00 |
| Organic I (atoms) | 2.2472E+11 | 0.0000E+00 | 0.0000E+00 |
| Aerosols (kg) | 1.6960E-10 | 0.0000E+00 | 0.0000E+00 |

| Time (h) = 24.0000 | Deposition Surfaces | Recirculating Filter |
|---|---|---|
| Noble gases (atoms) | 0.0000E+00 | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 | 4.5878E+13 |
| Organic I (atoms) | 0.0000E+00 | 1.2790E+13 |
| Aerosols (kg) | 0.0000E+00 | 3.2767E-08 |

TSC Filtered Air Intake Transport Group Inventory:

Pathway

```
Time (h) =  24.0000      Filter
Noble gases (atoms)    0.0000E+00
Elemental I (atoms)    2.3381E+21
Organic I (atoms)      8.5493E+20
Aerosols (kg)          1.1318E+00

TSC Unfiltered Inleakage Transport Group Inventory:

                        Pathway


Time (h) =  24.0000      Filter
Noble gases (atoms)    0.0000E+00
Elemental I (atoms)    0.0000E+00
Organic I (atoms)      0.0000E+00
Aerosols (kg)          0.0000E+00

TSC Exhaust to Environment Transport Group Inventory:

                        Pathway
Time (h) =  24.0000      Filter
Noble gases (atoms)    0.0000E+00
Elemental I (atoms)    0.0000E+00
Organic I (atoms)      0.0000E+00
Aerosols (kg)          0.0000E+00

Exclusion Area Boundary Doses:

Time (h) =  96.0000    Whole Body   Thyroid       TEDE
Delta dose (rem)        1.1126E+00  4.8578E+02  2.9964E+01
Accumulated dose (rem)  6.6222E+00  1.5703E+03  9.2839E+01

Low Population Zone Doses:

Time (h) =  96.0000    Whole Body   Thyroid       TEDE
Delta dose (rem)        2.2252E-02  6.3846E+00  4.0144E-01
Accumulated dose (rem)  5.3026E-01  9.5782E+01  5.5676E+00

TSC Doses:

Time (h) =  96.0000    Whole Body   Thyroid       TEDE
Delta dose (rem)        7.9666E-04  1.6503E+00  9.6620E-02
Accumulated dose (rem)  1.6789E-02  5.9149E+01  3.0790E+00

Travel Path Doses:

Time (h) =  96.0000    Whole Body   Thyroid       TEDE
Delta dose (rem)        0.0000E+00  0.0000E+00  0.0000E+00
Accumulated dose (rem)  6.3483E-02  1.2742E+01  7.1208E-01

Environment Integral Nuclide Release:

Time (h) =  96.0000       Ci           kg         Atoms         Bq
Co-58                  2.6273E-01  8.2626E-09  8.5790E+16  9.7211E+09
Co-60                  2.0330E-01  1.7985E-07  1.8051E+18  7.5220E+09
Kr-85                  2.5611E+03  6.5277E-03  4.6248E+22  9.4759E+13
Kr-85m                 4.3256E+03  5.2561E-07  3.7239E+18  1.6005E+14
```

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**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 1 | System Nos. | Sheet 517 of 1000 |
|---|---|---|---|---|

| | | | | |
|---|---|---|---|---|
| Kr-87 | 1.1612E+03 | 4.0994E-08 | 2.8376E+17 | 4.2964E+13 |
| Kr-88 | 6.4882E+03 | 5.1743E-07 | 3.5410E+18 | 2.4006E+14 |
| Rb-86 | 6.9411E+00 | 8.5306E-08 | 5.9735E+17 | 2.5682E+11 |
| Sr-89 | 2.4517E+02 | 8.4388E-06 | 5.7101E+19 | 9.0711E+12 |
| Sr-90 | 2.6883E+01 | 1.9708E-04 | 1.3187E+21 | 9.9466E+11 |
| Sr-91 | 1.2121E+02 | 3.3438E-08 | 2.2129E+17 | 4.4849E+12 |
| Sr-92 | 5.1265E+01 | 4.0786E-09 | 2.6698E+16 | 1.8968E+12 |
| Y-90 | 2.1108E-01 | 3.8797E-10 | 2.5960E+15 | 7.8100E+09 |
| Y-91 | 3.0074E+00 | 1.2263E-07 | 8.1155E+17 | 1.1128E+11 |
| Y-92 | 6.5403E-01 | 6.7970E-11 | 4.4492E+14 | 2.4199E+10 |
| Y-93 | 1.4722E+00 | 4.4127E-10 | 2.8574E+15 | 5.4472E+10 |
| Zr-95 | 3.8786E+00 | 1.8054E-07 | 1.1445E+18 | 1.4351E+11 |
| Zr-97 | 1.9170E+00 | 1.0028E-09 | 6.2256E+15 | 7.0928E+10 |
| Nb-95 | 3.8676E+00 | 9.8908E-08 | 6.2699E+17 | 1.4310E+11 |
| Mo-99 | 4.1361E+01 | 8.6239E-08 | 5.2459E+17 | 1.5304E+12 |
| Tc-99m | 1.2834E+01 | 2.4407E-09 | 1.4847E+16 | 4.7486E+11 |
| Ru-103 | 4.2491E+01 | 1.3166E-06 | 7.6977E+18 | 1.5722E+12 |
| Ru-105 | 6.3395E+00 | 9.4310E-10 | 5.4090E+15 | 2.3456E+11 |
| Ru-106 | 1.6313E+01 | 4.8759E-06 | 2.7701E+19 | 6.0357E+11 |
| Rh-105 | 1.7528E+01 | 2.0767E-08 | 1.1911E+17 | 6.4855E+11 |
| Sb-127 | 4.8770E+01 | 1.8262E-07 | 8.6597E+17 | 1.8045E+12 |
| Sb-129 | 3.8570E+01 | 6.8589E-09 | 3.2019E+16 | 1.4271E+12 |
| Te-127 | 2.0903E+01 | 7.9206E-09 | 3.7558E+16 | 7.7342E+11 |
| Te-127m | 7.8476E+00 | 8.3196E-07 | 3.9450E+18 | 2.9036E+11 |
| Te-129 | 8.6676E+00 | 4.1388E-10 | 1.9321E+15 | 3.2070E+11 |
| Te-129m | 2.5823E+01 | 8.5717E-06 | 4.0016E+18 | 9.5544E+11 |
| Te-131m | 4.9200E+01 | 6.1701E-08 | 2.8364E+17 | 1.8204E+12 |
| Te-132 | 6.4317E+02 | 2.1185E-06 | 9.6652E+18 | 2.3797E+13 |
| I-131 | 4.0582E+03 | 3.2734E-05 | 1.5048E+20 | 1.5015E+14 |
| I-132 | 8.3098E+02 | 8.0504E-08 | 3.6728E+17 | 3.0746E+13 |
| I-133 | 4.8726E+03 | 4.3014E-06 | 1.9476E+19 | 1.8029E+14 |
| I-134 | 3.8740E+02 | 1.4522E-08 | 6.5263E+16 | 1.4334E+13 |
| I-135 | 2.5232E+03 | 7.1847E-07 | 3.2050E+18 | 9.3357E+13 |
| Xe-133 | 2.9123E+05 | 1.5559E-03 | 7.0448E+21 | 1.0775E+16 |
| Xe-135 | 2.2522E+04 | 8.8191E-06 | 3.9341E+19 | 8.3330E+14 |
| Cs-134 | 7.5496E+02 | 5.8351E-04 | 2.6224E+21 | 2.7934E+13 |
| Cs-136 | 1.9664E+02 | 2.6830E-06 | 1.1880E+19 | 7.2755E+12 |
| Cs-137 | 5.0633E+02 | 5.8211E-03 | 2.5588E+22 | 1.8734E+13 |
| Ba-139 | 2.8110E+01 | 1.7185E-09 | 7.4454E+15 | 1.0401E+12 |
| Ba-140 | 3.9610E+02 | 5.4106E-06 | 2.3274E+19 | 1.4656E+13 |
| La-140 | 2.8711E+00 | 5.1654E-09 | 2.2219E+16 | 1.0623E+11 |
| La-141 | 7.9718E-01 | 1.4096E-10 | 6.0205E+14 | 2.9496E+10 |
| La-142 | 3.5746E-01 | 2.4971E-11 | 1.0590E+14 | 1.3226E+10 |
| Ce-141 | 9.4293E+00 | 3.3093E-07 | 1.4134E+18 | 3.4889E+11 |
| Ce-143 | 6.0302E+00 | 9.0806E-09 | 3.8241E+16 | 2.2312E+11 |
| Ce-144 | 7.7687E+00 | 2.4357E-06 | 1.0186E+19 | 2.8744E+11 |
| Pr-143 | 3.5580E+00 | 5.2837E-08 | 2.2251E+17 | 1.3165E+11 |
| Nd-147 | 1.4674E+00 | 1.8139E-08 | 7.4310E+16 | 5.4294E+10 |
| Np-239 | 7.8997E+01 | 3.4052E-07 | 8.5800E+17 | 2.9229E+12 |
| Pu-238 | 3.0721E-02 | 1.7945E-06 | 4.5405E+18 | 1.1367E+09 |
| Pu-239 | 2.3911E-03 | 3.8468E-05 | 9.6930E+19 | 8.8469E+07 |
| Pu-240 | 2.5785E-03 | 1.1316E-05 | 2.8394E+19 | 9.5405E+07 |
| Pu-241 | 1.0677E+00 | 1.0365E-05 | 2.5899E+19 | 3.9504E+10 |
| Am-241 | 6.5675E-04 | 1.9135E-07 | 4.7815E+17 | 2.4300E+07 |
| Cm-242 | 1.5358E-01 | 4.6339E-08 | 1.1531E+17 | 5.6825E+09 |

| | | | | |
|---|---|---|---|---|
| Cm-244 | 1.2487E-02 | 1.5435E-07 | 3.8094E+17 | 4.6202E+08 |

Environment Transport Group Inventory:

| Time (h) = 96.0000 | Present Release | Release Rate/s | Total Release |
|---|---|---|---|
| Noble gases (atoms) | 5.5325E+22 | 1.6008E+17 | 5.5325E+22 |
| Elemental I (atoms) | 1.4648E+19 | 4.2383E+13 | 1.4648E+19 |
| Organic I (atoms) | 4.9627E+18 | 1.4360E+13 | 4.9627E+18 |
| Aerosols (kg) | 6.7470E-03 | 1.9523E-08 | 6.7470E-03 |

TSC Filtered Air Intake Transport Group Inventory:

| Time (h) = 96.0000 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 1.7534E+22 |
| Organic I (atoms) | 6.4115E+21 |
| Aerosols (kg) | 6.1877E+00 |

TSC Unfiltered Inleakage Transport Group Inventory:

| Time (h) = 96.0000 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 |

TSC Exhaust to Environment Transport Group Inventory:

| Time (h) = 96.0000 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 |

TSC Compartment Nuclide Inventory:

| Time (h) = 96.0000 | Ci | kg | Atoms | Bq |
|---|---|---|---|---|
| Co-58 | 1.5305E-09 | 4.8130E-17 | 4.9974E+08 | 5.6627E+01 |
| Co-60 | 1.2164E-09 | 1.0761E-15 | 1.0800E+10 | 4.5005E+01 |
| Kr-85 | 2.5243E-04 | 6.4341E-10 | 4.5585E+15 | 9.3400E+06 |
| Kr-85m | 1.6936E-09 | 2.0580E-19 | 1.4581E+06 | 6.2664E+01 |
| Rb-86 | 3.6407E-08 | 4.4744E-16 | 3.1332E+09 | 1.3471E+03 |
| Sr-89 | 1.4122E-06 | 4.8609E-14 | 3.2891E+11 | 5.2251E+04 |
| Sr-90 | 1.6098E-07 | 1.1801E-12 | 7.8966E+12 | 5.9562E+03 |
| Sr-91 | 1.6867E-09 | 4.6529E-19 | 3.0792E+06 | 6.2407E+01 |
| Y-90 | 5.7977E-10 | 1.0656E-18 | 7.1304E+06 | 2.1451E+01 |
| Y-91 | 1.7416E-08 | 7.1018E-16 | 4.6998E+09 | 6.4441E+02 |
| Zr-95 | 2.2526E-08 | 1.0486E-15 | 6.6470E+09 | 8.3347E+02 |
| Zr-97 | 4.4560E-10 | 2.3310E-19 | 1.4471E+06 | 1.6487E+01 |
| Nb-95 | 2.1900E-08 | 5.6006E-16 | 3.5503E+09 | 8.1031E+02 |
| Mo-99 | 1.1646E-07 | 2.4281E-16 | 1.4770E+09 | 4.3088E+03 |

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**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 1 | System Nos. | Sheet 519 of 1000 |
|---|---|---|---|---|

| | | | | |
|---|---|---|---|---|
| Ru-103 | 2.4203E-07 | 7.4994E-15 | 4.3847E+10 | 8.9552E+03 |
| Ru-106 | 9.7181E-08 | 2.9047E-14 | 1.6503E+11 | 3.5957E+03 |
| Rh-105 | 2.4312E-08 | 2.8804E-17 | 1.6520E+08 | 8.9955E+02 |
| Sb-127 | 1.7169E-07 | 6.4292E-16 | 3.0486E+09 | 6.3526E+03 |
| Te-127 | 2.6189E-10 | 9.9233E-20 | 4.7055E+05 | 9.6898E+00 |
| Te-127m | 4.6161E-08 | 4.8938E-15 | 2.3206E+10 | 1.7080E+03 |
| Te-129m | 1.4584E-07 | 4.8411E-14 | 2.2600E+10 | 5.3961E+03 |
| Te-131m | 5.1447E-08 | 6.4518E-17 | 2.9659E+08 | 1.9035E+03 |
| Te-132 | 2.0473E-06 | 6.7435E-15 | 3.0765E+10 | 7.5749E+04 |
| I-131 | 2.0939E-05 | 1.6890E-13 | 7.7645E+11 | 7.7476E+05 |
| I-133 | 2.4367E-06 | 2.1510E-15 | 9.7397E+09 | 9.0158E+04 |
| I-135 | 2.1774E-09 | 6.2001E-19 | 2.7657E+06 | 8.0563E+01 |
| Xe-133 | 2.1171E-02 | 1.1310E-10 | 5.1212E+14 | 7.8332E+08 |
| Xe-135 | 8.1270E-06 | 3.1824E-15 | 1.4196E+10 | 3.0070E+05 |
| Cs-134 | 4.3966E-06 | 3.3981E-12 | 1.5272E+13 | 1.6267E+05 |
| Cs-136 | 9.8493E-07 | 1.3439E-14 | 5.9507E+10 | 3.6442E+04 |
| Cs-137 | 2.9559E-06 | 3.3982E-11 | 1.4938E+14 | 1.0937E+05 |
| Ba-140 | 2.0294E-06 | 2.7721E-14 | 1.1924E+11 | 7.5089E+04 |
| La-140 | 4.8152E-09 | 8.6630E-18 | 3.7264E+07 | 1.7816E+02 |
| Ce-141 | 5.3148E-08 | 1.8653E-15 | 7.9666E+09 | 1.9665E+03 |
| Ce-143 | 7.4741E-09 | 1.1255E-17 | 4.7397E+07 | 2.7654E+02 |
| Ce-144 | 4.6208E-08 | 1.4488E-14 | 6.0588E+10 | 1.7097E+03 |
| Pr-143 | 1.8405E-08 | 2.7331E-16 | 1.1510E+09 | 6.8097E+02 |
| Nd-147 | 7.3298E-09 | 9.0605E-17 | 3.7118E+08 | 2.7120E+02 |
| Np-239 | 1.9459E-07 | 8.3877E-16 | 2.1135E+09 | 7.1997E+03 |
| Pu-238 | 1.8398E-10 | 1.0747E-14 | 2.7193E+10 | 6.8073E+00 |
| Pu-239 | 1.4321E-11 | 2.3040E-13 | 5.8054E+11 | 5.2986E-01 |
| Pu-240 | 1.5443E-11 | 6.7774E-14 | 1.7006E+11 | 5.7140E-01 |
| Pu-241 | 6.3922E-09 | 6.2053E-14 | 1.5506E+11 | 2.3651E+02 |
| Am-241 | 3.9334E-12 | 1.1460E-15 | 2.8637E+09 | 1.4553E-01 |
| Cm-242 | 9.0880E-10 | 2.7421E-16 | 6.8236E+08 | 3.3625E+01 |
| Cm-244 | 7.4765E-11 | 9.2414E-16 | 2.2809E+09 | 2.7663E+00 |

TSC Transport Group Inventory:

| Time (h) = 96.0000 | Atmosphere | Sump | Overlying Pool |
|---|---|---|---|
| Noble gases (atoms) | 5.4553E+15 | 0.0000E+00 | 0.0000E+00 |
| Elemental I (atoms) | 1.9636E+11 | 0.0000E+00 | 0.0000E+00 |
| Organic I (atoms) | 7.1803E+10 | 0.0000E+00 | 0.0000E+00 |
| Aerosols (kg) | 3.9441E-11 | 0.0000E+00 | 0.0000E+00 |

| Time (h) = 96.0000 | Deposition Surfaces | Recirculating Filter |
|---|---|---|
| Noble gases (atoms) | 0.0000E+00 | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 | 6.7305E+13 |
| Organic I (atoms) | 0.0000E+00 | 2.0625E+13 |
| Aerosols (kg) | 0.0000E+00 | 3.8017E-08 |

TSC Filtered Air Intake Transport Group Inventory:

| Time (h) = 96.0000 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 1.7534E+22 |

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**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 1 | System Nos. | Sheet 520 of 1000 |
|---|---|---|---|---|

```
Organic I (atoms)      6.4115E+21
Aerosols (kg)          6.1877E+00

TSC Unfiltered Inleakage Transport Group Inventory:

                        Pathway
Time (h) =  96.0000      Filter
Noble gases (atoms)    0.0000E+00
Elemental I (atoms)    0.0000E+00
Organic I (atoms)      0.0000E+00
Aerosols (kg)          0.0000E+00

TSC Exhaust to Environment Transport Group Inventory:



                        Pathway
Time (h) =  96.0000      Filter
Noble gases (atoms)    0.0000E+00
Elemental I (atoms)    0.0000E+00
Organic I (atoms)      0.0000E+00
Aerosols (kg)          0.0000E+00

Exclusion Area Boundary Doses:

Time (h) = 720.0000    Whole Body   Thyroid       TEDE
Delta dose (rem)        1.8642E+00  6.8621E+02  5.7390E+01
Accumulated dose (rem)  8.4863E+00  2.2565E+03  1.5023E+02

Low Population Zone Doses:

Time (h) = 720.0000    Whole Body   Thyroid       TEDE
Delta dose (rem)        9.3209E-03  2.2547E+00  1.9176E-01
Accumulated dose (rem)  5.3958E-01  9.8036E+01  5.7594E+00

TSC Doses:

Time (h) = 720.0000    Whole Body   Thyroid       TEDE
Delta dose (rem)        7.3382E-04  1.2946E+00  1.0099E-01
Accumulated dose (rem)  1.7523E-02  6.0444E+01  3.1800E+00

Travel Path Doses:

Time (h) = 720.0000    Whole Body   Thyroid       TEDE
Delta dose (rem)        0.0000E+00  0.0000E+00  0.0000E+00
Accumulated dose (rem)  6.3483E-02  1.2742E+01  7.1208E-01

Environment Integral Nuclide Release:

Time (h) = 720.0000       Ci           kg         Atoms         Bq
Co-58                  4.9295E-01  1.5502E-08  1.6096E+17  1.8239E+10
Co-60                  3.9996E-01  3.5382E-07  3.5513E+18  1.4798E+10
Kr-85                  1.5988E+04  4.0750E-02  2.8871E+23  5.9154E+14
Kr-85m                 4.3256E+03  5.2561E-07  3.7239E+18  1.6005E+14
Kr-87                  1.1612E+03  4.0994E-08  2.8376E+17  4.2964E+13
Kr-88                  6.4882E+03  5.1743E-07  3.5410E+18  2.4006E+14
Rb-86                  1.1467E+01  1.4092E-07  9.8682E+17  4.2427E+11
```

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**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 1 | System Nos. | Sheet 521 of 1000 |
|---|---|---|---|---|

| | | | | |
|---|---|---|---|---|
| Sr-89 | 4.5150E+02 | 1.5541E-05 | 1.0516E+20 | 1.6706E+13 |
| Sr-90 | 5.2970E+01 | 3.8832E-04 | 2.5984E+21 | 1.9599E+12 |
| Sr-91 | 1.2123E+02 | 3.3442E-08 | 2.2131E+17 | 4.4854E+12 |
| Sr-92 | 5.1265E+01 | 4.0786E-09 | 2.6698E+16 | 1.8968E+12 |
| Y-90 | 2.3918E-01 | 4.3961E-10 | 2.9416E+15 | 8.8496E+09 |
| Y-91 | 5.5876E+00 | 2.2784E-07 | 1.5078E+18 | 2.0674E+11 |
| Y-92 | 6.5403E-01 | 6.7970E-11 | 4.4492E+14 | 2.4199E+10 |
| Y-93 | 1.4725E+00 | 4.4135E-10 | 2.8579E+15 | 5.4482E+10 |
| Zr-95 | 7.2408E+00 | 3.3705E-07 | 2.1366E+18 | 2.6791E+11 |
| Zr-97 | 1.9238E+00 | 1.0063E-09 | 6.2477E+15 | 7.1179E+10 |
| Nb-95 | 6.9322E+00 | 1.7728E-07 | 1.1238E+18 | 2.5649E+11 |
| Mo-99 | 4.7134E+01 | 9.8274E-08 | 5.9780E+17 | 1.7439E+12 |
| Tc-99m | 1.2834E+01 | 2.4407E-09 | 1.4847E+16 | 4.7486E+11 |
| Ru-103 | 7.6864E+01 | 2.3816E-06 | 1.3925E+19 | 2.8440E+12 |
| Ru-105 | 6.3395E+00 | 9.4310E-10 | 5.4090E+15 | 2.3456E+11 |
| Ru-106 | 3.1839E+01 | 9.5167E-06 | 5.4067E+19 | 1.1780E+12 |
| Rh-105 | 1.8261E+01 | 2.1635E-08 | 1.2409E+17 | 6.7567E+11 |
| Sb-127 | 5.9501E+01 | 2.2281E-07 | 1.0565E+18 | 2.2015E+12 |
| Sb-129 | 3.8570E+01 | 6.8589E-09 | 3.2019E+16 | 1.4271E+12 |
| Te-127 | 2.0905E+01 | 7.9214E-09 | 3.7562E+16 | 7.7350E+11 |
| Te-127m | 1.4973E+01 | 1.5874E-06 | 7.5271E+18 | 5.5400E+11 |
| Te-129 | 8.6676E+00 | 4.1388E-10 | 1.9321E+15 | 3.2070E+11 |
| Te-129m | 4.6099E+01 | 1.5302E-05 | 7.1437E+18 | 1.7057E+12 |
| Te-131m | 5.0544E+01 | 6.3385E-08 | 2.9138E+17 | 1.8701E+12 |
| Te-132 | 7.5762E+02 | 2.4955E-06 | 1.1385E+19 | 2.8032E+13 |
| I-131 | 6.2201E+03 | 5.0172E-05 | 2.3065E+20 | 2.3014E+14 |
| I-132 | 8.3098E+02 | 8.0504E-08 | 3.6728E+17 | 3.0746E+13 |
| I-133 | 4.9170E+03 | 4.3405E-06 | 1.9654E+19 | 1.8193E+14 |
| I-134 | 3.8740E+02 | 1.4522E-08 | 6.5263E+16 | 1.4334E+13 |
| I-135 | 2.5232E+03 | 7.1847E-07 | 3.2050E+18 | 9.3357E+13 |
| Xe-133 | 6.0663E+05 | 3.2409E-03 | 1.4674E+22 | 2.2445E+16 |
| Xe-135 | 2.2529E+04 | 8.8222E-06 | 3.9354E+19 | 8.3359E+14 |
| Cs-134 | 1.4627E+03 | 1.1305E-03 | 5.0806E+21 | 5.4119E+13 |
| Cs-136 | 3.0756E+02 | 4.1964E-06 | 1.8582E+19 | 1.1380E+13 |
| Cs-137 | 9.8534E+02 | 1.1328E-02 | 4.9795E+22 | 3.6457E+13 |
| Ba-139 | 2.8110E+01 | 1.7185E-09 | 7.4454E+15 | 1.0401E+12 |
| Ba-140 | 6.2262E+02 | 8.5047E-06 | 3.6583E+19 | 2.3037E+13 |
| La-140 | 3.0331E+00 | 5.4570E-09 | 2.3473E+16 | 1.1223E+11 |
| La-141 | 7.9718E-01 | 1.4096E-10 | 6.0205E+14 | 2.9496E+10 |
| La-142 | 3.5746E-01 | 2.4971E-11 | 1.0590E+14 | 1.3226E+10 |
| Ce-141 | 1.6782E+01 | 5.8899E-07 | 2.5156E+18 | 6.2095E+11 |
| Ce-143 | 6.2425E+00 | 9.4002E-09 | 3.9587E+16 | 2.3097E+11 |
| Ce-144 | 1.5119E+01 | 4.7404E-06 | 1.9825E+19 | 5.5942E+11 |
| Pr-143 | 5.6533E+00 | 8.3954E-08 | 3.5355E+17 | 2.0917E+11 |
| Nd-147 | 2.2448E+00 | 2.7748E-08 | 1.1368E+17 | 8.3057E+10 |
| Np-239 | 8.7587E+01 | 3.7754E-07 | 9.5130E+17 | 3.2407E+12 |
| Pu-238 | 6.0546E-02 | 3.5366E-06 | 8.9487E+18 | 2.2402E+09 |
| Pu-239 | 4.7130E-03 | 7.5824E-05 | 1.9106E+20 | 1.7438E+08 |
| Pu-240 | 5.0824E-03 | 2.2304E-05 | 5.5967E+19 | 1.8805E+08 |
| Pu-241 | 2.1030E+00 | 2.0415E-05 | 5.1014E+19 | 7.7812E+10 |
| Am-241 | 1.2945E-03 | 3.7716E-07 | 9.4244E+17 | 4.7895E+07 |
| Cm-242 | 2.9613E-01 | 8.9351E-08 | 2.2235E+17 | 1.0957E+10 |
| Cm-244 | 2.4599E-02 | 3.0406E-07 | 7.5044E+17 | 9.1016E+08 |

Environment Transport Group Inventory:

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**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 1 | System Nos. | Sheet 522 of 1000 |
|---|---|---|---|---|

| Time (h) = 720.0000 | Present Release | Release Rate/s | Total Release |
|---|---|---|---|
| Noble gases (atoms) | 3.4615E+23 | 1.3355E+17 | 3.4615E+23 |
| Elemental I (atoms) | 8.5900E+19 | 3.3141E+13 | 8.5900E+19 |
| Organic I (atoms) | 3.1018E+19 | 1.1967E+13 | 3.1018E+19 |
| Aerosols (kg) | 1.3142E-02 | 5.0701E-09 | 1.3142E-02 |

TSC Filtered Air Intake Transport Group Inventory:

| Time (h) = 720.0000 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 1.4828E+23 |
| Organic I (atoms) | 5.4221E+22 |
| Aerosols (kg) | 1.9132E+01 |

TSC Unfiltered Inleakage Transport Group Inventory:

| Time (h) = 720.0000 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 |

TSC Exhaust to Environment Transport Group Inventory:

| Time (h) = 720.0000 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 |

TSC Compartment Nuclide Inventory:

| Time (h) = 720.0000 | Ci | kg | Atoms | Bq |
|---|---|---|---|---|
| Co-58 | 6.9942E-11 | 2.1996E-18 | 2.2838E+07 | 2.5879E+00 |
| Co-60 | 7.1034E-11 | 6.2840E-17 | 6.3072E+08 | 2.6282E+00 |
| Kr-85 | 2.1562E-04 | 5.4957E-10 | 3.8936E+15 | 7.9778E+06 |
| Rb-86 | 8.1699E-10 | 1.0041E-17 | 7.0310E+07 | 3.0229E+01 |
| Sr-89 | 5.8261E-08 | 2.0054E-15 | 1.3569E+10 | 2.1557E+03 |
| Sr-90 | 9.4733E-09 | 6.9448E-14 | 4.6470E+11 | 3.5051E+02 |
| Y-91 | 7.5450E-10 | 3.0766E-17 | 2.0360E+08 | 2.7917E+01 |
| Zr-95 | 1.0019E-09 | 4.6637E-17 | 2.9564E+08 | 3.7070E+01 |
| Nb-95 | 7.7313E-10 | 1.9771E-17 | 1.2533E+08 | 2.8606E+01 |
| Mo-99 | 9.7842E-12 | 2.0400E-20 | 1.2409E+05 | 3.6202E-01 |
| Ru-103 | 9.0175E-09 | 2.7941E-16 | 1.6336E+09 | 3.3365E+02 |
| Ru-106 | 5.4550E-09 | 1.6305E-15 | 9.2633E+09 | 2.0183E+02 |
| Sb-127 | 9.3819E-11 | 3.5131E-19 | 1.6659E+06 | 3.4713E+00 |
| Te-127m | 2.3064E-09 | 2.4452E-16 | 1.1595E+09 | 8.5338E+01 |
| Te-129m | 5.0281E-09 | 1.6691E-15 | 7.7917E+08 | 1.8604E+02 |
| Te-132 | 4.7815E-10 | 1.5750E-18 | 7.1854E+06 | 1.7692E+01 |
| I-131 | 4.7396E-07 | 3.8230E-15 | 1.7575E+10 | 1.7536E+04 |

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**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 1 | System Nos. | Sheet 523 of 1000 |
|---|---|---|---|---|

| | | | | |
|---|---|---|---|---|
| Xe-133 | 5.8484E-04 | 3.1244E-12 | 1.4147E+13 | 2.1639E+07 |
| Cs-134 | 2.5304E-07 | 1.9558E-13 | 8.7894E+11 | 9.3625E+03 |
| Cs-136 | 1.4669E-08 | 2.0015E-16 | 8.8628E+08 | 5.4277E+02 |
| Cs-137 | 1.7396E-07 | 1.9999E-12 | 8.7910E+12 | 6.4363E+03 |
| Ba-140 | 2.9074E-08 | 3.9713E-16 | 1.7083E+09 | 1.0757E+03 |
| Ce-141 | 1.7995E-09 | 6.3153E-17 | 2.6973E+08 | 6.6580E+01 |
| Ce-144 | 2.5566E-09 | 8.0156E-16 | 3.3522E+09 | 9.4593E+01 |
| Pr-143 | 2.8721E-10 | 4.2651E-18 | 1.7962E+07 | 1.0627E+01 |
| Nd-147 | 8.3703E-11 | 1.0347E-18 | 4.2387E+06 | 3.0970E+00 |
| Pu-238 | 1.0839E-11 | 6.3315E-16 | 1.6021E+09 | 4.0105E-01 |
| Pu-239 | 8.4417E-13 | 1.3581E-14 | 3.4221E+10 | 3.1234E-02 |
| Pu-240 | 9.1035E-13 | 3.9951E-15 | 1.0025E+10 | 3.3683E-02 |
| Pu-241 | 3.7552E-10 | 3.6454E-15 | 9.1091E+09 | 1.3894E+01 |
| Am-241 | 2.3184E-13 | 6.7549E-17 | 1.6879E+08 | 8.5780E-03 |
| Cm-242 | 4.7958E-11 | 1.4470E-17 | 3.6008E+07 | 1.7744E+00 |
| Cm-244 | 4.3953E-12 | 5.4328E-17 | 1.3409E+08 | 1.6262E-01 |

TSC Transport Group Inventory:

| Time (h) = 720.0000 | Atmosphere | Sump | Overlying Pool |
|---|---|---|---|
| Noble gases (atoms) | 4.6811E+15 | 0.0000E+00 | 0.0000E+00 |
| Elemental I (atoms) | 1.6849E+11 | 0.0000E+00 | 0.0000E+00 |
| Organic I (atoms) | 6.1613E+10 | 0.0000E+00 | 0.0000E+00 |
| Aerosols (kg) | 2.3250E-12 | 0.0000E+00 | 0.0000E+00 |

| Time (h) = 720.0000 | Deposition Surfaces | Recirculating Filter |
|---|---|---|
| Noble gases (atoms) | 0.0000E+00 | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 | 2.5755E+14 |
| Organic I (atoms) | 0.0000E+00 | 9.0191E+13 |
| Aerosols (kg) | 0.0000E+00 | 5.2632E-08 |

TSC Filtered Air Intake Transport Group Inventory:

| Time (h) = 720.0000 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 1.4828E+23 |
| Organic I (atoms) | 5.4221E+22 |
| Aerosols (kg) | 1.9132E+01 |

TSC Unfiltered Inleakage Transport Group Inventory:

| Time (h) = 720.0000 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 |

TSC Exhaust to Environment Transport Group Inventory:

| Time (h) = 720.0000 | Pathway Filter |
|---|---|

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**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 1 | System Nos. | Sheet 524 of 1000 |
|---|---|---|---|---|

```
Noble gases (atoms)    0.0000E+00
Elemental I (atoms)    0.0000E+00
Organic I (atoms)      0.0000E+00
Aerosols (kg)          0.0000E+00

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#####################################################################
                              I-131 Summary
#####################################################################
```

| Time (hr) | Sprayed Region I-131 (Curies) | Unsprayed Region I-131 (Curies) | Environment I-131 (Curies) |
|---|---|---|---|
| 0.001 | 2.2633E+03 | 1.7074E+03 | 4.5957E-05 |
| 0.010 | 3.9516E+04 | 2.9810E+04 | 1.4010E-02 |
| 0.021 | 8.4730E+04 | 6.3919E+04 | 6.4415E-02 |
| 0.350 | 8.1987E+05 | 9.8651E+05 | 1.4568E+01 |
| 0.491 | 9.8444E+05 | 1.3066E+06 | 2.6623E+01 |
| 0.500 | 1.0120E+06 | 1.3252E+06 | 2.7520E+01 |
| 0.800 | 3.2695E+06 | 3.4391E+06 | 8.5514E+01 |
| 0.917 | 3.8996E+06 | 4.1762E+06 | 1.2152E+02 |
| 1.000 | 4.2953E+06 | 4.6746E+06 | 1.5112E+02 |
| 1.300 | 5.4538E+06 | 6.2310E+06 | 2.8097E+02 |
| 1.600 | 6.3160E+06 | 7.4560E+06 | 4.4060E+02 |
| 1.800 | 6.7741E+06 | 8.1208E+06 | 5.6016E+02 |
| 2.000 | 5.3566E+06 | 7.0480E+06 | 6.7356E+02 |
| 2.300 | 3.9661E+06 | 5.5361E+06 | 8.0954E+02 |
| 2.600 | 3.0198E+06 | 4.3057E+06 | 9.1407E+02 |
| 2.800 | 2.5352E+06 | 3.6339E+06 | 9.7015E+02 |
| 2.920 | 2.2855E+06 | 3.2600E+06 | 9.9945E+02 |
| 3.300 | 1.6878E+06 | 2.3817E+06 | 1.0750E+03 |
| 3.600 | 1.3314E+06 | 1.8561E+06 | 1.1201E+03 |
| 3.820 | 1.1206E+06 | 1.5393E+06 | 1.1469E+03 |
| 4.000 | 1.2414E+06 | 1.3610E+06 | 1.1667E+03 |
| 4.300 | 1.3719E+06 | 1.1918E+06 | 1.1989E+03 |
| 4.600 | 1.4149E+06 | 1.1111E+06 | 1.2308E+03 |
| 4.900 | 1.4214E+06 | 1.0689E+06 | 1.2621E+03 |
| 5.200 | 1.4128E+06 | 1.0430E+06 | 1.2930E+03 |
| 5.500 | 1.3979E+06 | 1.0240E+06 | 1.3235E+03 |
| 5.800 | 1.3807E+06 | 1.0080E+06 | 1.3535E+03 |
| 6.100 | 1.3625E+06 | 9.9338E+05 | 1.3832E+03 |
| 6.400 | 1.3442E+06 | 9.7946E+05 | 1.4124E+03 |
| 6.700 | 1.3260E+06 | 9.6595E+05 | 1.4413E+03 |
| 7.000 | 1.3079E+06 | 9.5272E+05 | 1.4697E+03 |
| 7.300 | 1.2901E+06 | 9.3971E+05 | 1.4978E+03 |
| 7.600 | 1.2725E+06 | 9.2691E+05 | 1.5255E+03 |
| 7.900 | 1.2551E+06 | 9.1430E+05 | 1.5528E+03 |
| 8.000 | 1.2494E+06 | 9.1014E+05 | 1.5618E+03 |
| 8.300 | 1.2324E+06 | 8.9777E+05 | 1.5886E+03 |
| 8.600 | 1.2156E+06 | 8.8559E+05 | 1.6150E+03 |
| 8.900 | 1.1991E+06 | 8.7358E+05 | 1.6411E+03 |
| 9.200 | 1.1828E+06 | 8.6175E+05 | 1.6668E+03 |
| 9.500 | 1.1668E+06 | 8.5009E+05 | 1.6922E+03 |
| 9.800 | 1.1510E+06 | 8.3860E+05 | 1.7172E+03 |
| 10.100 | 1.1354E+06 | 8.2727E+05 | 1.7419E+03 |

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**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 1 | System Nos. | Sheet 525 of 1000 |
|---|---|---|---|---|

| | | | |
|---|---|---|---|
| 10.400 | 1.1200E+06 | 8.1611E+05 | 1.7663E+03 |
| 24.000 | 7.0378E+05 | 5.1708E+05 | 2.6443E+03 |
| 96.000 | 4.1203E+05 | 3.0996E+05 | 4.0582E+03 |
| 720.000 | 9.2833E+03 | 6.9977E+03 | 6.2201E+03 |

| Time (hr) | TSC I-131 (Curies) |
|---|---|
| 0.001 | 1.5029E-09 |
| 0.010 | 4.5756E-07 |
| 0.021 | 2.1005E-06 |
| 0.350 | 4.5212E-04 |
| 0.491 | 8.0849E-04 |
| 0.500 | 8.3451E-04 |
| 0.800 | 2.5302E-03 |
| 0.917 | 3.5553E-03 |
| 1.000 | 4.3808E-03 |
| 1.300 | 7.8429E-03 |
| 1.600 | 1.1795E-02 |
| 1.800 | 1.4568E-02 |
| 2.000 | 1.6910E-02 |
| 2.300 | 1.7177E-02 |
| 2.600 | 1.6874E-02 |
| 2.800 | 1.6457E-02 |
| 2.920 | 1.1602E-02 |
| 3.300 | 4.1170E-03 |
| 3.600 | 2.0291E-03 |
| 3.820 | 1.3061E-03 |
| 4.000 | 9.7285E-04 |
| 4.300 | 7.0189E-04 |
| 4.600 | 5.9303E-04 |
| 4.900 | 5.4669E-04 |
| 5.200 | 5.2451E-04 |
| 5.500 | 5.1172E-04 |
| 5.800 | 5.0261E-04 |
| 6.100 | 4.9499E-04 |
| 6.400 | 4.8799E-04 |
| 6.700 | 4.8130E-04 |
| 7.000 | 4.7479E-04 |
| 7.300 | 4.6840E-04 |
| 7.600 | 4.6212E-04 |
| 7.900 | 4.5593E-04 |
| 8.000 | 4.5388E-04 |
| 8.300 | 2.9118E-04 |
| 8.600 | 2.2699E-04 |
| 8.900 | 2.0074E-04 |
| 9.200 | 1.8912E-04 |
| 9.500 | 1.8316E-04 |
| 9.800 | 1.7940E-04 |
| 10.100 | 1.7650E-04 |
| 10.400 | 1.7397E-04 |
| 24.000 | 1.1050E-04 |
| 96.000 | 2.0939E-05 |
| 720.000 | 4.7396E-07 |

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**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 1 | System Nos. | Sheet 526 of 1000 |
|---|---|---|---|---|

Cumulative Dose Summary
##################################################################

| Time (hr) | Exclusion Area Bounda Thyroid (rem) | Exclusion Area Bounda TEDE (rem) | Low Population Zone Thyroid (rem) | Low Population Zone TEDE (rem) | TSC Thyroid (rem) | TSC TEDE (rem) |
|---|---|---|---|---|---|---|
| 0.001 | 1.9873E-05 | 9.5569E-07 | 3.4777E-06 | 1.6725E-07 | 6.8306E-10 | 2.8912E-11 |
| 0.010 | 6.0579E-03 | 2.9130E-04 | 1.0601E-03 | 5.0978E-05 | 3.2613E-06 | 1.3804E-07 |
| 0.021 | 2.7851E-02 | 1.3387E-03 | 4.8739E-03 | 2.3427E-04 | 2.6486E-05 | 1.1211E-06 |
| 0.350 | 6.2743E+00 | 2.9978E-01 | 1.0980E+00 | 5.2462E-02 | 9.2508E-02 | 3.9211E-03 |
| 0.491 | 1.1445E+01 | 5.4506E-01 | 2.0029E+00 | 9.5386E-02 | 2.3537E-01 | 9.9788E-03 |
| 0.500 | 1.1829E+01 | 5.6322E-01 | 2.0701E+00 | 9.8563E-02 | 2.4776E-01 | 1.0504E-02 |
| 0.800 | 3.6967E+01 | 1.9012E+00 | 6.4692E+00 | 3.3271E-01 | 1.0073E+00 | 4.4546E-02 |
| 0.917 | 5.2611E+01 | 2.7677E+00 | 9.2070E+00 | 4.8435E-01 | 1.5847E+00 | 7.1890E-02 |
| 1.000 | 6.5464E+01 | 3.4854E+00 | 1.1456E+01 | 6.0994E-01 | 2.1241E+00 | 9.7936E-02 |
| 1.300 | 1.2176E+02 | 6.6594E+00 | 2.1307E+01 | 1.1654E+00 | 5.0967E+00 | 2.4532E-01 |
| 1.600 | 1.9069E+02 | 1.0575E+01 | 3.3370E+01 | 1.8506E+00 | 9.8891E+00 | 4.8852E-01 |
| 1.800 | 2.4212E+02 | 1.3507E+01 | 4.2371E+01 | 2.3637E+00 | 1.4177E+01 | 7.0877E-01 |
| 2.000 | 2.9077E+02 | 1.6291E+01 | 5.0886E+01 | 2.8510E+00 | 1.9306E+01 | 9.7400E-01 |
| 2.300 | 3.4898E+02 | 1.9647E+01 | 5.5251E+01 | 3.1027E+00 | 2.7609E+01 | 1.4055E+00 |
| 2.600 | 3.9358E+02 | 2.2246E+01 | 5.8596E+01 | 3.2976E+00 | 3.5870E+01 | 1.8361E+00 |
| 2.800 | 4.1745E+02 | 2.3650E+01 | 6.0386E+01 | 3.4029E+00 | 4.1239E+01 | 2.1167E+00 |
| 2.920 | 4.2990E+02 | 2.4388E+01 | 6.1320E+01 | 3.4582E+00 | 4.3933E+01 | 2.2577E+00 |
| 3.300 | 4.6193E+02 | 2.6306E+01 | 6.3722E+01 | 3.6021E+00 | 4.8316E+01 | 2.4877E+00 |
| 3.600 | 4.8098E+02 | 2.7464E+01 | 6.5151E+01 | 3.6889E+00 | 4.9725E+01 | 2.5621E+00 |
| 3.820 | 4.9225E+02 | 2.8159E+01 | 6.5996E+01 | 3.7410E+00 | 5.0300E+01 | 2.5926E+00 |
| 4.000 | 5.0055E+02 | 2.8673E+01 | 6.6618E+01 | 3.7796E+00 | 5.0623E+01 | 2.6099E+00 |
| 4.300 | 5.1408E+02 | 2.9509E+01 | 6.7633E+01 | 3.8423E+00 | 5.1012E+01 | 2.6308E+00 |
| 4.600 | 5.2737E+02 | 3.0326E+01 | 6.8630E+01 | 3.9036E+00 | 5.1316E+01 | 2.6471E+00 |
| 4.900 | 5.4043E+02 | 3.1125E+01 | 6.9610E+01 | 3.9635E+00 | 5.1584E+01 | 2.6616E+00 |
| 5.200 | 5.5328E+02 | 3.1907E+01 | 7.0573E+01 | 4.0221E+00 | 5.1836E+01 | 2.6753E+00 |
| 5.500 | 5.6591E+02 | 3.2672E+01 | 7.1521E+01 | 4.0795E+00 | 5.2079E+01 | 2.6884E+00 |
| 5.800 | 5.7834E+02 | 3.3422E+01 | 7.2453E+01 | 4.1358E+00 | 5.2317E+01 | 2.7013E+00 |
| 6.100 | 5.9056E+02 | 3.4157E+01 | 7.3370E+01 | 4.1909E+00 | 5.2550E+01 | 2.7139E+00 |
| 6.400 | 6.0259E+02 | 3.4878E+01 | 7.4272E+01 | 4.2450E+00 | 5.2779E+01 | 2.7263E+00 |
| 6.700 | 6.1442E+02 | 3.5585E+01 | 7.5159E+01 | 4.2980E+00 | 5.3005E+01 | 2.7385E+00 |
| 7.000 | 6.2606E+02 | 3.6278E+01 | 7.6032E+01 | 4.3499E+00 | 5.3227E+01 | 2.7505E+00 |
| 7.300 | 6.3751E+02 | 3.6958E+01 | 7.6891E+01 | 4.4009E+00 | 5.3445E+01 | 2.7623E+00 |
| 7.600 | 6.4878E+02 | 3.7625E+01 | 7.7736E+01 | 4.4510E+00 | 5.3660E+01 | 2.7739E+00 |
| 7.900 | 6.5986E+02 | 3.8280E+01 | 7.8567E+01 | 4.5001E+00 | 5.3871E+01 | 2.7853E+00 |
| 8.000 | 6.6352E+02 | 3.8496E+01 | 7.8841E+01 | 4.5163E+00 | 5.3941E+01 | 2.7890E+00 |
| 8.300 | 6.7437E+02 | 3.9135E+01 | 7.9113E+01 | 4.5338E+00 | 5.4107E+01 | 2.7980E+00 |
| 8.600 | 6.8505E+02 | 3.9763E+01 | 7.9381E+01 | 4.5509E+00 | 5.4224E+01 | 2.8044E+00 |
| 8.900 | 6.9556E+02 | 4.0379E+01 | 7.9645E+01 | 4.5677E+00 | 5.4320E+01 | 2.8097E+00 |
| 9.200 | 7.0590E+02 | 4.0985E+01 | 7.9904E+01 | 4.5842E+00 | 5.4409E+01 | 2.8145E+00 |
| 9.500 | 7.1608E+02 | 4.1581E+01 | 8.0159E+01 | 4.6004E+00 | 5.4494E+01 | 2.8191E+00 |
| 9.800 | 7.2610E+02 | 4.2165E+01 | 8.0410E+01 | 4.6162E+00 | 5.4576E+01 | 2.8235E+00 |
| 10.100 | 7.3596E+02 | 4.2740E+01 | 8.0658E+01 | 4.6318E+00 | 5.4656E+01 | 2.8279E+00 |
| 10.400 | 7.4566E+02 | 4.3306E+01 | 8.0901E+01 | 4.6470E+00 | 5.4736E+01 | 2.8322E+00 |
| 24.000 | 1.0845E+03 | 6.2875E+01 | 8.9397E+01 | 5.1662E+00 | 5.7499E+01 | 2.9824E+00 |
| 96.000 | 1.5703E+03 | 9.2839E+01 | 9.5782E+01 | 5.5676E+00 | 5.9149E+01 | 3.0790E+00 |
| 720.000 | 2.2565E+03 | 1.5023E+02 | 9.8036E+01 | 5.7594E+00 | 6.0444E+01 | 3.1800E+00 |

Travel Path

| Time | Thyroid | TEDE |
|---|---|---|

AmerGen

**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 1 | System Nos. | Sheet 527 of 1000 |
|---|---|---|---|---|

```
  (hr)      (rem)        (rem)
   0.001 0.0000E+00 0.0000E+00
   0.010 0.0000E+00 0.0000E+00
   0.021 0.0000E+00 0.0000E+00
   0.350 0.0000E+00 0.0000E+00
   0.491 0.0000E+00 0.0000E+00
   0.500 0.0000E+00 0.0000E+00
   0.800 0.0000E+00 0.0000E+00
   0.917 0.0000E+00 0.0000E+00
   1.000 1.2742E+01 7.1208E-01
   1.300 1.2742E+01 7.1208E-01
   1.600 1.2742E+01 7.1208E-01
   1.800 1.2742E+01 7.1208E-01
   2.000 1.2742E+01 7.1208E-01
   2.300 1.2742E+01 7.1208E-01
   2.600 1.2742E+01 7.1208E-01
   2.800 1.2742E+01 7.1208E-01
   2.920 1.2742E+01 7.1208E-01
   3.300 1.2742E+01 7.1208E-01
   3.600 1.2742E+01 7.1208E-01


  3.820 1.2742E+01 7.1208E-01
   4.000 1.2742E+01 7.1208E-01
   4.300 1.2742E+01 7.1208E-01
   4.600 1.2742E+01 7.1208E-01
   4.900 1.2742E+01 7.1208E-01
   5.200 1.2742E+01 7.1208E-01
   5.500 1.2742E+01 7.1208E-01
   5.800 1.2742E+01 7.1208E-01
   6.100 1.2742E+01 7.1208E-01
   6.400 1.2742E+01 7.1208E-01
   6.700 1.2742E+01 7.1208E-01
   7.000 1.2742E+01 7.1208E-01
   7.300 1.2742E+01 7.1208E-01
   7.600 1.2742E+01 7.1208E-01
   7.900 1.2742E+01 7.1208E-01
   8.000 1.2742E+01 7.1208E-01
   8.300 1.2742E+01 7.1208E-01
   8.600 1.2742E+01 7.1208E-01
   8.900 1.2742E+01 7.1208E-01
   9.200 1.2742E+01 7.1208E-01
   9.500 1.2742E+01 7.1208E-01
   9.800 1.2742E+01 7.1208E-01
  10.100 1.2742E+01 7.1208E-01
  10.400 1.2742E+01 7.1208E-01
  24.000 1.2742E+01 7.1208E-01
  96.000 1.2742E+01 7.1208E-01
 720.000 1.2742E+01 7.1208E-01

#####################################################################
                        Worst Two-Hour Doses
    Note: All of the dose locations are shown below but the
          worst two-hour dose is only meaningful for the EAB
          dose location.  Please disregard the two-hour worst
          doses for the other dose locations
#####################################################################
```

AmerGen

**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 1 | System Nos. | Sheet 528 of 1000 |
|---|---|---|---|---|

Exclusion Area Boundary

| Time (hr) | Whole Body (rem) | Thyroid (rem) | TEDE (rem) |
|---|---|---|---|
| 0.8 | 1.8474E+00 | 3.8048E+02 | 2.1749E+01 |

Low Population Zone

| Time (hr) | Whole Body (rem) | Thyroid (rem) | TEDE (rem) |
|---|---|---|---|
| 0.5 | 2.6295E-01 | 5.5411E+01 | 3.1340E+00 |

TSC

| Time (hr) | Whole Body (rem) | Thyroid (rem) | TEDE (rem) |
|---|---|---|---|
| 1.3 | 5.9013E-03 | 4.3220E+01 | 2.2424E+00 |

Travel Path

| Time (hr) | Whole Body (rem) | Thyroid (rem) | TEDE (rem) |
|---|---|---|---|
| 0.0 | 6.3483E-02 | 1.2742E+01 | 7.1208E-01 |

**Appendix O**

**RADTRAD Output File**

# ESF_TSC.o0

**ESF Leakage Pathway (For TSC Dose)**

TMI Containment Leakage Pathway AST Analysis: (Same inputs as for CR & Offsite Dose)

CR Unfiltered Inleakage = 1,000 cfm (t=30 minutes to t=720 hours),
CR Initiation Time = 30 min (t=0 to t=30 min),
Two Spray Pumps For 28.19 min at 800 gpm each (t=75 seconds to t= 29.44 min),
Two Spray Pump For t=29.44 min to t=4.0 hours @ 800 gpm each

AmerGen

**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 1 | System Nos. | Sheet 530 of 1000 |
|---|---|---|---|---|

```
 ######################################################################
           RADTRAD Version 3.02 run on  5/15/2002  at  7:25:29
 ######################################################################

 ######################################################################
                      File information
 ######################################################################

 Plant file name           = C:\Documents and Settings\u004tjm\My Documents\TMI
RADTRAD\ESF_TSC.psf
 Inventory file name       = c:\documents and settings\u004tjm\my documents\tmi
radtrad\defaults\tmi_i131.nif
 Scenario file name        = C:\Documents and Settings\u004tjm\My Documents\TMI
RADTRAD\ESF_TSC.psf
 Release file name         = c:\documents and settings\u004tjm\my documents\tmi
radtrad\defaults\pwr_i.rft
 Dose conversion file name = c:\documents and settings\u004tjm\my documents\tmi
radtrad\defaults\fgr11&12.inp




     #####    ####   #####    #  #     #  #####   #    #  #####
     #    #  #       #        #  ##    #  #    #  #    #    #
     #    #  #       #        #  # #   #  #    #  #    #    #
     #####    ####   ####     #  #  #  #  #####   #    #    #
     #            #  #        #  #   # #  #       #    #    #
     #            #  #        #  #    ##  #       #    #    #
     #        ####   #        #  #     #  #        ####     #


 Radtrad 3.02 1/5/2000
 TSC Dose Due To ESF Leakage - NO HVAC for 2 hours - 250 cfm Unfiltered Inleakage (.8 -
2.8 max)
 Nuclide Inventory File:
 c:\documents and settings\u004tjm\my documents\tmi radtrad\defaults\tmi_i131.nif
 Plant Power Level:
  2.6190E+03
 Compartments:
   3
 Compartment 1:
 Sump
   3
  5.4519E+04
   0
   0
   0
   0
   0
 Compartment 2:
 Environment
   2
  0.0000E+00
   0
```

```
  0
  0
  0
  0
Compartment 3:
TSC
  1
 4.2000E+04
  0
  0
  1
  0
  0
Pathways:
  4
Pathway 1:
Sump to Environment
  1
  2
  2
Pathway 2:
TSC Filtered Air Intake
  2
  3
  2
Pathway 3:
TSC Unfiltered Inleakage
  2
  3
  2
Pathway 4:
TSC Exhaust
  3
  2
  2
End of Plant Model File
Scenario Description Name:

Plant Model Filename:

Source Term:
  1
  1   1.0000E+00
c:\documents and settings\u004tjm\my documents\tmi radtrad\defaults\fgr11&12.inp
c:\documents and settings\u004tjm\my documents\tmi radtrad\defaults\pwr_i.rft
  0.0000E+00
  0
  0.0000E+00   9.7000E-01   3.0000E-02   1.0000E+00
Overlying Pool:
  0
  0.0000E+00
  0
  0
  0
  0
Compartments:
```

```
  3

Compartment 1:
  0
  1
  0
  0
  0
  0
  0
  0
  0
Compartment 2:
  1
  1
  0
  0
  0
  0
  0
  0
  0
Compartment 3:
  1
  1
  0
  0
  0
  0
  1
  1.4000E+03
  5
  0.0000E+00   0.0000E+00   0.0000E+00   0.0000E+00
  8.0000E-01   0.0000E+00   0.0000E+00   0.0000E+00
  1.0000E+00   0.0000E+00   0.0000E+00   0.0000E+00
  2.8000E+00   9.9000E+01   9.0000E+01   9.0000E+01
  7.2000E+02   0.0000E+00   0.0000E+00   0.0000E+00
  0
  0
Pathways:
  4
Pathway 1:
  0
  0
  0
  0
  0
  1
  4
  0.0000E+00   0.0000E+00   0.0000E+00   0.0000E+00   0.0000E+00
  4.9070E-01   3.3400E-03   0.0000E+00   0.0000E+00   0.0000E+00
  2.4000E+01   1.3360E-03   0.0000E+00   0.0000E+00   0.0000E+00
  7.2000E+02   0.0000E+00   0.0000E+00   0.0000E+00   0.0000E+00
  0
  0
  0
  0
```

AmerGen

**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 1 | System Nos. | Sheet 533 of 1000 |
|---|---|---|---|---|

```
  0
  0
Pathway 2:
  0
  0
  0
  0
  0
  1
  5
  0.0000E+00   3.0000E+02   0.0000E+00   0.0000E+00   0.0000E+00
  8.0000E-01   3.0000E+02   0.0000E+00   0.0000E+00   0.0000E+00
  1.0000E+00   3.0000E+02   0.0000E+00   0.0000E+00   0.0000E+00
  2.8000E+00   6.0000E+02   9.9000E+01   9.0000E+01   9.0000E+01
  7.2000E+02   0.0000E+00   0.0000E+00   0.0000E+00   0.0000E+00
  0
  0
  0
  0
  0
  0
Pathway 3:
  0
  0
  0
  0
  0
  1
  5
  0.0000E+00   0.0000E+00   0.0000E+00   0.0000E+00   0.0000E+00
  8.0000E-01   0.0000E+00   0.0000E+00   0.0000E+00   0.0000E+00
  1.0000E+00   0.0000E+00   0.0000E+00   0.0000E+00   0.0000E+00
  2.8000E+00   2.5000E+02   0.0000E+00   0.0000E+00   0.0000E+00
  7.2000E+02   0.0000E+00   0.0000E+00   0.0000E+00   0.0000E+00
  0
  0
  0
  0
  0
  0
Pathway 4:
  0
  0
  0
  0
  0
  1
  5
  0.0000E+00   3.0000E+02   0.0000E+00   0.0000E+00   0.0000E+00
  8.0000E-01   3.0000E+02   0.0000E+00   0.0000E+00   0.0000E+00
  1.0000E+00   3.0000E+02   0.0000E+00   0.0000E+00   0.0000E+00
  2.8000E+00   8.5000E+02   0.0000E+00   0.0000E+00   0.0000E+00
  7.2000E+02   0.0000E+00   0.0000E+00   0.0000E+00   0.0000E+00
  0
```

AmerGen

**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 1 | System Nos. | Sheet 534 of 1000 |
|---|---|---|---|---|

```
  0
  0


  0
  0
  0
Dose Locations:
  4
Location 1:
Exclusion Area Boundary
  2
  1
  2
  0.0000E+00   8.0000E-04
  7.2000E+02   0.0000E+00
  1
  2
  0.0000E+00   3.5000E-04
  7.2000E+02   0.0000E+00
  0
Location 2:
Low Population Zone
  2
  1
  6
  0.0000E+00   1.4000E-04
  2.0000E+00   6.0000E-05
  8.0000E+00   3.9000E-05
  2.4000E+01   1.6000E-05
  9.6000E+01   4.0000E-06
  7.2000E+02   0.0000E+00
  1
  4
  0.0000E+00   3.5000E-04
  8.0000E+00   1.8000E-04
  2.4000E+01   2.3000E-04
  7.2000E+02   0.0000E+00
  0
Location 3:
TSC
  3
  0
  1
  2
  0.0000E+00   3.4700E-04
  7.2000E+02   0.0000E+00
  1
  4
  0.0000E+00   1.0000E+00
  2.4000E+01   6.0000E-01
  9.6000E+01   4.0000E-01
  7.2000E+02   0.0000E+00
Location 4:
Travel Path
  2
  1
```

```
  3
  0.0000E+00   0.0000E+00
  9.1667E-01   8.0000E-04


  1.0000E+00   0.0000E+00
  1
  4
  0.0000E+00   3.4700E-04
  8.0000E+00   1.7500E-04
  2.4000E+01   2.3200E-04
  7.2000E+02   0.0000E+00
  0
Effective Volume Location:
  1
  6
  0.0000E+00   2.7000E-04
  2.0000E+00   1.5400E-04
  8.0000E+00   5.9800E-05
  2.4000E+01   4.0300E-05
  9.6000E+01   3.4100E-05
  7.2000E+02   0.0000E+00
Simulation Parameters:
  7
  0.0000E+00   5.0000E-02
  1.0000E+00   1.0000E-01
  2.0000E+00   1.0000E+00
  8.0000E+00   2.0000E+00
  2.4000E+01   4.0000E+00
  9.6000E+01   8.0000E+00
  7.2000E+02   0.0000E+00
Output Filename:
C:\Documents and Settings\u004tjm\My Documents\TMI RADTRAD\ESF_TSC.o0
  1
  1
  1
  0
  0
End of Scenario File


#######################################################################
          RADTRAD Version 3.02 run on  5/15/2002  at  7:25:29
#######################################################################

#######################################################################
                     Plant Description
#######################################################################

Number of Nuclides =  60

Inventory Power =   1.0000E+00 MWth
Plant Power Level =   2.6190E+03 MWth

Number of compartments    =   3

Compartment information
```

```
Compartment number  1  (Source term fraction =   1.0000E+00
)
Name: Sump


Compartment volume =   5.4519E+04 (Cubic feet)
Pathways into and out of compartment  1
    Pathway to compartment number   2: Sump to Environment

Compartment number  2
Name: Environment
Pathways into and out of compartment  2
    Pathway to compartment number   3: TSC Filtered Air Intake
    Pathway to compartment number   3: TSC Unfiltered Inleakage
    Pathway from compartment number 1: Sump to Environment
    Pathway from compartment number 3: TSC Exhaust

Compartment number  3
Name: TSC
Compartment volume =   4.2000E+04 (Cubic feet)
Removal devices within compartment:
     Filter(s)
Pathways into and out of compartment  3
    Pathway to compartment number   2: TSC Exhaust
    Pathway from compartment number 2: TSC Filtered Air Intake
    Pathway from compartment number 2: TSC Unfiltered Inleakage

Total number of pathways =   4


#######################################################################
          RADTRAD Version 3.02 run on  5/15/2002  at  7:25:29
#######################################################################

#######################################################################
                    Scenario Description
#######################################################################

Radioactive Decay is enabled
RELEASE_NAME = PWR, NUREG-1465, Tables 3.12 & 3.13, Jun
Release Fractions and Timings
                GAP       EARLY IN-VESSEL
             0.5000 hrs     1.3000 hrs
NOBLES       0.0000E+00     0.0000E+00
IODINE       5.0000E-02     3.5000E-01
CESIUM       0.0000E+00     0.0000E+00
TELLURIUM    0.0000E+00     0.0000E+00
STRONTIUM    0.0000E+00     0.0000E+00
BARIUM       0.0000E+00     0.0000E+00
RUTHENIUM    0.0000E+00     0.0000E+00
CERIUM       0.0000E+00     0.0000E+00
LANTHANUM    0.0000E+00     0.0000E+00

Iodine fractions
     Aerosol     =   0.0000E+00
     Elemental   =   9.7000E-01
```

Organic = 3.0000E-02

COMPARTMENT DATA

Compartment number 1: Sump

Compartment number 2: Environment

Compartment number 3: TSC

Compartment Filter Data

| Time (hr) | Flow Rate (cfm) | Filter Efficiencies (%) Aerosol | Elemental | Organic |
|---|---|---|---|---|
| 0.0000E+00 | 1.4000E+03 | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 |
| 8.0000E-01 | 1.4000E+03 | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 |
| 1.0000E+00 | 1.4000E+03 | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 |
| 2.8000E+00 | 1.4000E+03 | 9.9000E+01 | 9.0000E+01 | 9.0000E+01 |
| 7.2000E+02 | 1.4000E+03 | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 |

PATHWAY DATA

Pathway number 1: Sump to Environment

Pathway Filter: Removal Data

| Time (hr) | Flow Rate (cfm) | Filter Efficiencies (%) Aerosol | Elemental | Organic |
|---|---|---|---|---|
| 0.0000E+00 | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 |
| 4.9070E-01 | 3.3400E-03 | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 |
| 2.4000E+01 | 1.3360E-03 | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 |
| 7.2000E+02 | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 |

Pathway number 2: TSC Filtered Air Intake

Pathway Filter: Removal Data

| Time (hr) | Flow Rate (cfm) | Filter Efficiencies (%) Aerosol | Elemental | Organic |
|---|---|---|---|---|
| 0.0000E+00 | 3.0000E+02 | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 |
| 8.0000E-01 | 3.0000E+02 | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 |
| 1.0000E+00 | 3.0000E+02 | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 |
| 2.8000E+00 | 6.0000E+02 | 9.9000E+01 | 9.0000E+01 | 9.0000E+01 |
| 7.2000E+02 | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 |

Pathway number 3: TSC Unfiltered Inleakage

Pathway Filter: Removal Data

| Time (hr) | Flow Rate (cfm) | Filter Efficiencies (%) Aerosol | Elemental | Organic |
|---|---|---|---|---|
| 0.0000E+00 | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 |
| 8.0000E-01 | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 |
| 1.0000E+00 | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 |
| 2.8000E+00 | 2.5000E+02 | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 |
| 7.2000E+02 | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 |

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**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 1 | System Nos. | Sheet 538 of 1000 |
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Pathway number 4: TSC Exhaust

Pathway Filter: Removal Data

| Time (hr) | Flow Rate (cfm) | Filter Efficiencies (%) Aerosol | Elemental | Organic |
|---|---|---|---|---|
| 0.0000E+00 | 3.0000E+02 | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 |
| 8.0000E-01 | 3.0000E+02 | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 |
| 1.0000E+00 | 3.0000E+02 | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 |
| 2.8000E+00 | 8.5000E+02 | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 |
| 7.2000E+02 | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 |

LOCATION DATA

Location Exclusion Area Boundary is in compartment 2

Location X/Q Data

| Time (hr) | X/Q (s * m^-3) |
|---|---|
| 0.0000E+00 | 8.0000E-04 |
| 7.2000E+02 | 0.0000E+00 |

Location Breathing Rate Data

| Time (hr) | Breathing Rate (m^3 * sec^-1) |
|---|---|
| 0.0000E+00 | 3.5000E-04 |
| 7.2000E+02 | 0.0000E+00 |

Location Low Population Zone is in compartment 2

Location X/Q Data

| Time (hr) | X/Q (s * m^-3) |
|---|---|
| 0.0000E+00 | 1.4000E-04 |
| 2.0000E+00 | 6.0000E-05 |
| 8.0000E+00 | 3.9000E-05 |
| 2.4000E+01 | 1.6000E-05 |
| 9.6000E+01 | 4.0000E-06 |
| 7.2000E+02 | 0.0000E+00 |

Location Breathing Rate Data

| Time (hr) | Breathing Rate (m^3 * sec^-1) |
|---|---|
| 0.0000E+00 | 3.5000E-04 |
| 8.0000E+00 | 1.8000E-04 |
| 2.4000E+01 | 2.3000E-04 |
| 7.2000E+02 | 0.0000E+00 |

Location TSC is in compartment 3

Location X/Q Data

| Time (hr) | X/Q (s * m^-3) |
|---|---|
| 0.0000E+00 | 2.7000E-04 |
| 2.0000E+00 | 1.5400E-04 |
| 8.0000E+00 | 5.9800E-05 |
| 2.4000E+01 | 4.0300E-05 |
| 9.6000E+01 | 3.4100E-05 |
| 7.2000E+02 | 0.0000E+00 |

Location Breathing Rate Data

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```
      Time (hr)         Breathing Rate (m^3 * sec^-1)
       0.0000E+00                3.4700E-04
       7.2000E+02                0.0000E+00

     Location Occupancy Factor Data
      Time (hr)         Occupancy Factor
       0.0000E+00           1.0000E+00
       2.4000E+01           6.0000E-01

       9.6000E+01           4.0000E-01
       7.2000E+02           0.0000E+00
     Location Travel Path     is in compartment   2

     Location X/Q Data
      Time (hr)         X/Q (s * m^-3)
       0.0000E+00          0.0000E+00
       9.1667E-01          8.0000E-04
       1.0000E+00          0.0000E+00

     Location Breathing Rate Data
      Time (hr)         Breathing Rate (m^3 * sec^-1)
       0.0000E+00                3.4700E-04
       8.0000E+00                1.7500E-04
       2.4000E+01                2.3200E-04
       7.2000E+02                0.0000E+00


USER SPECIFIED TIME STEP DATA - SUPPLEMENTAL TIME STEPS
     Time            Time step
      0.0000E+00       5.0000E-02
      1.0000E+00       1.0000E-01
      2.0000E+00       1.0000E+00
      8.0000E+00       2.0000E+00
      2.4000E+01       4.0000E+00
      9.6000E+01       8.0000E+00
      7.2000E+02       0.0000E+00


#######################################################################
          RADTRAD Version 3.02 run on  5/15/2002  at  7:25:29
#######################################################################


     ####   #    #  #####  #####   #    #  #####
    #    #  #    #    #    #    #  #    #    #
    #    #  #    #    #    #    #  #    #    #
    #    #  #    #    #    #####   #    #    #
    #    #  #    #    #    #       #    #    #
    #    #  #    #    #    #       #    #    #
     ####    ####     #    #        ####     #
```

```
#################################################################
           Dose, Detailed model and Detailed Inventory Output
#################################################################


Exclusion Area Boundary Doses:

Time (h) =   0.4907    Whole Body   Thyroid       TEDE
Delta dose (rem)        0.0000E+00  0.0000E+00  0.0000E+00
Accumulated dose (rem)  0.0000E+00  0.0000E+00  0.0000E+00

Low Population Zone Doses:

Time (h) =   0.4907    Whole Body   Thyroid       TEDE
Delta dose (rem)        0.0000E+00  0.0000E+00  0.0000E+00
Accumulated dose (rem)  0.0000E+00  0.0000E+00  0.0000E+00

TSC Doses:

Time (h) =   0.4907    Whole Body   Thyroid       TEDE
Delta dose (rem)        0.0000E+00  0.0000E+00  0.0000E+00
Accumulated dose (rem)  0.0000E+00  0.0000E+00  0.0000E+00

Travel Path Doses:

Time (h) =   0.4907    Whole Body   Thyroid       TEDE
Delta dose (rem)        0.0000E+00  0.0000E+00  0.0000E+00
Accumulated dose (rem)  0.0000E+00  0.0000E+00  0.0000E+00

Environment Integral Nuclide Release:

Time (h) =   0.4907       Ci           kg         Atoms         Bq

Environment Transport Group Inventory:

                        Present     Release      Total
Time (h) =   0.4907     Release     Rate/s      Release
Noble gases (atoms)    0.0000E+00  0.0000E+00  0.0000E+00
Elemental I (atoms)    0.0000E+00  0.0000E+00  0.0000E+00
Organic I (atoms)      0.0000E+00  0.0000E+00  0.0000E+00
Aerosols (kg)          0.0000E+00  0.0000E+00  0.0000E+00

Sump to Environment Transport Group Inventory:

                        Pathway
Time (h) =   0.4907      Filter
Noble gases (atoms)    0.0000E+00
Elemental I (atoms)    0.0000E+00
Organic I (atoms)      0.0000E+00
Aerosols (kg)          0.0000E+00

TSC Filtered Air Intake Transport Group Inventory:

                        Pathway
Time (h) =   0.4907      Filter
```

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**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 1 | System Nos. | Sheet 541 of 1000 |
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```
Noble gases (atoms)    0.0000E+00
Elemental I (atoms)    0.0000E+00
Organic I (atoms)      0.0000E+00
Aerosols (kg)          0.0000E+00

TSC Unfiltered Inleakage Transport Group Inventory:

                        Pathway
Time (h) =   0.4907      Filter


Noble gases (atoms)    0.0000E+00
Elemental I (atoms)    0.0000E+00
Organic I (atoms)      0.0000E+00
Aerosols (kg)          0.0000E+00

TSC Exhaust Transport Group Inventory:

                        Pathway
Time (h) =   0.4907      Filter
Noble gases (atoms)    0.0000E+00
Elemental I (atoms)    0.0000E+00
Organic I (atoms)      0.0000E+00
Aerosols (kg)          0.0000E+00

TSC Compartment Nuclide Inventory:

Time (h) =   0.4907       Ci           kg         Atoms         Bq

TSC Transport Group Inventory:

                                                 Overlying
Time (h) =   0.4907    Atmosphere     Sump         Pool
Noble gases (atoms)    0.0000E+00  0.0000E+00  0.0000E+00
Elemental I (atoms)    0.0000E+00  0.0000E+00  0.0000E+00
Organic I (atoms)      0.0000E+00  0.0000E+00  0.0000E+00
Aerosols (kg)          0.0000E+00  0.0000E+00  0.0000E+00

                       Deposition Recirculating
Time (h) =   0.4907     Surfaces     Filter
Noble gases (atoms)    0.0000E+00  0.0000E+00
Elemental I (atoms)    0.0000E+00  0.0000E+00
Organic I (atoms)      0.0000E+00  0.0000E+00
Aerosols (kg)          0.0000E+00  0.0000E+00

TSC Filtered Air Intake Transport Group Inventory:

                        Pathway
Time (h) =   0.4907      Filter
Noble gases (atoms)    0.0000E+00
Elemental I (atoms)    0.0000E+00
Organic I (atoms)      0.0000E+00
Aerosols (kg)          0.0000E+00

TSC Unfiltered Inleakage Transport Group Inventory:

                        Pathway
```

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**CALCULATION SHEET**
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| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 1 | System Nos. | Sheet 542 of 1000 |
|---|---|---|---|---|

```
Time (h) =   0.4907      Filter
Noble gases (atoms)    0.0000E+00
Elemental I (atoms)    0.0000E+00
Organic I (atoms)      0.0000E+00
Aerosols (kg)          0.0000E+00

TSC Exhaust Transport Group Inventory:

                        Pathway
Time (h) =   0.4907      Filter


Noble gases (atoms)    0.0000E+00
Elemental I (atoms)    0.0000E+00
Organic I (atoms)      0.0000E+00
Aerosols (kg)          0.0000E+00

Exclusion Area Boundary Doses:

Time (h) =   0.5000    Whole Body   Thyroid       TEDE
Delta dose (rem)        2.0672E-04  5.1381E-02  1.8273E-03
Accumulated dose (rem)  2.0672E-04  5.1381E-02  1.8273E-03

Low Population Zone Doses:

Time (h) =   0.5000    Whole Body   Thyroid       TEDE
Delta dose (rem)        3.6175E-05  8.9916E-03  3.1978E-04
Accumulated dose (rem)  3.6175E-05  8.9916E-03  3.1978E-04

TSC Doses:

Time (h) =   0.5000    Whole Body   Thyroid       TEDE
Delta dose (rem)        4.3212E-09  3.4194E-05  1.0828E-06
Accumulated dose (rem)  4.3212E-09  3.4194E-05  1.0828E-06

Travel Path Doses:

Time (h) =   0.5000    Whole Body   Thyroid       TEDE
Delta dose (rem)        0.0000E+00  0.0000E+00  0.0000E+00
Accumulated dose (rem)  0.0000E+00  0.0000E+00  0.0000E+00

Environment Integral Nuclide Release:

Time (h) =   0.5000       Ci           kg         Atoms         Bq
I-131                  1.2081E-01  9.7448E-10  4.4797E+15  4.4700E+09
I-132                  1.5044E-01  1.4575E-11  6.6494E+13  5.5664E+09
I-133                  2.4896E-01  2.1977E-10  9.9511E+14  9.2115E+09
I-134                  1.8954E-01  7.1049E-12  3.1930E+13  7.0128E+09
I-135                  2.2401E-01  6.3787E-11  2.8454E+14  8.2883E+09

Environment Transport Group Inventory:

                        Present     Release      Total
Time (h) =   0.5000     Release     Rate/s      Release
Noble gases (atoms)    0.0000E+00  0.0000E+00  0.0000E+00
Elemental I (atoms)    5.7170E+15  3.1761E+12  5.7170E+15
Organic I (atoms)      1.7681E+14  9.8230E+10  1.7681E+14
```

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**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 1 | System Nos. | Sheet 543 of 1000 |
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```
Aerosols (kg)          0.0000E+00  0.0000E+00  0.0000E+00

Sump to Environment Transport Group Inventory:

                        Pathway
Time (h) =   0.5000      Filter
Noble gases (atoms)    0.0000E+00
Elemental I (atoms)    0.0000E+00
Organic I (atoms)      0.0000E+00
Aerosols (kg)          0.0000E+00


TSC Filtered Air Intake Transport Group Inventory:

                        Pathway
Time (h) =   0.5000      Filter
Noble gases (atoms)    0.0000E+00
Elemental I (atoms)    0.0000E+00
Organic I (atoms)      0.0000E+00
Aerosols (kg)          0.0000E+00

TSC Unfiltered Inleakage Transport Group Inventory:

                        Pathway
Time (h) =   0.5000      Filter
Noble gases (atoms)    0.0000E+00
Elemental I (atoms)    0.0000E+00
Organic I (atoms)      0.0000E+00
Aerosols (kg)          0.0000E+00

TSC Exhaust Transport Group Inventory:

                        Pathway
Time (h) =   0.5000      Filter
Noble gases (atoms)    0.0000E+00
Elemental I (atoms)    0.0000E+00
Organic I (atoms)      0.0000E+00
Aerosols (kg)          0.0000E+00

TSC Compartment Nuclide Inventory:

Time (h) =   0.5000       Ci           kg          Atoms         Bq
I-131                  4.6091E-06  3.7178E-14  1.7091E+11  1.7054E+05
I-132                  5.7397E-06  5.5606E-16  2.5369E+09  2.1237E+05
I-133                  9.4983E-06  8.3847E-15  3.7965E+10  3.5144E+05
I-134                  7.2311E-06  2.7107E-16  1.2182E+09  2.6755E+05
I-135                  8.5464E-06  2.4336E-15  1.0856E+10  3.1622E+05

TSC Transport Group Inventory:

                                               Overlying
Time (h) =   0.5000    Atmosphere     Sump        Pool
Noble gases (atoms)    0.0000E+00  0.0000E+00  0.0000E+00
Elemental I (atoms)    2.1811E+11  0.0000E+00  0.0000E+00
Organic I (atoms)      6.7458E+09  0.0000E+00  0.0000E+00
Aerosols (kg)          0.0000E+00  0.0000E+00  0.0000E+00
```

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| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 1 | System Nos. | Sheet 544 of 1000 |
|---|---|---|---|---|

```
                        Deposition Recirculating
Time (h) =   0.5000      Surfaces     Filter
Noble gases (atoms)     0.0000E+00  0.0000E+00
Elemental I (atoms)     0.0000E+00  0.0000E+00
Organic I (atoms)       0.0000E+00  0.0000E+00
Aerosols (kg)           0.0000E+00  0.0000E+00

TSC Filtered Air Intake Transport Group Inventory:

                         Pathway
Time (h) =   0.5000       Filter


Noble gases (atoms)     0.0000E+00
Elemental I (atoms)     0.0000E+00
Organic I (atoms)       0.0000E+00
Aerosols (kg)           0.0000E+00

TSC Unfiltered Inleakage Transport Group Inventory:

                         Pathway
Time (h) =   0.5000       Filter
Noble gases (atoms)     0.0000E+00
Elemental I (atoms)     0.0000E+00
Organic I (atoms)       0.0000E+00
Aerosols (kg)           0.0000E+00

TSC Exhaust Transport Group Inventory:

                         Pathway
Time (h) =   0.5000       Filter
Noble gases (atoms)     0.0000E+00
Elemental I (atoms)     0.0000E+00
Organic I (atoms)       0.0000E+00
Aerosols (kg)           0.0000E+00

Exclusion Area Boundary Doses:

Time (h) =   0.8000    Whole Body   Thyroid       TEDE
Delta dose (rem)        1.1480E-02  3.0163E+00  1.0654E-01
Accumulated dose (rem)  1.1687E-02  3.0676E+00  1.0837E-01

Low Population Zone Doses:

Time (h) =   0.8000    Whole Body   Thyroid       TEDE
Delta dose (rem)        2.0090E-03  5.2785E-01  1.8645E-02
Accumulated dose (rem)  2.0452E-03  5.3684E-01  1.8965E-02

TSC Doses:

Time (h) =   0.8000    Whole Body   Thyroid       TEDE
Delta dose (rem)        6.5457E-06  5.5389E-02  1.7520E-03
Accumulated dose (rem)  6.5500E-06  5.5423E-02  1.7530E-03

Travel Path Doses:
```

```
Time (h) =   0.8000    Whole Body   Thyroid       TEDE
Delta dose (rem)        0.0000E+00  0.0000E+00  0.0000E+00
Accumulated dose (rem)  0.0000E+00  0.0000E+00  0.0000E+00

Environment Integral Nuclide Release:

Time (h) =   0.8000       Ci           kg         Atoms         Bq
I-131                  7.2267E+00  5.8292E-08  2.6797E+17  2.6739E+11
I-132                  8.4985E+00  8.2333E-10  3.7562E+15  3.1444E+11
I-133                  1.4807E+01  1.3071E-08  5.9185E+16  5.4786E+11
I-134                  9.7591E+00  3.6583E-10  1.6441E+15  3.6109E+11
I-135                  1.3141E+01  3.7418E-09  1.6691E+16  4.8620E+11


Environment Transport Group Inventory:

                        Present     Release      Total
Time (h) =   0.8000     Release     Rate/s      Release
Noble gases (atoms)    0.0000E+00  0.0000E+00  0.0000E+00
Elemental I (atoms)    3.4105E+17  1.1842E+14  3.4105E+17
Organic I (atoms)      1.0548E+16  3.6625E+12  1.0548E+16
Aerosols (kg)          0.0000E+00  0.0000E+00  0.0000E+00

Sump to Environment Transport Group Inventory:

                        Pathway
Time (h) =   0.8000      Filter
Noble gases (atoms)    0.0000E+00
Elemental I (atoms)    0.0000E+00
Organic I (atoms)      0.0000E+00
Aerosols (kg)          0.0000E+00

TSC Filtered Air Intake Transport Group Inventory:

                        Pathway
Time (h) =   0.8000      Filter
Noble gases (atoms)    0.0000E+00
Elemental I (atoms)    0.0000E+00
Organic I (atoms)      0.0000E+00
Aerosols (kg)          0.0000E+00

TSC Unfiltered Inleakage Transport Group Inventory:

                        Pathway
Time (h) =   0.8000      Filter
Noble gases (atoms)    0.0000E+00
Elemental I (atoms)    0.0000E+00
Organic I (atoms)      0.0000E+00
Aerosols (kg)          0.0000E+00

TSC Exhaust Transport Group Inventory:

                        Pathway
Time (h) =   0.8000      Filter
Noble gases (atoms)    0.0000E+00
Elemental I (atoms)    0.0000E+00
```

```
Organic I (atoms)      0.0000E+00
Aerosols (kg)          0.0000E+00

TSC Compartment Nuclide Inventory:

Time (h) =   0.8000       Ci           kg          Atoms         Bq
I-131                  2.6130E-04  2.1077E-12  9.6891E+12  9.6680E+06
I-132                  2.9758E-04  2.8830E-14  1.3153E+11  1.1011E+07
I-133                  5.3369E-04  4.7112E-13  2.1332E+12  1.9746E+07
I-134                  3.2372E-04  1.2135E-14  5.4537E+10  1.1978E+07
I-135                  4.7001E-04  1.3383E-13  5.9701E+11  1.7390E+07

TSC Transport Group Inventory:



                                                Overlying
Time (h) =   0.8000    Atmosphere     Sump        Pool
Noble gases (atoms)    0.0000E+00  0.0000E+00  0.0000E+00
Elemental I (atoms)    1.2336E+13  0.0000E+00  0.0000E+00
Organic I (atoms)      3.8151E+11  0.0000E+00  0.0000E+00
Aerosols (kg)          0.0000E+00  0.0000E+00  0.0000E+00

                       Deposition Recirculating
Time (h) =   0.8000     Surfaces     Filter
Noble gases (atoms)    0.0000E+00  0.0000E+00
Elemental I (atoms)    0.0000E+00  0.0000E+00
Organic I (atoms)      0.0000E+00  0.0000E+00
Aerosols (kg)          0.0000E+00  0.0000E+00

TSC Filtered Air Intake Transport Group Inventory:

                        Pathway
Time (h) =   0.8000      Filter
Noble gases (atoms)    0.0000E+00
Elemental I (atoms)    0.0000E+00
Organic I (atoms)      0.0000E+00
Aerosols (kg)          0.0000E+00

TSC Unfiltered Inleakage Transport Group Inventory:

                        Pathway
Time (h) =   0.8000      Filter
Noble gases (atoms)    0.0000E+00
Elemental I (atoms)    0.0000E+00
Organic I (atoms)      0.0000E+00
Aerosols (kg)          0.0000E+00

TSC Exhaust Transport Group Inventory:

                        Pathway
Time (h) =   0.8000      Filter
Noble gases (atoms)    0.0000E+00
Elemental I (atoms)    0.0000E+00
Organic I (atoms)      0.0000E+00
Aerosols (kg)          0.0000E+00
```

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**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 1 | System Nos. | Sheet 547 of 1000 |
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Exclusion Area Boundary Doses:

| Time (h) = 0.9167 | Whole Body | Thyroid | TEDE |
|---|---|---|---|
| Delta dose (rem) | 6.7486E-03 | 1.8949E+00 | 6.6417E-02 |
| Accumulated dose (rem) | 1.8435E-02 | 4.9625E+00 | 1.7479E-01 |

Low Population Zone Doses:

| Time (h) = 0.9167 | Whole Body | Thyroid | TEDE |
|---|---|---|---|
| Delta dose (rem) | 1.1810E-03 | 3.3160E-01 | 1.1623E-02 |
| Accumulated dose (rem) | 3.2262E-03 | 8.6844E-01 | 3.0588E-02 |

TSC Doses:

| Time (h) = 0.9167 | Whole Body | Thyroid | TEDE |
|---|---|---|---|
| Delta dose (rem) | 6.9667E-06 | 6.2323E-02 | 1.9694E-03 |
| Accumulated dose (rem) | 1.3517E-05 | 1.1775E-01 | 3.7225E-03 |

Travel Path Doses:

| Time (h) = 0.9167 | Whole Body | Thyroid | TEDE |
|---|---|---|---|
| Delta dose (rem) | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 |
| Accumulated dose (rem) | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 |

Environment Integral Nuclide Release:

| Time (h) = 0.9167 | Ci | kg | Atoms | Bq |
|---|---|---|---|---|
| I-131 | 1.1702E+01 | 9.4391E-08 | 4.3392E+17 | 4.3298E+11 |
| I-132 | 1.3472E+01 | 1.3051E-09 | 5.9544E+15 | 4.9846E+11 |
| I-133 | 2.3925E+01 | 2.1120E-08 | 9.5632E+16 | 8.8524E+11 |
| I-134 | 1.4956E+01 | 5.6066E-10 | 2.5197E+15 | 5.5339E+11 |
| I-135 | 2.1124E+01 | 6.0150E-09 | 2.6832E+16 | 7.8158E+11 |

Environment Transport Group Inventory:

| Time (h) = 0.9167 | Present Release | Release Rate/s | Total Release |
|---|---|---|---|
| Noble gases (atoms) | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 |
| Elemental I (atoms) | 5.5182E+17 | 1.6722E+14 | 5.5182E+17 |
| Organic I (atoms) | 1.7067E+16 | 5.1717E+12 | 1.7067E+16 |
| Aerosols (kg) | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 |

Sump to Environment Transport Group Inventory:

| Time (h) = 0.9167 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 |

TSC Filtered Air Intake Transport Group Inventory:

| Time (h) = 0.9167 | Pathway Filter |
|---|---|

```
Noble gases (atoms)    0.0000E+00
Elemental I (atoms)    0.0000E+00
Organic I (atoms)      0.0000E+00
Aerosols (kg)          0.0000E+00

TSC Unfiltered Inleakage Transport Group Inventory:

                        Pathway
Time (h) =   0.9167      Filter
Noble gases (atoms)    0.0000E+00
Elemental I (atoms)    0.0000E+00
Organic I (atoms)      0.0000E+00
Aerosols (kg)          0.0000E+00

TSC Exhaust Transport Group Inventory:



                        Pathway
Time (h) =   0.9167      Filter
Noble gases (atoms)    0.0000E+00
Elemental I (atoms)    0.0000E+00
Organic I (atoms)      0.0000E+00
Aerosols (kg)          0.0000E+00

TSC Compartment Nuclide Inventory:

Time (h) =   0.9167       Ci           kg         Atoms         Bq
I-131                  4.1546E-04  3.3511E-12  1.5405E+13  1.5372E+07
I-132                  4.5700E-04  4.4273E-14  2.0199E+11  1.6909E+07
I-133                  8.4561E-04  7.4647E-13  3.3800E+12  3.1288E+07
I-134                  4.6955E-04  1.7602E-14  7.9104E+10  1.7374E+07
I-135                  7.3852E-04  2.1029E-13  9.3809E+11  2.7325E+07

TSC Transport Group Inventory:

                                                Overlying
Time (h) =   0.9167    Atmosphere     Sump        Pool
Noble gases (atoms)    0.0000E+00  0.0000E+00  0.0000E+00
Elemental I (atoms)    1.9600E+13  0.0000E+00  0.0000E+00
Organic I (atoms)      6.0619E+11  0.0000E+00  0.0000E+00
Aerosols (kg)          0.0000E+00  0.0000E+00  0.0000E+00

                       Deposition Recirculating
Time (h) =   0.9167     Surfaces     Filter
Noble gases (atoms)    0.0000E+00  0.0000E+00
Elemental I (atoms)    0.0000E+00  0.0000E+00
Organic I (atoms)      0.0000E+00  0.0000E+00
Aerosols (kg)          0.0000E+00  0.0000E+00

TSC Filtered Air Intake Transport Group Inventory:

                        Pathway
Time (h) =   0.9167      Filter
Noble gases (atoms)    0.0000E+00
Elemental I (atoms)    0.0000E+00
Organic I (atoms)      0.0000E+00
```

```
Aerosols (kg)          0.0000E+00

TSC Unfiltered Inleakage Transport Group Inventory:

                        Pathway
Time (h) =   0.9167      Filter
Noble gases (atoms)    0.0000E+00
Elemental I (atoms)    0.0000E+00
Organic I (atoms)      0.0000E+00
Aerosols (kg)          0.0000E+00

TSC Exhaust Transport Group Inventory:

                        Pathway
Time (h) =   0.9167      Filter
Noble gases (atoms)    0.0000E+00
Elemental I (atoms)    0.0000E+00


Organic I (atoms)      0.0000E+00
Aerosols (kg)          0.0000E+00

Exclusion Area Boundary Doses:

Time (h) =   1.0000    Whole Body   Thyroid       TEDE
Delta dose (rem)        5.5116E-03  1.5995E+00  5.5858E-02
Accumulated dose (rem)  2.3947E-02  6.5620E+00  2.3065E-01

Low Population Zone Doses:

Time (h) =   1.0000    Whole Body   Thyroid       TEDE
Delta dose (rem)        9.6453E-04  2.7991E-01  9.7751E-03
Accumulated dose (rem)  4.1907E-03  1.1484E+00  4.0363E-02

TSC Doses:

Time (h) =   1.0000    Whole Body   Thyroid       TEDE
Delta dose (rem)        6.8412E-06  6.3218E-02  1.9967E-03
Accumulated dose (rem)  2.0358E-05  1.8096E-01  5.7192E-03

Travel Path Doses:

Time (h) =   1.0000    Whole Body   Thyroid       TEDE
Delta dose (rem)        5.5116E-03  1.5858E+00  5.5426E-02
Accumulated dose (rem)  5.5116E-03  1.5858E+00  5.5426E-02

Environment Integral Nuclide Release:

Time (h) =   1.0000       Ci           kg         Atoms         Bq
I-131                  1.5485E+01  1.2490E-07  5.7419E+17  5.7294E+11
I-132                  1.7554E+01  1.7006E-09  7.7587E+15  6.4951E+11
I-133                  3.1610E+01  2.7904E-08  1.2635E+17  1.1696E+12
I-134                  1.9022E+01  7.1306E-10  3.2046E+15  7.0382E+11
I-135                  2.7804E+01  7.9173E-09  3.5318E+16  1.0288E+12

Environment Transport Group Inventory:
```

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**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 1 | System Nos. | Sheet 550 of 1000 |
|---|---|---|---|---|

```
                          Present     Release      Total
Time (h) =   1.0000       Release     Rate/s      Release
Noble gases (atoms)     0.0000E+00  0.0000E+00  0.0000E+00
Elemental I (atoms)     7.2982E+17  2.0273E+14  7.2982E+17
Organic I (atoms)       2.2572E+16  6.2699E+12  2.2572E+16
Aerosols (kg)           0.0000E+00  0.0000E+00  0.0000E+00

Sump to Environment Transport Group Inventory:

                          Pathway
Time (h) =   1.0000        Filter
Noble gases (atoms)     0.0000E+00
Elemental I (atoms)     0.0000E+00
Organic I (atoms)       0.0000E+00
Aerosols (kg)           0.0000E+00

TSC Filtered Air Intake Transport Group Inventory:



                          Pathway
Time (h) =   1.0000        Filter
Noble gases (atoms)     0.0000E+00
Elemental I (atoms)     0.0000E+00
Organic I (atoms)       0.0000E+00
Aerosols (kg)           0.0000E+00

TSC Unfiltered Inleakage Transport Group Inventory:

                          Pathway
Time (h) =   1.0000        Filter
Noble gases (atoms)     0.0000E+00
Elemental I (atoms)     0.0000E+00
Organic I (atoms)       0.0000E+00
Aerosols (kg)           0.0000E+00

TSC Exhaust Transport Group Inventory:

                          Pathway
Time (h) =   1.0000        Filter
Noble gases (atoms)     0.0000E+00
Elemental I (atoms)     0.0000E+00
Organic I (atoms)       0.0000E+00
Aerosols (kg)           0.0000E+00

TSC Compartment Nuclide Inventory:

Time (h) =   1.0000        Ci           kg          Atoms         Bq
I-131                   5.4286E-04  4.3788E-12  2.0130E+13  2.0086E+07
I-132                   5.8250E-04  5.6432E-14  2.5746E+11  2.1553E+07
I-133                   1.1022E-03  9.7297E-13  4.4055E+12  4.0781E+07
I-134                   5.7460E-04  2.1539E-14  9.6800E+10  2.1260E+07
I-135                   9.5688E-04  2.7247E-13  1.2155E+12  3.5405E+07

TSC Transport Group Inventory:

                                                Overlying
```

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| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 1 | System Nos. | Sheet 551 of 1000 |
|---|---|---|---|---|

```
Time (h) =   1.0000    Atmosphere     Sump        Pool
Noble gases (atoms)    0.0000E+00  0.0000E+00  0.0000E+00
Elemental I (atoms)    2.5599E+13  0.0000E+00  0.0000E+00
Organic I (atoms)      7.9173E+11  0.0000E+00  0.0000E+00
Aerosols (kg)          0.0000E+00  0.0000E+00  0.0000E+00

                       Deposition Recirculating
Time (h) =   1.0000     Surfaces     Filter
Noble gases (atoms)    0.0000E+00  0.0000E+00
Elemental I (atoms)    0.0000E+00  0.0000E+00
Organic I (atoms)      0.0000E+00  0.0000E+00
Aerosols (kg)          0.0000E+00  0.0000E+00

TSC Filtered Air Intake Transport Group Inventory:

                        Pathway
Time (h) =   1.0000      Filter
Noble gases (atoms)    0.0000E+00
Elemental I (atoms)    0.0000E+00


Organic I (atoms)      0.0000E+00
Aerosols (kg)          0.0000E+00

TSC Unfiltered Inleakage Transport Group Inventory:

                        Pathway
Time (h) =   1.0000      Filter
Noble gases (atoms)    0.0000E+00
Elemental I (atoms)    0.0000E+00
Organic I (atoms)      0.0000E+00
Aerosols (kg)          0.0000E+00

TSC Exhaust Transport Group Inventory:

                        Pathway
Time (h) =   1.0000      Filter
Noble gases (atoms)    0.0000E+00
Elemental I (atoms)    0.0000E+00
Organic I (atoms)      0.0000E+00
Aerosols (kg)          0.0000E+00

Exclusion Area Boundary Doses:

Time (h) =   1.8000    Whole Body   Thyroid       TEDE
Delta dose (rem)        7.7225E-02  2.5694E+01  8.8459E-01
Accumulated dose (rem)  1.0117E-01  3.2256E+01  1.1152E+00

Low Population Zone Doses:

Time (h) =   1.8000    Whole Body   Thyroid       TEDE
Delta dose (rem)        1.3514E-02  4.4965E+00  1.5480E-01
Accumulated dose (rem)  1.7705E-02  5.6449E+00  1.9517E-01

TSC Doses:

Time (h) =   1.8000    Whole Body   Thyroid       TEDE
```

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**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 1 | System Nos. | Sheet 552 of 1000 |
|---|---|---|---|---|

```
Delta dose (rem)        1.6285E-04  1.7455E+00  5.5003E-02
Accumulated dose (rem)  1.8321E-04  1.9265E+00  6.0722E-02

Travel Path Doses:

Time (h) =   1.8000    Whole Body   Thyroid       TEDE
Delta dose (rem)        0.0000E+00  0.0000E+00  0.0000E+00
Accumulated dose (rem)  5.5116E-03  1.5858E+00  5.5426E-02

Environment Integral Nuclide Release:

Time (h) =   1.8000       Ci           kg         Atoms         Bq
I-131                  7.6591E+01  6.1779E-07  2.8400E+18  2.8339E+12
I-132                  7.4210E+01  7.1894E-09  3.2799E+16  2.7458E+12
I-133                  1.5385E+02  1.3582E-07  6.1497E+17  5.6926E+12
I-134                  6.3414E+01  2.3771E-09  1.0683E+16  2.3463E+12
I-135                  1.3024E+02  3.7086E-08  1.6544E+17  4.8189E+12

Environment Transport Group Inventory:



                        Present     Release      Total
Time (h) =   1.8000     Release     Rate/s      Release
Noble gases (atoms)    0.0000E+00  0.0000E+00  0.0000E+00
Elemental I (atoms)    3.5961E+18  5.5495E+14  3.5961E+18
Organic I (atoms)      1.1122E+17  1.7163E+13  1.1122E+17
Aerosols (kg)          0.0000E+00  0.0000E+00  0.0000E+00

Sump to Environment Transport Group Inventory:

                        Pathway
Time (h) =   1.8000      Filter
Noble gases (atoms)    0.0000E+00
Elemental I (atoms)    0.0000E+00
Organic I (atoms)      0.0000E+00
Aerosols (kg)          0.0000E+00

TSC Filtered Air Intake Transport Group Inventory:

                        Pathway
Time (h) =   1.8000      Filter
Noble gases (atoms)    0.0000E+00
Elemental I (atoms)    0.0000E+00
Organic I (atoms)      0.0000E+00
Aerosols (kg)          0.0000E+00

TSC Unfiltered Inleakage Transport Group Inventory:

                        Pathway
Time (h) =   1.8000      Filter
Noble gases (atoms)    0.0000E+00
Elemental I (atoms)    0.0000E+00
Organic I (atoms)      0.0000E+00
Aerosols (kg)          0.0000E+00

TSC Exhaust Transport Group Inventory:
```

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**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 1 | System Nos. | Sheet 553 of 1000 |
|---|---|---|---|---|

```
                          Pathway
Time (h) =   1.8000        Filter
Noble gases (atoms)     0.0000E+00
Elemental I (atoms)     0.0000E+00
Organic I (atoms)       0.0000E+00
Aerosols (kg)           0.0000E+00

TSC Compartment Nuclide Inventory:

Time (h) =   1.8000        Ci           kg          Atoms         Bq
I-131                   2.4011E-03  1.9368E-11  8.9036E+13  8.8842E+07
I-132                   2.0304E-03  1.9670E-13  8.9738E+11  7.5123E+07
I-133                   4.7605E-03  4.2024E-12  1.9028E+13  1.7614E+08
I-134                   1.3541E-03  5.0758E-14  2.2811E+11  5.0100E+07
I-135                   3.9031E-03  1.1114E-12  4.9578E+12  1.4441E+08

TSC Transport Group Inventory:

                                                Overlying
Time (h) =   1.8000    Atmosphere     Sump        Pool


Noble gases (atoms)     0.0000E+00  0.0000E+00  0.0000E+00
Elemental I (atoms)     1.1286E+14  0.0000E+00  0.0000E+00
Organic I (atoms)       3.4905E+12  0.0000E+00  0.0000E+00
Aerosols (kg)           0.0000E+00  0.0000E+00  0.0000E+00

                        Deposition Recirculating
Time (h) =   1.8000      Surfaces     Filter
Noble gases (atoms)     0.0000E+00  0.0000E+00
Elemental I (atoms)     0.0000E+00  0.0000E+00
Organic I (atoms)       0.0000E+00  0.0000E+00
Aerosols (kg)           0.0000E+00  0.0000E+00

TSC Filtered Air Intake Transport Group Inventory:

                          Pathway
Time (h) =   1.8000        Filter
Noble gases (atoms)     0.0000E+00
Elemental I (atoms)     0.0000E+00
Organic I (atoms)       0.0000E+00
Aerosols (kg)           0.0000E+00

TSC Unfiltered Inleakage Transport Group Inventory:

                          Pathway
Time (h) =   1.8000        Filter
Noble gases (atoms)     0.0000E+00
Elemental I (atoms)     0.0000E+00
Organic I (atoms)       0.0000E+00
Aerosols (kg)           0.0000E+00

TSC Exhaust Transport Group Inventory:

                          Pathway
Time (h) =   1.8000        Filter
```

```
Noble gases (atoms)    0.0000E+00
Elemental I (atoms)    0.0000E+00
Organic I (atoms)      0.0000E+00
Aerosols (kg)          0.0000E+00

Exclusion Area Boundary Doses:

Time (h) =   2.0000    Whole Body   Thyroid       TEDE
Delta dose (rem)        2.3137E-02  8.7277E+00  2.9697E-01
Accumulated dose (rem)  1.2431E-01  4.0984E+01  1.4122E+00

Low Population Zone Doses:

Time (h) =   2.0000    Whole Body   Thyroid       TEDE
Delta dose (rem)        4.0491E-03  1.5273E+00  5.1970E-02
Accumulated dose (rem)  2.1754E-02  7.1722E+00  2.4714E-01

TSC Doses:

Time (h) =   2.0000    Whole Body   Thyroid       TEDE
Delta dose (rem)        7.0140E-05  8.4287E-01  2.6515E-02
Accumulated dose (rem)  2.5335E-04  2.7694E+00  8.7237E-02


Travel Path Doses:

Time (h) =   2.0000    Whole Body   Thyroid       TEDE
Delta dose (rem)        0.0000E+00  0.0000E+00  0.0000E+00
Accumulated dose (rem)  5.5116E-03  1.5858E+00  5.5426E-02

Environment Integral Nuclide Release:

Time (h) =   2.0000       Ci           kg         Atoms         Bq
I-131                  9.7462E+01  7.8614E-07  3.6139E+18  3.6061E+12
I-132                  9.1089E+01  8.8246E-09  4.0260E+16  3.3703E+12
I-133                  1.9505E+02  1.7218E-07  7.7963E+17  7.2168E+12
I-134                  7.3881E+01  2.7695E-09  1.2447E+16  2.7336E+12
I-135                  1.6366E+02  4.6601E-08  2.0788E+17  6.0553E+12

Environment Transport Group Inventory:

                        Present     Release      Total
Time (h) =   2.0000     Release     Rate/s      Release
Noble gases (atoms)    0.0000E+00  0.0000E+00  0.0000E+00
Elemental I (atoms)    4.5733E+18  6.3519E+14  4.5733E+18
Organic I (atoms)      1.4144E+17  1.9645E+13  1.4144E+17
Aerosols (kg)          0.0000E+00  0.0000E+00  0.0000E+00

Sump to Environment Transport Group Inventory:

                        Pathway
Time (h) =   2.0000      Filter
Noble gases (atoms)    0.0000E+00
Elemental I (atoms)    0.0000E+00
Organic I (atoms)      0.0000E+00
Aerosols (kg)          0.0000E+00
```

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**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 1 | System Nos. | Sheet 555 of 1000 |
|---|---|---|---|---|

TSC Filtered Air Intake Transport Group Inventory:

| Time (h) = 2.0000 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 |

TSC Unfiltered Inleakage Transport Group Inventory:

| Time (h) = 2.0000 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 |

TSC Exhaust Transport Group Inventory:

| Time (h) = 2.0000 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 |

TSC Compartment Nuclide Inventory:

| Time (h) = 2.0000 | Ci | kg | Atoms | Bq |
|---|---|---|---|---|
| I-131 | 2.9668E-03 | 2.3931E-11 | 1.1001E+14 | 1.0977E+08 |
| I-132 | 2.3636E-03 | 2.2898E-13 | 1.0447E+12 | 8.7454E+07 |
| I-133 | 5.8471E-03 | 5.1616E-12 | 2.3371E+13 | 2.1634E+08 |
| I-134 | 1.4294E-03 | 5.3581E-14 | 2.4080E+11 | 5.2887E+07 |
| I-135 | 4.7258E-03 | 1.3457E-12 | 6.0028E+12 | 1.7486E+08 |

TSC Transport Group Inventory:

| Time (h) = 2.0000 | Atmosphere | Sump | Overlying Pool |
|---|---|---|---|
| Noble gases (atoms) | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 |
| Elemental I (atoms) | 1.3939E+14 | 0.0000E+00 | 0.0000E+00 |
| Organic I (atoms) | 4.3111E+12 | 0.0000E+00 | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 |

| Time (h) = 2.0000 | Deposition Surfaces | Recirculating Filter |
|---|---|---|
| Noble gases (atoms) | 0.0000E+00 | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 | 0.0000E+00 |

TSC Filtered Air Intake Transport Group Inventory:

Pathway

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**CALCULATION SHEET**
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| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 1 | System Nos. | Sheet 556 of 1000 |
|---|---|---|---|---|

```
Time (h) =   2.0000      Filter
Noble gases (atoms)    0.0000E+00
Elemental I (atoms)    0.0000E+00
Organic I (atoms)      0.0000E+00
Aerosols (kg)          0.0000E+00

TSC Unfiltered Inleakage Transport Group Inventory:

                        Pathway
Time (h) =   2.0000      Filter
Noble gases (atoms)    0.0000E+00
Elemental I (atoms)    0.0000E+00
Organic I (atoms)      0.0000E+00
Aerosols (kg)          0.0000E+00

TSC Exhaust Transport Group Inventory:

                        Pathway
Time (h) =   2.0000      Filter
Noble gases (atoms)    0.0000E+00
Elemental I (atoms)    0.0000E+00
Organic I (atoms)      0.0000E+00
Aerosols (kg)          0.0000E+00



Exclusion Area Boundary Doses:

Time (h) =   2.8000    Whole Body   Thyroid       TEDE
Delta dose (rem)        8.1928E-02  3.4646E+01  1.1675E+00
Accumulated dose (rem)  2.0624E-01  7.5631E+01  2.5797E+00

Low Population Zone Doses:

Time (h) =   2.8000    Whole Body   Thyroid       TEDE
Delta dose (rem)        6.1446E-03  2.5985E+00  8.7563E-02
Accumulated dose (rem)  2.7899E-02  9.7707E+00  3.3470E-01

TSC Doses:

Time (h) =   2.8000    Whole Body   Thyroid       TEDE
Delta dose (rem)        3.0675E-04  4.1419E+00  1.3008E-01
Accumulated dose (rem)  5.6009E-04  6.9113E+00  2.1732E-01

Travel Path Doses:

Time (h) =   2.8000    Whole Body   Thyroid       TEDE
Delta dose (rem)        0.0000E+00  0.0000E+00  0.0000E+00
Accumulated dose (rem)  5.5116E-03  1.5858E+00  5.5426E-02

Environment Integral Nuclide Release:

Time (h) =   2.8000       Ci           kg         Atoms         Bq
I-131                  1.8080E+02  1.4583E-06  6.7040E+18  6.6894E+12
I-132                  1.4929E+02  1.4463E-08  6.5985E+16  5.5238E+12
I-133                  3.5711E+02  3.1524E-07  1.4274E+18  1.3213E+13
I-134                  1.0252E+02  3.8431E-09  1.7271E+16  3.7933E+12
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I-135                  2.9052E+02  8.2726E-08  3.6903E+17  1.0749E+13

Environment Transport Group Inventory:

                        Present     Release      Total
Time (h) =   2.8000     Release     Rate/s      Release
Noble gases (atoms)    0.0000E+00  0.0000E+00  0.0000E+00
Elemental I (atoms)    8.4824E+18  8.4151E+14  8.4824E+18
Organic I (atoms)      2.6234E+17  2.6026E+13  2.6234E+17
Aerosols (kg)          0.0000E+00  0.0000E+00  0.0000E+00

Sump to Environment Transport Group Inventory:

                        Pathway
Time (h) =   2.8000      Filter
Noble gases (atoms)    0.0000E+00
Elemental I (atoms)    0.0000E+00
Organic I (atoms)      0.0000E+00
Aerosols (kg)          0.0000E+00

TSC Filtered Air Intake Transport Group Inventory:

                        Pathway
Time (h) =   2.8000      Filter
Noble gases (atoms)    0.0000E+00


Elemental I (atoms)    0.0000E+00
Organic I (atoms)      0.0000E+00
Aerosols (kg)          0.0000E+00

TSC Unfiltered Inleakage Transport Group Inventory:

                        Pathway
Time (h) =   2.8000      Filter
Noble gases (atoms)    0.0000E+00
Elemental I (atoms)    0.0000E+00
Organic I (atoms)      0.0000E+00
Aerosols (kg)          0.0000E+00

TSC Exhaust Transport Group Inventory:

                        Pathway
Time (h) =   2.8000      Filter
Noble gases (atoms)    0.0000E+00
Elemental I (atoms)    0.0000E+00
Organic I (atoms)      0.0000E+00
Aerosols (kg)          0.0000E+00

TSC Compartment Nuclide Inventory:

Time (h) =   2.8000       Ci          kg         Atoms         Bq
I-131                  3.6359E-03  2.9328E-11  1.3482E+14  1.3453E+08
I-132                  2.2827E-03  2.2114E-13  1.0089E+12  8.4460E+07
I-133                  6.9975E-03  6.1771E-12  2.7969E+13  2.5891E+08
I-134                  9.3329E-04  3.4985E-14  1.5723E+11  3.4532E+07
I-135                  5.3410E-03  1.5208E-12  6.7842E+12  1.9762E+08
```

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**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 1 | System Nos. | Sheet 558 of 1000 |
|---|---|---|---|---|

TSC Transport Group Inventory:

| Time (h) = 2.8000 | Atmosphere | Sump | Overlying Pool |
|---|---|---|---|
| Noble gases (atoms) | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 |
| Elemental I (atoms) | 1.7109E+14 | 0.0000E+00 | 0.0000E+00 |
| Organic I (atoms) | 5.2914E+12 | 0.0000E+00 | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 |

| Time (h) = 2.8000 | Deposition Surfaces | Recirculating Filter |
|---|---|---|
| Noble gases (atoms) | 0.0000E+00 | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 | 0.0000E+00 |

TSC Filtered Air Intake Transport Group Inventory:

| Time (h) = 2.8000 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 |

TSC Unfiltered Inleakage Transport Group Inventory:

| Time (h) = 2.8000 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 |

TSC Exhaust Transport Group Inventory:

| Time (h) = 2.8000 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 |

Exclusion Area Boundary Doses:

| Time (h) = 8.0000 | Whole Body | Thyroid | TEDE |
|---|---|---|---|
| Delta dose (rem) | 3.3439E-01 | 2.1609E+02 | 7.0705E+00 |
| Accumulated dose (rem) | 5.4063E-01 | 2.9173E+02 | 9.6502E+00 |

Low Population Zone Doses:

| Time (h) = 8.0000 | Whole Body | Thyroid | TEDE |
|---|---|---|---|
| Delta dose (rem) | 2.5080E-02 | 1.6207E+01 | 5.3029E-01 |
| Accumulated dose (rem) | 5.2978E-02 | 2.5978E+01 | 8.6498E-01 |

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**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 1 | System Nos. | Sheet 559 of 1000 |
|---|---|---|---|---|

TSC Doses:

| Time (h) = 8.0000 | Whole Body | Thyroid | TEDE |
|---|---|---|---|
| Delta dose (rem) | 3.8943E-04 | 7.5352E+00 | 2.3543E-01 |
| Accumulated dose (rem) | 9.4953E-04 | 1.4446E+01 | 4.5275E-01 |

Travel Path Doses:

| Time (h) = 8.0000 | Whole Body | Thyroid | TEDE |
|---|---|---|---|
| Delta dose (rem) | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 |
| Accumulated dose (rem) | 5.5116E-03 | 1.5858E+00 | 5.5426E-02 |

Environment Integral Nuclide Release:

| Time (h) = 8.0000 | Ci | kg | Atoms | Bq |
|---|---|---|---|---|
| I-131 | 7.1666E+02 | 5.7807E-06 | 2.6574E+19 | 2.6516E+13 |
| I-132 | 3.1823E+02 | 3.0830E-08 | 1.4065E+17 | 1.1774E+13 |
| I-133 | 1.3114E+03 | 1.1577E-06 | 5.2419E+18 | 4.8523E+13 |
| I-134 | 1.3445E+02 | 5.0398E-09 | 2.2650E+16 | 4.9745E+12 |
| I-135 | 8.9987E+02 | 2.5624E-07 | 1.1430E+18 | 3.3295E+13 |

Environment Transport Group Inventory:

| Time (h) = 8.0000 | Present Release | Release Rate/s | Total Release |
|---|---|---|---|
| Noble gases (atoms) | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 |
| Elemental I (atoms) | 3.3891E+19 | 1.1768E+15 | 3.3891E+19 |
| Organic I (atoms) | 1.0482E+18 | 3.6395E+13 | 1.0482E+18 |
| Aerosols (kg) | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 |

Sump to Environment Transport Group Inventory:

| Time (h) = 8.0000 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 |

TSC Filtered Air Intake Transport Group Inventory:

| Time (h) = 8.0000 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 1.1656E+21 |
| Organic I (atoms) | 3.6049E+19 |
| Aerosols (kg) | 0.0000E+00 |

TSC Unfiltered Inleakage Transport Group Inventory:

| Time (h) = 8.0000 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 |

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**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 1 | System Nos. | Sheet 560 of 1000 |
|---|---|---|---|---|

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Organic I (atoms)      0.0000E+00
Aerosols (kg)          0.0000E+00

TSC Exhaust Transport Group Inventory:

                        Pathway
Time (h) =   8.0000      Filter
Noble gases (atoms)    0.0000E+00
Elemental I (atoms)    0.0000E+00
Organic I (atoms)      0.0000E+00
Aerosols (kg)          0.0000E+00

TSC Compartment Nuclide Inventory:

Time (h) =   8.0000       Ci           kg         Atoms         Bq
I-131                  7.6323E-04  6.1563E-12  2.8301E+13  2.8239E+07
I-132                  1.0186E-04  9.8682E-15  4.5021E+10  3.7688E+06
I-133                  1.2584E-03  1.1109E-12  5.0301E+12  4.6562E+07
I-134                  3.2703E-06  1.2259E-16  5.5094E+08  1.2100E+05
I-135                  6.6215E-04  1.8855E-13  8.4107E+11  2.4499E+07

TSC Transport Group Inventory:

                                                Overlying
Time (h) =   8.0000    Atmosphere     Sump        Pool
Noble gases (atoms)    0.0000E+00  0.0000E+00  0.0000E+00
Elemental I (atoms)    3.6523E+13  0.0000E+00  0.0000E+00



Organic I (atoms)      1.1296E+12  0.0000E+00  0.0000E+00
Aerosols (kg)          0.0000E+00  0.0000E+00  0.0000E+00

                       Deposition Recirculating
Time (h) =   8.0000     Surfaces     Filter
Noble gases (atoms)    0.0000E+00  0.0000E+00
Elemental I (atoms)    0.0000E+00  4.2218E+14
Organic I (atoms)      0.0000E+00  1.3057E+13
Aerosols (kg)          0.0000E+00  0.0000E+00

TSC Filtered Air Intake Transport Group Inventory:

                        Pathway
Time (h) =   8.0000      Filter
Noble gases (atoms)    0.0000E+00
Elemental I (atoms)    1.1656E+21
Organic I (atoms)      3.6049E+19
Aerosols (kg)          0.0000E+00

TSC Unfiltered Inleakage Transport Group Inventory:

                        Pathway
Time (h) =   8.0000      Filter
Noble gases (atoms)    0.0000E+00
Elemental I (atoms)    0.0000E+00
Organic I (atoms)      0.0000E+00
Aerosols (kg)          0.0000E+00
```

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**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 1 | System Nos. | Sheet 561 of 1000 |
|---|---|---|---|---|

TSC Exhaust Transport Group Inventory:

| Time (h) = 8.0000 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 |

Exclusion Area Boundary Doses:

| Time (h) = 24.0000 | Whole Body | Thyroid | TEDE |
|---|---|---|---|
| Delta dose (rem) | 4.6503E-01 | 5.9517E+02 | 1.8865E+01 |
| Accumulated dose (rem) | 1.0057E+00 | 8.8689E+02 | 2.8515E+01 |

Low Population Zone Doses:

| Time (h) = 24.0000 | Whole Body | Thyroid | TEDE |
|---|---|---|---|
| Delta dose (rem) | 2.2670E-02 | 1.4922E+01 | 4.8398E-01 |
| Accumulated dose (rem) | 7.5649E-02 | 4.0899E+01 | 1.3490E+00 |

TSC Doses:

| Time (h) = 24.0000 | Whole Body | Thyroid | TEDE |
|---|---|---|---|
| Delta dose (rem) | 1.6723E-04 | 6.7097E+00 | 2.0764E-01 |
| Accumulated dose (rem) | 1.1168E-03 | 2.1156E+01 | 6.6039E-01 |

Travel Path Doses:

| Time (h) = 24.0000 | Whole Body | Thyroid | TEDE |
|---|---|---|---|
| Delta dose (rem) | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 |
| Accumulated dose (rem) | 5.5116E-03 | 1.5858E+00 | 5.5426E-02 |

Environment Integral Nuclide Release:

| Time (h) = 24.0000 | Ci | kg | Atoms | Bq |
|---|---|---|---|---|
| I-131 | 2.3005E+03 | 1.8556E-05 | 8.5302E+19 | 8.5117E+13 |
| I-132 | 3.6021E+02 | 3.4897E-08 | 1.5921E+17 | 1.3328E+13 |
| I-133 | 3.3568E+03 | 2.9632E-06 | 1.3417E+19 | 1.2420E+14 |
| I-134 | 1.3497E+02 | 5.0596E-09 | 2.2738E+16 | 4.9940E+12 |
| I-135 | 1.5525E+03 | 4.4208E-07 | 1.9721E+18 | 5.7444E+13 |

Environment Transport Group Inventory:

| Time (h) = 24.0000 | Present Release | Release Rate/s | Total Release |
|---|---|---|---|
| Noble gases (atoms) | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 |
| Elemental I (atoms) | 1.1207E+20 | 1.2971E+15 | 1.1207E+20 |
| Organic I (atoms) | 3.4660E+18 | 4.0116E+13 | 3.4660E+18 |
| Aerosols (kg) | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 |

Sump to Environment Transport Group Inventory:

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**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 1 | System Nos. | Sheet 562 of 1000 |
|---|---|---|---|---|

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                          Pathway
Time (h) =  24.0000        Filter
Noble gases (atoms)     0.0000E+00
Elemental I (atoms)     0.0000E+00
Organic I (atoms)       0.0000E+00
Aerosols (kg)           0.0000E+00

TSC Filtered Air Intake Transport Group Inventory:

                          Pathway
Time (h) =  24.0000        Filter
Noble gases (atoms)     0.0000E+00
Elemental I (atoms)     4.9624E+22
Organic I (atoms)       1.5348E+21
Aerosols (kg)           0.0000E+00

TSC Unfiltered Inleakage Transport Group Inventory:

                          Pathway
Time (h) =  24.0000        Filter
Noble gases (atoms)     0.0000E+00
Elemental I (atoms)     0.0000E+00
Organic I (atoms)       0.0000E+00
Aerosols (kg)           0.0000E+00

TSC Exhaust Transport Group Inventory:

                          Pathway
Time (h) =  24.0000        Filter
Noble gases (atoms)     0.0000E+00


Elemental I (atoms)     0.0000E+00
Organic I (atoms)       0.0000E+00
Aerosols (kg)           0.0000E+00

TSC Compartment Nuclide Inventory:

Time (h) =  24.0000        Ci            kg          Atoms          Bq
I-131                   2.7980E-04  2.2569E-12  1.0375E+13  1.0353E+07
I-132                   3.1845E-07  3.0851E-17  1.4075E+08  1.1783E+04
I-133                   2.8670E-04  2.5309E-13  1.1460E+12  1.0608E+07
I-135                   4.8022E-05  1.3674E-14  6.0999E+10  1.7768E+06

TSC Transport Group Inventory:

                                                Overlying
Time (h) =  24.0000     Atmosphere     Sump        Pool
Noble gases (atoms)     0.0000E+00  0.0000E+00  0.0000E+00
Elemental I (atoms)     1.4181E+13  0.0000E+00  0.0000E+00
Organic I (atoms)       4.3860E+11  0.0000E+00  0.0000E+00
Aerosols (kg)           0.0000E+00  0.0000E+00  0.0000E+00

                        Deposition Recirculating
Time (h) =  24.0000      Surfaces     Filter
Noble gases (atoms)     0.0000E+00  0.0000E+00
Elemental I (atoms)     0.0000E+00  8.4395E+14
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Organic I (atoms)      0.0000E+00  2.6102E+13
Aerosols (kg)          0.0000E+00  0.0000E+00

TSC Filtered Air Intake Transport Group Inventory:

                        Pathway
Time (h) =  24.0000      Filter
Noble gases (atoms)    0.0000E+00
Elemental I (atoms)    4.9624E+22
Organic I (atoms)      1.5348E+21
Aerosols (kg)          0.0000E+00

TSC Unfiltered Inleakage Transport Group Inventory:

                        Pathway
Time (h) =  24.0000      Filter
Noble gases (atoms)    0.0000E+00
Elemental I (atoms)    0.0000E+00
Organic I (atoms)      0.0000E+00
Aerosols (kg)          0.0000E+00

TSC Exhaust Transport Group Inventory:

                        Pathway
Time (h) =  24.0000      Filter
Noble gases (atoms)    0.0000E+00
Elemental I (atoms)    0.0000E+00
Organic I (atoms)      0.0000E+00
Aerosols (kg)          0.0000E+00



Exclusion Area Boundary Doses:

Time (h) =  96.0000    Whole Body   Thyroid       TEDE
Delta dose (rem)        2.5197E-01  8.0398E+02  2.4855E+01
Accumulated dose (rem)  1.2576E+00  1.6909E+03  5.3370E+01

Low Population Zone Doses:

Time (h) =  96.0000    Whole Body   Thyroid       TEDE
Delta dose (rem)        5.0395E-03  1.0567E+01  3.2839E-01
Accumulated dose (rem)  8.0688E-02  5.1466E+01  1.6774E+00

TSC Doses:

Time (h) =  96.0000    Whole Body   Thyroid       TEDE
Delta dose (rem)        4.0207E-05  3.8668E+00  1.1843E-01
Accumulated dose (rem)  1.1570E-03  2.5023E+01  7.7882E-01

Travel Path Doses:

Time (h) =  96.0000    Whole Body   Thyroid       TEDE
Delta dose (rem)        0.0000E+00  0.0000E+00  0.0000E+00
Accumulated dose (rem)  5.5116E-03  1.5858E+00  5.5426E-02
```

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**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 1 | System Nos. | Sheet 564 of 1000 |
|---|---|---|---|---|

Environment Integral Nuclide Release:

| Time (h) = 96.0000 | Ci | kg | Atoms | Bq |
|---|---|---|---|---|
| I-131 | 4.7291E+03 | 3.8146E-05 | 1.7536E+20 | 1.7498E+14 |
| I-132 | 3.6029E+02 | 3.4904E-08 | 1.5924E+17 | 1.3331E+13 |
| I-133 | 4.3645E+03 | 3.8528E-06 | 1.7445E+19 | 1.6149E+14 |
| I-134 | 1.3497E+02 | 5.0596E-09 | 2.2738E+16 | 4.9940E+12 |
| I-135 | 1.6033E+03 | 4.5654E-07 | 2.0366E+18 | 5.9322E+13 |

Environment Transport Group Inventory:

| Time (h) = 96.0000 | Present Release | Release Rate/s | Total Release |
|---|---|---|---|
| Noble gases (atoms) | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 |
| Elemental I (atoms) | 2.5277E+20 | 7.3140E+14 | 2.5277E+20 |
| Organic I (atoms) | 7.8177E+18 | 2.2621E+13 | 7.8177E+18 |
| Aerosols (kg) | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 |

Sump to Environment Transport Group Inventory:

| Time (h) = 96.0000 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 |

TSC Filtered Air Intake Transport Group Inventory:

| Time (h) = 96.0000 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 3.0781E+23 |
| Organic I (atoms) | 9.5199E+21 |
| Aerosols (kg) | 0.0000E+00 |

TSC Unfiltered Inleakage Transport Group Inventory:

| Time (h) = 96.0000 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 |

TSC Exhaust Transport Group Inventory:

| Time (h) = 96.0000 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 |

TSC Compartment Nuclide Inventory:

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**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 1 | System Nos. | Sheet 565 of 1000 |
|---|---|---|---|---|

| Time (h) = 96.0000 | Ci | kg | Atoms | Bq |
|---|---|---|---|---|
| I-131 | 5.8229E-05 | 4.6968E-13 | 2.1592E+12 | 2.1545E+06 |
| I-133 | 7.0148E-06 | 6.1924E-15 | 2.8039E+10 | 2.5955E+05 |
| I-135 | 6.8087E-09 | 1.9388E-18 | 8.6485E+06 | 2.5192E+02 |

TSC Transport Group Inventory:

| Time (h) = 96.0000 | Atmosphere | Sump | Overlying Pool |
|---|---|---|---|
| Noble gases (atoms) | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 |
| Elemental I (atoms) | 3.8224E+12 | 0.0000E+00 | 0.0000E+00 |
| Organic I (atoms) | 1.1822E+11 | 0.0000E+00 | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 |

| Time (h) = 96.0000 | Deposition Surfaces | Recirculating Filter |
|---|---|---|
| Noble gases (atoms) | 0.0000E+00 | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 | 1.2392E+15 |
| Organic I (atoms) | 0.0000E+00 | 3.8326E+13 |
| Aerosols (kg) | 0.0000E+00 | 0.0000E+00 |

TSC Filtered Air Intake Transport Group Inventory:

| Time (h) = 96.0000 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 3.0781E+23 |
| Organic I (atoms) | 9.5199E+21 |
| Aerosols (kg) | 0.0000E+00 |

TSC Unfiltered Inleakage Transport Group Inventory:

| Time (h) = 96.0000 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 |

TSC Exhaust Transport Group Inventory:

| Time (h) = 96.0000 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 |

Exclusion Area Boundary Doses:

| Time (h) = 720.0000 | Whole Body | Thyroid | TEDE |
|---|---|---|---|
| Delta dose (rem) | 4.1175E-01 | 2.2617E+03 | 6.9282E+01 |
| Accumulated dose (rem) | 1.6694E+00 | 3.9526E+03 | 1.2265E+02 |

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**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 1 | System Nos. | Sheet 566 of 1000 |
|---|---|---|---|---|

Low Population Zone Doses:

| Time (h) = 720.0000 | Whole Body | Thyroid | TEDE |
|---|---|---|---|
| Delta dose (rem) | 2.0588E-03 | 7.4313E+00 | 2.2835E-01 |
| Accumulated dose (rem) | 8.2747E-02 | 5.8897E+01 | 1.9057E+00 |

TSC Doses:

| Time (h) = 720.0000 | Whole Body | Thyroid | TEDE |
|---|---|---|---|
| Delta dose (rem) | 3.2175E-05 | 5.6253E+00 | 1.7132E-01 |
| Accumulated dose (rem) | 1.1891E-03 | 3.0648E+01 | 9.5014E-01 |

Travel Path Doses:

| Time (h) = 720.0000 | Whole Body | Thyroid | TEDE |
|---|---|---|---|
| Delta dose (rem) | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 |
| Accumulated dose (rem) | 5.5116E-03 | 1.5858E+00 | 5.5426E-02 |

Environment Integral Nuclide Release:

| Time (h) = 720.0000 | Ci | kg | Atoms | Bq |
|---|---|---|---|---|
| I-131 | 1.2080E+04 | 9.7440E-05 | 4.4793E+20 | 4.4696E+14 |
| I-132 | 3.6029E+02 | 3.4904E-08 | 1.5924E+17 | 1.3331E+13 |
| I-133 | 4.4651E+03 | 3.9416E-06 | 1.7847E+19 | 1.6521E+14 |
| I-134 | 1.3497E+02 | 5.0596E-09 | 2.2738E+16 | 4.9940E+12 |
| I-135 | 1.6033E+03 | 4.5655E-07 | 2.0366E+18 | 5.9323E+13 |

Environment Transport Group Inventory:

| Time (h) = 720.0000 | Present Release | Release Rate/s | Total Release |
|---|---|---|---|
| Noble gases (atoms) | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 |
| Elemental I (atoms) | 1.4716E+21 | 5.6775E+14 | 1.4716E+21 |
| Organic I (atoms) | 4.5513E+19 | 1.7559E+13 | 4.5513E+19 |
| Aerosols (kg) | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 |

Sump to Environment Transport Group Inventory:

| Time (h) = 720.0000 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 |

TSC Filtered Air Intake Transport Group Inventory:

| Time (h) = 720.0000 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 2.5443E+24 |
| Organic I (atoms) | 7.8689E+22 |
| Aerosols (kg) | 0.0000E+00 |

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**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 1 | System Nos. | Sheet 567 of 1000 |
|---|---|---|---|---|

TSC Unfiltered Inleakage Transport Group Inventory:

| Time (h) = 720.0000 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 |

TSC Exhaust Transport Group Inventory:

| Time (h) = 720.0000 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 |

TSC Compartment Nuclide Inventory:

| Time (h) = 720.0000 | Ci | kg | Atoms | Bq |
|---|---|---|---|---|
| I-131 | 5.2325E-06 | 4.2206E-14 | 1.9402E+11 | 1.9360E+05 |

TSC Transport Group Inventory:

| Time (h) = 720.0000 | Atmosphere | Sump | Overlying Pool |
|---|---|---|---|
| Noble gases (atoms) | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 |
| Elemental I (atoms) | 3.2313E+12 | 0.0000E+00 | 0.0000E+00 |
| Organic I (atoms) | 9.9938E+10 | 0.0000E+00 | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 |

| Time (h) = 720.0000 | Deposition Surfaces | Recirculating Filter |
|---|---|---|
| Noble gases (atoms) | 0.0000E+00 | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 | 4.8646E+15 |
| Organic I (atoms) | 0.0000E+00 | 1.5045E+14 |
| Aerosols (kg) | 0.0000E+00 | 0.0000E+00 |

TSC Filtered Air Intake Transport Group Inventory:

| Time (h) = 720.0000 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 2.5443E+24 |
| Organic I (atoms) | 7.8689E+22 |
| Aerosols (kg) | 0.0000E+00 |

TSC Unfiltered Inleakage Transport Group Inventory:

| Time (h) = 720.0000 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 |

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**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 1 | System Nos. | Sheet 568 of 1000 |
|---|---|---|---|---|

```
Aerosols (kg)          0.0000E+00

TSC Exhaust Transport Group Inventory:

                        Pathway
Time (h) = 720.0000      Filter
Noble gases (atoms)    0.0000E+00
Elemental I (atoms)    0.0000E+00
Organic I (atoms)      0.0000E+00
Aerosols (kg)          0.0000E+00

    322

#####################################################################
                              I-131 Summary
#####################################################################
```

| Time (hr) | Sump I-131 (Curies) | Environment I-131 (Curies) | TSC I-131 (Curies) |
|---|---|---|---|
| 0.001 | 3.9707E+03 | 0.0000E+00 | 0.0000E+00 |
| 0.300 | 2.1419E+06 | 0.0000E+00 | 0.0000E+00 |
| 0.491 | 3.5010E+06 | 0.0000E+00 | 0.0000E+00 |
| 0.500 | 3.5672E+06 | 1.2081E-01 | 4.6091E-06 |
| 0.800 | 9.3196E+06 | 7.2267E+00 | 2.6130E-04 |
| 0.917 | 1.1553E+07 | 1.1702E+01 | 4.1546E-04 |
| 1.000 | 1.3148E+07 | 1.5485E+01 | 5.4286E-04 |
| 1.300 | 1.8879E+07 | 3.3142E+01 | 1.1125E-03 |
| 1.600 | 2.4599E+07 | 5.7111E+01 | 1.8392E-03 |
| 1.800 | 2.8405E+07 | 7.6591E+01 | 2.4011E-03 |
| 2.000 | 2.8384E+07 | 9.7462E+01 | 2.9668E-03 |
| 2.300 | 2.8354E+07 | 1.2874E+02 | 3.2458E-03 |
| 2.600 | 2.8323E+07 | 1.5998E+02 | 3.4902E-03 |
| 2.800 | 2.8303E+07 | 1.8080E+02 | 3.6359E-03 |
| 3.100 | 2.8272E+07 | 2.1198E+02 | 1.9327E-03 |
| 3.400 | 2.8242E+07 | 2.4314E+02 | 1.2434E-03 |
| 3.700 | 2.8211E+07 | 2.7426E+02 | 9.6415E-04 |
| 4.000 | 2.8181E+07 | 3.0535E+02 | 8.5073E-04 |
| 4.300 | 2.8150E+07 | 3.3640E+02 | 8.0436E-04 |
| 4.600 | 2.8120E+07 | 3.6742E+02 | 7.8512E-04 |
| 4.900 | 2.8090E+07 | 3.9841E+02 | 7.7684E-04 |
| 5.200 | 2.8060E+07 | 4.2936E+02 | 7.7299E-04 |
| 5.500 | 2.8029E+07 | 4.6028E+02 | 7.7095E-04 |
| 5.800 | 2.7999E+07 | 4.9117E+02 | 7.6962E-04 |
| 6.100 | 2.7969E+07 | 5.2202E+02 | 7.6859E-04 |
| 6.400 | 2.7939E+07 | 5.5284E+02 | 7.6768E-04 |
| 6.700 | 2.7909E+07 | 5.8363E+02 | 7.6682E-04 |
| 7.000 | 2.7878E+07 | 6.1439E+02 | 7.6598E-04 |
| 7.300 | 2.7848E+07 | 6.4511E+02 | 7.6515E-04 |
| 7.600 | 2.7818E+07 | 6.7579E+02 | 7.6433E-04 |
| 7.900 | 2.7788E+07 | 7.0645E+02 | 7.6350E-04 |
| 8.000 | 2.7778E+07 | 7.1666E+02 | 7.6323E-04 |
| 8.300 | 2.7748E+07 | 7.4727E+02 | 4.8484E-04 |
| 8.600 | 2.7719E+07 | 7.7785E+02 | 3.7208E-04 |
| 8.900 | 2.7689E+07 | 8.0839E+02 | 3.2629E-04 |
| 9.200 | 2.7659E+07 | 8.3890E+02 | 3.0758E-04 |

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**CALCULATION SHEET**
**(Ref. EP-006T)**

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| | | | |
|---|---|---|---|
| 9.500 | 2.7629E+07 | 8.6938E+02 | 2.9982E-04 |
| 9.800 | 2.7599E+07 | 8.9983E+02 | 2.9650E-04 |
| 10.100 | 2.7569E+07 | 9.3024E+02 | 2.9496E-04 |
| 10.400 | 2.7540E+07 | 9.6062E+02 | 2.9416E-04 |
| 24.000 | 2.6225E+07 | 2.3005E+03 | 2.7980E-04 |
| 96.000 | 2.0247E+07 | 4.7291E+03 | 5.8229E-05 |
| 720.000 | 2.1502E+06 | 1.2080E+04 | 5.2325E-06 |

```
#####################################################################
                        Cumulative Dose Summary
#####################################################################
```

| | Exclusion Area Bounda | | Low Population Zone | | TSC | |
|---|---|---|---|---|---|---|
| Time (hr) | Thyroid (rem) | TEDE (rem) | Thyroid (rem) | TEDE (rem) | Thyroid (rem) | TEDE (rem) |
| 0.001 | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 |
| 0.300 | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 |
| 0.491 | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 |
| 0.500 | 5.1381E-02 | 1.8273E-03 | 8.9916E-03 | 3.1978E-04 | 3.4194E-05 | 1.0828E-06 |
| 0.800 | 3.0676E+00 | 1.0837E-01 | 5.3684E-01 | 1.8965E-02 | 5.5423E-02 | 1.7530E-03 |
| 0.917 | 4.9625E+00 | 1.7479E-01 | 8.6844E-01 | 3.0588E-02 | 1.1775E-01 | 3.7225E-03 |
| 1.000 | 6.5620E+00 | 2.3065E-01 | 1.1484E+00 | 4.0363E-02 | 1.8096E-01 | 5.7192E-03 |
| 1.300 | 1.4013E+01 | 4.8935E-01 | 2.4523E+00 | 8.5637E-02 | 5.6804E-01 | 1.7934E-02 |
| 1.600 | 2.4091E+01 | 8.3610E-01 | 4.2159E+00 | 1.4632E-01 | 1.2610E+00 | 3.9772E-02 |
| 1.800 | 3.2256E+01 | 1.1152E+00 | 5.6449E+00 | 1.9517E-01 | 1.9265E+00 | 6.0722E-02 |
| 2.000 | 4.0984E+01 | 1.4122E+00 | 7.1722E+00 | 2.4714E-01 | 2.7694E+00 | 8.7237E-02 |
| 2.300 | 5.4025E+01 | 1.8536E+00 | 8.1503E+00 | 2.8024E-01 | 4.2279E+00 | 1.3308E-01 |
| 2.600 | 6.7008E+01 | 2.2906E+00 | 9.1240E+00 | 3.1302E-01 | 5.8036E+00 | 1.8256E-01 |
| 2.800 | 7.5631E+01 | 2.5797E+00 | 9.7707E+00 | 3.3470E-01 | 6.9113E+00 | 2.1732E-01 |
| 3.100 | 8.8517E+01 | 3.0102E+00 | 1.0737E+01 | 3.6698E-01 | 8.1536E+00 | 2.5628E-01 |
| 3.400 | 1.0135E+02 | 3.4371E+00 | 1.1700E+01 | 3.9900E-01 | 8.8685E+00 | 2.7868E-01 |
| 3.700 | 1.1412E+02 | 3.8606E+00 | 1.2658E+01 | 4.3077E-01 | 9.3699E+00 | 2.9438E-01 |
| 4.000 | 1.2685E+02 | 4.2811E+00 | 1.3612E+01 | 4.6230E-01 | 9.7843E+00 | 3.0735E-01 |
| 4.300 | 1.3952E+02 | 4.6986E+00 | 1.4562E+01 | 4.9362E-01 | 1.0163E+01 | 3.1919E-01 |
| 4.600 | 1.5213E+02 | 5.1134E+00 | 1.5508E+01 | 5.2473E-01 | 1.0526E+01 | 3.3054E-01 |
| 4.900 | 1.6470E+02 | 5.5255E+00 | 1.6451E+01 | 5.5563E-01 | 1.0882E+01 | 3.4166E-01 |
| 5.200 | 1.7721E+02 | 5.9351E+00 | 1.7389E+01 | 5.8635E-01 | 1.1235E+01 | 3.5267E-01 |
| 5.500 | 1.8968E+02 | 6.3422E+00 | 1.8324E+01 | 6.1688E-01 | 1.1585E+01 | 3.6360E-01 |
| 5.800 | 2.0210E+02 | 6.7470E+00 | 1.9256E+01 | 6.4724E-01 | 1.1933E+01 | 3.7447E-01 |
| 6.100 | 2.1446E+02 | 7.1495E+00 | 2.0183E+01 | 6.7743E-01 | 1.2280E+01 | 3.8529E-01 |
| 6.400 | 2.2679E+02 | 7.5498E+00 | 2.1107E+01 | 7.0745E-01 | 1.2626E+01 | 3.9606E-01 |
| 6.700 | 2.3906E+02 | 7.9479E+00 | 2.2028E+01 | 7.3732E-01 | 1.2970E+01 | 4.0678E-01 |
| 7.000 | 2.5129E+02 | 8.3441E+00 | 2.2945E+01 | 7.6702E-01 | 1.3313E+01 | 4.1746E-01 |
| 7.300 | 2.6347E+02 | 8.7382E+00 | 2.3859E+01 | 7.9658E-01 | 1.3654E+01 | 4.2810E-01 |
| 7.600 | 2.7561E+02 | 9.1303E+00 | 2.4769E+01 | 8.2599E-01 | 1.3995E+01 | 4.3869E-01 |
| 7.900 | 2.8770E+02 | 9.5205E+00 | 2.5676E+01 | 8.5526E-01 | 1.4334E+01 | 4.4924E-01 |
| 8.000 | 2.9173E+02 | 9.6502E+00 | 2.5978E+01 | 8.6498E-01 | 1.4446E+01 | 4.5275E-01 |
| 8.300 | 3.0376E+02 | 1.0038E+01 | 2.6280E+01 | 8.7503E-01 | 1.4714E+01 | 4.6109E-01 |
| 8.600 | 3.1575E+02 | 1.0424E+01 | 2.6580E+01 | 8.8503E-01 | 1.4900E+01 | 4.6686E-01 |
| 8.900 | 3.2770E+02 | 1.0808E+01 | 2.6880E+01 | 8.9497E-01 | 1.5053E+01 | 4.7160E-01 |
| 9.200 | 3.3961E+02 | 1.1190E+01 | 2.7178E+01 | 9.0486E-01 | 1.5191E+01 | 4.7591E-01 |
| 9.500 | 3.5148E+02 | 1.1571E+01 | 2.7476E+01 | 9.1470E-01 | 1.5324E+01 | 4.8004E-01 |
| 9.800 | 3.6331E+02 | 1.1950E+01 | 2.7772E+01 | 9.2450E-01 | 1.5454E+01 | 4.8408E-01 |
| 10.100 | 3.7509E+02 | 1.2328E+01 | 2.8068E+01 | 9.3424E-01 | 1.5583E+01 | 4.8808E-01 |
| 10.400 | 3.8684E+02 | 1.2704E+01 | 2.8362E+01 | 9.4394E-01 | 1.5711E+01 | 4.9206E-01 |

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**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 1 | System Nos. | Sheet 570 of 1000 |
|---|---|---|---|---|

```
  24.000 8.8689E+02 2.8515E+01 4.0899E+01 1.3490E+00 2.1156E+01 6.6039E-01
  96.000 1.6909E+03 5.3370E+01 5.1466E+01 1.6774E+00 2.5023E+01 7.7882E-01
 720.000 3.9526E+03 1.2265E+02 5.8897E+01 1.9057E+00 3.0648E+01 9.5014E-01

             Travel Path
  Time    Thyroid      TEDE
  (hr)     (rem)       (rem)
   0.001 0.0000E+00 0.0000E+00
   0.300 0.0000E+00 0.0000E+00
   0.491 0.0000E+00 0.0000E+00
   0.500 0.0000E+00 0.0000E+00
   0.800 0.0000E+00 0.0000E+00
   0.917 0.0000E+00 0.0000E+00
   1.000 1.5858E+00 5.5426E-02
   1.300 1.5858E+00 5.5426E-02
   1.600 1.5858E+00 5.5426E-02
   1.800 1.5858E+00 5.5426E-02
   2.000 1.5858E+00 5.5426E-02
   2.300 1.5858E+00 5.5426E-02
   2.600 1.5858E+00 5.5426E-02
   2.800 1.5858E+00 5.5426E-02
   3.100 1.5858E+00 5.5426E-02
   3.400 1.5858E+00 5.5426E-02
   3.700 1.5858E+00 5.5426E-02
   4.000 1.5858E+00 5.5426E-02
   4.300 1.5858E+00 5.5426E-02
   4.600 1.5858E+00 5.5426E-02
   4.900 1.5858E+00 5.5426E-02
   5.200 1.5858E+00 5.5426E-02
   5.500 1.5858E+00 5.5426E-02
   5.800 1.5858E+00 5.5426E-02
   6.100 1.5858E+00 5.5426E-02
   6.400 1.5858E+00 5.5426E-02
   6.700 1.5858E+00 5.5426E-02
   7.000 1.5858E+00 5.5426E-02
   7.300 1.5858E+00 5.5426E-02
   7.600 1.5858E+00 5.5426E-02
   7.900 1.5858E+00 5.5426E-02


  8.000 1.5858E+00 5.5426E-02
   8.300 1.5858E+00 5.5426E-02
   8.600 1.5858E+00 5.5426E-02
   8.900 1.5858E+00 5.5426E-02
   9.200 1.5858E+00 5.5426E-02
   9.500 1.5858E+00 5.5426E-02
   9.800 1.5858E+00 5.5426E-02
  10.100 1.5858E+00 5.5426E-02
  10.400 1.5858E+00 5.5426E-02
  24.000 1.5858E+00 5.5426E-02
  96.000 1.5858E+00 5.5426E-02
 720.000 1.5858E+00 5.5426E-02

#####################################################################
                     Worst Two-Hour Doses
    Note: All of the dose locations are shown below but the
          worst two-hour dose is only meaningful for the EAB
```

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**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 1 | System Nos. | Sheet 571 of 1000 |
|---|---|---|---|---|

```
          dose location.  Please disregard the two-hour worst
          doses for the other dose locations
#################################################################

Exclusion Area Boundary
   Time   Whole Body    Thyroid        TEDE
   (hr)      (rem)        (rem)         (rem)
    1.8   1.8987E-01   8.6108E+01   2.8856E+00

Low Population Zone
   Time   Whole Body    Thyroid        TEDE
   (hr)      (rem)        (rem)         (rem)
    0.9   2.5521E-02   9.2718E+00   3.1653E-01

TSC
   Time   Whole Body    Thyroid        TEDE
   (hr)      (rem)        (rem)         (rem)
    1.4   6.0599E-04   8.0695E+00   2.5347E-01

Travel Path
   Time   Whole Body    Thyroid        TEDE
   (hr)      (rem)        (rem)         (rem)
    0.0   5.5116E-03   1.5858E+00   5.5426E-02
```

**Appendix P**

**RADTRAD Output File**

# BWST_TSC.o0

**BWST Leakage Pathway (For TSC Dose)**

TMI Containment Leakage Pathway AST Analysis: (Same inputs as for CR & Offsite Dose)

CR Unfiltered Inleakage = 1,000 cfm (t=30 minutes to t=720 hours),
CR Initiation Time = 30 min (t=0 to t=30 min),
Two Spray Pumps For 28.19 min at 800 gpm each (t=75 seconds to t= 29.44 min),
Two Spray Pump For t=29.44 min to t=4.0 hours @ 800 gpm each

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**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 1 | System Nos. | Sheet 573 of 1000 |
|---|---|---|---|---|

```
 ######################################################################
           RADTRAD Version 3.02 run on  5/15/2002  at  7:25:29
 ######################################################################

 ######################################################################
                      File information
 ######################################################################

 Plant file name           = C:\Documents and Settings\u004tjm\My Documents\TMI
RADTRAD\ESF_TSC.psf
 Inventory file name       = c:\documents and settings\u004tjm\my documents\tmi
radtrad\defaults\tmi_i131.nif
 Scenario file name        = C:\Documents and Settings\u004tjm\My Documents\TMI
RADTRAD\ESF_TSC.psf
 Release file name         = c:\documents and settings\u004tjm\my documents\tmi
radtrad\defaults\pwr_i.rft
 Dose conversion file name = c:\documents and settings\u004tjm\my documents\tmi
radtrad\defaults\fgr11&12.inp




     #####    ####   #####    #  #     #  #####   #    #  #####
     #    #  #       #        #  ##    #  #    #  #    #    #
     #    #  #       #        #  # #   #  #    #  #    #    #
     #####    ####   ####     #  #  #  #  #####   #    #    #
     #            #  #        #  #   # #  #       #    #    #
     #            #  #        #  #    ##  #       #    #    #
     #        ####   #        #  #     #  #        ####     #


 Radtrad 3.02 1/5/2000
 TSC Dose Due To ESF Leakage - NO HVAC for 2 hours - 250 cfm Unfiltered Inleakage (.8 -
2.8 max)
 Nuclide Inventory File:
 c:\documents and settings\u004tjm\my documents\tmi radtrad\defaults\tmi_i131.nif
 Plant Power Level:
  2.6190E+03
 Compartments:
   3
 Compartment 1:
 Sump
   3
  5.4519E+04
   0
   0
   0
   0
   0
 Compartment 2:
 Environment
   2
  0.0000E+00
   0
```

```
  0
  0
  0
  0
Compartment 3:
TSC
  1
 4.2000E+04
  0
  0
  1
  0
  0
Pathways:
  4
Pathway 1:
Sump to Environment
  1
  2
  2
Pathway 2:
TSC Filtered Air Intake
  2
  3
  2
Pathway 3:
TSC Unfiltered Inleakage
  2
  3
  2
Pathway 4:
TSC Exhaust
  3
  2
  2
End of Plant Model File
Scenario Description Name:

Plant Model Filename:

Source Term:
  1
  1   1.0000E+00
c:\documents and settings\u004tjm\my documents\tmi radtrad\defaults\fgr11&12.inp
c:\documents and settings\u004tjm\my documents\tmi radtrad\defaults\pwr_i.rft
  0.0000E+00
  0
  0.0000E+00   9.7000E-01   3.0000E-02   1.0000E+00
Overlying Pool:
  0
  0.0000E+00
  0
  0
  0
  0
```

AmerGen

**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 1 | System Nos. | Sheet 575 of 1000 |
|---|---|---|---|---|

```
Compartments:
  3
Compartment 1:
  0
  1
  0
  0
  0
  0
  0
  0
  0
Compartment 2:
  1
  1
  0
  0
  0
  0
  0
  0
  0
Compartment 3:
  1
  1
  0
  0
  0
  0
  1
  1.4000E+03
  5
  0.0000E+00   0.0000E+00   0.0000E+00   0.0000E+00
  8.0000E-01   0.0000E+00   0.0000E+00   0.0000E+00
  1.0000E+00   0.0000E+00   0.0000E+00   0.0000E+00
  2.8000E+00   9.9000E+01   9.0000E+01   9.0000E+01
  7.2000E+02   0.0000E+00   0.0000E+00   0.0000E+00
  0
  0
Pathways:
  4
Pathway 1:
  0
  0
  0
  0
  0
  1
  4
  0.0000E+00   0.0000E+00   0.0000E+00   0.0000E+00   0.0000E+00
  4.9070E-01   3.3400E-03   0.0000E+00   0.0000E+00   0.0000E+00
  2.4000E+01   1.3360E-03   0.0000E+00   0.0000E+00   0.0000E+00
  7.2000E+02   0.0000E+00   0.0000E+00   0.0000E+00   0.0000E+00
  0
  0
```

```
  0


  0
  0
  0
Pathway 2:
  0
  0
  0
  0
  0
  1
  5
  0.0000E+00   3.0000E+02   0.0000E+00   0.0000E+00   0.0000E+00
  8.0000E-01   3.0000E+02   0.0000E+00   0.0000E+00   0.0000E+00
  1.0000E+00   3.0000E+02   0.0000E+00   0.0000E+00   0.0000E+00
  2.8000E+00   6.0000E+02   9.9000E+01   9.0000E+01   9.0000E+01
  7.2000E+02   0.0000E+00   0.0000E+00   0.0000E+00   0.0000E+00
  0
  0
  0
  0
  0
  0
Pathway 3:
  0
  0
  0
  0
  0
  1
  5
  0.0000E+00   0.0000E+00   0.0000E+00   0.0000E+00   0.0000E+00
  8.0000E-01   0.0000E+00   0.0000E+00   0.0000E+00   0.0000E+00
  1.0000E+00   0.0000E+00   0.0000E+00   0.0000E+00   0.0000E+00
  2.8000E+00   2.5000E+02   0.0000E+00   0.0000E+00   0.0000E+00
  7.2000E+02   0.0000E+00   0.0000E+00   0.0000E+00   0.0000E+00
  0
  0
  0
  0
  0
  0
Pathway 4:
  0
  0
  0
  0
  0
  1
  5
  0.0000E+00   3.0000E+02   0.0000E+00   0.0000E+00   0.0000E+00
  8.0000E-01   3.0000E+02   0.0000E+00   0.0000E+00   0.0000E+00
  1.0000E+00   3.0000E+02   0.0000E+00   0.0000E+00   0.0000E+00
  2.8000E+00   8.5000E+02   0.0000E+00   0.0000E+00   0.0000E+00
  7.2000E+02   0.0000E+00   0.0000E+00   0.0000E+00   0.0000E+00
```

```
  0
  0


  0
  0
  0
  0
Dose Locations:
  4
Location 1:
Exclusion Area Boundary
  2
  1
  2
  0.0000E+00   8.0000E-04
  7.2000E+02   0.0000E+00
  1
  2
  0.0000E+00   3.5000E-04
  7.2000E+02   0.0000E+00
  0
Location 2:
Low Population Zone
  2
  1
  6
  0.0000E+00   1.4000E-04
  2.0000E+00   6.0000E-05
  8.0000E+00   3.9000E-05
  2.4000E+01   1.6000E-05
  9.6000E+01   4.0000E-06
  7.2000E+02   0.0000E+00
  1
  4
  0.0000E+00   3.5000E-04
  8.0000E+00   1.8000E-04
  2.4000E+01   2.3000E-04
  7.2000E+02   0.0000E+00
  0
Location 3:
TSC
  3
  0
  1
  2
  0.0000E+00   3.4700E-04
  7.2000E+02   0.0000E+00
  1
  4
  0.0000E+00   1.0000E+00
  2.4000E+01   6.0000E-01
  9.6000E+01   4.0000E-01
  7.2000E+02   0.0000E+00
Location 4:
Travel Path
  2
```

```
  1
  3
  0.0000E+00   0.0000E+00


  9.1667E-01   8.0000E-04
  1.0000E+00   0.0000E+00
  1
  4
  0.0000E+00   3.4700E-04
  8.0000E+00   1.7500E-04
  2.4000E+01   2.3200E-04
  7.2000E+02   0.0000E+00
  0
Effective Volume Location:
  1
  6
  0.0000E+00   2.7000E-04
  2.0000E+00   1.5400E-04
  8.0000E+00   5.9800E-05
  2.4000E+01   4.0300E-05
  9.6000E+01   3.4100E-05
  7.2000E+02   0.0000E+00
Simulation Parameters:
  7
  0.0000E+00   5.0000E-02
  1.0000E+00   1.0000E-01
  2.0000E+00   1.0000E+00
  8.0000E+00   2.0000E+00
  2.4000E+01   4.0000E+00
  9.6000E+01   8.0000E+00
  7.2000E+02   0.0000E+00
Output Filename:
C:\Documents and Settings\u004tjm\My Documents\TMI RADTRAD\ESF_TSC.o0
  1
  1
  1
  0
  0
End of Scenario File


#######################################################################
          RADTRAD Version 3.02 run on  5/15/2002  at  7:25:29
#######################################################################

#######################################################################
                     Plant Description
#######################################################################

Number of Nuclides =  60

Inventory Power =   1.0000E+00 MWth
Plant Power Level =   2.6190E+03 MWth

Number of compartments    =   3
```

```
Compartment information

Compartment number  1  (Source term fraction =   1.0000E+00
)


Name: Sump
Compartment volume =   5.4519E+04 (Cubic feet)
Pathways into and out of compartment  1
    Pathway to compartment number   2: Sump to Environment

Compartment number  2
Name: Environment
Pathways into and out of compartment  2
    Pathway to compartment number   3: TSC Filtered Air Intake
    Pathway to compartment number   3: TSC Unfiltered Inleakage
    Pathway from compartment number 1: Sump to Environment
    Pathway from compartment number 3: TSC Exhaust

Compartment number  3
Name: TSC
Compartment volume =   4.2000E+04 (Cubic feet)
Removal devices within compartment:
     Filter(s)
Pathways into and out of compartment  3
    Pathway to compartment number   2: TSC Exhaust
    Pathway from compartment number 2: TSC Filtered Air Intake
    Pathway from compartment number 2: TSC Unfiltered Inleakage

Total number of pathways =   4


#######################################################################
          RADTRAD Version 3.02 run on  5/15/2002  at  7:25:29
#######################################################################

#######################################################################
                    Scenario Description
#######################################################################

Radioactive Decay is enabled
RELEASE_NAME = PWR, NUREG-1465, Tables 3.12 & 3.13, Jun
Release Fractions and Timings
                GAP       EARLY IN-VESSEL
              0.5000 hrs     1.3000 hrs
NOBLES        0.0000E+00     0.0000E+00
IODINE        5.0000E-02     3.5000E-01
CESIUM        0.0000E+00     0.0000E+00
TELLURIUM     0.0000E+00     0.0000E+00
STRONTIUM     0.0000E+00     0.0000E+00
BARIUM        0.0000E+00     0.0000E+00
RUTHENIUM     0.0000E+00     0.0000E+00
CERIUM        0.0000E+00     0.0000E+00
LANTHANUM     0.0000E+00     0.0000E+00

Iodine fractions
     Aerosol     =   0.0000E+00
```

```
     Elemental    =   9.7000E-01
     Organic      =   3.0000E-02

COMPARTMENT DATA



Compartment number   1: Sump

Compartment number   2: Environment

Compartment number   3: TSC

     Compartment Filter Data

      Time (hr)      Flow Rate          Filter Efficiencies (%)
                       (cfm)        Aerosol     Elemental    Organic
       0.0000E+00    1.4000E+03   0.0000E+00   0.0000E+00   0.0000E+00
       8.0000E-01    1.4000E+03   0.0000E+00   0.0000E+00   0.0000E+00
       1.0000E+00    1.4000E+03   0.0000E+00   0.0000E+00   0.0000E+00
       2.8000E+00    1.4000E+03   9.9000E+01   9.0000E+01   9.0000E+01
       7.2000E+02    1.4000E+03   0.0000E+00   0.0000E+00   0.0000E+00

PATHWAY DATA

Pathway number  1: Sump to Environment

     Pathway Filter: Removal Data

       Time (hr)      Flow Rate          Filter Efficiencies (%)
                       (cfm)        Aerosol     Elemental    Organic
       0.0000E+00    0.0000E+00   0.0000E+00   0.0000E+00   0.0000E+00
       4.9070E-01    3.3400E-03   0.0000E+00   0.0000E+00   0.0000E+00
       2.4000E+01    1.3360E-03   0.0000E+00   0.0000E+00   0.0000E+00
       7.2000E+02    0.0000E+00   0.0000E+00   0.0000E+00   0.0000E+00

Pathway number  2: TSC Filtered Air Intake

     Pathway Filter: Removal Data

       Time (hr)      Flow Rate          Filter Efficiencies (%)
                       (cfm)        Aerosol     Elemental    Organic
       0.0000E+00    3.0000E+02   0.0000E+00   0.0000E+00   0.0000E+00
       8.0000E-01    3.0000E+02   0.0000E+00   0.0000E+00   0.0000E+00
       1.0000E+00    3.0000E+02   0.0000E+00   0.0000E+00   0.0000E+00
       2.8000E+00    6.0000E+02   9.9000E+01   9.0000E+01   9.0000E+01
       7.2000E+02    0.0000E+00   0.0000E+00   0.0000E+00   0.0000E+00

Pathway number  3: TSC Unfiltered Inleakage

     Pathway Filter: Removal Data

       Time (hr)      Flow Rate          Filter Efficiencies (%)
                       (cfm)        Aerosol     Elemental    Organic
       0.0000E+00    0.0000E+00   0.0000E+00   0.0000E+00   0.0000E+00
       8.0000E-01    0.0000E+00   0.0000E+00   0.0000E+00   0.0000E+00
       1.0000E+00    0.0000E+00   0.0000E+00   0.0000E+00   0.0000E+00
```

```
      2.8000E+00    2.5000E+02   0.0000E+00   0.0000E+00   0.0000E+00
      7.2000E+02    0.0000E+00   0.0000E+00   0.0000E+00   0.0000E+00

Pathway number  4: TSC Exhaust

     Pathway Filter: Removal Data


      Time (hr)      Flow Rate          Filter Efficiencies (%)
                      (cfm)        Aerosol     Elemental    Organic
      0.0000E+00    3.0000E+02   0.0000E+00   0.0000E+00   0.0000E+00
      8.0000E-01    3.0000E+02   0.0000E+00   0.0000E+00   0.0000E+00
      1.0000E+00    3.0000E+02   0.0000E+00   0.0000E+00   0.0000E+00
      2.8000E+00    8.5000E+02   0.0000E+00   0.0000E+00   0.0000E+00
      7.2000E+02    0.0000E+00   0.0000E+00   0.0000E+00   0.0000E+00

LOCATION DATA
     Location Exclusion Area Boundary     is in compartment   2

     Location X/Q Data
      Time (hr)         X/Q (s * m^-3)
       0.0000E+00          8.0000E-04
       7.2000E+02          0.0000E+00

     Location Breathing Rate Data
      Time (hr)         Breathing Rate (m^3 * sec^-1)
       0.0000E+00                 3.5000E-04
       7.2000E+02                 0.0000E+00
     Location Low Population Zone     is in compartment   2

     Location X/Q Data
      Time (hr)         X/Q (s * m^-3)
       0.0000E+00          1.4000E-04
       2.0000E+00          6.0000E-05
       8.0000E+00          3.9000E-05
       2.4000E+01          1.6000E-05
       9.6000E+01          4.0000E-06
       7.2000E+02          0.0000E+00

     Location Breathing Rate Data
      Time (hr)         Breathing Rate (m^3 * sec^-1)
       0.0000E+00                 3.5000E-04
       8.0000E+00                 1.8000E-04
       2.4000E+01                 2.3000E-04
       7.2000E+02                 0.0000E+00
     Location TSC     is in compartment   3

     Location X/Q Data
      Time (hr)         X/Q (s * m^-3)
       0.0000E+00          2.7000E-04
       2.0000E+00          1.5400E-04
       8.0000E+00          5.9800E-05
       2.4000E+01          4.0300E-05
       9.6000E+01          3.4100E-05
       7.2000E+02          0.0000E+00

     Location Breathing Rate Data
```

```
      Time (hr)         Breathing Rate (m^3 * sec^-1)
       0.0000E+00                3.4700E-04
       7.2000E+02                0.0000E+00

     Location Occupancy Factor Data
      Time (hr)         Occupancy Factor
       0.0000E+00           1.0000E+00


       2.4000E+01           6.0000E-01
       9.6000E+01           4.0000E-01
       7.2000E+02           0.0000E+00
     Location Travel Path     is in compartment   2

     Location X/Q Data
      Time (hr)         X/Q (s * m^-3)
       0.0000E+00          0.0000E+00
       9.1667E-01          8.0000E-04
       1.0000E+00          0.0000E+00

     Location Breathing Rate Data
      Time (hr)         Breathing Rate (m^3 * sec^-1)
       0.0000E+00                3.4700E-04
       8.0000E+00                1.7500E-04
       2.4000E+01                2.3200E-04
       7.2000E+02                0.0000E+00

USER SPECIFIED TIME STEP DATA - SUPPLEMENTAL TIME STEPS
     Time            Time step
      0.0000E+00       5.0000E-02
      1.0000E+00       1.0000E-01
      2.0000E+00       1.0000E+00
      8.0000E+00       2.0000E+00
      2.4000E+01       4.0000E+00
      9.6000E+01       8.0000E+00
      7.2000E+02       0.0000E+00


#######################################################################
          RADTRAD Version 3.02 run on  5/15/2002  at  7:25:29
#######################################################################




     ####   #    #  #####  #####   #    #  #####
    #    #  #    #    #    #    #  #    #    #
    #    #  #    #    #    #    #  #    #    #
    #    #  #    #    #    #####   #    #    #
    #    #  #    #    #    #       #    #    #
    #    #  #    #    #    #       #    #    #
     ####    ####     #    #        ####     #


#######################################################################
            Dose, Detailed model and Detailed Inventory Output
```

AmerGen

**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 1 | System Nos. | Sheet 583 of 1000 |
|---|---|---|---|---|

```
#################################################################

Exclusion Area Boundary Doses:

Time (h) =   0.4907    Whole Body   Thyroid       TEDE
Delta dose (rem)        0.0000E+00  0.0000E+00  0.0000E+00
Accumulated dose (rem)  0.0000E+00  0.0000E+00  0.0000E+00



Low Population Zone Doses:

Time (h) =   0.4907    Whole Body   Thyroid       TEDE
Delta dose (rem)        0.0000E+00  0.0000E+00  0.0000E+00
Accumulated dose (rem)  0.0000E+00  0.0000E+00  0.0000E+00

TSC Doses:

Time (h) =   0.4907    Whole Body   Thyroid       TEDE
Delta dose (rem)        0.0000E+00  0.0000E+00  0.0000E+00
Accumulated dose (rem)  0.0000E+00  0.0000E+00  0.0000E+00

Travel Path Doses:

Time (h) =   0.4907    Whole Body   Thyroid       TEDE
Delta dose (rem)        0.0000E+00  0.0000E+00  0.0000E+00
Accumulated dose (rem)  0.0000E+00  0.0000E+00  0.0000E+00

Environment Integral Nuclide Release:

Time (h) =   0.4907       Ci           kg         Atoms         Bq

Environment Transport Group Inventory:

                        Present     Release      Total
Time (h) =   0.4907     Release     Rate/s      Release
Noble gases (atoms)    0.0000E+00  0.0000E+00  0.0000E+00
Elemental I (atoms)    0.0000E+00  0.0000E+00  0.0000E+00
Organic I (atoms)      0.0000E+00  0.0000E+00  0.0000E+00
Aerosols (kg)          0.0000E+00  0.0000E+00  0.0000E+00

Sump to Environment Transport Group Inventory:

                        Pathway
Time (h) =   0.4907      Filter
Noble gases (atoms)    0.0000E+00
Elemental I (atoms)    0.0000E+00
Organic I (atoms)      0.0000E+00
Aerosols (kg)          0.0000E+00

TSC Filtered Air Intake Transport Group Inventory:

                        Pathway
Time (h) =   0.4907      Filter
Noble gases (atoms)    0.0000E+00
Elemental I (atoms)    0.0000E+00
Organic I (atoms)      0.0000E+00
```

AmerGen

**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 1 | System Nos. | Sheet 584 of 1000 |
|---|---|---|---|---|

```
Aerosols (kg)          0.0000E+00

TSC Unfiltered Inleakage Transport Group Inventory:

                        Pathway
Time (h) =   0.4907      Filter
Noble gases (atoms)    0.0000E+00
Elemental I (atoms)    0.0000E+00



Organic I (atoms)      0.0000E+00
Aerosols (kg)          0.0000E+00

TSC Exhaust Transport Group Inventory:

                        Pathway
Time (h) =   0.4907      Filter
Noble gases (atoms)    0.0000E+00
Elemental I (atoms)    0.0000E+00
Organic I (atoms)      0.0000E+00
Aerosols (kg)          0.0000E+00

TSC Compartment Nuclide Inventory:

Time (h) =   0.4907       Ci           kg         Atoms         Bq

TSC Transport Group Inventory:

                                                 Overlying
Time (h) =   0.4907    Atmosphere     Sump         Pool
Noble gases (atoms)    0.0000E+00  0.0000E+00  0.0000E+00
Elemental I (atoms)    0.0000E+00  0.0000E+00  0.0000E+00
Organic I (atoms)      0.0000E+00  0.0000E+00  0.0000E+00
Aerosols (kg)          0.0000E+00  0.0000E+00  0.0000E+00

                       Deposition Recirculating
Time (h) =   0.4907     Surfaces     Filter
Noble gases (atoms)    0.0000E+00  0.0000E+00
Elemental I (atoms)    0.0000E+00  0.0000E+00
Organic I (atoms)      0.0000E+00  0.0000E+00
Aerosols (kg)          0.0000E+00  0.0000E+00

TSC Filtered Air Intake Transport Group Inventory:

                        Pathway
Time (h) =   0.4907      Filter
Noble gases (atoms)    0.0000E+00
Elemental I (atoms)    0.0000E+00
Organic I (atoms)      0.0000E+00
Aerosols (kg)          0.0000E+00

TSC Unfiltered Inleakage Transport Group Inventory:

                        Pathway
Time (h) =   0.4907      Filter
Noble gases (atoms)    0.0000E+00
```

AmerGen

**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 1 | System Nos. | Sheet 585 of 1000 |
|---|---|---|---|---|

```
Elemental I (atoms)    0.0000E+00
Organic I (atoms)      0.0000E+00
Aerosols (kg)          0.0000E+00

TSC Exhaust Transport Group Inventory:

                        Pathway
Time (h) =   0.4907      Filter
Noble gases (atoms)    0.0000E+00
Elemental I (atoms)    0.0000E+00


Organic I (atoms)      0.0000E+00
Aerosols (kg)          0.0000E+00

Exclusion Area Boundary Doses:

Time (h) =   0.5000    Whole Body   Thyroid       TEDE
Delta dose (rem)        2.0672E-04  5.1381E-02  1.8273E-03
Accumulated dose (rem)  2.0672E-04  5.1381E-02  1.8273E-03

Low Population Zone Doses:

Time (h) =   0.5000    Whole Body   Thyroid       TEDE
Delta dose (rem)        3.6175E-05  8.9916E-03  3.1978E-04
Accumulated dose (rem)  3.6175E-05  8.9916E-03  3.1978E-04

TSC Doses:

Time (h) =   0.5000    Whole Body   Thyroid       TEDE
Delta dose (rem)        4.3212E-09  3.4194E-05  1.0828E-06
Accumulated dose (rem)  4.3212E-09  3.4194E-05  1.0828E-06

Travel Path Doses:

Time (h) =   0.5000    Whole Body   Thyroid       TEDE
Delta dose (rem)        0.0000E+00  0.0000E+00  0.0000E+00
Accumulated dose (rem)  0.0000E+00  0.0000E+00  0.0000E+00

Environment Integral Nuclide Release:

Time (h) =   0.5000       Ci           kg         Atoms         Bq
I-131                  1.2081E-01  9.7448E-10  4.4797E+15  4.4700E+09
I-132                  1.5044E-01  1.4575E-11  6.6494E+13  5.5664E+09
I-133                  2.4896E-01  2.1977E-10  9.9511E+14  9.2115E+09
I-134                  1.8954E-01  7.1049E-12  3.1930E+13  7.0128E+09
I-135                  2.2401E-01  6.3787E-11  2.8454E+14  8.2883E+09

Environment Transport Group Inventory:

                        Present     Release      Total
Time (h) =   0.5000     Release     Rate/s      Release
Noble gases (atoms)    0.0000E+00  0.0000E+00  0.0000E+00
Elemental I (atoms)    5.7170E+15  3.1761E+12  5.7170E+15
Organic I (atoms)      1.7681E+14  9.8230E+10  1.7681E+14
Aerosols (kg)          0.0000E+00  0.0000E+00  0.0000E+00
```

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**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 1 | System Nos. | Sheet 586 of 1000 |
|---|---|---|---|---|

Sump to Environment Transport Group Inventory:

| Time (h) = 0.5000 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 |

TSC Filtered Air Intake Transport Group Inventory:

| Time (h) = 0.5000 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 |

TSC Unfiltered Inleakage Transport Group Inventory:

| Time (h) = 0.5000 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 |

TSC Exhaust Transport Group Inventory:

| Time (h) = 0.5000 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 |

TSC Compartment Nuclide Inventory:

| Time (h) = 0.5000 | Ci | kg | Atoms | Bq |
|---|---|---|---|---|
| I-131 | 4.6091E-06 | 3.7178E-14 | 1.7091E+11 | 1.7054E+05 |
| I-132 | 5.7397E-06 | 5.5606E-16 | 2.5369E+09 | 2.1237E+05 |
| I-133 | 9.4983E-06 | 8.3847E-15 | 3.7965E+10 | 3.5144E+05 |
| I-134 | 7.2311E-06 | 2.7107E-16 | 1.2182E+09 | 2.6755E+05 |
| I-135 | 8.5464E-06 | 2.4336E-15 | 1.0856E+10 | 3.1622E+05 |

TSC Transport Group Inventory:

| Time (h) = 0.5000 | Atmosphere | Sump | Overlying Pool |
|---|---|---|---|
| Noble gases (atoms) | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 |
| Elemental I (atoms) | 2.1811E+11 | 0.0000E+00 | 0.0000E+00 |
| Organic I (atoms) | 6.7458E+09 | 0.0000E+00 | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 |

Deposition Recirculating

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**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 1 | System Nos. | Sheet 587 of 1000 |
|---|---|---|---|---|

```
Time (h) =   0.5000     Surfaces     Filter
Noble gases (atoms)    0.0000E+00  0.0000E+00
Elemental I (atoms)    0.0000E+00  0.0000E+00
Organic I (atoms)      0.0000E+00  0.0000E+00
Aerosols (kg)          0.0000E+00  0.0000E+00

TSC Filtered Air Intake Transport Group Inventory:

                        Pathway
Time (h) =   0.5000      Filter
Noble gases (atoms)    0.0000E+00
Elemental I (atoms)    0.0000E+00


Organic I (atoms)      0.0000E+00
Aerosols (kg)          0.0000E+00

TSC Unfiltered Inleakage Transport Group Inventory:

                        Pathway
Time (h) =   0.5000      Filter
Noble gases (atoms)    0.0000E+00
Elemental I (atoms)    0.0000E+00
Organic I (atoms)      0.0000E+00
Aerosols (kg)          0.0000E+00

TSC Exhaust Transport Group Inventory:

                        Pathway
Time (h) =   0.5000      Filter
Noble gases (atoms)    0.0000E+00
Elemental I (atoms)    0.0000E+00
Organic I (atoms)      0.0000E+00
Aerosols (kg)          0.0000E+00

Exclusion Area Boundary Doses:

Time (h) =   0.8000    Whole Body   Thyroid       TEDE
Delta dose (rem)        1.1480E-02  3.0163E+00  1.0654E-01
Accumulated dose (rem)  1.1687E-02  3.0676E+00  1.0837E-01

Low Population Zone Doses:

Time (h) =   0.8000    Whole Body   Thyroid       TEDE
Delta dose (rem)        2.0090E-03  5.2785E-01  1.8645E-02
Accumulated dose (rem)  2.0452E-03  5.3684E-01  1.8965E-02

TSC Doses:

Time (h) =   0.8000    Whole Body   Thyroid       TEDE
Delta dose (rem)        6.5457E-06  5.5389E-02  1.7520E-03
Accumulated dose (rem)  6.5500E-06  5.5423E-02  1.7530E-03

Travel Path Doses:

Time (h) =   0.8000    Whole Body   Thyroid       TEDE
Delta dose (rem)        0.0000E+00  0.0000E+00  0.0000E+00
```

```
Accumulated dose (rem)  0.0000E+00  0.0000E+00  0.0000E+00

Environment Integral Nuclide Release:

Time (h) =   0.8000       Ci           kg          Atoms         Bq
I-131                  7.2267E+00  5.8292E-08  2.6797E+17  2.6739E+11
I-132                  8.4985E+00  8.2333E-10  3.7562E+15  3.1444E+11
I-133                  1.4807E+01  1.3071E-08  5.9185E+16  5.4786E+11
I-134                  9.7591E+00  3.6583E-10  1.6441E+15  3.6109E+11
I-135                  1.3141E+01  3.7418E-09  1.6691E+16  4.8620E+11

Environment Transport Group Inventory:



                        Present     Release      Total
Time (h) =   0.8000     Release     Rate/s      Release
Noble gases (atoms)    0.0000E+00  0.0000E+00  0.0000E+00
Elemental I (atoms)    3.4105E+17  1.1842E+14  3.4105E+17
Organic I (atoms)      1.0548E+16  3.6625E+12  1.0548E+16
Aerosols (kg)          0.0000E+00  0.0000E+00  0.0000E+00

Sump to Environment Transport Group Inventory:

                        Pathway
Time (h) =   0.8000      Filter
Noble gases (atoms)    0.0000E+00
Elemental I (atoms)    0.0000E+00
Organic I (atoms)      0.0000E+00
Aerosols (kg)          0.0000E+00

TSC Filtered Air Intake Transport Group Inventory:

                        Pathway
Time (h) =   0.8000      Filter
Noble gases (atoms)    0.0000E+00
Elemental I (atoms)    0.0000E+00
Organic I (atoms)      0.0000E+00
Aerosols (kg)          0.0000E+00

TSC Unfiltered Inleakage Transport Group Inventory:

                        Pathway
Time (h) =   0.8000      Filter
Noble gases (atoms)    0.0000E+00
Elemental I (atoms)    0.0000E+00
Organic I (atoms)      0.0000E+00
Aerosols (kg)          0.0000E+00

TSC Exhaust Transport Group Inventory:

                        Pathway
Time (h) =   0.8000      Filter
Noble gases (atoms)    0.0000E+00
Elemental I (atoms)    0.0000E+00
Organic I (atoms)      0.0000E+00
Aerosols (kg)          0.0000E+00
```

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**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 1 | System Nos. | Sheet 589 of 1000 |
|---|---|---|---|---|

TSC Compartment Nuclide Inventory:

| Time (h) = 0.8000 | Ci | kg | Atoms | Bq |
|---|---|---|---|---|
| I-131 | 2.6130E-04 | 2.1077E-12 | 9.6891E+12 | 9.6680E+06 |
| I-132 | 2.9758E-04 | 2.8830E-14 | 1.3153E+11 | 1.1011E+07 |
| I-133 | 5.3369E-04 | 4.7112E-13 | 2.1332E+12 | 1.9746E+07 |
| I-134 | 3.2372E-04 | 1.2135E-14 | 5.4537E+10 | 1.1978E+07 |
| I-135 | 4.7001E-04 | 1.3383E-13 | 5.9701E+11 | 1.7390E+07 |

TSC Transport Group Inventory:

| Time (h) = 0.8000 | Atmosphere | Sump | Overlying Pool |
|---|---|---|---|
| Noble gases (atoms) | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 |
| Elemental I (atoms) | 1.2336E+13 | 0.0000E+00 | 0.0000E+00 |
| Organic I (atoms) | 3.8151E+11 | 0.0000E+00 | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 |

| Time (h) = 0.8000 | Deposition Surfaces | Recirculating Filter |
|---|---|---|
| Noble gases (atoms) | 0.0000E+00 | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 | 0.0000E+00 |

TSC Filtered Air Intake Transport Group Inventory:

| Time (h) = 0.8000 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 |

TSC Unfiltered Inleakage Transport Group Inventory:

| Time (h) = 0.8000 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 |

TSC Exhaust Transport Group Inventory:

| Time (h) = 0.8000 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 |

Exclusion Area Boundary Doses:

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**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 1 | System Nos. | Sheet 590 of 1000 |
|---|---|---|---|---|

```
Time (h) =   0.9167    Whole Body   Thyroid       TEDE
Delta dose (rem)        6.7486E-03  1.8949E+00  6.6417E-02
Accumulated dose (rem)  1.8435E-02  4.9625E+00  1.7479E-01

Low Population Zone Doses:

Time (h) =   0.9167    Whole Body   Thyroid       TEDE
Delta dose (rem)        1.1810E-03  3.3160E-01  1.1623E-02
Accumulated dose (rem)  3.2262E-03  8.6844E-01  3.0588E-02

TSC Doses:

Time (h) =   0.9167    Whole Body   Thyroid       TEDE
Delta dose (rem)        6.9667E-06  6.2323E-02  1.9694E-03
Accumulated dose (rem)  1.3517E-05  1.1775E-01  3.7225E-03


Travel Path Doses:

Time (h) =   0.9167    Whole Body   Thyroid       TEDE
Delta dose (rem)        0.0000E+00  0.0000E+00  0.0000E+00
Accumulated dose (rem)  0.0000E+00  0.0000E+00  0.0000E+00

Environment Integral Nuclide Release:

Time (h) =   0.9167       Ci           kg         Atoms         Bq
I-131                  1.1702E+01  9.4391E-08  4.3392E+17  4.3298E+11
I-132                  1.3472E+01  1.3051E-09  5.9544E+15  4.9846E+11
I-133                  2.3925E+01  2.1120E-08  9.5632E+16  8.8524E+11
I-134                  1.4956E+01  5.6066E-10  2.5197E+15  5.5339E+11
I-135                  2.1124E+01  6.0150E-09  2.6832E+16  7.8158E+11

Environment Transport Group Inventory:

                        Present     Release      Total
Time (h) =   0.9167     Release     Rate/s      Release
Noble gases (atoms)    0.0000E+00  0.0000E+00  0.0000E+00
Elemental I (atoms)    5.5182E+17  1.6722E+14  5.5182E+17
Organic I (atoms)      1.7067E+16  5.1717E+12  1.7067E+16
Aerosols (kg)          0.0000E+00  0.0000E+00  0.0000E+00

Sump to Environment Transport Group Inventory:

                        Pathway
Time (h) =   0.9167      Filter
Noble gases (atoms)    0.0000E+00
Elemental I (atoms)    0.0000E+00
Organic I (atoms)      0.0000E+00
Aerosols (kg)          0.0000E+00

TSC Filtered Air Intake Transport Group Inventory:

                        Pathway
Time (h) =   0.9167      Filter
Noble gases (atoms)    0.0000E+00
Elemental I (atoms)    0.0000E+00
Organic I (atoms)      0.0000E+00
```

```
Aerosols (kg)          0.0000E+00

TSC Unfiltered Inleakage Transport Group Inventory:

                        Pathway
Time (h) =   0.9167      Filter
Noble gases (atoms)    0.0000E+00
Elemental I (atoms)    0.0000E+00
Organic I (atoms)      0.0000E+00
Aerosols (kg)          0.0000E+00

TSC Exhaust Transport Group Inventory:

                        Pathway
Time (h) =   0.9167      Filter
Noble gases (atoms)    0.0000E+00


Elemental I (atoms)    0.0000E+00
Organic I (atoms)      0.0000E+00
Aerosols (kg)          0.0000E+00

TSC Compartment Nuclide Inventory:

Time (h) =   0.9167       Ci           kg         Atoms         Bq
I-131                  4.1546E-04  3.3511E-12  1.5405E+13  1.5372E+07
I-132                  4.5700E-04  4.4273E-14  2.0199E+11  1.6909E+07
I-133                  8.4561E-04  7.4647E-13  3.3800E+12  3.1288E+07
I-134                  4.6955E-04  1.7602E-14  7.9104E+10  1.7374E+07
I-135                  7.3852E-04  2.1029E-13  9.3809E+11  2.7325E+07

TSC Transport Group Inventory:

                                                Overlying
Time (h) =   0.9167    Atmosphere     Sump        Pool
Noble gases (atoms)    0.0000E+00  0.0000E+00  0.0000E+00
Elemental I (atoms)    1.9600E+13  0.0000E+00  0.0000E+00
Organic I (atoms)      6.0619E+11  0.0000E+00  0.0000E+00
Aerosols (kg)          0.0000E+00  0.0000E+00  0.0000E+00

                       Deposition Recirculating
Time (h) =   0.9167     Surfaces     Filter
Noble gases (atoms)    0.0000E+00  0.0000E+00
Elemental I (atoms)    0.0000E+00  0.0000E+00
Organic I (atoms)      0.0000E+00  0.0000E+00
Aerosols (kg)          0.0000E+00  0.0000E+00

TSC Filtered Air Intake Transport Group Inventory:

                        Pathway
Time (h) =   0.9167      Filter
Noble gases (atoms)    0.0000E+00
Elemental I (atoms)    0.0000E+00
Organic I (atoms)      0.0000E+00
Aerosols (kg)          0.0000E+00

TSC Unfiltered Inleakage Transport Group Inventory:
```

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**CALCULATION SHEET**
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| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 1 | System Nos. | Sheet 592 of 1000 |
|---|---|---|---|---|

```
                          Pathway
Time (h) =   0.9167        Filter
Noble gases (atoms)     0.0000E+00
Elemental I (atoms)     0.0000E+00
Organic I (atoms)       0.0000E+00
Aerosols (kg)           0.0000E+00

TSC Exhaust Transport Group Inventory:

                          Pathway
Time (h) =   0.9167        Filter
Noble gases (atoms)     0.0000E+00
Elemental I (atoms)     0.0000E+00
Organic I (atoms)       0.0000E+00
Aerosols (kg)           0.0000E+00


Exclusion Area Boundary Doses:

Time (h) =   1.0000    Whole Body   Thyroid       TEDE
Delta dose (rem)        5.5116E-03  1.5995E+00  5.5858E-02
Accumulated dose (rem)  2.3947E-02  6.5620E+00  2.3065E-01

Low Population Zone Doses:

Time (h) =   1.0000    Whole Body   Thyroid       TEDE
Delta dose (rem)        9.6453E-04  2.7991E-01  9.7751E-03
Accumulated dose (rem)  4.1907E-03  1.1484E+00  4.0363E-02

TSC Doses:

Time (h) =   1.0000    Whole Body   Thyroid       TEDE
Delta dose (rem)        6.8412E-06  6.3218E-02  1.9967E-03
Accumulated dose (rem)  2.0358E-05  1.8096E-01  5.7192E-03

Travel Path Doses:

Time (h) =   1.0000    Whole Body   Thyroid       TEDE
Delta dose (rem)        5.5116E-03  1.5858E+00  5.5426E-02
Accumulated dose (rem)  5.5116E-03  1.5858E+00  5.5426E-02

Environment Integral Nuclide Release:

Time (h) =   1.0000       Ci           kg         Atoms         Bq
I-131                  1.5485E+01  1.2490E-07  5.7419E+17  5.7294E+11
I-132                  1.7554E+01  1.7006E-09  7.7587E+15  6.4951E+11
I-133                  3.1610E+01  2.7904E-08  1.2635E+17  1.1696E+12
I-134                  1.9022E+01  7.1306E-10  3.2046E+15  7.0382E+11
I-135                  2.7804E+01  7.9173E-09  3.5318E+16  1.0288E+12

Environment Transport Group Inventory:

                          Present     Release      Total
Time (h) =   1.0000       Release     Rate/s      Release
Noble gases (atoms)     0.0000E+00  0.0000E+00  0.0000E+00
```

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**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 1 | System Nos. | Sheet 593 of 1000 |
|---|---|---|---|---|

```
Elemental I (atoms)    7.2982E+17  2.0273E+14  7.2982E+17
Organic I (atoms)      2.2572E+16  6.2699E+12  2.2572E+16
Aerosols (kg)          0.0000E+00  0.0000E+00  0.0000E+00

Sump to Environment Transport Group Inventory:

                        Pathway
Time (h) =   1.0000      Filter
Noble gases (atoms)    0.0000E+00
Elemental I (atoms)    0.0000E+00
Organic I (atoms)      0.0000E+00
Aerosols (kg)          0.0000E+00

TSC Filtered Air Intake Transport Group Inventory:

                        Pathway
Time (h) =   1.0000      Filter
Noble gases (atoms)    0.0000E+00


Elemental I (atoms)    0.0000E+00
Organic I (atoms)      0.0000E+00
Aerosols (kg)          0.0000E+00

TSC Unfiltered Inleakage Transport Group Inventory:

                        Pathway
Time (h) =   1.0000      Filter
Noble gases (atoms)    0.0000E+00
Elemental I (atoms)    0.0000E+00
Organic I (atoms)      0.0000E+00
Aerosols (kg)          0.0000E+00

TSC Exhaust Transport Group Inventory:

                        Pathway
Time (h) =   1.0000      Filter
Noble gases (atoms)    0.0000E+00
Elemental I (atoms)    0.0000E+00
Organic I (atoms)      0.0000E+00
Aerosols (kg)          0.0000E+00

TSC Compartment Nuclide Inventory:

Time (h) =   1.0000       Ci           kg          Atoms         Bq
I-131                  5.4286E-04  4.3788E-12  2.0130E+13  2.0086E+07
I-132                  5.8250E-04  5.6432E-14  2.5746E+11  2.1553E+07
I-133                  1.1022E-03  9.7297E-13  4.4055E+12  4.0781E+07
I-134                  5.7460E-04  2.1539E-14  9.6800E+10  2.1260E+07
I-135                  9.5688E-04  2.7247E-13  1.2155E+12  3.5405E+07

TSC Transport Group Inventory:

                                               Overlying
Time (h) =   1.0000    Atmosphere     Sump        Pool
Noble gases (atoms)    0.0000E+00  0.0000E+00  0.0000E+00
Elemental I (atoms)    2.5599E+13  0.0000E+00  0.0000E+00
```

```
Organic I (atoms)      7.9173E+11  0.0000E+00  0.0000E+00
Aerosols (kg)          0.0000E+00  0.0000E+00  0.0000E+00

                       Deposition Recirculating
Time (h) =   1.0000     Surfaces     Filter
Noble gases (atoms)    0.0000E+00  0.0000E+00
Elemental I (atoms)    0.0000E+00  0.0000E+00
Organic I (atoms)      0.0000E+00  0.0000E+00
Aerosols (kg)          0.0000E+00  0.0000E+00

TSC Filtered Air Intake Transport Group Inventory:

                        Pathway
Time (h) =   1.0000      Filter
Noble gases (atoms)    0.0000E+00
Elemental I (atoms)    0.0000E+00
Organic I (atoms)      0.0000E+00
Aerosols (kg)          0.0000E+00


TSC Unfiltered Inleakage Transport Group Inventory:

                        Pathway
Time (h) =   1.0000      Filter
Noble gases (atoms)    0.0000E+00
Elemental I (atoms)    0.0000E+00
Organic I (atoms)      0.0000E+00
Aerosols (kg)          0.0000E+00

TSC Exhaust Transport Group Inventory:

                        Pathway
Time (h) =   1.0000      Filter
Noble gases (atoms)    0.0000E+00
Elemental I (atoms)    0.0000E+00
Organic I (atoms)      0.0000E+00
Aerosols (kg)          0.0000E+00

Exclusion Area Boundary Doses:

Time (h) =   1.8000    Whole Body   Thyroid       TEDE
Delta dose (rem)        7.7225E-02  2.5694E+01  8.8459E-01
Accumulated dose (rem)  1.0117E-01  3.2256E+01  1.1152E+00

Low Population Zone Doses:

Time (h) =   1.8000    Whole Body   Thyroid       TEDE
Delta dose (rem)        1.3514E-02  4.4965E+00  1.5480E-01
Accumulated dose (rem)  1.7705E-02  5.6449E+00  1.9517E-01

TSC Doses:

Time (h) =   1.8000    Whole Body   Thyroid       TEDE
Delta dose (rem)        1.6285E-04  1.7455E+00  5.5003E-02
Accumulated dose (rem)  1.8321E-04  1.9265E+00  6.0722E-02
```

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**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 1 | System Nos. | Sheet 595 of 1000 |
|---|---|---|---|---|

Travel Path Doses:

| Time (h) = 1.8000 | Whole Body | Thyroid | TEDE |
|---|---|---|---|
| Delta dose (rem) | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 |
| Accumulated dose (rem) | 5.5116E-03 | 1.5858E+00 | 5.5426E-02 |

Environment Integral Nuclide Release:

| Time (h) = 1.8000 | Ci | kg | Atoms | Bq |
|---|---|---|---|---|
| I-131 | 7.6591E+01 | 6.1779E-07 | 2.8400E+18 | 2.8339E+12 |
| I-132 | 7.4210E+01 | 7.1894E-09 | 3.2799E+16 | 2.7458E+12 |
| I-133 | 1.5385E+02 | 1.3582E-07 | 6.1497E+17 | 5.6926E+12 |
| I-134 | 6.3414E+01 | 2.3771E-09 | 1.0683E+16 | 2.3463E+12 |
| I-135 | 1.3024E+02 | 3.7086E-08 | 1.6544E+17 | 4.8189E+12 |

Environment Transport Group Inventory:

| Time (h) = 1.8000 | Present Release | Release Rate/s | Total Release |
|---|---|---|---|
| Noble gases (atoms) | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 |
| Elemental I (atoms) | 3.5961E+18 | 5.5495E+14 | 3.5961E+18 |
| Organic I (atoms) | 1.1122E+17 | 1.7163E+13 | 1.1122E+17 |
| Aerosols (kg) | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 |

Sump to Environment Transport Group Inventory:

| Time (h) = 1.8000 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 |

TSC Filtered Air Intake Transport Group Inventory:

| Time (h) = 1.8000 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 |

TSC Unfiltered Inleakage Transport Group Inventory:

| Time (h) = 1.8000 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 |

TSC Exhaust Transport Group Inventory:

| Time (h) = 1.8000 | Pathway Filter |
|---|---|

```
Noble gases (atoms)    0.0000E+00
Elemental I (atoms)    0.0000E+00
Organic I (atoms)      0.0000E+00
Aerosols (kg)          0.0000E+00

TSC Compartment Nuclide Inventory:

Time (h) =   1.8000       Ci           kg         Atoms         Bq
I-131                  2.4011E-03  1.9368E-11  8.9036E+13  8.8842E+07
I-132                  2.0304E-03  1.9670E-13  8.9738E+11  7.5123E+07
I-133                  4.7605E-03  4.2024E-12  1.9028E+13  1.7614E+08
I-134                  1.3541E-03  5.0758E-14  2.2811E+11  5.0100E+07
I-135                  3.9031E-03  1.1114E-12  4.9578E+12  1.4441E+08

TSC Transport Group Inventory:

                                                Overlying
Time (h) =   1.8000    Atmosphere     Sump        Pool
Noble gases (atoms)    0.0000E+00  0.0000E+00  0.0000E+00
Elemental I (atoms)    1.1286E+14  0.0000E+00  0.0000E+00



Organic I (atoms)      3.4905E+12  0.0000E+00  0.0000E+00
Aerosols (kg)          0.0000E+00  0.0000E+00  0.0000E+00

                       Deposition Recirculating
Time (h) =   1.8000     Surfaces     Filter
Noble gases (atoms)    0.0000E+00  0.0000E+00
Elemental I (atoms)    0.0000E+00  0.0000E+00
Organic I (atoms)      0.0000E+00  0.0000E+00
Aerosols (kg)          0.0000E+00  0.0000E+00

TSC Filtered Air Intake Transport Group Inventory:

                        Pathway
Time (h) =   1.8000      Filter
Noble gases (atoms)    0.0000E+00
Elemental I (atoms)    0.0000E+00
Organic I (atoms)      0.0000E+00
Aerosols (kg)          0.0000E+00

TSC Unfiltered Inleakage Transport Group Inventory:

                        Pathway
Time (h) =   1.8000      Filter
Noble gases (atoms)    0.0000E+00
Elemental I (atoms)    0.0000E+00
Organic I (atoms)      0.0000E+00
Aerosols (kg)          0.0000E+00

TSC Exhaust Transport Group Inventory:

                        Pathway
Time (h) =   1.8000      Filter
Noble gases (atoms)    0.0000E+00
Elemental I (atoms)    0.0000E+00
```

```
Organic I (atoms)      0.0000E+00
Aerosols (kg)          0.0000E+00

Exclusion Area Boundary Doses:

Time (h) =   2.0000    Whole Body   Thyroid       TEDE
Delta dose (rem)        2.3137E-02  8.7277E+00  2.9697E-01
Accumulated dose (rem)  1.2431E-01  4.0984E+01  1.4122E+00

Low Population Zone Doses:

Time (h) =   2.0000    Whole Body   Thyroid       TEDE
Delta dose (rem)        4.0491E-03  1.5273E+00  5.1970E-02
Accumulated dose (rem)  2.1754E-02  7.1722E+00  2.4714E-01

TSC Doses:

Time (h) =   2.0000    Whole Body   Thyroid       TEDE
Delta dose (rem)        7.0140E-05  8.4287E-01  2.6515E-02
Accumulated dose (rem)  2.5335E-04  2.7694E+00  8.7237E-02



Travel Path Doses:

Time (h) =   2.0000    Whole Body   Thyroid       TEDE
Delta dose (rem)        0.0000E+00  0.0000E+00  0.0000E+00
Accumulated dose (rem)  5.5116E-03  1.5858E+00  5.5426E-02

Environment Integral Nuclide Release:

Time (h) =   2.0000       Ci           kg         Atoms         Bq
I-131                  9.7462E+01  7.8614E-07  3.6139E+18  3.6061E+12
I-132                  9.1089E+01  8.8246E-09  4.0260E+16  3.3703E+12
I-133                  1.9505E+02  1.7218E-07  7.7963E+17  7.2168E+12
I-134                  7.3881E+01  2.7695E-09  1.2447E+16  2.7336E+12
I-135                  1.6366E+02  4.6601E-08  2.0788E+17  6.0553E+12

Environment Transport Group Inventory:

                        Present     Release      Total
Time (h) =   2.0000     Release     Rate/s      Release
Noble gases (atoms)    0.0000E+00  0.0000E+00  0.0000E+00
Elemental I (atoms)    4.5733E+18  6.3519E+14  4.5733E+18
Organic I (atoms)      1.4144E+17  1.9645E+13  1.4144E+17
Aerosols (kg)          0.0000E+00  0.0000E+00  0.0000E+00

Sump to Environment Transport Group Inventory:

                        Pathway
Time (h) =   2.0000      Filter
Noble gases (atoms)    0.0000E+00
Elemental I (atoms)    0.0000E+00
Organic I (atoms)      0.0000E+00
Aerosols (kg)          0.0000E+00
```

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**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 1 | System Nos. | Sheet 598 of 1000 |
|---|---|---|---|---|

TSC Filtered Air Intake Transport Group Inventory:

| Time (h) = 2.0000 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 |

TSC Unfiltered Inleakage Transport Group Inventory:

| Time (h) = 2.0000 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 |

TSC Exhaust Transport Group Inventory:

| Time (h) = 2.0000 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 |

TSC Compartment Nuclide Inventory:

| Time (h) = 2.0000 | Ci | kg | Atoms | Bq |
|---|---|---|---|---|
| I-131 | 2.9668E-03 | 2.3931E-11 | 1.1001E+14 | 1.0977E+08 |
| I-132 | 2.3636E-03 | 2.2898E-13 | 1.0447E+12 | 8.7454E+07 |
| I-133 | 5.8471E-03 | 5.1616E-12 | 2.3371E+13 | 2.1634E+08 |
| I-134 | 1.4294E-03 | 5.3581E-14 | 2.4080E+11 | 5.2887E+07 |
| I-135 | 4.7258E-03 | 1.3457E-12 | 6.0028E+12 | 1.7486E+08 |

TSC Transport Group Inventory:

| Time (h) = 2.0000 | Atmosphere | Sump | Overlying Pool |
|---|---|---|---|
| Noble gases (atoms) | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 |
| Elemental I (atoms) | 1.3939E+14 | 0.0000E+00 | 0.0000E+00 |
| Organic I (atoms) | 4.3111E+12 | 0.0000E+00 | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 |

| Time (h) = 2.0000 | Deposition Surfaces | Recirculating Filter |
|---|---|---|
| Noble gases (atoms) | 0.0000E+00 | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 | 0.0000E+00 |

TSC Filtered Air Intake Transport Group Inventory:

Pathway

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**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 1 | System Nos. | Sheet 599 of 1000 |
|---|---|---|---|---|

```
Time (h) =   2.0000      Filter
Noble gases (atoms)    0.0000E+00
Elemental I (atoms)    0.0000E+00
Organic I (atoms)      0.0000E+00
Aerosols (kg)          0.0000E+00

TSC Unfiltered Inleakage Transport Group Inventory:

                        Pathway
Time (h) =   2.0000      Filter
Noble gases (atoms)    0.0000E+00
Elemental I (atoms)    0.0000E+00
Organic I (atoms)      0.0000E+00
Aerosols (kg)          0.0000E+00

TSC Exhaust Transport Group Inventory:

                        Pathway
Time (h) =   2.0000      Filter
Noble gases (atoms)    0.0000E+00
Elemental I (atoms)    0.0000E+00
Organic I (atoms)      0.0000E+00
Aerosols (kg)          0.0000E+00



Exclusion Area Boundary Doses:

Time (h) =   2.8000    Whole Body   Thyroid       TEDE
Delta dose (rem)        8.1928E-02  3.4646E+01  1.1675E+00
Accumulated dose (rem)  2.0624E-01  7.5631E+01  2.5797E+00

Low Population Zone Doses:

Time (h) =   2.8000    Whole Body   Thyroid       TEDE
Delta dose (rem)        6.1446E-03  2.5985E+00  8.7563E-02
Accumulated dose (rem)  2.7899E-02  9.7707E+00  3.3470E-01

TSC Doses:

Time (h) =   2.8000    Whole Body   Thyroid       TEDE
Delta dose (rem)        3.0675E-04  4.1419E+00  1.3008E-01
Accumulated dose (rem)  5.6009E-04  6.9113E+00  2.1732E-01

Travel Path Doses:

Time (h) =   2.8000    Whole Body   Thyroid       TEDE
Delta dose (rem)        0.0000E+00  0.0000E+00  0.0000E+00
Accumulated dose (rem)  5.5116E-03  1.5858E+00  5.5426E-02

Environment Integral Nuclide Release:

Time (h) =   2.8000       Ci           kg         Atoms         Bq
I-131                  1.8080E+02  1.4583E-06  6.7040E+18  6.6894E+12
I-132                  1.4929E+02  1.4463E-08  6.5985E+16  5.5238E+12
I-133                  3.5711E+02  3.1524E-07  1.4274E+18  1.3213E+13
I-134                  1.0252E+02  3.8431E-09  1.7271E+16  3.7933E+12
```

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**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 1 | System Nos. | Sheet 600 of 1000 |
|---|---|---|---|---|

```
I-135                  2.9052E+02  8.2726E-08  3.6903E+17  1.0749E+13

Environment Transport Group Inventory:

                        Present     Release      Total
Time (h) =   2.8000     Release     Rate/s      Release
Noble gases (atoms)    0.0000E+00  0.0000E+00  0.0000E+00
Elemental I (atoms)    8.4824E+18  8.4151E+14  8.4824E+18
Organic I (atoms)      2.6234E+17  2.6026E+13  2.6234E+17
Aerosols (kg)          0.0000E+00  0.0000E+00  0.0000E+00

Sump to Environment Transport Group Inventory:

                        Pathway
Time (h) =   2.8000      Filter
Noble gases (atoms)    0.0000E+00
Elemental I (atoms)    0.0000E+00
Organic I (atoms)      0.0000E+00
Aerosols (kg)          0.0000E+00

TSC Filtered Air Intake Transport Group Inventory:

                        Pathway
Time (h) =   2.8000      Filter
Noble gases (atoms)    0.0000E+00


Elemental I (atoms)    0.0000E+00
Organic I (atoms)      0.0000E+00
Aerosols (kg)          0.0000E+00

TSC Unfiltered Inleakage Transport Group Inventory:

                        Pathway
Time (h) =   2.8000      Filter
Noble gases (atoms)    0.0000E+00
Elemental I (atoms)    0.0000E+00
Organic I (atoms)      0.0000E+00
Aerosols (kg)          0.0000E+00

TSC Exhaust Transport Group Inventory:

                        Pathway
Time (h) =   2.8000      Filter
Noble gases (atoms)    0.0000E+00
Elemental I (atoms)    0.0000E+00
Organic I (atoms)      0.0000E+00
Aerosols (kg)          0.0000E+00

TSC Compartment Nuclide Inventory:

Time (h) =   2.8000       Ci          kg         Atoms         Bq
I-131                  3.6359E-03  2.9328E-11  1.3482E+14  1.3453E+08
I-132                  2.2827E-03  2.2114E-13  1.0089E+12  8.4460E+07
I-133                  6.9975E-03  6.1771E-12  2.7969E+13  2.5891E+08
I-134                  9.3329E-04  3.4985E-14  1.5723E+11  3.4532E+07
I-135                  5.3410E-03  1.5208E-12  6.7842E+12  1.9762E+08
```

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**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 1 | System Nos. | Sheet 601 of 1000 |
|---|---|---|---|---|

TSC Transport Group Inventory:

| Time (h) = 2.8000 | Atmosphere | Sump | Overlying Pool |
|---|---|---|---|
| Noble gases (atoms) | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 |
| Elemental I (atoms) | 1.7109E+14 | 0.0000E+00 | 0.0000E+00 |
| Organic I (atoms) | 5.2914E+12 | 0.0000E+00 | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 |

| Time (h) = 2.8000 | Deposition Surfaces | Recirculating Filter |
|---|---|---|
| Noble gases (atoms) | 0.0000E+00 | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 | 0.0000E+00 |

TSC Filtered Air Intake Transport Group Inventory:

| Time (h) = 2.8000 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 |

TSC Unfiltered Inleakage Transport Group Inventory:

| Time (h) = 2.8000 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 |

TSC Exhaust Transport Group Inventory:

| Time (h) = 2.8000 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 |

Exclusion Area Boundary Doses:

| Time (h) = 8.0000 | Whole Body | Thyroid | TEDE |
|---|---|---|---|
| Delta dose (rem) | 3.3439E-01 | 2.1609E+02 | 7.0705E+00 |
| Accumulated dose (rem) | 5.4063E-01 | 2.9173E+02 | 9.6502E+00 |

Low Population Zone Doses:

| Time (h) = 8.0000 | Whole Body | Thyroid | TEDE |
|---|---|---|---|
| Delta dose (rem) | 2.5080E-02 | 1.6207E+01 | 5.3029E-01 |
| Accumulated dose (rem) | 5.2978E-02 | 2.5978E+01 | 8.6498E-01 |

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**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 1 | System Nos. | Sheet 602 of 1000 |
|---|---|---|---|---|

TSC Doses:

| Time (h) = 8.0000 | Whole Body | Thyroid | TEDE |
|---|---|---|---|
| Delta dose (rem) | 3.8943E-04 | 7.5352E+00 | 2.3543E-01 |
| Accumulated dose (rem) | 9.4953E-04 | 1.4446E+01 | 4.5275E-01 |

Travel Path Doses:

| Time (h) = 8.0000 | Whole Body | Thyroid | TEDE |
|---|---|---|---|
| Delta dose (rem) | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 |
| Accumulated dose (rem) | 5.5116E-03 | 1.5858E+00 | 5.5426E-02 |

Environment Integral Nuclide Release:

| Time (h) = 8.0000 | Ci | kg | Atoms | Bq |
|---|---|---|---|---|
| I-131 | 7.1666E+02 | 5.7807E-06 | 2.6574E+19 | 2.6516E+13 |
| I-132 | 3.1823E+02 | 3.0830E-08 | 1.4065E+17 | 1.1774E+13 |
| I-133 | 1.3114E+03 | 1.1577E-06 | 5.2419E+18 | 4.8523E+13 |
| I-134 | 1.3445E+02 | 5.0398E-09 | 2.2650E+16 | 4.9745E+12 |
| I-135 | 8.9987E+02 | 2.5624E-07 | 1.1430E+18 | 3.3295E+13 |

Environment Transport Group Inventory:

| Time (h) = 8.0000 | Present Release | Release Rate/s | Total Release |
|---|---|---|---|
| Noble gases (atoms) | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 |
| Elemental I (atoms) | 3.3891E+19 | 1.1768E+15 | 3.3891E+19 |
| Organic I (atoms) | 1.0482E+18 | 3.6395E+13 | 1.0482E+18 |
| Aerosols (kg) | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 |

Sump to Environment Transport Group Inventory:

| Time (h) = 8.0000 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 |

TSC Filtered Air Intake Transport Group Inventory:

| Time (h) = 8.0000 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 1.1656E+21 |
| Organic I (atoms) | 3.6049E+19 |
| Aerosols (kg) | 0.0000E+00 |

TSC Unfiltered Inleakage Transport Group Inventory:

| Time (h) = 8.0000 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 |

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**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 1 | System Nos. | Sheet 603 of 1000 |
|---|---|---|---|---|

```
Organic I (atoms)      0.0000E+00
Aerosols (kg)          0.0000E+00

TSC Exhaust Transport Group Inventory:

                        Pathway
Time (h) =   8.0000      Filter
Noble gases (atoms)    0.0000E+00
Elemental I (atoms)    0.0000E+00
Organic I (atoms)      0.0000E+00
Aerosols (kg)          0.0000E+00

TSC Compartment Nuclide Inventory:

Time (h) =   8.0000       Ci           kg         Atoms         Bq
I-131                  7.6323E-04  6.1563E-12  2.8301E+13  2.8239E+07
I-132                  1.0186E-04  9.8682E-15  4.5021E+10  3.7688E+06
I-133                  1.2584E-03  1.1109E-12  5.0301E+12  4.6562E+07
I-134                  3.2703E-06  1.2259E-16  5.5094E+08  1.2100E+05
I-135                  6.6215E-04  1.8855E-13  8.4107E+11  2.4499E+07

TSC Transport Group Inventory:

                                                Overlying
Time (h) =   8.0000    Atmosphere     Sump        Pool
Noble gases (atoms)    0.0000E+00  0.0000E+00  0.0000E+00
Elemental I (atoms)    3.6523E+13  0.0000E+00  0.0000E+00



Organic I (atoms)      1.1296E+12  0.0000E+00  0.0000E+00
Aerosols (kg)          0.0000E+00  0.0000E+00  0.0000E+00

                       Deposition Recirculating
Time (h) =   8.0000     Surfaces     Filter
Noble gases (atoms)    0.0000E+00  0.0000E+00
Elemental I (atoms)    0.0000E+00  4.2218E+14
Organic I (atoms)      0.0000E+00  1.3057E+13
Aerosols (kg)          0.0000E+00  0.0000E+00

TSC Filtered Air Intake Transport Group Inventory:

                        Pathway
Time (h) =   8.0000      Filter
Noble gases (atoms)    0.0000E+00
Elemental I (atoms)    1.1656E+21
Organic I (atoms)      3.6049E+19
Aerosols (kg)          0.0000E+00

TSC Unfiltered Inleakage Transport Group Inventory:

                        Pathway
Time (h) =   8.0000      Filter
Noble gases (atoms)    0.0000E+00
Elemental I (atoms)    0.0000E+00
Organic I (atoms)      0.0000E+00
Aerosols (kg)          0.0000E+00
```

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**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 1 | System Nos. | Sheet 604 of 1000 |
|---|---|---|---|---|

TSC Exhaust Transport Group Inventory:

| Time (h) = 8.0000 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 |

Exclusion Area Boundary Doses:

| Time (h) = 24.0000 | Whole Body | Thyroid | TEDE |
|---|---|---|---|
| Delta dose (rem) | 4.6503E-01 | 5.9517E+02 | 1.8865E+01 |
| Accumulated dose (rem) | 1.0057E+00 | 8.8689E+02 | 2.8515E+01 |

Low Population Zone Doses:

| Time (h) = 24.0000 | Whole Body | Thyroid | TEDE |
|---|---|---|---|
| Delta dose (rem) | 2.2670E-02 | 1.4922E+01 | 4.8398E-01 |
| Accumulated dose (rem) | 7.5649E-02 | 4.0899E+01 | 1.3490E+00 |

TSC Doses:

| Time (h) = 24.0000 | Whole Body | Thyroid | TEDE |
|---|---|---|---|
| Delta dose (rem) | 1.6723E-04 | 6.7097E+00 | 2.0764E-01 |
| Accumulated dose (rem) | 1.1168E-03 | 2.1156E+01 | 6.6039E-01 |

Travel Path Doses:

| Time (h) = 24.0000 | Whole Body | Thyroid | TEDE |
|---|---|---|---|
| Delta dose (rem) | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 |
| Accumulated dose (rem) | 5.5116E-03 | 1.5858E+00 | 5.5426E-02 |

Environment Integral Nuclide Release:

| Time (h) = 24.0000 | Ci | kg | Atoms | Bq |
|---|---|---|---|---|
| I-131 | 2.3005E+03 | 1.8556E-05 | 8.5302E+19 | 8.5117E+13 |
| I-132 | 3.6021E+02 | 3.4897E-08 | 1.5921E+17 | 1.3328E+13 |
| I-133 | 3.3568E+03 | 2.9632E-06 | 1.3417E+19 | 1.2420E+14 |
| I-134 | 1.3497E+02 | 5.0596E-09 | 2.2738E+16 | 4.9940E+12 |
| I-135 | 1.5525E+03 | 4.4208E-07 | 1.9721E+18 | 5.7444E+13 |

Environment Transport Group Inventory:

| Time (h) = 24.0000 | Present Release | Release Rate/s | Total Release |
|---|---|---|---|
| Noble gases (atoms) | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 |
| Elemental I (atoms) | 1.1207E+20 | 1.2971E+15 | 1.1207E+20 |
| Organic I (atoms) | 3.4660E+18 | 4.0116E+13 | 3.4660E+18 |
| Aerosols (kg) | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 |

Sump to Environment Transport Group Inventory:

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**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 1 | System Nos. | Sheet 605 of 1000 |
|---|---|---|---|---|

```
                          Pathway
Time (h) =  24.0000        Filter
Noble gases (atoms)     0.0000E+00
Elemental I (atoms)     0.0000E+00
Organic I (atoms)       0.0000E+00
Aerosols (kg)           0.0000E+00

TSC Filtered Air Intake Transport Group Inventory:

                          Pathway
Time (h) =  24.0000        Filter
Noble gases (atoms)     0.0000E+00
Elemental I (atoms)     4.9624E+22
Organic I (atoms)       1.5348E+21
Aerosols (kg)           0.0000E+00

TSC Unfiltered Inleakage Transport Group Inventory:

                          Pathway
Time (h) =  24.0000        Filter
Noble gases (atoms)     0.0000E+00
Elemental I (atoms)     0.0000E+00
Organic I (atoms)       0.0000E+00
Aerosols (kg)           0.0000E+00

TSC Exhaust Transport Group Inventory:

                          Pathway
Time (h) =  24.0000        Filter
Noble gases (atoms)     0.0000E+00


Elemental I (atoms)     0.0000E+00
Organic I (atoms)       0.0000E+00
Aerosols (kg)           0.0000E+00

TSC Compartment Nuclide Inventory:

Time (h) =  24.0000        Ci            kg          Atoms          Bq
I-131                   2.7980E-04  2.2569E-12  1.0375E+13  1.0353E+07
I-132                   3.1845E-07  3.0851E-17  1.4075E+08  1.1783E+04
I-133                   2.8670E-04  2.5309E-13  1.1460E+12  1.0608E+07
I-135                   4.8022E-05  1.3674E-14  6.0999E+10  1.7768E+06

TSC Transport Group Inventory:

                                                Overlying
Time (h) =  24.0000     Atmosphere     Sump        Pool
Noble gases (atoms)     0.0000E+00  0.0000E+00  0.0000E+00
Elemental I (atoms)     1.4181E+13  0.0000E+00  0.0000E+00
Organic I (atoms)       4.3860E+11  0.0000E+00  0.0000E+00
Aerosols (kg)           0.0000E+00  0.0000E+00  0.0000E+00

                        Deposition Recirculating
Time (h) =  24.0000      Surfaces     Filter
Noble gases (atoms)     0.0000E+00  0.0000E+00
Elemental I (atoms)     0.0000E+00  8.4395E+14
```

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**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 1 | System Nos. | Sheet 606 of 1000 |
|---|---|---|---|---|

```
Organic I (atoms)      0.0000E+00  2.6102E+13
Aerosols (kg)          0.0000E+00  0.0000E+00

TSC Filtered Air Intake Transport Group Inventory:

                        Pathway
Time (h) =  24.0000      Filter
Noble gases (atoms)    0.0000E+00
Elemental I (atoms)    4.9624E+22
Organic I (atoms)      1.5348E+21
Aerosols (kg)          0.0000E+00

TSC Unfiltered Inleakage Transport Group Inventory:

                        Pathway
Time (h) =  24.0000      Filter
Noble gases (atoms)    0.0000E+00
Elemental I (atoms)    0.0000E+00
Organic I (atoms)      0.0000E+00
Aerosols (kg)          0.0000E+00

TSC Exhaust Transport Group Inventory:

                        Pathway
Time (h) =  24.0000      Filter
Noble gases (atoms)    0.0000E+00
Elemental I (atoms)    0.0000E+00
Organic I (atoms)      0.0000E+00
Aerosols (kg)          0.0000E+00



Exclusion Area Boundary Doses:

Time (h) =  96.0000    Whole Body   Thyroid       TEDE
Delta dose (rem)        2.5197E-01  8.0398E+02  2.4855E+01
Accumulated dose (rem)  1.2576E+00  1.6909E+03  5.3370E+01

Low Population Zone Doses:

Time (h) =  96.0000    Whole Body   Thyroid       TEDE
Delta dose (rem)        5.0395E-03  1.0567E+01  3.2839E-01
Accumulated dose (rem)  8.0688E-02  5.1466E+01  1.6774E+00

TSC Doses:

Time (h) =  96.0000    Whole Body   Thyroid       TEDE
Delta dose (rem)        4.0207E-05  3.8668E+00  1.1843E-01
Accumulated dose (rem)  1.1570E-03  2.5023E+01  7.7882E-01

Travel Path Doses:

Time (h) =  96.0000    Whole Body   Thyroid       TEDE
Delta dose (rem)        0.0000E+00  0.0000E+00  0.0000E+00
Accumulated dose (rem)  5.5116E-03  1.5858E+00  5.5426E-02
```

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**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 1 | System Nos. | Sheet 607 of 1000 |
|---|---|---|---|---|

Environment Integral Nuclide Release:

| Time (h) = 96.0000 | Ci | kg | Atoms | Bq |
|---|---|---|---|---|
| I-131 | 4.7291E+03 | 3.8146E-05 | 1.7536E+20 | 1.7498E+14 |
| I-132 | 3.6029E+02 | 3.4904E-08 | 1.5924E+17 | 1.3331E+13 |
| I-133 | 4.3645E+03 | 3.8528E-06 | 1.7445E+19 | 1.6149E+14 |
| I-134 | 1.3497E+02 | 5.0596E-09 | 2.2738E+16 | 4.9940E+12 |
| I-135 | 1.6033E+03 | 4.5654E-07 | 2.0366E+18 | 5.9322E+13 |

Environment Transport Group Inventory:

| Time (h) = 96.0000 | Present Release | Release Rate/s | Total Release |
|---|---|---|---|
| Noble gases (atoms) | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 |
| Elemental I (atoms) | 2.5277E+20 | 7.3140E+14 | 2.5277E+20 |
| Organic I (atoms) | 7.8177E+18 | 2.2621E+13 | 7.8177E+18 |
| Aerosols (kg) | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 |

Sump to Environment Transport Group Inventory:

| Time (h) = 96.0000 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 |

TSC Filtered Air Intake Transport Group Inventory:

| Time (h) = 96.0000 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 3.0781E+23 |
| Organic I (atoms) | 9.5199E+21 |
| Aerosols (kg) | 0.0000E+00 |

TSC Unfiltered Inleakage Transport Group Inventory:

| Time (h) = 96.0000 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 |

TSC Exhaust Transport Group Inventory:

| Time (h) = 96.0000 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 |

TSC Compartment Nuclide Inventory:

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**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 1 | System Nos. | Sheet 608 of 1000 |
|---|---|---|---|---|

| Time (h) = 96.0000 | Ci | kg | Atoms | Bq |
|---|---|---|---|---|
| I-131 | 5.8229E-05 | 4.6968E-13 | 2.1592E+12 | 2.1545E+06 |
| I-133 | 7.0148E-06 | 6.1924E-15 | 2.8039E+10 | 2.5955E+05 |
| I-135 | 6.8087E-09 | 1.9388E-18 | 8.6485E+06 | 2.5192E+02 |

TSC Transport Group Inventory:

| Time (h) = 96.0000 | Atmosphere | Sump | Overlying Pool |
|---|---|---|---|
| Noble gases (atoms) | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 |
| Elemental I (atoms) | 3.8224E+12 | 0.0000E+00 | 0.0000E+00 |
| Organic I (atoms) | 1.1822E+11 | 0.0000E+00 | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 |

| Time (h) = 96.0000 | Deposition Surfaces | Recirculating Filter |
|---|---|---|
| Noble gases (atoms) | 0.0000E+00 | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 | 1.2392E+15 |
| Organic I (atoms) | 0.0000E+00 | 3.8326E+13 |
| Aerosols (kg) | 0.0000E+00 | 0.0000E+00 |

TSC Filtered Air Intake Transport Group Inventory:

| Time (h) = 96.0000 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 3.0781E+23 |
| Organic I (atoms) | 9.5199E+21 |
| Aerosols (kg) | 0.0000E+00 |

TSC Unfiltered Inleakage Transport Group Inventory:

| Time (h) = 96.0000 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 |

TSC Exhaust Transport Group Inventory:

| Time (h) = 96.0000 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 |

Exclusion Area Boundary Doses:

| Time (h) = 720.0000 | Whole Body | Thyroid | TEDE |
|---|---|---|---|
| Delta dose (rem) | 4.1175E-01 | 2.2617E+03 | 6.9282E+01 |
| Accumulated dose (rem) | 1.6694E+00 | 3.9526E+03 | 1.2265E+02 |

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**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 1 | System Nos. | Sheet 609 of 1000 |
|---|---|---|---|---|

Low Population Zone Doses:

| Time (h) = 720.0000 | Whole Body | Thyroid | TEDE |
|---|---|---|---|
| Delta dose (rem) | 2.0588E-03 | 7.4313E+00 | 2.2835E-01 |
| Accumulated dose (rem) | 8.2747E-02 | 5.8897E+01 | 1.9057E+00 |

TSC Doses:

| Time (h) = 720.0000 | Whole Body | Thyroid | TEDE |
|---|---|---|---|
| Delta dose (rem) | 3.2175E-05 | 5.6253E+00 | 1.7132E-01 |
| Accumulated dose (rem) | 1.1891E-03 | 3.0648E+01 | 9.5014E-01 |

Travel Path Doses:

| Time (h) = 720.0000 | Whole Body | Thyroid | TEDE |
|---|---|---|---|
| Delta dose (rem) | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 |
| Accumulated dose (rem) | 5.5116E-03 | 1.5858E+00 | 5.5426E-02 |

Environment Integral Nuclide Release:

| Time (h) = 720.0000 | Ci | kg | Atoms | Bq |
|---|---|---|---|---|
| I-131 | 1.2080E+04 | 9.7440E-05 | 4.4793E+20 | 4.4696E+14 |
| I-132 | 3.6029E+02 | 3.4904E-08 | 1.5924E+17 | 1.3331E+13 |
| I-133 | 4.4651E+03 | 3.9416E-06 | 1.7847E+19 | 1.6521E+14 |
| I-134 | 1.3497E+02 | 5.0596E-09 | 2.2738E+16 | 4.9940E+12 |
| I-135 | 1.6033E+03 | 4.5655E-07 | 2.0366E+18 | 5.9323E+13 |

Environment Transport Group Inventory:

| Time (h) = 720.0000 | Present Release | Release Rate/s | Total Release |
|---|---|---|---|
| Noble gases (atoms) | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 |
| Elemental I (atoms) | 1.4716E+21 | 5.6775E+14 | 1.4716E+21 |
| Organic I (atoms) | 4.5513E+19 | 1.7559E+13 | 4.5513E+19 |
| Aerosols (kg) | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 |

Sump to Environment Transport Group Inventory:

| Time (h) = 720.0000 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 |

TSC Filtered Air Intake Transport Group Inventory:

| Time (h) = 720.0000 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 2.5443E+24 |
| Organic I (atoms) | 7.8689E+22 |
| Aerosols (kg) | 0.0000E+00 |

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**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 1 | System Nos. | Sheet 610 of 1000 |
|---|---|---|---|---|

TSC Unfiltered Inleakage Transport Group Inventory:

| Time (h) = 720.0000 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 |

TSC Exhaust Transport Group Inventory:

| Time (h) = 720.0000 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 |

TSC Compartment Nuclide Inventory:

| Time (h) = 720.0000 | Ci | kg | Atoms | Bq |
|---|---|---|---|---|
| I-131 | 5.2325E-06 | 4.2206E-14 | 1.9402E+11 | 1.9360E+05 |

TSC Transport Group Inventory:

| Time (h) = 720.0000 | Atmosphere | Sump | Overlying Pool |
|---|---|---|---|
| Noble gases (atoms) | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 |
| Elemental I (atoms) | 3.2313E+12 | 0.0000E+00 | 0.0000E+00 |
| Organic I (atoms) | 9.9938E+10 | 0.0000E+00 | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 |

| Time (h) = 720.0000 | Deposition Surfaces | Recirculating Filter |
|---|---|---|
| Noble gases (atoms) | 0.0000E+00 | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 | 4.8646E+15 |
| Organic I (atoms) | 0.0000E+00 | 1.5045E+14 |
| Aerosols (kg) | 0.0000E+00 | 0.0000E+00 |

TSC Filtered Air Intake Transport Group Inventory:

| Time (h) = 720.0000 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 2.5443E+24 |
| Organic I (atoms) | 7.8689E+22 |
| Aerosols (kg) | 0.0000E+00 |

TSC Unfiltered Inleakage Transport Group Inventory:

| Time (h) = 720.0000 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 |

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**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 1 | System Nos. | Sheet 611 of 1000 |
|---|---|---|---|---|

```
Aerosols (kg)          0.0000E+00

TSC Exhaust Transport Group Inventory:

                         Pathway
Time (h) = 720.0000       Filter
Noble gases (atoms)    0.0000E+00
Elemental I (atoms)    0.0000E+00
Organic I (atoms)      0.0000E+00
Aerosols (kg)          0.0000E+00

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#####################################################################
                              I-131 Summary
#####################################################################
```

| Time (hr) | Sump I-131 (Curies) | Environment I-131 (Curies) | TSC I-131 (Curies) |
|---|---|---|---|
| 0.001 | 3.9707E+03 | 0.0000E+00 | 0.0000E+00 |
| 0.300 | 2.1419E+06 | 0.0000E+00 | 0.0000E+00 |
| 0.491 | 3.5010E+06 | 0.0000E+00 | 0.0000E+00 |
| 0.500 | 3.5672E+06 | 1.2081E-01 | 4.6091E-06 |
| 0.800 | 9.3196E+06 | 7.2267E+00 | 2.6130E-04 |
| 0.917 | 1.1553E+07 | 1.1702E+01 | 4.1546E-04 |
| 1.000 | 1.3148E+07 | 1.5485E+01 | 5.4286E-04 |
| 1.300 | 1.8879E+07 | 3.3142E+01 | 1.1125E-03 |
| 1.600 | 2.4599E+07 | 5.7111E+01 | 1.8392E-03 |
| 1.800 | 2.8405E+07 | 7.6591E+01 | 2.4011E-03 |
| 2.000 | 2.8384E+07 | 9.7462E+01 | 2.9668E-03 |
| 2.300 | 2.8354E+07 | 1.2874E+02 | 3.2458E-03 |
| 2.600 | 2.8323E+07 | 1.5998E+02 | 3.4902E-03 |
| 2.800 | 2.8303E+07 | 1.8080E+02 | 3.6359E-03 |
| 3.100 | 2.8272E+07 | 2.1198E+02 | 1.9327E-03 |
| 3.400 | 2.8242E+07 | 2.4314E+02 | 1.2434E-03 |
| 3.700 | 2.8211E+07 | 2.7426E+02 | 9.6415E-04 |
| 4.000 | 2.8181E+07 | 3.0535E+02 | 8.5073E-04 |
| 4.300 | 2.8150E+07 | 3.3640E+02 | 8.0436E-04 |
| 4.600 | 2.8120E+07 | 3.6742E+02 | 7.8512E-04 |
| 4.900 | 2.8090E+07 | 3.9841E+02 | 7.7684E-04 |
| 5.200 | 2.8060E+07 | 4.2936E+02 | 7.7299E-04 |
| 5.500 | 2.8029E+07 | 4.6028E+02 | 7.7095E-04 |
| 5.800 | 2.7999E+07 | 4.9117E+02 | 7.6962E-04 |
| 6.100 | 2.7969E+07 | 5.2202E+02 | 7.6859E-04 |
| 6.400 | 2.7939E+07 | 5.5284E+02 | 7.6768E-04 |
| 6.700 | 2.7909E+07 | 5.8363E+02 | 7.6682E-04 |
| 7.000 | 2.7878E+07 | 6.1439E+02 | 7.6598E-04 |
| 7.300 | 2.7848E+07 | 6.4511E+02 | 7.6515E-04 |
| 7.600 | 2.7818E+07 | 6.7579E+02 | 7.6433E-04 |
| 7.900 | 2.7788E+07 | 7.0645E+02 | 7.6350E-04 |
| 8.000 | 2.7778E+07 | 7.1666E+02 | 7.6323E-04 |
| 8.300 | 2.7748E+07 | 7.4727E+02 | 4.8484E-04 |
| 8.600 | 2.7719E+07 | 7.7785E+02 | 3.7208E-04 |
| 8.900 | 2.7689E+07 | 8.0839E+02 | 3.2629E-04 |
| 9.200 | 2.7659E+07 | 8.3890E+02 | 3.0758E-04 |

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**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 1 | System Nos. | Sheet 612 of 1000 |
|---|---|---|---|---|

| | | | |
|---|---|---|---|
| 9.500 | 2.7629E+07 | 8.6938E+02 | 2.9982E-04 |
| 9.800 | 2.7599E+07 | 8.9983E+02 | 2.9650E-04 |
| 10.100 | 2.7569E+07 | 9.3024E+02 | 2.9496E-04 |
| 10.400 | 2.7540E+07 | 9.6062E+02 | 2.9416E-04 |
| 24.000 | 2.6225E+07 | 2.3005E+03 | 2.7980E-04 |
| 96.000 | 2.0247E+07 | 4.7291E+03 | 5.8229E-05 |
| 720.000 | 2.1502E+06 | 1.2080E+04 | 5.2325E-06 |

```
#####################################################################
                        Cumulative Dose Summary
#####################################################################
```

| | Exclusion Area Bounda | | Low Population Zone | | TSC | |
|---|---|---|---|---|---|---|
| Time (hr) | Thyroid (rem) | TEDE (rem) | Thyroid (rem) | TEDE (rem) | Thyroid (rem) | TEDE (rem) |
| 0.001 | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 |
| 0.300 | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 |
| 0.491 | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 |
| 0.500 | 5.1381E-02 | 1.8273E-03 | 8.9916E-03 | 3.1978E-04 | 3.4194E-05 | 1.0828E-06 |
| 0.800 | 3.0676E+00 | 1.0837E-01 | 5.3684E-01 | 1.8965E-02 | 5.5423E-02 | 1.7530E-03 |
| 0.917 | 4.9625E+00 | 1.7479E-01 | 8.6844E-01 | 3.0588E-02 | 1.1775E-01 | 3.7225E-03 |
| 1.000 | 6.5620E+00 | 2.3065E-01 | 1.1484E+00 | 4.0363E-02 | 1.8096E-01 | 5.7192E-03 |
| 1.300 | 1.4013E+01 | 4.8935E-01 | 2.4523E+00 | 8.5637E-02 | 5.6804E-01 | 1.7934E-02 |
| 1.600 | 2.4091E+01 | 8.3610E-01 | 4.2159E+00 | 1.4632E-01 | 1.2610E+00 | 3.9772E-02 |
| 1.800 | 3.2256E+01 | 1.1152E+00 | 5.6449E+00 | 1.9517E-01 | 1.9265E+00 | 6.0722E-02 |
| 2.000 | 4.0984E+01 | 1.4122E+00 | 7.1722E+00 | 2.4714E-01 | 2.7694E+00 | 8.7237E-02 |
| 2.300 | 5.4025E+01 | 1.8536E+00 | 8.1503E+00 | 2.8024E-01 | 4.2279E+00 | 1.3308E-01 |
| 2.600 | 6.7008E+01 | 2.2906E+00 | 9.1240E+00 | 3.1302E-01 | 5.8036E+00 | 1.8256E-01 |
| 2.800 | 7.5631E+01 | 2.5797E+00 | 9.7707E+00 | 3.3470E-01 | 6.9113E+00 | 2.1732E-01 |
| 3.100 | 8.8517E+01 | 3.0102E+00 | 1.0737E+01 | 3.6698E-01 | 8.1536E+00 | 2.5628E-01 |
| 3.400 | 1.0135E+02 | 3.4371E+00 | 1.1700E+01 | 3.9900E-01 | 8.8685E+00 | 2.7868E-01 |
| 3.700 | 1.1412E+02 | 3.8606E+00 | 1.2658E+01 | 4.3077E-01 | 9.3699E+00 | 2.9438E-01 |
| 4.000 | 1.2685E+02 | 4.2811E+00 | 1.3612E+01 | 4.6230E-01 | 9.7843E+00 | 3.0735E-01 |
| 4.300 | 1.3952E+02 | 4.6986E+00 | 1.4562E+01 | 4.9362E-01 | 1.0163E+01 | 3.1919E-01 |
| 4.600 | 1.5213E+02 | 5.1134E+00 | 1.5508E+01 | 5.2473E-01 | 1.0526E+01 | 3.3054E-01 |
| 4.900 | 1.6470E+02 | 5.5255E+00 | 1.6451E+01 | 5.5563E-01 | 1.0882E+01 | 3.4166E-01 |
| 5.200 | 1.7721E+02 | 5.9351E+00 | 1.7389E+01 | 5.8635E-01 | 1.1235E+01 | 3.5267E-01 |
| 5.500 | 1.8968E+02 | 6.3422E+00 | 1.8324E+01 | 6.1688E-01 | 1.1585E+01 | 3.6360E-01 |
| 5.800 | 2.0210E+02 | 6.7470E+00 | 1.9256E+01 | 6.4724E-01 | 1.1933E+01 | 3.7447E-01 |
| 6.100 | 2.1446E+02 | 7.1495E+00 | 2.0183E+01 | 6.7743E-01 | 1.2280E+01 | 3.8529E-01 |
| 6.400 | 2.2679E+02 | 7.5498E+00 | 2.1107E+01 | 7.0745E-01 | 1.2626E+01 | 3.9606E-01 |
| 6.700 | 2.3906E+02 | 7.9479E+00 | 2.2028E+01 | 7.3732E-01 | 1.2970E+01 | 4.0678E-01 |
| 7.000 | 2.5129E+02 | 8.3441E+00 | 2.2945E+01 | 7.6702E-01 | 1.3313E+01 | 4.1746E-01 |
| 7.300 | 2.6347E+02 | 8.7382E+00 | 2.3859E+01 | 7.9658E-01 | 1.3654E+01 | 4.2810E-01 |
| 7.600 | 2.7561E+02 | 9.1303E+00 | 2.4769E+01 | 8.2599E-01 | 1.3995E+01 | 4.3869E-01 |
| 7.900 | 2.8770E+02 | 9.5205E+00 | 2.5676E+01 | 8.5526E-01 | 1.4334E+01 | 4.4924E-01 |
| 8.000 | 2.9173E+02 | 9.6502E+00 | 2.5978E+01 | 8.6498E-01 | 1.4446E+01 | 4.5275E-01 |
| 8.300 | 3.0376E+02 | 1.0038E+01 | 2.6280E+01 | 8.7503E-01 | 1.4714E+01 | 4.6109E-01 |
| 8.600 | 3.1575E+02 | 1.0424E+01 | 2.6580E+01 | 8.8503E-01 | 1.4900E+01 | 4.6686E-01 |
| 8.900 | 3.2770E+02 | 1.0808E+01 | 2.6880E+01 | 8.9497E-01 | 1.5053E+01 | 4.7160E-01 |
| 9.200 | 3.3961E+02 | 1.1190E+01 | 2.7178E+01 | 9.0486E-01 | 1.5191E+01 | 4.7591E-01 |
| 9.500 | 3.5148E+02 | 1.1571E+01 | 2.7476E+01 | 9.1470E-01 | 1.5324E+01 | 4.8004E-01 |
| 9.800 | 3.6331E+02 | 1.1950E+01 | 2.7772E+01 | 9.2450E-01 | 1.5454E+01 | 4.8408E-01 |
| 10.100 | 3.7509E+02 | 1.2328E+01 | 2.8068E+01 | 9.3424E-01 | 1.5583E+01 | 4.8808E-01 |
| 10.400 | 3.8684E+02 | 1.2704E+01 | 2.8362E+01 | 9.4394E-01 | 1.5711E+01 | 4.9206E-01 |

AmerGen

**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 1 | System Nos. | Sheet 613 of 1000 |
|---|---|---|---|---|

```
  24.000 8.8689E+02 2.8515E+01 4.0899E+01 1.3490E+00 2.1156E+01 6.6039E-01
  96.000 1.6909E+03 5.3370E+01 5.1466E+01 1.6774E+00 2.5023E+01 7.7882E-01
 720.000 3.9526E+03 1.2265E+02 5.8897E+01 1.9057E+00 3.0648E+01 9.5014E-01

              Travel Path
  Time     Thyroid      TEDE
  (hr)      (rem)       (rem)
   0.001 0.0000E+00 0.0000E+00
   0.300 0.0000E+00 0.0000E+00
   0.491 0.0000E+00 0.0000E+00
   0.500 0.0000E+00 0.0000E+00
   0.800 0.0000E+00 0.0000E+00
   0.917 0.0000E+00 0.0000E+00
   1.000 1.5858E+00 5.5426E-02
   1.300 1.5858E+00 5.5426E-02
   1.600 1.5858E+00 5.5426E-02
   1.800 1.5858E+00 5.5426E-02
   2.000 1.5858E+00 5.5426E-02
   2.300 1.5858E+00 5.5426E-02
   2.600 1.5858E+00 5.5426E-02
   2.800 1.5858E+00 5.5426E-02
   3.100 1.5858E+00 5.5426E-02
   3.400 1.5858E+00 5.5426E-02
   3.700 1.5858E+00 5.5426E-02
   4.000 1.5858E+00 5.5426E-02
   4.300 1.5858E+00 5.5426E-02
   4.600 1.5858E+00 5.5426E-02
   4.900 1.5858E+00 5.5426E-02
   5.200 1.5858E+00 5.5426E-02
   5.500 1.5858E+00 5.5426E-02
   5.800 1.5858E+00 5.5426E-02
   6.100 1.5858E+00 5.5426E-02
   6.400 1.5858E+00 5.5426E-02
   6.700 1.5858E+00 5.5426E-02
   7.000 1.5858E+00 5.5426E-02
   7.300 1.5858E+00 5.5426E-02
   7.600 1.5858E+00 5.5426E-02
   7.900 1.5858E+00 5.5426E-02


   8.000 1.5858E+00 5.5426E-02
   8.300 1.5858E+00 5.5426E-02
   8.600 1.5858E+00 5.5426E-02
   8.900 1.5858E+00 5.5426E-02
   9.200 1.5858E+00 5.5426E-02
   9.500 1.5858E+00 5.5426E-02
   9.800 1.5858E+00 5.5426E-02
  10.100 1.5858E+00 5.5426E-02
  10.400 1.5858E+00 5.5426E-02
  24.000 1.5858E+00 5.5426E-02
  96.000 1.5858E+00 5.5426E-02
 720.000 1.5858E+00 5.5426E-02

#####################################################################
                     Worst Two-Hour Doses
    Note: All of the dose locations are shown below but the
          worst two-hour dose is only meaningful for the EAB
```

AmerGen

**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 1 | System Nos. | Sheet 614 of 1000 |
|---|---|---|---|---|

```
          dose location.  Please disregard the two-hour worst
          doses for the other dose locations
#################################################################

Exclusion Area Boundary
   Time   Whole Body    Thyroid        TEDE
   (hr)      (rem)        (rem)         (rem)
    1.8   1.8987E-01   8.6108E+01   2.8856E+00

Low Population Zone
   Time   Whole Body    Thyroid        TEDE
   (hr)      (rem)        (rem)         (rem)
    0.9   2.5521E-02   9.2718E+00   3.1653E-01

TSC
   Time   Whole Body    Thyroid        TEDE
   (hr)      (rem)        (rem)         (rem)
    1.4   6.0599E-04   8.0695E+00   2.5347E-01

Travel Path
   Time   Whole Body    Thyroid        TEDE
   (hr)      (rem)        (rem)         (rem)
    0.0   5.5116E-03   1.5858E+00   5.5426E-02
```

**Appendix Q**

**RADTRAD Output File**

# Purge_TSC.o0

**Containment Purge Pathway (For TSC Dose)**

TMI Containment Leakage Pathway AST Analysis: (Same inputs as for CR & Offsite Dose)

CR Unfiltered Inleakage = 1,000 cfm (t=30 minutes to t=720 hours),
CR Initiation Time = 30 min (t=0 to t=30 min),
Two Spray Pumps For 28.19 min at 800 gpm each (t=75 seconds to t= 29.44 min),
Two Spray Pump For t=29.44 min to t=4.0 hours @ 800 gpm each

AmerGen

**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 1 | System Nos. | Sheet 616 of 1000 |
|---|---|---|---|---|

```
 ######################################################################
          RADTRAD Version 3.02 run on  5/15/2002  at  7:25:29
 ######################################################################

 ######################################################################
                      File information
 ######################################################################

 Plant file name           = C:\Documents and Settings\u004tjm\My Documents\TMI
RADTRAD\Purge_TSC.psf
 Inventory file name       = c:\documents and settings\u004tjm\my documents\tmi
radtrad\defaults\tmipurge_def.nif
 Scenario file name        = C:\Documents and Settings\u004tjm\My Documents\TMI
RADTRAD\Purge_TSC.psf
 Release file name         = c:\documents and settings\u004tjm\my documents\tmi
radtrad\defaults\tmipurge.rft
 Dose conversion file name = c:\documents and settings\u004tjm\my documents\tmi
radtrad\defaults\fgr11&12.inp




     #####    ####   #####    #  #     #  #####   #    #  #####
     #    #  #       #        #  ##    #  #    #  #    #    #
     #    #  #       #        #  # #   #  #    #  #    #    #
     #####    ####   ####     #  #  #  #  #####   #    #    #
     #            #  #        #  #   # #  #       #    #    #
     #            #  #        #  #    ##  #       #    #    #
     #        ####   #        #  #     #  #        ####     #


 Radtrad 3.02 1/5/2000
 TSC Dose Due To Containment Purge - NO HVAC for 2 hours - 250 cfm Unfiltered Inleakage
(0.8 - 2.8 max)
 Nuclide Inventory File:
 c:\documents and settings\u004tjm\my documents\tmi radtrad\defaults\tmipurge_def.nif
 Plant Power Level:
  2.6190E+03
 Compartments:
   3
 Compartment 1:
 Containment
   3
  2.1600E+06
   0
   0
   0
   0
   0
 Compartment 2:
 Environment
   2
  0.0000E+00
   0
```

```
  0
  0
  0
  0
Compartment 3:
TSC
  1
 4.2000E+04
  0
  0
  1
  0
  0
Pathways:
  4
Pathway 1:
Containment Leakage to Environment
  1
  2
  2
Pathway 2:
TSC Filtered Air Intake
  2
  3
  2
Pathway 3:
TSC  Unfiltered Inleakage
  2
  3
  2
Pathway 4:
TSC Exhaust to Environment
  3
  2
  2
End of Plant Model File
Scenario Description Name:

Plant Model Filename:
ACCEPT\TEST24.PMF
Source Term:
  1
  1   1.0000E+00
c:\documents and settings\u004tjm\my documents\tmi radtrad\defaults\fgr11&12.inp
c:\documents and settings\u004tjm\my documents\tmi radtrad\defaults\tmipurge.rft
  0.0000E+00
  0
  9.5000E-01   4.8500E-02   1.5000E-03   1.0000E+00
Overlying Pool:
  0
  0.0000E+00
  0
  0
  0
  0
Compartments:
```

```
  3
Compartment 1:
  0
  1
  0
  0
  0
  0
  0
  0
  0
Compartment 2:
  0
  1
  0
  0
  0
  0
  0
  0
  0
Compartment 3:
  1
  1
  0
  0
  0
  0
  1
  1.4000E+03
  5
  0.0000E+00   0.0000E+00   0.0000E+00   0.0000E+00
  8.0000E-01   0.0000E+00   0.0000E+00   0.0000E+00
  1.0000E+00   0.0000E+00   0.0000E+00   0.0000E+00
  2.8000E+00   9.9000E+01   9.0000E+01   9.0000E+01
  7.2000E+02   0.0000E+00   0.0000E+00   0.0000E+00
  0
  0
Pathways:
  4
Pathway 1:
  0
  0
  0
  0
  0
  1
  2
  0.0000E+00   1.4000E+04   0.0000E+00   0.0000E+00   0.0000E+00
  1.6700E-02   0.0000E+00   0.0000E+00   0.0000E+00   0.0000E+00
  0
  0
  0
  0
  0
```

```
  0


Pathway 2:
  0
  0
  0
  0
  0
  1
  5
  0.0000E+00   3.0000E+02   0.0000E+00   0.0000E+00   0.0000E+00
  8.0000E-01   3.0000E+02   0.0000E+00   0.0000E+00   0.0000E+00
  1.0000E+00   3.0000E+02   0.0000E+00   0.0000E+00   0.0000E+00
  2.8000E+00   6.0000E+02   9.9000E+01   9.0000E+01   9.0000E+01
  7.2000E+02   0.0000E+00   0.0000E+00   0.0000E+00   0.0000E+00
  0
  0
  0
  0
  0
  0
Pathway 3:
  0
  0
  0
  0
  0
  1
  5
  0.0000E+00   0.0000E+00   0.0000E+00   0.0000E+00   0.0000E+00
  8.0000E-01   0.0000E+00   0.0000E+00   0.0000E+00   0.0000E+00
  1.0000E+00   0.0000E+00   0.0000E+00   0.0000E+00   0.0000E+00
  2.8000E+00   2.5000E+02   0.0000E+00   0.0000E+00   0.0000E+00
  7.2000E+02   0.0000E+00   0.0000E+00   0.0000E+00   0.0000E+00
  0
  0
  0
  0
  0
  0
Pathway 4:
  0
  0
  0
  0
  0
  1
  5
  0.0000E+00   3.0000E+02   0.0000E+00   0.0000E+00   0.0000E+00
  8.0000E-01   3.0000E+02   0.0000E+00   0.0000E+00   0.0000E+00
  1.0000E+00   3.0000E+02   0.0000E+00   0.0000E+00   0.0000E+00
  2.8000E+00   8.5000E+02   0.0000E+00   0.0000E+00   0.0000E+00
  7.2000E+02   0.0000E+00   0.0000E+00   0.0000E+00   0.0000E+00
  0
  0
  0
```

```
  0
  0


  0
Dose Locations:
  4
Location 1:
Exclusion Area Boundary
  2
  1
  2
  0.0000E+00   8.0000E-04
  7.2000E+02   0.0000E+00
  1
  2
  0.0000E+00   3.5000E-04
  2.0000E+00   0.0000E+00
  0
Location 2:
Low Population Zone
  2
  1
  6
  0.0000E+00   1.4000E-04
  2.0000E+00   6.0000E-05
  8.0000E+00   3.9000E-05
  2.4000E+01   1.6000E-05
  9.6000E+01   4.0000E-06
  7.2000E+02   0.0000E+00
  1
  4
  0.0000E+00   3.5000E-04
  8.0000E+00   1.8000E-04
  2.4000E+01   2.3000E-04
  7.2000E+02   0.0000E+00
  0
Location 3:
TSC
  3
  0
  1
  2
  0.0000E+00   3.5000E-04
  7.2000E+02   0.0000E+00
  1
  4
  0.0000E+00   1.0000E+00
  2.4000E+01   6.0000E-01
  9.6000E+01   4.0000E-01
  7.2000E+02   0.0000E+00
Location 4:
Travel Path
  2
  1
  3
  0.0000E+00   0.0000E+00
```

```
  7.5000E-01   8.0000E-04
  1.0000E+00   0.0000E+00
  1


  4
  0.0000E+00   3.4700E-04
  8.0000E+00   1.7500E-04
  2.4000E+01   2.3200E-04
  7.2000E+02   0.0000E+00
  0
Effective Volume Location:
  1
  6
  0.0000E+00   2.3100E-04
  2.0000E+00   1.2900E-04
  8.0000E+00   5.5000E-05
  2.4000E+01   3.5200E-05
  9.6000E+01   3.0600E-05
  7.2000E+02   0.0000E+00
Simulation Parameters:
  7
  0.0000E+00   5.0000E-01
  1.0000E+00   1.0000E-01
  2.0000E+00   1.0000E+00
  8.0000E+00   2.0000E+00
  2.4000E+01   4.0000E+00
  9.6000E+01   8.0000E+00
  7.2000E+02   0.0000E+00
Output Filename:
C:\Documents and Settings\u004tjm\My Documents\TMI RADTRAD\Purge_TSC.o0
  1
  1
  1
  0
  0
End of Scenario File


#######################################################################
          RADTRAD Version 3.02 run on  5/15/2002  at  7:25:29
#######################################################################

#######################################################################
                     Plant Description
#######################################################################

Number of Nuclides =  60

Inventory Power =   1.0000E+00 MWth
Plant Power Level =   2.6190E+03 MWth

Number of compartments    =   3

Compartment information

Compartment number  1  (Source term fraction =   1.0000E+00
```

```
)
Name: Containment
Compartment volume =   2.1600E+06 (Cubic feet)
Pathways into and out of compartment  1


    Pathway to compartment number   2: Containment Leakage to Environment

Compartment number  2
Name: Environment
Pathways into and out of compartment  2
    Pathway to compartment number   3: TSC Filtered Air Intake
    Pathway to compartment number   3: TSC  Unfiltered Inleakage
    Pathway from compartment number 1: Containment Leakage to Environment
    Pathway from compartment number 3: TSC Exhaust to Environment

Compartment number  3
Name: TSC
Compartment volume =   4.2000E+04 (Cubic feet)
Removal devices within compartment:
     Filter(s)
Pathways into and out of compartment  3
    Pathway to compartment number   2: TSC Exhaust to Environment
    Pathway from compartment number 2: TSC Filtered Air Intake
    Pathway from compartment number 2: TSC  Unfiltered Inleakage

Total number of pathways =   4


#######################################################################
          RADTRAD Version 3.02 run on  5/15/2002  at  7:25:29
#######################################################################

#######################################################################
                     Scenario Description
#######################################################################

Radioactive Decay is enabled
RELEASE_NAME = TMI-1 Post-LOCA Containment Purge Releas
Release Fractions and Timings
                GAP       EARLY IN-VESSEL
              0.0003 hrs     0.0000 hrs
NOBLES        1.0000E+00     0.0000E+00
IODINE        1.0000E+00     0.0000E+00
CESIUM        0.0000E+00     0.0000E+00
TELLURIUM     0.0000E+00     0.0000E+00
STRONTIUM     0.0000E+00     0.0000E+00
BARIUM        0.0000E+00     0.0000E+00
RUTHENIUM     0.0000E+00     0.0000E+00
CERIUM        0.0000E+00     0.0000E+00
LANTHANUM     0.0000E+00     0.0000E+00

Iodine fractions
     Aerosol     =   9.5000E-01
     Elemental   =   4.8500E-02
     Organic     =   1.5000E-03
```

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**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 1 | System Nos. | Sheet 623 of 1000 |
|---|---|---|---|---|

COMPARTMENT DATA

Compartment number 1: Containment

Compartment number 2: Environment

Compartment number 3: TSC

Compartment Filter Data

| Time (hr) | Flow Rate (cfm) | Filter Efficiencies (%) Aerosol | Elemental | Organic |
|---|---|---|---|---|
| 0.0000E+00 | 1.4000E+03 | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 |
| 8.0000E-01 | 1.4000E+03 | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 |
| 1.0000E+00 | 1.4000E+03 | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 |
| 2.8000E+00 | 1.4000E+03 | 9.9000E+01 | 9.0000E+01 | 9.0000E+01 |
| 7.2000E+02 | 1.4000E+03 | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 |

PATHWAY DATA

Pathway number 1: Containment Leakage to Environment

Pathway Filter: Removal Data

| Time (hr) | Flow Rate (cfm) | Filter Efficiencies (%) Aerosol | Elemental | Organic |
|---|---|---|---|---|
| 0.0000E+00 | 1.4000E+04 | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 |
| 1.6700E-02 | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 |

Pathway number 2: TSC Filtered Air Intake

Pathway Filter: Removal Data

| Time (hr) | Flow Rate (cfm) | Filter Efficiencies (%) Aerosol | Elemental | Organic |
|---|---|---|---|---|
| 0.0000E+00 | 3.0000E+02 | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 |
| 8.0000E-01 | 3.0000E+02 | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 |
| 1.0000E+00 | 3.0000E+02 | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 |
| 2.8000E+00 | 6.0000E+02 | 9.9000E+01 | 9.0000E+01 | 9.0000E+01 |
| 7.2000E+02 | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 |

Pathway number 3: TSC Unfiltered Inleakage

Pathway Filter: Removal Data

| Time (hr) | Flow Rate (cfm) | Filter Efficiencies (%) Aerosol | Elemental | Organic |
|---|---|---|---|---|
| 0.0000E+00 | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 |
| 8.0000E-01 | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 |
| 1.0000E+00 | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 |
| 2.8000E+00 | 2.5000E+02 | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 |
| 7.2000E+02 | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 |

Pathway number 4: TSC Exhaust to Environment

Pathway Filter: Removal Data

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**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 1 | System Nos. | Sheet 624 of 1000 |
|---|---|---|---|---|

| Time (hr) | Flow Rate (cfm) | Filter Efficiencies (%) Aerosol | Elemental | Organic |
|---|---|---|---|---|
| 0.0000E+00 | 3.0000E+02 | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 |
| 8.0000E-01 | 3.0000E+02 | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 |
| 1.0000E+00 | 3.0000E+02 | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 |
| 2.8000E+00 | 8.5000E+02 | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 |
| 7.2000E+02 | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 |

LOCATION DATA

Location Exclusion Area Boundary is in compartment 2

Location X/Q Data

| Time (hr) | X/Q (s * m^-3) |
|---|---|
| 0.0000E+00 | 8.0000E-04 |
| 7.2000E+02 | 0.0000E+00 |

Location Breathing Rate Data

| Time (hr) | Breathing Rate (m^3 * sec^-1) |
|---|---|
| 0.0000E+00 | 3.5000E-04 |
| 2.0000E+00 | 0.0000E+00 |

Location Low Population Zone is in compartment 2

Location X/Q Data

| Time (hr) | X/Q (s * m^-3) |
|---|---|
| 0.0000E+00 | 1.4000E-04 |
| 2.0000E+00 | 6.0000E-05 |
| 8.0000E+00 | 3.9000E-05 |
| 2.4000E+01 | 1.6000E-05 |
| 9.6000E+01 | 4.0000E-06 |
| 7.2000E+02 | 0.0000E+00 |

Location Breathing Rate Data

| Time (hr) | Breathing Rate (m^3 * sec^-1) |
|---|---|
| 0.0000E+00 | 3.5000E-04 |
| 8.0000E+00 | 1.8000E-04 |
| 2.4000E+01 | 2.3000E-04 |
| 7.2000E+02 | 0.0000E+00 |

Location TSC is in compartment 3

Location X/Q Data

| Time (hr) | X/Q (s * m^-3) |
|---|---|
| 0.0000E+00 | 2.3100E-04 |
| 2.0000E+00 | 1.2900E-04 |
| 8.0000E+00 | 5.5000E-05 |
| 2.4000E+01 | 3.5200E-05 |
| 9.6000E+01 | 3.0600E-05 |
| 7.2000E+02 | 0.0000E+00 |

Location Breathing Rate Data

| Time (hr) | Breathing Rate (m^3 * sec^-1) |
|---|---|
| 0.0000E+00 | 3.5000E-04 |
| 7.2000E+02 | 0.0000E+00 |

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**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 1 | System Nos. | Sheet 625 of 1000 |
|---|---|---|---|---|

```
     Location Occupancy Factor Data
      Time (hr)         Occupancy Factor
       0.0000E+00            1.0000E+00
       2.4000E+01            6.0000E-01
       9.6000E+01            4.0000E-01
       7.2000E+02            0.0000E+00
     Location Travel Path     is in compartment   2


     Location X/Q Data
      Time (hr)         X/Q (s * m^-3)
       0.0000E+00          0.0000E+00
       7.5000E-01          8.0000E-04
       1.0000E+00          0.0000E+00

     Location Breathing Rate Data
      Time (hr)         Breathing Rate (m^3 * sec^-1)
       0.0000E+00                3.4700E-04
       8.0000E+00                1.7500E-04
       2.4000E+01                2.3200E-04
       7.2000E+02                0.0000E+00

USER SPECIFIED TIME STEP DATA - SUPPLEMENTAL TIME STEPS
     Time            Time step
      0.0000E+00       5.0000E-01
      1.0000E+00       1.0000E-01
      2.0000E+00       1.0000E+00
      8.0000E+00       2.0000E+00
      2.4000E+01       4.0000E+00
      9.6000E+01       8.0000E+00
      7.2000E+02       0.0000E+00

#######################################################################
          RADTRAD Version 3.02 run on  5/15/2002  at  7:25:29
#######################################################################




     ####   #    #  #####  #####   #    #  #####
    #    #  #    #    #    #    #  #    #    #
    #    #  #    #    #    #    #  #    #    #
    #    #  #    #    #    #####   #    #    #
    #    #  #    #    #    #       #    #    #
    #    #  #    #    #    #       #    #    #
     ####    ####     #    #        ####     #


#######################################################################
            Dose, Detailed model and Detailed Inventory Output
#######################################################################

Exclusion Area Boundary Doses:

Time (h) =   0.0003    Whole Body   Thyroid       TEDE
Delta dose (rem)        7.2620E-05  4.9326E-03  2.2525E-04
```

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**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 1 | System Nos. | Sheet 626 of 1000 |
|---|---|---|---|---|

```
Accumulated dose (rem)  7.2620E-05  4.9326E-03  2.2525E-04

Low Population Zone Doses:

Time (h) =   0.0003    Whole Body   Thyroid       TEDE
Delta dose (rem)        1.2708E-05  8.6321E-04  3.9418E-05
Accumulated dose (rem)  1.2708E-05  8.6321E-04  3.9418E-05



TSC Doses:

Time (h) =   0.0003    Whole Body   Thyroid       TEDE
Delta dose (rem)        3.9179E-11  8.5454E-08  2.6833E-09
Accumulated dose (rem)  3.9179E-11  8.5454E-08  2.6833E-09

Travel Path Doses:

Time (h) =   0.0003    Whole Body   Thyroid       TEDE
Delta dose (rem)        0.0000E+00  0.0000E+00  0.0000E+00
Accumulated dose (rem)  0.0000E+00  0.0000E+00  0.0000E+00

TSC Compartment Nuclide Inventory:

Time (h) =   0.0003       Ci           kg         Atoms         Bq
Kr-85                  7.8248E-06  1.9944E-11  1.4130E+14  2.8952E+05
Kr-85m                 1.2921E-06  1.5701E-16  1.1124E+09  4.7808E+04
Kr-87                  7.1243E-07  2.5151E-17  1.7410E+08  2.6360E+04
Kr-88                  2.2065E-06  1.7597E-16  1.2042E+09  8.1639E+04
I-131                  4.4244E-07  3.5688E-15  1.6406E+10  1.6370E+04
I-132                  1.6115E-07  1.5612E-17  7.1224E+07  5.9624E+03
I-133                  4.9802E-07  4.3964E-16  1.9906E+09  1.8427E+04
I-134                  5.8650E-08  2.1985E-18  9.8805E+06  2.1700E+03
I-135                  2.3865E-07  6.7957E-17  3.0315E+08  8.8302E+03
Xe-133                 2.2299E-04  1.1913E-12  5.3942E+12  8.2508E+06
Xe-135                 1.0194E-05  3.9916E-15  1.7806E+10  3.7716E+05

TSC Transport Group Inventory:

                                                Overlying
Time (h) =   0.0003    Atmosphere     Sump        Pool
Noble gases (atoms)    1.4672E+14  0.0000E+00  0.0000E+00
Elemental I (atoms)    9.1088E+08  0.0000E+00  0.0000E+00
Organic I (atoms)      2.8171E+07  0.0000E+00  0.0000E+00
Aerosols (kg)          3.8895E-15  0.0000E+00  0.0000E+00

                       Deposition Recirculating
Time (h) =   0.0003     Surfaces     Filter
Noble gases (atoms)    0.0000E+00  0.0000E+00
Elemental I (atoms)    0.0000E+00  0.0000E+00
Organic I (atoms)      0.0000E+00  0.0000E+00
Aerosols (kg)          0.0000E+00  0.0000E+00

TSC Filtered Air Intake Transport Group Inventory:

                        Pathway
Time (h) =   0.0003      Filter
```

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**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 1 | System Nos. | Sheet 627 of 1000 |
|---|---|---|---|---|

```
Noble gases (atoms)    0.0000E+00
Elemental I (atoms)    0.0000E+00
Organic I (atoms)      0.0000E+00
Aerosols (kg)          0.0000E+00

TSC  Unfiltered Inleakage Transport Group Inventory:




                        Pathway
Time (h) =   0.0003      Filter
Noble gases (atoms)    0.0000E+00
Elemental I (atoms)    0.0000E+00
Organic I (atoms)      0.0000E+00
Aerosols (kg)          0.0000E+00

TSC Exhaust to Environment Transport Group Inventory:

                        Pathway
Time (h) =   0.0003      Filter
Noble gases (atoms)    0.0000E+00
Elemental I (atoms)    0.0000E+00
Organic I (atoms)      0.0000E+00
Aerosols (kg)          0.0000E+00

Exclusion Area Boundary Doses:

Time (h) =   0.0167    Whole Body   Thyroid       TEDE
Delta dose (rem)        8.4892E-03  5.7667E-01  2.6332E-02
Accumulated dose (rem)  8.5618E-03  5.8160E-01  2.6558E-02

Low Population Zone Doses:

Time (h) =   0.0167    Whole Body   Thyroid       TEDE
Delta dose (rem)        1.4856E-03  1.0092E-01  4.6082E-03
Accumulated dose (rem)  1.4983E-03  1.0178E-01  4.6476E-03

TSC Doses:

Time (h) =   0.0167    Whole Body   Thyroid       TEDE
Delta dose (rem)        2.7229E-07  5.9394E-04  1.8650E-05
Accumulated dose (rem)  2.7232E-07  5.9403E-04  1.8653E-05

Travel Path Doses:

Time (h) =   0.0167    Whole Body   Thyroid       TEDE
Delta dose (rem)        0.0000E+00  0.0000E+00  0.0000E+00
Accumulated dose (rem)  0.0000E+00  0.0000E+00  0.0000E+00

TSC Compartment Nuclide Inventory:

Time (h) =   0.0167       Ci           kg         Atoms         Bq
Kr-85                  9.1939E-04  2.3434E-09  1.6603E+16  3.4017E+07
Kr-85m                 1.5143E-04  1.8401E-14  1.3037E+11  5.6031E+06
Kr-87                  8.2962E-05  2.9289E-15  2.0274E+10  3.0696E+06
```

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**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 1 | System Nos. | Sheet 628 of 1000 |
|---|---|---|---|---|

| | | | | |
|---|---|---|---|---|
| Kr-88 | 2.5822E-04 | 2.0593E-14 | 1.4092E+11 | 9.5540E+06 |
| I-131 | 5.1983E-05 | 4.1930E-13 | 1.9275E+12 | 1.9234E+06 |
| I-132 | 1.8841E-05 | 1.8253E-15 | 8.3273E+09 | 6.9711E+05 |
| I-133 | 5.8484E-05 | 5.1628E-14 | 2.3377E+11 | 2.1639E+06 |
| I-134 | 6.8023E-06 | 2.5499E-16 | 1.1460E+09 | 2.5168E+05 |
| I-135 | 2.7993E-05 | 7.9710E-15 | 3.5557E+10 | 1.0357E+06 |
| Xe-133 | 2.6199E-02 | 1.3996E-10 | 6.3374E+14 | 9.6935E+08 |
| Xe-135 | 1.1962E-03 | 4.6842E-13 | 2.0895E+12 | 4.4260E+07 |

TSC Transport Group Inventory:

| Time (h) = 0.0167 | Atmosphere | Sump | Overlying Pool |
|---|---|---|---|
| Noble gases (atoms) | 1.7239E+16 | 0.0000E+00 | 0.0000E+00 |
| Elemental I (atoms) | 1.0703E+11 | 0.0000E+00 | 0.0000E+00 |
| Organic I (atoms) | 3.3101E+09 | 0.0000E+00 | 0.0000E+00 |
| Aerosols (kg) | 4.5701E-13 | 0.0000E+00 | 0.0000E+00 |

| Time (h) = 0.0167 | Deposition Surfaces | Recirculating Filter |
|---|---|---|
| Noble gases (atoms) | 0.0000E+00 | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 | 0.0000E+00 |

TSC Filtered Air Intake Transport Group Inventory:

| Time (h) = 0.0167 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 |

TSC Unfiltered Inleakage Transport Group Inventory:

| Time (h) = 0.0167 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 |

TSC Exhaust to Environment Transport Group Inventory:

| Time (h) = 0.0167 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 |

Exclusion Area Boundary Doses:

| Time (h) = 0.7500 | Whole Body | Thyroid | TEDE |
|---|---|---|---|
| Delta dose (rem) | 7.2543E-08 | 5.0954E-06 | 2.3014E-07 |

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**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 1 | System Nos. | Sheet 629 of 1000 |
|---|---|---|---|---|

```
Accumulated dose (rem)  8.5618E-03  5.8161E-01  2.6558E-02

Low Population Zone Doses:

Time (h) =   0.7500    Whole Body   Thyroid       TEDE
Delta dose (rem)        1.2695E-08  8.9170E-07  4.0275E-08
Accumulated dose (rem)  1.4983E-03  1.0178E-01  4.6476E-03

TSC Doses:

Time (h) =   0.7500    Whole Body   Thyroid       TEDE


Delta dose (rem)        1.9948E-05  4.4992E-02  1.4116E-03
Accumulated dose (rem)  2.0220E-05  4.5586E-02  1.4302E-03

Travel Path Doses:

Time (h) =   0.7500    Whole Body   Thyroid       TEDE
Delta dose (rem)        0.0000E+00  0.0000E+00  0.0000E+00
Accumulated dose (rem)  0.0000E+00  0.0000E+00  0.0000E+00

TSC Compartment Nuclide Inventory:

Time (h) =   0.7500       Ci           kg         Atoms         Bq
Kr-85                  6.7145E-04  1.7114E-09  1.2125E+16  2.4844E+07
Kr-85m                 9.8734E-05  1.1998E-14  8.5001E+10  3.6532E+06
Kr-87                  4.0627E-05  1.4343E-15  9.9280E+09  1.5032E+06
Kr-88                  1.5768E-04  1.2575E-14  8.6054E+10  5.8341E+06
I-131                  3.7864E-05  3.0542E-13  1.4040E+12  1.4010E+06
I-132                  1.1032E-05  1.0687E-15  4.8758E+09  4.0817E+05
I-133                  4.1682E-05  3.6795E-14  1.6660E+11  1.5422E+06
I-134                  2.7821E-06  1.0429E-16  4.6869E+08  1.0294E+05
I-135                  1.8931E-05  5.3906E-15  2.4046E+10  7.0044E+05
Xe-133                 1.9056E-02  1.0181E-10  4.6098E+14  7.0509E+08
Xe-135                 8.2611E-04  3.2349E-13  1.4431E+12  3.0566E+07

TSC Transport Group Inventory:

                                                Overlying
Time (h) =   0.7500    Atmosphere     Sump        Pool
Noble gases (atoms)    1.2590E+16  0.0000E+00  0.0000E+00
Elemental I (atoms)    7.8163E+10  0.0000E+00  0.0000E+00
Organic I (atoms)      2.4174E+09  0.0000E+00  0.0000E+00
Aerosols (kg)          3.3376E-13  0.0000E+00  0.0000E+00

                       Deposition Recirculating
Time (h) =   0.7500     Surfaces     Filter
Noble gases (atoms)    0.0000E+00  0.0000E+00
Elemental I (atoms)    0.0000E+00  0.0000E+00
Organic I (atoms)      0.0000E+00  0.0000E+00
Aerosols (kg)          0.0000E+00  0.0000E+00

TSC Filtered Air Intake Transport Group Inventory:

                        Pathway
Time (h) =   0.7500      Filter
```

```
Noble gases (atoms)    0.0000E+00
Elemental I (atoms)    0.0000E+00
Organic I (atoms)      0.0000E+00
Aerosols (kg)          0.0000E+00

TSC  Unfiltered Inleakage Transport Group Inventory:

                        Pathway
Time (h) =   0.7500      Filter
Noble gases (atoms)    0.0000E+00
Elemental I (atoms)    0.0000E+00
Organic I (atoms)      0.0000E+00


Aerosols (kg)          0.0000E+00

TSC Exhaust to Environment Transport Group Inventory:

                        Pathway
Time (h) =   0.7500      Filter
Noble gases (atoms)    0.0000E+00
Elemental I (atoms)    0.0000E+00
Organic I (atoms)      0.0000E+00
Aerosols (kg)          0.0000E+00

Exclusion Area Boundary Doses:

Time (h) =   0.8000    Whole Body   Thyroid       TEDE
Delta dose (rem)        3.9671E-09  2.9129E-07  1.2972E-08
Accumulated dose (rem)  8.5619E-03  5.8161E-01  2.6558E-02

Low Population Zone Doses:

Time (h) =   0.8000    Whole Body   Thyroid       TEDE
Delta dose (rem)        6.9424E-10  5.0976E-08  2.2701E-09
Accumulated dose (rem)  1.4983E-03  1.0178E-01  4.6476E-03

TSC Doses:

Time (h) =   0.8000    Whole Body   Thyroid       TEDE
Delta dose (rem)        1.0907E-06  2.5718E-03  8.0596E-05
Accumulated dose (rem)  2.1311E-05  4.8158E-02  1.5108E-03

Travel Path Doses:

Time (h) =   0.8000    Whole Body   Thyroid       TEDE
Delta dose (rem)        3.9671E-09  2.8879E-07  1.2895E-08
Accumulated dose (rem)  3.9671E-09  2.8879E-07  1.2895E-08

TSC Compartment Nuclide Inventory:

Time (h) =   0.8000       Ci           kg         Atoms         Bq
Kr-85                  6.5722E-04  1.6751E-09  1.1868E+16  2.4317E+07
Kr-85m                 9.5896E-05  1.1653E-14  8.2558E+10  3.5482E+06
Kr-87                  3.8696E-05  1.3661E-15  9.4563E+09  1.4318E+06
Kr-88                  1.5246E-04  1.2159E-14  8.3208E+10  5.6412E+06
I-131                  3.7055E-05  2.9889E-13  1.3740E+12  1.3710E+06
```

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**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 1 | System Nos. | Sheet 631 of 1000 |
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| | | | | |
|---|---|---|---|---|
| I-132 | 1.0636E-05 | 1.0304E-15 | 4.7011E+09 | 3.9354E+05 |
| I-133 | 4.0730E-05 | 3.5955E-14 | 1.6280E+11 | 1.5070E+06 |
| I-134 | 2.6176E-06 | 9.8122E-17 | 4.4097E+08 | 9.6850E+04 |
| I-135 | 1.8433E-05 | 5.2487E-15 | 2.3414E+10 | 6.8201E+05 |
| Xe-133 | 1.8647E-02 | 9.9622E-11 | 4.5108E+14 | 6.8995E+08 |
| Xe-135 | 8.0552E-04 | 3.1543E-13 | 1.4071E+12 | 2.9804E+07 |

TSC Transport Group Inventory:

| Time (h) = 0.8000 | Atmosphere | Sump | Overlying Pool |
|---|---|---|---|
| Noble gases (atoms) | 1.2323E+16 | 0.0000E+00 | 0.0000E+00 |
| Elemental I (atoms) | 7.6506E+10 | 0.0000E+00 | 0.0000E+00 |
| Organic I (atoms) | 2.3662E+09 | 0.0000E+00 | 0.0000E+00 |
| Aerosols (kg) | 3.2669E-13 | 0.0000E+00 | 0.0000E+00 |

| Time (h) = 0.8000 | Deposition Surfaces | Recirculating Filter |
|---|---|---|
| Noble gases (atoms) | 0.0000E+00 | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 | 0.0000E+00 |

TSC Filtered Air Intake Transport Group Inventory:

| Time (h) = 0.8000 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 |

TSC Unfiltered Inleakage Transport Group Inventory:

| Time (h) = 0.8000 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 |

TSC Exhaust to Environment Transport Group Inventory:

| Time (h) = 0.8000 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 |

Exclusion Area Boundary Doses:

| Time (h) = 1.0000 | Whole Body | Thyroid | TEDE |
|---|---|---|---|
| Delta dose (rem) | 1.4889E-08 | 1.1036E-06 | 4.9003E-08 |
| Accumulated dose (rem) | 8.5619E-03 | 5.8161E-01 | 2.6558E-02 |

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**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 1 | System Nos. | Sheet 632 of 1000 |
|---|---|---|---|---|

Low Population Zone Doses:

| Time (h) = 1.0000 | Whole Body | Thyroid | TEDE |
|---|---|---|---|
| Delta dose (rem) | 2.6056E-09 | 1.9314E-07 | 8.5756E-09 |
| Accumulated dose (rem) | 1.4983E-03 | 1.0178E-01 | 4.6477E-03 |

TSC Doses:

| Time (h) = 1.0000 | Whole Body | Thyroid | TEDE |
|---|---|---|---|
| Delta dose (rem) | 4.0942E-06 | 9.7451E-03 | 3.0532E-04 |
| Accumulated dose (rem) | 2.5405E-05 | 5.7903E-02 | 1.8161E-03 |

Travel Path Doses:

| Time (h) = 1.0000 | Whole Body | Thyroid | TEDE |
|---|---|---|---|
| Delta dose (rem) | 1.4889E-08 | 1.0942E-06 | 4.8711E-08 |
| Accumulated dose (rem) | 1.8856E-08 | 1.3830E-06 | 6.1606E-08 |

TSC Compartment Nuclide Inventory:

| Time (h) = 1.0000 | Ci | kg | Atoms | Bq |
|---|---|---|---|---|
| Kr-85 | 6.0323E-04 | 1.5375E-09 | 1.0893E+16 | 2.2320E+07 |
| Kr-85m | 8.5337E-05 | 1.0370E-14 | 7.3468E+10 | 3.1575E+06 |
| Kr-87 | 3.1849E-05 | 1.1244E-15 | 7.7831E+09 | 1.1784E+06 |
| Kr-88 | 1.3327E-04 | 1.0629E-14 | 7.2735E+10 | 4.9311E+06 |
| I-131 | 3.3987E-05 | 2.7414E-13 | 1.2603E+12 | 1.2575E+06 |
| I-132 | 9.1915E-06 | 8.9047E-16 | 4.0625E+09 | 3.4009E+05 |
| I-133 | 3.7136E-05 | 3.2782E-14 | 1.4844E+11 | 1.3740E+06 |
| I-134 | 2.0511E-06 | 7.6889E-17 | 3.4555E+08 | 7.5893E+04 |
| I-135 | 1.6567E-05 | 4.7176E-15 | 2.1044E+10 | 6.1300E+05 |
| Xe-133 | 1.7097E-02 | 9.1338E-11 | 4.1357E+14 | 6.3258E+08 |
| Xe-135 | 7.2817E-04 | 2.8514E-13 | 1.2720E+12 | 2.6942E+07 |

TSC Transport Group Inventory:

| Time (h) = 1.0000 | Atmosphere | Sump | Overlying Pool |
|---|---|---|---|
| Noble gases (atoms) | 1.1311E+16 | 0.0000E+00 | 0.0000E+00 |
| Elemental I (atoms) | 7.0222E+10 | 0.0000E+00 | 0.0000E+00 |
| Organic I (atoms) | 2.1718E+09 | 0.0000E+00 | 0.0000E+00 |
| Aerosols (kg) | 2.9985E-13 | 0.0000E+00 | 0.0000E+00 |

| Time (h) = 1.0000 | Deposition Surfaces | Recirculating Filter |
|---|---|---|
| Noble gases (atoms) | 0.0000E+00 | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 | 0.0000E+00 |

TSC Filtered Air Intake Transport Group Inventory:

Pathway

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**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 1 | System Nos. | Sheet 633 of 1000 |
|---|---|---|---|---|

```
Time (h) =   1.0000      Filter
Noble gases (atoms)    0.0000E+00
Elemental I (atoms)    0.0000E+00
Organic I (atoms)      0.0000E+00
Aerosols (kg)          0.0000E+00

TSC  Unfiltered Inleakage Transport Group Inventory:

                        Pathway
Time (h) =   1.0000      Filter
Noble gases (atoms)    0.0000E+00
Elemental I (atoms)    0.0000E+00
Organic I (atoms)      0.0000E+00
Aerosols (kg)          0.0000E+00

TSC Exhaust to Environment Transport Group Inventory:

                        Pathway
Time (h) =   1.0000      Filter
Noble gases (atoms)    0.0000E+00
Elemental I (atoms)    0.0000E+00
Organic I (atoms)      0.0000E+00
Aerosols (kg)          0.0000E+00

Exclusion Area Boundary Doses:

Time (h) =   2.0000    Whole Body   Thyroid       TEDE
Delta dose (rem)        5.4861E-08  4.2750E-06  1.8693E-07
Accumulated dose (rem)  8.5619E-03  5.8161E-01  2.6558E-02

Low Population Zone Doses:

Time (h) =   2.0000    Whole Body   Thyroid       TEDE
Delta dose (rem)        9.6006E-09  7.4812E-07  3.2713E-08
Accumulated dose (rem)  1.4983E-03  1.0178E-01  4.6477E-03

TSC Doses:

Time (h) =   2.0000    Whole Body   Thyroid       TEDE
Delta dose (rem)        1.5086E-05  3.7748E-02  1.1813E-03
Accumulated dose (rem)  4.0490E-05  9.5651E-02  2.9974E-03

Travel Path Doses:




Time (h) =   2.0000    Whole Body   Thyroid       TEDE
Delta dose (rem)        0.0000E+00  0.0000E+00  0.0000E+00
Accumulated dose (rem)  1.8856E-08  1.3830E-06  6.1606E-08

TSC Compartment Nuclide Inventory:

Time (h) =   2.0000       Ci           kg         Atoms         Bq
Kr-85                  3.9297E-04  1.0016E-09  7.0964E+15  1.4540E+07
Kr-85m                 4.7624E-05  5.7870E-15  4.1000E+10  1.7621E+06
```

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**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 1 | System Nos. | Sheet 634 of 1000 |
|---|---|---|---|---|

| | | | | |
|---|---|---|---|---|
| Kr-87 | 1.2030E-05 | 4.2470E-16 | 2.9397E+09 | 4.4510E+05 |
| Kr-88 | 6.8019E-05 | 5.4245E-15 | 3.7122E+10 | 2.5167E+06 |
| I-131 | 2.2061E-05 | 1.7795E-13 | 8.1805E+11 | 8.1627E+05 |
| I-132 | 4.4298E-06 | 4.2916E-16 | 1.9579E+09 | 1.6390E+05 |
| I-133 | 2.3399E-05 | 2.0656E-14 | 9.3529E+10 | 8.6577E+05 |
| I-134 | 6.0603E-07 | 2.2718E-17 | 1.0210E+08 | 2.2423E+04 |
| I-135 | 9.7184E-06 | 2.7673E-15 | 1.2345E+10 | 3.5958E+05 |
| Xe-133 | 1.1077E-02 | 5.9175E-11 | 2.6794E+14 | 4.0983E+08 |
| Xe-135 | 4.3954E-04 | 1.7212E-13 | 7.6778E+11 | 1.6263E+07 |

TSC Transport Group Inventory:

| Time (h) = 2.0000 | Atmosphere | Sump | Overlying Pool |
|---|---|---|---|
| Noble gases (atoms) | 7.3684E+15 | 0.0000E+00 | 0.0000E+00 |
| Elemental I (atoms) | 4.5746E+10 | 0.0000E+00 | 0.0000E+00 |
| Organic I (atoms) | 1.4148E+09 | 0.0000E+00 | 0.0000E+00 |
| Aerosols (kg) | 1.9534E-13 | 0.0000E+00 | 0.0000E+00 |

| Time (h) = 2.0000 | Deposition Surfaces | Recirculating Filter |
|---|---|---|
| Noble gases (atoms) | 0.0000E+00 | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 | 0.0000E+00 |

TSC Filtered Air Intake Transport Group Inventory:

| Time (h) = 2.0000 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 |

TSC Unfiltered Inleakage Transport Group Inventory:

| Time (h) = 2.0000 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 |

TSC Exhaust to Environment Transport Group Inventory:

| Time (h) = 2.0000 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 |

Exclusion Area Boundary Doses:

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**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 1 | System Nos. | Sheet 635 of 1000 |
|---|---|---|---|---|

```
Time (h) =   2.8000    Whole Body   Thyroid       TEDE
Delta dose (rem)        2.7443E-08  0.0000E+00  2.7443E-08
Accumulated dose (rem)  8.5619E-03  5.8161E-01  2.6558E-02

Low Population Zone Doses:

Time (h) =   2.8000    Whole Body   Thyroid       TEDE
Delta dose (rem)        2.0583E-09  1.7244E-07  7.3812E-09
Accumulated dose (rem)  1.4983E-03  1.0178E-01  4.6477E-03

TSC Doses:

Time (h) =   2.8000    Whole Body   Thyroid       TEDE
Delta dose (rem)        7.5464E-06  2.0302E-02  6.3423E-04
Accumulated dose (rem)  4.8037E-05  1.1595E-01  3.6316E-03



Travel Path Doses:

Time (h) =   2.8000    Whole Body   Thyroid       TEDE
Delta dose (rem)        0.0000E+00  0.0000E+00  0.0000E+00
Accumulated dose (rem)  1.8856E-08  1.3830E-06  6.1606E-08

TSC Compartment Nuclide Inventory:

Time (h) =   2.8000       Ci           kg         Atoms         Bq
Kr-85                  2.7891E-04  7.1089E-10  5.0366E+15  1.0320E+07
Kr-85m                 2.9866E-05  3.6291E-15  2.5712E+10  1.1050E+06
Kr-87                  5.5206E-06  1.9490E-16  1.3491E+09  2.0426E+05
Kr-88                  3.9713E-05  3.1671E-15  2.1674E+10  1.4694E+06
I-131                  1.5613E-05  1.2594E-13  5.7894E+11  5.7768E+05
I-132                  2.4705E-06  2.3934E-16  1.0919E+09  9.1408E+04
I-133                  1.6171E-05  1.4275E-14  6.4635E+10  5.9831E+05
I-134                  2.2850E-07  8.5657E-18  3.8495E+07  8.4547E+03
I-135                  6.3425E-06  1.8060E-15  8.0564E+09  2.3467E+05
Xe-133                 7.8269E-03  4.1815E-11  1.8933E+14  2.8960E+08
Xe-135                 2.9350E-04  1.1493E-13  5.1268E+11  1.0859E+07

TSC Transport Group Inventory:

                                                Overlying
Time (h) =   2.8000    Atmosphere     Sump        Pool
Noble gases (atoms)    5.2297E+15  0.0000E+00  0.0000E+00
Elemental I (atoms)    3.2468E+10  0.0000E+00  0.0000E+00
Organic I (atoms)      1.0042E+09  0.0000E+00  0.0000E+00
Aerosols (kg)          1.3864E-13  0.0000E+00  0.0000E+00



                       Deposition Recirculating
Time (h) =   2.8000     Surfaces     Filter
Noble gases (atoms)    0.0000E+00  0.0000E+00
Elemental I (atoms)    0.0000E+00  0.0000E+00
Organic I (atoms)      0.0000E+00  0.0000E+00
```

```
Aerosols (kg)          0.0000E+00  0.0000E+00

TSC Filtered Air Intake Transport Group Inventory:

                        Pathway
Time (h) =   2.8000      Filter
Noble gases (atoms)    0.0000E+00
Elemental I (atoms)    0.0000E+00
Organic I (atoms)      0.0000E+00
Aerosols (kg)          0.0000E+00

TSC  Unfiltered Inleakage Transport Group Inventory:

                        Pathway
Time (h) =   2.8000      Filter
Noble gases (atoms)    0.0000E+00
Elemental I (atoms)    0.0000E+00



Organic I (atoms)      0.0000E+00
Aerosols (kg)          0.0000E+00

TSC Exhaust to Environment Transport Group Inventory:

                        Pathway
Time (h) =   2.8000      Filter
Noble gases (atoms)    0.0000E+00
Elemental I (atoms)    0.0000E+00
Organic I (atoms)      0.0000E+00
Aerosols (kg)          0.0000E+00

Exclusion Area Boundary Doses:

Time (h) =   8.0000    Whole Body   Thyroid       TEDE
Delta dose (rem)        5.8690E-08  0.0000E+00  5.8690E-08
Accumulated dose (rem)  8.5620E-03  5.8161E-01  2.6558E-02

Low Population Zone Doses:

Time (h) =   8.0000    Whole Body   Thyroid       TEDE
Delta dose (rem)        4.4018E-09  1.5968E-07  9.3280E-09
Accumulated dose (rem)  1.4983E-03  1.0178E-01  4.6477E-03

TSC Doses:

Time (h) =   8.0000    Whole Body   Thyroid       TEDE
Delta dose (rem)        5.7034E-06  6.6900E-03  2.1210E-04
Accumulated dose (rem)  5.3740E-05  1.2264E-01  3.8437E-03

Travel Path Doses:




Time (h) =   8.0000    Whole Body   Thyroid       TEDE
```

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**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 1 | System Nos. | Sheet 637 of 1000 |
|---|---|---|---|---|

```
Delta dose (rem)        0.0000E+00  0.0000E+00  0.0000E+00
Accumulated dose (rem)  1.8856E-08  1.3830E-06  6.1606E-08

TSC Compartment Nuclide Inventory:

Time (h) =   8.0000       Ci           kg         Atoms         Bq
Kr-85                  5.0504E-07  1.2873E-12  9.1202E+12  1.8687E+04
Kr-85m                 2.4190E-08  2.9395E-18  2.0826E+07  8.9505E+02
Kr-87                  5.8738E-10  2.0737E-20  1.4354E+05  2.1733E+01
Kr-88                  2.0213E-08  1.6120E-18  1.1031E+07  7.4789E+02
Xe-133                 1.3773E-05  7.3583E-14  3.3318E+11  5.0961E+05
Xe-135                 3.5750E-07  1.3999E-16  6.2448E+08  1.3228E+04

TSC Transport Group Inventory:

                                                Overlying
Time (h) =   8.0000    Atmosphere     Sump        Pool
Noble gases (atoms)    9.4702E+12  0.0000E+00  0.0000E+00
Elemental I (atoms)    5.0612E+03  0.0000E+00  0.0000E+00
Organic I (atoms)      1.5653E+02  0.0000E+00  0.0000E+00
Aerosols (kg)          8.4758E-21  0.0000E+00  0.0000E+00

                       Deposition Recirculating
Time (h) =   8.0000     Surfaces     Filter
Noble gases (atoms)    0.0000E+00  0.0000E+00
Elemental I (atoms)    0.0000E+00  1.9381E+10
Organic I (atoms)      0.0000E+00  5.9941E+08
Aerosols (kg)          0.0000E+00  8.5898E-14

TSC Filtered Air Intake Transport Group Inventory:

                        Pathway
Time (h) =   8.0000      Filter
Noble gases (atoms)    0.0000E+00
Elemental I (atoms)    6.3166E+11
Organic I (atoms)      1.9536E+10
Aerosols (kg)          2.8086E-12

TSC  Unfiltered Inleakage Transport Group Inventory:

                        Pathway
Time (h) =   8.0000      Filter
Noble gases (atoms)    0.0000E+00
Elemental I (atoms)    0.0000E+00
Organic I (atoms)      0.0000E+00
Aerosols (kg)          0.0000E+00

TSC Exhaust to Environment Transport Group Inventory:

                        Pathway
Time (h) =   8.0000      Filter
Noble gases (atoms)    0.0000E+00
Elemental I (atoms)    0.0000E+00
Organic I (atoms)      0.0000E+00
Aerosols (kg)          0.0000E+00
```

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**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 1 | System Nos. | Sheet 638 of 1000 |
|---|---|---|---|---|

```
Exclusion Area Boundary Doses:

Time (h) =  24.0000    Whole Body   Thyroid       TEDE
Delta dose (rem)        8.1076E-11  0.0000E+00  8.1076E-11
Accumulated dose (rem)  8.5620E-03  5.8161E-01  2.6558E-02

Low Population Zone Doses:

Time (h) =  24.0000    Whole Body   Thyroid       TEDE
Delta dose (rem)        3.9524E-12  3.3775E-15  3.9525E-12
Accumulated dose (rem)  1.4983E-03  1.0178E-01  4.6477E-03

TSC Doses:

Time (h) =  24.0000    Whole Body   Thyroid       TEDE
Delta dose (rem)        7.8807E-09  4.2329E-10  7.8937E-09
Accumulated dose (rem)  5.3748E-05  1.2264E-01  3.8437E-03

Travel Path Doses:

Time (h) =  24.0000    Whole Body   Thyroid       TEDE
Delta dose (rem)        0.0000E+00  0.0000E+00  0.0000E+00
Accumulated dose (rem)  1.8856E-08  1.3830E-06  6.1606E-08

TSC Compartment Nuclide Inventory:

Time (h) =  24.0000       Ci           kg         Atoms         Bq

TSC Transport Group Inventory:

                                                Overlying
Time (h) =  24.0000    Atmosphere     Sump        Pool
Noble gases (atoms)    3.4579E+04  0.0000E+00  0.0000E+00
Elemental I (atoms)    5.7388E-18  0.0000E+00  0.0000E+00
Organic I (atoms)      1.7749E-19  0.0000E+00  0.0000E+00
Aerosols (kg)          5.3939E-43  0.0000E+00  0.0000E+00

                       Deposition Recirculating
Time (h) =  24.0000     Surfaces     Filter
Noble gases (atoms)    0.0000E+00  0.0000E+00
Elemental I (atoms)    0.0000E+00  1.9381E+10
Organic I (atoms)      0.0000E+00  5.9941E+08
Aerosols (kg)          0.0000E+00  8.5898E-14

TSC Filtered Air Intake Transport Group Inventory:

                        Pathway
Time (h) =  24.0000      Filter
Noble gases (atoms)    0.0000E+00
Elemental I (atoms)    6.3166E+11
Organic I (atoms)      1.9536E+10
Aerosols (kg)          2.8086E-12

TSC  Unfiltered Inleakage Transport Group Inventory:
```

```
                          Pathway
Time (h) =  24.0000        Filter
Noble gases (atoms)     0.0000E+00
Elemental I (atoms)     0.0000E+00
Organic I (atoms)       0.0000E+00
Aerosols (kg)           0.0000E+00

TSC Exhaust to Environment Transport Group Inventory:

                          Pathway
Time (h) =  24.0000        Filter
Noble gases (atoms)     0.0000E+00
Elemental I (atoms)     0.0000E+00
Organic I (atoms)       0.0000E+00
Aerosols (kg)           0.0000E+00

Exclusion Area Boundary Doses:

Time (h) =  96.0000    Whole Body   Thyroid       TEDE
Delta dose (rem)        2.2742E-19  0.0000E+00  2.2742E-19
Accumulated dose (rem)  8.5620E-03  5.8161E-01  2.6558E-02

Low Population Zone Doses:

Time (h) =  96.0000    Whole Body   Thyroid       TEDE
Delta dose (rem)        4.5483E-21  3.1222E-37  4.5483E-21
Accumulated dose (rem)  1.4983E-03  1.0178E-01  4.6477E-03

TSC Doses:

Time (h) =  96.0000    Whole Body   Thyroid       TEDE
Delta dose (rem)        3.2659E-17  2.7228E-31  3.2659E-17
Accumulated dose (rem)  5.3748E-05  1.2264E-01  3.8437E-03

Travel Path Doses:

Time (h) =  96.0000    Whole Body   Thyroid       TEDE
Delta dose (rem)        0.0000E+00  0.0000E+00  0.0000E+00
Accumulated dose (rem)  1.8856E-08  1.3830E-06  6.1606E-08

TSC Compartment Nuclide Inventory:

Time (h) =  96.0000       Ci           kg         Atoms         Bq

TSC Transport Group Inventory:

                                                Overlying
Time (h) =  96.0000    Atmosphere     Sump         Pool
Noble gases (atoms)    3.7116E-34  0.0000E+00  0.0000E+00
Elemental I (atoms)    3.1921-112  0.0000E+00  0.0000E+00
Organic I (atoms)      9.8724-114  0.0000E+00  0.0000E+00
Aerosols (kg)          7.0510-143  0.0000E+00  0.0000E+00

                       Deposition Recirculating
Time (h) =  96.0000     Surfaces     Filter
Noble gases (atoms)    0.0000E+00  0.0000E+00
```

```
Elemental I (atoms)    0.0000E+00  1.9381E+10
Organic I (atoms)      0.0000E+00  5.9941E+08
Aerosols (kg)          0.0000E+00  8.5898E-14

TSC Filtered Air Intake Transport Group Inventory:

                        Pathway
Time (h) =  96.0000      Filter
Noble gases (atoms)    0.0000E+00
Elemental I (atoms)    6.3166E+11
Organic I (atoms)      1.9536E+10
Aerosols (kg)          2.8086E-12

TSC  Unfiltered Inleakage Transport Group Inventory:

                        Pathway
Time (h) =  96.0000      Filter
Noble gases (atoms)    0.0000E+00
Elemental I (atoms)    0.0000E+00
Organic I (atoms)      0.0000E+00
Aerosols (kg)          0.0000E+00

TSC Exhaust to Environment Transport Group Inventory:

                        Pathway
Time (h) =  96.0000      Filter
Noble gases (atoms)    0.0000E+00
Elemental I (atoms)    0.0000E+00
Organic I (atoms)      0.0000E+00
Aerosols (kg)          0.0000E+00

Exclusion Area Boundary Doses:

Time (h) = 720.0000    Whole Body   Thyroid       TEDE
Delta dose (rem)        1.5427E-57  0.0000E+00  1.5427E-57
Accumulated dose (rem)  8.5620E-03  5.8161E-01  2.6558E-02

Low Population Zone Doses:

Time (h) = 720.0000    Whole Body   Thyroid       TEDE
Delta dose (rem)        7.7134E-60  2.2225-132  7.7134E-60
Accumulated dose (rem)  1.4983E-03  1.0178E-01  4.6477E-03

TSC Doses:

Time (h) = 720.0000    Whole Body   Thyroid       TEDE
Delta dose (rem)        1.4770E-55  5.0827-126  1.4770E-55
Accumulated dose (rem)  5.3748E-05  1.2264E-01  3.8437E-03

Travel Path Doses:

Time (h) = 720.0000    Whole Body   Thyroid       TEDE
Delta dose (rem)        0.0000E+00  0.0000E+00  0.0000E+00
Accumulated dose (rem)  1.8856E-08  1.3830E-06  6.1606E-08
```

AmerGen

**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 1 | System Nos. | Sheet 641 of 1000 |
|---|---|---|---|---|

```
TSC Compartment Nuclide Inventory:


Time (h) = 720.0000       Ci           kg         Atoms         Bq

TSC Transport Group Inventory:

                                                 Overlying
Time (h) = 720.0000    Atmosphere     Sump         Pool
Noble gases (atoms)    0.0000E+00  0.0000E+00  0.0000E+00
Elemental I (atoms)    0.0000E+00  0.0000E+00  0.0000E+00
Organic I (atoms)      0.0000E+00  0.0000E+00  0.0000E+00
Aerosols (kg)          0.0000E+00  0.0000E+00  0.0000E+00

                       Deposition Recirculating
Time (h) = 720.0000     Surfaces     Filter
Noble gases (atoms)    0.0000E+00  0.0000E+00
Elemental I (atoms)    0.0000E+00  1.9381E+10
Organic I (atoms)      0.0000E+00  5.9941E+08
Aerosols (kg)          0.0000E+00  8.5898E-14




TSC Filtered Air Intake Transport Group Inventory:

                        Pathway
Time (h) = 720.0000      Filter
Noble gases (atoms)    0.0000E+00
Elemental I (atoms)    6.3166E+11
Organic I (atoms)      1.9536E+10
Aerosols (kg)          2.8086E-12

TSC  Unfiltered Inleakage Transport Group Inventory:

                        Pathway
Time (h) = 720.0000      Filter
Noble gases (atoms)    0.0000E+00
Elemental I (atoms)    0.0000E+00
Organic I (atoms)      0.0000E+00
Aerosols (kg)          0.0000E+00

TSC Exhaust to Environment Transport Group Inventory:

                        Pathway
Time (h) = 720.0000      Filter
Noble gases (atoms)    0.0000E+00
Elemental I (atoms)    0.0000E+00
Organic I (atoms)      0.0000E+00
Aerosols (kg)          0.0000E+00

    312

#################################################################
                          I-131 Summary
#################################################################
```

AmerGen

**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 1 | System Nos. | Sheet 642 of 1000 |
|---|---|---|---|---|

| Time (hr) | Containment I-131 (Curies) | Environment I-131 (Curies) | TSC I-131 (Curies) |
|---|---|---|---|
| 0.000 | 2.4848E+02 | 1.3528E-02 | 4.4244E-07 |
| 0.017 | 2.4688E+02 | 1.5950E+00 | 5.1983E-05 |
| 0.417 | 2.4653E+02 | 1.5951E+00 | 4.3731E-05 |
| 0.700 | 2.4628E+02 | 1.5951E+00 | 3.8691E-05 |
| 0.750 | 2.4623E+02 | 1.5951E+00 | 3.7864E-05 |
| 0.800 | 2.4619E+02 | 1.5951E+00 | 3.7055E-05 |
| 1.000 | 2.4601E+02 | 1.5951E+00 | 3.3987E-05 |
| 1.300 | 2.4575E+02 | 1.5951E+00 | 2.9854E-05 |
| 1.600 | 2.4548E+02 | 1.5951E+00 | 2.6224E-05 |
| 1.900 | 2.4522E+02 | 1.5951E+00 | 2.3036E-05 |
| 2.000 | 2.4513E+02 | 1.5951E+00 | 2.2061E-05 |
| 2.300 | 2.4486E+02 | 1.5951E+00 | 1.9379E-05 |
| 2.600 | 2.4460E+02 | 1.5951E+00 | 1.7022E-05 |
| 2.800 | 2.4442E+02 | 1.5951E+00 | 1.5613E-05 |
| 3.100 | 2.4416E+02 | 1.5951E+00 | 5.9985E-06 |
| 3.400 | 2.4390E+02 | 1.5951E+00 | 2.3050E-06 |
| 3.700 | 2.4364E+02 | 1.5951E+00 | 8.8584E-07 |
| 4.000 | 2.4337E+02 | 1.5951E+00 | 3.4050E-07 |
| 4.300 | 2.4311E+02 | 1.5951E+00 | 1.3090E-07 |
| 4.600 | 2.4285E+02 | 1.5951E+00 | 5.0333E-08 |
| 4.900 | 2.4259E+02 | 1.5951E+00 | 1.9357E-08 |
| 5.200 | 2.4233E+02 | 1.5951E+00 | 7.4458E-09 |
| 5.500 | 2.4207E+02 | 1.5951E+00 | 2.8647E-09 |
| 5.800 | 2.4180E+02 | 1.5951E+00 | 1.1024E-09 |
| 6.100 | 2.4154E+02 | 1.5951E+00 | 4.2430E-10 |
| 6.400 | 2.4128E+02 | 1.5951E+00 | 1.6335E-10 |
| 6.700 | 2.4102E+02 | 1.5951E+00 | 6.2903E-11 |
| 7.000 | 2.4076E+02 | 1.5951E+00 | 2.4229E-11 |
| 7.300 | 2.4051E+02 | 1.5951E+00 | 9.3350E-12 |
| 7.600 | 2.4025E+02 | 1.5951E+00 | 3.5976E-12 |
| 7.900 | 2.3999E+02 | 1.5951E+00 | 1.3869E-12 |
| 8.000 | 2.3990E+02 | 1.5951E+00 | 1.0094E-12 |
| 8.300 | 2.3964E+02 | 1.5951E+00 | 3.8929E-13 |
| 8.600 | 2.3938E+02 | 1.5951E+00 | 1.5018E-13 |
| 8.900 | 2.3913E+02 | 1.5951E+00 | 5.7954E-14 |
| 9.200 | 2.3887E+02 | 1.5951E+00 | 2.2372E-14 |
| 9.500 | 2.3861E+02 | 1.5951E+00 | 8.6395E-15 |
| 9.800 | 2.3836E+02 | 1.5951E+00 | 3.3376E-15 |
| 10.100 | 2.3810E+02 | 1.5951E+00 | 1.2899E-15 |
| 10.400 | 2.3784E+02 | 1.5951E+00 | 4.9869E-16 |
| 24.000 | 2.2650E+02 | 1.5951E+00 | 1.8134E-34 |
| 96.000 | 1.7488E+02 | 1.5951E+00 | 5.4913-129 |
| 720.000 | 1.8589E+01 | 1.5951E+00 | 0.0000E+00 |

##########################################################################
Cumulative Dose Summary
##########################################################################

| Time (hr) | Exclusion Area Bounda Thyroid (rem) | Exclusion Area Bounda TEDE (rem) | Low Population Zone Thyroid (rem) | Low Population Zone TEDE (rem) | TSC Thyroid (rem) | TSC TEDE (rem) |
|---|---|---|---|---|---|---|
| 0.000 | 4.9326E-03 | 2.2525E-04 | 8.6321E-04 | 3.9418E-05 | 8.5454E-08 | 2.6833E-09 |

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**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 1 | System Nos. | Sheet 643 of 1000 |
|---|---|---|---|---|

| | | | | | | |
|---|---|---|---|---|---|---|
| 0.017 | 5.8160E-01 | 2.6558E-02 | 1.0178E-01 | 4.6476E-03 | 5.9403E-04 | 1.8653E-05 |
| 0.417 | 5.8160E-01 | 2.6558E-02 | 1.0178E-01 | 4.6476E-03 | 2.6918E-02 | 8.4488E-04 |
| 0.700 | 5.8161E-01 | 2.6558E-02 | 1.0178E-01 | 4.6476E-03 | 4.2957E-02 | 1.3478E-03 |
| 0.750 | 5.8161E-01 | 2.6558E-02 | 1.0178E-01 | 4.6476E-03 | 4.5586E-02 | 1.4302E-03 |
| 0.800 | 5.8161E-01 | 2.6558E-02 | 1.0178E-01 | 4.6476E-03 | 4.8158E-02 | 1.5108E-03 |
| 1.000 | 5.8161E-01 | 2.6558E-02 | 1.0178E-01 | 4.6477E-03 | 5.7903E-02 | 1.8161E-03 |
| 1.300 | 5.8161E-01 | 2.6558E-02 | 1.0178E-01 | 4.6477E-03 | 7.1009E-02 | 2.2265E-03 |
| 1.600 | 5.8161E-01 | 2.6558E-02 | 1.0178E-01 | 4.6477E-03 | 8.2500E-02 | 2.5861E-03 |
| 1.900 | 5.8161E-01 | 2.6558E-02 | 1.0178E-01 | 4.6477E-03 | 9.2576E-02 | 2.9012E-03 |
| 2.000 | 5.8161E-01 | 2.6558E-02 | 1.0178E-01 | 4.6477E-03 | 9.5651E-02 | 2.9974E-03 |
| 2.300 | 5.8161E-01 | 2.6558E-02 | 1.0178E-01 | 4.6477E-03 | 1.0411E-01 | 3.2617E-03 |
| 2.600 | 5.8161E-01 | 2.6558E-02 | 1.0178E-01 | 4.6477E-03 | 1.1152E-01 | 3.4933E-03 |
| 2.800 | 5.8161E-01 | 2.6558E-02 | 1.0178E-01 | 4.6477E-03 | 1.1595E-01 | 3.6316E-03 |
| 3.100 | 5.8161E-01 | 2.6558E-02 | 1.0178E-01 | 4.6477E-03 | 1.2008E-01 | 3.7607E-03 |
| 3.400 | 5.8161E-01 | 2.6558E-02 | 1.0178E-01 | 4.6477E-03 | 1.2166E-01 | 3.8107E-03 |
| 3.700 | 5.8161E-01 | 2.6558E-02 | 1.0178E-01 | 4.6477E-03 | 1.2227E-01 | 3.8303E-03 |
| 4.000 | 5.8161E-01 | 2.6558E-02 | 1.0178E-01 | 4.6477E-03 | 1.2250E-01 | 3.8380E-03 |
| 4.300 | 5.8161E-01 | 2.6558E-02 | 1.0178E-01 | 4.6477E-03 | 1.2259E-01 | 3.8412E-03 |
| 4.600 | 5.8161E-01 | 2.6558E-02 | 1.0178E-01 | 4.6477E-03 | 1.2262E-01 | 3.8425E-03 |
| 4.900 | 5.8161E-01 | 2.6558E-02 | 1.0178E-01 | 4.6477E-03 | 1.2263E-01 | 3.8431E-03 |
| 5.200 | 5.8161E-01 | 2.6558E-02 | 1.0178E-01 | 4.6477E-03 | 1.2264E-01 | 3.8433E-03 |
| 5.500 | 5.8161E-01 | 2.6558E-02 | 1.0178E-01 | 4.6477E-03 | 1.2264E-01 | 3.8435E-03 |
| 5.800 | 5.8161E-01 | 2.6558E-02 | 1.0178E-01 | 4.6477E-03 | 1.2264E-01 | 3.8436E-03 |
| 6.100 | 5.8161E-01 | 2.6558E-02 | 1.0178E-01 | 4.6477E-03 | 1.2264E-01 | 3.8436E-03 |
| 6.400 | 5.8161E-01 | 2.6558E-02 | 1.0178E-01 | 4.6477E-03 | 1.2264E-01 | 3.8436E-03 |
| 6.700 | 5.8161E-01 | 2.6558E-02 | 1.0178E-01 | 4.6477E-03 | 1.2264E-01 | 3.8437E-03 |
| 7.000 | 5.8161E-01 | 2.6558E-02 | 1.0178E-01 | 4.6477E-03 | 1.2264E-01 | 3.8437E-03 |
| 7.300 | 5.8161E-01 | 2.6558E-02 | 1.0178E-01 | 4.6477E-03 | 1.2264E-01 | 3.8437E-03 |
| 7.600 | 5.8161E-01 | 2.6558E-02 | 1.0178E-01 | 4.6477E-03 | 1.2264E-01 | 3.8437E-03 |
| 7.900 | 5.8161E-01 | 2.6558E-02 | 1.0178E-01 | 4.6477E-03 | 1.2264E-01 | 3.8437E-03 |
| 8.000 | 5.8161E-01 | 2.6558E-02 | 1.0178E-01 | 4.6477E-03 | 1.2264E-01 | 3.8437E-03 |
| 8.300 | 5.8161E-01 | 2.6558E-02 | 1.0178E-01 | 4.6477E-03 | 1.2264E-01 | 3.8437E-03 |
| 8.600 | 5.8161E-01 | 2.6558E-02 | 1.0178E-01 | 4.6477E-03 | 1.2264E-01 | 3.8437E-03 |
| 8.900 | 5.8161E-01 | 2.6558E-02 | 1.0178E-01 | 4.6477E-03 | 1.2264E-01 | 3.8437E-03 |
| 9.200 | 5.8161E-01 | 2.6558E-02 | 1.0178E-01 | 4.6477E-03 | 1.2264E-01 | 3.8437E-03 |
| 9.500 | 5.8161E-01 | 2.6558E-02 | 1.0178E-01 | 4.6477E-03 | 1.2264E-01 | 3.8437E-03 |
| 9.800 | 5.8161E-01 | 2.6558E-02 | 1.0178E-01 | 4.6477E-03 | 1.2264E-01 | 3.8437E-03 |
| 10.100 | 5.8161E-01 | 2.6558E-02 | 1.0178E-01 | 4.6477E-03 | 1.2264E-01 | 3.8437E-03 |
| 10.400 | 5.8161E-01 | 2.6558E-02 | 1.0178E-01 | 4.6477E-03 | 1.2264E-01 | 3.8437E-03 |
| 24.000 | 5.8161E-01 | 2.6558E-02 | 1.0178E-01 | 4.6477E-03 | 1.2264E-01 | 3.8437E-03 |
| 96.000 | 5.8161E-01 | 2.6558E-02 | 1.0178E-01 | 4.6477E-03 | 1.2264E-01 | 3.8437E-03 |
| 720.000 | 5.8161E-01 | 2.6558E-02 | 1.0178E-01 | 4.6477E-03 | 1.2264E-01 | 3.8437E-03 |

Travel Path

| Time (hr) | Thyroid (rem) | TEDE (rem) |
|---|---|---|
| 0.000 | 0.0000E+00 | 0.0000E+00 |
| 0.017 | 0.0000E+00 | 0.0000E+00 |
| 0.417 | 0.0000E+00 | 0.0000E+00 |
| 0.700 | 0.0000E+00 | 0.0000E+00 |
| 0.750 | 0.0000E+00 | 0.0000E+00 |
| 0.800 | 2.8879E-07 | 1.2895E-08 |
| 1.000 | 1.3830E-06 | 6.1606E-08 |
| 1.300 | 1.3830E-06 | 6.1606E-08 |
| 1.600 | 1.3830E-06 | 6.1606E-08 |

```
   1.900 1.3830E-06 6.1606E-08
   2.000 1.3830E-06 6.1606E-08
   2.300 1.3830E-06 6.1606E-08
   2.600 1.3830E-06 6.1606E-08
   2.800 1.3830E-06 6.1606E-08
   3.100 1.3830E-06 6.1606E-08
   3.400 1.3830E-06 6.1606E-08
   3.700 1.3830E-06 6.1606E-08


   4.000 1.3830E-06 6.1606E-08
   4.300 1.3830E-06 6.1606E-08
   4.600 1.3830E-06 6.1606E-08
   4.900 1.3830E-06 6.1606E-08
   5.200 1.3830E-06 6.1606E-08
   5.500 1.3830E-06 6.1606E-08
   5.800 1.3830E-06 6.1606E-08
   6.100 1.3830E-06 6.1606E-08
   6.400 1.3830E-06 6.1606E-08
   6.700 1.3830E-06 6.1606E-08
   7.000 1.3830E-06 6.1606E-08
   7.300 1.3830E-06 6.1606E-08
   7.600 1.3830E-06 6.1606E-08
   7.900 1.3830E-06 6.1606E-08
   8.000 1.3830E-06 6.1606E-08
   8.300 1.3830E-06 6.1606E-08
   8.600 1.3830E-06 6.1606E-08
   8.900 1.3830E-06 6.1606E-08
   9.200 1.3830E-06 6.1606E-08
   9.500 1.3830E-06 6.1606E-08
   9.800 1.3830E-06 6.1606E-08
  10.100 1.3830E-06 6.1606E-08
  10.400 1.3830E-06 6.1606E-08
  24.000 1.3830E-06 6.1606E-08
  96.000 1.3830E-06 6.1606E-08
 720.000 1.3830E-06 6.1606E-08

#####################################################################
                        Worst Two-Hour Doses
    Note: All of the dose locations are shown below but the
          worst two-hour dose is only meaningful for the EAB
          dose location.  Please disregard the two-hour worst
          doses for the other dose locations
#####################################################################

Exclusion Area Boundary
   Time   Whole Body    Thyroid        TEDE
   (hr)     (rem)        (rem)         (rem)
    0.0   8.4893E-03   5.7668E-01   2.6333E-02

Low Population Zone
   Time   Whole Body    Thyroid        TEDE
   (hr)     (rem)        (rem)         (rem)
    0.0   1.4856E-03   1.0092E-01   4.6083E-03

TSC
   Time   Whole Body    Thyroid        TEDE
```

AmerGen

**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 1 | System Nos. | Sheet 645 of 1000 |
|---|---|---|---|---|

```
   (hr)      (rem)         (rem)          (rem)
    0.0   4.0490E-05   9.5651E-02   2.9974E-03

Travel Path
   Time   Whole Body    Thyroid        TEDE
   (hr)      (rem)         (rem)          (rem)
    0.0   1.8856E-08   1.3830E-06   6.1606E-08
```

**Appendix R**

**RADTRAD Output File**

# CL_TSC_No Filtration.o0

**Containment Purge Pathway (For TSC Dose)**
**To Evaluate TSC HVAC Filter Shine Dose**

AmerGen

**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 1 | System Nos. | Sheet 647 of 1000 |
|---|---|---|---|---|

```
 ######################################################################
           RADTRAD Version 3.02 run on  5/15/2002  at  9:35:16
 ######################################################################

 ######################################################################
                      File information
 ######################################################################

 Plant file name           = C:\Documents and Settings\u004tjm\My Documents\TMI
RADTRAD\CL_TSC_NO Filtration.psf
 Inventory file name       = c:\documents and settings\u004tjm\my documents\tmi
radtrad\defaults\tmi_def.nif
 Scenario file name        = C:\Documents and Settings\u004tjm\My Documents\TMI
RADTRAD\CL_TSC_NO Filtration.psf
 Release file name         = c:\documents and settings\u004tjm\my documents\tmi
radtrad\defaults\pwr_dba.rft
 Dose conversion file name = c:\documents and settings\u004tjm\my documents\tmi
radtrad\defaults\fgr11&12.inp




     #####    ####   #####    #  #     #  #####   #    #  #####
     #    #  #       #        #  ##    #  #    #  #    #    #
     #    #  #       #        #  # #   #  #    #  #    #    #
     #####    ####   ####     #  #  #  #  #####   #    #    #
     #            #  #        #  #   # #  #       #    #    #
     #            #  #        #  #    ##  #       #    #    #
     #        ####   #        #  #     #  #        ####     #


 Radtrad 3.02 1/5/2000
 TSC Dose Due To Containment Leakage - NO HVAC for 2 hours - 250 cfm Unfiltered
Inleakage (.8 - 2.8 max)
 Nuclide Inventory File:
 c:\documents and settings\u004tjm\my documents\tmi radtrad\defaults\tmi_def.nif
 Plant Power Level:
  2.6190E+03
 Compartments:
   4
 Compartment 1:
 Sprayed Region
   3
  1.2310E+06
   1
   0
   0
   0
   0
 Compartment 2:
 Unsprayed Region
   3
  9.2880E+05
   0
```

```
  0
  0
  1
  0
Compartment 3:
Environment
  2
 0.0000E+00
  0
  0
  0
  0
  0
Compartment 4:
TSC
  1
 4.2000E+04
  0
  0
  1
  0
  0
Pathways:
  7
Pathway 1:
Sprayed to Unsprayed
  1
  2
  2
Pathway 2:
Unsprayed to Sprayed
  2
  1
  2
Pathway 3:
Sprayed to Environment
  1
  3
  4
Pathway 4:
Unsprayed to Environment
  2
  3
  4
Pathway 5:
TSC Filtered Air Intake
  3
  4
  2
Pathway 6:
TSC Unfiltered Inleakage
  3
  4
  2
Pathway 7:
```

```
TSC Exhaust to Environment
  4
  3
  2
End of Plant Model File
Scenario Description Name:

Plant Model Filename:
ACCEPT\TEST24.PMF
Source Term:
  2
  1   5.7000E-01
  2   4.3000E-01
c:\documents and settings\u004tjm\my documents\tmi radtrad\defaults\fgr11&12.inp
c:\documents and settings\u004tjm\my documents\tmi radtrad\defaults\pwr_dba.rft
  0.0000E+00
  0
  9.5000E-01   4.8500E-02   1.5000E-03   1.0000E+00
Overlying Pool:
  0
  0.0000E+00
  0
  0
  0
  0
Compartments:
  4
Compartment 1:
  0
  1
  1
  0.0000E+00
  6
  0.0000E+00   0.0000E+00
  2.0800E-02   3.8800E+00
  4.9070E-01   1.9400E+00
  2.9200E+00   1.9400E+00
  3.8200E+00   1.9400E-01
  4.0000E+00   0.0000E+00
  1
  0.0000E+00
  6
  0.0000E+00   0.0000E+00
  2.0800E-02   9.4600E+00
  4.9070E-01   4.7300E+00
  2.9200E+00   0.0000E+00
  3.8200E+00   0.0000E+00
  4.0000E+00   0.0000E+00
  1
  0.0000E+00
  0
  0
  0
  0
  0
```

AmerGen

**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 1 | System Nos. | Sheet 650 of 1000 |
|---|---|---|---|---|

```
Compartment 2:
  0
  1
  0
  0
  0
  0
  0
  3
  1
  1.0000E+01
  0
Compartment 3:
  1
  1
  0
  0
  0
  0
  0
  0
  0
Compartment 4:
  1
  1
  0
  0
  0
  0
  1
  0.0000E+00
  5
  0.0000E+00   0.0000E+00   0.0000E+00   0.0000E+00
  8.0000E-01   0.0000E+00   0.0000E+00   0.0000E+00
  1.0000E+00   0.0000E+00   0.0000E+00   0.0000E+00
  2.8000E+00   0.0000E+00   0.0000E+00   0.0000E+00
  7.2000E+02   0.0000E+00   0.0000E+00   0.0000E+00
  0
  0
Pathways:
  7
Pathway 1:
  0
  0
  0
  0
  0
  1
  3
  0.0000E+00   0.0000E+00   0.0000E+00   0.0000E+00   0.0000E+00
  9.7000E-03   2.5000E+04   0.0000E+00   0.0000E+00   0.0000E+00
  7.2000E+02   2.5000E+04   0.0000E+00   0.0000E+00   0.0000E+00
  0
  0
```

AmerGen

**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 1 | System Nos. | Sheet 651 of 1000 |
|---|---|---|---|---|

```
  0
  0
  0
  0
Pathway 2:
  0
  0
  0
  0
  0
  1
  3
  0.0000E+00   0.0000E+00   0.0000E+00   0.0000E+00   0.0000E+00
  9.7000E-03   2.5000E+04   0.0000E+00   0.0000E+00   0.0000E+00
  7.2000E+02   2.5000E+04   0.0000E+00   0.0000E+00   0.0000E+00
  0
  0
  0
  0
  0
  0
Pathway 3:
  0
  0
  0
  0
  0
  0
  0
  0
  0
  0
  1
  3
  0.0000E+00   1.0000E-01
  2.4000E+01   5.0000E-02
  7.2000E+02   0.0000E+00
  0
Pathway 4:
  0
  0
  0
  0
  0
  0
  0
  0
  0
  0
  1
  3
  0.0000E+00   1.0000E-01
  2.4000E+01   5.0000E-02
```

AmerGen

**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 1 | System Nos. | Sheet 652 of 1000 |
|---|---|---|---|---|

```
  7.2000E+02   0.0000E+00
  0
Pathway 5:


  0
  0
  0
  0
  0
  1
  5
  0.0000E+00   3.0000E+02   0.0000E+00   0.0000E+00   0.0000E+00
  8.0000E-01   3.0000E+02   0.0000E+00   0.0000E+00   0.0000E+00
  1.0000E+00   3.0000E+02   0.0000E+00   0.0000E+00   0.0000E+00
  2.8000E+00   6.0000E+02   0.0000E+00   0.0000E+00   0.0000E+00
  7.2000E+02   0.0000E+00   0.0000E+00   0.0000E+00   0.0000E+00
  0
  0
  0
  0
  0
  0
Pathway 6:
  0
  0
  0
  0
  0
  1
  5
  0.0000E+00   0.0000E+00   0.0000E+00   0.0000E+00   0.0000E+00
  8.0000E-01   0.0000E+00   0.0000E+00   0.0000E+00   0.0000E+00
  1.0000E+00   0.0000E+00   0.0000E+00   0.0000E+00   0.0000E+00
  2.8000E+00   2.5000E+02   0.0000E+00   0.0000E+00   0.0000E+00
  7.2000E+02   0.0000E+00   0.0000E+00   0.0000E+00   0.0000E+00
  0
  0
  0
  0
  0
  0
Pathway 7:
  0
  0
  0
  0
  0
  1
  5
  0.0000E+00   3.0000E+02   0.0000E+00   0.0000E+00   0.0000E+00
  8.0000E-01   3.0000E+02   0.0000E+00   0.0000E+00   0.0000E+00
  1.0000E+00   3.0000E+02   0.0000E+00   0.0000E+00   0.0000E+00
  2.8000E+00   8.5000E+02   0.0000E+00   0.0000E+00   0.0000E+00
  7.2000E+02   0.0000E+00   0.0000E+00   0.0000E+00   0.0000E+00
  0
  0
```

```
  0
  0
  0
  0


Dose Locations:
  4
Location 1:
Exclusion Area Boundary
  3
  1
  2
  0.0000E+00   8.0000E-04
  7.2000E+02   0.0000E+00
  1
  2
  0.0000E+00   3.5000E-04
  7.2000E+02   0.0000E+00
  0
Location 2:
Low Population Zone
  3
  1
  6
  0.0000E+00   1.4000E-04
  2.0000E+00   6.0000E-05
  8.0000E+00   3.9000E-05
  2.4000E+01   1.6000E-05
  9.6000E+01   4.0000E-06
  7.2000E+02   0.0000E+00
  1
  4
  0.0000E+00   3.5000E-04
  8.0000E+00   1.8000E-04
  2.4000E+01   2.3000E-04
  7.2000E+02   0.0000E+00
  0
Location 3:
TSC
  4
  0
  1
  2
  0.0000E+00   3.5000E-04
  7.2000E+02   0.0000E+00
  1
  4
  0.0000E+00   1.0000E+00
  2.4000E+01   6.0000E-01
  9.6000E+01   4.0000E-01
  7.2000E+02   0.0000E+00
Location 4:
Travel Path
  3
  1
  3
```

```
  0.0000E+00   0.0000E+00
  9.1670E-01   8.0000E-04
  1.0000E+00   0.0000E+00
  1
  4


  0.0000E+00   3.4700E-04
  8.0000E+00   1.7500E-04
  2.4000E+01   2.3200E-04
  7.2000E+02   0.0000E+00
  0
Effective Volume Location:
  1
  6
  0.0000E+00   2.3100E-04
  2.0000E+00   1.2900E-04
  8.0000E+00   5.5000E-05
  2.4000E+01   3.5200E-05
  9.6000E+01   3.0600E-05
  7.2000E+02   0.0000E+00
Simulation Parameters:
  7
  0.0000E+00   5.0000E-02
  1.0000E+00   1.0000E-01
  2.0000E+00   1.0000E+00
  8.0000E+00   2.0000E+00
  2.4000E+01   4.0000E+00
  9.6000E+01   8.0000E+00
  7.2000E+02   0.0000E+00
Output Filename:
C:\Documents and Settings\u004tjm\My Documents\TMI RADTRAD\CL_TSC_NO Filtration.o7
  1
  1
  1
  0
  0
End of Scenario File


#######################################################################
          RADTRAD Version 3.02 run on  5/15/2002  at  9:35:16
#######################################################################

#######################################################################
                     Plant Description
#######################################################################

Number of Nuclides =  60

Inventory Power =   1.0000E+00 MWth
Plant Power Level =   2.6190E+03 MWth

Number of compartments    =   4

Compartment information
```

```
Compartment number  1  (Source term fraction =   5.7000E-01
)
Name: Sprayed Region
Compartment volume =   1.2310E+06 (Cubic feet)
Removal devices within compartment:
     Spray(s)


Pathways into and out of compartment  1
    Pathway to compartment number   2: Sprayed to Unsprayed
    Pathway to compartment number   3: Sprayed to Environment
    Pathway from compartment number 2: Unsprayed to Sprayed

Compartment number  2  (Source term fraction =   4.3000E-01
)
Name: Unsprayed Region
Compartment volume =   9.2880E+05 (Cubic feet)
Removal devices within compartment:
     Deposition
Pathways into and out of compartment  2
    Pathway to compartment number   1: Unsprayed to Sprayed
    Pathway to compartment number   3: Unsprayed to Environment
    Pathway from compartment number 1: Sprayed to Unsprayed

Compartment number  3
Name: Environment
Pathways into and out of compartment  3
    Pathway to compartment number   4: TSC Filtered Air Intake
    Pathway to compartment number   4: TSC Unfiltered Inleakage
    Pathway from compartment number 1: Sprayed to Environment
    Pathway from compartment number 2: Unsprayed to Environment
    Pathway from compartment number 4: TSC Exhaust to Environment

Compartment number  4
Name: TSC
Compartment volume =   4.2000E+04 (Cubic feet)
Removal devices within compartment:
     Filter(s)
Pathways into and out of compartment  4
    Pathway to compartment number   3: TSC Exhaust to Environment
    Pathway from compartment number 3: TSC Filtered Air Intake
    Pathway from compartment number 3: TSC Unfiltered Inleakage

Total number of pathways =   7


#######################################################################
          RADTRAD Version 3.02 run on  5/15/2002  at  9:35:16
#######################################################################

#######################################################################
                     Scenario Description
#######################################################################

Radioactive Decay is enabled
RELEASE_NAME = PWR, NUREG-1465, Tables 3.12 & 3.13, Jun
Release Fractions and Timings
```

AmerGen

**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 1 | System Nos. | Sheet 656 of 1000 |
|---|---|---|---|---|

```
                GAP       EARLY IN-VESSEL
              0.5000 hrs     1.3000 hrs
NOBLES        5.0000E-02     9.5000E-01
IODINE        5.0000E-02     3.5000E-01
CESIUM        5.0000E-02     2.5000E-01
TELLURIUM     0.0000E+00     5.0000E-02
STRONTIUM     0.0000E+00     2.0000E-02


BARIUM        0.0000E+00     2.0000E-02
RUTHENIUM     0.0000E+00     2.5000E-03
CERIUM        0.0000E+00     5.0000E-04
LANTHANUM     0.0000E+00     2.0000E-04

Iodine fractions
     Aerosol     =   9.5000E-01
     Elemental   =   4.8500E-02
     Organic     =   1.5000E-03

COMPARTMENT DATA

Compartment number   1: Sprayed Region

     Sprays:  Aerosal Removal Data
      Time (hr)          Removal Coef. (hr^-1)
       0.0000E+00          0.0000E+00
       2.0800E-02          3.8800E+00
       4.9070E-01          1.9400E+00
       2.9200E+00          1.9400E+00
       3.8200E+00          1.9400E-01
       4.0000E+00          0.0000E+00

     Sprays:  Elemental Removal Data
      Time (hr)          Removal Coef. (hr^-1)
       0.0000E+00          0.0000E+00
       2.0800E-02          9.4600E+00
       4.9070E-01          4.7300E+00
       2.9200E+00          0.0000E+00
       3.8200E+00          0.0000E+00
       4.0000E+00          0.0000E+00

Compartment number   2: Unsprayed Region
Natural Deposition (Powers' model):  Aerosol data
      Reactor type:   1
      Percentile =  10 (%)

Compartment number   3: Environment

Compartment number   4: TSC

     Compartment Filter Data

      Time (hr)      Flow Rate          Filter Efficiencies (%)
                       (cfm)        Aerosol     Elemental    Organic
       0.0000E+00    0.0000E+00   0.0000E+00   0.0000E+00   0.0000E+00
       8.0000E-01    0.0000E+00   0.0000E+00   0.0000E+00   0.0000E+00
       1.0000E+00    0.0000E+00   0.0000E+00   0.0000E+00   0.0000E+00
```

```
       2.8000E+00    0.0000E+00   0.0000E+00   0.0000E+00   0.0000E+00
       7.2000E+02    0.0000E+00   0.0000E+00   0.0000E+00   0.0000E+00

PATHWAY DATA

Pathway number  1: Sprayed to Unsprayed



     Pathway Filter: Removal Data

       Time (hr)      Flow Rate          Filter Efficiencies (%)
                       (cfm)        Aerosol     Elemental    Organic
       0.0000E+00    0.0000E+00   0.0000E+00   0.0000E+00   0.0000E+00
       9.7000E-03    2.5000E+04   0.0000E+00   0.0000E+00   0.0000E+00
       7.2000E+02    2.5000E+04   0.0000E+00   0.0000E+00   0.0000E+00

Pathway number  2: Unsprayed to Sprayed

     Pathway Filter: Removal Data

       Time (hr)      Flow Rate          Filter Efficiencies (%)
                       (cfm)        Aerosol     Elemental    Organic
       0.0000E+00    0.0000E+00   0.0000E+00   0.0000E+00   0.0000E+00
       9.7000E-03    2.5000E+04   0.0000E+00   0.0000E+00   0.0000E+00
       7.2000E+02    2.5000E+04   0.0000E+00   0.0000E+00   0.0000E+00

Pathway number  3: Sprayed to Environment

     Convection Data
      Time (hr)          Flow Rate (% / day)
       0.0000E+00             1.0000E-01
       2.4000E+01             5.0000E-02
       7.2000E+02             0.0000E+00

Pathway number  4: Unsprayed to Environment

     Convection Data
      Time (hr)          Flow Rate (% / day)
       0.0000E+00             1.0000E-01
       2.4000E+01             5.0000E-02
       7.2000E+02             0.0000E+00

Pathway number  5: TSC Filtered Air Intake

     Pathway Filter: Removal Data

       Time (hr)      Flow Rate          Filter Efficiencies (%)
                       (cfm)        Aerosol     Elemental    Organic
       0.0000E+00    3.0000E+02   0.0000E+00   0.0000E+00   0.0000E+00
       8.0000E-01    3.0000E+02   0.0000E+00   0.0000E+00   0.0000E+00
       1.0000E+00    3.0000E+02   0.0000E+00   0.0000E+00   0.0000E+00
       2.8000E+00    6.0000E+02   0.0000E+00   0.0000E+00   0.0000E+00
       7.2000E+02    0.0000E+00   0.0000E+00   0.0000E+00   0.0000E+00

Pathway number  6: TSC Unfiltered Inleakage
```

AmerGen

**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 1 | System Nos. | Sheet 658 of 1000 |
|---|---|---|---|---|

```
     Pathway Filter: Removal Data

       Time (hr)      Flow Rate          Filter Efficiencies (%)
                       (cfm)        Aerosol     Elemental    Organic
       0.0000E+00    0.0000E+00   0.0000E+00   0.0000E+00   0.0000E+00
       8.0000E-01    0.0000E+00   0.0000E+00   0.0000E+00   0.0000E+00
       1.0000E+00    0.0000E+00   0.0000E+00   0.0000E+00   0.0000E+00



       2.8000E+00    2.5000E+02   0.0000E+00   0.0000E+00   0.0000E+00
       7.2000E+02    0.0000E+00   0.0000E+00   0.0000E+00   0.0000E+00

Pathway number  7: TSC Exhaust to Environment

     Pathway Filter: Removal Data

       Time (hr)      Flow Rate          Filter Efficiencies (%)
                       (cfm)        Aerosol     Elemental    Organic
       0.0000E+00    3.0000E+02   0.0000E+00   0.0000E+00   0.0000E+00
       8.0000E-01    3.0000E+02   0.0000E+00   0.0000E+00   0.0000E+00
       1.0000E+00    3.0000E+02   0.0000E+00   0.0000E+00   0.0000E+00
       2.8000E+00    8.5000E+02   0.0000E+00   0.0000E+00   0.0000E+00
       7.2000E+02    0.0000E+00   0.0000E+00   0.0000E+00   0.0000E+00

LOCATION DATA
     Location Exclusion Area Boundary     is in compartment   3

     Location X/Q Data
      Time (hr)         X/Q (s * m^-3)
       0.0000E+00          8.0000E-04
       7.2000E+02          0.0000E+00

     Location Breathing Rate Data
      Time (hr)         Breathing Rate (m^3 * sec^-1)
       0.0000E+00                 3.5000E-04
       7.2000E+02                 0.0000E+00
     Location Low Population Zone     is in compartment   3

     Location X/Q Data
      Time (hr)         X/Q (s * m^-3)
       0.0000E+00          1.4000E-04
       2.0000E+00          6.0000E-05
       8.0000E+00          3.9000E-05
       2.4000E+01          1.6000E-05
       9.6000E+01          4.0000E-06
       7.2000E+02          0.0000E+00

     Location Breathing Rate Data
      Time (hr)         Breathing Rate (m^3 * sec^-1)
       0.0000E+00                 3.5000E-04
       8.0000E+00                 1.8000E-04
       2.4000E+01                 2.3000E-04
       7.2000E+02                 0.0000E+00
     Location TSC     is in compartment   4
```

```
     Location X/Q Data
      Time (hr)         X/Q (s * m^-3)
       0.0000E+00          2.3100E-04
       2.0000E+00          1.2900E-04
       8.0000E+00          5.5000E-05
       2.4000E+01          3.5200E-05
       9.6000E+01          3.0600E-05
       7.2000E+02          0.0000E+00




     Location Breathing Rate Data
      Time (hr)         Breathing Rate (m^3 * sec^-1)
       0.0000E+00                3.5000E-04
       7.2000E+02                0.0000E+00

     Location Occupancy Factor Data
      Time (hr)         Occupancy Factor
       0.0000E+00           1.0000E+00
       2.4000E+01           6.0000E-01
       9.6000E+01           4.0000E-01
       7.2000E+02           0.0000E+00
     Location Travel Path     is in compartment   3

     Location X/Q Data
      Time (hr)         X/Q (s * m^-3)
       0.0000E+00          0.0000E+00
       9.1670E-01          8.0000E-04
       1.0000E+00          0.0000E+00

     Location Breathing Rate Data
      Time (hr)         Breathing Rate (m^3 * sec^-1)
       0.0000E+00                3.4700E-04
       8.0000E+00                1.7500E-04
       2.4000E+01                2.3200E-04
       7.2000E+02                0.0000E+00

USER SPECIFIED TIME STEP DATA - SUPPLEMENTAL TIME STEPS
     Time            Time step
      0.0000E+00       5.0000E-02
      1.0000E+00       1.0000E-01
      2.0000E+00       1.0000E+00
      8.0000E+00       2.0000E+00
      2.4000E+01       4.0000E+00
      9.6000E+01       8.0000E+00
      7.2000E+02       0.0000E+00

#######################################################################
          RADTRAD Version 3.02 run on  5/15/2002  at  9:35:16
#######################################################################


     ####   #    #  #####  #####   #    #  #####
    #    #  #    #    #    #    #  #    #    #
    #    #  #    #    #    #    #  #    #    #
    #    #  #    #    #    #####   #    #    #
```

AmerGen

**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 1 | System Nos. | Sheet 660 of 1000 |
|---|---|---|---|---|

```
    #    #  #    #    #    #       #    #    #
    #    #  #    #    #    #       #    #    #
     ####    ####     #    #        ####     #


#####################################################################
            Dose, Detailed model and Detailed Inventory Output
#####################################################################

Exclusion Area Boundary Doses:



Time (h) =   0.0097    Whole Body   Thyroid       TEDE
Delta dose (rem)        3.6011E-05  6.0579E-03  2.9130E-04
Accumulated dose (rem)  3.6011E-05  6.0579E-03  2.9130E-04

Low Population Zone Doses:

Time (h) =   0.0097    Whole Body   Thyroid       TEDE
Delta dose (rem)        6.3019E-06  1.0601E-03  5.0978E-05
Accumulated dose (rem)  6.3019E-06  1.0601E-03  5.0978E-05

TSC Doses:

Time (h) =   0.0097    Whole Body   Thyroid       TEDE
Delta dose (rem)        6.0372E-10  3.2613E-06  1.3804E-07
Accumulated dose (rem)  6.0372E-10  3.2613E-06  1.3804E-07

Travel Path Doses:

Time (h) =   0.0097    Whole Body   Thyroid       TEDE
Delta dose (rem)        0.0000E+00  0.0000E+00  0.0000E+00
Accumulated dose (rem)  0.0000E+00  0.0000E+00  0.0000E+00

Environment Integral Nuclide Release:

Time (h) =   0.0097       Ci           kg         Atoms         Bq
Kr-85                  2.0489E-04  5.2223E-10  3.6999E+15  7.5809E+06
Kr-85m                 4.5560E-03  5.5362E-13  3.9223E+12  1.6857E+08
Kr-87                  8.9583E-03  3.1626E-13  2.1892E+12  3.3146E+08
Kr-88                  1.2674E-02  1.0107E-12  6.9166E+12  4.6892E+08
Rb-86                  3.2188E-05  3.9559E-13  2.7701E+12  1.1910E+06
I-131                  1.4010E-02  1.1300E-10  5.1948E+14  5.1835E+08
I-132                  2.0184E-02  1.9554E-12  8.9208E+12  7.4679E+08
I-133                  2.9293E-02  2.5859E-11  1.1709E+14  1.0839E+09
I-134                  3.2309E-02  1.2111E-12  5.4430E+12  1.1954E+09
I-135                  2.7297E-02  7.7728E-12  3.4673E+13  1.0100E+09
Xe-133                 2.9302E-02  1.5654E-10  7.0881E+14  1.0842E+09
Xe-135                 1.0788E-02  4.2243E-12  1.8844E+13  3.9914E+08
Cs-134                 3.3570E-03  2.5946E-09  1.1661E+16  1.2421E+08
Cs-136                 9.2817E-04  1.2664E-11  5.6077E+13  3.4342E+07
Cs-137                 2.2491E-03  2.5857E-08  1.1366E+17  8.3217E+07

Environment Transport Group Inventory:

                         Present     Release      Total
```

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**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 1 | System Nos. | Sheet 661 of 1000 |
|---|---|---|---|---|

| Time (h) = 0.0097 | Release | Rate/s | Release |
|---|---|---|---|
| Noble gases (atoms) | 4.4407E+15 | 1.2717E+14 | 4.4261E+15 |
| Elemental I (atoms) | 3.3259E+13 | 9.5244E+11 | 3.3150E+13 |
| Organic I (atoms) | 1.0286E+12 | 2.9457E+10 | 1.0253E+12 |
| Aerosols (kg) | 2.8607E-08 | 8.1922E-10 | 2.8513E-08 |

TSC Filtered Air Intake Transport Group Inventory:

| Time (h) = 0.0097 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 |

TSC Unfiltered Inleakage Transport Group Inventory:

| Time (h) = 0.0097 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 |

TSC Exhaust to Environment Transport Group Inventory:

| Time (h) = 0.0097 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 |

TSC Compartment Nuclide Inventory:

| Time (h) = 0.0097 | Ci | kg | Atoms | Bq |
|---|---|---|---|---|
| Kr-85 | 6.6918E-09 | 1.7056E-14 | 1.2084E+11 | 2.4760E+02 |
| Kr-85m | 1.4880E-07 | 1.8081E-17 | 1.2810E+08 | 5.5056E+03 |
| Kr-87 | 2.9257E-07 | 1.0329E-17 | 7.1495E+07 | 1.0825E+04 |
| Kr-88 | 4.1392E-07 | 3.3010E-17 | 2.2590E+08 | 1.5315E+04 |
| Rb-86 | 1.0513E-09 | 1.2920E-17 | 9.0474E+07 | 3.8898E+01 |
| I-131 | 4.5756E-07 | 3.6908E-15 | 1.6967E+10 | 1.6930E+04 |
| I-132 | 6.5919E-07 | 6.3861E-17 | 2.9135E+08 | 2.4390E+04 |
| I-133 | 9.5674E-07 | 8.4457E-16 | 3.8242E+09 | 3.5399E+04 |
| I-134 | 1.0551E-06 | 3.9553E-17 | 1.7776E+08 | 3.9040E+04 |
| I-135 | 8.9153E-07 | 2.5386E-16 | 1.1324E+09 | 3.2987E+04 |
| Xe-133 | 9.5702E-07 | 5.1128E-15 | 2.3150E+10 | 3.5410E+04 |
| Xe-135 | 3.5233E-07 | 1.3797E-16 | 6.1545E+08 | 1.3036E+04 |
| Cs-134 | 1.0964E-07 | 8.4742E-14 | 3.8084E+11 | 4.0567E+03 |
| Cs-136 | 3.0315E-08 | 4.1362E-16 | 1.8315E+09 | 1.1216E+03 |
| Cs-137 | 7.3458E-08 | 8.4452E-13 | 3.7123E+12 | 2.7179E+03 |

TSC Transport Group Inventory:

Overlying

```
Time (h) =   0.0097    Atmosphere     Sump        Pool
Noble gases (atoms)    1.4504E+11  0.0000E+00  0.0000E+00
Elemental I (atoms)    1.0863E+09  0.0000E+00  0.0000E+00
Organic I (atoms)      3.3596E+07  0.0000E+00  0.0000E+00
Aerosols (kg)          9.3433E-13  0.0000E+00  0.0000E+00

                       Deposition Recirculating
Time (h) =   0.0097     Surfaces     Filter
Noble gases (atoms)    0.0000E+00  0.0000E+00
Elemental I (atoms)    0.0000E+00  0.0000E+00
Organic I (atoms)      0.0000E+00  0.0000E+00
Aerosols (kg)          0.0000E+00  0.0000E+00


TSC Filtered Air Intake Transport Group Inventory:

                        Pathway
Time (h) =   0.0097      Filter
Noble gases (atoms)    0.0000E+00
Elemental I (atoms)    0.0000E+00
Organic I (atoms)      0.0000E+00
Aerosols (kg)          0.0000E+00

TSC Unfiltered Inleakage Transport Group Inventory:

                        Pathway
Time (h) =   0.0097      Filter
Noble gases (atoms)    0.0000E+00
Elemental I (atoms)    0.0000E+00
Organic I (atoms)      0.0000E+00
Aerosols (kg)          0.0000E+00

TSC Exhaust to Environment Transport Group Inventory:

                        Pathway
Time (h) =   0.0097      Filter
Noble gases (atoms)    0.0000E+00
Elemental I (atoms)    0.0000E+00
Organic I (atoms)      0.0000E+00
Aerosols (kg)          0.0000E+00

Exclusion Area Boundary Doses:

Time (h) =   0.0208    Whole Body   Thyroid       TEDE
Delta dose (rem)        1.2897E-04  2.1793E-02  1.0474E-03
Accumulated dose (rem)  1.6498E-04  2.7851E-02  1.3387E-03

Low Population Zone Doses:

Time (h) =   0.0208    Whole Body   Thyroid       TEDE
Delta dose (rem)        2.2569E-05  3.8137E-03  1.8329E-04
Accumulated dose (rem)  2.8871E-05  4.8739E-03  2.3427E-04

TSC Doses:

Time (h) =   0.0208    Whole Body   Thyroid       TEDE
```

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**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 1 | System Nos. | Sheet 663 of 1000 |
|---|---|---|---|---|

| | | | |
|---|---|---|---|
| Delta dose (rem) | 4.2820E-09 | 2.3225E-05 | 9.8303E-07 |
| Accumulated dose (rem) | 4.8857E-09 | 2.6486E-05 | 1.1211E-06 |

Travel Path Doses:

| Time (h) = 0.0208 | Whole Body | Thyroid | TEDE |
|---|---|---|---|
| Delta dose (rem) | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 |
| Accumulated dose (rem) | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 |

Environment Integral Nuclide Release:

| Time (h) = 0.0208 | Ci | kg | Atoms | Bq |
|---|---|---|---|---|
| Kr-85 | 9.4211E-04 | 2.4013E-09 | 1.7013E+16 | 3.4858E+07 |
| Kr-85m | 2.0913E-02 | 2.5412E-12 | 1.8004E+13 | 7.7376E+08 |
| Kr-87 | 4.0939E-02 | 1.4453E-12 | 1.0004E+13 | 1.5147E+09 |
| Kr-88 | 5.8114E-02 | 4.6346E-12 | 3.1716E+13 | 2.1502E+09 |
| Rb-86 | 1.4800E-04 | 1.8190E-12 | 1.2737E+13 | 5.4762E+06 |
| I-131 | 6.4415E-02 | 5.1959E-10 | 2.3886E+15 | 2.3834E+09 |
| I-132 | 9.2491E-02 | 8.9605E-12 | 4.0880E+13 | 3.4222E+09 |
| I-133 | 1.3464E-01 | 1.1886E-10 | 5.3818E+14 | 4.9818E+09 |
| I-134 | 1.4724E-01 | 5.5195E-12 | 2.4805E+13 | 5.4479E+09 |
| I-135 | 1.2537E-01 | 3.5698E-11 | 1.5924E+14 | 4.6386E+09 |
| Xe-133 | 1.3473E-01 | 7.1976E-10 | 3.2590E+15 | 4.9849E+09 |
| Xe-135 | 4.9561E-02 | 1.9407E-11 | 8.6572E+13 | 1.8337E+09 |
| Cs-134 | 1.5436E-02 | 1.1930E-08 | 5.3617E+16 | 5.7113E+08 |
| Cs-136 | 4.2677E-03 | 5.8230E-11 | 2.5785E+14 | 1.5791E+08 |
| Cs-137 | 1.0342E-02 | 1.1890E-07 | 5.2263E+17 | 3.8264E+08 |

Environment Transport Group Inventory:

| Time (h) = 0.0208 | Present Release | Release Rate/s | Total Release |
|---|---|---|---|
| Noble gases (atoms) | 2.0419E+16 | 2.7269E+14 | 2.0404E+16 |
| Elemental I (atoms) | 1.5292E+14 | 2.0422E+12 | 1.5281E+14 |
| Organic I (atoms) | 4.7294E+12 | 6.3159E+10 | 4.7260E+12 |
| Aerosols (kg) | 1.3154E-07 | 1.7567E-09 | 1.3145E-07 |

TSC Filtered Air Intake Transport Group Inventory:

| Time (h) = 0.0208 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 |

TSC Unfiltered Inleakage Transport Group Inventory:

| Time (h) = 0.0208 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 |

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**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 1 | System Nos. | Sheet 664 of 1000 |
|---|---|---|---|---|

TSC Exhaust to Environment Transport Group Inventory:

| Time (h) = 0.0208 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 |

TSC Compartment Nuclide Inventory:

| Time (h) = 0.0208 | Ci | kg | Atoms | Bq |
|---|---|---|---|---|
| Kr-85 | 3.0721E-08 | 7.8304E-14 | 5.5477E+11 | 1.1367E+03 |
| Kr-85m | 6.8168E-07 | 8.2833E-17 | 5.8686E+08 | 2.5222E+04 |
| Kr-87 | 1.3332E-06 | 4.7066E-17 | 3.2579E+08 | 4.9328E+04 |
| Kr-88 | 1.8939E-06 | 1.5104E-16 | 1.0336E+09 | 7.0075E+04 |
| Rb-86 | 4.8262E-09 | 5.9314E-17 | 4.1535E+08 | 1.7857E+02 |
| I-131 | 2.1005E-06 | 1.6943E-14 | 7.7888E+10 | 7.7719E+04 |
| I-132 | 3.0138E-06 | 2.9198E-16 | 1.3321E+09 | 1.1151E+05 |
| I-133 | 4.3903E-06 | 3.8756E-15 | 1.7548E+10 | 1.6244E+05 |
| I-134 | 4.7921E-06 | 1.7964E-16 | 8.0731E+08 | 1.7731E+05 |
| I-135 | 4.0870E-06 | 1.1638E-15 | 5.1915E+09 | 1.5122E+05 |
| Xe-133 | 4.3932E-06 | 2.3470E-14 | 1.0627E+11 | 1.6255E+05 |
| Xe-135 | 1.6158E-06 | 6.3273E-16 | 2.8225E+09 | 5.9785E+04 |
| Cs-134 | 5.0335E-07 | 3.8904E-13 | 1.7484E+12 | 1.8624E+04 |
| Cs-136 | 1.3917E-07 | 1.8988E-15 | 8.4080E+09 | 5.1491E+03 |
| Cs-137 | 3.3723E-07 | 3.8771E-12 | 1.7042E+13 | 1.2478E+04 |

TSC Transport Group Inventory:

| Time (h) = 0.0208 | Atmosphere | Sump | Overlying Pool |
|---|---|---|---|
| Noble gases (atoms) | 6.6584E+11 | 0.0000E+00 | 0.0000E+00 |
| Elemental I (atoms) | 4.9865E+09 | 0.0000E+00 | 0.0000E+00 |
| Organic I (atoms) | 1.5422E+08 | 0.0000E+00 | 0.0000E+00 |
| Aerosols (kg) | 4.2894E-12 | 0.0000E+00 | 0.0000E+00 |

| Time (h) = 0.0208 | Deposition Surfaces | Recirculating Filter |
|---|---|---|
| Noble gases (atoms) | 0.0000E+00 | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 | 0.0000E+00 |

TSC Filtered Air Intake Transport Group Inventory:

| Time (h) = 0.0208 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 |

TSC Unfiltered Inleakage Transport Group Inventory:

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**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 1 | System Nos. | Sheet 665 of 1000 |
|---|---|---|---|---|

```
                          Pathway
Time (h) =   0.0208        Filter
Noble gases (atoms)     0.0000E+00
Elemental I (atoms)     0.0000E+00
Organic I (atoms)       0.0000E+00
Aerosols (kg)           0.0000E+00

TSC Exhaust to Environment Transport Group Inventory:

                          Pathway
Time (h) =   0.0208        Filter
Noble gases (atoms)     0.0000E+00
Elemental I (atoms)     0.0000E+00
Organic I (atoms)       0.0000E+00
Aerosols (kg)           0.0000E+00


Exclusion Area Boundary Doses:

Time (h) =   0.4907    Whole Body   Thyroid       TEDE
Delta dose (rem)        6.1397E-02  1.1417E+01  5.4373E-01
Accumulated dose (rem)  6.1562E-02  1.1445E+01  5.4506E-01

Low Population Zone Doses:

Time (h) =   0.4907    Whole Body   Thyroid       TEDE
Delta dose (rem)        1.0744E-02  1.9980E+00  9.5152E-02
Accumulated dose (rem)  1.0773E-02  2.0029E+00  9.5386E-02

TSC Doses:

Time (h) =   0.4907    Whole Body   Thyroid       TEDE
Delta dose (rem)        3.8835E-05  2.3534E-01  9.9777E-03
Accumulated dose (rem)  3.8840E-05  2.3537E-01  9.9788E-03

Travel Path Doses:

Time (h) =   0.4907    Whole Body   Thyroid       TEDE
Delta dose (rem)        0.0000E+00  0.0000E+00  0.0000E+00
Accumulated dose (rem)  0.0000E+00  0.0000E+00  0.0000E+00

Environment Integral Nuclide Release:

Time (h) =   0.4907       Ci           kg         Atoms         Bq
Kr-85                  5.2433E-01  1.3364E-06  9.4685E+18  1.9400E+10
Kr-85m                 1.0826E+01  1.3155E-09  9.3202E+15  4.0056E+11
Kr-87                  1.7727E+01  6.2584E-10  4.3321E+15  6.5591E+11
Kr-88                  2.8865E+01  2.3020E-09  1.5753E+16  1.0680E+12
Rb-86                  6.1818E-02  7.5974E-10  5.3201E+15  2.2873E+09
I-131                  2.6623E+01  2.1475E-07  9.8721E+17  9.8506E+11
I-132                  3.3296E+01  3.2256E-09  1.4716E+16  1.2319E+12
I-133                  5.4878E+01  4.8444E-08  2.1935E+17  2.0305E+12
I-134                  4.2592E+01  1.5966E-09  7.1753E+15  1.5759E+12
I-135                  4.9416E+01  1.4071E-08  6.2770E+16  1.8284E+12
Xe-133                 7.4788E+01  3.9955E-07  1.8091E+18  2.7671E+12
Xe-135                 2.6613E+01  1.0421E-08  4.6488E+16  9.8469E+11
```

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**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 1 | System Nos. | Sheet 666 of 1000 |
|---|---|---|---|---|

| | | | | |
|---|---|---|---|---|
| Cs-134 | 6.4518E+00 | 4.9866E-06 | 2.2410E+19 | 2.3872E+11 |
| Cs-136 | 1.7820E+00 | 2.4314E-08 | 1.0766E+17 | 6.5934E+10 |
| Cs-137 | 4.3227E+00 | 4.9696E-05 | 2.1845E+20 | 1.5994E+11 |

Environment Transport Group Inventory:

| Time (h) = 0.4907 | Present Release | Release Rate/s | Total Release |
|---|---|---|---|
| Noble gases (atoms) | 1.1358E+19 | 6.4298E+15 | 1.1358E+19 |
| Elemental I (atoms) | 5.0379E+16 | 2.8519E+13 | 5.0379E+16 |
| Organic I (atoms) | 2.6169E+15 | 1.4814E+12 | 2.6168E+15 |
| Aerosols (kg) | 5.4980E-05 | 3.1123E-08 | 5.4980E-05 |

TSC Filtered Air Intake Transport Group Inventory:

| Time (h) = 0.4907 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 |

TSC Unfiltered Inleakage Transport Group Inventory:

| Time (h) = 0.4907 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 |

TSC Exhaust to Environment Transport Group Inventory:

| Time (h) = 0.4907 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 |

TSC Compartment Nuclide Inventory:

| Time (h) = 0.4907 | Ci | kg | Atoms | Bq |
|---|---|---|---|---|
| Kr-85 | 1.6007E-05 | 4.0800E-11 | 2.8906E+14 | 5.9227E+05 |
| Kr-85m | 3.2318E-04 | 3.9271E-14 | 2.7823E+11 | 1.1958E+07 |
| Kr-87 | 4.9873E-04 | 1.7607E-14 | 1.2188E+11 | 1.8453E+07 |
| Kr-88 | 8.5036E-04 | 6.7816E-14 | 4.6409E+11 | 3.1463E+07 |
| Rb-86 | 1.8780E-06 | 2.3081E-14 | 1.6162E+11 | 6.9487E+04 |
| I-131 | 8.0849E-04 | 6.5214E-12 | 2.9979E+13 | 2.9914E+07 |
| I-132 | 9.6431E-04 | 9.3422E-14 | 4.2621E+11 | 3.5680E+07 |
| I-133 | 1.6588E-03 | 1.4644E-12 | 6.6305E+12 | 6.1377E+07 |
| I-134 | 1.1347E-03 | 4.2534E-14 | 1.9116E+11 | 4.1983E+07 |
| I-135 | 1.4771E-03 | 4.2060E-13 | 1.8762E+12 | 5.4652E+07 |

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**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 1 | System Nos. | Sheet 667 of 1000 |
|---|---|---|---|---|

| | | | | |
|---|---|---|---|---|
| Xe-133 | 2.2814E-03 | 1.2188E-11 | 5.5187E+13 | 8.4411E+07 |
| Xe-135 | 8.0360E-04 | 3.1468E-13 | 1.4037E+12 | 2.9733E+07 |
| Cs-134 | 1.9605E-04 | 1.5153E-10 | 6.8099E+14 | 7.2539E+06 |
| Cs-136 | 5.4132E-05 | 7.3858E-13 | 3.2705E+12 | 2.0029E+06 |
| Cs-137 | 1.3135E-04 | 1.5101E-09 | 6.6381E+15 | 4.8601E+06 |

TSC Transport Group Inventory:

| Time (h) = 0.4907 | Atmosphere | Sump | Overlying Pool |
|---|---|---|---|
| Noble gases (atoms) | 3.4676E+14 | 0.0000E+00 | 0.0000E+00 |
| Elemental I (atoms) | 1.5266E+12 | 0.0000E+00 | 0.0000E+00 |
| Organic I (atoms) | 7.9880E+10 | 0.0000E+00 | 0.0000E+00 |
| Aerosols (kg) | 1.6707E-09 | 0.0000E+00 | 0.0000E+00 |

| Time (h) = 0.4907 | Deposition Surfaces | Recirculating Filter |
|---|---|---|
| Noble gases (atoms) | 0.0000E+00 | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 | 0.0000E+00 |

TSC Filtered Air Intake Transport Group Inventory:

| Time (h) = 0.4907 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 |

TSC Unfiltered Inleakage Transport Group Inventory:

| Time (h) = 0.4907 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 |

TSC Exhaust to Environment Transport Group Inventory:

| Time (h) = 0.4907 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 |

Exclusion Area Boundary Doses:

| Time (h) = 0.5000 | Whole Body | Thyroid | TEDE |
|---|---|---|---|
| Delta dose (rem) | 1.9235E-03 | 3.8388E-01 | 1.8151E-02 |
| Accumulated dose (rem) | 6.3485E-02 | 1.1829E+01 | 5.6322E-01 |

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**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 1 | System Nos. | Sheet 668 of 1000 |
|---|---|---|---|---|

Low Population Zone Doses:

| Time (h) = 0.5000 | Whole Body | Thyroid | TEDE |
|---|---|---|---|
| Delta dose (rem) | 3.3662E-04 | 6.7179E-02 | 3.1764E-03 |
| Accumulated dose (rem) | 1.1110E-02 | 2.0701E+00 | 9.8563E-02 |

TSC Doses:

| Time (h) = 0.5000 | Whole Body | Thyroid | TEDE |
|---|---|---|---|
| Delta dose (rem) | 1.9395E-06 | 1.2391E-02 | 5.2546E-04 |
| Accumulated dose (rem) | 4.0780E-05 | 2.4776E-01 | 1.0504E-02 |

Travel Path Doses:

| Time (h) = 0.5000 | Whole Body | Thyroid | TEDE |
|---|---|---|---|
| Delta dose (rem) | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 |
| Accumulated dose (rem) | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 |

Environment Integral Nuclide Release:

| Time (h) = 0.5000 | Ci | kg | Atoms | Bq |
|---|---|---|---|---|
| Kr-85 | 5.4439E-01 | 1.3876E-06 | 9.8308E+18 | 2.0143E+10 |
| Kr-85m | 1.1226E+01 | 1.3641E-09 | 9.6642E+15 | 4.1535E+11 |
| Kr-87 | 1.8323E+01 | 6.4689E-10 | 4.4778E+15 | 6.7797E+11 |
| Kr-88 | 2.9908E+01 | 2.3852E-09 | 1.6322E+16 | 1.1066E+12 |
| Rb-86 | 6.3905E-02 | 7.8539E-10 | 5.4997E+15 | 2.3645E+09 |
| I-131 | 2.7520E+01 | 2.2198E-07 | 1.0205E+18 | 1.0182E+12 |
| I-132 | 3.4331E+01 | 3.3259E-09 | 1.5174E+16 | 1.2702E+12 |
| I-133 | 5.6712E+01 | 5.0063E-08 | 2.2668E+17 | 2.0983E+12 |
| I-134 | 4.3747E+01 | 1.6399E-09 | 7.3699E+15 | 1.6186E+12 |
| I-135 | 5.1036E+01 | 1.4533E-08 | 6.4827E+16 | 1.8883E+12 |
| Xe-133 | 7.7646E+01 | 4.1481E-07 | 1.8782E+18 | 2.8729E+12 |
| Xe-135 | 2.7614E+01 | 1.0813E-08 | 4.8235E+16 | 1.0217E+12 |
| Cs-134 | 6.6697E+00 | 5.1550E-06 | 2.3167E+19 | 2.4678E+11 |
| Cs-136 | 1.8421E+00 | 2.5135E-08 | 1.1130E+17 | 6.8159E+10 |
| Cs-137 | 4.4687E+00 | 5.1375E-05 | 2.2583E+20 | 1.6534E+11 |

Environment Transport Group Inventory:

| Time (h) = 0.5000 | Present Release | Release Rate/s | Total Release |
|---|---|---|---|
| Noble gases (atoms) | 1.1793E+19 | 6.5516E+15 | 1.1793E+19 |
| Elemental I (atoms) | 5.1985E+16 | 2.8880E+13 | 5.1985E+16 |
| Organic I (atoms) | 2.7166E+15 | 1.5092E+12 | 2.7166E+15 |
| Aerosols (kg) | 5.6837E-05 | 3.1576E-08 | 5.6836E-05 |

TSC Filtered Air Intake Transport Group Inventory:

| Time (h) = 0.5000 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 |

TSC Unfiltered Inleakage Transport Group Inventory:

| Time (h) = 0.5000 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 |

TSC Exhaust to Environment Transport Group Inventory:

| Time (h) = 0.5000 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 |

TSC Compartment Nuclide Inventory:

| Time (h) = 0.5000 | Ci | kg | Atoms | Bq |
|---|---|---|---|---|
| Kr-85 | 1.6598E-05 | 4.2307E-11 | 2.9974E+14 | 6.1414E+05 |
| Kr-85m | 3.3447E-04 | 4.0643E-14 | 2.8795E+11 | 1.2376E+07 |
| Kr-87 | 5.1369E-04 | 1.8135E-14 | 1.2553E+11 | 1.9007E+07 |
| Kr-88 | 8.7911E-04 | 7.0108E-14 | 4.7978E+11 | 3.2527E+07 |
| Rb-86 | 1.9387E-06 | 2.3826E-14 | 1.6684E+11 | 7.1730E+04 |
| I-131 | 8.3451E-04 | 6.7313E-12 | 3.0944E+13 | 3.0877E+07 |
| I-132 | 9.9157E-04 | 9.6063E-14 | 4.3826E+11 | 3.6688E+07 |
| I-133 | 1.7116E-03 | 1.5109E-12 | 6.8413E+12 | 6.3329E+07 |
| I-134 | 1.1596E-03 | 4.3469E-14 | 1.9535E+11 | 4.2905E+07 |
| I-135 | 1.5227E-03 | 4.3358E-13 | 1.9341E+12 | 5.6339E+07 |
| Xe-133 | 2.3655E-03 | 1.2637E-11 | 5.7221E+13 | 8.7523E+07 |
| Xe-135 | 8.3249E-04 | 3.2599E-13 | 1.4542E+12 | 3.0802E+07 |
| Cs-134 | 2.0238E-04 | 1.5642E-10 | 7.0298E+14 | 7.4882E+06 |
| Cs-136 | 5.5878E-05 | 7.6242E-13 | 3.3760E+12 | 2.0675E+06 |
| Cs-137 | 1.3560E-04 | 1.5589E-09 | 6.8525E+15 | 5.0171E+06 |

TSC Transport Group Inventory:

| Time (h) = 0.5000 | Atmosphere | Sump | Overlying Pool |
|---|---|---|---|
| Noble gases (atoms) | 3.5956E+14 | 0.0000E+00 | 0.0000E+00 |
| Elemental I (atoms) | 1.5730E+12 | 0.0000E+00 | 0.0000E+00 |
| Organic I (atoms) | 8.2820E+10 | 0.0000E+00 | 0.0000E+00 |
| Aerosols (kg) | 1.7246E-09 | 0.0000E+00 | 0.0000E+00 |

| Time (h) = 0.5000 | Deposition Surfaces | Recirculating Filter |
|---|---|---|
| Noble gases (atoms) | 0.0000E+00 | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 | 0.0000E+00 |

TSC Filtered Air Intake Transport Group Inventory:

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**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 1 | System Nos. | Sheet 670 of 1000 |
|---|---|---|---|---|

```
                          Pathway
Time (h) =   0.5000        Filter
Noble gases (atoms)     0.0000E+00
Elemental I (atoms)     0.0000E+00
Organic I (atoms)       0.0000E+00
Aerosols (kg)           0.0000E+00

TSC Unfiltered Inleakage Transport Group Inventory:

                          Pathway
Time (h) =   0.5000        Filter
Noble gases (atoms)     0.0000E+00
Elemental I (atoms)     0.0000E+00
Organic I (atoms)       0.0000E+00
Aerosols (kg)           0.0000E+00

TSC Exhaust to Environment Transport Group Inventory:

                          Pathway
Time (h) =   0.5000        Filter
Noble gases (atoms)     0.0000E+00


Elemental I (atoms)     0.0000E+00
Organic I (atoms)       0.0000E+00
Aerosols (kg)           0.0000E+00

Exclusion Area Boundary Doses:

Time (h) =   0.8000    Whole Body   Thyroid       TEDE
Delta dose (rem)        1.2850E-01  2.5138E+01  1.3380E+00
Accumulated dose (rem)  1.9199E-01  3.6967E+01  1.9012E+00

Low Population Zone Doses:

Time (h) =   0.8000    Whole Body   Thyroid       TEDE
Delta dose (rem)        2.2488E-02  4.3991E+00  2.3414E-01
Accumulated dose (rem)  3.3598E-02  6.4692E+00  3.3271E-01

TSC Doses:

Time (h) =   0.8000    Whole Body   Thyroid       TEDE
Delta dose (rem)        1.1619E-04  7.5952E-01  3.4042E-02
Accumulated dose (rem)  1.5697E-04  1.0073E+00  4.4546E-02

Travel Path Doses:

Time (h) =   0.8000    Whole Body   Thyroid       TEDE
Delta dose (rem)        0.0000E+00  0.0000E+00  0.0000E+00
Accumulated dose (rem)  0.0000E+00  0.0000E+00  0.0000E+00

Environment Integral Nuclide Release:

Time (h) =   0.8000       Ci           kg         Atoms         Bq
Co-58                  2.1747E-03  6.8392E-11  7.1012E+14  8.0465E+07
Co-60                  1.6645E-03  1.4725E-09  1.4779E+16  6.1586E+07
Kr-85                  2.6298E+00  6.7030E-06  4.7490E+19  9.7303E+10
```

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**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 1 | System Nos. | Sheet 671 of 1000 |
|---|---|---|---|---|

| | | | | |
|---|---|---|---|---|
| Kr-85m | 4.9975E+01 | 6.0727E-09 | 4.3024E+16 | 1.8491E+12 |
| Kr-87 | 6.7037E+01 | 2.3667E-09 | 1.6382E+16 | 2.4804E+12 |
| Kr-88 | 1.2714E+02 | 1.0139E-08 | 6.9386E+16 | 4.7041E+12 |
| Rb-86 | 1.7734E-01 | 2.1795E-09 | 1.5262E+16 | 6.5617E+09 |
| Sr-89 | 2.0385E+00 | 7.0167E-08 | 4.7478E+17 | 7.5425E+10 |
| Sr-90 | 2.2003E-01 | 1.6130E-06 | 1.0793E+19 | 8.1409E+09 |
| Sr-91 | 2.5228E+00 | 6.9594E-10 | 4.6056E+15 | 9.3343E+10 |
| Sr-92 | 2.0918E+00 | 1.6642E-10 | 1.0894E+15 | 7.7398E+10 |
| Y-90 | 2.2388E-03 | 4.1149E-12 | 2.7534E+13 | 8.2834E+07 |
| Y-91 | 2.4953E-02 | 1.0175E-09 | 6.7334E+15 | 9.2325E+08 |
| Y-92 | 2.2673E-02 | 2.3563E-12 | 1.5424E+13 | 8.3890E+08 |
| Y-93 | 2.9798E-02 | 8.9315E-12 | 5.7835E+13 | 1.1025E+09 |
| Zr-95 | 3.2143E-02 | 1.4962E-09 | 9.4846E+15 | 1.1893E+09 |
| Zr-97 | 3.1119E-02 | 1.6279E-11 | 1.0106E+14 | 1.1514E+09 |
| Nb-95 | 3.2380E-02 | 8.2806E-10 | 5.2491E+15 | 1.1980E+09 |
| Mo-99 | 4.3575E-01 | 9.0854E-10 | 5.5266E+15 | 1.6123E+10 |
| Tc-99m | 3.3296E-01 | 6.3322E-11 | 3.8518E+14 | 1.2320E+10 |
| Ru-103 | 3.5489E-01 | 1.0996E-08 | 6.4292E+16 | 1.3131E+10 |
| Ru-105 | 1.9324E-01 | 2.8748E-11 | 1.6488E+14 | 7.1500E+09 |
| Ru-106 | 1.3380E-01 | 3.9992E-08 | 2.2720E+17 | 4.9504E+09 |
| Rh-105 | 2.1776E-01 | 2.5800E-10 | 1.4797E+15 | 8.0573E+09 |
| Sb-127 | 4.8176E-01 | 1.8040E-09 | 8.5543E+15 | 1.7825E+10 |
| Sb-129 | 1.1936E+00 | 2.1226E-10 | 9.9091E+14 | 4.4165E+10 |
| Te-127 | 4.3825E-01 | 1.6606E-10 | 7.8743E+14 | 1.6215E+10 |
| Te-127m | 6.4700E-02 | 6.8592E-09 | 3.2525E+16 | 2.3939E+09 |
| Te-129 | 6.6749E-01 | 3.1873E-11 | 1.4879E+14 | 2.4697E+10 |
| Te-129m | 2.1641E-01 | 7.1836E-08 | 3.3536E+16 | 8.0071E+09 |
| Te-131m | 6.4479E-01 | 8.0860E-10 | 3.7172E+15 | 2.3857E+10 |
| Te-132 | 6.5464E+00 | 2.1563E-08 | 9.8376E+16 | 2.4222E+11 |
| I-131 | 8.5514E+01 | 6.8977E-07 | 3.1709E+18 | 3.1640E+12 |
| I-132 | 9.4259E+01 | 9.1317E-09 | 4.1661E+16 | 3.4876E+12 |
| I-133 | 1.7399E+02 | 1.5359E-07 | 6.9546E+17 | 6.4377E+12 |
| I-134 | 9.9919E+01 | 3.7456E-09 | 1.6833E+16 | 3.6970E+12 |
| I-135 | 1.5190E+02 | 4.3255E-08 | 1.9295E+17 | 5.6204E+12 |
| Xe-133 | 3.7399E+02 | 1.9980E-06 | 9.0467E+18 | 1.3837E+13 |
| Xe-135 | 1.2810E+02 | 5.0161E-08 | 2.2376E+17 | 4.7396E+12 |
| Cs-134 | 1.8520E+01 | 1.4314E-05 | 6.4329E+19 | 6.8523E+11 |
| Cs-136 | 5.1108E+00 | 6.9733E-08 | 3.0878E+17 | 1.8910E+11 |
| Cs-137 | 1.2408E+01 | 1.4265E-04 | 6.2707E+20 | 4.5911E+11 |
| Ba-139 | 1.8685E+00 | 1.1423E-10 | 4.9491E+14 | 6.9135E+10 |
| Ba-140 | 3.4467E+00 | 4.7080E-08 | 2.0252E+17 | 1.2753E+11 |
| La-140 | 3.4291E-02 | 6.1693E-11 | 2.6537E+14 | 1.2688E+09 |
| La-141 | 2.6017E-02 | 4.6005E-12 | 1.9649E+13 | 9.6264E+08 |
| La-142 | 2.1715E-02 | 1.5169E-12 | 6.4332E+12 | 8.0346E+08 |
| Ce-141 | 7.9086E-02 | 2.7756E-09 | 1.1855E+16 | 2.9262E+09 |
| Ce-143 | 7.6581E-02 | 1.1532E-10 | 4.8564E+14 | 2.8335E+09 |
| Ce-144 | 6.3760E-02 | 1.9991E-08 | 8.3601E+16 | 2.3591E+09 |
| Pr-143 | 3.0849E-02 | 4.5812E-10 | 1.9293E+15 | 1.1414E+09 |
| Nd-147 | 1.2890E-02 | 1.5934E-10 | 6.5276E+14 | 4.7694E+08 |
| Np-239 | 8.6213E-01 | 3.7162E-09 | 9.3638E+15 | 3.1899E+10 |
| Pu-238 | 2.5142E-04 | 1.4686E-08 | 3.7161E+16 | 9.3027E+06 |
| Pu-239 | 1.9569E-05 | 3.1483E-07 | 7.9328E+17 | 7.2403E+05 |
| Pu-240 | 2.1103E-05 | 9.2610E-08 | 2.3238E+17 | 7.8080E+05 |
| Pu-241 | 8.7393E-03 | 8.4837E-08 | 2.1199E+17 | 3.2335E+08 |
| Am-241 | 5.3749E-06 | 1.5660E-09 | 3.9132E+15 | 1.9887E+05 |

| | | | | |
|---|---|---|---|---|
| Cm-242 | 1.2631E-03 | 3.8112E-10 | 9.4841E+14 | 4.6736E+07 |
| Cm-244 | 1.0221E-04 | 1.2633E-09 | 3.1180E+15 | 3.7816E+06 |

Environment Transport Group Inventory:

| Time (h) = 0.8000 | Present Release | Release Rate/s | Total Release |
|---|---|---|---|
| Noble gases (atoms) | 5.6916E+19 | 1.9762E+16 | 5.6916E+19 |
| Elemental I (atoms) | 1.6179E+17 | 5.6177E+13 | 1.6179E+17 |
| Organic I (atoms) | 8.5521E+15 | 2.9695E+12 | 8.5521E+15 |
| Aerosols (kg) | 1.6034E-04 | 5.5672E-08 | 1.6034E-04 |

TSC Filtered Air Intake Transport Group Inventory:

| Time (h) = 0.8000 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 |

TSC Unfiltered Inleakage Transport Group Inventory:

| Time (h) = 0.8000 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 |

TSC Exhaust to Environment Transport Group Inventory:

| Time (h) = 0.8000 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 |

TSC Compartment Nuclide Inventory:

| Time (h) = 0.8000 | Ci | kg | Atoms | Bq |
|---|---|---|---|---|
| Co-58 | 6.8099E-08 | 2.1416E-15 | 2.2236E+10 | 2.5197E+03 |
| Co-60 | 5.2123E-08 | 4.6111E-14 | 4.6281E+11 | 1.9285E+03 |
| Kr-85 | 7.9541E-05 | 2.0274E-10 | 1.4364E+15 | 2.9430E+06 |
| Kr-85m | 1.4699E-03 | 1.7861E-13 | 1.2654E+12 | 5.4386E+07 |
| Kr-87 | 1.8213E-03 | 6.4298E-14 | 4.4507E+11 | 6.7387E+07 |
| Kr-88 | 3.6763E-03 | 2.9318E-13 | 2.0063E+12 | 1.3602E+08 |
| Rb-86 | 5.2132E-06 | 6.4070E-14 | 4.4865E+11 | 1.9289E+05 |
| Sr-89 | 6.3833E-05 | 2.1972E-12 | 1.4867E+13 | 2.3618E+06 |
| Sr-90 | 6.8901E-06 | 5.0511E-11 | 3.3798E+14 | 2.5493E+05 |
| Sr-91 | 7.8539E-05 | 2.1666E-14 | 1.4338E+11 | 2.9059E+06 |
| Sr-92 | 6.4158E-05 | 5.1043E-15 | 3.3412E+10 | 2.3738E+06 |
| Y-90 | 7.0045E-08 | 1.2874E-16 | 8.6147E+08 | 2.5917E+03 |
| Y-91 | 7.8135E-07 | 3.1861E-14 | 2.1085E+11 | 2.8910E+04 |

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**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 1 | System Nos. | Sheet 673 of 1000 |
|---|---|---|---|---|

| | | | | |
|---|---|---|---|---|
| Y-92 | 6.9884E-07 | 7.2627E-17 | 4.7540E+08 | 2.5857E+04 |
| Y-93 | 9.2800E-07 | 2.7815E-16 | 1.8011E+09 | 3.4336E+04 |
| Zr-95 | 1.0065E-06 | 4.6852E-14 | 2.9700E+11 | 3.7241E+04 |
| Zr-97 | 9.7130E-07 | 5.0809E-16 | 3.1544E+09 | 3.5938E+04 |
| Nb-95 | 1.0139E-06 | 2.5929E-14 | 1.6436E+11 | 3.7514E+04 |
| Mo-99 | 1.3634E-05 | 2.8427E-14 | 1.7292E+11 | 5.0446E+05 |
| Tc-99m | 1.0330E-05 | 1.9646E-15 | 1.1951E+10 | 3.8222E+05 |
| Ru-103 | 1.1113E-05 | 3.4433E-13 | 2.0132E+12 | 4.1117E+05 |
| Ru-105 | 5.9756E-06 | 8.8895E-16 | 5.0985E+09 | 2.2110E+05 |
| Ru-106 | 4.1897E-06 | 1.2523E-12 | 7.1148E+12 | 1.5502E+05 |
| Rh-105 | 6.8086E-06 | 8.0665E-15 | 4.6264E+10 | 2.5192E+05 |
| Sb-127 | 1.5077E-05 | 5.6458E-14 | 2.6772E+11 | 5.5786E+05 |
| Sb-129 | 3.6897E-05 | 6.5614E-15 | 3.0631E+10 | 1.3652E+06 |
| Te-127 | 1.3642E-05 | 5.1692E-15 | 2.4512E+10 | 5.0476E+05 |
| Te-127m | 2.0260E-06 | 2.1479E-13 | 1.0185E+12 | 7.4963E+04 |
| Te-129 | 1.9891E-05 | 9.4981E-16 | 4.4340E+09 | 7.3598E+05 |
| Te-129m | 6.7763E-06 | 2.2494E-12 | 1.0501E+12 | 2.5072E+05 |
| Te-131m | 2.0154E-05 | 2.5274E-14 | 1.1619E+11 | 7.4570E+05 |
| Te-132 | 2.0485E-04 | 6.7477E-13 | 3.0784E+12 | 7.5796E+06 |
| I-131 | 2.5302E-03 | 2.0409E-11 | 9.3821E+13 | 9.3617E+07 |
| I-132 | 2.5953E-03 | 2.5143E-13 | 1.1471E+12 | 9.6025E+07 |
| I-133 | 5.1131E-03 | 4.5136E-12 | 2.0437E+13 | 1.8918E+08 |
| I-134 | 2.3987E-03 | 8.9919E-14 | 4.0411E+11 | 8.8753E+07 |
| I-135 | 4.3900E-03 | 1.2500E-12 | 5.5763E+12 | 1.6243E+08 |
| Xe-133 | 1.1301E-02 | 6.0372E-11 | 2.7336E+14 | 4.1812E+08 |
| Xe-135 | 3.8223E-03 | 1.4968E-12 | 6.6768E+12 | 1.4143E+08 |
| Cs-134 | 5.4461E-04 | 4.2093E-10 | 1.8917E+15 | 2.0151E+07 |
| Cs-136 | 1.5022E-04 | 2.0496E-12 | 9.0756E+12 | 5.5580E+06 |
| Cs-137 | 3.6490E-04 | 4.1951E-09 | 1.8440E+16 | 1.3501E+07 |
| Ba-139 | 5.6134E-05 | 3.4318E-15 | 1.4868E+10 | 2.0770E+06 |
| Ba-140 | 1.0791E-04 | 1.4740E-12 | 6.3407E+12 | 3.9928E+06 |
| La-140 | 1.0723E-06 | 1.9292E-15 | 8.2987E+09 | 3.9676E+04 |
| La-141 | 8.0319E-07 | 1.4202E-16 | 6.0658E+08 | 2.9718E+04 |
| La-142 | 6.5532E-07 | 4.5778E-17 | 1.9414E+08 | 2.4247E+04 |
| Ce-141 | 2.4764E-06 | 8.6911E-14 | 3.7120E+11 | 9.1626E+04 |
| Ce-143 | 2.3941E-06 | 3.6051E-15 | 1.5182E+10 | 8.8581E+04 |
| Ce-144 | 1.9966E-06 | 6.2599E-13 | 2.6179E+12 | 7.3874E+04 |
| Pr-143 | 9.6587E-07 | 1.4343E-14 | 6.0404E+10 | 3.5737E+04 |
| Nd-147 | 4.0357E-07 | 4.9886E-15 | 2.0437E+10 | 1.4932E+04 |
| Np-239 | 2.6971E-05 | 1.1626E-13 | 2.9294E+11 | 9.9792E+05 |
| Pu-238 | 7.8733E-09 | 4.5990E-13 | 1.1637E+12 | 2.9131E+02 |
| Pu-239 | 6.1278E-10 | 9.8587E-12 | 2.4841E+13 | 2.2673E+01 |
| Pu-240 | 6.6082E-10 | 2.9000E-12 | 7.2769E+12 | 2.4450E+01 |
| Pu-241 | 2.7367E-07 | 2.6567E-12 | 6.6385E+12 | 1.0126E+04 |
| Am-241 | 1.6831E-10 | 4.9040E-14 | 1.2254E+11 | 6.2276E+00 |
| Cm-242 | 3.9554E-08 | 1.1934E-14 | 2.9699E+10 | 1.4635E+03 |
| Cm-244 | 3.2005E-09 | 3.9561E-14 | 9.7639E+10 | 1.1842E+02 |

TSC Transport Group Inventory:

| Time (h) = 0.8000 | Atmosphere | Sump | Overlying Pool |
|---|---|---|---|
| Noble gases (atoms) | 1.7214E+15 | 0.0000E+00 | 0.0000E+00 |
| Elemental I (atoms) | 4.7868E+12 | 0.0000E+00 | 0.0000E+00 |
| Organic I (atoms) | 2.5362E+11 | 0.0000E+00 | 0.0000E+00 |

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**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 1 | System Nos. | Sheet 674 of 1000 |
|---|---|---|---|---|

```
Aerosols (kg)          4.7199E-09  0.0000E+00  0.0000E+00

                       Deposition Recirculating
Time (h) =   0.8000     Surfaces     Filter
Noble gases (atoms)    0.0000E+00  0.0000E+00
Elemental I (atoms)    0.0000E+00  0.0000E+00
Organic I (atoms)      0.0000E+00  0.0000E+00
Aerosols (kg)          0.0000E+00  0.0000E+00

TSC Filtered Air Intake Transport Group Inventory:

                        Pathway
Time (h) =   0.8000      Filter
Noble gases (atoms)    0.0000E+00
Elemental I (atoms)    0.0000E+00
Organic I (atoms)      0.0000E+00
Aerosols (kg)          0.0000E+00

TSC Unfiltered Inleakage Transport Group Inventory:

                        Pathway
Time (h) =   0.8000      Filter
Noble gases (atoms)    0.0000E+00
Elemental I (atoms)    0.0000E+00



Organic I (atoms)      0.0000E+00
Aerosols (kg)          0.0000E+00

TSC Exhaust to Environment Transport Group Inventory:

                        Pathway
Time (h) =   0.8000      Filter
Noble gases (atoms)    0.0000E+00
Elemental I (atoms)    0.0000E+00
Organic I (atoms)      0.0000E+00
Aerosols (kg)          0.0000E+00

Exclusion Area Boundary Doses:

Time (h) =   0.9167    Whole Body   Thyroid       TEDE
Delta dose (rem)        7.8450E-02  1.5645E+01  8.6652E-01
Accumulated dose (rem)  2.7044E-01  5.2611E+01  2.7677E+00

Low Population Zone Doses:

Time (h) =   0.9167    Whole Body   Thyroid       TEDE
Delta dose (rem)        1.3729E-02  2.7378E+00  1.5164E-01
Accumulated dose (rem)  4.7326E-02  9.2070E+00  4.8435E-01

TSC Doses:

Time (h) =   0.9167    Whole Body   Thyroid       TEDE
Delta dose (rem)        8.6400E-05  5.7747E-01  2.7344E-02
Accumulated dose (rem)  2.4337E-04  1.5847E+00  7.1890E-02
```

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**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 1 | System Nos. | Sheet 675 of 1000 |
|---|---|---|---|---|

Travel Path Doses:

| Time (h) = 0.9167 | Whole Body | Thyroid | TEDE |
|---|---|---|---|
| Delta dose (rem) | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 |
| Accumulated dose (rem) | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 |

Environment Integral Nuclide Release:

| Time (h) = 0.9167 | Ci | kg | Atoms | Bq |
|---|---|---|---|---|
| Co-58 | 4.0451E-03 | 1.2721E-10 | 1.3208E+15 | 1.4967E+08 |
| Co-60 | 3.0962E-03 | 2.7390E-09 | 2.7491E+16 | 1.1456E+08 |
| Kr-85 | 4.2149E+00 | 1.0743E-05 | 7.6113E+19 | 1.5595E+11 |
| Kr-85m | 7.8109E+01 | 9.4913E-09 | 6.7244E+16 | 2.8900E+12 |
| Kr-87 | 9.8500E+01 | 3.4774E-09 | 2.4071E+16 | 3.6445E+12 |
| Kr-88 | 1.9588E+02 | 1.5621E-08 | 1.0690E+17 | 7.2474E+12 |
| Rb-86 | 2.4283E-01 | 2.9843E-09 | 2.0898E+16 | 8.9845E+09 |
| Sr-89 | 3.7917E+00 | 1.3051E-07 | 8.8310E+17 | 1.4029E+11 |
| Sr-90 | 4.0928E-01 | 3.0004E-06 | 2.0077E+19 | 1.5143E+10 |
| Sr-91 | 4.6535E+00 | 1.2837E-09 | 8.4954E+15 | 1.7218E+11 |
| Sr-92 | 3.7796E+00 | 3.0070E-10 | 1.9683E+15 | 1.3985E+11 |
| Y-90 | 4.1592E-03 | 7.6447E-12 | 5.1152E+13 | 1.5389E+08 |
| Y-91 | 4.6412E-02 | 1.8925E-09 | 1.2524E+16 | 1.7173E+09 |
| Y-92 | 4.1244E-02 | 4.2862E-12 | 2.8057E+13 | 1.5260E+09 |
| Y-93 | 5.4993E-02 | 1.6483E-11 | 1.0674E+14 | 2.0347E+09 |
| Zr-95 | 5.9787E-02 | 2.7830E-09 | 1.7642E+16 | 2.2121E+09 |
| Zr-97 | 5.7613E-02 | 3.0138E-11 | 1.8711E+14 | 2.1317E+09 |
| Nb-95 | 6.0225E-02 | 1.5401E-09 | 9.7631E+15 | 2.2283E+09 |
| Mo-99 | 8.0957E-01 | 1.6880E-09 | 1.0268E+16 | 2.9954E+10 |
| Tc-99m | 6.1123E-01 | 1.1624E-10 | 7.0710E+14 | 2.2616E+10 |
| Ru-103 | 6.6009E-01 | 2.0453E-08 | 1.1958E+17 | 2.4423E+10 |
| Ru-105 | 3.5310E-01 | 5.2529E-11 | 3.0127E+14 | 1.3065E+10 |
| Ru-106 | 2.4887E-01 | 7.4389E-08 | 4.2262E+17 | 9.2084E+09 |
| Rh-105 | 4.0416E-01 | 4.7883E-10 | 2.7463E+15 | 1.4954E+10 |
| Sb-127 | 8.9537E-01 | 3.3528E-09 | 1.5898E+16 | 3.3129E+10 |
| Sb-129 | 2.1800E+00 | 3.8766E-10 | 1.8097E+15 | 8.0659E+10 |
| Te-127 | 8.0828E-01 | 3.0627E-10 | 1.4523E+15 | 2.9906E+10 |
| Te-127m | 1.2035E-01 | 1.2759E-08 | 6.0500E+16 | 4.4529E+09 |
| Te-129 | 1.1618E+00 | 5.5478E-11 | 2.5899E+14 | 4.2988E+10 |
| Te-129m | 4.0251E-01 | 1.3361E-07 | 6.2374E+16 | 1.4893E+10 |
| Te-131m | 1.1962E+00 | 1.5001E-09 | 6.8961E+15 | 4.4259E+10 |
| Te-132 | 1.2165E+01 | 4.0069E-08 | 1.8280E+17 | 4.5010E+11 |
| I-131 | 1.2152E+02 | 9.8024E-07 | 4.5062E+18 | 4.4964E+12 |
| I-132 | 1.2808E+02 | 1.2408E-08 | 5.6609E+16 | 4.7390E+12 |
| I-133 | 2.4613E+02 | 2.1727E-07 | 9.8378E+17 | 9.1067E+12 |
| I-134 | 1.2697E+02 | 4.7597E-09 | 2.1391E+16 | 4.6980E+12 |
| I-135 | 2.1254E+02 | 6.0520E-08 | 2.6997E+17 | 7.8639E+12 |
| Xe-133 | 5.9886E+02 | 3.1993E-06 | 1.4486E+19 | 2.2158E+13 |
| Xe-135 | 2.0277E+02 | 7.9402E-08 | 3.5420E+17 | 7.5025E+12 |
| Cs-134 | 2.5364E+01 | 1.9604E-05 | 8.8101E+19 | 9.3846E+11 |
| Cs-136 | 6.9973E+00 | 9.5473E-08 | 4.2276E+17 | 2.5890E+11 |
| Cs-137 | 1.6994E+01 | 1.9537E-04 | 8.5880E+20 | 6.2877E+11 |
| Ba-139 | 3.2856E+00 | 2.0087E-10 | 8.7026E+14 | 1.2157E+11 |
| Ba-140 | 6.4096E+00 | 8.7553E-08 | 3.7661E+17 | 2.3716E+11 |
| La-140 | 6.3659E-02 | 1.1453E-10 | 4.9265E+14 | 2.3554E+09 |

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**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 1 | System Nos. | Sheet 676 of 1000 |
|---|---|---|---|---|

| | | | | |
|---|---|---|---|---|
| La-141 | 4.7431E-02 | 8.3869E-12 | 3.5820E+13 | 1.7549E+09 |
| La-142 | 3.8406E-02 | 2.6829E-12 | 1.1378E+13 | 1.4210E+09 |
| Ce-141 | 1.4710E-01 | 5.1624E-09 | 2.2049E+16 | 5.4425E+09 |
| Ce-143 | 1.4211E-01 | 2.1399E-10 | 9.0116E+14 | 5.2579E+09 |
| Ce-144 | 1.1860E-01 | 3.7185E-08 | 1.5551E+17 | 4.3882E+09 |
| Pr-143 | 5.7369E-02 | 8.5195E-10 | 3.5878E+15 | 2.1227E+09 |
| Nd-147 | 2.3970E-02 | 2.9630E-10 | 1.2138E+15 | 8.8689E+08 |
| Np-239 | 1.6014E+00 | 6.9029E-09 | 1.7393E+16 | 5.9252E+10 |
| Pu-238 | 4.6768E-04 | 2.7318E-08 | 6.9124E+16 | 1.7304E+07 |
| Pu-239 | 3.6400E-05 | 5.8562E-07 | 1.4756E+18 | 1.3468E+06 |
| Pu-240 | 3.9254E-05 | 1.7227E-07 | 4.3225E+17 | 1.4524E+06 |
| Pu-241 | 1.6256E-02 | 1.5781E-07 | 3.9433E+17 | 6.0148E+08 |
| Am-241 | 9.9980E-06 | 2.9130E-09 | 7.2791E+15 | 3.6992E+05 |
| Cm-242 | 2.3496E-03 | 7.0892E-10 | 1.7641E+15 | 8.6934E+07 |
| Cm-244 | 1.9012E-04 | 2.3499E-09 | 5.7999E+15 | 7.0343E+06 |

Environment Transport Group Inventory:

| Time (h) = 0.9167 | Present Release | Release Rate/s | Total Release |
|---|---|---|---|
| Noble gases (atoms) | 9.1198E+19 | 2.7635E+16 | 9.1198E+19 |
| Elemental I (atoms) | 2.2790E+17 | 6.9059E+13 | 2.2790E+17 |
| Organic I (atoms) | 1.2213E+16 | 3.7007E+12 | 1.2213E+16 |
| Aerosols (kg) | 2.2082E-04 | 6.6914E-08 | 2.2082E-04 |

TSC Filtered Air Intake Transport Group Inventory:

| Time (h) = 0.9167 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 |

TSC Unfiltered Inleakage Transport Group Inventory:

| Time (h) = 0.9167 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 |

TSC Exhaust to Environment Transport Group Inventory:

| Time (h) = 0.9167 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 |

TSC Compartment Nuclide Inventory:

| Time (h) = 0.9167 | Ci | kg | Atoms | Bq |
|---|---|---|---|---|

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**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 1 | System Nos. | Sheet 677 of 1000 |
|---|---|---|---|---|

| | | | | |
|---|---|---|---|---|
| Co-58 | 1.2451E-07 | 3.9156E-15 | 4.0656E+10 | 4.6068E+03 |
| Co-60 | 9.5304E-08 | 8.4312E-14 | 8.4623E+11 | 3.5263E+03 |
| Kr-85 | 1.2628E-04 | 3.2188E-10 | 2.2805E+15 | 4.6725E+06 |
| Kr-85m | 2.2669E-03 | 2.7546E-13 | 1.9516E+12 | 8.3877E+07 |
| Kr-87 | 2.6118E-03 | 9.2205E-14 | 6.3824E+11 | 9.6636E+07 |
| Kr-88 | 5.5758E-03 | 4.4467E-13 | 3.0430E+12 | 2.0630E+08 |
| Rb-86 | 7.0483E-06 | 8.6623E-14 | 6.0658E+11 | 2.6079E+05 |
| Sr-89 | 1.1671E-04 | 4.0171E-12 | 2.7181E+13 | 4.3181E+06 |
| Sr-90 | 1.2598E-05 | 9.2357E-11 | 6.1799E+14 | 4.6613E+05 |
| Sr-91 | 1.4196E-04 | 3.9160E-14 | 2.5915E+11 | 5.2524E+06 |
| Sr-92 | 1.1267E-04 | 8.9637E-15 | 5.8674E+10 | 4.1687E+06 |
| Y-90 | 1.2786E-07 | 2.3500E-16 | 1.5725E+09 | 4.7307E+03 |
| Y-91 | 1.4286E-06 | 5.8252E-14 | 3.8550E+11 | 5.2857E+04 |
| Y-92 | 1.2389E-06 | 1.2875E-16 | 8.4277E+08 | 4.5838E+04 |
| Y-93 | 1.6785E-06 | 5.0309E-16 | 3.2577E+09 | 6.2104E+04 |
| Zr-95 | 1.8402E-06 | 8.5661E-14 | 5.4301E+11 | 6.8089E+04 |
| Zr-97 | 1.7645E-06 | 9.2301E-16 | 5.7304E+09 | 6.5286E+04 |
| Nb-95 | 1.8536E-06 | 4.7403E-14 | 3.0049E+11 | 6.8584E+04 |
| Mo-99 | 2.4888E-05 | 5.1891E-14 | 3.1565E+11 | 9.2085E+05 |
| Tc-99m | 1.8548E-05 | 3.5274E-15 | 2.1457E+10 | 6.8626E+05 |
| Ru-103 | 2.0317E-05 | 6.2951E-13 | 3.6806E+12 | 7.5173E+05 |
| Ru-105 | 1.0660E-05 | 1.5858E-15 | 9.0951E+09 | 3.9441E+05 |
| Ru-106 | 7.6607E-06 | 2.2898E-12 | 1.3009E+13 | 2.8345E+05 |
| Rh-105 | 1.2411E-05 | 1.4704E-14 | 8.4330E+10 | 4.5919E+05 |
| Sb-127 | 2.7536E-05 | 1.0311E-13 | 4.8893E+11 | 1.0188E+06 |
| Sb-129 | 6.5775E-05 | 1.1697E-14 | 5.4604E+10 | 2.4337E+06 |
| Te-127 | 2.4653E-05 | 9.3415E-15 | 4.4296E+10 | 9.1217E+05 |
| Te-127m | 3.7044E-06 | 3.9272E-13 | 1.8622E+12 | 1.3706E+05 |
| Te-129 | 3.3112E-05 | 1.5811E-15 | 7.3812E+09 | 1.2252E+06 |
| Te-129m | 1.2389E-05 | 4.1124E-12 | 1.9198E+12 | 4.5838E+05 |
| Te-131m | 3.6716E-05 | 4.6044E-14 | 2.1167E+11 | 1.3585E+06 |
| Te-132 | 3.7404E-04 | 1.2321E-12 | 5.6209E+12 | 1.3840E+07 |
| I-131 | 3.5553E-03 | 2.8677E-11 | 1.3183E+14 | 1.3155E+08 |
| I-132 | 3.4518E-03 | 3.3441E-13 | 1.5256E+12 | 1.2772E+08 |
| I-133 | 7.1451E-03 | 6.3074E-12 | 2.8559E+13 | 2.6437E+08 |
| I-134 | 2.9205E-03 | 1.0948E-13 | 4.9201E+11 | 1.0806E+08 |
| I-135 | 6.0538E-03 | 1.7238E-12 | 7.6897E+12 | 2.2399E+08 |
| Xe-133 | 1.7923E-02 | 9.5752E-11 | 4.3356E+14 | 6.6315E+08 |
| Xe-135 | 5.9823E-03 | 2.3426E-12 | 1.0450E+13 | 2.2135E+08 |
| Cs-134 | 7.3652E-04 | 5.6926E-10 | 2.5583E+15 | 2.7251E+07 |
| Cs-136 | 2.0307E-04 | 2.7707E-12 | 1.2269E+13 | 7.5135E+06 |
| Cs-137 | 4.9348E-04 | 5.6734E-09 | 2.4939E+16 | 1.8259E+07 |
| Ba-139 | 9.4834E-05 | 5.7978E-15 | 2.5119E+10 | 3.5089E+06 |
| Ba-140 | 1.9724E-04 | 2.6943E-12 | 1.1589E+13 | 7.2980E+06 |
| La-140 | 1.9554E-06 | 3.5179E-15 | 1.5132E+10 | 7.2349E+04 |
| La-141 | 1.4282E-06 | 2.5254E-16 | 1.0786E+09 | 5.2845E+04 |
| La-142 | 1.1164E-06 | 7.7985E-17 | 3.3073E+08 | 4.1305E+04 |
| Ce-141 | 4.5273E-06 | 1.5889E-13 | 6.7862E+11 | 1.6751E+05 |
| Ce-143 | 4.3629E-06 | 6.5699E-15 | 2.7668E+10 | 1.6143E+05 |
| Ce-144 | 3.6507E-06 | 1.1446E-12 | 4.7867E+12 | 1.3507E+05 |
| Pr-143 | 1.7655E-06 | 2.6218E-14 | 1.1041E+11 | 6.5322E+04 |
| Nd-147 | 7.3760E-07 | 9.1176E-15 | 3.7352E+10 | 2.7291E+04 |
| Np-239 | 4.9219E-05 | 2.1216E-13 | 5.3459E+11 | 1.8211E+06 |
| Pu-238 | 1.4396E-08 | 8.4090E-13 | 2.1277E+12 | 5.3265E+02 |
| Pu-239 | 1.1205E-09 | 1.8026E-11 | 4.5421E+13 | 4.1457E+01 |

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**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 1 | System Nos. | Sheet 678 of 1000 |
|---|---|---|---|---|

| | | | | |
|---|---|---|---|---|
| Pu-240 | 1.2083E-09 | 5.3026E-12 | 1.3305E+13 | 4.4707E+01 |
| Pu-241 | 5.0039E-07 | 4.8576E-12 | 1.2138E+13 | 1.8515E+04 |
| Am-241 | 3.0775E-10 | 8.9667E-14 | 2.2406E+11 | 1.1387E+01 |
| Cm-242 | 7.2322E-08 | 2.1821E-14 | 5.4302E+10 | 2.6759E+03 |
| Cm-244 | 5.8521E-09 | 7.2335E-14 | 1.7853E+11 | 2.1653E+02 |

TSC Transport Group Inventory:

| Time (h) = 0.9167 | Atmosphere | Sump | Overlying Pool |
|---|---|---|---|
| Noble gases (atoms) | 2.7323E+15 | 0.0000E+00 | 0.0000E+00 |
| Elemental I (atoms) | 6.6637E+12 | 0.0000E+00 | 0.0000E+00 |
| Organic I (atoms) | 3.5814E+11 | 0.0000E+00 | 0.0000E+00 |
| Aerosols (kg) | 6.4206E-09 | 0.0000E+00 | 0.0000E+00 |

| Time (h) = 0.9167 | Deposition Surfaces | Recirculating Filter |
|---|---|---|
| Noble gases (atoms) | 0.0000E+00 | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 | 0.0000E+00 |

TSC Filtered Air Intake Transport Group Inventory:

| Time (h) = 0.9167 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 |

TSC Unfiltered Inleakage Transport Group Inventory:

| Time (h) = 0.9167 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 |

TSC Exhaust to Environment Transport Group Inventory:

| Time (h) = 0.9167 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 |

Exclusion Area Boundary Doses:

| Time (h) = 1.0000 | Whole Body | Thyroid | TEDE |
|---|---|---|---|
| Delta dose (rem) | 6.3483E-02 | 1.2852E+01 | 7.1769E-01 |
| Accumulated dose (rem) | 3.3392E-01 | 6.5464E+01 | 3.4854E+00 |

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**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 1 | System Nos. | Sheet 679 of 1000 |
|---|---|---|---|---|

Low Population Zone Doses:

| Time (h) = 1.0000 | Whole Body | Thyroid | TEDE |
|---|---|---|---|
| Delta dose (rem) | 1.1109E-02 | 2.2491E+00 | 1.2560E-01 |
| Accumulated dose (rem) | 5.8436E-02 | 1.1456E+01 | 6.0994E-01 |

TSC Doses:

| Time (h) = 1.0000 | Whole Body | Thyroid | TEDE |
|---|---|---|---|
| Delta dose (rem) | 7.9658E-05 | 5.3940E-01 | 2.6046E-02 |
| Accumulated dose (rem) | 3.2302E-04 | 2.1241E+00 | 9.7936E-02 |

Travel Path Doses:

| Time (h) = 1.0000 | Whole Body | Thyroid | TEDE |
|---|---|---|---|
| Delta dose (rem) | 6.3483E-02 | 1.2742E+01 | 7.1208E-01 |
| Accumulated dose (rem) | 6.3483E-02 | 1.2742E+01 | 7.1208E-01 |

Environment Integral Nuclide Release:

| Time (h) = 1.0000 | Ci | kg | Atoms | Bq |
|---|---|---|---|---|
| Co-58 | 5.6791E-03 | 1.7860E-10 | 1.8544E+15 | 2.1013E+08 |
| Co-60 | 4.3470E-03 | 3.8456E-09 | 3.8598E+16 | 1.6084E+08 |
| Kr-85 | 5.6114E+00 | 1.4303E-05 | 1.0133E+20 | 2.0762E+11 |
| Kr-85m | 1.0231E+02 | 1.2432E-08 | 8.8081E+16 | 3.7855E+12 |
| Kr-87 | 1.2400E+02 | 4.3778E-09 | 3.0303E+16 | 4.5882E+12 |
| Kr-88 | 2.5421E+02 | 2.0273E-08 | 1.3873E+17 | 9.4056E+12 |
| Rb-86 | 2.9578E-01 | 3.6351E-09 | 2.5455E+16 | 1.0944E+10 |
| Sr-89 | 5.3232E+00 | 1.8323E-07 | 1.2398E+18 | 1.9696E+11 |
| Sr-90 | 5.7462E-01 | 4.2126E-06 | 2.8187E+19 | 2.1261E+10 |
| Sr-91 | 6.4943E+00 | 1.7915E-09 | 1.1856E+16 | 2.4029E+11 |
| Sr-92 | 5.1974E+00 | 4.1350E-10 | 2.7067E+15 | 1.9231E+11 |
| Y-90 | 5.8342E-03 | 1.0723E-11 | 7.1753E+13 | 2.1587E+08 |
| Y-91 | 6.5160E-02 | 2.6570E-09 | 1.7583E+16 | 2.4109E+09 |
| Y-92 | 5.6987E-02 | 5.9224E-12 | 3.8767E+13 | 2.1085E+09 |
| Y-93 | 7.6774E-02 | 2.3012E-11 | 1.4901E+14 | 2.8406E+09 |
| Zr-95 | 8.3938E-02 | 3.9072E-09 | 2.4768E+16 | 3.1057E+09 |
| Zr-97 | 8.0615E-02 | 4.2170E-11 | 2.6181E+14 | 2.9828E+09 |
| Nb-95 | 8.4550E-02 | 2.1622E-09 | 1.3707E+16 | 3.1283E+09 |
| Mo-99 | 1.1357E+00 | 2.3678E-09 | 1.4403E+16 | 4.2019E+10 |
| Tc-99m | 8.5008E-01 | 1.6167E-10 | 9.8341E+14 | 3.1453E+10 |
| Ru-103 | 9.2672E-01 | 2.8714E-08 | 1.6788E+17 | 3.4288E+10 |
| Ru-105 | 4.8945E-01 | 7.2813E-11 | 4.1761E+14 | 1.8110E+10 |
| Ru-106 | 3.4942E-01 | 1.0444E-07 | 5.9336E+17 | 1.2928E+10 |
| Rh-105 | 5.6651E-01 | 6.7118E-10 | 3.8495E+15 | 2.0961E+10 |
| Sb-127 | 1.2563E+00 | 4.7044E-09 | 2.2307E+16 | 4.6484E+10 |
| Sb-129 | 3.0207E+00 | 5.3717E-10 | 2.5077E+15 | 1.1177E+11 |
| Te-127 | 1.1279E+00 | 4.2738E-10 | 2.0266E+15 | 4.1733E+10 |
| Te-127m | 1.6896E-01 | 1.7913E-08 | 8.4940E+16 | 6.2517E+09 |
| Te-129 | 1.5561E+00 | 7.4306E-11 | 3.4688E+14 | 5.7577E+10 |
| Te-129m | 5.6508E-01 | 1.8758E-07 | 8.7567E+16 | 2.0908E+10 |
| Te-131m | 1.6762E+00 | 2.1021E-09 | 9.6636E+15 | 6.2021E+10 |
| Te-132 | 1.7067E+01 | 5.6216E-08 | 2.5647E+17 | 6.3147E+11 |
| I-131 | 1.5112E+02 | 1.2190E-06 | 5.6038E+18 | 5.5916E+12 |

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**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 1 | System Nos. | Sheet 680 of 1000 |
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| | | | | |
|---|---|---|---|---|
| I-132 | 1.5457E+02 | 1.4974E-08 | 6.8316E+16 | 5.7190E+12 |
| I-133 | 3.0513E+02 | 2.6936E-07 | 1.2196E+18 | 1.1290E+13 |
| I-134 | 1.4657E+02 | 5.4944E-09 | 2.4693E+16 | 5.4232E+12 |
| I-135 | 2.6156E+02 | 7.4480E-08 | 3.3224E+17 | 9.6778E+12 |
| Xe-133 | 7.9681E+02 | 4.2569E-06 | 1.9275E+19 | 2.9482E+13 |
| Xe-135 | 2.6779E+02 | 1.0486E-07 | 4.6778E+17 | 9.9083E+12 |
| Cs-134 | 3.0900E+01 | 2.3882E-05 | 1.0733E+20 | 1.1433E+12 |
| Cs-136 | 8.5227E+00 | 1.1629E-07 | 5.1492E+17 | 3.1534E+11 |
| Cs-137 | 2.0703E+01 | 2.3802E-04 | 1.0463E+21 | 7.6601E+11 |
| Ba-139 | 4.4321E+00 | 2.7096E-10 | 1.1739E+15 | 1.6399E+11 |
| Ba-140 | 8.9975E+00 | 1.2290E-07 | 5.2866E+17 | 3.3291E+11 |
| La-140 | 8.9249E-02 | 1.6057E-10 | 6.9070E+14 | 3.3022E+09 |
| La-141 | 6.5639E-02 | 1.1606E-11 | 4.9571E+13 | 2.4286E+09 |
| La-142 | 5.2018E-02 | 3.6338E-12 | 1.5411E+13 | 1.9247E+09 |
| Ce-141 | 2.0651E-01 | 7.2475E-09 | 3.0954E+16 | 7.6408E+09 |
| Ce-143 | 1.9917E-01 | 2.9992E-10 | 1.2630E+15 | 7.3693E+09 |
| Ce-144 | 1.6651E-01 | 5.2207E-08 | 2.1833E+17 | 6.1610E+09 |
| Pr-143 | 8.0532E-02 | 1.1959E-09 | 5.0364E+15 | 2.9797E+09 |
| Nd-147 | 3.3647E-02 | 4.1591E-10 | 1.7039E+15 | 1.2449E+09 |
| Np-239 | 2.2461E+00 | 9.6818E-09 | 2.4395E+16 | 8.3105E+10 |
| Pu-238 | 6.5663E-04 | 3.8355E-08 | 9.7050E+16 | 2.4295E+07 |
| Pu-239 | 5.1106E-05 | 8.2221E-07 | 2.0717E+18 | 1.8909E+06 |
| Pu-240 | 5.5112E-05 | 2.4186E-07 | 6.0689E+17 | 2.0392E+06 |
| Pu-241 | 2.2824E-02 | 2.2156E-07 | 5.5364E+17 | 8.4448E+08 |
| Am-241 | 1.4037E-05 | 4.0899E-09 | 1.0220E+16 | 5.1937E+05 |
| Cm-242 | 3.2987E-03 | 9.9531E-10 | 2.4768E+15 | 1.2205E+08 |
| Cm-244 | 2.6692E-04 | 3.2993E-09 | 8.1430E+15 | 9.8762E+06 |

Environment Transport Group Inventory:

| Time (h) = 1.0000 | Present Release | Release Rate/s | Total Release |
|---|---|---|---|
| Noble gases (atoms) | 1.2140E+20 | 3.3721E+16 | 1.2140E+20 |
| Elemental I (atoms) | 2.8103E+17 | 7.8063E+13 | 2.8103E+17 |
| Organic I (atoms) | 1.5300E+16 | 4.2499E+12 | 1.5300E+16 |
| Aerosols (kg) | 2.6989E-04 | 7.4970E-08 | 2.6989E-04 |

TSC Filtered Air Intake Transport Group Inventory:

| Time (h) = 1.0000 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 |

TSC Unfiltered Inleakage Transport Group Inventory:

| Time (h) = 1.0000 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 |

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**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 1 | System Nos. | Sheet 681 of 1000 |
|---|---|---|---|---|

TSC Exhaust to Environment Transport Group Inventory:

| Time (h) = 1.0000 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 |

TSC Compartment Nuclide Inventory:

| Time (h) = 1.0000 | Ci | kg | Atoms | Bq |
|---|---|---|---|---|
| Co-58 | 1.7266E-07 | 5.4299E-15 | 5.6379E+10 | 6.3884E+03 |
| Co-60 | 1.3217E-07 | 1.1692E-13 | 1.1735E+12 | 4.8902E+03 |
| Kr-85 | 1.6674E-04 | 4.2501E-10 | 3.0111E+15 | 6.1695E+06 |
| Kr-85m | 2.9351E-03 | 3.5665E-13 | 2.5268E+12 | 1.0860E+08 |
| Kr-87 | 3.2195E-03 | 1.1366E-13 | 7.8675E+11 | 1.1912E+08 |
| Kr-88 | 7.1382E-03 | 5.6927E-13 | 3.8957E+12 | 2.6411E+08 |
| Rb-86 | 8.5021E-06 | 1.0449E-13 | 7.3169E+11 | 3.1458E+05 |
| Sr-89 | 1.6184E-04 | 5.5705E-12 | 3.7693E+13 | 5.9879E+06 |
| Sr-90 | 1.7471E-05 | 1.2808E-10 | 8.5702E+14 | 6.4643E+05 |
| Sr-91 | 1.9523E-04 | 5.3858E-14 | 3.5642E+11 | 7.2236E+06 |
| Sr-92 | 1.5177E-04 | 1.2075E-14 | 7.9039E+10 | 5.6156E+06 |
| Y-90 | 1.7709E-07 | 3.2550E-16 | 2.1780E+09 | 6.5524E+03 |
| Y-91 | 1.9810E-06 | 8.0779E-14 | 5.3457E+11 | 7.3298E+04 |
| Y-92 | 1.6802E-06 | 1.7462E-16 | 1.1430E+09 | 6.2168E+04 |
| Y-93 | 2.3096E-06 | 6.9225E-16 | 4.4826E+09 | 8.5454E+04 |
| Zr-95 | 2.5519E-06 | 1.1879E-13 | 7.5301E+11 | 9.4421E+04 |
| Zr-97 | 2.4356E-06 | 1.2740E-15 | 7.9098E+09 | 9.0116E+04 |
| Nb-95 | 2.5704E-06 | 6.5733E-14 | 4.1669E+11 | 9.5103E+04 |
| Mo-99 | 3.4473E-05 | 7.1876E-14 | 4.3722E+11 | 1.2755E+06 |
| Tc-99m | 2.5387E-05 | 4.8280E-15 | 2.9368E+10 | 9.3930E+05 |
| Ru-103 | 2.8173E-05 | 8.7294E-13 | 5.1038E+12 | 1.0424E+06 |
| Ru-105 | 1.4522E-05 | 2.1604E-15 | 1.2391E+10 | 5.3733E+05 |
| Ru-106 | 1.0624E-05 | 3.1755E-12 | 1.8041E+13 | 3.9308E+05 |
| Rh-105 | 1.7172E-05 | 2.0345E-14 | 1.1669E+11 | 6.3538E+05 |
| Sb-127 | 3.8153E-05 | 1.4287E-13 | 6.7746E+11 | 1.4117E+06 |
| Sb-129 | 8.9566E-05 | 1.5927E-14 | 7.4354E+10 | 3.3139E+06 |
| Te-127 | 3.3901E-05 | 1.2846E-14 | 6.0912E+10 | 1.2543E+06 |
| Te-127m | 5.1371E-06 | 5.4461E-13 | 2.5824E+12 | 1.9007E+05 |
| Te-129 | 4.2926E-05 | 2.0497E-15 | 9.5688E+09 | 1.5883E+06 |
| Te-129m | 1.7179E-05 | 5.7024E-12 | 2.6621E+12 | 6.3562E+05 |
| Te-131m | 5.0784E-05 | 6.3686E-14 | 2.9277E+11 | 1.8790E+06 |
| Te-132 | 5.1820E-04 | 1.7069E-12 | 7.7872E+12 | 1.9173E+07 |
| I-131 | 4.3808E-03 | 3.5336E-11 | 1.6244E+14 | 1.6209E+08 |
| I-132 | 4.0944E-03 | 3.9666E-13 | 1.8097E+12 | 1.5149E+08 |
| I-133 | 8.7705E-03 | 7.7423E-12 | 3.5056E+13 | 3.2451E+08 |
| I-134 | 3.2585E-03 | 1.2215E-13 | 5.4894E+11 | 1.2056E+08 |
| I-135 | 7.3630E-03 | 2.0966E-12 | 9.3527E+12 | 2.7243E+08 |
| Xe-133 | 2.3649E-02 | 1.2634E-10 | 5.7207E+14 | 8.7501E+08 |
| Xe-135 | 7.8229E-03 | 3.0633E-12 | 1.3665E+13 | 2.8945E+08 |
| Cs-134 | 8.8861E-04 | 6.8680E-10 | 3.0866E+15 | 3.2878E+07 |
| Cs-136 | 2.4493E-04 | 3.3419E-12 | 1.4798E+13 | 9.0625E+06 |
| Cs-137 | 5.9538E-04 | 6.8449E-09 | 3.0088E+16 | 2.2029E+07 |

| | | | | |
|---|---|---|---|---|
| Ba-139 | 1.2425E-04 | 7.5959E-15 | 3.2909E+10 | 4.5971E+06 |
| Ba-140 | 2.7347E-04 | 3.7354E-12 | 1.6068E+13 | 1.0118E+07 |
| La-140 | 2.7064E-06 | 4.8691E-15 | 2.0945E+10 | 1.0014E+05 |
| La-141 | 1.9413E-06 | 3.4327E-16 | 1.4661E+09 | 7.1828E+04 |
| La-142 | 1.4714E-06 | 1.0278E-16 | 4.3590E+08 | 5.4440E+04 |
| Ce-141 | 6.2779E-06 | 2.2033E-13 | 9.4102E+11 | 2.3228E+05 |
| Ce-143 | 6.0360E-06 | 9.0893E-15 | 3.8277E+10 | 2.2333E+05 |
| Ce-144 | 5.0627E-06 | 1.5873E-12 | 6.6381E+12 | 1.8732E+05 |
| Pr-143 | 2.4477E-06 | 3.6350E-14 | 1.5308E+11 | 9.0566E+04 |
| Nd-147 | 1.0226E-06 | 1.2640E-14 | 5.1784E+10 | 3.7836E+04 |
| Np-239 | 6.8162E-05 | 2.9381E-13 | 7.4032E+11 | 2.5220E+06 |
| Pu-238 | 1.9964E-08 | 1.1662E-12 | 2.9508E+12 | 7.3868E+02 |
| Pu-239 | 1.5538E-09 | 2.4999E-11 | 6.2990E+13 | 5.7492E+01 |
| Pu-240 | 1.6757E-09 | 7.3537E-12 | 1.8452E+13 | 6.1999E+01 |
| Pu-241 | 6.9394E-07 | 6.7365E-12 | 1.6833E+13 | 2.5676E+04 |
| Am-241 | 4.2679E-10 | 1.2435E-13 | 3.1073E+11 | 1.5791E+01 |
| Cm-242 | 1.0029E-07 | 3.0261E-14 | 7.5304E+10 | 3.7109E+03 |
| Cm-244 | 8.1156E-09 | 1.0031E-13 | 2.4758E+11 | 3.0028E+02 |

TSC Transport Group Inventory:

| Time (h) = 1.0000 | Atmosphere | Sump | Overlying Pool |
|---|---|---|---|
| Noble gases (atoms) | 3.6072E+15 | 0.0000E+00 | 0.0000E+00 |
| Elemental I (atoms) | 8.1374E+12 | 0.0000E+00 | 0.0000E+00 |
| Organic I (atoms) | 4.4479E+11 | 0.0000E+00 | 0.0000E+00 |
| Aerosols (kg) | 7.7724E-09 | 0.0000E+00 | 0.0000E+00 |

| Time (h) = 1.0000 | Deposition Surfaces | Recirculating Filter |
|---|---|---|
| Noble gases (atoms) | 0.0000E+00 | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 | 0.0000E+00 |

TSC Filtered Air Intake Transport Group Inventory:

| Time (h) = 1.0000 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 |

TSC Unfiltered Inleakage Transport Group Inventory:

| Time (h) = 1.0000 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 |

TSC Exhaust to Environment Transport Group Inventory:

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**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 1 | System Nos. | Sheet 683 of 1000 |
|---|---|---|---|---|

```
                          Pathway
Time (h) =   1.0000        Filter
Noble gases (atoms)     0.0000E+00
Elemental I (atoms)     0.0000E+00
Organic I (atoms)       0.0000E+00
Aerosols (kg)           0.0000E+00

Exclusion Area Boundary Doses:

Time (h) =   1.8000    Whole Body   Thyroid       TEDE
Delta dose (rem)        8.2130E-01  1.7665E+02  1.0021E+01
Accumulated dose (rem)  1.1552E+00  2.4212E+02  1.3507E+01

Low Population Zone Doses:

Time (h) =   1.8000    Whole Body   Thyroid       TEDE
Delta dose (rem)        1.4373E-01  3.0915E+01  1.7537E+00
Accumulated dose (rem)  2.0216E-01  4.2371E+01  2.3637E+00

TSC Doses:

Time (h) =   1.8000    Whole Body   Thyroid       TEDE
Delta dose (rem)        1.6632E-03  1.2053E+01  6.1083E-01
Accumulated dose (rem)  1.9862E-03  1.4177E+01  7.0877E-01

Travel Path Doses:

Time (h) =   1.8000    Whole Body   Thyroid       TEDE
Delta dose (rem)        0.0000E+00  0.0000E+00  0.0000E+00
Accumulated dose (rem)  6.3483E-02  1.2742E+01  7.1208E-01

Environment Integral Nuclide Release:


Time (h) =   1.8000       Ci           kg         Atoms         Bq
Co-58                  3.1027E-02  9.7576E-10  1.0131E+16  1.1480E+09
Co-60                  2.3757E-02  2.1017E-08  2.1094E+17  8.7900E+08
Kr-85                  3.0268E+01  7.7147E-05  5.4658E+20  1.1199E+12
Kr-85m                 4.8220E+02  5.8593E-08  4.1513E+17  1.7841E+13
Kr-87                  4.2675E+02  1.5066E-08  1.0429E+17  1.5790E+13
Kr-88                  1.1112E+03  8.8615E-08  6.0643E+17  4.1113E+13
Rb-86                  1.0047E+00  1.2347E-08  8.6461E+16  3.7172E+10
Sr-89                  2.9079E+01  1.0009E-06  6.7727E+18  1.0759E+12
Sr-90                  3.1404E+00  2.3022E-05  1.5405E+20  1.1620E+11
Sr-91                  3.3477E+01  9.2351E-09  6.1116E+16  1.2387E+12
Sr-92                  2.3291E+01  1.8530E-09  1.2129E+16  8.6177E+11
Y-90                   3.1607E-02  5.8094E-11  3.8872E+14  1.1694E+09
Y-91                   3.5597E-01  1.4515E-08  9.6058E+16  1.3171E+10
Y-92                   2.6711E-01  2.7759E-11  1.8171E+14  9.8830E+09
Y-93                   3.9712E-01  1.1903E-10  7.7076E+14  1.4693E+10
Zr-95                  4.5857E-01  2.1346E-08  1.3531E+17  1.6967E+10
Zr-97                  4.2626E-01  2.2298E-10  1.3843E+15  1.5771E+10
Nb-95                  4.6177E-01  1.1809E-08  7.4859E+16  1.7086E+10
Mo-99                  6.1540E+00  1.2831E-08  7.8051E+16  2.2770E+11
Tc-99m                 4.2392E+00  8.0621E-10  4.9041E+15  1.5685E+11
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**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 1 | System Nos. | Sheet 684 of 1000 |
|---|---|---|---|---|

| | | | | |
|---|---|---|---|---|
| Ru-103 | 5.0616E+00 | 1.5683E-07 | 9.1697E+17 | 1.8728E+11 |
| Ru-105 | 2.3646E+00 | 3.5177E-10 | 2.0175E+15 | 8.7491E+10 |
| Ru-106 | 1.9095E+00 | 5.7076E-07 | 3.2426E+18 | 7.0652E+10 |
| Rh-105 | 3.0474E+00 | 3.6104E-09 | 2.0707E+16 | 1.1275E+11 |
| Sb-127 | 6.8244E+00 | 2.5555E-08 | 1.2118E+17 | 2.5250E+11 |
| Sb-129 | 1.4545E+01 | 2.5866E-09 | 1.2075E+16 | 5.3817E+11 |
| Te-127 | 5.8088E+00 | 2.2010E-09 | 1.0437E+16 | 2.1493E+11 |
| Te-127m | 9.2322E-01 | 9.7876E-08 | 4.6411E+17 | 3.4159E+10 |
| Te-129 | 5.5006E+00 | 2.6266E-10 | 1.2262E+15 | 2.0352E+11 |
| Te-129m | 3.0861E+00 | 1.0244E-06 | 4.7824E+17 | 1.1419E+11 |
| Te-131m | 8.9915E+00 | 1.1276E-08 | 5.1836E+16 | 3.3269E+11 |
| Te-132 | 9.2605E+01 | 3.0503E-07 | 1.3916E+18 | 3.4264E+12 |
| I-131 | 5.6016E+02 | 4.5183E-06 | 2.0771E+19 | 2.0726E+13 |
| I-132 | 4.4556E+02 | 4.3165E-08 | 1.9693E+17 | 1.6486E+13 |
| I-133 | 1.1014E+03 | 9.7231E-07 | 4.4025E+18 | 4.0753E+13 |
| I-134 | 2.9963E+02 | 1.1232E-08 | 5.0477E+16 | 1.1086E+13 |
| I-135 | 8.8698E+02 | 2.5257E-07 | 1.1267E+18 | 3.2818E+13 |
| Xe-133 | 4.2770E+03 | 2.2849E-05 | 1.0346E+20 | 1.5825E+14 |
| Xe-135 | 1.3505E+03 | 5.2885E-07 | 2.3591E+18 | 4.9970E+13 |
| Cs-134 | 1.0510E+02 | 8.1229E-05 | 3.6505E+20 | 3.8886E+12 |
| Cs-136 | 2.8932E+01 | 3.9475E-07 | 1.7480E+18 | 1.0705E+12 |
| Cs-137 | 7.0417E+01 | 8.0956E-04 | 3.5586E+21 | 2.6054E+12 |
| Ba-139 | 1.6678E+01 | 1.0196E-09 | 4.4174E+15 | 6.1707E+11 |
| Ba-140 | 4.9082E+01 | 6.7044E-07 | 2.8839E+18 | 1.8161E+12 |
| La-140 | 4.8102E-01 | 8.6541E-10 | 3.7226E+15 | 1.7798E+10 |
| La-141 | 3.1223E-01 | 5.5210E-11 | 2.3580E+14 | 1.1553E+10 |
| La-142 | 2.0297E-01 | 1.4179E-11 | 6.0131E+13 | 7.5098E+09 |
| Ce-141 | 1.1278E+00 | 3.9581E-08 | 1.6905E+17 | 4.1728E+10 |
| Ce-143 | 1.0702E+00 | 1.6115E-09 | 6.7865E+15 | 3.9596E+10 |
| Ce-144 | 9.0995E-01 | 2.8530E-07 | 1.1931E+18 | 3.3668E+10 |
| Pr-143 | 4.3936E-01 | 6.5247E-09 | 2.7477E+16 | 1.6256E+10 |
| Nd-147 | 1.8349E-01 | 2.2682E-09 | 9.2921E+15 | 6.7893E+09 |
| Np-239 | 1.2154E+01 | 5.2390E-08 | 1.3201E+17 | 4.4970E+11 |
| Pu-238 | 3.5886E-03 | 2.0962E-07 | 5.3040E+17 | 1.3278E+08 |
| Pu-239 | 2.7930E-04 | 4.4935E-06 | 1.1322E+19 | 1.0334E+07 |
| Pu-240 | 3.0120E-04 | 1.3218E-06 | 3.3167E+18 | 1.1144E+07 |
| Pu-241 | 1.2474E-01 | 1.2109E-06 | 3.0257E+18 | 4.6152E+09 |
| Am-241 | 7.6716E-05 | 2.2352E-08 | 5.5853E+16 | 2.8385E+06 |
| Cm-242 | 1.8026E-02 | 5.4387E-09 | 1.3534E+16 | 6.6695E+08 |
| Cm-244 | 1.4588E-03 | 1.8031E-08 | 4.4503E+16 | 5.3975E+07 |

Environment Transport Group Inventory:

| Time (h) = 1.8000 | Present Release | Release Rate/s | Total Release |
|---|---|---|---|
| Noble gases (atoms) | 6.5414E+20 | 1.0095E+17 | 6.5414E+20 |
| Elemental I (atoms) | 9.5447E+17 | 1.4729E+14 | 9.5447E+17 |
| Organic I (atoms) | 6.4841E+16 | 1.0006E+13 | 6.4841E+16 |
| Aerosols (kg) | 9.3150E-04 | 1.4375E-07 | 9.3150E-04 |

TSC Filtered Air Intake Transport Group Inventory:

| Time (h) = 1.8000 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |

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**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 1 | System Nos. | Sheet 685 of 1000 |
|---|---|---|---|---|

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Elemental I (atoms)    0.0000E+00
Organic I (atoms)      0.0000E+00
Aerosols (kg)          0.0000E+00

TSC Unfiltered Inleakage Transport Group Inventory:

                        Pathway
Time (h) =   1.8000      Filter
Noble gases (atoms)    0.0000E+00
Elemental I (atoms)    0.0000E+00
Organic I (atoms)      0.0000E+00
Aerosols (kg)          0.0000E+00

TSC Exhaust to Environment Transport Group Inventory:

                        Pathway
Time (h) =   1.8000      Filter
Noble gases (atoms)    0.0000E+00
Elemental I (atoms)    0.0000E+00
Organic I (atoms)      0.0000E+00
Aerosols (kg)          0.0000E+00

TSC Compartment Nuclide Inventory:

Time (h) =   1.8000       Ci            kg          Atoms          Bq
Co-58                  8.3624E-07  2.6299E-14  2.7306E+11  3.0941E+04
Co-60                  6.4040E-07  5.6654E-13  5.6863E+12  2.3695E+04
Kr-85                  8.1712E-04  2.0827E-09  1.4756E+16  3.0233E+07
Kr-85m                 1.2097E-02  1.4699E-12  1.0414E+13  4.4758E+08
Kr-87                  8.6379E-03  3.0495E-13  2.1109E+12  3.1960E+08
Kr-88                  2.6641E-02  2.1246E-12  1.4540E+13  9.8572E+08
Rb-86                  2.5893E-05  3.1823E-13  2.2284E+12  9.5805E+05
Sr-89                  7.8367E-04  2.6975E-11  1.8252E+14  2.8996E+07
Sr-90                  8.4655E-05  6.2061E-10  4.1527E+15  3.1323E+06
Sr-91                  8.7262E-04  2.4072E-13  1.5931E+12  3.2287E+07
Sr-92                  5.5519E-04  4.4170E-14  2.8913E+11  2.0542E+07


Y-90                   8.4784E-07  1.5583E-15  1.0427E+10  3.1370E+04
Y-91                   9.5937E-06  3.9120E-13  2.5888E+12  3.5497E+05
Y-92                   6.5620E-06  6.8195E-16  4.4639E+09  2.4279E+05
Y-93                   1.0372E-05  3.1089E-15  2.0132E+10  3.8378E+05
Zr-95                  1.2359E-05  5.7530E-13  3.6469E+12  4.5728E+05
Zr-97                  1.1277E-05  5.8991E-15  3.6624E+10  4.1726E+05
Nb-95                  1.2443E-05  3.1822E-13  2.0172E+12  4.6040E+05
Mo-99                  1.6510E-04  3.4424E-13  2.0940E+12  6.1088E+06
Tc-99m                 1.0832E-04  2.0599E-14  1.2531E+11  4.0077E+06
Ru-103                 1.3640E-04  4.2263E-12  2.4710E+13  5.0468E+06
Ru-105                 5.9236E-05  8.8122E-15  5.0541E+10  2.1917E+06
Ru-106                 5.1472E-05  1.5385E-11  8.7408E+13  1.9045E+06
Rh-105                 8.1420E-05  9.6463E-14  5.5325E+11  3.0125E+06
Sb-127                 1.8334E-04  6.8653E-13  3.2554E+12  6.7836E+06
Sb-129                 3.6360E-04  6.4659E-14  3.0185E+11  1.3453E+07
Te-127                 1.5133E-04  5.7342E-14  2.7190E+11  5.5992E+06
Te-127m                2.4884E-05  2.6381E-12  1.2509E+13  9.2071E+05
Te-129                 1.0873E-04  5.1919E-15  2.4238E+10  4.0230E+06
Te-129m                8.3160E-05  2.7605E-11  1.2887E+13  3.0769E+06
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**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 1 | System Nos. | Sheet 686 of 1000 |
|---|---|---|---|---|

| | | | | |
|---|---|---|---|---|
| Te-131m | 2.3985E-04 | 3.0079E-13 | 1.3827E+12 | 8.8744E+06 |
| Te-132 | 2.4863E-03 | 8.1897E-12 | 3.7363E+13 | 9.1994E+07 |
| I-131 | 1.4568E-02 | 1.1750E-10 | 5.4017E+14 | 5.3900E+08 |
| I-132 | 9.6348E-03 | 9.3341E-13 | 4.2584E+12 | 3.5649E+08 |
| I-133 | 2.8164E-02 | 2.4862E-11 | 1.1258E+14 | 1.0421E+09 |
| I-134 | 4.4217E-03 | 1.6575E-13 | 7.4491E+11 | 1.6360E+08 |
| I-135 | 2.1748E-02 | 6.1927E-12 | 2.7624E+13 | 8.0467E+08 |
| Xe-133 | 1.1518E-01 | 6.1531E-10 | 2.7861E+15 | 4.2615E+09 |
| Xe-135 | 3.5193E-02 | 1.3781E-11 | 6.1475E+13 | 1.3021E+09 |
| Cs-134 | 2.7111E-03 | 2.0954E-09 | 9.4169E+15 | 1.0031E+08 |
| Cs-136 | 7.4537E-04 | 1.0170E-11 | 4.5033E+13 | 2.7579E+07 |
| Cs-137 | 1.8165E-03 | 2.0884E-08 | 9.1801E+16 | 6.7212E+07 |
| Ba-139 | 3.4812E-04 | 2.1283E-14 | 9.2207E+10 | 1.2880E+07 |
| Ba-140 | 1.3217E-03 | 1.8054E-11 | 7.7662E+13 | 4.8905E+07 |
| La-140 | 1.2866E-05 | 2.3147E-14 | 9.9567E+10 | 4.7603E+05 |
| La-141 | 7.7446E-06 | 1.3694E-15 | 5.8488E+09 | 2.8655E+05 |
| La-142 | 4.3647E-06 | 3.0490E-16 | 1.2931E+09 | 1.6149E+05 |
| Ce-141 | 3.0389E-05 | 1.0665E-12 | 4.5552E+12 | 1.1244E+06 |
| Ce-143 | 2.8574E-05 | 4.3028E-14 | 1.8120E+11 | 1.0572E+06 |
| Ce-144 | 2.4528E-05 | 7.6903E-12 | 3.2161E+13 | 9.0754E+05 |
| Pr-143 | 1.1832E-05 | 1.7571E-13 | 7.3999E+11 | 4.3780E+05 |
| Nd-147 | 4.9405E-06 | 6.1070E-14 | 2.5019E+11 | 1.8280E+05 |
| Np-239 | 3.2581E-04 | 1.4044E-12 | 3.5388E+12 | 1.2055E+07 |
| Pu-238 | 9.6737E-08 | 5.6506E-12 | 1.4298E+13 | 3.5793E+03 |
| Pu-239 | 7.5291E-09 | 1.2113E-10 | 3.0522E+14 | 2.7858E+02 |
| Pu-240 | 8.1193E-09 | 3.5632E-11 | 8.9408E+13 | 3.0042E+02 |
| Pu-241 | 3.3625E-06 | 3.2641E-11 | 8.1564E+13 | 1.2441E+05 |
| Am-241 | 2.0680E-09 | 6.0253E-13 | 1.5056E+12 | 7.6516E+01 |
| Cm-242 | 4.8587E-07 | 1.4660E-13 | 3.6481E+11 | 1.7977E+04 |
| Cm-244 | 3.9324E-08 | 4.8606E-13 | 1.1996E+12 | 1.4550E+03 |

TSC Transport Group Inventory:

| Time (h) = 1.8000 | Atmosphere | Sump | Overlying Pool |
|---|---|---|---|
| Noble gases (atoms) | 1.7658E+16 | 0.0000E+00 | 0.0000E+00 |
| Elemental I (atoms) | 2.4608E+13 | 0.0000E+00 | 0.0000E+00 |
| Organic I (atoms) | 1.7157E+12 | 0.0000E+00 | 0.0000E+00 |
| Aerosols (kg) | 2.4071E-08 | 0.0000E+00 | 0.0000E+00 |

| Time (h) = 1.8000 | Deposition Surfaces | Recirculating Filter |
|---|---|---|
| Noble gases (atoms) | 0.0000E+00 | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 | 0.0000E+00 |

TSC Filtered Air Intake Transport Group Inventory:

| Time (h) = 1.8000 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 |

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**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 1 | System Nos. | Sheet 687 of 1000 |
|---|---|---|---|---|

TSC Unfiltered Inleakage Transport Group Inventory:

| | Pathway Filter |
|---|---|
| Time (h) = 1.8000 | |
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 |

TSC Exhaust to Environment Transport Group Inventory:

| | Pathway Filter |
|---|---|
| Time (h) = 1.8000 | |
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 |

Exclusion Area Boundary Doses:

| Time (h) = 2.0000 | Whole Body | Thyroid | TEDE |
|---|---|---|---|
| Delta dose (rem) | 2.2087E-01 | 4.8657E+01 | 2.7845E+00 |
| Accumulated dose (rem) | 1.3761E+00 | 2.9077E+02 | 1.6291E+01 |

Low Population Zone Doses:

| Time (h) = 2.0000 | Whole Body | Thyroid | TEDE |
|---|---|---|---|
| Delta dose (rem) | 3.8653E-02 | 8.5150E+00 | 4.8728E-01 |
| Accumulated dose (rem) | 2.4082E-01 | 5.0886E+01 | 2.8510E+00 |

TSC Doses:

| Time (h) = 2.0000 | Whole Body | Thyroid | TEDE |
|---|---|---|---|
| Delta dose (rem) | 6.6718E-04 | 5.1283E+00 | 2.6523E-01 |
| Accumulated dose (rem) | 2.6534E-03 | 1.9306E+01 | 9.7400E-01 |

Travel Path Doses:

| Time (h) = 2.0000 | Whole Body | Thyroid | TEDE |
|---|---|---|---|
| Delta dose (rem) | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 |
| Accumulated dose (rem) | 6.3483E-02 | 1.2742E+01 | 7.1208E-01 |

Environment Integral Nuclide Release:

| Time (h) = 2.0000 | Ci | kg | Atoms | Bq |
|---|---|---|---|---|
| Co-58 | 3.8387E-02 | 1.2072E-09 | 1.2534E+16 | 1.4203E+09 |
| Co-60 | 2.9394E-02 | 2.6003E-08 | 2.6099E+17 | 1.0876E+09 |
| Kr-85 | 3.8978E+01 | 9.9348E-05 | 7.0386E+20 | 1.4422E+12 |
| Kr-85m | 6.0410E+02 | 7.3406E-08 | 5.2007E+17 | 2.2352E+13 |
| Kr-87 | 5.0264E+02 | 1.7745E-08 | 1.2283E+17 | 1.8598E+13 |
| Kr-88 | 1.3712E+03 | 1.0935E-07 | 7.4833E+17 | 5.0734E+13 |
| Rb-86 | 1.1992E+00 | 1.4738E-08 | 1.0320E+17 | 4.4370E+10 |
| Sr-89 | 3.5976E+01 | 1.2383E-06 | 8.3789E+18 | 1.3311E+12 |

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**CALCULATION SHEET**
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|---|---|---|---|---|

| | | | | |
|---|---|---|---|---|
| Sr-90 | 3.8856E+00 | 2.8485E-05 | 1.9060E+20 | 1.4377E+11 |
| Sr-91 | 4.0932E+01 | 1.1292E-08 | 7.4726E+16 | 1.5145E+12 |
| Sr-92 | 2.7696E+01 | 2.2034E-09 | 1.4423E+16 | 1.0247E+12 |
| Y-90 | 3.9037E-02 | 7.1750E-11 | 4.8010E+14 | 1.4444E+09 |
| Y-91 | 4.4040E-01 | 1.7958E-08 | 1.1884E+17 | 1.6295E+10 |
| Y-92 | 3.2044E-01 | 3.3302E-11 | 2.1799E+14 | 1.1856E+10 |
| Y-93 | 4.8589E-01 | 1.4564E-10 | 9.4306E+14 | 1.7978E+10 |
| Zr-95 | 5.6734E-01 | 2.6409E-08 | 1.6741E+17 | 2.0991E+10 |
| Zr-97 | 5.2387E-01 | 2.7404E-10 | 1.7013E+15 | 1.9383E+10 |
| Nb-95 | 5.7126E-01 | 1.4609E-08 | 9.2609E+16 | 2.1137E+10 |
| Mo-99 | 7.6010E+00 | 1.5848E-08 | 9.6404E+16 | 2.8124E+11 |
| Tc-99m | 5.1489E+00 | 9.7920E-10 | 5.9564E+15 | 1.9051E+11 |
| Ru-103 | 6.2619E+00 | 1.9402E-07 | 1.1344E+18 | 2.3169E+11 |
| Ru-105 | 2.8539E+00 | 4.2456E-10 | 2.4350E+15 | 1.0559E+11 |
| Ru-106 | 2.3626E+00 | 7.0618E-07 | 4.0120E+18 | 8.7415E+10 |
| Rh-105 | 3.7584E+00 | 4.4527E-09 | 2.5538E+16 | 1.3906E+11 |
| Sb-127 | 8.4333E+00 | 3.1579E-08 | 1.4974E+17 | 3.1203E+11 |
| Sb-129 | 1.7543E+01 | 3.1197E-09 | 1.4564E+16 | 6.4909E+11 |
| Te-127 | 7.1011E+00 | 2.6907E-09 | 1.2759E+16 | 2.6274E+11 |
| Te-127m | 1.1422E+00 | 1.2109E-07 | 5.7421E+17 | 4.2263E+10 |
| Te-129 | 6.2545E+00 | 2.9865E-10 | 1.3942E+15 | 2.3142E+11 |
| Te-129m | 3.8179E+00 | 1.2673E-06 | 5.9163E+17 | 1.4126E+11 |
| Te-131m | 1.1083E+01 | 1.3899E-08 | 6.3893E+16 | 4.1006E+11 |
| Te-132 | 1.1441E+02 | 3.7686E-07 | 1.7193E+18 | 4.2332E+12 |
| I-131 | 6.7356E+02 | 5.4330E-06 | 2.4976E+19 | 2.4922E+13 |
| I-132 | 5.1073E+02 | 4.9479E-08 | 2.2573E+17 | 1.8897E+13 |
| I-133 | 1.3176E+03 | 1.1631E-06 | 5.2666E+18 | 4.8752E+13 |
| I-134 | 3.2350E+02 | 1.2127E-08 | 5.4499E+16 | 1.1969E+13 |
| I-135 | 1.0483E+03 | 2.9851E-07 | 1.3316E+18 | 3.8789E+13 |
| Xe-133 | 5.5022E+03 | 2.9395E-05 | 1.3310E+20 | 2.0358E+14 |
| Xe-135 | 1.7154E+03 | 6.7172E-07 | 2.9965E+18 | 6.3470E+13 |
| Cs-134 | 1.2548E+02 | 9.6983E-05 | 4.3586E+20 | 4.6427E+12 |
| Cs-136 | 3.4530E+01 | 4.7114E-07 | 2.0862E+18 | 1.2776E+12 |
| Cs-137 | 8.4075E+01 | 9.6659E-04 | 4.2488E+21 | 3.1108E+12 |
| Ba-139 | 1.9182E+01 | 1.1727E-09 | 5.0807E+15 | 7.0973E+11 |
| Ba-140 | 6.0706E+01 | 8.2922E-07 | 3.5669E+18 | 2.2461E+12 |
| La-140 | 5.9347E-01 | 1.0677E-09 | 4.5928E+15 | 2.1958E+10 |
| La-141 | 3.7568E-01 | 6.6429E-11 | 2.8372E+14 | 1.3900E+10 |
| La-142 | 2.3503E-01 | 1.6418E-11 | 6.9629E+13 | 8.6961E+09 |
| | | | | |
| Ce-141 | 1.3952E+00 | 4.8965E-08 | 2.0913E+17 | 5.1622E+10 |
| Ce-143 | 1.3195E+00 | 1.9870E-09 | 8.3678E+15 | 4.8823E+10 |
| Ce-144 | 1.1258E+00 | 3.5299E-07 | 1.4762E+18 | 4.1656E+10 |
| Pr-143 | 5.4343E-01 | 8.0700E-09 | 3.3985E+16 | 2.0107E+10 |
| Nd-147 | 2.2693E-01 | 2.8052E-09 | 1.1492E+16 | 8.3966E+09 |
| Np-239 | 1.5008E+01 | 6.4690E-08 | 1.6300E+17 | 5.5528E+11 |
| Pu-238 | 4.4401E-03 | 2.5936E-07 | 6.5625E+17 | 1.6428E+08 |
| Pu-239 | 3.4557E-04 | 5.5598E-06 | 1.4009E+19 | 1.2786E+07 |
| Pu-240 | 3.7267E-04 | 1.6355E-06 | 4.1037E+18 | 1.3789E+07 |
| Pu-241 | 1.5433E-01 | 1.4982E-06 | 3.7437E+18 | 5.7103E+09 |
| Am-241 | 9.4919E-05 | 2.7656E-08 | 6.9106E+16 | 3.5120E+06 |
| Cm-242 | 2.2302E-02 | 6.7291E-09 | 1.6745E+16 | 8.2518E+08 |
| Cm-244 | 1.8049E-03 | 2.2310E-08 | 5.5063E+16 | 6.6782E+07 |

Environment Transport Group Inventory:

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**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 1 | System Nos. | Sheet 689 of 1000 |
|---|---|---|---|---|

| Time (h) = 2.0000 | Present Release | Release Rate/s | Total Release |
|---|---|---|---|
| Noble gases (atoms) | 8.4224E+20 | 1.1698E+17 | 8.4224E+20 |
| Elemental I (atoms) | 1.1209E+18 | 1.5568E+14 | 1.1209E+18 |
| Organic I (atoms) | 8.1693E+16 | 1.1346E+13 | 8.1693E+16 |
| Aerosols (kg) | 1.1137E-03 | 1.5468E-07 | 1.1137E-03 |

TSC Filtered Air Intake Transport Group Inventory:

| Time (h) = 2.0000 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 |

TSC Unfiltered Inleakage Transport Group Inventory:

| Time (h) = 2.0000 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 |

TSC Exhaust to Environment Transport Group Inventory:

| Time (h) = 2.0000 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 |

TSC Compartment Nuclide Inventory:

| Time (h) = 2.0000 | Ci | kg | Atoms | Bq |
|---|---|---|---|---|
| Co-58 | 9.9786E-07 | 3.1381E-14 | 3.2583E+11 | 3.6921E+04 |
| Co-60 | 7.6425E-07 | 6.7610E-13 | 6.7859E+12 | 2.8277E+04 |
| Kr-85 | 1.0230E-03 | 2.6075E-09 | 1.8474E+16 | 3.7851E+07 |
| Kr-85m | 1.4556E-02 | 1.7688E-12 | 1.2531E+13 | 5.3857E+08 |
| Kr-87 | 9.4233E-03 | 3.3268E-13 | 2.3028E+12 | 3.4866E+08 |
| Kr-88 | 3.1338E-02 | 2.4992E-12 | 1.7103E+13 | 1.1595E+09 |
| Rb-86 | 2.9848E-05 | 3.6683E-13 | 2.5687E+12 | 1.1044E+06 |
| Sr-89 | 9.3509E-04 | 3.2187E-11 | 2.1779E+14 | 3.4598E+07 |
| Sr-90 | 1.0103E-04 | 7.4063E-10 | 4.9558E+15 | 3.7380E+06 |
| Sr-91 | 1.0218E-03 | 2.8188E-13 | 1.8654E+12 | 3.7807E+07 |
| Sr-92 | 6.2022E-04 | 4.9344E-14 | 3.2299E+11 | 2.2948E+07 |
| Y-90 | 1.0090E-06 | 1.8545E-15 | 1.2409E+10 | 3.7332E+04 |
| Y-91 | 1.1448E-05 | 4.6679E-13 | 3.0891E+12 | 4.2356E+05 |
| Y-92 | 7.4441E-06 | 7.7363E-16 | 5.0640E+09 | 2.7543E+05 |
| Y-93 | 1.2160E-05 | 3.6446E-15 | 2.3600E+10 | 4.4990E+05 |
| Zr-95 | 1.4747E-05 | 6.8648E-13 | 4.3516E+12 | 5.4566E+05 |
| Zr-97 | 1.3315E-05 | 6.9653E-15 | 4.3243E+10 | 4.9267E+05 |
| Nb-95 | 1.4847E-05 | 3.7968E-13 | 2.4068E+12 | 5.4932E+05 |

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**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 1 | System Nos. | Sheet 690 of 1000 |
|---|---|---|---|---|

| | | | | |
|---|---|---|---|---|
| Mo-99 | 1.9649E-04 | 4.0969E-13 | 2.4921E+12 | 7.2703E+06 |
| Tc-99m | 1.2546E-04 | 2.3860E-14 | 1.4514E+11 | 4.6420E+06 |
| Ru-103 | 1.6275E-04 | 5.0427E-12 | 2.9483E+13 | 6.0217E+06 |
| Ru-105 | 6.7889E-05 | 1.0100E-14 | 5.7924E+10 | 2.5119E+06 |
| Ru-106 | 6.1426E-05 | 1.8360E-11 | 1.0431E+14 | 2.2728E+06 |
| Rh-105 | 9.6671E-05 | 1.1453E-13 | 6.5688E+11 | 3.5768E+06 |
| Sb-127 | 2.1837E-04 | 8.1770E-13 | 3.8774E+12 | 8.0797E+06 |
| Sb-129 | 4.1625E-04 | 7.4021E-14 | 3.4555E+11 | 1.5401E+07 |
| Te-127 | 1.7715E-04 | 6.7125E-14 | 3.1830E+11 | 6.5546E+06 |
| Te-127m | 2.9695E-05 | 3.1481E-12 | 1.4928E+13 | 1.0987E+06 |
| Te-129 | 1.1142E-04 | 5.3204E-15 | 2.4837E+10 | 4.1226E+06 |
| Te-129m | 9.9221E-05 | 3.2936E-11 | 1.5376E+13 | 3.6712E+06 |
| Te-131m | 2.8452E-04 | 3.5680E-13 | 1.6402E+12 | 1.0527E+07 |
| Te-132 | 2.9603E-03 | 9.7510E-12 | 4.4486E+13 | 1.0953E+08 |
| I-131 | 1.6910E-02 | 1.3640E-10 | 6.2704E+14 | 6.2568E+08 |
| I-132 | 1.0334E-02 | 1.0012E-12 | 4.5675E+12 | 3.8236E+08 |
| I-133 | 3.2434E-02 | 2.8632E-11 | 1.2964E+14 | 1.2001E+09 |
| I-134 | 4.1814E-03 | 1.5674E-13 | 7.0443E+11 | 1.5471E+08 |
| I-135 | 2.4570E-02 | 6.9964E-12 | 3.1210E+13 | 9.0910E+08 |
| Xe-133 | 1.4399E-01 | 7.6926E-10 | 3.4831E+15 | 5.3277E+09 |
| Xe-135 | 4.3205E-02 | 1.6919E-11 | 7.5471E+13 | 1.5986E+09 |
| Cs-134 | 3.1264E-03 | 2.4164E-09 | 1.0860E+16 | 1.1568E+08 |
| Cs-136 | 8.5907E-04 | 1.1721E-11 | 5.1902E+13 | 3.1785E+07 |
| Cs-137 | 2.0949E-03 | 2.4084E-08 | 1.0587E+17 | 7.7510E+07 |
| Ba-139 | 3.6529E-04 | 2.2332E-14 | 9.6754E+10 | 1.3516E+07 |
| Ba-140 | 1.5764E-03 | 2.1533E-11 | 9.2627E+13 | 5.8328E+07 |
| La-140 | 1.5285E-05 | 2.7500E-14 | 1.1829E+11 | 5.6556E+05 |
| La-141 | 8.8297E-06 | 1.5613E-15 | 6.6684E+09 | 3.2670E+05 |
| La-142 | 4.6418E-06 | 3.2426E-16 | 1.3752E+09 | 1.7175E+05 |
| Ce-141 | 3.6258E-05 | 1.2725E-12 | 5.4349E+12 | 1.3415E+06 |
| Ce-143 | 3.3914E-05 | 5.1069E-14 | 2.1507E+11 | 1.2548E+06 |
| Ce-144 | 2.9271E-05 | 9.1774E-12 | 3.8380E+13 | 1.0830E+06 |
| Pr-143 | 1.4113E-05 | 2.0958E-13 | 8.8261E+11 | 5.2218E+05 |
| Nd-147 | 5.8919E-06 | 7.2831E-14 | 2.9837E+11 | 2.1800E+05 |
| Np-239 | 3.8759E-04 | 1.6707E-12 | 4.2097E+12 | 1.4341E+07 |
| Pu-238 | 1.1545E-07 | 6.7434E-12 | 1.7063E+13 | 4.2715E+03 |
| Pu-239 | 8.9852E-09 | 1.4456E-10 | 3.6424E+14 | 3.3245E+02 |
| Pu-240 | 9.6896E-09 | 4.2523E-11 | 1.0670E+14 | 3.5851E+02 |
| Pu-241 | 4.0127E-06 | 3.8954E-11 | 9.7338E+13 | 1.4847E+05 |
| Am-241 | 2.4679E-09 | 7.1906E-13 | 1.7968E+12 | 9.1314E+01 |
| Cm-242 | 5.7981E-07 | 1.7494E-13 | 4.3534E+11 | 2.1453E+04 |
| Cm-244 | 4.6929E-08 | 5.8007E-13 | 1.4317E+12 | 1.7364E+03 |

TSC Transport Group Inventory:

| Time (h) = 2.0000 | Atmosphere | Sump | Overlying Pool |
|---|---|---|---|
| Noble gases (atoms) | 2.2103E+16 | 0.0000E+00 | 0.0000E+00 |
| Elemental I (atoms) | 2.7791E+13 | 0.0000E+00 | 0.0000E+00 |
| Organic I (atoms) | 2.1030E+12 | 0.0000E+00 | 0.0000E+00 |
| Aerosols (kg) | 2.7798E-08 | 0.0000E+00 | 0.0000E+00 |

| Time (h) = 2.0000 | Deposition Surfaces | Recirculating Filter |
|---|---|---|

```
Noble gases (atoms)    0.0000E+00  0.0000E+00
Elemental I (atoms)    0.0000E+00  0.0000E+00
Organic I (atoms)      0.0000E+00  0.0000E+00
Aerosols (kg)          0.0000E+00  0.0000E+00

TSC Filtered Air Intake Transport Group Inventory:

                        Pathway
Time (h) =   2.0000      Filter
Noble gases (atoms)    0.0000E+00
Elemental I (atoms)    0.0000E+00
Organic I (atoms)      0.0000E+00
Aerosols (kg)          0.0000E+00

TSC Unfiltered Inleakage Transport Group Inventory:

                        Pathway
Time (h) =   2.0000      Filter
Noble gases (atoms)    0.0000E+00
Elemental I (atoms)    0.0000E+00
Organic I (atoms)      0.0000E+00
Aerosols (kg)          0.0000E+00

TSC Exhaust to Environment Transport Group Inventory:

                        Pathway
Time (h) =   2.0000      Filter
Noble gases (atoms)    0.0000E+00
Elemental I (atoms)    0.0000E+00
Organic I (atoms)      0.0000E+00
Aerosols (kg)          0.0000E+00

Exclusion Area Boundary Doses:

Time (h) =   2.8000    Whole Body   Thyroid       TEDE
Delta dose (rem)        6.6331E-01  1.2668E+02  7.3590E+00
Accumulated dose (rem)  2.0394E+00  4.1745E+02  2.3650E+01

Low Population Zone Doses:

Time (h) =   2.8000    Whole Body   Thyroid       TEDE



Delta dose (rem)        4.9749E-02  9.5007E+00  5.5193E-01
Accumulated dose (rem)  2.9056E-01  6.0386E+01  3.4029E+00

TSC Doses:

Time (h) =   2.8000    Whole Body   Thyroid       TEDE
Delta dose (rem)        2.7391E-03  2.1933E+01  1.1427E+00
Accumulated dose (rem)  5.3925E-03  4.1239E+01  2.1167E+00

Travel Path Doses:

Time (h) =   2.8000    Whole Body   Thyroid       TEDE
Delta dose (rem)        0.0000E+00  0.0000E+00  0.0000E+00
```

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**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 1 | System Nos. | Sheet 692 of 1000 |
|---|---|---|---|---|

Accumulated dose (rem) 6.3483E-02 1.2742E+01 7.1208E-01

Environment Integral Nuclide Release:

| Time (h) = 2.8000 | Ci | kg | Atoms | Bq |
|---|---|---|---|---|
| Co-58 | 5.7719E-02 | 1.8152E-09 | 1.8847E+16 | 2.1356E+09 |
| Co-60 | 4.4204E-02 | 3.9105E-08 | 3.9249E+17 | 1.6355E+09 |
| Kr-85 | 7.3817E+01 | 1.8815E-04 | 1.3330E+21 | 2.7312E+12 |
| Kr-85m | 1.0557E+03 | 1.2828E-07 | 9.0884E+17 | 3.9060E+13 |
| Kr-87 | 7.3549E+02 | 2.5966E-08 | 1.7973E+17 | 2.7213E+13 |
| Kr-88 | 2.2931E+03 | 1.8288E-07 | 1.2515E+18 | 8.4846E+13 |
| Rb-86 | 1.7106E+00 | 2.1023E-08 | 1.4721E+17 | 6.3292E+10 |
| Sr-89 | 5.4090E+01 | 1.8618E-06 | 1.2598E+19 | 2.0013E+12 |
| Sr-90 | 5.8434E+00 | 4.2838E-05 | 2.8664E+20 | 2.1620E+11 |
| Sr-91 | 5.9886E+01 | 1.6520E-08 | 1.0933E+17 | 2.2158E+12 |
| Sr-92 | 3.8020E+01 | 3.0248E-09 | 1.9800E+16 | 1.4068E+12 |
| Y-90 | 5.8462E-02 | 1.0745E-10 | 7.1900E+14 | 2.1631E+09 |
| Y-91 | 6.6217E-01 | 2.7001E-08 | 1.7869E+17 | 2.4500E+10 |
| Y-92 | 4.4881E-01 | 4.6642E-11 | 3.0531E+14 | 1.6606E+10 |
| Y-93 | 7.1202E-01 | 2.1341E-10 | 1.3819E+15 | 2.6345E+10 |
| Zr-95 | 8.5304E-01 | 3.9708E-08 | 2.5171E+17 | 3.1563E+10 |
| Zr-97 | 7.7562E-01 | 4.0573E-10 | 2.5189E+15 | 2.8698E+10 |
| Nb-95 | 8.5883E-01 | 2.1963E-08 | 1.3923E+17 | 3.1777E+10 |
| Mo-99 | 1.1385E+01 | 2.3737E-08 | 1.4439E+17 | 4.2124E+11 |
| Tc-99m | 7.4182E+00 | 1.4108E-09 | 8.5817E+15 | 2.7447E+11 |
| Ru-103 | 9.4144E+00 | 2.9170E-07 | 1.7055E+18 | 3.4833E+11 |
| Ru-105 | 4.0523E+00 | 6.0285E-10 | 3.4575E+15 | 1.4994E+11 |
| Ru-106 | 3.5529E+00 | 1.0620E-06 | 6.0333E+18 | 1.3146E+11 |
| Rh-105 | 5.6097E+00 | 6.6462E-09 | 3.8118E+16 | 2.0756E+11 |
| Sb-127 | 1.2646E+01 | 4.7354E-08 | 2.2454E+17 | 4.6790E+11 |
| Sb-129 | 2.4872E+01 | 4.4230E-09 | 2.0648E+16 | 9.2028E+11 |
| Te-127 | 1.0385E+01 | 3.9349E-09 | 1.8659E+16 | 3.8423E+11 |
| Te-127m | 1.7176E+00 | 1.8209E-07 | 8.6344E+17 | 6.3551E+10 |
| Te-129 | 7.7788E+00 | 3.7144E-10 | 1.7340E+15 | 2.8782E+11 |
| Te-129m | 5.7396E+00 | 1.9053E-06 | 8.8943E+17 | 2.1237E+11 |
| Te-131m | 1.6520E+01 | 2.0718E-08 | 9.5240E+16 | 6.1125E+11 |
| Te-132 | 1.7147E+02 | 5.6481E-07 | 2.5768E+18 | 6.3445E+12 |
| I-131 | 9.7015E+02 | 7.8254E-06 | 3.5974E+19 | 3.5895E+13 |
| I-132 | 6.6006E+02 | 6.3946E-08 | 2.9174E+17 | 2.4422E+13 |
| I-133 | 1.8755E+03 | 1.6556E-06 | 7.4964E+18 | 6.9392E+13 |
| I-134 | 3.6792E+02 | 1.3792E-08 | 6.1982E+16 | 1.3613E+13 |
| I-135 | 1.4516E+03 | 4.1335E-07 | 1.8439E+18 | 5.3710E+13 |
| Xe-133 | 1.0390E+04 | 5.5505E-05 | 2.5132E+20 | 3.8441E+14 |
| Xe-135 | 3.1204E+03 | 1.2219E-06 | 5.4507E+18 | 1.1545E+14 |
| Cs-134 | 1.7910E+02 | 1.3843E-04 | 6.2211E+20 | 6.6267E+12 |
| Cs-136 | 4.9242E+01 | 6.7187E-07 | 2.9751E+18 | 1.8220E+12 |
| Cs-137 | 1.2000E+02 | 1.3797E-03 | 6.0646E+21 | 4.4402E+12 |
| Ba-139 | 2.4454E+01 | 1.4950E-09 | 6.4772E+15 | 9.0480E+11 |
| Ba-140 | 9.1213E+01 | 1.2459E-06 | 5.3594E+18 | 3.3749E+12 |
| La-140 | 8.8663E-01 | 1.5951E-09 | 6.8616E+15 | 3.2805E+10 |
| La-141 | 5.2969E-01 | 9.3662E-11 | 4.0003E+14 | 1.9599E+10 |
| La-142 | 3.0409E-01 | 2.1243E-11 | 9.0090E+13 | 1.1251E+10 |
| Ce-141 | 2.0974E+00 | 7.3611E-08 | 3.1439E+17 | 7.7605E+10 |
| Ce-143 | 1.9685E+00 | 2.9642E-09 | 1.2483E+16 | 7.2834E+10 |
| Ce-144 | 1.6930E+00 | 5.3082E-07 | 2.2199E+18 | 6.2643E+10 |

| | | | | |
|---|---|---|---|---|
| Pr-143 | 8.1656E-01 | 1.2126E-08 | 5.1067E+16 | 3.0213E+10 |
| Nd-147 | 3.4093E-01 | 4.2143E-09 | 1.7265E+16 | 1.2614E+10 |
| Np-239 | 2.2463E+01 | 9.6827E-08 | 2.4398E+17 | 8.3114E+11 |
| Pu-238 | 6.6772E-03 | 3.9003E-07 | 9.8690E+17 | 2.4706E+08 |
| Pu-239 | 5.1969E-04 | 8.3611E-06 | 2.1068E+19 | 1.9229E+07 |
| Pu-240 | 5.6044E-04 | 2.4595E-06 | 6.1714E+18 | 2.0736E+07 |
| Pu-241 | 2.3209E-01 | 2.2531E-06 | 5.6300E+18 | 8.5875E+09 |
| Am-241 | 1.4274E-04 | 4.1590E-08 | 1.0393E+17 | 5.2815E+06 |
| Cm-242 | 3.3537E-02 | 1.0119E-08 | 2.5181E+16 | 1.2409E+09 |
| Cm-244 | 2.7143E-03 | 3.3551E-08 | 8.2806E+16 | 1.0043E+08 |

Environment Transport Group Inventory:

| Time (h) = 2.8000 | Present Release | Release Rate/s | Total Release |
|---|---|---|---|
| Noble gases (atoms) | 1.5946E+21 | 1.5820E+17 | 1.5946E+21 |
| Elemental I (atoms) | 1.4819E+18 | 1.4701E+14 | 1.4819E+18 |
| Organic I (atoms) | 1.4910E+17 | 1.4791E+13 | 1.4910E+17 |
| Aerosols (kg) | 1.5930E-03 | 1.5804E-07 | 1.5930E-03 |

TSC Filtered Air Intake Transport Group Inventory:

| Time (h) = 2.8000 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 |

TSC Unfiltered Inleakage Transport Group Inventory:

| Time (h) = 2.8000 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 |

TSC Exhaust to Environment Transport Group Inventory:

| Time (h) = 2.8000 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 |

TSC Compartment Nuclide Inventory:

| Time (h) = 2.8000 | Ci | kg | Atoms | Bq |
|---|---|---|---|---|
| Co-58 | 1.0010E-06 | 3.1481E-14 | 3.2687E+11 | 3.7039E+04 |
| Co-60 | 7.6695E-07 | 6.7849E-13 | 6.8099E+12 | 2.8377E+04 |
| Kr-85 | 1.2648E-03 | 3.2237E-09 | 2.2839E+16 | 4.6796E+07 |
| Kr-85m | 1.5738E-02 | 1.9124E-12 | 1.3549E+13 | 5.8232E+08 |
| Kr-87 | 7.2764E-03 | 2.5689E-13 | 1.7782E+12 | 2.6923E+08 |

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**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 1 | System Nos. | Sheet 694 of 1000 |
|---|---|---|---|---|

| | | | | |
|---|---|---|---|---|
| Kr-88 | 3.1365E-02 | 2.5013E-12 | 1.7118E+13 | 1.1605E+09 |
| Rb-86 | 2.8907E-05 | 3.5527E-13 | 2.4877E+12 | 1.0696E+06 |
| Sr-89 | 9.3795E-04 | 3.2285E-11 | 2.1845E+14 | 3.4704E+07 |
| Sr-90 | 1.0139E-04 | 7.4325E-10 | 4.9733E+15 | 3.7512E+06 |
| Sr-91 | 9.6327E-04 | 2.6573E-13 | 1.7585E+12 | 3.5641E+07 |
| Sr-92 | 5.0000E-04 | 3.9779E-14 | 2.6039E+11 | 1.8500E+07 |
| Y-90 | 1.0032E-06 | 1.8439E-15 | 1.2338E+10 | 3.7117E+04 |
| Y-91 | 1.1483E-05 | 4.6825E-13 | 3.0987E+12 | 4.2488E+05 |
| Y-92 | 6.3170E-06 | 6.5649E-16 | 4.2972E+09 | 2.3373E+05 |
| Y-93 | 1.1505E-05 | 3.4485E-15 | 2.2331E+10 | 4.2570E+05 |
| Zr-95 | 1.4794E-05 | 6.8864E-13 | 4.3653E+12 | 5.4738E+05 |
| Zr-97 | 1.2901E-05 | 6.7484E-15 | 4.1896E+10 | 4.7732E+05 |
| Nb-95 | 1.4889E-05 | 3.8075E-13 | 2.4136E+12 | 5.5088E+05 |
| Mo-99 | 1.9542E-04 | 4.0746E-13 | 2.4785E+12 | 7.2306E+06 |
| Tc-99m | 1.1407E-04 | 2.1694E-14 | 1.3196E+11 | 4.2207E+06 |
| Ru-103 | 1.6322E-04 | 5.0574E-12 | 2.9569E+13 | 6.0392E+06 |
| Ru-105 | 5.9600E-05 | 8.8663E-15 | 5.0852E+10 | 2.2052E+06 |
| Ru-106 | 6.1639E-05 | 1.8424E-11 | 1.0467E+14 | 2.2807E+06 |
| Rh-105 | 9.5396E-05 | 1.1302E-13 | 6.4822E+11 | 3.5297E+06 |
| Sb-127 | 2.1774E-04 | 8.1534E-13 | 3.8662E+12 | 8.0563E+06 |
| Sb-129 | 3.6407E-04 | 6.4742E-14 | 3.0224E+11 | 1.3471E+07 |
| Te-127 | 1.6683E-04 | 6.3215E-14 | 2.9976E+11 | 6.1728E+06 |
| Te-127m | 2.9793E-05 | 3.1585E-12 | 1.4977E+13 | 1.1023E+06 |
| Te-129 | 6.7120E-05 | 3.2050E-15 | 1.4962E+10 | 2.4835E+06 |
| Te-129m | 9.9499E-05 | 3.3028E-11 | 1.5419E+13 | 3.6814E+06 |
| Te-131m | 2.7992E-04 | 3.5104E-13 | 1.6138E+12 | 1.0357E+07 |
| Te-132 | 2.9483E-03 | 9.7114E-12 | 4.4306E+13 | 1.0909E+08 |
| I-131 | 1.6457E-02 | 1.3275E-10 | 6.1025E+14 | 6.0892E+08 |
| I-132 | 7.7683E-03 | 7.5259E-13 | 3.4335E+12 | 2.8743E+08 |
| I-133 | 3.0760E-02 | 2.7154E-11 | 1.2295E+14 | 1.1381E+09 |
| I-134 | 2.0617E-03 | 7.7284E-14 | 3.4732E+11 | 7.6282E+07 |
| I-135 | 2.1899E-02 | 6.2358E-12 | 2.7817E+13 | 8.1027E+08 |
| Xe-133 | 1.7717E-01 | 9.4652E-10 | 4.2858E+15 | 6.5553E+09 |
| Xe-135 | 4.9999E-02 | 1.9579E-11 | 8.7338E+13 | 1.8500E+09 |
| Cs-134 | 3.0318E-03 | 2.3433E-09 | 1.0531E+16 | 1.1218E+08 |
| Cs-136 | 8.3150E-04 | 1.1345E-11 | 5.0237E+13 | 3.0766E+07 |
| Cs-137 | 2.0315E-03 | 2.3356E-08 | 1.0267E+17 | 7.5167E+07 |
| Ba-139 | 2.3851E-04 | 1.4581E-14 | 6.3173E+10 | 8.8247E+06 |
| Ba-140 | 1.5789E-03 | 2.1568E-11 | 9.2774E+13 | 5.8421E+07 |
| La-140 | 1.5115E-05 | 2.7193E-14 | 1.1697E+11 | 5.5924E+05 |
| La-141 | 7.6184E-06 | 1.3471E-15 | 5.7535E+09 | 2.8188E+05 |
| La-142 | 3.1715E-06 | 2.2155E-16 | 9.3957E+08 | 1.1734E+05 |
| Ce-141 | 3.6359E-05 | 1.2760E-12 | 5.4500E+12 | 1.3453E+06 |
| Ce-143 | 3.3427E-05 | 5.0335E-14 | 2.1198E+11 | 1.2368E+06 |
| Ce-144 | 2.9372E-05 | 9.2091E-12 | 3.8513E+13 | 1.0868E+06 |
| | | | | |
| Pr-143 | 1.4137E-05 | 2.0994E-13 | 8.8412E+11 | 5.2307E+05 |
| Nd-147 | 5.8995E-06 | 7.2924E-14 | 2.9875E+11 | 2.1828E+05 |
| Np-239 | 3.8489E-04 | 1.6591E-12 | 4.1804E+12 | 1.4241E+07 |
| Pu-238 | 1.1585E-07 | 6.7673E-12 | 1.7123E+13 | 4.2866E+03 |
| Pu-239 | 9.0170E-09 | 1.4507E-10 | 3.6553E+14 | 3.3363E+02 |
| Pu-240 | 9.7239E-09 | 4.2674E-11 | 1.0708E+14 | 3.5978E+02 |
| Pu-241 | 4.0269E-06 | 3.9092E-11 | 9.7682E+13 | 1.4900E+05 |
| Am-241 | 2.4767E-09 | 7.2161E-13 | 1.8032E+12 | 9.1637E+01 |
| Cm-242 | 5.8178E-07 | 1.7554E-13 | 4.3682E+11 | 2.1526E+04 |
| Cm-244 | 4.7095E-08 | 5.8212E-13 | 1.4367E+12 | 1.7425E+03 |

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**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 1 | System Nos. | Sheet 695 of 1000 |
|---|---|---|---|---|

TSC Transport Group Inventory:

| Time (h) = 2.8000 | Atmosphere | Sump | Overlying Pool |
|---|---|---|---|
| Noble gases (atoms) | 2.7321E+16 | 0.0000E+00 | 0.0000E+00 |
| Elemental I (atoms) | 2.5152E+13 | 0.0000E+00 | 0.0000E+00 |
| Organic I (atoms) | 2.5348E+12 | 0.0000E+00 | 0.0000E+00 |
| Aerosols (kg) | 2.6996E-08 | 0.0000E+00 | 0.0000E+00 |

| Time (h) = 2.8000 | Deposition Surfaces | Recirculating Filter |
|---|---|---|
| Noble gases (atoms) | 0.0000E+00 | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 | 0.0000E+00 |

TSC Filtered Air Intake Transport Group Inventory:

| Time (h) = 2.8000 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 |

TSC Unfiltered Inleakage Transport Group Inventory:

| Time (h) = 2.8000 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 |

TSC Exhaust to Environment Transport Group Inventory:

| Time (h) = 2.8000 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 |

Exclusion Area Boundary Doses:

| Time (h) = 2.9200 | Whole Body | Thyroid | TEDE |
|---|---|---|---|
| Delta dose (rem) | 7.7869E-02 | 1.2450E+01 | 7.3784E-01 |
| Accumulated dose (rem) | 2.1173E+00 | 4.2990E+02 | 2.4388E+01 |

Low Population Zone Doses:

| Time (h) = 2.9200 | Whole Body | Thyroid | TEDE |
|---|---|---|---|
| Delta dose (rem) | 5.8401E-03 | 9.3378E-01 | 5.5338E-02 |
| Accumulated dose (rem) | 2.9640E-01 | 6.1320E+01 | 3.4582E+00 |

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**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 1 | System Nos. | Sheet 696 of 1000 |
|---|---|---|---|---|

TSC Doses:

| Time (h) = 2.9200 | Whole Body | Thyroid | TEDE |
|---|---|---|---|
| Delta dose (rem) | 3.8507E-04 | 3.0942E+00 | 1.6201E-01 |
| Accumulated dose (rem) | 5.7776E-03 | 4.4333E+01 | 2.2787E+00 |

Travel Path Doses:

| Time (h) = 2.9200 | Whole Body | Thyroid | TEDE |
|---|---|---|---|
| Delta dose (rem) | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 |
| Accumulated dose (rem) | 6.3483E-02 | 1.2742E+01 | 7.1208E-01 |

Environment Integral Nuclide Release:

| Time (h) = 2.9200 | Ci | kg | Atoms | Bq |
|---|---|---|---|---|
| Co-58 | 5.9635E-02 | 1.8754E-09 | 1.9473E+16 | 2.2065E+09 |
| Co-60 | 4.5672E-02 | 4.0404E-08 | 4.0553E+17 | 1.6899E+09 |
| Kr-85 | 7.9042E+01 | 2.0147E-04 | 1.4274E+21 | 2.9246E+12 |
| Kr-85m | 1.1188E+03 | 1.3595E-07 | 9.6317E+17 | 4.1395E+13 |
| Kr-87 | 7.6256E+02 | 2.6921E-08 | 1.8635E+17 | 2.8215E+13 |
| Kr-88 | 2.4168E+03 | 1.9274E-07 | 1.3190E+18 | 8.9420E+13 |
| Rb-86 | 1.7613E+00 | 2.1646E-08 | 1.5158E+17 | 6.5167E+10 |
| Sr-89 | 5.5885E+01 | 1.9236E-06 | 1.3016E+19 | 2.0678E+12 |
| Sr-90 | 6.0374E+00 | 4.4260E-05 | 2.9616E+20 | 2.2338E+11 |
| Sr-91 | 6.1698E+01 | 1.7020E-08 | 1.1263E+17 | 2.2828E+12 |
| Sr-92 | 3.8920E+01 | 3.0964E-09 | 2.0269E+16 | 1.4401E+12 |
| Y-90 | 6.0377E-02 | 1.1097E-10 | 7.4256E+14 | 2.2340E+09 |
| Y-91 | 6.8415E-01 | 2.7897E-08 | 1.8462E+17 | 2.5314E+10 |
| Y-92 | 4.6034E-01 | 4.7841E-11 | 3.1316E+14 | 1.7033E+10 |
| Y-93 | 7.3368E-01 | 2.1991E-10 | 1.4240E+15 | 2.7146E+10 |
| Zr-95 | 8.8136E-01 | 4.1026E-08 | 2.6007E+17 | 3.2610E+10 |
| Zr-97 | 8.0007E-01 | 4.1852E-10 | 2.5983E+15 | 2.9603E+10 |
| Nb-95 | 8.8732E-01 | 2.2692E-08 | 1.4385E+17 | 3.2831E+10 |
| Mo-99 | 1.1758E+01 | 2.4515E-08 | 1.4913E+17 | 4.3504E+11 |
| Tc-99m | 7.6305E+00 | 1.4512E-09 | 8.8274E+15 | 2.8233E+11 |
| Ru-103 | 9.7267E+00 | 3.0138E-07 | 1.7621E+18 | 3.5989E+11 |
| Ru-105 | 4.1622E+00 | 6.1919E-10 | 3.5513E+15 | 1.5400E+11 |
| Ru-106 | 3.6709E+00 | 1.0972E-06 | 6.2336E+18 | 1.3582E+11 |
| Rh-105 | 5.7915E+00 | 6.8615E-09 | 3.9353E+16 | 2.1429E+11 |
| Sb-127 | 1.3062E+01 | 4.8911E-08 | 2.3193E+17 | 4.8329E+11 |
| Sb-129 | 2.5543E+01 | 4.5423E-09 | 2.1205E+16 | 9.4509E+11 |
| Te-127 | 1.0698E+01 | 4.0538E-09 | 1.9222E+16 | 3.9584E+11 |
| Te-127m | 1.7746E+00 | 1.8814E-07 | 8.9211E+17 | 6.5661E+10 |
| Te-129 | 7.8901E+00 | 3.7676E-10 | 1.7588E+15 | 2.9194E+11 |
| Te-129m | 5.9301E+00 | 1.9685E-06 | 9.1894E+17 | 2.1941E+11 |
| Te-131m | 1.7053E+01 | 2.1386E-08 | 9.8311E+16 | 6.3097E+11 |
| Te-132 | 1.7711E+02 | 5.8336E-07 | 2.6614E+18 | 6.5529E+12 |
| I-131 | 9.9945E+02 | 8.0617E-06 | 3.7060E+19 | 3.6980E+13 |
| I-132 | 6.7276E+02 | 6.5176E-08 | 2.9735E+17 | 2.4892E+13 |
| I-133 | 1.9298E+03 | 1.7035E-06 | 7.7135E+18 | 7.1402E+13 |
| I-134 | 3.7084E+02 | 1.3901E-08 | 6.2474E+16 | 1.3721E+13 |
| I-135 | 1.4895E+03 | 4.2413E-07 | 1.8920E+18 | 5.5111E+13 |
| Xe-133 | 1.1121E+04 | 5.9412E-05 | 2.6901E+20 | 4.1147E+14 |
| Xe-135 | 3.3239E+03 | 1.3016E-06 | 5.8063E+18 | 1.2299E+14 |

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**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 1 | System Nos. | Sheet 697 of 1000 |
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| | | | | |
|---|---|---|---|---|
| Cs-134 | 1.8442E+02 | 1.4254E-04 | 6.4058E+20 | 6.8235E+12 |
| Cs-136 | 5.0700E+01 | 6.9176E-07 | 3.0631E+18 | 1.8759E+12 |
| Cs-137 | 1.2357E+02 | 1.4206E-03 | 6.2446E+21 | 4.5720E+12 |
| Ba-139 | 2.4859E+01 | 1.5198E-09 | 6.5843E+15 | 9.1977E+11 |
| Ba-140 | 9.4234E+01 | 1.2872E-06 | 5.5369E+18 | 3.4867E+12 |
| La-140 | 9.1544E-01 | 1.6470E-09 | 7.0845E+15 | 3.3871E+10 |
| La-141 | 5.4367E-01 | 9.6134E-11 | 4.1059E+14 | 2.0116E+10 |
| La-142 | 3.0954E-01 | 2.1623E-11 | 9.1704E+13 | 1.1453E+10 |
| Ce-141 | 2.1670E+00 | 7.6053E-08 | 3.2482E+17 | 8.0180E+10 |
| Ce-143 | 2.0321E+00 | 3.0601E-09 | 1.2887E+16 | 7.5190E+10 |
| Ce-144 | 1.7493E+00 | 5.4845E-07 | 2.2936E+18 | 6.4723E+10 |
| Pr-143 | 8.4361E-01 | 1.2528E-08 | 5.2758E+16 | 3.1214E+10 |
| Nd-147 | 3.5222E-01 | 4.3538E-09 | 1.7836E+16 | 1.3032E+10 |
| Np-239 | 2.3198E+01 | 9.9994E-08 | 2.5196E+17 | 8.5832E+11 |
| Pu-238 | 6.8990E-03 | 4.0299E-07 | 1.0197E+18 | 2.5526E+08 |
| Pu-239 | 5.3696E-04 | 8.6388E-06 | 2.1767E+19 | 1.9867E+07 |
| Pu-240 | 5.7905E-04 | 2.5412E-06 | 6.3764E+18 | 2.1425E+07 |
| Pu-241 | 2.3980E-01 | 2.3279E-06 | 5.8169E+18 | 8.8727E+09 |
| Am-241 | 1.4748E-04 | 4.2971E-08 | 1.0738E+17 | 5.4569E+06 |
| Cm-242 | 3.4650E-02 | 1.0455E-08 | 2.6017E+16 | 1.2821E+09 |
| Cm-244 | 2.8045E-03 | 3.4665E-08 | 8.5556E+16 | 1.0377E+08 |

Environment Transport Group Inventory:

| Time (h) = 2.9200 | Present Release | Release Rate/s | Total Release |
|---|---|---|---|
| Noble gases (atoms) | 1.7075E+21 | 1.6243E+17 | 1.7075E+21 |
| Elemental I (atoms) | 1.5116E+18 | 1.4380E+14 | 1.5116E+18 |
| Organic I (atoms) | 1.5921E+17 | 1.5145E+13 | 1.5921E+17 |
| Aerosols (kg) | 1.6406E-03 | 1.5606E-07 | 1.6406E-03 |

TSC Filtered Air Intake Transport Group Inventory:

| Time (h) = 2.9200 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 |

TSC Unfiltered Inleakage Transport Group Inventory:

| Time (h) = 2.9200 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 |

TSC Exhaust to Environment Transport Group Inventory:

| Time (h) = 2.9200 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 |

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**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 1 | System Nos. | Sheet 698 of 1000 |
|---|---|---|---|---|

Organic I (atoms) 0.0000E+00
Aerosols (kg) 0.0000E+00

TSC Compartment Nuclide Inventory:

| Time (h) = 2.9200 | Ci | kg | Atoms | Bq |
|---|---|---|---|---|
| Co-58 | 9.5741E-07 | 3.0109E-14 | 3.1262E+11 | 3.5424E+04 |
| Co-60 | 7.3356E-07 | 6.4895E-13 | 6.5134E+12 | 2.7142E+04 |
| Kr-85 | 1.3449E-03 | 3.4280E-09 | 2.4287E+16 | 4.9762E+07 |
| Kr-85m | 1.6385E-02 | 1.9910E-12 | 1.4106E+13 | 6.0626E+08 |
| Kr-87 | 7.1833E-03 | 2.5360E-13 | 1.7554E+12 | 2.6578E+08 |
| Kr-88 | 3.2258E-02 | 2.5726E-12 | 1.7605E+13 | 1.1935E+09 |
| Rb-86 | 2.7420E-05 | 3.3699E-13 | 2.3598E+12 | 1.0145E+06 |
| Sr-89 | 8.9705E-04 | 3.0877E-11 | 2.0893E+14 | 3.3191E+07 |
| Sr-90 | 9.6972E-05 | 7.1090E-10 | 4.7568E+15 | 3.5879E+06 |
| Sr-91 | 9.1242E-04 | 2.5170E-13 | 1.6657E+12 | 3.3760E+07 |
| Sr-92 | 4.6223E-04 | 3.6775E-14 | 2.4072E+11 | 1.7103E+07 |
| Y-90 | 9.5812E-07 | 1.7610E-15 | 1.1784E+10 | 3.5450E+04 |
| Y-91 | 1.0983E-05 | 4.4784E-13 | 2.9637E+12 | 4.0636E+05 |
| Y-92 | 5.8866E-06 | 6.1176E-16 | 4.0045E+09 | 2.1780E+05 |
| Y-93 | 1.0904E-05 | 3.2684E-15 | 2.1164E+10 | 4.0346E+05 |
| Zr-95 | 1.4149E-05 | 6.5862E-13 | 4.1751E+12 | 5.2352E+05 |
| Zr-97 | 1.2272E-05 | 6.4194E-15 | 3.9854E+10 | 4.5406E+05 |
| Nb-95 | 1.4239E-05 | 3.6414E-13 | 2.3083E+12 | 5.2684E+05 |
| Mo-99 | 1.8665E-04 | 3.8918E-13 | 2.3673E+12 | 6.9062E+06 |
| Tc-99m | 1.0745E-04 | 2.0434E-14 | 1.2430E+11 | 3.9755E+06 |
| Ru-103 | 1.5610E-04 | 4.8368E-12 | 2.8279E+13 | 5.7757E+06 |
| Ru-105 | 5.5833E-05 | 8.3059E-15 | 4.7638E+10 | 2.0658E+06 |
| Ru-106 | 5.8955E-05 | 1.7622E-11 | 1.0011E+14 | 2.1813E+06 |
| Rh-105 | 9.1006E-05 | 1.0782E-13 | 6.1839E+11 | 3.3672E+06 |
| Sb-127 | 2.0805E-04 | 7.7906E-13 | 3.6942E+12 | 7.6979E+06 |
| Sb-129 | 3.4086E-04 | 6.0615E-14 | 2.8297E+11 | 1.2612E+07 |
| Te-127 | 1.5800E-04 | 5.9869E-14 | 2.8389E+11 | 5.8460E+06 |
| Te-127m | 2.8495E-05 | 3.0209E-12 | 1.4325E+13 | 1.0543E+06 |
| Te-129 | 5.9305E-05 | 2.8318E-15 | 1.3220E+10 | 2.1943E+06 |
| Te-129m | 9.5156E-05 | 3.1587E-11 | 1.4746E+13 | 3.5208E+06 |
| Te-131m | 2.6691E-04 | 3.3473E-13 | 1.5388E+12 | 9.8758E+06 |
| Te-132 | 2.8166E-03 | 9.2777E-12 | 4.2327E+13 | 1.0422E+08 |
| I-131 | 1.5629E-02 | 1.2606E-10 | 5.7953E+14 | 5.7827E+08 |
| I-132 | 7.0841E-03 | 6.8630E-13 | 3.1310E+12 | 2.6211E+08 |
| I-133 | 2.9094E-02 | 2.5683E-11 | 1.1629E+14 | 1.0765E+09 |
| I-134 | 1.7595E-03 | 6.5958E-14 | 2.9642E+11 | 6.5103E+07 |
| I-135 | 2.0512E-02 | 5.8407E-12 | 2.6054E+13 | 7.5893E+08 |
| Xe-133 | 1.8826E-01 | 1.0058E-09 | 4.5540E+15 | 6.9656E+09 |
| Xe-135 | 5.2616E-02 | 2.0604E-11 | 9.1909E+13 | 1.9468E+09 |
| Cs-134 | 2.8765E-03 | 2.2232E-09 | 9.9915E+15 | 1.0643E+08 |
| Cs-136 | 7.8866E-04 | 1.0761E-11 | 4.7649E+13 | 2.9180E+07 |
| Cs-137 | 1.9275E-03 | 2.2159E-08 | 9.7406E+16 | 7.1316E+07 |
| Ba-139 | 2.1339E-04 | 1.3046E-14 | 5.6520E+10 | 7.8953E+06 |
| Ba-140 | 1.5098E-03 | 2.0623E-11 | 8.8709E+13 | 5.5861E+07 |
| La-140 | 1.4424E-05 | 2.5950E-14 | 1.1162E+11 | 5.3367E+05 |
| La-141 | 7.1176E-06 | 1.2586E-15 | 5.3754E+09 | 2.6335E+05 |
| La-142 | 2.8575E-06 | 1.9962E-16 | 8.4656E+08 | 1.0573E+05 |
| Ce-141 | 3.4772E-05 | 1.2203E-12 | 5.2121E+12 | 1.2866E+06 |
| Ce-143 | 3.1882E-05 | 4.8010E-14 | 2.0218E+11 | 1.1796E+06 |

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**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 1 | System Nos. | Sheet 699 of 1000 |
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| | | | | |
|---|---|---|---|---|
| Ce-144 | 2.8093E-05 | 8.8080E-12 | 3.6836E+13 | 1.0394E+06 |
| Pr-143 | 1.3518E-05 | 2.0074E-13 | 8.4539E+11 | 5.0016E+05 |
| Nd-147 | 5.6407E-06 | 6.9726E-14 | 2.8564E+11 | 2.0871E+05 |
| Np-239 | 3.6753E-04 | 1.5843E-12 | 3.9919E+12 | 1.3599E+07 |
| Pu-238 | 1.1081E-07 | 6.4727E-12 | 1.6378E+13 | 4.1000E+03 |
| Pu-239 | 8.6245E-09 | 1.3875E-10 | 3.4962E+14 | 3.1911E+02 |
| Pu-240 | 9.3006E-09 | 4.0816E-11 | 1.0242E+14 | 3.4412E+02 |
| Pu-241 | 3.8516E-06 | 3.7390E-11 | 9.3430E+13 | 1.4251E+05 |
| Am-241 | 2.3689E-09 | 6.9020E-13 | 1.7247E+12 | 8.7648E+01 |
| Cm-242 | 5.5644E-07 | 1.6789E-13 | 4.1779E+11 | 2.0588E+04 |
| Cm-244 | 4.5045E-08 | 5.5678E-13 | 1.3742E+12 | 1.6667E+03 |

TSC Transport Group Inventory:

| Time (h) = 2.9200 | Atmosphere | Sump | Overlying Pool |
|---|---|---|---|
| Noble gases (atoms) | 2.9051E+16 | 0.0000E+00 | 0.0000E+00 |
| Elemental I (atoms) | 2.3172E+13 | 0.0000E+00 | 0.0000E+00 |
| Organic I (atoms) | 2.6780E+12 | 0.0000E+00 | 0.0000E+00 |
| Aerosols (kg) | 2.5622E-08 | 0.0000E+00 | 0.0000E+00 |

| Time (h) = 2.9200 | Deposition Surfaces | Recirculating Filter |
|---|---|---|
| Noble gases (atoms) | 0.0000E+00 | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 | 0.0000E+00 |

TSC Filtered Air Intake Transport Group Inventory:

| Time (h) = 2.9200 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 |

TSC Unfiltered Inleakage Transport Group Inventory:

| Time (h) = 2.9200 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 |

TSC Exhaust to Environment Transport Group Inventory:

| Time (h) = 2.9200 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 |

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**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 1 | System Nos. | Sheet 700 of 1000 |
|---|---|---|---|---|

Exclusion Area Boundary Doses:

| Time (h) = 3.8200 | Whole Body | Thyroid | TEDE |
|---|---|---|---|
| Delta dose (rem) | 4.7529E-01 | 6.2350E+01 | 3.7709E+00 |
| Accumulated dose (rem) | 2.5926E+00 | 4.9225E+02 | 2.8159E+01 |

Low Population Zone Doses:

| Time (h) = 3.8200 | Whole Body | Thyroid | TEDE |
|---|---|---|---|
| Delta dose (rem) | 3.5647E-02 | 4.6763E+00 | 2.8281E-01 |
| Accumulated dose (rem) | 3.3205E-01 | 6.5996E+01 | 3.7410E+00 |

TSC Doses:

| Time (h) = 3.8200 | Whole Body | Thyroid | TEDE |
|---|---|---|---|
| Delta dose (rem) | 2.5623E-03 | 1.7996E+01 | 9.4751E-01 |
| Accumulated dose (rem) | 8.3399E-03 | 6.2329E+01 | 3.2262E+00 |

Travel Path Doses:

| Time (h) = 3.8200 | Whole Body | Thyroid | TEDE |
|---|---|---|---|
| Delta dose (rem) | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 |
| Accumulated dose (rem) | 6.3483E-02 | 1.2742E+01 | 7.1208E-01 |

Environment Integral Nuclide Release:

| Time (h) = 3.8200 | Ci | kg | Atoms | Bq |
|---|---|---|---|---|
| Co-58 | 6.9175E-02 | 2.1755E-09 | 2.2588E+16 | 2.5595E+09 |
| Co-60 | 5.2983E-02 | 4.6872E-08 | 4.7044E+17 | 1.9604E+09 |
| Kr-85 | 1.1824E+02 | 3.0136E-04 | 2.1351E+21 | 4.3747E+12 |
| Kr-85m | 1.5562E+03 | 1.8910E-07 | 1.3397E+18 | 5.7579E+13 |
| Kr-87 | 9.1743E+02 | 3.2389E-08 | 2.2419E+17 | 3.3945E+13 |
| Kr-88 | 3.2360E+03 | 2.5807E-07 | 1.7661E+18 | 1.1973E+14 |
| Rb-86 | 2.0135E+00 | 2.4746E-08 | 1.7328E+17 | 7.4499E+10 |
| Sr-89 | 6.4823E+01 | 2.2312E-06 | 1.5098E+19 | 2.3984E+12 |
| Sr-90 | 7.0039E+00 | 5.1345E-05 | 3.4357E+20 | 2.5914E+11 |
| Sr-91 | 7.0424E+01 | 1.9427E-08 | 1.2857E+17 | 2.6057E+12 |
| Sr-92 | 4.2914E+01 | 3.4142E-09 | 2.2348E+16 | 1.5878E+12 |
| Y-90 | 6.9868E-02 | 1.2842E-10 | 8.5928E+14 | 2.5851E+09 |
| Y-91 | 7.9358E-01 | 3.2359E-08 | 2.1415E+17 | 2.9362E+10 |
| Y-92 | 5.1291E-01 | 5.3305E-11 | 3.4892E+14 | 1.8978E+10 |
| Y-93 | 8.3823E-01 | 2.5124E-10 | 1.6269E+15 | 3.1014E+10 |
| Zr-95 | 1.0223E+00 | 4.7589E-08 | 3.0167E+17 | 3.7827E+10 |
| Zr-97 | 9.1957E-01 | 4.8103E-10 | 2.9864E+15 | 3.4024E+10 |
| Nb-95 | 1.0292E+00 | 2.6319E-08 | 1.6684E+17 | 3.8079E+10 |
| Mo-99 | 1.3607E+01 | 2.8371E-08 | 1.7258E+17 | 5.0347E+11 |
| Tc-99m | 8.6342E+00 | 1.6420E-09 | 9.9884E+15 | 3.1947E+11 |
| Ru-103 | 1.1282E+01 | 3.4957E-07 | 2.0438E+18 | 4.1743E+11 |
| Ru-105 | 4.6720E+00 | 6.9502E-10 | 3.9862E+15 | 1.7286E+11 |
| Ru-106 | 4.2584E+00 | 1.2728E-06 | 7.2314E+18 | 1.5756E+11 |
| Rh-105 | 6.6885E+00 | 7.9242E-09 | 4.5448E+16 | 2.4747E+11 |
| Sb-127 | 1.5127E+01 | 5.6643E-08 | 2.6859E+17 | 5.5969E+11 |
| Sb-129 | 2.8647E+01 | 5.0943E-09 | 2.3782E+16 | 1.0600E+12 |
| Te-127 | 1.2209E+01 | 4.6260E-09 | 2.1936E+16 | 4.5172E+11 |
| Te-127m | 2.0586E+00 | 2.1824E-07 | 1.0349E+18 | 7.6167E+10 |

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**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 1 | System Nos. | Sheet 701 of 1000 |
|---|---|---|---|---|

| | | | | |
|---|---|---|---|---|
| Te-129 | 8.3164E+00 | 3.9711E-10 | 1.8538E+15 | 3.0771E+11 |
| Te-129m | 6.8780E+00 | 2.2831E-06 | 1.0658E+18 | 2.5448E+11 |
| Te-131m | 1.9679E+01 | 2.4678E-08 | 1.1345E+17 | 7.2811E+11 |
| Te-132 | 2.0504E+02 | 6.7537E-07 | 3.0812E+18 | 7.5863E+12 |
| I-131 | 1.1469E+03 | 9.2512E-06 | 4.2528E+19 | 4.2436E+13 |
| I-132 | 7.2863E+02 | 7.0589E-08 | 3.2204E+17 | 2.6959E+13 |
| I-133 | 2.1994E+03 | 1.9415E-06 | 8.7910E+18 | 8.1377E+13 |
| I-134 | 3.8128E+02 | 1.4293E-08 | 6.4233E+16 | 1.4107E+13 |
| I-135 | 1.6715E+03 | 4.7596E-07 | 2.1232E+18 | 6.1845E+13 |
| Xe-133 | 1.6590E+04 | 8.8630E-05 | 4.0131E+20 | 6.1382E+14 |
| Xe-135 | 4.7921E+03 | 1.8765E-06 | 8.3709E+18 | 1.7731E+14 |
| Cs-134 | 2.1090E+02 | 1.6300E-04 | 7.3256E+20 | 7.8033E+12 |
| Cs-136 | 5.7951E+01 | 7.9069E-07 | 3.5012E+18 | 2.1442E+12 |
| Cs-137 | 1.4131E+02 | 1.6246E-03 | 7.1414E+21 | 5.2286E+12 |
| Ba-139 | 2.6471E+01 | 1.6183E-09 | 7.0115E+15 | 9.7944E+11 |
| Ba-140 | 1.0926E+02 | 1.4925E-06 | 6.4199E+18 | 4.0427E+12 |
| La-140 | 1.0578E+00 | 1.9031E-09 | 8.1862E+15 | 3.9138E+10 |
| La-141 | 6.0793E-01 | 1.0750E-10 | 4.5911E+14 | 2.2493E+10 |
| La-142 | 3.3176E-01 | 2.3176E-11 | 9.8287E+13 | 1.2275E+10 |
| Ce-141 | 2.5134E+00 | 8.8209E-08 | 3.7674E+17 | 9.2995E+10 |
| Ce-143 | 2.3461E+00 | 3.5329E-09 | 1.4878E+16 | 8.6807E+10 |
| Ce-144 | 2.0292E+00 | 6.3623E-07 | 2.6607E+18 | 7.5082E+10 |
| Pr-143 | 9.7817E-01 | 1.4526E-08 | 6.1174E+16 | 3.6192E+10 |
| Nd-147 | 4.0835E-01 | 5.0477E-09 | 2.0679E+16 | 1.5109E+10 |
| Np-239 | 2.6835E+01 | 1.1567E-07 | 2.9147E+17 | 9.9291E+11 |
| Pu-238 | 8.0034E-03 | 4.6750E-07 | 1.1829E+18 | 2.9613E+08 |
| Pu-239 | 6.2291E-04 | 1.0022E-05 | 2.5252E+19 | 2.3048E+07 |
| Pu-240 | 6.7174E-04 | 2.9480E-06 | 7.3971E+18 | 2.4855E+07 |
| Pu-241 | 2.7819E-01 | 2.7005E-06 | 6.7481E+18 | 1.0293E+10 |
| Am-241 | 1.7109E-04 | 4.9850E-08 | 1.2457E+17 | 6.3305E+06 |
| Cm-242 | 4.0195E-02 | 1.2128E-08 | 3.0180E+16 | 1.4872E+09 |
| Cm-244 | 3.2534E-03 | 4.0214E-08 | 9.9252E+16 | 1.2038E+08 |

Environment Transport Group Inventory:

| Time (h) = 3.8200 | Present Release | Release Rate/s | Total Release |
|---|---|---|---|
| Noble gases (atoms) | 2.5539E+21 | 1.8571E+17 | 2.5539E+21 |
| Elemental I (atoms) | 1.7190E+18 | 1.2500E+14 | 1.7190E+18 |
| Organic I (atoms) | 2.3504E+17 | 1.7091E+13 | 2.3504E+17 |
| Aerosols (kg) | 1.8773E-03 | 1.3651E-07 | 1.8773E-03 |

TSC Filtered Air Intake Transport Group Inventory:

| Time (h) = 3.8200 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 |

TSC Unfiltered Inleakage Transport Group Inventory:

Pathway

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**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 1 | System Nos. | Sheet 702 of 1000 |
|---|---|---|---|---|

```
Time (h) =   3.8200      Filter
Noble gases (atoms)    0.0000E+00
Elemental I (atoms)    0.0000E+00
Organic I (atoms)      0.0000E+00
Aerosols (kg)          0.0000E+00
```

TSC Exhaust to Environment Transport Group Inventory:

```
                        Pathway
Time (h) =   3.8200      Filter
Noble gases (atoms)    0.0000E+00
Elemental I (atoms)    0.0000E+00
Organic I (atoms)      0.0000E+00
Aerosols (kg)          0.0000E+00
```

TSC Compartment Nuclide Inventory:

| Time (h) = 3.8200 | Ci | kg | Atoms | Bq |
|---|---|---|---|---|
| Co-58 | 6.0112E-07 | 1.8904E-14 | 1.9628E+11 | 2.2242E+04 |
| Co-60 | 4.6075E-07 | 4.0760E-13 | 4.0911E+12 | 1.7048E+04 |
| Kr-85 | 1.6846E-03 | 4.2937E-09 | 3.0420E+16 | 6.2329E+07 |
| Kr-85m | 1.7708E-02 | 2.1517E-12 | 1.5245E+13 | 6.5518E+08 |
| Kr-87 | 5.3519E-03 | 1.8894E-13 | 1.3078E+12 | 1.9802E+08 |
| Kr-88 | 3.2014E-02 | 2.5531E-12 | 1.7472E+13 | 1.1845E+09 |
| Rb-86 | 1.6586E-05 | 2.0383E-13 | 1.4273E+12 | 6.1366E+05 |
| Sr-89 | 5.6313E-04 | 1.9383E-11 | 1.3116E+14 | 2.0836E+07 |
| Sr-90 | 6.0908E-05 | 4.4652E-10 | 2.9878E+15 | 2.2536E+06 |
| Sr-91 | 5.3441E-04 | 1.4742E-13 | 9.7562E+11 | 1.9773E+07 |
| Sr-92 | 2.2727E-04 | 1.8081E-14 | 1.1835E+11 | 8.4088E+06 |
| Y-90 | 5.9559E-07 | 1.0947E-15 | 7.3249E+09 | 2.2037E+04 |
| Y-91 | 6.8950E-06 | 2.8116E-13 | 1.8606E+12 | 2.5512E+05 |
| Y-92 | 3.0652E-06 | 3.1855E-16 | 2.0852E+09 | 1.1341E+05 |
| Y-93 | 6.4133E-06 | 1.9223E-15 | 1.2448E+10 | 2.3729E+05 |
| Zr-95 | 8.8833E-06 | 4.1351E-13 | 2.6212E+12 | 3.2868E+05 |
| Zr-97 | 7.4110E-06 | 3.8767E-15 | 2.4068E+10 | 2.7421E+05 |
| Nb-95 | 8.9365E-06 | 2.2854E-13 | 1.4487E+12 | 3.3065E+05 |
| Mo-99 | 1.1606E-04 | 2.4200E-13 | 1.4721E+12 | 4.2944E+06 |
| Tc-99m | 6.0441E-05 | 1.1495E-14 | 6.9921E+10 | 2.2363E+06 |
| Ru-103 | 9.7979E-05 | 3.0359E-12 | 1.7750E+13 | 3.6252E+06 |
| Ru-105 | 3.0199E-05 | 4.4925E-15 | 2.5766E+10 | 1.1174E+06 |
| Ru-106 | 3.7027E-05 | 1.1068E-11 | 6.2878E+13 | 1.3700E+06 |
| Rh-105 | 5.6098E-05 | 6.6462E-14 | 3.8119E+11 | 2.0756E+06 |
| Sb-127 | 1.2974E-04 | 4.8583E-13 | 2.3037E+12 | 4.8005E+06 |
| Sb-129 | 1.8360E-04 | 3.2650E-14 | 1.5242E+11 | 6.7933E+06 |
| Te-127 | 9.2439E-05 | 3.5027E-14 | 1.6609E+11 | 3.4202E+06 |
| Te-127m | 1.7893E-05 | 1.8970E-12 | 8.9951E+12 | 6.6205E+05 |
| Te-129 | 2.1031E-05 | 1.0042E-15 | 4.6881E+09 | 7.7815E+05 |
| Te-129m | 5.9719E-05 | 1.9824E-11 | 9.2543E+12 | 2.2096E+06 |
| Te-131m | 1.6398E-04 | 2.0564E-13 | 9.4535E+11 | 6.0673E+06 |
| Te-132 | 1.7542E-03 | 5.7781E-12 | 2.6361E+13 | 6.4905E+07 |
| I-131 | 9.5612E-03 | 7.7122E-11 | 3.5453E+14 | 3.5376E+08 |
| I-132 | 3.2417E-03 | 3.1405E-13 | 1.4328E+12 | 1.1994E+08 |
| I-133 | 1.7290E-02 | 1.5263E-11 | 6.9109E+13 | 6.3973E+08 |
| I-134 | 4.9993E-04 | 1.8740E-14 | 8.4221E+10 | 1.8497E+07 |
| I-135 | 1.1368E-02 | 3.2372E-12 | 1.4440E+13 | 4.2063E+08 |

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**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 1 | System Nos. | Sheet 703 of 1000 |
|---|---|---|---|---|

| | | | | |
|---|---|---|---|---|
| Xe-133 | 2.3457E-01 | 1.2532E-09 | 5.6742E+15 | 8.6790E+09 |
| Xe-135 | 6.1280E-02 | 2.3996E-11 | 1.0704E+14 | 2.2674E+09 |
| Cs-134 | 1.7425E-03 | 1.3467E-09 | 6.0525E+15 | 6.4471E+07 |
| Cs-136 | 4.7673E-04 | 6.5046E-12 | 2.8803E+13 | 1.7639E+07 |
| Cs-137 | 1.1676E-03 | 1.3424E-08 | 5.9007E+16 | 4.3202E+07 |
| Ba-139 | 8.2834E-05 | 5.0641E-15 | 2.1940E+10 | 3.0648E+06 |
| Ba-140 | 9.4623E-04 | 1.2925E-11 | 5.5597E+13 | 3.5010E+07 |
| La-140 | 8.9114E-06 | 1.6033E-14 | 6.8965E+10 | 3.2972E+05 |
| La-141 | 3.7758E-06 | 6.6766E-16 | 2.8516E+09 | 1.3971E+05 |
| La-142 | 1.1672E-06 | 8.1536E-17 | 3.4579E+08 | 4.3186E+04 |
| Ce-141 | 2.1822E-05 | 7.6585E-13 | 3.2710E+12 | 8.0740E+05 |
| Ce-143 | 1.9627E-05 | 2.9554E-14 | 1.2446E+11 | 7.2618E+05 |
| Ce-144 | 1.7644E-05 | 5.5318E-12 | 2.3134E+13 | 6.5282E+05 |
| Pr-143 | 8.4733E-06 | 1.2583E-13 | 5.2991E+11 | 3.1351E+05 |
| Nd-147 | 3.5340E-06 | 4.3685E-14 | 1.7896E+11 | 1.3076E+05 |
| Np-239 | 2.2815E-04 | 9.8345E-13 | 2.4780E+12 | 8.4417E+06 |
| Pu-238 | 6.9601E-08 | 4.0655E-12 | 1.0287E+13 | 2.5752E+03 |
| Pu-239 | 5.4171E-09 | 8.7152E-11 | 2.1960E+14 | 2.0043E+02 |
| Pu-240 | 5.8418E-09 | 2.5637E-11 | 6.4328E+13 | 2.1614E+02 |
| Pu-241 | 2.4192E-06 | 2.3485E-11 | 5.8684E+13 | 8.9511E+04 |
| Am-241 | 1.4879E-09 | 4.3352E-13 | 1.0833E+12 | 5.5052E+01 |
| Cm-242 | 3.4944E-07 | 1.0543E-13 | 2.6237E+11 | 1.2929E+04 |
| Cm-244 | 2.8293E-08 | 3.4971E-13 | 8.6312E+11 | 1.0468E+03 |

TSC Transport Group Inventory:

| Time (h) = 3.8200 | Atmosphere | Sump | Overlying Pool |
|---|---|---|---|
| Noble gases (atoms) | 3.6382E+16 | 0.0000E+00 | 0.0000E+00 |
| Elemental I (atoms) | 1.4296E+13 | 0.0000E+00 | 0.0000E+00 |
| Organic I (atoms) | 3.2847E+12 | 0.0000E+00 | 0.0000E+00 |
| Aerosols (kg) | 1.5546E-08 | 0.0000E+00 | 0.0000E+00 |

| Time (h) = 3.8200 | Deposition Surfaces | Recirculating Filter |
|---|---|---|
| Noble gases (atoms) | 0.0000E+00 | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 | 0.0000E+00 |

TSC Filtered Air Intake Transport Group Inventory:

| Time (h) = 3.8200 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 |

TSC Unfiltered Inleakage Transport Group Inventory:

| Time (h) = 3.8200 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 |

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**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 1 | System Nos. | Sheet 704 of 1000 |
|---|---|---|---|---|

```
Organic I (atoms)      0.0000E+00
Aerosols (kg)          0.0000E+00

TSC Exhaust to Environment Transport Group Inventory:

                        Pathway
Time (h) =   3.8200      Filter
Noble gases (atoms)    0.0000E+00
Elemental I (atoms)    0.0000E+00
Organic I (atoms)      0.0000E+00
Aerosols (kg)          0.0000E+00

Exclusion Area Boundary Doses:

Time (h) =   4.0000    Whole Body   Thyroid       TEDE
Delta dose (rem)        7.8327E-02  8.2998E+00  5.1455E-01
Accumulated dose (rem)  2.6709E+00  5.0055E+02  2.8673E+01

Low Population Zone Doses:

Time (h) =   4.0000    Whole Body   Thyroid       TEDE
Delta dose (rem)        5.8745E-03  6.2248E-01  3.8591E-02
Accumulated dose (rem)  3.3793E-01  6.6619E+01  3.7796E+00

TSC Doses:

Time (h) =   4.0000    Whole Body   Thyroid       TEDE
Delta dose (rem)        4.3670E-04  2.5957E+00  1.3720E-01
Accumulated dose (rem)  8.7766E-03  6.4924E+01  3.3634E+00

Travel Path Doses:

Time (h) =   4.0000    Whole Body   Thyroid       TEDE
Delta dose (rem)        0.0000E+00  0.0000E+00  0.0000E+00
Accumulated dose (rem)  6.3483E-02  1.2742E+01  7.1208E-01

Environment Integral Nuclide Release:

Time (h) =   4.0000       Ci           kg         Atoms         Bq
Co-58                  7.0429E-02  2.2149E-09  2.2997E+16  2.6059E+09
Co-60                  5.3944E-02  4.7722E-08  4.7898E+17  1.9959E+09
Kr-85                  1.2607E+02  3.2134E-04  2.2767E+21  4.6647E+12
Kr-85m                 1.6366E+03  1.9887E-07  1.4090E+18  6.0556E+13
Kr-87                  9.4032E+02  3.3197E-08  2.2979E+17  3.4792E+13
Kr-88                  3.3794E+03  2.6951E-07  1.8443E+18  1.2504E+14
Rb-86                  2.0466E+00  2.5153E-08  1.7613E+17  7.5725E+10
Sr-89                  6.5998E+01  2.2717E-06  1.5371E+19  2.4419E+12
Sr-90                  7.1310E+00  5.2277E-05  3.4980E+20  2.6385E+11
Sr-91                  7.1523E+01  1.9731E-08  1.3057E+17  2.6464E+12
Sr-92                  4.3364E+01  3.4500E-09  2.2583E+16  1.6045E+12
Y-90                   7.1108E-02  1.3070E-10  8.7453E+14  2.6310E+09
Y-91                   8.0797E-01  3.2946E-08  2.1803E+17  2.9895E+10
Y-92                   5.1906E-01  5.3944E-11  3.5310E+14  1.9205E+10
Y-93                   8.5143E-01  2.5520E-10  1.6525E+15  3.1503E+10
Zr-95                  1.0409E+00  4.8451E-08  3.0714E+17  3.8512E+10
```

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**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 1 | System Nos. | Sheet 705 of 1000 |
|---|---|---|---|---|

| | | | | |
|---|---|---|---|---|
| Zr-97 | 9.3491E-01 | 4.8905E-10 | 3.0362E+15 | 3.4592E+10 |
| Nb-95 | 1.0478E+00 | 2.6796E-08 | 1.6986E+17 | 3.8769E+10 |
| Mo-99 | 1.3849E+01 | 2.8875E-08 | 1.7565E+17 | 5.1241E+11 |
| Tc-99m | 8.7574E+00 | 1.6655E-09 | 1.0131E+16 | 3.2403E+11 |
| Ru-103 | 1.1486E+01 | 3.5590E-07 | 2.0809E+18 | 4.2499E+11 |
| Ru-105 | 4.7330E+00 | 7.0411E-10 | 4.0383E+15 | 1.7512E+11 |
| Ru-106 | 4.3357E+00 | 1.2959E-06 | 7.3626E+18 | 1.6042E+11 |
| Rh-105 | 6.8051E+00 | 8.0624E-09 | 4.6241E+16 | 2.5179E+11 |
| Sb-127 | 1.5397E+01 | 5.7655E-08 | 2.7339E+17 | 5.6969E+11 |
| Sb-129 | 2.9018E+01 | 5.1603E-09 | 2.4090E+16 | 1.0737E+12 |
| Te-127 | 1.2399E+01 | 4.6980E-09 | 2.2277E+16 | 4.5875E+11 |
| Te-127m | 2.0959E+00 | 2.2220E-07 | 1.0536E+18 | 7.7548E+10 |
| Te-129 | 8.3553E+00 | 3.9897E-10 | 1.8625E+15 | 3.0915E+11 |
| Te-129m | 7.0026E+00 | 2.3245E-06 | 1.0851E+18 | 2.5909E+11 |
| Te-131m | 2.0019E+01 | 2.5106E-08 | 1.1541E+17 | 7.4072E+11 |
| Te-132 | 2.0869E+02 | 6.8740E-07 | 3.1361E+18 | 7.7215E+12 |
| I-131 | 1.1667E+03 | 9.4106E-06 | 4.3261E+19 | 4.3167E+13 |
| I-132 | 7.3489E+02 | 7.1195E-08 | 3.2481E+17 | 2.7191E+13 |
| I-133 | 2.2349E+03 | 1.9728E-06 | 8.9329E+18 | 8.2690E+13 |
| I-134 | 3.8214E+02 | 1.4325E-08 | 6.4378E+16 | 1.4139E+13 |
| I-135 | 1.6945E+03 | 4.8250E-07 | 2.1523E+18 | 6.2695E+13 |
| Xe-133 | 1.7680E+04 | 9.4456E-05 | 4.2769E+20 | 6.5417E+14 |
| Xe-135 | 5.0739E+03 | 1.9869E-06 | 8.8631E+18 | 1.8773E+14 |
| Cs-134 | 2.1438E+02 | 1.6570E-04 | 7.4466E+20 | 7.9322E+12 |
| Cs-136 | 5.8903E+01 | 8.0369E-07 | 3.5588E+18 | 2.1794E+12 |
| Cs-137 | 1.4365E+02 | 1.6515E-03 | 7.2594E+21 | 5.3149E+12 |
| Ba-139 | 2.6627E+01 | 1.6279E-09 | 7.0528E+15 | 9.8522E+11 |
| Ba-140 | 1.1124E+02 | 1.5194E-06 | 6.5359E+18 | 4.1157E+12 |
| La-140 | 1.0763E+00 | 1.9364E-09 | 8.3297E+15 | 3.9824E+10 |
| La-141 | 6.1553E-01 | 1.0884E-10 | 4.6486E+14 | 2.2775E+10 |
| La-142 | 3.3399E-01 | 2.3331E-11 | 9.8946E+13 | 1.2357E+10 |
| Ce-141 | 2.5589E+00 | 8.9807E-08 | 3.8357E+17 | 9.4680E+10 |
| Ce-143 | 2.3869E+00 | 3.5943E-09 | 1.5137E+16 | 8.8316E+10 |
| Ce-144 | 2.0661E+00 | 6.4777E-07 | 2.7090E+18 | 7.6444E+10 |
| Pr-143 | 9.9585E-01 | 1.4789E-08 | 6.2279E+16 | 3.6846E+10 |
| Nd-147 | 4.1572E-01 | 5.1388E-09 | 2.1052E+16 | 1.5382E+10 |
| Np-239 | 2.7310E+01 | 1.1772E-07 | 2.9662E+17 | 1.0105E+12 |
| Pu-238 | 8.1486E-03 | 4.7598E-07 | 1.2044E+18 | 3.0150E+08 |
| Pu-239 | 6.3421E-04 | 1.0204E-05 | 2.5710E+19 | 2.3466E+07 |
| Pu-240 | 6.8393E-04 | 3.0015E-06 | 7.5314E+18 | 2.5306E+07 |
| Pu-241 | 2.8324E-01 | 2.7495E-06 | 6.8706E+18 | 1.0480E+10 |
| Am-241 | 1.7420E-04 | 5.0755E-08 | 1.2683E+17 | 6.4454E+06 |
| Cm-242 | 4.0925E-02 | 1.2348E-08 | 3.0728E+16 | 1.5142E+09 |
| Cm-244 | 3.3125E-03 | 4.0944E-08 | 1.0105E+17 | 1.2256E+08 |

Environment Transport Group Inventory:

| Time (h) = 4.0000 | Present Release | Release Rate/s | Total Release |
|---|---|---|---|
| Noble gases (atoms) | 2.7232E+21 | 1.8911E+17 | 2.7232E+21 |
| Elemental I (atoms) | 1.7605E+18 | 1.2226E+14 | 1.7605E+18 |
| Organic I (atoms) | 2.5020E+17 | 1.7375E+13 | 2.5020E+17 |
| Aerosols (kg) | 1.9084E-03 | 1.3253E-07 | 1.9084E-03 |

TSC Filtered Air Intake Transport Group Inventory:

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**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 1 | System Nos. | Sheet 706 of 1000 |
|---|---|---|---|---|

```
                          Pathway
Time (h) =   4.0000        Filter
Noble gases (atoms)     0.0000E+00
Elemental I (atoms)     0.0000E+00
Organic I (atoms)       0.0000E+00
Aerosols (kg)           0.0000E+00

TSC Unfiltered Inleakage Transport Group Inventory:

                          Pathway
Time (h) =   4.0000        Filter
Noble gases (atoms)     0.0000E+00
Elemental I (atoms)     0.0000E+00
Organic I (atoms)       0.0000E+00
Aerosols (kg)           0.0000E+00

TSC Exhaust to Environment Transport Group Inventory:

                          Pathway
Time (h) =   4.0000        Filter
Noble gases (atoms)     0.0000E+00
Elemental I (atoms)     0.0000E+00
Organic I (atoms)       0.0000E+00
Aerosols (kg)           0.0000E+00

TSC Compartment Nuclide Inventory:

Time (h) =   4.0000        Ci            kg          Atoms          Bq
Co-58                   5.4135E-07  1.7025E-14  1.7677E+11  2.0030E+04
Co-60                   4.1496E-07  3.6710E-13  3.6845E+12  1.5354E+04
Kr-85                   1.7182E-03  4.3794E-09  3.1027E+16  6.3573E+07
Kr-85m                  1.7554E-02  2.1330E-12  1.5112E+13  6.4948E+08
Kr-87                   4.9373E-03  1.7431E-13  1.2065E+12  1.8268E+08
Kr-88                   3.1218E-02  2.4896E-12  1.7037E+13  1.1551E+09
Rb-86                   1.4865E-05  1.8269E-13  1.2793E+12  5.5001E+05
Sr-89                   5.0712E-04  1.7455E-11  1.1811E+14  1.8763E+07
Sr-90                   5.4856E-05  4.0215E-10  2.6909E+15  2.0297E+06
Sr-91                   4.7478E-04  1.3097E-13  8.6675E+11  1.7567E+07
Sr-92                   1.9512E-04  1.5523E-14  1.0161E+11  7.2193E+06
Y-90                    5.3532E-07  9.8393E-16  6.5837E+09  1.9807E+04
Y-91                    6.2093E-06  2.5319E-13  1.6756E+12  2.2974E+05
Y-92                    2.6613E-06  2.7657E-16  1.8104E+09  9.8468E+04
Y-93                    5.7023E-06  1.7092E-15  1.1068E+10  2.1099E+05
Zr-95                   7.9999E-06  3.7238E-13  2.3606E+12  2.9600E+05
Zr-97                   6.6236E-06  3.4648E-15  2.1511E+10  2.4507E+05
Nb-95                   8.0473E-06  2.0580E-13  1.3046E+12  2.9775E+05
Mo-99                   1.0433E-04  2.1752E-13  1.3232E+12  3.8601E+06
Tc-99m                  5.3275E-05  1.0132E-14  6.1631E+10  1.9712E+06
Ru-103                  8.8231E-05  2.7338E-12  1.5984E+13  3.2645E+06
Ru-105                  2.6415E-05  3.9296E-15  2.2538E+10  9.7735E+05
Ru-106                  3.3347E-05  9.9676E-12  5.6629E+13  1.2339E+06
Rh-105                  5.0338E-05  5.9639E-14  3.4205E+11  1.8625E+06
Sb-127                  1.1669E-04  4.3694E-13  2.0719E+12  4.3174E+06
Sb-129                  1.6047E-04  2.8536E-14  1.3321E+11  5.9373E+06
Te-127                  8.2106E-05  3.1111E-14  1.4752E+11  3.0379E+06
Te-127m                 1.6114E-05  1.7084E-12  8.1009E+12  5.9624E+05
```

| | | | | |
|---|---|---|---|---|
| Te-129 | 1.6938E-05 | 8.0878E-16 | 3.7756E+09 | 6.2670E+05 |
| Te-129m | 5.3776E-05 | 1.7851E-11 | 8.3333E+12 | 1.9897E+06 |
| Te-131m | 1.4705E-04 | 1.8441E-13 | 8.4774E+11 | 5.4408E+06 |
| Te-132 | 1.5773E-03 | 5.1953E-12 | 2.3702E+13 | 5.8359E+07 |
| I-131 | 8.5970E-03 | 6.9345E-11 | 3.1878E+14 | 3.1809E+08 |
| I-132 | 2.7546E-03 | 2.6687E-13 | 1.2175E+12 | 1.0192E+08 |
| I-133 | 1.5459E-02 | 1.3647E-11 | 6.1791E+13 | 5.7198E+08 |
| I-134 | 3.8711E-04 | 1.4511E-14 | 6.5215E+10 | 1.4323E+07 |
| I-135 | 1.0028E-02 | 2.8553E-12 | 1.2737E+13 | 3.7102E+08 |
| Xe-133 | 2.3901E-01 | 1.2769E-09 | 5.7816E+15 | 8.8433E+09 |
| Xe-135 | 6.1632E-02 | 2.4134E-11 | 1.0766E+14 | 2.2804E+09 |
| Cs-134 | 1.5622E-03 | 1.2074E-09 | 5.4263E+15 | 5.7801E+07 |
| Cs-136 | 4.2723E-04 | 5.8292E-12 | 2.5812E+13 | 1.5807E+07 |
| Cs-137 | 1.0468E-03 | 1.2035E-08 | 5.2902E+16 | 3.8732E+07 |
| Ba-139 | 6.7903E-05 | 4.1513E-15 | 1.7985E+10 | 2.5124E+06 |
| Ba-140 | 8.5184E-04 | 1.1636E-11 | 5.0052E+13 | 3.1518E+07 |
| La-140 | 8.0001E-06 | 1.4393E-14 | 6.1912E+10 | 2.9600E+05 |
| La-141 | 3.2902E-06 | 5.8179E-16 | 2.4848E+09 | 1.2174E+05 |
| La-142 | 9.6639E-07 | 6.7509E-17 | 2.8630E+08 | 3.5756E+04 |
| Ce-141 | 1.9650E-05 | 6.8964E-13 | 2.9454E+12 | 7.2705E+05 |
| Ce-143 | 1.7607E-05 | 2.6513E-14 | 1.1165E+11 | 6.5146E+05 |
| Ce-144 | 1.5890E-05 | 4.9821E-12 | 2.0835E+13 | 5.8794E+05 |
| Pr-143 | 7.6283E-06 | 1.1328E-13 | 4.7706E+11 | 2.8225E+05 |
| Nd-147 | 3.1813E-06 | 3.9324E-14 | 1.6110E+11 | 1.1771E+05 |
| Np-239 | 2.0501E-04 | 8.8370E-13 | 2.2267E+12 | 7.5854E+06 |
| Pu-238 | 6.2684E-08 | 3.6615E-12 | 9.2648E+12 | 2.3193E+03 |
| Pu-239 | 4.8788E-09 | 7.8492E-11 | 1.9778E+14 | 1.8051E+02 |
| Pu-240 | 5.2613E-09 | 2.3089E-11 | 5.7936E+13 | 1.9467E+02 |
| Pu-241 | 2.1788E-06 | 2.1151E-11 | 5.2852E+13 | 8.0616E+04 |
| Am-241 | 1.3400E-09 | 3.9044E-13 | 9.7563E+11 | 4.9582E+01 |
| Cm-242 | 3.1471E-07 | 9.4955E-14 | 2.3629E+11 | 1.1644E+04 |
| Cm-244 | 2.5481E-08 | 3.1496E-13 | 7.7736E+11 | 9.4281E+02 |

TSC Transport Group Inventory:

| Time (h) = 4.0000 | Atmosphere | Sump | Overlying Pool |
|---|---|---|---|
| Noble gases (atoms) | 3.7108E+16 | 0.0000E+00 | 0.0000E+00 |
| Elemental I (atoms) | 1.3417E+13 | 0.0000E+00 | 0.0000E+00 |
| Organic I (atoms) | 3.3448E+12 | 0.0000E+00 | 0.0000E+00 |
| Aerosols (kg) | 1.3940E-08 | 0.0000E+00 | 0.0000E+00 |

| Time (h) = 4.0000 | Deposition Surfaces | Recirculating Filter |
|---|---|---|
| Noble gases (atoms) | 0.0000E+00 | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 | 0.0000E+00 |

TSC Filtered Air Intake Transport Group Inventory:

| Time (h) = 4.0000 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 |

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**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 1 | System Nos. | Sheet 708 of 1000 |
|---|---|---|---|---|

```
Organic I (atoms)      0.0000E+00
Aerosols (kg)          0.0000E+00

TSC Unfiltered Inleakage Transport Group Inventory:

                        Pathway
Time (h) =   4.0000      Filter
Noble gases (atoms)    0.0000E+00
Elemental I (atoms)    0.0000E+00
Organic I (atoms)      0.0000E+00
Aerosols (kg)          0.0000E+00

TSC Exhaust to Environment Transport Group Inventory:

                        Pathway
Time (h) =   4.0000      Filter
Noble gases (atoms)    0.0000E+00
Elemental I (atoms)    0.0000E+00
Organic I (atoms)      0.0000E+00
Aerosols (kg)          0.0000E+00

Exclusion Area Boundary Doses:

Time (h) =   8.0000    Whole Body   Thyroid       TEDE
Delta dose (rem)        1.2075E+00  1.6298E+02  9.8231E+00
Accumulated dose (rem)  3.8784E+00  6.6353E+02  3.8497E+01

Low Population Zone Doses:

Time (h) =   8.0000    Whole Body   Thyroid       TEDE
Delta dose (rem)        9.0563E-02  1.2224E+01  7.3673E-01
Accumulated dose (rem)  4.2849E-01  7.8842E+01  4.5164E+00

TSC Doses:

Time (h) =   8.0000    Whole Body   Thyroid       TEDE
Delta dose (rem)        6.2681E-03  3.2156E+01  1.7082E+00
Accumulated dose (rem)  1.5045E-02  9.7080E+01  5.0716E+00

Travel Path Doses:

Time (h) =   8.0000    Whole Body   Thyroid       TEDE
Delta dose (rem)        0.0000E+00  0.0000E+00  0.0000E+00
Accumulated dose (rem)  6.3483E-02  1.2742E+01  7.1208E-01

Environment Integral Nuclide Release:

Time (h) =   8.0000       Ci           kg         Atoms         Bq
Co-58                  9.5510E-02  3.0036E-09  3.1187E+16  3.5339E+09
Co-60                  7.3185E-02  6.4743E-08  6.4982E+17  2.7078E+09
Kr-85                  3.0025E+02  7.6528E-04  5.4219E+21  1.1109E+13
Kr-85m                 2.9500E+03  3.5847E-07  2.5397E+18  1.0915E+14
Kr-87                  1.1368E+03  4.0132E-08  2.7779E+17  4.2060E+13
Kr-88                  5.3677E+03  4.2807E-07  2.9294E+18  1.9861E+14
```

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**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 1 | System Nos. | Sheet 709 of 1000 |
|---|---|---|---|---|

| | | | | |
|---|---|---|---|---|
| Rb-86 | 2.7077E+00 | 3.3278E-08 | 2.3303E+17 | 1.0019E+11 |
| Sr-89 | 8.9484E+01 | 3.0801E-06 | 2.0842E+19 | 3.3109E+12 |
| Sr-90 | 9.6745E+00 | 7.0924E-05 | 4.7457E+20 | 3.5796E+11 |
| Sr-91 | 9.0549E+01 | 2.4979E-08 | 1.6531E+17 | 3.3503E+12 |
| Sr-92 | 4.8957E+01 | 3.8949E-09 | 2.5495E+16 | 1.8114E+12 |
| Y-90 | 9.5387E-02 | 1.7532E-10 | 1.1731E+15 | 3.5293E+09 |
| Y-91 | 1.0956E+00 | 4.4674E-08 | 2.9564E+17 | 4.0537E+10 |
| Y-92 | 6.0380E-01 | 6.2750E-11 | 4.1075E+14 | 2.2341E+10 |
| Y-93 | 1.0819E+00 | 3.2427E-10 | 2.0998E+15 | 4.0030E+10 |
| Zr-95 | 1.4115E+00 | 6.5702E-08 | 4.1649E+17 | 5.2225E+10 |
| Zr-97 | 1.2176E+00 | 6.3693E-10 | 3.9543E+15 | 4.5051E+10 |
| Nb-95 | 1.4203E+00 | 3.6322E-08 | 2.3025E+17 | 5.2552E+10 |
| Mo-99 | 1.8584E+01 | 3.8747E-08 | 2.3570E+17 | 6.8760E+11 |
| Tc-99m | 1.0726E+01 | 2.0398E-09 | 1.2408E+16 | 3.9686E+11 |
| Ru-103 | 1.5571E+01 | 4.8247E-07 | 2.8209E+18 | 5.7614E+11 |
| Ru-105 | 5.6370E+00 | 8.3859E-10 | 4.8096E+15 | 2.0857E+11 |
| Ru-106 | 5.8817E+00 | 1.7581E-06 | 9.9879E+18 | 2.1762E+11 |
| Rh-105 | 9.0479E+00 | 1.0720E-08 | 6.1481E+16 | 3.3477E+11 |
| Sb-127 | 2.0725E+01 | 7.7607E-08 | 3.6800E+17 | 7.6683E+11 |
| Sb-129 | 3.4466E+01 | 6.1291E-09 | 2.8613E+16 | 1.2753E+12 |
| Te-127 | 1.5681E+01 | 5.9419E-09 | 2.8176E+16 | 5.8021E+11 |
| Te-127m | 2.8427E+00 | 3.0137E-07 | 1.4290E+18 | 1.0518E+11 |
| Te-129 | 8.6442E+00 | 4.1276E-10 | 1.9269E+15 | 3.1983E+11 |
| Te-129m | 9.4917E+00 | 3.1507E-06 | 1.4709E+18 | 3.5119E+11 |
| Te-131m | 2.6525E+01 | 3.3264E-08 | 1.5292E+17 | 9.8142E+11 |
| Te-132 | 2.8051E+02 | 9.2398E-07 | 4.2154E+18 | 1.0379E+13 |
| I-131 | 1.5618E+03 | 1.2598E-05 | 5.7913E+19 | 5.7787E+13 |
| I-132 | 8.0729E+02 | 7.8210E-08 | 3.5681E+17 | 2.9870E+13 |
| I-133 | 2.9034E+03 | 2.5630E-06 | 1.1605E+19 | 1.0743E+14 |
| I-134 | 3.8721E+02 | 1.4515E-08 | 6.5232E+16 | 1.4327E+13 |
| I-135 | 2.0707E+03 | 5.8964E-07 | 2.6303E+18 | 7.6618E+13 |
| Xe-133 | 4.1635E+04 | 2.2243E-04 | 1.0072E+21 | 1.5405E+15 |
| Xe-135 | 1.0432E+04 | 4.0849E-06 | 1.8222E+19 | 3.8598E+14 |
| Cs-134 | 2.8408E+02 | 2.1956E-04 | 9.8674E+20 | 1.0511E+13 |
| Cs-136 | 7.7877E+01 | 1.0626E-06 | 4.7051E+18 | 2.8815E+12 |
| Cs-137 | 1.9035E+02 | 2.1884E-03 | 9.6196E+21 | 7.0430E+12 |
| Ba-139 | 2.7947E+01 | 1.7086E-09 | 7.4024E+15 | 1.0341E+12 |
| Ba-140 | 1.5055E+02 | 2.0565E-06 | 8.8459E+18 | 5.5704E+12 |
| La-140 | 1.4345E+00 | 2.5808E-09 | 1.1102E+16 | 5.3077E+10 |
| La-141 | 7.2403E-01 | 1.2803E-10 | 5.4680E+14 | 2.6789E+10 |
| La-142 | 3.5429E-01 | 2.4750E-11 | 1.0496E+14 | 1.3109E+10 |
| Ce-141 | 3.4684E+00 | 1.2173E-07 | 5.1990E+17 | 1.2833E+11 |
| Ce-143 | 3.1692E+00 | 4.7723E-09 | 2.0097E+16 | 1.1726E+11 |
| Ce-144 | 2.8027E+00 | 8.7873E-07 | 3.6749E+18 | 1.0370E+11 |
| Pr-143 | 1.3480E+00 | 2.0018E-08 | 8.4304E+16 | 4.9877E+10 |
| Nd-147 | 5.6244E-01 | 6.9524E-09 | 2.8482E+16 | 2.0810E+10 |
| Np-239 | 3.6581E+01 | 1.5768E-07 | 3.9732E+17 | 1.3535E+12 |
| Pu-238 | 1.1055E-02 | 6.4576E-07 | 1.6340E+18 | 4.0904E+08 |
| Pu-239 | 8.6044E-04 | 1.3843E-05 | 3.4881E+19 | 3.1836E+07 |
| Pu-240 | 9.2789E-04 | 4.0721E-06 | 1.0218E+19 | 3.4332E+07 |
| Pu-241 | 3.8426E-01 | 3.7303E-06 | 9.3212E+18 | 1.4218E+10 |
| Am-241 | 2.3633E-04 | 6.8859E-08 | 1.7207E+17 | 8.7444E+06 |
| Cm-242 | 5.5512E-02 | 1.6749E-08 | 4.1680E+16 | 2.0539E+09 |
| Cm-244 | 4.4940E-03 | 5.5548E-08 | 1.3710E+17 | 1.6628E+08 |

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**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 1 | System Nos. | Sheet 710 of 1000 |
|---|---|---|---|---|

Environment Transport Group Inventory:

| Time (h) = 8.0000 | Present Release | Release Rate/s | Total Release |
|---|---|---|---|
| Noble gases (atoms) | 6.4846E+21 | 2.2516E+17 | 6.4846E+21 |
| Elemental I (atoms) | 2.6821E+18 | 9.3127E+13 | 2.6821E+18 |
| Organic I (atoms) | 5.8719E+17 | 2.0389E+13 | 5.8719E+17 |
| Aerosols (kg) | 2.5315E-03 | 8.7898E-08 | 2.5315E-03 |

TSC Filtered Air Intake Transport Group Inventory:

| Time (h) = 8.0000 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 |

TSC Unfiltered Inleakage Transport Group Inventory:

| Time (h) = 8.0000 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 |

TSC Exhaust to Environment Transport Group Inventory:

| Time (h) = 8.0000 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 |

TSC Compartment Nuclide Inventory:

| Time (h) = 8.0000 | Ci | kg | Atoms | Bq |
|---|---|---|---|---|
| Co-58 | 2.5471E-07 | 8.0103E-15 | 8.3171E+10 | 9.4243E+03 |
| Co-60 | 1.9556E-07 | 1.7300E-13 | 1.7364E+12 | 7.2356E+03 |
| Kr-85 | 1.8545E-03 | 4.7268E-09 | 3.3488E+16 | 6.8615E+07 |
| Kr-85m | 1.0179E-02 | 1.2369E-12 | 8.7632E+12 | 3.7663E+08 |
| Kr-87 | 5.9717E-04 | 2.1082E-14 | 1.4593E+11 | 2.2095E+07 |
| Kr-88 | 1.2645E-02 | 1.0085E-12 | 6.9013E+12 | 4.6788E+08 |
| Rb-86 | 6.7029E-06 | 8.2378E-14 | 5.7685E+11 | 2.4801E+05 |
| Sr-89 | 2.3845E-04 | 8.2075E-12 | 5.5536E+13 | 8.8226E+06 |
| Sr-90 | 2.5853E-05 | 1.8953E-10 | 1.2682E+15 | 9.5655E+05 |
| Sr-91 | 1.6641E-04 | 4.5907E-14 | 3.0380E+11 | 6.1573E+06 |
| Sr-92 | 3.2564E-05 | 2.5907E-15 | 1.6958E+10 | 1.2049E+06 |
| Y-90 | 2.4144E-07 | 4.4378E-16 | 2.9694E+09 | 8.9334E+03 |
| Y-91 | 2.9205E-06 | 1.1909E-13 | 7.8810E+11 | 1.0806E+05 |
| Y-92 | 5.6657E-07 | 5.8881E-17 | 3.8542E+08 | 2.0963E+04 |
| Y-93 | 2.0342E-06 | 6.0970E-16 | 3.9481E+09 | 7.5264E+04 |

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**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 1 | System Nos. | Sheet 711 of 1000 |
|---|---|---|---|---|

| | | | | |
|---|---|---|---|---|
| Zr-95 | 3.7634E-06 | 1.7518E-13 | 1.1105E+12 | 1.3925E+05 |
| Zr-97 | 2.6430E-06 | 1.3826E-15 | 8.5834E+09 | 9.7791E+04 |
| Nb-95 | 3.7800E-06 | 9.6667E-14 | 6.1278E+11 | 1.3986E+05 |
| Mo-99 | 4.7117E-05 | 9.8239E-14 | 5.9758E+11 | 1.7433E+06 |
| Tc-99m | 1.5735E-05 | 2.9925E-15 | 1.8203E+10 | 5.8220E+05 |
| Ru-103 | 4.1459E-05 | 1.2846E-12 | 7.5106E+12 | 1.5340E+06 |
| Ru-105 | 6.6065E-06 | 9.8282E-16 | 5.6368E+09 | 2.4444E+05 |
| Ru-106 | 1.5711E-05 | 4.6962E-12 | 2.6680E+13 | 5.8132E+05 |
| Rh-105 | 2.1910E-05 | 2.5958E-14 | 1.4888E+11 | 8.1067E+05 |
| Sb-127 | 5.3344E-05 | 1.9975E-13 | 9.4719E+11 | 1.9737E+06 |
| Sb-129 | 3.9434E-05 | 7.0124E-15 | 3.2736E+10 | 1.4590E+06 |
| Te-127 | 2.8642E-05 | 1.0853E-14 | 5.1463E+10 | 1.0598E+06 |
| Te-127m | 7.5865E-06 | 8.0428E-13 | 3.8138E+12 | 2.8070E+05 |
| Te-129 | 7.0595E-07 | 3.3709E-17 | 1.5736E+08 | 2.6120E+04 |
| Te-129m | 2.5256E-05 | 8.3837E-12 | 3.9138E+12 | 9.3447E+05 |
| Te-131m | 6.3100E-05 | 7.9132E-14 | 3.6377E+11 | 2.3347E+06 |
| Te-132 | 7.1709E-04 | 2.3620E-12 | 1.0776E+13 | 2.6532E+07 |
| I-131 | 4.0024E-03 | 3.2284E-11 | 1.4841E+14 | 1.4809E+08 |
| I-132 | 3.8037E-04 | 3.6850E-14 | 1.6812E+11 | 1.4074E+07 |
| I-133 | 6.3749E-03 | 5.6275E-12 | 2.5481E+13 | 2.3587E+08 |
| I-134 | 7.2390E-06 | 2.7136E-16 | 1.2195E+09 | 2.6784E+05 |
| I-135 | 3.0883E-03 | 8.7939E-13 | 3.9228E+12 | 1.1427E+08 |
| Xe-133 | 2.5233E-01 | 1.3481E-09 | 6.1039E+15 | 9.3363E+09 |
| Xe-135 | 4.8976E-02 | 1.9178E-11 | 8.5552E+13 | 1.8121E+09 |
| Cs-134 | 7.0876E-04 | 5.4780E-10 | 2.4619E+15 | 2.6224E+07 |
| Cs-136 | 1.9213E-04 | 2.6214E-12 | 1.1608E+13 | 7.1086E+06 |
| Cs-137 | 4.7501E-04 | 5.4610E-09 | 2.4005E+16 | 1.7575E+07 |
| Ba-139 | 4.1560E-06 | 2.5408E-16 | 1.1008E+09 | 1.5377E+05 |
| Ba-140 | 3.9779E-04 | 5.4336E-12 | 2.3373E+13 | 1.4718E+07 |
| La-140 | 3.5160E-06 | 6.3257E-15 | 2.7210E+10 | 1.3009E+05 |
| La-141 | 7.5795E-07 | 1.3402E-16 | 5.7241E+08 | 2.8044E+04 |
| La-142 | 7.3431E-08 | 5.1296E-18 | 2.1754E+07 | 2.7169E+03 |
| Ce-141 | 9.2276E-06 | 3.2385E-13 | 1.3832E+12 | 3.4142E+05 |
| Ce-143 | 7.6200E-06 | 1.1474E-14 | 4.8322E+10 | 2.8194E+05 |
| Ce-144 | 7.4859E-06 | 2.3470E-12 | 9.8154E+12 | 2.7698E+05 |
| Pr-143 | 3.5642E-06 | 5.2930E-14 | 2.2290E+11 | 1.3188E+05 |
| Nd-147 | 1.4834E-06 | 1.8337E-14 | 7.5119E+10 | 5.4886E+04 |
| Np-239 | 9.1929E-05 | 3.9626E-13 | 9.9847E+11 | 3.4014E+06 |
| Pu-238 | 2.9543E-08 | 1.7256E-12 | 4.3664E+12 | 1.0931E+03 |
| Pu-239 | 2.2993E-09 | 3.6993E-11 | 9.3211E+13 | 8.5075E+01 |
| Pu-240 | 2.4796E-09 | 1.0882E-11 | 2.7305E+13 | 9.1745E+01 |
| Pu-241 | 1.0268E-06 | 9.9681E-12 | 2.4908E+13 | 3.7993E+04 |
| Am-241 | 6.3155E-10 | 1.8401E-13 | 4.5981E+11 | 2.3368E+01 |
| Cm-242 | 1.4821E-07 | 4.4719E-14 | 1.1128E+11 | 5.4839E+03 |
| Cm-244 | 1.2009E-08 | 1.4844E-13 | 3.6636E+11 | 4.4433E+02 |

TSC Transport Group Inventory:

| Time (h) = 8.0000 | Atmosphere | Sump | Overlying Pool |
|---|---|---|---|
| Noble gases (atoms) | 4.0050E+16 | 0.0000E+00 | 0.0000E+00 |
| Elemental I (atoms) | 9.8460E+12 | 0.0000E+00 | 0.0000E+00 |
| Organic I (atoms) | 3.5882E+12 | 0.0000E+00 | 0.0000E+00 |
| Aerosols (kg) | 6.3366E-09 | 0.0000E+00 | 0.0000E+00 |

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**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 1 | System Nos. | Sheet 712 of 1000 |
|---|---|---|---|---|

```
                        Deposition Recirculating
Time (h) =   8.0000      Surfaces     Filter
Noble gases (atoms)     0.0000E+00  0.0000E+00
Elemental I (atoms)     0.0000E+00  0.0000E+00



Organic I (atoms)       0.0000E+00  0.0000E+00
Aerosols (kg)           0.0000E+00  0.0000E+00

TSC Filtered Air Intake Transport Group Inventory:

                         Pathway
Time (h) =   8.0000       Filter
Noble gases (atoms)     0.0000E+00
Elemental I (atoms)     0.0000E+00
Organic I (atoms)       0.0000E+00
Aerosols (kg)           0.0000E+00

TSC Unfiltered Inleakage Transport Group Inventory:

                         Pathway
Time (h) =   8.0000       Filter
Noble gases (atoms)     0.0000E+00
Elemental I (atoms)     0.0000E+00
Organic I (atoms)       0.0000E+00
Aerosols (kg)           0.0000E+00

TSC Exhaust to Environment Transport Group Inventory:

                         Pathway
Time (h) =   8.0000       Filter
Noble gases (atoms)     0.0000E+00
Elemental I (atoms)     0.0000E+00
Organic I (atoms)       0.0000E+00
Aerosols (kg)           0.0000E+00

Exclusion Area Boundary Doses:

Time (h) =  24.0000     Whole Body   Thyroid       TEDE
Delta dose (rem)         1.6312E+00  4.2103E+02  2.4380E+01
Accumulated dose (rem)   5.5096E+00  1.0846E+03  6.2877E+01

Low Population Zone Doses:

Time (h) =  24.0000     Whole Body   Thyroid       TEDE
Delta dose (rem)         7.9520E-02  1.0556E+01  6.4987E-01
Accumulated dose (rem)   5.0801E-01  8.9398E+01  5.1662E+00

TSC Doses:

Time (h) =  24.0000     Whole Body   Thyroid       TEDE
Delta dose (rem)         3.9737E-03  3.2657E+01  1.7685E+00
Accumulated dose (rem)   1.9018E-02  1.2974E+02  6.8401E+00

Travel Path Doses:
```

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**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 1 | System Nos. | Sheet 713 of 1000 |
|---|---|---|---|---|

| Time (h) = 24.0000 | Whole Body | Thyroid | TEDE |
|---|---|---|---|
| Delta dose (rem) | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 |
| Accumulated dose (rem) | 6.3483E-02 | 1.2742E+01 | 7.1208E-01 |

Environment Integral Nuclide Release:

| Time (h) = 24.0000 | Ci | kg | Atoms | Bq |
|---|---|---|---|---|
| Co-58 | 1.6439E-01 | 5.1697E-09 | 5.3677E+16 | 6.0823E+09 |
| Co-60 | 1.2623E-01 | 1.1167E-07 | 1.1208E+18 | 4.6705E+09 |
| Kr-85 | 9.9657E+02 | 2.5401E-03 | 1.7996E+22 | 3.6873E+13 |
| Kr-85m | 4.2787E+03 | 5.1992E-07 | 3.6835E+18 | 1.5831E+14 |
| Kr-87 | 1.1612E+03 | 4.0994E-08 | 2.8376E+17 | 4.2964E+13 |
| Kr-88 | 6.4810E+03 | 5.1686E-07 | 3.5370E+18 | 2.3980E+14 |
| Rb-86 | 4.5028E+00 | 5.5339E-08 | 3.8751E+17 | 1.6660E+11 |
| Sr-89 | 1.5388E+02 | 5.2966E-06 | 3.5839E+19 | 5.6935E+12 |
| Sr-90 | 1.6688E+01 | 1.2234E-04 | 8.1860E+20 | 6.1745E+11 |
| Sr-91 | 1.1755E+02 | 3.2429E-08 | 2.1461E+17 | 4.3495E+12 |
| Sr-92 | 5.1258E+01 | 4.0780E-09 | 2.6694E+16 | 1.8966E+12 |
| Y-90 | 1.5559E-01 | 2.8598E-10 | 1.9135E+15 | 5.7568E+09 |
| Y-91 | 1.8848E+00 | 7.6855E-08 | 5.0861E+17 | 6.9737E+10 |
| Y-92 | 6.5353E-01 | 6.7918E-11 | 4.4458E+14 | 2.4180E+10 |
| Y-93 | 1.4210E+00 | 4.2593E-10 | 2.7581E+15 | 5.2579E+10 |
| Zr-95 | 2.4288E+00 | 1.1306E-07 | 7.1667E+17 | 8.9865E+10 |
| Zr-97 | 1.7465E+00 | 9.1358E-10 | 5.6719E+15 | 6.4619E+10 |
| Nb-95 | 2.4391E+00 | 6.2377E-08 | 3.9541E+17 | 9.0248E+10 |
| Mo-99 | 3.0361E+01 | 6.3304E-08 | 3.8507E+17 | 1.1234E+12 |
| Tc-99m | 1.2730E+01 | 2.4209E-09 | 1.4726E+16 | 4.7100E+11 |
| Ru-103 | 2.6753E+01 | 8.2894E-07 | 4.8466E+18 | 9.8986E+11 |
| Ru-105 | 6.3241E+00 | 9.4080E-10 | 5.3959E+15 | 2.3399E+11 |
| Ru-106 | 1.0141E+01 | 3.0313E-06 | 1.7221E+19 | 3.7523E+11 |
| Rh-105 | 1.4161E+01 | 1.6777E-08 | 9.6224E+16 | 5.2396E+11 |
| Sb-127 | 3.4371E+01 | 1.2871E-07 | 6.1030E+17 | 1.2717E+12 |
| Sb-129 | 3.8487E+01 | 6.8441E-09 | 3.1951E+16 | 1.4240E+12 |
| Te-127 | 2.0296E+01 | 7.6904E-09 | 3.6467E+16 | 7.5095E+11 |
| Te-127m | 4.8965E+00 | 5.1910E-07 | 2.4615E+18 | 1.8117E+11 |
| Te-129 | 8.6677E+00 | 4.1388E-10 | 1.9321E+15 | 3.2070E+11 |
| Te-129m | 1.6297E+01 | 5.4097E-06 | 2.5254E+18 | 6.0298E+11 |
| Te-131m | 4.0874E+01 | 5.1259E-08 | 2.3564E+17 | 1.5123E+12 |
| Te-132 | 4.6203E+02 | 1.5219E-06 | 6.9432E+18 | 1.7095E+13 |
| I-131 | 2.6444E+03 | 2.1330E-05 | 9.8056E+19 | 9.7843E+13 |
| I-132 | 8.3095E+02 | 8.0502E-08 | 3.6727E+17 | 3.0745E+13 |
| I-133 | 4.2815E+03 | 3.7795E-06 | 1.7113E+19 | 1.5841E+14 |
| I-134 | 3.8740E+02 | 1.4522E-08 | 6.5263E+16 | 1.4334E+13 |
| I-135 | 2.4944E+03 | 7.1029E-07 | 3.1685E+18 | 9.2294E+13 |
| Xe-133 | 1.3200E+05 | 7.0521E-04 | 3.1931E+21 | 4.8841E+15 |
| Xe-135 | 2.0628E+04 | 8.0775E-06 | 3.6032E+19 | 7.6323E+14 |
| Cs-134 | 4.7617E+02 | 3.6803E-04 | 1.6540E+21 | 1.7618E+13 |
| Cs-136 | 1.2907E+02 | 1.7610E-06 | 7.7978E+18 | 4.7754E+12 |
| Cs-137 | 3.1913E+02 | 3.6689E-03 | 1.6127E+22 | 1.1808E+13 |
| Ba-139 | 2.8110E+01 | 1.7185E-09 | 7.4454E+15 | 1.0401E+12 |
| Ba-140 | 2.5655E+02 | 3.5044E-06 | 1.5074E+19 | 9.4924E+12 |
| La-140 | 2.2698E+00 | 4.0836E-09 | 1.7566E+16 | 8.3983E+10 |
| La-141 | 7.9610E-01 | 1.4077E-10 | 6.0123E+14 | 2.9456E+10 |
| La-142 | 3.5747E-01 | 2.4971E-11 | 1.0590E+14 | 1.3226E+10 |
| Ce-141 | 5.9542E+00 | 2.0897E-07 | 8.9250E+17 | 2.2030E+11 |

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**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 1 | System Nos. | Sheet 714 of 1000 |
|---|---|---|---|---|

| | | | | |
|---|---|---|---|---|
| Ce-143 | 4.9290E+00 | 7.4223E-09 | 3.1257E+16 | 1.8237E+11 |
| Ce-144 | 4.8319E+00 | 1.5149E-06 | 6.3355E+18 | 1.7878E+11 |
| Pr-143 | 2.2988E+00 | 3.4138E-08 | 1.4376E+17 | 8.5056E+10 |
| Nd-147 | 9.5660E-01 | 1.1825E-08 | 4.8442E+16 | 3.5394E+10 |
| Np-239 | 5.9254E+01 | 2.5541E-07 | 6.4357E+17 | 2.1924E+12 |
| Pu-238 | 1.9070E-02 | 1.1139E-06 | 2.8185E+18 | 7.0557E+08 |
| Pu-239 | 1.4842E-03 | 2.3879E-05 | 6.0167E+19 | 5.4916E+07 |
| Pu-240 | 1.6006E-03 | 7.0241E-06 | 1.7625E+19 | 5.9221E+07 |
| Pu-241 | 6.6282E-01 | 6.4343E-06 | 1.6078E+19 | 2.4524E+10 |
| Am-241 | 4.0766E-04 | 1.1878E-07 | 2.9680E+17 | 1.5084E+07 |
| Cm-242 | 9.5663E-02 | 2.8864E-08 | 7.1827E+16 | 3.5395E+09 |
| Cm-244 | 7.7517E-03 | 9.5815E-08 | 2.3648E+17 | 2.8681E+08 |

Environment Transport Group Inventory:

| Time (h) = 24.0000 | Present Release | Release Rate/s | Total Release |
|---|---|---|---|
| Noble gases (atoms) | 2.1524E+22 | 2.4912E+17 | 2.1524E+22 |
| Elemental I (atoms) | 6.3667E+18 | 7.3688E+13 | 6.3667E+18 |
| Organic I (atoms) | 1.9345E+18 | 2.2391E+13 | 1.9345E+18 |
| Aerosols (kg) | 4.2494E-03 | 4.9183E-08 | 4.2494E-03 |

TSC Filtered Air Intake Transport Group Inventory:

| Time (h) = 24.0000 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 |

TSC Unfiltered Inleakage Transport Group Inventory:

| Time (h) = 24.0000 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 |

TSC Exhaust to Environment Transport Group Inventory:

| Time (h) = 24.0000 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 |

TSC Compartment Nuclide Inventory:

| Time (h) = 24.0000 | Ci | kg | Atoms | Bq |
|---|---|---|---|---|
| Co-58 | 6.0329E-08 | 1.8972E-15 | 1.9699E+10 | 2.2322E+03 |
| Co-60 | 4.6610E-08 | 4.1234E-14 | 4.1386E+11 | 1.7246E+03 |
| Kr-85 | 7.9048E-04 | 2.0148E-09 | 1.4275E+16 | 2.9248E+07 |

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**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 1 | System Nos. | Sheet 715 of 1000 |
|---|---|---|---|---|

| | | | | |
|---|---|---|---|---|
| Kr-85m | 3.6502E-04 | 4.4355E-14 | 3.1425E+11 | 1.3506E+07 |
| Kr-87 | 4.1520E-08 | 1.4658E-18 | 1.0146E+07 | 1.5362E+03 |
| Kr-88 | 1.0857E-04 | 8.6582E-15 | 5.9251E+10 | 4.0170E+06 |
| Rb-86 | 1.5579E-06 | 1.9146E-14 | 1.3407E+11 | 5.7642E+04 |
| Sr-89 | 5.6328E-05 | 1.9389E-12 | 1.3119E+13 | 2.0842E+06 |
| Sr-90 | 6.1631E-06 | 4.5182E-11 | 3.0232E+14 | 2.2803E+05 |
| Sr-91 | 1.2344E-05 | 3.4053E-15 | 2.2536E+10 | 4.5674E+05 |
| Sr-92 | 1.2961E-07 | 1.0312E-17 | 6.7497E+07 | 4.7956E+03 |
| Y-90 | 4.8402E-08 | 8.8964E-17 | 5.9528E+08 | 1.7909E+03 |
| Y-91 | 6.9078E-07 | 2.8168E-14 | 1.8641E+11 | 2.5559E+04 |
| Y-92 | 5.8870E-09 | 6.1180E-19 | 4.0047E+06 | 2.1782E+02 |
| Y-93 | 1.6173E-07 | 4.8475E-17 | 3.1390E+08 | 5.9839E+03 |
| Zr-95 | 8.9074E-07 | 4.1463E-14 | 2.6284E+11 | 3.2957E+04 |
| Zr-97 | 3.2688E-07 | 1.7099E-16 | 1.0616E+09 | 1.2095E+04 |
| Nb-95 | 8.8939E-07 | 2.2745E-14 | 1.4418E+11 | 3.2907E+04 |
| Mo-99 | 9.4952E-06 | 1.9798E-14 | 1.2043E+11 | 3.5132E+05 |
| Tc-99m | 5.9436E-07 | 1.1303E-16 | 6.8759E+08 | 2.1991E+04 |
| Ru-103 | 9.7682E-06 | 3.0267E-13 | 1.7696E+12 | 3.6142E+05 |
| Ru-105 | 1.2955E-07 | 1.9272E-17 | 1.1053E+08 | 4.7932E+03 |
| Ru-106 | 3.7409E-06 | 1.1182E-12 | 6.3526E+12 | 1.3841E+05 |
| Rh-105 | 3.8171E-06 | 4.5223E-15 | 2.5937E+10 | 1.4123E+05 |
| Sb-127 | 1.1279E-05 | 4.2235E-14 | 2.0027E+11 | 4.1732E+05 |
| Sb-129 | 7.2141E-07 | 1.2829E-16 | 5.9888E+08 | 2.6692E+04 |
| Te-127 | 2.0852E-06 | 7.9012E-16 | 3.7466E+09 | 7.7153E+04 |
| Te-127m | 1.8010E-06 | 1.9093E-13 | 9.0537E+11 | 6.6636E+04 |
| Te-129m | 5.9388E-06 | 1.9714E-12 | 9.2030E+11 | 2.1974E+05 |
| Te-131m | 1.0394E-05 | 1.3035E-14 | 5.9921E+10 | 3.8458E+05 |
| Te-132 | 1.4835E-04 | 4.8865E-13 | 2.2293E+12 | 5.4889E+06 |
| I-131 | 9.4939E-04 | 7.6579E-12 | 3.5204E+13 | 3.5127E+07 |
| I-132 | 7.6913E-07 | 7.4513E-17 | 3.3994E+08 | 2.8458E+04 |
| I-133 | 9.3969E-04 | 8.2952E-13 | 3.7560E+12 | 3.4769E+07 |
| I-135 | 1.4490E-04 | 4.1261E-14 | 1.8406E+11 | 5.3615E+06 |
| Xe-133 | 9.8499E-02 | 5.2622E-10 | 2.3827E+15 | 3.6445E+09 |
| Xe-135 | 6.1636E-03 | 2.4136E-12 | 1.0767E+13 | 2.2805E+08 |
| Cs-134 | 1.6876E-04 | 1.3043E-10 | 5.8618E+14 | 6.2440E+06 |
| Cs-136 | 4.4187E-05 | 6.0289E-13 | 2.6696E+12 | 1.6349E+06 |
| Cs-137 | 1.1317E-04 | 1.3010E-09 | 5.7189E+15 | 4.1871E+06 |
| Ba-140 | 9.1455E-05 | 1.2492E-12 | 5.3736E+12 | 3.3839E+06 |
| La-140 | 6.3643E-07 | 1.1450E-15 | 4.9253E+09 | 2.3548E+04 |
| La-141 | 1.0747E-08 | 1.9004E-18 | 8.1167E+06 | 3.9766E+02 |
| Ce-141 | 2.1688E-06 | 7.6116E-14 | 3.2509E+11 | 8.0246E+04 |
| Ce-143 | 1.2981E-06 | 1.9547E-15 | 8.2318E+09 | 4.8029E+04 |
| Ce-144 | 1.7817E-06 | 5.5863E-13 | 2.3362E+12 | 6.5924E+04 |
| Pr-143 | 8.2124E-07 | 1.2196E-14 | 5.1360E+10 | 3.0386E+04 |
| Nd-147 | 3.3907E-07 | 4.1913E-15 | 1.7170E+10 | 1.2546E+04 |
| Np-239 | 1.8011E-05 | 7.7637E-14 | 1.9562E+11 | 6.6641E+05 |
| Pu-238 | 7.0429E-09 | 4.1139E-13 | 1.0409E+12 | 2.6059E+02 |
| Pu-239 | 5.4816E-10 | 8.8191E-12 | 2.2222E+13 | 2.0282E+01 |
| Pu-240 | 5.9114E-10 | 2.5942E-12 | 6.5095E+12 | 2.1872E+01 |
| Pu-241 | 2.4478E-07 | 2.3762E-12 | 5.9377E+12 | 9.0568E+03 |
| Am-241 | 1.5056E-10 | 4.3868E-14 | 1.0962E+11 | 5.5708E+00 |
| Cm-242 | 3.5234E-08 | 1.0631E-14 | 2.6455E+10 | 1.3037E+03 |
| Cm-244 | 2.8627E-09 | 3.5385E-14 | 8.7334E+10 | 1.0592E+02 |

TSC Transport Group Inventory:

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**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 1 | System Nos. | Sheet 716 of 1000 |
|---|---|---|---|---|

```
                                                Overlying
Time (h) =  24.0000    Atmosphere     Sump        Pool
Noble gases (atoms)    1.7074E+16  0.0000E+00  0.0000E+00
Elemental I (atoms)    4.1831E+12  0.0000E+00  0.0000E+00
Organic I (atoms)      1.5296E+12  0.0000E+00  0.0000E+00
Aerosols (kg)          1.5097E-09  0.0000E+00  0.0000E+00

                       Deposition Recirculating
Time (h) =  24.0000     Surfaces     Filter
Noble gases (atoms)    0.0000E+00  0.0000E+00
Elemental I (atoms)    0.0000E+00  0.0000E+00
Organic I (atoms)      0.0000E+00  0.0000E+00
Aerosols (kg)          0.0000E+00  0.0000E+00

TSC Filtered Air Intake Transport Group Inventory:

                        Pathway
Time (h) =  24.0000      Filter
Noble gases (atoms)    0.0000E+00
Elemental I (atoms)    0.0000E+00
Organic I (atoms)      0.0000E+00
Aerosols (kg)          0.0000E+00

TSC Unfiltered Inleakage Transport Group Inventory:

                        Pathway
Time (h) =  24.0000      Filter
Noble gases (atoms)    0.0000E+00
Elemental I (atoms)    0.0000E+00
Organic I (atoms)      0.0000E+00
Aerosols (kg)          0.0000E+00

TSC Exhaust to Environment Transport Group Inventory:

                        Pathway
Time (h) =  24.0000      Filter
Noble gases (atoms)    0.0000E+00
Elemental I (atoms)    0.0000E+00
Organic I (atoms)      0.0000E+00
Aerosols (kg)          0.0000E+00

Exclusion Area Boundary Doses:

Time (h) =  96.0000    Whole Body   Thyroid       TEDE
Delta dose (rem)        1.1126E+00  4.8579E+02  2.9964E+01
Accumulated dose (rem)  6.6222E+00  1.5704E+03  9.2841E+01

Low Population Zone Doses:

Time (h) =  96.0000    Whole Body   Thyroid       TEDE
Delta dose (rem)        2.2252E-02  6.3847E+00  4.0145E-01
Accumulated dose (rem)  5.3026E-01  9.5783E+01  5.5677E+00

TSC Doses:

Time (h) =  96.0000    Whole Body   Thyroid       TEDE
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AmerGen

**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 1 | System Nos. | Sheet 717 of 1000 |
|---|---|---|---|---|

| | | | |
|---|---|---|---|
| Delta dose (rem) | 1.0091E-03 | 1.3970E+01 | 8.2632E-01 |
| Accumulated dose (rem) | 2.0028E-02 | 1.4371E+02 | 7.6665E+00 |

Travel Path Doses:

| Time (h) = 96.0000 | Whole Body | Thyroid | TEDE |
|---|---|---|---|
| Delta dose (rem) | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 |
| Accumulated dose (rem) | 6.3483E-02 | 1.2742E+01 | 7.1208E-01 |

Environment Integral Nuclide Release:

| Time (h) = 96.0000 | Ci | kg | Atoms | Bq |
|---|---|---|---|---|
| Co-58 | 2.6274E-01 | 8.2627E-09 | 8.5792E+16 | 9.7213E+09 |
| Co-60 | 2.0330E-01 | 1.7985E-07 | 1.8051E+18 | 7.5221E+09 |
| Kr-85 | 2.5611E+03 | 6.5277E-03 | 4.6248E+22 | 9.4759E+13 |
| Kr-85m | 4.3256E+03 | 5.2561E-07 | 3.7239E+18 | 1.6005E+14 |
| Kr-87 | 1.1612E+03 | 4.0994E-08 | 2.8376E+17 | 4.2964E+13 |
| Kr-88 | 6.4882E+03 | 5.1743E-07 | 3.5410E+18 | 2.4006E+14 |
| Rb-86 | 6.9413E+00 | 8.5308E-08 | 5.9737E+17 | 2.5683E+11 |
| Sr-89 | 2.4517E+02 | 8.4390E-06 | 5.7102E+19 | 9.0713E+12 |
| Sr-90 | 2.6883E+01 | 1.9708E-04 | 1.3187E+21 | 9.9468E+11 |
| Sr-91 | 1.2122E+02 | 3.3439E-08 | 2.2129E+17 | 4.4850E+12 |
| Sr-92 | 5.1266E+01 | 4.0786E-09 | 2.6698E+16 | 1.8968E+12 |
| Y-90 | 2.1109E-01 | 3.8798E-10 | 2.5961E+15 | 7.8102E+09 |
| Y-91 | 3.0075E+00 | 1.2264E-07 | 8.1157E+17 | 1.1128E+11 |
| Y-92 | 6.5404E-01 | 6.7971E-11 | 4.4493E+14 | 2.4200E+10 |
| Y-93 | 1.4723E+00 | 4.4128E-10 | 2.8575E+15 | 5.4473E+10 |
| Zr-95 | 3.8787E+00 | 1.8055E-07 | 1.1445E+18 | 1.4351E+11 |
| Zr-97 | 1.9170E+00 | 1.0028E-09 | 6.2258E+15 | 7.0930E+10 |
| Nb-95 | 3.8677E+00 | 9.8910E-08 | 6.2700E+17 | 1.4311E+11 |
| Mo-99 | 4.1362E+01 | 8.6240E-08 | 5.2460E+17 | 1.5304E+12 |
| Tc-99m | 1.2834E+01 | 2.4408E-09 | 1.4847E+16 | 4.7487E+11 |
| Ru-103 | 4.2492E+01 | 1.3166E-06 | 7.6978E+18 | 1.5722E+12 |
| Ru-105 | 6.3396E+00 | 9.4311E-10 | 5.4091E+15 | 2.3457E+11 |
| Ru-106 | 1.6313E+01 | 4.8760E-06 | 2.7702E+19 | 6.0358E+11 |
| Rh-105 | 1.7529E+01 | 2.0767E-08 | 1.1911E+17 | 6.4856E+11 |
| Sb-127 | 4.8771E+01 | 1.8263E-07 | 8.6599E+17 | 1.8045E+12 |
| Sb-129 | 3.8571E+01 | 6.8590E-09 | 3.2020E+16 | 1.4271E+12 |
| Te-127 | 2.0904E+01 | 7.9208E-09 | 3.7559E+16 | 7.7344E+11 |
| Te-127m | 7.8477E+00 | 8.3198E-07 | 3.9451E+18 | 2.9037E+11 |
| Te-129 | 8.6677E+00 | 4.1388E-10 | 1.9321E+15 | 3.2070E+11 |
| Te-129m | 2.5823E+01 | 8.5719E-06 | 4.0016E+18 | 9.5546E+11 |
| Te-131m | 4.9201E+01 | 6.1702E-08 | 2.8365E+17 | 1.8204E+12 |
| Te-132 | 6.4318E+02 | 2.1186E-06 | 9.6654E+18 | 2.3798E+13 |
| I-131 | 4.0583E+03 | 3.2735E-05 | 1.5048E+20 | 1.5016E+14 |
| I-132 | 8.3099E+02 | 8.0505E-08 | 3.6728E+17 | 3.0746E+13 |
| I-133 | 4.8727E+03 | 4.3015E-06 | 1.9477E+19 | 1.8029E+14 |
| I-134 | 3.8740E+02 | 1.4522E-08 | 6.5263E+16 | 1.4334E+13 |
| I-135 | 2.5232E+03 | 7.1848E-07 | 3.2050E+18 | 9.3359E+13 |
| Xe-133 | 2.9123E+05 | 1.5559E-03 | 7.0448E+21 | 1.0775E+16 |
| Xe-135 | 2.2522E+04 | 8.8191E-06 | 3.9341E+19 | 8.3330E+14 |
| Cs-134 | 7.5498E+02 | 5.8352E-04 | 2.6224E+21 | 2.7934E+13 |
| Cs-136 | 1.9664E+02 | 2.6830E-06 | 1.1880E+19 | 7.2757E+12 |
| Cs-137 | 5.0634E+02 | 5.8212E-03 | 2.5588E+22 | 1.8734E+13 |
| Ba-139 | 2.8110E+01 | 1.7185E-09 | 7.4454E+15 | 1.0401E+12 |
| Ba-140 | 3.9611E+02 | 5.4107E-06 | 2.3274E+19 | 1.4656E+13 |
| La-140 | 2.8711E+00 | 5.1655E-09 | 2.2219E+16 | 1.0623E+11 |

| | | | | |
|---|---|---|---|---|
| La-141 | 7.9720E-01 | 1.4096E-10 | 6.0205E+14 | 2.9496E+10 |
| La-142 | 3.5747E-01 | 2.4971E-11 | 1.0590E+14 | 1.3226E+10 |
| Ce-141 | 9.4295E+00 | 3.3094E-07 | 1.4134E+18 | 3.4889E+11 |
| Ce-143 | 6.0304E+00 | 9.0807E-09 | 3.8242E+16 | 2.2312E+11 |
| Ce-144 | 7.7688E+00 | 2.4358E-06 | 1.0186E+19 | 2.8745E+11 |
| Pr-143 | 3.5580E+00 | 5.2838E-08 | 2.2252E+17 | 1.3165E+11 |
| Nd-147 | 1.4674E+00 | 1.8139E-08 | 7.4311E+16 | 5.4295E+10 |
| Np-239 | 7.8998E+01 | 3.4052E-07 | 8.5802E+17 | 2.9229E+12 |
| Pu-238 | 3.0721E-02 | 1.7945E-06 | 4.5406E+18 | 1.1367E+09 |
| Pu-239 | 2.3911E-03 | 3.8469E-05 | 9.6932E+19 | 8.8471E+07 |
| Pu-240 | 2.5786E-03 | 1.1316E-05 | 2.8395E+19 | 9.5407E+07 |
| Pu-241 | 1.0677E+00 | 1.0365E-05 | 2.5900E+19 | 3.9505E+10 |
| Am-241 | 6.5676E-04 | 1.9135E-07 | 4.7816E+17 | 2.4300E+07 |
| Cm-242 | 1.5358E-01 | 4.6340E-08 | 1.1532E+17 | 5.6826E+09 |
| Cm-244 | 1.2487E-02 | 1.5435E-07 | 3.8095E+17 | 4.6203E+08 |

Environment Transport Group Inventory:

| Time (h) = 96.0000 | Present Release | Release Rate/s | Total Release |
|---|---|---|---|
| Noble gases (atoms) | 5.5325E+22 | 1.6008E+17 | 5.5325E+22 |
| Elemental I (atoms) | 1.4648E+19 | 4.2384E+13 | 1.4648E+19 |
| Organic I (atoms) | 4.9628E+18 | 1.4360E+13 | 4.9628E+18 |
| Aerosols (kg) | 6.7471E-03 | 1.9523E-08 | 6.7471E-03 |

TSC Filtered Air Intake Transport Group Inventory:

| Time (h) = 96.0000 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 |

TSC Unfiltered Inleakage Transport Group Inventory:

| Time (h) = 96.0000 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 |

TSC Exhaust to Environment Transport Group Inventory:

| Time (h) = 96.0000 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 |

TSC Compartment Nuclide Inventory:

| Time (h) = 96.0000 | Ci | kg | Atoms | Bq |
|---|---|---|---|---|
| Co-58 | 1.3397E-08 | 4.2132E-16 | 4.3746E+09 | 4.9570E+02 |
| Co-60 | 1.0648E-08 | 9.4195E-15 | 9.4543E+10 | 3.9397E+02 |

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**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 1 | System Nos. | Sheet 719 of 1000 |
|---|---|---|---|---|

| | | | | |
|---|---|---|---|---|
| Kr-85 | 2.5243E-04 | 6.4341E-10 | 4.5585E+15 | 9.3400E+06 |
| Kr-85m | 1.6936E-09 | 2.0580E-19 | 1.4581E+06 | 6.2664E+01 |
| Rb-86 | 3.1870E-07 | 3.9168E-15 | 2.7428E+10 | 1.1792E+04 |
| Sr-89 | 1.2362E-05 | 4.2551E-13 | 2.8792E+12 | 4.5740E+05 |
| Sr-90 | 1.4092E-06 | 1.0331E-11 | 6.9125E+13 | 5.2139E+04 |
| Sr-91 | 1.4765E-08 | 4.0730E-18 | 2.6954E+07 | 5.4629E+02 |
| Y-90 | 5.0752E-09 | 9.3283E-18 | 6.2418E+07 | 1.8778E+02 |
| Y-91 | 1.5246E-07 | 6.2168E-15 | 4.1141E+10 | 5.6410E+03 |
| Y-93 | 2.6429E-10 | 7.9215E-20 | 5.1295E+05 | 9.7787E+00 |
| Zr-95 | 1.9719E-07 | 9.1789E-15 | 5.8186E+10 | 7.2960E+03 |
| Zr-97 | 3.9007E-09 | 2.0405E-18 | 1.2668E+07 | 1.4433E+02 |
| Nb-95 | 1.9171E-07 | 4.9027E-15 | 3.1079E+10 | 7.0933E+03 |
| Mo-99 | 1.0194E-06 | 2.1255E-15 | 1.2929E+10 | 3.7719E+04 |
| Ru-103 | 2.1187E-06 | 6.5648E-14 | 3.8382E+11 | 7.8392E+04 |
| Ru-106 | 8.5070E-07 | 2.5428E-13 | 1.4446E+12 | 3.1476E+04 |
| Rh-105 | 2.1282E-07 | 2.5214E-16 | 1.4461E+09 | 7.8745E+03 |
| Sb-127 | 1.5030E-06 | 5.6280E-15 | 2.6687E+10 | 5.5609E+04 |
| Te-127 | 2.2925E-09 | 8.6866E-19 | 4.1191E+06 | 8.4822E+01 |
| Te-127m | 4.0408E-07 | 4.2839E-14 | 2.0314E+11 | 1.4951E+04 |
| Te-129m | 1.2766E-06 | 4.2378E-13 | 1.9783E+11 | 4.7236E+04 |
| Te-131m | 4.5036E-07 | 5.6478E-16 | 2.5963E+09 | 1.6663E+04 |
| Te-132 | 1.7921E-05 | 5.9031E-14 | 2.6931E+11 | 6.6309E+05 |
| I-131 | 1.7544E-04 | 1.4151E-12 | 6.5055E+12 | 6.4914E+06 |
| I-133 | 2.0416E-05 | 1.8023E-14 | 8.1605E+10 | 7.5540E+05 |
| I-135 | 1.8243E-08 | 5.1948E-18 | 2.3173E+07 | 6.7500E+02 |
| Xe-133 | 2.1171E-02 | 1.1310E-10 | 5.1212E+14 | 7.8332E+08 |
| Xe-135 | 8.1270E-06 | 3.1824E-15 | 1.4196E+10 | 3.0070E+05 |
| Cs-134 | 3.8487E-05 | 2.9746E-11 | 1.3368E+14 | 1.4240E+06 |
| Cs-136 | 8.6219E-06 | 1.1764E-13 | 5.2091E+11 | 3.1901E+05 |
| Cs-137 | 2.5875E-05 | 2.9747E-10 | 1.3076E+15 | 9.5737E+05 |
| Ba-140 | 1.7765E-05 | 2.4267E-13 | 1.0438E+12 | 6.5731E+05 |
| La-140 | 4.2151E-08 | 7.5834E-17 | 3.2620E+08 | 1.5596E+03 |
| Ce-141 | 4.6525E-07 | 1.6328E-14 | 6.9738E+10 | 1.7214E+04 |
| Ce-143 | 6.5427E-08 | 9.8522E-17 | 4.1490E+08 | 2.4208E+03 |
| Ce-144 | 4.0450E-07 | 1.2682E-13 | 5.3037E+11 | 1.4966E+04 |
| Pr-143 | 1.6111E-07 | 2.3925E-15 | 1.0076E+10 | 5.9610E+03 |
| Nd-147 | 6.4164E-08 | 7.9314E-16 | 3.2492E+09 | 2.3741E+03 |
| Np-239 | 1.7034E-06 | 7.3424E-15 | 1.8501E+10 | 6.3025E+04 |
| Pu-238 | 1.6105E-09 | 9.4075E-14 | 2.3804E+11 | 5.9590E+01 |
| Pu-239 | 1.2536E-10 | 2.0168E-12 | 5.0819E+12 | 4.6383E+00 |
| Pu-240 | 1.3519E-10 | 5.9328E-13 | 1.4887E+12 | 5.0019E+00 |
| Pu-241 | 5.5956E-08 | 5.4320E-13 | 1.3573E+12 | 2.0704E+03 |
| Am-241 | 3.4432E-11 | 1.0032E-14 | 2.5068E+10 | 1.2740E+00 |
| Cm-242 | 7.9554E-09 | 2.4003E-15 | 5.9732E+09 | 2.9435E+02 |
| Cm-244 | 6.5448E-10 | 8.0897E-15 | 1.9966E+10 | 2.4216E+01 |

TSC Transport Group Inventory:

| Time (h) = 96.0000 | Atmosphere | Sump | Overlying Pool |
|---|---|---|---|
| Noble gases (atoms) | 5.4553E+15 | 0.0000E+00 | 0.0000E+00 |
| Elemental I (atoms) | 1.3365E+12 | 0.0000E+00 | 0.0000E+00 |
| Organic I (atoms) | 4.8873E+11 | 0.0000E+00 | 0.0000E+00 |
| Aerosols (kg) | 3.4526E-10 | 0.0000E+00 | 0.0000E+00 |

| Time (h) = 96.0000 | Deposition Surfaces | Recirculating Filter |
|---|---|---|

```
Noble gases (atoms)    0.0000E+00  0.0000E+00
Elemental I (atoms)    0.0000E+00  0.0000E+00
Organic I (atoms)      0.0000E+00  0.0000E+00
Aerosols (kg)          0.0000E+00  0.0000E+00

TSC Filtered Air Intake Transport Group Inventory:

                        Pathway
Time (h) =  96.0000      Filter
Noble gases (atoms)    0.0000E+00
Elemental I (atoms)    0.0000E+00
Organic I (atoms)      0.0000E+00
Aerosols (kg)          0.0000E+00

TSC Unfiltered Inleakage Transport Group Inventory:

                        Pathway
Time (h) =  96.0000      Filter
Noble gases (atoms)    0.0000E+00
Elemental I (atoms)    0.0000E+00
Organic I (atoms)      0.0000E+00
Aerosols (kg)          0.0000E+00

TSC Exhaust to Environment Transport Group Inventory:

                        Pathway
Time (h) =  96.0000      Filter
Noble gases (atoms)    0.0000E+00
Elemental I (atoms)    0.0000E+00
Organic I (atoms)      0.0000E+00
Aerosols (kg)          0.0000E+00

Exclusion Area Boundary Doses:

Time (h) = 720.0000    Whole Body   Thyroid       TEDE
Delta dose (rem)        1.8642E+00  6.8621E+02  5.7390E+01
Accumulated dose (rem)  8.4864E+00  2.2566E+03  1.5023E+02

Low Population Zone Doses:

Time (h) = 720.0000    Whole Body   Thyroid       TEDE
Delta dose (rem)        9.3209E-03  2.2547E+00  1.9176E-01
Accumulated dose (rem)  5.3958E-01  9.8038E+01  5.7594E+00

TSC Doses:

Time (h) = 720.0000    Whole Body   Thyroid       TEDE
Delta dose (rem)        8.9037E-04  1.0549E+01  8.5465E-01
Accumulated dose (rem)  2.0918E-02  1.5426E+02  8.5211E+00

Travel Path Doses:

Time (h) = 720.0000    Whole Body   Thyroid       TEDE
Delta dose (rem)        0.0000E+00  0.0000E+00  0.0000E+00
Accumulated dose (rem)  6.3483E-02  1.2742E+01  7.1208E-01

Environment Integral Nuclide Release:
```

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**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 1 | System Nos. | Sheet 721 of 1000 |
|---|---|---|---|---|

| Time (h) = 720.0000 | Ci | kg | Atoms | Bq |
|---|---|---|---|---|
| Co-58 | 4.9296E-01 | 1.5503E-08 | 1.6096E+17 | 1.8239E+10 |
| Co-60 | 3.9996E-01 | 3.5383E-07 | 3.5513E+18 | 1.4799E+10 |
| Kr-85 | 1.5988E+04 | 4.0750E-02 | 2.8871E+23 | 5.9154E+14 |
| Kr-85m | 4.3256E+03 | 5.2561E-07 | 3.7239E+18 | 1.6005E+14 |
| Kr-87 | 1.1612E+03 | 4.0994E-08 | 2.8376E+17 | 4.2964E+13 |
| Kr-88 | 6.4882E+03 | 5.1743E-07 | 3.5410E+18 | 2.4006E+14 |
| Rb-86 | 1.1467E+01 | 1.4093E-07 | 9.8684E+17 | 4.2427E+11 |
| Sr-89 | 4.5151E+02 | 1.5541E-05 | 1.0516E+20 | 1.6706E+13 |
| Sr-90 | 5.2970E+01 | 3.8833E-04 | 2.5984E+21 | 1.9599E+12 |
| Sr-91 | 1.2123E+02 | 3.3443E-08 | 2.2132E+17 | 4.4855E+12 |
| Sr-92 | 5.1266E+01 | 4.0786E-09 | 2.6698E+16 | 1.8968E+12 |
| Y-90 | 2.3918E-01 | 4.3962E-10 | 2.9416E+15 | 8.8497E+09 |
| Y-91 | 5.5876E+00 | 2.2784E-07 | 1.5078E+18 | 2.0674E+11 |
| Y-92 | 6.5404E-01 | 6.7971E-11 | 4.4493E+14 | 2.4200E+10 |
| Y-93 | 1.4725E+00 | 4.4136E-10 | 2.8580E+15 | 5.4483E+10 |
| Zr-95 | 7.2409E+00 | 3.3706E-07 | 2.1366E+18 | 2.6791E+11 |
| Zr-97 | 1.9238E+00 | 1.0063E-09 | 6.2478E+15 | 7.1181E+10 |
| Nb-95 | 6.9323E+00 | 1.7728E-07 | 1.1238E+18 | 2.5649E+11 |
| Mo-99 | 4.7135E+01 | 9.8276E-08 | 5.9781E+17 | 1.7440E+12 |
| Tc-99m | 1.2834E+01 | 2.4408E-09 | 1.4847E+16 | 4.7487E+11 |
| Ru-103 | 7.6865E+01 | 2.3816E-06 | 1.3925E+19 | 2.8440E+12 |
| Ru-105 | 6.3396E+00 | 9.4311E-10 | 5.4091E+15 | 2.3457E+11 |
| Ru-106 | 3.1839E+01 | 9.5169E-06 | 5.4068E+19 | 1.1781E+12 |
| Rh-105 | 1.8262E+01 | 2.1636E-08 | 1.2409E+17 | 6.7568E+11 |
| Sb-127 | 5.9502E+01 | 2.2281E-07 | 1.0565E+18 | 2.2016E+12 |
| Sb-129 | 3.8571E+01 | 6.8590E-09 | 3.2020E+16 | 1.4271E+12 |
| Te-127 | 2.0906E+01 | 7.9216E-09 | 3.7563E+16 | 7.7352E+11 |
| Te-127m | 1.4973E+01 | 1.5874E-06 | 7.5272E+18 | 5.5401E+11 |
| Te-129 | 8.6677E+00 | 4.1388E-10 | 1.9321E+15 | 3.2070E+11 |
| Te-129m | 4.6100E+01 | 1.5303E-05 | 7.1438E+18 | 1.7057E+12 |
| Te-131m | 5.0545E+01 | 6.3386E-08 | 2.9139E+17 | 1.8702E+12 |
| Te-132 | 7.5763E+02 | 2.4956E-06 | 1.1385E+19 | 2.8032E+13 |
| I-131 | 6.2202E+03 | 5.0173E-05 | 2.3065E+20 | 2.3015E+14 |
| I-132 | 8.3099E+02 | 8.0505E-08 | 3.6728E+17 | 3.0746E+13 |
| I-133 | 4.9171E+03 | 4.3406E-06 | 1.9654E+19 | 1.8193E+14 |
| I-134 | 3.8740E+02 | 1.4522E-08 | 6.5263E+16 | 1.4334E+13 |
| I-135 | 2.5232E+03 | 7.1849E-07 | 3.2050E+18 | 9.3359E+13 |
| Xe-133 | 6.0663E+05 | 3.2409E-03 | 1.4674E+22 | 2.2445E+16 |
| Xe-135 | 2.2529E+04 | 8.8222E-06 | 3.9354E+19 | 8.3359E+14 |
| Cs-134 | 1.4627E+03 | 1.1305E-03 | 5.0807E+21 | 5.4120E+13 |
| Cs-136 | 3.0756E+02 | 4.1965E-06 | 1.8582E+19 | 1.1380E+13 |
| Cs-137 | 9.8535E+02 | 1.1328E-02 | 4.9796E+22 | 3.6458E+13 |
| Ba-139 | 2.8110E+01 | 1.7185E-09 | 7.4454E+15 | 1.0401E+12 |
| Ba-140 | 6.2263E+02 | 8.5048E-06 | 3.6584E+19 | 2.3037E+13 |
| La-140 | 3.0332E+00 | 5.4571E-09 | 2.3474E+16 | 1.1223E+11 |
| La-141 | 7.9720E-01 | 1.4096E-10 | 6.0206E+14 | 2.9496E+10 |
| La-142 | 3.5747E-01 | 2.4971E-11 | 1.0590E+14 | 1.3226E+10 |
| Ce-141 | 1.6783E+01 | 5.8900E-07 | 2.5156E+18 | 6.2096E+11 |
| Ce-143 | 6.2426E+00 | 9.4003E-09 | 3.9588E+16 | 2.3098E+11 |
| Ce-144 | 1.5120E+01 | 4.7405E-06 | 1.9825E+19 | 5.5943E+11 |
| Pr-143 | 5.6534E+00 | 8.3955E-08 | 3.5356E+17 | 2.0918E+11 |
| Nd-147 | 2.2448E+00 | 2.7749E-08 | 1.1368E+17 | 8.3058E+10 |
| Np-239 | 8.7588E+01 | 3.7755E-07 | 9.5132E+17 | 3.2408E+12 |
| Pu-238 | 6.0546E-02 | 3.5367E-06 | 8.9488E+18 | 2.2402E+09 |
| Pu-239 | 4.7130E-03 | 7.5825E-05 | 1.9106E+20 | 1.7438E+08 |
| Pu-240 | 5.0825E-03 | 2.2305E-05 | 5.5968E+19 | 1.8805E+08 |

| | | | | |
|---|---|---|---|---|
| Pu-241 | 2.1031E+00 | 2.0415E-05 | 5.1014E+19 | 7.7813E+10 |
| Am-241 | 1.2945E-03 | 3.7716E-07 | 9.4246E+17 | 4.7896E+07 |
| Cm-242 | 2.9614E-01 | 8.9352E-08 | 2.2235E+17 | 1.0957E+10 |
| Cm-244 | 2.4599E-02 | 3.0406E-07 | 7.5045E+17 | 9.1018E+08 |

Environment Transport Group Inventory:

| Time (h) = 720.0000 | Present Release | Release Rate/s | Total Release |
|---|---|---|---|
| Noble gases (atoms) | 3.4615E+23 | 1.3355E+17 | 3.4615E+23 |
| Elemental I (atoms) | 8.5901E+19 | 3.3141E+13 | 8.5901E+19 |
| Organic I (atoms) | 3.1018E+19 | 1.1967E+13 | 3.1018E+19 |
| Aerosols (kg) | 1.3142E-02 | 5.0702E-09 | 1.3142E-02 |

TSC Filtered Air Intake Transport Group Inventory:

| Time (h) = 720.0000 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 |

TSC Unfiltered Inleakage Transport Group Inventory:

| Time (h) = 720.0000 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 |

TSC Exhaust to Environment Transport Group Inventory:

| Time (h) = 720.0000 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 |

TSC Compartment Nuclide Inventory:

| Time (h) = 720.0000 | Ci | kg | Atoms | Bq |
|---|---|---|---|---|
| Co-58 | 6.1226E-10 | 1.9255E-17 | 1.9992E+08 | 2.2654E+01 |
| Co-60 | 6.2181E-10 | 5.5009E-16 | 5.5212E+09 | 2.3007E+01 |
| Kr-85 | 2.1562E-04 | 5.4957E-10 | 3.8936E+15 | 7.9778E+06 |
| Rb-86 | 7.1517E-09 | 8.7894E-17 | 6.1548E+08 | 2.6461E+02 |
| Sr-89 | 5.1001E-07 | 1.7555E-14 | 1.1878E+11 | 1.8870E+04 |
| Sr-90 | 8.2927E-08 | 6.0794E-13 | 4.0679E+12 | 3.0683E+03 |
| Y-91 | 6.6047E-09 | 2.6932E-16 | 1.7823E+09 | 2.4437E+02 |
| Zr-95 | 8.7704E-09 | 4.0825E-16 | 2.5879E+09 | 3.2451E+02 |
| Nb-95 | 6.7678E-09 | 1.7307E-16 | 1.0971E+09 | 2.5041E+02 |
| Mo-99 | 8.5649E-11 | 1.7858E-19 | 1.0863E+06 | 3.1690E+00 |
| Ru-103 | 7.8938E-08 | 2.4459E-15 | 1.4300E+10 | 2.9207E+03 |
| Ru-106 | 4.7751E-08 | 1.4273E-14 | 8.1089E+10 | 1.7668E+03 |
| Sb-127 | 8.2127E-10 | 3.0753E-18 | 1.4583E+07 | 3.0387E+01 |

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**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 1 | System Nos. | Sheet 723 of 1000 |
|---|---|---|---|---|

| | | | | |
|---|---|---|---|---|
| Te-127m | 2.0190E-08 | 2.1404E-15 | 1.0150E+10 | 7.4703E+02 |
| Te-129m | 4.4015E-08 | 1.4611E-14 | 6.8207E+09 | 1.6286E+03 |
| Te-132 | 4.1856E-09 | 1.3787E-17 | 6.2899E+07 | 1.5487E+02 |
| I-131 | 3.4323E-06 | 2.7685E-14 | 1.2727E+11 | 1.2699E+05 |
| Xe-133 | 5.8484E-04 | 3.1244E-12 | 1.4147E+13 | 2.1639E+07 |
| Cs-134 | 2.2151E-06 | 1.7120E-12 | 7.6941E+12 | 8.1957E+04 |
| Cs-136 | 1.2841E-07 | 1.7521E-15 | 7.7583E+09 | 4.7512E+03 |
| Cs-137 | 1.5228E-06 | 1.7507E-11 | 7.6955E+13 | 5.6342E+04 |
| Ba-140 | 2.5450E-07 | 3.4764E-15 | 1.4954E+10 | 9.4166E+03 |
| Ce-141 | 1.5752E-08 | 5.5283E-16 | 2.3611E+09 | 5.8282E+02 |
| Ce-144 | 2.2380E-08 | 7.0167E-15 | 2.9344E+10 | 8.2805E+02 |
| Pr-143 | 2.5142E-09 | 3.7336E-17 | 1.5723E+08 | 9.3024E+01 |
| Nd-147 | 7.3272E-10 | 9.0572E-18 | 3.7105E+07 | 2.7110E+01 |
| Np-239 | 4.7677E-11 | 2.0551E-19 | 5.1783E+05 | 1.7640E+00 |
| Pu-238 | 9.4885E-11 | 5.5424E-15 | 1.4024E+10 | 3.5107E+00 |
| Pu-239 | 7.3897E-12 | 1.1889E-13 | 2.9957E+11 | 2.7342E-01 |
| Pu-240 | 7.9690E-12 | 3.4972E-14 | 8.7753E+10 | 2.9485E-01 |
| Pu-241 | 3.2872E-09 | 3.1911E-14 | 7.9739E+10 | 1.2163E+02 |
| Am-241 | 2.0295E-12 | 5.9130E-16 | 1.4776E+09 | 7.5090E-02 |
| Cm-242 | 4.1981E-10 | 1.2667E-16 | 3.1521E+08 | 1.5533E+01 |
| Cm-244 | 3.8475E-11 | 4.7557E-16 | 1.1738E+09 | 1.4236E+00 |

TSC Transport Group Inventory:

| Time (h) = 720.0000 | Atmosphere | Sump | Overlying Pool |
|---|---|---|---|
| Noble gases (atoms) | 4.6811E+15 | 0.0000E+00 | 0.0000E+00 |
| Elemental I (atoms) | 1.1469E+12 | 0.0000E+00 | 0.0000E+00 |
| Organic I (atoms) | 4.1938E+11 | 0.0000E+00 | 0.0000E+00 |
| Aerosols (kg) | 2.0352E-11 | 0.0000E+00 | 0.0000E+00 |

| Time (h) = 720.0000 | Deposition Surfaces | Recirculating Filter |
|---|---|---|
| Noble gases (atoms) | 0.0000E+00 | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 | 0.0000E+00 |

TSC Filtered Air Intake Transport Group Inventory:

| Time (h) = 720.0000 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 |

TSC Unfiltered Inleakage Transport Group Inventory:

| Time (h) = 720.0000 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 |

TSC Exhaust to Environment Transport Group Inventory:

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**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 1 | System Nos. | Sheet 724 of 1000 |
|---|---|---|---|---|

```
                          Pathway
Time (h) = 720.0000        Filter
Noble gases (atoms)     0.0000E+00
Elemental I (atoms)     0.0000E+00
Organic I (atoms)       0.0000E+00
Aerosols (kg)           0.0000E+00

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#####################################################################
                              I-131 Summary
#####################################################################
```

| Time (hr) | Sprayed Region I-131 (Curies) | Unsprayed Region I-131 (Curies) | Environment I-131 (Curies) |
|---|---|---|---|
| 0.001 | 2.2633E+03 | 1.7074E+03 | 4.5957E-05 |
| 0.010 | 3.9516E+04 | 2.9810E+04 | 1.4010E-02 |
| 0.021 | 8.4730E+04 | 6.3919E+04 | 6.4415E-02 |
| 0.350 | 8.1987E+05 | 9.8651E+05 | 1.4568E+01 |
| 0.491 | 9.8444E+05 | 1.3066E+06 | 2.6623E+01 |
| 0.500 | 1.0120E+06 | 1.3252E+06 | 2.7520E+01 |
| 0.800 | 3.2695E+06 | 3.4391E+06 | 8.5514E+01 |
| 0.917 | 3.8996E+06 | 4.1762E+06 | 1.2152E+02 |
| 1.000 | 4.2953E+06 | 4.6746E+06 | 1.5112E+02 |
| 1.300 | 5.4538E+06 | 6.2310E+06 | 2.8097E+02 |
| 1.600 | 6.3160E+06 | 7.4560E+06 | 4.4060E+02 |
| 1.800 | 6.7741E+06 | 8.1208E+06 | 5.6016E+02 |
| 2.000 | 5.3566E+06 | 7.0480E+06 | 6.7356E+02 |
| 2.300 | 3.9661E+06 | 5.5361E+06 | 8.0954E+02 |
| 2.600 | 3.0198E+06 | 4.3057E+06 | 9.1407E+02 |
| 2.800 | 2.5352E+06 | 3.6339E+06 | 9.7015E+02 |
| 2.920 | 2.2855E+06 | 3.2600E+06 | 9.9945E+02 |
| 3.300 | 1.6878E+06 | 2.3817E+06 | 1.0750E+03 |
| 3.600 | 1.3314E+06 | 1.8561E+06 | 1.1201E+03 |
| 3.820 | 1.1206E+06 | 1.5393E+06 | 1.1469E+03 |
| 4.000 | 1.2414E+06 | 1.3610E+06 | 1.1667E+03 |
| 4.300 | 1.3719E+06 | 1.1918E+06 | 1.1990E+03 |
| 4.600 | 1.4149E+06 | 1.1111E+06 | 1.2308E+03 |
| 4.900 | 1.4214E+06 | 1.0689E+06 | 1.2621E+03 |
| 5.200 | 1.4128E+06 | 1.0430E+06 | 1.2930E+03 |
| 5.500 | 1.3979E+06 | 1.0240E+06 | 1.3235E+03 |
| 5.800 | 1.3807E+06 | 1.0080E+06 | 1.3536E+03 |
| 6.100 | 1.3625E+06 | 9.9338E+05 | 1.3832E+03 |
| 6.400 | 1.3442E+06 | 9.7946E+05 | 1.4125E+03 |
| 6.700 | 1.3260E+06 | 9.6595E+05 | 1.4413E+03 |
| 7.000 | 1.3079E+06 | 9.5272E+05 | 1.4698E+03 |
| 7.300 | 1.2901E+06 | 9.3971E+05 | 1.4978E+03 |
| 7.600 | 1.2725E+06 | 9.2691E+05 | 1.5255E+03 |
| 7.900 | 1.2551E+06 | 9.1430E+05 | 1.5528E+03 |
| 8.000 | 1.2494E+06 | 9.1014E+05 | 1.5618E+03 |
| 8.300 | 1.2324E+06 | 8.9777E+05 | 1.5886E+03 |
| 8.600 | 1.2156E+06 | 8.8559E+05 | 1.6151E+03 |
| 8.900 | 1.1991E+06 | 8.7358E+05 | 1.6411E+03 |
| 9.200 | 1.1828E+06 | 8.6175E+05 | 1.6669E+03 |
| 9.500 | 1.1668E+06 | 8.5009E+05 | 1.6923E+03 |
| 9.800 | 1.1510E+06 | 8.3860E+05 | 1.7173E+03 |

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**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 1 | System Nos. | Sheet 725 of 1000 |
|---|---|---|---|---|

| | | | |
|---|---|---|---|
| 10.100 | 1.1354E+06 | 8.2727E+05 | 1.7420E+03 |
| 10.400 | 1.1200E+06 | 8.1611E+05 | 1.7663E+03 |
| 24.000 | 7.0378E+05 | 5.1708E+05 | 2.6444E+03 |
| 96.000 | 4.1203E+05 | 3.0996E+05 | 4.0583E+03 |
| 720.000 | 9.2833E+03 | 6.9977E+03 | 6.2202E+03 |

| Time (hr) | TSC I-131 (Curies) |
|---|---|
| 0.001 | 1.5029E-09 |
| 0.010 | 4.5756E-07 |
| 0.021 | 2.1005E-06 |
| 0.350 | 4.5212E-04 |
| 0.491 | 8.0849E-04 |
| 0.500 | 8.3451E-04 |
| 0.800 | 2.5302E-03 |
| 0.917 | 3.5553E-03 |
| 1.000 | 4.3808E-03 |
| 1.300 | 7.8429E-03 |
| 1.600 | 1.1795E-02 |
| 1.800 | 1.4568E-02 |
| 2.000 | 1.6910E-02 |
| 2.300 | 1.7177E-02 |
| 2.600 | 1.6874E-02 |
| 2.800 | 1.6457E-02 |
| 2.920 | 1.5629E-02 |
| 3.300 | 1.2933E-02 |
| 3.600 | 1.0917E-02 |
| 3.820 | 9.5612E-03 |
| 4.000 | 8.5970E-03 |
| 4.300 | 7.3652E-03 |
| 4.600 | 6.4894E-03 |
| 4.900 | 5.8618E-03 |
| 5.200 | 5.4073E-03 |
| 5.500 | 5.0734E-03 |
| 5.800 | 4.8235E-03 |
| 6.100 | 4.6322E-03 |
| 6.400 | 4.4818E-03 |
| 6.700 | 4.3602E-03 |
| 7.000 | 4.2587E-03 |
| 7.300 | 4.1714E-03 |
| 7.600 | 4.0943E-03 |
| 7.900 | 4.0244E-03 |
| 8.000 | 4.0024E-03 |
| 8.300 | 3.2727E-03 |
| 8.600 | 2.7597E-03 |
| 8.900 | 2.3970E-03 |
| 9.200 | 2.1388E-03 |
| 9.500 | 1.9532E-03 |
| 9.800 | 1.8180E-03 |
| 10.100 | 1.7179E-03 |
| 10.400 | 1.6423E-03 |
| 24.000 | 9.4939E-04 |
| 96.000 | 1.7544E-04 |
| 720.000 | 3.4323E-06 |

##################################################################
Cumulative Dose Summary

AmerGen

**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 1 | System Nos. | Sheet 726 of 1000 |
|---|---|---|---|---|

```
#################################################################
```

| Time (hr) | Exclusion Area Bounda Thyroid (rem) | Exclusion Area Bounda TEDE (rem) | Low Population Zone Thyroid (rem) | Low Population Zone TEDE (rem) | TSC Thyroid (rem) | TSC TEDE (rem) |
|---|---|---|---|---|---|---|
| 0.001 | 1.9873E-05 | 9.5569E-07 | 3.4777E-06 | 1.6725E-07 | 6.8306E-10 | 2.8912E-11 |
| 0.010 | 6.0579E-03 | 2.9130E-04 | 1.0601E-03 | 5.0978E-05 | 3.2613E-06 | 1.3804E-07 |
| 0.021 | 2.7851E-02 | 1.3387E-03 | 4.8739E-03 | 2.3427E-04 | 2.6486E-05 | 1.1211E-06 |
| 0.350 | 6.2743E+00 | 2.9978E-01 | 1.0980E+00 | 5.2462E-02 | 9.2508E-02 | 3.9211E-03 |
| 0.491 | 1.1445E+01 | 5.4506E-01 | 2.0029E+00 | 9.5386E-02 | 2.3537E-01 | 9.9788E-03 |
| 0.500 | 1.1829E+01 | 5.6322E-01 | 2.0701E+00 | 9.8563E-02 | 2.4776E-01 | 1.0504E-02 |
| 0.800 | 3.6967E+01 | 1.9012E+00 | 6.4692E+00 | 3.3271E-01 | 1.0073E+00 | 4.4546E-02 |
| 0.917 | 5.2611E+01 | 2.7677E+00 | 9.2070E+00 | 4.8435E-01 | 1.5847E+00 | 7.1890E-02 |
| 1.000 | 6.5464E+01 | 3.4854E+00 | 1.1456E+01 | 6.0994E-01 | 2.1241E+00 | 9.7936E-02 |
| 1.300 | 1.2176E+02 | 6.6594E+00 | 2.1307E+01 | 1.1654E+00 | 5.0967E+00 | 2.4532E-01 |
| 1.600 | 1.9069E+02 | 1.0575E+01 | 3.3370E+01 | 1.8506E+00 | 9.8891E+00 | 4.8852E-01 |
| 1.800 | 2.4212E+02 | 1.3507E+01 | 4.2371E+01 | 2.3637E+00 | 1.4177E+01 | 7.0877E-01 |
| 2.000 | 2.9077E+02 | 1.6291E+01 | 5.0886E+01 | 2.8510E+00 | 1.9306E+01 | 9.7400E-01 |
| 2.300 | 3.4898E+02 | 1.9647E+01 | 5.5251E+01 | 3.1027E+00 | 2.7609E+01 | 1.4055E+00 |
| 2.600 | 3.9358E+02 | 2.2246E+01 | 5.8596E+01 | 3.2976E+00 | 3.5870E+01 | 1.8361E+00 |
| 2.800 | 4.1745E+02 | 2.3650E+01 | 6.0386E+01 | 3.4029E+00 | 4.1239E+01 | 2.1167E+00 |
| 2.920 | 4.2990E+02 | 2.4388E+01 | 6.1320E+01 | 3.4582E+00 | 4.4333E+01 | 2.2787E+00 |
| 3.300 | 4.6193E+02 | 2.6306E+01 | 6.3723E+01 | 3.6021E+00 | 5.3032E+01 | 2.7358E+00 |
| 3.600 | 4.8098E+02 | 2.7464E+01 | 6.5151E+01 | 3.6889E+00 | 5.8742E+01 | 3.0368E+00 |
| 3.820 | 4.9225E+02 | 2.8159E+01 | 6.5996E+01 | 3.7410E+00 | 6.2329E+01 | 3.2262E+00 |
| 4.000 | 5.0055E+02 | 2.8673E+01 | 6.6619E+01 | 3.7796E+00 | 6.4924E+01 | 3.3634E+00 |
| 4.300 | 5.1408E+02 | 2.9509E+01 | 6.7634E+01 | 3.8423E+00 | 6.8708E+01 | 3.5636E+00 |
| 4.600 | 5.2738E+02 | 3.0326E+01 | 6.8631E+01 | 3.9036E+00 | 7.1986E+01 | 3.7371E+00 |
| 4.900 | 5.4044E+02 | 3.1125E+01 | 6.9611E+01 | 3.9635E+00 | 7.4901E+01 | 3.8916E+00 |
| 5.200 | 5.5329E+02 | 3.1907E+01 | 7.0574E+01 | 4.0221E+00 | 7.7555E+01 | 4.0324E+00 |
| 5.500 | 5.6592E+02 | 3.2673E+01 | 7.1522E+01 | 4.0796E+00 | 8.0017E+01 | 4.1631E+00 |
| 5.800 | 5.7835E+02 | 3.3423E+01 | 7.2454E+01 | 4.1358E+00 | 8.2337E+01 | 4.2863E+00 |
| 6.100 | 5.9057E+02 | 3.4158E+01 | 7.3370E+01 | 4.1910E+00 | 8.4548E+01 | 4.4038E+00 |
| 6.400 | 6.0260E+02 | 3.4878E+01 | 7.4272E+01 | 4.2450E+00 | 8.6674E+01 | 4.5169E+00 |
| 6.700 | 6.1443E+02 | 3.5585E+01 | 7.5160E+01 | 4.2980E+00 | 8.8731E+01 | 4.6264E+00 |
| 7.000 | 6.2607E+02 | 3.6278E+01 | 7.6033E+01 | 4.3500E+00 | 9.0732E+01 | 4.7330E+00 |
| 7.300 | 6.3752E+02 | 3.6958E+01 | 7.6892E+01 | 4.4010E+00 | 9.2684E+01 | 4.8370E+00 |
| 7.600 | 6.4879E+02 | 3.7626E+01 | 7.7737E+01 | 4.4511E+00 | 9.4594E+01 | 4.9389E+00 |
| 7.900 | 6.5988E+02 | 3.8281E+01 | 7.8568E+01 | 4.5002E+00 | 9.6465E+01 | 5.0387E+00 |
| 8.000 | 6.6353E+02 | 3.8497E+01 | 7.8842E+01 | 4.5164E+00 | 9.7080E+01 | 5.0716E+00 |
| 8.300 | 6.7438E+02 | 3.9136E+01 | 7.9115E+01 | 4.5339E+00 | 9.8743E+01 | 5.1605E+00 |
| 8.600 | 6.8506E+02 | 3.9764E+01 | 7.9382E+01 | 4.5510E+00 | 1.0012E+02 | 5.2341E+00 |
| 8.900 | 6.9557E+02 | 4.0380E+01 | 7.9646E+01 | 4.5678E+00 | 1.0129E+02 | 5.2970E+00 |
| 9.200 | 7.0592E+02 | 4.0986E+01 | 7.9905E+01 | 4.5843E+00 | 1.0233E+02 | 5.3523E+00 |
| 9.500 | 7.1609E+02 | 4.1581E+01 | 8.0160E+01 | 4.6004E+00 | 1.0326E+02 | 5.4021E+00 |
| 9.800 | 7.2611E+02 | 4.2166E+01 | 8.0411E+01 | 4.6163E+00 | 1.0411E+02 | 5.4479E+00 |
| 10.100 | 7.3597E+02 | 4.2741E+01 | 8.0659E+01 | 4.6318E+00 | 1.0491E+02 | 5.4909E+00 |
| 10.400 | 7.4568E+02 | 4.3307E+01 | 8.0902E+01 | 4.6471E+00 | 1.0567E+02 | 5.5317E+00 |
| 24.000 | 1.0846E+03 | 6.2877E+01 | 8.9398E+01 | 5.1662E+00 | 1.2974E+02 | 6.8401E+00 |
| 96.000 | 1.5704E+03 | 9.2841E+01 | 9.5783E+01 | 5.5677E+00 | 1.4371E+02 | 7.6665E+00 |
| 720.000 | 2.2566E+03 | 1.5023E+02 | 9.8038E+01 | 5.7594E+00 | 1.5426E+02 | 8.5211E+00 |

| Time (hr) | Travel Path Thyroid (rem) | Travel Path TEDE (rem) |
|---|---|---|
| 0.001 | 0.0000E+00 | 0.0000E+00 |
| 0.010 | 0.0000E+00 | 0.0000E+00 |

AmerGen

**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 1 | System Nos. | Sheet 727 of 1000 |
|---|---|---|---|---|

```
    0.021 0.0000E+00 0.0000E+00
    0.350 0.0000E+00 0.0000E+00
    0.491 0.0000E+00 0.0000E+00
    0.500 0.0000E+00 0.0000E+00
    0.800 0.0000E+00 0.0000E+00
    0.917 0.0000E+00 0.0000E+00
    1.000 1.2742E+01 7.1208E-01
    1.300 1.2742E+01 7.1208E-01
    1.600 1.2742E+01 7.1208E-01
    1.800 1.2742E+01 7.1208E-01
    2.000 1.2742E+01 7.1208E-01
    2.300 1.2742E+01 7.1208E-01
    2.600 1.2742E+01 7.1208E-01
    2.800 1.2742E+01 7.1208E-01
    2.920 1.2742E+01 7.1208E-01
    3.300 1.2742E+01 7.1208E-01
    3.600 1.2742E+01 7.1208E-01
    3.820 1.2742E+01 7.1208E-01
    4.000 1.2742E+01 7.1208E-01
    4.300 1.2742E+01 7.1208E-01
    4.600 1.2742E+01 7.1208E-01
    4.900 1.2742E+01 7.1208E-01
    5.200 1.2742E+01 7.1208E-01
    5.500 1.2742E+01 7.1208E-01
    5.800 1.2742E+01 7.1208E-01
    6.100 1.2742E+01 7.1208E-01
    6.400 1.2742E+01 7.1208E-01
    6.700 1.2742E+01 7.1208E-01
    7.000 1.2742E+01 7.1208E-01
    7.300 1.2742E+01 7.1208E-01
    7.600 1.2742E+01 7.1208E-01
    7.900 1.2742E+01 7.1208E-01
    8.000 1.2742E+01 7.1208E-01
    8.300 1.2742E+01 7.1208E-01
    8.600 1.2742E+01 7.1208E-01
    8.900 1.2742E+01 7.1208E-01
    9.200 1.2742E+01 7.1208E-01
    9.500 1.2742E+01 7.1208E-01
    9.800 1.2742E+01 7.1208E-01
   10.100 1.2742E+01 7.1208E-01
   10.400 1.2742E+01 7.1208E-01
   24.000 1.2742E+01 7.1208E-01
   96.000 1.2742E+01 7.1208E-01
  720.000 1.2742E+01 7.1208E-01

#####################################################################
                        Worst Two-Hour Doses
    Note: All of the dose locations are shown below but the
          worst two-hour dose is only meaningful for the EAB
          dose location.  Please disregard the two-hour worst
          doses for the other dose locations
#####################################################################

Exclusion Area Boundary
   Time   Whole Body    Thyroid        TEDE
   (hr)     (rem)        (rem)         (rem)
    0.8   1.8474E+00   3.8048E+02   2.1749E+01
```

AmerGen

**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 1 | System Nos. | Sheet 728 of 1000 |
|---|---|---|---|---|

Low Population Zone

| Time (hr) | Whole Body (rem) | Thyroid (rem) | TEDE (rem) |
|---|---|---|---|
| 0.5 | 2.6295E-01 | 5.5411E+01 | 3.1340E+00 |

TSC

| Time (hr) | Whole Body (rem) | Thyroid (rem) | TEDE (rem) |
|---|---|---|---|
| 1.6 | 6.3580E-03 | 4.8853E+01 | 2.5483E+00 |

Travel Path

| Time (hr) | Whole Body (rem) | Thyroid (rem) | TEDE (rem) |
|---|---|---|---|
| 0.0 | 6.3483E-02 | 1.2742E+01 | 7.1208E-01 |

AmerGen

**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 1 | System Nos. | Sheet 729 of 1000 |
|---|---|---|---|---|

**Appendix S**

**RADTRAD Output File**

# ESF_TSC_No Filtration.o0

**ESF Leakage Pathway (For TSC Dose)**
**To Evaluate TSC HVAC Filter Shine Dose**

AmerGen

**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 1 | System Nos. | Sheet 730 of 1000 |
|---|---|---|---|---|

```
 ######################################################################
          RADTRAD Version 3.02 run on  5/15/2002  at 11:07:06
 ######################################################################

 ######################################################################
                      File information
 ######################################################################

 Plant file name           = C:\Documents and Settings\u004tjm\My Documents\TMI
RADTRAD\ESF_TSC_NO Filtration.psf
 Inventory file name       = c:\documents and settings\u004tjm\my documents\tmi
radtrad\defaults\tmi_i131.nif
 Scenario file name        = C:\Documents and Settings\u004tjm\My Documents\TMI
RADTRAD\ESF_TSC_NO Filtration.psf
 Release file name         = c:\documents and settings\u004tjm\my documents\tmi
radtrad\defaults\pwr_i.rft
 Dose conversion file name = c:\documents and settings\u004tjm\my documents\tmi
radtrad\defaults\fgr11&12.inp


     #####    ####   #####    #  #     #  #####   #    #  #####
     #    #  #       #        #  ##    #  #    #  #    #    #
     #    #  #       #        #  # #   #  #    #  #    #    #
     #####    ####   ####     #  #  #  #  #####   #    #    #
     #            #  #        #  #   # #  #       #    #    #
     #            #  #        #  #    ##  #       #    #    #
     #        ####   #        #  #     #  #        ####     #


 Radtrad 3.02 1/5/2000
 TSC Dose Due To ESF Leakage - NO Filtration
 Nuclide Inventory File:
 c:\documents and settings\u004tjm\my documents\tmi radtrad\defaults\tmi_i131.nif
 Plant Power Level:
  2.6190E+03
 Compartments:
   3
 Compartment 1:
 Sump
   3
  5.4519E+04
   0
   0
   0
   0
   0
 Compartment 2:
 Environment
   2
  0.0000E+00
   0
   0
   0
   0
   0
 Compartment 3:
```

AmerGen

**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 1 | System Nos. | Sheet 731 of 1000 |
|---|---|---|---|---|

```
TSC
  1
 4.2000E+04
  0
  0
  1
  0
  0
Pathways:
  4
Pathway 1:
Sump to Environment
  1
  2
  2
Pathway 2:
TSC Filtered Air Intake
  2
  3
  2
Pathway 3:
TSC Unfiltered Inleakage
  2
  3
  2
Pathway 4:
TSC Exhaust
  3
  2
  2
End of Plant Model File
Scenario Description Name:

Plant Model Filename:

Source Term:
  1
  1   1.0000E+00
c:\documents and settings\u004tjm\my documents\tmi radtrad\defaults\fgr11&12.inp
c:\documents and settings\u004tjm\my documents\tmi radtrad\defaults\pwr_i.rft
  0.0000E+00
  0
  0.0000E+00   9.7000E-01   3.0000E-02   1.0000E+00
Overlying Pool:
  0
  0.0000E+00
  0
  0
  0
  0
Compartments:
  3
Compartment 1:
  0
  1
  0
```

```
  0
  0
  0
  0
  0
  0
Compartment 2:
  1
  1
  0
  0
  0
  0
  0
  0
  0
Compartment 3:
  1
  1
  0
  0
  0
  0
  1
  0.0000E+00
  5
  0.0000E+00   0.0000E+00   0.0000E+00   0.0000E+00
  8.0000E-01   0.0000E+00   0.0000E+00   0.0000E+00
  1.0000E+00   0.0000E+00   0.0000E+00   0.0000E+00
  2.8000E+00   9.9000E+01   9.0000E+01   9.0000E+01
  7.2000E+02   0.0000E+00   0.0000E+00   0.0000E+00
  0
  0
Pathways:
  4
Pathway 1:
  0
  0
  0
  0
  0
  1
  4
  0.0000E+00   0.0000E+00   0.0000E+00   0.0000E+00   0.0000E+00
  4.9070E-01   3.3400E-03   0.0000E+00   0.0000E+00   0.0000E+00
  2.4000E+01   1.3360E-03   0.0000E+00   0.0000E+00   0.0000E+00
  7.2000E+02   0.0000E+00   0.0000E+00   0.0000E+00   0.0000E+00
  0
  0
  0
  0
  0
  0
Pathway 2:
  0
```

AmerGen

**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 1 | System Nos. | Sheet 733 of 1000 |
|---|---|---|---|---|

```
  0


  0
  0
  0
  1
  5
  0.0000E+00   3.0000E+02   0.0000E+00   0.0000E+00   0.0000E+00
  8.0000E-01   3.0000E+02   0.0000E+00   0.0000E+00   0.0000E+00
  1.0000E+00   3.0000E+02   0.0000E+00   0.0000E+00   0.0000E+00
  2.8000E+00   6.0000E+02   0.0000E+00   0.0000E+00   0.0000E+00
  7.2000E+02   0.0000E+00   0.0000E+00   0.0000E+00   0.0000E+00
  0
  0
  0
  0
  0
  0
Pathway 3:
  0
  0
  0
  0
  0
  1
  5
  0.0000E+00   0.0000E+00   0.0000E+00   0.0000E+00   0.0000E+00
  8.0000E-01   0.0000E+00   0.0000E+00   0.0000E+00   0.0000E+00
  1.0000E+00   0.0000E+00   0.0000E+00   0.0000E+00   0.0000E+00
  2.8000E+00   2.5000E+02   0.0000E+00   0.0000E+00   0.0000E+00
  7.2000E+02   0.0000E+00   0.0000E+00   0.0000E+00   0.0000E+00
  0
  0
  0
  0
  0
  0
Pathway 4:
  0
  0
  0
  0
  0
  1
  5
  0.0000E+00   3.0000E+02   0.0000E+00   0.0000E+00   0.0000E+00
  8.0000E-01   3.0000E+02   0.0000E+00   0.0000E+00   0.0000E+00
  1.0000E+00   3.0000E+02   0.0000E+00   0.0000E+00   0.0000E+00
  2.8000E+00   8.5000E+02   0.0000E+00   0.0000E+00   0.0000E+00
  7.2000E+02   0.0000E+00   0.0000E+00   0.0000E+00   0.0000E+00
  0
  0
  0
  0
  0
  0
```

AmerGen

**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 1 | System Nos. | Sheet 734 of 1000 |
|---|---|---|---|---|

```
Dose Locations:
  4


Location 1:
Exclusion Area Boundary
  2
  1
  2
  0.0000E+00   8.0000E-04
  7.2000E+02   0.0000E+00
  1
  2
  0.0000E+00   3.5000E-04
  7.2000E+02   0.0000E+00
  0
Location 2:
Low Population Zone
  2
  1
  6
  0.0000E+00   1.4000E-04
  2.0000E+00   6.0000E-05
  8.0000E+00   3.9000E-05
  2.4000E+01   1.6000E-05
  9.6000E+01   4.0000E-06
  7.2000E+02   0.0000E+00
  1
  4
  0.0000E+00   3.5000E-04
  8.0000E+00   1.8000E-04
  2.4000E+01   2.3000E-04
  7.2000E+02   0.0000E+00
  0
Location 3:
TSC
  3
  0
  1
  2
  0.0000E+00   3.4700E-04
  7.2000E+02   0.0000E+00
  1
  4
  0.0000E+00   1.0000E+00
  2.4000E+01   6.0000E-01
  9.6000E+01   4.0000E-01
  7.2000E+02   0.0000E+00
Location 4:
Travel Path
  2
  1
  3
  0.0000E+00   0.0000E+00
  9.1667E-01   8.0000E-04
  1.0000E+00   0.0000E+00
  1
```

```
  4
  0.0000E+00   3.4700E-04
  8.0000E+00   1.7500E-04


  2.4000E+01   2.3200E-04
  7.2000E+02   0.0000E+00
  0
Effective Volume Location:
  1
  6
  0.0000E+00   2.7000E-04
  2.0000E+00   1.5400E-04
  8.0000E+00   5.9800E-05
  2.4000E+01   4.0300E-05
  9.6000E+01   3.4100E-05
  7.2000E+02   0.0000E+00
Simulation Parameters:
  7
  0.0000E+00   5.0000E-02
  1.0000E+00   1.0000E-01
  2.0000E+00   1.0000E+00
  8.0000E+00   2.0000E+00
  2.4000E+01   4.0000E+00
  9.6000E+01   8.0000E+00
  7.2000E+02   0.0000E+00
Output Filename:
C:\Documents and Settings\u004tjm\My Documents\TMI RADTRAD\ESF_TSC_NO Filtration.o0
  1
  1
  1
  0
  0
End of Scenario File

#######################################################################
          RADTRAD Version 3.02 run on  5/15/2002  at 11:07:06
#######################################################################

#######################################################################
                    Plant Description
#######################################################################

Number of Nuclides =  60

Inventory Power =   1.0000E+00 MWth
Plant Power Level =   2.6190E+03 MWth

Number of compartments    =   3

Compartment information

Compartment number  1  (Source term fraction =   1.0000E+00
)
Name: Sump
Compartment volume =   5.4519E+04 (Cubic feet)
Pathways into and out of compartment  1
```

```
    Pathway to compartment number   2: Sump to Environment

Compartment number  2
Name: Environment


Pathways into and out of compartment  2
    Pathway to compartment number   3: TSC Filtered Air Intake
    Pathway to compartment number   3: TSC Unfiltered Inleakage
    Pathway from compartment number 1: Sump to Environment
    Pathway from compartment number 3: TSC Exhaust

Compartment number  3
Name: TSC
Compartment volume =   4.2000E+04 (Cubic feet)
Removal devices within compartment:
     Filter(s)
Pathways into and out of compartment  3
    Pathway to compartment number   2: TSC Exhaust
    Pathway from compartment number 2: TSC Filtered Air Intake
    Pathway from compartment number 2: TSC Unfiltered Inleakage

Total number of pathways =   4

#######################################################################
          RADTRAD Version 3.02 run on  5/15/2002  at 11:07:06
#######################################################################

#######################################################################
                     Scenario Description
#######################################################################

Radioactive Decay is enabled
RELEASE_NAME = PWR, NUREG-1465, Tables 3.12 & 3.13, Jun
Release Fractions and Timings
                GAP       EARLY IN-VESSEL
              0.5000 hrs     1.3000 hrs
NOBLES        0.0000E+00     0.0000E+00
IODINE        5.0000E-02     3.5000E-01
CESIUM        0.0000E+00     0.0000E+00
TELLURIUM     0.0000E+00     0.0000E+00
STRONTIUM     0.0000E+00     0.0000E+00
BARIUM        0.0000E+00     0.0000E+00
RUTHENIUM     0.0000E+00     0.0000E+00
CERIUM        0.0000E+00     0.0000E+00
LANTHANUM     0.0000E+00     0.0000E+00

Iodine fractions
     Aerosol     =   0.0000E+00
     Elemental   =   9.7000E-01
     Organic     =   3.0000E-02

COMPARTMENT DATA

Compartment number   1: Sump

Compartment number   2: Environment
```

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**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 1 | System Nos. | Sheet 737 of 1000 |
|---|---|---|---|---|

Compartment number 3: TSC

Compartment Filter Data

| Time (hr) | Flow Rate (cfm) | Filter Efficiencies (%) Aerosol | Elemental | Organic |
|---|---|---|---|---|
| 0.0000E+00 | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 |
| 8.0000E-01 | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 |
| 1.0000E+00 | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 |
| 2.8000E+00 | 0.0000E+00 | 9.9000E+01 | 9.0000E+01 | 9.0000E+01 |
| 7.2000E+02 | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 |

PATHWAY DATA

Pathway number 1: Sump to Environment

Pathway Filter: Removal Data

| Time (hr) | Flow Rate (cfm) | Filter Efficiencies (%) Aerosol | Elemental | Organic |
|---|---|---|---|---|
| 0.0000E+00 | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 |
| 4.9070E-01 | 3.3400E-03 | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 |
| 2.4000E+01 | 1.3360E-03 | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 |
| 7.2000E+02 | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 |

Pathway number 2: TSC Filtered Air Intake

Pathway Filter: Removal Data

| Time (hr) | Flow Rate (cfm) | Filter Efficiencies (%) Aerosol | Elemental | Organic |
|---|---|---|---|---|
| 0.0000E+00 | 3.0000E+02 | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 |
| 8.0000E-01 | 3.0000E+02 | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 |
| 1.0000E+00 | 3.0000E+02 | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 |
| 2.8000E+00 | 6.0000E+02 | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 |
| 7.2000E+02 | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 |

Pathway number 3: TSC Unfiltered Inleakage

Pathway Filter: Removal Data

| Time (hr) | Flow Rate (cfm) | Filter Efficiencies (%) Aerosol | Elemental | Organic |
|---|---|---|---|---|
| 0.0000E+00 | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 |
| 8.0000E-01 | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 |
| 1.0000E+00 | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 |
| 2.8000E+00 | 2.5000E+02 | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 |
| 7.2000E+02 | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 |

Pathway number 4: TSC Exhaust

Pathway Filter: Removal Data

Time (hr) Flow Rate Filter Efficiencies (%)

```
                    (cfm)        Aerosol     Elemental    Organic
  0.0000E+00    3.0000E+02   0.0000E+00   0.0000E+00   0.0000E+00
  8.0000E-01    3.0000E+02   0.0000E+00   0.0000E+00   0.0000E+00
  1.0000E+00    3.0000E+02   0.0000E+00   0.0000E+00   0.0000E+00
  2.8000E+00    8.5000E+02   0.0000E+00   0.0000E+00   0.0000E+00
  7.2000E+02    0.0000E+00   0.0000E+00   0.0000E+00   0.0000E+00


LOCATION DATA
     Location Exclusion Area Boundary     is in compartment   2

     Location X/Q Data
      Time (hr)         X/Q (s * m^-3)
       0.0000E+00          8.0000E-04
       7.2000E+02          0.0000E+00

     Location Breathing Rate Data
      Time (hr)         Breathing Rate (m^3 * sec^-1)
       0.0000E+00                3.5000E-04
       7.2000E+02                0.0000E+00
     Location Low Population Zone     is in compartment   2

     Location X/Q Data
      Time (hr)         X/Q (s * m^-3)
       0.0000E+00          1.4000E-04
       2.0000E+00          6.0000E-05
       8.0000E+00          3.9000E-05
       2.4000E+01          1.6000E-05
       9.6000E+01          4.0000E-06
       7.2000E+02          0.0000E+00

     Location Breathing Rate Data
      Time (hr)         Breathing Rate (m^3 * sec^-1)
       0.0000E+00                3.5000E-04
       8.0000E+00                1.8000E-04
       2.4000E+01                2.3000E-04
       7.2000E+02                0.0000E+00
     Location TSC     is in compartment   3

     Location X/Q Data
      Time (hr)         X/Q (s * m^-3)
       0.0000E+00          2.7000E-04
       2.0000E+00          1.5400E-04
       8.0000E+00          5.9800E-05
       2.4000E+01          4.0300E-05
       9.6000E+01          3.4100E-05
       7.2000E+02          0.0000E+00

     Location Breathing Rate Data
      Time (hr)         Breathing Rate (m^3 * sec^-1)
       0.0000E+00                3.4700E-04
       7.2000E+02                0.0000E+00

     Location Occupancy Factor Data
      Time (hr)         Occupancy Factor
       0.0000E+00           1.0000E+00
       2.4000E+01           6.0000E-01
```

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**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 1 | System Nos. | Sheet 739 of 1000 |
|---|---|---|---|---|

```
        9.6000E+01            4.0000E-01
        7.2000E+02            0.0000E+00
      Location Travel Path     is in compartment   2

      Location X/Q Data
       Time (hr)         X/Q (s * m^-3)
        0.0000E+00          0.0000E+00
        9.1667E-01          8.0000E-04
        1.0000E+00          0.0000E+00

      Location Breathing Rate Data
       Time (hr)         Breathing Rate (m^3 * sec^-1)
        0.0000E+00                 3.4700E-04
        8.0000E+00                 1.7500E-04
        2.4000E+01                 2.3200E-04
        7.2000E+02                 0.0000E+00

USER SPECIFIED TIME STEP DATA - SUPPLEMENTAL TIME STEPS
      Time            Time step
       0.0000E+00       5.0000E-02
       1.0000E+00       1.0000E-01
       2.0000E+00       1.0000E+00
       8.0000E+00       2.0000E+00
       2.4000E+01       4.0000E+00
       9.6000E+01       8.0000E+00
       7.2000E+02       0.0000E+00

#######################################################################
           RADTRAD Version 3.02 run on  5/15/2002  at 11:07:06
#######################################################################


      ####   #    #  #####  #####   #    #  #####
     #    #  #    #    #    #    #  #    #    #
     #    #  #    #    #    #    #  #    #    #
     #    #  #    #    #    #####   #    #    #
     #    #  #    #    #    #       #    #    #
     #    #  #    #    #    #       #    #    #
      ####    ####     #    #        ####     #


#######################################################################
            Dose, Detailed model and Detailed Inventory Output
#######################################################################

Exclusion Area Boundary Doses:

Time (h) =   0.4907    Whole Body   Thyroid       TEDE
Delta dose (rem)        0.0000E+00  0.0000E+00  0.0000E+00
Accumulated dose (rem)  0.0000E+00  0.0000E+00  0.0000E+00

Low Population Zone Doses:

Time (h) =   0.4907    Whole Body   Thyroid       TEDE
Delta dose (rem)        0.0000E+00  0.0000E+00  0.0000E+00
Accumulated dose (rem)  0.0000E+00  0.0000E+00  0.0000E+00
```

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**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 1 | System Nos. | Sheet 740 of 1000 |
|---|---|---|---|---|

```
TSC Doses:

Time (h) =   0.4907    Whole Body   Thyroid       TEDE
Delta dose (rem)        0.0000E+00  0.0000E+00  0.0000E+00
Accumulated dose (rem)  0.0000E+00  0.0000E+00  0.0000E+00

Travel Path Doses:

Time (h) =   0.4907    Whole Body   Thyroid       TEDE
Delta dose (rem)        0.0000E+00  0.0000E+00  0.0000E+00
Accumulated dose (rem)  0.0000E+00  0.0000E+00  0.0000E+00

Environment Integral Nuclide Release:

Time (h) =   0.4907       Ci           kg         Atoms         Bq

Environment Transport Group Inventory:

                        Present     Release      Total
Time (h) =   0.4907     Release     Rate/s      Release
Noble gases (atoms)    0.0000E+00  0.0000E+00  0.0000E+00
Elemental I (atoms)    0.0000E+00  0.0000E+00  0.0000E+00
Organic I (atoms)      0.0000E+00  0.0000E+00  0.0000E+00
Aerosols (kg)          0.0000E+00  0.0000E+00  0.0000E+00

Sump to Environment Transport Group Inventory:

                        Pathway
Time (h) =   0.4907      Filter
Noble gases (atoms)    0.0000E+00
Elemental I (atoms)    0.0000E+00
Organic I (atoms)      0.0000E+00
Aerosols (kg)          0.0000E+00

TSC Filtered Air Intake Transport Group Inventory:

                        Pathway
Time (h) =   0.4907      Filter
Noble gases (atoms)    0.0000E+00
Elemental I (atoms)    0.0000E+00
Organic I (atoms)      0.0000E+00
Aerosols (kg)          0.0000E+00

TSC Unfiltered Inleakage Transport Group Inventory:

                        Pathway
Time (h) =   0.4907      Filter
Noble gases (atoms)    0.0000E+00
Elemental I (atoms)    0.0000E+00
Organic I (atoms)      0.0000E+00
Aerosols (kg)          0.0000E+00

TSC Exhaust Transport Group Inventory:

                        Pathway
Time (h) =   0.4907      Filter
Noble gases (atoms)    0.0000E+00
```

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**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 1 | System Nos. | Sheet 741 of 1000 |
|---|---|---|---|---|

```
Elemental I (atoms)    0.0000E+00
Organic I (atoms)      0.0000E+00
Aerosols (kg)          0.0000E+00

TSC Compartment Nuclide Inventory:

Time (h) =   0.4907       Ci           kg         Atoms         Bq



TSC Transport Group Inventory:

                                                 Overlying
Time (h) =   0.4907    Atmosphere     Sump         Pool
Noble gases (atoms)    0.0000E+00  0.0000E+00  0.0000E+00
Elemental I (atoms)    0.0000E+00  0.0000E+00  0.0000E+00
Organic I (atoms)      0.0000E+00  0.0000E+00  0.0000E+00
Aerosols (kg)          0.0000E+00  0.0000E+00  0.0000E+00

                       Deposition Recirculating
Time (h) =   0.4907     Surfaces     Filter
Noble gases (atoms)    0.0000E+00  0.0000E+00
Elemental I (atoms)    0.0000E+00  0.0000E+00
Organic I (atoms)      0.0000E+00  0.0000E+00
Aerosols (kg)          0.0000E+00  0.0000E+00

TSC Filtered Air Intake Transport Group Inventory:

                        Pathway
Time (h) =   0.4907      Filter
Noble gases (atoms)    0.0000E+00
Elemental I (atoms)    0.0000E+00
Organic I (atoms)      0.0000E+00
Aerosols (kg)          0.0000E+00

TSC Unfiltered Inleakage Transport Group Inventory:

                        Pathway
Time (h) =   0.4907      Filter
Noble gases (atoms)    0.0000E+00
Elemental I (atoms)    0.0000E+00
Organic I (atoms)      0.0000E+00
Aerosols (kg)          0.0000E+00

TSC Exhaust Transport Group Inventory:

                        Pathway
Time (h) =   0.4907      Filter
Noble gases (atoms)    0.0000E+00
Elemental I (atoms)    0.0000E+00
Organic I (atoms)      0.0000E+00
Aerosols (kg)          0.0000E+00

Exclusion Area Boundary Doses:

Time (h) =   0.5000    Whole Body   Thyroid       TEDE
```

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**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 1 | System Nos. | Sheet 742 of 1000 |
|---|---|---|---|---|

```
Delta dose (rem)        2.0672E-04  5.1381E-02  1.8273E-03
Accumulated dose (rem)  2.0672E-04  5.1381E-02  1.8273E-03

Low Population Zone Doses:

Time (h) =   0.5000    Whole Body   Thyroid       TEDE
Delta dose (rem)        3.6175E-05  8.9916E-03  3.1978E-04
Accumulated dose (rem)  3.6175E-05  8.9916E-03  3.1978E-04



TSC Doses:

Time (h) =   0.5000    Whole Body   Thyroid       TEDE
Delta dose (rem)        4.3212E-09  3.4194E-05  1.0828E-06
Accumulated dose (rem)  4.3212E-09  3.4194E-05  1.0828E-06

Travel Path Doses:

Time (h) =   0.5000    Whole Body   Thyroid       TEDE
Delta dose (rem)        0.0000E+00  0.0000E+00  0.0000E+00
Accumulated dose (rem)  0.0000E+00  0.0000E+00  0.0000E+00

Environment Integral Nuclide Release:

Time (h) =   0.5000       Ci           kg         Atoms         Bq
I-131                  1.2081E-01  9.7448E-10  4.4797E+15  4.4700E+09
I-132                  1.5044E-01  1.4575E-11  6.6494E+13  5.5664E+09
I-133                  2.4896E-01  2.1977E-10  9.9511E+14  9.2115E+09
I-134                  1.8954E-01  7.1049E-12  3.1930E+13  7.0128E+09
I-135                  2.2401E-01  6.3787E-11  2.8454E+14  8.2883E+09

Environment Transport Group Inventory:

                        Present     Release      Total
Time (h) =   0.5000     Release     Rate/s      Release
Noble gases (atoms)    0.0000E+00  0.0000E+00  0.0000E+00
Elemental I (atoms)    5.7170E+15  3.1761E+12  5.7170E+15
Organic I (atoms)      1.7681E+14  9.8230E+10  1.7681E+14
Aerosols (kg)          0.0000E+00  0.0000E+00  0.0000E+00

Sump to Environment Transport Group Inventory:

                        Pathway
Time (h) =   0.5000      Filter
Noble gases (atoms)    0.0000E+00
Elemental I (atoms)    0.0000E+00
Organic I (atoms)      0.0000E+00
Aerosols (kg)          0.0000E+00

TSC Filtered Air Intake Transport Group Inventory:

                        Pathway
Time (h) =   0.5000      Filter
Noble gases (atoms)    0.0000E+00
Elemental I (atoms)    0.0000E+00
```

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**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 1 | System Nos. | Sheet 743 of 1000 |
|---|---|---|---|---|

```
Organic I (atoms)      0.0000E+00
Aerosols (kg)          0.0000E+00

TSC Unfiltered Inleakage Transport Group Inventory:

                        Pathway
Time (h) =   0.5000      Filter
Noble gases (atoms)    0.0000E+00
Elemental I (atoms)    0.0000E+00
Organic I (atoms)      0.0000E+00
Aerosols (kg)          0.0000E+00


TSC Exhaust Transport Group Inventory:

                        Pathway
Time (h) =   0.5000      Filter
Noble gases (atoms)    0.0000E+00
Elemental I (atoms)    0.0000E+00
Organic I (atoms)      0.0000E+00
Aerosols (kg)          0.0000E+00

TSC Compartment Nuclide Inventory:

Time (h) =   0.5000       Ci           kg         Atoms         Bq
I-131                  4.6091E-06  3.7178E-14  1.7091E+11  1.7054E+05
I-132                  5.7397E-06  5.5606E-16  2.5369E+09  2.1237E+05
I-133                  9.4983E-06  8.3847E-15  3.7965E+10  3.5144E+05
I-134                  7.2311E-06  2.7107E-16  1.2182E+09  2.6755E+05
I-135                  8.5464E-06  2.4336E-15  1.0856E+10  3.1622E+05

TSC Transport Group Inventory:

                                                Overlying
Time (h) =   0.5000    Atmosphere     Sump        Pool
Noble gases (atoms)    0.0000E+00  0.0000E+00  0.0000E+00
Elemental I (atoms)    2.1811E+11  0.0000E+00  0.0000E+00
Organic I (atoms)      6.7458E+09  0.0000E+00  0.0000E+00
Aerosols (kg)          0.0000E+00  0.0000E+00  0.0000E+00

                       Deposition Recirculating
Time (h) =   0.5000     Surfaces     Filter
Noble gases (atoms)    0.0000E+00  0.0000E+00
Elemental I (atoms)    0.0000E+00  0.0000E+00
Organic I (atoms)      0.0000E+00  0.0000E+00
Aerosols (kg)          0.0000E+00  0.0000E+00

TSC Filtered Air Intake Transport Group Inventory:

                        Pathway
Time (h) =   0.5000      Filter
Noble gases (atoms)    0.0000E+00
Elemental I (atoms)    0.0000E+00
Organic I (atoms)      0.0000E+00
Aerosols (kg)          0.0000E+00

TSC Unfiltered Inleakage Transport Group Inventory:
```

```
                          Pathway
Time (h) =   0.5000        Filter
Noble gases (atoms)     0.0000E+00
Elemental I (atoms)     0.0000E+00
Organic I (atoms)       0.0000E+00
Aerosols (kg)           0.0000E+00

TSC Exhaust Transport Group Inventory:




                          Pathway
Time (h) =   0.5000        Filter
Noble gases (atoms)     0.0000E+00
Elemental I (atoms)     0.0000E+00
Organic I (atoms)       0.0000E+00
Aerosols (kg)           0.0000E+00

Exclusion Area Boundary Doses:

Time (h) =   0.8000    Whole Body   Thyroid       TEDE
Delta dose (rem)        1.1480E-02  3.0163E+00  1.0654E-01
Accumulated dose (rem)  1.1687E-02  3.0676E+00  1.0837E-01

Low Population Zone Doses:

Time (h) =   0.8000    Whole Body   Thyroid       TEDE
Delta dose (rem)        2.0090E-03  5.2785E-01  1.8645E-02
Accumulated dose (rem)  2.0452E-03  5.3684E-01  1.8965E-02

TSC Doses:

Time (h) =   0.8000    Whole Body   Thyroid       TEDE
Delta dose (rem)        6.5457E-06  5.5389E-02  1.7520E-03
Accumulated dose (rem)  6.5500E-06  5.5423E-02  1.7530E-03

Travel Path Doses:

Time (h) =   0.8000    Whole Body   Thyroid       TEDE
Delta dose (rem)        0.0000E+00  0.0000E+00  0.0000E+00
Accumulated dose (rem)  0.0000E+00  0.0000E+00  0.0000E+00

Environment Integral Nuclide Release:

Time (h) =   0.8000       Ci           kg         Atoms         Bq
I-131                  7.2267E+00  5.8292E-08  2.6797E+17  2.6739E+11
I-132                  8.4985E+00  8.2333E-10  3.7562E+15  3.1444E+11
I-133                  1.4807E+01  1.3071E-08  5.9185E+16  5.4786E+11
I-134                  9.7591E+00  3.6583E-10  1.6441E+15  3.6109E+11
I-135                  1.3141E+01  3.7418E-09  1.6691E+16  4.8620E+11

Environment Transport Group Inventory:

                          Present     Release      Total
```

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**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 1 | System Nos. | Sheet 745 of 1000 |
|---|---|---|---|---|

```
Time (h) =   0.8000     Release     Rate/s      Release
Noble gases (atoms)    0.0000E+00  0.0000E+00  0.0000E+00
Elemental I (atoms)    3.4105E+17  1.1842E+14  3.4105E+17
Organic I (atoms)      1.0548E+16  3.6625E+12  1.0548E+16
Aerosols (kg)          0.0000E+00  0.0000E+00  0.0000E+00

Sump to Environment Transport Group Inventory:

                        Pathway
Time (h) =   0.8000      Filter
Noble gases (atoms)    0.0000E+00
Elemental I (atoms)    0.0000E+00
Organic I (atoms)      0.0000E+00
Aerosols (kg)          0.0000E+00

TSC Filtered Air Intake Transport Group Inventory:



                        Pathway
Time (h) =   0.8000      Filter
Noble gases (atoms)    0.0000E+00
Elemental I (atoms)    0.0000E+00
Organic I (atoms)      0.0000E+00
Aerosols (kg)          0.0000E+00

TSC Unfiltered Inleakage Transport Group Inventory:

                        Pathway
Time (h) =   0.8000      Filter
Noble gases (atoms)    0.0000E+00
Elemental I (atoms)    0.0000E+00
Organic I (atoms)      0.0000E+00
Aerosols (kg)          0.0000E+00

TSC Exhaust Transport Group Inventory:

                        Pathway
Time (h) =   0.8000      Filter
Noble gases (atoms)    0.0000E+00
Elemental I (atoms)    0.0000E+00
Organic I (atoms)      0.0000E+00
Aerosols (kg)          0.0000E+00

TSC Compartment Nuclide Inventory:

Time (h) =   0.8000       Ci           kg          Atoms         Bq
I-131                  2.6130E-04  2.1077E-12  9.6891E+12  9.6680E+06
I-132                  2.9758E-04  2.8830E-14  1.3153E+11  1.1011E+07
I-133                  5.3369E-04  4.7112E-13  2.1332E+12  1.9746E+07
I-134                  3.2372E-04  1.2135E-14  5.4537E+10  1.1978E+07
I-135                  4.7001E-04  1.3383E-13  5.9701E+11  1.7390E+07

TSC Transport Group Inventory:

                                                Overlying
Time (h) =   0.8000    Atmosphere     Sump        Pool
```

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**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 1 | System Nos. | Sheet 746 of 1000 |
|---|---|---|---|---|

```
Noble gases (atoms)    0.0000E+00  0.0000E+00  0.0000E+00
Elemental I (atoms)    1.2336E+13  0.0000E+00  0.0000E+00
Organic I (atoms)      3.8151E+11  0.0000E+00  0.0000E+00
Aerosols (kg)          0.0000E+00  0.0000E+00  0.0000E+00

                       Deposition Recirculating
Time (h) =   0.8000     Surfaces     Filter
Noble gases (atoms)    0.0000E+00  0.0000E+00
Elemental I (atoms)    0.0000E+00  0.0000E+00
Organic I (atoms)      0.0000E+00  0.0000E+00
Aerosols (kg)          0.0000E+00  0.0000E+00

TSC Filtered Air Intake Transport Group Inventory:



                        Pathway
Time (h) =   0.8000      Filter
Noble gases (atoms)    0.0000E+00
Elemental I (atoms)    0.0000E+00
Organic I (atoms)      0.0000E+00
Aerosols (kg)          0.0000E+00

TSC Unfiltered Inleakage Transport Group Inventory:

                        Pathway
Time (h) =   0.8000      Filter
Noble gases (atoms)    0.0000E+00
Elemental I (atoms)    0.0000E+00
Organic I (atoms)      0.0000E+00
Aerosols (kg)          0.0000E+00

TSC Exhaust Transport Group Inventory:

                        Pathway
Time (h) =   0.8000      Filter
Noble gases (atoms)    0.0000E+00
Elemental I (atoms)    0.0000E+00
Organic I (atoms)      0.0000E+00
Aerosols (kg)          0.0000E+00

Exclusion Area Boundary Doses:

Time (h) =   0.9167    Whole Body   Thyroid       TEDE
Delta dose (rem)        6.7486E-03  1.8949E+00  6.6417E-02
Accumulated dose (rem)  1.8435E-02  4.9625E+00  1.7479E-01

Low Population Zone Doses:

Time (h) =   0.9167    Whole Body   Thyroid       TEDE
Delta dose (rem)        1.1810E-03  3.3160E-01  1.1623E-02
Accumulated dose (rem)  3.2262E-03  8.6844E-01  3.0588E-02

TSC Doses:

Time (h) =   0.9167    Whole Body   Thyroid       TEDE
Delta dose (rem)        6.9667E-06  6.2323E-02  1.9694E-03
```

```
Accumulated dose (rem)  1.3517E-05  1.1775E-01  3.7225E-03

Travel Path Doses:

Time (h) =   0.9167    Whole Body   Thyroid       TEDE
Delta dose (rem)        0.0000E+00  0.0000E+00  0.0000E+00
Accumulated dose (rem)  0.0000E+00  0.0000E+00  0.0000E+00

Environment Integral Nuclide Release:

Time (h) =   0.9167       Ci           kg         Atoms         Bq
I-131                  1.1702E+01  9.4391E-08  4.3392E+17  4.3298E+11
I-132                  1.3472E+01  1.3051E-09  5.9544E+15  4.9846E+11
I-133                  2.3925E+01  2.1120E-08  9.5632E+16  8.8524E+11
I-134                  1.4956E+01  5.6066E-10  2.5197E+15  5.5339E+11
I-135                  2.1124E+01  6.0150E-09  2.6832E+16  7.8158E+11

Environment Transport Group Inventory:

                        Present     Release      Total
Time (h) =   0.9167     Release     Rate/s      Release
Noble gases (atoms)    0.0000E+00  0.0000E+00  0.0000E+00
Elemental I (atoms)    5.5182E+17  1.6722E+14  5.5182E+17
Organic I (atoms)      1.7067E+16  5.1717E+12  1.7067E+16
Aerosols (kg)          0.0000E+00  0.0000E+00  0.0000E+00

Sump to Environment Transport Group Inventory:

                        Pathway
Time (h) =   0.9167      Filter
Noble gases (atoms)    0.0000E+00
Elemental I (atoms)    0.0000E+00
Organic I (atoms)      0.0000E+00
Aerosols (kg)          0.0000E+00

TSC Filtered Air Intake Transport Group Inventory:

                        Pathway
Time (h) =   0.9167      Filter
Noble gases (atoms)    0.0000E+00
Elemental I (atoms)    0.0000E+00
Organic I (atoms)      0.0000E+00
Aerosols (kg)          0.0000E+00

TSC Unfiltered Inleakage Transport Group Inventory:

                        Pathway
Time (h) =   0.9167      Filter
Noble gases (atoms)    0.0000E+00
Elemental I (atoms)    0.0000E+00
Organic I (atoms)      0.0000E+00
Aerosols (kg)          0.0000E+00

TSC Exhaust Transport Group Inventory:

                        Pathway
Time (h) =   0.9167      Filter
```

```
Noble gases (atoms)    0.0000E+00
Elemental I (atoms)    0.0000E+00
Organic I (atoms)      0.0000E+00
Aerosols (kg)          0.0000E+00

TSC Compartment Nuclide Inventory:

Time (h) =   0.9167       Ci           kg          Atoms         Bq
I-131                  4.1546E-04  3.3511E-12  1.5405E+13  1.5372E+07
I-132                  4.5700E-04  4.4273E-14  2.0199E+11  1.6909E+07
I-133                  8.4561E-04  7.4647E-13  3.3800E+12  3.1288E+07
I-134                  4.6955E-04  1.7602E-14  7.9104E+10  1.7374E+07
I-135                  7.3852E-04  2.1029E-13  9.3809E+11  2.7325E+07

TSC Transport Group Inventory:



                                                Overlying
Time (h) =   0.9167    Atmosphere     Sump        Pool
Noble gases (atoms)    0.0000E+00  0.0000E+00  0.0000E+00
Elemental I (atoms)    1.9600E+13  0.0000E+00  0.0000E+00
Organic I (atoms)      6.0619E+11  0.0000E+00  0.0000E+00
Aerosols (kg)          0.0000E+00  0.0000E+00  0.0000E+00


                       Deposition Recirculating
Time (h) =   0.9167     Surfaces     Filter
Noble gases (atoms)    0.0000E+00  0.0000E+00
Elemental I (atoms)    0.0000E+00  0.0000E+00
Organic I (atoms)      0.0000E+00  0.0000E+00
Aerosols (kg)          0.0000E+00  0.0000E+00

TSC Filtered Air Intake Transport Group Inventory:

                        Pathway
Time (h) =   0.9167      Filter
Noble gases (atoms)    0.0000E+00
Elemental I (atoms)    0.0000E+00
Organic I (atoms)      0.0000E+00
Aerosols (kg)          0.0000E+00

TSC Unfiltered Inleakage Transport Group Inventory:

                        Pathway
Time (h) =   0.9167      Filter
Noble gases (atoms)    0.0000E+00
Elemental I (atoms)    0.0000E+00
Organic I (atoms)      0.0000E+00
Aerosols (kg)          0.0000E+00

TSC Exhaust Transport Group Inventory:

                        Pathway
Time (h) =   0.9167      Filter
Noble gases (atoms)    0.0000E+00
Elemental I (atoms)    0.0000E+00
```

```
Organic I (atoms)      0.0000E+00
Aerosols (kg)          0.0000E+00

Exclusion Area Boundary Doses:

Time (h) =   1.0000    Whole Body   Thyroid       TEDE
Delta dose (rem)        5.5116E-03  1.5995E+00  5.5858E-02
Accumulated dose (rem)  2.3947E-02  6.5620E+00  2.3065E-01

Low Population Zone Doses:

Time (h) =   1.0000    Whole Body   Thyroid       TEDE
Delta dose (rem)        9.6453E-04  2.7991E-01  9.7751E-03
Accumulated dose (rem)  4.1907E-03  1.1484E+00  4.0363E-02



TSC Doses:

Time (h) =   1.0000    Whole Body   Thyroid       TEDE
Delta dose (rem)        6.8412E-06  6.3218E-02  1.9967E-03
Accumulated dose (rem)  2.0358E-05  1.8096E-01  5.7192E-03

Travel Path Doses:

Time (h) =   1.0000    Whole Body   Thyroid       TEDE
Delta dose (rem)        5.5116E-03  1.5858E+00  5.5426E-02
Accumulated dose (rem)  5.5116E-03  1.5858E+00  5.5426E-02

Environment Integral Nuclide Release:

Time (h) =   1.0000       Ci           kg         Atoms         Bq
I-131                  1.5485E+01  1.2490E-07  5.7419E+17  5.7294E+11
I-132                  1.7554E+01  1.7006E-09  7.7587E+15  6.4951E+11
I-133                  3.1610E+01  2.7904E-08  1.2635E+17  1.1696E+12
I-134                  1.9022E+01  7.1306E-10  3.2046E+15  7.0382E+11
I-135                  2.7804E+01  7.9173E-09  3.5318E+16  1.0288E+12

Environment Transport Group Inventory:

                        Present     Release      Total
Time (h) =   1.0000     Release     Rate/s      Release
Noble gases (atoms)    0.0000E+00  0.0000E+00  0.0000E+00
Elemental I (atoms)    7.2982E+17  2.0273E+14  7.2982E+17
Organic I (atoms)      2.2572E+16  6.2699E+12  2.2572E+16
Aerosols (kg)          0.0000E+00  0.0000E+00  0.0000E+00

Sump to Environment Transport Group Inventory:

                        Pathway
Time (h) =   1.0000      Filter
Noble gases (atoms)    0.0000E+00
Elemental I (atoms)    0.0000E+00
Organic I (atoms)      0.0000E+00
Aerosols (kg)          0.0000E+00
```

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**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 1 | System Nos. | Sheet 750 of 1000 |
|---|---|---|---|---|

TSC Filtered Air Intake Transport Group Inventory:

| Time (h) = 1.0000 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 |

TSC Unfiltered Inleakage Transport Group Inventory:

| Time (h) = 1.0000 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 |

TSC Exhaust Transport Group Inventory:

| Time (h) = 1.0000 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 |

TSC Compartment Nuclide Inventory:

| Time (h) = 1.0000 | Ci | kg | Atoms | Bq |
|---|---|---|---|---|
| I-131 | 5.4286E-04 | 4.3788E-12 | 2.0130E+13 | 2.0086E+07 |
| I-132 | 5.8250E-04 | 5.6432E-14 | 2.5746E+11 | 2.1553E+07 |
| I-133 | 1.1022E-03 | 9.7297E-13 | 4.4055E+12 | 4.0781E+07 |
| I-134 | 5.7460E-04 | 2.1539E-14 | 9.6800E+10 | 2.1260E+07 |
| I-135 | 9.5688E-04 | 2.7247E-13 | 1.2155E+12 | 3.5405E+07 |

TSC Transport Group Inventory:

| Time (h) = 1.0000 | Atmosphere | Sump | Overlying Pool |
|---|---|---|---|
| Noble gases (atoms) | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 |
| Elemental I (atoms) | 2.5599E+13 | 0.0000E+00 | 0.0000E+00 |
| Organic I (atoms) | 7.9173E+11 | 0.0000E+00 | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 |

| Time (h) = 1.0000 | Deposition Surfaces | Recirculating Filter |
|---|---|---|
| Noble gases (atoms) | 0.0000E+00 | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 | 0.0000E+00 |

TSC Filtered Air Intake Transport Group Inventory:

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**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 1 | System Nos. | Sheet 751 of 1000 |
|---|---|---|---|---|

```
                          Pathway
Time (h) =   1.0000        Filter
Noble gases (atoms)     0.0000E+00
Elemental I (atoms)     0.0000E+00
Organic I (atoms)       0.0000E+00
Aerosols (kg)           0.0000E+00

TSC Unfiltered Inleakage Transport Group Inventory:

                          Pathway
Time (h) =   1.0000        Filter
Noble gases (atoms)     0.0000E+00
Elemental I (atoms)     0.0000E+00
Organic I (atoms)       0.0000E+00
Aerosols (kg)           0.0000E+00

TSC Exhaust Transport Group Inventory:



                          Pathway
Time (h) =   1.0000        Filter
Noble gases (atoms)     0.0000E+00
Elemental I (atoms)     0.0000E+00
Organic I (atoms)       0.0000E+00
Aerosols (kg)           0.0000E+00

Exclusion Area Boundary Doses:

Time (h) =   1.8000    Whole Body   Thyroid       TEDE
Delta dose (rem)        7.7225E-02  2.5694E+01  8.8459E-01
Accumulated dose (rem)  1.0117E-01  3.2256E+01  1.1152E+00



Low Population Zone Doses:

Time (h) =   1.8000    Whole Body   Thyroid       TEDE
Delta dose (rem)        1.3514E-02  4.4965E+00  1.5480E-01
Accumulated dose (rem)  1.7705E-02  5.6449E+00  1.9517E-01

TSC Doses:

Time (h) =   1.8000    Whole Body   Thyroid       TEDE
Delta dose (rem)        1.6285E-04  1.7455E+00  5.5003E-02
Accumulated dose (rem)  1.8321E-04  1.9265E+00  6.0722E-02

Travel Path Doses:

Time (h) =   1.8000    Whole Body   Thyroid       TEDE
Delta dose (rem)        0.0000E+00  0.0000E+00  0.0000E+00
Accumulated dose (rem)  5.5116E-03  1.5858E+00  5.5426E-02

Environment Integral Nuclide Release:

Time (h) =   1.8000       Ci           kg         Atoms         Bq
```

| | | | | |
|---|---|---|---|---|
| I-131 | 7.6591E+01 | 6.1779E-07 | 2.8400E+18 | 2.8339E+12 |
| I-132 | 7.4210E+01 | 7.1894E-09 | 3.2799E+16 | 2.7458E+12 |
| I-133 | 1.5385E+02 | 1.3582E-07 | 6.1497E+17 | 5.6926E+12 |
| I-134 | 6.3414E+01 | 2.3771E-09 | 1.0683E+16 | 2.3463E+12 |
| I-135 | 1.3024E+02 | 3.7086E-08 | 1.6544E+17 | 4.8189E+12 |

Environment Transport Group Inventory:

| Time (h) = 1.8000 | Present Release | Release Rate/s | Total Release |
|---|---|---|---|
| Noble gases (atoms) | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 |
| Elemental I (atoms) | 3.5961E+18 | 5.5495E+14 | 3.5961E+18 |
| Organic I (atoms) | 1.1122E+17 | 1.7163E+13 | 1.1122E+17 |
| Aerosols (kg) | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 |

Sump to Environment Transport Group Inventory:

| Time (h) = 1.8000 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 |

TSC Filtered Air Intake Transport Group Inventory:

| Time (h) = 1.8000 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 |

TSC Unfiltered Inleakage Transport Group Inventory:

| Time (h) = 1.8000 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 |

TSC Exhaust Transport Group Inventory:

| Time (h) = 1.8000 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 |

TSC Compartment Nuclide Inventory:

| Time (h) = 1.8000 | Ci | kg | Atoms | Bq |
|---|---|---|---|---|
| I-131 | 2.4011E-03 | 1.9368E-11 | 8.9036E+13 | 8.8842E+07 |

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**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 1 | System Nos. | Sheet 753 of 1000 |
|---|---|---|---|---|

| | | | | |
|---|---|---|---|---|
| I-132 | 2.0304E-03 | 1.9670E-13 | 8.9738E+11 | 7.5123E+07 |
| I-133 | 4.7605E-03 | 4.2024E-12 | 1.9028E+13 | 1.7614E+08 |
| I-134 | 1.3541E-03 | 5.0758E-14 | 2.2811E+11 | 5.0100E+07 |
| I-135 | 3.9031E-03 | 1.1114E-12 | 4.9578E+12 | 1.4441E+08 |

TSC Transport Group Inventory:

| Time (h) = 1.8000 | Atmosphere | Sump | Overlying Pool |
|---|---|---|---|
| Noble gases (atoms) | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 |
| Elemental I (atoms) | 1.1286E+14 | 0.0000E+00 | 0.0000E+00 |
| Organic I (atoms) | 3.4905E+12 | 0.0000E+00 | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 |

| Time (h) = 1.8000 | Deposition Surfaces | Recirculating Filter |
|---|---|---|
| Noble gases (atoms) | 0.0000E+00 | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 | 0.0000E+00 |

TSC Filtered Air Intake Transport Group Inventory:

| Time (h) = 1.8000 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 |

TSC Unfiltered Inleakage Transport Group Inventory:

| Time (h) = 1.8000 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 |

TSC Exhaust Transport Group Inventory:

| Time (h) = 1.8000 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 |

Exclusion Area Boundary Doses:

| Time (h) = 2.0000 | Whole Body | Thyroid | TEDE |
|---|---|---|---|
| Delta dose (rem) | 2.3137E-02 | 8.7277E+00 | 2.9697E-01 |
| Accumulated dose (rem) | 1.2431E-01 | 4.0984E+01 | 1.4122E+00 |

Low Population Zone Doses:

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**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 1 | System Nos. | Sheet 754 of 1000 |
|---|---|---|---|---|

```
Time (h) =   2.0000    Whole Body   Thyroid       TEDE
Delta dose (rem)        4.0491E-03  1.5273E+00  5.1970E-02
Accumulated dose (rem)  2.1754E-02  7.1722E+00  2.4714E-01

TSC Doses:

Time (h) =   2.0000    Whole Body   Thyroid       TEDE
Delta dose (rem)        7.0140E-05  8.4287E-01  2.6515E-02
Accumulated dose (rem)  2.5335E-04  2.7694E+00  8.7237E-02

Travel Path Doses:

Time (h) =   2.0000    Whole Body   Thyroid       TEDE
Delta dose (rem)        0.0000E+00  0.0000E+00  0.0000E+00
Accumulated dose (rem)  5.5116E-03  1.5858E+00  5.5426E-02

Environment Integral Nuclide Release:

Time (h) =   2.0000       Ci           kg         Atoms         Bq
I-131                  9.7462E+01  7.8614E-07  3.6139E+18  3.6061E+12
I-132                  9.1089E+01  8.8246E-09  4.0260E+16  3.3703E+12
I-133                  1.9505E+02  1.7218E-07  7.7963E+17  7.2168E+12
I-134                  7.3881E+01  2.7695E-09  1.2447E+16  2.7336E+12
I-135                  1.6366E+02  4.6601E-08  2.0788E+17  6.0553E+12

Environment Transport Group Inventory:

                        Present     Release      Total
Time (h) =   2.0000     Release     Rate/s      Release
Noble gases (atoms)    0.0000E+00  0.0000E+00  0.0000E+00
Elemental I (atoms)    4.5733E+18  6.3519E+14  4.5733E+18
Organic I (atoms)      1.4144E+17  1.9645E+13  1.4144E+17
Aerosols (kg)          0.0000E+00  0.0000E+00  0.0000E+00

Sump to Environment Transport Group Inventory:

                        Pathway
Time (h) =   2.0000      Filter
Noble gases (atoms)    0.0000E+00
Elemental I (atoms)    0.0000E+00
Organic I (atoms)      0.0000E+00
Aerosols (kg)          0.0000E+00

TSC Filtered Air Intake Transport Group Inventory:

                        Pathway
Time (h) =   2.0000      Filter
Noble gases (atoms)    0.0000E+00
Elemental I (atoms)    0.0000E+00
Organic I (atoms)      0.0000E+00
Aerosols (kg)          0.0000E+00

TSC Unfiltered Inleakage Transport Group Inventory:

                        Pathway
Time (h) =   2.0000      Filter
```

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**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 1 | System Nos. | Sheet 755 of 1000 |
|---|---|---|---|---|

```
Noble gases (atoms)    0.0000E+00
Elemental I (atoms)    0.0000E+00
Organic I (atoms)      0.0000E+00
Aerosols (kg)          0.0000E+00

TSC Exhaust Transport Group Inventory:

                        Pathway
Time (h) =   2.0000      Filter
Noble gases (atoms)    0.0000E+00
Elemental I (atoms)    0.0000E+00
Organic I (atoms)      0.0000E+00
Aerosols (kg)          0.0000E+00

TSC Compartment Nuclide Inventory:

Time (h) =   2.0000       Ci           kg         Atoms         Bq
I-131                  2.9668E-03  2.3931E-11  1.1001E+14  1.0977E+08
I-132                  2.3636E-03  2.2898E-13  1.0447E+12  8.7454E+07
I-133                  5.8471E-03  5.1616E-12  2.3371E+13  2.1634E+08
I-134                  1.4294E-03  5.3581E-14  2.4080E+11  5.2887E+07
I-135                  4.7258E-03  1.3457E-12  6.0028E+12  1.7486E+08



TSC Transport Group Inventory:

                                                Overlying
Time (h) =   2.0000    Atmosphere     Sump        Pool
Noble gases (atoms)    0.0000E+00  0.0000E+00  0.0000E+00
Elemental I (atoms)    1.3939E+14  0.0000E+00  0.0000E+00
Organic I (atoms)      4.3111E+12  0.0000E+00  0.0000E+00
Aerosols (kg)          0.0000E+00  0.0000E+00  0.0000E+00

                       Deposition Recirculating
Time (h) =   2.0000     Surfaces     Filter
Noble gases (atoms)    0.0000E+00  0.0000E+00
Elemental I (atoms)    0.0000E+00  0.0000E+00
Organic I (atoms)      0.0000E+00  0.0000E+00
Aerosols (kg)          0.0000E+00  0.0000E+00

TSC Filtered Air Intake Transport Group Inventory:


                        Pathway
Time (h) =   2.0000      Filter
Noble gases (atoms)    0.0000E+00
Elemental I (atoms)    0.0000E+00
Organic I (atoms)      0.0000E+00
Aerosols (kg)          0.0000E+00

TSC Unfiltered Inleakage Transport Group Inventory:

                        Pathway
Time (h) =   2.0000      Filter
Noble gases (atoms)    0.0000E+00
Elemental I (atoms)    0.0000E+00
```

```
Organic I (atoms)      0.0000E+00
Aerosols (kg)          0.0000E+00

TSC Exhaust Transport Group Inventory:

                        Pathway
Time (h) =   2.0000      Filter
Noble gases (atoms)    0.0000E+00
Elemental I (atoms)    0.0000E+00
Organic I (atoms)      0.0000E+00
Aerosols (kg)          0.0000E+00

Exclusion Area Boundary Doses:

Time (h) =   2.8000    Whole Body   Thyroid       TEDE
Delta dose (rem)        8.1928E-02  3.4646E+01  1.1675E+00
Accumulated dose (rem)  2.0624E-01  7.5631E+01  2.5797E+00

Low Population Zone Doses:

Time (h) =   2.8000    Whole Body   Thyroid       TEDE
Delta dose (rem)        6.1446E-03  2.5985E+00  8.7563E-02
Accumulated dose (rem)  2.7899E-02  9.7707E+00  3.3470E-01



TSC Doses:

Time (h) =   2.8000    Whole Body   Thyroid       TEDE
Delta dose (rem)        3.0675E-04  4.1419E+00  1.3008E-01
Accumulated dose (rem)  5.6009E-04  6.9113E+00  2.1732E-01

Travel Path Doses:

Time (h) =   2.8000    Whole Body   Thyroid       TEDE
Delta dose (rem)        0.0000E+00  0.0000E+00  0.0000E+00
Accumulated dose (rem)  5.5116E-03  1.5858E+00  5.5426E-02

Environment Integral Nuclide Release:

Time (h) =   2.8000       Ci           kg         Atoms         Bq
I-131                  1.8080E+02  1.4583E-06  6.7040E+18  6.6894E+12
I-132                  1.4929E+02  1.4463E-08  6.5985E+16  5.5238E+12
I-133                  3.5711E+02  3.1524E-07  1.4274E+18  1.3213E+13
I-134                  1.0252E+02  3.8431E-09  1.7271E+16  3.7933E+12
I-135                  2.9052E+02  8.2726E-08  3.6903E+17  1.0749E+13

Environment Transport Group Inventory:

                        Present     Release      Total
Time (h) =   2.8000     Release     Rate/s      Release
Noble gases (atoms)    0.0000E+00  0.0000E+00  0.0000E+00
Elemental I (atoms)    8.4824E+18  8.4151E+14  8.4824E+18
Organic I (atoms)      2.6234E+17  2.6026E+13  2.6234E+17
Aerosols (kg)          0.0000E+00  0.0000E+00  0.0000E+00

Sump to Environment Transport Group Inventory:
```

| Time (h) = 2.8000 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 |

TSC Filtered Air Intake Transport Group Inventory:

| Time (h) = 2.8000 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 |

TSC Unfiltered Inleakage Transport Group Inventory:

| Time (h) = 2.8000 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 |

TSC Exhaust Transport Group Inventory:

| Time (h) = 2.8000 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 |

TSC Compartment Nuclide Inventory:

| Time (h) = 2.8000 | Ci | kg | Atoms | Bq |
|---|---|---|---|---|
| I-131 | 3.6359E-03 | 2.9328E-11 | 1.3482E+14 | 1.3453E+08 |
| I-132 | 2.2827E-03 | 2.2114E-13 | 1.0089E+12 | 8.4460E+07 |
| I-133 | 6.9975E-03 | 6.1771E-12 | 2.7969E+13 | 2.5891E+08 |
| I-134 | 9.3329E-04 | 3.4985E-14 | 1.5723E+11 | 3.4532E+07 |
| I-135 | 5.3410E-03 | 1.5208E-12 | 6.7842E+12 | 1.9762E+08 |

TSC Transport Group Inventory:

| Time (h) = 2.8000 | Atmosphere | Sump | Overlying Pool |
|---|---|---|---|
| Noble gases (atoms) | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 |
| Elemental I (atoms) | 1.7109E+14 | 0.0000E+00 | 0.0000E+00 |
| Organic I (atoms) | 5.2914E+12 | 0.0000E+00 | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 |

Deposition Recirculating

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**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 1 | System Nos. | Sheet 758 of 1000 |
|---|---|---|---|---|

```
Time (h) =   2.8000     Surfaces     Filter
Noble gases (atoms)    0.0000E+00  0.0000E+00
Elemental I (atoms)    0.0000E+00  0.0000E+00
Organic I (atoms)      0.0000E+00  0.0000E+00
Aerosols (kg)          0.0000E+00  0.0000E+00

TSC Filtered Air Intake Transport Group Inventory:

                        Pathway
Time (h) =   2.8000      Filter
Noble gases (atoms)    0.0000E+00
Elemental I (atoms)    0.0000E+00
Organic I (atoms)      0.0000E+00
Aerosols (kg)          0.0000E+00

TSC Unfiltered Inleakage Transport Group Inventory:

                        Pathway
Time (h) =   2.8000      Filter
Noble gases (atoms)    0.0000E+00
Elemental I (atoms)    0.0000E+00
Organic I (atoms)      0.0000E+00
Aerosols (kg)          0.0000E+00




TSC Exhaust Transport Group Inventory:

                        Pathway
Time (h) =   2.8000      Filter
Noble gases (atoms)    0.0000E+00
Elemental I (atoms)    0.0000E+00
Organic I (atoms)      0.0000E+00
Aerosols (kg)          0.0000E+00

Exclusion Area Boundary Doses:

Time (h) =   8.0000    Whole Body   Thyroid       TEDE
Delta dose (rem)        3.3441E-01  2.1611E+02  7.0708E+00
Accumulated dose (rem)  5.4065E-01  2.9174E+02  9.6505E+00

Low Population Zone Doses:

Time (h) =   8.0000    Whole Body   Thyroid       TEDE
Delta dose (rem)        2.5081E-02  1.6208E+01  5.3031E-01
Accumulated dose (rem)  5.2979E-02  2.5979E+01  8.6501E-01

TSC Doses:

Time (h) =   8.0000    Whole Body   Thyroid       TEDE
Delta dose (rem)        1.8789E-03  3.9151E+01  1.2221E+00
Accumulated dose (rem)  2.4390E-03  4.6062E+01  1.4394E+00

Travel Path Doses:
```

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**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 1 | System Nos. | Sheet 759 of 1000 |
|---|---|---|---|---|

```
Time (h) =   8.0000    Whole Body   Thyroid       TEDE
Delta dose (rem)        0.0000E+00  0.0000E+00  0.0000E+00
Accumulated dose (rem)  5.5116E-03  1.5858E+00  5.5426E-02

Environment Integral Nuclide Release:

Time (h) =   8.0000       Ci           kg         Atoms         Bq
I-131                  7.1668E+02  5.7809E-06  2.6575E+19  2.6517E+13
I-132                  3.1824E+02  3.0830E-08  1.4066E+17  1.1775E+13
I-133                  1.3115E+03  1.1577E-06  5.2421E+18  4.8525E+13
I-134                  1.3445E+02  5.0399E-09  2.2650E+16  4.9745E+12
I-135                  8.9990E+02  2.5625E-07  1.1431E+18  3.3296E+13

Environment Transport Group Inventory:

                        Present     Release      Total
Time (h) =   8.0000     Release     Rate/s      Release
Noble gases (atoms)    0.0000E+00  0.0000E+00  0.0000E+00
Elemental I (atoms)    3.3892E+19  1.1768E+15  3.3892E+19
Organic I (atoms)      1.0482E+18  3.6396E+13  1.0482E+18
Aerosols (kg)          0.0000E+00  0.0000E+00  0.0000E+00

Sump to Environment Transport Group Inventory:

                        Pathway
Time (h) =   8.0000      Filter
Noble gases (atoms)    0.0000E+00
Elemental I (atoms)    0.0000E+00
Organic I (atoms)      0.0000E+00
Aerosols (kg)          0.0000E+00

TSC Filtered Air Intake Transport Group Inventory:

                        Pathway
Time (h) =   8.0000      Filter
Noble gases (atoms)    0.0000E+00
Elemental I (atoms)    0.0000E+00
Organic I (atoms)      0.0000E+00
Aerosols (kg)          0.0000E+00

TSC Unfiltered Inleakage Transport Group Inventory:

                        Pathway
Time (h) =   8.0000      Filter
Noble gases (atoms)    0.0000E+00
Elemental I (atoms)    0.0000E+00
Organic I (atoms)      0.0000E+00
Aerosols (kg)          0.0000E+00

TSC Exhaust Transport Group Inventory:

                        Pathway
Time (h) =   8.0000      Filter
Noble gases (atoms)    0.0000E+00
Elemental I (atoms)    0.0000E+00
Organic I (atoms)      0.0000E+00
Aerosols (kg)          0.0000E+00
```

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**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 1 | System Nos. | Sheet 760 of 1000 |
|---|---|---|---|---|

TSC Compartment Nuclide Inventory:

| Time (h) = 8.0000 | Ci | kg | Atoms | Bq |
|---|---|---|---|---|
| I-131 | 5.1922E-03 | 4.1881E-11 | 1.9253E+14 | 1.9211E+08 |
| I-132 | 6.9295E-04 | 6.7133E-14 | 3.0627E+11 | 2.5639E+07 |
| I-133 | 8.5611E-03 | 7.5574E-12 | 3.4220E+13 | 3.1676E+08 |
| I-134 | 2.2248E-05 | 8.3398E-16 | 3.7480E+09 | 8.2317E+05 |
| I-135 | 4.5046E-03 | 1.2827E-12 | 5.7218E+12 | 1.6667E+08 |

TSC Transport Group Inventory:

| Time (h) = 8.0000 | Atmosphere | Sump | Overlying Pool |
|---|---|---|---|
| Noble gases (atoms) | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 |
| Elemental I (atoms) | 2.4846E+14 | 0.0000E+00 | 0.0000E+00 |
| Organic I (atoms) | 7.6844E+12 | 0.0000E+00 | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 |

| Time (h) = 8.0000 | Deposition Surfaces | Recirculating Filter |
|---|---|---|
| Noble gases (atoms) | 0.0000E+00 | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 | 0.0000E+00 |

TSC Filtered Air Intake Transport Group Inventory:

| Time (h) = 8.0000 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 |

TSC Unfiltered Inleakage Transport Group Inventory:

| Time (h) = 8.0000 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 |

TSC Exhaust Transport Group Inventory:

| Time (h) = 8.0000 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 |

Exclusion Area Boundary Doses:

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**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 1 | System Nos. | Sheet 761 of 1000 |
|---|---|---|---|---|

```
Time (h) =  24.0000    Whole Body   Thyroid       TEDE
Delta dose (rem)        4.6504E-01  5.9518E+02  1.8865E+01
Accumulated dose (rem)  1.0057E+00  8.8692E+02  2.8516E+01

Low Population Zone Doses:

Time (h) =  24.0000    Whole Body   Thyroid       TEDE
Delta dose (rem)        2.2671E-02  1.4922E+01  4.8399E-01
Accumulated dose (rem)  7.5650E-02  4.0901E+01  1.3490E+00

TSC Doses:

Time (h) =  24.0000    Whole Body   Thyroid       TEDE
Delta dose (rem)        1.2145E-03  4.7939E+01  1.4838E+00
Accumulated dose (rem)  3.6535E-03  9.4001E+01  2.9232E+00

Travel Path Doses:

Time (h) =  24.0000    Whole Body   Thyroid       TEDE
Delta dose (rem)        0.0000E+00  0.0000E+00  0.0000E+00
Accumulated dose (rem)  5.5116E-03  1.5858E+00  5.5426E-02

Environment Integral Nuclide Release:

Time (h) =  24.0000       Ci           kg         Atoms         Bq
I-131                  2.3005E+03  1.8556E-05  8.5305E+19  8.5119E+13
I-132                  3.6022E+02  3.4898E-08  1.5921E+17  1.3328E+13
I-133                  3.3568E+03  2.9633E-06  1.3418E+19  1.2420E+14
I-134                  1.3497E+02  5.0596E-09  2.2739E+16  4.9940E+12
I-135                  1.5526E+03  4.4210E-07  1.9721E+18  5.7445E+13

Environment Transport Group Inventory:

                        Present     Release      Total
Time (h) =  24.0000     Release     Rate/s      Release
Noble gases (atoms)    0.0000E+00  0.0000E+00  0.0000E+00
Elemental I (atoms)    1.1207E+20  1.2971E+15  1.1207E+20
Organic I (atoms)      3.4661E+18  4.0117E+13  3.4661E+18
Aerosols (kg)          0.0000E+00  0.0000E+00  0.0000E+00

Sump to Environment Transport Group Inventory:

                        Pathway
Time (h) =  24.0000      Filter
Noble gases (atoms)    0.0000E+00
Elemental I (atoms)    0.0000E+00
Organic I (atoms)      0.0000E+00
Aerosols (kg)          0.0000E+00

TSC Filtered Air Intake Transport Group Inventory:

                        Pathway
Time (h) =  24.0000      Filter
Noble gases (atoms)    0.0000E+00
Elemental I (atoms)    0.0000E+00
Organic I (atoms)      0.0000E+00
```

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**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 1 | System Nos. | Sheet 762 of 1000 |
|---|---|---|---|---|

```
Aerosols (kg)          0.0000E+00

TSC Unfiltered Inleakage Transport Group Inventory:

                        Pathway
Time (h) =  24.0000      Filter
Noble gases (atoms)    0.0000E+00
Elemental I (atoms)    0.0000E+00
Organic I (atoms)      0.0000E+00
Aerosols (kg)          0.0000E+00

TSC Exhaust Transport Group Inventory:

                        Pathway
Time (h) =  24.0000      Filter
Noble gases (atoms)    0.0000E+00
Elemental I (atoms)    0.0000E+00
Organic I (atoms)      0.0000E+00
Aerosols (kg)          0.0000E+00

TSC Compartment Nuclide Inventory:

Time (h) =  24.0000       Ci           kg         Atoms         Bq
I-131                  1.9045E-03  1.5362E-11  7.0619E+13  7.0466E+07
I-132                  2.1675E-06  2.0999E-16  9.5802E+08  8.0199E+04
I-133                  1.9514E-03  1.7227E-12  7.8000E+12  7.2203E+07
I-135                  3.2687E-04  9.3075E-14  4.1519E+11  1.2094E+07

TSC Transport Group Inventory:



                                                Overlying
Time (h) =  24.0000    Atmosphere     Sump        Pool
Noble gases (atoms)    0.0000E+00  0.0000E+00  0.0000E+00
Elemental I (atoms)    9.6526E+13  0.0000E+00  0.0000E+00
Organic I (atoms)      2.9853E+12  0.0000E+00  0.0000E+00
Aerosols (kg)          0.0000E+00  0.0000E+00  0.0000E+00

                       Deposition Recirculating
Time (h) =  24.0000     Surfaces     Filter
Noble gases (atoms)    0.0000E+00  0.0000E+00
Elemental I (atoms)    0.0000E+00  0.0000E+00
Organic I (atoms)      0.0000E+00  0.0000E+00
Aerosols (kg)          0.0000E+00  0.0000E+00

TSC Filtered Air Intake Transport Group Inventory:

                        Pathway
Time (h) =  24.0000      Filter
Noble gases (atoms)    0.0000E+00
Elemental I (atoms)    0.0000E+00
Organic I (atoms)      0.0000E+00
Aerosols (kg)          0.0000E+00

TSC Unfiltered Inleakage Transport Group Inventory:
```

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**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 1 | System Nos. | Sheet 763 of 1000 |
|---|---|---|---|---|

```
                          Pathway
Time (h) =  24.0000        Filter
Noble gases (atoms)     0.0000E+00
Elemental I (atoms)     0.0000E+00
Organic I (atoms)       0.0000E+00
Aerosols (kg)           0.0000E+00

TSC Exhaust Transport Group Inventory:

                          Pathway
Time (h) =  24.0000        Filter
Noble gases (atoms)     0.0000E+00
Elemental I (atoms)     0.0000E+00
Organic I (atoms)       0.0000E+00
Aerosols (kg)           0.0000E+00

Exclusion Area Boundary Doses:

Time (h) =  96.0000    Whole Body   Thyroid       TEDE
Delta dose (rem)        2.5198E-01  8.0399E+02  2.4855E+01
Accumulated dose (rem)  1.2577E+00  1.6909E+03  5.3371E+01

Low Population Zone Doses:

Time (h) =  96.0000    Whole Body   Thyroid       TEDE
Delta dose (rem)        5.0395E-03  1.0567E+01  3.2840E-01
Accumulated dose (rem)  8.0690E-02  5.1467E+01  1.6774E+00

TSC Doses:

Time (h) =  96.0000    Whole Body   Thyroid       TEDE
Delta dose (rem)        2.7420E-04  2.6354E+01  8.0714E-01
Accumulated dose (rem)  3.9277E-03  1.2035E+02  3.7303E+00

Travel Path Doses:

Time (h) =  96.0000    Whole Body   Thyroid       TEDE
Delta dose (rem)        0.0000E+00  0.0000E+00  0.0000E+00
Accumulated dose (rem)  5.5116E-03  1.5858E+00  5.5426E-02

Environment Integral Nuclide Release:

Time (h) =  96.0000       Ci           kg         Atoms         Bq
I-131                  4.7292E+03  3.8147E-05  1.7536E+20  1.7498E+14
I-132                  3.6030E+02  3.4905E-08  1.5925E+17  1.3331E+13
I-133                  4.3646E+03  3.8529E-06  1.7446E+19  1.6149E+14
I-134                  1.3497E+02  5.0596E-09  2.2739E+16  4.9940E+12
I-135                  1.6033E+03  4.5655E-07  2.0366E+18  5.9324E+13

Environment Transport Group Inventory:

                          Present     Release      Total
Time (h) =  96.0000       Release     Rate/s      Release
Noble gases (atoms)     0.0000E+00  0.0000E+00  0.0000E+00
Elemental I (atoms)     2.5278E+20  7.3142E+14  2.5278E+20
Organic I (atoms)       7.8179E+18  2.2621E+13  7.8179E+18
Aerosols (kg)           0.0000E+00  0.0000E+00  0.0000E+00
```

AmerGen

**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 1 | System Nos. | Sheet 764 of 1000 |
|---|---|---|---|---|

Sump to Environment Transport Group Inventory:

| Time (h) = 96.0000 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 |

TSC Filtered Air Intake Transport Group Inventory:

| Time (h) = 96.0000 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 |

TSC Unfiltered Inleakage Transport Group Inventory:

| Time (h) = 96.0000 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 |

TSC Exhaust Transport Group Inventory:

| Time (h) = 96.0000 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 |

TSC Compartment Nuclide Inventory:

| Time (h) = 96.0000 | Ci | kg | Atoms | Bq |
|---|---|---|---|---|
| I-131 | 3.9634E-04 | 3.1969E-12 | 1.4696E+13 | 1.4664E+07 |
| I-133 | 4.7747E-05 | 4.2149E-14 | 1.9085E+11 | 1.7666E+06 |
| I-135 | 4.6344E-08 | 1.3196E-17 | 5.8867E+07 | 1.7147E+03 |

TSC Transport Group Inventory:

| Time (h) = 96.0000 | Atmosphere | Sump | Overlying Pool |
|---|---|---|---|
| Noble gases (atoms) | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 |
| Elemental I (atoms) | 2.6017E+13 | 0.0000E+00 | 0.0000E+00 |
| Organic I (atoms) | 8.0465E+11 | 0.0000E+00 | 0.0000E+00 |

AmerGen

**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 1 | System Nos. | Sheet 765 of 1000 |
|---|---|---|---|---|

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Aerosols (kg)          0.0000E+00  0.0000E+00  0.0000E+00

                       Deposition Recirculating
Time (h) =  96.0000     Surfaces     Filter
Noble gases (atoms)    0.0000E+00  0.0000E+00
Elemental I (atoms)    0.0000E+00  0.0000E+00
Organic I (atoms)      0.0000E+00  0.0000E+00
Aerosols (kg)          0.0000E+00  0.0000E+00


TSC Filtered Air Intake Transport Group Inventory:

                        Pathway
Time (h) =  96.0000      Filter
Noble gases (atoms)    0.0000E+00
Elemental I (atoms)    0.0000E+00
Organic I (atoms)      0.0000E+00
Aerosols (kg)          0.0000E+00

TSC Unfiltered Inleakage Transport Group Inventory:

                        Pathway
Time (h) =  96.0000      Filter
Noble gases (atoms)    0.0000E+00
Elemental I (atoms)    0.0000E+00
Organic I (atoms)      0.0000E+00
Aerosols (kg)          0.0000E+00

TSC Exhaust Transport Group Inventory:

                        Pathway
Time (h) =  96.0000      Filter
Noble gases (atoms)    0.0000E+00
Elemental I (atoms)    0.0000E+00
Organic I (atoms)      0.0000E+00
Aerosols (kg)          0.0000E+00

Exclusion Area Boundary Doses:

Time (h) = 720.0000    Whole Body   Thyroid       TEDE
Delta dose (rem)        4.1176E-01  2.2617E+03  6.9283E+01
Accumulated dose (rem)  1.6694E+00  3.9526E+03  1.2265E+02

Low Population Zone Doses:

Time (h) = 720.0000    Whole Body   Thyroid       TEDE
Delta dose (rem)        2.0588E-03  7.4314E+00  2.2835E-01
Accumulated dose (rem)  8.2749E-02  5.8899E+01  1.9057E+00

TSC Doses:

Time (h) = 720.0000    Whole Body   Thyroid       TEDE
Delta dose (rem)        2.1900E-04  3.8290E+01  1.1662E+00
Accumulated dose (rem)  4.1467E-03  1.5864E+02  4.8965E+00

Travel Path Doses:
```

| Time (h) = 720.0000 | Whole Body | Thyroid | TEDE |
|---|---|---|---|
| Delta dose (rem) | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 |
| Accumulated dose (rem) | 5.5116E-03 | 1.5858E+00 | 5.5426E-02 |

Environment Integral Nuclide Release:

| Time (h) = 720.0000 | Ci | kg | Atoms | Bq |
|---|---|---|---|---|
| I-131 | 1.2080E+04 | 9.7441E-05 | 4.4794E+20 | 4.4697E+14 |
| I-132 | 3.6030E+02 | 3.4905E-08 | 1.5925E+17 | 1.3331E+13 |
| I-133 | 4.4652E+03 | 3.9417E-06 | 1.7848E+19 | 1.6521E+14 |
| I-134 | 1.3497E+02 | 5.0596E-09 | 2.2739E+16 | 4.9940E+12 |
| I-135 | 1.6034E+03 | 4.5656E-07 | 2.0366E+18 | 5.9325E+13 |

Environment Transport Group Inventory:

| Time (h) = 720.0000 | Present Release | Release Rate/s | Total Release |
|---|---|---|---|
| Noble gases (atoms) | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 |
| Elemental I (atoms) | 1.4716E+21 | 5.6775E+14 | 1.4716E+21 |
| Organic I (atoms) | 4.5514E+19 | 1.7559E+13 | 4.5514E+19 |
| Aerosols (kg) | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 |

Sump to Environment Transport Group Inventory:

| Time (h) = 720.0000 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 |

TSC Filtered Air Intake Transport Group Inventory:

| Time (h) = 720.0000 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 |

TSC Unfiltered Inleakage Transport Group Inventory:

| Time (h) = 720.0000 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 |

TSC Exhaust Transport Group Inventory:

| Time (h) = 720.0000 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 |

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**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 1 | System Nos. | Sheet 767 of 1000 |
|---|---|---|---|---|

```
TSC Compartment Nuclide Inventory:

Time (h) = 720.0000       Ci           kg         Atoms         Bq
I-131                  3.5615E-05  2.8728E-13  1.3206E+12  1.3178E+06

TSC Transport Group Inventory:

                                                Overlying
Time (h) = 720.0000    Atmosphere     Sump        Pool
Noble gases (atoms)    0.0000E+00  0.0000E+00  0.0000E+00
Elemental I (atoms)    2.1994E+13  0.0000E+00  0.0000E+00
Organic I (atoms)      6.8023E+11  0.0000E+00  0.0000E+00
Aerosols (kg)          0.0000E+00  0.0000E+00  0.0000E+00

                       Deposition Recirculating
Time (h) = 720.0000     Surfaces     Filter
Noble gases (atoms)    0.0000E+00  0.0000E+00
Elemental I (atoms)    0.0000E+00  0.0000E+00
Organic I (atoms)      0.0000E+00  0.0000E+00
Aerosols (kg)          0.0000E+00  0.0000E+00

TSC Filtered Air Intake Transport Group Inventory:

                        Pathway
Time (h) = 720.0000      Filter
Noble gases (atoms)    0.0000E+00
Elemental I (atoms)    0.0000E+00
Organic I (atoms)      0.0000E+00
Aerosols (kg)          0.0000E+00

TSC Unfiltered Inleakage Transport Group Inventory:

                        Pathway
Time (h) = 720.0000      Filter
Noble gases (atoms)    0.0000E+00
Elemental I (atoms)    0.0000E+00
Organic I (atoms)      0.0000E+00
Aerosols (kg)          0.0000E+00

TSC Exhaust Transport Group Inventory:

                        Pathway
Time (h) = 720.0000      Filter
Noble gases (atoms)    0.0000E+00
Elemental I (atoms)    0.0000E+00
Organic I (atoms)      0.0000E+00
Aerosols (kg)          0.0000E+00

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#####################################################################
                             I-131 Summary
#####################################################################

                   Sump                Environment                TSC
Time (hr)    I-131 (Curies)         I-131 (Curies)       I-131 (Curies)
```

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**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 1 | System Nos. | Sheet 768 of 1000 |
|---|---|---|---|---|

| | | | |
|---|---|---|---|
| 0.001 | 3.9707E+03 | 0.0000E+00 | 0.0000E+00 |
| 0.300 | 2.1419E+06 | 0.0000E+00 | 0.0000E+00 |
| 0.491 | 3.5010E+06 | 0.0000E+00 | 0.0000E+00 |
| 0.500 | 3.5672E+06 | 1.2081E-01 | 4.6091E-06 |
| 0.800 | 9.3196E+06 | 7.2267E+00 | 2.6130E-04 |
| 0.917 | 1.1553E+07 | 1.1702E+01 | 4.1546E-04 |
| 1.000 | 1.3148E+07 | 1.5485E+01 | 5.4286E-04 |
| 1.300 | 1.8879E+07 | 3.3142E+01 | 1.1125E-03 |
| 1.600 | 2.4599E+07 | 5.7111E+01 | 1.8392E-03 |
| 1.800 | 2.8405E+07 | 7.6591E+01 | 2.4011E-03 |
| 2.000 | 2.8384E+07 | 9.7462E+01 | 2.9668E-03 |
| 2.300 | 2.8354E+07 | 1.2874E+02 | 3.2458E-03 |
| 2.600 | 2.8323E+07 | 1.5998E+02 | 3.4902E-03 |
| 2.800 | 2.8303E+07 | 1.8080E+02 | 3.6359E-03 |
| 3.100 | 2.8272E+07 | 2.1198E+02 | 4.1374E-03 |
| 3.400 | 2.8242E+07 | 2.4314E+02 | 4.4837E-03 |
| 3.700 | 2.8211E+07 | 2.7426E+02 | 4.7222E-03 |
| 4.000 | 2.8181E+07 | 3.0535E+02 | 4.8861E-03 |
| 4.300 | 2.8150E+07 | 3.3641E+02 | 4.9980E-03 |
| 4.600 | 2.8120E+07 | 3.6743E+02 | 5.0740E-03 |
| 4.900 | 2.8090E+07 | 3.9842E+02 | 5.1249E-03 |
| 5.200 | 2.8060E+07 | 4.2937E+02 | 5.1586E-03 |
| 5.500 | 2.8029E+07 | 4.6030E+02 | 5.1802E-03 |
| 5.800 | 2.7999E+07 | 4.9118E+02 | 5.1935E-03 |
| 6.100 | 2.7969E+07 | 5.2204E+02 | 5.2010E-03 |
| 6.400 | 2.7939E+07 | 5.5286E+02 | 5.2044E-03 |
| 6.700 | 2.7909E+07 | 5.8365E+02 | 5.2051E-03 |
| 7.000 | 2.7878E+07 | 6.1441E+02 | 5.2039E-03 |
| 7.300 | 2.7848E+07 | 6.4513E+02 | 5.2013E-03 |
| 7.600 | 2.7818E+07 | 6.7582E+02 | 5.1978E-03 |
| 7.900 | 2.7788E+07 | 7.0647E+02 | 5.1937E-03 |
| 8.000 | 2.7778E+07 | 7.1668E+02 | 5.1922E-03 |
| 8.300 | 2.7748E+07 | 7.4730E+02 | 4.2183E-03 |
| 8.600 | 2.7719E+07 | 7.7787E+02 | 3.5419E-03 |
| 8.900 | 2.7689E+07 | 8.0842E+02 | 3.0718E-03 |
| 9.200 | 2.7659E+07 | 8.3893E+02 | 2.7449E-03 |
| 9.500 | 2.7629E+07 | 8.6941E+02 | 2.5174E-03 |
| 9.800 | 2.7599E+07 | 8.9986E+02 | 2.3588E-03 |
| 10.100 | 2.7569E+07 | 9.3027E+02 | 2.2481E-03 |
| 10.400 | 2.7540E+07 | 9.6065E+02 | 2.1707E-03 |
| 24.000 | 2.6225E+07 | 2.3005E+03 | 1.9045E-03 |
| 96.000 | 2.0247E+07 | 4.7292E+03 | 3.9634E-04 |
| 720.000 | 2.1502E+06 | 1.2080E+04 | 3.5615E-05 |

```
#####################################################################
                        Cumulative Dose Summary
#####################################################################
```

| | Exclusion Area Bounda | | Low Population Zone | | TSC | |
|---|---|---|---|---|---|---|
| Time (hr) | Thyroid (rem) | TEDE (rem) | Thyroid (rem) | TEDE (rem) | Thyroid (rem) | TEDE (rem) |
| 0.001 | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 |
| 0.300 | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 |
| 0.491 | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 |
| 0.500 | 5.1381E-02 | 1.8273E-03 | 8.9916E-03 | 3.1978E-04 | 3.4194E-05 | 1.0828E-06 |

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**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 1 | System Nos. | Sheet 769 of 1000 |
|---|---|---|---|---|

| | | | | | | |
|---|---|---|---|---|---|---|
| 0.800 | 3.0676E+00 | 1.0837E-01 | 5.3684E-01 | 1.8965E-02 | 5.5423E-02 | 1.7530E-03 |
| 0.917 | 4.9625E+00 | 1.7479E-01 | 8.6844E-01 | 3.0588E-02 | 1.1775E-01 | 3.7225E-03 |
| 1.000 | 6.5620E+00 | 2.3065E-01 | 1.1484E+00 | 4.0363E-02 | 1.8096E-01 | 5.7192E-03 |
| 1.300 | 1.4013E+01 | 4.8935E-01 | 2.4523E+00 | 8.5637E-02 | 5.6804E-01 | 1.7934E-02 |
| 1.600 | 2.4091E+01 | 8.3610E-01 | 4.2159E+00 | 1.4632E-01 | 1.2610E+00 | 3.9772E-02 |
| 1.800 | 3.2256E+01 | 1.1152E+00 | 5.6449E+00 | 1.9517E-01 | 1.9265E+00 | 6.0722E-02 |
| 2.000 | 4.0984E+01 | 1.4122E+00 | 7.1722E+00 | 2.4714E-01 | 2.7694E+00 | 8.7237E-02 |
| 2.300 | 5.4025E+01 | 1.8536E+00 | 8.1503E+00 | 2.8024E-01 | 4.2279E+00 | 1.3308E-01 |
| 2.600 | 6.7008E+01 | 2.2906E+00 | 9.1240E+00 | 3.1302E-01 | 5.8036E+00 | 1.8256E-01 |
| 2.800 | 7.5631E+01 | 2.5797E+00 | 9.7707E+00 | 3.3470E-01 | 6.9113E+00 | 2.1732E-01 |
| 3.100 | 8.8518E+01 | 3.0102E+00 | 1.0737E+01 | 3.6698E-01 | 8.7245E+00 | 2.7418E-01 |
| 3.400 | 1.0135E+02 | 3.4371E+00 | 1.1700E+01 | 3.9900E-01 | 1.0726E+01 | 3.3691E-01 |
| 3.700 | 1.1413E+02 | 3.8607E+00 | 1.2658E+01 | 4.3077E-01 | 1.2856E+01 | 4.0358E-01 |
| 4.000 | 1.2685E+02 | 4.2812E+00 | 1.3612E+01 | 4.6231E-01 | 1.5070E+01 | 4.7287E-01 |
| 4.300 | 1.3952E+02 | 4.6987E+00 | 1.4562E+01 | 4.9362E-01 | 1.7340E+01 | 5.4387E-01 |
| 4.600 | 1.5213E+02 | 5.1135E+00 | 1.5509E+01 | 5.2473E-01 | 1.9646E+01 | 6.1594E-01 |
| 4.900 | 1.6470E+02 | 5.5256E+00 | 1.6451E+01 | 5.5564E-01 | 2.1973E+01 | 6.8866E-01 |
| 5.200 | 1.7722E+02 | 5.9352E+00 | 1.7390E+01 | 5.8636E-01 | 2.4313E+01 | 7.6172E-01 |
| 5.500 | 1.8968E+02 | 6.3423E+00 | 1.8325E+01 | 6.1690E-01 | 2.6658E+01 | 8.3492E-01 |
| 5.800 | 2.0210E+02 | 6.7471E+00 | 1.9256E+01 | 6.4726E-01 | 2.9004E+01 | 9.0812E-01 |
| 6.100 | 2.1447E+02 | 7.1497E+00 | 2.0184E+01 | 6.7744E-01 | 3.1349E+01 | 9.8124E-01 |
| 6.400 | 2.2679E+02 | 7.5500E+00 | 2.1108E+01 | 7.0747E-01 | 3.3689E+01 | 1.0542E+00 |
| 6.700 | 2.3907E+02 | 7.9482E+00 | 2.2029E+01 | 7.3733E-01 | 3.6024E+01 | 1.1269E+00 |
| 7.000 | 2.5130E+02 | 8.3443E+00 | 2.2946E+01 | 7.6704E-01 | 3.8353E+01 | 1.1995E+00 |
| 7.300 | 2.6348E+02 | 8.7384E+00 | 2.3859E+01 | 7.9660E-01 | 4.0674E+01 | 1.2718E+00 |
| 7.600 | 2.7562E+02 | 9.1306E+00 | 2.4770E+01 | 8.2602E-01 | 4.2988E+01 | 1.3438E+00 |
| 7.900 | 2.8771E+02 | 9.5209E+00 | 2.5677E+01 | 8.5528E-01 | 4.5295E+01 | 1.4156E+00 |
| 8.000 | 2.9174E+02 | 9.6505E+00 | 2.5979E+01 | 8.6501E-01 | 4.6062E+01 | 1.4394E+00 |
| 8.300 | 3.0377E+02 | 1.0038E+01 | 2.6280E+01 | 8.7506E-01 | 4.8132E+01 | 1.5038E+00 |
| 8.600 | 3.1577E+02 | 1.0424E+01 | 2.6581E+01 | 8.8505E-01 | 4.9836E+01 | 1.5568E+00 |
| 8.900 | 3.2772E+02 | 1.0808E+01 | 2.6881E+01 | 8.9500E-01 | 5.1287E+01 | 1.6019E+00 |
| 9.200 | 3.3962E+02 | 1.1191E+01 | 2.7179E+01 | 9.0489E-01 | 5.2560E+01 | 1.6414E+00 |
| 9.500 | 3.5149E+02 | 1.1572E+01 | 2.7477E+01 | 9.1473E-01 | 5.3710E+01 | 1.6772E+00 |
| 9.800 | 3.6332E+02 | 1.1951E+01 | 2.7773E+01 | 9.2452E-01 | 5.4774E+01 | 1.7102E+00 |
| 10.100 | 3.7510E+02 | 1.2328E+01 | 2.8069E+01 | 9.3427E-01 | 5.5777E+01 | 1.7414E+00 |
| 10.400 | 3.8685E+02 | 1.2704E+01 | 2.8363E+01 | 9.4396E-01 | 5.6737E+01 | 1.7712E+00 |
| 24.000 | 8.8692E+02 | 2.8516E+01 | 4.0901E+01 | 1.3490E+00 | 9.4001E+01 | 2.9232E+00 |
| 96.000 | 1.6909E+03 | 5.3371E+01 | 5.1467E+01 | 1.6774E+00 | 1.2035E+02 | 3.7303E+00 |
| 720.000 | 3.9526E+03 | 1.2265E+02 | 5.8899E+01 | 1.9057E+00 | 1.5864E+02 | 4.8965E+00 |

Travel Path

| Time (hr) | Thyroid (rem) | TEDE (rem) |
|---|---|---|
| 0.001 | 0.0000E+00 | 0.0000E+00 |
| 0.300 | 0.0000E+00 | 0.0000E+00 |
| 0.491 | 0.0000E+00 | 0.0000E+00 |
| 0.500 | 0.0000E+00 | 0.0000E+00 |
| 0.800 | 0.0000E+00 | 0.0000E+00 |
| 0.917 | 0.0000E+00 | 0.0000E+00 |
| 1.000 | 1.5858E+00 | 5.5426E-02 |
| 1.300 | 1.5858E+00 | 5.5426E-02 |
| 1.600 | 1.5858E+00 | 5.5426E-02 |
| 1.800 | 1.5858E+00 | 5.5426E-02 |
| 2.000 | 1.5858E+00 | 5.5426E-02 |
| 2.300 | 1.5858E+00 | 5.5426E-02 |

```
   2.600 1.5858E+00 5.5426E-02
   2.800 1.5858E+00 5.5426E-02
   3.100 1.5858E+00 5.5426E-02
   3.400 1.5858E+00 5.5426E-02
   3.700 1.5858E+00 5.5426E-02
   4.000 1.5858E+00 5.5426E-02
   4.300 1.5858E+00 5.5426E-02
   4.600 1.5858E+00 5.5426E-02
   4.900 1.5858E+00 5.5426E-02
   5.200 1.5858E+00 5.5426E-02
   5.500 1.5858E+00 5.5426E-02
   5.800 1.5858E+00 5.5426E-02
   6.100 1.5858E+00 5.5426E-02
   6.400 1.5858E+00 5.5426E-02
   6.700 1.5858E+00 5.5426E-02
   7.000 1.5858E+00 5.5426E-02
   7.300 1.5858E+00 5.5426E-02
   7.600 1.5858E+00 5.5426E-02
   7.900 1.5858E+00 5.5426E-02
   8.000 1.5858E+00 5.5426E-02
   8.300 1.5858E+00 5.5426E-02
   8.600 1.5858E+00 5.5426E-02
   8.900 1.5858E+00 5.5426E-02
   9.200 1.5858E+00 5.5426E-02
   9.500 1.5858E+00 5.5426E-02
   9.800 1.5858E+00 5.5426E-02
  10.100 1.5858E+00 5.5426E-02
  10.400 1.5858E+00 5.5426E-02
  24.000 1.5858E+00 5.5426E-02
  96.000 1.5858E+00 5.5426E-02
 720.000 1.5858E+00 5.5426E-02

#####################################################################
                        Worst Two-Hour Doses
    Note: All of the dose locations are shown below but the
          worst two-hour dose is only meaningful for the EAB
          dose location.  Please disregard the two-hour worst
          doses for the other dose locations
#####################################################################

Exclusion Area Boundary
   Time   Whole Body    Thyroid        TEDE
   (hr)     (rem)        (rem)         (rem)
    1.8   1.8987E-01   8.6110E+01   2.8856E+00

Low Population Zone
   Time   Whole Body    Thyroid        TEDE
   (hr)     (rem)        (rem)         (rem)
    0.9   2.5521E-02   9.2718E+00   3.1653E-01

TSC
   Time   Whole Body    Thyroid        TEDE
   (hr)     (rem)        (rem)         (rem)
    4.7   7.0838E-04   1.5603E+01   4.8677E-01

Travel Path
   Time   Whole Body    Thyroid        TEDE
```

AmerGen

**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 1 | System Nos. | Sheet 771 of 1000 |
|---|---|---|---|---|

```
(hr)      (rem)         (rem)          (rem)
 0.0   5.5116E-03   1.5858E+00   5.5426E-02
```

**Appendix T**

**RADTRAD Output File**

# BWST_TSC_No Filtration.o0

**BWST Leakage Pathway (For TSC Dose)**
**To Evaluate TSC HVAC Filter Shine Dose**

AmerGen

**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 1 | System Nos. | Sheet 773 of 1000 |
|---|---|---|---|---|

```
 ######################################################################
          RADTRAD Version 3.02 run on  5/15/2002  at 14:01:29
 ######################################################################

 ######################################################################
                      File information
 ######################################################################

 Plant file name           = C:\Documents and Settings\u004tjm\My Documents\TMI
RADTRAD\BWST_TSC_NO Filtration.psf
 Inventory file name       = c:\documents and settings\u004tjm\my documents\tmi
radtrad\defaults\tmi_i131.nif
 Scenario file name        = C:\Documents and Settings\u004tjm\My Documents\TMI
RADTRAD\BWST_TSC_NO Filtration.psf
 Release file name         = c:\documents and settings\u004tjm\my documents\tmi
radtrad\defaults\pwr_i.rft
 Dose conversion file name = c:\documents and settings\u004tjm\my documents\tmi
radtrad\defaults\fgr11&12.inp


     #####    ####   #####    #  #     #  #####   #    #  #####
     #    #  #       #        #  ##    #  #    #  #    #    #
     #    #  #       #        #  # #   #  #    #  #    #    #
     #####    ####   ####     #  #  #  #  #####   #    #    #
     #            #  #        #  #   # #  #       #    #    #
     #            #  #        #  #    ##  #       #    #    #
     #        ####   #        #  #     #  #        ####     #


 Radtrad 3.02 1/5/2000
 TSC Dose Due to BWST Leakage - NO Filtration
 Nuclide Inventory File:
 c:\documents and settings\u004tjm\my documents\tmi radtrad\defaults\tmi_i131.nif
 Plant Power Level:
  2.6190E+03
 Compartments:
   4
 Compartment 1:
 Sump
   3
  5.4519E+04
   0
   0
   0
   0
   0
 Compartment 2:
 BWST
   3
  4.0684E+04
   0
   0
   0
   0
   0
 Compartment 3:
```

```
Environment
  2
 0.0000E+00
  0
  0
  0
  0
  0
Compartment 4:
TSC
  1
 4.2000E+04
  0
  0
  1
  0
  0
Pathways:
  5
Pathway 1:
Sump to BWST
  1
  2
  2
Pathway 2:
BWST to Environment
  2
  3
  2
Pathway 3:
TSC Filtered Air Intake
  3
  4
  2
Pathway 4:
TSC Unfiltered Inleakage
  3
  4
  2
Pathway 5:
TSC Exhaust to Environment
  4
  3
  2
End of Plant Model File
Scenario Description Name:

Plant Model Filename:

Source Term:
  1
  1   1.0000E+00
c:\documents and settings\u004tjm\my documents\tmi radtrad\defaults\fgr11&12.inp
c:\documents and settings\u004tjm\my documents\tmi radtrad\defaults\pwr_i.rft
  0.0000E+00
  0
```

```
  0.0000E+00   9.7000E-01   3.0000E-02   1.0000E+00

Overlying Pool:
  0
  0.0000E+00
  0
  0
  0
  0
Compartments:
  4
Compartment 1:
  0
  1
  0
  0
  0
  0
  0
  0
  0
Compartment 2:
  0
  1
  0
  0
  0
  0
  0
  0
  0
Compartment 3:
  1
  1
  0
  0
  0
  0
  0
  0
  0
Compartment 4:
  1
  1
  0
  0
  0
  0
  1
  0.0000E+00
  5
  0.0000E+00   0.0000E+00   0.0000E+00   0.0000E+00
  8.0000E-01   0.0000E+00   0.0000E+00   0.0000E+00
  1.0000E+00   0.0000E+00   0.0000E+00   0.0000E+00
  2.8000E+00   9.9000E+01   9.0000E+01   9.0000E+01
  7.2000E+02   0.0000E+00   0.0000E+00   0.0000E+00
  0
```

```
  0


Pathways:
  5
Pathway 1:
  0
  0
  0
  0
  0
  1
  5
  0.0000E+00   0.0000E+00   0.0000E+00   0.0000E+00   0.0000E+00
  4.9070E-01   4.0100E-01   9.0000E+01   9.0000E+01   9.0000E+01
  5.0000E+00   2.2720E-01   9.0000E+01   9.0000E+01   9.0000E+01
  2.4000E+01   2.1390E-01   9.0000E+01   9.0000E+01   9.0000E+01
  7.2000E+02   0.0000E+00   0.0000E+00   0.0000E+00   0.0000E+00
  0
  0
  0
  0
  0
  0
Pathway 2:
  0
  0
  0
  0
  0
  1
  4
  0.0000E+00   0.0000E+00   0.0000E+00   0.0000E+00   0.0000E+00
  4.9070E-01   4.0100E-01   9.0000E+01   9.0000E+01   9.0000E+01
  5.0000E+00   2.2720E-01   9.0000E+01   9.0000E+01   9.0000E+01
  2.4000E+01   2.1390E-01   9.0000E+01   9.0000E+01   9.0000E+01
  0
  0
  0
  0
  0
  0
Pathway 3:
  0
  0
  0
  0
  0
  1
  5
  0.0000E+00   3.0000E+02   0.0000E+00   0.0000E+00   0.0000E+00
  8.0000E-01   3.0000E+02   0.0000E+00   0.0000E+00   0.0000E+00
  1.0000E+00   3.0000E+02   0.0000E+00   0.0000E+00   0.0000E+00
  2.8000E+00   6.0000E+02   0.0000E+00   0.0000E+00   0.0000E+00
  7.2000E+02   0.0000E+00   0.0000E+00   0.0000E+00   0.0000E+00
  0
  0
```

```
  0
  0


  0
  0
Pathway 4:
  0
  0
  0
  0
  0
  1
  5
  0.0000E+00   0.0000E+00   0.0000E+00   0.0000E+00   0.0000E+00
  8.0000E-01   0.0000E+00   0.0000E+00   0.0000E+00   0.0000E+00
  1.0000E+00   0.0000E+00   0.0000E+00   0.0000E+00   0.0000E+00
  2.8000E+00   2.5000E+02   0.0000E+00   0.0000E+00   0.0000E+00
  7.2000E+02   0.0000E+00   0.0000E+00   0.0000E+00   0.0000E+00
  0
  0
  0
  0
  0
  0
Pathway 5:
  0
  0
  0
  0
  0
  1
  5
  0.0000E+00   3.0000E+02   0.0000E+00   0.0000E+00   0.0000E+00
  8.0000E-01   3.0000E+02   0.0000E+00   0.0000E+00   0.0000E+00
  1.0000E+00   3.0000E+02   0.0000E+00   0.0000E+00   0.0000E+00
  2.8000E+00   8.5000E+02   0.0000E+00   0.0000E+00   0.0000E+00
  7.2000E+02   0.0000E+00   0.0000E+00   0.0000E+00   0.0000E+00
  0
  0
  0
  0
  0
  0
Dose Locations:
  4
Location 1:
Exclusion Area Boundary
  3
  1
  2
  0.0000E+00   8.0000E-04
  7.2000E+02   0.0000E+00
  1
  2
  0.0000E+00   3.5000E-04
  7.2000E+02   0.0000E+00
```

```
  0
Location 2:
Low Population Zone
  3
  1
  6
  0.0000E+00   1.4000E-04
  2.0000E+00   6.0000E-05
  8.0000E+00   3.9000E-05
  2.4000E+01   1.6000E-05
  9.6000E+01   4.0000E-06
  7.2000E+02   0.0000E+00
  1
  4
  0.0000E+00   3.5000E-04
  8.0000E+00   1.8000E-04
  2.4000E+01   2.3000E-04
  7.2000E+02   0.0000E+00
  0
Location 3:
TSC
  4
  0
  1
  2
  0.0000E+00   3.5000E-04
  7.2000E+02   0.0000E+00
  1
  4
  0.0000E+00   1.0000E+00
  2.4000E+01   6.0000E-01
  9.6000E+01   4.0000E-01
  7.2000E+02   0.0000E+00
Location 4:
Travel Path
  3
  1
  3
  0.0000E+00   0.0000E+00
  7.5000E-01   8.0000E-04
  1.0000E+00   0.0000E+00
  1
  4
  0.0000E+00   3.4700E-04
  8.0000E+00   1.7500E-04
  2.4000E+01   2.3200E-04
  7.2000E+02   0.0000E+00
  0
Effective Volume Location:
  1
  6
  0.0000E+00   2.9700E-04
  2.0000E+00   1.6400E-04
  8.0000E+00   6.4200E-05
  2.4000E+01   4.6500E-05
  9.6000E+01   3.8000E-05
  7.2000E+02   0.0000E+00
```

```
Simulation Parameters:
  7
  0.0000E+00   5.0000E-02
  1.0000E+00   1.0000E-01
  2.0000E+00   1.0000E+00
  8.0000E+00   2.0000E+00
  2.4000E+01   4.0000E+00
  9.6000E+01   8.0000E+00
  7.2000E+02   0.0000E+00
Output Filename:
C:\Documents and Settings\u004tjm\My Documents\TMI RADTRAD\BWST_TSC_NO Filtration.o0
  1
  1
  1
  0
  0
End of Scenario File

#######################################################################
          RADTRAD Version 3.02 run on  5/15/2002  at 14:01:29
#######################################################################

#######################################################################
                    Plant Description
#######################################################################

Number of Nuclides =  60

Inventory Power =   1.0000E+00 MWth
Plant Power Level =   2.6190E+03 MWth

Number of compartments    =   4

Compartment information

Compartment number  1  (Source term fraction =   1.0000E+00
)
Name: Sump
Compartment volume =   5.4519E+04 (Cubic feet)
Pathways into and out of compartment  1
    Pathway to compartment number   2: Sump to BWST

Compartment number  2
Name: BWST
Compartment volume =   4.0684E+04 (Cubic feet)
Pathways into and out of compartment  2
    Pathway to compartment number   3: BWST to Environment
    Pathway from compartment number 1: Sump to BWST

Compartment number  3
Name: Environment
Pathways into and out of compartment  3
    Pathway to compartment number   4: TSC Filtered Air Intake
    Pathway to compartment number   4: TSC Unfiltered Inleakage
    Pathway from compartment number 2: BWST to Environment
    Pathway from compartment number 4: TSC Exhaust to Environment
```

```
Compartment number  4
Name: TSC
Compartment volume =   4.2000E+04 (Cubic feet)
Removal devices within compartment:
     Filter(s)


Pathways into and out of compartment  4
    Pathway to compartment number   3: TSC Exhaust to Environment
    Pathway from compartment number 3: TSC Filtered Air Intake
    Pathway from compartment number 3: TSC Unfiltered Inleakage

Total number of pathways =   5

#######################################################################
          RADTRAD Version 3.02 run on  5/15/2002  at 14:01:29
#######################################################################

#######################################################################
                     Scenario Description
#######################################################################

Radioactive Decay is enabled
RELEASE_NAME = PWR, NUREG-1465, Tables 3.12 & 3.13, Jun
Release Fractions and Timings
                GAP       EARLY IN-VESSEL
             0.5000 hrs     1.3000 hrs
NOBLES       0.0000E+00     0.0000E+00
IODINE       5.0000E-02     3.5000E-01
CESIUM       0.0000E+00     0.0000E+00
TELLURIUM    0.0000E+00     0.0000E+00
STRONTIUM    0.0000E+00     0.0000E+00
BARIUM       0.0000E+00     0.0000E+00
RUTHENIUM    0.0000E+00     0.0000E+00
CERIUM       0.0000E+00     0.0000E+00
LANTHANUM    0.0000E+00     0.0000E+00

Iodine fractions
     Aerosol     =   0.0000E+00
     Elemental   =   9.7000E-01
     Organic     =   3.0000E-02

COMPARTMENT DATA

Compartment number   1: Sump

Compartment number   2: BWST

Compartment number   3: Environment

Compartment number   4: TSC

     Compartment Filter Data

      Time (hr)      Flow Rate          Filter Efficiencies (%)
                       (cfm)        Aerosol     Elemental    Organic
       0.0000E+00    0.0000E+00   0.0000E+00   0.0000E+00   0.0000E+00
```

| | | | | |
|---|---|---|---|---|
| 8.0000E-01 | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 |
| 1.0000E+00 | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 |
| 2.8000E+00 | 0.0000E+00 | 9.9000E+01 | 9.0000E+01 | 9.0000E+01 |
| 7.2000E+02 | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 |

PATHWAY DATA

Pathway number 1: Sump to BWST

Pathway Filter: Removal Data

| Time (hr) | Flow Rate (cfm) | Filter Efficiencies (%) Aerosol | Elemental | Organic |
|---|---|---|---|---|
| 0.0000E+00 | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 |
| 4.9070E-01 | 4.0100E-01 | 9.0000E+01 | 9.0000E+01 | 9.0000E+01 |
| 5.0000E+00 | 2.2720E-01 | 9.0000E+01 | 9.0000E+01 | 9.0000E+01 |
| 2.4000E+01 | 2.1390E-01 | 9.0000E+01 | 9.0000E+01 | 9.0000E+01 |
| 7.2000E+02 | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 |

Pathway number 2: BWST to Environment

Pathway Filter: Removal Data

| Time (hr) | Flow Rate (cfm) | Filter Efficiencies (%) Aerosol | Elemental | Organic |
|---|---|---|---|---|
| 0.0000E+00 | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 |
| 4.9070E-01 | 4.0100E-01 | 9.0000E+01 | 9.0000E+01 | 9.0000E+01 |
| 5.0000E+00 | 2.2720E-01 | 9.0000E+01 | 9.0000E+01 | 9.0000E+01 |
| 2.4000E+01 | 2.1390E-01 | 9.0000E+01 | 9.0000E+01 | 9.0000E+01 |

Pathway number 3: TSC Filtered Air Intake

Pathway Filter: Removal Data

| Time (hr) | Flow Rate (cfm) | Filter Efficiencies (%) Aerosol | Elemental | Organic |
|---|---|---|---|---|
| 0.0000E+00 | 3.0000E+02 | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 |
| 8.0000E-01 | 3.0000E+02 | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 |
| 1.0000E+00 | 3.0000E+02 | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 |
| 2.8000E+00 | 6.0000E+02 | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 |
| 7.2000E+02 | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 |

Pathway number 4: TSC Unfiltered Inleakage

Pathway Filter: Removal Data

| Time (hr) | Flow Rate (cfm) | Filter Efficiencies (%) Aerosol | Elemental | Organic |
|---|---|---|---|---|
| 0.0000E+00 | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 |
| 8.0000E-01 | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 |
| 1.0000E+00 | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 |
| 2.8000E+00 | 2.5000E+02 | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 |
| 7.2000E+02 | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 |

AmerGen

**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 1 | System Nos. | Sheet 782 of 1000 |
|---|---|---|---|---|

Pathway number 5: TSC Exhaust to Environment

Pathway Filter: Removal Data

| Time (hr) | Flow Rate (cfm) | Filter Efficiencies (%) Aerosol | Elemental | Organic |
|---|---|---|---|---|
| 0.0000E+00 | 3.0000E+02 | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 |
| 8.0000E-01 | 3.0000E+02 | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 |
| 1.0000E+00 | 3.0000E+02 | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 |
| 2.8000E+00 | 8.5000E+02 | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 |
| 7.2000E+02 | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 |

LOCATION DATA

Location Exclusion Area Boundary is in compartment 3

Location X/Q Data

| Time (hr) | X/Q (s * m^-3) |
|---|---|
| 0.0000E+00 | 8.0000E-04 |
| 7.2000E+02 | 0.0000E+00 |

Location Breathing Rate Data

| Time (hr) | Breathing Rate (m^3 * sec^-1) |
|---|---|
| 0.0000E+00 | 3.5000E-04 |
| 7.2000E+02 | 0.0000E+00 |

Location Low Population Zone is in compartment 3

Location X/Q Data

| Time (hr) | X/Q (s * m^-3) |
|---|---|
| 0.0000E+00 | 1.4000E-04 |
| 2.0000E+00 | 6.0000E-05 |
| 8.0000E+00 | 3.9000E-05 |
| 2.4000E+01 | 1.6000E-05 |
| 9.6000E+01 | 4.0000E-06 |
| 7.2000E+02 | 0.0000E+00 |

Location Breathing Rate Data

| Time (hr) | Breathing Rate (m^3 * sec^-1) |
|---|---|
| 0.0000E+00 | 3.5000E-04 |
| 8.0000E+00 | 1.8000E-04 |
| 2.4000E+01 | 2.3000E-04 |
| 7.2000E+02 | 0.0000E+00 |

Location TSC is in compartment 4

Location X/Q Data

| Time (hr) | X/Q (s * m^-3) |
|---|---|
| 0.0000E+00 | 2.9700E-04 |
| 2.0000E+00 | 1.6400E-04 |
| 8.0000E+00 | 6.4200E-05 |
| 2.4000E+01 | 4.6500E-05 |
| 9.6000E+01 | 3.8000E-05 |
| 7.2000E+02 | 0.0000E+00 |

Location Breathing Rate Data

| Time (hr) | Breathing Rate (m^3 * sec^-1) |
|---|---|
| 0.0000E+00 | 3.5000E-04 |
| 7.2000E+02 | 0.0000E+00 |

AmerGen

**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 1 | System Nos. | Sheet 783 of 1000 |
|---|---|---|---|---|

```
     Location Occupancy Factor Data
      Time (hr)         Occupancy Factor
       0.0000E+00            1.0000E+00
       2.4000E+01            6.0000E-01
       9.6000E+01            4.0000E-01
       7.2000E+02            0.0000E+00
     Location Travel Path     is in compartment   3



    Location X/Q Data
      Time (hr)         X/Q (s * m^-3)
       0.0000E+00          0.0000E+00
       7.5000E-01          8.0000E-04
       1.0000E+00          0.0000E+00

     Location Breathing Rate Data
      Time (hr)         Breathing Rate (m^3 * sec^-1)
       0.0000E+00                3.4700E-04
       8.0000E+00                1.7500E-04
       2.4000E+01                2.3200E-04
       7.2000E+02                0.0000E+00

USER SPECIFIED TIME STEP DATA - SUPPLEMENTAL TIME STEPS
     Time            Time step
      0.0000E+00       5.0000E-02
      1.0000E+00       1.0000E-01
      2.0000E+00       1.0000E+00
      8.0000E+00       2.0000E+00
      2.4000E+01       4.0000E+00
      9.6000E+01       8.0000E+00
      7.2000E+02       0.0000E+00

#######################################################################
           RADTRAD Version 3.02 run on  5/15/2002  at 14:01:29
#######################################################################


     ####   #    #  #####  #####   #    #  #####
    #    #  #    #    #    #    #  #    #    #
    #    #  #    #    #    #    #  #    #    #
    #    #  #    #    #    #####   #    #    #
    #    #  #    #    #    #       #    #    #
    #    #  #    #    #    #       #    #    #
     ####    ####     #    #        ####     #


#####################################################################
            Dose, Detailed model and Detailed Inventory Output
#####################################################################

Exclusion Area Boundary Doses:

Time (h) =   0.4907    Whole Body   Thyroid       TEDE
Delta dose (rem)        0.0000E+00  0.0000E+00  0.0000E+00
Accumulated dose (rem)  0.0000E+00  0.0000E+00  0.0000E+00
```

AmerGen

**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 1 | System Nos. | Sheet 784 of 1000 |
|---|---|---|---|---|

```
Low Population Zone Doses:

Time (h) =   0.4907    Whole Body   Thyroid       TEDE
Delta dose (rem)        0.0000E+00  0.0000E+00  0.0000E+00
Accumulated dose (rem)  0.0000E+00  0.0000E+00  0.0000E+00

TSC Doses:




Time (h) =   0.4907    Whole Body   Thyroid       TEDE
Delta dose (rem)        0.0000E+00  0.0000E+00  0.0000E+00
Accumulated dose (rem)  0.0000E+00  0.0000E+00  0.0000E+00

Travel Path Doses:

Time (h) =   0.4907    Whole Body   Thyroid       TEDE
Delta dose (rem)        0.0000E+00  0.0000E+00  0.0000E+00
Accumulated dose (rem)  0.0000E+00  0.0000E+00  0.0000E+00

Environment Integral Nuclide Release:

Time (h) =   0.4907       Ci           kg         Atoms         Bq

Environment Transport Group Inventory:

                         Present     Release      Total
Time (h) =   0.4907      Release     Rate/s      Release
Noble gases (atoms)    0.0000E+00  0.0000E+00  0.0000E+00
Elemental I (atoms)    0.0000E+00  0.0000E+00  0.0000E+00
Organic I (atoms)      0.0000E+00  0.0000E+00  0.0000E+00
Aerosols (kg)          0.0000E+00  0.0000E+00  0.0000E+00

BWST to Environment Transport Group Inventory:

                         Pathway
Time (h) =   0.4907       Filter
Noble gases (atoms)    0.0000E+00
Elemental I (atoms)    0.0000E+00
Organic I (atoms)      0.0000E+00
Aerosols (kg)          0.0000E+00

TSC Filtered Air Intake Transport Group Inventory:

                         Pathway
Time (h) =   0.4907       Filter
Noble gases (atoms)    0.0000E+00
Elemental I (atoms)    0.0000E+00
Organic I (atoms)      0.0000E+00
Aerosols (kg)          0.0000E+00

TSC Unfiltered Inleakage Transport Group Inventory:

                         Pathway
Time (h) =   0.4907       Filter
Noble gases (atoms)    0.0000E+00
```

```
Elemental I (atoms)    0.0000E+00
Organic I (atoms)      0.0000E+00
Aerosols (kg)          0.0000E+00

TSC Exhaust to Environment Transport Group Inventory:

                        Pathway
Time (h) =   0.4907      Filter
Noble gases (atoms)    0.0000E+00
Elemental I (atoms)    0.0000E+00


Organic I (atoms)      0.0000E+00
Aerosols (kg)          0.0000E+00

TSC Compartment Nuclide Inventory:

Time (h) =   0.4907       Ci           kg         Atoms         Bq

TSC Transport Group Inventory:

                                                 Overlying
Time (h) =   0.4907    Atmosphere     Sump         Pool
Noble gases (atoms)    0.0000E+00  0.0000E+00  0.0000E+00
Elemental I (atoms)    0.0000E+00  0.0000E+00  0.0000E+00
Organic I (atoms)      0.0000E+00  0.0000E+00  0.0000E+00
Aerosols (kg)          0.0000E+00  0.0000E+00  0.0000E+00

                       Deposition Recirculating
Time (h) =   0.4907     Surfaces     Filter
Noble gases (atoms)    0.0000E+00  0.0000E+00
Elemental I (atoms)    0.0000E+00  0.0000E+00
Organic I (atoms)      0.0000E+00  0.0000E+00
Aerosols (kg)          0.0000E+00  0.0000E+00

TSC Filtered Air Intake Transport Group Inventory:

                        Pathway
Time (h) =   0.4907      Filter
Noble gases (atoms)    0.0000E+00
Elemental I (atoms)    0.0000E+00
Organic I (atoms)      0.0000E+00
Aerosols (kg)          0.0000E+00

TSC Unfiltered Inleakage Transport Group Inventory:

                        Pathway
Time (h) =   0.4907      Filter
Noble gases (atoms)    0.0000E+00
Elemental I (atoms)    0.0000E+00
Organic I (atoms)      0.0000E+00
Aerosols (kg)          0.0000E+00

TSC Exhaust to Environment Transport Group Inventory:

                        Pathway
Time (h) =   0.4907      Filter
```

```
Noble gases (atoms)    0.0000E+00
Elemental I (atoms)    0.0000E+00
Organic I (atoms)      0.0000E+00
Aerosols (kg)          0.0000E+00

Exclusion Area Boundary Doses:

Time (h) =   0.5000    Whole Body   Thyroid       TEDE
Delta dose (rem)        6.8035E-10  1.6911E-07  6.0141E-09
Accumulated dose (rem)  6.8035E-10  1.6911E-07  6.0141E-09



Low Population Zone Doses:

Time (h) =   0.5000    Whole Body   Thyroid       TEDE
Delta dose (rem)        1.1906E-10  2.9594E-08  1.0525E-09
Accumulated dose (rem)  1.1906E-10  2.9594E-08  1.0525E-09

TSC Doses:

Time (h) =   0.5000    Whole Body   Thyroid       TEDE
Delta dose (rem)        1.5655E-14  1.2495E-10  3.9566E-12
Accumulated dose (rem)  1.5655E-14  1.2495E-10  3.9566E-12

Travel Path Doses:

Time (h) =   0.5000    Whole Body   Thyroid       TEDE
Delta dose (rem)        0.0000E+00  0.0000E+00  0.0000E+00
Accumulated dose (rem)  0.0000E+00  0.0000E+00  0.0000E+00

Environment Integral Nuclide Release:

Time (h) =   0.5000       Ci           kg          Atoms         Bq
I-131                  3.9762E-07  3.2072E-15  1.4744E+10  1.4712E+04
I-132                  4.9515E-07  4.7970E-17  2.1885E+08  1.8321E+04
I-133                  8.1939E-07  7.2332E-16  3.2751E+09  3.0317E+04
I-134                  6.2381E-07  2.3384E-17  1.0509E+08  2.3081E+04
I-135                  7.3727E-07  2.0994E-16  9.3650E+08  2.7279E+04

Environment Transport Group Inventory:

                        Present     Release      Total
Time (h) =   0.5000     Release     Rate/s      Release
Noble gases (atoms)    0.0000E+00  0.0000E+00  0.0000E+00
Elemental I (atoms)    1.8816E+10  1.0454E+07  1.8816E+10
Organic I (atoms)      5.8195E+08  3.2330E+05  5.8195E+08
Aerosols (kg)          0.0000E+00  0.0000E+00  0.0000E+00

BWST to Environment Transport Group Inventory:

                        Pathway
Time (h) =   0.5000      Filter
Noble gases (atoms)    0.0000E+00
Elemental I (atoms)    1.6935E+11
Organic I (atoms)      5.2375E+09
Aerosols (kg)          0.0000E+00
```

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**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 1 | System Nos. | Sheet 787 of 1000 |
|---|---|---|---|---|

TSC Filtered Air Intake Transport Group Inventory:

| Time (h) = 0.5000 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 |

TSC Unfiltered Inleakage Transport Group Inventory:

| Time (h) = 0.5000 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 |

TSC Exhaust to Environment Transport Group Inventory:

| Time (h) = 0.5000 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 |

TSC Compartment Nuclide Inventory:

| Time (h) = 0.5000 | Ci | kg | Atoms | Bq |
|---|---|---|---|---|
| I-131 | 1.6698E-11 | 1.3469E-19 | 6.1916E+05 | 6.1782E-01 |
| I-133 | 3.4410E-11 | 3.0376E-20 | 1.3754E+05 | 1.2732E+00 |

TSC Transport Group Inventory:

| Time (h) = 0.5000 | Atmosphere | Sump | Overlying Pool |
|---|---|---|---|
| Noble gases (atoms) | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 |
| Elemental I (atoms) | 7.9019E+05 | 0.0000E+00 | 0.0000E+00 |
| Organic I (atoms) | 2.4439E+04 | 0.0000E+00 | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 |

| Time (h) = 0.5000 | Deposition Surfaces | Recirculating Filter |
|---|---|---|
| Noble gases (atoms) | 0.0000E+00 | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 | 0.0000E+00 |

TSC Filtered Air Intake Transport Group Inventory:

| Time (h) = 0.5000 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |

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**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 1 | System Nos. | Sheet 788 of 1000 |
|---|---|---|---|---|

```
Elemental I (atoms)    0.0000E+00
Organic I (atoms)      0.0000E+00
Aerosols (kg)          0.0000E+00

TSC Unfiltered Inleakage Transport Group Inventory:

                        Pathway
Time (h) =   0.5000      Filter
Noble gases (atoms)    0.0000E+00
Elemental I (atoms)    0.0000E+00
Organic I (atoms)      0.0000E+00
Aerosols (kg)          0.0000E+00


TSC Exhaust to Environment Transport Group Inventory:

                        Pathway
Time (h) =   0.5000      Filter
Noble gases (atoms)    0.0000E+00
Elemental I (atoms)    0.0000E+00
Organic I (atoms)      0.0000E+00
Aerosols (kg)          0.0000E+00

Exclusion Area Boundary Doses:

Time (h) =   0.7500    Whole Body   Thyroid       TEDE
Delta dose (rem)        7.1546E-07  1.8787E-04  6.6367E-06
Accumulated dose (rem)  7.1614E-07  1.8804E-04  6.6427E-06

Low Population Zone Doses:

Time (h) =   0.7500    Whole Body   Thyroid       TEDE
Delta dose (rem)        1.2521E-07  3.2878E-05  1.1614E-06
Accumulated dose (rem)  1.2532E-07  3.2907E-05  1.1625E-06

TSC Doses:

Time (h) =   0.7500    Whole Body   Thyroid       TEDE
Delta dose (rem)        2.7887E-10  2.3649E-06  7.4808E-08
Accumulated dose (rem)  2.7889E-10  2.3650E-06  7.4812E-08

Travel Path Doses:

Time (h) =   0.7500    Whole Body   Thyroid       TEDE
Delta dose (rem)        0.0000E+00  0.0000E+00  0.0000E+00
Accumulated dose (rem)  0.0000E+00  0.0000E+00  0.0000E+00

Environment Integral Nuclide Release:

Time (h) =   0.7500       Ci           kg         Atoms         Bq
I-131                  4.4298E-04  3.5732E-12  1.6426E+13  1.6390E+07
I-132                  5.2079E-04  5.0454E-14  2.3018E+11  1.9269E+07
I-133                  9.0763E-04  8.0122E-13  3.6279E+12  3.3582E+07
I-134                  5.9730E-04  2.2390E-14  1.0063E+11  2.2100E+07
I-135                  8.0544E-04  2.2935E-13  1.0231E+12  2.9801E+07
```

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**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 1 | System Nos. | Sheet 789 of 1000 |
|---|---|---|---|---|

Environment Transport Group Inventory:

| Time (h) = 0.7500 | Present Release | Release Rate/s | Total Release |
|---|---|---|---|
| Noble gases (atoms) | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 |
| Elemental I (atoms) | 2.0934E+13 | 7.7532E+09 | 2.0934E+13 |
| Organic I (atoms) | 6.4744E+11 | 2.3979E+08 | 6.4744E+11 |
| Aerosols (kg) | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 |

BWST to Environment Transport Group Inventory:

| Time (h) = 0.7500 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 1.8840E+14 |
| Organic I (atoms) | 5.8269E+12 |
| Aerosols (kg) | 0.0000E+00 |

TSC Filtered Air Intake Transport Group Inventory:

| Time (h) = 0.7500 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 |

TSC Unfiltered Inleakage Transport Group Inventory:

| Time (h) = 0.7500 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 |

TSC Exhaust to Environment Transport Group Inventory:

| Time (h) = 0.7500 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 |

TSC Compartment Nuclide Inventory:

| Time (h) = 0.7500 | Ci | kg | Atoms | Bq |
|---|---|---|---|---|
| I-131 | 1.8007E-08 | 1.4525E-16 | 6.6770E+08 | 6.6625E+02 |
| I-132 | 2.0815E-08 | 2.0165E-18 | 9.1999E+06 | 7.7016E+02 |
| I-133 | 3.6832E-08 | 3.2514E-17 | 1.4722E+08 | 1.3628E+03 |
| I-134 | 2.3204E-08 | 8.6983E-19 | 3.9091E+06 | 8.5856E+02 |
| I-135 | 3.2554E-08 | 9.2697E-18 | 4.1351E+07 | 1.2045E+03 |

TSC Transport Group Inventory:

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**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 1 | System Nos. | Sheet 790 of 1000 |
|---|---|---|---|---|

```
                                                Overlying
Time (h) =   0.7500    Atmosphere     Sump        Pool
Noble gases (atoms)    0.0000E+00  0.0000E+00  0.0000E+00
Elemental I (atoms)    8.5109E+08  0.0000E+00  0.0000E+00
Organic I (atoms)      2.6322E+07  0.0000E+00  0.0000E+00
Aerosols (kg)          0.0000E+00  0.0000E+00  0.0000E+00

                       Deposition Recirculating
Time (h) =   0.7500     Surfaces     Filter
Noble gases (atoms)    0.0000E+00  0.0000E+00
Elemental I (atoms)    0.0000E+00  0.0000E+00
Organic I (atoms)      0.0000E+00  0.0000E+00
Aerosols (kg)          0.0000E+00  0.0000E+00


TSC Filtered Air Intake Transport Group Inventory:

                        Pathway
Time (h) =   0.7500      Filter
Noble gases (atoms)    0.0000E+00
Elemental I (atoms)    0.0000E+00
Organic I (atoms)      0.0000E+00
Aerosols (kg)          0.0000E+00

TSC Unfiltered Inleakage Transport Group Inventory:

                        Pathway
Time (h) =   0.7500      Filter
Noble gases (atoms)    0.0000E+00
Elemental I (atoms)    0.0000E+00
Organic I (atoms)      0.0000E+00
Aerosols (kg)          0.0000E+00

TSC Exhaust to Environment Transport Group Inventory:

                        Pathway
Time (h) =   0.7500      Filter
Noble gases (atoms)    0.0000E+00
Elemental I (atoms)    0.0000E+00
Organic I (atoms)      0.0000E+00
Aerosols (kg)          0.0000E+00

Exclusion Area Boundary Doses:

Time (h) =   0.8000    Whole Body   Thyroid       TEDE
Delta dose (rem)        3.5311E-07  9.6252E-05  3.3852E-06
Accumulated dose (rem)  1.0692E-06  2.8429E-04  1.0028E-05

Low Population Zone Doses:

Time (h) =   0.8000    Whole Body   Thyroid       TEDE
Delta dose (rem)        6.1794E-08  1.6844E-05  5.9241E-07
Accumulated dose (rem)  1.8712E-07  4.9751E-05  1.7549E-06

TSC Doses:
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**CALCULATION SHEET**
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| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 1 | System Nos. | Sheet 791 of 1000 |
|---|---|---|---|---|

```
Time (h) =   0.8000    Whole Body   Thyroid       TEDE
Delta dose (rem)        2.0649E-10  1.8074E-06  5.7143E-08
Accumulated dose (rem)  4.8538E-10  4.1724E-06  1.3195E-07

Travel Path Doses:

Time (h) =   0.8000    Whole Body   Thyroid       TEDE
Delta dose (rem)        3.5311E-07  9.5427E-05  3.3592E-06
Accumulated dose (rem)  3.5311E-07  9.5427E-05  3.3592E-06

Environment Integral Nuclide Release:

Time (h) =   0.8000       Ci           kg         Atoms         Bq
I-131                  6.7005E-04  5.4047E-12  2.4846E+13  2.4792E+07
I-132                  7.7939E-04  7.5507E-14  3.4448E+11  2.8838E+07


I-133                  1.3714E-03  1.2106E-12  5.4816E+12  5.0742E+07
I-134                  8.7862E-04  3.2936E-14  1.4802E+11  3.2509E+07
I-135                  1.2139E-03  3.4565E-13  1.5419E+12  4.4913E+07

Environment Transport Group Inventory:

                        Present     Release      Total
Time (h) =   0.8000     Release     Rate/s      Release
Noble gases (atoms)    0.0000E+00  0.0000E+00  0.0000E+00
Elemental I (atoms)    3.1656E+13  1.0992E+10  3.1656E+13
Organic I (atoms)      9.7906E+11  3.3995E+08  9.7906E+11
Aerosols (kg)          0.0000E+00  0.0000E+00  0.0000E+00

BWST to Environment Transport Group Inventory:

                        Pathway
Time (h) =   0.8000      Filter
Noble gases (atoms)    0.0000E+00
Elemental I (atoms)    2.8491E+14
Organic I (atoms)      8.8116E+12
Aerosols (kg)          0.0000E+00

TSC Filtered Air Intake Transport Group Inventory:

                        Pathway
Time (h) =   0.8000      Filter
Noble gases (atoms)    0.0000E+00
Elemental I (atoms)    0.0000E+00
Organic I (atoms)      0.0000E+00
Aerosols (kg)          0.0000E+00

TSC Unfiltered Inleakage Transport Group Inventory:

                        Pathway
Time (h) =   0.8000      Filter
Noble gases (atoms)    0.0000E+00
Elemental I (atoms)    0.0000E+00
Organic I (atoms)      0.0000E+00
Aerosols (kg)          0.0000E+00
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**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 1 | System Nos. | Sheet 792 of 1000 |
|---|---|---|---|---|

TSC Exhaust to Environment Transport Group Inventory:

| Time (h) = 0.8000 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 |

TSC Compartment Nuclide Inventory:

| Time (h) = 0.8000 | Ci | kg | Atoms | Bq |
|---|---|---|---|---|
| I-131 | 2.7073E-08 | 2.1837E-16 | 1.0039E+09 | 1.0017E+03 |
| I-132 | 3.0833E-08 | 2.9870E-18 | 1.3627E+07 | 1.1408E+03 |
| I-133 | 5.5295E-08 | 4.8812E-17 | 2.2102E+08 | 2.0459E+03 |
| I-134 | 3.3541E-08 | 1.2573E-18 | 5.6505E+06 | 1.2410E+03 |
| I-135 | 4.8697E-08 | 1.3866E-17 | 6.1856E+07 | 1.8018E+03 |

TSC Transport Group Inventory:

| Time (h) = 0.8000 | Atmosphere | Sump | Overlying Pool |
|---|---|---|---|
| Noble gases (atoms) | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 |
| Elemental I (atoms) | 1.2793E+09 | 0.0000E+00 | 0.0000E+00 |
| Organic I (atoms) | 3.9567E+07 | 0.0000E+00 | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 |

| Time (h) = 0.8000 | Deposition Surfaces | Recirculating Filter |
|---|---|---|
| Noble gases (atoms) | 0.0000E+00 | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 | 0.0000E+00 |

TSC Filtered Air Intake Transport Group Inventory:

| Time (h) = 0.8000 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 |

TSC Unfiltered Inleakage Transport Group Inventory:

| Time (h) = 0.8000 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 |

TSC Exhaust to Environment Transport Group Inventory:

| Time (h) = 0.8000 | Pathway Filter |
|---|---|

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**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 1 | System Nos. | Sheet 793 of 1000 |
|---|---|---|---|---|

```
Noble gases (atoms)    0.0000E+00
Elemental I (atoms)    0.0000E+00
Organic I (atoms)      0.0000E+00
Aerosols (kg)          0.0000E+00

Exclusion Area Boundary Doses:

Time (h) =   1.0000    Whole Body   Thyroid       TEDE
Delta dose (rem)        2.3400E-06  6.6771E-04  2.3361E-05
Accumulated dose (rem)  3.4093E-06  9.5200E-04  3.3389E-05

Low Population Zone Doses:

Time (h) =   1.0000    Whole Body   Thyroid       TEDE
Delta dose (rem)        4.0950E-07  1.1685E-04  4.0882E-06
Accumulated dose (rem)  5.9662E-07  1.6660E-04  5.8431E-06



TSC Doses:

Time (h) =   1.0000    Whole Body   Thyroid       TEDE
Delta dose (rem)        1.8996E-09  1.7441E-05  5.5097E-07
Accumulated dose (rem)  2.3850E-09  2.1613E-05  6.8292E-07

Travel Path Doses:

Time (h) =   1.0000    Whole Body   Thyroid       TEDE
Delta dose (rem)        2.3400E-06  6.6198E-04  2.3181E-05
Accumulated dose (rem)  2.6931E-06  7.5741E-04  2.6540E-05

Environment Integral Nuclide Release:

Time (h) =   1.0000       Ci           kg         Atoms         Bq
I-131                  2.2481E-03  1.8133E-11  8.3359E+13  8.3178E+07
I-132                  2.5051E-03  2.4270E-13  1.1072E+12  9.2690E+07
I-133                  4.5813E-03  4.0442E-12  1.8312E+13  1.6951E+08
I-134                  2.6360E-03  9.8812E-14  4.4408E+11  9.7532E+07
I-135                  4.0133E-03  1.1428E-12  5.0978E+12  1.4849E+08

Environment Transport Group Inventory:

                        Present     Release      Total
Time (h) =   1.0000     Release     Rate/s      Release
Noble gases (atoms)    0.0000E+00  0.0000E+00  0.0000E+00
Elemental I (atoms)    1.0612E+14  2.9477E+10  1.0612E+14
Organic I (atoms)      3.2820E+12  9.1166E+08  3.2820E+12
Aerosols (kg)          0.0000E+00  0.0000E+00  0.0000E+00

BWST to Environment Transport Group Inventory:

                        Pathway
Time (h) =   1.0000      Filter
Noble gases (atoms)    0.0000E+00
Elemental I (atoms)    9.5505E+14
Organic I (atoms)      2.9538E+13
```

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**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 1 | System Nos. | Sheet 794 of 1000 |
|---|---|---|---|---|

```
Aerosols (kg)          0.0000E+00

TSC Filtered Air Intake Transport Group Inventory:

                        Pathway
Time (h) =   1.0000      Filter
Noble gases (atoms)    0.0000E+00
Elemental I (atoms)    0.0000E+00
Organic I (atoms)      0.0000E+00
Aerosols (kg)          0.0000E+00

TSC Unfiltered Inleakage Transport Group Inventory:

                        Pathway
Time (h) =   1.0000      Filter
Noble gases (atoms)    0.0000E+00
Elemental I (atoms)    0.0000E+00
Organic I (atoms)      0.0000E+00
Aerosols (kg)          0.0000E+00


TSC Exhaust to Environment Transport Group Inventory:



                        Pathway
Time (h) =   1.0000      Filter
Noble gases (atoms)    0.0000E+00
Elemental I (atoms)    0.0000E+00
Organic I (atoms)      0.0000E+00
Aerosols (kg)          0.0000E+00

TSC Compartment Nuclide Inventory:

Time (h) =   1.0000       Ci           kg         Atoms         Bq
I-131                  8.8746E-08  7.1584E-16  3.2907E+09  3.2836E+03
I-132                  9.5226E-08  9.2255E-18  4.2089E+07  3.5234E+03
I-133                  1.8018E-07  1.5906E-16  7.2021E+08  6.6668E+03
I-134                  9.3934E-08  3.5212E-18  1.5825E+07  3.4756E+03
I-135                  1.5643E-07  4.4543E-17  1.9870E+08  5.7879E+03

TSC Transport Group Inventory:

                                                Overlying
Time (h) =   1.0000    Atmosphere     Sump        Pool
Noble gases (atoms)    0.0000E+00  0.0000E+00  0.0000E+00
Elemental I (atoms)    4.1908E+09  0.0000E+00  0.0000E+00
Organic I (atoms)      1.2961E+08  0.0000E+00  0.0000E+00
Aerosols (kg)          0.0000E+00  0.0000E+00  0.0000E+00

                       Deposition Recirculating
Time (h) =   1.0000     Surfaces     Filter
Noble gases (atoms)    0.0000E+00  0.0000E+00
Elemental I (atoms)    0.0000E+00  0.0000E+00
Organic I (atoms)      0.0000E+00  0.0000E+00
Aerosols (kg)          0.0000E+00  0.0000E+00
```

AmerGen

**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 1 | System Nos. | Sheet 795 of 1000 |
|---|---|---|---|---|

TSC Filtered Air Intake Transport Group Inventory:

| | Pathway Filter |
|---|---|
| Time (h) = 1.0000 | |
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 |

TSC Unfiltered Inleakage Transport Group Inventory:

| | Pathway Filter |
|---|---|
| Time (h) = 1.0000 | |
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 |

TSC Exhaust to Environment Transport Group Inventory:

| | Pathway Filter |
|---|---|
| Time (h) = 1.0000 | |
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 |

Exclusion Area Boundary Doses:

| Time (h) = 1.8000 | Whole Body | Thyroid | TEDE |
|---|---|---|---|
| Delta dose (rem) | 2.9881E-05 | 1.0079E-02 | 3.4654E-04 |
| Accumulated dose (rem) | 3.3290E-05 | 1.1031E-02 | 3.7992E-04 |

Low Population Zone Doses:

| Time (h) = 1.8000 | Whole Body | Thyroid | TEDE |
|---|---|---|---|
| Delta dose (rem) | 5.2292E-06 | 1.7639E-03 | 6.0644E-05 |
| Accumulated dose (rem) | 5.8258E-06 | 1.9305E-03 | 6.6487E-05 |

TSC Doses:

| Time (h) = 1.8000 | Whole Body | Thyroid | TEDE |
|---|---|---|---|
| Delta dose (rem) | 4.9301E-08 | 5.3984E-04 | 1.7007E-05 |
| Accumulated dose (rem) | 5.1686E-08 | 5.6146E-04 | 1.7690E-05 |

Travel Path Doses:

| Time (h) = 1.8000 | Whole Body | Thyroid | TEDE |
|---|---|---|---|
| Delta dose (rem) | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 |
| Accumulated dose (rem) | 2.6931E-06 | 7.5741E-04 | 2.6540E-05 |

Environment Integral Nuclide Release:

| Time (h) = 1.8000 | Ci | kg | Atoms | Bq |
|---|---|---|---|---|
| I-131 | 2.6232E-02 | 2.1159E-10 | 9.7270E+14 | 9.7059E+08 |

| | | | | |
|---|---|---|---|---|
| I-132 | 2.4432E-02 | 2.3669E-12 | 1.0798E+13 | 9.0397E+08 |
| I-133 | 5.2496E-02 | 4.6341E-11 | 2.0983E+14 | 1.9423E+09 |
| I-134 | 1.9410E-02 | 7.2762E-13 | 3.2700E+12 | 7.1819E+08 |
| I-135 | 4.4030E-02 | 1.2537E-11 | 5.5928E+13 | 1.6291E+09 |

Environment Transport Group Inventory:

| Time (h) = 1.8000 | Present Release | Release Rate/s | Total Release |
|---|---|---|---|
| Noble gases (atoms) | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 |
| Elemental I (atoms) | 1.2353E+15 | 1.9064E+11 | 1.2353E+15 |
| Organic I (atoms) | 3.8206E+13 | 5.8960E+09 | 3.8206E+13 |
| Aerosols (kg) | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 |

BWST to Environment Transport Group Inventory:

| Time (h) = 1.8000 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 1.1118E+16 |
| Organic I (atoms) | 3.4385E+14 |
| Aerosols (kg) | 0.0000E+00 |

TSC Filtered Air Intake Transport Group Inventory:

| Time (h) = 1.8000 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 |

TSC Unfiltered Inleakage Transport Group Inventory:

| Time (h) = 1.8000 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 |

TSC Exhaust to Environment Transport Group Inventory:

| Time (h) = 1.8000 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 |

TSC Compartment Nuclide Inventory:

| Time (h) = 1.8000 | Ci | kg | Atoms | Bq |
|---|---|---|---|---|
| I-131 | 9.5118E-07 | 7.6723E-15 | 3.5270E+10 | 3.5194E+04 |
| I-132 | 8.0429E-07 | 7.7919E-17 | 3.5548E+08 | 2.9759E+04 |
| I-133 | 1.8858E-06 | 1.6647E-15 | 7.5377E+09 | 6.9775E+04 |
| I-134 | 5.3639E-07 | 2.0107E-17 | 9.0364E+07 | 1.9846E+04 |

```
I-135                  1.5461E-06  4.4026E-16  1.9639E+09  5.7207E+04

TSC Transport Group Inventory:

                                                Overlying
Time (h) =   1.8000    Atmosphere     Sump        Pool
Noble gases (atoms)    0.0000E+00  0.0000E+00  0.0000E+00
Elemental I (atoms)    4.4833E+10  0.0000E+00  0.0000E+00
Organic I (atoms)      1.3866E+09  0.0000E+00  0.0000E+00
Aerosols (kg)          0.0000E+00  0.0000E+00  0.0000E+00

                       Deposition Recirculating
Time (h) =   1.8000     Surfaces     Filter
Noble gases (atoms)    0.0000E+00  0.0000E+00
Elemental I (atoms)    0.0000E+00  0.0000E+00
Organic I (atoms)      0.0000E+00  0.0000E+00
Aerosols (kg)          0.0000E+00  0.0000E+00

TSC Filtered Air Intake Transport Group Inventory:

                        Pathway
Time (h) =   1.8000      Filter
Noble gases (atoms)    0.0000E+00
Elemental I (atoms)    0.0000E+00
Organic I (atoms)      0.0000E+00
Aerosols (kg)          0.0000E+00

TSC Unfiltered Inleakage Transport Group Inventory:


                       Pathway
Time (h) =   1.8000      Filter
Noble gases (atoms)    0.0000E+00
Elemental I (atoms)    0.0000E+00
Organic I (atoms)      0.0000E+00
Aerosols (kg)          0.0000E+00

TSC Exhaust to Environment Transport Group Inventory:

                        Pathway
Time (h) =   1.8000      Filter
Noble gases (atoms)    0.0000E+00
Elemental I (atoms)    0.0000E+00
Organic I (atoms)      0.0000E+00
Aerosols (kg)          0.0000E+00

Exclusion Area Boundary Doses:

Time (h) =   2.0000    Whole Body   Thyroid       TEDE
Delta dose (rem)        1.3656E-05  5.1552E-03  1.7540E-04
Accumulated dose (rem)  4.6947E-05  1.6186E-02  5.5533E-04

Low Population Zone Doses:

Time (h) =   2.0000    Whole Body   Thyroid       TEDE
Delta dose (rem)        2.3899E-06  9.0217E-04  3.0695E-05
Accumulated dose (rem)  8.2157E-06  2.8326E-03  9.7182E-05
```

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**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 1 | System Nos. | Sheet 798 of 1000 |
|---|---|---|---|---|

TSC Doses:

| Time (h) = 2.0000 | Whole Body | Thyroid | TEDE |
|---|---|---|---|
| Delta dose (rem) | 3.0136E-08 | 3.6545E-04 | 1.1496E-05 |
| Accumulated dose (rem) | 8.1822E-08 | 9.2691E-04 | 2.9186E-05 |

Travel Path Doses:

| Time (h) = 2.0000 | Whole Body | Thyroid | TEDE |
|---|---|---|---|
| Delta dose (rem) | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 |
| Accumulated dose (rem) | 2.6931E-06 | 7.5741E-04 | 2.6540E-05 |

Environment Integral Nuclide Release:

| Time (h) = 2.0000 | Ci | kg | Atoms | Bq |
|---|---|---|---|---|
| I-131 | 3.8561E-02 | 3.1104E-10 | 1.4298E+15 | 1.4267E+09 |
| I-132 | 3.4393E-02 | 3.3320E-12 | 1.5201E+13 | 1.2725E+09 |
| I-133 | 7.6827E-02 | 6.7820E-11 | 3.0708E+14 | 2.8426E+09 |
| I-134 | 2.5579E-02 | 9.5884E-13 | 4.3091E+12 | 9.4641E+08 |
| I-135 | 6.3762E-02 | 1.8156E-11 | 8.0992E+13 | 2.3592E+09 |

Environment Transport Group Inventory:

| Time (h) = 2.0000 | Present Release | Release Rate/s | Total Release |
|---|---|---|---|
| Noble gases (atoms) | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 |
| Elemental I (atoms) | 1.8151E+15 | 2.5209E+11 | 1.8151E+15 |
| Organic I (atoms) | 5.6136E+13 | 7.7967E+09 | 5.6136E+13 |
| Aerosols (kg) | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 |

BWST to Environment Transport Group Inventory:

| Time (h) = 2.0000 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 1.6335E+16 |
| Organic I (atoms) | 5.0522E+14 |
| Aerosols (kg) | 0.0000E+00 |

TSC Filtered Air Intake Transport Group Inventory:

| Time (h) = 2.0000 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 |

TSC Unfiltered Inleakage Transport Group Inventory:

| Time (h) = 2.0000 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |

```
Elemental I (atoms)    0.0000E+00
Organic I (atoms)      0.0000E+00
Aerosols (kg)          0.0000E+00

TSC Exhaust to Environment Transport Group Inventory:

                        Pathway
Time (h) =   2.0000      Filter
Noble gases (atoms)    0.0000E+00
Elemental I (atoms)    0.0000E+00
Organic I (atoms)      0.0000E+00
Aerosols (kg)          0.0000E+00

TSC Compartment Nuclide Inventory:

Time (h) =   2.0000       Ci           kg         Atoms         Bq
I-131                  1.3700E-06  1.1051E-14  5.0800E+10  5.0690E+04
I-132                  1.0915E-06  1.0574E-16  4.8241E+08  4.0384E+04
I-133                  2.7001E-06  2.3835E-15  1.0792E+10  9.9903E+04
I-134                  6.6005E-07  2.4743E-17  1.1120E+08  2.4422E+04
I-135                  2.1823E-06  6.2140E-16  2.7720E+09  8.0744E+04

TSC Transport Group Inventory:



                                                Overlying
Time (h) =   2.0000    Atmosphere     Sump        Pool
Noble gases (atoms)    0.0000E+00  0.0000E+00  0.0000E+00
Elemental I (atoms)    6.4553E+10  0.0000E+00  0.0000E+00
Organic I (atoms)      1.9965E+09  0.0000E+00  0.0000E+00
Aerosols (kg)          0.0000E+00  0.0000E+00  0.0000E+00

                       Deposition Recirculating
Time (h) =   2.0000     Surfaces     Filter
Noble gases (atoms)    0.0000E+00  0.0000E+00
Elemental I (atoms)    0.0000E+00  0.0000E+00
Organic I (atoms)      0.0000E+00  0.0000E+00
Aerosols (kg)          0.0000E+00  0.0000E+00

TSC Filtered Air Intake Transport Group Inventory:

                        Pathway
Time (h) =   2.0000      Filter
Noble gases (atoms)    0.0000E+00
Elemental I (atoms)    0.0000E+00
Organic I (atoms)      0.0000E+00
Aerosols (kg)          0.0000E+00

TSC Unfiltered Inleakage Transport Group Inventory:

                        Pathway
Time (h) =   2.0000      Filter
Noble gases (atoms)    0.0000E+00
Elemental I (atoms)    0.0000E+00
Organic I (atoms)      0.0000E+00
Aerosols (kg)          0.0000E+00
```

TSC Exhaust to Environment Transport Group Inventory:

| | Pathway Filter |
|---|---|
| Time (h) = 2.0000 | |
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 |

Exclusion Area Boundary Doses:

| Time (h) = 2.8000 | Whole Body | Thyroid | TEDE |
|---|---|---|---|
| Delta dose (rem) | 7.6734E-05 | 3.2732E-02 | 1.1022E-03 |
| Accumulated dose (rem) | 1.2368E-04 | 4.8918E-02 | 1.6575E-03 |

Low Population Zone Doses:

| Time (h) = 2.8000 | Whole Body | Thyroid | TEDE |
|---|---|---|---|
| Delta dose (rem) | 5.7551E-06 | 2.4549E-03 | 8.2666E-05 |
| Accumulated dose (rem) | 1.3971E-05 | 5.2875E-03 | 1.7985E-04 |

TSC Doses:

| Time (h) = 2.8000 | Whole Body | Thyroid | TEDE |
|---|---|---|---|
| Delta dose (rem) | 1.7441E-07 | 2.3897E-03 | 7.5042E-05 |
| Accumulated dose (rem) | 2.5623E-07 | 3.3166E-03 | 1.0423E-04 |

Travel Path Doses:

| Time (h) = 2.8000 | Whole Body | Thyroid | TEDE |
|---|---|---|---|
| Delta dose (rem) | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 |
| Accumulated dose (rem) | 2.6931E-06 | 7.5741E-04 | 2.6540E-05 |

Environment Integral Nuclide Release:

| Time (h) = 2.8000 | Ci | kg | Atoms | Bq |
|---|---|---|---|---|
| I-131 | 1.1732E-01 | 9.4636E-10 | 4.3505E+15 | 4.3410E+09 |
| I-132 | 8.8760E-02 | 8.5990E-12 | 3.9231E+13 | 3.2841E+09 |
| I-133 | 2.2982E-01 | 2.0288E-10 | 9.1861E+14 | 8.5034E+09 |
| I-134 | 5.1814E-02 | 1.9423E-12 | 8.7289E+12 | 1.9171E+09 |
| I-135 | 1.8319E-01 | 5.2164E-11 | 2.3270E+14 | 6.7781E+09 |

Environment Transport Group Inventory:

| Time (h) = 2.8000 | Present Release | Release Rate/s | Total Release |
|---|---|---|---|
| Noble gases (atoms) | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 |
| Elemental I (atoms) | 5.5201E+15 | 5.4763E+11 | 5.5201E+15 |
| Organic I (atoms) | 1.7073E+14 | 1.6937E+10 | 1.7073E+14 |
| Aerosols (kg) | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 |

BWST to Environment Transport Group Inventory:

Pathway

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**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 1 | System Nos. | Sheet 801 of 1000 |
|---|---|---|---|---|

```
Time (h) =   2.8000      Filter
Noble gases (atoms)    0.0000E+00
Elemental I (atoms)    4.9681E+16
Organic I (atoms)      1.5365E+15
Aerosols (kg)          0.0000E+00

TSC Filtered Air Intake Transport Group Inventory:

                        Pathway
Time (h) =   2.8000      Filter
Noble gases (atoms)    0.0000E+00
Elemental I (atoms)    0.0000E+00
Organic I (atoms)      0.0000E+00
Aerosols (kg)          0.0000E+00

TSC Unfiltered Inleakage Transport Group Inventory:

                        Pathway
Time (h) =   2.8000      Filter
Noble gases (atoms)    0.0000E+00
Elemental I (atoms)    0.0000E+00
Organic I (atoms)      0.0000E+00
Aerosols (kg)          0.0000E+00

TSC Exhaust to Environment Transport Group Inventory:



                        Pathway
Time (h) =   2.8000      Filter
Noble gases (atoms)    0.0000E+00
Elemental I (atoms)    0.0000E+00
Organic I (atoms)      0.0000E+00
Aerosols (kg)          0.0000E+00

TSC Compartment Nuclide Inventory:

Time (h) =   2.8000       Ci           kg         Atoms         Bq
I-131                  2.5426E-06  2.0509E-14  9.4281E+10  9.4077E+04
I-132                  1.5963E-06  1.5465E-16  7.0553E+08  5.9063E+04
I-133                  4.8933E-06  4.3196E-15  1.9559E+10  1.8105E+05
I-134                  6.5265E-07  2.4465E-17  1.0995E+08  2.4148E+04
I-135                  3.7349E-06  1.0635E-15  4.7442E+09  1.3819E+05

TSC Transport Group Inventory:

                                              Overlying
Time (h) =   2.8000    Atmosphere     Sump       Pool
Noble gases (atoms)    0.0000E+00  0.0000E+00  0.0000E+00
Elemental I (atoms)    1.1989E+11  0.0000E+00  0.0000E+00
Organic I (atoms)      3.7080E+09  0.0000E+00  0.0000E+00
Aerosols (kg)          0.0000E+00  0.0000E+00  0.0000E+00

                       Deposition Recirculating
Time (h) =   2.8000     Surfaces     Filter
Noble gases (atoms)    0.0000E+00  0.0000E+00
Elemental I (atoms)    0.0000E+00  0.0000E+00
```

```
Organic I (atoms)      0.0000E+00  0.0000E+00
Aerosols (kg)          0.0000E+00  0.0000E+00

TSC Filtered Air Intake Transport Group Inventory:

                        Pathway
Time (h) =   2.8000      Filter
Noble gases (atoms)    0.0000E+00
Elemental I (atoms)    0.0000E+00
Organic I (atoms)      0.0000E+00
Aerosols (kg)          0.0000E+00

TSC Unfiltered Inleakage Transport Group Inventory:

                        Pathway
Time (h) =   2.8000      Filter
Noble gases (atoms)    0.0000E+00
Elemental I (atoms)    0.0000E+00
Organic I (atoms)      0.0000E+00
Aerosols (kg)          0.0000E+00

TSC Exhaust to Environment Transport Group Inventory:

                        Pathway
Time (h) =   2.8000      Filter
Noble gases (atoms)    0.0000E+00
Elemental I (atoms)    0.0000E+00
Organic I (atoms)      0.0000E+00
Aerosols (kg)          0.0000E+00

Exclusion Area Boundary Doses:

Time (h) =   5.0000    Whole Body   Thyroid       TEDE
Delta dose (rem)        3.3318E-04  1.8686E-01  6.1688E-03
Accumulated dose (rem)  4.5686E-04  2.3578E-01  7.8263E-03

Low Population Zone Doses:

Time (h) =   5.0000    Whole Body   Thyroid       TEDE
Delta dose (rem)        2.4988E-05  1.4015E-02  4.6266E-04
Accumulated dose (rem)  3.8959E-05  1.9302E-02  6.4251E-04

TSC Doses:

Time (h) =   5.0000    Whole Body   Thyroid       TEDE
Delta dose (rem)        1.4153E-06  2.5853E-02  8.0866E-04
Accumulated dose (rem)  1.6715E-06  2.9170E-02  9.1289E-04

Travel Path Doses:

Time (h) =   5.0000    Whole Body   Thyroid       TEDE
Delta dose (rem)        0.0000E+00  0.0000E+00  0.0000E+00
Accumulated dose (rem)  2.6931E-06  7.5741E-04  2.6540E-05

Environment Integral Nuclide Release:

Time (h) =   5.0000       Ci           kg         Atoms         Bq
```

| | | | | |
|---|---|---|---|---|
| I-131 | 5.7478E-01 | 4.6363E-09 | 2.1313E+16 | 2.1267E+10 |
| I-132 | 2.8771E-01 | 2.7873E-11 | 1.2716E+14 | 1.0645E+10 |
| I-133 | 1.0772E+00 | 9.5093E-10 | 4.3057E+15 | 3.9857E+10 |
| I-134 | 9.9797E-02 | 3.7410E-12 | 1.6812E+13 | 3.6925E+09 |
| I-135 | 7.7401E-01 | 2.2040E-10 | 9.8317E+14 | 2.8638E+10 |

Environment Transport Group Inventory:

| Time (h) = 5.0000 | Present Release | Release Rate/s | Total Release |
|---|---|---|---|
| Noble gases (atoms) | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 |
| Elemental I (atoms) | 2.7133E+16 | 1.5074E+12 | 2.7133E+16 |
| Organic I (atoms) | 8.3916E+14 | 4.6620E+10 | 8.3916E+14 |
| Aerosols (kg) | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 |

BWST to Environment Transport Group Inventory:

| Time (h) = 5.0000 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 2.4419E+17 |
| Organic I (atoms) | 7.5522E+15 |
| Aerosols (kg) | 0.0000E+00 |

TSC Filtered Air Intake Transport Group Inventory:

| Time (h) = 5.0000 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 |

TSC Unfiltered Inleakage Transport Group Inventory:

| Time (h) = 5.0000 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 |

TSC Exhaust to Environment Transport Group Inventory:

| Time (h) = 5.0000 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 |

TSC Compartment Nuclide Inventory:

| Time (h) = 5.0000 | Ci | kg | Atoms | Bq |
|---|---|---|---|---|
| I-131 | 1.2248E-05 | 9.8796E-14 | 4.5417E+11 | 4.5318E+05 |
| I-132 | 3.9939E-06 | 3.8692E-16 | 1.7652E+09 | 1.4777E+05 |

```
I-133                  2.2080E-05  1.9491E-14  8.8254E+10  8.1694E+05
I-134                  5.5650E-07  2.0861E-17  9.3752E+07  2.0591E+04
I-135                  1.4399E-05  4.1000E-15  1.8289E+10  5.3274E+05

TSC Transport Group Inventory:

                                                Overlying
Time (h) =   5.0000    Atmosphere     Sump        Pool
Noble gases (atoms)    0.0000E+00  0.0000E+00  0.0000E+00
Elemental I (atoms)    5.8049E+11  0.0000E+00  0.0000E+00
Organic I (atoms)      1.7953E+10  0.0000E+00  0.0000E+00
Aerosols (kg)          0.0000E+00  0.0000E+00  0.0000E+00

                       Deposition Recirculating
Time (h) =   5.0000     Surfaces     Filter
Noble gases (atoms)    0.0000E+00  0.0000E+00
Elemental I (atoms)    0.0000E+00  0.0000E+00
Organic I (atoms)      0.0000E+00  0.0000E+00
Aerosols (kg)          0.0000E+00  0.0000E+00

TSC Filtered Air Intake Transport Group Inventory:

                        Pathway
Time (h) =   5.0000      Filter
Noble gases (atoms)    0.0000E+00
Elemental I (atoms)    0.0000E+00
Organic I (atoms)      0.0000E+00
Aerosols (kg)          0.0000E+00


TSC Unfiltered Inleakage Transport Group Inventory:

                        Pathway
Time (h) =   5.0000      Filter
Noble gases (atoms)    0.0000E+00
Elemental I (atoms)    0.0000E+00
Organic I (atoms)      0.0000E+00
Aerosols (kg)          0.0000E+00

TSC Exhaust to Environment Transport Group Inventory:

                        Pathway
Time (h) =   5.0000      Filter
Noble gases (atoms)    0.0000E+00
Elemental I (atoms)    0.0000E+00
Organic I (atoms)      0.0000E+00
Aerosols (kg)          0.0000E+00

Exclusion Area Boundary Doses:

Time (h) =   8.0000    Whole Body   Thyroid       TEDE
Delta dose (rem)        3.1265E-04  2.3551E-01  7.6414E-03
Accumulated dose (rem)  7.6951E-04  4.7129E-01  1.5468E-02

Low Population Zone Doses:
```

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**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 1 | System Nos. | Sheet 805 of 1000 |
|---|---|---|---|---|

```
Time (h) =   8.0000    Whole Body   Thyroid       TEDE
Delta dose (rem)        2.3449E-05  1.7663E-02  5.7310E-04
Accumulated dose (rem)  6.2408E-05  3.6965E-02  1.2156E-03

TSC Doses:

Time (h) =   8.0000    Whole Body   Thyroid       TEDE
Delta dose (rem)        2.0433E-06  4.9006E-02  1.5272E-03
Accumulated dose (rem)  3.7148E-06  7.8176E-02  2.4401E-03

Travel Path Doses:

Time (h) =   8.0000    Whole Body   Thyroid       TEDE
Delta dose (rem)        0.0000E+00  0.0000E+00  0.0000E+00
Accumulated dose (rem)  2.6931E-06  7.5741E-04  2.6540E-05

Environment Integral Nuclide Release:

Time (h) =   8.0000       Ci           kg         Atoms         Bq
I-131                  1.1656E+00  9.4016E-09  4.3220E+16  4.3126E+10
I-132                  4.1004E-01  3.9724E-11  1.8123E+14  1.5171E+10
I-133                  2.0920E+00  1.8467E-09  8.3617E+15  7.7403E+10
I-134                  1.0908E-01  4.0889E-12  1.8376E+13  4.0359E+09
I-135                  1.3647E+00  3.8860E-10  1.7335E+15  5.0495E+10

Environment Transport Group Inventory:

                        Present     Release      Total
Time (h) =   8.0000     Release     Rate/s      Release
Noble gases (atoms)    0.0000E+00  0.0000E+00  0.0000E+00
Elemental I (atoms)    5.5286E+16  1.9197E+12  5.5286E+16
Organic I (atoms)      1.7099E+15  5.9371E+10  1.7099E+15
Aerosols (kg)          0.0000E+00  0.0000E+00  0.0000E+00

BWST to Environment Transport Group Inventory:

                        Pathway
Time (h) =   8.0000      Filter
Noble gases (atoms)    0.0000E+00
Elemental I (atoms)    4.9755E+17
Organic I (atoms)      1.5388E+16
Aerosols (kg)          0.0000E+00

TSC Filtered Air Intake Transport Group Inventory:



                        Pathway
Time (h) =   8.0000      Filter
Noble gases (atoms)    0.0000E+00
Elemental I (atoms)    0.0000E+00
Organic I (atoms)      0.0000E+00
Aerosols (kg)          0.0000E+00

TSC Unfiltered Inleakage Transport Group Inventory:

                        Pathway
```

```
Time (h) =   8.0000      Filter
Noble gases (atoms)    0.0000E+00
Elemental I (atoms)    0.0000E+00
Organic I (atoms)      0.0000E+00
Aerosols (kg)          0.0000E+00

TSC Exhaust to Environment Transport Group Inventory:

                        Pathway
Time (h) =   8.0000      Filter
Noble gases (atoms)    0.0000E+00
Elemental I (atoms)    0.0000E+00
Organic I (atoms)      0.0000E+00
Aerosols (kg)          0.0000E+00

TSC Compartment Nuclide Inventory:

Time (h) =   8.0000       Ci           kg         Atoms         Bq
I-131                  1.1581E-05  9.3418E-14  4.2945E+11  4.2852E+05
I-132                  1.5457E-06  1.4974E-16  6.8316E+08  5.7190E+04
I-133                  1.9096E-05  1.6857E-14  7.6329E+10  7.0656E+05
I-134                  4.9625E-08  1.8602E-18  8.3601E+06  1.8361E+03
I-135                  1.0048E-05  2.8611E-15  1.2763E+10  3.7176E+05

TSC Transport Group Inventory:

                                                Overlying
Time (h) =   8.0000    Atmosphere     Sump        Pool
Noble gases (atoms)    0.0000E+00  0.0000E+00  0.0000E+00
Elemental I (atoms)    5.5460E+11  0.0000E+00  0.0000E+00
Organic I (atoms)      1.7152E+10  0.0000E+00  0.0000E+00
Aerosols (kg)          0.0000E+00  0.0000E+00  0.0000E+00

                       Deposition Recirculating
Time (h) =   8.0000     Surfaces     Filter
Noble gases (atoms)    0.0000E+00  0.0000E+00
Elemental I (atoms)    0.0000E+00  0.0000E+00
Organic I (atoms)      0.0000E+00  0.0000E+00
Aerosols (kg)          0.0000E+00  0.0000E+00

TSC Filtered Air Intake Transport Group Inventory:

                        Pathway
Time (h) =   8.0000      Filter
Noble gases (atoms)    0.0000E+00
Elemental I (atoms)    0.0000E+00
Organic I (atoms)      0.0000E+00
Aerosols (kg)          0.0000E+00

TSC Unfiltered Inleakage Transport Group Inventory:

                        Pathway
Time (h) =   8.0000      Filter
Noble gases (atoms)    0.0000E+00
Elemental I (atoms)    0.0000E+00
Organic I (atoms)      0.0000E+00
Aerosols (kg)          0.0000E+00
```

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**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 1 | System Nos. | Sheet 807 of 1000 |
|---|---|---|---|---|

TSC Exhaust to Environment Transport Group Inventory:

| | Pathway Filter |
|---|---|
| Time (h) = 8.0000 | |
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 |

Exclusion Area Boundary Doses:

| Time (h) = 24.0000 | Whole Body | Thyroid | TEDE |
|---|---|---|---|
| Delta dose (rem) | 1.7683E-03 | 2.3943E+00 | 7.5743E-02 |
| Accumulated dose (rem) | 2.5378E-03 | 2.8656E+00 | 9.1210E-02 |

Low Population Zone Doses:

| Time (h) = 24.0000 | Whole Body | Thyroid | TEDE |
|---|---|---|---|
| Delta dose (rem) | 8.6205E-05 | 6.0029E-02 | 1.9408E-03 |
| Accumulated dose (rem) | 1.4861E-04 | 9.6994E-02 | 3.1565E-03 |

TSC Doses:

| Time (h) = 24.0000 | Whole Body | Thyroid | TEDE |
|---|---|---|---|
| Delta dose (rem) | 4.4979E-06 | 1.9190E-01 | 5.9344E-03 |
| Accumulated dose (rem) | 8.2127E-06 | 2.7007E-01 | 8.3745E-03 |

Travel Path Doses:

| Time (h) = 24.0000 | Whole Body | Thyroid | TEDE |
|---|---|---|---|
| Delta dose (rem) | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 |
| Accumulated dose (rem) | 2.6931E-06 | 7.5741E-04 | 2.6540E-05 |

Environment Integral Nuclide Release:

| Time (h) = 24.0000 | Ci | kg | Atoms | Bq |
|---|---|---|---|---|
| I-131 | 7.5770E+00 | 6.1117E-08 | 2.8096E+17 | 2.8035E+11 |
| I-132 | 5.3282E-01 | 5.1619E-11 | 2.3550E+14 | 1.9714E+10 |
| I-133 | 1.0059E+01 | 8.8793E-09 | 4.0205E+16 | 3.7217E+11 |
| I-134 | 1.1041E-01 | 4.1390E-12 | 1.8601E+13 | 4.0853E+09 |
| I-135 | 3.6792E+00 | 1.0477E-09 | 4.6734E+15 | 1.3613E+11 |

Environment Transport Group Inventory:

| Time (h) = 24.0000 | Present Release | Release Rate/s | Total Release |
|---|---|---|---|
| Noble gases (atoms) | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 |
| Elemental I (atoms) | 3.7331E+17 | 4.3207E+12 | 3.7331E+17 |
| Organic I (atoms) | 1.1546E+16 | 1.3363E+11 | 1.1546E+16 |
| Aerosols (kg) | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 |

BWST to Environment Transport Group Inventory:

| | Pathway Filter |
|---|---|
| Time (h) = 24.0000 | |
| Noble gases (atoms) | 0.0000E+00 |

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**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 1 | System Nos. | Sheet 808 of 1000 |
|---|---|---|---|---|

```
Elemental I (atoms)    3.3597E+18
Organic I (atoms)      1.0391E+17
Aerosols (kg)          0.0000E+00

TSC Filtered Air Intake Transport Group Inventory:

                        Pathway
Time (h) =  24.0000      Filter
Noble gases (atoms)    0.0000E+00
Elemental I (atoms)    0.0000E+00
Organic I (atoms)      0.0000E+00
Aerosols (kg)          0.0000E+00

TSC Unfiltered Inleakage Transport Group Inventory:

                        Pathway
Time (h) =  24.0000      Filter
Noble gases (atoms)    0.0000E+00
Elemental I (atoms)    0.0000E+00
Organic I (atoms)      0.0000E+00
Aerosols (kg)          0.0000E+00

TSC Exhaust to Environment Transport Group Inventory:

                        Pathway
Time (h) =  24.0000      Filter
Noble gases (atoms)    0.0000E+00
Elemental I (atoms)    0.0000E+00
Organic I (atoms)      0.0000E+00
Aerosols (kg)          0.0000E+00




TSC Compartment Nuclide Inventory:

Time (h) =  24.0000       Ci           kg          Atoms         Bq
I-131                  1.1620E-05  9.3730E-14  4.3088E+11  4.2995E+05
I-132                  1.3225E-08  1.2813E-18  5.8454E+06  4.8934E+02
I-133                  1.1907E-05  1.0511E-14  4.7592E+10  4.4055E+05
I-135                  1.9944E-06  5.6790E-16  2.5333E+09  7.3792E+04

TSC Transport Group Inventory:

                                               Overlying
Time (h) =  24.0000    Atmosphere     Sump        Pool
Noble gases (atoms)    0.0000E+00  0.0000E+00  0.0000E+00
Elemental I (atoms)    5.8911E+11  0.0000E+00  0.0000E+00
Organic I (atoms)      1.8220E+10  0.0000E+00  0.0000E+00
Aerosols (kg)          0.0000E+00  0.0000E+00  0.0000E+00



                       Deposition Recirculating
Time (h) =  24.0000     Surfaces     Filter
Noble gases (atoms)    0.0000E+00  0.0000E+00
```

```
Elemental I (atoms)    0.0000E+00  0.0000E+00
Organic I (atoms)      0.0000E+00  0.0000E+00
Aerosols (kg)          0.0000E+00  0.0000E+00

TSC Filtered Air Intake Transport Group Inventory:

                        Pathway
Time (h) =  24.0000      Filter
Noble gases (atoms)    0.0000E+00
Elemental I (atoms)    0.0000E+00
Organic I (atoms)      0.0000E+00
Aerosols (kg)          0.0000E+00

TSC Unfiltered Inleakage Transport Group Inventory:

                        Pathway
Time (h) =  24.0000      Filter
Noble gases (atoms)    0.0000E+00
Elemental I (atoms)    0.0000E+00
Organic I (atoms)      0.0000E+00
Aerosols (kg)          0.0000E+00

TSC Exhaust to Environment Transport Group Inventory:

                        Pathway
Time (h) =  24.0000      Filter
Noble gases (atoms)    0.0000E+00
Elemental I (atoms)    0.0000E+00
Organic I (atoms)      0.0000E+00
Aerosols (kg)          0.0000E+00

Exclusion Area Boundary Doses:

Time (h) =  96.0000    Whole Body   Thyroid       TEDE
Delta dose (rem)        6.9450E-03  2.4373E+01  7.5209E-01
Accumulated dose (rem)  9.4828E-03  2.7238E+01  8.4330E-01

Low Population Zone Doses:

Time (h) =  96.0000    Whole Body   Thyroid       TEDE
Delta dose (rem)        1.3890E-04  3.2033E-01  9.9323E-03
Accumulated dose (rem)  2.8751E-04  4.1732E-01  1.3089E-02

TSC Doses:

Time (h) =  96.0000    Whole Body   Thyroid       TEDE
Delta dose (rem)        7.5302E-06  8.4475E-01  2.5835E-02
Accumulated dose (rem)  1.5743E-05  1.1148E+00  3.4209E-02

Travel Path Doses:

Time (h) =  96.0000    Whole Body   Thyroid       TEDE
Delta dose (rem)        0.0000E+00  0.0000E+00  0.0000E+00
Accumulated dose (rem)  2.6931E-06  7.5741E-04  2.6540E-05

Environment Integral Nuclide Release:
```

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**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 1 | System Nos. | Sheet 810 of 1000 |
|---|---|---|---|---|

| Time (h) = 96.0000 | Ci | kg | Atoms | Bq |
|---|---|---|---|---|
| I-131 | 8.2219E+01 | 6.6319E-07 | 3.0487E+18 | 3.0421E+12 |
| I-132 | 5.3399E-01 | 5.1733E-11 | 2.3602E+14 | 1.9758E+10 |
| I-133 | 3.5323E+01 | 3.1182E-08 | 1.4119E+17 | 1.3070E+12 |
| I-134 | 1.1041E-01 | 4.1390E-12 | 1.8601E+13 | 4.0853E+09 |
| I-135 | 4.6226E+00 | 1.3163E-09 | 5.8718E+15 | 1.7104E+11 |

Environment Transport Group Inventory:

| Time (h) = 96.0000 | Present Release | Release Rate/s | Total Release |
|---|---|---|---|
| Noble gases (atoms) | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 |
| Elemental I (atoms) | 4.8043E+18 | 1.3901E+13 | 4.8043E+18 |
| Organic I (atoms) | 1.4859E+17 | 4.2994E+11 | 1.4859E+17 |
| Aerosols (kg) | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 |

BWST to Environment Transport Group Inventory:

| Time (h) = 96.0000 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 4.3238E+19 |
| Organic I (atoms) | 1.3372E+18 |
| Aerosols (kg) | 0.0000E+00 |

TSC Filtered Air Intake Transport Group Inventory:

| Time (h) = 96.0000 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 |

TSC Unfiltered Inleakage Transport Group Inventory:

| Time (h) = 96.0000 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 |

TSC Exhaust to Environment Transport Group Inventory:

| Time (h) = 96.0000 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 |

TSC Compartment Nuclide Inventory:

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**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 1 | System Nos. | Sheet 811 of 1000 |
|---|---|---|---|---|

```
Time (h) =  96.0000       Ci           kg          Atoms         Bq
I-131                  2.2196E-05  1.7904E-13  8.2304E+11  8.2126E+05
I-133                  2.6740E-06  2.3605E-15  1.0688E+10  9.8936E+04
I-135                  2.5954E-09  7.3904E-19  3.2967E+06  9.6029E+01

TSC Transport Group Inventory:

                                                Overlying
Time (h) =  96.0000    Atmosphere     Sump        Pool
Noble gases (atoms)    0.0000E+00  0.0000E+00  0.0000E+00
Elemental I (atoms)    1.4571E+12  0.0000E+00  0.0000E+00
Organic I (atoms)      4.5066E+10  0.0000E+00  0.0000E+00
Aerosols (kg)          0.0000E+00  0.0000E+00  0.0000E+00

                       Deposition Recirculating
Time (h) =  96.0000     Surfaces     Filter
Noble gases (atoms)    0.0000E+00  0.0000E+00
Elemental I (atoms)    0.0000E+00  0.0000E+00
Organic I (atoms)      0.0000E+00  0.0000E+00
Aerosols (kg)          0.0000E+00  0.0000E+00

TSC Filtered Air Intake Transport Group Inventory:

                        Pathway
Time (h) =  96.0000      Filter
Noble gases (atoms)    0.0000E+00
Elemental I (atoms)    0.0000E+00
Organic I (atoms)      0.0000E+00
Aerosols (kg)          0.0000E+00

TSC Unfiltered Inleakage Transport Group Inventory:

                        Pathway
Time (h) =  96.0000      Filter
Noble gases (atoms)    0.0000E+00
Elemental I (atoms)    0.0000E+00
Organic I (atoms)      0.0000E+00
Aerosols (kg)          0.0000E+00

TSC Exhaust to Environment Transport Group Inventory:

                        Pathway
Time (h) =  96.0000      Filter
Noble gases (atoms)    0.0000E+00
Elemental I (atoms)    0.0000E+00
Organic I (atoms)      0.0000E+00
Aerosols (kg)          0.0000E+00

Exclusion Area Boundary Doses:

Time (h) = 720.0000    Whole Body   Thyroid       TEDE
Delta dose (rem)        5.6098E-02  3.1183E+02  9.5507E+00
Accumulated dose (rem)  6.5581E-02  3.3907E+02  1.0394E+01

Low Population Zone Doses:

Time (h) = 720.0000    Whole Body   Thyroid       TEDE
```

| | | | |
|---|---|---|---|
| Delta dose (rem) | 2.8049E-04 | 1.0246E+00 | 3.1477E-02 |
| Accumulated dose (rem) | 5.6800E-04 | 1.4419E+00 | 4.4566E-02 |

TSC Doses:

| Time (h) = 720.0000 | Whole Body | Thyroid | TEDE |
|---|---|---|---|
| Delta dose (rem) | 3.3132E-05 | 5.9135E+00 | 1.8009E-01 |
| Accumulated dose (rem) | 4.8875E-05 | 7.0283E+00 | 2.1430E-01 |

Travel Path Doses:

| Time (h) = 720.0000 | Whole Body | Thyroid | TEDE |
|---|---|---|---|
| Delta dose (rem) | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 |
| Accumulated dose (rem) | 2.6931E-06 | 7.5741E-04 | 2.6540E-05 |

Environment Integral Nuclide Release:

| Time (h) = 720.0000 | Ci | kg | Atoms | Bq |
|---|---|---|---|---|
| I-131 | 1.0971E+03 | 8.8497E-06 | 4.0682E+19 | 4.0594E+13 |
| I-132 | 5.3399E-01 | 5.1733E-11 | 2.3602E+14 | 1.9758E+10 |
| I-133 | 4.1667E+01 | 3.6782E-08 | 1.6655E+17 | 1.5417E+12 |
| I-134 | 1.1041E-01 | 4.1390E-12 | 1.8601E+13 | 4.0853E+09 |
| I-135 | 4.6241E+00 | 1.3167E-09 | 5.8736E+15 | 1.7109E+11 |

Environment Transport Group Inventory:

| Time (h) = 720.0000 | Present Release | Release Rate/s | Total Release |
|---|---|---|---|
| Noble gases (atoms) | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 |
| Elemental I (atoms) | 2.2653E+20 | 8.7395E+13 | 2.2653E+20 |
| Organic I (atoms) | 7.0060E+18 | 2.7029E+12 | 7.0060E+18 |
| Aerosols (kg) | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 |

BWST to Environment Transport Group Inventory:

| Time (h) = 720.0000 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 2.0387E+21 |
| Organic I (atoms) | 6.3053E+19 |
| Aerosols (kg) | 0.0000E+00 |

TSC Filtered Air Intake Transport Group Inventory:

| Time (h) = 720.0000 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 |

TSC Unfiltered Inleakage Transport Group Inventory:

| Time (h) = 720.0000 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 |

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**CALCULATION SHEET**
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| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 1 | System Nos. | Sheet 813 of 1000 |
|---|---|---|---|---|

```
Organic I (atoms)      0.0000E+00
Aerosols (kg)          0.0000E+00

TSC Exhaust to Environment Transport Group Inventory:

                        Pathway
Time (h) = 720.0000      Filter
Noble gases (atoms)    0.0000E+00
Elemental I (atoms)    0.0000E+00
Organic I (atoms)      0.0000E+00
Aerosols (kg)          0.0000E+00

TSC Compartment Nuclide Inventory:

Time (h) = 720.0000       Ci           kg         Atoms         Bq
I-131                  1.1887E-05  9.5882E-14  4.4078E+11  4.3982E+05

TSC Transport Group Inventory:

                                                Overlying
Time (h) = 720.0000    Atmosphere     Sump        Pool
Noble gases (atoms)    0.0000E+00  0.0000E+00  0.0000E+00
Elemental I (atoms)    7.3410E+12  0.0000E+00  0.0000E+00
Organic I (atoms)      2.2704E+11  0.0000E+00  0.0000E+00
Aerosols (kg)          0.0000E+00  0.0000E+00  0.0000E+00

                       Deposition Recirculating
Time (h) = 720.0000     Surfaces     Filter
Noble gases (atoms)    0.0000E+00  0.0000E+00
Elemental I (atoms)    0.0000E+00  0.0000E+00
Organic I (atoms)      0.0000E+00  0.0000E+00
Aerosols (kg)          0.0000E+00  0.0000E+00

TSC Filtered Air Intake Transport Group Inventory:

                        Pathway
Time (h) = 720.0000      Filter
Noble gases (atoms)    0.0000E+00
Elemental I (atoms)    0.0000E+00

Organic I (atoms)      0.0000E+00
Aerosols (kg)          0.0000E+00

TSC Unfiltered Inleakage Transport Group Inventory:

                        Pathway
Time (h) = 720.0000      Filter
Noble gases (atoms)    0.0000E+00
Elemental I (atoms)    0.0000E+00
Organic I (atoms)      0.0000E+00
Aerosols (kg)          0.0000E+00

TSC Exhaust to Environment Transport Group Inventory:

                        Pathway
Time (h) = 720.0000      Filter
Noble gases (atoms)    0.0000E+00
```

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**CALCULATION SHEET**
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|---|---|---|---|---|

```
Elemental I (atoms)     0.0000E+00
Organic I (atoms)       0.0000E+00
Aerosols (kg)           0.0000E+00

    321

#####################################################################
                              I-131 Summary
#####################################################################
```

| Time (hr) | Sump I-131 (Curies) | BWST I-131 (Curies) | Environment I-131 (Curies) |
|---|---|---|---|
| 0.001 | 3.9707E+03 | 0.0000E+00 | 0.0000E+00 |
| 0.300 | 2.1419E+06 | 0.0000E+00 | 0.0000E+00 |
| 0.491 | 3.5010E+06 | 0.0000E+00 | 0.0000E+00 |
| 0.500 | 3.5672E+06 | 1.4504E+00 | 3.9762E-07 |
| 0.750 | 8.3610E+06 | 6.7229E+01 | 4.4298E-04 |
| 0.800 | 9.3187E+06 | 8.6719E+01 | 6.7005E-04 |
| 1.000 | 1.3146E+07 | 1.8575E+02 | 2.2481E-03 |
| 1.300 | 1.8875E+07 | 3.9738E+02 | 7.3083E-03 |
| 1.600 | 2.4592E+07 | 6.8446E+02 | 1.6792E-02 |
| 1.800 | 2.8396E+07 | 9.1764E+02 | 2.6232E-02 |
| 2.000 | 2.8373E+07 | 1.1673E+03 | 3.8561E-02 |
| 2.300 | 2.8338E+07 | 1.5410E+03 | 6.2583E-02 |
| 2.600 | 2.8304E+07 | 1.9138E+03 | 9.3226E-02 |
| 2.800 | 2.8281E+07 | 2.1618E+03 | 1.1732E-01 |
| 3.100 | 2.8247E+07 | 2.5331E+03 | 1.5897E-01 |
| 3.400 | 2.8213E+07 | 2.9034E+03 | 2.0719E-01 |
| 3.700 | 2.8179E+07 | 3.2728E+03 | 2.6197E-01 |
| 4.000 | 2.8145E+07 | 3.6413E+03 | 3.2330E-01 |
| 4.300 | 2.8111E+07 | 4.0089E+03 | 3.9115E-01 |
| 4.600 | 2.8077E+07 | 4.3756E+03 | 4.6552E-01 |
| 4.900 | 2.8043E+07 | 4.7414E+03 | 5.4639E-01 |
| 5.000 | 2.8031E+07 | 4.8631E+03 | 5.7478E-01 |
| 5.300 | 2.7999E+07 | 5.0674E+03 | 6.2469E-01 |
| 5.600 | 2.7967E+07 | 5.2712E+03 | 6.7665E-01 |
| 5.900 | 2.7935E+07 | 5.4745E+03 | 7.3065E-01 |
| 6.200 | 2.7902E+07 | 5.6774E+03 | 7.8670E-01 |
| 6.500 | 2.7870E+07 | 5.8798E+03 | 8.4478E-01 |
| 6.800 | 2.7838E+07 | 6.0817E+03 | 9.0489E-01 |
| 7.100 | 2.7806E+07 | 6.2831E+03 | 9.6703E-01 |
| 7.400 | 2.7774E+07 | 6.4840E+03 | 1.0312E+00 |
| 7.700 | 2.7742E+07 | 6.6845E+03 | 1.0974E+00 |
| 8.000 | 2.7710E+07 | 6.8845E+03 | 1.1656E+00 |
| 8.300 | 2.7678E+07 | 7.0840E+03 | 1.2358E+00 |
| 8.600 | 2.7646E+07 | 7.2830E+03 | 1.3080E+00 |
| 8.900 | 2.7615E+07 | 7.4816E+03 | 1.3822E+00 |
| 9.200 | 2.7583E+07 | 7.6797E+03 | 1.4583E+00 |
| 9.500 | 2.7551E+07 | 7.8773E+03 | 1.5365E+00 |
| 9.800 | 2.7519E+07 | 8.0745E+03 | 1.6167E+00 |
| 10.100 | 2.7487E+07 | 8.2711E+03 | 1.6988E+00 |
| 10.400 | 2.7456E+07 | 8.4673E+03 | 1.7829E+00 |
| 24.000 | 2.6058E+07 | 1.6883E+04 | 7.5770E+00 |
| 96.000 | 1.9781E+07 | 4.6174E+04 | 8.2219E+01 |
| 720.000 | 1.8154E+06 | 3.0043E+04 | 1.0971E+03 |

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**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 1 | System Nos. | Sheet 815 of 1000 |
|---|---|---|---|---|

| Time (hr) | TSC I-131 (Curies) |
|---|---|
| 0.001 | 0.0000E+00 |
| 0.300 | 0.0000E+00 |
| 0.491 | 0.0000E+00 |
| 0.500 | 1.6698E-11 |
| 0.750 | 1.8007E-08 |
| 0.800 | 2.7073E-08 |
| 1.000 | 8.8746E-08 |
| 1.300 | 2.7916E-07 |
| 1.600 | 6.2148E-07 |
| 1.800 | 9.5118E-07 |
| 2.000 | 1.3700E-06 |
| 2.300 | 1.7282E-06 |
| 2.600 | 2.1871E-06 |
| 2.800 | 2.5426E-06 |
| 3.100 | 4.0708E-06 |
| 3.400 | 5.4938E-06 |
| 3.700 | 6.8429E-06 |
| 4.000 | 8.1399E-06 |
| 4.300 | 9.3998E-06 |
| 4.600 | 1.0633E-05 |
| 4.900 | 1.1847E-05 |
| 5.000 | 1.2248E-05 |
| 5.300 | 1.1254E-05 |
| 5.600 | 1.0677E-05 |
| 5.900 | 1.0389E-05 |
| 6.200 | 1.0302E-05 |
| 6.500 | 1.0354E-05 |
| 6.800 | 1.0502E-05 |
| 7.100 | 1.0716E-05 |
| 7.400 | 1.0976E-05 |
| 7.700 | 1.1268E-05 |
| 8.000 | 1.1581E-05 |
| 8.300 | 9.5529E-06 |
| 8.600 | 8.1884E-06 |
| 8.900 | 7.2846E-06 |
| 9.200 | 6.7004E-06 |
| 9.500 | 6.3379E-06 |
| 9.800 | 6.1292E-06 |
| 10.100 | 6.0270E-06 |
| 10.400 | 5.9987E-06 |
| 24.000 | 1.1620E-05 |
| 96.000 | 2.2196E-05 |
| 720.000 | 1.1887E-05 |

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#####################################################################
                        Cumulative Dose Summary
#####################################################################
```

| Time (hr) | Exclusion Area Bounda Thyroid (rem) | TEDE (rem) | Low Population Zone Thyroid (rem) | TEDE (rem) | TSC Thyroid (rem) | TEDE (rem) |
|---|---|---|---|---|---|---|
| 0.001 | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 |

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**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 1 | System Nos. | Sheet 816 of 1000 |
|---|---|---|---|---|

| | | | | | | |
|---|---|---|---|---|---|---|
| 0.300 | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 |
| 0.491 | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 |
| 0.500 | 1.6911E-07 | 6.0141E-09 | 2.9594E-08 | 1.0525E-09 | 1.2495E-10 | 3.9566E-12 |
| 0.750 | 1.8804E-04 | 6.6427E-06 | 3.2907E-05 | 1.1625E-06 | 2.3650E-06 | 7.4812E-08 |
| 0.800 | 2.8429E-04 | 1.0028E-05 | 4.9751E-05 | 1.7549E-06 | 4.1724E-06 | 1.3195E-07 |
| 1.000 | 9.5200E-04 | 3.3389E-05 | 1.6660E-04 | 5.8431E-06 | 2.1613E-05 | 6.8292E-07 |
| 1.300 | 3.0872E-03 | 1.0750E-04 | 5.4026E-04 | 1.8813E-05 | 1.0497E-04 | 3.3132E-06 |
| 1.600 | 7.0743E-03 | 2.4466E-04 | 1.2380E-03 | 4.2816E-05 | 3.1381E-04 | 9.8941E-06 |
| 1.800 | 1.1031E-02 | 3.7992E-04 | 1.9305E-03 | 6.6487E-05 | 5.6146E-04 | 1.7690E-05 |
| 2.000 | 1.6186E-02 | 5.5533E-04 | 2.8326E-03 | 9.7182E-05 | 9.2691E-04 | 2.9186E-05 |
| 2.300 | 2.6202E-02 | 8.9429E-04 | 3.5838E-03 | 1.2260E-04 | 1.6561E-03 | 5.2106E-05 |
| 2.600 | 3.8933E-02 | 1.3228E-03 | 4.5386E-03 | 1.5474E-04 | 2.5760E-03 | 8.0989E-05 |
| 2.800 | 4.8918E-02 | 1.6575E-03 | 5.2875E-03 | 1.7985E-04 | 3.3166E-03 | 1.0423E-04 |
| 3.100 | 6.6124E-02 | 2.2322E-03 | 6.5779E-03 | 2.2295E-04 | 4.8714E-03 | 1.5298E-04 |
| 3.400 | 8.5982E-02 | 2.8929E-03 | 8.0673E-03 | 2.7250E-04 | 7.1095E-03 | 2.2311E-04 |
| 3.700 | 1.0847E-01 | 3.6385E-03 | 9.7539E-03 | 3.2842E-04 | 9.9854E-03 | 3.1316E-04 |
| 4.000 | 1.3357E-01 | 4.4679E-03 | 1.1636E-02 | 3.9063E-04 | 1.3466E-02 | 4.2209E-04 |
| 4.300 | 1.6125E-01 | 5.3802E-03 | 1.3712E-02 | 4.5905E-04 | 1.7528E-02 | 5.4911E-04 |
| 4.600 | 1.9150E-01 | 6.3746E-03 | 1.5981E-02 | 5.3362E-04 | 2.2152E-02 | 6.9366E-04 |
| 4.900 | 2.2429E-01 | 7.4500E-03 | 1.8440E-02 | 6.1428E-04 | 2.7325E-02 | 8.5528E-04 |
| 5.000 | 2.3578E-01 | 7.8263E-03 | 1.9302E-02 | 6.4251E-04 | 2.9170E-02 | 9.1289E-04 |
| 5.300 | 2.5594E-01 | 8.4856E-03 | 2.0814E-02 | 6.9195E-04 | 3.4540E-02 | 1.0806E-03 |
| 5.600 | 2.7687E-01 | 9.1686E-03 | 2.2384E-02 | 7.4318E-04 | 3.9541E-02 | 1.2366E-03 |
| 5.900 | 2.9856E-01 | 9.8752E-03 | 2.4010E-02 | 7.9617E-04 | 4.4334E-02 | 1.3861E-03 |
| 6.200 | 3.2100E-01 | 1.0605E-02 | 2.5694E-02 | 8.5093E-04 | 4.9031E-02 | 1.5326E-03 |
| 6.500 | 3.4420E-01 | 1.1359E-02 | 2.7434E-02 | 9.0742E-04 | 5.3709E-02 | 1.6784E-03 |
| 6.800 | 3.6815E-01 | 1.2135E-02 | 2.9230E-02 | 9.6565E-04 | 5.8420E-02 | 1.8252E-03 |
| 7.100 | 3.9283E-01 | 1.2934E-02 | 3.1081E-02 | 1.0256E-03 | 6.3202E-02 | 1.9741E-03 |
| 7.400 | 4.1825E-01 | 1.3756E-02 | 3.2988E-02 | 1.0872E-03 | 6.8078E-02 | 2.1259E-03 |
| 7.700 | 4.4441E-01 | 1.4601E-02 | 3.4949E-02 | 1.1506E-03 | 7.3065E-02 | 2.2811E-03 |
| 8.000 | 4.7129E-01 | 1.5468E-02 | 3.6965E-02 | 1.2156E-03 | 7.8176E-02 | 2.4401E-03 |
| 8.300 | 4.9889E-01 | 1.6357E-02 | 3.7657E-02 | 1.2387E-03 | 8.2865E-02 | 2.5860E-03 |
| 8.600 | 5.2720E-01 | 1.7268E-02 | 3.8367E-02 | 1.2623E-03 | 8.6796E-02 | 2.7082E-03 |
| 8.900 | 5.5623E-01 | 1.8201E-02 | 3.9095E-02 | 1.2864E-03 | 9.0219E-02 | 2.8146E-03 |
| 9.200 | 5.8597E-01 | 1.9156E-02 | 3.9840E-02 | 1.3111E-03 | 9.3307E-02 | 2.9105E-03 |
| 9.500 | 6.1641E-01 | 2.0133E-02 | 4.0604E-02 | 1.3363E-03 | 9.6182E-02 | 2.9998E-03 |
| 9.800 | 6.4755E-01 | 2.1131E-02 | 4.1384E-02 | 1.3621E-03 | 9.8926E-02 | 3.0850E-03 |
| 10.100 | 6.7938E-01 | 2.2150E-02 | 4.2182E-02 | 1.3884E-03 | 1.0160E-01 | 3.1680E-03 |
| 10.400 | 7.1190E-01 | 2.3191E-02 | 4.2998E-02 | 1.4153E-03 | 1.0423E-01 | 3.2498E-03 |
| 24.000 | 2.8656E+00 | 9.1210E-02 | 9.6994E-02 | 3.1565E-03 | 2.7007E-01 | 8.3745E-03 |
| 96.000 | 2.7238E+01 | 8.4330E-01 | 4.1732E-01 | 1.3089E-02 | 1.1148E+00 | 3.4209E-02 |
| 720.000 | 3.3907E+02 | 1.0394E+01 | 1.4419E+00 | 4.4566E-02 | 7.0283E+00 | 2.1430E-01 |

Travel Path

| Time (hr) | Thyroid (rem) | TEDE (rem) |
|---|---|---|
| 0.001 | 0.0000E+00 | 0.0000E+00 |
| 0.300 | 0.0000E+00 | 0.0000E+00 |
| 0.491 | 0.0000E+00 | 0.0000E+00 |
| 0.500 | 0.0000E+00 | 0.0000E+00 |
| 0.750 | 0.0000E+00 | 0.0000E+00 |
| 0.800 | 9.5427E-05 | 3.3592E-06 |
| 1.000 | 7.5741E-04 | 2.6540E-05 |

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**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 1 | System Nos. | Sheet 817 of 1000 |
|---|---|---|---|---|

```
   1.300 7.5741E-04 2.6540E-05
   1.600 7.5741E-04 2.6540E-05
   1.800 7.5741E-04 2.6540E-05
   2.000 7.5741E-04 2.6540E-05
   2.300 7.5741E-04 2.6540E-05
   2.600 7.5741E-04 2.6540E-05
   2.800 7.5741E-04 2.6540E-05
   3.100 7.5741E-04 2.6540E-05
   3.400 7.5741E-04 2.6540E-05
   3.700 7.5741E-04 2.6540E-05
   4.000 7.5741E-04 2.6540E-05


   4.300 7.5741E-04 2.6540E-05
   4.600 7.5741E-04 2.6540E-05
   4.900 7.5741E-04 2.6540E-05
   5.000 7.5741E-04 2.6540E-05
   5.300 7.5741E-04 2.6540E-05
   5.600 7.5741E-04 2.6540E-05
   5.900 7.5741E-04 2.6540E-05
   6.200 7.5741E-04 2.6540E-05
   6.500 7.5741E-04 2.6540E-05
   6.800 7.5741E-04 2.6540E-05
   7.100 7.5741E-04 2.6540E-05
   7.400 7.5741E-04 2.6540E-05
   7.700 7.5741E-04 2.6540E-05
   8.000 7.5741E-04 2.6540E-05
   8.300 7.5741E-04 2.6540E-05
   8.600 7.5741E-04 2.6540E-05
   8.900 7.5741E-04 2.6540E-05
   9.200 7.5741E-04 2.6540E-05
   9.500 7.5741E-04 2.6540E-05
   9.800 7.5741E-04 2.6540E-05
  10.100 7.5741E-04 2.6540E-05
  10.400 7.5741E-04 2.6540E-05
  24.000 7.5741E-04 2.6540E-05
  96.000 7.5741E-04 2.6540E-05
 720.000 7.5741E-04 2.6540E-05


##################################################################
                        Worst Two-Hour Doses
    Note: All of the dose locations are shown below but the
          worst two-hour dose is only meaningful for the EAB
          dose location.  Please disregard the two-hour worst
          doses for the other dose locations
##################################################################

Exclusion Area Boundary
   Time   Whole Body    Thyroid        TEDE
   (hr)     (rem)        (rem)         (rem)
  310.3   1.7980E-04   9.9946E-01   3.0611E-02
```

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**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 1 | System Nos. | Sheet 818 of 1000 |
|---|---|---|---|---|

Low Population Zone

| Time (hr) | Whole Body (rem) | Thyroid (rem) | TEDE (rem) |
|---|---|---|---|
| 3.4 | 2.2376E-05 | 1.3270E-02 | 4.3652E-04 |

TSC

| Time (hr) | Whole Body (rem) | Thyroid (rem) | TEDE (rem) |
|---|---|---|---|
| 4.6 | 1.5104E-06 | 3.3128E-02 | 1.0337E-03 |

Travel Path

| Time (hr) | Whole Body (rem) | Thyroid (rem) | TEDE (rem) |
|---|---|---|---|
| 0.0 | 2.6931E-06 | 7.5741E-04 | 2.6540E-05 |

**Appendix U**

**RADTRAD Output File**

# Purge_TSC_No Filtration.o0

**Containment Purge Pathway (For TSC Dose)**
**To Evaluate TSC HVAC Filter Shine Dose**

AmerGen

**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 1 | System Nos. | Sheet 820 of 1000 |
|---|---|---|---|---|

```
 ######################################################################
          RADTRAD Version 3.02 run on  5/15/2002  at 14:01:29
 ######################################################################

 ######################################################################
                      File information
 ######################################################################

 Plant file name           = C:\Documents and Settings\u004tjm\My Documents\TMI
RADTRAD\Purge_TSC_NO Filtration.psf
 Inventory file name       = c:\documents and settings\u004tjm\my documents\tmi
radtrad\defaults\tmipurge_def.nif
 Scenario file name        = C:\Documents and Settings\u004tjm\My Documents\TMI
RADTRAD\Purge_TSC_NO Filtration.psf
 Release file name         = c:\documents and settings\u004tjm\my documents\tmi
radtrad\defaults\tmipurge.rft
 Dose conversion file name = c:\documents and settings\u004tjm\my documents\tmi
radtrad\defaults\fgr11&12.inp


     #####    ####   #####    #  #     #  #####   #    #  #####
     #    #  #       #        #  ##    #  #    #  #    #    #
     #    #  #       #        #  # #   #  #    #  #    #    #
     #####    ####   ####     #  #  #  #  #####   #    #    #
     #            #  #        #  #   # #  #       #    #    #
     #            #  #        #  #    ##  #       #    #    #
     #        ####   #        #  #     #  #        ####     #


 Radtrad 3.02 1/5/2000
 TSC Dose Due To Containment Purge - NO Filtration
 Nuclide Inventory File:
 c:\documents and settings\u004tjm\my documents\tmi radtrad\defaults\tmipurge_def.nif
 Plant Power Level:
  2.6190E+03
 Compartments:
   3
 Compartment 1:
 Containment
   3
  2.1600E+06
   0
   0
   0
   0
   0
 Compartment 2:
 Environment
   2
  0.0000E+00
   0
   0
   0
   0
   0
```

```
Compartment 3:
TSC
  1
 4.2000E+04
  0
  0
  1
  0
  0
Pathways:
  4
Pathway 1:
Containment Leakage to Environment
  1
  2
  2
Pathway 2:
TSC Filtered Air Intake
  2
  3
  2
Pathway 3:
TSC  Unfiltered Inleakage
  2
  3
  2
Pathway 4:
TSC Exhaust to Environment
  3
  2
  2
End of Plant Model File
Scenario Description Name:

Plant Model Filename:
ACCEPT\TEST24.PMF
Source Term:
  1
  1   1.0000E+00
c:\documents and settings\u004tjm\my documents\tmi radtrad\defaults\fgr11&12.inp
c:\documents and settings\u004tjm\my documents\tmi radtrad\defaults\tmipurge.rft
  0.0000E+00
  0
  9.5000E-01   4.8500E-02   1.5000E-03   1.0000E+00
Overlying Pool:
  0
  0.0000E+00
  0
  0
  0
  0
Compartments:
  3
Compartment 1:
  0
  1
```

```
  0
  0
  0
  0
  0
  0
  0
Compartment 2:
  0
  1
  0
  0
  0
  0
  0
  0
  0
Compartment 3:
  1
  1
  0
  0
  0
  0
  1
  0.0000E+00
  5
  0.0000E+00   0.0000E+00   0.0000E+00   0.0000E+00
  8.0000E-01   0.0000E+00   0.0000E+00   0.0000E+00
  1.0000E+00   0.0000E+00   0.0000E+00   0.0000E+00
  2.8000E+00   9.9000E+01   9.0000E+01   9.0000E+01
  7.2000E+02   0.0000E+00   0.0000E+00   0.0000E+00
  0
  0
Pathways:
  4
Pathway 1:
  0
  0
  0
  0
  0
  1
  2
  0.0000E+00   1.4000E+04   0.0000E+00   0.0000E+00   0.0000E+00
  1.6700E-02   0.0000E+00   0.0000E+00   0.0000E+00   0.0000E+00
  0
  0
  0
  0
  0
  0
Pathway 2:
  0
  0
  0
  0
```

AmerGen

**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 1 | System Nos. | Sheet 823 of 1000 |
|---|---|---|---|---|

```
  0
  1
  5
  0.0000E+00   3.0000E+02   0.0000E+00   0.0000E+00   0.0000E+00
  8.0000E-01   3.0000E+02   0.0000E+00   0.0000E+00   0.0000E+00
  1.0000E+00   3.0000E+02   0.0000E+00   0.0000E+00   0.0000E+00
  2.8000E+00   6.0000E+02   0.0000E+00   0.0000E+00   0.0000E+00
  7.2000E+02   0.0000E+00   0.0000E+00   0.0000E+00   0.0000E+00
  0
  0
  0
  0
  0
  0
Pathway 3:
  0
  0
  0
  0
  0
  1
  5
  0.0000E+00   0.0000E+00   0.0000E+00   0.0000E+00   0.0000E+00
  8.0000E-01   0.0000E+00   0.0000E+00   0.0000E+00   0.0000E+00
  1.0000E+00   0.0000E+00   0.0000E+00   0.0000E+00   0.0000E+00
  2.8000E+00   2.5000E+02   0.0000E+00   0.0000E+00   0.0000E+00
  7.2000E+02   0.0000E+00   0.0000E+00   0.0000E+00   0.0000E+00
  0
  0
  0
  0
  0
  0
Pathway 4:
  0
  0
  0
  0
  0
  1
  5
  0.0000E+00   3.0000E+02   0.0000E+00   0.0000E+00   0.0000E+00
  8.0000E-01   3.0000E+02   0.0000E+00   0.0000E+00   0.0000E+00
  1.0000E+00   3.0000E+02   0.0000E+00   0.0000E+00   0.0000E+00
  2.8000E+00   8.5000E+02   0.0000E+00   0.0000E+00   0.0000E+00
  7.2000E+02   0.0000E+00   0.0000E+00   0.0000E+00   0.0000E+00
  0
  0
  0
  0
  0
  0
Dose Locations:
  4
```

AmerGen

**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 1 | System Nos. | Sheet 824 of 1000 |
|---|---|---|---|---|

```
Location 1:
Exclusion Area Boundary
  2
  1
  2
  0.0000E+00   8.0000E-04
  7.2000E+02   0.0000E+00
  1
  2
  0.0000E+00   3.5000E-04
  2.0000E+00   0.0000E+00
  0
Location 2:
Low Population Zone
  2
  1
  6
  0.0000E+00   1.4000E-04
  2.0000E+00   6.0000E-05
  8.0000E+00   3.9000E-05
  2.4000E+01   1.6000E-05
  9.6000E+01   4.0000E-06
  7.2000E+02   0.0000E+00
  1
  4
  0.0000E+00   3.5000E-04
  8.0000E+00   1.8000E-04
  2.4000E+01   2.3000E-04
  7.2000E+02   0.0000E+00
  0
Location 3:
TSC
  3
  0
  1
  2
  0.0000E+00   3.5000E-04
  7.2000E+02   0.0000E+00
  1
  4
  0.0000E+00   1.0000E+00
  2.4000E+01   6.0000E-01
  9.6000E+01   4.0000E-01
  7.2000E+02   0.0000E+00
Location 4:
Travel Path
  2
  1
  3
  0.0000E+00   0.0000E+00
  7.5000E-01   8.0000E-04
  1.0000E+00   0.0000E+00
  1
```

```
  4
  0.0000E+00   3.4700E-04
  8.0000E+00   1.7500E-04
  2.4000E+01   2.3200E-04
  7.2000E+02   0.0000E+00
  0
Effective Volume Location:
  1
  6
  0.0000E+00   2.3100E-04
  2.0000E+00   1.2900E-04
  8.0000E+00   5.5000E-05
  2.4000E+01   3.5200E-05
  9.6000E+01   3.0600E-05
  7.2000E+02   0.0000E+00
Simulation Parameters:
  7
  0.0000E+00   5.0000E-01
  1.0000E+00   1.0000E-01
  2.0000E+00   1.0000E+00
  8.0000E+00   2.0000E+00
  2.4000E+01   4.0000E+00
  9.6000E+01   8.0000E+00
  7.2000E+02   0.0000E+00
Output Filename:
C:\Documents and Settings\u004tjm\My Documents\TMI RADTRAD\Purge_TSC_NO Filtration.o0
  1
  1
  1
  0
  0
End of Scenario File

#######################################################################
          RADTRAD Version 3.02 run on  5/15/2002  at 14:01:29
#######################################################################

#######################################################################
                    Plant Description
#######################################################################

Number of Nuclides =  60

Inventory Power =   1.0000E+00 MWth
Plant Power Level =   2.6190E+03 MWth

Number of compartments    =   3

Compartment information

Compartment number  1  (Source term fraction =   1.0000E+00
)
Name: Containment
Compartment volume =   2.1600E+06 (Cubic feet)
Pathways into and out of compartment  1
    Pathway to compartment number   2: Containment Leakage to Environment
```

```
Compartment number  2
Name: Environment
Pathways into and out of compartment  2
    Pathway to compartment number   3: TSC Filtered Air Intake
    Pathway to compartment number   3: TSC  Unfiltered Inleakage

    Pathway from compartment number 1: Containment Leakage to Environment
    Pathway from compartment number 3: TSC Exhaust to Environment

Compartment number  3
Name: TSC
Compartment volume =   4.2000E+04 (Cubic feet)
Removal devices within compartment:
     Filter(s)
Pathways into and out of compartment  3
    Pathway to compartment number   2: TSC Exhaust to Environment
    Pathway from compartment number 2: TSC Filtered Air Intake
    Pathway from compartment number 2: TSC  Unfiltered Inleakage

Total number of pathways =   4

#######################################################################
          RADTRAD Version 3.02 run on  5/15/2002  at 14:01:29
#######################################################################

#######################################################################
                     Scenario Description
#######################################################################

Radioactive Decay is enabled
RELEASE_NAME = TMI-1 Post-LOCA Containment Purge Releas
Release Fractions and Timings
                GAP       EARLY IN-VESSEL
             0.0003 hrs     0.0000 hrs
NOBLES       1.0000E+00     0.0000E+00
IODINE       1.0000E+00     0.0000E+00
CESIUM       0.0000E+00     0.0000E+00
TELLURIUM    0.0000E+00     0.0000E+00
STRONTIUM    0.0000E+00     0.0000E+00
BARIUM       0.0000E+00     0.0000E+00
RUTHENIUM    0.0000E+00     0.0000E+00
CERIUM       0.0000E+00     0.0000E+00
LANTHANUM    0.0000E+00     0.0000E+00

Iodine fractions
     Aerosol     =   9.5000E-01
     Elemental   =   4.8500E-02
     Organic     =   1.5000E-03

COMPARTMENT DATA

Compartment number   1: Containment

Compartment number   2: Environment

Compartment number   3: TSC
```

AmerGen

**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 1 | System Nos. | Sheet 827 of 1000 |
|---|---|---|---|---|

Compartment Filter Data

| Time (hr) | Flow Rate (cfm) | Filter Efficiencies (%) Aerosol | Elemental | Organic |
|---|---|---|---|---|
| 0.0000E+00 | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 |
| 8.0000E-01 | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 |
| 1.0000E+00 | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 |
| 2.8000E+00 | 0.0000E+00 | 9.9000E+01 | 9.0000E+01 | 9.0000E+01 |
| 7.2000E+02 | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 |

PATHWAY DATA

Pathway number 1: Containment Leakage to Environment

Pathway Filter: Removal Data

| Time (hr) | Flow Rate (cfm) | Filter Efficiencies (%) Aerosol | Elemental | Organic |
|---|---|---|---|---|
| 0.0000E+00 | 1.4000E+04 | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 |
| 1.6700E-02 | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 |

Pathway number 2: TSC Filtered Air Intake

Pathway Filter: Removal Data

| Time (hr) | Flow Rate (cfm) | Filter Efficiencies (%) Aerosol | Elemental | Organic |
|---|---|---|---|---|
| 0.0000E+00 | 3.0000E+02 | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 |
| 8.0000E-01 | 3.0000E+02 | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 |
| 1.0000E+00 | 3.0000E+02 | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 |
| 2.8000E+00 | 6.0000E+02 | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 |
| 7.2000E+02 | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 |

Pathway number 3: TSC Unfiltered Inleakage

Pathway Filter: Removal Data

| Time (hr) | Flow Rate (cfm) | Filter Efficiencies (%) Aerosol | Elemental | Organic |
|---|---|---|---|---|
| 0.0000E+00 | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 |
| 8.0000E-01 | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 |
| 1.0000E+00 | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 |
| 2.8000E+00 | 2.5000E+02 | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 |
| 7.2000E+02 | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 |

Pathway number 4: TSC Exhaust to Environment

Pathway Filter: Removal Data

| Time (hr) | Flow Rate (cfm) | Filter Efficiencies (%) Aerosol | Elemental | Organic |
|---|---|---|---|---|
| 0.0000E+00 | 3.0000E+02 | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 |
| 8.0000E-01 | 3.0000E+02 | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 |
| 1.0000E+00 | 3.0000E+02 | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 |
| 2.8000E+00 | 8.5000E+02 | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 |
| 7.2000E+02 | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 |

AmerGen

**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 1 | System Nos. | Sheet 828 of 1000 |
|---|---|---|---|---|

```
LOCATION DATA
     Location Exclusion Area Boundary     is in compartment   2

     Location X/Q Data
      Time (hr)         X/Q (s * m^-3)
       0.0000E+00          8.0000E-04
       7.2000E+02          0.0000E+00

     Location Breathing Rate Data
      Time (hr)         Breathing Rate (m^3 * sec^-1)
       0.0000E+00                 3.5000E-04
       2.0000E+00                 0.0000E+00
     Location Low Population Zone     is in compartment   2

     Location X/Q Data
      Time (hr)         X/Q (s * m^-3)
       0.0000E+00          1.4000E-04
       2.0000E+00          6.0000E-05
       8.0000E+00          3.9000E-05
       2.4000E+01          1.6000E-05
       9.6000E+01          4.0000E-06
       7.2000E+02          0.0000E+00

     Location Breathing Rate Data
      Time (hr)         Breathing Rate (m^3 * sec^-1)
       0.0000E+00                 3.5000E-04
       8.0000E+00                 1.8000E-04
       2.4000E+01                 2.3000E-04
       7.2000E+02                 0.0000E+00
     Location TSC     is in compartment   3

     Location X/Q Data
      Time (hr)         X/Q (s * m^-3)
       0.0000E+00          2.3100E-04
       2.0000E+00          1.2900E-04
       8.0000E+00          5.5000E-05
       2.4000E+01          3.5200E-05
       9.6000E+01          3.0600E-05
       7.2000E+02          0.0000E+00

     Location Breathing Rate Data
      Time (hr)         Breathing Rate (m^3 * sec^-1)
       0.0000E+00                 3.5000E-04
       7.2000E+02                 0.0000E+00

     Location Occupancy Factor Data
      Time (hr)         Occupancy Factor
       0.0000E+00            1.0000E+00
       2.4000E+01            6.0000E-01
       9.6000E+01            4.0000E-01
       7.2000E+02            0.0000E+00
     Location Travel Path     is in compartment   2

     Location X/Q Data
      Time (hr)         X/Q (s * m^-3)
       0.0000E+00          0.0000E+00
       7.5000E-01          8.0000E-04
```

AmerGen

**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 1 | System Nos. | Sheet 829 of 1000 |
|---|---|---|---|---|

```
       1.0000E+00          0.0000E+00

     Location Breathing Rate Data
      Time (hr)          Breathing Rate (m^3 * sec^-1)
       0.0000E+00                 3.4700E-04
       8.0000E+00                 1.7500E-04
       2.4000E+01                 2.3200E-04
       7.2000E+02                 0.0000E+00

USER SPECIFIED TIME STEP DATA - SUPPLEMENTAL TIME STEPS
     Time            Time step
      0.0000E+00       5.0000E-01
      1.0000E+00       1.0000E-01
      2.0000E+00       1.0000E+00
      8.0000E+00       2.0000E+00
      2.4000E+01       4.0000E+00
      9.6000E+01       8.0000E+00
      7.2000E+02       0.0000E+00

#######################################################################
          RADTRAD Version 3.02 run on  5/15/2002  at 14:01:29
#######################################################################


     ####   #    #  #####  #####   #    #  #####
    #    #  #    #    #    #    #  #    #    #
    #    #  #    #    #    #    #  #    #    #
    #    #  #    #    #    #####   #    #    #
    #    #  #    #    #    #       #    #    #
    #    #  #    #    #    #       #    #    #
     ####    ####     #    #        ####     #


#####################################################################
            Dose, Detailed model and Detailed Inventory Output
#####################################################################

Exclusion Area Boundary Doses:

Time (h) =   0.0003    Whole Body   Thyroid       TEDE
Delta dose (rem)        7.2620E-05  4.9326E-03  2.2525E-04
Accumulated dose (rem)  7.2620E-05  4.9326E-03  2.2525E-04

Low Population Zone Doses:

Time (h) =   0.0003    Whole Body   Thyroid       TEDE
Delta dose (rem)        1.2708E-05  8.6321E-04  3.9418E-05
Accumulated dose (rem)  1.2708E-05  8.6321E-04  3.9418E-05

TSC Doses:

Time (h) =   0.0003    Whole Body   Thyroid       TEDE
Delta dose (rem)        3.9179E-11  8.5454E-08  2.6833E-09
Accumulated dose (rem)  3.9179E-11  8.5454E-08  2.6833E-09

Travel Path Doses:
```

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**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 1 | System Nos. | Sheet 830 of 1000 |
|---|---|---|---|---|

```
Time (h) =   0.0003    Whole Body   Thyroid       TEDE
Delta dose (rem)        0.0000E+00  0.0000E+00  0.0000E+00
Accumulated dose (rem)  0.0000E+00  0.0000E+00  0.0000E+00

TSC Compartment Nuclide Inventory:

Time (h) =   0.0003       Ci           kg         Atoms         Bq
Kr-85                  7.8248E-06  1.9944E-11  1.4130E+14  2.8952E+05
Kr-85m                 1.2921E-06  1.5701E-16  1.1124E+09  4.7808E+04
Kr-87                  7.1243E-07  2.5151E-17  1.7410E+08  2.6360E+04
Kr-88                  2.2065E-06  1.7597E-16  1.2042E+09  8.1639E+04
I-131                  4.4244E-07  3.5688E-15  1.6406E+10  1.6370E+04
I-132                  1.6115E-07  1.5612E-17  7.1224E+07  5.9624E+03
I-133                  4.9802E-07  4.3964E-16  1.9906E+09  1.8427E+04
I-134                  5.8650E-08  2.1985E-18  9.8805E+06  2.1700E+03
I-135                  2.3865E-07  6.7957E-17  3.0315E+08  8.8302E+03
Xe-133                 2.2299E-04  1.1913E-12  5.3942E+12  8.2508E+06
Xe-135                 1.0194E-05  3.9916E-15  1.7806E+10  3.7716E+05

TSC Transport Group Inventory:

                                                Overlying
Time (h) =   0.0003    Atmosphere     Sump        Pool
Noble gases (atoms)    1.4672E+14  0.0000E+00  0.0000E+00
Elemental I (atoms)    9.1088E+08  0.0000E+00  0.0000E+00
Organic I (atoms)      2.8171E+07  0.0000E+00  0.0000E+00
Aerosols (kg)          3.8895E-15  0.0000E+00  0.0000E+00

                       Deposition Recirculating
Time (h) =   0.0003     Surfaces     Filter
Noble gases (atoms)    0.0000E+00  0.0000E+00
Elemental I (atoms)    0.0000E+00  0.0000E+00
Organic I (atoms)      0.0000E+00  0.0000E+00
Aerosols (kg)          0.0000E+00  0.0000E+00

TSC Filtered Air Intake Transport Group Inventory:

                        Pathway
Time (h) =   0.0003      Filter
Noble gases (atoms)    0.0000E+00
Elemental I (atoms)    0.0000E+00
Organic I (atoms)      0.0000E+00
Aerosols (kg)          0.0000E+00

TSC  Unfiltered Inleakage Transport Group Inventory:

                        Pathway
Time (h) =   0.0003      Filter
Noble gases (atoms)    0.0000E+00
Elemental I (atoms)    0.0000E+00
Organic I (atoms)      0.0000E+00
Aerosols (kg)          0.0000E+00

TSC Exhaust to Environment Transport Group Inventory:

                        Pathway
Time (h) =   0.0003      Filter
```

| | |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 |

Exclusion Area Boundary Doses:

| Time (h) = 0.0167 | Whole Body | Thyroid | TEDE |
|---|---|---|---|
| Delta dose (rem) | 8.4892E-03 | 5.7667E-01 | 2.6332E-02 |
| Accumulated dose (rem) | 8.5618E-03 | 5.8160E-01 | 2.6558E-02 |

Low Population Zone Doses:

| Time (h) = 0.0167 | Whole Body | Thyroid | TEDE |
|---|---|---|---|
| Delta dose (rem) | 1.4856E-03 | 1.0092E-01 | 4.6082E-03 |
| Accumulated dose (rem) | 1.4983E-03 | 1.0178E-01 | 4.6476E-03 |

TSC Doses:

| Time (h) = 0.0167 | Whole Body | Thyroid | TEDE |
|---|---|---|---|
| Delta dose (rem) | 2.7229E-07 | 5.9394E-04 | 1.8650E-05 |
| Accumulated dose (rem) | 2.7232E-07 | 5.9403E-04 | 1.8653E-05 |

Travel Path Doses:

| Time (h) = 0.0167 | Whole Body | Thyroid | TEDE |
|---|---|---|---|
| Delta dose (rem) | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 |
| Accumulated dose (rem) | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 |

TSC Compartment Nuclide Inventory:

| Time (h) = 0.0167 | Ci | kg | Atoms | Bq |
|---|---|---|---|---|
| Kr-85 | 9.1939E-04 | 2.3434E-09 | 1.6603E+16 | 3.4017E+07 |
| Kr-85m | 1.5143E-04 | 1.8401E-14 | 1.3037E+11 | 5.6031E+06 |
| Kr-87 | 8.2962E-05 | 2.9289E-15 | 2.0274E+10 | 3.0696E+06 |
| Kr-88 | 2.5822E-04 | 2.0593E-14 | 1.4092E+11 | 9.5540E+06 |
| I-131 | 5.1983E-05 | 4.1930E-13 | 1.9275E+12 | 1.9234E+06 |
| I-132 | 1.8841E-05 | 1.8253E-15 | 8.3273E+09 | 6.9711E+05 |
| I-133 | 5.8484E-05 | 5.1628E-14 | 2.3377E+11 | 2.1639E+06 |
| I-134 | 6.8023E-06 | 2.5499E-16 | 1.1460E+09 | 2.5168E+05 |
| I-135 | 2.7993E-05 | 7.9710E-15 | 3.5557E+10 | 1.0357E+06 |
| Xe-133 | 2.6199E-02 | 1.3996E-10 | 6.3374E+14 | 9.6935E+08 |
| Xe-135 | 1.1962E-03 | 4.6842E-13 | 2.0895E+12 | 4.4260E+07 |

TSC Transport Group Inventory:

| Time (h) = 0.0167 | Atmosphere | Sump | Overlying Pool |
|---|---|---|---|
| Noble gases (atoms) | 1.7239E+16 | 0.0000E+00 | 0.0000E+00 |
| Elemental I (atoms) | 1.0703E+11 | 0.0000E+00 | 0.0000E+00 |
| Organic I (atoms) | 3.3101E+09 | 0.0000E+00 | 0.0000E+00 |

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**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 1 | System Nos. | Sheet 832 of 1000 |
|---|---|---|---|---|

```
Aerosols (kg)          4.5701E-13  0.0000E+00  0.0000E+00

                       Deposition Recirculating
Time (h) =   0.0167     Surfaces     Filter
Noble gases (atoms)    0.0000E+00  0.0000E+00
Elemental I (atoms)    0.0000E+00  0.0000E+00
Organic I (atoms)      0.0000E+00  0.0000E+00
Aerosols (kg)          0.0000E+00  0.0000E+00



TSC Filtered Air Intake Transport Group Inventory:

                        Pathway
Time (h) =   0.0167      Filter
Noble gases (atoms)    0.0000E+00
Elemental I (atoms)    0.0000E+00
Organic I (atoms)      0.0000E+00
Aerosols (kg)          0.0000E+00

TSC  Unfiltered Inleakage Transport Group Inventory:

                        Pathway
Time (h) =   0.0167      Filter
Noble gases (atoms)    0.0000E+00
Elemental I (atoms)    0.0000E+00
Organic I (atoms)      0.0000E+00
Aerosols (kg)          0.0000E+00

TSC Exhaust to Environment Transport Group Inventory:

                        Pathway
Time (h) =   0.0167      Filter
Noble gases (atoms)    0.0000E+00
Elemental I (atoms)    0.0000E+00
Organic I (atoms)      0.0000E+00
Aerosols (kg)          0.0000E+00

Exclusion Area Boundary Doses:

Time (h) =   0.7500    Whole Body   Thyroid       TEDE
Delta dose (rem)        7.2543E-08  5.0954E-06  2.3014E-07
Accumulated dose (rem)  8.5618E-03  5.8161E-01  2.6558E-02

Low Population Zone Doses:

Time (h) =   0.7500    Whole Body   Thyroid       TEDE
Delta dose (rem)        1.2695E-08  8.9170E-07  4.0275E-08
Accumulated dose (rem)  1.4983E-03  1.0178E-01  4.6476E-03

TSC Doses:

Time (h) =   0.7500    Whole Body   Thyroid       TEDE
Delta dose (rem)        1.9948E-05  4.4992E-02  1.4116E-03
Accumulated dose (rem)  2.0220E-05  4.5586E-02  1.4302E-03
```

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**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 1 | System Nos. | Sheet 833 of 1000 |
|---|---|---|---|---|

Travel Path Doses:

| Time (h) = 0.7500 | Whole Body | Thyroid | TEDE |
|---|---|---|---|
| Delta dose (rem) | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 |
| Accumulated dose (rem) | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 |

TSC Compartment Nuclide Inventory:

| Time (h) = 0.7500 | Ci | kg | Atoms | Bq |
|---|---|---|---|---|
| Kr-85 | 6.7145E-04 | 1.7114E-09 | 1.2125E+16 | 2.4844E+07 |
| Kr-85m | 9.8734E-05 | 1.1998E-14 | 8.5001E+10 | 3.6532E+06 |
| Kr-87 | 4.0627E-05 | 1.4343E-15 | 9.9280E+09 | 1.5032E+06 |
| Kr-88 | 1.5768E-04 | 1.2575E-14 | 8.6054E+10 | 5.8341E+06 |
| I-131 | 3.7864E-05 | 3.0542E-13 | 1.4040E+12 | 1.4010E+06 |
| I-132 | 1.1032E-05 | 1.0687E-15 | 4.8758E+09 | 4.0817E+05 |
| I-133 | 4.1682E-05 | 3.6795E-14 | 1.6660E+11 | 1.5422E+06 |
| I-134 | 2.7821E-06 | 1.0429E-16 | 4.6869E+08 | 1.0294E+05 |
| I-135 | 1.8931E-05 | 5.3906E-15 | 2.4046E+10 | 7.0044E+05 |
| Xe-133 | 1.9056E-02 | 1.0181E-10 | 4.6098E+14 | 7.0509E+08 |
| Xe-135 | 8.2611E-04 | 3.2349E-13 | 1.4431E+12 | 3.0566E+07 |

TSC Transport Group Inventory:

| Time (h) = 0.7500 | Atmosphere | Sump | Overlying Pool |
|---|---|---|---|
| Noble gases (atoms) | 1.2590E+16 | 0.0000E+00 | 0.0000E+00 |
| Elemental I (atoms) | 7.8163E+10 | 0.0000E+00 | 0.0000E+00 |
| Organic I (atoms) | 2.4174E+09 | 0.0000E+00 | 0.0000E+00 |
| Aerosols (kg) | 3.3376E-13 | 0.0000E+00 | 0.0000E+00 |

| Time (h) = 0.7500 | Deposition Surfaces | Recirculating Filter |
|---|---|---|
| Noble gases (atoms) | 0.0000E+00 | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 | 0.0000E+00 |

TSC Filtered Air Intake Transport Group Inventory:

| Time (h) = 0.7500 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 |

TSC Unfiltered Inleakage Transport Group Inventory:

| Time (h) = 0.7500 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 |

TSC Exhaust to Environment Transport Group Inventory:

| Time (h) = 0.7500 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 |

Exclusion Area Boundary Doses:

| Time (h) = 0.8000 | Whole Body | Thyroid | TEDE |
|---|---|---|---|
| Delta dose (rem) | 3.9671E-09 | 2.9129E-07 | 1.2972E-08 |
| Accumulated dose (rem) | 8.5619E-03 | 5.8161E-01 | 2.6558E-02 |

Low Population Zone Doses:

| Time (h) = 0.8000 | Whole Body | Thyroid | TEDE |
|---|---|---|---|
| Delta dose (rem) | 6.9424E-10 | 5.0976E-08 | 2.2701E-09 |
| Accumulated dose (rem) | 1.4983E-03 | 1.0178E-01 | 4.6476E-03 |

TSC Doses:

| Time (h) = 0.8000 | Whole Body | Thyroid | TEDE |
|---|---|---|---|
| Delta dose (rem) | 1.0907E-06 | 2.5718E-03 | 8.0596E-05 |
| Accumulated dose (rem) | 2.1311E-05 | 4.8158E-02 | 1.5108E-03 |

Travel Path Doses:

| Time (h) = 0.8000 | Whole Body | Thyroid | TEDE |
|---|---|---|---|
| Delta dose (rem) | 3.9671E-09 | 2.8879E-07 | 1.2895E-08 |
| Accumulated dose (rem) | 3.9671E-09 | 2.8879E-07 | 1.2895E-08 |

TSC Compartment Nuclide Inventory:

| Time (h) = 0.8000 | Ci | kg | Atoms | Bq |
|---|---|---|---|---|
| Kr-85 | 6.5722E-04 | 1.6751E-09 | 1.1868E+16 | 2.4317E+07 |
| Kr-85m | 9.5896E-05 | 1.1653E-14 | 8.2558E+10 | 3.5482E+06 |
| Kr-87 | 3.8696E-05 | 1.3661E-15 | 9.4563E+09 | 1.4318E+06 |
| Kr-88 | 1.5246E-04 | 1.2159E-14 | 8.3208E+10 | 5.6412E+06 |
| I-131 | 3.7055E-05 | 2.9889E-13 | 1.3740E+12 | 1.3710E+06 |
| I-132 | 1.0636E-05 | 1.0304E-15 | 4.7011E+09 | 3.9354E+05 |
| I-133 | 4.0730E-05 | 3.5955E-14 | 1.6280E+11 | 1.5070E+06 |
| I-134 | 2.6176E-06 | 9.8122E-17 | 4.4097E+08 | 9.6850E+04 |
| I-135 | 1.8433E-05 | 5.2487E-15 | 2.3414E+10 | 6.8201E+05 |
| Xe-133 | 1.8647E-02 | 9.9622E-11 | 4.5108E+14 | 6.8995E+08 |
| Xe-135 | 8.0552E-04 | 3.1543E-13 | 1.4071E+12 | 2.9804E+07 |

TSC Transport Group Inventory:

| Time (h) = 0.8000 | Atmosphere | Sump | Overlying Pool |
|---|---|---|---|
| Noble gases (atoms) | 1.2323E+16 | 0.0000E+00 | 0.0000E+00 |
| Elemental I (atoms) | 7.6506E+10 | 0.0000E+00 | 0.0000E+00 |
| Organic I (atoms) | 2.3662E+09 | 0.0000E+00 | 0.0000E+00 |
| Aerosols (kg) | 3.2669E-13 | 0.0000E+00 | 0.0000E+00 |

Deposition Recirculating

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**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 1 | System Nos. | Sheet 835 of 1000 |
|---|---|---|---|---|

```
Time (h) =   0.8000     Surfaces     Filter
Noble gases (atoms)    0.0000E+00  0.0000E+00
Elemental I (atoms)    0.0000E+00  0.0000E+00
Organic I (atoms)      0.0000E+00  0.0000E+00
Aerosols (kg)          0.0000E+00  0.0000E+00

TSC Filtered Air Intake Transport Group Inventory:

                        Pathway
Time (h) =   0.8000      Filter
Noble gases (atoms)    0.0000E+00
Elemental I (atoms)    0.0000E+00
Organic I (atoms)      0.0000E+00
Aerosols (kg)          0.0000E+00

TSC  Unfiltered Inleakage Transport Group Inventory:

                        Pathway
Time (h) =   0.8000      Filter
Noble gases (atoms)    0.0000E+00
Elemental I (atoms)    0.0000E+00
Organic I (atoms)      0.0000E+00
Aerosols (kg)          0.0000E+00

TSC Exhaust to Environment Transport Group Inventory:

                        Pathway
Time (h) =   0.8000      Filter
Noble gases (atoms)    0.0000E+00
Elemental I (atoms)    0.0000E+00
Organic I (atoms)      0.0000E+00
Aerosols (kg)          0.0000E+00

Exclusion Area Boundary Doses:

Time (h) =   1.0000    Whole Body   Thyroid       TEDE
Delta dose (rem)        1.4889E-08  1.1036E-06  4.9003E-08
Accumulated dose (rem)  8.5619E-03  5.8161E-01  2.6558E-02

Low Population Zone Doses:

Time (h) =   1.0000    Whole Body   Thyroid       TEDE
Delta dose (rem)        2.6056E-09  1.9314E-07  8.5756E-09
Accumulated dose (rem)  1.4983E-03  1.0178E-01  4.6477E-03

TSC Doses:

Time (h) =   1.0000    Whole Body   Thyroid       TEDE
Delta dose (rem)        4.0942E-06  9.7451E-03  3.0532E-04
Accumulated dose (rem)  2.5405E-05  5.7903E-02  1.8161E-03

Travel Path Doses:

Time (h) =   1.0000    Whole Body   Thyroid       TEDE
Delta dose (rem)        1.4889E-08  1.0942E-06  4.8711E-08
Accumulated dose (rem)  1.8856E-08  1.3830E-06  6.1606E-08
```

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**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 1 | System Nos. | Sheet 836 of 1000 |
|---|---|---|---|---|

TSC Compartment Nuclide Inventory:

| Time (h) = 1.0000 | Ci | kg | Atoms | Bq |
|---|---|---|---|---|
| Kr-85 | 6.0323E-04 | 1.5375E-09 | 1.0893E+16 | 2.2320E+07 |
| Kr-85m | 8.5337E-05 | 1.0370E-14 | 7.3468E+10 | 3.1575E+06 |
| Kr-87 | 3.1849E-05 | 1.1244E-15 | 7.7831E+09 | 1.1784E+06 |
| Kr-88 | 1.3327E-04 | 1.0629E-14 | 7.2735E+10 | 4.9311E+06 |
| I-131 | 3.3987E-05 | 2.7414E-13 | 1.2603E+12 | 1.2575E+06 |
| I-132 | 9.1915E-06 | 8.9047E-16 | 4.0625E+09 | 3.4009E+05 |
| I-133 | 3.7136E-05 | 3.2782E-14 | 1.4844E+11 | 1.3740E+06 |
| I-134 | 2.0511E-06 | 7.6889E-17 | 3.4555E+08 | 7.5893E+04 |
| I-135 | 1.6567E-05 | 4.7176E-15 | 2.1044E+10 | 6.1300E+05 |
| Xe-133 | 1.7097E-02 | 9.1338E-11 | 4.1357E+14 | 6.3258E+08 |
| Xe-135 | 7.2817E-04 | 2.8514E-13 | 1.2720E+12 | 2.6942E+07 |

TSC Transport Group Inventory:

| Time (h) = 1.0000 | Atmosphere | Sump | Overlying Pool |
|---|---|---|---|
| Noble gases (atoms) | 1.1311E+16 | 0.0000E+00 | 0.0000E+00 |
| Elemental I (atoms) | 7.0222E+10 | 0.0000E+00 | 0.0000E+00 |
| Organic I (atoms) | 2.1718E+09 | 0.0000E+00 | 0.0000E+00 |
| Aerosols (kg) | 2.9985E-13 | 0.0000E+00 | 0.0000E+00 |

| Time (h) = 1.0000 | Deposition Surfaces | Recirculating Filter |
|---|---|---|
| Noble gases (atoms) | 0.0000E+00 | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 | 0.0000E+00 |

TSC Filtered Air Intake Transport Group Inventory:

| Time (h) = 1.0000 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 |

TSC Unfiltered Inleakage Transport Group Inventory:

| Time (h) = 1.0000 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 |

TSC Exhaust to Environment Transport Group Inventory:

| Time (h) = 1.0000 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 |

```
Aerosols (kg)          0.0000E+00

Exclusion Area Boundary Doses:

Time (h) =   2.0000    Whole Body   Thyroid       TEDE
Delta dose (rem)        5.4861E-08  4.2750E-06  1.8693E-07
Accumulated dose (rem)  8.5619E-03  5.8161E-01  2.6558E-02

Low Population Zone Doses:

Time (h) =   2.0000    Whole Body   Thyroid       TEDE
Delta dose (rem)        9.6006E-09  7.4812E-07  3.2713E-08
Accumulated dose (rem)  1.4983E-03  1.0178E-01  4.6477E-03



TSC Doses:

Time (h) =   2.0000    Whole Body   Thyroid       TEDE
Delta dose (rem)        1.5086E-05  3.7748E-02  1.1813E-03
Accumulated dose (rem)  4.0490E-05  9.5651E-02  2.9974E-03

Travel Path Doses:

Time (h) =   2.0000    Whole Body   Thyroid       TEDE
Delta dose (rem)        0.0000E+00  0.0000E+00  0.0000E+00
Accumulated dose (rem)  1.8856E-08  1.3830E-06  6.1606E-08

TSC Compartment Nuclide Inventory:

Time (h) =   2.0000       Ci           kg         Atoms         Bq
Kr-85                  3.9297E-04  1.0016E-09  7.0964E+15  1.4540E+07
Kr-85m                 4.7624E-05  5.7870E-15  4.1000E+10  1.7621E+06
Kr-87                  1.2030E-05  4.2470E-16  2.9397E+09  4.4510E+05
Kr-88                  6.8019E-05  5.4245E-15  3.7122E+10  2.5167E+06
I-131                  2.2061E-05  1.7795E-13  8.1805E+11  8.1627E+05
I-132                  4.4298E-06  4.2916E-16  1.9579E+09  1.6390E+05
I-133                  2.3399E-05  2.0656E-14  9.3529E+10  8.6577E+05
I-134                  6.0603E-07  2.2718E-17  1.0210E+08  2.2423E+04
I-135                  9.7184E-06  2.7673E-15  1.2345E+10  3.5958E+05
Xe-133                 1.1077E-02  5.9175E-11  2.6794E+14  4.0983E+08
Xe-135                 4.3954E-04  1.7212E-13  7.6778E+11  1.6263E+07

TSC Transport Group Inventory:

                                                Overlying
Time (h) =   2.0000    Atmosphere     Sump        Pool
Noble gases (atoms)    7.3684E+15  0.0000E+00  0.0000E+00
Elemental I (atoms)    4.5746E+10  0.0000E+00  0.0000E+00
Organic I (atoms)      1.4148E+09  0.0000E+00  0.0000E+00
Aerosols (kg)          1.9534E-13  0.0000E+00  0.0000E+00

                       Deposition Recirculating
Time (h) =   2.0000     Surfaces     Filter
Noble gases (atoms)    0.0000E+00  0.0000E+00
Elemental I (atoms)    0.0000E+00  0.0000E+00
```

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**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 1 | System Nos. | Sheet 838 of 1000 |
|---|---|---|---|---|

```
Organic I (atoms)      0.0000E+00  0.0000E+00
Aerosols (kg)          0.0000E+00  0.0000E+00

TSC Filtered Air Intake Transport Group Inventory:

                        Pathway
Time (h) =   2.0000      Filter
Noble gases (atoms)    0.0000E+00
Elemental I (atoms)    0.0000E+00
Organic I (atoms)      0.0000E+00
Aerosols (kg)          0.0000E+00

TSC  Unfiltered Inleakage Transport Group Inventory:

                        Pathway
Time (h) =   2.0000      Filter
Noble gases (atoms)    0.0000E+00
Elemental I (atoms)    0.0000E+00
Organic I (atoms)      0.0000E+00
Aerosols (kg)          0.0000E+00

TSC Exhaust to Environment Transport Group Inventory:

                        Pathway
Time (h) =   2.0000      Filter
Noble gases (atoms)    0.0000E+00
Elemental I (atoms)    0.0000E+00
Organic I (atoms)      0.0000E+00
Aerosols (kg)          0.0000E+00

Exclusion Area Boundary Doses:

Time (h) =   2.8000    Whole Body   Thyroid       TEDE
Delta dose (rem)        2.7443E-08  0.0000E+00  2.7443E-08
Accumulated dose (rem)  8.5619E-03  5.8161E-01  2.6558E-02

Low Population Zone Doses:

Time (h) =   2.8000    Whole Body   Thyroid       TEDE
Delta dose (rem)        2.0583E-09  1.7244E-07  7.3812E-09
Accumulated dose (rem)  1.4983E-03  1.0178E-01  4.6477E-03

TSC Doses:

Time (h) =   2.8000    Whole Body   Thyroid       TEDE
Delta dose (rem)        7.5464E-06  2.0302E-02  6.3423E-04
Accumulated dose (rem)  4.8037E-05  1.1595E-01  3.6316E-03

Travel Path Doses:

Time (h) =   2.8000    Whole Body   Thyroid       TEDE
Delta dose (rem)        0.0000E+00  0.0000E+00  0.0000E+00
Accumulated dose (rem)  1.8856E-08  1.3830E-06  6.1606E-08

TSC Compartment Nuclide Inventory:

Time (h) =   2.8000       Ci           kg         Atoms         Bq
```

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**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 1 | System Nos. | Sheet 839 of 1000 |
|---|---|---|---|---|

| | | | | |
|---|---|---|---|---|
| Kr-85 | 2.7891E-04 | 7.1089E-10 | 5.0366E+15 | 1.0320E+07 |
| Kr-85m | 2.9866E-05 | 3.6291E-15 | 2.5712E+10 | 1.1050E+06 |
| Kr-87 | 5.5206E-06 | 1.9490E-16 | 1.3491E+09 | 2.0426E+05 |
| Kr-88 | 3.9713E-05 | 3.1671E-15 | 2.1674E+10 | 1.4694E+06 |
| I-131 | 1.5613E-05 | 1.2594E-13 | 5.7894E+11 | 5.7768E+05 |
| I-132 | 2.4705E-06 | 2.3934E-16 | 1.0919E+09 | 9.1408E+04 |
| I-133 | 1.6171E-05 | 1.4275E-14 | 6.4635E+10 | 5.9831E+05 |
| I-134 | 2.2850E-07 | 8.5657E-18 | 3.8495E+07 | 8.4547E+03 |
| I-135 | 6.3425E-06 | 1.8060E-15 | 8.0564E+09 | 2.3467E+05 |
| Xe-133 | 7.8269E-03 | 4.1815E-11 | 1.8933E+14 | 2.8960E+08 |
| Xe-135 | 2.9350E-04 | 1.1493E-13 | 5.1268E+11 | 1.0859E+07 |

TSC Transport Group Inventory:

| Time (h) = 2.8000 | Atmosphere | Sump | Overlying Pool |
|---|---|---|---|
| Noble gases (atoms) | 5.2297E+15 | 0.0000E+00 | 0.0000E+00 |
| Elemental I (atoms) | 3.2468E+10 | 0.0000E+00 | 0.0000E+00 |
| Organic I (atoms) | 1.0042E+09 | 0.0000E+00 | 0.0000E+00 |
| Aerosols (kg) | 1.3864E-13 | 0.0000E+00 | 0.0000E+00 |

| Time (h) = 2.8000 | Deposition Surfaces | Recirculating Filter |
|---|---|---|
| Noble gases (atoms) | 0.0000E+00 | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 | 0.0000E+00 |

TSC Filtered Air Intake Transport Group Inventory:

| Time (h) = 2.8000 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 |

TSC Unfiltered Inleakage Transport Group Inventory:

| Time (h) = 2.8000 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 |

TSC Exhaust to Environment Transport Group Inventory:

| Time (h) = 2.8000 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 |

Exclusion Area Boundary Doses:

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**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 1 | System Nos. | Sheet 840 of 1000 |
|---|---|---|---|---|

```
Time (h) =   8.0000    Whole Body   Thyroid       TEDE
Delta dose (rem)        6.1311E-08  0.0000E+00  6.1311E-08
Accumulated dose (rem)  8.5620E-03  5.8161E-01  2.6558E-02

Low Population Zone Doses:

Time (h) =   8.0000    Whole Body   Thyroid       TEDE
Delta dose (rem)        4.5983E-09  4.1621E-07  1.7435E-08
Accumulated dose (rem)  1.4983E-03  1.0178E-01  4.6477E-03

TSC Doses:

Time (h) =   8.0000    Whole Body   Thyroid       TEDE
Delta dose (rem)        5.9567E-06  1.7313E-02  5.3992E-04
Accumulated dose (rem)  5.3994E-05  1.3327E-01  4.1715E-03




Travel Path Doses:

Time (h) =   8.0000    Whole Body   Thyroid       TEDE
Delta dose (rem)        0.0000E+00  0.0000E+00  0.0000E+00
Accumulated dose (rem)  1.8856E-08  1.3830E-06  6.1606E-08

TSC Compartment Nuclide Inventory:

Time (h) =   8.0000       Ci           kg         Atoms         Bq
Kr-85                  5.0504E-07  1.2873E-12  9.1202E+12  1.8687E+04
Kr-85m                 2.4190E-08  2.9395E-18  2.0826E+07  8.9505E+02
Kr-87                  5.8738E-10  2.0737E-20  1.4354E+05  2.1733E+01
Kr-88                  2.0213E-08  1.6120E-18  1.1031E+07  7.4789E+02
I-131                  2.7749E-08  2.2383E-16  1.0290E+09  1.0267E+03
I-132                  9.3341E-10  9.0428E-20  4.1255E+05  3.4536E+01
I-133                  2.4624E-08  2.1737E-17  9.8422E+07  9.1107E+02
I-135                  6.6578E-09  1.8958E-18  8.4568E+06  2.4634E+02
Xe-133                 1.3773E-05  7.3583E-14  3.3318E+11  5.0961E+05
Xe-135                 3.5750E-07  1.3999E-16  6.2448E+08  1.3228E+04

TSC Transport Group Inventory:

                                                Overlying
Time (h) =   8.0000    Atmosphere     Sump        Pool
Noble gases (atoms)    9.4702E+12  0.0000E+00  0.0000E+00
Elemental I (atoms)    5.8795E+07  0.0000E+00  0.0000E+00
Organic I (atoms)      1.8184E+06  0.0000E+00  0.0000E+00
Aerosols (kg)          2.5106E-16  0.0000E+00  0.0000E+00

                       Deposition Recirculating
Time (h) =   8.0000     Surfaces     Filter
Noble gases (atoms)    0.0000E+00  0.0000E+00
Elemental I (atoms)    0.0000E+00  0.0000E+00
Organic I (atoms)      0.0000E+00  0.0000E+00
Aerosols (kg)          0.0000E+00  0.0000E+00

TSC Filtered Air Intake Transport Group Inventory:
```

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**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 1 | System Nos. | Sheet 841 of 1000 |
|---|---|---|---|---|

```
                          Pathway
Time (h) =   8.0000        Filter
Noble gases (atoms)     0.0000E+00
Elemental I (atoms)     0.0000E+00
Organic I (atoms)       0.0000E+00
Aerosols (kg)           0.0000E+00

TSC  Unfiltered Inleakage Transport Group Inventory:

                          Pathway
Time (h) =   8.0000        Filter
Noble gases (atoms)     0.0000E+00
Elemental I (atoms)     0.0000E+00
Organic I (atoms)       0.0000E+00
Aerosols (kg)           0.0000E+00




TSC Exhaust to Environment Transport Group Inventory:

                          Pathway
Time (h) =   8.0000        Filter
Noble gases (atoms)     0.0000E+00
Elemental I (atoms)     0.0000E+00
Organic I (atoms)       0.0000E+00
Aerosols (kg)           0.0000E+00

Exclusion Area Boundary Doses:

Time (h) =  24.0000    Whole Body   Thyroid       TEDE
Delta dose (rem)        8.6421E-11  0.0000E+00  8.6421E-11
Accumulated dose (rem)  8.5620E-03  5.8161E-01  2.6558E-02

Low Population Zone Doses:

Time (h) =  24.0000    Whole Body   Thyroid       TEDE
Delta dose (rem)        4.2130E-12  2.4158E-10  1.1643E-11
Accumulated dose (rem)  1.4983E-03  1.0178E-01  4.6477E-03

TSC Doses:

Time (h) =  24.0000    Whole Body   Thyroid       TEDE
Delta dose (rem)        8.4003E-09  3.0077E-05  9.3348E-07
Accumulated dose (rem)  5.4002E-05  1.3330E-01  4.1725E-03

Travel Path Doses:

Time (h) =  24.0000    Whole Body   Thyroid       TEDE
Delta dose (rem)        0.0000E+00  0.0000E+00  0.0000E+00
Accumulated dose (rem)  1.8856E-08  1.3830E-06  6.1606E-08

TSC Compartment Nuclide Inventory:

Time (h) =  24.0000       Ci           kg         Atoms         Bq
```

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**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 1 | System Nos. | Sheet 842 of 1000 |
|---|---|---|---|---|

TSC Transport Group Inventory:

| Time (h) = 24.0000 | Atmosphere | Sump | Overlying Pool |
|---|---|---|---|
| Noble gases (atoms) | 3.4579E+04 | 0.0000E+00 | 0.0000E+00 |
| Elemental I (atoms) | 2.1468E-01 | 0.0000E+00 | 0.0000E+00 |
| Organic I (atoms) | 6.6396E-03 | 0.0000E+00 | 0.0000E+00 |
| Aerosols (kg) | 9.1671E-25 | 0.0000E+00 | 0.0000E+00 |

| Time (h) = 24.0000 | Deposition Surfaces | Recirculating Filter |
|---|---|---|
| Noble gases (atoms) | 0.0000E+00 | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 | 0.0000E+00 |

TSC Filtered Air Intake Transport Group Inventory:

| Time (h) = 24.0000 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 |

TSC Unfiltered Inleakage Transport Group Inventory:

| Time (h) = 24.0000 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 |

TSC Exhaust to Environment Transport Group Inventory:

| Time (h) = 24.0000 | Pathway Filter |
|---|---|
| Noble gases (atoms) | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 |

Exclusion Area Boundary Doses:

| Time (h) = 96.0000 | Whole Body | Thyroid | TEDE |
|---|---|---|---|
| Delta dose (rem) | 2.3828E-19 | 0.0000E+00 | 2.3828E-19 |
| Accumulated dose (rem) | 8.5620E-03 | 5.8161E-01 | 2.6558E-02 |

Low Population Zone Doses:

| Time (h) = 96.0000 | Whole Body | Thyroid | TEDE |
|---|---|---|---|
| Delta dose (rem) | 4.7655E-21 | 4.1571E-19 | 1.7499E-20 |

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**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 1 | System Nos. | Sheet 843 of 1000 |
|---|---|---|---|---|

```
Accumulated dose (rem)  1.4983E-03  1.0178E-01  4.6477E-03

TSC Doses:

Time (h) =  96.0000    Whole Body   Thyroid       TEDE
Delta dose (rem)        3.4219E-17  1.4586E-13  4.5019E-15
Accumulated dose (rem)  5.4002E-05  1.3330E-01  4.1725E-03

Travel Path Doses:

Time (h) =  96.0000    Whole Body   Thyroid       TEDE
Delta dose (rem)        0.0000E+00  0.0000E+00  0.0000E+00
Accumulated dose (rem)  1.8856E-08  1.3830E-06  6.1606E-08

TSC Compartment Nuclide Inventory:

Time (h) =  96.0000       Ci           kg         Atoms         Bq

TSC Transport Group Inventory:



                                                Overlying
Time (h) =  96.0000    Atmosphere     Sump        Pool
Noble gases (atoms)    3.7116E-34  0.0000E+00  0.0000E+00
Elemental I (atoms)    2.3043E-39  0.0000E+00  0.0000E+00
Organic I (atoms)      7.1266E-41  0.0000E+00  0.0000E+00
Aerosols (kg)          9.8395E-63  0.0000E+00  0.0000E+00

                       Deposition Recirculating
Time (h) =  96.0000     Surfaces     Filter
Noble gases (atoms)    0.0000E+00  0.0000E+00
Elemental I (atoms)    0.0000E+00  0.0000E+00
Organic I (atoms)      0.0000E+00  0.0000E+00
Aerosols (kg)          0.0000E+00  0.0000E+00

TSC Filtered Air Intake Transport Group Inventory:

                        Pathway
Time (h) =  96.0000      Filter
Noble gases (atoms)    0.0000E+00
Elemental I (atoms)    0.0000E+00
Organic I (atoms)      0.0000E+00
Aerosols (kg)          0.0000E+00

TSC  Unfiltered Inleakage Transport Group Inventory:

                        Pathway
Time (h) =  96.0000      Filter
Noble gases (atoms)    0.0000E+00
Elemental I (atoms)    0.0000E+00
Organic I (atoms)      0.0000E+00
Aerosols (kg)          0.0000E+00

TSC Exhaust to Environment Transport Group Inventory:
```

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**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 1 | System Nos. | Sheet 844 of 1000 |
|---|---|---|---|---|

```
                          Pathway
Time (h) =  96.0000        Filter
Noble gases (atoms)      0.0000E+00
Elemental I (atoms)      0.0000E+00
Organic I (atoms)        0.0000E+00
Aerosols (kg)            0.0000E+00

Exclusion Area Boundary Doses:

Time (h) = 720.0000    Whole Body   Thyroid       TEDE
Delta dose (rem)        1.5899E-57  0.0000E+00  1.5899E-57
Accumulated dose (rem)  8.5620E-03  5.8161E-01  2.6558E-02

Low Population Zone Doses:

Time (h) = 720.0000    Whole Body   Thyroid       TEDE
Delta dose (rem)        7.9493E-60  7.9644E-58  3.2215E-59
Accumulated dose (rem)  1.4983E-03  1.0178E-01  4.6477E-03

TSC Doses:

Time (h) = 720.0000    Whole Body   Thyroid       TEDE
Delta dose (rem)        1.5221E-55  7.4521E-52  2.2857E-53
Accumulated dose (rem)  5.4002E-05  1.3330E-01  4.1725E-03

Travel Path Doses:

Time (h) = 720.0000    Whole Body   Thyroid       TEDE
Delta dose (rem)        0.0000E+00  0.0000E+00  0.0000E+00
Accumulated dose (rem)  1.8856E-08  1.3830E-06  6.1606E-08

TSC Compartment Nuclide Inventory:

Time (h) = 720.0000       Ci           kg         Atoms         Bq

TSC Transport Group Inventory:

                                                 Overlying
Time (h) = 720.0000    Atmosphere     Sump         Pool
Noble gases (atoms)    0.0000E+00  0.0000E+00  0.0000E+00
Elemental I (atoms)    0.0000E+00  0.0000E+00  0.0000E+00
Organic I (atoms)      0.0000E+00  0.0000E+00  0.0000E+00
Aerosols (kg)          0.0000E+00  0.0000E+00  0.0000E+00

                       Deposition Recirculating
Time (h) = 720.0000     Surfaces     Filter
Noble gases (atoms)    0.0000E+00  0.0000E+00
Elemental I (atoms)    0.0000E+00  0.0000E+00
Organic I (atoms)      0.0000E+00  0.0000E+00
Aerosols (kg)          0.0000E+00  0.0000E+00

TSC Filtered Air Intake Transport Group Inventory:

                          Pathway
Time (h) = 720.0000        Filter
Noble gases (atoms)      0.0000E+00
Elemental I (atoms)      0.0000E+00
```

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**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 1 | System Nos. | Sheet 845 of 1000 |
|---|---|---|---|---|

```
Organic I (atoms)      0.0000E+00
Aerosols (kg)          0.0000E+00

TSC  Unfiltered Inleakage Transport Group Inventory:

                        Pathway
Time (h) = 720.0000      Filter
Noble gases (atoms)    0.0000E+00
Elemental I (atoms)    0.0000E+00
Organic I (atoms)      0.0000E+00
Aerosols (kg)          0.0000E+00

TSC Exhaust to Environment Transport Group Inventory:

                        Pathway
Time (h) = 720.0000      Filter
Noble gases (atoms)    0.0000E+00
Elemental I (atoms)    0.0000E+00
Organic I (atoms)      0.0000E+00
Aerosols (kg)          0.0000E+00




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####################################################################
                            I-131 Summary
####################################################################
```

| Time (hr) | Containment I-131 (Curies) | Environment I-131 (Curies) | TSC I-131 (Curies) |
|---|---|---|---|
| 0.000 | 2.4848E+02 | 1.3528E-02 | 4.4244E-07 |
| 0.017 | 2.4688E+02 | 1.5950E+00 | 5.1983E-05 |
| 0.417 | 2.4653E+02 | 1.5951E+00 | 4.3731E-05 |
| 0.700 | 2.4628E+02 | 1.5951E+00 | 3.8691E-05 |
| 0.750 | 2.4623E+02 | 1.5951E+00 | 3.7864E-05 |
| 0.800 | 2.4619E+02 | 1.5951E+00 | 3.7055E-05 |
| 1.000 | 2.4601E+02 | 1.5951E+00 | 3.3987E-05 |
| 1.300 | 2.4575E+02 | 1.5951E+00 | 2.9854E-05 |
| 1.600 | 2.4548E+02 | 1.5951E+00 | 2.6224E-05 |
| 1.900 | 2.4522E+02 | 1.5951E+00 | 2.3036E-05 |
| 2.000 | 2.4513E+02 | 1.5951E+00 | 2.2061E-05 |
| 2.300 | 2.4486E+02 | 1.5951E+00 | 1.9379E-05 |
| 2.600 | 2.4460E+02 | 1.5951E+00 | 1.7022E-05 |
| 2.800 | 2.4442E+02 | 1.5951E+00 | 1.5613E-05 |
| 3.100 | 2.4416E+02 | 1.5951E+00 | 1.0835E-05 |
| 3.400 | 2.4390E+02 | 1.5951E+00 | 7.5188E-06 |
| 3.700 | 2.4364E+02 | 1.5951E+00 | 5.2178E-06 |
| 4.000 | 2.4337E+02 | 1.5951E+00 | 3.6209E-06 |
| 4.300 | 2.4311E+02 | 1.5951E+00 | 2.5128E-06 |
| 4.600 | 2.4285E+02 | 1.5951E+00 | 1.7437E-06 |
| 4.900 | 2.4259E+02 | 1.5951E+00 | 1.2101E-06 |
| 5.200 | 2.4233E+02 | 1.5951E+00 | 8.3975E-07 |
| 5.500 | 2.4207E+02 | 1.5951E+00 | 5.8275E-07 |
| 5.800 | 2.4180E+02 | 1.5951E+00 | 4.0440E-07 |

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|---|---|---|---|---|

| | | | |
|---|---|---|---|
| 6.100 | 2.4154E+02 | 1.5951E+00 | 2.8064E-07 |
| 6.400 | 2.4128E+02 | 1.5951E+00 | 1.9475E-07 |
| 6.700 | 2.4102E+02 | 1.5951E+00 | 1.3515E-07 |
| 7.000 | 2.4076E+02 | 1.5951E+00 | 9.3788E-08 |
| 7.300 | 2.4051E+02 | 1.5951E+00 | 6.5085E-08 |
| 7.600 | 2.4025E+02 | 1.5951E+00 | 4.5166E-08 |
| 7.900 | 2.3999E+02 | 1.5951E+00 | 3.1343E-08 |
| 8.000 | 2.3990E+02 | 1.5951E+00 | 2.7749E-08 |
| 8.300 | 2.3964E+02 | 1.5951E+00 | 1.9257E-08 |
| 8.600 | 2.3938E+02 | 1.5951E+00 | 1.3363E-08 |
| 8.900 | 2.3913E+02 | 1.5951E+00 | 9.2734E-09 |
| 9.200 | 2.3887E+02 | 1.5951E+00 | 6.4353E-09 |
| 9.500 | 2.3861E+02 | 1.5951E+00 | 4.4658E-09 |
| 9.800 | 2.3836E+02 | 1.5951E+00 | 3.0990E-09 |
| 10.100 | 2.3810E+02 | 1.5951E+00 | 2.1506E-09 |
| 10.400 | 2.3784E+02 | 1.5951E+00 | 1.4924E-09 |
| 24.000 | 2.2650E+02 | 1.5951E+00 | 9.5665E-17 |
| 96.000 | 1.7488E+02 | 1.5951E+00 | 7.9281E-55 |
| 720.000 | 1.8589E+01 | 1.5951E+00 | 0.0000E+00 |

```
#####################################################################
                        Cumulative Dose Summary
#####################################################################
```

| | Exclusion Area Bounda | | Low Population Zone | | TSC | |
|---|---|---|---|---|---|---|
| Time (hr) | Thyroid (rem) | TEDE (rem) | Thyroid (rem) | TEDE (rem) | Thyroid (rem) | TEDE (rem) |
| 0.000 | 4.9326E-03 | 2.2525E-04 | 8.6321E-04 | 3.9418E-05 | 8.5454E-08 | 2.6833E-09 |
| 0.017 | 5.8160E-01 | 2.6558E-02 | 1.0178E-01 | 4.6476E-03 | 5.9403E-04 | 1.8653E-05 |
| 0.417 | 5.8160E-01 | 2.6558E-02 | 1.0178E-01 | 4.6476E-03 | 2.6918E-02 | 8.4488E-04 |
| 0.700 | 5.8161E-01 | 2.6558E-02 | 1.0178E-01 | 4.6476E-03 | 4.2957E-02 | 1.3478E-03 |
| 0.750 | 5.8161E-01 | 2.6558E-02 | 1.0178E-01 | 4.6476E-03 | 4.5586E-02 | 1.4302E-03 |
| 0.800 | 5.8161E-01 | 2.6558E-02 | 1.0178E-01 | 4.6476E-03 | 4.8158E-02 | 1.5108E-03 |
| 1.000 | 5.8161E-01 | 2.6558E-02 | 1.0178E-01 | 4.6477E-03 | 5.7903E-02 | 1.8161E-03 |
| 1.300 | 5.8161E-01 | 2.6558E-02 | 1.0178E-01 | 4.6477E-03 | 7.1009E-02 | 2.2265E-03 |
| 1.600 | 5.8161E-01 | 2.6558E-02 | 1.0178E-01 | 4.6477E-03 | 8.2500E-02 | 2.5861E-03 |
| 1.900 | 5.8161E-01 | 2.6558E-02 | 1.0178E-01 | 4.6477E-03 | 9.2576E-02 | 2.9012E-03 |
| 2.000 | 5.8161E-01 | 2.6558E-02 | 1.0178E-01 | 4.6477E-03 | 9.5651E-02 | 2.9974E-03 |
| 2.300 | 5.8161E-01 | 2.6558E-02 | 1.0178E-01 | 4.6477E-03 | 1.0411E-01 | 3.2617E-03 |
| 2.600 | 5.8161E-01 | 2.6558E-02 | 1.0178E-01 | 4.6477E-03 | 1.1152E-01 | 3.4933E-03 |
| 2.800 | 5.8161E-01 | 2.6558E-02 | 1.0178E-01 | 4.6477E-03 | 1.1595E-01 | 3.6316E-03 |
| 3.100 | 5.8161E-01 | 2.6558E-02 | 1.0178E-01 | 4.6477E-03 | 1.2128E-01 | 3.7979E-03 |
| 3.400 | 5.8161E-01 | 2.6558E-02 | 1.0178E-01 | 4.6477E-03 | 1.2497E-01 | 3.9130E-03 |
| 3.700 | 5.8161E-01 | 2.6558E-02 | 1.0178E-01 | 4.6477E-03 | 1.2753E-01 | 3.9928E-03 |
| 4.000 | 5.8161E-01 | 2.6558E-02 | 1.0178E-01 | 4.6477E-03 | 1.2930E-01 | 4.0480E-03 |
| 4.300 | 5.8161E-01 | 2.6558E-02 | 1.0178E-01 | 4.6477E-03 | 1.3053E-01 | 4.0862E-03 |
| 4.600 | 5.8161E-01 | 2.6558E-02 | 1.0178E-01 | 4.6477E-03 | 1.3138E-01 | 4.1127E-03 |
| 4.900 | 5.8161E-01 | 2.6558E-02 | 1.0178E-01 | 4.6477E-03 | 1.3197E-01 | 4.1311E-03 |
| 5.200 | 5.8161E-01 | 2.6558E-02 | 1.0178E-01 | 4.6477E-03 | 1.3238E-01 | 4.1438E-03 |
| 5.500 | 5.8161E-01 | 2.6558E-02 | 1.0178E-01 | 4.6477E-03 | 1.3266E-01 | 4.1526E-03 |
| 5.800 | 5.8161E-01 | 2.6558E-02 | 1.0178E-01 | 4.6477E-03 | 1.3285E-01 | 4.1587E-03 |
| 6.100 | 5.8161E-01 | 2.6558E-02 | 1.0178E-01 | 4.6477E-03 | 1.3299E-01 | 4.1629E-03 |
| 6.400 | 5.8161E-01 | 2.6558E-02 | 1.0178E-01 | 4.6477E-03 | 1.3308E-01 | 4.1659E-03 |
| 6.700 | 5.8161E-01 | 2.6558E-02 | 1.0178E-01 | 4.6477E-03 | 1.3315E-01 | 4.1679E-03 |
| 7.000 | 5.8161E-01 | 2.6558E-02 | 1.0178E-01 | 4.6477E-03 | 1.3319E-01 | 4.1693E-03 |

AmerGen

**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 1 | System Nos. | Sheet 847 of 1000 |
|---|---|---|---|---|

| | | | | | | |
|---|---|---|---|---|---|---|
| 7.300 | 5.8161E-01 | 2.6558E-02 | 1.0178E-01 | 4.6477E-03 | 1.3323E-01 | 4.1703E-03 |
| 7.600 | 5.8161E-01 | 2.6558E-02 | 1.0178E-01 | 4.6477E-03 | 1.3325E-01 | 4.1709E-03 |
| 7.900 | 5.8161E-01 | 2.6558E-02 | 1.0178E-01 | 4.6477E-03 | 1.3326E-01 | 4.1714E-03 |
| 8.000 | 5.8161E-01 | 2.6558E-02 | 1.0178E-01 | 4.6477E-03 | 1.3327E-01 | 4.1715E-03 |
| 8.300 | 5.8161E-01 | 2.6558E-02 | 1.0178E-01 | 4.6477E-03 | 1.3328E-01 | 4.1718E-03 |
| 8.600 | 5.8161E-01 | 2.6558E-02 | 1.0178E-01 | 4.6477E-03 | 1.3328E-01 | 4.1720E-03 |
| 8.900 | 5.8161E-01 | 2.6558E-02 | 1.0178E-01 | 4.6477E-03 | 1.3329E-01 | 4.1721E-03 |
| 9.200 | 5.8161E-01 | 2.6558E-02 | 1.0178E-01 | 4.6477E-03 | 1.3329E-01 | 4.1722E-03 |
| 9.500 | 5.8161E-01 | 2.6558E-02 | 1.0178E-01 | 4.6477E-03 | 1.3329E-01 | 4.1723E-03 |
| 9.800 | 5.8161E-01 | 2.6558E-02 | 1.0178E-01 | 4.6477E-03 | 1.3329E-01 | 4.1724E-03 |
| 10.100 | 5.8161E-01 | 2.6558E-02 | 1.0178E-01 | 4.6477E-03 | 1.3329E-01 | 4.1724E-03 |
| 10.400 | 5.8161E-01 | 2.6558E-02 | 1.0178E-01 | 4.6477E-03 | 1.3329E-01 | 4.1724E-03 |
| 24.000 | 5.8161E-01 | 2.6558E-02 | 1.0178E-01 | 4.6477E-03 | 1.3330E-01 | 4.1725E-03 |
| 96.000 | 5.8161E-01 | 2.6558E-02 | 1.0178E-01 | 4.6477E-03 | 1.3330E-01 | 4.1725E-03 |
| 720.000 | 5.8161E-01 | 2.6558E-02 | 1.0178E-01 | 4.6477E-03 | 1.3330E-01 | 4.1725E-03 |

Travel Path

| Time (hr) | Thyroid (rem) | TEDE (rem) |
|---|---|---|
| 0.000 | 0.0000E+00 | 0.0000E+00 |
| 0.017 | 0.0000E+00 | 0.0000E+00 |
| 0.417 | 0.0000E+00 | 0.0000E+00 |
| 0.700 | 0.0000E+00 | 0.0000E+00 |
| 0.750 | 0.0000E+00 | 0.0000E+00 |
| 0.800 | 2.8879E-07 | 1.2895E-08 |
| 1.000 | 1.3830E-06 | 6.1606E-08 |
| 1.300 | 1.3830E-06 | 6.1606E-08 |
| 1.600 | 1.3830E-06 | 6.1606E-08 |
| 1.900 | 1.3830E-06 | 6.1606E-08 |
| 2.000 | 1.3830E-06 | 6.1606E-08 |
| 2.300 | 1.3830E-06 | 6.1606E-08 |
| 2.600 | 1.3830E-06 | 6.1606E-08 |
| 2.800 | 1.3830E-06 | 6.1606E-08 |
| 3.100 | 1.3830E-06 | 6.1606E-08 |
| 3.400 | 1.3830E-06 | 6.1606E-08 |
| 3.700 | 1.3830E-06 | 6.1606E-08 |
| 4.000 | 1.3830E-06 | 6.1606E-08 |
| 4.300 | 1.3830E-06 | 6.1606E-08 |
| 4.600 | 1.3830E-06 | 6.1606E-08 |
| 4.900 | 1.3830E-06 | 6.1606E-08 |
| 5.200 | 1.3830E-06 | 6.1606E-08 |
| 5.500 | 1.3830E-06 | 6.1606E-08 |
| 5.800 | 1.3830E-06 | 6.1606E-08 |
| 6.100 | 1.3830E-06 | 6.1606E-08 |
| 6.400 | 1.3830E-06 | 6.1606E-08 |
| 6.700 | 1.3830E-06 | 6.1606E-08 |
| 7.000 | 1.3830E-06 | 6.1606E-08 |
| 7.300 | 1.3830E-06 | 6.1606E-08 |
| 7.600 | 1.3830E-06 | 6.1606E-08 |
| 7.900 | 1.3830E-06 | 6.1606E-08 |
| 8.000 | 1.3830E-06 | 6.1606E-08 |
| 8.300 | 1.3830E-06 | 6.1606E-08 |
| 8.600 | 1.3830E-06 | 6.1606E-08 |
| 8.900 | 1.3830E-06 | 6.1606E-08 |
| 9.200 | 1.3830E-06 | 6.1606E-08 |

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**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 1 | System Nos. | Sheet 848 of 1000 |
|---|---|---|---|---|

```
   9.500 1.3830E-06 6.1606E-08
   9.800 1.3830E-06 6.1606E-08
  10.100 1.3830E-06 6.1606E-08
  10.400 1.3830E-06 6.1606E-08
  24.000 1.3830E-06 6.1606E-08
  96.000 1.3830E-06 6.1606E-08
 720.000 1.3830E-06 6.1606E-08

#################################################################
                        Worst Two-Hour Doses
    Note: All of the dose locations are shown below but the
          worst two-hour dose is only meaningful for the EAB
          dose location.  Please disregard the two-hour worst
          doses for the other dose locations
#################################################################

Exclusion Area Boundary
   Time   Whole Body    Thyroid        TEDE
   (hr)     (rem)        (rem)         (rem)
    0.0   8.4893E-03   5.7668E-01   2.6333E-02

Low Population Zone
   Time   Whole Body    Thyroid        TEDE
   (hr)     (rem)        (rem)         (rem)
    0.0   1.4856E-03   1.0092E-01   4.6083E-03



TSC
   Time   Whole Body    Thyroid        TEDE
   (hr)     (rem)        (rem)         (rem)
    0.0   4.0490E-05   9.5651E-02   2.9974E-03

Travel Path
   Time   Whole Body    Thyroid        TEDE
   (hr)     (rem)        (rem)         (rem)
    0.0   1.8856E-08   1.3830E-06   6.1606E-08
```

**Appendix V**

**MicroShield Output**

# (From Input File TMI_RB.ms5)

**To Evaluate TSC Dose Contribution Due To Containment Shine**

NOTES:

- RB wall 3 feet thick
- Shield #1 is effective shielding of ½ height due to other structures
- 9" concrete wall in TSC
- No additional credit for outer walls of OSF Building
- Decay over time is not considered. Over the 30-day mitigation period, doses would be less due to decay.

**AmerGen**

**CALCULATION SHEET**
**(Ref. EP-006T)**

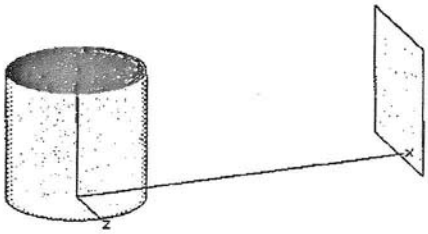
| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 1 | System Nos. | Sheet 850 of 1000 |
|---|---|---|---|---|

MicroShield v5.03 (5.03-00095)
PECO Energy

Page : 1
DOS File: TMI_RB.MS5
Run Date: May 15, 2002
Run Time: 5:35:09 PM
Duration: 00:00:08

File Ref: _____
Date: _____
By: _____
Checked: _____

Case Title: Case 1
Description: Case 1
Geometry: 7 - Cylinder Volume - Side Shields




Source Dimensions

| | | |
|---|---|---|
| Height | 4.4e+3 cm | 144 ft 9.0 in |
| Radius | 2.1e+3 cm | 70 ft 3.0 in |

Dose Points

| | X | Y | Z |
|---|---|---|---|
| # 1 | 11285.22 cm | 91.44 cm | 0 cm |
| | 370 ft 3.0 in | 3 ft | 0.0 in |

Shields

| Shield Name | Dimension | Material | Density |
|---|---|---|---|
| Source | 2.24e+06 ft³ | Air | 0.00122 |
| Shield 1 | 2.0 ft | Concrete | 2.35 |
| Transition | 290.0 ft | Air | 0.00122 |
| Shield 3 | .75 ft | Concrete | 2.35 |
| Air Gap | | Air | 0.00122 |
| Wall Clad | 3.0 ft | Concrete | 2.35 |

Source Input
Grouping Method : Standard Indices
Number of Groups : 25
Lower Energy Cutoff : 0.015
Photons < 0.015 : Excluded
Library : Grove

| Nuclide | curies | becquerels | µCi/cm³ | Bq/cm³ |
|---|---|---|---|---|
| Ba-137m | 3.2637e+006 | 1.2076e+017 | 5.1358e+001 | 1.9002e+006 |
| Cs-134 | 5.1300e+006 | 1.8981e+017 | 8.0726e+001 | 2.9868e+006 |
| Cs-136 | 1.4220e+006 | 5.2614e+016 | 2.2377e+001 | 8.2793e+005 |
| Cs-137 | 3.4500e+006 | 1.2765e+017 | 5.4289e+001 | 2.0087e+006 |
| I-131 | 2.8600e+007 | 1.0582e+018 | 4.5005e+002 | 1.6652e+007 |
| I-132 | 4.1200e+007 | 1.5244e+018 | 6.4832e+002 | 2.3988e+007 |
| I-133 | 6.0000e+007 | 2.2200e+018 | 9.4416e+002 | 3.4934e+007 |
| I-134 | 6.6400e+007 | 2.4568e+018 | 1.0449e+003 | 3.8660e+007 |
| I-135 | 5.5600e+007 | 2.0572e+018 | 8.7492e+002 | 3.2372e+007 |
| Kr-85 | 1.0500e+006 | 3.8850e+016 | 1.6523e+001 | 6.1134e+005 |
| Kr-85m | 2.3300e+007 | 8.6210e+017 | 3.6665e+002 | 1.3566e+007 |
| Kr-87 | 4.6000e+007 | 1.7020e+018 | 7.2386e+002 | 2.6783e+007 |
| Kr-88 | 3.4800e+007 | 1.2876e+018 | 5.4761e+002 | 2.0262e+007 |
| Mo-99 | | | | |
| Rb-86 | 1.6400e+005 | 6.0680e+015 | 2.5807e+000 | 9.5486e+004 |
| Xe-133 | 1.5000e+008 | 5.5500e+018 | 2.3604e+003 | 8.7335e+007 |
| Xe-135 | 5.5100e+007 | 2.0387e+018 | 8.6705e+002 | 3.2081e+007 |

Buildup
The material reference is : Wall Clad

Integration Parameters
Radial 10

AmerGen

**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 1 | System Nos. | Sheet 851 of 1000 |
|---|---|---|---|---|

Page : 2
DOS File: TMI_RB.MS5
Run Date: May 15, 2002
Run Time: 5:35:09 PM
Duration: 00:00:08

Circumferential 10
Y Direction (axial) 20

| Energy MeV | Activity photons/sec | Fluence Rate MeV/cm²/sec No Buildup | Results Fluence Rate MeV/cm²/sec With Buildup | Exposure Rate mR/hr No Buildup | Exposure Rate mR/hr With Buildup |
|---|---|---|---|---|---|
| 0.03 | 2.921e+18 | 4.447e-201 | 8.996e-19 | 4.407e-203 | 8.915e-21 |
| 0.04 | 3.699e+15 | 2.139e-100 | 3.020e-21 | 9.461e-103 | 1.336e-23 |
| 0.06 | 6.557e+15 | 7.656e-47 | 1.256e-19 | 1.521e-49 | 2.495e-22 |
| 0.08 | 2.068e+18 | 1.166e-30 | 9.426e-17 | 1.845e-33 | 1.492e-19 |
| 0.1 | 2.754e+15 | 5.817e-28 | 5.803e-19 | 8.900e-31 | 8.879e-22 |
| 0.15 | 8.259e+17 | 1.131e-19 | 9.832e-16 | 1.863e-22 | 1.619e-18 |
| 0.2 | 2.300e+18 | 2.426e-16 | 5.031e-13 | 4.281e-19 | 8.879e-16 |
| 0.3 | 3.657e+17 | 1.222e-13 | 1.704e-10 | 2.318e-16 | 3.233e-13 |
| 0.4 | 2.216e+18 | 1.444e-10 | 1.135e-07 | 2.815e-13 | 2.212e-10 |
| 0.5 | 2.827e+18 | 9.097e-09 | 4.301e-06 | 1.786e-11 | 8.443e-09 |
| 0.6 | 3.338e+18 | 2.279e-07 | 6.981e-05 | 4.447e-10 | 1.363e-07 |
| 0.8 | 6.675e+18 | 4.518e-05 | 7.133e-03 | 8.593e-08 | 1.357e-05 |
| 1.0 | 2.480e+18 | 4.876e-04 | 4.643e-02 | 8.989e-07 | 8.558e-05 |
| 1.5 | 2.038e+18 | 1.089e-01 | 4.549e+00 | 1.833e-04 | 7.654e-03 |
| 2.0 | 1.311e+18 | 2.208e+00 | 5.673e+01 | 3.414e-03 | 8.772e-02 |
| 3.0 | 2.479e+17 | 2.461e+01 | 3.493e+02 | 3.338e-02 | 4.740e-01 |
| TOTALS: | 2.963e+19 | 2.692e+01 | 4.107e+02 | 3.698e-02 | 5.694e-01 |

**Appendix W**

**MicroShield Output**

# (From Input File FILT_3.ms5)

**To Evaluate TSC Dose Contribution Due To TSC Filter Shine**

**AmerGen**

**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 1 | System Nos. | Sheet 853 of 1000 |
|---|---|---|---|---|

MicroShield v5.03 (5.03-00095)
PECO Energy

Page : 1
DOS File: FILT_3.MS5
Run Date: May 15, 2002
Run Time: 3:49:28 PM
Duration: 00:00:10

File Ref: _____
Date: _____
By: _____
Checked: _____

Case Title: TSC Filter Shine
Description: TSC Filter Shine
Geometry: 13 - Rectangular Volume

Source Dimensions

| | | |
|---|---|---|
| Length | 76.2 cm | 2 ft 6.0 in |
| Width | 60.96 cm | 2 ft |
| Height | 10.16 cm | 4.0 in |

Dose Points

| | X | Y | Z |
|---|---|---|---|
| # 1 | 609.6 cm | 5.08 cm | 0 cm |
| | 20 ft 0.0 in | 2.0 in | 0.0 in |

Shields

| Shield Name | Dimension | Material | Density |
|---|---|---|---|
| Source | 2880.0 in³ | Carbon | 2.25 |
| Shield 1 | 9.0 in | Concrete | 2.35 |
| Shield 2 | 2.5 in | Concrete | 2.35 |
| Air Gap | | Air | 0.00122 |

Source Input
Grouping Method : Standard Indices
Number of Groups : 25
Lower Energy Cutoff : 0.015
Photons < 0.015 : Excluded
Library : Grove

| Nuclide | curies | becquerels | µCi/cm³ | Bq/cm³ |
|---|---|---|---|---|
| Am-241 | 3.8200e-009 | 1.4134e+002 | 8.0941e-008 | 2.9948e-003 |
| Ba-137m | | | | |
| Ba-139 | 1.9100e-004 | 7.0670e+006 | 4.0471e-003 | 1.4974e+002 |
| Ba-140 | 2.4200e-003 | 8.9540e+007 | 5.1277e-002 | 1.8972e+003 |
| Ba-141 | | | | |
| Ce-143 | 4.8900e-005 | 1.8093e+006 | 1.0361e-003 | 3.8337e+001 |
| Ce-144 | 4.5300e-005 | 1.6761e+006 | 9.5985e-004 | 3.5515e+001 |
| Cm-242 | 8.9800e-007 | 3.3226e+004 | 1.9028e-005 | 7.0402e-001 |
| Cm-244 | 7.2700e-008 | 2.6899e+003 | 1.5404e-006 | 5.6996e-002 |
| Co-58 | 1.5400e-006 | 5.6980e+004 | 3.2631e-005 | 1.2073e+000 |
| Co-60 | 1.1800e-006 | 4.3660e+004 | 2.5003e-005 | 9.2510e-001 |
| Cs-134 | 4.4500e-003 | 1.6465e+008 | 9.4290e-002 | 3.4887e+003 |
| Cs-136 | 1.2100e-003 | 4.4770e+007 | 2.5638e-002 | 9.4862e+002 |
| Cs-137 | 2.9800e-003 | 1.1026e+008 | 6.3143e-002 | 2.3363e+003 |
| I-131 | 3.0900e-002 | 1.1433e+009 | 6.5473e-001 | 2.4225e+004 |
| I-132 | 7.9800e-003 | 2.9526e+008 | 1.6909e-001 | 6.2562e+003 |
| I-133 | 5.1600e-002 | 1.9092e+009 | 1.0933e+000 | 4.0454e+004 |
| I-134 | 1.2400e-003 | 4.5880e+007 | 2.6274e-002 | 9.7214e+002 |
| I-135 | 3.1000e-002 | 1.1470e+009 | 6.5685e-001 | 2.4304e+004 |
| La-140 | 2.2300e-005 | 8.2510e+005 | 4.7251e-004 | 1.7483e+001 |
| La-141 | 8.7300e-006 | 3.2301e+005 | 1.8498e-004 | 6.8442e+000 |
| La-142 | 2.6700e-006 | 9.8790e+004 | 5.6574e-005 | 2.0932e+000 |
| Mo-99 | 2.9300e-004 | 1.0841e+007 | 6.2083e-003 | 2.2971e+002 |

AmerGen

**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 1 | System Nos. | Sheet 854 of 1000 |
|---|---|---|---|---|

Page : 2
DOS File: FILT_3.MS5
Run Date: May 15, 2002
Run Time: 3:49:28 PM
Duration: 00:00:10

| Nuclide | curies | becquerels | µCi/cm³ | Bq/cm³ |
|---|---|---|---|---|
| Nb-95 | 2.2900e-005 | 8.4730e+005 | 4.8522e-004 | 1.7953e+001 |
| Nd-147 | 9.0400e-006 | 3.3448e+005 | 1.9155e-004 | 7.0872e+000 |
| Np-239 | 5.7500e-004 | 2.1275e+007 | 1.2184e-002 | 4.5079e+002 |
| Pr-143 | 2.1700e-005 | 8.0290e+005 | 4.5980e-004 | 1.7012e+001 |
| Pr-144 | | | | |
| Pu-238 | 1.7900e-007 | 6.6230e+003 | 3.7928e-006 | 1.4033e-001 |
| Pu-239 | 1.3900e-008 | 5.1430e+002 | 2.9452e-007 | 1.0897e-002 |
| Pu-240 | 1.5000e-008 | 5.5500e+002 | 3.1783e-007 | 1.1760e-002 |
| Pu-241 | 6.2200e-006 | 2.3014e+005 | 1.3179e-004 | 4.8764e+000 |
| Rb-86 | 4.2300e-005 | 1.5651e+006 | 8.9629e-004 | 3.3163e+001 |
| Rh-103m | | | | |
| Rh-105 | 1.4000e-004 | 5.1800e+006 | 2.9664e-003 | 1.0976e+002 |
| Rh-106 | | | | |
| Ru-103 | 2.5100e-004 | 9.2870e+006 | 5.3184e-003 | 1.9678e+002 |
| Ru-105 | 7.0100e-005 | 2.5937e+006 | 1.4853e-003 | 5.4957e+001 |
| Ru-106 | 9.5200e-005 | 3.5224e+006 | 2.0172e-003 | 7.4635e+001 |
| Sb-127 | 3.2900e-004 | 1.2173e+007 | 6.9711e-003 | 2.5793e+002 |
| Sb-129 | 4.2600e-004 | 1.5762e+007 | 9.0264e-003 | 3.3398e+002 |
| Sr-89 | 1.4500e-003 | 5.3650e+007 | 3.0724e-002 | 1.1368e+003 |
| Sr-90 | 1.5700e-004 | 5.8090e+006 | 3.3266e-003 | 1.2309e+002 |
| Sr-91 | 1.2800e-003 | 4.7360e+007 | 2.7122e-002 | 1.0035e+003 |
| Sr-92 | 5.1900e-004 | 1.9203e+007 | 1.0997e-002 | 4.0689e+002 |
| Tc-99m | 1.4200e-004 | 5.2540e+006 | 3.0088e-003 | 1.1133e+002 |
| Te-127 | 2.2100e-004 | 8.1770e+006 | 4.6827e-003 | 1.7326e+002 |
| Te-127m | 4.6000e-005 | 1.7020e+006 | 9.7468e-004 | 3.6063e+001 |
| Te-129 | 4.9200e-005 | 1.8204e+006 | 1.0425e-003 | 3.8572e+001 |
| Te-129m | 1.5300e-004 | 5.6610e+006 | 3.2419e-003 | 1.1995e+002 |
| Te-131m | 4.0800e-004 | 1.5096e+007 | 8.6450e-003 | 3.1987e+002 |
| Te-132 | 4.4400e-003 | 1.6428e+008 | 9.4078e-002 | 3.4809e+003 |
| Y-90 | 1.5000e-006 | 5.5500e+004 | 3.1783e-005 | 1.1760e+000 |
| Y-91 | 1.7700e-005 | 6.5490e+005 | 3.7504e-004 | 1.3877e+001 |
| Y-92 | 7.0600e-006 | 2.6122e+005 | 1.4959e-004 | 5.5349e+000 |
| Y-93 | 1.5400e-005 | 5.6980e+005 | 3.2631e-004 | 1.2073e+001 |
| Zr-95 | 2.2800e-005 | 8.4360e+005 | 4.8310e-004 | 1.7875e+001 |
| Zr-97 | 1.8100e-005 | 6.6970e+005 | 3.8352e-004 | 1.4190e+001 |

**Buildup**
The material reference is : Shield 1

**Integration Parameters**

| | |
|---|---|
| X Direction | 10 |
| Y Direction | 20 |
| Z Direction | 20 |

**Results**

| Energy MeV | Activity photons/sec | Fluence Rate MeV/cm²/sec No Buildup | Fluence Rate MeV/cm²/sec With Buildup | Exposure Rate mR/hr No Buildup | Exposure Rate mR/hr With Buildup |
|---|---|---|---|---|---|
| 0.015 | 1.222e+03 | 1.075e-249 | 4.344e-32 | 9.220e-251 | 3.726e-33 |
| 0.02 | 8.415e+05 | 6.379e-110 | 4.706e-29 | 2.209e-111 | 1.630e-30 |
| 0.03 | 2.031e+08 | 2.609e-36 | 2.511e-26 | 2.585e-38 | 2.489e-28 |

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**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 1 | System Nos. | Sheet 855 of 1000 |
|---|---|---|---|---|

Page : 3
DOS File: FILT_3.MS5
Run Date: May 15, 2002
Run Time: 3:49:28 PM
Duration: 00:00:10

| Energy MeV | Activity photons/sec | Fluence Rate MeV/cm²/sec No Buildup | Fluence Rate MeV/cm²/sec With Buildup | Exposure Rate mR/hr No Buildup | Exposure Rate mR/hr With Buildup |
|---|---|---|---|---|---|
| 0.04 | 3.617e+06 | 1.084e-20 | 4.372e-20 | 4.795e-23 | 1.933e-22 |
| 0.05 | 2.160e+07 | 1.075e-13 | 8.149e-13 | 2.864e-16 | 2.171e-15 |
| 0.06 | 6.210e+06 | 1.974e-11 | 2.506e-10 | 3.920e-14 | 4.977e-13 |
| 0.08 | 3.344e+07 | 2.590e-08 | 6.231e-07 | 4.098e-11 | 9.860e-10 |
| 0.1 | 2.321e+07 | 1.868e-07 | 6.707e-06 | 2.858e-10 | 1.026e-08 |
| 0.15 | 2.240e+07 | 2.483e-06 | 1.194e-04 | 4.088e-09 | 1.966e-07 |
| 0.2 | 1.860e+08 | 8.373e-05 | 3.938e-03 | 1.478e-07 | 6.950e-06 |
| 0.3 | 1.775e+08 | 4.698e-04 | 1.680e-02 | 8.912e-07 | 3.186e-05 |
| 0.4 | 1.018e+09 | 8.875e-03 | 2.365e-01 | 1.729e-05 | 4.608e-04 |
| 0.5 | 1.903e+09 | 4.071e-02 | 8.401e-01 | 7.991e-05 | 1.649e-03 |
| 0.6 | 7.262e+08 | 3.178e-02 | 5.282e-01 | 6.203e-05 | 1.031e-03 |
| 0.8 | 8.604e+08 | 1.129e-01 | 1.341e+00 | 2.147e-04 | 2.551e-03 |
| 1.0 | 7.054e+08 | 2.113e-01 | 1.948e+00 | 3.894e-04 | 3.590e-03 |
| 1.5 | 7.473e+08 | 9.314e-01 | 5.636e+00 | 1.567e-03 | 9.482e-03 |
| 2.0 | 1.405e+08 | 4.446e-01 | 2.092e+00 | 6.876e-04 | 3.235e-03 |
| 3.0 | 5.645e+04 | 5.873e-04 | 2.029e-03 | 7.969e-07 | 2.753e-06 |
| 4.0 | 2.593e+03 | 5.751e-05 | 1.641e-04 | 7.115e-08 | 2.031e-07 |
| TOTALS: | 6.779e+09 | 1.783e+00 | 1.264e+01 | 3.020e-03 | 2.204e-02 |

**Appendix X**

**MicroShield Output**

# (From Input File PLUME2.ms5)

**To Evaluate TSC Dose Contribution Due To External Plume Shine**

**AmerGen**

**CALCULATION SHEET**
**(Ref. EP-006T)**

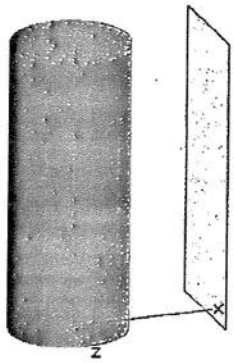
| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 1 | System Nos. | Sheet 857 of 1000 |
|---|---|---|---|---|

MicroShield v5.03 (5.03-00095)
PECO Energy

Page : 1
DOS File: PLUME2.MS5
Run Date: May 15, 2002
Run Time: 5:42:14 PM
Duration: 00:00:07

File Ref: _____
Date: _____
By: _____
Checked: _____

Case Title: TSC Dose
Description: TSC Dose Due To Plume Shine
Geometry: 7 - Cylinder Volume - Side Shields




Source Dimensions

| | | |
|---|---|---|
| Height | 3.0e+4 cm | 1000 ft |
| Radius | 6.1e+3 cm | 200 ft |

Dose Points

| | X | Y | Z |
|---|---|---|---|
| # 1 | 15240 cm | 6096 cm | 0 cm |
| | 500 ft | 200 ft | 0.0 in |

Shields

| Shield Name | Dimension | Material | Density |
|---|---|---|---|
| Source | 1.26e+08 ft³ | Air | 0.00122 |
| Transition | 280.0 ft | Air | 0.00122 |
| Shield 2 | .75 ft | Concrete | 2.35 |
| Shield 3 | .167 ft | Concrete | 2.35 |
| Air Gap | | Air | 0.00122 |

Source Input
Grouping Method : Standard Indices
Number of Groups : 25
Lower Energy Cutoff : 0.015
Photons < 0.015 : Excluded
Library : Grove

| Nuclide | curies | becquerels | µCi/cm³ | Bq/cm³ |
|---|---|---|---|---|
| Ba-137m | | | | |
| Ba-139 | 4.4300e+000 | 1.6391e+011 | 1.2449e-006 | 4.6063e-002 |
| Ba-140 | 8.9900e+000 | 3.3263e+011 | 2.5264e-006 | 9.3477e-002 |
| Ce-141 | 2.0650e-001 | 7.6405e+009 | 5.8032e-008 | 2.1472e-003 |
| Ce-143 | 1.9900e-001 | 7.3630e+009 | 5.5924e-008 | 2.0692e-003 |
| Ce-144 | 1.6600e-001 | 6.1420e+009 | 4.6650e-008 | 1.7261e-003 |
| Cm-242 | 3.2980e-003 | 1.2203e+008 | 9.2682e-010 | 3.4292e-005 |
| Cm-244 | 2.6690e-004 | 9.8753e+006 | 7.5006e-011 | 2.7752e-006 |
| Co-58 | 5.6790e-003 | 2.1012e+008 | 1.5959e-009 | 5.9050e-005 |
| Co-60 | 4.3470e-003 | 1.6084e+008 | 1.2216e-009 | 4.5200e-005 |
| Cs-134 | 3.0900e+001 | 1.1433e+012 | 8.6837e-006 | 3.2130e-001 |
| Cs-136 | 8.5200e+000 | 3.1524e+011 | 2.3943e-006 | 8.8590e-002 |
| Cs-137 | 2.0700e+001 | 7.6590e+011 | 5.8172e-006 | 2.1524e-001 |
| I-131 | 1.5110e+002 | 5.5907e+012 | 4.2463e-005 | 1.5711e+000 |
| I-132 | 1.5450e+002 | 5.7165e+012 | 4.3418e-005 | 1.6065e+000 |
| I-133 | 3.0510e+002 | 1.1289e+013 | 8.5741e-005 | 3.1724e+000 |
| I-134 | 1.4660e+002 | 5.4242e+012 | 4.1198e-005 | 1.5243e+000 |
| I-135 | 2.6150e+002 | 9.6755e+012 | 7.3488e-005 | 2.7191e+000 |
| Kr-85 | 5.6100e+000 | 2.0757e+011 | 1.5766e-006 | 5.8332e-002 |
| Kr-85m | 1.0230e+002 | 3.7851e+012 | 2.8749e-005 | 1.0637e+000 |
| Kr-87 | 1.2400e+002 | 4.5880e+012 | 3.4847e-005 | 1.2893e+000 |
| Kr-88 | 2.5420e+002 | 9.4054e+012 | 7.1437e-005 | 2.6432e+000 |
| La-140 | 8.9200e-002 | 3.3004e+009 | 2.5067e-008 | 9.2750e-004 |

AmerGen

**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 1 | System Nos. | Sheet 858 of 1000 |
|---|---|---|---|---|

Page : 2
DOS File: PLUME2.MS5
Run Date: May 15, 2002
Run Time: 5:42:14 PM
Duration: 00:00:07

| Nuclide | curies | becquerels | µCi/cm³ | Bq/cm³ |
|---|---|---|---|---|
| La-141 | 6.5600e-002 | 2.4272e+009 | 1.8435e-008 | 6.8210e-004 |
| La-142 | 5.2000e-002 | 1.9240e+009 | 1.4613e-008 | 5.4069e-004 |
| Mo-99 | 1.1350e+000 | 4.1995e+010 | 3.1896e-007 | 1.1802e-002 |
| Nb-95 | 8.4550e-002 | 3.1284e+009 | 2.3761e-008 | 8.7915e-004 |
| Nd-147 | 3.3640e-002 | 1.2447e+009 | 9.4537e-009 | 3.4979e-004 |
| Np-239 | 2.2460e+000 | 8.3102e+010 | 6.3118e-007 | 2.3354e-002 |
| Pr-143 | 8.0500e-002 | 2.9785e+009 | 2.2623e-008 | 8.3703e-004 |
| Pr-144 | | | | |
| Pu-238 | 6.5600e-004 | 2.4272e+007 | 1.8435e-010 | 6.8210e-006 |
| Pu-239 | 5.1100e-005 | 1.8907e+006 | 1.4360e-011 | 5.3133e-007 |
| Pu-240 | 5.5110e-005 | 2.0391e+006 | 1.5487e-011 | 5.7303e-007 |
| Pu-241 | 2.2800e-002 | 8.4360e+008 | 6.4074e-009 | 2.3707e-004 |
| Rb-86 | 2.9580e-001 | 1.0945e+010 | 8.3127e-008 | 3.0757e-003 |
| Rh-103m | | | | |
| Rh-105 | 5.6650e-001 | 2.0961e+010 | 1.5920e-007 | 5.8904e-003 |
| Rh-106 | | | | |
| Ru-103 | 9.2670e-001 | 3.4288e+010 | 2.6043e-007 | 9.6358e-003 |
| Ru-105 | 4.8900e-001 | 1.8093e+010 | 1.3742e-007 | 5.0846e-003 |
| Ru-106 | 3.4900e-001 | 1.2913e+010 | 9.8078e-008 | 3.6289e-003 |
| Sb-127 | 1.2560e+000 | 4.6472e+010 | 3.5297e-007 | 1.3060e-002 |
| Sb-129 | 3.0200e+000 | 1.1174e+011 | 8.4870e-007 | 3.1402e-002 |
| Sr-89 | 5.3230e+000 | 1.9695e+011 | 1.4959e-006 | 5.5348e-002 |
| Sr-90 | 5.7400e-001 | 2.1238e+010 | 1.6131e-007 | 5.9684e-003 |
| Sr-91 | 6.4900e+000 | 2.4013e+011 | 1.8239e-006 | 6.7483e-002 |
| Sr-92 | 5.1970e+000 | 1.9229e+011 | 1.4605e-006 | 5.4038e-002 |
| Tc-99m | 8.5000e-001 | 3.1450e+010 | 2.3887e-007 | 8.8382e-003 |
| Te-127 | 1.1280e+000 | 4.1736e+010 | 3.1700e-007 | 1.1729e-002 |
| Te-127m | 1.6890e-001 | 6.2493e+009 | 4.7465e-008 | 1.7562e-003 |
| Te-129 | 1.5560e+000 | 5.7572e+010 | 4.3728e-007 | 1.6179e-002 |
| Te-131 | | | | |
| Te-132 | 1.7067e+001 | 6.3148e+011 | 4.7963e-006 | 1.7746e-001 |
| Xe-133 | 7.9680e+002 | 2.9482e+013 | 2.2392e-004 | 8.2851e+000 |
| Xe-135 | 2.6780e+002 | 9.9086e+012 | 7.5259e-005 | 2.7846e+000 |
| Y-90 | 5.8000e-003 | 2.1460e+008 | 1.6299e-009 | 6.0308e-005 |
| Y-91 | 6.5160e-002 | 2.4109e+009 | 1.8312e-008 | 6.7753e-004 |
| Y-92 | 5.6980e-002 | 2.1083e+009 | 1.6013e-008 | 5.9247e-004 |
| Y-93 | 7.6770e-002 | 2.8405e+009 | 2.1574e-008 | 7.9825e-004 |
| Zr-95 | 8.3900e-002 | 3.1043e+009 | 2.3578e-008 | 8.7239e-004 |
| Zr-97 | 8.0600e-002 | 2.9822e+009 | 2.2651e-008 | 8.3807e-004 |

**Buildup**
**The material reference is : Source**

**Integration Parameters**

| | |
|---|---|
| Radial | 10 |
| Circumferential | 10 |
| Y Direction (axial) | 20 |

**Results**

| Energy MeV | Activity photons/sec | Fluence Rate MeV/cm²/sec No Buildup | Fluence Rate MeV/cm²/sec With Buildup | Exposure Rate mR/hr No Buildup | Exposure Rate mR/hr With Buildup |
|---|---|---|---|---|---|
| 0.015 | 5.197e+06 | 2.860e-246 | 3.175e-31 | 2.453e-247 | 2.723e-32 |

AmerGen

**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 1 | System Nos. | Sheet 859 of 1000 |
|---|---|---|---|---|

Page : 3
DOS File: PLUME2.MS5
Run Date: May 15, 2002
Run Time: 5:42:14 PM
Duration: 00:00:07

| Energy MeV | Activity photons/sec | Fluence Rate MeV/cm²/sec No Buildup | Fluence Rate MeV/cm²/sec With Buildup | Exposure Rate mR/hr No Buildup | Exposure Rate mR/hr With Buildup |
|---|---|---|---|---|---|
| 0.02 | 4.108e+09 | 1.556e-108 | 7.121e-28 | 5.390e-110 | 2.467e-29 |
| 0.03 | 1.583e+13 | 1.451e-34 | 5.203e-23 | 1.438e-36 | 5.156e-25 |
| 0.04 | 2.174e+10 | 4.431e-20 | 9.190e-18 | 1.960e-22 | 4.065e-20 |
| 0.05 | 8.301e+10 | 3.211e-13 | 1.572e-10 | 8.555e-16 | 4.189e-13 |
| 0.06 | 4.177e+10 | 1.163e-10 | 8.257e-08 | 2.310e-13 | 1.640e-10 |
| 0.08 | 1.099e+13 | 8.736e-06 | 6.928e-03 | 1.382e-08 | 1.096e-05 |
| 0.1 | 1.047e+11 | 9.602e-07 | 6.651e-04 | 1.469e-09 | 1.018e-06 |
| 0.15 | 3.582e+12 | 5.313e-04 | 2.087e-01 | 8.749e-07 | 3.436e-04 |
| 0.2 | 1.239e+13 | 8.282e-03 | 1.907e+00 | 1.462e-05 | 3.366e-03 |
| 0.3 | 1.758e+12 | 7.925e-03 | 7.985e-01 | 1.503e-05 | 1.515e-03 |
| 0.4 | 8.565e+12 | 1.385e-01 | 7.845e+00 | 2.699e-04 | 1.529e-02 |
| 0.5 | 1.309e+13 | 5.514e-01 | 2.041e+01 | 1.082e-03 | 4.006e-02 |
| 0.6 | 1.165e+13 | 1.047e+00 | 2.787e+01 | 2.044e-03 | 5.441e-02 |
| 0.8 | 1.997e+13 | 5.692e+00 | 9.400e+01 | 1.083e-02 | 1.788e-01 |
| 1.0 | 9.344e+12 | 6.279e+00 | 7.384e+01 | 1.157e-02 | 1.361e-01 |
| 1.5 | 9.206e+12 | 2.662e+01 | 1.830e+02 | 4.479e-02 | 3.078e-01 |
| 2.0 | 7.557e+12 | 5.561e+01 | 2.786e+02 | 8.599e-02 | 4.309e-01 |
| 3.0 | 7.148e+11 | 1.685e+01 | 5.845e+01 | 2.286e-02 | 7.930e-02 |
| 4.0 | 5.050e+07 | 2.447e-03 | 6.844e-03 | 3.027e-06 | 8.467e-06 |
| TOTALS: | 1.249e+14 | 1.128e+02 | 7.469e+02 | 1.795e-01 | 1.248e+00 |

**Appendix Y**

**MicroShield Output**

# (From Input File PLUME3.ms5)

**To Evaluate TSC Transit Dose Due To Plume Shine**

**AmerGen**

**CALCULATION SHEET**
**(Ref. EP-006T)**

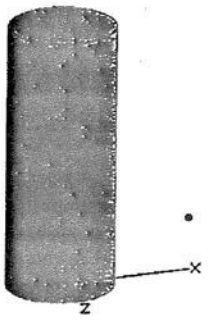
| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 1 | System Nos. | Sheet 861 of 1000 |
|---|---|---|---|---|

MicroShield v5.03 (5.03-00095)
PECO Energy

Page : 1
DOS File: PLUME3.MS5
Run Date: May 15, 2002
Run Time: 5:44:50 PM
Duration: 00:00:07

File Ref: _____
Date: _____
By: _____
Checked: _____

Case Title: TSC Dose
Description: TSC Dose Due To Plume Shine
Geometry: 7 - Cylinder Volume - Side Shields




Source Dimensions

| | | |
|---|---|---|
| Height | 3.0e+4 cm | 1000 ft |
| Radius | 6.1e+3 cm | 200 ft |

Dose Points

| | X | Y | Z |
|---|---|---|---|
| # 1 | 15240 cm | 6096 cm | 0 cm |
| | 500 ft | 200 ft | 0.0 in |

Shields

| Shield Name | Dimension | Material | Density |
|---|---|---|---|
| Source | 1.26e+08 ft³ | Air | 0.00122 |
| Transition | 280.0 ft | Air | 0.00122 |
| Air Gap | | Air | 0.00122 |

Source Input
Grouping Method : Standard Indices
Number of Groups : 25
Lower Energy Cutoff : 0.015
Photons < 0.015 : Excluded
Library : Grove

| Nuclide | curies | becquerels | µCi/cm³ | Bq/cm³ |
|---|---|---|---|---|
| Ba-137m | | | | |
| Ba-139 | 4.4300e+000 | 1.6391e+011 | 1.2449e-006 | 4.6063e-002 |
| Ba-140 | 8.9900e+000 | 3.3263e+011 | 2.5264e-006 | 9.3477e-002 |
| Ce-141 | 2.0650e-001 | 7.6405e+009 | 5.8032e-008 | 2.1472e-003 |
| Ce-143 | 1.9900e-001 | 7.3630e+009 | 5.5924e-008 | 2.0692e-003 |
| Ce-144 | 1.6600e-001 | 6.1420e+009 | 4.6650e-008 | 1.7261e-003 |
| Cm-242 | 3.2980e-003 | 1.2203e+008 | 9.2682e-010 | 3.4292e-005 |
| Cm-244 | 2.6690e-004 | 9.8753e+006 | 7.5006e-011 | 2.7752e-006 |
| Co-58 | 5.6790e-003 | 2.1012e+008 | 1.5959e-009 | 5.9050e-005 |
| Co-60 | 4.3470e-003 | 1.6084e+008 | 1.2216e-009 | 4.5200e-005 |
| Cs-134 | 3.0900e+001 | 1.1433e+012 | 8.6837e-006 | 3.2130e-001 |
| Cs-136 | 8.5200e+000 | 3.1524e+011 | 2.3943e-006 | 8.8590e-002 |
| Cs-137 | 2.0700e+001 | 7.6590e+011 | 5.8172e-006 | 2.1524e-001 |
| I-131 | 1.5110e+002 | 5.5907e+012 | 4.2463e-005 | 1.5711e+000 |
| I-132 | 1.5450e+002 | 5.7165e+012 | 4.3418e-005 | 1.6065e+000 |
| I-133 | 3.0510e+002 | 1.1289e+013 | 8.5741e-005 | 3.1724e+000 |
| I-134 | 1.4660e+002 | 5.4242e+012 | 4.1198e-005 | 1.5243e+000 |
| I-135 | 2.6150e+002 | 9.6755e+012 | 7.3488e-005 | 2.7191e+000 |
| Kr-85 | 5.6100e+000 | 2.0757e+011 | 1.5766e-006 | 5.8332e-002 |
| Kr-85m | 1.0230e+002 | 3.7851e+012 | 2.8749e-005 | 1.0637e+000 |
| Kr-87 | 1.2400e+002 | 4.5880e+012 | 3.4847e-005 | 1.2893e+000 |
| Kr-88 | 2.5420e+002 | 9.4054e+012 | 7.1437e-005 | 2.6432e+000 |
| La-140 | 8.9200e-002 | 3.3004e+009 | 2.5067e-008 | 9.2750e-004 |
| La-141 | 6.5600e-002 | 2.4272e+009 | 1.8435e-008 | 6.8210e-004 |
| La-142 | 5.2000e-002 | 1.9240e+009 | 1.4613e-008 | 5.4069e-004 |

AmerGen

**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 1 | System Nos. | Sheet 862 of 1000 |
|---|---|---|---|---|

Page : 2
DOS File: PLUME3.MS5
Run Date: May 15, 2002
Run Time: 5:44:50 PM
Duration: 00:00:07

| Nuclide | curies | becquerels | µCi/cm³ | Bq/cm³ |
|---|---|---|---|---|
| Mo-99 | 1.1350e+000 | 4.1995e+010 | 3.1896e-007 | 1.1802e-002 |
| Nb-95 | 8.4550e-002 | 3.1284e+009 | 2.3761e-008 | 8.7915e-004 |
| Nd-147 | 3.3640e-002 | 1.2447e+009 | 9.4537e-009 | 3.4979e-004 |
| Np-239 | 2.2460e+000 | 8.3102e+010 | 6.3118e-007 | 2.3354e-002 |
| Pr-143 | 8.0500e-002 | 2.9785e+009 | 2.2623e-008 | 8.3703e-004 |
| Pr-144 | | | | |
| Pu-238 | 6.5600e-004 | 2.4272e+007 | 1.8435e-010 | 6.8210e-006 |
| Pu-239 | 5.1100e-005 | 1.8907e+006 | 1.4360e-011 | 5.3133e-007 |
| Pu-240 | 5.5110e-005 | 2.0391e+006 | 1.5487e-011 | 5.7303e-007 |
| Pu-241 | 2.2800e-002 | 8.4360e+008 | 6.4074e-009 | 2.3707e-004 |
| Rb-86 | 2.9580e-001 | 1.0945e+010 | 8.3127e-008 | 3.0757e-003 |
| Rh-103m | | | | |
| Rh-105 | 5.6650e-001 | 2.0961e+010 | 1.5920e-007 | 5.8904e-003 |
| Rh-106 | | | | |
| Ru-103 | 9.2670e-001 | 3.4288e+010 | 2.6043e-007 | 9.6358e-003 |
| Ru-105 | 4.8900e-001 | 1.8093e+010 | 1.3742e-007 | 5.0846e-003 |
| Ru-106 | 3.4900e-001 | 1.2913e+010 | 9.8078e-008 | 3.6289e-003 |
| Sb-127 | 1.2560e+000 | 4.6472e+010 | 3.5297e-007 | 1.3060e-002 |
| Sb-129 | 3.0200e+000 | 1.1174e+011 | 8.4870e-007 | 3.1402e-002 |
| Sr-89 | 5.3230e+000 | 1.9695e+011 | 1.4959e-006 | 5.5348e-002 |
| Sr-90 | 5.7400e-001 | 2.1238e+010 | 1.6131e-007 | 5.9684e-003 |
| Sr-91 | 6.4900e+000 | 2.4013e+011 | 1.8239e-006 | 6.7483e-002 |
| Sr-92 | 5.1970e+000 | 1.9229e+011 | 1.4605e-006 | 5.4038e-002 |
| Tc-99m | 8.5000e-001 | 3.1450e+010 | 2.3887e-007 | 8.8382e-003 |
| Te-127 | 1.1280e+000 | 4.1736e+010 | 3.1700e-007 | 1.1729e-002 |
| Te-127m | 1.6890e-001 | 6.2493e+009 | 4.7465e-008 | 1.7562e-003 |
| Te-129 | 1.5560e+000 | 5.7572e+010 | 4.3728e-007 | 1.6179e-002 |
| Te-131 | | | | |
| Te-132 | 1.7067e+001 | 6.3148e+011 | 4.7963e-006 | 1.7746e-001 |
| Xe-133 | 7.9680e+002 | 2.9482e+013 | 2.2392e-004 | 8.2851e+000 |
| Xe-135 | 2.6780e+002 | 9.9086e+012 | 7.5259e-005 | 2.7846e+000 |
| Y-90 | 5.8000e-003 | 2.1460e+008 | 1.6299e-009 | 6.0308e-005 |
| Y-91 | 6.5160e-002 | 2.4109e+009 | 1.8312e-008 | 6.7753e-004 |
| Y-92 | 5.6980e-002 | 2.1083e+009 | 1.6013e-008 | 5.9247e-004 |
| Y-93 | 7.6770e-002 | 2.8405e+009 | 2.1574e-008 | 7.9825e-004 |
| Zr-95 | 8.3900e-002 | 3.1043e+009 | 2.3578e-008 | 8.7239e-004 |
| Zr-97 | 8.0600e-002 | 2.9822e+009 | 2.2651e-008 | 8.3807e-004 |

Buildup
The material reference is : Source

Integration Parameters

| | |
|---|---|
| Radial | 10 |
| Circumferential | 10 |
| Y Direction (axial) | 20 |

Results

| Energy MeV | Activity photons/sec | Fluence Rate MeV/cm²/sec No Buildup | Fluence Rate MeV/cm²/sec With Buildup | Exposure Rate mR/hr No Buildup | Exposure Rate mR/hr With Buildup |
|---|---|---|---|---|---|
| 0.015 | 5.197e+06 | 7.614e-15 | 1.269e-14 | 6.531e-16 | 1.089e-15 |

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**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 1 | System Nos. | Sheet 863 of 1000 |
|---|---|---|---|---|

Page : 3
DOS File: PLUME3.MS5
Run Date: May 15, 2002
Run Time: 5:44:50 PM
Duration: 00:00:07

| Energy MeV | Activity photons/sec | Fluence Rate MeV/cm²/sec No Buildup | Fluence Rate MeV/cm²/sec With Buildup | Exposure Rate mR/hr No Buildup | Exposure Rate mR/hr With Buildup |
|---|---|---|---|---|---|
| 0.02 | 4.108e+09 | 2.407e-07 | 5.958e-07 | 8.337e-09 | 2.064e-08 |
| 0.03 | 1.583e+13 | 3.915e-01 | 2.130e+00 | 3.880e-03 | 2.111e-02 |
| 0.04 | 2.174e+10 | 3.154e-03 | 3.347e-02 | 1.395e-05 | 1.480e-04 |
| 0.05 | 8.301e+10 | 2.672e-02 | 4.309e-01 | 7.119e-05 | 1.148e-03 |
| 0.06 | 4.177e+10 | 2.161e-02 | 4.292e-01 | 4.293e-05 | 8.525e-04 |
| 0.08 | 1.099e+13 | 1.027e+01 | 2.175e+02 | 1.625e-02 | 3.441e-01 |
| 0.1 | 1.047e+11 | 1.469e-01 | 2.771e+00 | 2.248e-04 | 4.239e-03 |
| 0.15 | 3.582e+12 | 1.013e+01 | 1.302e+02 | 1.669e-02 | 2.145e-01 |
| 0.2 | 1.239e+13 | 5.753e+01 | 5.414e+02 | 1.015e-01 | 9.556e-01 |
| 0.3 | 1.758e+12 | 1.643e+01 | 1.018e+02 | 3.116e-02 | 1.930e-01 |
| 0.4 | 8.565e+12 | 1.308e+02 | 6.195e+02 | 2.548e-01 | 1.207e+00 |
| 0.5 | 1.309e+13 | 2.916e+02 | 1.143e+03 | 5.724e-01 | 2.244e+00 |
| 0.6 | 1.165e+13 | 3.521e+02 | 1.196e+03 | 6.873e-01 | 2.334e+00 |
| 0.8 | 1.997e+13 | 9.692e+02 | 2.677e+03 | 1.843e+00 | 5.092e+00 |
| 1.0 | 9.344e+12 | 6.502e+02 | 1.566e+03 | 1.199e+00 | 2.887e+00 |
| 1.5 | 9.206e+12 | 1.209e+03 | 2.345e+03 | 2.034e+00 | 3.945e+00 |
| 2.0 | 7.557e+12 | 1.527e+03 | 2.623e+03 | 2.361e+00 | 4.056e+00 |
| 3.0 | 7.148e+11 | 2.573e+02 | 3.849e+02 | 3.491e-01 | 5.221e-01 |
| 4.0 | 5.050e+07 | 2.681e-02 | 3.708e-02 | 3.317e-05 | 4.587e-05 |
| TOTALS: | 1.249e+14 | 5.482e+03 | 1.355e+04 | 9.470e+00 | 2.402e+01 |

**Appendix Z**

**RADTRAD Output File**

# Containment_Leakage pH 7_3.o0

**For Containment Leakage Dose to CR, EAB, and LPZ**

TMI Containment Leakage Pathway AST Analysis

Spray removal coefficients determined using SRP 6.5.2 methodology
Elemental iodine decontamination factor determined using SRP 6.5.2 methodology and a sump water pH of 7.3

CR Unfiltered Inleakage = 1,000 cfm (t=30 minutes to t=720 hours)
CR Initiation Time = 30 min (t=0 to t=30 min)
Two Spray Pumps for 28.19 min at 800 gpm each pump (t=75 seconds to t=29.44 minutes)
One Spray Pump from 29.44 minutes to 4.0 hours @ 800 gpm

RADTRAD, Version 3.03, has been verified and validated in accordance with S&L's QA program. As such, independent validation of the code is not required for use of the code in this calculation. The RADTRAD code was accessed via S&L's Applist and was run on S&L desktop computer # ZD1950. The controlled file path is:

```
Controlled File Summary for RADTRAD (S&L Program No. 03.7.720-3.03)
Type: 2 Status: O Effective Date: 04-02-2004
Executed 06-26-2007

Controlled File Path: \\SNL1B\SYS3\OPS$\RAD720303\
```

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**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 2 | System Nos. | Sheet 865 of 1000 |
|---|---|---|---|---|

```
 ######################################################################
    RADTRAD Version 3.03 (Spring 2001) run on  6/26/2007  at  8:24:58
 ######################################################################

 ######################################################################
                        File information
 ######################################################################

 Plant file           = d:\0c2678\AGK\TMI\SRP 6-5-2 Spray Removal Coeff_pH 7-
3\Containment_Leakage pH 7_3.psf
 Inventory file       = D:\0c2678\AGK\TMI\SRP 6-5-2 Spray Removal Coeff_pH 7-3\Tmi_def.nif
 Release file         = \\snl1b\sys3\ops$\rad720303\defaults\pwr_dba.rft
 Dose Conversion file = \\snl1b\sys3\ops$\rad720303\defaults\fgr11&12.inp


     #####    ####   #####    #  #     #  #####   #    #  #####
     #    #  #      #        #  ##    #  #    #  #    #    #
     #    #  #      #        #  # #   #  #    #  #    #    #
     #####    ####   ####     #  #  #  #  #####   #    #    #
     #           #  #        #  #   # #  #       #    #    #
     #           #  #        #  #    ##  #       #    #    #
     #        ####   #        #  #     #  #        ####     #

 Radtrad 3.03 4/15/2001
 All Spray Floww at 800 gpm - 28.19 min BWST Depletion
 Nuclide Inventory File:
 D:\0c2678\AGK\TMI\SRP 6-5-2 Spray Removal Coeff_pH 7-3\Tmi_def.nif
 Plant Power Level:
  2.6190E+03
 Compartments:
   4
 Compartment 1:
 Sprayed Region
   3
  1.2310E+06
   1
   0
   0
   0
   0
 Compartment 2:
 Unsprayed Region
   3
  9.2880E+05
   0
   0
   0
   1
   0
 Compartment 3:
 Environment
   2
  0.0000E+00
   0
   0
   0
   0
   0
 Compartment 4:
 Control Room
   1
  2.5000E+05
   0
   0
```

```
  1
  0
  0
Pathways:
  7
Pathway 1:
Sprayed to Unsprayed
  1
  2
  2
Pathway 2:
Unsprayed to Sprayed
  2
  1
  2
Pathway 3:
Sprayed to Environment
  1
  3
  4
Pathway 4:
Unsprayed to Environment
  2
  3
  4
Pathway 5:
CR Filtered Air Intake
  3
  4
  2
Pathway 6:
CR  Unfiltered Inleakage
  3
  4
  2
Pathway 7:
CR Exhaust to Environment
  4
  3
  2
End of Plant Model File
Scenario Description Name:

Plant Model Filename:
ACCEPT\TEST24.PMF
Source Term:
  2
  1   5.7000E-01
  2   4.3000E-01
\\snl1b\sys3\ops$\rad720303\defaults\fgr11&12.inp
\\snl1b\sys3\ops$\rad720303\defaults\pwr_dba.rft
  0.0000E+00
  0
  9.5000E-01   4.8500E-02   1.5000E-03   1.0000E+00
Overlying Pool:
  0
  0.0000E+00
  0
  0
  0
  0
Compartments:
  4
Compartment 1:
  0
```

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**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 2 | System Nos. | Sheet 867 of 1000 |
|---|---|---|---|---|

```
  1
  1
  0.0000E+00
  6
  0.0000E+00   0.0000E+00
  2.0800E-02   4.5800E+00
  4.9070E-01   2.2900E+00
  2.0600E+00   2.2900E+00
  3.5100E+00   2.2900E-01
  4.0000E+00   0.0000E+00
  1
  0.0000E+00
  6
  0.0000E+00   0.0000E+00
  2.0800E-02   1.7020E+01
  4.9070E-01   8.5100E+00
  2.0600E+00   0.0000E+00
  3.5100E+00   0.0000E+00
  4.0000E+00   0.0000E+00
  1
  0.0000E+00
  0
  0
  0
  0
  0
Compartment 2:
  0
  1
  0
  0
  0
  0
  0
  3
  1
  1.0000E+01
  1
  1
  0.0000E+00   0.0000E+00
Compartment 3:
  1
  1
  0
  0
  0
  0
  0
  0
  0
Compartment 4:
  1
  1
  0
  0
  0
  0
  1
  2.8000E+04
  3
  0.0000E+00   0.0000E+00   0.0000E+00   0.0000E+00
  5.0000E-01   9.9000E+01   9.0000E+01   9.0000E+01
  7.2000E+02   0.0000E+00   0.0000E+00   0.0000E+00
  0
  0
```

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**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 2 | System Nos. | Sheet 868 of 1000 |
|---|---|---|---|---|

```
Pathways:
  7
Pathway 1:
  0
  0
  0
  0
  0
  1
  3
  0.0000E+00   0.0000E+00   0.0000E+00   0.0000E+00   0.0000E+00
  9.7000E-03   2.5000E+04   0.0000E+00   0.0000E+00   0.0000E+00
  7.2000E+02   2.5000E+04   0.0000E+00   0.0000E+00   0.0000E+00
  0
  0
  0
  0
  0
  0
Pathway 2:
  0
  0
  0
  0
  0
  1
  3
  0.0000E+00   0.0000E+00   0.0000E+00   0.0000E+00   0.0000E+00
  9.7000E-03   2.5000E+04   0.0000E+00   0.0000E+00   0.0000E+00
  7.2000E+02   2.5000E+04   0.0000E+00   0.0000E+00   0.0000E+00
  0
  0
  0
  0
  0
  0
Pathway 3:
  0
  0
  0
  0
  0
  0
  0
  0
  0
  0
  1
  3
  0.0000E+00   1.0000E-01
  2.4000E+01   5.0000E-02
  7.2000E+02   0.0000E+00
  0
Pathway 4:
  0
  0
  0
  0
  0
  0
  0
  0
  0
  0
  1
```

```
  3
  0.0000E+00   1.0000E-01
  2.4000E+01   5.0000E-02
  7.2000E+02   0.0000E+00
  0
Pathway 5:
  0
  0
  0
  0
  0
  1
  3
  0.0000E+00   4.0000E+03   0.0000E+00   0.0000E+00   0.0000E+00
  5.0000E-01   8.0000E+03   9.9000E+01   9.0000E+01   9.0000E+01
  7.2000E+02   8.0000E+03   9.9000E+01   9.0000E+01   9.0000E+01
  0
  0
  0
  0
  0
  0
Pathway 6:
  0
  0
  0
  0
  0
  1
  3
  0.0000E+00   0.0000E+00   0.0000E+00   0.0000E+00   0.0000E+00
  5.0000E-01   1.0000E+03   0.0000E+00   0.0000E+00   0.0000E+00
  7.2000E+02   1.0000E+03   0.0000E+00   0.0000E+00   0.0000E+00
  0
  0
  0
  0
  0
  0
Pathway 7:
  0
  0
  0
  0
  0
  1
  3
  0.0000E+00   4.0000E+03   0.0000E+00   0.0000E+00   0.0000E+00
  5.0000E-01   9.0000E+03   0.0000E+00   0.0000E+00   0.0000E+00
  7.2000E+02   9.0000E+03   0.0000E+00   0.0000E+00   0.0000E+00
  0
  0
  0
  0
  0
  0
Dose Locations:
  3
Location 1:
Exclusion Area Boundary
  3
  1
  2
  0.0000E+00   8.0000E-04
  7.2000E+02   0.0000E+00
```

```
  1
  2
  0.0000E+00   3.5000E-04
  7.2000E+02   0.0000E+00
  0
Location 2:
Low Population Zone
  3
  1
  6
  0.0000E+00   1.4000E-04
  2.0000E+00   6.0000E-05
  8.0000E+00   3.9000E-05
  2.4000E+01   1.6000E-05
  9.6000E+01   4.0000E-06
  7.2000E+02   0.0000E+00
  1
  4
  0.0000E+00   3.5000E-04
  8.0000E+00   1.8000E-04
  2.4000E+01   2.3000E-04
  7.2000E+02   0.0000E+00
  0
Location 3:
Control Room
  4
  0
  1
  2
  0.0000E+00   3.5000E-04
  7.2000E+02   0.0000E+00
  1
  4
  0.0000E+00   1.0000E+00
  2.4000E+01   6.0000E-01
  9.6000E+01   4.0000E-01
  7.2000E+02   0.0000E+00
Effective Volume Location:
  1
  6
  0.0000E+00   3.4000E-04
  2.0000E+00   2.2500E-04
  8.0000E+00   1.0200E-04
  2.4000E+01   7.1600E-05
  9.6000E+01   4.9900E-05
  7.2000E+02   0.0000E+00
Simulation Parameters:
  7
  0.0000E+00   5.0000E-02
  1.0000E+00   1.0000E-01
  2.0000E+00   1.0000E+00
  8.0000E+00   2.0000E+00
  2.4000E+01   4.0000E+00
  9.6000E+01   8.0000E+00
  7.2000E+02   0.0000E+00
Output Filename:
d:\0c2678\AGK\TMI\SRP 6-5-2 Spray Removal Coeff_pH 7-3\Containment_Leakage pH 7_3.o0
  1
  1
  1
  0
  0
End of Scenario File
```

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**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 2 | System Nos. | Sheet 871 of 1000 |
|---|---|---|---|---|

```
#######################################################################
   RADTRAD Version 3.03 (Spring 2001) run on  6/26/2007  at  8:24:58
#######################################################################

#######################################################################
                     Plant Description
#######################################################################

Number of Nuclides =  60

Inventory Power =   1.0000E+00 MWth
Plant Power Level =   2.6190E+03 MWth

Number of compartments    =   4

Compartment information

Compartment number  1  (Source term fraction =   5.7000E-01
)
Name: Sprayed Region
Compartment volume =   1.2310E+06 (Cubic feet)
Compartment type is Normal
Removal devices within compartment:
     Spray(s)
Pathways into and out of compartment  1
   Inlet Pathway Number   2: Unsprayed to Sprayed
   Exit Pathway Number    1: Sprayed to Unsprayed
   Exit Pathway Number    3: Sprayed to Environment

Compartment number  2  (Source term fraction =   4.3000E-01
)
Name: Unsprayed Region
Compartment volume =   9.2880E+05 (Cubic feet)
Compartment type is Normal
Removal devices within compartment:
     Deposition
Pathways into and out of compartment  2
   Inlet Pathway Number   1: Sprayed to Unsprayed
   Exit Pathway Number    2: Unsprayed to Sprayed
   Exit Pathway Number    4: Unsprayed to Environment

Compartment number  3
Name: Environment
Compartment type is Environment
Pathways into and out of compartment  3
   Inlet Pathway Number   3: Sprayed to Environment
   Inlet Pathway Number   4: Unsprayed to Environment
   Inlet Pathway Number   7: CR Exhaust to Environment
   Exit Pathway Number    5: CR Filtered Air Intake
   Exit Pathway Number    6: CR  Unfiltered Inleakage

Compartment number  4
Name: Control Room
Compartment volume =   2.5000E+05 (Cubic feet)
Compartment type is Control Room
```

AmerGen

**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 2 | System Nos. | Sheet 872 of 1000 |
|---|---|---|---|---|

```
Removal devices within compartment:
     Filter(s)
Pathways into and out of compartment  4
   Inlet Pathway Number   5: CR Filtered Air Intake
   Inlet Pathway Number   6: CR  Unfiltered Inleakage
   Exit Pathway Number    7: CR Exhaust to Environment

Total number of pathways =   7
```

AmerGen

**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 2 | System Nos. | Sheet 873 of 1000 |
|---|---|---|---|---|

```
#######################################################################
   RADTRAD Version 3.03 (Spring 2001) run on  6/26/2007  at  8:24:58
#######################################################################

#######################################################################
                      Scenario Description
#######################################################################

Radioactive Decay is enabled

Release Fractions and Timings
                GAP       EARLY IN-VESSEL  LATE RELEASE    RELEASE MASS
             0.500000 hr    1.3000 hrs      0.0000 hrs          (gm)
NOBLES       5.0000E-02     9.5000E-01      0.0000E+00        3.494E+03
IODINE       5.0000E-02     3.5000E-01      0.0000E+00        3.058E+02
CESIUM       5.0000E-02     2.5000E-01      0.0000E+00        4.356E+04
TELLURIUM    0.0000E+00     5.0000E-02      0.0000E+00        7.971E+01
STRONTIUM    0.0000E+00     2.0000E-02      0.0000E+00        1.294E+03
BARIUM       0.0000E+00     2.0000E-02      0.0000E+00        3.644E+01
RUTHENIUM    0.0000E+00     2.5000E-03      0.0000E+00        4.136E+01
CERIUM       0.0000E+00     5.0000E-04      0.0000E+00        4.099E+02
LANTHANUM    0.0000E+00     2.0000E-04      0.0000E+00        5.592E+00

Inventory Power =      2619. MWt

Nuclide  Group  Specific     half     Whole Body   Inhaled     Inhaled
 Name          Inventory     life        DCF       Thyroid    Effective
                (Ci/MWt)     (s)     (Sv-m3/Bq-s)  (Sv/Bq)     (Sv/Bq)
 Co-58     7   2.553E+02  6.117E+06   4.760E-14   8.720E-10   2.940E-09
 Co-60     7   1.953E+02  1.663E+08   1.260E-13   1.620E-08   5.910E-08
 Kr-85     1   3.991E+02  3.383E+08   1.190E-16   0.000E+00   0.000E+00
 Kr-85m    1   8.889E+03  1.613E+04   7.480E-15   0.000E+00   0.000E+00
 Kr-87     1   1.755E+04  4.578E+03   4.120E-14   0.000E+00   0.000E+00
 Kr-88     1   2.475E+04  1.022E+04   1.020E-13   0.000E+00   0.000E+00
 Rb-86     3   6.270E+01  1.612E+06   4.810E-15   1.330E-09   1.790E-09
 Sr-89     5   2.992E+04  4.363E+06   7.730E-17   7.960E-12   1.120E-08
 Sr-90     5   3.227E+03  9.190E+08   7.530E-18   2.690E-10   3.510E-07
 Sr-91     5   4.068E+04  3.420E+04   4.924E-14   9.930E-12   4.547E-10
 Sr-92     5   4.276E+04  9.756E+03   6.790E-14   3.920E-12   2.180E-10
 Y-90      9   3.330E+03  2.304E+05   1.900E-16   5.170E-13   2.280E-09
 Y-91      9   3.662E+04  5.055E+06   2.600E-16   8.500E-12   1.320E-08
 Y-92      9   4.288E+04  1.274E+04   1.300E-14   1.050E-12   2.110E-10
 Y-93      9   4.778E+04  3.636E+04   4.800E-15   9.260E-13   5.820E-10
 Zr-95     9   4.717E+04  5.528E+06   3.600E-14   1.440E-09   6.390E-09
 Zr-97     9   4.814E+04  6.084E+04   4.432E-14   2.315E-11   1.171E-09
 Nb-95     9   4.754E+04  3.037E+06   3.740E-14   3.580E-10   1.570E-09
 Mo-99     7   5.183E+04  2.376E+05   7.280E-15   1.520E-11   1.070E-09
 Tc-99m    7   4.537E+04  2.167E+04   5.890E-15   5.010E-11   8.800E-12
 Ru-103    7   4.168E+04  3.394E+06   2.251E-14   2.570E-10   2.421E-09
 Ru-105    7   2.777E+04  1.598E+04   3.810E-14   4.150E-12   1.230E-10
 Ru-106    7   1.570E+04  3.181E+07   1.040E-14   1.720E-09   1.290E-07
 Rh-105    7   2.621E+04  1.273E+05   3.720E-15   2.880E-12   2.580E-10
 Sb-127    4   2.854E+03  3.326E+05   3.330E-14   6.150E-11   1.630E-09
 Sb-129    4   8.625E+03  1.555E+04   7.140E-14   9.720E-12   1.740E-10
 Te-127    4   2.831E+03  3.366E+04   2.420E-16   1.840E-12   8.600E-11
 Te-127m   4   3.797E+02  9.418E+06   1.470E-16   9.660E-11   5.810E-09
 Te-129    4   8.492E+03  4.176E+03   2.750E-15   5.090E-13   2.090E-11
 Te-129m   4   1.271E+03  2.903E+06   3.337E-15   1.563E-10   6.484E-09
 Te-131m   4   3.898E+03  1.080E+05   7.463E-14   3.669E-08   1.758E-09
 Te-132    4   3.885E+04  2.815E+05   1.030E-14   6.280E-08   2.550E-09
 I-131     2   2.729E+04  6.947E+05   1.820E-14   2.920E-07   8.890E-09
 I-132     2   3.944E+04  8.280E+03   1.120E-13   1.740E-09   1.030E-10
 I-133     2   5.708E+04  7.488E+04   2.940E-14   4.860E-08   1.580E-09
 I-134     2   6.346E+04  3.156E+03   1.300E-13   2.880E-10   3.550E-11
```

AmerGen

**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 2 | System Nos. | Sheet 874 of 1000 |
|---|---|---|---|---|

| | | | | | | |
|---|---|---|---|---|---|---|
| I-135 | 2 | 5.323E+04 | 2.380E+04 | 8.294E-14 | 8.460E-09 | 3.320E-10 |
| Xe-133 | 1 | 5.708E+04 | 4.532E+05 | 1.560E-15 | 0.000E+00 | 0.000E+00 |
| Xe-135 | 1 | 2.103E+04 | 3.272E+04 | 1.190E-14 | 0.000E+00 | 0.000E+00 |
| Cs-134 | 3 | 6.539E+03 | 6.507E+07 | 7.570E-14 | 1.110E-08 | 1.250E-08 |
| Cs-136 | 3 | 1.808E+03 | 1.132E+06 | 1.060E-13 | 1.730E-09 | 1.980E-09 |
| Cs-137 | 3 | 4.381E+03 | 9.467E+08 | 2.725E-14 | 7.930E-09 | 8.630E-09 |
| Ba-139 | 6 | 5.259E+04 | 4.962E+03 | 2.170E-15 | 2.400E-12 | 4.640E-11 |
| Ba-140 | 6 | 5.070E+04 | 1.101E+06 | 8.580E-15 | 2.560E-10 | 1.010E-09 |
| La-140 | 9 | 5.143E+04 | 1.450E+05 | 1.170E-13 | 6.870E-11 | 1.310E-09 |
| La-141 | 9 | 4.798E+04 | 1.415E+04 | 2.390E-15 | 9.400E-12 | 1.570E-10 |
| La-142 | 9 | 5.705E+04 | 5.550E+03 | 1.440E-13 | 8.740E-12 | 6.840E-11 |
| Ce-141 | 8 | 4.645E+04 | 2.808E+06 | 3.430E-15 | 2.550E-11 | 2.420E-09 |
| Ce-143 | 8 | 4.617E+04 | 1.188E+05 | 1.290E-14 | 6.230E-12 | 9.160E-10 |
| Ce-144 | 8 | 3.741E+04 | 2.456E+07 | 2.773E-15 | 2.920E-10 | 1.010E-07 |
| Pr-143 | 9 | 4.537E+04 | 1.172E+06 | 2.100E-17 | 1.680E-18 | 2.190E-09 |
| Nd-147 | 9 | 1.897E+04 | 9.487E+05 | 6.190E-15 | 1.820E-11 | 1.850E-09 |
| Np-239 | 8 | 5.139E+05 | 2.035E+05 | 7.690E-15 | 7.620E-12 | 6.780E-10 |
| Pu-238 | 8 | 1.475E+02 | 2.769E+09 | 4.880E-18 | 3.860E-10 | 7.790E-05 |
| Pu-239 | 8 | 1.148E+01 | 7.594E+11 | 4.240E-18 | 3.750E-10 | 8.330E-05 |
| Pu-240 | 8 | 1.238E+01 | 2.063E+11 | 4.750E-18 | 3.760E-10 | 8.330E-05 |
| Pu-241 | 8 | 5.127E+03 | 4.544E+08 | 7.250E-20 | 9.150E-12 | 1.340E-06 |
| Am-241 | 9 | 7.883E+00 | 1.364E+10 | 8.180E-16 | 1.600E-09 | 1.200E-04 |
| Cm-242 | 9 | 1.853E+03 | 1.407E+07 | 5.690E-18 | 9.410E-10 | 4.670E-06 |
| Cm-244 | 9 | 1.499E+02 | 5.715E+08 | 4.910E-18 | 1.010E-09 | 6.700E-05 |

```
Iodine fractions
     Aerosol     =   9.5000E-01
     Elemental   =   4.8500E-02
     Organic     =   1.5000E-03

COMPARTMENT DATA

Compartment number   1: Sprayed Region

     Sprays:  Aerosal Removal Data
      Time (hr)          Removal Coef. (hr^-1)
       0.0000E+00          0.0000E+00
       2.0800E-02          4.5800E+00
       4.9070E-01          2.2900E+00
       2.0600E+00          2.2900E+00
       3.5100E+00          2.2900E-01
       4.0000E+00          0.0000E+00

     Sprays:  Elemental Removal Data
      Time (hr)          Removal Coef. (hr^-1)
       0.0000E+00          0.0000E+00
       2.0800E-02          1.7020E+01
       4.9070E-01          8.5100E+00
       2.0600E+00          0.0000E+00
       3.5100E+00          0.0000E+00
       4.0000E+00          0.0000E+00

Compartment number   2: Unsprayed Region
Natural Deposition (Powers' model):  Aerosol data
      Reactor type:   1
      Percentile =  10 (%)

     Natural Deposition:  Elemental Removal Data
      Time (hr)          Removal Coef. (hr^-1)
       0.0000E+00          0.0000E+00

Compartment number   3: Environment

Compartment number   4: Control Room
```

AmerGen

**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 2 | System Nos. | Sheet 875 of 1000 |
|---|---|---|---|---|

Compartment Filter Data

| Time (hr) | Flow Rate (cfm) | Filter Efficiencies (%) Aerosol | Elemental | Organic |
|---|---|---|---|---|
| 0.0000E+00 | 2.8000E+04 | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 |
| 5.0000E-01 | 2.8000E+04 | 9.9000E+01 | 9.0000E+01 | 9.0000E+01 |
| 7.2000E+02 | 2.8000E+04 | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 |

PATHWAY DATA

Pathway number 1: Sprayed to Unsprayed

Pathway Filter: Removal Data

| Time (hr) | Flow Rate (cfm) | Filter Efficiencies (%) Aerosol | Elemental | Organic |
|---|---|---|---|---|
| 0.0000E+00 | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 |
| 9.7000E-03 | 2.5000E+04 | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 |
| 7.2000E+02 | 2.5000E+04 | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 |

Pathway number 2: Unsprayed to Sprayed

Pathway Filter: Removal Data

| Time (hr) | Flow Rate (cfm) | Filter Efficiencies (%) Aerosol | Elemental | Organic |
|---|---|---|---|---|
| 0.0000E+00 | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 |
| 9.7000E-03 | 2.5000E+04 | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 |
| 7.2000E+02 | 2.5000E+04 | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 |

Pathway number 3: Sprayed to Environment

Convection Data

| Time (hr) | Flow Rate (% / day) |
|---|---|
| 0.0000E+00 | 1.0000E-01 |
| 2.4000E+01 | 5.0000E-02 |
| 7.2000E+02 | 0.0000E+00 |

Pathway number 4: Unsprayed to Environment

Convection Data

| Time (hr) | Flow Rate (% / day) |
|---|---|
| 0.0000E+00 | 1.0000E-01 |
| 2.4000E+01 | 5.0000E-02 |
| 7.2000E+02 | 0.0000E+00 |

Pathway number 5: CR Filtered Air Intake

Pathway Filter: Removal Data

| Time (hr) | Flow Rate (cfm) | Filter Efficiencies (%) Aerosol | Elemental | Organic |
|---|---|---|---|---|
| 0.0000E+00 | 4.0000E+03 | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 |
| 5.0000E-01 | 8.0000E+03 | 9.9000E+01 | 9.0000E+01 | 9.0000E+01 |
| 7.2000E+02 | 8.0000E+03 | 9.9000E+01 | 9.0000E+01 | 9.0000E+01 |

Pathway number 6: CR Unfiltered Inleakage

Pathway Filter: Removal Data

| Time (hr) | Flow Rate (cfm) | Filter Efficiencies (%) Aerosol | Elemental | Organic |
|---|---|---|---|---|
| 0.0000E+00 | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 |
| 5.0000E-01 | 1.0000E+03 | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 |
| 7.2000E+02 | 1.0000E+03 | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 |

```
Pathway number  7: CR Exhaust to Environment

     Pathway Filter: Removal Data

       Time (hr)      Flow Rate          Filter Efficiencies (%)
                       (cfm)        Aerosol     Elemental    Organic
       0.0000E+00    4.0000E+03   0.0000E+00   0.0000E+00   0.0000E+00
       5.0000E-01    9.0000E+03   0.0000E+00   0.0000E+00   0.0000E+00
       7.2000E+02    9.0000E+03   0.0000E+00   0.0000E+00   0.0000E+00

LOCATION DATA
     Location Exclusion Area Boundary     is in compartment   3

     Location X/Q Data
      Time (hr)         X/Q (s * m^-3)
       0.0000E+00          8.0000E-04
       7.2000E+02          0.0000E+00

     Location Breathing Rate Data
      Time (hr)         Breathing Rate (m^3 * sec^-1)
       0.0000E+00                 3.5000E-04
       7.2000E+02                 0.0000E+00
     Location Low Population Zone     is in compartment   3

     Location X/Q Data
      Time (hr)         X/Q (s * m^-3)
       0.0000E+00          1.4000E-04
       2.0000E+00          6.0000E-05
       8.0000E+00          3.9000E-05
       2.4000E+01          1.6000E-05
       9.6000E+01          4.0000E-06
       7.2000E+02          0.0000E+00

     Location Breathing Rate Data
      Time (hr)         Breathing Rate (m^3 * sec^-1)
       0.0000E+00                 3.5000E-04
       8.0000E+00                 1.8000E-04
       2.4000E+01                 2.3000E-04
       7.2000E+02                 0.0000E+00
     Location Control Room     is in compartment   4

     Location X/Q Data
      Time (hr)         X/Q (s * m^-3)
       0.0000E+00          3.4000E-04
       2.0000E+00          2.2500E-04
       8.0000E+00          1.0200E-04
       2.4000E+01          7.1600E-05
       9.6000E+01          4.9900E-05
       7.2000E+02          0.0000E+00

     Location Breathing Rate Data
      Time (hr)         Breathing Rate (m^3 * sec^-1)
       0.0000E+00                 3.5000E-04
       7.2000E+02                 0.0000E+00

     Location Occupancy Factor Data
      Time (hr)         Occupancy Factor
       0.0000E+00            1.0000E+00
       2.4000E+01            6.0000E-01
       9.6000E+01            4.0000E-01
       7.2000E+02            0.0000E+00

USER SPECIFIED TIME STEP DATA - SUPPLEMENTAL TIME STEPS
     Time            Time step
```

AmerGen

**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 2 | System Nos. | Sheet 877 of 1000 |
|---|---|---|---|---|

```
0.0000E+00      5.0000E-02
1.0000E+00      1.0000E-01
2.0000E+00      1.0000E+00
8.0000E+00      2.0000E+00
2.4000E+01      4.0000E+00
9.6000E+01      8.0000E+00
7.2000E+02      0.0000E+00
```

AmerGen

**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 2 | System Nos. | Sheet 878 of 1000 |
|---|---|---|---|---|

```
#######################################################################
   RADTRAD Version 3.03 (Spring 2001) run on  6/26/2007  at  8:24:58
#######################################################################


     ####   #    #  #####  #####   #    #  #####
    #    #  #    #    #    #    #  #    #    #
    #    #  #    #    #    #    #  #    #    #
    #    #  #    #    #    #####   #    #    #
    #    #  #    #    #    #       #    #    #
    #    #  #    #    #    #       #    #    #
     ####    ####     #    #        ####     #


#################################################################
           Dose, Detailed model and Detailed Inventory Output
#################################################################

Exclusion Area Boundary Doses:

Time (h) =   0.0097    Whole Body   Thyroid       TEDE
Delta dose (rem)        3.6010E-05  6.0577E-03  2.9129E-04
Accumulated dose (rem)  3.6010E-05  6.0577E-03  2.9129E-04

Low Population Zone Doses:

Time (h) =   0.0097    Whole Body   Thyroid       TEDE
Delta dose (rem)        6.3017E-06  1.0601E-03  5.0976E-05
Accumulated dose (rem)  6.3017E-06  1.0601E-03  5.0976E-05

Control Room Doses:

Time (h) =   0.0097    Whole Body   Thyroid       TEDE
Delta dose (rem)        3.6312E-09  1.0734E-05  4.5598E-07
Accumulated dose (rem)  3.6312E-09  1.0734E-05  4.5598E-07

Environment Integral Nuclide Release:

Time (h) =   0.0097       Ci           kg          Atoms         Bq
Kr-85                  2.0489E-04  5.2223E-10  3.6999E+15  7.5809E+06
Kr-85m                 4.5560E-03  5.5362E-13  3.9223E+12  1.6857E+08
Kr-87                  8.9583E-03  3.1626E-13  2.1892E+12  3.3146E+08
Kr-88                  1.2674E-02  1.0107E-12  6.9166E+12  4.6892E+08
Rb-86                  3.2187E-05  3.9558E-13  2.7700E+12  1.1909E+06
I-131                  1.4009E-02  1.1300E-10  5.1946E+14  5.1834E+08
I-132                  2.0183E-02  1.9553E-12  8.9205E+12  7.4677E+08
I-133                  2.9292E-02  2.5858E-11  1.1708E+14  1.0838E+09
I-134                  3.2308E-02  1.2111E-12  5.4428E+12  1.1954E+09
I-135                  2.7296E-02  7.7725E-12  3.4672E+13  1.0100E+09
Xe-133                 2.9302E-02  1.5654E-10  7.0881E+14  1.0842E+09
Xe-135                 1.0788E-02  4.2243E-12  1.8844E+13  3.9914E+08
Cs-134                 3.3569E-03  2.5945E-09  1.1660E+16  1.2420E+08
Cs-136                 9.2813E-04  1.2664E-11  5.6075E+13  3.4341E+07
Cs-137                 2.2490E-03  2.5856E-08  1.1366E+17  8.3214E+07

Environment Transport Group Inventory:

                         Total      Release
Time (h) =   0.0097     Release     Rate/s
Noble gases (atoms)    4.4406E+15  1.2717E+14
Elemental I (atoms)    3.3252E+13  9.5223E+11
Organic I (atoms)      1.0284E+12  2.9450E+10
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Aerosols (kg)          2.8606E-08  8.1919E-10
Dose Effective (Ci) I-131 (Thyroid)            1.9827E-02
Dose Effective (Ci) I-131 (ICRP2 Thyroid)      2.5389E-02
Total I  (Ci)                                  1.2309E-01

Sprayed to Environment Transport Group Inventory:
Time (h) =   0.0097  Leakage Transport

Noble gases (atoms)      2.5312E+15
Elemental I (atoms)      1.8958E+13
Organic I (atoms)        5.8632E+11
Aerosols (kg)            1.6306E-08

Unsprayed to Environment Transport Group Inventory:
Time (h) =   0.0097  Leakage Transport

Noble gases (atoms)      1.9095E+15
Elemental I (atoms)      1.4301E+13
Organic I (atoms)        4.4231E+11
Aerosols (kg)            1.2300E-08

CR Filtered Air Intake Transport Group Inventory:

                         Pathway
Time (h) =   0.0097     Filtered   Transported
Noble gases (atoms)    0.0000E+00  2.8503E+12
Elemental I (atoms)    0.0000E+00  2.1347E+10
Organic I (atoms)      0.0000E+00  6.6022E+08
Aerosols (kg)          0.0000E+00  1.8361E-11

CR  Unfiltered Inleakage Transport Group Inventory:

                         Pathway
Time (h) =   0.0097     Filtered   Transported
Noble gases (atoms)    0.0000E+00  0.0000E+00
Elemental I (atoms)    0.0000E+00  0.0000E+00
Organic I (atoms)      0.0000E+00  0.0000E+00
Aerosols (kg)          0.0000E+00  0.0000E+00

CR Exhaust to Environment Transport Group Inventory:

                         Pathway
Time (h) =   0.0097     Filtered   Transported
Noble gases (atoms)    8.8224E+09  0.0000E+00
Elemental I (atoms)    6.6076E+07  0.0000E+00
Organic I (atoms)      2.0436E+06  0.0000E+00
Aerosols (kg)          5.6833E-14  0.0000E+00

Control Room Compartment Nuclide Inventory:

Time (h) =   0.0097       Ci           kg          Atoms       Decay
Kr-85                  1.3110E-07  3.3416E-13  2.3674E+12  1.5014E+05
Kr-85m                 2.9152E-06  3.5423E-16  2.5097E+09  3.3408E+06
Kr-87                  5.7317E-06  2.0235E-16  1.4007E+09  6.5797E+06
Kr-88                  8.1091E-06  6.4670E-16  4.4256E+09  9.2967E+06
Rb-86                  2.0595E-08  2.5311E-16  1.7724E+09  2.3587E+04
I-131                  8.9639E-06  7.2304E-14  3.3238E+11  1.0266E+07
I-132                  1.2914E-05  1.2511E-15  5.7077E+09  1.4809E+07
I-133                  1.8743E-05  1.6546E-14  7.4917E+10  2.1469E+07
I-134                  2.0671E-05  7.7486E-16  3.4823E+09  2.3754E+07
I-135                  1.7465E-05  4.9733E-15  2.2185E+10  2.0011E+07
Xe-133                 1.8749E-05  1.0017E-13  4.5354E+11  2.1473E+07
Xe-135                 6.9026E-06  2.7029E-15  1.2057E+10  7.9078E+06
Cs-134                 2.1479E-06  1.6601E-12  7.4608E+12  2.4599E+06
Cs-136                 5.9388E-07  8.1030E-15  3.5880E+10  6.8015E+05
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Cs-137                 1.4391E-06  1.6544E-11  7.2725E+13  1.6481E+06

Control Room Transport Group Inventory:
Time (h) =   0.0097    Atmosphere     Sump
Noble gases (atoms)    2.8414E+12  0.0000E+00
Elemental I (atoms)    2.1277E+10  0.0000E+00
Organic I (atoms)      6.5804E+08  0.0000E+00
Aerosols (kg)          1.8304E-11  0.0000E+00
Dose Effective (Ci/cc) I-131 (Thyroid)         1.7921E-15
Dose Effective (Ci/cc) I-131 (ICRP2 Thyroid)   2.2948E-15
Total I (Ci)                                   7.8757E-05

                       Deposition Recirculating
Time (h) =   0.0097     Surfaces     Filter
Noble gases (atoms)    0.0000E+00  0.0000E+00
Elemental I (atoms)    0.0000E+00  0.0000E+00
Organic I (atoms)      0.0000E+00  0.0000E+00
Aerosols (kg)          0.0000E+00  0.0000E+00

CR Filtered Air Intake Transport Group Inventory:

                         Pathway
Time (h) =   0.0097     Filtered   Transported
Noble gases (atoms)    0.0000E+00  2.8503E+12
Elemental I (atoms)    0.0000E+00  2.1347E+10
Organic I (atoms)      0.0000E+00  6.6022E+08
Aerosols (kg)          0.0000E+00  1.8361E-11

CR  Unfiltered Inleakage Transport Group Inventory:

                         Pathway
Time (h) =   0.0097     Filtered   Transported
Noble gases (atoms)    0.0000E+00  0.0000E+00
Elemental I (atoms)    0.0000E+00  0.0000E+00
Organic I (atoms)      0.0000E+00  0.0000E+00
Aerosols (kg)          0.0000E+00  0.0000E+00

CR Exhaust to Environment Transport Group Inventory:

                         Pathway
Time (h) =   0.0097     Filtered   Transported
Noble gases (atoms)    8.8224E+09  0.0000E+00
Elemental I (atoms)    6.6076E+07  0.0000E+00
Organic I (atoms)      2.0436E+06  0.0000E+00
Aerosols (kg)          5.6833E-14  0.0000E+00

Exclusion Area Boundary Doses:

Time (h) =   0.0208    Whole Body   Thyroid       TEDE
Delta dose (rem)        1.2896E-04  2.1791E-02  1.0473E-03
Accumulated dose (rem)  1.6497E-04  2.7849E-02  1.3386E-03

Low Population Zone Doses:

Time (h) =   0.0208    Whole Body   Thyroid       TEDE
Delta dose (rem)        2.2567E-05  3.8134E-03  1.8327E-04
Accumulated dose (rem)  2.8869E-05  4.8735E-03  2.3425E-04

Control Room Doses:

Time (h) =   0.0208    Whole Body   Thyroid       TEDE
Delta dose (rem)        2.5712E-08  7.6313E-05  3.2417E-06
Accumulated dose (rem)  2.9343E-08  8.7047E-05  3.6977E-06

Environment Integral Nuclide Release:
```

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**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 2 | System Nos. | Sheet 881 of 1000 |
|---|---|---|---|---|

```
Time (h) =   0.0208       Ci           kg          Atoms         Bq
Kr-85                  9.4211E-04  2.4013E-09  1.7013E+16  3.4858E+07
Kr-85m                 2.0913E-02  2.5412E-12  1.8004E+13  7.7376E+08
Kr-87                  4.0939E-02  1.4453E-12  1.0004E+13  1.5147E+09
Kr-88                  5.8114E-02  4.6346E-12  3.1716E+13  2.1502E+09
Rb-86                  1.4799E-04  1.8188E-12  1.2736E+13  5.4757E+06
I-131                  6.4411E-02  5.1955E-10  2.3884E+15  2.3832E+09
I-132                  9.2484E-02  8.9598E-12  4.0877E+13  3.4219E+09
I-133                  1.3463E-01  1.1885E-10  5.3814E+14  4.9815E+09
I-134                  1.4723E-01  5.5191E-12  2.4803E+13  5.4475E+09
I-135                  1.2536E-01  3.5696E-11  1.5923E+14  4.6382E+09
Xe-133                 1.3473E-01  7.1976E-10  3.2590E+15  4.9849E+09
Xe-135                 4.9561E-02  1.9407E-11  8.6572E+13  1.8337E+09
Cs-134                 1.5435E-02  1.1929E-08  5.3612E+16  5.7108E+08
Cs-136                 4.2674E-03  5.8226E-11  2.5782E+14  1.5789E+08
Cs-137                 1.0341E-02  1.1889E-07  5.2259E+17  3.8261E+08

Environment Transport Group Inventory:

                          Total      Release
Time (h) =   0.0208     Release     Rate/s
Noble gases (atoms)    2.0418E+16  2.7268E+14
Elemental I (atoms)    1.5286E+14  2.0413E+12
Organic I (atoms)      4.7275E+12  6.3135E+10
Aerosols (kg)          1.3153E-07  1.7565E-09
Dose Effective (Ci) I-131 (Thyroid)            9.1147E-02
Dose Effective (Ci) I-131 (ICRP2 Thyroid)      1.1667E-01
Total I  (Ci)                                  5.6412E-01

Sprayed to Environment Transport Group Inventory:
Time (h) =   0.0208  Leakage Transport

Noble gases (atoms)      1.1639E+16
Elemental I (atoms)      8.7155E+13
Organic I (atoms)        2.6955E+12
Aerosols (kg)            7.4978E-08

Unsprayed to Environment Transport Group Inventory:
Time (h) =   0.0208  Leakage Transport

Noble gases (atoms)      8.7800E+15
Elemental I (atoms)      6.5745E+13
Organic I (atoms)        2.0333E+12
Aerosols (kg)            5.6552E-08

CR Filtered Air Intake Transport Group Inventory:

                          Pathway
Time (h) =   0.0208     Filtered   Transported
Noble gases (atoms)    0.0000E+00  1.3106E+13
Elemental I (atoms)    0.0000E+00  9.8139E+10
Organic I (atoms)      0.0000E+00  3.0352E+09
Aerosols (kg)          0.0000E+00  8.4422E-11

CR  Unfiltered Inleakage Transport Group Inventory:

                          Pathway
Time (h) =   0.0208     Filtered   Transported
Noble gases (atoms)    0.0000E+00  0.0000E+00
Elemental I (atoms)    0.0000E+00  0.0000E+00
Organic I (atoms)      0.0000E+00  0.0000E+00
Aerosols (kg)          0.0000E+00  0.0000E+00

CR Exhaust to Environment Transport Group Inventory:
```

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**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 2 | System Nos. | Sheet 882 of 1000 |
|---|---|---|---|---|

| Time (h) = 0.0208 | Pathway Filtered | Transported |
|---|---|---|
| Noble gases (atoms) | 8.6782E+10 | 0.0000E+00 |
| Elemental I (atoms) | 6.4984E+08 | 0.0000E+00 |
| Organic I (atoms) | 2.0098E+07 | 0.0000E+00 |
| Aerosols (kg) | 5.5903E-13 | 0.0000E+00 |

Control Room Compartment Nuclide Inventory:

| Time (h) = 0.0208 | Ci | kg | Atoms | Decay |
|---|---|---|---|---|
| Kr-85 | 6.0069E-07 | 1.5311E-12 | 1.0847E+13 | 1.0383E+06 |
| Kr-85m | 1.3329E-05 | 1.6196E-15 | 1.1475E+10 | 2.3065E+07 |
| Kr-87 | 2.6067E-05 | 9.2028E-16 | 6.3702E+09 | 4.5238E+07 |
| Kr-88 | 3.7031E-05 | 2.9532E-15 | 2.0210E+10 | 6.4123E+07 |
| Rb-86 | 9.4359E-08 | 1.1597E-15 | 8.1206E+09 | 1.6310E+05 |
| I-131 | 4.1068E-05 | 3.3126E-13 | 1.5228E+12 | 7.0987E+07 |
| I-132 | 5.8924E-05 | 5.7085E-15 | 2.6044E+10 | 1.0208E+08 |
| I-133 | 8.5836E-05 | 7.5772E-14 | 3.4309E+11 | 1.4840E+08 |
| I-134 | 9.3691E-05 | 3.5121E-15 | 1.5784E+10 | 1.6289E+08 |
| I-135 | 7.9907E-05 | 2.2754E-14 | 1.0150E+11 | 1.3822E+08 |
| Xe-133 | 8.5900E-05 | 4.5891E-13 | 2.0779E+12 | 1.4848E+08 |
| Xe-135 | 3.1594E-05 | 1.2372E-14 | 5.5188E+10 | 5.4640E+07 |
| Cs-134 | 9.8411E-06 | 7.6062E-12 | 3.4183E+13 | 1.7010E+07 |
| Cs-136 | 2.7209E-06 | 3.7124E-14 | 1.6439E+11 | 4.7031E+06 |
| Cs-137 | 6.5933E-06 | 7.5801E-11 | 3.3320E+14 | 1.1396E+07 |

Control Room Transport Group Inventory:

| Time (h) = 0.0208 | Atmosphere | Sump |
|---|---|---|
| Noble gases (atoms) | 1.3019E+13 | 0.0000E+00 |
| Elemental I (atoms) | 9.7455E+10 | 0.0000E+00 |
| Organic I (atoms) | 3.0141E+09 | 0.0000E+00 |
| Aerosols (kg) | 8.3863E-11 | 0.0000E+00 |
| Dose Effective (Ci/cc) | I-131 (Thyroid) | 8.2089E-15 |
| Dose Effective (Ci/cc) | I-131 (ICRP2 Thyroid) | 1.0507E-14 |
| Total I (Ci) | | 3.5943E-04 |

| Time (h) = 0.0208 | Deposition Surfaces | Recirculating Filter |
|---|---|---|
| Noble gases (atoms) | 0.0000E+00 | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 | 0.0000E+00 |

CR Filtered Air Intake Transport Group Inventory:

| Time (h) = 0.0208 | Pathway Filtered | Transported |
|---|---|---|
| Noble gases (atoms) | 0.0000E+00 | 1.3106E+13 |
| Elemental I (atoms) | 0.0000E+00 | 9.8139E+10 |
| Organic I (atoms) | 0.0000E+00 | 3.0352E+09 |
| Aerosols (kg) | 0.0000E+00 | 8.4422E-11 |

CR Unfiltered Inleakage Transport Group Inventory:

| Time (h) = 0.0208 | Pathway Filtered | Transported |
|---|---|---|
| Noble gases (atoms) | 0.0000E+00 | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 | 0.0000E+00 |

CR Exhaust to Environment Transport Group Inventory:

Pathway

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**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 2 | System Nos. | Sheet 883 of 1000 |
|---|---|---|---|---|

```
Time (h) =   0.0208     Filtered   Transported
Noble gases (atoms)    8.6782E+10  0.0000E+00
Elemental I (atoms)    6.4984E+08  0.0000E+00
Organic I (atoms)      2.0098E+07  0.0000E+00
Aerosols (kg)          5.5903E-13  0.0000E+00

Exclusion Area Boundary Doses:

Time (h) =   0.4907    Whole Body   Thyroid       TEDE
Delta dose (rem)        5.9358E-02  1.0939E+01  5.2200E-01
Accumulated dose (rem)  5.9523E-02  1.0967E+01  5.2334E-01

Low Population Zone Doses:

Time (h) =   0.4907    Whole Body   Thyroid       TEDE
Delta dose (rem)        1.0388E-02  1.9143E+00  9.1351E-02
Accumulated dose (rem)  1.0417E-02  1.9192E+00  9.1585E-02

Control Room Doses:

Time (h) =   0.4907    Whole Body   Thyroid       TEDE
Delta dose (rem)        2.1315E-04  7.0126E-01  2.9863E-02
Accumulated dose (rem)  2.1318E-04  7.0134E-01  2.9867E-02

Environment Integral Nuclide Release:

Time (h) =   0.4907       Ci           kg         Atoms         Bq
Kr-85                  5.2433E-01  1.3364E-06  9.4684E+18  1.9400E+10
Kr-85m                 1.0826E+01  1.3155E-09  9.3202E+15  4.0056E+11
Kr-87                  1.7727E+01  6.2584E-10  4.3321E+15  6.5591E+11
Kr-88                  2.8865E+01  2.3020E-09  1.5753E+16  1.0680E+12
Rb-86                  5.9502E-02  7.3128E-10  5.1208E+15  2.2016E+09
I-131                  2.5509E+01  2.0576E-07  9.4589E+17  9.4383E+11
I-132                  3.1902E+01  3.0907E-09  1.4100E+16  1.1804E+12
I-133                  5.2581E+01  4.6416E-08  2.1017E+17  1.9455E+12
I-134                  4.0814E+01  1.5300E-09  6.8758E+15  1.5101E+12
I-135                  4.7348E+01  1.3482E-08  6.0142E+16  1.7519E+12
Xe-133                 7.4788E+01  3.9955E-07  1.8091E+18  2.7671E+12
Xe-135                 2.6613E+01  1.0421E-08  4.6488E+16  9.8468E+11
Cs-134                 6.2101E+00  4.7998E-06  2.1571E+19  2.2977E+11
Cs-136                 1.7152E+00  2.3403E-08  1.0363E+17  6.3464E+10
Cs-137                 4.1607E+00  4.7834E-05  2.1027E+20  1.5395E+11

Environment Transport Group Inventory:

                         Total      Release
Time (h) =   0.4907     Release     Rate/s
Noble gases (atoms)    1.1353E+19  6.4270E+15
Elemental I (atoms)    4.2524E+16  2.4072E+13
Organic I (atoms)      2.6037E+15  1.4739E+12
Aerosols (kg)          5.2919E-05  2.9956E-08
Dose Effective (Ci) I-131 (Thyroid)            3.5863E+01
Dose Effective (Ci) I-131 (ICRP2 Thyroid)      4.5349E+01
Total I  (Ci)                                  1.9815E+02

Sprayed to Environment Transport Group Inventory:
Time (h) =   0.4907  Leakage Transport

Noble gases (atoms)      6.4719E+18
Elemental I (atoms)      1.1846E+16
Organic I (atoms)        1.4857E+15
Aerosols (kg)            2.4029E-05

Unsprayed to Environment Transport Group Inventory:
Time (h) =   0.4907  Leakage Transport
```

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**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 2 | System Nos. | Sheet 884 of 1000 |
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```
Noble gases (atoms)      4.8826E+18
Elemental I (atoms)      3.0731E+16
Organic I (atoms)        1.1208E+15
Aerosols (kg)            2.8891E-05

CR Filtered Air Intake Transport Group Inventory:

                         Pathway
Time (h) =   0.4907     Filtered   Transported
Noble gases (atoms)    0.0000E+00  7.2879E+15
Elemental I (atoms)    0.0000E+00  2.7325E+13
Organic I (atoms)      0.0000E+00  1.6730E+12
Aerosols (kg)          0.0000E+00  3.3966E-08

CR  Unfiltered Inleakage Transport Group Inventory:

                         Pathway
Time (h) =   0.4907     Filtered   Transported
Noble gases (atoms)    0.0000E+00  0.0000E+00
Elemental I (atoms)    0.0000E+00  0.0000E+00
Organic I (atoms)      0.0000E+00  0.0000E+00
Aerosols (kg)          0.0000E+00  0.0000E+00

CR Exhaust to Environment Transport Group Inventory:

                         Pathway
Time (h) =   0.4907     Filtered   Transported
Noble gases (atoms)    1.0213E+15  0.0000E+00
Elemental I (atoms)    4.2404E+12  0.0000E+00
Organic I (atoms)      2.3443E+11  0.0000E+00
Aerosols (kg)          5.0899E-09  0.0000E+00

Control Room Compartment Nuclide Inventory:

Time (h) =   0.4907       Ci           kg          Atoms       Decay
Kr-85                  2.8937E-04  7.3757E-10  5.2256E+15  7.5022E+09
Kr-85m                 5.8395E-03  7.0957E-13  5.0272E+12  1.5545E+11
Kr-87                  9.0002E-03  3.1774E-13  2.1994E+12  2.5647E+11
Kr-88                  1.5360E-02  1.2250E-12  8.3830E+12  4.1525E+11
Rb-86                  3.2460E-05  3.9893E-13  2.7935E+12  9.0128E+08
I-131                  1.3909E-02  1.1219E-10  5.1574E+14  3.8676E+11
I-132                  1.6562E-02  1.6045E-12  7.3203E+12  4.8676E+11
I-133                  2.8533E-02  2.5187E-11  1.1405E+14  7.9777E+11
I-134                  1.9438E-02  7.2864E-13  3.2746E+12  6.2742E+11
I-135                  2.5397E-02  7.2317E-12  3.2259E+13  7.1953E+11
Xe-133                 4.1242E-02  2.2033E-10  9.9764E+14  1.0702E+12
Xe-135                 1.4524E-02  5.6873E-12  2.5370E+13  3.8146E+11
Cs-134                 3.3886E-03  2.6190E-09  1.1770E+16  9.4061E+10
Cs-136                 9.3560E-04  1.2766E-11  5.6526E+13  2.5981E+10
Cs-137                 2.2703E-03  2.6101E-08  1.1473E+17  6.3020E+10

Control Room Transport Group Inventory:
Time (h) =   0.4907    Atmosphere     Sump
Noble gases (atoms)    6.2642E+15  0.0000E+00
Elemental I (atoms)    2.2975E+13  0.0000E+00
Organic I (atoms)      1.4325E+12  0.0000E+00
Aerosols (kg)          2.8875E-08  0.0000E+00
Dose Effective (Ci/cc) I-131 (Thyroid)         2.7561E-12
Dose Effective (Ci/cc) I-131 (ICRP2 Thyroid)   3.4717E-12
Total I (Ci)                                   1.0384E-01

                       Deposition Recirculating
Time (h) =   0.4907     Surfaces     Filter
Noble gases (atoms)    0.0000E+00  0.0000E+00
```

```
Elemental I (atoms)    0.0000E+00  0.0000E+00
Organic I (atoms)      0.0000E+00  0.0000E+00
Aerosols (kg)          0.0000E+00  0.0000E+00

CR Filtered Air Intake Transport Group Inventory:

                         Pathway
Time (h) =   0.4907     Filtered   Transported
Noble gases (atoms)    0.0000E+00  7.2879E+15
Elemental I (atoms)    0.0000E+00  2.7325E+13
Organic I (atoms)      0.0000E+00  1.6730E+12
Aerosols (kg)          0.0000E+00  3.3966E-08

CR  Unfiltered Inleakage Transport Group Inventory:

                         Pathway
Time (h) =   0.4907     Filtered   Transported
Noble gases (atoms)    0.0000E+00  0.0000E+00
Elemental I (atoms)    0.0000E+00  0.0000E+00
Organic I (atoms)      0.0000E+00  0.0000E+00
Aerosols (kg)          0.0000E+00  0.0000E+00

CR Exhaust to Environment Transport Group Inventory:

                         Pathway
Time (h) =   0.4907     Filtered   Transported
Noble gases (atoms)    1.0213E+15  0.0000E+00
Elemental I (atoms)    4.2404E+12  0.0000E+00
Organic I (atoms)      2.3443E+11  0.0000E+00
Aerosols (kg)          5.0899E-09  0.0000E+00

Exclusion Area Boundary Doses:

Time (h) =   0.5000    Whole Body   Thyroid       TEDE
Delta dose (rem)        1.8439E-03  3.6356E-01  1.7228E-02
Accumulated dose (rem)  6.1367E-02  1.1330E+01  5.4057E-01

Low Population Zone Doses:

Time (h) =   0.5000    Whole Body   Thyroid       TEDE
Delta dose (rem)        3.2269E-04  6.3623E-02  3.0149E-03
Accumulated dose (rem)  1.0739E-02  1.9828E+00  9.4600E-02

Control Room Doses:

Time (h) =   0.5000    Whole Body   Thyroid       TEDE
Delta dose (rem)        1.0327E-05  3.5774E-02  1.5236E-03
Accumulated dose (rem)  2.2351E-04  7.3712E-01  3.1391E-02

Environment Integral Nuclide Release:

Time (h) =   0.5000       Ci           kg         Atoms         Bq
Kr-85                  5.4439E-01  1.3876E-06  9.8307E+18  2.0142E+10
Kr-85m                 1.1226E+01  1.3641E-09  9.6642E+15  4.1535E+11
Kr-87                  1.8323E+01  6.4689E-10  4.4777E+15  6.7797E+11
Kr-88                  2.9908E+01  2.3852E-09  1.6322E+16  1.1066E+12
Rb-86                  6.1487E-02  7.5567E-10  5.2916E+15  2.2750E+09
I-131                  2.6358E+01  2.1261E-07  9.7738E+17  9.7526E+11
I-132                  3.2881E+01  3.1855E-09  1.4533E+16  1.2166E+12
I-133                  5.4317E+01  4.7949E-08  2.1711E+17  2.0097E+12
I-134                  4.1905E+01  1.5709E-09  7.0596E+15  1.5505E+12
I-135                  4.8881E+01  1.3919E-08  6.2090E+16  1.8086E+12
Xe-133                 7.7646E+01  4.1481E-07  1.8782E+18  2.8729E+12
Xe-135                 2.7613E+01  1.0813E-08  4.8235E+16  1.0217E+12
Cs-134                 6.4173E+00  4.9599E-06  2.2291E+19  2.3744E+11
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**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 2 | System Nos. | Sheet 886 of 1000 |
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Cs-136                 1.7724E+00  2.4183E-08  1.0709E+17  6.5580E+10
Cs-137                 4.2995E+00  4.9430E-05  2.1728E+20  1.5908E+11

Environment Transport Group Inventory:

                         Total      Release
Time (h) =   0.5000     Release     Rate/s
Noble gases (atoms)    1.1788E+19  6.5487E+15
Elemental I (atoms)    4.3868E+16  2.4371E+13
Organic I (atoms)      2.7028E+15  1.5016E+12
Aerosols (kg)          5.4684E-05  3.0380E-08
Dose Effective (Ci) I-131 (Thyroid)            3.7052E+01
Dose Effective (Ci) I-131 (ICRP2 Thyroid)      4.6844E+01
Total I  (Ci)                                  2.0434E+02

Sprayed to Environment Transport Group Inventory:
Time (h) =   0.5000  Leakage Transport

Noble gases (atoms)      6.7195E+18
Elemental I (atoms)      1.2144E+16
Organic I (atoms)        1.5422E+15
Aerosols (kg)            2.4763E-05

Unsprayed to Environment Transport Group Inventory:
Time (h) =   0.5000  Leakage Transport

Noble gases (atoms)      5.0693E+18
Elemental I (atoms)      3.1777E+16
Organic I (atoms)        1.1634E+15
Aerosols (kg)            2.9923E-05

CR Filtered Air Intake Transport Group Inventory:

                         Pathway
Time (h) =   0.5000     Filtered   Transported
Noble gases (atoms)    0.0000E+00  7.5666E+15
Elemental I (atoms)    0.0000E+00  2.8187E+13
Organic I (atoms)      0.0000E+00  1.7366E+12
Aerosols (kg)          0.0000E+00  3.5099E-08

CR  Unfiltered Inleakage Transport Group Inventory:

                         Pathway
Time (h) =   0.5000     Filtered   Transported
Noble gases (atoms)    0.0000E+00  0.0000E+00
Elemental I (atoms)    0.0000E+00  0.0000E+00
Organic I (atoms)      0.0000E+00  0.0000E+00
Aerosols (kg)          0.0000E+00  0.0000E+00

CR Exhaust to Environment Transport Group Inventory:

                         Pathway
Time (h) =   0.5000     Filtered   Transported
Noble gases (atoms)    1.0782E+15  0.0000E+00
Elemental I (atoms)    4.4484E+12  0.0000E+00
Organic I (atoms)      2.4744E+11  0.0000E+00
Aerosols (kg)          5.3516E-09  0.0000E+00

Control Room Compartment Nuclide Inventory:

Time (h) =   0.5000       Ci          kg         Atoms      Decay
Kr-85                  2.9962E-04  7.6369E-10  5.4107E+15  7.8734E+09
Kr-85m                 6.0345E-03  7.3328E-13  5.1952E+12  1.6293E+11
Kr-87                  9.2560E-03  3.2677E-13  2.2619E+12  2.6797E+11
Kr-88                  1.5856E-02  1.2645E-12  8.6535E+12  4.3491E+11
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**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 2 | System Nos. | Sheet 887 of 1000 |
|---|---|---|---|---|

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Rb-86                  3.3439E-05  4.1096E-13  2.8778E+12  9.4270E+08
I-131                  1.4327E-02  1.1556E-10  5.3126E+14  4.0451E+11
I-132                  1.6995E-02  1.6464E-12  7.5115E+12  5.0784E+11
I-133                  2.9380E-02  2.5935E-11  1.1743E+14  8.3417E+11
I-134                  1.9821E-02  7.4301E-13  3.3392E+12  6.5207E+11
I-135                  2.6126E-02  7.4395E-12  3.3186E+13  7.5191E+11
Xe-133                 4.2699E-02  2.2812E-10  1.0329E+15  1.1231E+12
Xe-135                 1.5024E-02  5.8831E-12  2.6243E+13  4.0008E+11
Cs-134                 3.4909E-03  2.6981E-09  1.2126E+16  9.8385E+10
Cs-136                 9.6382E-04  1.3151E-11  5.8231E+13  2.7175E+10
Cs-137                 2.3389E-03  2.6889E-08  1.1820E+17  6.5917E+10

Control Room Transport Group Inventory:
Time (h) =   0.5000    Atmosphere     Sump
Noble gases (atoms)    6.4859E+15  0.0000E+00
Elemental I (atoms)    2.3625E+13  0.0000E+00
Organic I (atoms)      1.4828E+12  0.0000E+00
Aerosols (kg)          2.9747E-08  0.0000E+00
Dose Effective (Ci/cc) I-131 (Thyroid)         2.8386E-12
Dose Effective (Ci/cc) I-131 (ICRP2 Thyroid)   3.5745E-12
Total I (Ci)                                   1.0665E-01

                       Deposition Recirculating
Time (h) =   0.5000     Surfaces     Filter
Noble gases (atoms)    0.0000E+00  0.0000E+00
Elemental I (atoms)    0.0000E+00  0.0000E+00
Organic I (atoms)      0.0000E+00  0.0000E+00
Aerosols (kg)          0.0000E+00  0.0000E+00

CR Filtered Air Intake Transport Group Inventory:

                         Pathway
Time (h) =   0.5000     Filtered   Transported
Noble gases (atoms)    0.0000E+00  7.5666E+15
Elemental I (atoms)    0.0000E+00  2.8187E+13
Organic I (atoms)      0.0000E+00  1.7366E+12
Aerosols (kg)          0.0000E+00  3.5099E-08

CR  Unfiltered Inleakage Transport Group Inventory:

                         Pathway
Time (h) =   0.5000     Filtered   Transported
Noble gases (atoms)    0.0000E+00  0.0000E+00
Elemental I (atoms)    0.0000E+00  0.0000E+00
Organic I (atoms)      0.0000E+00  0.0000E+00
Aerosols (kg)          0.0000E+00  0.0000E+00

CR Exhaust to Environment Transport Group Inventory:

                         Pathway
Time (h) =   0.5000     Filtered   Transported
Noble gases (atoms)    1.0782E+15  0.0000E+00
Elemental I (atoms)    4.4484E+12  0.0000E+00
Organic I (atoms)      2.4744E+11  0.0000E+00
Aerosols (kg)          5.3516E-09  0.0000E+00

Exclusion Area Boundary Doses:

Time (h) =   1.8000    Whole Body   Thyroid       TEDE
Delta dose (rem)        1.0520E+00  2.1587E+02  1.2199E+01
Accumulated dose (rem)  1.1134E+00  2.2720E+02  1.2739E+01

Low Population Zone Doses:

Time (h) =   1.8000    Whole Body   Thyroid       TEDE
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**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 2 | System Nos. | Sheet 888 of 1000 |
|---|---|---|---|---|

| | | | |
|---|---|---|---|
| Delta dose (rem) | 1.8411E-01 | 3.7777E+01 | 2.1347E+00 |
| Accumulated dose (rem) | 1.9485E-01 | 3.9760E+01 | 2.2293E+00 |

Control Room Doses:

| Time (h) = 1.8000 | Whole Body | Thyroid | TEDE |
|---|---|---|---|
| Delta dose (rem) | 6.5976E-03 | 2.8677E+00 | 1.4897E-01 |
| Accumulated dose (rem) | 6.8211E-03 | 3.6048E+00 | 1.8036E-01 |

Environment Integral Nuclide Release:

| Time (h) = 1.8000 | Ci | kg | Atoms | Bq |
|---|---|---|---|---|
| Co-58 | 2.9455E-02 | 9.2633E-10 | 9.6181E+15 | 1.0899E+09 |
| Co-60 | 2.2553E-02 | 1.9952E-08 | 2.0026E+17 | 8.3448E+08 |
| Kr-85 | 3.0267E+01 | 7.7147E-05 | 5.4658E+20 | 1.1199E+12 |
| Kr-85m | 4.8221E+02 | 5.8595E-08 | 4.1514E+17 | 1.7842E+13 |
| Kr-87 | 4.2677E+02 | 1.5067E-08 | 1.0429E+17 | 1.5790E+13 |
| Kr-88 | 1.1112E+03 | 8.8618E-08 | 6.0645E+17 | 4.1115E+13 |
| Rb-86 | 9.4529E-01 | 1.1617E-08 | 8.1351E+16 | 3.4976E+10 |
| Sr-89 | 2.7606E+01 | 9.5022E-07 | 6.4296E+18 | 1.0214E+12 |
| Sr-90 | 2.9813E+00 | 2.1856E-05 | 1.4625E+20 | 1.1031E+11 |
| Sr-91 | 3.1782E+01 | 8.7674E-09 | 5.8020E+16 | 1.1759E+12 |
| Sr-92 | 2.2115E+01 | 1.7594E-09 | 1.1517E+16 | 8.1824E+11 |
| Y-90 | 3.0006E-02 | 5.5151E-11 | 3.6903E+14 | 1.1102E+09 |
| Y-91 | 3.3794E-01 | 1.3780E-08 | 9.1192E+16 | 1.2504E+10 |
| Y-92 | 2.5360E-01 | 2.6355E-11 | 1.7252E+14 | 9.3832E+09 |
| Y-93 | 3.7701E-01 | 1.1300E-10 | 7.3173E+14 | 1.3949E+10 |
| Zr-95 | 4.3534E-01 | 2.0264E-08 | 1.2846E+17 | 1.6108E+10 |
| Zr-97 | 4.0466E-01 | 2.1168E-10 | 1.3142E+15 | 1.4973E+10 |
| Nb-95 | 4.3838E-01 | 1.1211E-08 | 7.1066E+16 | 1.6220E+10 |
| Mo-99 | 5.8422E+00 | 1.2181E-08 | 7.4097E+16 | 2.1616E+11 |
| Tc-99m | 4.0246E+00 | 7.6539E-10 | 4.6559E+15 | 1.4891E+11 |
| Ru-103 | 4.8052E+00 | 1.4889E-07 | 8.7052E+17 | 1.7779E+11 |
| Ru-105 | 2.2450E+00 | 3.3397E-10 | 1.9155E+15 | 8.3064E+10 |
| Ru-106 | 1.8128E+00 | 5.4184E-07 | 3.0784E+18 | 6.7073E+10 |
| Rh-105 | 2.8930E+00 | 3.4276E-09 | 1.9658E+16 | 1.0704E+11 |
| Sb-127 | 6.4787E+00 | 2.4260E-08 | 1.1504E+17 | 2.3971E+11 |
| Sb-129 | 1.3809E+01 | 2.4557E-09 | 1.1464E+16 | 5.1094E+11 |
| Te-127 | 5.5146E+00 | 2.0896E-09 | 9.9084E+15 | 2.0404E+11 |
| Te-127m | 8.7645E-01 | 9.2918E-08 | 4.4060E+17 | 3.2429E+10 |
| Te-129 | 5.2265E+00 | 2.4956E-10 | 1.1650E+15 | 1.9338E+11 |
| Te-129m | 2.9298E+00 | 9.7254E-07 | 4.5401E+17 | 1.0840E+11 |
| Te-131m | 8.5360E+00 | 1.0705E-08 | 4.9210E+16 | 3.1583E+11 |
| Te-132 | 8.7914E+01 | 2.8958E-07 | 1.3211E+18 | 3.2528E+12 |
| I-131 | 5.2548E+02 | 4.2386E-06 | 1.9485E+19 | 1.9443E+13 |
| I-132 | 4.1765E+02 | 4.0462E-08 | 1.8460E+17 | 1.5453E+13 |
| I-133 | 1.0331E+03 | 9.1202E-07 | 4.1296E+18 | 3.8226E+13 |
| I-134 | 2.8086E+02 | 1.0528E-08 | 4.7315E+16 | 1.0392E+13 |
| I-135 | 8.3180E+02 | 2.3685E-07 | 1.0566E+18 | 3.0777E+13 |
| Xe-133 | 4.2770E+03 | 2.2849E-05 | 1.0346E+20 | 1.5825E+14 |
| Xe-135 | 1.3506E+03 | 5.2886E-07 | 2.3592E+18 | 4.9971E+13 |
| Cs-134 | 9.8885E+01 | 7.6428E-05 | 3.4348E+20 | 3.6588E+12 |
| Cs-136 | 2.7222E+01 | 3.7142E-07 | 1.6447E+18 | 1.0072E+12 |
| Cs-137 | 6.6256E+01 | 7.6172E-04 | 3.3483E+21 | 2.4515E+12 |
| Ba-139 | 1.5843E+01 | 9.6855E-10 | 4.1962E+15 | 5.8617E+11 |
| Ba-140 | 4.6596E+01 | 6.3648E-07 | 2.7378E+18 | 1.7241E+12 |
| La-140 | 4.5665E-01 | 8.2157E-10 | 3.5340E+15 | 1.6896E+10 |
| La-141 | 2.9644E-01 | 5.2418E-11 | 2.2388E+14 | 1.0968E+10 |
| La-142 | 1.9278E-01 | 1.3467E-11 | 5.7113E+13 | 7.1329E+09 |
| Ce-141 | 1.0707E+00 | 3.7575E-08 | 1.6049E+17 | 3.9614E+10 |
| Ce-143 | 1.0160E+00 | 1.5299E-09 | 6.4427E+15 | 3.7590E+10 |
| Ce-144 | 8.6385E-01 | 2.7084E-07 | 1.1327E+18 | 3.1963E+10 |
| Pr-143 | 4.1711E-01 | 6.1942E-09 | 2.6085E+16 | 1.5433E+10 |
| Nd-147 | 1.7420E-01 | 2.1533E-09 | 8.8214E+15 | 6.4453E+09 |
| Np-239 | 1.1538E+01 | 4.9736E-08 | 1.2532E+17 | 4.2692E+11 |

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**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 2 | System Nos. | Sheet 889 of 1000 |
|---|---|---|---|---|

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Pu-238                  3.4068E-03  1.9900E-07  5.0353E+17  1.2605E+08
Pu-239                  2.6515E-04  4.2659E-06  1.0749E+19  9.8107E+06
Pu-240                  2.8594E-04  1.2549E-06  3.1487E+18  1.0580E+07
Pu-241                  1.1842E-01  1.1495E-06  2.8725E+18  4.3814E+09
Am-241                  7.2829E-05  2.1220E-08  5.3024E+16  2.6947E+06
Cm-242                  1.7112E-02  5.1632E-09  1.2849E+16  6.3316E+08
Cm-244                  1.3849E-03  1.7118E-08  4.2248E+16  5.1241E+07

Environment Transport Group Inventory:

                         Total      Release
Time (h) =   1.8000     Release     Rate/s
Noble gases (atoms)    6.5352E+20  1.0085E+17
Elemental I (atoms)    7.6295E+17  1.1774E+14
Organic I (atoms)      6.4135E+16  9.8973E+12
Aerosols (kg)          8.7670E-04  1.3529E-07
Dose Effective (Ci) I-131 (Thyroid)            7.2430E+02
Dose Effective (Ci) I-131 (ICRP2 Thyroid)      8.9068E+02
Total I  (Ci)                                  3.0889E+03

Sprayed to Environment Transport Group Inventory:
Time (h) =   1.8000  Leakage Transport

Noble gases (atoms)      3.7255E+20
Elemental I (atoms)      2.1950E+17
Organic I (atoms)        3.6610E+16
Aerosols (kg)            3.9836E-04

Unsprayed to Environment Transport Group Inventory:
Time (h) =   1.8000  Leakage Transport

Noble gases (atoms)      2.8107E+20
Elemental I (atoms)      5.4458E+17
Organic I (atoms)        2.7618E+16
Aerosols (kg)            4.7835E-04

CR Filtered Air Intake Transport Group Inventory:

                         Pathway
Time (h) =   1.8000     Filtered   Transported
Noble gases (atoms)    0.0000E+00  8.3148E+17
Elemental I (atoms)    8.3200E+14  1.2063E+14
Organic I (atoms)      7.1078E+13  9.6342E+12
Aerosols (kg)          1.0447E-06  4.5652E-08

CR  Unfiltered Inleakage Transport Group Inventory:

                         Pathway
Time (h) =   1.8000     Filtered   Transported
Noble gases (atoms)    0.0000E+00  1.0299E+17
Elemental I (atoms)    0.0000E+00  1.1556E+14
Organic I (atoms)      0.0000E+00  9.8720E+12
Aerosols (kg)          0.0000E+00  1.3190E-07

CR Exhaust to Environment Transport Group Inventory:

                         Pathway
Time (h) =   1.8000     Filtered   Transported
Noble gases (atoms)    5.0709E+17  0.0000E+00
Elemental I (atoms)    5.8593E+13  0.0000E+00
Organic I (atoms)      4.5973E+12  0.0000E+00
Aerosols (kg)          4.3285E-08  0.0000E+00

Control Room Compartment Nuclide Inventory:
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**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 2 | System Nos. | Sheet 890 of 1000 |
|---|---|---|---|---|

| Time (h) = 1.8000 | Ci | kg | Atoms | Decay |
|---|---|---|---|---|
| Co-58 | 7.0064E-07 | 2.2034E-14 | 2.2878E+11 | 7.0136E+07 |
| Co-60 | 5.3660E-07 | 4.7471E-13 | 4.7646E+12 | 5.3701E+07 |
| Kr-85 | 1.9791E-02 | 5.0444E-08 | 3.5739E+17 | 1.5674E+12 |
| Kr-85m | 2.8961E-01 | 3.5192E-11 | 2.4933E+14 | 2.5046E+13 |
| Kr-87 | 2.0095E-01 | 7.0942E-12 | 4.9106E+13 | 2.2073E+13 |
| Kr-88 | 6.3361E-01 | 5.0530E-11 | 3.4579E+14 | 5.7749E+13 |
| Rb-86 | 1.8580E-05 | 2.2835E-13 | 1.5990E+12 | 3.4641E+09 |
| Sr-89 | 6.5658E-04 | 2.2600E-11 | 1.5292E+14 | 6.5733E+10 |
| Sr-90 | 7.0934E-05 | 5.2002E-10 | 3.4796E+15 | 7.0988E+09 |
| Sr-91 | 7.2015E-04 | 1.9866E-13 | 1.3147E+12 | 7.5845E+10 |
| Sr-92 | 4.4122E-04 | 3.5103E-14 | 2.2978E+11 | 5.3028E+10 |
| Y-90 | 7.0882E-07 | 1.3028E-15 | 8.7175E+09 | 7.1470E+07 |
| Y-91 | 8.0379E-06 | 3.2776E-13 | 2.1690E+12 | 8.0467E+08 |
| Y-92 | 5.2795E-06 | 5.4867E-16 | 3.5915E+09 | 6.0723E+08 |
| Y-93 | 8.5677E-06 | 2.5680E-15 | 1.6629E+10 | 8.9958E+08 |
| Zr-95 | 1.0355E-05 | 4.8201E-13 | 3.0555E+12 | 1.0366E+09 |
| Zr-97 | 9.3688E-06 | 4.9008E-15 | 3.0426E+10 | 9.6478E+08 |
| Nb-95 | 1.0425E-05 | 2.6659E-13 | 1.6900E+12 | 1.0438E+09 |
| Mo-99 | 1.3804E-04 | 2.8781E-13 | 1.7508E+12 | 1.3915E+10 |
| Tc-99m | 8.8612E-05 | 1.6852E-14 | 1.0251E+11 | 9.6161E+09 |
| Ru-103 | 1.1427E-04 | 3.5408E-12 | 2.0702E+13 | 1.1442E+10 |
| Ru-105 | 4.8051E-05 | 7.1482E-15 | 4.0998E+10 | 5.3699E+09 |
| Ru-106 | 4.3129E-05 | 1.2891E-11 | 7.3239E+13 | 4.3164E+09 |
| Rh-105 | 6.7944E-05 | 8.0498E-14 | 4.6168E+11 | 6.8928E+09 |
| Sb-127 | 1.5338E-04 | 5.7436E-13 | 2.7235E+12 | 1.5430E+10 |
| Sb-129 | 2.9468E-04 | 5.2402E-14 | 2.4463E+11 | 3.3035E+10 |
| Te-127 | 1.2486E-04 | 4.7311E-14 | 2.2434E+11 | 1.3161E+10 |
| Te-127m | 2.0850E-05 | 2.2104E-12 | 1.0481E+13 | 2.0869E+09 |
| Te-129 | 8.0680E-05 | 3.8525E-15 | 1.7985E+10 | 1.2603E+10 |
| Te-129m | 6.9669E-05 | 2.3126E-11 | 1.0796E+13 | 6.9762E+09 |
| Te-131m | 2.0001E-04 | 2.5082E-13 | 1.1530E+12 | 2.0340E+10 |
| Te-132 | 2.0795E-03 | 6.8496E-12 | 3.1249E+13 | 2.0939E+11 |
| I-131 | 1.1056E-02 | 8.9179E-11 | 4.0996E+14 | 1.8030E+12 |
| I-132 | 6.7370E-03 | 6.5268E-13 | 2.9777E+12 | 1.6576E+12 |
| I-133 | 2.1201E-02 | 1.8716E-11 | 8.4743E+13 | 3.5931E+12 |
| I-134 | 2.7054E-03 | 1.0141E-13 | 4.5577E+11 | 1.4642E+12 |
| I-135 | 1.6052E-02 | 4.5708E-12 | 2.0389E+13 | 2.9914E+12 |
| Xe-133 | 2.7884E+00 | 1.4897E-08 | 6.7452E+16 | 2.2151E+14 |
| Xe-135 | 8.4752E-01 | 3.3188E-10 | 1.4804E+15 | 7.0063E+13 |
| Cs-134 | 1.9462E-03 | 1.5042E-09 | 6.7602E+15 | 3.6210E+11 |
| Cs-136 | 5.3475E-04 | 7.2962E-12 | 3.2308E+13 | 9.9792E+10 |
| Cs-137 | 1.3041E-03 | 1.4992E-08 | 6.5902E+16 | 2.4261E+11 |
| Ba-139 | 2.6320E-04 | 1.6091E-14 | 6.9713E+10 | 3.8160E+10 |
| Ba-140 | 1.1070E-03 | 1.5121E-11 | 6.5043E+13 | 1.1096E+11 |
| La-140 | 1.0742E-05 | 1.9326E-14 | 8.3130E+10 | 1.0879E+09 |
| La-141 | 6.2560E-06 | 1.1062E-15 | 4.7246E+09 | 7.0945E+08 |
| La-142 | 3.3352E-06 | 2.3299E-16 | 9.8809E+08 | 4.6399E+08 |
| Ce-141 | 2.5459E-05 | 8.9350E-13 | 3.8162E+12 | 2.5494E+09 |
| Ce-143 | 2.3838E-05 | 3.5896E-14 | 1.5117E+11 | 2.4207E+09 |
| Ce-144 | 2.0552E-05 | 6.4437E-12 | 2.6948E+13 | 2.0569E+09 |
| Pr-143 | 9.9102E-06 | 1.4717E-13 | 6.1977E+11 | 9.9323E+08 |
| Nd-147 | 4.1375E-06 | 5.1144E-14 | 2.0952E+11 | 4.1481E+08 |
| Np-239 | 2.7231E-04 | 1.1738E-12 | 2.9576E+12 | 2.7484E+10 |
| Pu-238 | 8.1057E-08 | 4.7347E-12 | 1.1980E+13 | 8.1118E+06 |
| Pu-239 | 6.3087E-09 | 1.0150E-10 | 2.5575E+14 | 6.3135E+05 |
| Pu-240 | 6.8033E-09 | 2.9857E-11 | 7.4917E+13 | 6.8084E+05 |
| Pu-241 | 2.8175E-06 | 2.7351E-11 | 6.8344E+13 | 2.8196E+08 |
| Am-241 | 1.7328E-09 | 5.0487E-13 | 1.2616E+12 | 1.7341E+05 |
| Cm-242 | 4.0711E-07 | 1.2283E-13 | 3.0567E+11 | 4.0746E+07 |
| Cm-244 | 3.2950E-08 | 4.0728E-13 | 1.0052E+12 | 3.2975E+06 |

Control Room Transport Group Inventory:

| Time (h) = 1.8000 | Atmosphere | Sump |
|---|---|---|
| Noble gases (atoms) | 4.2696E+17 | 0.0000E+00 |

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**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 2 | System Nos. | Sheet 891 of 1000 |
|---|---|---|---|---|

```
Elemental I (atoms)    2.5413E+13  0.0000E+00
Organic I (atoms)      2.6867E+12  0.0000E+00
Aerosols (kg)          1.7394E-08  0.0000E+00
Dose Effective (Ci/cc) I-131 (Thyroid)         2.1320E-12
Dose Effective (Ci/cc) I-131 (ICRP2 Thyroid)   2.5917E-12
Total I (Ci)                                   5.7752E-02

                       Deposition Recirculating
Time (h) =   1.8000     Surfaces     Filter
Noble gases (atoms)    0.0000E+00  0.0000E+00
Elemental I (atoms)    0.0000E+00  1.5161E+14
Organic I (atoms)      0.0000E+00  1.2180E+13
Aerosols (kg)          0.0000E+00  1.1684E-07

CR Filtered Air Intake Transport Group Inventory:

                         Pathway
Time (h) =   1.8000     Filtered   Transported
Noble gases (atoms)    0.0000E+00  8.3148E+17
Elemental I (atoms)    8.3200E+14  1.2063E+14
Organic I (atoms)      7.1078E+13  9.6342E+12
Aerosols (kg)          1.0447E-06  4.5652E-08

CR  Unfiltered Inleakage Transport Group Inventory:

                         Pathway
Time (h) =   1.8000     Filtered   Transported
Noble gases (atoms)    0.0000E+00  1.0299E+17
Elemental I (atoms)    0.0000E+00  1.1556E+14
Organic I (atoms)      0.0000E+00  9.8720E+12
Aerosols (kg)          0.0000E+00  1.3190E-07

CR Exhaust to Environment Transport Group Inventory:

                         Pathway
Time (h) =   1.8000     Filtered   Transported
Noble gases (atoms)    5.0709E+17  0.0000E+00
Elemental I (atoms)    5.8593E+13  0.0000E+00
Organic I (atoms)      4.5973E+12  0.0000E+00
Aerosols (kg)          4.3285E-08  0.0000E+00

Exclusion Area Boundary Doses:

Time (h) =   2.0000    Whole Body   Thyroid       TEDE
Delta dose (rem)        2.1071E-01  4.4257E+01  2.5500E+00
Accumulated dose (rem)  1.3241E+00  2.7146E+02  1.5289E+01

Low Population Zone Doses:

Time (h) =   2.0000    Whole Body   Thyroid       TEDE
Delta dose (rem)        3.6874E-02  7.7450E+00  4.4625E-01
Accumulated dose (rem)  2.3172E-01  4.7505E+01  2.6756E+00

Control Room Doses:

Time (h) =   2.0000    Whole Body   Thyroid       TEDE
Delta dose (rem)        2.1175E-03  5.8798E-01  3.2870E-02
Accumulated dose (rem)  8.9386E-03  4.1928E+00  2.1323E-01

Environment Integral Nuclide Release:

Time (h) =   2.0000       Ci           kg         Atoms         Bq
Co-58                  3.6222E-02  1.1391E-09  1.1828E+16  1.3402E+09
Co-60                  2.7736E-02  2.4537E-08  2.4627E+17  1.0262E+09
Kr-85                  3.8977E+01  9.9347E-05  7.0386E+20  1.4422E+12
```

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**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 2 | System Nos. | Sheet 892 of 1000 |
|---|---|---|---|---|

| | | | | |
|---|---|---|---|---|
| Kr-85m | 6.0412E+02 | 7.3409E-08 | 5.2009E+17 | 2.2352E+13 |
| Kr-87 | 5.0267E+02 | 1.7746E-08 | 1.2284E+17 | 1.8599E+13 |
| Kr-88 | 1.3713E+03 | 1.0936E-07 | 7.4837E+17 | 5.0736E+13 |
| Rb-86 | 1.1228E+00 | 1.3799E-08 | 9.6627E+16 | 4.1543E+10 |
| Sr-89 | 3.3947E+01 | 1.1685E-06 | 7.9064E+18 | 1.2560E+12 |
| Sr-90 | 3.6664E+00 | 2.6879E-05 | 1.7985E+20 | 1.3566E+11 |
| Sr-91 | 3.8629E+01 | 1.0656E-08 | 7.0521E+16 | 1.4293E+12 |
| Sr-92 | 2.6151E+01 | 2.0805E-09 | 1.3618E+16 | 9.6757E+11 |
| Y-90 | 3.6836E-02 | 6.7705E-11 | 4.5303E+14 | 1.3629E+09 |
| Y-91 | 4.1556E-01 | 1.6945E-08 | 1.1214E+17 | 1.5376E+10 |
| Y-92 | 3.0251E-01 | 3.1438E-11 | 2.0579E+14 | 1.1193E+10 |
| Y-93 | 4.5855E-01 | 1.3744E-10 | 8.8999E+14 | 1.6966E+10 |
| Zr-95 | 5.3534E-01 | 2.4919E-08 | 1.5797E+17 | 1.9808E+10 |
| Zr-97 | 4.9436E-01 | 2.5860E-10 | 1.6055E+15 | 1.8291E+10 |
| Nb-95 | 5.3905E-01 | 1.3785E-08 | 8.7386E+16 | 1.9945E+10 |
| Mo-99 | 7.1725E+00 | 1.4955E-08 | 9.0968E+16 | 2.6538E+11 |
| Tc-99m | 4.8596E+00 | 9.2420E-10 | 5.6218E+15 | 1.7981E+11 |
| Ru-103 | 5.9088E+00 | 1.8308E-07 | 1.0704E+18 | 2.1862E+11 |
| Ru-105 | 2.6939E+00 | 4.0075E-10 | 2.2985E+15 | 9.9672E+10 |
| Ru-106 | 2.2293E+00 | 6.6635E-07 | 3.7857E+18 | 8.2485E+10 |
| Rh-105 | 3.5465E+00 | 4.2018E-09 | 2.4099E+16 | 1.3122E+11 |
| Sb-127 | 7.9577E+00 | 2.9798E-08 | 1.4130E+17 | 2.9444E+11 |
| Sb-129 | 1.6560E+01 | 2.9448E-09 | 1.3747E+16 | 6.1270E+11 |
| Te-127 | 6.7015E+00 | 2.5393E-09 | 1.2041E+16 | 2.4796E+11 |
| Te-127m | 1.0778E+00 | 1.1427E-07 | 5.4183E+17 | 3.9879E+10 |
| Te-129 | 5.9139E+00 | 2.8239E-10 | 1.3183E+15 | 2.1881E+11 |
| Te-129m | 3.6026E+00 | 1.1959E-06 | 5.5827E+17 | 1.3329E+11 |
| Te-131m | 1.0458E+01 | 1.3115E-08 | 6.0292E+16 | 3.8695E+11 |
| Te-132 | 1.0796E+02 | 3.5561E-07 | 1.6224E+18 | 3.9945E+12 |
| I-131 | 6.2861E+02 | 5.0705E-06 | 2.3309E+19 | 2.3259E+13 |
| I-132 | 4.7658E+02 | 4.6171E-08 | 2.1064E+17 | 1.7633E+13 |
| I-133 | 1.2296E+03 | 1.0855E-06 | 4.9149E+18 | 4.5496E+13 |
| I-134 | 3.0222E+02 | 1.1329E-08 | 5.0915E+16 | 1.1182E+13 |
| I-135 | 9.7826E+02 | 2.7856E-07 | 1.2426E+18 | 3.6196E+13 |
| Xe-133 | 5.5022E+03 | 2.9395E-05 | 1.3310E+20 | 2.0358E+14 |
| Xe-135 | 1.7154E+03 | 6.7173E-07 | 2.9965E+18 | 6.3471E+13 |
| Cs-134 | 1.1748E+02 | 9.0804E-05 | 4.0808E+20 | 4.3469E+12 |
| Cs-136 | 3.2330E+01 | 4.4111E-07 | 1.9533E+18 | 1.1962E+12 |
| Cs-137 | 7.8718E+01 | 9.0500E-04 | 3.9781E+21 | 2.9126E+12 |
| Ba-139 | 1.8129E+01 | 1.1083E-09 | 4.8019E+15 | 6.7078E+11 |
| Ba-140 | 5.7283E+01 | 7.8245E-07 | 3.3657E+18 | 2.1195E+12 |
| La-140 | 5.6002E-01 | 1.0075E-09 | 4.3340E+15 | 2.0721E+10 |
| La-141 | 3.5463E-01 | 6.2707E-11 | 2.6782E+14 | 1.3121E+10 |
| La-142 | 2.2208E-01 | 1.5514E-11 | 6.5792E+13 | 8.2169E+09 |
| Ce-141 | 1.3165E+00 | 4.6204E-08 | 1.9734E+17 | 4.8710E+10 |
| Ce-143 | 1.2452E+00 | 1.8750E-09 | 7.8962E+15 | 4.6071E+10 |
| Ce-144 | 1.0624E+00 | 3.3308E-07 | 1.3929E+18 | 3.9307E+10 |
| Pr-143 | 5.1278E-01 | 7.6149E-09 | 3.2069E+16 | 1.8973E+10 |
| Nd-147 | 2.1414E-01 | 2.6470E-09 | 1.0844E+16 | 7.9231E+09 |
| Np-239 | 1.4161E+01 | 6.1043E-08 | 1.5381E+17 | 5.2397E+11 |
| Pu-238 | 4.1897E-03 | 2.4473E-07 | 6.1924E+17 | 1.5502E+08 |
| Pu-239 | 3.2609E-04 | 5.2462E-06 | 1.3219E+19 | 1.2065E+07 |
| Pu-240 | 3.5165E-04 | 1.5432E-06 | 3.8723E+18 | 1.3011E+07 |
| Pu-241 | 1.4563E-01 | 1.4137E-06 | 3.5326E+18 | 5.3883E+09 |
| Am-241 | 8.9565E-05 | 2.6096E-08 | 6.5209E+16 | 3.3139E+06 |
| Cm-242 | 2.1044E-02 | 6.3496E-09 | 1.5801E+16 | 7.7864E+08 |
| Cm-244 | 1.7031E-03 | 2.1052E-08 | 5.1957E+16 | 6.3016E+07 |

Environment Transport Group Inventory:

| Time (h) = 2.0000 | Total Release | Release Rate/s |
|---|---|---|
| Noble gases (atoms) | 8.4135E+20 | 1.1685E+17 |
| Elemental I (atoms) | 8.8614E+17 | 1.2307E+14 |
| Organic I (atoms) | 8.0718E+16 | 1.1211E+13 |

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**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 2 | System Nos. | Sheet 893 of 1000 |
|---|---|---|---|---|

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Aerosols (kg)          1.0430E-03  1.4486E-07
Dose Effective (Ci) I-131 (Thyroid)            8.6475E+02
Dose Effective (Ci) I-131 (ICRP2 Thyroid)      1.0610E+03
Total I  (Ci)                                  3.6153E+03

Sprayed to Environment Transport Group Inventory:
Time (h) =   2.0000  Leakage Transport

Noble gases (atoms)      4.7962E+20
Elemental I (atoms)      2.4574E+17
Organic I (atoms)        4.6076E+16
Aerosols (kg)            4.6930E-04

Unsprayed to Environment Transport Group Inventory:
Time (h) =   2.0000  Leakage Transport

Noble gases (atoms)      3.6185E+20
Elemental I (atoms)      6.4162E+17
Organic I (atoms)        3.4760E+16
Aerosols (kg)            5.7371E-04

CR Filtered Air Intake Transport Group Inventory:

                         Pathway
Time (h) =   2.0000     Filtered   Transported
Noble gases (atoms)    0.0000E+00  1.0726E+18
Elemental I (atoms)    9.7453E+14  1.3647E+14
Organic I (atoms)      9.0266E+13  1.1766E+13
Aerosols (kg)          1.2560E-06  4.7786E-08

CR  Unfiltered Inleakage Transport Group Inventory:

                         Pathway
Time (h) =   2.0000     Filtered   Transported
Noble gases (atoms)    0.0000E+00  1.3313E+17
Elemental I (atoms)    0.0000E+00  1.3535E+14
Organic I (atoms)      0.0000E+00  1.2537E+13
Aerosols (kg)          0.0000E+00  1.5859E-07

CR Exhaust to Environment Transport Group Inventory:

                         Pathway
Time (h) =   2.0000     Filtered   Transported
Noble gases (atoms)    7.0786E+17  0.0000E+00
Elemental I (atoms)    6.8981E+13  0.0000E+00
Organic I (atoms)      5.8097E+12  0.0000E+00
Aerosols (kg)          5.0661E-08  0.0000E+00

Control Room Compartment Nuclide Inventory:

Time (h) =   2.0000       Ci           kg          Atoms       Decay
Co-58                  6.5559E-07  2.0617E-14  2.1407E+11  8.8152E+07
Co-60                  5.0215E-07  4.4423E-13  4.4587E+12  6.7499E+07
Kr-85                  2.3062E-02  5.8782E-08  4.1646E+17  2.1623E+12
Kr-85m                 3.2415E-01  3.9388E-11  2.7906E+14  3.3552E+13
Kr-87                  2.0357E-01  7.1868E-12  4.9747E+13  2.7652E+13
Kr-88                  6.9298E-01  5.5265E-11  3.7820E+14  7.6115E+13
Rb-86                  1.7233E-05  2.1179E-13  1.4831E+12  3.9383E+09
Sr-89                  6.1433E-04  2.1146E-11  1.4308E+14  8.2615E+10
Sr-90                  6.6380E-05  4.8663E-10  3.2562E+15  8.9228E+09
Sr-91                  6.6154E-04  1.8250E-13  1.2077E+12  9.4168E+10
Sr-92                  3.8704E-04  3.0792E-14  2.0156E+11  6.3965E+10
Y-90                   6.6148E-07  1.2158E-15  8.1354E+09  8.9668E+07
Y-91                   7.5209E-06  3.0668E-13  2.0295E+12  1.0113E+09
Y-92                   4.7016E-06  4.8861E-16  3.1984E+09  7.3921E+08
```

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**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 2 | System Nos. | Sheet 894 of 1000 |
|---|---|---|---|---|

| | | | | |
|---|---|---|---|---|
| Y-93 | 7.8791E-06 | 2.3616E-15 | 1.5293E+10 | 1.1177E+09 |
| Zr-95 | 9.6889E-06 | 4.5101E-13 | 2.8590E+12 | 1.3028E+09 |
| Zr-97 | 8.6764E-06 | 4.5386E-15 | 2.8178E+10 | 1.2043E+09 |
| Nb-95 | 9.7533E-06 | 2.4942E-13 | 1.5811E+12 | 1.3119E+09 |
| Mo-99 | 1.2883E-04 | 2.6862E-13 | 1.6340E+12 | 1.7460E+10 |
| Tc-99m | 8.0535E-05 | 1.5316E-14 | 9.3167E+10 | 1.1857E+10 |
| Ru-103 | 1.0692E-04 | 3.3128E-12 | 1.9369E+13 | 1.4380E+10 |
| Ru-105 | 4.3221E-05 | 6.4298E-15 | 3.6877E+10 | 6.5780E+09 |
| Ru-106 | 4.0359E-05 | 1.2063E-11 | 6.8535E+13 | 5.4254E+09 |
| Rh-105 | 6.3266E-05 | 7.4955E-14 | 4.2989E+11 | 8.6350E+09 |
| Sb-127 | 1.4326E-04 | 5.3645E-13 | 2.5438E+12 | 1.9370E+10 |
| Sb-129 | 2.6477E-04 | 4.7084E-14 | 2.1980E+11 | 4.0439E+10 |
| Te-127 | 1.1466E-04 | 4.3448E-14 | 2.0602E+11 | 1.6337E+10 |
| Te-127m | 1.9510E-05 | 2.0683E-12 | 9.8077E+12 | 2.6230E+09 |
| Te-129 | 6.4997E-05 | 3.1036E-15 | 1.4489E+10 | 1.4510E+10 |
| Te-129m | 6.5181E-05 | 2.1637E-11 | 1.0101E+13 | 8.7675E+09 |
| Te-131m | 1.8607E-04 | 2.3334E-13 | 1.0727E+12 | 2.5466E+10 |
| Te-132 | 1.9416E-03 | 6.3954E-12 | 2.9177E+13 | 2.6279E+11 |
| I-131 | 1.0239E-02 | 8.2586E-11 | 3.7965E+14 | 2.0849E+12 |
| I-132 | 5.7828E-03 | 5.6023E-13 | 2.5559E+12 | 1.8221E+12 |
| I-133 | 1.9485E-02 | 1.7200E-11 | 7.7881E+13 | 4.1314E+12 |
| I-134 | 2.0553E-03 | 7.7046E-14 | 3.4626E+11 | 1.5260E+12 |
| I-135 | 1.4484E-02 | 4.1244E-12 | 1.8398E+13 | 3.3947E+12 |
| Xe-133 | 3.2447E+00 | 1.7334E-08 | 7.8488E+16 | 3.0527E+14 |
| Xe-135 | 9.6812E-01 | 3.7910E-10 | 1.6911E+15 | 9.5249E+13 |
| Cs-134 | 1.8058E-03 | 1.3957E-09 | 6.2726E+15 | 4.1178E+11 |
| Cs-136 | 4.9590E-04 | 6.7662E-12 | 2.9961E+13 | 1.1344E+11 |
| Cs-137 | 1.2100E-03 | 1.3911E-08 | 6.1149E+16 | 2.7590E+11 |
| Ba-139 | 2.1706E-04 | 1.3270E-14 | 5.7492E+10 | 4.4462E+10 |
| Ba-140 | 1.0353E-03 | 1.4142E-11 | 6.0832E+13 | 1.3941E+11 |
| La-140 | 1.0008E-05 | 1.8006E-14 | 7.7453E+10 | 1.3634E+09 |
| La-141 | 5.5985E-06 | 9.8995E-16 | 4.2281E+09 | 8.6628E+08 |
| La-142 | 2.7872E-06 | 1.9471E-16 | 8.2574E+08 | 5.4444E+08 |
| Ce-141 | 2.3819E-05 | 8.3595E-13 | 3.5703E+12 | 3.2039E+09 |
| Ce-143 | 2.2189E-05 | 3.3412E-14 | 1.4071E+11 | 3.0318E+09 |
| Ce-144 | 1.9232E-05 | 6.0298E-12 | 2.5217E+13 | 2.5854E+09 |
| Pr-143 | 9.2689E-06 | 1.3765E-13 | 5.7966E+11 | 1.2480E+09 |
| Nd-147 | 3.8692E-06 | 4.7828E-14 | 1.9594E+11 | 5.2116E+08 |
| Np-239 | 2.5403E-04 | 1.0950E-12 | 2.7591E+12 | 3.4474E+10 |
| Pu-238 | 7.5853E-08 | 4.4307E-12 | 1.1211E+13 | 1.0196E+07 |
| Pu-239 | 5.9037E-09 | 9.4981E-11 | 2.3933E+14 | 7.9357E+05 |
| Pu-240 | 6.3665E-09 | 2.7940E-11 | 7.0107E+13 | 8.5579E+05 |
| Pu-241 | 2.6366E-06 | 2.5595E-11 | 6.3956E+13 | 3.5441E+08 |
| Am-241 | 1.6216E-09 | 4.7246E-13 | 1.1806E+12 | 2.1797E+05 |
| Cm-242 | 3.8095E-07 | 1.1494E-13 | 2.8603E+11 | 5.1214E+07 |
| Cm-244 | 3.0835E-08 | 3.8113E-13 | 9.4067E+11 | 4.1448E+06 |

Control Room Transport Group Inventory:

| Time (h) = 2.0000 | Atmosphere | Sump | |
|---|---|---|---|
| Noble gases (atoms) | 4.9735E+17 | 0.0000E+00 | |
| Elemental I (atoms) | 2.1569E+13 | 0.0000E+00 | |
| Organic I (atoms) | 2.8698E+12 | 0.0000E+00 | |
| Aerosols (kg) | 1.6146E-08 | 0.0000E+00 | |
| Dose Effective (Ci/cc) | I-131 (Thyroid) | | 1.9688E-12 |
| Dose Effective (Ci/cc) | I-131 (ICRP2 Thyroid) | | 2.3866E-12 |
| Total I (Ci) | | | 5.2046E-02 |

| Time (h) = 2.0000 | Deposition Surfaces | Recirculating Filter |
|---|---|---|
| Noble gases (atoms) | 0.0000E+00 | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 | 1.8069E+14 |
| Organic I (atoms) | 0.0000E+00 | 1.5574E+13 |
| Aerosols (kg) | 0.0000E+00 | 1.3955E-07 |

CR Filtered Air Intake Transport Group Inventory:

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**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 2 | System Nos. | Sheet 895 of 1000 |
|---|---|---|---|---|

| Time (h) = 2.0000 | Pathway Filtered | Transported |
|---|---|---|
| Noble gases (atoms) | 0.0000E+00 | 1.0726E+18 |
| Elemental I (atoms) | 9.7453E+14 | 1.3647E+14 |
| Organic I (atoms) | 9.0266E+13 | 1.1766E+13 |
| Aerosols (kg) | 1.2560E-06 | 4.7786E-08 |

CR Unfiltered Inleakage Transport Group Inventory:

| Time (h) = 2.0000 | Pathway Filtered | Transported |
|---|---|---|
| Noble gases (atoms) | 0.0000E+00 | 1.3313E+17 |
| Elemental I (atoms) | 0.0000E+00 | 1.3535E+14 |
| Organic I (atoms) | 0.0000E+00 | 1.2537E+13 |
| Aerosols (kg) | 0.0000E+00 | 1.5859E-07 |

CR Exhaust to Environment Transport Group Inventory:

| Time (h) = 2.0000 | Pathway Filtered | Transported |
|---|---|---|
| Noble gases (atoms) | 7.0786E+17 | 0.0000E+00 |
| Elemental I (atoms) | 6.8981E+13 | 0.0000E+00 |
| Organic I (atoms) | 5.8097E+12 | 0.0000E+00 |
| Aerosols (kg) | 5.0661E-08 | 0.0000E+00 |

Exclusion Area Boundary Doses:

| Time (h) = 2.0600 | Whole Body | Thyroid | TEDE |
|---|---|---|---|
| Delta dose (rem) | 5.7624E-02 | 1.1580E+01 | 6.7040E-01 |
| Accumulated dose (rem) | 1.3817E+00 | 2.8304E+02 | 1.5960E+01 |

Low Population Zone Doses:

| Time (h) = 2.0600 | Whole Body | Thyroid | TEDE |
|---|---|---|---|
| Delta dose (rem) | 4.3218E-03 | 8.6849E-01 | 5.0280E-02 |
| Accumulated dose (rem) | 2.3604E-01 | 4.8373E+01 | 2.7259E+00 |

Control Room Doses:

| Time (h) = 2.0600 | Whole Body | Thyroid | TEDE |
|---|---|---|---|
| Delta dose (rem) | 6.4229E-04 | 1.5287E-01 | 8.6534E-03 |
| Accumulated dose (rem) | 9.5809E-03 | 4.3457E+00 | 2.2189E-01 |

Environment Integral Nuclide Release:

| Time (h) = 2.0600 | Ci | kg | Atoms | Bq |
|---|---|---|---|---|
| Co-58 | 3.7998E-02 | 1.1950E-09 | 1.2407E+16 | 1.4059E+09 |
| Co-60 | 2.9096E-02 | 2.5740E-08 | 2.5835E+17 | 1.0766E+09 |
| Kr-85 | 4.1590E+01 | 1.0601E-04 | 7.5105E+20 | 1.5388E+12 |
| Kr-85m | 6.4007E+02 | 7.7777E-08 | 5.5104E+17 | 2.3683E+13 |
| Kr-87 | 5.2411E+02 | 1.8503E-08 | 1.2808E+17 | 1.9392E+13 |
| Kr-88 | 1.4472E+03 | 1.1541E-07 | 7.8981E+17 | 5.3546E+13 |
| Rb-86 | 1.1694E+00 | 1.4372E-08 | 1.0064E+17 | 4.3268E+10 |
| Sr-89 | 3.5611E+01 | 1.2257E-06 | 8.2940E+18 | 1.3176E+12 |
| Sr-90 | 3.8463E+00 | 2.8197E-05 | 1.8867E+20 | 1.4231E+11 |
| Sr-91 | 4.0412E+01 | 1.1148E-08 | 7.3776E+16 | 1.4953E+12 |
| Sr-92 | 2.7181E+01 | 2.1624E-09 | 1.4155E+16 | 1.0057E+12 |
| Y-90 | 3.8626E-02 | 7.0996E-11 | 4.7505E+14 | 1.4292E+09 |
| Y-91 | 4.3594E-01 | 1.7776E-08 | 1.1764E+17 | 1.6130E+10 |
| Y-92 | 3.1507E-01 | 3.2744E-11 | 2.1433E+14 | 1.1658E+10 |
| Y-93 | 4.7979E-01 | 1.4381E-10 | 9.3122E+14 | 1.7752E+10 |
| Zr-95 | 5.6159E-01 | 2.6141E-08 | 1.6571E+17 | 2.0779E+10 |
| Zr-97 | 5.1780E-01 | 2.7086E-10 | 1.6816E+15 | 1.9158E+10 |
| Nb-95 | 5.6547E-01 | 1.4461E-08 | 9.1669E+16 | 2.0922E+10 |

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**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 2 | System Nos. | Sheet 896 of 1000 |
|---|---|---|---|---|

| | | | | |
|---|---|---|---|---|
| Mo-99 | 7.5212E+00 | 1.5682E-08 | 9.5392E+16 | 2.7828E+11 |
| Tc-99m | 5.0761E+00 | 9.6535E-10 | 5.8722E+15 | 1.8781E+11 |
| Ru-103 | 6.1984E+00 | 1.9206E-07 | 1.1229E+18 | 2.2934E+11 |
| Ru-105 | 2.8097E+00 | 4.1798E-10 | 2.3973E+15 | 1.0396E+11 |
| Ru-106 | 2.3387E+00 | 6.9903E-07 | 3.9714E+18 | 8.6530E+10 |
| Rh-105 | 3.7177E+00 | 4.4045E-09 | 2.5262E+16 | 1.3755E+11 |
| Sb-127 | 8.3456E+00 | 3.1251E-08 | 1.4819E+17 | 3.0879E+11 |
| Sb-129 | 1.7269E+01 | 3.0709E-09 | 1.4336E+16 | 6.3895E+11 |
| Te-127 | 7.0106E+00 | 2.6564E-09 | 1.2596E+16 | 2.5939E+11 |
| Te-127m | 1.1307E+00 | 1.1987E-07 | 5.6840E+17 | 4.1835E+10 |
| Te-129 | 6.0828E+00 | 2.9046E-10 | 1.3559E+15 | 2.2506E+11 |
| Te-129m | 3.7791E+00 | 1.2545E-06 | 5.8563E+17 | 1.3983E+11 |
| Te-131m | 1.0961E+01 | 1.3746E-08 | 6.3193E+16 | 4.0557E+11 |
| Te-132 | 1.1322E+02 | 3.7292E-07 | 1.7014E+18 | 4.1890E+12 |
| I-131 | 6.5564E+02 | 5.2885E-06 | 2.4311E+19 | 2.4259E+13 |
| I-132 | 4.9153E+02 | 4.7619E-08 | 2.1725E+17 | 1.8187E+13 |
| I-133 | 1.2810E+03 | 1.1308E-06 | 5.1201E+18 | 4.7395E+13 |
| I-134 | 3.0736E+02 | 1.1522E-08 | 5.1780E+16 | 1.1372E+13 |
| I-135 | 1.0162E+03 | 2.8937E-07 | 1.2908E+18 | 3.7601E+13 |
| Xe-133 | 5.8695E+03 | 3.1357E-05 | 1.4198E+20 | 2.1717E+14 |
| Xe-135 | 1.8240E+03 | 7.1424E-07 | 3.1861E+18 | 6.7487E+13 |
| Cs-134 | 1.2237E+02 | 9.4580E-05 | 4.2505E+20 | 4.5277E+12 |
| Cs-136 | 3.3671E+01 | 4.5942E-07 | 2.0343E+18 | 1.2458E+12 |
| Cs-137 | 8.1992E+01 | 9.4263E-04 | 4.1435E+21 | 3.0337E+12 |
| Ba-139 | 1.8697E+01 | 1.1431E-09 | 4.9523E+15 | 6.9179E+11 |
| Ba-140 | 6.0087E+01 | 8.2076E-07 | 3.5305E+18 | 2.2232E+12 |
| La-140 | 5.8710E-01 | 1.0563E-09 | 4.5435E+15 | 2.1723E+10 |
| La-141 | 3.6961E-01 | 6.5356E-11 | 2.7914E+14 | 1.3676E+10 |
| La-142 | 2.2940E-01 | 1.6025E-11 | 6.7961E+13 | 8.4877E+09 |
| Ce-141 | 1.3810E+00 | 4.8468E-08 | 2.0701E+17 | 5.1098E+10 |
| Ce-143 | 1.3052E+00 | 1.9654E-09 | 8.2768E+15 | 4.8292E+10 |
| Ce-144 | 1.1144E+00 | 3.4941E-07 | 1.4613E+18 | 4.1235E+10 |
| Pr-143 | 5.3788E-01 | 7.9877E-09 | 3.3639E+16 | 1.9902E+10 |
| Nd-147 | 2.2462E-01 | 2.7765E-09 | 1.1375E+16 | 8.3108E+09 |
| Np-239 | 1.4849E+01 | 6.4007E-08 | 1.6128E+17 | 5.4941E+11 |
| Pu-238 | 4.3952E-03 | 2.5673E-07 | 6.4961E+17 | 1.6262E+08 |
| Pu-239 | 3.4208E-04 | 5.5035E-06 | 1.3867E+19 | 1.2657E+07 |
| Pu-240 | 3.6890E-04 | 1.6189E-06 | 4.0622E+18 | 1.3649E+07 |
| Pu-241 | 1.5277E-01 | 1.4830E-06 | 3.7058E+18 | 5.6525E+09 |
| Am-241 | 9.3958E-05 | 2.7376E-08 | 6.8407E+16 | 3.4765E+06 |
| Cm-242 | 2.2076E-02 | 6.6609E-09 | 1.6576E+16 | 8.1682E+08 |
| Cm-244 | 1.7867E-03 | 2.2084E-08 | 5.4505E+16 | 6.6106E+07 |

Environment Transport Group Inventory:

| Time (h) = 2.0600 | Total Release | Release Rate/s | |
|---|---|---|---|
| Noble gases (atoms) | 8.9768E+20 | 1.2105E+17 | |
| Elemental I (atoms) | 9.1576E+17 | 1.2348E+14 | |
| Organic I (atoms) | 8.5685E+16 | 1.1554E+13 | |
| Aerosols (kg) | 1.0867E-03 | 1.4653E-07 | |
| Dose Effective (Ci) I-131 (Thyroid) | | | 9.0151E+02 |
| Dose Effective (Ci) I-131 (ICRP2 Thyroid) | | | 1.1055E+03 |
| Total I (Ci) | | | 3.7517E+03 |

Sprayed to Environment Transport Group Inventory:
Time (h) = 2.0600 Leakage Transport

| | |
|---|---|
| Noble gases (atoms) | 5.1173E+20 |
| Elemental I (atoms) | 2.5099E+17 |
| Organic I (atoms) | 4.8909E+16 |
| Aerosols (kg) | 4.8729E-04 |

Unsprayed to Environment Transport Group Inventory:
Time (h) = 2.0600 Leakage Transport

| | |
|---|---|
| Noble gases (atoms) | 3.8608E+20 |
| Elemental I (atoms) | 6.6601E+17 |
| Organic I (atoms) | 3.6898E+16 |
| Aerosols (kg) | 5.9941E-04 |

CR Filtered Air Intake Transport Group Inventory:

| Time (h) = 2.0600 | Pathway Filtered | Transported |
|---|---|---|
| Noble gases (atoms) | 0.0000E+00 | 1.1205E+18 |
| Elemental I (atoms) | 9.9720E+14 | 1.3899E+14 |
| Organic I (atoms) | 9.4067E+13 | 1.2188E+13 |
| Aerosols (kg) | 1.2928E-06 | 4.8158E-08 |

CR Unfiltered Inleakage Transport Group Inventory:

| Time (h) = 2.0600 | Pathway Filtered | Transported |
|---|---|---|
| Noble gases (atoms) | 0.0000E+00 | 1.3912E+17 |
| Elemental I (atoms) | 0.0000E+00 | 1.3850E+14 |
| Organic I (atoms) | 0.0000E+00 | 1.3065E+13 |
| Aerosols (kg) | 0.0000E+00 | 1.6323E-07 |

CR Exhaust to Environment Transport Group Inventory:

| Time (h) = 2.0600 | Pathway Filtered | Transported |
|---|---|---|
| Noble gases (atoms) | 7.7166E+17 | 0.0000E+00 |
| Elemental I (atoms) | 7.1506E+13 | 0.0000E+00 |
| Organic I (atoms) | 6.1558E+12 | 0.0000E+00 |
| Aerosols (kg) | 5.2562E-08 | 0.0000E+00 |

Control Room Compartment Nuclide Inventory:

| Time (h) = 2.0600 | Ci | kg | Atoms | Decay |
|---|---|---|---|---|
| Co-58 | 5.4411E-07 | 1.7112E-14 | 1.7767E+11 | 9.2500E+07 |
| Co-60 | 4.1678E-07 | 3.6870E-13 | 3.7006E+12 | 7.0830E+07 |
| Kr-85 | 2.2601E-02 | 5.7607E-08 | 4.0813E+17 | 2.3429E+12 |
| Kr-85m | 3.1434E-01 | 3.8197E-11 | 2.7062E+14 | 3.6076E+13 |
| Kr-87 | 1.9229E-01 | 6.7885E-12 | 4.6990E+13 | 2.9214E+13 |
| Kr-88 | 6.6796E-01 | 5.3270E-11 | 3.6454E+14 | 8.1493E+13 |
| Rb-86 | 1.4296E-05 | 1.7570E-13 | 1.2303E+12 | 4.0526E+09 |
| Sr-89 | 5.0987E-04 | 1.7550E-11 | 1.1875E+14 | 8.6690E+10 |
| Sr-90 | 5.5094E-05 | 4.0390E-10 | 2.7026E+15 | 9.3631E+09 |
| Sr-91 | 5.4656E-04 | 1.5078E-13 | 9.9779E+11 | 9.8546E+10 |
| Sr-92 | 3.1612E-04 | 2.5150E-14 | 1.6463E+11 | 6.6510E+10 |
| Y-90 | 5.4865E-07 | 1.0084E-15 | 6.7476E+09 | 9.4054E+07 |
| Y-91 | 6.2420E-06 | 2.5453E-13 | 1.6844E+12 | 1.0612E+09 |
| Y-92 | 3.8546E-06 | 4.0059E-16 | 2.6222E+09 | 7.7020E+08 |
| Y-93 | 6.5114E-06 | 1.9517E-15 | 1.2638E+10 | 1.1699E+09 |
| Zr-95 | 8.0414E-06 | 3.7432E-13 | 2.3728E+12 | 1.3671E+09 |
| Zr-97 | 7.1827E-06 | 3.7573E-15 | 2.3327E+10 | 1.2617E+09 |
| Nb-95 | 8.0946E-06 | 2.0701E-13 | 1.3122E+12 | 1.3766E+09 |
| Mo-99 | 1.0686E-04 | 2.2280E-13 | 1.3553E+12 | 1.8314E+10 |
| Tc-99m | 6.6361E-05 | 1.2620E-14 | 7.6770E+10 | 1.2389E+10 |
| Ru-103 | 8.8736E-05 | 2.7495E-12 | 1.6075E+13 | 1.5089E+10 |
| Ru-105 | 3.5523E-05 | 5.2846E-15 | 3.0309E+10 | 6.8632E+09 |
| Ru-106 | 3.3497E-05 | 1.0012E-11 | 5.6883E+13 | 5.6931E+09 |
| Rh-105 | 5.2445E-05 | 6.2135E-14 | 3.5637E+11 | 9.0544E+09 |
| Sb-127 | 1.1885E-04 | 4.4504E-13 | 2.1103E+12 | 2.0320E+10 |
| Sb-129 | 2.1755E-04 | 3.8687E-14 | 1.8060E+11 | 4.2187E+10 |
| Te-127 | 9.4726E-05 | 3.5893E-14 | 1.7020E+11 | 1.7096E+10 |
| Te-127m | 1.6192E-05 | 1.7167E-12 | 8.1401E+12 | 2.7524E+09 |
| Te-129 | 5.1965E-05 | 2.4813E-15 | 1.1584E+10 | 1.4933E+10 |

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**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 2 | System Nos. | Sheet 898 of 1000 |
|---|---|---|---|---|

| | | | | |
|---|---|---|---|---|
| Te-129m | 5.4097E-05 | 1.7957E-11 | 8.3830E+12 | 9.1998E+09 |
| Te-131m | 1.5421E-04 | 1.9339E-13 | 8.8902E+11 | 2.6699E+10 |
| Te-132 | 1.6106E-03 | 5.3051E-12 | 2.4203E+13 | 2.7567E+11 |
| I-131 | 8.4907E-03 | 6.8487E-11 | 3.1484E+14 | 2.1528E+12 |
| I-132 | 4.7066E-03 | 4.5597E-13 | 2.0803E+12 | 1.8601E+12 |
| I-133 | 1.6128E-02 | 1.4237E-11 | 6.4465E+13 | 4.2604E+12 |
| I-134 | 1.6224E-03 | 6.0817E-14 | 2.7332E+11 | 1.5392E+12 |
| I-135 | 1.1935E-02 | 3.3986E-12 | 1.5161E+13 | 3.4904E+12 |
| Xe-133 | 3.1786E+00 | 1.6981E-08 | 7.6890E+16 | 3.3067E+14 |
| Xe-135 | 9.4386E-01 | 3.6960E-10 | 1.6487E+15 | 1.0281E+14 |
| Cs-134 | 1.4982E-03 | 1.1580E-09 | 5.2042E+15 | 4.2375E+11 |
| Cs-136 | 4.1138E-04 | 5.6129E-12 | 2.4854E+13 | 1.1673E+11 |
| Cs-137 | 1.0039E-03 | 1.1542E-08 | 5.0734E+16 | 2.8392E+11 |
| Ba-139 | 1.7456E-04 | 1.0672E-14 | 4.6237E+10 | 4.5879E+10 |
| Ba-140 | 8.5918E-04 | 1.1736E-11 | 5.0483E+13 | 1.4628E+11 |
| La-140 | 8.2977E-06 | 1.4928E-14 | 6.4215E+10 | 1.4298E+09 |
| La-141 | 4.5955E-06 | 8.1260E-16 | 3.4706E+09 | 9.0321E+08 |
| La-142 | 2.2491E-06 | 1.5711E-16 | 6.6630E+08 | 5.6266E+08 |
| Ce-141 | 1.9768E-05 | 6.9378E-13 | 2.9632E+12 | 3.3619E+09 |
| Ce-143 | 1.8392E-05 | 2.7695E-14 | 1.1663E+11 | 3.1789E+09 |
| Ce-144 | 1.5962E-05 | 5.0046E-12 | 2.0930E+13 | 2.7129E+09 |
| Pr-143 | 7.6920E-06 | 1.1423E-13 | 4.8105E+11 | 1.3095E+09 |
| Nd-147 | 3.2109E-06 | 3.9690E-14 | 1.6260E+11 | 5.4683E+08 |
| Np-239 | 2.1068E-04 | 9.0813E-13 | 2.2882E+12 | 3.6158E+10 |
| Pu-238 | 6.2957E-08 | 3.6774E-12 | 9.3051E+12 | 1.0699E+07 |
| Pu-239 | 4.9000E-09 | 7.8833E-11 | 1.9864E+14 | 8.3273E+05 |
| Pu-240 | 5.2841E-09 | 2.3190E-11 | 5.8188E+13 | 8.9802E+05 |
| Pu-241 | 2.1883E-06 | 2.1243E-11 | 5.3082E+13 | 3.7190E+08 |
| Am-241 | 1.3459E-09 | 3.9213E-13 | 9.7987E+11 | 2.2873E+05 |
| Cm-242 | 3.1618E-07 | 9.5399E-14 | 2.3740E+11 | 5.3741E+07 |
| Cm-244 | 2.5592E-08 | 3.1633E-13 | 7.8074E+11 | 4.3493E+06 |

Control Room Transport Group Inventory:

| Time (h) = 2.0600 | Atmosphere | Sump | |
|---|---|---|---|
| Noble gases (atoms) | 4.8736E+17 | 0.0000E+00 | |
| Elemental I (atoms) | 1.7625E+13 | 0.0000E+00 | |
| Organic I (atoms) | 2.5019E+12 | 0.0000E+00 | |
| Aerosols (kg) | 1.3396E-08 | 0.0000E+00 | |
| Dose Effective (Ci/cc) | I-131 (Thyroid) | | 1.6316E-12 |
| Dose Effective (Ci/cc) | I-131 (ICRP2 Thyroid) | | 1.9765E-12 |
| Total I (Ci) | | | 4.2883E-02 |

| Time (h) = 2.0600 | Deposition Surfaces | Recirculating Filter |
|---|---|---|
| Noble gases (atoms) | 0.0000E+00 | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 | 1.8776E+14 |
| Organic I (atoms) | 0.0000E+00 | 1.6543E+13 |
| Aerosols (kg) | 0.0000E+00 | 1.4541E-07 |

CR Filtered Air Intake Transport Group Inventory:

| Time (h) = 2.0600 | Pathway Filtered | Transported |
|---|---|---|
| Noble gases (atoms) | 0.0000E+00 | 1.1205E+18 |
| Elemental I (atoms) | 9.9720E+14 | 1.3899E+14 |
| Organic I (atoms) | 9.4067E+13 | 1.2188E+13 |
| Aerosols (kg) | 1.2928E-06 | 4.8158E-08 |

CR Unfiltered Inleakage Transport Group Inventory:

| Time (h) = 2.0600 | Pathway Filtered | Transported |
|---|---|---|
| Noble gases (atoms) | 0.0000E+00 | 1.3912E+17 |
| Elemental I (atoms) | 0.0000E+00 | 1.3850E+14 |
| Organic I (atoms) | 0.0000E+00 | 1.3065E+13 |

```
Aerosols (kg)          0.0000E+00  1.6323E-07

CR Exhaust to Environment Transport Group Inventory:

                          Pathway
Time (h) =   2.0600     Filtered   Transported
Noble gases (atoms)    7.7166E+17  0.0000E+00
Elemental I (atoms)    7.1506E+13  0.0000E+00
Organic I (atoms)      6.1558E+12  0.0000E+00
Aerosols (kg)          5.2562E-08  0.0000E+00

Exclusion Area Boundary Doses:

Time (h) =   3.5100    Whole Body   Thyroid       TEDE
Delta dose (rem)        9.6291E-01  1.4906E+02  8.7995E+00
Accumulated dose (rem)  2.3446E+00  4.3209E+02  2.4759E+01

Low Population Zone Doses:

Time (h) =   3.5100    Whole Body   Thyroid       TEDE
Delta dose (rem)        7.2219E-02  1.1179E+01  6.5996E-01
Accumulated dose (rem)  3.0826E-01  5.9553E+01  3.3858E+00

Control Room Doses:

Time (h) =   3.5100    Whole Body   Thyroid       TEDE
Delta dose (rem)        1.1454E-02  1.4882E+00  8.8814E-02
Accumulated dose (rem)  2.1035E-02  5.8339E+00  3.1070E-01

Environment Integral Nuclide Release:

Time (h) =   3.5100       Ci           kg          Atoms         Bq
Co-58                  6.0527E-02  1.9035E-09  1.9764E+16  2.2395E+09
Co-60                  4.6358E-02  4.1010E-08  4.1162E+17  1.7152E+09
Kr-85                  1.0473E+02  2.6695E-04  1.8913E+21  3.8752E+12
Kr-85m                 1.4125E+03  1.7164E-07  1.2160E+18  5.2263E+13
Kr-87                  8.7273E+02  3.0811E-08  2.1327E+17  3.2291E+13
Kr-88                  2.9744E+03  2.3721E-07  1.6233E+18  1.1005E+14
Rb-86                  1.7610E+00  2.1642E-08  1.5155E+17  6.5155E+10
Sr-89                  5.6720E+01  1.9523E-06  1.3210E+19  2.0986E+12
Sr-90                  6.1281E+00  4.4925E-05  3.0060E+20  2.2674E+11
Sr-91                  6.2061E+01  1.7120E-08  1.1330E+17  2.2963E+12
Sr-92                  3.8419E+01  3.0565E-09  2.0007E+16  1.4215E+12
Y-90                   6.1198E-02  1.1248E-10  7.5266E+14  2.2643E+09
Y-91                   6.9438E-01  2.8314E-08  1.8738E+17  2.5692E+10
Y-92                   4.5697E-01  4.7490E-11  3.1086E+14  1.6908E+10
Y-93                   7.3838E-01  2.2132E-10  1.4331E+15  2.7320E+10
Zr-95                  8.9454E-01  4.1640E-08  2.6396E+17  3.3098E+10
Zr-97                  8.0788E-01  4.2261E-10  2.6237E+15  2.9892E+10
Nb-95                  9.0055E-01  2.3030E-08  1.4599E+17  3.3320E+10
Mo-99                  1.1918E+01  2.4850E-08  1.5116E+17  4.4098E+11
Tc-99m                 7.6387E+00  1.4527E-09  8.8367E+15  2.8263E+11
Ru-103                 9.8718E+00  3.0588E-07  1.7884E+18  3.6526E+11
Ru-105                 4.1483E+00  6.1713E-10  3.5394E+15  1.5349E+11
Ru-106                 3.7259E+00  1.1137E-06  6.3271E+18  1.3786E+11
Rh-105                 5.8637E+00  6.9471E-09  3.9844E+16  2.1696E+11
Sb-127                 1.3245E+01  4.9598E-08  2.3518E+17  4.9007E+11
Sb-129                 2.5446E+01  4.5251E-09  2.1124E+16  9.4151E+11
Te-127                 1.0760E+01  4.0771E-09  1.9333E+16  3.9812E+11
Te-127m                1.8012E+00  1.9095E-07  9.0547E+17  6.6644E+10
Te-129                 7.6123E+00  3.6349E-10  1.6969E+15  2.8165E+11
Te-129m                6.0184E+00  1.9978E-06  9.3263E+17  2.2268E+11
Te-131m                1.7258E+01  2.1643E-08  9.9493E+16  6.3855E+11
Te-132                 1.7956E+02  5.9145E-07  2.6983E+18  6.6437E+12
I-131                  1.0059E+03  8.1136E-06  3.7299E+19  3.7218E+13
```

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**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 2 | System Nos. | Sheet 900 of 1000 |
|---|---|---|---|---|

| | | | | |
|---|---|---|---|---|
| I-132 | 6.5386E+02 | 6.3346E-08 | 2.8900E+17 | 2.4193E+13 |
| I-133 | 1.9341E+03 | 1.7073E-06 | 7.7306E+18 | 7.1560E+13 |
| I-134 | 3.5027E+02 | 1.3130E-08 | 5.9009E+16 | 1.2960E+13 |
| I-135 | 1.4788E+03 | 4.2108E-07 | 1.8784E+18 | 5.4715E+13 |
| Xe-133 | 1.4709E+04 | 7.8581E-05 | 3.5581E+20 | 5.4423E+14 |
| Xe-135 | 4.2979E+03 | 1.6830E-06 | 7.5076E+18 | 1.5902E+14 |
| Cs-134 | 1.8442E+02 | 1.4254E-04 | 6.4059E+20 | 6.8236E+12 |
| Cs-136 | 5.0686E+01 | 6.9157E-07 | 3.0623E+18 | 1.8754E+12 |
| Cs-137 | 1.2357E+02 | 1.4207E-03 | 6.2448E+21 | 4.5721E+12 |
| Ba-139 | 2.4102E+01 | 1.4735E-09 | 6.3838E+15 | 8.9176E+11 |
| Ba-140 | 9.5621E+01 | 1.3061E-06 | 5.6184E+18 | 3.5380E+12 |
| La-140 | 9.2713E-01 | 1.6680E-09 | 7.1750E+15 | 3.4304E+10 |
| La-141 | 5.4073E-01 | 9.5614E-11 | 4.0837E+14 | 2.0007E+10 |
| La-142 | 3.0108E-01 | 2.1032E-11 | 8.9198E+13 | 1.1140E+10 |
| Ce-141 | 2.1993E+00 | 7.7186E-08 | 3.2966E+17 | 8.1374E+10 |
| Ce-143 | 2.0571E+00 | 3.0977E-09 | 1.3045E+16 | 7.6113E+10 |
| Ce-144 | 1.7755E+00 | 5.5667E-07 | 2.3280E+18 | 6.5694E+10 |
| Pr-143 | 8.5604E-01 | 1.2712E-08 | 5.3536E+16 | 3.1673E+10 |
| Nd-147 | 3.5738E-01 | 4.4177E-09 | 1.8098E+16 | 1.3223E+10 |
| Np-239 | 2.3509E+01 | 1.0133E-07 | 2.5534E+17 | 8.6983E+11 |
| Pu-238 | 7.0026E-03 | 4.0904E-07 | 1.0350E+18 | 2.5910E+08 |
| Pu-239 | 5.4502E-04 | 8.7685E-06 | 2.2094E+19 | 2.0166E+07 |
| Pu-240 | 5.8774E-04 | 2.5793E-06 | 6.4721E+18 | 2.1747E+07 |
| Pu-241 | 2.4340E-01 | 2.3628E-06 | 5.9043E+18 | 9.0059E+09 |
| Am-241 | 1.4970E-04 | 4.3616E-08 | 1.0899E+17 | 5.5389E+06 |
| Cm-242 | 3.5170E-02 | 1.0612E-08 | 2.6407E+16 | 1.3013E+09 |
| Cm-244 | 2.8466E-03 | 3.5185E-08 | 8.6841E+16 | 1.0532E+08 |

Environment Transport Group Inventory:

| Time (h) = 3.5100 | Total Release | Release Rate/s |
|---|---|---|
| Noble gases (atoms) | 2.2577E+21 | 1.7867E+17 |
| Elemental I (atoms) | 1.5928E+18 | 1.2605E+14 |
| Organic I (atoms) | 2.0445E+17 | 1.6180E+13 |
| Aerosols (kg) | 1.6415E-03 | 1.2990E-07 |

| | |
|---|---|
| Dose Effective (Ci) I-131 (Thyroid) | 1.3749E+03 |
| Dose Effective (Ci) I-131 (ICRP2 Thyroid) | 1.6754E+03 |
| Total I (Ci) | 5.4229E+03 |

Sprayed to Environment Transport Group Inventory:
Time (h) = 3.5100 Leakage Transport

| | |
|---|---|
| Noble gases (atoms) | 1.2870E+21 |
| Elemental I (atoms) | 5.7273E+17 |
| Organic I (atoms) | 1.1669E+17 |
| Aerosols (kg) | 7.0509E-04 |

Unsprayed to Environment Transport Group Inventory:
Time (h) = 3.5100 Leakage Transport

| | |
|---|---|
| Noble gases (atoms) | 9.7101E+20 |
| Elemental I (atoms) | 1.0222E+18 |
| Organic I (atoms) | 8.8037E+16 |
| Aerosols (kg) | 9.3638E-04 |

CR Filtered Air Intake Transport Group Inventory:

| Time (h) = 3.5100 | Pathway Filtered | Transported |
|---|---|---|
| Noble gases (atoms) | 0.0000E+00 | 2.2760E+18 |
| Elemental I (atoms) | 1.5155E+15 | 1.9658E+14 |
| Organic I (atoms) | 1.8499E+14 | 2.2291E+13 |
| Aerosols (kg) | 1.7593E-06 | 5.2870E-08 |

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**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 2 | System Nos. | Sheet 901 of 1000 |
|---|---|---|---|---|

CR Unfiltered Inleakage Transport Group Inventory:

| Time (h) = 3.5100 | Pathway Filtered | Transported |
|---|---|---|
| Noble gases (atoms) | 0.0000E+00 | 2.8355E+17 |
| Elemental I (atoms) | 0.0000E+00 | 2.1049E+14 |
| Organic I (atoms) | 0.0000E+00 | 2.5693E+13 |
| Aerosols (kg) | 0.0000E+00 | 2.2214E-07 |

CR Exhaust to Environment Transport Group Inventory:

| Time (h) = 3.5100 | Pathway Filtered | Transported |
|---|---|---|
| Noble gases (atoms) | 2.1403E+18 | 0.0000E+00 |
| Elemental I (atoms) | 1.0733E+14 | 0.0000E+00 |
| Organic I (atoms) | 1.2287E+13 | 0.0000E+00 |
| Aerosols (kg) | 7.0791E-08 | 0.0000E+00 |

Control Room Compartment Nuclide Inventory:

| Time (h) = 3.5100 | Ci | kg | Atoms | Decay |
|---|---|---|---|---|
| Co-58 | 1.0597E-07 | 3.3325E-15 | 3.4601E+10 | 1.3544E+08 |
| Co-60 | 8.1213E-08 | 7.1846E-14 | 7.2111E+11 | 1.0373E+08 |
| Kr-85 | 1.9413E-02 | 4.9480E-08 | 3.5056E+17 | 6.2406E+12 |
| Kr-85m | 2.1356E-01 | 2.5950E-11 | 1.8385E+14 | 8.4396E+13 |
| Kr-87 | 7.2396E-02 | 2.5559E-12 | 1.7692E+13 | 5.1798E+13 |
| Kr-88 | 3.9638E-01 | 3.1611E-11 | 2.1633E+14 | 1.7778E+14 |
| Rb-86 | 2.7807E-06 | 3.4174E-14 | 2.3930E+11 | 5.1801E+09 |
| Sr-89 | 9.9273E-05 | 3.4170E-12 | 2.3121E+13 | 1.2692E+11 |
| Sr-90 | 1.0736E-05 | 7.8705E-11 | 5.2664E+14 | 1.3712E+10 |
| Sr-91 | 9.5804E-05 | 2.6429E-14 | 1.7490E+11 | 1.3999E+11 |
| Sr-92 | 4.2499E-05 | 3.3812E-15 | 2.2133E+10 | 8.8272E+10 |
| Y-90 | 1.0524E-07 | 1.9344E-16 | 1.2944E+09 | 1.3710E+08 |
| Y-91 | 1.2155E-06 | 4.9563E-14 | 3.2800E+11 | 1.5538E+09 |
| Y-92 | 5.6533E-07 | 5.8751E-17 | 3.8458E+08 | 1.0439E+09 |
| Y-93 | 1.1486E-06 | 3.4426E-16 | 2.2292E+09 | 1.6648E+09 |
| Zr-95 | 1.5660E-06 | 7.2894E-14 | 4.6208E+11 | 2.0017E+09 |
| Zr-97 | 1.3188E-06 | 6.8986E-16 | 4.2829E+09 | 1.8160E+09 |
| Nb-95 | 1.5755E-06 | 4.0290E-14 | 2.5540E+11 | 2.0152E+09 |
| Mo-99 | 2.0508E-05 | 4.2759E-14 | 2.6010E+11 | 2.6700E+10 |
| Tc-99m | 1.0942E-05 | 2.0808E-15 | 1.2658E+10 | 1.7308E+10 |
| Ru-103 | 1.7273E-05 | 5.3520E-13 | 3.1292E+12 | 2.2091E+10 |
| Ru-105 | 5.5188E-06 | 8.2101E-16 | 4.7088E+09 | 9.4395E+09 |
| Ru-106 | 6.5267E-06 | 1.9508E-12 | 1.1083E+13 | 8.3372E+09 |
| Rh-105 | 9.9331E-06 | 1.1768E-14 | 6.7495E+10 | 1.3150E+10 |
| Sb-127 | 2.2909E-05 | 8.5783E-14 | 4.0677E+11 | 2.9662E+10 |
| Sb-129 | 3.3587E-05 | 5.9727E-15 | 2.7883E+10 | 5.7928E+10 |
| Te-127 | 1.6576E-05 | 6.2809E-15 | 2.9783E+10 | 2.4275E+10 |
| Te-127m | 3.1541E-06 | 3.3439E-13 | 1.5856E+12 | 4.0304E+09 |
| Te-129 | 4.2549E-06 | 2.0317E-16 | 9.4847E+08 | 1.7959E+10 |
| Te-129m | 1.0528E-05 | 3.4949E-12 | 1.6315E+12 | 1.3468E+10 |
| Te-131m | 2.9059E-05 | 3.6442E-14 | 1.6753E+11 | 3.8717E+10 |
| Te-132 | 3.0984E-04 | 1.0206E-12 | 4.6561E+12 | 4.0218E+11 |
| I-131 | 1.8378E-03 | 1.4824E-11 | 6.8148E+13 | 2.8427E+12 |
| I-132 | 6.6131E-04 | 6.4067E-14 | 2.9229E+11 | 2.1854E+12 |
| I-133 | 3.3435E-03 | 2.9515E-12 | 1.3364E+13 | 5.5490E+12 |
| I-134 | 1.1210E-04 | 4.2021E-15 | 1.8885E+10 | 1.6278E+12 |
| I-135 | 2.2303E-03 | 6.3509E-13 | 2.8330E+12 | 4.4068E+12 |
| Xe-133 | 2.7075E+00 | 1.4465E-08 | 6.5495E+16 | 8.7655E+14 |
| Xe-135 | 7.2220E-01 | 2.8280E-10 | 1.2615E+15 | 2.5652E+14 |
| Cs-134 | 2.9205E-04 | 2.2572E-10 | 1.0144E+15 | 5.4202E+11 |
| Cs-136 | 7.9937E-05 | 1.0907E-12 | 4.8296E+12 | 1.4916E+11 |
| Cs-137 | 1.9570E-04 | 2.2499E-09 | 9.8899E+15 | 3.6317E+11 |
| Ba-139 | 1.6397E-05 | 1.0025E-15 | 4.3432E+09 | 5.6508E+10 |
| Ba-140 | 1.6687E-04 | 2.2794E-12 | 9.8050E+12 | 2.1402E+11 |

| | | | | |
|---|---|---|---|---|
| La-140 | 1.5770E-06 | 2.8373E-15 | 1.2205E+10 | 2.0786E+09 |
| La-141 | 6.9327E-07 | 1.2259E-16 | 5.2357E+08 | 1.2329E+09 |
| La-142 | 2.2824E-07 | 1.5944E-17 | 6.7617E+07 | 7.0317E+08 |
| Ce-141 | 3.8472E-06 | 1.3502E-13 | 5.7667E+11 | 4.9216E+09 |
| Ce-143 | 3.4763E-06 | 5.2348E-15 | 2.2045E+10 | 4.6139E+09 |
| Ce-144 | 3.1100E-06 | 9.7509E-13 | 4.0778E+12 | 3.9729E+09 |
| Pr-143 | 1.4943E-06 | 2.2190E-14 | 9.3450E+10 | 1.9159E+09 |
| Nd-147 | 6.2330E-07 | 7.7047E-15 | 3.1564E+10 | 7.9992E+08 |
| Np-239 | 4.0330E-05 | 1.7384E-13 | 4.3803E+11 | 5.2676E+10 |
| Pu-238 | 1.2268E-08 | 7.1661E-13 | 1.8132E+12 | 1.5669E+07 |
| Pu-239 | 9.5483E-10 | 1.5362E-11 | 3.8707E+13 | 1.2195E+06 |
| Pu-240 | 1.0297E-09 | 4.5188E-12 | 1.1339E+13 | 1.3151E+06 |
| Pu-241 | 4.2642E-07 | 4.1395E-12 | 1.0344E+13 | 5.4463E+08 |
| Am-241 | 2.6226E-10 | 7.6413E-14 | 1.9094E+11 | 3.3497E+05 |
| Cm-242 | 6.1596E-08 | 1.8585E-14 | 4.6249E+10 | 7.8697E+07 |
| Cm-244 | 4.9870E-09 | 6.1642E-14 | 1.5214E+11 | 6.3695E+06 |

Control Room Transport Group Inventory:

| Time (h) = 3.5100 | Atmosphere | Sump | |
|---|---|---|---|
| Noble gases (atoms) | 4.1773E+17 | 0.0000E+00 | |
| Elemental I (atoms) | 1.0775E+13 | 0.0000E+00 | |
| Organic I (atoms) | 1.8901E+12 | 0.0000E+00 | |
| Aerosols (kg) | 2.6109E-09 | 0.0000E+00 | |
| Dose Effective (Ci/cc) | I-131 (Thyroid) | | 3.4792E-13 |
| Dose Effective (Ci/cc) | I-131 (ICRP2 Thyroid) | | 4.1570E-13 |
| Total I (Ci) | | | 8.1851E-03 |

| Time (h) = 3.5100 | Deposition Surfaces | Recirculating Filter |
|---|---|---|
| Noble gases (atoms) | 0.0000E+00 | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 | 2.8808E+14 |
| Organic I (atoms) | 0.0000E+00 | 3.3711E+13 |
| Aerosols (kg) | 0.0000E+00 | 2.0155E-07 |

CR Filtered Air Intake Transport Group Inventory:

| Time (h) = 3.5100 | Pathway Filtered | Transported |
|---|---|---|
| Noble gases (atoms) | 0.0000E+00 | 2.2760E+18 |
| Elemental I (atoms) | 1.5155E+15 | 1.9658E+14 |
| Organic I (atoms) | 1.8499E+14 | 2.2291E+13 |
| Aerosols (kg) | 1.7593E-06 | 5.2870E-08 |

CR Unfiltered Inleakage Transport Group Inventory:

| Time (h) = 3.5100 | Pathway Filtered | Transported |
|---|---|---|
| Noble gases (atoms) | 0.0000E+00 | 2.8355E+17 |
| Elemental I (atoms) | 0.0000E+00 | 2.1049E+14 |
| Organic I (atoms) | 0.0000E+00 | 2.5693E+13 |
| Aerosols (kg) | 0.0000E+00 | 2.2214E-07 |

CR Exhaust to Environment Transport Group Inventory:

| Time (h) = 3.5100 | Pathway Filtered | Transported |
|---|---|---|
| Noble gases (atoms) | 2.1403E+18 | 0.0000E+00 |
| Elemental I (atoms) | 1.0733E+14 | 0.0000E+00 |
| Organic I (atoms) | 1.2287E+13 | 0.0000E+00 |
| Aerosols (kg) | 7.0791E-08 | 0.0000E+00 |

Exclusion Area Boundary Doses:

| Time (h) = 4.0000 | Whole Body | Thyroid | TEDE |
|---|---|---|---|
| Delta dose (rem) | 2.2160E-01 | 2.3690E+01 | 1.4451E+00 |

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**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 2 | System Nos. | Sheet 903 of 1000 |
|---|---|---|---|---|

| | | | |
|---|---|---|---|
| Accumulated dose (rem) | 2.5663E+00 | 4.5578E+02 | 2.6204E+01 |

Low Population Zone Doses:

| Time (h) = 4.0000 | Whole Body | Thyroid | TEDE |
|---|---|---|---|
| Delta dose (rem) | 1.6620E-02 | 1.7767E+00 | 1.0839E-01 |
| Accumulated dose (rem) | 3.2488E-01 | 6.1330E+01 | 3.4942E+00 |

Control Room Doses:

| Time (h) = 4.0000 | Whole Body | Thyroid | TEDE |
|---|---|---|---|
| Delta dose (rem) | 2.9242E-03 | 2.1892E-01 | 1.3935E-02 |
| Accumulated dose (rem) | 2.3959E-02 | 6.0528E+00 | 3.2464E-01 |

Environment Integral Nuclide Release:

| Time (h) = 4.0000 | Ci | kg | Atoms | Bq |
|---|---|---|---|---|
| Co-58 | 6.3963E-02 | 2.0116E-09 | 2.0886E+16 | 2.3666E+09 |
| Co-60 | 4.8991E-02 | 4.3340E-08 | 4.3500E+17 | 1.8127E+09 |
| Kr-85 | 1.2607E+02 | 3.2134E-04 | 2.2766E+21 | 4.6646E+12 |
| Kr-85m | 1.6367E+03 | 1.9888E-07 | 1.4091E+18 | 6.0559E+13 |
| Kr-87 | 9.4058E+02 | 3.3206E-08 | 2.2985E+17 | 3.4801E+13 |
| Kr-88 | 3.3798E+03 | 2.6954E-07 | 1.8445E+18 | 1.2505E+14 |
| Rb-86 | 1.8511E+00 | 2.2750E-08 | 1.5930E+17 | 6.8490E+10 |
| Sr-89 | 5.9939E+01 | 2.0631E-06 | 1.3960E+19 | 2.2177E+12 |
| Sr-90 | 6.4762E+00 | 4.7477E-05 | 3.1768E+20 | 2.3962E+11 |
| Sr-91 | 6.5103E+01 | 1.7959E-08 | 1.1885E+17 | 2.4088E+12 |
| Sr-92 | 3.9699E+01 | 3.1584E-09 | 2.0674E+16 | 1.4688E+12 |
| Y-90 | 6.4600E-02 | 1.1874E-10 | 7.9450E+14 | 2.3902E+09 |
| Y-91 | 7.3379E-01 | 2.9921E-08 | 1.9801E+17 | 2.7150E+10 |
| Y-92 | 4.7429E-01 | 4.9291E-11 | 3.2265E+14 | 1.7549E+10 |
| Y-93 | 7.7489E-01 | 2.3226E-10 | 1.5040E+15 | 2.8671E+10 |
| Zr-95 | 9.4531E-01 | 4.4003E-08 | 2.7894E+17 | 3.4977E+10 |
| Zr-97 | 8.5014E-01 | 4.4471E-10 | 2.7609E+15 | 3.1455E+10 |
| Nb-95 | 9.5162E-01 | 2.4336E-08 | 1.5427E+17 | 3.5210E+10 |
| Mo-99 | 1.2581E+01 | 2.6232E-08 | 1.5957E+17 | 4.6551E+11 |
| Tc-99m | 7.9818E+00 | 1.5180E-09 | 9.2337E+15 | 2.9533E+11 |
| Ru-103 | 1.0432E+01 | 3.2323E-07 | 1.8898E+18 | 3.8598E+11 |
| Ru-105 | 4.3194E+00 | 6.4257E-10 | 3.6854E+15 | 1.5982E+11 |
| Ru-106 | 3.9376E+00 | 1.1769E-06 | 6.6865E+18 | 1.4569E+11 |
| Rh-105 | 6.1840E+00 | 7.3265E-09 | 4.2020E+16 | 2.2881E+11 |
| Sb-127 | 1.3986E+01 | 5.2373E-08 | 2.4835E+17 | 5.1750E+11 |
| Sb-129 | 2.6486E+01 | 4.7100E-09 | 2.1988E+16 | 9.7998E+11 |
| Te-127 | 1.1286E+01 | 4.2765E-09 | 2.0278E+16 | 4.1758E+11 |
| Te-127m | 1.9035E+00 | 2.0180E-07 | 9.5689E+17 | 7.0428E+10 |
| Te-129 | 7.7286E+00 | 3.6904E-10 | 1.7228E+15 | 2.8596E+11 |
| Te-129m | 6.3597E+00 | 2.1111E-06 | 9.8553E+17 | 2.3531E+11 |
| Te-131m | 1.8194E+01 | 2.2817E-08 | 1.0489E+17 | 6.7318E+11 |
| Te-132 | 1.8958E+02 | 6.2445E-07 | 2.8489E+18 | 7.0145E+12 |
| I-131 | 1.0623E+03 | 8.5686E-06 | 3.9390E+19 | 3.9305E+13 |
| I-132 | 6.7249E+02 | 6.5150E-08 | 2.9723E+17 | 2.4882E+13 |
| I-133 | 2.0358E+03 | 1.7971E-06 | 8.1372E+18 | 7.5325E+13 |
| I-134 | 3.5302E+02 | 1.3233E-08 | 5.9473E+16 | 1.3062E+13 |
| I-135 | 1.5452E+03 | 4.4001E-07 | 1.9628E+18 | 5.7174E+13 |
| Xe-133 | 1.7680E+04 | 9.4454E-05 | 4.2768E+20 | 6.5416E+14 |
| Xe-135 | 5.0740E+03 | 1.9869E-06 | 8.8632E+18 | 1.8774E+14 |
| Cs-134 | 1.9389E+02 | 1.4986E-04 | 6.7349E+20 | 7.1740E+12 |
| Cs-136 | 5.3277E+01 | 7.2692E-07 | 3.2188E+18 | 1.9712E+12 |
| Cs-137 | 1.2992E+02 | 1.4936E-03 | 6.5655E+21 | 4.8069E+12 |
| Ba-139 | 2.4562E+01 | 1.5016E-09 | 6.5058E+15 | 9.0880E+11 |
| Ba-140 | 1.0103E+02 | 1.3800E-06 | 5.9361E+18 | 3.7381E+12 |
| La-140 | 9.7802E-01 | 1.7596E-09 | 7.5688E+15 | 3.6187E+10 |
| La-141 | 5.6209E-01 | 9.9391E-11 | 4.2450E+14 | 2.0797E+10 |
| La-142 | 3.0759E-01 | 2.1487E-11 | 9.1125E+13 | 1.1381E+10 |
| Ce-141 | 2.3240E+00 | 8.1563E-08 | 3.4836E+17 | 8.5989E+10 |

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**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 2 | System Nos. | Sheet 904 of 1000 |
|---|---|---|---|---|

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Ce-143                  2.1692E+00  3.2664E-09  1.3756E+16  8.0259E+10
Ce-144                  1.8764E+00  5.8829E-07  2.4603E+18  6.9425E+10
Pr-143                  9.0447E-01  1.3432E-08  5.6564E+16  3.3465E+10
Nd-147                  3.7758E-01  4.6673E-09  1.9121E+16  1.3970E+10
Np-239                  2.4812E+01  1.0695E-07  2.6949E+17  9.1804E+11
Pu-238                  7.4004E-03  4.3228E-07  1.0938E+18  2.7382E+08
Pu-239                  5.7598E-04  9.2666E-06  2.3349E+19  2.1311E+07
Pu-240                  6.2113E-04  2.7259E-06  6.8398E+18  2.2982E+07
Pu-241                  2.5723E-01  2.4971E-06  6.2397E+18  9.5175E+09
Am-241                  1.5820E-04  4.6094E-08  1.1518E+17  5.8535E+06
Cm-242                  3.7167E-02  1.1214E-08  2.7906E+16  1.3752E+09
Cm-244                  3.0083E-03  3.7184E-08  9.1774E+16  1.1131E+08

Environment Transport Group Inventory:

                          Total      Release
Time (h) =   4.0000     Release     Rate/s
Noble gases (atoms)    2.7166E+21  1.8866E+17
Elemental I (atoms)    1.8186E+18  1.2629E+14
Organic I (atoms)      2.4407E+17  1.6949E+13
Aerosols (kg)          1.7261E-03  1.1987E-07
Dose Effective (Ci) I-131 (Thyroid)            1.4503E+03
Dose Effective (Ci) I-131 (ICRP2 Thyroid)      1.7653E+03
Total I  (Ci)                                  5.6689E+03

Sprayed to Environment Transport Group Inventory:
Time (h) =   4.0000  Leakage Transport

Noble gases (atoms)      1.5486E+21
Elemental I (atoms)      7.0084E+17
Organic I (atoms)        1.3930E+17
Aerosols (kg)            7.4439E-04

Unsprayed to Environment Transport Group Inventory:
Time (h) =   4.0000  Leakage Transport

Noble gases (atoms)      1.1684E+21
Elemental I (atoms)      1.1202E+18
Organic I (atoms)        1.0510E+17
Aerosols (kg)            9.8174E-04

CR Filtered Air Intake Transport Group Inventory:

                          Pathway
Time (h) =   4.0000     Filtered   Transported
Noble gases (atoms)    0.0000E+00  2.6659E+18
Elemental I (atoms)    1.6884E+15  2.1579E+14
Organic I (atoms)      2.1532E+14  2.5661E+13
Aerosols (kg)          1.8305E-06  5.3590E-08

CR  Unfiltered Inleakage Transport Group Inventory:

                          Pathway
Time (h) =   4.0000     Filtered   Transported
Noble gases (atoms)    0.0000E+00  3.3229E+17
Elemental I (atoms)    0.0000E+00  2.3450E+14
Organic I (atoms)      0.0000E+00  2.9905E+13
Aerosols (kg)          0.0000E+00  2.3113E-07

CR Exhaust to Environment Transport Group Inventory:

                          Pathway
Time (h) =   4.0000     Filtered   Transported
Noble gases (atoms)    2.5811E+18  0.0000E+00
Elemental I (atoms)    1.1871E+14  0.0000E+00
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**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 2 | System Nos. | Sheet 905 of 1000 |
|---|---|---|---|---|

| | | |
|---|---|---|
| Organic I (atoms) | 1.4283E+13 | 0.0000E+00 |
| Aerosols (kg) | 7.3270E-08 | 0.0000E+00 |

Control Room Compartment Nuclide Inventory:

| Time (h) = 4.0000 | Ci | kg | Atoms | Decay |
|---|---|---|---|---|
| Co-58 | 8.9433E-08 | 2.8125E-15 | 2.9203E+10 | 1.4155E+08 |
| Co-60 | 6.8556E-08 | 6.0648E-14 | 6.0872E+11 | 1.0841E+08 |
| Kr-85 | 1.9317E-02 | 4.9237E-08 | 3.4884E+17 | 7.5034E+12 |
| Kr-85m | 1.9692E-01 | 2.3929E-11 | 1.6953E+14 | 9.7771E+13 |
| Kr-87 | 5.5088E-02 | 1.9448E-12 | 1.3462E+13 | 5.5928E+13 |
| Kr-88 | 3.4978E-01 | 2.7895E-11 | 1.9089E+14 | 2.0207E+14 |
| Rb-86 | 2.3455E-06 | 2.8826E-14 | 2.0186E+11 | 5.3403E+09 |
| Sr-89 | 8.3777E-05 | 2.8837E-12 | 1.9512E+13 | 1.3264E+11 |
| Sr-90 | 9.0627E-06 | 6.6439E-11 | 4.4456E+14 | 1.4331E+10 |
| Sr-91 | 7.8033E-05 | 2.1526E-14 | 1.4246E+11 | 1.4542E+11 |
| Sr-92 | 3.1650E-05 | 2.5180E-15 | 1.6483E+10 | 9.0577E+10 |
| Y-90 | 8.8372E-08 | 1.6243E-16 | 1.0869E+09 | 1.4315E+08 |
| Y-91 | 1.0258E-06 | 4.1829E-14 | 2.7681E+11 | 1.6239E+09 |
| Y-92 | 4.3356E-07 | 4.5058E-17 | 2.9494E+08 | 1.0750E+09 |
| Y-93 | 9.3749E-07 | 2.8100E-16 | 1.8196E+09 | 1.7299E+09 |
| Zr-95 | 1.3216E-06 | 6.1519E-14 | 3.8998E+11 | 2.0919E+09 |
| Zr-97 | 1.0911E-06 | 5.7076E-16 | 3.5435E+09 | 1.8913E+09 |
| Nb-95 | 1.3294E-06 | 3.3997E-14 | 2.1551E+11 | 2.1060E+09 |
| Mo-99 | 1.7223E-05 | 3.5910E-14 | 2.1844E+11 | 2.7879E+10 |
| Tc-99m | 8.7296E-06 | 1.6602E-15 | 1.0099E+10 | 1.7922E+10 |
| Ru-103 | 1.4576E-05 | 4.5163E-13 | 2.6405E+12 | 2.3086E+10 |
| Ru-105 | 4.3157E-06 | 6.4202E-16 | 3.6822E+09 | 9.7458E+09 |
| Ru-106 | 5.5093E-06 | 1.6467E-12 | 9.3556E+12 | 8.7132E+09 |
| Rh-105 | 8.3048E-06 | 9.8392E-15 | 5.6431E+10 | 1.3719E+10 |
| Sb-127 | 1.9267E-05 | 7.2148E-14 | 3.4212E+11 | 3.0980E+10 |
| Sb-129 | 2.6209E-05 | 4.6607E-15 | 2.1758E+10 | 5.9791E+10 |
| Te-127 | 1.3493E-05 | 5.1129E-15 | 2.4244E+10 | 2.5213E+10 |
| Te-127m | 2.6622E-06 | 2.8224E-13 | 1.3383E+12 | 4.2122E+09 |
| Te-129 | 2.6801E-06 | 1.2798E-16 | 5.9744E+08 | 1.8172E+10 |
| Te-129m | 8.8838E-06 | 2.9489E-12 | 1.3767E+12 | 1.4075E+10 |
| Te-131m | 2.4254E-05 | 3.0416E-14 | 1.3982E+11 | 4.0382E+10 |
| Te-132 | 2.6041E-04 | 8.5778E-13 | 3.9134E+12 | 4.2000E+11 |
| I-131 | 1.5915E-03 | 1.2837E-11 | 5.9012E+13 | 2.9506E+12 |
| I-132 | 4.9491E-04 | 4.7947E-14 | 2.1874E+11 | 2.2216E+12 |
| I-133 | 2.8534E-03 | 2.5189E-12 | 1.1405E+13 | 5.7439E+12 |
| I-134 | 6.6010E-05 | 2.4744E-15 | 1.1120E+10 | 1.6332E+12 |
| I-135 | 1.8378E-03 | 5.2333E-13 | 2.3345E+12 | 4.5346E+12 |
| Xe-133 | 2.6869E+00 | 1.4355E-08 | 6.4997E+16 | 1.0524E+15 |
| Xe-135 | 6.9218E-01 | 2.7105E-10 | 1.2091E+15 | 3.0263E+14 |
| Cs-134 | 2.4653E-04 | 1.9054E-10 | 8.5632E+14 | 5.5885E+11 |
| Cs-136 | 6.7406E-05 | 9.1970E-13 | 4.0725E+12 | 1.5376E+11 |
| Cs-137 | 1.6520E-04 | 1.8992E-09 | 8.3486E+15 | 3.7445E+11 |
| Ba-139 | 1.0819E-05 | 6.6142E-16 | 2.8656E+09 | 5.7347E+10 |
| Ba-140 | 1.4071E-04 | 1.9220E-12 | 8.2677E+12 | 2.2363E+11 |
| La-140 | 1.3201E-06 | 2.3750E-15 | 1.0216E+10 | 2.1691E+09 |
| La-141 | 5.3677E-07 | 9.4914E-17 | 4.0538E+08 | 1.2712E+09 |
| La-142 | 1.5457E-07 | 1.0798E-17 | 4.5793E+07 | 7.1500E+08 |
| Ce-141 | 3.2462E-06 | 1.1393E-13 | 4.8658E+11 | 5.1433E+09 |
| Ce-143 | 2.9045E-06 | 4.3737E-15 | 1.8419E+10 | 4.8132E+09 |
| Ce-144 | 2.6252E-06 | 8.2308E-13 | 3.4421E+12 | 4.1521E+09 |
| Pr-143 | 1.2601E-06 | 1.8712E-14 | 7.8803E+10 | 2.0020E+09 |
| Nd-147 | 5.2548E-07 | 6.4956E-15 | 2.6610E+10 | 8.3581E+08 |
| Np-239 | 3.3840E-05 | 1.4587E-13 | 3.6755E+11 | 5.4993E+10 |
| Pu-238 | 1.0356E-08 | 6.0492E-13 | 1.5306E+12 | 1.6376E+07 |
| Pu-239 | 8.0602E-10 | 1.2968E-11 | 3.2675E+13 | 1.2745E+06 |
| Pu-240 | 8.6921E-10 | 3.8146E-12 | 9.5716E+12 | 1.3745E+06 |
| Pu-241 | 3.5996E-07 | 3.4943E-12 | 8.7317E+12 | 5.6921E+08 |
| Am-241 | 2.2139E-10 | 6.4504E-14 | 1.6118E+11 | 3.5008E+05 |
| Cm-242 | 5.1992E-08 | 1.5687E-14 | 3.9037E+10 | 8.2246E+07 |

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Cm-244                 4.2097E-09  5.2035E-14  1.2843E+11  6.6568E+06

Control Room Transport Group Inventory:
Time (h) =   4.0000    Atmosphere     Sump
Noble gases (atoms)    4.1542E+17  0.0000E+00
Elemental I (atoms)    1.0708E+13  0.0000E+00
Organic I (atoms)      1.8784E+12  0.0000E+00
Aerosols (kg)          2.2039E-09  0.0000E+00
Dose Effective (Ci/cc) I-131 (Thyroid)         2.9984E-13
Dose Effective (Ci/cc) I-131 (ICRP2 Thyroid)   3.5682E-13
Total I (Ci)                                   6.8437E-03

                       Deposition Recirculating
Time (h) =   4.0000     Surfaces     Filter
Noble gases (atoms)    0.0000E+00  0.0000E+00
Elemental I (atoms)    0.0000E+00  3.1993E+14
Organic I (atoms)      0.0000E+00  3.9298E+13
Aerosols (kg)          0.0000E+00  2.0919E-07

CR Filtered Air Intake Transport Group Inventory:

                         Pathway
Time (h) =   4.0000     Filtered   Transported
Noble gases (atoms)    0.0000E+00  2.6659E+18
Elemental I (atoms)    1.6884E+15  2.1579E+14
Organic I (atoms)      2.1532E+14  2.5661E+13
Aerosols (kg)          1.8305E-06  5.3590E-08

CR  Unfiltered Inleakage Transport Group Inventory:

                         Pathway
Time (h) =   4.0000     Filtered   Transported
Noble gases (atoms)    0.0000E+00  3.3229E+17
Elemental I (atoms)    0.0000E+00  2.3450E+14
Organic I (atoms)      0.0000E+00  2.9905E+13
Aerosols (kg)          0.0000E+00  2.3113E-07

CR Exhaust to Environment Transport Group Inventory:

                         Pathway
Time (h) =   4.0000     Filtered   Transported
Noble gases (atoms)    2.5811E+18  0.0000E+00
Elemental I (atoms)    1.1871E+14  0.0000E+00
Organic I (atoms)      1.4283E+13  0.0000E+00
Aerosols (kg)          7.3270E-08  0.0000E+00

Exclusion Area Boundary Doses:

Time (h) =   8.0000    Whole Body   Thyroid       TEDE
Delta dose (rem)        1.2117E+00  1.6717E+02  9.8740E+00
Accumulated dose (rem)  3.7780E+00  6.2296E+02  3.6078E+01

Low Population Zone Doses:

Time (h) =   8.0000    Whole Body   Thyroid       TEDE
Delta dose (rem)        9.0878E-02  1.2538E+01  7.4055E-01
Accumulated dose (rem)  4.1576E-01  7.3868E+01  4.2348E+00

Control Room Doses:

Time (h) =   8.0000    Whole Body   Thyroid       TEDE
Delta dose (rem)        1.5670E-02  1.5112E+00  9.1480E-02
Accumulated dose (rem)  3.9629E-02  7.5640E+00  4.1612E-01

Environment Integral Nuclide Release:
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**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 2 | System Nos. | Sheet 907 of 1000 |
|---|---|---|---|---|

| Time (h) = 8.0000 | Ci | kg | Atoms | Bq |
|---|---|---|---|---|
| Co-58 | 8.8519E-02 | 2.7838E-09 | 2.8904E+16 | 3.2752E+09 |
| Co-60 | 6.7829E-02 | 6.0005E-08 | 6.0227E+17 | 2.5097E+09 |
| Kr-85 | 3.0023E+02 | 7.6525E-04 | 5.4217E+21 | 1.1109E+13 |
| Kr-85m | 2.9501E+03 | 3.5848E-07 | 2.5398E+18 | 1.0915E+14 |
| Kr-87 | 1.1371E+03 | 4.0142E-08 | 2.7787E+17 | 4.2071E+13 |
| Kr-88 | 5.3682E+03 | 4.2811E-07 | 2.9297E+18 | 1.9862E+14 |
| Rb-86 | 2.4936E+00 | 3.0647E-08 | 2.1460E+17 | 9.2265E+10 |
| Sr-89 | 8.2934E+01 | 2.8547E-06 | 1.9316E+19 | 3.0686E+12 |
| Sr-90 | 8.9666E+00 | 6.5734E-05 | 4.3984E+20 | 3.3176E+11 |
| Sr-91 | 8.3714E+01 | 2.3094E-08 | 1.5283E+17 | 3.0974E+12 |
| Sr-92 | 4.5157E+01 | 3.5926E-09 | 2.3516E+16 | 1.6708E+12 |
| Y-90 | 8.8368E-02 | 1.6242E-10 | 1.0868E+15 | 3.2696E+09 |
| Y-91 | 1.0154E+00 | 4.1404E-08 | 2.7400E+17 | 3.7570E+10 |
| Y-92 | 5.5706E-01 | 5.7892E-11 | 3.7895E+14 | 2.0611E+10 |
| Y-93 | 1.0003E+00 | 2.9983E-10 | 1.9415E+15 | 3.7013E+10 |
| Zr-95 | 1.3082E+00 | 6.0893E-08 | 3.8601E+17 | 4.8402E+10 |
| Zr-97 | 1.1268E+00 | 5.8942E-10 | 3.6594E+15 | 4.1691E+10 |
| Nb-95 | 1.3163E+00 | 3.3663E-08 | 2.1339E+17 | 4.8704E+10 |
| Mo-99 | 1.7217E+01 | 3.5897E-08 | 2.1836E+17 | 6.3701E+11 |
| Tc-99m | 9.9064E+00 | 1.8840E-09 | 1.1460E+16 | 3.6654E+11 |
| Ru-103 | 1.4431E+01 | 4.4715E-07 | 2.6144E+18 | 5.3396E+11 |
| Ru-105 | 5.2028E+00 | 7.7400E-10 | 4.4392E+15 | 1.9250E+11 |
| Ru-106 | 5.4512E+00 | 1.6294E-06 | 9.2570E+18 | 2.0170E+11 |
| Rh-105 | 8.3794E+00 | 9.9275E-09 | 5.6938E+16 | 3.1004E+11 |
| Sb-127 | 1.9203E+01 | 7.1906E-08 | 3.4097E+17 | 7.1050E+11 |
| Sb-129 | 3.1810E+01 | 5.6567E-09 | 2.6407E+16 | 1.1770E+12 |
| Te-127 | 1.4497E+01 | 5.4932E-09 | 2.6048E+16 | 5.3640E+11 |
| Te-127m | 2.6346E+00 | 2.7931E-07 | 1.3245E+18 | 9.7482E+10 |
| Te-129 | 8.0094E+00 | 3.8245E-10 | 1.7854E+15 | 2.9635E+11 |
| Te-129m | 8.7968E+00 | 2.9201E-06 | 1.3632E+18 | 3.2548E+11 |
| Te-131m | 2.4562E+01 | 3.0802E-08 | 1.4160E+17 | 9.0879E+11 |
| Te-132 | 2.5989E+02 | 8.5606E-07 | 3.9055E+18 | 9.6160E+12 |
| I-131 | 1.4684E+03 | 1.1844E-05 | 5.4450E+19 | 5.4331E+13 |
| I-132 | 7.4645E+02 | 7.2316E-08 | 3.2992E+17 | 2.7619E+13 |
| I-133 | 2.7225E+03 | 2.4033E-06 | 1.0882E+19 | 1.0073E+14 |
| I-134 | 3.5814E+02 | 1.3425E-08 | 6.0335E+16 | 1.3251E+13 |
| I-135 | 1.9312E+03 | 5.4991E-07 | 2.4531E+18 | 7.1455E+13 |
| Xe-133 | 4.1634E+04 | 2.2242E-04 | 1.0071E+21 | 1.5404E+15 |
| Xe-135 | 1.0432E+04 | 4.0849E-06 | 1.8222E+19 | 3.8597E+14 |
| Cs-134 | 2.6163E+02 | 2.0221E-04 | 9.0878E+20 | 9.6804E+12 |
| Cs-136 | 7.1718E+01 | 9.7854E-07 | 4.3330E+18 | 2.6536E+12 |
| Cs-137 | 1.7531E+02 | 2.0155E-03 | 8.8596E+21 | 6.4866E+12 |
| Ba-139 | 2.5846E+01 | 1.5801E-09 | 6.8459E+15 | 9.5632E+11 |
| Ba-140 | 1.3952E+02 | 1.9058E-06 | 8.1978E+18 | 5.1623E+12 |
| La-140 | 1.3286E+00 | 2.3903E-09 | 1.0282E+16 | 4.9159E+10 |
| La-141 | 6.6810E-01 | 1.1814E-10 | 5.0456E+14 | 2.4720E+10 |
| La-142 | 3.2736E-01 | 2.2868E-11 | 9.6982E+13 | 1.2112E+10 |
| Ce-141 | 3.2145E+00 | 1.1281E-07 | 4.8183E+17 | 1.1894E+11 |
| Ce-143 | 2.9349E+00 | 4.4194E-09 | 1.8611E+16 | 1.0859E+11 |
| Ce-144 | 2.5976E+00 | 8.1442E-07 | 3.4059E+18 | 9.6111E+10 |
| Pr-143 | 1.2493E+00 | 1.8552E-08 | 7.8127E+16 | 4.6223E+10 |
| Nd-147 | 5.2123E-01 | 6.4430E-09 | 2.6395E+16 | 1.9285E+10 |
| Np-239 | 3.3888E+01 | 1.4607E-07 | 3.6806E+17 | 1.2538E+12 |
| Pu-238 | 1.0246E-02 | 5.9850E-07 | 1.5144E+18 | 3.7911E+08 |
| Pu-239 | 7.9747E-04 | 1.2830E-05 | 3.2328E+19 | 2.9506E+07 |
| Pu-240 | 8.5999E-04 | 3.7741E-06 | 9.4700E+18 | 3.1820E+07 |
| Pu-241 | 3.5614E-01 | 3.4573E-06 | 8.6391E+18 | 1.3177E+10 |
| Am-241 | 2.1904E-04 | 6.3820E-08 | 1.5947E+17 | 8.1045E+06 |
| Cm-242 | 5.1449E-02 | 1.5523E-08 | 3.8630E+16 | 1.9036E+09 |
| Cm-244 | 4.1651E-03 | 5.1483E-08 | 1.2706E+17 | 1.5411E+08 |

Environment Transport Group Inventory:

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**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 2 | System Nos. | Sheet 908 of 1000 |
|---|---|---|---|---|

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                          Total      Release
Time (h) =   8.0000     Release     Rate/s
Noble gases (atoms)    6.4528E+21  2.2405E+17
Elemental I (atoms)    3.6145E+18  1.2550E+14
Organic I (atoms)      5.5910E+17  1.9413E+13
Aerosols (kg)          2.3316E-03  8.0959E-08
Dose Effective (Ci) I-131 (Thyroid)            1.9823E+03
Dose Effective (Ci) I-131 (ICRP2 Thyroid)      2.3898E+03
Total I  (Ci)                                  7.2267E+03

Sprayed to Environment Transport Group Inventory:
Time (h) =   8.0000  Leakage Transport

Noble gases (atoms)      3.6783E+21
Elemental I (atoms)      1.7253E+18
Organic I (atoms)        3.1906E+17
Aerosols (kg)            1.0915E-03

Unsprayed to Environment Transport Group Inventory:
Time (h) =   8.0000  Leakage Transport

Noble gases (atoms)      2.7753E+21
Elemental I (atoms)      1.8937E+18
Organic I (atoms)        2.4073E+17
Aerosols (kg)            1.2402E-03

CR Filtered Air Intake Transport Group Inventory:

                          Pathway
Time (h) =   8.0000     Filtered   Transported
Noble gases (atoms)    0.0000E+00  5.8401E+18
Elemental I (atoms)    3.0630E+15  3.6852E+14
Organic I (atoms)      4.5645E+14  5.2453E+13
Aerosols (kg)          2.3398E-06  5.8733E-08

CR  Unfiltered Inleakage Transport Group Inventory:

                          Pathway
Time (h) =   8.0000     Filtered   Transported
Noble gases (atoms)    0.0000E+00  7.2907E+17
Elemental I (atoms)    0.0000E+00  4.2542E+14
Organic I (atoms)      0.0000E+00  6.3396E+13
Aerosols (kg)          0.0000E+00  2.9543E-07

CR Exhaust to Environment Transport Group Inventory:

                          Pathway
Time (h) =   8.0000     Filtered   Transported
Noble gases (atoms)    6.1532E+18  0.0000E+00
Elemental I (atoms)    2.0914E+14  0.0000E+00
Organic I (atoms)      3.0147E+13  0.0000E+00
Aerosols (kg)          9.0388E-08  0.0000E+00

Control Room Compartment Nuclide Inventory:

Time (h) =   8.0000       Ci          kg         Atoms      Decay
Co-58                  7.3160E-08  2.3008E-15  2.3889E+10  1.8425E+08
Co-60                  5.6170E-08  4.9691E-14  4.9874E+11  1.4117E+08
Kr-85                  1.9263E-02  4.9099E-08  3.4786E+17  1.7770E+13
Kr-85m                 1.0574E-01  1.2849E-11  9.1031E+13  1.7581E+14
Kr-87                  6.2041E-03  2.1903E-13  1.5161E+12  6.7836E+13
Kr-88                  1.3136E-01  1.0476E-11  7.1692E+13  3.2075E+14
Rb-86                  1.9100E-06  2.3474E-14  1.6438E+11  6.4578E+09
Sr-89                  6.8489E-05  2.3574E-12  1.5951E+13  1.7263E+11
Sr-90                  7.4257E-06  5.4438E-11  3.6426E+14  1.8661E+10
```

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**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 2 | System Nos. | Sheet 909 of 1000 |
|---|---|---|---|---|

| | | | | |
|---|---|---|---|---|
| Sr-91 | 4.7754E-05 | 1.3174E-14 | 8.7179E+10 | 1.7790E+11 |
| Sr-92 | 9.3226E-06 | 7.4169E-16 | 4.8549E+09 | 1.0019E+11 |
| Y-90 | 6.9340E-08 | 1.2745E-16 | 8.5279E+08 | 1.8451E+08 |
| Y-91 | 8.3886E-07 | 3.4206E-14 | 2.2636E+11 | 2.1136E+09 |
| Y-92 | 1.6233E-07 | 1.6870E-17 | 1.1043E+08 | 1.2204E+09 |
| Y-93 | 5.8376E-07 | 1.7497E-16 | 1.1330E+09 | 2.1233E+09 |
| Zr-95 | 1.0810E-06 | 5.0317E-14 | 3.1896E+11 | 2.7229E+09 |
| Zr-97 | 7.5875E-07 | 3.9690E-16 | 2.4641E+09 | 2.3733E+09 |
| Nb-95 | 1.0857E-06 | 2.7765E-14 | 1.7601E+11 | 2.7403E+09 |
| Mo-99 | 1.3532E-05 | 2.8213E-14 | 1.7162E+11 | 3.5944E+10 |
| Tc-99m | 4.5129E-06 | 8.5826E-16 | 5.2208E+09 | 2.1288E+10 |
| Ru-103 | 1.1908E-05 | 3.6897E-13 | 2.1573E+12 | 3.0041E+10 |
| Ru-105 | 1.8938E-06 | 2.8173E-16 | 1.6158E+09 | 1.1294E+10 |
| Ru-106 | 4.5128E-06 | 1.3489E-12 | 7.6633E+12 | 1.1346E+10 |
| Rh-105 | 6.2916E-06 | 7.4540E-15 | 4.2752E+10 | 1.7541E+10 |
| Sb-127 | 1.5321E-05 | 5.7369E-14 | 2.7204E+11 | 4.0055E+10 |
| Sb-129 | 1.1303E-05 | 2.0100E-15 | 9.3835E+09 | 6.9124E+10 |
| Te-127 | 8.2191E-06 | 3.1143E-15 | 1.4768E+10 | 3.0818E+10 |
| Te-127m | 2.1791E-06 | 2.3101E-13 | 1.0954E+12 | 5.4837E+09 |
| Te-129 | 2.0119E-07 | 9.6068E-18 | 4.4848E+07 | 1.8676E+10 |
| Te-129m | 7.2542E-06 | 2.4080E-12 | 1.1241E+12 | 1.8313E+10 |
| Te-131m | 1.8119E-05 | 2.2722E-14 | 1.0446E+11 | 5.1469E+10 |
| Te-132 | 2.0595E-04 | 6.7836E-13 | 3.0948E+12 | 5.4232E+11 |
| I-131 | 1.3342E-03 | 1.0762E-11 | 4.9474E+13 | 3.7207E+12 |
| I-132 | 1.2609E-04 | 1.2215E-14 | 5.5729E+10 | 2.3638E+12 |
| I-133 | 2.1240E-03 | 1.8750E-12 | 8.4897E+12 | 7.0479E+12 |
| I-134 | 2.3755E-06 | 8.9049E-17 | 4.0020E+08 | 1.6433E+12 |
| I-135 | 1.0276E-03 | 2.9260E-13 | 1.3053E+12 | 5.2699E+12 |
| Xe-133 | 2.6211E+00 | 1.4003E-08 | 6.3404E+16 | 2.4649E+15 |
| Xe-135 | 5.0875E-01 | 1.9922E-10 | 8.8868E+14 | 6.1970E+14 |
| Cs-134 | 2.0197E-04 | 1.5610E-10 | 7.0155E+14 | 6.7664E+11 |
| Cs-136 | 5.4746E-05 | 7.4697E-13 | 3.3076E+12 | 1.8584E+11 |
| Cs-137 | 1.3536E-04 | 1.5562E-09 | 6.8406E+15 | 4.5339E+11 |
| Ba-139 | 1.1859E-06 | 7.2503E-17 | 3.1412E+08 | 5.9639E+10 |
| Ba-140 | 1.1425E-04 | 1.5607E-12 | 6.7132E+12 | 2.9057E+11 |
| La-140 | 1.0097E-06 | 1.8165E-15 | 7.8138E+09 | 2.7793E+09 |
| La-141 | 2.1721E-07 | 3.8408E-17 | 1.6404E+08 | 1.4572E+09 |
| La-142 | 2.0968E-08 | 1.4648E-18 | 6.2120E+06 | 7.5018E+08 |
| Ce-141 | 2.6504E-06 | 9.3018E-14 | 3.9728E+11 | 6.6918E+09 |
| Ce-143 | 2.1881E-06 | 3.2949E-15 | 1.3876E+10 | 6.1461E+09 |
| Ce-144 | 2.1502E-06 | 6.7414E-13 | 2.8193E+12 | 5.4063E+09 |
| Pr-143 | 1.0237E-06 | 1.5203E-14 | 6.4022E+10 | 2.6016E+09 |
| Nd-147 | 4.2606E-07 | 5.2666E-15 | 2.1576E+10 | 1.0856E+09 |
| Np-239 | 2.6401E-05 | 1.1380E-13 | 2.8674E+11 | 7.0786E+10 |
| Pu-238 | 8.4855E-09 | 4.9566E-13 | 1.2542E+12 | 2.1325E+07 |
| Pu-239 | 6.6044E-10 | 1.0625E-11 | 2.6773E+13 | 1.6597E+06 |
| Pu-240 | 7.1221E-10 | 3.1256E-12 | 7.8428E+12 | 1.7898E+06 |
| Pu-241 | 2.9494E-07 | 2.8631E-12 | 7.1544E+12 | 7.4121E+08 |
| Am-241 | 1.8140E-10 | 5.2853E-14 | 1.3207E+11 | 4.5587E+05 |
| Cm-242 | 4.2571E-08 | 1.2845E-14 | 3.1964E+10 | 1.0708E+08 |
| Cm-244 | 3.4493E-09 | 4.2636E-14 | 1.0523E+11 | 8.6685E+06 |

```
Control Room Transport Group Inventory:
Time (h) =   8.0000    Atmosphere     Sump
Noble gases (atoms)    4.1231E+17  0.0000E+00
Elemental I (atoms)    1.0232E+13  0.0000E+00
Organic I (atoms)      1.7950E+12  0.0000E+00
Aerosols (kg)          1.8052E-09  0.0000E+00
Dose Effective (Ci/cc) I-131 (Thyroid)         2.4272E-13
Dose Effective (Ci/cc) I-131 (ICRP2 Thyroid)   2.8139E-13
Total I (Ci)                                   4.6143E-03

                       Deposition Recirculating
Time (h) =   8.0000     Surfaces     Filter
Noble gases (atoms)    0.0000E+00  0.0000E+00
```

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**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 2 | System Nos. | Sheet 910 of 1000 |
|---|---|---|---|---|

```
Elemental I (atoms)    0.0000E+00  5.7315E+14
Organic I (atoms)      0.0000E+00  8.3718E+13
Aerosols (kg)          0.0000E+00  2.6191E-07

CR Filtered Air Intake Transport Group Inventory:

                         Pathway
Time (h) =   8.0000     Filtered   Transported
Noble gases (atoms)    0.0000E+00  5.8401E+18
Elemental I (atoms)    3.0630E+15  3.6852E+14
Organic I (atoms)      4.5645E+14  5.2453E+13
Aerosols (kg)          2.3398E-06  5.8733E-08

CR  Unfiltered Inleakage Transport Group Inventory:

                         Pathway
Time (h) =   8.0000     Filtered   Transported
Noble gases (atoms)    0.0000E+00  7.2907E+17
Elemental I (atoms)    0.0000E+00  4.2542E+14
Organic I (atoms)      0.0000E+00  6.3396E+13
Aerosols (kg)          0.0000E+00  2.9543E-07

CR Exhaust to Environment Transport Group Inventory:

                         Pathway
Time (h) =   8.0000     Filtered   Transported
Noble gases (atoms)    6.1532E+18  0.0000E+00
Elemental I (atoms)    2.0914E+14  0.0000E+00
Organic I (atoms)      3.0147E+13  0.0000E+00
Aerosols (kg)          9.0388E-08  0.0000E+00

Exclusion Area Boundary Doses:

Time (h) =  24.0000    Whole Body   Thyroid       TEDE
Delta dose (rem)        1.6337E+00  4.2989E+02  2.4146E+01
Accumulated dose (rem)  5.4117E+00  1.0528E+03  6.0224E+01

Low Population Zone Doses:

Time (h) =  24.0000    Whole Body   Thyroid       TEDE
Delta dose (rem)        7.9642E-02  1.0778E+01  6.4406E-01
Accumulated dose (rem)  4.9540E-01  8.4645E+01  4.8788E+00

Control Room Doses:

Time (h) =  24.0000    Whole Body   Thyroid       TEDE
Delta dose (rem)        9.6789E-03  1.8401E+00  1.0174E-01
Accumulated dose (rem)  4.9308E-02  9.4040E+00  5.1786E-01

Environment Integral Nuclide Release:

Time (h) =  24.0000       Ci           kg          Atoms         Bq
Co-58                  1.5396E-01  4.8419E-09  5.0273E+16  5.6966E+09
Co-60                  1.1823E-01  1.0459E-07  1.0498E+18  4.3745E+09
Kr-85                  9.9654E+02  2.5400E-03  1.7996E+22  3.6872E+13
Kr-85m                 4.2788E+03  5.1994E-07  3.6837E+18  1.5832E+14
Kr-87                  1.1615E+03  4.1005E-08  2.8383E+17  4.2975E+13
Kr-88                  6.4815E+03  5.1690E-07  3.5373E+18  2.3982E+14
Rb-86                  4.1871E+00  5.1459E-08  3.6034E+17  1.5492E+11
Sr-89                  1.4412E+02  4.9607E-06  3.3567E+19  5.3325E+12
Sr-90                  1.5630E+01  1.1458E-04  7.6671E+20  5.7831E+11
Sr-91                  1.0954E+02  3.0219E-08  1.9998E+17  4.0531E+12
Sr-92                  4.7385E+01  3.7699E-09  2.4677E+16  1.7532E+12
Y-90                   1.4562E-01  2.6766E-10  1.7910E+15  5.3881E+09
Y-91                   1.7653E+00  7.1982E-08  4.7636E+17  6.5315E+10
```

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**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 2 | System Nos. | Sheet 911 of 1000 |
|---|---|---|---|---|

| | | | | |
|---|---|---|---|---|
| Y-92 | 6.0506E-01 | 6.2881E-11 | 4.1161E+14 | 2.2387E+10 |
| Y-93 | 1.3246E+00 | 3.9703E-10 | 2.5709E+15 | 4.9011E+10 |
| Zr-95 | 2.2748E+00 | 1.0589E-07 | 6.7123E+17 | 8.4166E+10 |
| Zr-97 | 1.6312E+00 | 8.5326E-10 | 5.2974E+15 | 6.0353E+10 |
| Nb-95 | 2.2844E+00 | 5.8420E-08 | 3.7033E+17 | 8.4523E+10 |
| Mo-99 | 2.8417E+01 | 5.9250E-08 | 3.6042E+17 | 1.0514E+12 |
| Tc-99m | 1.1830E+01 | 2.2498E-09 | 1.3685E+16 | 4.3771E+11 |
| Ru-103 | 2.5056E+01 | 7.7636E-07 | 4.5392E+18 | 9.2708E+11 |
| Ru-105 | 5.8644E+00 | 8.7242E-10 | 5.0036E+15 | 2.1698E+11 |
| Ru-106 | 9.4985E+00 | 2.8391E-06 | 1.6130E+19 | 3.5144E+11 |
| Rh-105 | 1.3246E+01 | 1.5693E-08 | 9.0007E+16 | 4.9010E+11 |
| Sb-127 | 3.2177E+01 | 1.2049E-07 | 5.7134E+17 | 1.1905E+12 |
| Sb-129 | 3.5683E+01 | 6.3454E-09 | 2.9622E+16 | 1.3203E+12 |
| Te-127 | 1.8911E+01 | 7.1658E-09 | 3.3979E+16 | 6.9972E+11 |
| Te-127m | 4.5860E+00 | 4.8619E-07 | 2.3054E+18 | 1.6968E+11 |
| Te-129 | 8.0322E+00 | 3.8354E-10 | 1.7905E+15 | 2.9719E+11 |
| Te-129m | 1.5263E+01 | 5.0665E-06 | 2.3652E+18 | 5.6473E+11 |
| Te-131m | 3.8224E+01 | 4.7935E-08 | 2.2036E+17 | 1.4143E+12 |
| Te-132 | 4.3250E+02 | 1.4246E-06 | 6.4993E+18 | 1.6002E+13 |
| I-131 | 2.5768E+03 | 2.0785E-05 | 9.5550E+19 | 9.5342E+13 |
| I-132 | 7.7078E+02 | 7.4673E-08 | 3.4067E+17 | 2.8519E+13 |
| I-133 | 4.1342E+03 | 3.6495E-06 | 1.6525E+19 | 1.5297E+14 |
| I-134 | 3.5834E+02 | 1.3432E-08 | 6.0367E+16 | 1.3258E+13 |
| I-135 | 2.3659E+03 | 6.7370E-07 | 3.0053E+18 | 8.7539E+13 |
| Xe-133 | 1.3200E+05 | 7.0519E-04 | 3.1930E+21 | 4.8839E+15 |
| Xe-135 | 2.0628E+04 | 8.0775E-06 | 3.6033E+19 | 7.6323E+14 |
| Cs-134 | 4.4282E+02 | 3.4226E-04 | 1.5381E+21 | 1.6384E+13 |
| Cs-136 | 1.2001E+02 | 1.6374E-06 | 7.2507E+18 | 4.4404E+12 |
| Cs-137 | 2.9678E+02 | 3.4120E-03 | 1.4998E+22 | 1.0981E+13 |
| Ba-139 | 2.6004E+01 | 1.5898E-09 | 6.8877E+15 | 9.6215E+11 |
| Ba-140 | 2.4025E+02 | 3.2818E-06 | 1.4117E+19 | 8.8894E+12 |
| La-140 | 2.1235E+00 | 3.8204E-09 | 1.6434E+16 | 7.8570E+10 |
| La-141 | 7.3759E-01 | 1.3042E-10 | 5.5704E+14 | 2.7291E+10 |
| La-142 | 3.3044E-01 | 2.3084E-11 | 9.7896E+13 | 1.2226E+10 |
| Ce-141 | 5.5765E+00 | 1.9571E-07 | 8.3588E+17 | 2.0633E+11 |
| Ce-143 | 4.6101E+00 | 6.9421E-09 | 2.9235E+16 | 1.7057E+11 |
| Ce-144 | 4.5256E+00 | 1.4189E-06 | 5.9339E+18 | 1.6745E+11 |
| Pr-143 | 2.1528E+00 | 3.1970E-08 | 1.3463E+17 | 7.9654E+10 |
| Nd-147 | 8.9582E-01 | 1.1073E-08 | 4.5364E+16 | 3.3145E+10 |
| Np-239 | 5.5453E+01 | 2.3903E-07 | 6.0229E+17 | 2.0518E+12 |
| Pu-238 | 1.7861E-02 | 1.0433E-06 | 2.6399E+18 | 6.6085E+08 |
| Pu-239 | 1.3901E-03 | 2.2365E-05 | 5.6354E+19 | 5.1435E+07 |
| Pu-240 | 1.4991E-03 | 6.5789E-06 | 1.6508E+19 | 5.5467E+07 |
| Pu-241 | 6.2080E-01 | 6.0265E-06 | 1.5059E+19 | 2.2970E+10 |
| Am-241 | 3.8183E-04 | 1.1125E-07 | 2.7799E+17 | 1.4128E+07 |
| Cm-242 | 8.9599E-02 | 2.7034E-08 | 6.7274E+16 | 3.3151E+09 |
| Cm-244 | 7.2603E-03 | 8.9742E-08 | 2.2149E+17 | 2.6863E+08 |

Environment Transport Group Inventory:

| Time (h) = 24.0000 | Total Release | Release Rate/s | |
|---|---|---|---|
| Noble gases (atoms) | 2.1232E+22 | 2.4574E+17 | |
| Elemental I (atoms) | 1.0133E+19 | 1.1728E+14 | |
| Organic I (atoms) | 1.7026E+18 | 1.9705E+13 | |
| Aerosols (kg) | 3.9508E-03 | 4.5726E-08 | |
| Dose Effective (Ci) I-131 (Thyroid) | | | 3.3384E+03 |
| Dose Effective (Ci) I-131 (ICRP2 Thyroid) | | | 3.9126E+03 |
| Total I (Ci) | | | 1.0206E+04 |

Sprayed to Environment Transport Group Inventory:
Time (h) = 24.0000 Leakage Transport

| | |
|---|---|
| Noble gases (atoms) | 1.2112E+22 |
| Elemental I (atoms) | 5.4790E+18 |

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**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 2 | System Nos. | Sheet 912 of 1000 |
|---|---|---|---|---|

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Organic I (atoms)        9.7752E+17
Aerosols (kg)            2.0262E-03

Unsprayed to Environment Transport Group Inventory:
Time (h) =  24.0000  Leakage Transport

Noble gases (atoms)      9.1388E+21
Elemental I (atoms)      4.7258E+18
Organic I (atoms)        7.3754E+17
Aerosols (kg)            1.9247E-03

CR Filtered Air Intake Transport Group Inventory:

                         Pathway
Time (h) =  24.0000     Filtered   Transported
Noble gases (atoms)    0.0000E+00  1.1539E+19
Elemental I (atoms)    5.3456E+15  6.2215E+14
Organic I (atoms)      8.5687E+14  9.6944E+13
Aerosols (kg)          2.9571E-06  6.4969E-08

CR  Unfiltered Inleakage Transport Group Inventory:

                         Pathway
Time (h) =  24.0000     Filtered   Transported
Noble gases (atoms)    0.0000E+00  1.4414E+18
Elemental I (atoms)    0.0000E+00  7.4245E+14
Organic I (atoms)      0.0000E+00  1.1901E+14
Aerosols (kg)          0.0000E+00  3.7337E-07

CR Exhaust to Environment Transport Group Inventory:

                         Pathway
Time (h) =  24.0000     Filtered   Transported
Noble gases (atoms)    1.2790E+19  0.0000E+00
Elemental I (atoms)    3.6078E+14  0.0000E+00
Organic I (atoms)      5.6746E+13  0.0000E+00
Aerosols (kg)          1.1133E-07  0.0000E+00

Control Room Compartment Nuclide Inventory:

Time (h) =  24.0000       Ci           kg          Atoms       Decay
Co-58                  1.8692E-08  5.8785E-16  6.1036E+09  2.3530E+08
Co-60                  1.4442E-08  1.2776E-14  1.2823E+11  1.8047E+08
Kr-85                  8.7257E-03  2.2241E-08  1.5757E+17  3.6955E+13
Kr-85m                 4.0295E-03  4.8964E-13  3.4691E+12  2.1657E+14
Kr-87                  4.5843E-07  1.6184E-17  1.1203E+08  6.8673E+13
Kr-88                  1.1986E-03  9.5584E-14  6.5412E+11  3.5615E+14
Rb-86                  4.7919E-07  5.8892E-15  4.1239E+10  7.7798E+09
Sr-89                  1.7453E-05  6.0074E-13  4.0649E+12  2.2037E+11
Sr-90                  1.9096E-06  1.3999E-11  9.3673E+13  2.3858E+10
Sr-91                  3.8215E-06  1.0542E-15  6.9765E+09  1.9892E+11
Sr-92                  4.0037E-08  3.1853E-18  2.0850E+07  1.0209E+11
Y-90                   1.4995E-08  2.7561E-17  1.8442E+08  2.2949E+08
Y-91                   2.1403E-07  8.7276E-15  5.7757E+10  2.6986E+09
Y-92                   1.8198E-09  1.8912E-19  1.2380E+06  1.2609E+09
Y-93                   5.0070E-08  1.5008E-17  9.7180E+07  2.3867E+09
Zr-95                  2.7599E-07  1.2847E-14  8.1438E+10  3.4770E+09
Zr-97                  1.0123E-07  5.2955E-17  3.2877E+08  2.7771E+09
Nb-95                  2.7557E-07  7.0472E-15  4.4673E+10  3.4956E+09
Mo-99                  2.9417E-06  6.1334E-15  3.7309E+10  4.4742E+10
Tc-99m                 1.8391E-07  3.4975E-17  2.1275E+08  2.2880E+10
Ru-103                 3.0266E-06  9.3778E-14  5.4830E+11  3.8331E+10
Ru-105                 4.0065E-08  5.9602E-18  3.4184E+07  1.1848E+10
Ru-106                 1.1591E-06  3.4646E-13  1.9683E+12  1.4502E+10
Rh-105                 1.1824E-06  1.4009E-15  8.0346E+09  2.1386E+10
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| | | | | |
|---|---|---|---|---|
| Sb-127 | 3.4944E-06 | 1.3085E-14 | 6.2047E+10 | 5.0225E+10 |
| Sb-129 | 2.2310E-07 | 3.9673E-17 | 1.8521E+08 | 7.2370E+10 |
| Te-127 | 6.4553E-07 | 2.4460E-16 | 1.1599E+09 | 3.4412E+10 |
| Te-127m | 5.5802E-07 | 5.9159E-14 | 2.8052E+11 | 7.0057E+09 |
| Te-129m | 1.8401E-06 | 6.1081E-13 | 2.8515E+11 | 2.3358E+10 |
| Te-131m | 3.2196E-06 | 4.0376E-15 | 1.8561E+10 | 6.2288E+10 |
| Te-132 | 4.5960E-05 | 1.5139E-13 | 6.9067E+11 | 6.7775E+11 |
| I-131 | 3.7398E-04 | 3.0166E-12 | 1.3867E+13 | 4.7019E+12 |
| I-132 | 3.0139E-07 | 2.9199E-17 | 1.3321E+08 | 2.3869E+12 |
| I-133 | 3.6997E-04 | 3.2660E-13 | 1.4788E+12 | 8.3188E+12 |
| I-135 | 5.6981E-05 | 1.6225E-14 | 7.2379E+10 | 5.6728E+12 |
| Xe-133 | 1.0873E+00 | 5.8087E-09 | 2.6301E+16 | 4.9670E+15 |
| Xe-135 | 6.8040E-02 | 2.6643E-11 | 1.1885E+14 | 9.1839E+14 |
| Cs-134 | 5.1909E-05 | 4.0120E-11 | 1.8031E+14 | 8.1794E+11 |
| Cs-136 | 1.3591E-05 | 1.8544E-13 | 8.2114E+11 | 2.2355E+11 |
| Cs-137 | 3.4809E-05 | 4.0019E-10 | 1.7591E+15 | 5.4811E+11 |
| Ba-139 | 9.7692E-11 | 5.9725E-21 | 2.5876E+04 | 5.9775E+10 |
| Ba-140 | 2.8336E-05 | 3.8706E-13 | 1.6649E+12 | 3.6925E+11 |
| La-140 | 1.9715E-07 | 3.5470E-16 | 1.5258E+09 | 3.4064E+09 |
| La-141 | 3.3231E-09 | 5.8760E-19 | 2.5096E+06 | 1.5157E+09 |
| Ce-141 | 6.7199E-07 | 2.3584E-14 | 1.0073E+11 | 8.5349E+09 |
| Ce-143 | 4.0210E-07 | 6.0550E-16 | 2.5499E+09 | 7.4711E+09 |
| Ce-144 | 5.5206E-07 | 1.7309E-13 | 7.2386E+11 | 6.9099E+09 |
| Pr-143 | 2.5445E-07 | 3.7787E-15 | 1.5913E+10 | 3.3073E+09 |
| Nd-147 | 1.0506E-07 | 1.2986E-15 | 5.3200E+09 | 1.3783E+09 |
| Np-239 | 5.5798E-06 | 2.4052E-14 | 6.0604E+10 | 8.7745E+10 |
| Pu-238 | 2.1822E-09 | 1.2747E-13 | 3.2253E+11 | 2.7263E+07 |
| Pu-239 | 1.6985E-10 | 2.7325E-12 | 6.8853E+12 | 2.1219E+06 |
| Pu-240 | 1.8316E-10 | 8.0381E-13 | 2.0169E+12 | 2.2882E+06 |
| Pu-241 | 7.5843E-08 | 7.3625E-13 | 1.8397E+12 | 9.4761E+08 |
| Am-241 | 4.6651E-11 | 1.3592E-14 | 3.3965E+10 | 5.8282E+05 |
| Cm-242 | 1.0917E-08 | 3.2939E-15 | 8.1969E+09 | 1.3684E+08 |
| Cm-244 | 8.8700E-10 | 1.0964E-14 | 2.7060E+10 | 1.1082E+07 |

Control Room Transport Group Inventory:

| Time (h) = 24.0000 | Atmosphere | Sump | |
|---|---|---|---|
| Noble gases (atoms) | 1.8400E+17 | 0.0000E+00 | |
| Elemental I (atoms) | 4.0583E+12 | 0.0000E+00 | |
| Organic I (atoms) | 7.1190E+11 | 0.0000E+00 | |
| Aerosols (kg) | 4.6379E-10 | 0.0000E+00 | |
| Dose Effective (Ci/cc) | I-131 (Thyroid) | | 6.1760E-14 |
| Dose Effective (Ci/cc) | I-131 (ICRP2 Thyroid) | | 6.7469E-14 |
| Total I (Ci) | | | 8.0124E-04 |

| Time (h) = 24.0000 | Deposition Surfaces | Recirculating Filter |
|---|---|---|
| Noble gases (atoms) | 0.0000E+00 | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 | 9.9772E+14 |
| Organic I (atoms) | 0.0000E+00 | 1.5820E+14 |
| Aerosols (kg) | 0.0000E+00 | 3.2641E-07 |

CR Filtered Air Intake Transport Group Inventory:

| Time (h) = 24.0000 | Pathway Filtered | Transported |
|---|---|---|
| Noble gases (atoms) | 0.0000E+00 | 1.1539E+19 |
| Elemental I (atoms) | 5.3456E+15 | 6.2215E+14 |
| Organic I (atoms) | 8.5687E+14 | 9.6944E+13 |
| Aerosols (kg) | 2.9571E-06 | 6.4969E-08 |

CR Unfiltered Inleakage Transport Group Inventory:

| Time (h) = 24.0000 | Pathway Filtered | Transported |
|---|---|---|
| Noble gases (atoms) | 0.0000E+00 | 1.4414E+18 |

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**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 2 | System Nos. | Sheet 914 of 1000 |
|---|---|---|---|---|

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Elemental I (atoms)    0.0000E+00  7.4245E+14
Organic I (atoms)      0.0000E+00  1.1901E+14
Aerosols (kg)          0.0000E+00  3.7337E-07

CR Exhaust to Environment Transport Group Inventory:

                         Pathway
Time (h) =  24.0000     Filtered   Transported
Noble gases (atoms)    1.2790E+19  0.0000E+00
Elemental I (atoms)    3.6078E+14  0.0000E+00
Organic I (atoms)      5.6746E+13  0.0000E+00
Aerosols (kg)          1.1133E-07  0.0000E+00

Exclusion Area Boundary Doses:

Time (h) =  96.0000    Whole Body   Thyroid       TEDE
Delta dose (rem)        1.1222E+00  5.2623E+02  3.0921E+01
Accumulated dose (rem)  6.5339E+00  1.5791E+03  9.1145E+01

Low Population Zone Doses:

Time (h) =  96.0000    Whole Body   Thyroid       TEDE
Delta dose (rem)        2.2445E-02  6.9161E+00  4.1409E-01
Accumulated dose (rem)  5.1785E-01  9.1562E+01  5.2929E+00

Control Room Doses:

Time (h) =  96.0000    Whole Body   Thyroid       TEDE
Delta dose (rem)        2.8501E-03  1.0409E+00  5.7662E-02
Accumulated dose (rem)  5.2158E-02  1.0445E+01  5.7552E-01

Environment Integral Nuclide Release:

Time (h) =  96.0000       Ci           kg         Atoms         Bq
Co-58                  2.5054E-01  7.8791E-09  8.1809E+16  9.2700E+09
Co-60                  1.9391E-01  1.7154E-07  1.7218E+18  7.1747E+09
Kr-85                  2.5610E+03  6.5276E-03  4.6247E+22  9.4757E+13
Kr-85m                 4.3257E+03  5.2563E-07  3.7240E+18  1.6005E+14
Kr-87                  1.1615E+03  4.1005E-08  2.8383E+17  4.2975E+13
Kr-88                  6.4887E+03  5.1747E-07  3.5413E+18  2.4008E+14
Rb-86                  6.5641E+00  8.0672E-08  5.6491E+17  2.4287E+11
Sr-89                  2.3376E+02  8.0464E-06  5.4445E+19  8.6493E+12
Sr-90                  2.5642E+01  1.8798E-04  1.2578E+21  9.4874E+11
Sr-91                  1.1314E+02  3.1210E-08  2.0654E+17  4.1861E+12
Sr-92                  4.7393E+01  3.7705E-09  2.4681E+16  1.7535E+12
Y-90                   2.0011E-01  3.6781E-10  2.4611E+15  7.4042E+09
Y-91                   2.8677E+00  1.1694E-07  7.7385E+17  1.0611E+11
Y-92                   6.0557E-01  6.2934E-11  4.1195E+14  2.2406E+10
Y-93                   1.3749E+00  4.1209E-10  2.6684E+15  5.0870E+10
Zr-95                  3.6985E+00  1.7216E-07  1.0913E+18  1.3684E+11
Zr-97                  1.7986E+00  9.4083E-10  5.8410E+15  6.6547E+10
Nb-95                  3.6872E+00  9.4294E-08  5.9774E+17  1.3643E+11
Mo-99                  3.9219E+01  8.1771E-08  4.9741E+17  1.4511E+12
Tc-99m                 1.1933E+01  2.2693E-09  1.3804E+16  4.4150E+11
Ru-103                 4.0511E+01  1.2552E-06  7.3390E+18  1.4989E+12
Ru-105                 5.8796E+00  8.7468E-10  5.0166E+15  2.1755E+11
Ru-106                 1.5559E+01  4.6505E-06  2.6421E+19  5.7567E+11
Rh-105                 1.6552E+01  1.9611E-08  1.1247E+17  6.1244E+11
Sb-127                 4.6316E+01  1.7343E-07  8.2239E+17  1.7137E+12
Sb-129                 3.5764E+01  6.3599E-09  2.9690E+16  1.3233E+12
Te-127                 1.9508E+01  7.3918E-09  3.5051E+16  7.2179E+11
Te-127m                7.4840E+00  7.9342E-07  3.7623E+18  2.7691E+11
Te-129                 8.0322E+00  3.8354E-10  1.7905E+15  2.9719E+11
Te-129m                2.4617E+01  8.1717E-06  3.8148E+18  9.1085E+11
Te-131m                4.6399E+01  5.8187E-08  2.6749E+17  1.7168E+12
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| | | | | |
|---|---|---|---|---|
| Te-132 | 6.1036E+02 | 2.0105E-06 | 9.1722E+18 | 2.2583E+13 |
| I-131 | 4.1144E+03 | 3.3187E-05 | 1.5256E+20 | 1.5223E+14 |
| I-132 | 7.7082E+02 | 7.4676E-08 | 3.4069E+17 | 2.8520E+13 |
| I-133 | 4.7742E+03 | 4.2144E-06 | 1.9083E+19 | 1.7664E+14 |
| I-134 | 3.5834E+02 | 1.3432E-08 | 6.0367E+16 | 1.3258E+13 |
| I-135 | 2.3969E+03 | 6.8251E-07 | 3.0446E+18 | 8.8685E+13 |
| Xe-133 | 2.9122E+05 | 1.5558E-03 | 7.0447E+21 | 1.0775E+16 |
| Xe-135 | 2.2522E+04 | 8.8191E-06 | 3.9341E+19 | 8.3330E+14 |
| Cs-134 | 7.1462E+02 | 5.5233E-04 | 2.4822E+21 | 2.6441E+13 |
| Cs-136 | 1.8588E+02 | 2.5362E-06 | 1.1230E+19 | 6.8776E+12 |
| Cs-137 | 4.7928E+02 | 5.5101E-03 | 2.4221E+22 | 1.7733E+13 |
| Ba-139 | 2.6004E+01 | 1.5898E-09 | 6.8877E+15 | 9.6215E+11 |
| Ba-140 | 3.7729E+02 | 5.1536E-06 | 2.2168E+19 | 1.3960E+13 |
| La-140 | 2.7139E+00 | 4.8825E-09 | 2.1002E+16 | 1.0041E+11 |
| La-141 | 7.3866E-01 | 1.3061E-10 | 5.5785E+14 | 2.7331E+10 |
| La-142 | 3.3044E-01 | 2.3084E-11 | 9.7896E+13 | 1.2226E+10 |
| Ce-141 | 8.9891E+00 | 3.1548E-07 | 1.3474E+18 | 3.3260E+11 |
| Ce-143 | 5.6913E+00 | 8.5702E-09 | 3.6092E+16 | 2.1058E+11 |
| Ce-144 | 7.4096E+00 | 2.3231E-06 | 9.7154E+18 | 2.7415E+11 |
| Pr-143 | 3.3893E+00 | 5.0332E-08 | 2.1196E+17 | 1.2540E+11 |
| Nd-147 | 1.3974E+00 | 1.7274E-08 | 7.0766E+16 | 5.1705E+10 |
| Np-239 | 7.4839E+01 | 3.2259E-07 | 8.1285E+17 | 2.7690E+12 |
| Pu-238 | 2.9302E-02 | 1.7116E-06 | 4.3309E+18 | 1.0842E+09 |
| Pu-239 | 2.2807E-03 | 3.6693E-05 | 9.2455E+19 | 8.4385E+07 |
| Pu-240 | 2.4595E-03 | 1.0793E-05 | 2.7083E+19 | 9.1001E+07 |
| Pu-241 | 1.0184E+00 | 9.8861E-06 | 2.4703E+19 | 3.7680E+10 |
| Am-241 | 6.2643E-04 | 1.8252E-07 | 4.5608E+17 | 2.3178E+07 |
| Cm-242 | 1.4647E-01 | 4.4195E-08 | 1.0998E+17 | 5.4195E+09 |
| Cm-244 | 1.1910E-02 | 1.4722E-07 | 3.6335E+17 | 4.4069E+08 |

Environment Transport Group Inventory:

| Time (h) = 96.0000 | Total Release | Release Rate/s |
|---|---|---|
| Noble gases (atoms) | 5.3339E+22 | 1.5434E+17 |
| Elemental I (atoms) | 2.1491E+19 | 6.2184E+13 |
| Organic I (atoms) | 3.6949E+18 | 1.0691E+13 |
| Aerosols (kg) | 6.3792E-03 | 1.8458E-08 |

| | |
|---|---|
| Dose Effective (Ci) I-131 (Thyroid) | 4.9834E+03 |
| Dose Effective (Ci) I-131 (ICRP2 Thyroid) | 5.6238E+03 |
| Total I (Ci) | 1.2415E+04 |

Sprayed to Environment Transport Group Inventory:
Time (h) = 96.0000 Leakage Transport

| | |
|---|---|
| Noble gases (atoms) | 3.0462E+22 |
| Elemental I (atoms) | 1.2083E+19 |
| Organic I (atoms) | 2.1359E+18 |
| Aerosols (kg) | 3.4126E-03 |

Unsprayed to Environment Transport Group Inventory:
Time (h) = 96.0000 Leakage Transport

| | |
|---|---|
| Noble gases (atoms) | 2.2984E+22 |
| Elemental I (atoms) | 9.7083E+18 |
| Organic I (atoms) | 1.6116E+18 |
| Aerosols (kg) | 2.9671E-03 |

CR Filtered Air Intake Transport Group Inventory:

| Time (h) = 96.0000 | Pathway Filtered | Transported |
|---|---|---|
| Noble gases (atoms) | 0.0000E+00 | 2.0242E+19 |
| Elemental I (atoms) | 8.1645E+15 | 9.3535E+14 |
| Organic I (atoms) | 1.3513E+15 | 1.5189E+14 |

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Aerosols (kg)          3.6071E-06  7.1535E-08

CR  Unfiltered Inleakage Transport Group Inventory:

                         Pathway
Time (h) =  96.0000     Filtered   Transported
Noble gases (atoms)    0.0000E+00  2.5293E+18
Elemental I (atoms)    0.0000E+00  1.1340E+15
Organic I (atoms)      0.0000E+00  1.8769E+14
Aerosols (kg)          0.0000E+00  4.5545E-07

CR Exhaust to Environment Transport Group Inventory:

                         Pathway
Time (h) =  96.0000     Filtered   Transported
Noble gases (atoms)    2.3097E+19  0.0000E+00
Elemental I (atoms)    5.5761E+14  0.0000E+00
Organic I (atoms)      9.1274E+13  0.0000E+00
Aerosols (kg)          1.3437E-07  0.0000E+00

Control Room Compartment Nuclide Inventory:

Time (h) =  96.0000       Ci          kg         Atoms      Decay
Co-58                  4.6702E-09  1.4687E-16  1.5250E+09  2.8818E+08
Co-60                  3.7118E-09  3.2836E-15  3.2958E+10  2.2188E+08
Kr-85                  3.0563E-03  7.7901E-09  5.5192E+16  6.6296E+13
Kr-85m                 2.0507E-08  2.4919E-18  1.7655E+07  2.1779E+14
Rb-86                  1.1029E-07  1.3555E-15  9.4916E+09  9.0844E+09
Sr-89                  4.3094E-06  1.4833E-13  1.0037E+12  2.6947E+11
Sr-90                  4.9123E-07  3.6012E-12  2.4097E+13  2.9335E+10
Sr-91                  5.1425E-09  1.4186E-18  9.3881E+06  2.0121E+11
Y-90                   1.7690E-09  3.2514E-18  2.1756E+07  2.5996E+08
Y-91                   5.3147E-08  2.1671E-15  1.4342E+10  3.3023E+09
Y-93                   9.2056E-11  2.7592E-20  1.7867E+05  2.4183E+09
Zr-95                  6.8740E-08  3.1997E-15  2.0283E+10  4.2566E+09
Zr-97                  1.3591E-09  7.1096E-19  4.4139E+06  2.8766E+09
Nb-95                  6.6829E-08  1.7091E-15  1.0834E+10  4.2644E+09
Mo-99                  3.5533E-07  7.4086E-16  4.5066E+09  5.0777E+10
Tc-99m                 1.1876E-11  2.2586E-21  1.3739E+04  2.2951E+10
Ru-103                 7.3857E-07  2.2884E-14  1.3380E+11  4.6799E+10
Ru-106                 2.9655E-07  8.8640E-14  5.0359E+11  1.7818E+10
Rh-105                 7.4173E-08  8.7877E-17  5.0401E+08  2.3268E+10
Sb-127                 5.2388E-07  1.9617E-15  9.3022E+09  5.8078E+10
Te-127                 7.9846E-10  3.0255E-19  1.4346E+06  3.4792E+10
Te-127m                1.4086E-07  1.4934E-14  7.0813E+10  8.5921E+09
Te-129m                4.4503E-07  1.4773E-13  6.8964E+10  2.8485E+10
Te-131m                1.5695E-07  1.9683E-16  9.0482E+08  6.6974E+10
Te-132                 6.2467E-06  2.0576E-14  9.3872E+10  7.7681E+11
I-131                  8.2616E-05  6.6640E-13  3.0635E+12  5.7020E+12
I-133                  9.6091E-06  8.4826E-15  3.8408E+10  8.7583E+12
I-135                  8.5759E-09  2.4420E-18  1.0893E+07  5.6973E+12
Xe-133                 2.5632E-01  1.3694E-09  6.2005E+15  7.9862E+15
Xe-135                 9.8400E-05  3.8532E-14  1.7188E+11  9.5992E+14
Cs-134                 1.3319E-05  1.0294E-11  4.6264E+13  9.6666E+11
Cs-136                 2.9837E-06  4.0710E-14  1.8026E+11  2.5975E+11
Cs-137                 8.9545E-06  1.0295E-10  4.5253E+14  6.4796E+11
Ba-140                 6.1928E-06  8.4591E-14  3.6387E+11  4.4457E+11
La-140                 1.4691E-08  2.6430E-17  1.1369E+08  3.7408E+09
Ce-141                 1.6218E-07  5.6919E-15  2.4310E+10  1.0405E+10
Ce-143                 2.2802E-08  3.4336E-17  1.4460E+08  8.0882E+09
Ce-144                 1.4101E-07  4.4210E-14  1.8489E+11  8.4881E+09
Pr-143                 5.6161E-08  8.3401E-16  3.5122E+09  3.9867E+09
Nd-147                 2.2367E-08  2.7648E-16  1.1326E+09  1.6542E+09
Np-239                 5.9371E-07  2.5592E-15  6.4484E+09  9.8616E+10
Pu-238                 5.6143E-10  3.2794E-14  8.2980E+10  3.3523E+07
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**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 2 | System Nos. | Sheet 917 of 1000 |
|---|---|---|---|---|

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Pu-239                  4.3700E-11  7.0307E-13  1.7715E+12  2.6091E+06
Pu-240                  4.7126E-11  2.0682E-13  5.1895E+11  2.8137E+06
Pu-241                  1.9506E-08  1.8936E-13  4.7317E+11  1.1651E+09
Am-241                  1.2003E-11  3.4972E-15  8.7388E+09  7.1664E+05
Cm-242                  2.7732E-09  8.3675E-16  2.0822E+09  1.6797E+08
Cm-244                  2.2815E-10  2.8201E-15  6.9602E+09  1.3626E+07

Control Room Transport Group Inventory:
Time (h) =  96.0000    Atmosphere     Sump
Noble gases (atoms)    6.1392E+16  0.0000E+00
Elemental I (atoms)    1.0000E+12  0.0000E+00
Organic I (atoms)      1.7542E+11  0.0000E+00
Aerosols (kg)          1.1904E-10  0.0000E+00
Dose Effective (Ci/cc) I-131 (Thyroid)         1.1896E-14
Dose Effective (Ci/cc) I-131 (ICRP2 Thyroid)   1.2033E-14
Total I (Ci)                                   9.2234E-05

                       Deposition Recirculating
Time (h) =  96.0000     Surfaces     Filter
Noble gases (atoms)    0.0000E+00  0.0000E+00
Elemental I (atoms)    0.0000E+00  1.5488E+15
Organic I (atoms)      0.0000E+00  2.5487E+14
Aerosols (kg)          0.0000E+00  3.9736E-07

CR Filtered Air Intake Transport Group Inventory:

                         Pathway
Time (h) =  96.0000     Filtered   Transported
Noble gases (atoms)    0.0000E+00  2.0242E+19
Elemental I (atoms)    8.1645E+15  9.3535E+14
Organic I (atoms)      1.3513E+15  1.5189E+14
Aerosols (kg)          3.6071E-06  7.1535E-08

CR  Unfiltered Inleakage Transport Group Inventory:

                         Pathway
Time (h) =  96.0000     Filtered   Transported
Noble gases (atoms)    0.0000E+00  2.5293E+18
Elemental I (atoms)    0.0000E+00  1.1340E+15
Organic I (atoms)      0.0000E+00  1.8769E+14
Aerosols (kg)          0.0000E+00  4.5545E-07

CR Exhaust to Environment Transport Group Inventory:

                         Pathway
Time (h) =  96.0000     Filtered   Transported
Noble gases (atoms)    2.3097E+19  0.0000E+00
Elemental I (atoms)    5.5761E+14  0.0000E+00
Organic I (atoms)      9.1274E+13  0.0000E+00
Aerosols (kg)          1.3437E-07  0.0000E+00

Exclusion Area Boundary Doses:

Time (h) = 720.0000    Whole Body   Thyroid       TEDE
Delta dose (rem)        1.8816E+00  8.1537E+02  6.0620E+01
Accumulated dose (rem)  8.4155E+00  2.3944E+03  1.5176E+02

Low Population Zone Doses:

Time (h) = 720.0000    Whole Body   Thyroid       TEDE
Delta dose (rem)        9.4079E-03  2.6791E+00  2.0240E-01
Accumulated dose (rem)  5.2725E-01  9.4241E+01  5.4953E+00

Control Room Doses:
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**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 2 | System Nos. | Sheet 918 of 1000 |
|---|---|---|---|---|

| Time (h) = 720.0000 | Whole Body | Thyroid | TEDE |
|---|---|---|---|
| Delta dose (rem) | 2.1499E-03 | 7.8776E-01 | 5.1137E-02 |
| Accumulated dose (rem) | 5.4308E-02 | 1.1233E+01 | 6.2665E-01 |

Environment Integral Nuclide Release:

| Time (h) = 720.0000 | Ci | kg | Atoms | Bq |
|---|---|---|---|---|
| Co-58 | 4.7659E-01 | 1.4988E-08 | 1.5562E+17 | 1.7634E+10 |
| Co-60 | 3.8701E-01 | 3.4237E-07 | 3.4364E+18 | 1.4320E+10 |
| Kr-85 | 1.5987E+04 | 4.0750E-02 | 2.8870E+23 | 5.9154E+14 |
| Kr-85m | 4.3257E+03 | 5.2563E-07 | 3.7240E+18 | 1.6005E+14 |
| Kr-87 | 1.1615E+03 | 4.1005E-08 | 2.8383E+17 | 4.2975E+13 |
| Kr-88 | 6.4887E+03 | 5.1747E-07 | 3.5413E+18 | 2.4008E+14 |
| Rb-86 | 1.0976E+01 | 1.3489E-07 | 9.4456E+17 | 4.0610E+11 |
| Sr-89 | 4.3637E+02 | 1.5020E-05 | 1.0163E+20 | 1.6146E+13 |
| Sr-90 | 5.1257E+01 | 3.7577E-04 | 2.5144E+21 | 1.8965E+12 |
| Sr-91 | 1.1315E+02 | 3.1214E-08 | 2.0657E+17 | 4.1866E+12 |
| Sr-92 | 4.7393E+01 | 3.7705E-09 | 2.4681E+16 | 1.7535E+12 |
| Y-90 | 2.2770E-01 | 4.1851E-10 | 2.8004E+15 | 8.4248E+09 |
| Y-91 | 5.4012E+00 | 2.2024E-07 | 1.4575E+18 | 1.9984E+11 |
| Y-92 | 6.0557E-01 | 6.2934E-11 | 4.1195E+14 | 2.2406E+10 |
| Y-93 | 1.3751E+00 | 4.1217E-10 | 2.6690E+15 | 5.0880E+10 |
| Zr-95 | 7.0000E+00 | 3.2584E-07 | 2.0655E+18 | 2.5900E+11 |
| Zr-97 | 1.8052E+00 | 9.4431E-10 | 5.8627E+15 | 6.6793E+10 |
| Nb-95 | 6.6963E+00 | 1.7125E-07 | 1.0856E+18 | 2.4776E+11 |
| Mo-99 | 4.4886E+01 | 9.3587E-08 | 5.6929E+17 | 1.6608E+12 |
| Tc-99m | 1.1933E+01 | 2.2693E-09 | 1.3804E+16 | 4.4150E+11 |
| Ru-103 | 7.4263E+01 | 2.3010E-06 | 1.3453E+19 | 2.7477E+12 |
| Ru-105 | 5.8796E+00 | 8.7468E-10 | 5.0166E+15 | 2.1755E+11 |
| Ru-106 | 3.0804E+01 | 9.2075E-06 | 5.2310E+19 | 1.1398E+12 |
| Rh-105 | 1.7272E+01 | 2.0463E-08 | 1.1736E+17 | 6.3906E+11 |
| Sb-127 | 5.6852E+01 | 2.1289E-07 | 1.0095E+18 | 2.1035E+12 |
| Sb-129 | 3.5764E+01 | 6.3599E-09 | 2.9690E+16 | 1.3233E+12 |
| Te-127 | 1.9510E+01 | 7.3926E-09 | 3.5055E+16 | 7.2187E+11 |
| Te-127m | 1.4481E+01 | 1.5352E-06 | 7.2796E+18 | 5.3579E+11 |
| Te-129 | 8.0322E+00 | 3.8354E-10 | 1.7905E+15 | 2.9719E+11 |
| Te-129m | 4.4527E+01 | 1.4781E-05 | 6.9001E+18 | 1.6475E+12 |
| Te-131m | 4.7718E+01 | 5.9841E-08 | 2.7509E+17 | 1.7656E+12 |
| Te-132 | 7.2273E+02 | 2.3806E-06 | 1.0861E+19 | 2.6741E+13 |
| I-131 | 6.6977E+03 | 5.4025E-05 | 2.4835E+20 | 2.4781E+14 |
| I-132 | 7.7082E+02 | 7.4676E-08 | 3.4069E+17 | 2.8520E+13 |
| I-133 | 4.8237E+03 | 4.2582E-06 | 1.9281E+19 | 1.7848E+14 |
| I-134 | 3.5834E+02 | 1.3432E-08 | 6.0367E+16 | 1.3258E+13 |
| I-135 | 2.3969E+03 | 6.8251E-07 | 3.0446E+18 | 8.8685E+13 |
| Xe-133 | 6.0663E+05 | 3.2408E-03 | 1.4674E+22 | 2.2445E+16 |
| Xe-135 | 2.2529E+04 | 8.8222E-06 | 3.9354E+19 | 8.3359E+14 |
| Cs-134 | 1.4045E+03 | 1.0855E-03 | 4.8786E+21 | 5.1967E+13 |
| Cs-136 | 2.9401E+02 | 4.0115E-06 | 1.7763E+19 | 1.0878E+13 |
| Cs-137 | 9.4622E+02 | 1.0878E-02 | 4.7818E+22 | 3.5010E+13 |
| Ba-139 | 2.6004E+01 | 1.5898E-09 | 6.8877E+15 | 9.6215E+11 |
| Ba-140 | 5.9971E+02 | 8.1917E-06 | 3.5237E+19 | 2.2189E+13 |
| La-140 | 2.8730E+00 | 5.1688E-09 | 2.2234E+16 | 1.0630E+11 |
| La-141 | 7.3866E-01 | 1.3061E-10 | 5.5785E+14 | 2.7331E+10 |
| La-142 | 3.3044E-01 | 2.3084E-11 | 9.7896E+13 | 1.2226E+10 |
| Ce-141 | 1.6209E+01 | 5.6888E-07 | 2.4297E+18 | 5.9974E+11 |
| Ce-143 | 5.8997E+00 | 8.8840E-09 | 3.7413E+16 | 2.1829E+11 |
| Ce-144 | 1.4628E+01 | 4.5862E-06 | 1.9180E+19 | 5.4122E+11 |
| Pr-143 | 5.4468E+00 | 8.0886E-08 | 3.4063E+17 | 2.0153E+11 |
| Nd-147 | 2.1607E+00 | 2.6709E-08 | 1.0942E+17 | 7.9947E+10 |
| Np-239 | 8.3273E+01 | 3.5895E-07 | 9.0445E+17 | 3.0811E+12 |
| Pu-238 | 5.8588E-02 | 3.4223E-06 | 8.6594E+18 | 2.1678E+09 |
| Pu-239 | 4.5606E-03 | 7.3373E-05 | 1.8488E+20 | 1.6874E+08 |
| Pu-240 | 4.9181E-03 | 2.1583E-05 | 5.4158E+19 | 1.8197E+08 |
| Pu-241 | 2.0350E+00 | 1.9755E-05 | 4.9364E+19 | 7.5296E+10 |
| Am-241 | 1.2526E-03 | 3.6497E-07 | 9.1198E+17 | 4.6347E+07 |

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**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 2 | System Nos. | Sheet 919 of 1000 |
|---|---|---|---|---|

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Cm-242                 2.8645E-01  8.6429E-08  2.1508E+17  1.0599E+10
Cm-244                 2.3804E-02  2.9423E-07  7.2618E+17  8.8074E+08

Environment Transport Group Inventory:

                         Total      Release
Time (h) = 720.0000     Release     Rate/s
Noble gases (atoms)    3.0343E+23  1.1706E+17
Elemental I (atoms)    5.4318E+19  2.0956E+13
Organic I (atoms)      9.4535E+18  3.6472E+12
Aerosols (kg)          1.2568E-02  4.8489E-09
Dose Effective (Ci) I-131 (Thyroid)            7.5749E+03
Dose Effective (Ci) I-131 (ICRP2 Thyroid)      8.2204E+03
Total I  (Ci)                                  1.5047E+04

Sprayed to Environment Transport Group Inventory:
Time (h) = 720.0000  Leakage Transport

Noble gases (atoms)      1.7310E+23
Elemental I (atoms)      3.1067E+19
Organic I (atoms)        5.4662E+18
Aerosols (kg)            6.9459E-03

Unsprayed to Environment Transport Group Inventory:
Time (h) = 720.0000  Leakage Transport

Noble gases (atoms)      1.3061E+23
Elemental I (atoms)      2.4032E+19
Organic I (atoms)        4.1243E+18
Aerosols (kg)            5.6235E-03

CR Filtered Air Intake Transport Group Inventory:

                         Pathway
Time (h) = 720.0000     Filtered   Transported
Noble gases (atoms)    0.0000E+00  6.7392E+19
Elemental I (atoms)    1.3812E+16  1.5629E+15
Organic I (atoms)      2.3421E+15  2.6197E+14
Aerosols (kg)          4.7616E-06  8.3197E-08

CR  Unfiltered Inleakage Transport Group Inventory:

                         Pathway
Time (h) = 720.0000     Filtered   Transported
Noble gases (atoms)    0.0000E+00  8.4231E+18
Elemental I (atoms)    0.0000E+00  1.9184E+15
Organic I (atoms)      0.0000E+00  3.2529E+14
Aerosols (kg)          0.0000E+00  6.0122E-07

CR Exhaust to Environment Transport Group Inventory:

                         Pathway
Time (h) = 720.0000     Filtered   Transported
Noble gases (atoms)    7.6017E+19  0.0000E+00
Elemental I (atoms)    9.3048E+14  0.0000E+00
Organic I (atoms)      1.5668E+14  0.0000E+00
Aerosols (kg)          1.7313E-07  0.0000E+00

Control Room Compartment Nuclide Inventory:

Time (h) = 720.0000       Ci          kg         Atoms      Decay
Co-58                  1.7111E-10  5.3811E-18  5.5872E+07  3.7445E+08
Co-60                  1.7378E-10  1.5373E-16  1.5430E+09  2.9551E+08
Kr-85                  2.0929E-03  5.3344E-09  3.7793E+16  2.4178E+14
Rb-86                  1.9842E-09  2.4385E-17  1.7076E+08  1.0772E+10
```

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**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 2 | System Nos. | Sheet 920 of 1000 |
|---|---|---|---|---|

| | | | | |
|---|---|---|---|---|
| Sr-89 | 1.4253E-07 | 4.9060E-15 | 3.3196E+10 | 3.4681E+11 |
| Sr-90 | 2.3175E-08 | 1.6990E-13 | 1.1368E+12 | 3.9103E+10 |
| Y-91 | 1.8458E-09 | 7.5266E-17 | 4.9809E+08 | 4.2693E+09 |
| Zr-95 | 2.4511E-09 | 1.1409E-16 | 7.2325E+08 | 5.5166E+09 |
| Nb-95 | 1.8914E-09 | 4.8369E-17 | 3.0661E+08 | 5.4137E+09 |
| Mo-99 | 2.3933E-11 | 4.9901E-20 | 3.0355E+05 | 5.2984E+10 |
| Ru-103 | 2.2060E-08 | 6.8354E-16 | 3.9965E+09 | 5.9688E+10 |
| Ru-106 | 1.3345E-08 | 3.9889E-15 | 2.2662E+10 | 2.3632E+10 |
| Sb-127 | 2.2950E-10 | 8.5938E-19 | 4.0750E+06 | 6.2156E+10 |
| Te-127m | 5.6424E-09 | 5.9819E-16 | 2.8365E+09 | 1.1261E+10 |
| Te-129m | 1.2301E-08 | 4.0832E-15 | 1.9062E+09 | 3.6090E+10 |
| Te-132 | 1.1696E-09 | 3.8526E-18 | 1.7577E+07 | 8.2043E+11 |
| I-131 | 2.5470E-06 | 2.0545E-14 | 9.4445E+10 | 7.0150E+12 |
| Xe-133 | 5.6767E-03 | 3.0327E-11 | 1.3732E+14 | 1.2154E+16 |
| Cs-134 | 6.1455E-07 | 4.7499E-13 | 2.1347E+12 | 1.2297E+12 |
| Cs-136 | 3.5626E-08 | 4.8609E-16 | 2.1524E+09 | 3.0116E+11 |
| Cs-137 | 4.2248E-07 | 4.8571E-12 | 2.1351E+13 | 8.2601E+11 |
| Ba-140 | 7.1124E-08 | 9.7152E-16 | 4.1790E+09 | 5.2976E+11 |
| Ce-141 | 4.4022E-09 | 1.5450E-16 | 6.5986E+08 | 1.3163E+10 |
| Ce-144 | 6.2544E-09 | 1.9610E-15 | 8.2008E+09 | 1.1241E+10 |
| Pr-143 | 7.0261E-10 | 1.0434E-17 | 4.3941E+07 | 4.7746E+09 |
| Nd-147 | 2.0477E-10 | 2.5311E-18 | 1.0369E+07 | 1.9468E+09 |
| Np-239 | 1.3322E-11 | 5.7426E-20 | 1.4470E+05 | 1.0191E+11 |
| Pu-238 | 2.6517E-11 | 1.5489E-15 | 3.9193E+09 | 4.4689E+07 |
| Pu-239 | 2.0652E-12 | 3.3226E-14 | 8.3720E+10 | 3.4785E+06 |
| Pu-240 | 2.2271E-12 | 9.7737E-15 | 2.4524E+10 | 3.7512E+06 |
| Pu-241 | 9.1868E-10 | 8.9181E-15 | 2.2285E+10 | 1.5528E+09 |
| Am-241 | 5.6717E-13 | 1.6525E-16 | 4.1293E+08 | 9.5541E+05 |
| Cm-242 | 1.1732E-10 | 3.5400E-17 | 8.8091E+07 | 2.2136E+08 |
| Cm-244 | 1.0753E-11 | 1.3291E-16 | 3.2803E+08 | 1.8161E+07 |

Control Room Transport Group Inventory:

| Time (h) = 720.0000 | Atmosphere | Sump | |
|---|---|---|---|
| Noble gases (atoms) | 3.7931E+16 | 0.0000E+00 | |
| Elemental I (atoms) | 7.2219E+10 | 0.0000E+00 | |
| Organic I (atoms) | 1.2669E+10 | 0.0000E+00 | |
| Aerosols (kg) | 5.5762E-12 | 0.0000E+00 | |
| Dose Effective (Ci/cc) | I-131 (Thyroid) | | 3.5979E-16 |
| Dose Effective (Ci/cc) | I-131 (ICRP2 Thyroid) | | 3.5979E-16 |
| Total I (Ci) | | | 2.5470E-06 |

| Time (h) = 720.0000 | Deposition Surfaces | Recirculating Filter |
|---|---|---|
| Noble gases (atoms) | 0.0000E+00 | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 | 2.5929E+15 |
| Organic I (atoms) | 0.0000E+00 | 4.3802E+14 |
| Aerosols (kg) | 0.0000E+00 | 5.1674E-07 |

CR Filtered Air Intake Transport Group Inventory:

| Time (h) = 720.0000 | Pathway Filtered | Transported |
|---|---|---|
| Noble gases (atoms) | 0.0000E+00 | 6.7392E+19 |
| Elemental I (atoms) | 1.3812E+16 | 1.5629E+15 |
| Organic I (atoms) | 2.3421E+15 | 2.6197E+14 |
| Aerosols (kg) | 4.7616E-06 | 8.3197E-08 |

CR Unfiltered Inleakage Transport Group Inventory:

| Time (h) = 720.0000 | Pathway Filtered | Transported |
|---|---|---|
| Noble gases (atoms) | 0.0000E+00 | 8.4231E+18 |
| Elemental I (atoms) | 0.0000E+00 | 1.9184E+15 |
| Organic I (atoms) | 0.0000E+00 | 3.2529E+14 |
| Aerosols (kg) | 0.0000E+00 | 6.0122E-07 |

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**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 2 | System Nos. | Sheet 921 of 1000 |
|---|---|---|---|---|

CR Exhaust to Environment Transport Group Inventory:

| Time (h) = 720.0000 | Pathway Filtered | Transported |
|---|---|---|
| Noble gases (atoms) | 7.6017E+19 | 0.0000E+00 |
| Elemental I (atoms) | 9.3048E+14 | 0.0000E+00 |
| Organic I (atoms) | 1.5668E+14 | 0.0000E+00 |
| Aerosols (kg) | 1.7313E-07 | 0.0000E+00 |

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##################################################################
I-131 Summary
##################################################################

| Time (hr) | Sprayed Region I-131 (Curies) | Unsprayed Region I-131 (Curies) | Environment I-131 (Curies) |
|---|---|---|---|
| 0.000 | 2.2633E+03 | 1.7074E+03 | 4.5957E-05 |
| 0.010 | 3.9516E+04 | 2.9806E+04 | 1.4009E-02 |
| 0.021 | 8.4729E+04 | 6.3902E+04 | 6.4411E-02 |
| 0.350 | 7.4824E+05 | 9.7516E+05 | 1.4057E+01 |
| 0.491 | 8.8411E+05 | 1.2845E+06 | 2.5509E+01 |
| 0.500 | 9.1112E+05 | 1.3034E+06 | 2.6358E+01 |
| 0.800 | 3.0375E+06 | 3.3627E+06 | 8.1831E+01 |
| 1.100 | 4.3088E+06 | 5.0767E+06 | 1.8144E+02 |
| 1.400 | 5.1855E+06 | 6.4184E+06 | 3.1326E+02 |
| 1.700 | 5.8271E+06 | 7.4471E+06 | 4.6921E+02 |
| 1.800 | 6.0026E+06 | 7.7322E+06 | 5.2548E+02 |
| 2.000 | 4.5672E+06 | 6.5755E+06 | 6.2861E+02 |
| 2.060 | 4.2467E+06 | 6.2438E+06 | 6.5564E+02 |
| 2.360 | 3.1288E+06 | 4.7799E+06 | 7.6974E+02 |
| 2.660 | 2.3734E+06 | 3.6429E+06 | 8.5616E+02 |
| 2.960 | 1.8250E+06 | 2.7785E+06 | 9.2210E+02 |
| 3.300 | 1.3699E+06 | 2.0517E+06 | 9.7849E+02 |
| 3.510 | 1.1538E+06 | 1.7060E+06 | 1.0059E+03 |
| 3.910 | 1.3764E+06 | 1.3235E+06 | 1.0522E+03 |
| 4.000 | 1.3878E+06 | 1.2746E+06 | 1.0623E+03 |
| 4.300 | 1.4538E+06 | 1.1704E+06 | 1.0953E+03 |
| 4.600 | 1.4700E+06 | 1.1184E+06 | 1.1279E+03 |
| 4.900 | 1.4655E+06 | 1.0884E+06 | 1.1600E+03 |
| 5.200 | 1.4525E+06 | 1.0677E+06 | 1.1917E+03 |
| 5.500 | 1.4360E+06 | 1.0511E+06 | 1.2230E+03 |
| 5.800 | 1.4184E+06 | 1.0363E+06 | 1.2539E+03 |
| 6.100 | 1.4003E+06 | 1.0223E+06 | 1.2844E+03 |
| 6.400 | 1.3822E+06 | 1.0089E+06 | 1.3145E+03 |
| 6.700 | 1.3643E+06 | 9.9570E+05 | 1.3441E+03 |
| 7.000 | 1.3466E+06 | 9.8278E+05 | 1.3735E+03 |
| 7.300 | 1.3292E+06 | 9.7006E+05 | 1.4024E+03 |
| 7.600 | 1.3119E+06 | 9.5754E+05 | 1.4309E+03 |
| 7.900 | 1.2950E+06 | 9.4520E+05 | 1.4591E+03 |
| 8.000 | 1.2894E+06 | 9.4112E+05 | 1.4684E+03 |
| 8.300 | 1.2727E+06 | 9.2902E+05 | 1.4961E+03 |
| 8.600 | 1.2563E+06 | 9.1710E+05 | 1.5235E+03 |
| 8.900 | 1.2401E+06 | 9.0534E+05 | 1.5504E+03 |
| 9.200 | 1.2242E+06 | 8.9376E+05 | 1.5771E+03 |
| 9.500 | 1.2085E+06 | 8.8234E+05 | 1.6034E+03 |
| 9.800 | 1.1930E+06 | 8.7109E+05 | 1.6293E+03 |
| 10.100 | 1.1777E+06 | 8.5999E+05 | 1.6550E+03 |
| 10.400 | 1.1627E+06 | 8.4906E+05 | 1.6803E+03 |
| 24.000 | 7.4944E+05 | 5.6383E+05 | 2.5768E+03 |
| 96.000 | 4.5490E+05 | 3.4233E+05 | 4.1144E+03 |
| 720.000 | 1.4573E+04 | 1.0989E+04 | 6.6977E+03 |

Control Room

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**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 2 | System Nos. | Sheet 922 of 1000 |
|---|---|---|---|---|

| Time (hr) | I-131 (Curies) |
|---|---|
| 0.000 | 2.9492E-08 |
| 0.010 | 8.9639E-06 |
| 0.021 | 4.1068E-05 |
| 0.350 | 8.0350E-03 |
| 0.491 | 1.3909E-02 |
| 0.500 | 1.4327E-02 |
| 0.800 | 5.1310E-03 |
| 1.100 | 7.0442E-03 |
| 1.400 | 9.0676E-03 |
| 1.700 | 1.0626E-02 |
| 1.800 | 1.1056E-02 |
| 2.000 | 1.0239E-02 |
| 2.060 | 8.4907E-03 |
| 2.360 | 5.0614E-03 |
| 2.660 | 3.7683E-03 |
| 2.960 | 2.8979E-03 |
| 3.300 | 2.1789E-03 |
| 3.510 | 1.8378E-03 |
| 3.910 | 1.6140E-03 |
| 4.000 | 1.5915E-03 |
| 4.300 | 1.5523E-03 |
| 4.600 | 1.5311E-03 |
| 4.900 | 1.5119E-03 |
| 5.200 | 1.4934E-03 |
| 5.500 | 1.4752E-03 |
| 5.800 | 1.4574E-03 |
| 6.100 | 1.4398E-03 |
| 6.400 | 1.4225E-03 |
| 6.700 | 1.4054E-03 |
| 7.000 | 1.3886E-03 |
| 7.300 | 1.3720E-03 |
| 7.600 | 1.3557E-03 |
| 7.900 | 1.3395E-03 |
| 8.000 | 1.3342E-03 |
| 8.300 | 6.5157E-04 |
| 8.600 | 5.9463E-04 |
| 8.900 | 5.8397E-04 |
| 9.200 | 5.7683E-04 |
| 9.500 | 5.7005E-04 |
| 9.800 | 5.6338E-04 |
| 10.100 | 5.5682E-04 |
| 10.400 | 5.5034E-04 |
| 24.000 | 3.7398E-04 |
| 96.000 | 8.2616E-05 |
| 720.000 | 2.5470E-06 |

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#####################################################################
                        Cumulative Dose Summary
#####################################################################
```

| | Exclusion Area Bounda | | Low Population Zone | | Control Room | |
|---|---|---|---|---|---|---|
| Time (hr) | Thyroid (rem) | TEDE (rem) | Thyroid (rem) | TEDE (rem) | Thyroid (rem) | TEDE (rem) |
| 0.000 | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 |
| 0.010 | 6.0577E-03 | 2.9129E-04 | 1.0601E-03 | 5.0976E-05 | 1.0734E-05 | 4.5598E-07 |
| 0.021 | 2.7849E-02 | 1.3386E-03 | 4.8735E-03 | 2.3425E-04 | 8.7047E-05 | 3.6977E-06 |
| 0.350 | 6.0546E+00 | 2.8983E-01 | 1.0596E+00 | 5.0720E-02 | 2.8254E-01 | 1.2030E-02 |
| 0.491 | 1.0967E+01 | 5.2334E-01 | 1.9192E+00 | 9.1585E-02 | 7.0134E-01 | 2.9867E-02 |
| 0.500 | 1.1330E+01 | 5.4057E-01 | 1.9828E+00 | 9.4600E-02 | 7.3712E-01 | 3.1391E-02 |
| 0.800 | 3.5384E+01 | 1.8273E+00 | 6.1923E+00 | 3.1977E-01 | 1.3352E+00 | 5.7971E-02 |
| 1.100 | 7.8656E+01 | 4.2551E+00 | 1.3765E+01 | 7.4465E-01 | 1.8294E+00 | 8.3428E-02 |
| 1.400 | 1.3576E+02 | 7.5028E+00 | 2.3757E+01 | 1.3130E+00 | 2.4969E+00 | 1.1936E-01 |
| 1.700 | 2.0301E+02 | 1.1351E+01 | 3.5526E+01 | 1.9865E+00 | 3.3087E+00 | 1.6395E-01 |
| 1.800 | 2.2720E+02 | 1.2739E+01 | 3.9760E+01 | 2.2293E+00 | 3.6048E+00 | 1.8036E-01 |

AmerGen

**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 2 | System Nos. | Sheet 923 of 1000 |
|---|---|---|---|---|

```
   2.000 2.7146E+02 1.5289E+01 4.7505E+01 2.6756E+00 4.1928E+00 2.1323E-01
   2.060 2.8304E+02 1.5960E+01 4.8373E+01 2.7259E+00 4.3457E+00 2.2189E-01
   2.360 3.3184E+02 1.8799E+01 5.2034E+01 2.9389E+00 4.8688E+00 2.5221E-01
   2.660 3.6868E+02 2.0962E+01 5.4797E+01 3.1011E+00 5.2233E+00 2.7326E-01
   2.960 3.9669E+02 2.2623E+01 5.6897E+01 3.2256E+00 5.4912E+00 2.8944E-01
   3.300 4.2055E+02 2.4056E+01 5.8687E+01 3.3331E+00 5.7213E+00 3.0362E-01
   3.510 4.3209E+02 2.4759E+01 5.9553E+01 3.3858E+00 5.8339E+00 3.1070E-01
   3.910 4.5157E+02 2.5948E+01 6.1014E+01 3.4750E+00 6.0145E+00 3.2220E-01
   4.000 4.5578E+02 2.6204E+01 6.1330E+01 3.4942E+00 6.0528E+00 3.2464E-01
   4.300 4.6960E+02 2.7042E+01 6.2366E+01 3.5571E+00 6.1776E+00 3.3253E-01
   4.600 4.8319E+02 2.7862E+01 6.3385E+01 3.6185E+00 6.2998E+00 3.4020E-01
   4.900 4.9655E+02 2.8664E+01 6.4387E+01 3.6787E+00 6.4201E+00 3.4768E-01
   5.200 5.0971E+02 2.9449E+01 6.5374E+01 3.7376E+00 6.5386E+00 3.5499E-01
   5.500 5.2265E+02 3.0218E+01 6.6344E+01 3.7953E+00 6.6554E+00 3.6214E-01
   5.800 5.3539E+02 3.0972E+01 6.7300E+01 3.8518E+00 6.7704E+00 3.6912E-01
   6.100 5.4793E+02 3.1711E+01 6.8241E+01 3.9072E+00 6.8837E+00 3.7596E-01
   6.400 5.6028E+02 3.2436E+01 6.9166E+01 3.9616E+00 6.9953E+00 3.8265E-01
   6.700 5.7243E+02 3.3147E+01 7.0078E+01 4.0149E+00 7.1053E+00 3.8920E-01
   7.000 5.8439E+02 3.3844E+01 7.0975E+01 4.0672E+00 7.2137E+00 3.9562E-01
   7.300 5.9617E+02 3.4529E+01 7.1859E+01 4.1186E+00 7.3206E+00 4.0191E-01
   7.600 6.0777E+02 3.5201E+01 7.2729E+01 4.1690E+00 7.4259E+00 4.0808E-01
   7.900 6.1919E+02 3.5861E+01 7.3585E+01 4.2185E+00 7.5297E+00 4.1413E-01
   8.000 6.2296E+02 3.6078E+01 7.3868E+01 4.2348E+00 7.5640E+00 4.1612E-01
   8.300 6.3415E+02 3.6722E+01 7.4148E+01 4.2524E+00 7.6313E+00 4.2016E-01
   8.600 6.4516E+02 3.7355E+01 7.4424E+01 4.2697E+00 7.6783E+00 4.2302E-01
   8.900 6.5601E+02 3.7977E+01 7.4696E+01 4.2866E+00 7.7233E+00 4.2568E-01
   9.200 6.6670E+02 3.8589E+01 7.4964E+01 4.3032E+00 7.7675E+00 4.2825E-01
   9.500 6.7722E+02 3.9190E+01 7.5228E+01 4.3195E+00 7.8111E+00 4.3075E-01
   9.800 6.8759E+02 3.9780E+01 7.5488E+01 4.3355E+00 7.8541E+00 4.3321E-01
  10.100 6.9780E+02 4.0361E+01 7.5744E+01 4.3512E+00 7.8965E+00 4.3561E-01
  10.400 7.0785E+02 4.0933E+01 7.5996E+01 4.3667E+00 7.9383E+00 4.3797E-01
  24.000 1.0528E+03 6.0224E+01 8.4645E+01 4.8788E+00 9.4040E+00 5.1786E-01
  96.000 1.5791E+03 9.1145E+01 9.1562E+01 5.2929E+00 1.0445E+01 5.7552E-01
 720.000 2.3944E+03 1.5176E+02 9.4241E+01 5.4953E+00 1.1233E+01 6.2665E-01

#####################################################################
                        Worst Two-Hour Doses
#####################################################################

Exclusion Area Boundary
   Time   Whole Body    Thyroid        TEDE
   (hr)     (rem)        (rem)         (rem)
    0.8   1.7650E+00   3.4637E+02   1.9910E+01
```

**Appendix AA**

**RADTRAD Output File**

# Cl_tsc pH 7_3.o0

**For TSC Dose Due to Containment Leakage**

TMI Containment Leakage Pathway AST Analysis (Same inputs as for CR and Offsite Dose)

Spray removal coefficients determined using SRP 6.5.2 methodology
Elemental iodine decontamination factor determined using SRP 6.5.2 methodology and a sump water pH of 7.3

CR Unfiltered Inleakage = 1,000 cfm (t=30 minutes to t=720 hours)
CR Initiation Time = 30 min (t=0 to t=30 min)
Two Spray Pumps for 28.19 min at 800 gpm each pump (t=75 seconds to t=29.44 minutes)
One Spray Pump from 29.44 minutes to 4.0 hours @ 800 gpm

RADTRAD, Version 3.03, has been verified and validated in accordance with S&L's QA program. As such, independent validation of the code is not required for use of the code in this calculation. The RADTRAD code was accessed via S&L's Applist and was run on S&L desktop computer # ZD1950. The controlled file path is:

```
Controlled File Summary for RADTRAD (S&L Program No. 03.7.720-3.03)
Type: 2 Status: O Effective Date: 04-02-2004
Executed 06-26-2007

Controlled File Path: \\SNL1B\SYS3\OPS$\RAD720303\
```

AmerGen

**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 2 | System Nos. | Sheet 925 of 1000 |
|---|---|---|---|---|

```
#######################################################################
   RADTRAD Version 3.03 (Spring 2001) run on  6/26/2007  at  7:55:08
#######################################################################

#######################################################################
                      File information
#######################################################################

Plant file           = d:\0c2678\AGK\TMI\SRP 6-5-2 Spray Removal Coeff_pH 7-3\Cl_tsc pH 7_3.psf
Inventory file       = D:\0c2678\AGK\TMI\SRP 6-5-2 Spray Removal Coeff_pH 7-3\Tmi_def.nif
Release file         = \\snl1b\sys3\Ops$\RAD720303\Defaults\PWR_DBA.RFT
Dose Conversion file = \\snl1b\sys3\Ops$\RAD720303\Defaults\Fgr11&12.inp


    #####    ####   #####    #  #     #  #####   #    #  #####
    #    #  #       #        #  ##    #  #    #  #    #    #
    #    #  #       #        #  # #   #  #    #  #    #    #
    #####    ####   ####     #  #  #  #  #####   #    #    #
    #           #  #        #  #   # #  #       #    #    #
    #           #  #        #  #    ##  #       #    #    #
    #        ####   #        #  #     #  #        ####     #

Radtrad 3.03 4/15/2001
TSC Dose Due To Containment Leakage - NO HVAC for 2 hours - 250 cfm Unfiltered Inleakage (.8 -
2.8 max)
Nuclide Inventory File:
D:\0c2678\AGK\TMI\SRP 6-5-2 Spray Removal Coeff_pH 7-3\Tmi_def.nif
Plant Power Level:
 2.6190E+03
Compartments:
  4
Compartment 1:
Sprayed Region
  3
 1.2310E+06
  1
  0
  0
  0
  0
Compartment 2:
Unsprayed Region
  3
 9.2880E+05
  0
  0
  0
  1
  0
Compartment 3:
Environment
  2
 0.0000E+00
  0
  0
  0
  0
  0
Compartment 4:
TSC
  1
 4.2000E+04
  0
  0
  1
  0
```

```
  0
Pathways:
  7
Pathway 1:
Sprayed to Unsprayed
  1
  2
  2
Pathway 2:
Unsprayed to Sprayed
  2
  1
  2
Pathway 3:
Sprayed to Environment
  1
  3
  4
Pathway 4:
Unsprayed to Environment
  2
  3
  4
Pathway 5:
TSC Filtered Air Intake
  3
  4
  2
Pathway 6:
TSC Unfiltered Inleakage
  3
  4
  2
Pathway 7:
TSC Exhaust to Environment
  4
  3
  2
End of Plant Model File
Scenario Description Name:

Plant Model Filename:
ACCEPT\TEST24.PMF
Source Term:
  2
  1   5.7000E-01
  2   4.3000E-01
\\snl1b\sys3\Ops$\RAD720303\Defaults\Fgr11&12.inp
\\snl1b\sys3\Ops$\RAD720303\Defaults\PWR_DBA.RFT
  0.0000E+00
  0
  9.5000E-01   4.8500E-02   1.5000E-03   1.0000E+00
Overlying Pool:
  0
  0.0000E+00
  0
  0
  0
  0
Compartments:
  4
Compartment 1:
  0
  1
  1
```

```
  0.0000E+00
  6
  0.0000E+00   0.0000E+00
  2.0800E-02   4.5800E+00
  4.9070E-01   2.2900E+00
  2.0600E+00   2.2900E+00
  3.5100E+00   2.2900E-01
  4.0000E+00   0.0000E+00
  1
  0.0000E+00
  6
  0.0000E+00   0.0000E+00
  2.0800E-02   1.7020E+01
  4.9070E-01   8.5100E+00
  2.0600E+00   0.0000E+00
  3.5100E+00   0.0000E+00
  4.0000E+00   0.0000E+00
  1
  0.0000E+00
  0
  0
  0
  0
  0
Compartment 2:
  0
  1
  0
  0
  0
  0
  0
  3
  1
  1.0000E+01
  0
Compartment 3:
  1
  1
  0
  0
  0
  0
  0
  0
  0
Compartment 4:
  1
  1
  0
  0
  0
  0
  1
  1.4000E+03
  5
  0.0000E+00   0.0000E+00   0.0000E+00   0.0000E+00
  8.0000E-01   0.0000E+00   0.0000E+00   0.0000E+00
  1.0000E+00   0.0000E+00   0.0000E+00   0.0000E+00
  2.8000E+00   9.9000E+01   9.0000E+01   9.0000E+01
  7.2000E+02   0.0000E+00   0.0000E+00   0.0000E+00
  0
  0
Pathways:
  7
```

AmerGen

**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 2 | System Nos. | Sheet 928 of 1000 |
|---|---|---|---|---|

```
Pathway 1:
  0
  0
  0
  0
  0
  1
  3
  0.0000E+00   0.0000E+00   0.0000E+00   0.0000E+00   0.0000E+00
  9.7000E-03   2.5000E+04   0.0000E+00   0.0000E+00   0.0000E+00
  7.2000E+02   2.5000E+04   0.0000E+00   0.0000E+00   0.0000E+00
  0
  0
  0
  0
  0
  0
Pathway 2:
  0
  0
  0
  0
  0
  1
  3
  0.0000E+00   0.0000E+00   0.0000E+00   0.0000E+00   0.0000E+00
  9.7000E-03   2.5000E+04   0.0000E+00   0.0000E+00   0.0000E+00
  7.2000E+02   2.5000E+04   0.0000E+00   0.0000E+00   0.0000E+00
  0
  0
  0
  0
  0
  0
Pathway 3:
  0
  0
  0
  0
  0
  0
  0
  0
  0
  0
  1
  3
  0.0000E+00   1.0000E-01
  2.4000E+01   5.0000E-02
  7.2000E+02   0.0000E+00
  0
Pathway 4:
  0
  0
  0
  0
  0
  0
  0
  0
  0
  0
  1
  3
  0.0000E+00   1.0000E-01
```

```
  2.4000E+01   5.0000E-02
  7.2000E+02   0.0000E+00
  0
Pathway 5:
  0
  0
  0
  0
  0
  1
  5
  0.0000E+00   3.0000E+02   0.0000E+00   0.0000E+00   0.0000E+00
  8.0000E-01   3.0000E+02   0.0000E+00   0.0000E+00   0.0000E+00
  1.0000E+00   3.0000E+02   0.0000E+00   0.0000E+00   0.0000E+00
  2.8000E+00   6.0000E+02   9.9000E+01   9.0000E+01   9.0000E+01
  7.2000E+02   0.0000E+00   0.0000E+00   0.0000E+00   0.0000E+00
  0
  0
  0
  0
  0
  0
Pathway 6:
  0
  0
  0
  0
  0
  1
  5
  0.0000E+00   0.0000E+00   0.0000E+00   0.0000E+00   0.0000E+00
  8.0000E-01   0.0000E+00   0.0000E+00   0.0000E+00   0.0000E+00
  1.0000E+00   0.0000E+00   0.0000E+00   0.0000E+00   0.0000E+00
  2.8000E+00   2.5000E+02   0.0000E+00   0.0000E+00   0.0000E+00
  7.2000E+02   0.0000E+00   0.0000E+00   0.0000E+00   0.0000E+00
  0
  0
  0
  0
  0
  0
Pathway 7:
  0
  0
  0
  0
  0
  1
  5
  0.0000E+00   3.0000E+02   0.0000E+00   0.0000E+00   0.0000E+00
  8.0000E-01   3.0000E+02   0.0000E+00   0.0000E+00   0.0000E+00
  1.0000E+00   3.0000E+02   0.0000E+00   0.0000E+00   0.0000E+00
  2.8000E+00   8.5000E+02   0.0000E+00   0.0000E+00   0.0000E+00
  7.2000E+02   0.0000E+00   0.0000E+00   0.0000E+00   0.0000E+00
  0
  0
  0
  0
  0
  0
Dose Locations:
  4
Location 1:
Exclusion Area Boundary
  3
```

```
  1
  2
  0.0000E+00   8.0000E-04
  7.2000E+02   0.0000E+00
  1
  2
  0.0000E+00   3.5000E-04
  7.2000E+02   0.0000E+00
  0
Location 2:
Low Population Zone
  3
  1
  6
  0.0000E+00   1.4000E-04
  2.0000E+00   6.0000E-05
  8.0000E+00   3.9000E-05
  2.4000E+01   1.6000E-05
  9.6000E+01   4.0000E-06
  7.2000E+02   0.0000E+00
  1
  4
  0.0000E+00   3.5000E-04
  8.0000E+00   1.8000E-04
  2.4000E+01   2.3000E-04
  7.2000E+02   0.0000E+00
  0
Location 3:
TSC
  4
  0
  1
  2
  0.0000E+00   3.5000E-04
  7.2000E+02   0.0000E+00
  1
  4
  0.0000E+00   1.0000E+00
  2.4000E+01   6.0000E-01
  9.6000E+01   4.0000E-01
  7.2000E+02   0.0000E+00
Location 4:
Travel Path
  3
  1
  3
  0.0000E+00   0.0000E+00
  9.1670E-01   8.0000E-04
  1.0000E+00   0.0000E+00
  1
  4
  0.0000E+00   3.4700E-04
  8.0000E+00   1.7500E-04
  2.4000E+01   2.3200E-04
  7.2000E+02   0.0000E+00
  0
Effective Volume Location:
  1
  6
  0.0000E+00   2.3100E-04
  2.0000E+00   1.2900E-04
  8.0000E+00   5.5000E-05
  2.4000E+01   3.5200E-05
  9.6000E+01   3.0600E-05
  7.2000E+02   0.0000E+00
```

AmerGen

**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 2 | System Nos. | Sheet 931 of 1000 |
|---|---|---|---|---|

```
Simulation Parameters:
  7
  0.0000E+00   5.0000E-02
  1.0000E+00   1.0000E-01
  2.0000E+00   1.0000E+00
  8.0000E+00   2.0000E+00
  2.4000E+01   4.0000E+00
  9.6000E+01   8.0000E+00
  7.2000E+02   0.0000E+00
Output Filename:
d:\0c2678\AGK\TMI\SRP 6-5-2 Spray Removal Coeff_pH 7-3\Cl_tsc pH 7_3.o0
  1
  1
  1
  0
  0
End of Scenario File
```

AmerGen

**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 2 | System Nos. | Sheet 932 of 1000 |
|---|---|---|---|---|

AmerGen

**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 2 | System Nos. | Sheet 933 of 1000 |
|---|---|---|---|---|

```
#######################################################################
   RADTRAD Version 3.03 (Spring 2001) run on  6/26/2007  at  7:55:08
#######################################################################

#######################################################################
                      Plant Description
#######################################################################

Number of Nuclides =  60

Inventory Power =   1.0000E+00 MWth
Plant Power Level =   2.6190E+03 MWth

Number of compartments    =   4

Compartment information

Compartment number  1  (Source term fraction =   5.7000E-01
)
Name: Sprayed Region
Compartment volume =   1.2310E+06 (Cubic feet)
Compartment type is Normal
Removal devices within compartment:
     Spray(s)
Pathways into and out of compartment  1
   Inlet Pathway Number   2: Unsprayed to Sprayed
   Exit Pathway Number    1: Sprayed to Unsprayed
   Exit Pathway Number    3: Sprayed to Environment

Compartment number  2  (Source term fraction =   4.3000E-01
)
Name: Unsprayed Region
Compartment volume =   9.2880E+05 (Cubic feet)
Compartment type is Normal
Removal devices within compartment:
     Deposition
Pathways into and out of compartment  2
   Inlet Pathway Number   1: Sprayed to Unsprayed
   Exit Pathway Number    2: Unsprayed to Sprayed
   Exit Pathway Number    4: Unsprayed to Environment

Compartment number  3
Name: Environment
Compartment type is Environment
Pathways into and out of compartment  3
   Inlet Pathway Number   3: Sprayed to Environment
   Inlet Pathway Number   4: Unsprayed to Environment
   Inlet Pathway Number   7: TSC Exhaust to Environment
   Exit Pathway Number    5: TSC Filtered Air Intake
   Exit Pathway Number    6: TSC Unfiltered Inleakage

Compartment number  4
Name: TSC
Compartment volume =   4.2000E+04 (Cubic feet)
Compartment type is Control Room
Removal devices within compartment:
     Filter(s)
Pathways into and out of compartment  4
   Inlet Pathway Number   5: TSC Filtered Air Intake
   Inlet Pathway Number   6: TSC Unfiltered Inleakage
   Exit Pathway Number    7: TSC Exhaust to Environment

Total number of pathways =   7
```

AmerGen

**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 2 | System Nos. | Sheet 934 of 1000 |
|---|---|---|---|---|

```
#######################################################################
   RADTRAD Version 3.03 (Spring 2001) run on  6/26/2007  at  7:55:08
#######################################################################

#######################################################################
                        Scenario Description
#######################################################################

Radioactive Decay is enabled

Release Fractions and Timings
                GAP        EARLY IN-VESSEL  LATE RELEASE    RELEASE MASS
             0.500000 hr    1.3000 hrs      0.0000 hrs          (gm)
NOBLES       5.0000E-02     9.5000E-01      0.0000E+00        3.494E+03
IODINE       5.0000E-02     3.5000E-01      0.0000E+00        3.058E+02
CESIUM       5.0000E-02     2.5000E-01      0.0000E+00        4.356E+04
TELLURIUM    0.0000E+00     5.0000E-02      0.0000E+00        7.971E+01
STRONTIUM    0.0000E+00     2.0000E-02      0.0000E+00        1.294E+03
BARIUM       0.0000E+00     2.0000E-02      0.0000E+00        3.644E+01
RUTHENIUM    0.0000E+00     2.5000E-03      0.0000E+00        4.136E+01
CERIUM       0.0000E+00     5.0000E-04      0.0000E+00        4.099E+02
LANTHANUM    0.0000E+00     2.0000E-04      0.0000E+00        5.592E+00

Inventory Power =      2619. MWt

Nuclide  Group  Specific     half     Whole Body   Inhaled     Inhaled
 Name          Inventory     life        DCF       Thyroid    Effective
                (Ci/MWt)     (s)     (Sv-m3/Bq-s)  (Sv/Bq)     (Sv/Bq)
 Co-58     7   2.553E+02  6.117E+06   4.760E-14   8.720E-10   2.940E-09
 Co-60     7   1.953E+02  1.663E+08   1.260E-13   1.620E-08   5.910E-08
 Kr-85     1   3.991E+02  3.383E+08   1.190E-16   0.000E+00   0.000E+00
 Kr-85m    1   8.889E+03  1.613E+04   7.480E-15   0.000E+00   0.000E+00
 Kr-87     1   1.755E+04  4.578E+03   4.120E-14   0.000E+00   0.000E+00
 Kr-88     1   2.475E+04  1.022E+04   1.020E-13   0.000E+00   0.000E+00
 Rb-86     3   6.270E+01  1.612E+06   4.810E-15   1.330E-09   1.790E-09
 Sr-89     5   2.992E+04  4.363E+06   7.730E-17   7.960E-12   1.120E-08
 Sr-90     5   3.227E+03  9.190E+08   7.530E-18   2.690E-10   3.510E-07
 Sr-91     5   4.068E+04  3.420E+04   4.924E-14   9.930E-12   4.547E-10
 Sr-92     5   4.276E+04  9.756E+03   6.790E-14   3.920E-12   2.180E-10
 Y-90      9   3.330E+03  2.304E+05   1.900E-16   5.170E-13   2.280E-09
 Y-91      9   3.662E+04  5.055E+06   2.600E-16   8.500E-12   1.320E-08
 Y-92      9   4.288E+04  1.274E+04   1.300E-14   1.050E-12   2.110E-10
 Y-93      9   4.778E+04  3.636E+04   4.800E-15   9.260E-13   5.820E-10
 Zr-95     9   4.717E+04  5.528E+06   3.600E-14   1.440E-09   6.390E-09
 Zr-97     9   4.814E+04  6.084E+04   4.432E-14   2.315E-11   1.171E-09
 Nb-95     9   4.754E+04  3.037E+06   3.740E-14   3.580E-10   1.570E-09
 Mo-99     7   5.183E+04  2.376E+05   7.280E-15   1.520E-11   1.070E-09
 Tc-99m    7   4.537E+04  2.167E+04   5.890E-15   5.010E-11   8.800E-12
 Ru-103    7   4.168E+04  3.394E+06   2.251E-14   2.570E-10   2.421E-09
 Ru-105    7   2.777E+04  1.598E+04   3.810E-14   4.150E-12   1.230E-10
 Ru-106    7   1.570E+04  3.181E+07   1.040E-14   1.720E-09   1.290E-07
 Rh-105    7   2.621E+04  1.273E+05   3.720E-15   2.880E-12   2.580E-10
 Sb-127    4   2.854E+03  3.326E+05   3.330E-14   6.150E-11   1.630E-09
 Sb-129    4   8.625E+03  1.555E+04   7.140E-14   9.720E-12   1.740E-10
 Te-127    4   2.831E+03  3.366E+04   2.420E-16   1.840E-12   8.600E-11
 Te-127m   4   3.797E+02  9.418E+06   1.470E-16   9.660E-11   5.810E-09
 Te-129    4   8.492E+03  4.176E+03   2.750E-15   5.090E-13   2.090E-11
 Te-129m   4   1.271E+03  2.903E+06   3.337E-15   1.563E-10   6.484E-09
 Te-131m   4   3.898E+03  1.080E+05   7.463E-14   3.669E-08   1.758E-09
 Te-132    4   3.885E+04  2.815E+05   1.030E-14   6.280E-08   2.550E-09
 I-131     2   2.729E+04  6.947E+05   1.820E-14   2.920E-07   8.890E-09
 I-132     2   3.944E+04  8.280E+03   1.120E-13   1.740E-09   1.030E-10
 I-133     2   5.708E+04  7.488E+04   2.940E-14   4.860E-08   1.580E-09
 I-134     2   6.346E+04  3.156E+03   1.300E-13   2.880E-10   3.550E-11
```

AmerGen

**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 2 | System Nos. | Sheet 935 of 1000 |
|---|---|---|---|---|

| | | | | | | |
|---|---|---|---|---|---|---|
| I-135 | 2 | 5.323E+04 | 2.380E+04 | 8.294E-14 | 8.460E-09 | 3.320E-10 |
| Xe-133 | 1 | 5.708E+04 | 4.532E+05 | 1.560E-15 | 0.000E+00 | 0.000E+00 |
| Xe-135 | 1 | 2.103E+04 | 3.272E+04 | 1.190E-14 | 0.000E+00 | 0.000E+00 |
| Cs-134 | 3 | 6.539E+03 | 6.507E+07 | 7.570E-14 | 1.110E-08 | 1.250E-08 |
| Cs-136 | 3 | 1.808E+03 | 1.132E+06 | 1.060E-13 | 1.730E-09 | 1.980E-09 |
| Cs-137 | 3 | 4.381E+03 | 9.467E+08 | 2.725E-14 | 7.930E-09 | 8.630E-09 |
| Ba-139 | 6 | 5.259E+04 | 4.962E+03 | 2.170E-15 | 2.400E-12 | 4.640E-11 |
| Ba-140 | 6 | 5.070E+04 | 1.101E+06 | 8.580E-15 | 2.560E-10 | 1.010E-09 |
| La-140 | 9 | 5.143E+04 | 1.450E+05 | 1.170E-13 | 6.870E-11 | 1.310E-09 |
| La-141 | 9 | 4.798E+04 | 1.415E+04 | 2.390E-15 | 9.400E-12 | 1.570E-10 |
| La-142 | 9 | 5.705E+04 | 5.550E+03 | 1.440E-13 | 8.740E-12 | 6.840E-11 |
| Ce-141 | 8 | 4.645E+04 | 2.808E+06 | 3.430E-15 | 2.550E-11 | 2.420E-09 |
| Ce-143 | 8 | 4.617E+04 | 1.188E+05 | 1.290E-14 | 6.230E-12 | 9.160E-10 |
| Ce-144 | 8 | 3.741E+04 | 2.456E+07 | 2.773E-15 | 2.920E-10 | 1.010E-07 |
| Pr-143 | 9 | 4.537E+04 | 1.172E+06 | 2.100E-17 | 1.680E-18 | 2.190E-09 |
| Nd-147 | 9 | 1.897E+04 | 9.487E+05 | 6.190E-15 | 1.820E-11 | 1.850E-09 |
| Np-239 | 8 | 5.139E+05 | 2.035E+05 | 7.690E-15 | 7.620E-12 | 6.780E-10 |
| Pu-238 | 8 | 1.475E+02 | 2.769E+09 | 4.880E-18 | 3.860E-10 | 7.790E-05 |
| Pu-239 | 8 | 1.148E+01 | 7.594E+11 | 4.240E-18 | 3.750E-10 | 8.330E-05 |
| Pu-240 | 8 | 1.238E+01 | 2.063E+11 | 4.750E-18 | 3.760E-10 | 8.330E-05 |
| Pu-241 | 8 | 5.127E+03 | 4.544E+08 | 7.250E-20 | 9.150E-12 | 1.340E-06 |
| Am-241 | 9 | 7.883E+00 | 1.364E+10 | 8.180E-16 | 1.600E-09 | 1.200E-04 |
| Cm-242 | 9 | 1.853E+03 | 1.407E+07 | 5.690E-18 | 9.410E-10 | 4.670E-06 |
| Cm-244 | 9 | 1.499E+02 | 5.715E+08 | 4.910E-18 | 1.010E-09 | 6.700E-05 |

```
Iodine fractions
     Aerosol     =   9.5000E-01
     Elemental   =   4.8500E-02
     Organic     =   1.5000E-03

COMPARTMENT DATA

Compartment number   1: Sprayed Region

     Sprays:  Aerosal Removal Data
      Time (hr)          Removal Coef. (hr^-1)
       0.0000E+00          0.0000E+00
       2.0800E-02          4.5800E+00
       4.9070E-01          2.2900E+00
       2.0600E+00          2.2900E+00
       3.5100E+00          2.2900E-01
       4.0000E+00          0.0000E+00

     Sprays:  Elemental Removal Data
      Time (hr)          Removal Coef. (hr^-1)
       0.0000E+00          0.0000E+00
       2.0800E-02          1.7020E+01
       4.9070E-01          8.5100E+00
       2.0600E+00          0.0000E+00
       3.5100E+00          0.0000E+00
       4.0000E+00          0.0000E+00

Compartment number   2: Unsprayed Region
Natural Deposition (Powers' model):  Aerosol data
      Reactor type:   1
      Percentile =  10 (%)

Compartment number   3: Environment

Compartment number   4: TSC

     Compartment Filter Data

      Time (hr)      Flow Rate          Filter Efficiencies (%)
                       (cfm)        Aerosol     Elemental    Organic
```

| | | | | |
|---|---|---|---|---|
| 0.0000E+00 | 1.4000E+03 | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 |
| 8.0000E-01 | 1.4000E+03 | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 |
| 1.0000E+00 | 1.4000E+03 | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 |
| 2.8000E+00 | 1.4000E+03 | 9.9000E+01 | 9.0000E+01 | 9.0000E+01 |
| 7.2000E+02 | 1.4000E+03 | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 |

PATHWAY DATA

Pathway number 1: Sprayed to Unsprayed

Pathway Filter: Removal Data

| Time (hr) | Flow Rate (cfm) | Filter Efficiencies (%) Aerosol | Elemental | Organic |
|---|---|---|---|---|
| 0.0000E+00 | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 |
| 9.7000E-03 | 2.5000E+04 | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 |
| 7.2000E+02 | 2.5000E+04 | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 |

Pathway number 2: Unsprayed to Sprayed

Pathway Filter: Removal Data

| Time (hr) | Flow Rate (cfm) | Filter Efficiencies (%) Aerosol | Elemental | Organic |
|---|---|---|---|---|
| 0.0000E+00 | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 |
| 9.7000E-03 | 2.5000E+04 | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 |
| 7.2000E+02 | 2.5000E+04 | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 |

Pathway number 3: Sprayed to Environment

Convection Data

| Time (hr) | Flow Rate (% / day) |
|---|---|
| 0.0000E+00 | 1.0000E-01 |
| 2.4000E+01 | 5.0000E-02 |
| 7.2000E+02 | 0.0000E+00 |

Pathway number 4: Unsprayed to Environment

Convection Data

| Time (hr) | Flow Rate (% / day) |
|---|---|
| 0.0000E+00 | 1.0000E-01 |
| 2.4000E+01 | 5.0000E-02 |
| 7.2000E+02 | 0.0000E+00 |

Pathway number 5: TSC Filtered Air Intake

Pathway Filter: Removal Data

| Time (hr) | Flow Rate (cfm) | Filter Efficiencies (%) Aerosol | Elemental | Organic |
|---|---|---|---|---|
| 0.0000E+00 | 3.0000E+02 | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 |
| 8.0000E-01 | 3.0000E+02 | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 |
| 1.0000E+00 | 3.0000E+02 | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 |
| 2.8000E+00 | 6.0000E+02 | 9.9000E+01 | 9.0000E+01 | 9.0000E+01 |
| 7.2000E+02 | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 |

Pathway number 6: TSC Unfiltered Inleakage

Pathway Filter: Removal Data

| Time (hr) | Flow Rate (cfm) | Filter Efficiencies (%) Aerosol | Elemental | Organic |
|---|---|---|---|---|
| 0.0000E+00 | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 |
| 8.0000E-01 | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 |
| 1.0000E+00 | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 |

```
  2.8000E+00    2.5000E+02   0.0000E+00   0.0000E+00   0.0000E+00
  7.2000E+02    0.0000E+00   0.0000E+00   0.0000E+00   0.0000E+00

Pathway number  7: TSC Exhaust to Environment

     Pathway Filter: Removal Data

  Time (hr)      Flow Rate          Filter Efficiencies (%)
                  (cfm)        Aerosol     Elemental    Organic
  0.0000E+00    3.0000E+02   0.0000E+00   0.0000E+00   0.0000E+00
  8.0000E-01    3.0000E+02   0.0000E+00   0.0000E+00   0.0000E+00
  1.0000E+00    3.0000E+02   0.0000E+00   0.0000E+00   0.0000E+00
  2.8000E+00    8.5000E+02   0.0000E+00   0.0000E+00   0.0000E+00
  7.2000E+02    0.0000E+00   0.0000E+00   0.0000E+00   0.0000E+00

LOCATION DATA
     Location Exclusion Area Boundary     is in compartment   3

     Location X/Q Data
      Time (hr)         X/Q (s * m^-3)
       0.0000E+00          8.0000E-04
       7.2000E+02          0.0000E+00

     Location Breathing Rate Data
      Time (hr)         Breathing Rate (m^3 * sec^-1)
       0.0000E+00                3.5000E-04
       7.2000E+02                0.0000E+00
     Location Low Population Zone     is in compartment   3

     Location X/Q Data
      Time (hr)         X/Q (s * m^-3)
       0.0000E+00          1.4000E-04
       2.0000E+00          6.0000E-05
       8.0000E+00          3.9000E-05
       2.4000E+01          1.6000E-05
       9.6000E+01          4.0000E-06
       7.2000E+02          0.0000E+00

     Location Breathing Rate Data
      Time (hr)         Breathing Rate (m^3 * sec^-1)
       0.0000E+00                3.5000E-04
       8.0000E+00                1.8000E-04
       2.4000E+01                2.3000E-04
       7.2000E+02                0.0000E+00
     Location TSC     is in compartment   4

     Location X/Q Data
      Time (hr)         X/Q (s * m^-3)
       0.0000E+00          2.3100E-04
       2.0000E+00          1.2900E-04
       8.0000E+00          5.5000E-05
       2.4000E+01          3.5200E-05
       9.6000E+01          3.0600E-05
       7.2000E+02          0.0000E+00

     Location Breathing Rate Data
      Time (hr)         Breathing Rate (m^3 * sec^-1)
       0.0000E+00                3.5000E-04
       7.2000E+02                0.0000E+00

     Location Occupancy Factor Data
      Time (hr)         Occupancy Factor
       0.0000E+00            1.0000E+00
       2.4000E+01            6.0000E-01
       9.6000E+01            4.0000E-01
```

```
       7.2000E+02            0.0000E+00
     Location Travel Path     is in compartment   3

     Location X/Q Data
      Time (hr)         X/Q (s * m^-3)
       0.0000E+00          0.0000E+00
       9.1670E-01          8.0000E-04
       1.0000E+00          0.0000E+00

     Location Breathing Rate Data
      Time (hr)         Breathing Rate (m^3 * sec^-1)
       0.0000E+00                 3.4700E-04
       8.0000E+00                 1.7500E-04
       2.4000E+01                 2.3200E-04
       7.2000E+02                 0.0000E+00

USER SPECIFIED TIME STEP DATA - SUPPLEMENTAL TIME STEPS
     Time            Time step
      0.0000E+00       5.0000E-02
      1.0000E+00       1.0000E-01
      2.0000E+00       1.0000E+00
      8.0000E+00       2.0000E+00
      2.4000E+01       4.0000E+00
      9.6000E+01       8.0000E+00
      7.2000E+02       0.0000E+00

#######################################################################
   RADTRAD Version 3.03 (Spring 2001) run on  6/26/2007  at  7:55:08
#######################################################################

     ####   #    #  #####  #####   #    #  #####
    #    #  #    #    #    #    #  #    #    #
    #    #  #    #    #    #    #  #    #    #
    #    #  #    #    #    #####   #    #    #
    #    #  #    #    #    #       #    #    #
    #    #  #    #    #    #       #    #    #
     ####    ####     #    #        ####     #

#####################################################################
           Dose, Detailed model and Detailed Inventory Output
#####################################################################

Exclusion Area Boundary Doses:

Time (h) =   0.0097    Whole Body   Thyroid       TEDE
Delta dose (rem)        3.6010E-05  6.0577E-03  2.9129E-04
Accumulated dose (rem)  3.6010E-05  6.0577E-03  2.9129E-04

Low Population Zone Doses:

Time (h) =   0.0097    Whole Body   Thyroid       TEDE
Delta dose (rem)        6.3017E-06  1.0601E-03  5.0976E-05
Accumulated dose (rem)  6.3017E-06  1.0601E-03  5.0976E-05

TSC Doses:

Time (h) =   0.0097    Whole Body   Thyroid       TEDE
Delta dose (rem)        6.0370E-10  3.2612E-06  1.3804E-07
Accumulated dose (rem)  6.0370E-10  3.2612E-06  1.3804E-07

Travel Path Doses:

Time (h) =   0.0097    Whole Body   Thyroid       TEDE
Delta dose (rem)        0.0000E+00  0.0000E+00  0.0000E+00
Accumulated dose (rem)  0.0000E+00  0.0000E+00  0.0000E+00
```

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**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 2 | System Nos. | Sheet 939 of 1000 |
|---|---|---|---|---|

Environment Integral Nuclide Release:

| Time (h) = 0.0097 | Ci | kg | Atoms | Bq |
|---|---|---|---|---|
| Kr-85 | 2.0489E-04 | 5.2223E-10 | 3.6999E+15 | 7.5809E+06 |
| Kr-85m | 4.5560E-03 | 5.5362E-13 | 3.9223E+12 | 1.6857E+08 |
| Kr-87 | 8.9583E-03 | 3.1626E-13 | 2.1892E+12 | 3.3146E+08 |
| Kr-88 | 1.2674E-02 | 1.0107E-12 | 6.9166E+12 | 4.6892E+08 |
| Rb-86 | 3.2187E-05 | 3.9558E-13 | 2.7700E+12 | 1.1909E+06 |
| I-131 | 1.4009E-02 | 1.1300E-10 | 5.1946E+14 | 5.1834E+08 |
| I-132 | 2.0183E-02 | 1.9553E-12 | 8.9205E+12 | 7.4677E+08 |
| I-133 | 2.9292E-02 | 2.5858E-11 | 1.1708E+14 | 1.0838E+09 |
| I-134 | 3.2308E-02 | 1.2111E-12 | 5.4428E+12 | 1.1954E+09 |
| I-135 | 2.7296E-02 | 7.7725E-12 | 3.4672E+13 | 1.0100E+09 |
| Xe-133 | 2.9302E-02 | 1.5654E-10 | 7.0881E+14 | 1.0842E+09 |
| Xe-135 | 1.0788E-02 | 4.2243E-12 | 1.8844E+13 | 3.9914E+08 |
| Cs-134 | 3.3569E-03 | 2.5945E-09 | 1.1660E+16 | 1.2420E+08 |
| Cs-136 | 9.2813E-04 | 1.2664E-11 | 5.6075E+13 | 3.4341E+07 |
| Cs-137 | 2.2490E-03 | 2.5856E-08 | 1.1366E+17 | 8.3214E+07 |

Environment Transport Group Inventory:

| Time (h) = 0.0097 | Total Release | Release Rate/s |
|---|---|---|
| Noble gases (atoms) | 4.4406E+15 | 1.2717E+14 |
| Elemental I (atoms) | 3.3252E+13 | 9.5223E+11 |
| Organic I (atoms) | 1.0284E+12 | 2.9450E+10 |
| Aerosols (kg) | 2.8606E-08 | 8.1919E-10 |

| | |
|---|---|
| Dose Effective (Ci) I-131 (Thyroid) | 1.9827E-02 |
| Dose Effective (Ci) I-131 (ICRP2 Thyroid) | 2.5389E-02 |
| Total I (Ci) | 1.2309E-01 |

Sprayed to Environment Transport Group Inventory:
Time (h) = 0.0097 Leakage Transport

| | |
|---|---|
| Noble gases (atoms) | 2.5312E+15 |
| Elemental I (atoms) | 1.8958E+13 |
| Organic I (atoms) | 5.8632E+11 |
| Aerosols (kg) | 1.6306E-08 |

Unsprayed to Environment Transport Group Inventory:
Time (h) = 0.0097 Leakage Transport

| | |
|---|---|
| Noble gases (atoms) | 1.9095E+15 |
| Elemental I (atoms) | 1.4301E+13 |
| Organic I (atoms) | 4.4231E+11 |
| Aerosols (kg) | 1.2300E-08 |

TSC Filtered Air Intake Transport Group Inventory:

| Time (h) = 0.0097 | Pathway Filtered | Transported |
|---|---|---|
| Noble gases (atoms) | 0.0000E+00 | 1.4524E+11 |
| Elemental I (atoms) | 0.0000E+00 | 1.0878E+09 |
| Organic I (atoms) | 0.0000E+00 | 3.3642E+07 |
| Aerosols (kg) | 0.0000E+00 | 9.3559E-13 |

TSC Unfiltered Inleakage Transport Group Inventory:

| Time (h) = 0.0097 | Pathway Filtered | Transported |
|---|---|---|
| Noble gases (atoms) | 0.0000E+00 | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 | 0.0000E+00 |

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**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 2 | System Nos. | Sheet 940 of 1000 |
|---|---|---|---|---|

TSC Exhaust to Environment Transport Group Inventory:

| Time (h) = 0.0097 | Pathway Filtered | Transported |
|---|---|---|
| Noble gases (atoms) | 2.0101E+08 | 0.0000E+00 |
| Elemental I (atoms) | 1.5054E+06 | 0.0000E+00 |
| Organic I (atoms) | 4.6560E+04 | 0.0000E+00 |
| Aerosols (kg) | 1.2948E-15 | 0.0000E+00 |

TSC Compartment Nuclide Inventory:

| Time (h) = 0.0097 | Ci | kg | Atoms | Decay |
|---|---|---|---|---|
| Kr-85 | 6.6918E-09 | 1.7056E-14 | 1.2084E+11 | 7.6638E+03 |
| Kr-85m | 1.4880E-07 | 1.8081E-17 | 1.2810E+08 | 1.7053E+05 |
| Kr-87 | 2.9257E-07 | 1.0329E-17 | 7.1495E+07 | 3.3585E+05 |
| Kr-88 | 4.1392E-07 | 3.3010E-17 | 2.2590E+08 | 4.7454E+05 |
| Rb-86 | 1.0513E-09 | 1.2920E-17 | 9.0471E+07 | 1.2040E+03 |
| I-131 | 4.5755E-07 | 3.6906E-15 | 1.6966E+10 | 5.2401E+05 |
| I-132 | 6.5916E-07 | 6.3859E-17 | 2.9134E+08 | 7.5589E+05 |
| I-133 | 9.5670E-07 | 8.4454E-16 | 3.8240E+09 | 1.0958E+06 |
| I-134 | 1.0551E-06 | 3.9552E-17 | 1.7775E+08 | 1.2125E+06 |
| I-135 | 8.9150E-07 | 2.5385E-16 | 1.1324E+09 | 1.0215E+06 |
| Xe-133 | 9.5702E-07 | 5.1128E-15 | 2.3150E+10 | 1.0961E+06 |
| Xe-135 | 3.5233E-07 | 1.3797E-16 | 6.1545E+08 | 4.0364E+05 |
| Cs-134 | 1.0964E-07 | 8.4739E-14 | 3.8083E+11 | 1.2556E+05 |
| Cs-136 | 3.0313E-08 | 4.1360E-16 | 1.8315E+09 | 3.4717E+04 |
| Cs-137 | 7.3455E-08 | 8.4448E-13 | 3.7121E+12 | 8.4124E+04 |

TSC Transport Group Inventory:

| Time (h) = 0.0097 | Atmosphere | Sump |
|---|---|---|
| Noble gases (atoms) | 1.4503E+11 | 0.0000E+00 |
| Elemental I (atoms) | 1.0860E+09 | 0.0000E+00 |
| Organic I (atoms) | 3.3589E+07 | 0.0000E+00 |
| Aerosols (kg) | 9.3430E-13 | 0.0000E+00 |
| Dose Effective (Ci/cc) | I-131 (Thyroid) | 5.4450E-16 |
| Dose Effective (Ci/cc) | I-131 (ICRP2 Thyroid) | 6.9722E-16 |
| Total I (Ci) | | 4.0200E-06 |

| Time (h) = 0.0097 | Deposition Surfaces | Recirculating Filter |
|---|---|---|
| Noble gases (atoms) | 0.0000E+00 | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 | 0.0000E+00 |

TSC Filtered Air Intake Transport Group Inventory:

| Time (h) = 0.0097 | Pathway Filtered | Transported |
|---|---|---|
| Noble gases (atoms) | 0.0000E+00 | 1.4524E+11 |
| Elemental I (atoms) | 0.0000E+00 | 1.0878E+09 |
| Organic I (atoms) | 0.0000E+00 | 3.3642E+07 |
| Aerosols (kg) | 0.0000E+00 | 9.3559E-13 |

TSC Unfiltered Inleakage Transport Group Inventory:

| Time (h) = 0.0097 | Pathway Filtered | Transported |
|---|---|---|
| Noble gases (atoms) | 0.0000E+00 | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 | 0.0000E+00 |

TSC Exhaust to Environment Transport Group Inventory:

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**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 2 | System Nos. | Sheet 941 of 1000 |
|---|---|---|---|---|

```
                          Pathway
Time (h) =   0.0097      Filtered   Transported
Noble gases (atoms)     2.0101E+08  0.0000E+00
Elemental I (atoms)     1.5054E+06  0.0000E+00
Organic I (atoms)       4.6560E+04  0.0000E+00
Aerosols (kg)           1.2948E-15  0.0000E+00

Exclusion Area Boundary Doses:

Time (h) =   0.0208    Whole Body   Thyroid       TEDE
Delta dose (rem)        1.2896E-04  2.1791E-02  1.0473E-03
Accumulated dose (rem)  1.6497E-04  2.7849E-02  1.3386E-03

Low Population Zone Doses:

Time (h) =   0.0208    Whole Body   Thyroid       TEDE
Delta dose (rem)        2.2567E-05  3.8134E-03  1.8327E-04
Accumulated dose (rem)  2.8869E-05  4.8735E-03  2.3425E-04

TSC Doses:

Time (h) =   0.0208    Whole Body   Thyroid       TEDE
Delta dose (rem)        4.2818E-09  2.3224E-05  9.8296E-07
Accumulated dose (rem)  4.8855E-09  2.6485E-05  1.1210E-06

Travel Path Doses:

Time (h) =   0.0208    Whole Body   Thyroid       TEDE
Delta dose (rem)        0.0000E+00  0.0000E+00  0.0000E+00
Accumulated dose (rem)  0.0000E+00  0.0000E+00  0.0000E+00

Environment Integral Nuclide Release:

Time (h) =   0.0208       Ci           kg          Atoms         Bq
Kr-85                  9.4211E-04  2.4013E-09  1.7013E+16  3.4858E+07
Kr-85m                 2.0913E-02  2.5412E-12  1.8004E+13  7.7376E+08
Kr-87                  4.0939E-02  1.4453E-12  1.0004E+13  1.5147E+09
Kr-88                  5.8114E-02  4.6346E-12  3.1716E+13  2.1502E+09
Rb-86                  1.4799E-04  1.8188E-12  1.2736E+13  5.4757E+06
I-131                  6.4411E-02  5.1955E-10  2.3884E+15  2.3832E+09
I-132                  9.2484E-02  8.9598E-12  4.0877E+13  3.4219E+09
I-133                  1.3463E-01  1.1885E-10  5.3814E+14  4.9815E+09
I-134                  1.4723E-01  5.5191E-12  2.4803E+13  5.4475E+09
I-135                  1.2536E-01  3.5696E-11  1.5923E+14  4.6382E+09
Xe-133                 1.3473E-01  7.1976E-10  3.2590E+15  4.9849E+09
Xe-135                 4.9561E-02  1.9407E-11  8.6572E+13  1.8337E+09
Cs-134                 1.5435E-02  1.1929E-08  5.3612E+16  5.7108E+08
Cs-136                 4.2674E-03  5.8226E-11  2.5782E+14  1.5789E+08
Cs-137                 1.0341E-02  1.1889E-07  5.2259E+17  3.8261E+08

Environment Transport Group Inventory:

                          Total      Release
Time (h) =   0.0208      Release     Rate/s
Noble gases (atoms)     2.0418E+16  2.7268E+14
Elemental I (atoms)     1.5286E+14  2.0413E+12
Organic I (atoms)       4.7275E+12  6.3135E+10
Aerosols (kg)           1.3153E-07  1.7565E-09
Dose Effective (Ci) I-131 (Thyroid)             9.1147E-02
Dose Effective (Ci) I-131 (ICRP2 Thyroid)       1.1667E-01
Total I  (Ci)                                   5.6412E-01

Sprayed to Environment Transport Group Inventory:
Time (h) =   0.0208  Leakage Transport
```

```
Noble gases (atoms)      1.1639E+16
Elemental I (atoms)      8.7155E+13
Organic I (atoms)        2.6955E+12
Aerosols (kg)            7.4978E-08

Unsprayed to Environment Transport Group Inventory:
Time (h) =   0.0208  Leakage Transport

Noble gases (atoms)      8.7800E+15
Elemental I (atoms)      6.5745E+13
Organic I (atoms)        2.0333E+12
Aerosols (kg)            5.6552E-08

TSC Filtered Air Intake Transport Group Inventory:

                         Pathway
Time (h) =   0.0208     Filtered   Transported
Noble gases (atoms)    0.0000E+00  6.6781E+11
Elemental I (atoms)    0.0000E+00  5.0007E+09
Organic I (atoms)      0.0000E+00  1.5466E+08
Aerosols (kg)          0.0000E+00  4.3018E-12

TSC Unfiltered Inleakage Transport Group Inventory:

                         Pathway
Time (h) =   0.0208     Filtered   Transported
Noble gases (atoms)    0.0000E+00  0.0000E+00
Elemental I (atoms)    0.0000E+00  0.0000E+00
Organic I (atoms)      0.0000E+00  0.0000E+00
Aerosols (kg)          0.0000E+00  0.0000E+00

TSC Exhaust to Environment Transport Group Inventory:

                         Pathway
Time (h) =   0.0208     Filtered   Transported
Noble gases (atoms)    1.9798E+09  0.0000E+00
Elemental I (atoms)    1.4825E+07  0.0000E+00
Organic I (atoms)      4.5850E+05  0.0000E+00
Aerosols (kg)          1.2753E-14  0.0000E+00

TSC Compartment Nuclide Inventory:

Time (h) =   0.0208       Ci           kg          Atoms       Decay
Kr-85                  3.0721E-08  7.8304E-14  5.5477E+11  5.3086E+04
Kr-85m                 6.8168E-07  8.2833E-17  5.8686E+08  1.1793E+06
Kr-87                  1.3332E-06  4.7066E-17  3.2579E+08  2.3130E+06
Kr-88                  1.8939E-06  1.5104E-16  1.0336E+09  3.2785E+06
Rb-86                  4.8259E-09  5.9309E-17  4.1531E+08  8.3392E+03
I-131                  2.1003E-06  1.6942E-14  7.7882E+10  3.6295E+06
I-132                  3.0136E-06  2.9195E-16  1.3320E+09  5.2190E+06
I-133                  4.3899E-06  3.8753E-15  1.7547E+10  7.5876E+06
I-134                  4.7917E-06  1.7962E-16  8.0725E+08  8.3283E+06
I-135                  4.0867E-06  1.1637E-15  5.1911E+09  7.0673E+06
Xe-133                 4.3932E-06  2.3470E-14  1.0627E+11  7.5917E+06
Xe-135                 1.6158E-06  6.3273E-16  2.8225E+09  2.7937E+06
Cs-134                 5.0331E-07  3.8901E-13  1.7482E+12  8.6971E+05
Cs-136                 1.3915E-07  1.8987E-15  8.4074E+09  2.4046E+05
Cs-137                 3.3721E-07  3.8768E-12  1.7041E+13  5.8269E+05

TSC Transport Group Inventory:
Time (h) =   0.0208    Atmosphere     Sump
Noble gases (atoms)    6.6581E+11  0.0000E+00
Elemental I (atoms)    4.9842E+09  0.0000E+00
Organic I (atoms)      1.5415E+08  0.0000E+00
```

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**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 2 | System Nos. | Sheet 943 of 1000 |
|---|---|---|---|---|

```
Aerosols (kg)          4.2890E-12  0.0000E+00
Dose Effective (Ci/cc) I-131 (Thyroid)         2.4990E-15
Dose Effective (Ci/cc) I-131 (ICRP2 Thyroid)   3.1987E-15
Total I (Ci)                                   1.8382E-05

                       Deposition Recirculating
Time (h) =   0.0208     Surfaces     Filter
Noble gases (atoms)    0.0000E+00  0.0000E+00
Elemental I (atoms)    0.0000E+00  0.0000E+00
Organic I (atoms)      0.0000E+00  0.0000E+00
Aerosols (kg)          0.0000E+00  0.0000E+00

TSC Filtered Air Intake Transport Group Inventory:

                         Pathway
Time (h) =   0.0208     Filtered   Transported
Noble gases (atoms)    0.0000E+00  6.6781E+11
Elemental I (atoms)    0.0000E+00  5.0007E+09
Organic I (atoms)      0.0000E+00  1.5466E+08
Aerosols (kg)          0.0000E+00  4.3018E-12

TSC Unfiltered Inleakage Transport Group Inventory:

                         Pathway
Time (h) =   0.0208     Filtered   Transported
Noble gases (atoms)    0.0000E+00  0.0000E+00
Elemental I (atoms)    0.0000E+00  0.0000E+00
Organic I (atoms)      0.0000E+00  0.0000E+00
Aerosols (kg)          0.0000E+00  0.0000E+00

TSC Exhaust to Environment Transport Group Inventory:

                         Pathway
Time (h) =   0.0208     Filtered   Transported
Noble gases (atoms)    1.9798E+09  0.0000E+00
Elemental I (atoms)    1.4825E+07  0.0000E+00
Organic I (atoms)      4.5850E+05  0.0000E+00
Aerosols (kg)          1.2753E-14  0.0000E+00

Exclusion Area Boundary Doses:

Time (h) =   0.4907    Whole Body   Thyroid       TEDE
Delta dose (rem)        5.9358E-02  1.0939E+01  5.2200E-01
Accumulated dose (rem)  5.9523E-02  1.0967E+01  5.2334E-01

Low Population Zone Doses:

Time (h) =   0.4907    Whole Body   Thyroid       TEDE
Delta dose (rem)        1.0388E-02  1.9143E+00  9.1351E-02
Accumulated dose (rem)  1.0417E-02  1.9192E+00  9.1585E-02

TSC Doses:

Time (h) =   0.4907    Whole Body   Thyroid       TEDE
Delta dose (rem)        3.7736E-05  2.2703E-01  9.6366E-03
Accumulated dose (rem)  3.7741E-05  2.2705E-01  9.6377E-03

Travel Path Doses:

Time (h) =   0.4907    Whole Body   Thyroid       TEDE
Delta dose (rem)        0.0000E+00  0.0000E+00  0.0000E+00
Accumulated dose (rem)  0.0000E+00  0.0000E+00  0.0000E+00

Environment Integral Nuclide Release:
```

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**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 2 | System Nos. | Sheet 944 of 1000 |
|---|---|---|---|---|

| Time (h) = 0.4907 | Ci | kg | Atoms | Bq |
|---|---|---|---|---|
| Kr-85 | 5.2433E-01 | 1.3364E-06 | 9.4684E+18 | 1.9400E+10 |
| Kr-85m | 1.0826E+01 | 1.3155E-09 | 9.3202E+15 | 4.0056E+11 |
| Kr-87 | 1.7727E+01 | 6.2584E-10 | 4.3321E+15 | 6.5591E+11 |
| Kr-88 | 2.8865E+01 | 2.3020E-09 | 1.5753E+16 | 1.0680E+12 |
| Rb-86 | 5.9502E-02 | 7.3128E-10 | 5.1208E+15 | 2.2016E+09 |
| I-131 | 2.5509E+01 | 2.0576E-07 | 9.4589E+17 | 9.4383E+11 |
| I-132 | 3.1902E+01 | 3.0907E-09 | 1.4100E+16 | 1.1804E+12 |
| I-133 | 5.2581E+01 | 4.6416E-08 | 2.1017E+17 | 1.9455E+12 |
| I-134 | 4.0814E+01 | 1.5300E-09 | 6.8758E+15 | 1.5101E+12 |
| I-135 | 4.7348E+01 | 1.3482E-08 | 6.0142E+16 | 1.7519E+12 |
| Xe-133 | 7.4788E+01 | 3.9955E-07 | 1.8091E+18 | 2.7671E+12 |
| Xe-135 | 2.6613E+01 | 1.0421E-08 | 4.6488E+16 | 9.8468E+11 |
| Cs-134 | 6.2101E+00 | 4.7998E-06 | 2.1571E+19 | 2.2977E+11 |
| Cs-136 | 1.7152E+00 | 2.3403E-08 | 1.0363E+17 | 6.3464E+10 |
| Cs-137 | 4.1607E+00 | 4.7834E-05 | 2.1027E+20 | 1.5395E+11 |

Environment Transport Group Inventory:

| Time (h) = 0.4907 | Total Release | Release Rate/s |
|---|---|---|
| Noble gases (atoms) | 1.1353E+19 | 6.4270E+15 |
| Elemental I (atoms) | 4.2524E+16 | 2.4072E+13 |
| Organic I (atoms) | 2.6037E+15 | 1.4739E+12 |
| Aerosols (kg) | 5.2919E-05 | 2.9956E-08 |

| | | |
|---|---|---|
| Dose Effective (Ci) | I-131 (Thyroid) | 3.5863E+01 |
| Dose Effective (Ci) | I-131 (ICRP2 Thyroid) | 4.5349E+01 |
| Total I (Ci) | | 1.9815E+02 |

Sprayed to Environment Transport Group Inventory:
Time (h) = 0.4907 Leakage Transport

| | |
|---|---|
| Noble gases (atoms) | 6.4719E+18 |
| Elemental I (atoms) | 1.1846E+16 |
| Organic I (atoms) | 1.4857E+15 |
| Aerosols (kg) | 2.4029E-05 |

Unsprayed to Environment Transport Group Inventory:
Time (h) = 0.4907 Leakage Transport

| | |
|---|---|
| Noble gases (atoms) | 4.8826E+18 |
| Elemental I (atoms) | 3.0731E+16 |
| Organic I (atoms) | 1.1208E+15 |
| Aerosols (kg) | 2.8891E-05 |

TSC Filtered Air Intake Transport Group Inventory:

| Time (h) = 0.4907 | Pathway Filtered | Transported |
|---|---|---|
| Noble gases (atoms) | 0.0000E+00 | 3.7136E+14 |
| Elemental I (atoms) | 0.0000E+00 | 1.3923E+12 |
| Organic I (atoms) | 0.0000E+00 | 8.5248E+10 |
| Aerosols (kg) | 0.0000E+00 | 1.7308E-09 |

TSC Unfiltered Inleakage Transport Group Inventory:

| Time (h) = 0.4907 | Pathway Filtered | Transported |
|---|---|---|
| Noble gases (atoms) | 0.0000E+00 | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 | 0.0000E+00 |

TSC Exhaust to Environment Transport Group Inventory:

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**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 2 | System Nos. | Sheet 945 of 1000 |
|---|---|---|---|---|

```
                          Pathway
Time (h) =   0.4907      Filtered   Transported
Noble gases (atoms)     2.4719E+13  0.0000E+00
Elemental I (atoms)     1.0313E+11  0.0000E+00
Organic I (atoms)       5.6737E+09  0.0000E+00
Aerosols (kg)           1.2354E-10  0.0000E+00

TSC Compartment Nuclide Inventory:

Time (h) =   0.4907        Ci           kg          Atoms       Decay
Kr-85                   1.6007E-05  4.0800E-11  2.8906E+14  4.0782E+08
Kr-85m                  3.2318E-04  3.9271E-14  2.7823E+11  8.4500E+09
Kr-87                   4.9873E-04  1.7607E-14  1.2188E+11  1.3940E+10
Kr-88                   8.5036E-04  6.7816E-14  4.6409E+11  2.2572E+10
Rb-86                   1.8067E-06  2.2204E-14  1.5549E+11  4.9146E+07
I-131                   7.7424E-04  6.2451E-12  2.8709E+13  2.1091E+10
I-132                   9.2310E-04  8.9429E-14  4.0799E+11  2.6544E+10
I-133                   1.5885E-03  1.4023E-12  6.3494E+12  4.3504E+10
I-134                   1.0855E-03  4.0690E-14  1.8287E+11  3.4208E+10
I-135                   1.4143E-03  4.0273E-13  1.7965E+12  3.9237E+10
Xe-133                  2.2814E-03  1.2188E-11  5.5187E+13  5.8177E+10
Xe-135                  8.0360E-04  3.1468E-13  1.4037E+12  2.0736E+10
Cs-134                  1.8861E-04  1.4577E-10  6.5513E+14  5.1290E+09
Cs-136                  5.2076E-05  7.1054E-13  3.1463E+12  1.4167E+09
Cs-137                  1.2637E-04  1.4528E-09  6.3860E+15  3.4364E+09

TSC Transport Group Inventory:
Time (h) =   0.4907    Atmosphere     Sump
Noble gases (atoms)     3.4652E+14  0.0000E+00
Elemental I (atoms)     1.2833E+12  0.0000E+00
Organic I (atoms)       7.9244E+10  0.0000E+00
Aerosols (kg)           1.6072E-09  0.0000E+00
Dose Effective (Ci/cc) I-131 (Thyroid)          9.1328E-13
Dose Effective (Ci/cc) I-131 (ICRP2 Thyroid)    1.1505E-12
Total I (Ci)                                    5.7857E-03

                        Deposition Recirculating
Time (h) =   0.4907      Surfaces     Filter
Noble gases (atoms)     0.0000E+00  0.0000E+00
Elemental I (atoms)     0.0000E+00  0.0000E+00
Organic I (atoms)       0.0000E+00  0.0000E+00
Aerosols (kg)           0.0000E+00  0.0000E+00

TSC Filtered Air Intake Transport Group Inventory:

                          Pathway
Time (h) =   0.4907      Filtered   Transported
Noble gases (atoms)     0.0000E+00  3.7136E+14
Elemental I (atoms)     0.0000E+00  1.3923E+12
Organic I (atoms)       0.0000E+00  8.5248E+10
Aerosols (kg)           0.0000E+00  1.7308E-09

TSC Unfiltered Inleakage Transport Group Inventory:

                          Pathway
Time (h) =   0.4907      Filtered   Transported
Noble gases (atoms)     0.0000E+00  0.0000E+00
Elemental I (atoms)     0.0000E+00  0.0000E+00
Organic I (atoms)       0.0000E+00  0.0000E+00
Aerosols (kg)           0.0000E+00  0.0000E+00

TSC Exhaust to Environment Transport Group Inventory:

                          Pathway
Time (h) =   0.4907      Filtered   Transported
```

```
Noble gases (atoms)    2.4719E+13  0.0000E+00
Elemental I (atoms)    1.0313E+11  0.0000E+00
Organic I (atoms)      5.6737E+09  0.0000E+00
Aerosols (kg)          1.2354E-10  0.0000E+00

Exclusion Area Boundary Doses:

Time (h) =   0.5000    Whole Body   Thyroid       TEDE
Delta dose (rem)        1.8439E-03  3.6356E-01  1.7228E-02
Accumulated dose (rem)  6.1367E-02  1.1330E+01  5.4057E-01

Low Population Zone Doses:
Time (h) =   0.5000    Whole Body   Thyroid       TEDE
Delta dose (rem)        3.2269E-04  6.3623E-02  3.0149E-03
Accumulated dose (rem)  1.0739E-02  1.9828E+00  9.4600E-02

TSC Doses:

Time (h) =   0.5000    Whole Body   Thyroid       TEDE
Delta dose (rem)        1.8739E-06  1.1864E-02  5.0371E-04
Accumulated dose (rem)  3.9615E-05  2.3892E-01  1.0141E-02

Travel Path Doses:

Time (h) =   0.5000    Whole Body   Thyroid       TEDE
Delta dose (rem)        0.0000E+00  0.0000E+00  0.0000E+00
Accumulated dose (rem)  0.0000E+00  0.0000E+00  0.0000E+00

Environment Integral Nuclide Release:

Time (h) =   0.5000       Ci           kg         Atoms         Bq
Kr-85                  5.4439E-01  1.3876E-06  9.8307E+18  2.0142E+10
Kr-85m                 1.1226E+01  1.3641E-09  9.6642E+15  4.1535E+11
Kr-87                  1.8323E+01  6.4689E-10  4.4777E+15  6.7797E+11
Kr-88                  2.9908E+01  2.3852E-09  1.6322E+16  1.1066E+12
Rb-86                  6.1487E-02  7.5567E-10  5.2916E+15  2.2750E+09
I-131                  2.6358E+01  2.1261E-07  9.7738E+17  9.7526E+11
I-132                  3.2881E+01  3.1855E-09  1.4533E+16  1.2166E+12
I-133                  5.4317E+01  4.7949E-08  2.1711E+17  2.0097E+12
I-134                  4.1905E+01  1.5709E-09  7.0596E+15  1.5505E+12
I-135                  4.8881E+01  1.3919E-08  6.2090E+16  1.8086E+12
Xe-133                 7.7646E+01  4.1481E-07  1.8782E+18  2.8729E+12
Xe-135                 2.7613E+01  1.0813E-08  4.8235E+16  1.0217E+12
Cs-134                 6.4173E+00  4.9599E-06  2.2291E+19  2.3744E+11
Cs-136                 1.7724E+00  2.4183E-08  1.0709E+17  6.5580E+10
Cs-137                 4.2995E+00  4.9430E-05  2.1728E+20  1.5908E+11

Environment Transport Group Inventory:

                         Total      Release
Time (h) =   0.5000     Release     Rate/s
Noble gases (atoms)    1.1788E+19  6.5487E+15
Elemental I (atoms)    4.3868E+16  2.4371E+13
Organic I (atoms)      2.7028E+15  1.5016E+12
Aerosols (kg)          5.4684E-05  3.0380E-08
Dose Effective (Ci) I-131 (Thyroid)            3.7052E+01
Dose Effective (Ci) I-131 (ICRP2 Thyroid)      4.6844E+01
Total I  (Ci)                                  2.0434E+02

Sprayed to Environment Transport Group Inventory:
Time (h) =   0.5000  Leakage Transport

Noble gases (atoms)      6.7195E+18
Elemental I (atoms)      1.2144E+16
Organic I (atoms)        1.5422E+15
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Aerosols (kg)            2.4763E-05

Unsprayed to Environment Transport Group Inventory:
Time (h) =   0.5000  Leakage Transport

Noble gases (atoms)      5.0693E+18
Elemental I (atoms)      3.1777E+16
Organic I (atoms)        1.1634E+15
Aerosols (kg)            2.9923E-05
TSC Filtered Air Intake Transport Group Inventory:

                         Pathway
Time (h) =   0.5000     Filtered   Transported
Noble gases (atoms)    0.0000E+00  3.8556E+14
Elemental I (atoms)    0.0000E+00  1.4363E+12
Organic I (atoms)      0.0000E+00  8.8491E+10
Aerosols (kg)          0.0000E+00  1.7885E-09

TSC Unfiltered Inleakage Transport Group Inventory:

                         Pathway
Time (h) =   0.5000     Filtered   Transported
Noble gases (atoms)    0.0000E+00  0.0000E+00
Elemental I (atoms)    0.0000E+00  0.0000E+00
Organic I (atoms)      0.0000E+00  0.0000E+00
Aerosols (kg)          0.0000E+00  0.0000E+00

TSC Exhaust to Environment Transport Group Inventory:

                         Pathway
Time (h) =   0.5000     Filtered   Transported
Noble gases (atoms)    2.6125E+13  0.0000E+00
Elemental I (atoms)    1.0832E+11  0.0000E+00
Organic I (atoms)      5.9954E+09  0.0000E+00
Aerosols (kg)          1.3005E-10  0.0000E+00

TSC Compartment Nuclide Inventory:

Time (h) =   0.5000       Ci           kg          Atoms       Decay
Kr-85                  1.6598E-05  4.2307E-11  2.9974E+14  4.2838E+08
Kr-85m                 3.3447E-04  4.0643E-14  2.8795E+11  8.8646E+09
Kr-87                  5.1369E-04  1.8135E-14  1.2553E+11  1.4578E+10
Kr-88                  8.7910E-04  7.0108E-14  4.7977E+11  2.3662E+10
Rb-86                  1.8643E-06  2.2912E-14  1.6044E+11  5.1455E+07
I-131                  7.9885E-04  6.4437E-12  2.9622E+13  2.2081E+10
I-132                  9.4881E-04  9.1920E-14  4.1936E+11  2.7721E+10
I-133                  1.6384E-03  1.4463E-12  6.5487E+12  4.5534E+10
I-134                  1.1089E-03  4.1567E-14  1.8681E+11  3.5586E+10
I-135                  1.4574E-03  4.1499E-13  1.8512E+12  4.1044E+10
Xe-133                 2.3655E-03  1.2637E-11  5.7221E+13  6.1107E+10
Xe-135                 8.3249E-04  3.2599E-13  1.4542E+12  2.1768E+10
Cs-134                 1.9462E-04  1.5042E-10  6.7602E+14  5.3701E+09
Cs-136                 5.3735E-05  7.3317E-13  3.2465E+12  1.4833E+09
Cs-137                 1.3040E-04  1.4991E-09  6.5897E+15  3.5979E+09

TSC Transport Group Inventory:
Time (h) =   0.5000    Atmosphere     Sump
Noble gases (atoms)    3.5931E+14  0.0000E+00
Elemental I (atoms)    1.3218E+12  0.0000E+00
Organic I (atoms)      8.2150E+10  0.0000E+00
Aerosols (kg)          1.6584E-09  0.0000E+00
Dose Effective (Ci/cc) I-131 (Thyroid)          9.4216E-13
Dose Effective (Ci/cc) I-131 (ICRP2 Thyroid)    1.1865E-12
Total I (Ci)                                    5.9523E-03
```

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**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 2 | System Nos. | Sheet 948 of 1000 |
|---|---|---|---|---|

```
                        Deposition Recirculating
Time (h) =   0.5000      Surfaces     Filter
Noble gases (atoms)     0.0000E+00  0.0000E+00
Elemental I (atoms)     0.0000E+00  0.0000E+00
Organic I (atoms)       0.0000E+00  0.0000E+00
Aerosols (kg)           0.0000E+00  0.0000E+00

TSC Filtered Air Intake Transport Group Inventory:
                         Pathway
Time (h) =   0.5000      Filtered   Transported
Noble gases (atoms)     0.0000E+00  3.8556E+14
Elemental I (atoms)     0.0000E+00  1.4363E+12
Organic I (atoms)       0.0000E+00  8.8491E+10
Aerosols (kg)           0.0000E+00  1.7885E-09

TSC Unfiltered Inleakage Transport Group Inventory:

                         Pathway
Time (h) =   0.5000      Filtered   Transported
Noble gases (atoms)     0.0000E+00  0.0000E+00
Elemental I (atoms)     0.0000E+00  0.0000E+00
Organic I (atoms)       0.0000E+00  0.0000E+00
Aerosols (kg)           0.0000E+00  0.0000E+00

TSC Exhaust to Environment Transport Group Inventory:

                         Pathway
Time (h) =   0.5000      Filtered   Transported
Noble gases (atoms)     2.6125E+13  0.0000E+00
Elemental I (atoms)     1.0832E+11  0.0000E+00
Organic I (atoms)       5.9954E+09  0.0000E+00
Aerosols (kg)           1.3005E-10  0.0000E+00

Exclusion Area Boundary Doses:

Time (h) =   0.8000    Whole Body   Thyroid       TEDE
Delta dose (rem)        1.2462E-01  2.4054E+01  1.2867E+00
Accumulated dose (rem)  1.8598E-01  3.5384E+01  1.8273E+00

Low Population Zone Doses:

Time (h) =   0.8000    Whole Body   Thyroid       TEDE
Delta dose (rem)        2.1808E-02  4.2095E+00  2.2517E-01
Accumulated dose (rem)  3.2547E-02  6.1923E+00  3.1977E-01

TSC Doses:

Time (h) =   0.8000    Whole Body   Thyroid       TEDE
Delta dose (rem)        1.1243E-04  7.2698E-01  3.2669E-02
Accumulated dose (rem)  1.5204E-04  9.6589E-01  4.2811E-02

Travel Path Doses:

Time (h) =   0.8000    Whole Body   Thyroid       TEDE
Delta dose (rem)        0.0000E+00  0.0000E+00  0.0000E+00
Accumulated dose (rem)  0.0000E+00  0.0000E+00  0.0000E+00

Environment Integral Nuclide Release:

Time (h) =   0.8000       Ci           kg          Atoms         Bq
Co-58                   2.1352E-03  6.7148E-11  6.9720E+14  7.9001E+07
Co-60                   1.6342E-03  1.4457E-09  1.4510E+16  6.0466E+07
Kr-85                   2.6298E+00  6.7030E-06  4.7490E+19  9.7303E+10
Kr-85m                  4.9975E+01  6.0727E-09  4.3024E+16  1.8491E+12
Kr-87                   6.7037E+01  2.3667E-09  1.6382E+16  2.4804E+12
```

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**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 2 | System Nos. | Sheet 949 of 1000 |
|---|---|---|---|---|

| | | | | |
|---|---|---|---|---|
| Kr-88 | 1.2714E+02 | 1.0139E-08 | 6.9386E+16 | 4.7041E+12 |
| Rb-86 | 1.7000E-01 | 2.0893E-09 | 1.4631E+16 | 6.2902E+09 |
| Sr-89 | 2.0014E+00 | 6.8891E-08 | 4.6615E+17 | 7.4053E+10 |
| Sr-90 | 2.1602E-01 | 1.5837E-06 | 1.0597E+19 | 7.9928E+09 |
| Sr-91 | 2.4769E+00 | 6.8328E-10 | 4.5218E+15 | 9.1645E+10 |
| Sr-92 | 2.0538E+00 | 1.6339E-10 | 1.0695E+15 | 7.5989E+10 |
| Y-90 | 2.1980E-03 | 4.0400E-12 | 2.7033E+13 | 8.1327E+07 |
| Y-91 | 2.4499E-02 | 9.9897E-10 | 6.6109E+15 | 9.0645E+08 |
| Y-92 | 2.2261E-02 | 2.3134E-12 | 1.5143E+13 | 8.2364E+08 |
| Y-93 | 2.9256E-02 | 8.7690E-12 | 5.6783E+13 | 1.0825E+09 |
| Zr-95 | 3.1558E-02 | 1.4690E-09 | 9.3121E+15 | 1.1677E+09 |
| Zr-97 | 3.0553E-02 | 1.5982E-11 | 9.9225E+13 | 1.1305E+09 |
| Nb-95 | 3.1791E-02 | 8.1299E-10 | 5.1536E+15 | 1.1762E+09 |
| Mo-99 | 4.2782E-01 | 8.9201E-10 | 5.4261E+15 | 1.5829E+10 |
| Tc-99m | 3.2690E-01 | 6.2170E-11 | 3.7818E+14 | 1.2095E+10 |
| Ru-103 | 3.4844E-01 | 1.0796E-08 | 6.3123E+16 | 1.2892E+10 |
| Ru-105 | 1.8973E-01 | 2.8225E-11 | 1.6188E+14 | 7.0199E+09 |
| Ru-106 | 1.3136E-01 | 3.9264E-08 | 2.2307E+17 | 4.8604E+09 |
| Rh-105 | 2.1380E-01 | 2.5330E-10 | 1.4528E+15 | 7.9107E+09 |
| Sb-127 | 4.7300E-01 | 1.7712E-09 | 8.3987E+15 | 1.7501E+10 |
| Sb-129 | 1.1719E+00 | 2.0840E-10 | 9.7288E+14 | 4.3361E+10 |
| Te-127 | 4.3027E-01 | 1.6304E-10 | 7.7310E+14 | 1.5920E+10 |
| Te-127m | 6.3523E-02 | 6.7345E-09 | 3.1934E+16 | 2.3504E+09 |
| Te-129 | 6.5535E-01 | 3.1293E-11 | 1.4609E+14 | 2.4248E+10 |
| Te-129m | 2.1247E-01 | 7.0529E-08 | 3.2925E+16 | 7.8615E+09 |
| Te-131m | 6.3305E-01 | 7.9389E-10 | 3.6496E+15 | 2.3423E+10 |
| Te-132 | 6.4273E+00 | 2.1171E-08 | 9.6586E+16 | 2.3781E+11 |
| I-131 | 8.1831E+01 | 6.6006E-07 | 3.0343E+18 | 3.0277E+12 |
| I-132 | 9.0105E+01 | 8.7293E-09 | 3.9825E+16 | 3.3339E+12 |
| I-133 | 1.6648E+02 | 1.4696E-07 | 6.6543E+17 | 6.1597E+12 |
| I-134 | 9.5386E+01 | 3.5756E-09 | 1.6069E+16 | 3.5293E+12 |
| I-135 | 1.4531E+02 | 4.1376E-08 | 1.8457E+17 | 5.3764E+12 |
| Xe-133 | 3.7399E+02 | 1.9980E-06 | 9.0467E+18 | 1.3837E+13 |
| Xe-135 | 1.2810E+02 | 5.0161E-08 | 2.2376E+17 | 4.7396E+12 |
| Cs-134 | 1.7754E+01 | 1.3722E-05 | 6.1667E+19 | 6.5688E+11 |
| Cs-136 | 4.8993E+00 | 6.6848E-08 | 2.9600E+17 | 1.8128E+11 |
| Cs-137 | 1.1895E+01 | 1.3675E-04 | 6.0112E+20 | 4.4011E+11 |
| Ba-139 | 1.8345E+00 | 1.1215E-10 | 4.8591E+14 | 6.7877E+10 |
| Ba-140 | 3.3840E+00 | 4.6224E-08 | 1.9883E+17 | 1.2521E+11 |
| La-140 | 3.3667E-02 | 6.0571E-11 | 2.6055E+14 | 1.2457E+09 |
| La-141 | 2.5544E-02 | 4.5168E-12 | 1.9291E+13 | 9.4513E+08 |
| La-142 | 2.1320E-02 | 1.4893E-12 | 6.3162E+12 | 7.8884E+08 |
| Ce-141 | 7.7647E-02 | 2.7251E-09 | 1.1639E+16 | 2.8729E+09 |
| Ce-143 | 7.5187E-02 | 1.1322E-10 | 4.7680E+14 | 2.7819E+09 |
| Ce-144 | 6.2600E-02 | 1.9627E-08 | 8.2080E+16 | 2.3162E+09 |
| Pr-143 | 3.0288E-02 | 4.4978E-10 | 1.8942E+15 | 1.1207E+09 |
| Nd-147 | 1.2656E-02 | 1.5644E-10 | 6.4088E+14 | 4.6826E+08 |
| Np-239 | 8.4644E-01 | 3.6486E-09 | 9.1934E+15 | 3.1318E+10 |
| Pu-238 | 2.4685E-04 | 1.4419E-08 | 3.6485E+16 | 9.1335E+06 |
| Pu-239 | 1.9213E-05 | 3.0910E-07 | 7.7884E+17 | 7.1086E+05 |
| Pu-240 | 2.0719E-05 | 9.0925E-08 | 2.2815E+17 | 7.6659E+05 |
| Pu-241 | 8.5803E-03 | 8.3294E-08 | 2.0813E+17 | 3.1747E+08 |
| Am-241 | 5.2771E-06 | 1.5375E-09 | 3.8420E+15 | 1.9525E+05 |
| Cm-242 | 1.2402E-03 | 3.7419E-10 | 9.3115E+14 | 4.5886E+07 |
| Cm-244 | 1.0035E-04 | 1.2403E-09 | 3.0613E+15 | 3.7128E+06 |

Environment Transport Group Inventory:

| Time (h) = 0.8000 | Total Release | Release Rate/s | |
|---|---|---|---|
| Noble gases (atoms) | 5.6889E+19 | 1.9753E+16 | |
| Elemental I (atoms) | 1.3717E+17 | 4.7629E+13 | |
| Organic I (atoms) | 8.4986E+15 | 2.9509E+12 | |
| Aerosols (kg) | 1.5376E-04 | 5.3388E-08 | |
| Dose Effective (Ci) I-131 (Thyroid) | | | 1.1438E+02 |

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Dose Effective (Ci) I-131 (ICRP2 Thyroid)      1.4329E+02
Total I  (Ci)                                  5.7911E+02

Sprayed to Environment Transport Group Inventory:
Time (h) =   0.8000  Leakage Transport
Noble gases (atoms)      3.2429E+19
Elemental I (atoms)      4.3742E+16
Organic I (atoms)        4.8491E+15
Aerosols (kg)            7.0881E-05

Unsprayed to Environment Transport Group Inventory:
Time (h) =   0.8000  Leakage Transport

Noble gases (atoms)      2.4465E+19
Elemental I (atoms)      9.3589E+16
Organic I (atoms)        3.6580E+15
Aerosols (kg)            8.2879E-05

TSC Filtered Air Intake Transport Group Inventory:

                         Pathway
Time (h) =   0.8000     Filtered   Transported
Noble gases (atoms)    0.0000E+00  1.8608E+15
Elemental I (atoms)    0.0000E+00  4.4910E+12
Organic I (atoms)      0.0000E+00  2.7823E+11
Aerosols (kg)          0.0000E+00  5.0288E-09

TSC Unfiltered Inleakage Transport Group Inventory:

                         Pathway
Time (h) =   0.8000     Filtered   Transported
Noble gases (atoms)    0.0000E+00  0.0000E+00
Elemental I (atoms)    0.0000E+00  0.0000E+00
Organic I (atoms)      0.0000E+00  0.0000E+00
Aerosols (kg)          0.0000E+00  0.0000E+00

TSC Exhaust to Environment Transport Group Inventory:

                         Pathway
Time (h) =   0.8000     Filtered   Transported
Noble gases (atoms)    1.4000E+14  0.0000E+00
Elemental I (atoms)    4.2801E+11  0.0000E+00
Organic I (atoms)      2.5870E+10  0.0000E+00
Aerosols (kg)          5.0410E-10  0.0000E+00

TSC Compartment Nuclide Inventory:

Time (h) =   0.8000       Ci           kg          Atoms       Decay
Co-58                  6.6848E-08  2.1023E-15  2.1828E+10  1.1610E+06
Co-60                  5.1165E-08  4.5264E-14  4.5431E+11  8.8856E+05
Kr-85                  7.9541E-05  2.0274E-10  1.4364E+15  2.2818E+09
Kr-85m                 1.4699E-03  1.7861E-13  1.2654E+12  4.4125E+10
Kr-87                  1.8213E-03  6.4298E-14  4.4507E+11  6.1672E+10
Kr-88                  3.6763E-03  2.9318E-13  2.0063E+12  1.1336E+11
Rb-86                  4.9956E-06  6.1396E-14  4.2993E+11  1.9153E+08
Sr-89                  6.2660E-05  2.1568E-12  1.4594E+13  1.0882E+09
Sr-90                  6.7635E-06  4.9583E-11  3.3177E+14  1.1746E+08
Sr-91                  7.7094E-05  2.1267E-14  1.4074E+11  1.3492E+09
Sr-92                  6.2972E-05  5.0100E-15  3.2794E+10  1.1237E+09
Y-90                   6.8758E-08  1.2638E-16  8.4564E+08  1.1954E+06
Y-91                   7.6700E-07  3.1276E-14  2.0697E+11  1.3321E+07
Y-92                   6.8594E-07  7.1286E-17  4.6663E+08  1.2162E+07
Y-93                   9.1093E-07  2.7303E-16  1.7680E+09  1.5934E+07
Zr-95                  9.8803E-07  4.5991E-14  2.9154E+11  1.7159E+07
Zr-97                  9.5344E-07  4.9875E-16  3.0964E+09  1.6630E+07
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**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 2 | System Nos. | Sheet 951 of 1000 |
|---|---|---|---|---|

| | | | | |
|---|---|---|---|---|
| Nb-95 | 9.9527E-07 | 2.5452E-14 | 1.6135E+11 | 1.7286E+07 |
| Mo-99 | 1.3383E-05 | 2.7905E-14 | 1.6974E+11 | 2.3268E+08 |
| Tc-99m | 1.0140E-05 | 1.9284E-15 | 1.1730E+10 | 1.7825E+08 |
| Ru-103 | 1.0909E-05 | 3.3800E-13 | 1.9762E+12 | 1.8946E+08 |
| Ru-105 | 5.8654E-06 | 8.7256E-16 | 5.0045E+09 | 1.0356E+08 |
| Ru-106 | 4.1128E-06 | 1.2293E-12 | 6.9841E+12 | 7.1424E+07 |
| Rh-105 | 6.6834E-06 | 7.9182E-15 | 4.5414E+10 | 1.1631E+08 |
| Sb-127 | 1.4800E-05 | 5.5421E-14 | 2.6280E+11 | 2.5723E+08 |
| Sb-129 | 3.6217E-05 | 6.4404E-15 | 3.0066E+10 | 6.3973E+08 |
| Te-127 | 1.3391E-05 | 5.0741E-15 | 2.4061E+10 | 2.3438E+08 |
| Te-127m | 1.9888E-06 | 2.1085E-13 | 9.9980E+11 | 3.4539E+07 |
| Te-129 | 1.9521E-05 | 9.3211E-16 | 4.3514E+09 | 3.6140E+08 |
| Te-129m | 6.6519E-06 | 2.2081E-12 | 1.0308E+12 | 1.1553E+08 |
| Te-131m | 1.9784E-05 | 2.4810E-14 | 1.1405E+11 | 3.4441E+08 |
| Te-132 | 2.0109E-04 | 6.6237E-13 | 3.0219E+12 | 3.4955E+09 |
| I-131 | 2.4207E-03 | 1.9526E-11 | 8.9761E+13 | 8.6985E+10 |
| I-132 | 2.4797E-03 | 2.4023E-13 | 1.0960E+12 | 9.8139E+10 |
| I-133 | 4.8912E-03 | 4.3178E-12 | 1.9551E+13 | 1.7743E+11 |
| I-134 | 2.2871E-03 | 8.5733E-14 | 3.8529E+11 | 1.0708E+11 |
| I-135 | 4.1982E-03 | 1.1954E-12 | 5.3326E+12 | 1.5582E+11 |
| Xe-133 | 1.1301E-02 | 6.0372E-11 | 2.7336E+14 | 3.2470E+11 |
| Xe-135 | 3.8223E-03 | 1.4968E-12 | 6.6768E+12 | 1.1212E+11 |
| Cs-134 | 5.2189E-04 | 4.0337E-10 | 1.8128E+15 | 2.0000E+10 |
| Cs-136 | 1.4395E-04 | 1.9640E-12 | 8.6968E+12 | 5.5200E+09 |
| Cs-137 | 3.4967E-04 | 4.0200E-09 | 1.7671E+16 | 1.3400E+10 |
| Ba-139 | 5.5090E-05 | 3.3680E-15 | 1.4592E+10 | 1.0095E+09 |
| Ba-140 | 1.0593E-04 | 1.4470E-12 | 6.2242E+12 | 1.8401E+09 |
| La-140 | 1.0526E-06 | 1.8938E-15 | 8.1462E+09 | 1.8313E+07 |
| La-141 | 7.8838E-07 | 1.3940E-16 | 5.9539E+08 | 1.3949E+07 |
| La-142 | 6.4315E-07 | 4.4928E-17 | 1.9054E+08 | 1.1718E+07 |
| Ce-141 | 2.4309E-06 | 8.5314E-14 | 3.6438E+11 | 4.2220E+07 |
| Ce-143 | 2.3501E-06 | 3.5388E-15 | 1.4903E+10 | 4.0903E+07 |
| Ce-144 | 1.9599E-06 | 6.1450E-13 | 2.5698E+12 | 3.4037E+07 |
| Pr-143 | 9.4812E-07 | 1.4080E-14 | 5.9295E+10 | 1.6469E+07 |
| Nd-147 | 3.9615E-07 | 4.8969E-15 | 2.0061E+10 | 6.8816E+06 |
| Np-239 | 2.6475E-05 | 1.1412E-13 | 2.8756E+11 | 4.6037E+08 |
| Pu-238 | 7.7287E-09 | 4.5145E-13 | 1.1423E+12 | 1.3422E+05 |
| Pu-239 | 6.0153E-10 | 9.6776E-12 | 2.4385E+13 | 1.0446E+04 |
| Pu-240 | 6.4869E-10 | 2.8468E-12 | 7.1432E+12 | 1.1265E+04 |
| Pu-241 | 2.6864E-07 | 2.6079E-12 | 6.5165E+12 | 4.6653E+06 |
| Am-241 | 1.6522E-10 | 4.8139E-14 | 1.2029E+11 | 2.8693E+03 |
| Cm-242 | 3.8828E-08 | 1.1715E-14 | 2.9153E+10 | 6.7431E+05 |
| Cm-244 | 3.1418E-09 | 3.8834E-14 | 9.5845E+10 | 5.4561E+04 |

TSC Transport Group Inventory:

| Time (h) = 0.8000 | Atmosphere | Sump | |
|---|---|---|---|
| Noble gases (atoms) | 1.7201E+15 | 0.0000E+00 | |
| Elemental I (atoms) | 4.0408E+12 | 0.0000E+00 | |
| Organic I (atoms) | 2.5103E+11 | 0.0000E+00 | |
| Aerosols (kg) | 4.5245E-09 | 0.0000E+00 | |
| Dose Effective (Ci/cc) | I-131 (Thyroid) | | 2.8365E-12 |
| Dose Effective (Ci/cc) | I-131 (ICRP2 Thyroid) | | 3.5363E-12 |
| Total I (Ci) | | | 1.6277E-02 |

| Time (h) = 0.8000 | Deposition Surfaces | Recirculating Filter |
|---|---|---|
| Noble gases (atoms) | 0.0000E+00 | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 | 0.0000E+00 |

TSC Filtered Air Intake Transport Group Inventory:

| Time (h) = 0.8000 | Pathway Filtered | Transported |
|---|---|---|

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**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 2 | System Nos. | Sheet 952 of 1000 |
|---|---|---|---|---|

```
Noble gases (atoms)    0.0000E+00  1.8608E+15
Elemental I (atoms)    0.0000E+00  4.4910E+12
Organic I (atoms)      0.0000E+00  2.7823E+11
Aerosols (kg)          0.0000E+00  5.0288E-09

TSC Unfiltered Inleakage Transport Group Inventory:

                         Pathway
Time (h) =   0.8000     Filtered   Transported
Noble gases (atoms)    0.0000E+00  0.0000E+00
Elemental I (atoms)    0.0000E+00  0.0000E+00
Organic I (atoms)      0.0000E+00  0.0000E+00
Aerosols (kg)          0.0000E+00  0.0000E+00

TSC Exhaust to Environment Transport Group Inventory:

                         Pathway
Time (h) =   0.8000     Filtered   Transported
Noble gases (atoms)    1.4000E+14  0.0000E+00
Elemental I (atoms)    4.2801E+11  0.0000E+00
Organic I (atoms)      2.5870E+10  0.0000E+00
Aerosols (kg)          5.0410E-10  0.0000E+00

Exclusion Area Boundary Doses:

Time (h) =   0.9167    Whole Body   Thyroid       TEDE
Delta dose (rem)        7.6015E-02  1.4897E+01  8.2951E-01
Accumulated dose (rem)  2.6200E-01  5.0281E+01  2.6568E+00

Low Population Zone Doses:

Time (h) =   0.9167    Whole Body   Thyroid       TEDE
Delta dose (rem)        1.3303E-02  2.6069E+00  1.4516E-01
Accumulated dose (rem)  4.5850E-02  8.7992E+00  4.6494E-01

TSC Doses:

Time (h) =   0.9167    Whole Body   Thyroid       TEDE
Delta dose (rem)        8.3723E-05  5.5219E-01  2.6238E-02
Accumulated dose (rem)  2.3576E-04  1.5181E+00  6.9049E-02

Travel Path Doses:

Time (h) =   0.9167    Whole Body   Thyroid       TEDE
Delta dose (rem)        0.0000E+00  0.0000E+00  0.0000E+00
Accumulated dose (rem)  0.0000E+00  0.0000E+00  0.0000E+00

Environment Integral Nuclide Release:

Time (h) =   0.9167       Ci           kg          Atoms         Bq
Co-58                  3.9500E-03  1.2422E-10  1.2898E+15  1.4615E+08
Co-60                  3.0234E-03  2.6746E-09  2.6845E+16  1.1186E+08
Kr-85                  4.2149E+00  1.0743E-05  7.6113E+19  1.5595E+11
Kr-85m                 7.8108E+01  9.4912E-09  6.7244E+16  2.8900E+12
Kr-87                  9.8499E+01  3.4774E-09  2.4071E+16  3.6445E+12
Kr-88                  1.9587E+02  1.5621E-08  1.0690E+17  7.2474E+12
Rb-86                  2.3240E-01  2.8562E-09  2.0000E+16  8.5988E+09
Sr-89                  3.7025E+00  1.2744E-07  8.6234E+17  1.3699E+11
Sr-90                  3.9965E-01  2.9299E-06  1.9605E+19  1.4787E+10
Sr-91                  4.5441E+00  1.2536E-09  8.2957E+15  1.6813E+11
Sr-92                  3.6907E+00  2.9363E-10  1.9220E+15  1.3656E+11
Y-90                   4.0614E-03  7.4649E-12  4.9950E+13  1.5027E+08
Y-91                   4.5321E-02  1.8480E-09  1.2230E+16  1.6769E+09
Y-92                   4.0274E-02  4.1854E-12  2.7397E+13  1.4901E+09
Y-93                   5.3700E-02  1.6096E-11  1.0423E+14  1.9869E+09
```

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**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 2 | System Nos. | Sheet 953 of 1000 |
|---|---|---|---|---|

| | | | | |
|---|---|---|---|---|
| Zr-95 | 5.8382E-02 | 2.7176E-09 | 1.7227E+16 | 2.1601E+09 |
| Zr-97 | 5.6259E-02 | 2.9429E-11 | 1.8271E+14 | 2.0816E+09 |
| Nb-95 | 5.8809E-02 | 1.5039E-09 | 9.5336E+15 | 2.1759E+09 |
| Mo-99 | 7.9054E-01 | 1.6483E-09 | 1.0026E+16 | 2.9250E+10 |
| Tc-99m | 5.9686E-01 | 1.1351E-10 | 6.9047E+14 | 2.2084E+10 |
| Ru-103 | 6.4457E-01 | 1.9972E-08 | 1.1677E+17 | 2.3849E+10 |
| Ru-105 | 3.4479E-01 | 5.1293E-11 | 2.9419E+14 | 1.2757E+10 |
| Ru-106 | 2.4302E-01 | 7.2640E-08 | 4.1269E+17 | 8.9919E+09 |
| Rh-105 | 3.9465E-01 | 4.6757E-10 | 2.6817E+15 | 1.4602E+10 |
| Sb-127 | 8.7432E-01 | 3.2740E-09 | 1.5525E+16 | 3.2350E+10 |
| Sb-129 | 2.1287E+00 | 3.7855E-10 | 1.7672E+15 | 7.8762E+10 |
| Te-127 | 7.8928E-01 | 2.9907E-10 | 1.4181E+15 | 2.9203E+10 |
| Te-127m | 1.1752E-01 | 1.2459E-08 | 5.9077E+16 | 4.3482E+09 |
| Te-129 | 1.1345E+00 | 5.4174E-11 | 2.5290E+14 | 4.1978E+10 |
| Te-129m | 3.9305E-01 | 1.3047E-07 | 6.0908E+16 | 1.4543E+10 |
| Te-131m | 1.1681E+00 | 1.4648E-09 | 6.7339E+15 | 4.3219E+10 |
| Te-132 | 1.1879E+01 | 3.9127E-08 | 1.7851E+17 | 4.3951E+11 |
| I-131 | 1.1611E+02 | 9.3653E-07 | 4.3053E+18 | 4.2959E+12 |
| I-132 | 1.2223E+02 | 1.1842E-08 | 5.4024E+16 | 4.5225E+12 |
| I-133 | 2.3512E+02 | 2.0756E-07 | 9.3980E+17 | 8.6995E+12 |
| I-134 | 1.2099E+02 | 4.5355E-09 | 2.0383E+16 | 4.4767E+12 |
| I-135 | 2.0298E+02 | 5.7799E-08 | 2.5783E+17 | 7.5103E+12 |
| Xe-133 | 5.9886E+02 | 3.1993E-06 | 1.4486E+19 | 2.2158E+13 |
| Xe-135 | 2.0277E+02 | 7.9402E-08 | 3.5420E+17 | 7.5025E+12 |
| Cs-134 | 2.4275E+01 | 1.8762E-05 | 8.4319E+19 | 8.9817E+11 |
| Cs-136 | 6.6969E+00 | 9.1374E-08 | 4.0461E+17 | 2.4778E+11 |
| Cs-137 | 1.6264E+01 | 1.8699E-04 | 8.2194E+20 | 6.0178E+11 |
| Ba-139 | 3.2083E+00 | 1.9615E-10 | 8.4980E+14 | 1.1871E+11 |
| Ba-140 | 6.2590E+00 | 8.5495E-08 | 3.6776E+17 | 2.3158E+11 |
| La-140 | 6.2162E-02 | 1.1184E-10 | 4.8107E+14 | 2.3000E+09 |
| La-141 | 4.6315E-02 | 8.1896E-12 | 3.4978E+13 | 1.7137E+09 |
| La-142 | 3.7502E-02 | 2.6198E-12 | 1.1110E+13 | 1.3876E+09 |
| Ce-141 | 1.4364E-01 | 5.0411E-09 | 2.1530E+16 | 5.3146E+09 |
| Ce-143 | 1.3876E-01 | 2.0896E-10 | 8.7997E+14 | 5.1343E+09 |
| Ce-144 | 1.1581E-01 | 3.6310E-08 | 1.5185E+17 | 4.2850E+09 |
| Pr-143 | 5.6020E-02 | 8.3192E-10 | 3.5035E+15 | 2.0728E+09 |
| Nd-147 | 2.3407E-02 | 2.8933E-10 | 1.1853E+15 | 8.6604E+08 |
| Np-239 | 1.5638E+00 | 6.7406E-09 | 1.6984E+16 | 5.7859E+10 |
| Pu-238 | 4.5669E-04 | 2.6676E-08 | 6.7499E+16 | 1.6897E+07 |
| Pu-239 | 3.5544E-05 | 5.7185E-07 | 1.4409E+18 | 1.3151E+06 |
| Pu-240 | 3.8331E-05 | 1.6822E-07 | 4.2209E+17 | 1.4182E+06 |
| Pu-241 | 1.5874E-02 | 1.5410E-07 | 3.8506E+17 | 5.8734E+08 |
| Am-241 | 9.7629E-06 | 2.8445E-09 | 7.1079E+15 | 3.6123E+05 |
| Cm-242 | 2.2943E-03 | 6.9225E-10 | 1.7227E+15 | 8.4890E+07 |
| Cm-244 | 1.8565E-04 | 2.2947E-09 | 5.6635E+15 | 6.8689E+06 |

Environment Transport Group Inventory:

| | Total Release | Release Rate/s | |
|---|---|---|---|
| Time (h) = 0.9167 | | | |
| Noble gases (atoms) | 9.1152E+19 | 2.7621E+16 | |
| Elemental I (atoms) | 1.9155E+17 | 5.8044E+13 | |
| Organic I (atoms) | 1.2131E+16 | 3.6761E+12 | |
| Aerosols (kg) | 2.1143E-04 | 6.4067E-08 | |
| Dose Effective (Ci) I-131 (Thyroid) | | | 1.6197E+02 |
| Dose Effective (Ci) I-131 (ICRP2 Thyroid) | | | 2.0231E+02 |
| Total I (Ci) | | | 7.9743E+02 |

Sprayed to Environment Transport Group Inventory:
Time (h) = 0.9167 Leakage Transport

| | |
|---|---|
| Noble gases (atoms) | 5.1960E+19 |
| Elemental I (atoms) | 6.1144E+16 |
| Organic I (atoms) | 6.9215E+15 |
| Aerosols (kg) | 9.8047E-05 |

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**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 2 | System Nos. | Sheet 954 of 1000 |
|---|---|---|---|---|

Unsprayed to Environment Transport Group Inventory:
Time (h) = 0.9167 Leakage Transport

| | |
|---|---|
| Noble gases (atoms) | 3.9200E+19 |
| Elemental I (atoms) | 1.3061E+17 |
| Organic I (atoms) | 5.2214E+15 |
| Aerosols (kg) | 1.1339E-04 |

TSC Filtered Air Intake Transport Group Inventory:

| Time (h) = 0.9167 | Pathway Filtered | Transported |
|---|---|---|
| Noble gases (atoms) | 0.0000E+00 | 2.9815E+15 |
| Elemental I (atoms) | 0.0000E+00 | 6.2710E+12 |
| Organic I (atoms) | 0.0000E+00 | 3.9715E+11 |
| Aerosols (kg) | 0.0000E+00 | 6.9150E-09 |

TSC Unfiltered Inleakage Transport Group Inventory:

| Time (h) = 0.9167 | Pathway Filtered | Transported |
|---|---|---|
| Noble gases (atoms) | 0.0000E+00 | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 | 0.0000E+00 |

TSC Exhaust to Environment Transport Group Inventory:

| Time (h) = 0.9167 | Pathway Filtered | Transported |
|---|---|---|
| Noble gases (atoms) | 2.5022E+14 | 0.0000E+00 |
| Elemental I (atoms) | 6.6773E+11 | 0.0000E+00 |
| Organic I (atoms) | 4.0929E+10 | 0.0000E+00 |
| Aerosols (kg) | 7.6997E-10 | 0.0000E+00 |

TSC Compartment Nuclide Inventory:

| Time (h) = 0.9167 | Ci | kg | Atoms | Decay |
|---|---|---|---|---|
| Co-58 | 1.2154E-07 | 3.8224E-15 | 3.9688E+10 | 2.7741E+06 |
| Co-60 | 9.3035E-08 | 8.2304E-14 | 8.2607E+11 | 2.1233E+06 |
| Kr-85 | 1.2628E-04 | 3.2188E-10 | 2.2805E+15 | 4.0079E+09 |
| Kr-85m | 2.2669E-03 | 2.7546E-13 | 1.9516E+12 | 7.5468E+10 |
| Kr-87 | 2.6118E-03 | 9.2205E-14 | 6.3824E+11 | 9.8849E+10 |
| Kr-88 | 5.5758E-03 | 4.4467E-13 | 3.0430E+12 | 1.9097E+11 |
| Rb-86 | 6.7428E-06 | 8.2869E-14 | 5.8029E+11 | 2.8775E+08 |
| Sr-89 | 1.1393E-04 | 3.9214E-12 | 2.6534E+13 | 2.6003E+09 |
| Sr-90 | 1.2298E-05 | 9.0158E-11 | 6.0327E+14 | 2.8068E+08 |
| Sr-91 | 1.3857E-04 | 3.8226E-14 | 2.5297E+11 | 3.1971E+09 |
| Sr-92 | 1.0996E-04 | 8.7483E-15 | 5.7265E+10 | 2.6080E+09 |
| Y-90 | 1.2481E-07 | 2.2940E-16 | 1.5350E+09 | 2.8531E+06 |
| Y-91 | 1.3945E-06 | 5.6865E-14 | 3.7631E+11 | 3.1829E+07 |
| Y-92 | 1.2092E-06 | 1.2566E-16 | 8.2256E+08 | 2.8419E+07 |
| Y-93 | 1.6384E-06 | 4.9108E-16 | 3.1800E+09 | 3.7778E+07 |
| Zr-95 | 1.7964E-06 | 8.3621E-14 | 5.3008E+11 | 4.1002E+07 |
| Zr-97 | 1.7224E-06 | 9.0099E-16 | 5.5937E+09 | 3.9551E+07 |
| Nb-95 | 1.8095E-06 | 4.6274E-14 | 2.9334E+11 | 4.1302E+07 |
| Mo-99 | 2.4295E-05 | 5.0655E-14 | 3.0813E+11 | 5.5534E+08 |
| Tc-99m | 1.8104E-05 | 3.4430E-15 | 2.0944E+10 | 4.2037E+08 |
| Ru-103 | 1.9833E-05 | 6.1452E-13 | 3.5929E+12 | 4.5269E+08 |
| Ru-105 | 1.0404E-05 | 1.5478E-15 | 8.8773E+09 | 2.4308E+08 |
| Ru-106 | 7.4782E-06 | 2.2353E-12 | 1.2699E+13 | 1.7068E+08 |
| Rh-105 | 1.2115E-05 | 1.4353E-14 | 8.2320E+10 | 2.7730E+08 |
| Sb-127 | 2.6880E-05 | 1.0065E-13 | 4.7728E+11 | 6.1415E+08 |
| Sb-129 | 6.4200E-05 | 1.1417E-14 | 5.3297E+10 | 1.5009E+09 |
| Te-127 | 2.4065E-05 | 9.1184E-15 | 4.3238E+10 | 5.5533E+08 |

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**CALCULATION SHEET**
**(Ref. EP-006T)**

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|---|---|---|---|---|

| | | | | |
|---|---|---|---|---|
| Te-127m | 3.6161E-06 | 3.8337E-13 | 1.8179E+12 | 8.2533E+07 |
| Te-129 | 3.2308E-05 | 1.5427E-15 | 7.2019E+09 | 8.0750E+08 |
| Te-129m | 1.2094E-05 | 4.0144E-12 | 1.8741E+12 | 2.7604E+08 |
| Te-131m | 3.5841E-05 | 4.4947E-14 | 2.0662E+11 | 8.2081E+08 |
| Te-132 | 3.6513E-04 | 1.2027E-12 | 5.4870E+12 | 8.3443E+09 |
| I-131 | 3.3958E-03 | 2.7391E-11 | 1.2592E+14 | 1.3495E+11 |
| I-132 | 3.2921E-03 | 3.1894E-13 | 1.4551E+12 | 1.4569E+11 |
| I-133 | 6.8235E-03 | 6.0235E-12 | 2.7274E+13 | 2.7402E+11 |
| I-134 | 2.7786E-03 | 1.0416E-13 | 4.6811E+11 | 1.4872E+11 |
| I-135 | 5.7793E-03 | 1.6457E-12 | 7.3410E+12 | 2.3807E+11 |
| Xe-133 | 1.7923E-02 | 9.5752E-11 | 4.3356E+14 | 5.6977E+11 |
| Xe-135 | 5.9823E-03 | 2.3426E-12 | 1.0450E+13 | 1.9435E+11 |
| Cs-134 | 7.0460E-04 | 5.4459E-10 | 2.4475E+15 | 3.0053E+10 |
| Cs-136 | 1.9427E-04 | 2.6506E-12 | 1.1737E+13 | 8.2922E+09 |
| Cs-137 | 4.7209E-04 | 5.4275E-09 | 2.3858E+16 | 2.0135E+10 |
| Ba-139 | 9.2537E-05 | 5.6573E-15 | 2.4510E+10 | 2.2792E+09 |
| Ba-140 | 1.9255E-04 | 2.6301E-12 | 1.1313E+13 | 4.3959E+09 |
| La-140 | 1.9088E-06 | 3.4341E-15 | 1.4772E+10 | 4.3675E+07 |
| La-141 | 1.3940E-06 | 2.4649E-16 | 1.0528E+09 | 3.2668E+07 |
| La-142 | 1.0894E-06 | 7.6100E-17 | 3.2273E+08 | 2.6613E+07 |
| Ce-141 | 4.4195E-06 | 1.5511E-13 | 6.6246E+11 | 1.0088E+08 |
| Ce-143 | 4.2589E-06 | 6.4133E-15 | 2.7008E+10 | 9.7505E+07 |
| Ce-144 | 3.5637E-06 | 1.1173E-12 | 4.6727E+12 | 8.1335E+07 |
| Pr-143 | 1.7234E-06 | 2.5593E-14 | 1.0778E+11 | 3.9345E+07 |
| Nd-147 | 7.2003E-07 | 8.9004E-15 | 3.6462E+10 | 1.6439E+07 |
| Np-239 | 4.8047E-05 | 2.0711E-13 | 5.2185E+11 | 1.0986E+09 |
| Pu-238 | 1.4053E-08 | 8.2088E-13 | 2.0771E+12 | 3.2073E+05 |
| Pu-239 | 1.0938E-09 | 1.7597E-11 | 4.4339E+13 | 2.4963E+04 |
| Pu-240 | 1.1795E-09 | 5.1763E-12 | 1.2989E+13 | 2.6920E+04 |
| Pu-241 | 4.8847E-07 | 4.7419E-12 | 1.1849E+13 | 1.1148E+07 |
| Am-241 | 3.0042E-10 | 8.7532E-14 | 2.1873E+11 | 6.8565E+03 |
| Cm-242 | 7.0599E-08 | 2.1301E-14 | 5.3008E+10 | 1.6113E+06 |
| Cm-244 | 5.7127E-09 | 7.0612E-14 | 1.7428E+11 | 1.3038E+05 |

TSC Transport Group Inventory:

| Time (h) = 0.9167 | Atmosphere | Sump | |
|---|---|---|---|
| Noble gases (atoms) | 2.7301E+15 | 0.0000E+00 | |
| Elemental I (atoms) | 5.5701E+12 | 0.0000E+00 | |
| Organic I (atoms) | 3.5420E+11 | 0.0000E+00 | |
| Aerosols (kg) | 6.1448E-09 | 0.0000E+00 | |
| Dose Effective (Ci/cc) | I-131 (Thyroid) | | 3.9697E-12 |
| Dose Effective (Ci/cc) | I-131 (ICRP2 Thyroid) | | 4.9327E-12 |
| Total I (Ci) | | | 2.2069E-02 |

| Time (h) = 0.9167 | Deposition Surfaces | Recirculating Filter |
|---|---|---|
| Noble gases (atoms) | 0.0000E+00 | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 | 0.0000E+00 |

TSC Filtered Air Intake Transport Group Inventory:

| Time (h) = 0.9167 | Pathway Filtered | Transported |
|---|---|---|
| Noble gases (atoms) | 0.0000E+00 | 2.9815E+15 |
| Elemental I (atoms) | 0.0000E+00 | 6.2710E+12 |
| Organic I (atoms) | 0.0000E+00 | 3.9715E+11 |
| Aerosols (kg) | 0.0000E+00 | 6.9150E-09 |

TSC Unfiltered Inleakage Transport Group Inventory:

| Time (h) = 0.9167 | Pathway Filtered | Transported |
|---|---|---|
| Noble gases (atoms) | 0.0000E+00 | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 | 0.0000E+00 |

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**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 2 | System Nos. | Sheet 956 of 1000 |
|---|---|---|---|---|

```
Organic I (atoms)      0.0000E+00  0.0000E+00
Aerosols (kg)          0.0000E+00  0.0000E+00

TSC Exhaust to Environment Transport Group Inventory:

                          Pathway
Time (h) =   0.9167      Filtered   Transported
Noble gases (atoms)    2.5022E+14  0.0000E+00
Elemental I (atoms)    6.6773E+11  0.0000E+00
Organic I (atoms)      4.0929E+10  0.0000E+00
Aerosols (kg)          7.6997E-10  0.0000E+00

Exclusion Area Boundary Doses:

Time (h) =   1.0000    Whole Body   Thyroid       TEDE
Delta dose (rem)        6.1420E-02  1.2191E+01  6.8444E-01
Accumulated dose (rem)  3.2342E-01  6.2472E+01  3.3412E+00

Low Population Zone Doses:

Time (h) =   1.0000    Whole Body   Thyroid       TEDE
Delta dose (rem)        1.0749E-02  2.1334E+00  1.1978E-01
Accumulated dose (rem)  5.6599E-02  1.0933E+01  5.8471E-01

TSC Doses:

Time (h) =   1.0000    Whole Body   Thyroid       TEDE
Delta dose (rem)        7.7178E-05  5.1495E-01  2.4954E-02
Accumulated dose (rem)  3.1294E-04  2.0330E+00  9.4003E-02

Travel Path Doses:

Time (h) =   1.0000    Whole Body   Thyroid       TEDE
Delta dose (rem)        6.1420E-02  1.2087E+01  6.7910E-01
Accumulated dose (rem)  6.1420E-02  1.2087E+01  6.7910E-01

Environment Integral Nuclide Release:

Time (h) =   1.0000       Ci           kg          Atoms          Bq
Co-58                  5.5264E-03  1.7380E-10  1.8045E+15  2.0448E+08
Co-60                  4.2301E-03  3.7422E-09  3.7560E+16  1.5651E+08
Kr-85                  5.6114E+00  1.4303E-05  1.0133E+20  2.0762E+11
Kr-85m                 1.0231E+02  1.2432E-08  8.8081E+16  3.7855E+12
Kr-87                  1.2400E+02  4.3778E-09  3.0303E+16  4.5882E+12
Kr-88                  2.5421E+02  2.0273E-08  1.3873E+17  9.4056E+12
Rb-86                  2.8269E-01  3.4743E-09  2.4328E+16  1.0460E+10
Sr-89                  5.1801E+00  1.7830E-07  1.2065E+18  1.9166E+11
Sr-90                  5.5917E-01  4.0993E-06  2.7429E+19  2.0689E+10
Sr-91                  6.3197E+00  1.7434E-09  1.1537E+16  2.3383E+11
Sr-92                  5.0576E+00  4.0237E-10  2.6339E+15  1.8713E+11
Y-90                   5.6773E-03  1.0435E-11  6.9824E+13  2.1006E+08
Y-91                   6.3408E-02  2.5856E-09  1.7111E+16  2.3461E+09
Y-92                   5.5454E-02  5.7630E-12  3.7724E+13  2.0518E+09
Y-93                   7.4709E-02  2.2393E-11  1.4500E+14  2.7642E+09
Zr-95                  8.1681E-02  3.8021E-09  2.4102E+16  3.0222E+09
Zr-97                  7.8447E-02  4.1036E-11  2.5477E+14  2.9025E+09
Nb-95                  8.2276E-02  2.1041E-09  1.3338E+16  3.0442E+09
Mo-99                  1.1051E+00  2.3042E-09  1.4016E+16  4.0889E+10
Tc-99m                 8.2721E-01  1.5732E-10  9.5695E+14  3.0607E+10
Ru-103                 9.0180E-01  2.7942E-08  1.6337E+17  3.3366E+10
Ru-105                 4.7628E-01  7.0854E-11  4.0637E+14  1.7622E+10
Ru-106                 3.4002E-01  1.0163E-07  5.7741E+17  1.2581E+10
Rh-105                 5.5128E-01  6.5313E-10  3.7460E+15  2.0397E+10
Sb-127                 1.2225E+00  4.5779E-09  2.1708E+16  4.5234E+10
Sb-129                 2.9394E+00  5.2272E-10  2.4402E+15  1.0876E+11
```

| | | | | |
|---|---|---|---|---|
| Te-127 | 1.0976E+00 | 4.1589E-10 | 1.9721E+15 | 4.0610E+10 |
| Te-127m | 1.6442E-01 | 1.7431E-08 | 8.2656E+16 | 6.0836E+09 |
| Te-129 | 1.5143E+00 | 7.2308E-11 | 3.3756E+14 | 5.6029E+10 |
| Te-129m | 5.4989E-01 | 1.8253E-07 | 8.5213E+16 | 2.0346E+10 |
| Te-131m | 1.6312E+00 | 2.0456E-09 | 9.4037E+15 | 6.0353E+10 |
| Te-132 | 1.6608E+01 | 5.4704E-08 | 2.4957E+17 | 6.1449E+11 |
| I-131 | 1.4417E+02 | 1.1629E-06 | 5.3460E+18 | 5.3344E+12 |
| I-132 | 1.4729E+02 | 1.4269E-08 | 6.5098E+16 | 5.4496E+12 |
| I-133 | 2.9106E+02 | 2.5693E-07 | 1.1634E+18 | 1.0769E+13 |
| I-134 | 1.3946E+02 | 5.2276E-09 | 2.3494E+16 | 5.1599E+12 |
| I-135 | 2.4943E+02 | 7.1025E-08 | 3.1683E+17 | 9.2288E+12 |
| Xe-133 | 7.9681E+02 | 4.2569E-06 | 1.9275E+19 | 2.9482E+13 |
| Xe-135 | 2.6779E+02 | 1.0486E-07 | 4.6778E+17 | 9.9082E+12 |
| Cs-134 | 2.9533E+01 | 2.2826E-05 | 1.0258E+20 | 1.0927E+12 |
| Cs-136 | 8.1455E+00 | 1.1114E-07 | 4.9213E+17 | 3.0139E+11 |
| Cs-137 | 1.9787E+01 | 2.2748E-04 | 9.9996E+20 | 7.3212E+11 |
| Ba-139 | 4.3129E+00 | 2.6368E-10 | 1.1424E+15 | 1.5958E+11 |
| Ba-140 | 8.7555E+00 | 1.1960E-07 | 5.1445E+17 | 3.2395E+11 |
| La-140 | 8.6849E-02 | 1.5625E-10 | 6.7212E+14 | 3.2134E+09 |
| La-141 | 6.3873E-02 | 1.1294E-11 | 4.8238E+13 | 2.3633E+09 |
| La-142 | 5.0619E-02 | 3.5361E-12 | 1.4996E+13 | 1.8729E+09 |
| Ce-141 | 2.0095E-01 | 7.0526E-09 | 3.0122E+16 | 7.4353E+09 |
| Ce-143 | 1.9381E-01 | 2.9185E-10 | 1.2291E+15 | 7.1711E+09 |
| Ce-144 | 1.6204E-01 | 5.0803E-08 | 2.1246E+17 | 5.9953E+09 |
| Pr-143 | 7.8367E-02 | 1.1638E-09 | 4.9010E+15 | 2.8996E+09 |
| Nd-147 | 3.2742E-02 | 4.0473E-10 | 1.6580E+15 | 1.2115E+09 |
| Np-239 | 2.1857E+00 | 9.4214E-09 | 2.3739E+16 | 8.0870E+10 |
| Pu-238 | 6.3897E-04 | 3.7324E-08 | 9.4440E+16 | 2.3642E+07 |
| Pu-239 | 4.9731E-05 | 8.0010E-07 | 2.0160E+18 | 1.8401E+06 |
| Pu-240 | 5.3630E-05 | 2.3536E-07 | 5.9057E+17 | 1.9843E+06 |
| Pu-241 | 2.2210E-02 | 2.1560E-07 | 5.3876E+17 | 8.2177E+08 |
| Am-241 | 1.3660E-05 | 3.9799E-09 | 9.9450E+15 | 5.0541E+05 |
| Cm-242 | 3.2100E-03 | 9.6854E-10 | 2.4102E+15 | 1.1877E+08 |
| Cm-244 | 2.5975E-04 | 3.2106E-09 | 7.9240E+15 | 9.6106E+06 |

Environment Transport Group Inventory:

| Time (h) = 1.0000 | Total Release | Release Rate/s |
|---|---|---|
| Noble gases (atoms) | 1.2133E+20 | 3.3703E+16 |
| Elemental I (atoms) | 2.3470E+17 | 6.5194E+13 |
| Organic I (atoms) | 1.5193E+16 | 4.2202E+12 |
| Aerosols (kg) | 2.5805E-04 | 7.1682E-08 |

| | |
|---|---|
| Dose Effective (Ci) I-131 (Thyroid) | 2.0086E+02 |
| Dose Effective (Ci) I-131 (ICRP2 Thyroid) | 2.5041E+02 |
| Total I (Ci) | 9.7140E+02 |

Sprayed to Environment Transport Group Inventory:
Time (h) = 1.0000 Leakage Transport

| | |
|---|---|
| Noble gases (atoms) | 6.9163E+19 |
| Elemental I (atoms) | 7.4350E+16 |
| Organic I (atoms) | 8.6677E+15 |
| Aerosols (kg) | 1.1983E-04 |

Unsprayed to Environment Transport Group Inventory:
Time (h) = 1.0000 Leakage Transport

| | |
|---|---|
| Noble gases (atoms) | 5.2179E+19 |
| Elemental I (atoms) | 1.6059E+17 |
| Organic I (atoms) | 6.5388E+15 |
| Aerosols (kg) | 1.3823E-04 |

TSC Filtered Air Intake Transport Group Inventory:

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**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 2 | System Nos. | Sheet 958 of 1000 |
|---|---|---|---|---|

| Time (h) = 1.0000 | Pathway Filtered | Transported |
|---|---|---|
| Noble gases (atoms) | 0.0000E+00 | 3.9686E+15 |
| Elemental I (atoms) | 0.0000E+00 | 7.6833E+12 |
| Organic I (atoms) | 0.0000E+00 | 4.9735E+11 |
| Aerosols (kg) | 0.0000E+00 | 8.4399E-09 |

TSC Unfiltered Inleakage Transport Group Inventory:

| Time (h) = 1.0000 | Pathway Filtered | Transported |
|---|---|---|
| Noble gases (atoms) | 0.0000E+00 | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 | 0.0000E+00 |

TSC Exhaust to Environment Transport Group Inventory:

| Time (h) = 1.0000 | Pathway Filtered | Transported |
|---|---|---|
| Noble gases (atoms) | 3.6292E+14 | 0.0000E+00 |
| Elemental I (atoms) | 8.8759E+11 | 0.0000E+00 |
| Organic I (atoms) | 5.5076E+10 | 0.0000E+00 |
| Aerosols (kg) | 1.0120E-09 | 0.0000E+00 |

TSC Compartment Nuclide Inventory:

| Time (h) = 1.0000 | Ci | kg | Atoms | Decay |
|---|---|---|---|---|
| Co-58 | 1.6795E-07 | 5.2817E-15 | 5.4840E+10 | 4.5110E+06 |
| Co-60 | 1.2856E-07 | 1.1373E-13 | 1.1415E+12 | 3.4529E+06 |
| Kr-85 | 1.6674E-04 | 4.2500E-10 | 3.0111E+15 | 5.7472E+09 |
| Kr-85m | 2.9351E-03 | 3.5665E-13 | 2.5268E+12 | 1.0632E+11 |
| Kr-87 | 3.2195E-03 | 1.1366E-13 | 7.8675E+11 | 1.3335E+11 |
| Kr-88 | 7.1381E-03 | 5.6926E-13 | 3.8957E+12 | 2.6633E+11 |
| Rb-86 | 8.1217E-06 | 9.9815E-14 | 6.9895E+11 | 3.7414E+08 |
| Sr-89 | 1.5742E-04 | 5.4184E-12 | 3.6664E+13 | 4.2284E+09 |
| Sr-90 | 1.6994E-05 | 1.2458E-10 | 8.3363E+14 | 4.5643E+08 |
| Sr-91 | 1.8989E-04 | 5.2383E-14 | 3.4666E+11 | 5.1676E+09 |
| Sr-92 | 1.4758E-04 | 1.1742E-14 | 7.6858E+10 | 4.1526E+09 |
| Y-90 | 1.7225E-07 | 3.1661E-16 | 2.1185E+09 | 4.6354E+06 |
| Y-91 | 1.9269E-06 | 7.8574E-14 | 5.1998E+11 | 5.1758E+07 |
| Y-92 | 1.6340E-06 | 1.6981E-16 | 1.1115E+09 | 4.5472E+07 |
| Y-93 | 2.2463E-06 | 6.7329E-16 | 4.3599E+09 | 6.1084E+07 |
| Zr-95 | 2.4822E-06 | 1.1555E-13 | 7.3245E+11 | 6.6674E+07 |
| Zr-97 | 2.3690E-06 | 1.2392E-15 | 7.6935E+09 | 6.4098E+07 |
| Nb-95 | 2.5002E-06 | 6.3938E-14 | 4.0531E+11 | 6.7160E+07 |
| Mo-99 | 3.3531E-05 | 6.9913E-14 | 4.2528E+11 | 9.0229E+08 |
| Tc-99m | 2.4690E-05 | 4.6955E-15 | 2.8563E+10 | 6.7709E+08 |
| Ru-103 | 2.7404E-05 | 8.4910E-13 | 4.9645E+12 | 7.3611E+08 |
| Ru-105 | 1.4123E-05 | 2.1011E-15 | 1.2050E+10 | 3.9021E+08 |
| Ru-106 | 1.0334E-05 | 3.0888E-12 | 1.7548E+13 | 2.7755E+08 |
| Rh-105 | 1.6703E-05 | 1.9789E-14 | 1.1350E+11 | 4.5020E+08 |
| Sb-127 | 3.7112E-05 | 1.3897E-13 | 6.5896E+11 | 9.9809E+08 |
| Sb-129 | 8.7105E-05 | 1.5490E-14 | 7.2311E+10 | 2.4085E+09 |
| Te-127 | 3.2973E-05 | 1.2494E-14 | 5.9244E+10 | 8.9752E+08 |
| Te-127m | 4.9968E-06 | 5.2974E-13 | 2.5119E+12 | 1.3421E+08 |
| Te-129 | 4.1726E-05 | 1.9924E-15 | 9.3012E+09 | 1.2512E+09 |
| Te-129m | 1.6710E-05 | 5.5468E-12 | 2.5894E+12 | 4.4886E+08 |
| Te-131m | 4.9396E-05 | 6.1946E-14 | 2.8477E+11 | 1.3322E+09 |
| Te-132 | 5.0404E-04 | 1.6603E-12 | 7.5745E+12 | 1.3559E+10 |
| I-131 | 4.1776E-03 | 3.3697E-11 | 1.5491E+14 | 1.7919E+11 |
| I-132 | 3.8984E-03 | 3.7767E-13 | 1.7230E+12 | 1.8760E+11 |
| I-133 | 8.3625E-03 | 7.3821E-12 | 3.3425E+13 | 3.6271E+11 |
| I-134 | 3.0944E-03 | 1.1600E-13 | 5.2130E+11 | 1.8282E+11 |
| I-135 | 7.0178E-03 | 1.9983E-12 | 8.9142E+12 | 3.1277E+11 |

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**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 2 | System Nos. | Sheet 959 of 1000 |
|---|---|---|---|---|

| | | | | |
|---|---|---|---|---|
| Xe-133 | 2.3649E-02 | 1.2634E-10 | 5.7206E+14 | 8.1652E+11 |
| Xe-135 | 7.8229E-03 | 3.0633E-12 | 1.3665E+13 | 2.7626E+11 |
| Cs-134 | 8.4886E-04 | 6.5608E-10 | 2.9485E+15 | 3.9082E+10 |
| Cs-136 | 2.3397E-04 | 3.1924E-12 | 1.4136E+13 | 1.0781E+10 |
| Cs-137 | 5.6875E-04 | 6.5387E-09 | 2.8742E+16 | 2.6185E+10 |
| Ba-139 | 1.2078E-04 | 7.3843E-15 | 3.1992E+10 | 3.5580E+09 |
| Ba-140 | 2.6600E-04 | 3.6335E-12 | 1.5629E+13 | 7.1472E+09 |
| La-140 | 2.6324E-06 | 4.7361E-15 | 2.0372E+10 | 7.0922E+07 |
| La-141 | 1.8879E-06 | 3.3383E-16 | 1.4258E+09 | 5.2353E+07 |
| La-142 | 1.4304E-06 | 9.9926E-17 | 4.2378E+08 | 4.1719E+07 |
| Ce-141 | 6.1065E-06 | 2.1431E-13 | 9.1533E+11 | 1.6403E+08 |
| Ce-143 | 5.8711E-06 | 8.8409E-15 | 3.7232E+10 | 1.5828E+08 |
| Ce-144 | 4.9245E-06 | 1.5440E-12 | 6.4569E+12 | 1.3226E+08 |
| Pr-143 | 2.3809E-06 | 3.5357E-14 | 1.4890E+11 | 6.3971E+07 |
| Nd-147 | 9.9468E-07 | 1.2295E-14 | 5.0370E+10 | 2.6728E+07 |
| Np-239 | 6.6300E-05 | 2.8579E-13 | 7.2010E+11 | 1.7846E+09 |
| Pu-238 | 1.9419E-08 | 1.1343E-12 | 2.8702E+12 | 5.2157E+05 |
| Pu-239 | 1.5114E-09 | 2.4316E-11 | 6.1270E+13 | 4.0594E+04 |
| Pu-240 | 1.6299E-09 | 7.1529E-12 | 1.7948E+13 | 4.3776E+04 |
| Pu-241 | 6.7500E-07 | 6.5526E-12 | 1.6374E+13 | 1.8129E+07 |
| Am-241 | 4.1514E-10 | 1.2096E-13 | 3.0225E+11 | 1.1150E+04 |
| Cm-242 | 9.7555E-08 | 2.9435E-14 | 7.3248E+10 | 2.6202E+06 |
| Cm-244 | 7.8941E-09 | 9.7575E-14 | 2.4082E+11 | 2.1202E+05 |

TSC Transport Group Inventory:

| Time (h) = 1.0000 | Atmosphere | Sump | |
|---|---|---|---|
| Noble gases (atoms) | 3.6040E+15 | 0.0000E+00 | |
| Elemental I (atoms) | 6.7529E+12 | 0.0000E+00 | |
| Organic I (atoms) | 4.3962E+11 | 0.0000E+00 | |
| Aerosols (kg) | 7.4277E-09 | 0.0000E+00 | |
| Dose Effective (Ci/cc) | I-131 (Thyroid) | | 4.8760E-12 |
| Dose Effective (Ci/cc) | I-131 (ICRP2 Thyroid) | | 6.0456E-12 |
| Total I (Ci) | | | 2.6551E-02 |

| Time (h) = 1.0000 | Deposition Surfaces | Recirculating Filter |
|---|---|---|
| Noble gases (atoms) | 0.0000E+00 | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 | 0.0000E+00 |

TSC Filtered Air Intake Transport Group Inventory:

| Time (h) = 1.0000 | Pathway Filtered | Transported |
|---|---|---|
| Noble gases (atoms) | 0.0000E+00 | 3.9686E+15 |
| Elemental I (atoms) | 0.0000E+00 | 7.6833E+12 |
| Organic I (atoms) | 0.0000E+00 | 4.9735E+11 |
| Aerosols (kg) | 0.0000E+00 | 8.4399E-09 |

TSC Unfiltered Inleakage Transport Group Inventory:

| Time (h) = 1.0000 | Pathway Filtered | Transported |
|---|---|---|
| Noble gases (atoms) | 0.0000E+00 | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 | 0.0000E+00 |

TSC Exhaust to Environment Transport Group Inventory:

| Time (h) = 1.0000 | Pathway Filtered | Transported |
|---|---|---|
| Noble gases (atoms) | 3.6292E+14 | 0.0000E+00 |
| Elemental I (atoms) | 8.8759E+11 | 0.0000E+00 |

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**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 2 | System Nos. | Sheet 960 of 1000 |
|---|---|---|---|---|

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Organic I (atoms)      5.5076E+10  0.0000E+00
Aerosols (kg)          1.0120E-09  0.0000E+00

Exclusion Area Boundary Doses:

Time (h) =   1.8000    Whole Body   Thyroid       TEDE
Delta dose (rem)        7.8975E-01  1.6472E+02  9.3975E+00
Accumulated dose (rem)  1.1132E+00  2.2720E+02  1.2739E+01

Low Population Zone Doses:

Time (h) =   1.8000    Whole Body   Thyroid       TEDE
Delta dose (rem)        1.3821E-01  2.8827E+01  1.6446E+00
Accumulated dose (rem)  1.9481E-01  3.9759E+01  2.2293E+00

TSC Doses:

Time (h) =   1.8000    Whole Body   Thyroid       TEDE
Delta dose (rem)        1.6053E-03  1.1371E+01  5.7815E-01
Accumulated dose (rem)  1.9183E-03  1.3404E+01  6.7215E-01

Travel Path Doses:

Time (h) =   1.8000    Whole Body   Thyroid       TEDE
Delta dose (rem)        0.0000E+00  0.0000E+00  0.0000E+00
Accumulated dose (rem)  6.1420E-02  1.2087E+01  6.7910E-01

Environment Integral Nuclide Release:

Time (h) =   1.8000       Ci           kg         Atoms         Bq
Co-58                  2.9455E-02  9.2633E-10  9.6181E+15  1.0899E+09
Co-60                  2.2553E-02  1.9952E-08  2.0026E+17  8.3447E+08
Kr-85                  3.0267E+01  7.7147E-05  5.4658E+20  1.1199E+12
Kr-85m                 4.8219E+02  5.8593E-08  4.1512E+17  1.7841E+13
Kr-87                  4.2675E+02  1.5066E-08  1.0429E+17  1.5790E+13
Kr-88                  1.1112E+03  8.8615E-08  6.0642E+17  4.1113E+13
Rb-86                  9.4528E-01  1.1617E-08  8.1351E+16  3.4975E+10
Sr-89                  2.7606E+01  9.5022E-07  6.4296E+18  1.0214E+12
Sr-90                  2.9813E+00  2.1856E-05  1.4625E+20  1.1031E+11
Sr-91                  3.1781E+01  8.7672E-09  5.8019E+16  1.1759E+12
Sr-92                  2.2114E+01  1.7593E-09  1.1516E+16  8.1821E+11
Y-90                   3.0005E-02  5.5151E-11  3.6903E+14  1.1102E+09
Y-91                   3.3794E-01  1.3780E-08  9.1192E+16  1.2504E+10
Y-92                   2.5359E-01  2.6354E-11  1.7251E+14  9.3828E+09
Y-93                   3.7700E-01  1.1300E-10  7.3171E+14  1.3949E+10
Zr-95                  4.3534E-01  2.0264E-08  1.2846E+17  1.6108E+10
Zr-97                  4.0466E-01  2.1168E-10  1.3142E+15  1.4972E+10
Nb-95                  4.3838E-01  1.1211E-08  7.1066E+16  1.6220E+10
Mo-99                  5.8422E+00  1.2181E-08  7.4097E+16  2.1616E+11
Tc-99m                 4.0245E+00  7.6537E-10  4.6557E+15  1.4891E+11
Ru-103                 4.8052E+00  1.4889E-07  8.7051E+17  1.7779E+11
Ru-105                 2.2449E+00  3.3396E-10  1.9154E+15  8.3061E+10
Ru-106                 1.8128E+00  5.4184E-07  3.0784E+18  6.7073E+10
Rh-105                 2.8930E+00  3.4275E-09  1.9658E+16  1.0704E+11
Sb-127                 6.4787E+00  2.4260E-08  1.1504E+17  2.3971E+11
Sb-129                 1.3809E+01  2.4556E-09  1.1464E+16  5.1093E+11
Te-127                 5.5145E+00  2.0895E-09  9.9083E+15  2.0404E+11
Te-127m                8.7645E-01  9.2918E-08  4.4060E+17  3.2429E+10
Te-129                 5.2262E+00  2.4955E-10  1.1650E+15  1.9337E+11
Te-129m                2.9298E+00  9.7254E-07  4.5401E+17  1.0840E+11
Te-131m                8.5360E+00  1.0705E-08  4.9210E+16  3.1583E+11
Te-132                 8.7914E+01  2.8958E-07  1.3211E+18  3.2528E+12
I-131                  5.2548E+02  4.2386E-06  1.9485E+19  1.9443E+13
I-132                  4.1765E+02  4.0461E-08  1.8459E+17  1.5453E+13
I-133                  1.0331E+03  9.1202E-07  4.1295E+18  3.8226E+13
```

| | | | | |
|---|---|---|---|---|
| I-134 | 2.8087E+02 | 1.0529E-08 | 4.7318E+16 | 1.0392E+13 |
| I-135 | 8.3179E+02 | 2.3685E-07 | 1.0566E+18 | 3.0776E+13 |
| Xe-133 | 4.2770E+03 | 2.2849E-05 | 1.0346E+20 | 1.5825E+14 |
| Xe-135 | 1.3505E+03 | 5.2885E-07 | 2.3591E+18 | 4.9970E+13 |
| Cs-134 | 9.8885E+01 | 7.6428E-05 | 3.4348E+20 | 3.6588E+12 |
| Cs-136 | 2.7222E+01 | 3.7142E-07 | 1.6447E+18 | 1.0072E+12 |
| Cs-137 | 6.6256E+01 | 7.6172E-04 | 3.3483E+21 | 2.4515E+12 |
| Ba-139 | 1.5842E+01 | 9.6849E-10 | 4.1960E+15 | 5.8614E+11 |
| Ba-140 | 4.6596E+01 | 6.3648E-07 | 2.7378E+18 | 1.7240E+12 |
| La-140 | 4.5665E-01 | 8.2157E-10 | 3.5340E+15 | 1.6896E+10 |
| La-141 | 2.9643E-01 | 5.2416E-11 | 2.2387E+14 | 1.0968E+10 |
| La-142 | 1.9277E-01 | 1.3466E-11 | 5.7110E+13 | 7.1325E+09 |
| Ce-141 | 1.0707E+00 | 3.7575E-08 | 1.6049E+17 | 3.9614E+10 |
| Ce-143 | 1.0159E+00 | 1.5299E-09 | 6.4427E+15 | 3.7590E+10 |
| Ce-144 | 8.6385E-01 | 2.7084E-07 | 1.1327E+18 | 3.1963E+10 |
| Pr-143 | 4.1711E-01 | 6.1941E-09 | 2.6085E+16 | 1.5433E+10 |
| Nd-147 | 1.7420E-01 | 2.1533E-09 | 8.8214E+15 | 6.4453E+09 |
| Np-239 | 1.1538E+01 | 4.9736E-08 | 1.2532E+17 | 4.2691E+11 |
| Pu-238 | 3.4068E-03 | 1.9900E-07 | 5.0353E+17 | 1.2605E+08 |
| Pu-239 | 2.6515E-04 | 4.2659E-06 | 1.0749E+19 | 9.8106E+06 |
| Pu-240 | 2.8594E-04 | 1.2549E-06 | 3.1487E+18 | 1.0580E+07 |
| Pu-241 | 1.1842E-01 | 1.1495E-06 | 2.8725E+18 | 4.3814E+09 |
| Am-241 | 7.2829E-05 | 2.1220E-08 | 5.3024E+16 | 2.6947E+06 |
| Cm-242 | 1.7112E-02 | 5.1632E-09 | 1.2849E+16 | 6.3316E+08 |
| Cm-244 | 1.3849E-03 | 1.7118E-08 | 4.2248E+16 | 5.1240E+07 |

Environment Transport Group Inventory:

| Time (h) = 1.8000 | Total Release | Release Rate/s |
|---|---|---|
| Noble gases (atoms) | 6.5352E+20 | 1.0085E+17 |
| Elemental I (atoms) | 7.6295E+17 | 1.1774E+14 |
| Organic I (atoms) | 6.4135E+16 | 9.8973E+12 |
| Aerosols (kg) | 8.7670E-04 | 1.3529E-07 |

| | |
|---|---|
| Dose Effective (Ci) I-131 (Thyroid) | 7.2430E+02 |
| Dose Effective (Ci) I-131 (ICRP2 Thyroid) | 8.9068E+02 |
| Total I (Ci) | 3.0889E+03 |

Sprayed to Environment Transport Group Inventory:
Time (h) = 1.8000 Leakage Transport

| | |
|---|---|
| Noble gases (atoms) | 3.7255E+20 |
| Elemental I (atoms) | 2.1950E+17 |
| Organic I (atoms) | 3.6609E+16 |
| Aerosols (kg) | 3.9836E-04 |

Unsprayed to Environment Transport Group Inventory:
Time (h) = 1.8000 Leakage Transport

| | |
|---|---|
| Noble gases (atoms) | 2.8107E+20 |
| Elemental I (atoms) | 5.4458E+17 |
| Organic I (atoms) | 2.7618E+16 |
| Aerosols (kg) | 4.7835E-04 |

TSC Filtered Air Intake Transport Group Inventory:

| Time (h) = 1.8000 | Pathway Filtered | Pathway Transported |
|---|---|---|
| Noble gases (atoms) | 0.0000E+00 | 2.1377E+16 |
| Elemental I (atoms) | 0.0000E+00 | 2.4989E+13 |
| Organic I (atoms) | 0.0000E+00 | 2.1006E+12 |
| Aerosols (kg) | 0.0000E+00 | 2.8673E-08 |

TSC Unfiltered Inleakage Transport Group Inventory:

Pathway

AmerGen

**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 2 | System Nos. | Sheet 962 of 1000 |
|---|---|---|---|---|

| Time (h) = 1.8000 | Filtered | Transported |
|---|---|---|
| Noble gases (atoms) | 0.0000E+00 | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 | 0.0000E+00 |

TSC Exhaust to Environment Transport Group Inventory:

| | Pathway | |
|---|---|---|
| Time (h) = 1.8000 | Filtered | Transported |
| Noble gases (atoms) | 3.7318E+15 | 0.0000E+00 |
| Elemental I (atoms) | 5.3556E+12 | 0.0000E+00 |
| Organic I (atoms) | 3.9929E+11 | 0.0000E+00 |
| Aerosols (kg) | 6.0629E-09 | 0.0000E+00 |

TSC Compartment Nuclide Inventory:

| Time (h) = 1.8000 | Ci | kg | Atoms | Decay |
|---|---|---|---|---|
| Co-58 | 7.9238E-07 | 2.4919E-14 | 2.5874E+11 | 5.7827E+07 |
| Co-60 | 6.0682E-07 | 5.3682E-13 | 5.3880E+12 | 4.4276E+07 |
| Kr-85 | 8.1712E-04 | 2.0827E-09 | 1.4756E+16 | 5.8633E+10 |
| Kr-85m | 1.2097E-02 | 1.4699E-12 | 1.0414E+13 | 9.4112E+11 |
| Kr-87 | 8.6378E-03 | 3.0495E-13 | 2.1108E+12 | 8.3863E+11 |
| Kr-88 | 2.6641E-02 | 2.1246E-12 | 1.4539E+13 | 2.1755E+12 |
| Rb-86 | 2.4314E-05 | 2.9882E-13 | 2.0925E+12 | 2.1797E+09 |
| Sr-89 | 7.4257E-04 | 2.5560E-11 | 1.7295E+14 | 5.4196E+10 |
| Sr-90 | 8.0215E-05 | 5.8806E-10 | 3.9349E+15 | 5.8529E+09 |
| Sr-91 | 8.2652E-04 | 2.2800E-13 | 1.5089E+12 | 6.2523E+10 |
| Sr-92 | 5.2532E-04 | 4.1793E-14 | 2.7357E+11 | 4.3604E+10 |
| Y-90 | 8.0332E-07 | 1.4765E-15 | 9.8798E+09 | 5.8927E+07 |
| Y-91 | 9.0905E-06 | 3.7068E-13 | 2.4531E+12 | 6.6344E+08 |
| Y-92 | 6.2110E-06 | 6.4547E-16 | 4.2251E+09 | 4.9989E+08 |
| Y-93 | 9.8246E-06 | 2.9447E-15 | 1.9068E+10 | 7.4159E+08 |
| Zr-95 | 1.1711E-05 | 5.4512E-13 | 3.4556E+12 | 8.5466E+08 |
| Zr-97 | 1.0683E-05 | 5.5884E-15 | 3.4695E+10 | 7.9542E+08 |
| Nb-95 | 1.1791E-05 | 3.0152E-13 | 1.9114E+12 | 8.6064E+08 |
| Mo-99 | 1.5643E-04 | 3.2617E-13 | 1.9841E+12 | 1.1473E+10 |
| Tc-99m | 1.0257E-04 | 1.9506E-14 | 1.1866E+11 | 7.9245E+09 |
| Ru-103 | 1.2925E-04 | 4.0046E-12 | 2.3414E+13 | 9.4337E+09 |
| Ru-105 | 5.6080E-05 | 8.3427E-15 | 4.7848E+10 | 4.4233E+09 |
| Ru-106 | 4.8773E-05 | 1.4578E-11 | 8.2823E+13 | 3.5588E+09 |
| Rh-105 | 7.7141E-05 | 9.1393E-14 | 5.2417E+11 | 5.6831E+09 |
| Sb-127 | 1.7372E-04 | 6.5050E-13 | 3.0845E+12 | 1.2722E+10 |
| Sb-129 | 3.4422E-04 | 6.1212E-14 | 2.8576E+11 | 2.7210E+10 |
| Te-127 | 1.4333E-04 | 5.4311E-14 | 2.5754E+11 | 1.0849E+10 |
| Te-127m | 2.3579E-05 | 2.4997E-12 | 1.1853E+13 | 1.7206E+09 |
| Te-129 | 1.0269E-04 | 4.9036E-15 | 2.2892E+10 | 1.0235E+10 |
| Te-129m | 7.8798E-05 | 2.6157E-11 | 1.2211E+13 | 5.7519E+09 |
| Te-131m | 2.2724E-04 | 2.8497E-13 | 1.3100E+12 | 1.6770E+10 |
| Te-132 | 2.3558E-03 | 7.7598E-12 | 3.5402E+13 | 1.7264E+11 |
| I-131 | 1.3639E-02 | 1.1001E-10 | 5.0574E+14 | 1.1710E+12 |
| I-132 | 8.9949E-03 | 8.7142E-13 | 3.9756E+12 | 9.4046E+11 |
| I-133 | 2.6362E-02 | 2.3271E-11 | 1.0537E+14 | 2.3064E+12 |
| I-134 | 4.1087E-03 | 1.5402E-13 | 6.9219E+11 | 6.2114E+11 |
| I-135 | 2.0342E-02 | 5.7923E-12 | 2.5838E+13 | 1.8635E+12 |
| Xe-133 | 1.1517E-01 | 6.1531E-10 | 2.7861E+15 | 8.2877E+12 |
| Xe-135 | 3.5193E-02 | 1.3781E-11 | 6.1475E+13 | 2.6268E+12 |
| Cs-134 | 2.5458E-03 | 1.9676E-09 | 8.8427E+15 | 2.2800E+11 |
| Cs-136 | 6.9990E-04 | 9.5497E-12 | 4.2286E+13 | 6.2773E+10 |
| Cs-137 | 1.7058E-03 | 1.9611E-08 | 8.6203E+16 | 1.5276E+11 |
| Ba-139 | 3.2895E-04 | 2.0111E-14 | 8.7130E+10 | 3.1128E+10 |
| Ba-140 | 1.2524E-03 | 1.7107E-11 | 7.3588E+13 | 9.1483E+10 |
| La-140 | 1.2190E-05 | 2.1931E-14 | 9.4336E+10 | 8.9698E+08 |
| La-141 | 7.3311E-06 | 1.2963E-15 | 5.5366E+09 | 5.8422E+08 |
| La-142 | 4.1256E-06 | 2.8820E-16 | 1.2222E+09 | 3.7931E+08 |

| | | | | |
|---|---|---|---|---|
| Ce-141 | 2.8795E-05 | 1.0106E-12 | 4.3162E+12 | 2.1019E+09 |
| Ce-143 | 2.7072E-05 | 4.0766E-14 | 1.7168E+11 | 1.9958E+09 |
| Ce-144 | 2.3242E-05 | 7.2870E-12 | 3.0474E+13 | 1.6959E+09 |
| Pr-143 | 1.1212E-05 | 1.6650E-13 | 7.0117E+11 | 8.1891E+08 |
| Nd-147 | 4.6813E-06 | 5.7866E-14 | 2.3706E+11 | 3.4201E+08 |
| Np-239 | 3.0870E-04 | 1.3307E-12 | 3.3529E+12 | 2.2661E+10 |
| Pu-238 | 9.1663E-08 | 5.3542E-12 | 1.3548E+13 | 6.6881E+06 |
| Pu-239 | 7.1342E-09 | 1.1478E-10 | 2.8921E+14 | 5.2054E+05 |
| Pu-240 | 7.6935E-09 | 3.3763E-11 | 8.4719E+13 | 5.6135E+05 |
| Pu-241 | 3.1861E-06 | 3.0929E-11 | 7.7286E+13 | 2.3247E+08 |
| Am-241 | 1.9595E-09 | 5.7093E-13 | 1.4267E+12 | 1.4298E+05 |
| Cm-242 | 4.6039E-07 | 1.3891E-13 | 3.4568E+11 | 3.3595E+07 |
| Cm-244 | 3.7261E-08 | 4.6057E-13 | 1.1367E+12 | 2.7188E+06 |

TSC Transport Group Inventory:

| Time (h) = 1.8000 | Atmosphere | Sump | |
|---|---|---|---|
| Noble gases (atoms) | 1.7630E+16 | 0.0000E+00 | |
| Elemental I (atoms) | 1.9411E+13 | 0.0000E+00 | |
| Organic I (atoms) | 1.6847E+12 | 0.0000E+00 | |
| Aerosols (kg) | 2.2609E-08 | 0.0000E+00 | |
| Dose Effective (Ci/cc) | I-131 (Thyroid) | | 1.5701E-11 |
| Dose Effective (Ci/cc) | I-131 (ICRP2 Thyroid) | | 1.9147E-11 |
| Total I (Ci) | | | 7.3446E-02 |

| Time (h) = 1.8000 | Deposition Surfaces | Recirculating Filter |
|---|---|---|
| Noble gases (atoms) | 0.0000E+00 | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 | 0.0000E+00 |

TSC Filtered Air Intake Transport Group Inventory:

| Time (h) = 1.8000 | Pathway Filtered | Transported |
|---|---|---|
| Noble gases (atoms) | 0.0000E+00 | 2.1377E+16 |
| Elemental I (atoms) | 0.0000E+00 | 2.4989E+13 |
| Organic I (atoms) | 0.0000E+00 | 2.1006E+12 |
| Aerosols (kg) | 0.0000E+00 | 2.8673E-08 |

TSC Unfiltered Inleakage Transport Group Inventory:

| Time (h) = 1.8000 | Pathway Filtered | Transported |
|---|---|---|
| Noble gases (atoms) | 0.0000E+00 | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 | 0.0000E+00 |

TSC Exhaust to Environment Transport Group Inventory:

| Time (h) = 1.8000 | Pathway Filtered | Transported |
|---|---|---|
| Noble gases (atoms) | 3.7318E+15 | 0.0000E+00 |
| Elemental I (atoms) | 5.3556E+12 | 0.0000E+00 |
| Organic I (atoms) | 3.9929E+11 | 0.0000E+00 |
| Aerosols (kg) | 6.0629E-09 | 0.0000E+00 |

Exclusion Area Boundary Doses:

| Time (h) = 2.0000 | Whole Body | Thyroid | TEDE |
|---|---|---|---|
| Delta dose (rem) | 2.1069E-01 | 4.4257E+01 | 2.5500E+00 |
| Accumulated dose (rem) | 1.3239E+00 | 2.7145E+02 | 1.5289E+01 |

Low Population Zone Doses:

AmerGen

**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 2 | System Nos. | Sheet 964 of 1000 |
|---|---|---|---|---|

```
Time (h) =   2.0000    Whole Body   Thyroid       TEDE
Delta dose (rem)        3.6871E-02  7.7450E+00  4.4624E-01
Accumulated dose (rem)  2.3168E-01  4.7504E+01  2.6755E+00

TSC Doses:

Time (h) =   2.0000    Whole Body   Thyroid       TEDE
Delta dose (rem)        6.4165E-04  4.7883E+00  2.4843E-01
Accumulated dose (rem)  2.5599E-03  1.8192E+01  9.2058E-01

Travel Path Doses:

Time (h) =   2.0000    Whole Body   Thyroid       TEDE
Delta dose (rem)        0.0000E+00  0.0000E+00  0.0000E+00
Accumulated dose (rem)  6.1420E-02  1.2087E+01  6.7910E-01

Environment Integral Nuclide Release:

Time (h) =   2.0000       Ci           kg          Atoms         Bq
Co-58                  3.6222E-02  1.1391E-09  1.1828E+16  1.3402E+09
Co-60                  2.7736E-02  2.4537E-08  2.4627E+17  1.0262E+09
Kr-85                  3.8977E+01  9.9347E-05  7.0386E+20  1.4422E+12
Kr-85m                 6.0410E+02  7.3406E-08  5.2007E+17  2.2352E+13
Kr-87                  5.0264E+02  1.7745E-08  1.2283E+17  1.8598E+13
Kr-88                  1.3712E+03  1.0935E-07  7.4833E+17  5.0734E+13
Rb-86                  1.1228E+00  1.3799E-08  9.6627E+16  4.1543E+10
Sr-89                  3.3947E+01  1.1685E-06  7.9064E+18  1.2560E+12
Sr-90                  3.6664E+00  2.6879E-05  1.7985E+20  1.3566E+11
Sr-91                  3.8629E+01  1.0656E-08  7.0520E+16  1.4293E+12
Sr-92                  2.6149E+01  2.0804E-09  1.3618E+16  9.6752E+11
Y-90                   3.6836E-02  6.7705E-11  4.5303E+14  1.3629E+09
Y-91                   4.1556E-01  1.6945E-08  1.1214E+17  1.5376E+10
Y-92                   3.0249E-01  3.1437E-11  2.0578E+14  1.1192E+10
Y-93                   4.5854E-01  1.3744E-10  8.8997E+14  1.6966E+10
Zr-95                  5.3534E-01  2.4919E-08  1.5797E+17  1.9808E+10
Zr-97                  4.9435E-01  2.5860E-10  1.6055E+15  1.8291E+10
Nb-95                  5.3904E-01  1.3785E-08  8.7386E+16  1.9945E+10
Mo-99                  7.1724E+00  1.4955E-08  9.0968E+16  2.6538E+11
Tc-99m                 4.8595E+00  9.2417E-10  5.6217E+15  1.7980E+11
Ru-103                 5.9088E+00  1.8308E-07  1.0704E+18  2.1862E+11
Ru-105                 2.6938E+00  4.0074E-10  2.2984E+15  9.9669E+10
Ru-106                 2.2293E+00  6.6635E-07  3.7857E+18  8.2485E+10
Rh-105                 3.5465E+00  4.2017E-09  2.4099E+16  1.3122E+11
Sb-127                 7.9577E+00  2.9798E-08  1.4130E+17  2.9444E+11
Sb-129                 1.6559E+01  2.9447E-09  1.3747E+16  6.1268E+11
Te-127                 6.7014E+00  2.5393E-09  1.2041E+16  2.4795E+11
Te-127m                1.0778E+00  1.1427E-07  5.4183E+17  3.9879E+10
Te-129                 5.9134E+00  2.8237E-10  1.3182E+15  2.1880E+11
Te-129m                3.6026E+00  1.1959E-06  5.5826E+17  1.3329E+11
Te-131m                1.0458E+01  1.3115E-08  6.0291E+16  3.8695E+11
Te-132                 1.0796E+02  3.5561E-07  1.6224E+18  3.9945E+12
I-131                  6.2861E+02  5.0704E-06  2.3309E+19  2.3258E+13
I-132                  4.7657E+02  4.6169E-08  2.1064E+17  1.7633E+13
I-133                  1.2296E+03  1.0855E-06  4.9149E+18  4.5496E+13
I-134                  3.0224E+02  1.1330E-08  5.0917E+16  1.1183E+13
I-135                  9.7825E+02  2.7856E-07  1.2426E+18  3.6195E+13
Xe-133                 5.5022E+03  2.9395E-05  1.3310E+20  2.0358E+14
Xe-135                 1.7154E+03  6.7172E-07  2.9964E+18  6.3469E+13
Cs-134                 1.1748E+02  9.0803E-05  4.0808E+20  4.3469E+12
Cs-136                 3.2330E+01  4.4111E-07  1.9533E+18  1.1962E+12
Cs-137                 7.8718E+01  9.0500E-04  3.9781E+21  2.9126E+12
Ba-139                 1.8128E+01  1.1083E-09  4.8015E+15  6.7073E+11
Ba-140                 5.7282E+01  7.8245E-07  3.3657E+18  2.1194E+12
La-140                 5.6001E-01  1.0075E-09  4.3339E+15  2.0721E+10
```

| | | | | |
|---|---|---|---|---|
| La-141 | 3.5462E-01 | 6.2705E-11 | 2.6781E+14 | 1.3121E+10 |
| La-142 | 2.2206E-01 | 1.5512E-11 | 6.5787E+13 | 8.2163E+09 |
| Ce-141 | 1.3165E+00 | 4.6203E-08 | 1.9734E+17 | 4.8710E+10 |
| Ce-143 | 1.2451E+00 | 1.8750E-09 | 7.8961E+15 | 4.6070E+10 |
| Ce-144 | 1.0623E+00 | 3.3308E-07 | 1.3929E+18 | 3.9307E+10 |
| Pr-143 | 5.1278E-01 | 7.6149E-09 | 3.2069E+16 | 1.8973E+10 |
| Nd-147 | 2.1414E-01 | 2.6470E-09 | 1.0844E+16 | 7.9230E+09 |
| Np-239 | 1.4161E+01 | 6.1043E-08 | 1.5381E+17 | 5.2397E+11 |
| Pu-238 | 4.1897E-03 | 2.4473E-07 | 6.1924E+17 | 1.5502E+08 |
| Pu-239 | 3.2608E-04 | 5.2462E-06 | 1.3219E+19 | 1.2065E+07 |
| Pu-240 | 3.5165E-04 | 1.5432E-06 | 3.8723E+18 | 1.3011E+07 |
| Pu-241 | 1.4563E-01 | 1.4137E-06 | 3.5326E+18 | 5.3882E+09 |
| Am-241 | 8.9565E-05 | 2.6096E-08 | 6.5209E+16 | 3.3139E+06 |
| Cm-242 | 2.1044E-02 | 6.3495E-09 | 1.5801E+16 | 7.7864E+08 |
| Cm-244 | 1.7031E-03 | 2.1052E-08 | 5.1957E+16 | 6.3015E+07 |

Environment Transport Group Inventory:

| Time (h) = 2.0000 | Total Release | Release Rate/s |
|---|---|---|
| Noble gases (atoms) | 8.4135E+20 | 1.1685E+17 |
| Elemental I (atoms) | 8.8613E+17 | 1.2307E+14 |
| Organic I (atoms) | 8.0718E+16 | 1.1211E+13 |
| Aerosols (kg) | 1.0430E-03 | 1.4486E-07 |

| | |
|---|---|
| Dose Effective (Ci) I-131 (Thyroid) | 8.6474E+02 |
| Dose Effective (Ci) I-131 (ICRP2 Thyroid) | 1.0610E+03 |
| Total I (Ci) | 3.6153E+03 |

Sprayed to Environment Transport Group Inventory:
Time (h) = 2.0000 Leakage Transport

| | |
|---|---|
| Noble gases (atoms) | 4.7962E+20 |
| Elemental I (atoms) | 2.4573E+17 |
| Organic I (atoms) | 4.6075E+16 |
| Aerosols (kg) | 4.6930E-04 |

Unsprayed to Environment Transport Group Inventory:
Time (h) = 2.0000 Leakage Transport

| | |
|---|---|
| Noble gases (atoms) | 3.6185E+20 |
| Elemental I (atoms) | 6.4161E+17 |
| Organic I (atoms) | 3.4760E+16 |
| Aerosols (kg) | 5.7371E-04 |

TSC Filtered Air Intake Transport Group Inventory:

| Time (h) = 2.0000 | Pathway Filtered | Transported |
|---|---|---|
| Noble gases (atoms) | 0.0000E+00 | 2.7521E+16 |
| Elemental I (atoms) | 0.0000E+00 | 2.9024E+13 |
| Organic I (atoms) | 0.0000E+00 | 2.6438E+12 |
| Aerosols (kg) | 0.0000E+00 | 3.4113E-08 |

TSC Unfiltered Inleakage Transport Group Inventory:

| Time (h) = 2.0000 | Pathway Filtered | Transported |
|---|---|---|
| Noble gases (atoms) | 0.0000E+00 | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 | 0.0000E+00 |
| Organic I (atoms) | 0.0000E+00 | 0.0000E+00 |
| Aerosols (kg) | 0.0000E+00 | 0.0000E+00 |

TSC Exhaust to Environment Transport Group Inventory:

Pathway

AmerGen

**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 2 | System Nos. | Sheet 966 of 1000 |
|---|---|---|---|---|

| Time (h) = 2.0000 | Filtered | Transported |
|---|---|---|
| Noble gases (atoms) | 5.4358E+15 | 0.0000E+00 |
| Elemental I (atoms) | 7.1269E+12 | 0.0000E+00 |
| Organic I (atoms) | 5.6019E+11 | 0.0000E+00 |
| Aerosols (kg) | 8.1543E-09 | 0.0000E+00 |

TSC Compartment Nuclide Inventory:

| Time (h) = 2.0000 | Ci | kg | Atoms | Decay |
|---|---|---|---|---|
| Co-58 | 9.3900E-07 | 2.9530E-14 | 3.0661E+11 | 8.1963E+07 |
| Co-60 | 7.1917E-07 | 6.3622E-13 | 6.3857E+12 | 6.2761E+07 |
| Kr-85 | 1.0230E-03 | 2.6074E-09 | 1.8473E+16 | 8.4543E+10 |
| Kr-85m | 1.4556E-02 | 1.7687E-12 | 1.2531E+13 | 1.3161E+12 |
| Kr-87 | 9.4232E-03 | 3.3267E-13 | 2.3028E+12 | 1.0920E+12 |
| Kr-88 | 3.1338E-02 | 2.4992E-12 | 1.7103E+13 | 2.9907E+12 |
| Rb-86 | 2.7865E-05 | 3.4246E-13 | 2.3980E+12 | 2.9009E+09 |
| Sr-89 | 8.7993E-04 | 3.0288E-11 | 2.0494E+14 | 7.6814E+10 |
| Sr-90 | 9.5068E-05 | 6.9695E-10 | 4.6635E+15 | 8.2964E+09 |
| Sr-91 | 9.6112E-04 | 2.6514E-13 | 1.7546E+12 | 8.7426E+10 |
| Sr-92 | 5.8273E-04 | 4.6361E-14 | 3.0347E+11 | 5.9012E+10 |
| Y-90 | 9.4938E-07 | 1.7450E-15 | 1.1676E+10 | 8.3358E+07 |
| Y-91 | 1.0772E-05 | 4.3926E-13 | 2.9069E+12 | 9.4033E+08 |
| Y-92 | 6.9967E-06 | 7.2713E-16 | 4.7596E+09 | 6.8366E+08 |
| Y-93 | 1.1437E-05 | 3.4282E-15 | 2.2199E+10 | 1.0378E+09 |
| Zr-95 | 1.3878E-05 | 6.4598E-13 | 4.0949E+12 | 1.2114E+09 |
| Zr-97 | 1.2527E-05 | 6.5527E-15 | 4.0682E+10 | 1.1189E+09 |
| Nb-95 | 1.3971E-05 | 3.5728E-13 | 2.2648E+12 | 1.2198E+09 |
| Mo-99 | 1.8489E-04 | 3.8550E-13 | 2.3450E+12 | 1.6231E+10 |
| Tc-99m | 1.1798E-04 | 2.2436E-14 | 1.3648E+11 | 1.0996E+10 |
| Ru-103 | 1.5315E-04 | 4.7452E-12 | 2.7744E+13 | 1.3370E+10 |
| Ru-105 | 6.3824E-05 | 9.4947E-15 | 5.4456E+10 | 6.0923E+09 |
| Ru-106 | 5.7803E-05 | 1.7277E-11 | 9.8157E+13 | 5.0445E+09 |
| Rh-105 | 9.0958E-05 | 1.0776E-13 | 6.1806E+11 | 8.0260E+09 |
| Sb-127 | 2.0548E-04 | 7.6943E-13 | 3.6485E+12 | 1.8008E+10 |
| Sb-129 | 3.9131E-04 | 6.9587E-14 | 3.2485E+11 | 3.7448E+10 |
| Te-127 | 1.6663E-04 | 6.3137E-14 | 2.9939E+11 | 1.5167E+10 |
| Te-127m | 2.7943E-05 | 2.9624E-12 | 1.4047E+13 | 2.4389E+09 |
| Te-129 | 1.0448E-04 | 4.9888E-15 | 2.3289E+10 | 1.3105E+10 |
| Te-129m | 9.3367E-05 | 3.0993E-11 | 1.4469E+13 | 8.1519E+09 |
| Te-131m | 2.6770E-04 | 3.3571E-13 | 1.5433E+12 | 2.3668E+10 |
| Te-132 | 2.7856E-03 | 9.1753E-12 | 4.1860E+13 | 2.4431E+11 |
| I-131 | 1.5737E-02 | 1.2693E-10 | 5.8352E+14 | 1.5778E+12 |
| I-132 | 9.5880E-03 | 9.2888E-13 | 4.2377E+12 | 1.1968E+12 |
| I-133 | 3.0174E-02 | 2.6636E-11 | 1.2061E+14 | 3.0890E+12 |
| I-134 | 3.8605E-03 | 1.4472E-13 | 6.5037E+11 | 7.3023E+11 |
| I-135 | 2.2842E-02 | 6.5042E-12 | 2.9014E+13 | 2.4608E+12 |
| Xe-133 | 1.4399E-01 | 7.6925E-10 | 3.4831E+15 | 1.1937E+13 |
| Xe-135 | 4.3205E-02 | 1.6918E-11 | 7.5470E+13 | 3.7302E+12 |
| Cs-134 | 2.9187E-03 | 2.2559E-09 | 1.0138E+16 | 3.0353E+11 |
| Cs-136 | 8.0198E-04 | 1.0942E-11 | 4.8453E+13 | 8.3531E+10 |
| Cs-137 | 1.9557E-03 | 2.2484E-08 | 9.8833E+16 | 2.0337E+11 |
| Ba-139 | 3.4270E-04 | 2.0952E-14 | 9.0772E+10 | 4.0441E+10 |
| Ba-140 | 1.4834E-03 | 2.0263E-11 | 8.7162E+13 | 1.2962E+11 |
| La-140 | 1.4382E-05 | 2.5875E-14 | 1.1130E+11 | 1.2673E+09 |
| La-141 | 8.2999E-06 | 1.4676E-15 | 6.2682E+09 | 8.0176E+08 |
| La-142 | 4.3562E-06 | 3.0431E-16 | 1.2905E+09 | 4.9699E+08 |
| Ce-141 | 3.4119E-05 | 1.1974E-12 | 5.1143E+12 | 2.9790E+09 |
| Ce-143 | 3.1910E-05 | 4.8051E-14 | 2.0235E+11 | 2.8179E+09 |
| Ce-144 | 2.7544E-05 | 8.6360E-12 | 3.6116E+13 | 2.4039E+09 |
| Pr-143 | 1.3280E-05 | 1.9722E-13 | 8.3053E+11 | 1.1603E+09 |
| Nd-147 | 5.5443E-06 | 6.8534E-14 | 2.8076E+11 | 4.8456E+08 |
| Np-239 | 3.6470E-04 | 1.5720E-12 | 3.9611E+12 | 3.2047E+10 |
| Pu-238 | 1.0864E-07 | 6.3456E-12 | 1.6056E+13 | 9.4803E+06 |
| Pu-239 | 8.4552E-09 | 1.3603E-10 | 3.4276E+14 | 7.3786E+05 |
| Pu-240 | 9.1180E-09 | 4.0015E-11 | 1.0041E+14 | 7.9571E+05 |

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Pu-241                  3.7760E-06  3.6656E-11  9.1597E+13  3.2953E+08
Am-241                  2.3224E-09  6.7665E-13  1.6908E+12  2.0267E+05
Cm-242                  5.4561E-07  1.6462E-13  4.0966E+11  4.7619E+07
Cm-244                  4.4161E-08  5.4585E-13  1.3472E+12  3.8538E+06

TSC Transport Group Inventory:
Time (h) =   2.0000    Atmosphere     Sump
Noble gases (atoms)    2.2064E+16  0.0000E+00
Elemental I (atoms)    2.1611E+13  0.0000E+00
Organic I (atoms)      2.0610E+12  0.0000E+00
Aerosols (kg)          2.5956E-08  0.0000E+00
Dose Effective (Ci/cc) I-131 (Thyroid)         1.8062E-11
Dose Effective (Ci/cc) I-131 (ICRP2 Thyroid)   2.1957E-11
Total I (Ci)                                   8.2201E-02

                       Deposition Recirculating
Time (h) =   2.0000     Surfaces     Filter
Noble gases (atoms)    0.0000E+00  0.0000E+00
Elemental I (atoms)    0.0000E+00  0.0000E+00
Organic I (atoms)      0.0000E+00  0.0000E+00
Aerosols (kg)          0.0000E+00  0.0000E+00

TSC Filtered Air Intake Transport Group Inventory:

                         Pathway
Time (h) =   2.0000     Filtered   Transported
Noble gases (atoms)    0.0000E+00  2.7521E+16
Elemental I (atoms)    0.0000E+00  2.9024E+13
Organic I (atoms)      0.0000E+00  2.6438E+12
Aerosols (kg)          0.0000E+00  3.4113E-08

TSC Unfiltered Inleakage Transport Group Inventory:

                         Pathway
Time (h) =   2.0000     Filtered   Transported
Noble gases (atoms)    0.0000E+00  0.0000E+00
Elemental I (atoms)    0.0000E+00  0.0000E+00
Organic I (atoms)      0.0000E+00  0.0000E+00
Aerosols (kg)          0.0000E+00  0.0000E+00

TSC Exhaust to Environment Transport Group Inventory:

                         Pathway
Time (h) =   2.0000     Filtered   Transported
Noble gases (atoms)    5.4358E+15  0.0000E+00
Elemental I (atoms)    7.1269E+12  0.0000E+00
Organic I (atoms)      5.6019E+11  0.0000E+00
Aerosols (kg)          8.1543E-09  0.0000E+00
Exclusion Area Boundary Doses:

Time (h) =   2.0600    Whole Body   Thyroid       TEDE
Delta dose (rem)        5.7619E-02  1.1580E+01  6.7039E-01
Accumulated dose (rem)  1.3815E+00  2.8303E+02  1.5959E+01

Low Population Zone Doses:

Time (h) =   2.0600    Whole Body   Thyroid       TEDE
Delta dose (rem)        4.3214E-03  8.6848E-01  5.0280E-02
Accumulated dose (rem)  2.3600E-01  4.8373E+01  2.7258E+00

TSC Doses:

Time (h) =   2.0600    Whole Body   Thyroid       TEDE
Delta dose (rem)        2.0278E-04  1.5348E+00  7.9874E-02
Accumulated dose (rem)  2.7627E-03  1.9727E+01  1.0005E+00
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AmerGen

**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 2 | System Nos. | Sheet 968 of 1000 |
|---|---|---|---|---|

Travel Path Doses:

| Time (h) = 2.0600 | Whole Body | Thyroid | TEDE |
|---|---|---|---|
| Delta dose (rem) | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 |
| Accumulated dose (rem) | 6.1420E-02 | 1.2087E+01 | 6.7910E-01 |

Environment Integral Nuclide Release:

| Time (h) = 2.0600 | Ci | kg | Atoms | Bq |
|---|---|---|---|---|
| Co-58 | 3.7998E-02 | 1.1950E-09 | 1.2407E+16 | 1.4059E+09 |
| Co-60 | 2.9096E-02 | 2.5740E-08 | 2.5835E+17 | 1.0766E+09 |
| Kr-85 | 4.1590E+01 | 1.0601E-04 | 7.5105E+20 | 1.5388E+12 |
| Kr-85m | 6.4005E+02 | 7.7775E-08 | 5.5102E+17 | 2.3682E+13 |
| Kr-87 | 5.2407E+02 | 1.8502E-08 | 1.2807E+17 | 1.9391E+13 |
| Kr-88 | 1.4471E+03 | 1.1541E-07 | 7.8977E+17 | 5.3543E+13 |
| Rb-86 | 1.1694E+00 | 1.4372E-08 | 1.0064E+17 | 4.3268E+10 |
| Sr-89 | 3.5611E+01 | 1.2257E-06 | 8.2940E+18 | 1.3176E+12 |
| Sr-90 | 3.8463E+00 | 2.8197E-05 | 1.8867E+20 | 1.4231E+11 |
| Sr-91 | 4.0412E+01 | 1.1148E-08 | 7.3775E+16 | 1.4952E+12 |
| Sr-92 | 2.7179E+01 | 2.1623E-09 | 1.4154E+16 | 1.0056E+12 |
| Y-90 | 3.8626E-02 | 7.0996E-11 | 4.7505E+14 | 1.4292E+09 |
| Y-91 | 4.3594E-01 | 1.7776E-08 | 1.1764E+17 | 1.6130E+10 |
| Y-92 | 3.1506E-01 | 3.2742E-11 | 2.1432E+14 | 1.1657E+10 |
| Y-93 | 4.7978E-01 | 1.4381E-10 | 9.3120E+14 | 1.7752E+10 |
| Zr-95 | 5.6159E-01 | 2.6141E-08 | 1.6571E+17 | 2.0779E+10 |
| Zr-97 | 5.1779E-01 | 2.7086E-10 | 1.6816E+15 | 1.9158E+10 |
| Nb-95 | 5.6546E-01 | 1.4461E-08 | 9.1669E+16 | 2.0922E+10 |
| Mo-99 | 7.5212E+00 | 1.5682E-08 | 9.5391E+16 | 2.7828E+11 |
| Tc-99m | 5.0759E+00 | 9.6533E-10 | 5.8720E+15 | 1.8781E+11 |
| Ru-103 | 6.1984E+00 | 1.9206E-07 | 1.1229E+18 | 2.2934E+11 |
| Ru-105 | 2.8096E+00 | 4.1796E-10 | 2.3972E+15 | 1.0395E+11 |
| Ru-106 | 2.3387E+00 | 6.9903E-07 | 3.9714E+18 | 8.6530E+10 |
| Rh-105 | 3.7176E+00 | 4.4045E-09 | 2.5261E+16 | 1.3755E+11 |
| Sb-127 | 8.3456E+00 | 3.1251E-08 | 1.4819E+17 | 3.0879E+11 |
| Sb-129 | 1.7268E+01 | 3.0708E-09 | 1.4335E+16 | 6.3892E+11 |
| Te-127 | 7.0104E+00 | 2.6564E-09 | 1.2596E+16 | 2.5939E+11 |
| Te-127m | 1.1307E+00 | 1.1987E-07 | 5.6840E+17 | 4.1835E+10 |
| Te-129 | 6.0824E+00 | 2.9043E-10 | 1.3558E+15 | 2.2505E+11 |
| Te-129m | 3.7791E+00 | 1.2545E-06 | 5.8563E+17 | 1.3983E+11 |
| Te-131m | 1.0961E+01 | 1.3746E-08 | 6.3192E+16 | 4.0557E+11 |
| Te-132 | 1.1322E+02 | 3.7292E-07 | 1.7014E+18 | 4.1890E+12 |
| I-131 | 6.5564E+02 | 5.2885E-06 | 2.4311E+19 | 2.4259E+13 |
| I-132 | 4.9152E+02 | 4.7618E-08 | 2.1724E+17 | 1.8186E+13 |
| I-133 | 1.2810E+03 | 1.1308E-06 | 5.1201E+18 | 4.7395E+13 |
| I-134 | 3.0737E+02 | 1.1522E-08 | 5.1782E+16 | 1.1373E+13 |
| I-135 | 1.0162E+03 | 2.8937E-07 | 1.2908E+18 | 3.7600E+13 |
| Xe-133 | 5.8695E+03 | 3.1357E-05 | 1.4198E+20 | 2.1717E+14 |
| Xe-135 | 1.8239E+03 | 7.1422E-07 | 3.1860E+18 | 6.7485E+13 |
| Cs-134 | 1.2237E+02 | 9.4579E-05 | 4.2505E+20 | 4.5277E+12 |
| Cs-136 | 3.3671E+01 | 4.5942E-07 | 2.0343E+18 | 1.2458E+12 |
| Cs-137 | 8.1992E+01 | 9.4263E-04 | 4.1435E+21 | 3.0337E+12 |
| Ba-139 | 1.8695E+01 | 1.1430E-09 | 4.9519E+15 | 6.9173E+11 |
| Ba-140 | 6.0087E+01 | 8.2076E-07 | 3.5305E+18 | 2.2232E+12 |
| La-140 | 5.8709E-01 | 1.0563E-09 | 4.5435E+15 | 2.1722E+10 |
| La-141 | 3.6960E-01 | 6.5353E-11 | 2.7913E+14 | 1.3675E+10 |
| La-142 | 2.2938E-01 | 1.6024E-11 | 6.7955E+13 | 8.4870E+09 |
| Ce-141 | 1.3810E+00 | 4.8468E-08 | 2.0701E+17 | 5.1098E+10 |
| Ce-143 | 1.3052E+00 | 1.9654E-09 | 8.2767E+15 | 4.8291E+10 |
| Ce-144 | 1.1144E+00 | 3.4941E-07 | 1.4613E+18 | 4.1235E+10 |
| Pr-143 | 5.3788E-01 | 7.9877E-09 | 3.3639E+16 | 1.9902E+10 |
| Nd-147 | 2.2462E-01 | 2.7765E-09 | 1.1375E+16 | 8.3108E+09 |
| Np-239 | 1.4849E+01 | 6.4006E-08 | 1.6128E+17 | 5.4941E+11 |
| Pu-238 | 4.3952E-03 | 2.5673E-07 | 6.4961E+17 | 1.6262E+08 |
| Pu-239 | 3.4208E-04 | 5.5035E-06 | 1.3867E+19 | 1.2657E+07 |

```
Pu-240                  3.6890E-04  1.6189E-06  4.0622E+18  1.3649E+07
Pu-241                  1.5277E-01  1.4830E-06  3.7058E+18  5.6525E+09
Am-241                  9.3958E-05  2.7376E-08  6.8407E+16  3.4764E+06
Cm-242                  2.2076E-02  6.6609E-09  1.6576E+16  8.1682E+08
Cm-244                  1.7867E-03  2.2084E-08  5.4505E+16  6.6106E+07

Environment Transport Group Inventory:

                          Total      Release
Time (h) =   2.0600     Release     Rate/s
Noble gases (atoms)    8.9768E+20  1.2105E+17
Elemental I (atoms)    9.1576E+17  1.2348E+14
Organic I (atoms)      8.5685E+16  1.1554E+13
Aerosols (kg)          1.0867E-03  1.4653E-07
Dose Effective (Ci) I-131 (Thyroid)            9.0151E+02
Dose Effective (Ci) I-131 (ICRP2 Thyroid)      1.1055E+03
Total I  (Ci)                                  3.7517E+03

Sprayed to Environment Transport Group Inventory:
Time (h) =   2.0600  Leakage Transport

Noble gases (atoms)      5.1173E+20
Elemental I (atoms)      2.5099E+17
Organic I (atoms)        4.8909E+16
Aerosols (kg)            4.8729E-04

Unsprayed to Environment Transport Group Inventory:
Time (h) =   2.0600  Leakage Transport

Noble gases (atoms)      3.8608E+20
Elemental I (atoms)      6.6601E+17
Organic I (atoms)        3.6898E+16
Aerosols (kg)            5.9940E-04

TSC Filtered Air Intake Transport Group Inventory:

                          Pathway
Time (h) =   2.0600     Filtered   Transported
Noble gases (atoms)    0.0000E+00  2.8550E+16
Elemental I (atoms)    0.0000E+00  2.9565E+13
Organic I (atoms)      0.0000E+00  2.7346E+12
Aerosols (kg)          0.0000E+00  3.4910E-08

TSC Unfiltered Inleakage Transport Group Inventory:

                          Pathway
Time (h) =   2.0600     Filtered   Transported
Noble gases (atoms)    0.0000E+00  0.0000E+00
Elemental I (atoms)    0.0000E+00  0.0000E+00
Organic I (atoms)      0.0000E+00  0.0000E+00
Aerosols (kg)          0.0000E+00  0.0000E+00

TSC Exhaust to Environment Transport Group Inventory:

                          Pathway
Time (h) =   2.0600     Filtered   Transported
Noble gases (atoms)    6.0091E+15  0.0000E+00
Elemental I (atoms)    7.6825E+12  0.0000E+00
Organic I (atoms)      6.1367E+11  0.0000E+00
Aerosols (kg)          8.8235E-09  0.0000E+00

TSC Compartment Nuclide Inventory:

Time (h) =   2.0600       Ci           kg         Atoms      Decay
Co-58                  9.4716E-07  2.9787E-14  3.0928E+11  8.9533E+07
```

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**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 2 | System Nos. | Sheet 970 of 1000 |
|---|---|---|---|---|

| | | | | |
|---|---|---|---|---|
| Co-60 | 7.2544E-07 | 6.4176E-13 | 6.4413E+12 | 6.8559E+07 |
| Kr-85 | 1.0441E-03 | 2.6613E-09 | 1.8855E+16 | 9.2888E+10 |
| Kr-85m | 1.4704E-02 | 1.7867E-12 | 1.2658E+13 | 1.4342E+12 |
| Kr-87 | 9.2749E-03 | 3.2744E-13 | 2.2665E+12 | 1.1673E+12 |
| Kr-88 | 3.1468E-02 | 2.5095E-12 | 1.7174E+13 | 3.2441E+12 |
| Rb-86 | 2.7995E-05 | 3.4406E-13 | 2.4093E+12 | 3.1247E+09 |
| Sr-89 | 8.8757E-04 | 3.0551E-11 | 2.0672E+14 | 8.3908E+10 |
| Sr-90 | 9.5897E-05 | 7.0302E-10 | 4.7041E+15 | 9.0628E+09 |
| Sr-91 | 9.6477E-04 | 2.6615E-13 | 1.7613E+12 | 9.5153E+10 |
| Sr-92 | 5.7785E-04 | 4.5973E-14 | 3.0093E+11 | 6.3666E+10 |
| Y-90 | 9.5696E-07 | 1.7589E-15 | 1.1769E+10 | 9.1008E+07 |
| Y-91 | 1.0866E-05 | 4.4307E-13 | 2.9321E+12 | 1.0272E+09 |
| Y-92 | 6.9659E-06 | 7.2393E-16 | 4.7387E+09 | 7.3966E+08 |
| Y-93 | 1.1484E-05 | 3.4422E-15 | 2.2290E+10 | 1.1298E+09 |
| Zr-95 | 1.3998E-05 | 6.5159E-13 | 4.1305E+12 | 1.3232E+09 |
| Zr-97 | 1.2601E-05 | 6.5917E-15 | 4.0924E+10 | 1.2197E+09 |
| Nb-95 | 1.4092E-05 | 3.6037E-13 | 2.2844E+12 | 1.3324E+09 |
| Mo-99 | 1.8637E-04 | 3.8859E-13 | 2.3638E+12 | 1.7721E+10 |
| Tc-99m | 1.1809E-04 | 2.2458E-14 | 1.3661E+11 | 1.1943E+10 |
| Ru-103 | 1.5448E-04 | 4.7864E-12 | 2.7985E+13 | 1.4605E+10 |
| Ru-105 | 6.3711E-05 | 9.4780E-15 | 5.4360E+10 | 6.6039E+09 |
| Ru-106 | 5.8306E-05 | 1.7428E-11 | 9.9012E+13 | 5.5105E+09 |
| Rh-105 | 9.1630E-05 | 1.0856E-13 | 6.2263E+11 | 8.7587E+09 |
| Sb-127 | 2.0717E-04 | 7.7575E-13 | 3.6785E+12 | 1.9664E+10 |
| Sb-129 | 3.9051E-04 | 6.9444E-14 | 3.2419E+11 | 4.0584E+10 |
| Te-127 | 1.6725E-04 | 6.3372E-14 | 3.0050E+11 | 1.6506E+10 |
| Te-127m | 2.8186E-05 | 2.9882E-12 | 1.4169E+13 | 2.6641E+09 |
| Te-129 | 1.0128E-04 | 4.8363E-15 | 2.2577E+10 | 1.3929E+10 |
| Te-129m | 9.4176E-05 | 3.1261E-11 | 1.4594E+13 | 8.9045E+09 |
| Te-131m | 2.6961E-04 | 3.3811E-13 | 1.5543E+12 | 2.5824E+10 |
| Te-132 | 2.8082E-03 | 9.2498E-12 | 4.2200E+13 | 2.6676E+11 |
| I-131 | 1.5821E-02 | 1.2762E-10 | 5.8665E+14 | 1.7043E+12 |
| I-132 | 9.4467E-03 | 9.1518E-13 | 4.1753E+12 | 1.2730E+12 |
| I-133 | 3.0275E-02 | 2.6725E-11 | 1.2101E+14 | 3.3312E+12 |
| I-134 | 3.6808E-03 | 1.3798E-13 | 6.2009E+11 | 7.6036E+11 |
| I-135 | 2.2807E-02 | 6.4942E-12 | 2.8970E+13 | 2.6436E+12 |
| Xe-133 | 1.4691E-01 | 7.8486E-10 | 3.5538E+15 | 1.3111E+13 |
| Xe-135 | 4.3873E-02 | 1.7180E-11 | 7.6637E+13 | 4.0817E+12 |
| Cs-134 | 2.9327E-03 | 2.2667E-09 | 1.0187E+16 | 3.2697E+11 |
| Cs-136 | 8.0570E-04 | 1.0993E-11 | 4.8678E+13 | 8.9971E+10 |
| Cs-137 | 1.9651E-03 | 2.2592E-08 | 9.9306E+16 | 2.1908E+11 |
| Ba-139 | 3.3431E-04 | 2.0439E-14 | 8.8550E+10 | 4.3154E+10 |
| Ba-140 | 1.4961E-03 | 2.0436E-11 | 8.7908E+13 | 1.4158E+11 |
| La-140 | 1.4491E-05 | 2.6071E-14 | 1.1214E+11 | 1.3832E+09 |
| La-141 | 8.2742E-06 | 1.4631E-15 | 6.2488E+09 | 8.6823E+08 |
| La-142 | 4.2645E-06 | 2.9790E-16 | 1.2634E+09 | 5.3154E+08 |
| Ce-141 | 3.4414E-05 | 1.2078E-12 | 5.1585E+12 | 3.2540E+09 |
| Ce-143 | 3.2142E-05 | 4.8401E-14 | 2.0383E+11 | 3.0749E+09 |
| Ce-144 | 2.7784E-05 | 8.7112E-12 | 3.6431E+13 | 2.6259E+09 |
| Pr-143 | 1.3394E-05 | 1.9891E-13 | 8.3765E+11 | 1.2674E+09 |
| Nd-147 | 5.5917E-06 | 6.9119E-14 | 2.8316E+11 | 5.2925E+08 |
| Np-239 | 3.6757E-04 | 1.5844E-12 | 3.9923E+12 | 3.4986E+10 |
| Pu-238 | 1.0958E-07 | 6.4009E-12 | 1.6196E+13 | 1.0356E+07 |
| Pu-239 | 8.5289E-09 | 1.3722E-10 | 3.4575E+14 | 8.0602E+05 |
| Pu-240 | 9.1975E-09 | 4.0364E-11 | 1.0128E+14 | 8.6921E+05 |
| Pu-241 | 3.8089E-06 | 3.6976E-11 | 9.2395E+13 | 3.5997E+08 |
| Am-241 | 2.3426E-09 | 6.8255E-13 | 1.7056E+12 | 2.2139E+05 |
| Cm-242 | 5.5036E-07 | 1.6606E-13 | 4.1323E+11 | 5.2017E+07 |
| Cm-244 | 4.4546E-08 | 5.5061E-13 | 1.3590E+12 | 4.2098E+06 |

TSC Transport Group Inventory:

| Time (h) = 2.0600 | Atmosphere | Sump |
|---|---|---|
| Noble gases (atoms) | 2.2518E+16 | 0.0000E+00 |
| Elemental I (atoms) | 2.1578E+13 | 0.0000E+00 |
| Organic I (atoms) | 2.0965E+12 | 0.0000E+00 |

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**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 2 | System Nos. | Sheet 971 of 1000 |
|---|---|---|---|---|

```
Aerosols (kg)          2.6085E-08  0.0000E+00
Dose Effective (Ci/cc) I-131 (Thyroid)         1.8146E-11
Dose Effective (Ci/cc) I-131 (ICRP2 Thyroid)   2.2041E-11
Total I (Ci)                                   8.2030E-02

                       Deposition Recirculating
Time (h) =   2.0600     Surfaces     Filter
Noble gases (atoms)    0.0000E+00  0.0000E+00
Elemental I (atoms)    0.0000E+00  0.0000E+00
Organic I (atoms)      0.0000E+00  0.0000E+00
Aerosols (kg)          0.0000E+00  0.0000E+00

TSC Filtered Air Intake Transport Group Inventory:

                         Pathway
Time (h) =   2.0600     Filtered   Transported
Noble gases (atoms)    0.0000E+00  2.8550E+16
Elemental I (atoms)    0.0000E+00  2.9565E+13
Organic I (atoms)      0.0000E+00  2.7346E+12
Aerosols (kg)          0.0000E+00  3.4910E-08

TSC Unfiltered Inleakage Transport Group Inventory:

                         Pathway
Time (h) =   2.0600     Filtered   Transported
Noble gases (atoms)    0.0000E+00  0.0000E+00
Elemental I (atoms)    0.0000E+00  0.0000E+00
Organic I (atoms)      0.0000E+00  0.0000E+00
Aerosols (kg)          0.0000E+00  0.0000E+00

TSC Exhaust to Environment Transport Group Inventory:

                         Pathway
Time (h) =   2.0600     Filtered   Transported
Noble gases (atoms)    6.0091E+15  0.0000E+00
Elemental I (atoms)    7.6825E+12  0.0000E+00
Organic I (atoms)      6.1367E+11  0.0000E+00
Aerosols (kg)          8.8235E-09  0.0000E+00

Exclusion Area Boundary Doses:

Time (h) =   2.8000    Whole Body   Thyroid       TEDE
Delta dose (rem)        5.7229E-01  9.9660E+01  5.8312E+00
Accumulated dose (rem)  1.9538E+00  3.8269E+02  2.1790E+01

Low Population Zone Doses:

Time (h) =   2.8000    Whole Body   Thyroid       TEDE
Delta dose (rem)        4.2921E-02  7.4745E+00  4.3734E-01
Accumulated dose (rem)  2.7892E-01  5.5847E+01  3.1631E+00

TSC Doses:

Time (h) =   2.8000    Whole Body   Thyroid       TEDE
Delta dose (rem)        2.4207E-03  1.8716E+01  9.7793E-01
Accumulated dose (rem)  5.1834E-03  3.8443E+01  1.9784E+00

Travel Path Doses:

Time (h) =   2.8000    Whole Body   Thyroid       TEDE
Delta dose (rem)        0.0000E+00  0.0000E+00  0.0000E+00
Accumulated dose (rem)  6.1420E-02  1.2087E+01  6.7910E-01

Environment Integral Nuclide Release:
```

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**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 2 | System Nos. | Sheet 972 of 1000 |
|---|---|---|---|---|

| Time (h) = 2.8000 | Ci | kg | Atoms | Bq |
|---|---|---|---|---|
| Co-58 | 5.3188E-02 | 1.6727E-09 | 1.7368E+16 | 1.9680E+09 |
| Co-60 | 4.0734E-02 | 3.6035E-08 | 3.6168E+17 | 1.5071E+09 |
| Kr-85 | 7.3816E+01 | 1.8815E-04 | 1.3330E+21 | 2.7312E+12 |
| Kr-85m | 1.0559E+03 | 1.2830E-07 | 9.0901E+17 | 3.9067E+13 |
| Kr-87 | 7.3588E+02 | 2.5979E-08 | 1.7983E+17 | 2.7228E+13 |
| Kr-88 | 2.2938E+03 | 1.8293E-07 | 1.2519E+18 | 8.4871E+13 |
| Rb-86 | 1.5683E+00 | 1.9274E-08 | 1.3497E+17 | 5.8027E+10 |
| Sr-89 | 4.9844E+01 | 1.7157E-06 | 1.1609E+19 | 1.8442E+12 |
| Sr-90 | 5.3846E+00 | 3.9475E-05 | 2.6414E+20 | 1.9923E+11 |
| Sr-91 | 5.5257E+01 | 1.5243E-08 | 1.0088E+17 | 2.0445E+12 |
| Sr-92 | 3.5199E+01 | 2.8004E-09 | 1.8331E+16 | 1.3024E+12 |
| Y-90 | 5.3883E-02 | 9.9038E-11 | 6.6269E+14 | 1.9937E+09 |
| Y-91 | 6.1020E-01 | 2.4882E-08 | 1.6466E+17 | 2.2577E+10 |
| Y-92 | 4.1505E-01 | 4.3134E-11 | 2.8234E+14 | 1.5357E+10 |
| Y-93 | 6.5693E-01 | 1.9690E-10 | 1.2750E+15 | 2.4306E+10 |
| Zr-95 | 7.8608E-01 | 3.6591E-08 | 2.3195E+17 | 2.9085E+10 |
| Zr-97 | 7.1525E-01 | 3.7415E-10 | 2.3229E+15 | 2.6464E+10 |
| Nb-95 | 7.9142E-01 | 2.0239E-08 | 1.2830E+17 | 2.9282E+10 |
| Mo-99 | 1.0493E+01 | 2.1878E-08 | 1.3308E+17 | 3.8824E+11 |
| Tc-99m | 6.8500E+00 | 1.3027E-09 | 7.9244E+15 | 2.5345E+11 |
| Ru-103 | 8.6754E+00 | 2.6881E-07 | 1.5716E+18 | 3.2099E+11 |
| Ru-105 | 3.7448E+00 | 5.5709E-10 | 3.1951E+15 | 1.3856E+11 |
| Ru-106 | 3.2740E+00 | 9.7859E-07 | 5.5596E+18 | 1.2114E+11 |
| Rh-105 | 5.1712E+00 | 6.1266E-09 | 3.5138E+16 | 1.9133E+11 |
| Sb-127 | 1.1655E+01 | 4.3642E-08 | 2.0694E+17 | 4.3122E+11 |
| Sb-129 | 2.2986E+01 | 4.0877E-09 | 1.9082E+16 | 8.5050E+11 |
| Te-127 | 9.5822E+00 | 3.6308E-09 | 1.7217E+16 | 3.5454E+11 |
| Te-127m | 1.5828E+00 | 1.6780E-07 | 7.9566E+17 | 5.8562E+10 |
| Te-129 | 7.2473E+00 | 3.4606E-10 | 1.6155E+15 | 2.6815E+11 |
| Te-129m | 5.2891E+00 | 1.7557E-06 | 8.1962E+17 | 1.9570E+11 |
| Te-131m | 1.5230E+01 | 1.9099E-08 | 8.7799E+16 | 5.6350E+11 |
| Te-132 | 1.5804E+02 | 5.2056E-07 | 2.3749E+18 | 5.8474E+12 |
| I-131 | 8.8914E+02 | 7.1719E-06 | 3.2970E+19 | 3.2898E+13 |
| I-132 | 6.0726E+02 | 5.8831E-08 | 2.6840E+17 | 2.2469E+13 |
| I-133 | 1.7195E+03 | 1.5179E-06 | 6.8729E+18 | 6.3621E+13 |
| I-134 | 3.4085E+02 | 1.2777E-08 | 5.7422E+16 | 1.2612E+13 |
| I-135 | 1.3321E+03 | 3.7931E-07 | 1.6920E+18 | 4.9286E+13 |
| Xe-133 | 1.0390E+04 | 5.5505E-05 | 2.5132E+20 | 3.8441E+14 |
| Xe-135 | 3.1207E+03 | 1.2220E-06 | 5.4512E+18 | 1.1547E+14 |
| Cs-134 | 1.6420E+02 | 1.2691E-04 | 5.7034E+20 | 6.0753E+12 |
| Cs-136 | 4.5147E+01 | 6.1599E-07 | 2.7276E+18 | 1.6704E+12 |
| Cs-137 | 1.1002E+02 | 1.2649E-03 | 5.5600E+21 | 4.0707E+12 |
| Ba-139 | 2.2743E+01 | 1.3904E-09 | 6.0240E+15 | 8.4151E+11 |
| Ba-140 | 8.4056E+01 | 1.1482E-06 | 4.9389E+18 | 3.1101E+12 |
| La-140 | 8.1728E-01 | 1.4704E-09 | 6.3249E+15 | 3.0239E+10 |
| La-141 | 4.8967E-01 | 8.6586E-11 | 3.6981E+14 | 1.8118E+10 |
| La-142 | 2.8254E-01 | 1.9737E-11 | 8.3705E+13 | 1.0454E+10 |
| Ce-141 | 1.9328E+00 | 6.7833E-08 | 2.8972E+17 | 7.1514E+10 |
| Ce-143 | 1.8146E+00 | 2.7325E-09 | 1.1508E+16 | 6.7141E+10 |
| Ce-144 | 1.5601E+00 | 4.8915E-07 | 2.0456E+18 | 5.7725E+10 |
| Pr-143 | 7.5249E-01 | 1.1175E-08 | 4.7060E+16 | 2.7842E+10 |
| Nd-147 | 3.1418E-01 | 3.8836E-09 | 1.5910E+16 | 1.1625E+10 |
| Np-239 | 2.0704E+01 | 8.9246E-08 | 2.2487E+17 | 7.6606E+11 |
| Pu-238 | 6.1531E-03 | 3.5941E-07 | 9.0943E+17 | 2.2766E+08 |
| Pu-239 | 4.7890E-04 | 7.7047E-06 | 1.9414E+19 | 1.7719E+07 |
| Pu-240 | 5.1644E-04 | 2.2664E-06 | 5.6869E+18 | 1.9108E+07 |
| Pu-241 | 2.1387E-01 | 2.0762E-06 | 5.1880E+18 | 7.9133E+09 |
| Am-241 | 1.3154E-04 | 3.8325E-08 | 9.5767E+16 | 4.8669E+06 |
| Cm-242 | 3.0904E-02 | 9.3245E-09 | 2.3204E+16 | 1.1435E+09 |
| Cm-244 | 2.5012E-03 | 3.0917E-08 | 7.6305E+16 | 9.2546E+07 |

Environment Transport Group Inventory:

| | Total | Release |
|---|---|---|

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**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 2 | System Nos. | Sheet 973 of 1000 |
|---|---|---|---|---|

```
Time (h) =   2.8000     Release     Rate/s
Noble gases (atoms)    1.5921E+21  1.5795E+17
Elemental I (atoms)    1.2629E+18  1.2529E+14
Organic I (atoms)      1.4659E+17  1.4542E+13
Aerosols (kg)          1.4607E-03  1.4491E-07
Dose Effective (Ci) I-131 (Thyroid)            1.2179E+03
Dose Effective (Ci) I-131 (ICRP2 Thyroid)      1.4873E+03
Total I  (Ci)                                  4.8888E+03

Sprayed to Environment Transport Group Inventory:
Time (h) =   2.8000  Leakage Transport

Noble gases (atoms)      9.0757E+20
Elemental I (atoms)      3.9142E+17
Organic I (atoms)        8.3667E+16
Aerosols (kg)            6.3522E-04

Unsprayed to Environment Transport Group Inventory:
Time (h) =   2.8000  Leakage Transport

Noble gases (atoms)      6.8475E+20
Elemental I (atoms)      8.7321E+17
Organic I (atoms)        6.3122E+16
Aerosols (kg)            8.2544E-04

TSC Filtered Air Intake Transport Group Inventory:

                         Pathway
Time (h) =   2.8000     Filtered   Transported
Noble gases (atoms)    0.0000E+00  4.1235E+16
Elemental I (atoms)    0.0000E+00  3.5915E+13
Organic I (atoms)      0.0000E+00  3.8484E+12
Aerosols (kg)          0.0000E+00  4.1741E-08

TSC Unfiltered Inleakage Transport Group Inventory:

                         Pathway
Time (h) =   2.8000     Filtered   Transported
Noble gases (atoms)    0.0000E+00  0.0000E+00
Elemental I (atoms)    0.0000E+00  0.0000E+00
Organic I (atoms)      0.0000E+00  0.0000E+00
Aerosols (kg)          0.0000E+00  0.0000E+00

TSC Exhaust to Environment Transport Group Inventory:

                         Pathway
Time (h) =   2.8000     Filtered   Transported
Noble gases (atoms)    1.3940E+16  0.0000E+00
Elemental I (atoms)    1.4428E+13  0.0000E+00
Organic I (atoms)      1.3400E+12  0.0000E+00
Aerosols (kg)          1.6997E-08  0.0000E+00

TSC Compartment Nuclide Inventory:

Time (h) =   2.8000       Ci          kg          Atoms       Decay
Co-58                  9.2288E-07  2.9023E-14  3.0135E+11  1.8305E+08
Co-60                  7.0706E-07  6.2551E-13  6.2782E+12  1.4020E+08
Kr-85                  1.2647E-03  3.2236E-09  2.2839E+16  2.0867E+11
Kr-85m                 1.5738E-02  1.9124E-12  1.3549E+13  2.9633E+12
Kr-87                  7.2764E-03  2.5688E-13  1.7781E+12  1.9931E+12
Kr-88                  3.1365E-02  2.5013E-12  1.7117E+13  6.3997E+12
Rb-86                  2.6489E-05  3.2555E-13  2.2796E+12  5.8378E+09
Sr-89                  8.6471E-04  2.9764E-11  2.0140E+14  1.7154E+11
Sr-90                  9.3469E-05  6.8522E-10  4.5850E+15  1.8533E+10
Sr-91                  8.8773E-04  2.4489E-13  1.6206E+12  1.8771E+11
```

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**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 2 | System Nos. | Sheet 974 of 1000 |
|---|---|---|---|---|

| | | | | |
|---|---|---|---|---|
| Sr-92 | 4.6037E-04 | 3.6626E-14 | 2.3975E+11 | 1.1529E+11 |
| Y-90 | 9.2479E-07 | 1.6998E-15 | 1.1374E+10 | 1.8511E+08 |
| Y-91 | 1.0587E-05 | 4.3169E-13 | 2.8568E+12 | 2.1000E+09 |
| Y-92 | 5.8180E-06 | 6.0463E-16 | 3.9578E+09 | 1.3765E+09 |
| Y-93 | 1.0603E-05 | 3.1781E-15 | 2.0580E+10 | 2.2334E+09 |
| Zr-95 | 1.3639E-05 | 6.3487E-13 | 4.0245E+12 | 2.7054E+09 |
| Zr-97 | 1.1891E-05 | 6.2202E-15 | 3.8617E+10 | 2.4440E+09 |
| Nb-95 | 1.3726E-05 | 3.5102E-13 | 2.2252E+12 | 2.7236E+09 |
| Mo-99 | 1.8015E-04 | 3.7562E-13 | 2.2849E+12 | 3.6049E+10 |
| Tc-99m | 1.0510E-04 | 1.9989E-14 | 1.2159E+11 | 2.3085E+10 |
| Ru-103 | 1.5048E-04 | 4.6625E-12 | 2.7260E+13 | 2.9856E+10 |
| Ru-105 | 5.4903E-05 | 8.1676E-15 | 4.6844E+10 | 1.2519E+10 |
| Ru-106 | 5.6826E-05 | 1.6986E-11 | 9.6499E+13 | 1.1268E+10 |
| Rh-105 | 8.7939E-05 | 1.0419E-13 | 5.9755E+11 | 1.7737E+10 |
| Sb-127 | 2.0073E-04 | 7.5165E-13 | 3.5642E+12 | 4.0061E+10 |
| Sb-129 | 3.3537E-04 | 5.9639E-14 | 2.7841E+11 | 7.6782E+10 |
| Te-127 | 1.5375E-04 | 5.8257E-14 | 2.7625E+11 | 3.2544E+10 |
| Te-127m | 2.7467E-05 | 2.9119E-12 | 1.3808E+13 | 5.4474E+09 |
| Te-129 | 6.1695E-05 | 2.9460E-15 | 1.3753E+10 | 2.1888E+10 |
| Te-129m | 9.1729E-05 | 3.0449E-11 | 1.4215E+13 | 1.8202E+10 |
| Te-131m | 2.5804E-04 | 3.2359E-13 | 1.4876E+12 | 5.2206E+10 |
| Te-132 | 2.7180E-03 | 8.9528E-12 | 4.0845E+13 | 5.4310E+11 |
| I-131 | 1.5076E-02 | 1.2161E-10 | 5.5903E+14 | 3.2439E+12 |
| I-132 | 7.0968E-03 | 6.8753E-13 | 3.1367E+12 | 2.0901E+12 |
| I-133 | 2.8171E-02 | 2.4868E-11 | 1.1260E+14 | 6.2423E+12 |
| I-134 | 1.8748E-03 | 7.0279E-14 | 3.1584E+11 | 1.0257E+12 |
| I-135 | 2.0043E-02 | 5.7071E-12 | 2.5458E+13 | 4.7746E+12 |
| Xe-133 | 1.7717E-01 | 9.4651E-10 | 4.2857E+15 | 2.9365E+13 |
| Xe-135 | 4.9999E-02 | 1.9579E-11 | 8.7338E+13 | 8.7944E+12 |
| Cs-134 | 2.7782E-03 | 2.1473E-09 | 9.6503E+15 | 6.1137E+11 |
| Cs-136 | 7.6194E-04 | 1.0396E-11 | 4.6034E+13 | 1.6803E+11 |
| Cs-137 | 1.8616E-03 | 2.1402E-08 | 9.4079E+16 | 4.0964E+11 |
| Ba-139 | 2.1933E-04 | 1.3409E-14 | 5.8094E+10 | 7.0357E+10 |
| Ba-140 | 1.4556E-03 | 1.9883E-11 | 8.5529E+13 | 2.8920E+11 |
| La-140 | 1.3933E-05 | 2.5068E-14 | 1.0783E+11 | 2.8045E+09 |
| La-141 | 7.0173E-06 | 1.2408E-15 | 5.2996E+09 | 1.6304E+09 |
| La-142 | 2.9173E-06 | 2.0379E-16 | 8.6426E+08 | 8.8549E+08 |
| Ce-141 | 3.3520E-05 | 1.1764E-12 | 5.0244E+12 | 6.6515E+09 |
| Ce-143 | 3.0813E-05 | 4.6400E-14 | 1.9540E+11 | 6.2227E+09 |
| Ce-144 | 2.7079E-05 | 8.4900E-12 | 3.5505E+13 | 5.3697E+09 |
| Pr-143 | 1.3033E-05 | 1.9355E-13 | 8.1507E+11 | 2.5890E+09 |
| Nd-147 | 5.4388E-06 | 6.7230E-14 | 2.7542E+11 | 1.0809E+09 |
| Np-239 | 3.5481E-04 | 1.5294E-12 | 3.8537E+12 | 7.1108E+10 |
| Pu-238 | 1.0681E-07 | 6.2389E-12 | 1.5786E+13 | 2.1178E+07 |
| Pu-239 | 8.3129E-09 | 1.3374E-10 | 3.3699E+14 | 1.6483E+06 |
| Pu-240 | 8.9646E-09 | 3.9342E-11 | 9.8717E+13 | 1.7775E+06 |
| Pu-241 | 3.7125E-06 | 3.6039E-11 | 9.0055E+13 | 7.3612E+08 |
| Am-241 | 2.2833E-09 | 6.6527E-13 | 1.6624E+12 | 4.5274E+05 |
| Cm-242 | 5.3635E-07 | 1.6183E-13 | 4.0271E+11 | 1.0636E+08 |
| Cm-244 | 4.3418E-08 | 5.3667E-13 | 1.3245E+12 | 8.6090E+06 |

TSC Transport Group Inventory:

| Time (h) = 2.8000 | Atmosphere | Sump | |
|---|---|---|---|
| Noble gases (atoms) | 2.7245E+16 | 0.0000E+00 | |
| Elemental I (atoms) | 2.0958E+13 | 0.0000E+00 | |
| Organic I (atoms) | 2.4596E+12 | 0.0000E+00 | |
| Aerosols (kg) | 2.4739E-08 | 0.0000E+00 | |
| Dose Effective (Ci/cc) | I-131 (Thyroid) | | 1.7144E-11 |
| Dose Effective (Ci/cc) | I-131 (ICRP2 Thyroid) | | 2.0652E-11 |
| Total I (Ci) | | | 7.2261E-02 |

| Time (h) = 2.8000 | Deposition Surfaces | Recirculating Filter |
|---|---|---|
| Noble gases (atoms) | 0.0000E+00 | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 | 0.0000E+00 |

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**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 2 | System Nos. | Sheet 975 of 1000 |
|---|---|---|---|---|

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Organic I (atoms)      0.0000E+00  0.0000E+00
Aerosols (kg)          0.0000E+00  0.0000E+00

TSC Filtered Air Intake Transport Group Inventory:

                         Pathway
Time (h) =   2.8000     Filtered   Transported
Noble gases (atoms)    0.0000E+00  4.1235E+16
Elemental I (atoms)    0.0000E+00  3.5915E+13
Organic I (atoms)      0.0000E+00  3.8484E+12
Aerosols (kg)          0.0000E+00  4.1741E-08

TSC Unfiltered Inleakage Transport Group Inventory:

                         Pathway
Time (h) =   2.8000     Filtered   Transported
Noble gases (atoms)    0.0000E+00  0.0000E+00
Elemental I (atoms)    0.0000E+00  0.0000E+00
Organic I (atoms)      0.0000E+00  0.0000E+00
Aerosols (kg)          0.0000E+00  0.0000E+00

TSC Exhaust to Environment Transport Group Inventory:

                         Pathway
Time (h) =   2.8000     Filtered   Transported
Noble gases (atoms)    1.3940E+16  0.0000E+00
Elemental I (atoms)    1.4428E+13  0.0000E+00
Organic I (atoms)      1.3400E+12  0.0000E+00
Aerosols (kg)          1.6997E-08  0.0000E+00

Exclusion Area Boundary Doses:

Time (h) =   3.5100    Whole Body   Thyroid       TEDE
Delta dose (rem)        3.9054E-01  4.9396E+01  2.9682E+00
Accumulated dose (rem)  2.3443E+00  4.3209E+02  2.4758E+01

Low Population Zone Doses:

Time (h) =   3.5100    Whole Body   Thyroid       TEDE
Delta dose (rem)        2.9290E-02  3.7047E+00  2.2261E-01
Accumulated dose (rem)  3.0821E-01  5.9552E+01  3.3858E+00

TSC Doses:

Time (h) =   3.5100    Whole Body   Thyroid       TEDE
Delta dose (rem)        1.6371E-03  7.4430E+00  3.9063E-01
Accumulated dose (rem)  6.8204E-03  4.5886E+01  2.3690E+00

Travel Path Doses:

Time (h) =   3.5100    Whole Body   Thyroid       TEDE
Delta dose (rem)        0.0000E+00  0.0000E+00  0.0000E+00
Accumulated dose (rem)  6.1420E-02  1.2087E+01  6.7910E-01

Environment Integral Nuclide Release:

Time (h) =   3.5100       Ci           kg          Atoms         Bq
Co-58                  6.0527E-02  1.9035E-09  1.9764E+16  2.2395E+09
Co-60                  4.6357E-02  4.1010E-08  4.1162E+17  1.7152E+09
Kr-85                  1.0473E+02  2.6695E-04  1.8913E+21  3.8752E+12
Kr-85m                 1.4124E+03  1.7163E-07  1.2160E+18  5.2260E+13
Kr-87                  8.7262E+02  3.0807E-08  2.1324E+17  3.2287E+13
Kr-88                  2.9742E+03  2.3719E-07  1.6232E+18  1.1004E+14
Rb-86                  1.7610E+00  2.1642E-08  1.5155E+17  6.5155E+10
Sr-89                  5.6720E+01  1.9523E-06  1.3210E+19  2.0986E+12
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**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 2 | System Nos. | Sheet 976 of 1000 |
|---|---|---|---|---|

| | | | | |
|---|---|---|---|---|
| Sr-90 | 6.1281E+00 | 4.4925E-05 | 3.0060E+20 | 2.2674E+11 |
| Sr-91 | 6.2060E+01 | 1.7120E-08 | 1.1330E+17 | 2.2962E+12 |
| Sr-92 | 3.8416E+01 | 3.0563E-09 | 2.0006E+16 | 1.4214E+12 |
| Y-90 | 6.1198E-02 | 1.1248E-10 | 7.5265E+14 | 2.2643E+09 |
| Y-91 | 6.9438E-01 | 2.8314E-08 | 1.8738E+17 | 2.5692E+10 |
| Y-92 | 4.5695E-01 | 4.7488E-11 | 3.1085E+14 | 1.6907E+10 |
| Y-93 | 7.3837E-01 | 2.2131E-10 | 1.4331E+15 | 2.7320E+10 |
| Zr-95 | 8.9454E-01 | 4.1640E-08 | 2.6396E+17 | 3.3098E+10 |
| Zr-97 | 8.0787E-01 | 4.2260E-10 | 2.6237E+15 | 2.9891E+10 |
| Nb-95 | 9.0054E-01 | 2.3030E-08 | 1.4599E+17 | 3.3320E+10 |
| Mo-99 | 1.1918E+01 | 2.4850E-08 | 1.5116E+17 | 4.4098E+11 |
| Tc-99m | 7.6384E+00 | 1.4527E-09 | 8.8365E+15 | 2.8262E+11 |
| Ru-103 | 9.8718E+00 | 3.0588E-07 | 1.7884E+18 | 3.6526E+11 |
| Ru-105 | 4.1482E+00 | 6.1710E-10 | 3.5393E+15 | 1.5348E+11 |
| Ru-106 | 3.7259E+00 | 1.1137E-06 | 6.3271E+18 | 1.3786E+11 |
| Rh-105 | 5.8637E+00 | 6.9470E-09 | 3.9844E+16 | 2.1696E+11 |
| Sb-127 | 1.3245E+01 | 4.9598E-08 | 2.3518E+17 | 4.9007E+11 |
| Sb-129 | 2.5445E+01 | 4.5249E-09 | 2.1124E+16 | 9.4147E+11 |
| Te-127 | 1.0760E+01 | 4.0770E-09 | 1.9333E+16 | 3.9811E+11 |
| Te-127m | 1.8012E+00 | 1.9095E-07 | 9.0547E+17 | 6.6644E+10 |
| Te-129 | 7.6116E+00 | 3.6346E-10 | 1.6967E+15 | 2.8163E+11 |
| Te-129m | 6.0184E+00 | 1.9978E-06 | 9.3263E+17 | 2.2268E+11 |
| Te-131m | 1.7258E+01 | 2.1643E-08 | 9.9492E+16 | 6.3855E+11 |
| Te-132 | 1.7956E+02 | 5.9144E-07 | 2.6983E+18 | 6.6436E+12 |
| I-131 | 1.0059E+03 | 8.1136E-06 | 3.7299E+19 | 3.7218E+13 |
| I-132 | 6.5384E+02 | 6.3343E-08 | 2.8899E+17 | 2.4192E+13 |
| I-133 | 1.9340E+03 | 1.7073E-06 | 7.7305E+18 | 7.1560E+13 |
| I-134 | 3.5028E+02 | 1.3130E-08 | 5.9010E+16 | 1.2960E+13 |
| I-135 | 1.4788E+03 | 4.2107E-07 | 1.8783E+18 | 5.4714E+13 |
| Xe-133 | 1.4709E+04 | 7.8581E-05 | 3.5581E+20 | 5.4423E+14 |
| Xe-135 | 4.2978E+03 | 1.6830E-06 | 7.5074E+18 | 1.5902E+14 |
| Cs-134 | 1.8442E+02 | 1.4254E-04 | 6.4059E+20 | 6.8236E+12 |
| Cs-136 | 5.0686E+01 | 6.9157E-07 | 3.0623E+18 | 1.8754E+12 |
| Cs-137 | 1.2357E+02 | 1.4207E-03 | 6.2448E+21 | 4.5721E+12 |
| Ba-139 | 2.4100E+01 | 1.4734E-09 | 6.3833E+15 | 8.9168E+11 |
| Ba-140 | 9.5621E+01 | 1.3061E-06 | 5.6184E+18 | 3.5380E+12 |
| La-140 | 9.2713E-01 | 1.6680E-09 | 7.1750E+15 | 3.4304E+10 |
| La-141 | 5.4071E-01 | 9.5610E-11 | 4.0835E+14 | 2.0006E+10 |
| La-142 | 3.0106E-01 | 2.1031E-11 | 8.9190E+13 | 1.1139E+10 |
| Ce-141 | 2.1993E+00 | 7.7186E-08 | 3.2966E+17 | 8.1374E+10 |
| Ce-143 | 2.0571E+00 | 3.0977E-09 | 1.3045E+16 | 7.6113E+10 |
| Ce-144 | 1.7755E+00 | 5.5667E-07 | 2.3280E+18 | 6.5694E+10 |
| Pr-143 | 8.5604E-01 | 1.2712E-08 | 5.3536E+16 | 3.1673E+10 |
| Nd-147 | 3.5738E-01 | 4.4177E-09 | 1.8098E+16 | 1.3223E+10 |
| Np-239 | 2.3509E+01 | 1.0133E-07 | 2.5533E+17 | 8.6982E+11 |
| Pu-238 | 7.0026E-03 | 4.0904E-07 | 1.0350E+18 | 2.5910E+08 |
| Pu-239 | 5.4502E-04 | 8.7684E-06 | 2.2094E+19 | 2.0166E+07 |
| Pu-240 | 5.8774E-04 | 2.5793E-06 | 6.4721E+18 | 2.1747E+07 |
| Pu-241 | 2.4340E-01 | 2.3628E-06 | 5.9043E+18 | 9.0059E+09 |
| Am-241 | 1.4970E-04 | 4.3616E-08 | 1.0899E+17 | 5.5389E+06 |
| Cm-242 | 3.5170E-02 | 1.0612E-08 | 2.6407E+16 | 1.3013E+09 |
| Cm-244 | 2.8466E-03 | 3.5185E-08 | 8.6840E+16 | 1.0532E+08 |

Environment Transport Group Inventory:

| Time (h) = 3.5100 | Total Release | Release Rate/s |
|---|---|---|
| Noble gases (atoms) | 2.2577E+21 | 1.7867E+17 |
| Elemental I (atoms) | 1.5928E+18 | 1.2605E+14 |
| Organic I (atoms) | 2.0445E+17 | 1.6180E+13 |
| Aerosols (kg) | 1.6415E-03 | 1.2990E-07 |

| | |
|---|---|
| Dose Effective (Ci) I-131 (Thyroid) | 1.3749E+03 |
| Dose Effective (Ci) I-131 (ICRP2 Thyroid) | 1.6754E+03 |
| Total I (Ci) | 5.4228E+03 |

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**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 2 | System Nos. | Sheet 977 of 1000 |
|---|---|---|---|---|

Sprayed to Environment Transport Group Inventory:
Time (h) = 3.5100 Leakage Transport

| | |
|---|---|
| Noble gases (atoms) | 1.2870E+21 |
| Elemental I (atoms) | 5.7273E+17 |
| Organic I (atoms) | 1.1669E+17 |
| Aerosols (kg) | 7.0509E-04 |

Unsprayed to Environment Transport Group Inventory:
Time (h) = 3.5100 Leakage Transport

| | |
|---|---|
| Noble gases (atoms) | 9.7101E+20 |
| Elemental I (atoms) | 1.0222E+18 |
| Organic I (atoms) | 8.8037E+16 |
| Aerosols (kg) | 9.3638E-04 |

TSC Filtered Air Intake Transport Group Inventory:

| Time (h) = 3.5100 | Pathway Filtered | Transported |
|---|---|---|
| Noble gases (atoms) | 0.0000E+00 | 6.5551E+16 |
| Elemental I (atoms) | 1.0858E+13 | 3.7121E+13 |
| Organic I (atoms) | 1.9047E+12 | 4.0600E+12 |
| Aerosols (kg) | 6.5383E-09 | 4.1807E-08 |

TSC Unfiltered Inleakage Transport Group Inventory:

| Time (h) = 3.5100 | Pathway Filtered | Transported |
|---|---|---|
| Noble gases (atoms) | 0.0000E+00 | 1.0132E+16 |
| Elemental I (atoms) | 0.0000E+00 | 5.0268E+12 |
| Organic I (atoms) | 0.0000E+00 | 8.8179E+11 |
| Aerosols (kg) | 0.0000E+00 | 2.7518E-09 |

TSC Exhaust to Environment Transport Group Inventory:

| Time (h) = 3.5100 | Pathway Filtered | Transported |
|---|---|---|
| Noble gases (atoms) | 4.1037E+16 | 0.0000E+00 |
| Elemental I (atoms) | 2.3330E+13 | 0.0000E+00 |
| Organic I (atoms) | 2.4704E+12 | 0.0000E+00 |
| Aerosols (kg) | 2.6120E-08 | 0.0000E+00 |

TSC Compartment Nuclide Inventory:

| Time (h) = 3.5100 | Ci | kg | Atoms | Decay |
|---|---|---|---|---|
| Co-58 | 1.3564E-07 | 4.2656E-15 | 4.4289E+10 | 2.1569E+08 |
| Co-60 | 1.0395E-07 | 9.1959E-14 | 9.2298E+11 | 1.6521E+08 |
| Kr-85 | 1.6062E-03 | 4.0940E-09 | 2.9006E+16 | 3.4893E+11 |
| Kr-85m | 1.7742E-02 | 2.1559E-12 | 1.5274E+13 | 4.6026E+12 |
| Kr-87 | 6.0766E-03 | 2.1453E-13 | 1.4850E+12 | 2.6437E+12 |
| Kr-88 | 3.3008E-02 | 2.6324E-12 | 1.8015E+13 | 9.5521E+12 |
| Rb-86 | 3.7921E-06 | 4.6604E-14 | 3.2635E+11 | 6.7661E+09 |
| Sr-89 | 1.2707E-04 | 4.3739E-12 | 2.9596E+13 | 2.0212E+11 |
| Sr-90 | 1.3741E-05 | 1.0074E-10 | 6.7406E+14 | 2.1839E+10 |
| Sr-91 | 1.2354E-04 | 3.4079E-14 | 2.2553E+11 | 2.1851E+11 |
| Sr-92 | 5.5835E-05 | 4.4421E-15 | 2.9077E+10 | 1.3052E+11 |
| Y-90 | 1.3486E-07 | 2.4787E-16 | 1.6585E+09 | 2.1772E+08 |
| Y-91 | 1.5558E-06 | 6.3441E-14 | 4.1984E+11 | 2.4744E+09 |
| Y-92 | 7.3817E-07 | 7.6714E-17 | 5.0216E+08 | 1.5720E+09 |
| Y-93 | 1.4804E-06 | 4.4372E-16 | 2.8732E+09 | 2.6017E+09 |
| Zr-95 | 2.0044E-06 | 9.3304E-14 | 5.9146E+11 | 3.1877E+09 |
| Zr-97 | 1.6950E-06 | 8.8666E-16 | 5.5047E+09 | 2.8600E+09 |
| Nb-95 | 2.0167E-06 | 5.1574E-14 | 3.2693E+11 | 3.2089E+09 |
| Mo-99 | 2.6277E-05 | 5.4788E-14 | 3.3327E+11 | 4.2403E+10 |

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**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 2 | System Nos. | Sheet 978 of 1000 |
|---|---|---|---|---|

| | | | | |
|---|---|---|---|---|
| Tc-99m | 1.4170E-05 | 2.6947E-15 | 1.6392E+10 | 2.6691E+10 |
| Ru-103 | 2.2110E-05 | 6.8508E-13 | 4.0055E+12 | 3.5177E+10 |
| Ru-105 | 7.1770E-06 | 1.0677E-15 | 6.1236E+09 | 1.4383E+10 |
| Ru-106 | 8.3539E-06 | 2.4970E-12 | 1.4186E+13 | 1.3278E+10 |
| Rh-105 | 1.2739E-05 | 1.5093E-14 | 8.6562E+10 | 2.0831E+10 |
| Sb-127 | 2.9344E-05 | 1.0988E-13 | 5.2104E+11 | 4.7146E+10 |
| Sb-129 | 4.3698E-05 | 7.7707E-15 | 3.6276E+10 | 8.8155E+10 |
| Te-127 | 2.1377E-05 | 8.1000E-15 | 3.8409E+10 | 3.7876E+10 |
| Te-127m | 4.0372E-06 | 4.2801E-13 | 2.0295E+12 | 6.4187E+09 |
| Te-129 | 5.7894E-06 | 2.7644E-16 | 1.2905E+09 | 2.3764E+10 |
| Te-129m | 1.3477E-05 | 4.4736E-12 | 2.0884E+12 | 2.1445E+10 |
| Te-131m | 3.7281E-05 | 4.6753E-14 | 2.1493E+11 | 6.1276E+10 |
| Te-132 | 3.9693E-04 | 1.3074E-12 | 5.9649E+12 | 6.3900E+11 |
| I-131 | 2.2209E-03 | 1.7914E-11 | 8.2350E+13 | 3.7768E+12 |
| I-132 | 8.3228E-04 | 8.0630E-14 | 3.6785E+11 | 2.3220E+12 |
| I-133 | 4.0564E-03 | 3.5809E-12 | 1.6214E+13 | 7.2301E+12 |
| I-134 | 1.5129E-04 | 5.6712E-15 | 2.5487E+10 | 1.0800E+12 |
| I-135 | 2.7321E-03 | 7.7797E-13 | 3.4704E+12 | 5.4642E+12 |
| Xe-133 | 2.2405E-01 | 1.1970E-09 | 5.4199E+15 | 4.8969E+13 |
| Xe-135 | 5.9876E-02 | 2.3446E-11 | 1.0459E+14 | 1.4170E+13 |
| Cs-134 | 3.9819E-04 | 3.0776E-10 | 1.3831E+15 | 7.0877E+11 |
| Cs-136 | 1.0902E-04 | 1.4875E-12 | 6.5869E+12 | 1.9473E+11 |
| Cs-137 | 2.6682E-04 | 3.0676E-09 | 1.3484E+16 | 4.7491E+11 |
| Ba-139 | 2.2096E-05 | 1.3508E-15 | 5.8525E+09 | 7.7180E+10 |
| Ba-140 | 2.1364E-04 | 2.9182E-12 | 1.2553E+13 | 3.4065E+11 |
| La-140 | 2.0220E-06 | 3.6379E-15 | 1.5648E+10 | 3.2950E+09 |
| La-141 | 9.0344E-07 | 1.5975E-16 | 6.8229E+08 | 1.8674E+09 |
| La-142 | 3.0588E-07 | 2.1367E-17 | 9.0618E+07 | 9.7745E+08 |
| Ce-141 | 4.9246E-06 | 1.7283E-13 | 7.3817E+11 | 7.8366E+09 |
| Ce-143 | 4.4590E-06 | 6.7145E-15 | 2.8277E+10 | 7.3064E+09 |
| Ce-144 | 3.9807E-06 | 1.2481E-12 | 5.2195E+12 | 6.3273E+09 |
| Pr-143 | 1.9130E-06 | 2.8409E-14 | 1.1964E+11 | 3.0497E+09 |
| Nd-147 | 7.9800E-07 | 9.8643E-15 | 4.0411E+10 | 1.2731E+09 |
| Np-239 | 5.1684E-05 | 2.2278E-13 | 5.6135E+11 | 8.3616E+10 |
| Pu-238 | 1.5702E-08 | 9.1721E-13 | 2.3208E+12 | 2.4955E+07 |
| Pu-239 | 1.2221E-09 | 1.9662E-11 | 4.9543E+13 | 1.9423E+06 |
| Pu-240 | 1.3179E-09 | 5.7838E-12 | 1.4513E+13 | 2.0946E+06 |
| Pu-241 | 5.4579E-07 | 5.2983E-12 | 1.3239E+13 | 8.6742E+08 |
| Am-241 | 3.3568E-10 | 9.7804E-14 | 2.4440E+11 | 5.3349E+05 |
| Cm-242 | 7.8841E-08 | 2.3788E-14 | 5.9197E+10 | 1.2533E+08 |
| Cm-244 | 6.3831E-09 | 7.8898E-14 | 1.9473E+11 | 1.0144E+07 |

TSC Transport Group Inventory:

| Time (h) = 3.5100 | Atmosphere | Sump | |
|---|---|---|---|
| Noble gases (atoms) | 3.4565E+16 | 0.0000E+00 | |
| Elemental I (atoms) | 4.9984E+12 | 0.0000E+00 | |
| Organic I (atoms) | 7.3502E+11 | 0.0000E+00 | |
| Aerosols (kg) | 3.5495E-09 | 0.0000E+00 | |
| Dose Effective (Ci/cc) | I-131 (Thyroid) | | 2.5059E-12 |
| Dose Effective (Ci/cc) | I-131 (ICRP2 Thyroid) | | 2.9975E-12 |
| Total I (Ci) | | | 9.9930E-03 |

| Time (h) = 3.5100 | Deposition Surfaces | Recirculating Filter |
|---|---|---|
| Noble gases (atoms) | 0.0000E+00 | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 | 1.3196E+13 |
| Organic I (atoms) | 0.0000E+00 | 1.6756E+12 |
| Aerosols (kg) | 0.0000E+00 | 1.4875E-08 |

TSC Filtered Air Intake Transport Group Inventory:

| Time (h) = 3.5100 | Pathway Filtered | Transported |
|---|---|---|
| Noble gases (atoms) | 0.0000E+00 | 6.5551E+16 |
| Elemental I (atoms) | 1.0858E+13 | 3.7121E+13 |

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Organic I (atoms)      1.9047E+12  4.0600E+12
Aerosols (kg)          6.5383E-09  4.1807E-08

TSC Unfiltered Inleakage Transport Group Inventory:

                         Pathway
Time (h) =   3.5100     Filtered   Transported
Noble gases (atoms)    0.0000E+00  1.0132E+16
Elemental I (atoms)    0.0000E+00  5.0268E+12
Organic I (atoms)      0.0000E+00  8.8179E+11
Aerosols (kg)          0.0000E+00  2.7518E-09

TSC Exhaust to Environment Transport Group Inventory:

                         Pathway
Time (h) =   3.5100     Filtered   Transported
Noble gases (atoms)    4.1037E+16  0.0000E+00
Elemental I (atoms)    2.3330E+13  0.0000E+00
Organic I (atoms)      2.4704E+12  0.0000E+00
Aerosols (kg)          2.6120E-08  0.0000E+00

Exclusion Area Boundary Doses:

Time (h) =   4.0000    Whole Body   Thyroid       TEDE
Delta dose (rem)        2.2159E-01  2.3690E+01  1.4451E+00
Accumulated dose (rem)  2.5659E+00  4.5578E+02  2.6204E+01

Low Population Zone Doses:

Time (h) =   4.0000    Whole Body   Thyroid       TEDE
Delta dose (rem)        1.6619E-02  1.7767E+00  1.0838E-01
Accumulated dose (rem)  3.2483E-01  6.1329E+01  3.4941E+00

TSC Doses:

Time (h) =   4.0000    Whole Body   Thyroid       TEDE
Delta dose (rem)        8.7835E-04  1.1053E+00  5.8300E-02
Accumulated dose (rem)  7.6988E-03  4.6991E+01  2.4273E+00

Travel Path Doses:

Time (h) =   4.0000    Whole Body   Thyroid       TEDE
Delta dose (rem)        0.0000E+00  0.0000E+00  0.0000E+00
Accumulated dose (rem)  6.1420E-02  1.2087E+01  6.7910E-01

Environment Integral Nuclide Release:

Time (h) =   4.0000       Ci           kg          Atoms         Bq
Co-58                  6.3963E-02  2.0115E-09  2.0886E+16  2.3666E+09
Co-60                  4.8991E-02  4.3340E-08  4.3500E+17  1.8127E+09
Kr-85                  1.2607E+02  3.2134E-04  2.2766E+21  4.6646E+12
Kr-85m                 1.6366E+03  1.9887E-07  1.4090E+18  6.0556E+13
Kr-87                  9.4046E+02  3.3202E-08  2.2982E+17  3.4797E+13
Kr-88                  3.3795E+03  2.6952E-07  1.8444E+18  1.2504E+14
Rb-86                  1.8511E+00  2.2750E-08  1.5930E+17  6.8490E+10
Sr-89                  5.9939E+01  2.0631E-06  1.3960E+19  2.2177E+12
Sr-90                  6.4762E+00  4.7477E-05  3.1768E+20  2.3962E+11
Sr-91                  6.5102E+01  1.7959E-08  1.1885E+17  2.4088E+12
Sr-92                  3.9696E+01  3.1582E-09  2.0673E+16  1.4688E+12
Y-90                   6.4600E-02  1.1874E-10  7.9449E+14  2.3902E+09
Y-91                   7.3379E-01  2.9921E-08  1.9801E+17  2.7150E+10
Y-92                   4.7427E-01  4.9288E-11  3.2263E+14  1.7548E+10
Y-93                   7.7488E-01  2.3226E-10  1.5040E+15  2.8671E+10
Zr-95                  9.4531E-01  4.4003E-08  2.7894E+17  3.4977E+10
Zr-97                  8.5013E-01  4.4471E-10  2.7609E+15  3.1455E+10
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**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 2 | System Nos. | Sheet 980 of 1000 |
|---|---|---|---|---|

| | | | | |
|---|---|---|---|---|
| Nb-95 | 9.5162E-01 | 2.4336E-08 | 1.5427E+17 | 3.5210E+10 |
| Mo-99 | 1.2581E+01 | 2.6232E-08 | 1.5957E+17 | 4.6551E+11 |
| Tc-99m | 7.9816E+00 | 1.5179E-09 | 9.2335E+15 | 2.9532E+11 |
| Ru-103 | 1.0432E+01 | 3.2323E-07 | 1.8898E+18 | 3.8598E+11 |
| Ru-105 | 4.3192E+00 | 6.4255E-10 | 3.6853E+15 | 1.5981E+11 |
| Ru-106 | 3.9376E+00 | 1.1769E-06 | 6.6865E+18 | 1.4569E+11 |
| Rh-105 | 6.1839E+00 | 7.3265E-09 | 4.2020E+16 | 2.2881E+11 |
| Sb-127 | 1.3986E+01 | 5.2373E-08 | 2.4835E+17 | 5.1750E+11 |
| Sb-129 | 2.6485E+01 | 4.7098E-09 | 2.1987E+16 | 9.7994E+11 |
| Te-127 | 1.1286E+01 | 4.2764E-09 | 2.0278E+16 | 4.1757E+11 |
| Te-127m | 1.9035E+00 | 2.0180E-07 | 9.5689E+17 | 7.0428E+10 |
| Te-129 | 7.7279E+00 | 3.6901E-10 | 1.7227E+15 | 2.8593E+11 |
| Te-129m | 6.3597E+00 | 2.1111E-06 | 9.8553E+17 | 2.3531E+11 |
| Te-131m | 1.8194E+01 | 2.2816E-08 | 1.0489E+17 | 6.7318E+11 |
| Te-132 | 1.8958E+02 | 6.2445E-07 | 2.8489E+18 | 7.0144E+12 |
| I-131 | 1.0623E+03 | 8.5686E-06 | 3.9390E+19 | 3.9305E+13 |
| I-132 | 6.7247E+02 | 6.5148E-08 | 2.9722E+17 | 2.4881E+13 |
| I-133 | 2.0358E+03 | 1.7971E-06 | 8.1372E+18 | 7.5324E+13 |
| I-134 | 3.5303E+02 | 1.3234E-08 | 5.9473E+16 | 1.3062E+13 |
| I-135 | 1.5452E+03 | 4.4000E-07 | 1.9628E+18 | 5.7173E+13 |
| Xe-133 | 1.7680E+04 | 9.4453E-05 | 4.2768E+20 | 6.5416E+14 |
| Xe-135 | 5.0738E+03 | 1.9868E-06 | 8.8630E+18 | 1.8773E+14 |
| Cs-134 | 1.9389E+02 | 1.4986E-04 | 6.7349E+20 | 7.1740E+12 |
| Cs-136 | 5.3276E+01 | 7.2692E-07 | 3.2188E+18 | 1.9712E+12 |
| Cs-137 | 1.2992E+02 | 1.4936E-03 | 6.5655E+21 | 4.8069E+12 |
| Ba-139 | 2.4560E+01 | 1.5015E-09 | 6.5052E+15 | 9.0872E+11 |
| Ba-140 | 1.0103E+02 | 1.3800E-06 | 5.9361E+18 | 3.7381E+12 |
| La-140 | 9.7801E-01 | 1.7596E-09 | 7.5688E+15 | 3.6186E+10 |
| La-141 | 5.6207E-01 | 9.9387E-11 | 4.2448E+14 | 2.0797E+10 |
| La-142 | 3.0756E-01 | 2.1485E-11 | 9.1117E+13 | 1.1380E+10 |
| Ce-141 | 2.3240E+00 | 8.1563E-08 | 3.4836E+17 | 8.5989E+10 |
| Ce-143 | 2.1691E+00 | 3.2664E-09 | 1.3756E+16 | 8.0258E+10 |
| Ce-144 | 1.8764E+00 | 5.8829E-07 | 2.4603E+18 | 6.9425E+10 |
| Pr-143 | 9.0446E-01 | 1.3432E-08 | 5.6564E+16 | 3.3465E+10 |
| Nd-147 | 3.7758E-01 | 4.6673E-09 | 1.9121E+16 | 1.3970E+10 |
| Np-239 | 2.4812E+01 | 1.0695E-07 | 2.6949E+17 | 9.1804E+11 |
| Pu-238 | 7.4004E-03 | 4.3227E-07 | 1.0938E+18 | 2.7382E+08 |
| Pu-239 | 5.7598E-04 | 9.2666E-06 | 2.3349E+19 | 2.1311E+07 |
| Pu-240 | 6.2113E-04 | 2.7259E-06 | 6.8398E+18 | 2.2982E+07 |
| Pu-241 | 2.5723E-01 | 2.4971E-06 | 6.2397E+18 | 9.5175E+09 |
| Am-241 | 1.5820E-04 | 4.6094E-08 | 1.1518E+17 | 5.8535E+06 |
| Cm-242 | 3.7167E-02 | 1.1214E-08 | 2.7906E+16 | 1.3752E+09 |
| Cm-244 | 3.0083E-03 | 3.7184E-08 | 9.1774E+16 | 1.1131E+08 |

Environment Transport Group Inventory:

| Time (h) = 4.0000 | Total Release | Release Rate/s |
|---|---|---|
| Noble gases (atoms) | 2.7166E+21 | 1.8866E+17 |
| Elemental I (atoms) | 1.8186E+18 | 1.2629E+14 |
| Organic I (atoms) | 2.4407E+17 | 1.6949E+13 |
| Aerosols (kg) | 1.7261E-03 | 1.1987E-07 |

| | |
|---|---|
| Dose Effective (Ci) I-131 (Thyroid) | 1.4502E+03 |
| Dose Effective (Ci) I-131 (ICRP2 Thyroid) | 1.7653E+03 |
| Total I (Ci) | 5.6688E+03 |

Sprayed to Environment Transport Group Inventory:
Time (h) = 4.0000 Leakage Transport

| | |
|---|---|
| Noble gases (atoms) | 1.5486E+21 |
| Elemental I (atoms) | 7.0083E+17 |
| Organic I (atoms) | 1.3930E+17 |
| Aerosols (kg) | 7.4439E-04 |

Unsprayed to Environment Transport Group Inventory:

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**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 2 | System Nos. | Sheet 981 of 1000 |
|---|---|---|---|---|

Time (h) = 4.0000 Leakage Transport

| | |
|---|---|
| Noble gases (atoms) | 1.1684E+21 |
| Elemental I (atoms) | 1.1202E+18 |
| Organic I (atoms) | 1.0510E+17 |
| Aerosols (kg) | 9.8174E-04 |

TSC Filtered Air Intake Transport Group Inventory:

| Time (h) = 4.0000 | Pathway Filtered | Transported |
|---|---|---|
| Noble gases (atoms) | 0.0000E+00 | 8.2319E+16 |
| Elemental I (atoms) | 1.8293E+13 | 3.7947E+13 |
| Organic I (atoms) | 3.2089E+12 | 4.2049E+12 |
| Aerosols (kg) | 9.6000E-09 | 4.1838E-08 |

TSC Unfiltered Inleakage Transport Group Inventory:

| Time (h) = 4.0000 | Pathway Filtered | Transported |
|---|---|---|
| Noble gases (atoms) | 0.0000E+00 | 1.7118E+16 |
| Elemental I (atoms) | 0.0000E+00 | 8.4689E+12 |
| Organic I (atoms) | 0.0000E+00 | 1.4856E+12 |
| Aerosols (kg) | 0.0000E+00 | 4.0404E-09 |

TSC Exhaust to Environment Transport Group Inventory:

| Time (h) = 4.0000 | Pathway Filtered | Transported |
|---|---|---|
| Noble gases (atoms) | 6.2385E+16 | 0.0000E+00 |
| Elemental I (atoms) | 2.5702E+13 | 0.0000E+00 |
| Organic I (atoms) | 2.8424E+12 | 0.0000E+00 |
| Aerosols (kg) | 2.7437E-08 | 0.0000E+00 |

TSC Compartment Nuclide Inventory:

| Time (h) = 4.0000 | Ci | kg | Atoms | Decay |
|---|---|---|---|---|
| Co-58 | 5.5140E-08 | 1.7341E-15 | 1.8005E+10 | 2.2078E+08 |
| Co-60 | 4.2267E-08 | 3.7392E-14 | 3.7530E+11 | 1.6910E+08 |
| Kr-85 | 1.7181E-03 | 4.3792E-09 | 3.1026E+16 | 4.5850E+11 |
| Kr-85m | 1.7553E-02 | 2.1329E-12 | 1.5111E+13 | 5.7659E+12 |
| Kr-87 | 4.9371E-03 | 1.7430E-13 | 1.2065E+12 | 3.0051E+12 |
| Kr-88 | 3.1217E-02 | 2.4895E-12 | 1.7037E+13 | 1.1668E+13 |
| Rb-86 | 1.4948E-06 | 1.8371E-14 | 1.2864E+11 | 6.9061E+09 |
| Sr-89 | 5.1654E-05 | 1.7780E-12 | 1.2031E+13 | 2.0688E+11 |
| Sr-90 | 5.5875E-06 | 4.0962E-11 | 2.7409E+14 | 2.2354E+10 |
| Sr-91 | 4.8294E-05 | 1.3322E-14 | 8.8165E+10 | 2.2306E+11 |
| Sr-92 | 1.9778E-05 | 1.5735E-15 | 1.0300E+10 | 1.3249E+11 |
| Y-90 | 5.4516E-08 | 1.0020E-16 | 6.7047E+08 | 2.2276E+08 |
| Y-91 | 6.3246E-07 | 2.5790E-14 | 1.7067E+11 | 2.5327E+09 |
| Y-92 | 2.7007E-07 | 2.8067E-17 | 1.8372E+08 | 1.5985E+09 |
| Y-93 | 5.8008E-07 | 1.7387E-16 | 1.1259E+09 | 2.6563E+09 |
| Zr-95 | 8.1485E-07 | 3.7930E-14 | 2.4044E+11 | 3.2628E+09 |
| Zr-97 | 6.7415E-07 | 3.5265E-16 | 2.1894E+09 | 2.9229E+09 |
| Nb-95 | 8.1967E-07 | 2.0962E-14 | 1.3288E+11 | 3.2845E+09 |
| Mo-99 | 1.0624E-05 | 2.2152E-14 | 1.3475E+11 | 4.3386E+10 |
| Tc-99m | 5.4147E-06 | 1.0297E-15 | 6.2639E+09 | 2.7208E+10 |
| Ru-103 | 8.9869E-06 | 2.7846E-13 | 1.6281E+12 | 3.6005E+10 |
| Ru-105 | 2.6826E-06 | 3.9908E-16 | 2.2889E+09 | 1.4643E+10 |
| Ru-106 | 3.3967E-06 | 1.0153E-12 | 5.7681E+12 | 1.3591E+10 |
| Rh-105 | 5.1255E-06 | 6.0725E-15 | 3.4828E+10 | 2.1307E+10 |
| Sb-127 | 1.1884E-05 | 4.4500E-14 | 2.1101E+11 | 4.8245E+10 |
| Sb-129 | 1.6295E-05 | 2.8978E-15 | 1.3528E+10 | 8.9732E+10 |
| Te-127 | 8.3515E-06 | 3.1645E-15 | 1.5006E+10 | 3.8663E+10 |
| Te-127m | 1.6414E-06 | 1.7401E-13 | 8.2514E+11 | 6.5701E+09 |

| | | | | |
|---|---|---|---|---|
| Te-129 | 1.7058E-06 | 8.1451E-17 | 3.8024E+08 | 2.3953E+10 |
| Te-129m | 5.4775E-06 | 1.8182E-12 | 8.4881E+11 | 2.1950E+10 |
| Te-131m | 1.4972E-05 | 1.8775E-14 | 8.6312E+10 | 6.2666E+10 |
| Te-132 | 1.6063E-04 | 5.2910E-13 | 2.4139E+12 | 6.5385E+11 |
| I-131 | 9.1732E-04 | 7.3993E-12 | 3.4015E+13 | 3.8608E+12 |
| I-132 | 2.9127E-04 | 2.8218E-14 | 1.2874E+11 | 2.3513E+12 |
| I-133 | 1.6480E-03 | 1.4548E-12 | 6.5874E+12 | 7.3823E+12 |
| I-134 | 4.0302E-05 | 1.5108E-15 | 6.7896E+09 | 1.0847E+12 |
| I-135 | 1.0667E-03 | 3.0374E-13 | 1.3550E+12 | 5.5649E+12 |
| Xe-133 | 2.3900E-01 | 1.2768E-09 | 5.7814E+15 | 6.4231E+13 |
| Xe-135 | 6.1629E-02 | 2.4133E-11 | 1.0765E+14 | 1.8175E+13 |
| Cs-134 | 1.5709E-04 | 1.2142E-10 | 5.4566E+14 | 7.2347E+11 |
| Cs-136 | 4.2959E-05 | 5.8615E-13 | 2.5955E+12 | 1.9875E+11 |
| Cs-137 | 1.0527E-04 | 1.2102E-09 | 5.3198E+15 | 4.8476E+11 |
| Ba-139 | 6.8506E-06 | 4.1882E-16 | 1.8145E+09 | 7.7918E+10 |
| Ba-140 | 8.6764E-05 | 1.1852E-12 | 5.0980E+12 | 3.4865E+11 |
| La-140 | 8.1461E-07 | 1.4656E-15 | 6.3042E+09 | 3.3705E+09 |
| La-141 | 3.3402E-07 | 5.9062E-17 | 2.5226E+08 | 1.8999E+09 |
| La-142 | 9.7597E-08 | 6.8178E-18 | 2.8914E+07 | 9.8778E+08 |
| Ce-141 | 2.0015E-06 | 7.0244E-14 | 3.0001E+11 | 8.0212E+09 |
| Ce-143 | 1.7927E-06 | 2.6995E-15 | 1.1368E+10 | 7.4728E+09 |
| Ce-144 | 1.6186E-06 | 5.0746E-13 | 2.1222E+12 | 6.4766E+09 |
| Pr-143 | 7.7697E-07 | 1.1538E-14 | 4.8591E+10 | 3.1214E+09 |
| Nd-147 | 3.2403E-07 | 4.0053E-15 | 1.6409E+10 | 1.3030E+09 |
| Np-239 | 2.0877E-05 | 8.9991E-14 | 2.2675E+11 | 8.5548E+10 |
| Pu-238 | 6.3849E-09 | 3.7296E-13 | 9.4370E+11 | 2.5544E+07 |
| Pu-239 | 4.9695E-10 | 7.9951E-12 | 2.0145E+13 | 1.9881E+06 |
| Pu-240 | 5.3590E-10 | 2.3518E-12 | 5.9013E+12 | 2.1440E+06 |
| Pu-241 | 2.2193E-07 | 2.1544E-12 | 5.3834E+12 | 8.8789E+08 |
| Am-241 | 1.3650E-10 | 3.9769E-14 | 9.9376E+10 | 5.4608E+05 |
| Cm-242 | 3.2056E-08 | 9.6719E-15 | 2.4068E+10 | 1.2829E+08 |
| Cm-244 | 2.5955E-09 | 3.2082E-14 | 7.9180E+10 | 1.0384E+07 |

TSC Transport Group Inventory:

| Time (h) = 4.0000 | Atmosphere | Sump | |
|---|---|---|---|
| Noble gases (atoms) | 3.6949E+16 | 0.0000E+00 | |
| Elemental I (atoms) | 3.3558E+12 | 0.0000E+00 | |
| Organic I (atoms) | 5.5650E+11 | 0.0000E+00 | |
| Aerosols (kg) | 1.4022E-09 | 0.0000E+00 | |
| Dose Effective (Ci/cc) | I-131 (Thyroid) | | 1.0294E-12 |
| Dose Effective (Ci/cc) | I-131 (ICRP2 Thyroid) | | 1.2257E-12 |
| Total I (Ci) | | | 3.9636E-03 |

| Time (h) = 4.0000 | Deposition Surfaces | Recirculating Filter |
|---|---|---|
| Noble gases (atoms) | 0.0000E+00 | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 | 1.6711E+13 |
| Organic I (atoms) | 0.0000E+00 | 2.2270E+12 |
| Aerosols (kg) | 0.0000E+00 | 1.7023E-08 |

TSC Filtered Air Intake Transport Group Inventory:

| Time (h) = 4.0000 | Pathway Filtered | Transported |
|---|---|---|
| Noble gases (atoms) | 0.0000E+00 | 8.2319E+16 |
| Elemental I (atoms) | 1.8293E+13 | 3.7947E+13 |
| Organic I (atoms) | 3.2089E+12 | 4.2049E+12 |
| Aerosols (kg) | 9.6000E-09 | 4.1838E-08 |

TSC Unfiltered Inleakage Transport Group Inventory:

| Time (h) = 4.0000 | Pathway Filtered | Transported |
|---|---|---|
| Noble gases (atoms) | 0.0000E+00 | 1.7118E+16 |
| Elemental I (atoms) | 0.0000E+00 | 8.4689E+12 |

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**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 2 | System Nos. | Sheet 983 of 1000 |
|---|---|---|---|---|

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Organic I (atoms)      0.0000E+00  1.4856E+12
Aerosols (kg)          0.0000E+00  4.0404E-09

TSC Exhaust to Environment Transport Group Inventory:

                          Pathway
Time (h) =   4.0000      Filtered   Transported
Noble gases (atoms)    6.2385E+16  0.0000E+00
Elemental I (atoms)    2.5702E+13  0.0000E+00
Organic I (atoms)      2.8424E+12  0.0000E+00
Aerosols (kg)          2.7437E-08  0.0000E+00

Exclusion Area Boundary Doses:

Time (h) =   8.0000    Whole Body   Thyroid       TEDE
Delta dose (rem)        1.2116E+00  1.6717E+02  9.8739E+00
Accumulated dose (rem)  3.7775E+00  6.2295E+02  3.6077E+01

Low Population Zone Doses:

Time (h) =   8.0000    Whole Body   Thyroid       TEDE
Delta dose (rem)        9.0872E-02  1.2538E+01  7.4054E-01
Accumulated dose (rem)  4.1570E-01  7.3867E+01  4.2347E+00

TSC Doses:

Time (h) =   8.0000    Whole Body   Thyroid       TEDE
Delta dose (rem)        4.9404E-03  3.4001E+00  1.7936E-01
Accumulated dose (rem)  1.2639E-02  5.0391E+01  2.6067E+00

Travel Path Doses:

Time (h) =   8.0000    Whole Body   Thyroid       TEDE
Delta dose (rem)        0.0000E+00  0.0000E+00  0.0000E+00
Accumulated dose (rem)  6.1420E-02  1.2087E+01  6.7910E-01

Environment Integral Nuclide Release:

Time (h) =   8.0000       Ci           kg          Atoms         Bq
Co-58                  8.8519E-02  2.7838E-09  2.8904E+16  3.2752E+09
Co-60                  6.7829E-02  6.0005E-08  6.0227E+17  2.5097E+09
Kr-85                  3.0023E+02  7.6525E-04  5.4217E+21  1.1109E+13
Kr-85m                 2.9499E+03  3.5846E-07  2.5396E+18  1.0915E+14
Kr-87                  1.1369E+03  4.0136E-08  2.7782E+17  4.2065E+13
Kr-88                  5.3677E+03  4.2807E-07  2.9294E+18  1.9860E+14
Rb-86                  2.4936E+00  3.0647E-08  2.1460E+17  9.2265E+10
Sr-89                  8.2934E+01  2.8546E-06  1.9316E+19  3.0686E+12
Sr-90                  8.9665E+00  6.5734E-05  4.3984E+20  3.3176E+11
Sr-91                  8.3713E+01  2.3093E-08  1.5282E+17  3.0974E+12
Sr-92                  4.5154E+01  3.5924E-09  2.3515E+16  1.6707E+12
Y-90                   8.8368E-02  1.6242E-10  1.0868E+15  3.2696E+09
Y-91                   1.0154E+00  4.1404E-08  2.7400E+17  3.7570E+10
Y-92                   5.5703E-01  5.7890E-11  3.7893E+14  2.0610E+10
Y-93                   1.0003E+00  2.9983E-10  1.9415E+15  3.7012E+10
Zr-95                  1.3082E+00  6.0893E-08  3.8601E+17  4.8402E+10
Zr-97                  1.1268E+00  5.8942E-10  3.6593E+15  4.1691E+10
Nb-95                  1.3163E+00  3.3663E-08  2.1339E+17  4.8704E+10
Mo-99                  1.7216E+01  3.5896E-08  2.1836E+17  6.3701E+11
Tc-99m                 9.9061E+00  1.8839E-09  1.1460E+16  3.6653E+11
Ru-103                 1.4431E+01  4.4715E-07  2.6144E+18  5.3396E+11
Ru-105                 5.2026E+00  7.7397E-10  4.4390E+15  1.9250E+11
Ru-106                 5.4512E+00  1.6294E-06  9.2570E+18  2.0170E+11
Rh-105                 8.3793E+00  9.9274E-09  5.6938E+16  3.1003E+11
Sb-127                 1.9203E+01  7.1906E-08  3.4097E+17  7.1050E+11
Sb-129                 3.1808E+01  5.6564E-09  2.6406E+16  1.1769E+12
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**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 2 | System Nos. | Sheet 984 of 1000 |
|---|---|---|---|---|

| | | | | |
|---|---|---|---|---|
| Te-127 | 1.4497E+01 | 5.4931E-09 | 2.6047E+16 | 5.3639E+11 |
| Te-127m | 2.6346E+00 | 2.7931E-07 | 1.3245E+18 | 9.7481E+10 |
| Te-129 | 8.0086E+00 | 3.8241E-10 | 1.7852E+15 | 2.9632E+11 |
| Te-129m | 8.7968E+00 | 2.9201E-06 | 1.3632E+18 | 3.2548E+11 |
| Te-131m | 2.4562E+01 | 3.0802E-08 | 1.4160E+17 | 9.0878E+11 |
| Te-132 | 2.5989E+02 | 8.5606E-07 | 3.9055E+18 | 9.6160E+12 |
| I-131 | 1.4684E+03 | 1.1844E-05 | 5.4450E+19 | 5.4331E+13 |
| I-132 | 7.4642E+02 | 7.2312E-08 | 3.2991E+17 | 2.7618E+13 |
| I-133 | 2.7225E+03 | 2.4033E-06 | 1.0882E+19 | 1.0073E+14 |
| I-134 | 3.5815E+02 | 1.3425E-08 | 6.0336E+16 | 1.3251E+13 |
| I-135 | 1.9312E+03 | 5.4990E-07 | 2.4530E+18 | 7.1453E+13 |
| Xe-133 | 4.1634E+04 | 2.2242E-04 | 1.0071E+21 | 1.5404E+15 |
| Xe-135 | 1.0431E+04 | 4.0848E-06 | 1.8222E+19 | 3.8596E+14 |
| Cs-134 | 2.6163E+02 | 2.0221E-04 | 9.0878E+20 | 9.6803E+12 |
| Cs-136 | 7.1718E+01 | 9.7854E-07 | 4.3330E+18 | 2.6536E+12 |
| Cs-137 | 1.7531E+02 | 2.0155E-03 | 8.8596E+21 | 6.4866E+12 |
| Ba-139 | 2.5844E+01 | 1.5800E-09 | 6.8453E+15 | 9.5623E+11 |
| Ba-140 | 1.3952E+02 | 1.9058E-06 | 8.1978E+18 | 5.1623E+12 |
| La-140 | 1.3286E+00 | 2.3903E-09 | 1.0282E+16 | 4.9159E+10 |
| La-141 | 6.6807E-01 | 1.1813E-10 | 5.0454E+14 | 2.4719E+10 |
| La-142 | 3.2733E-01 | 2.2866E-11 | 9.6974E+13 | 1.2111E+10 |
| Ce-141 | 3.2145E+00 | 1.1281E-07 | 4.8183E+17 | 1.1894E+11 |
| Ce-143 | 2.9348E+00 | 4.4194E-09 | 1.8611E+16 | 1.0859E+11 |
| Ce-144 | 2.5976E+00 | 8.1442E-07 | 3.4059E+18 | 9.6111E+10 |
| Pr-143 | 1.2493E+00 | 1.8552E-08 | 7.8127E+16 | 4.6223E+10 |
| Nd-147 | 5.2122E-01 | 6.4429E-09 | 2.6395E+16 | 1.9285E+10 |
| Np-239 | 3.3888E+01 | 1.4607E-07 | 3.6806E+17 | 1.2538E+12 |
| Pu-238 | 1.0246E-02 | 5.9850E-07 | 1.5144E+18 | 3.7911E+08 |
| Pu-239 | 7.9747E-04 | 1.2830E-05 | 3.2328E+19 | 2.9506E+07 |
| Pu-240 | 8.5999E-04 | 3.7741E-06 | 9.4700E+18 | 3.1819E+07 |
| Pu-241 | 3.5614E-01 | 3.4573E-06 | 8.6391E+18 | 1.3177E+10 |
| Am-241 | 2.1904E-04 | 6.3820E-08 | 1.5947E+17 | 8.1045E+06 |
| Cm-242 | 5.1449E-02 | 1.5523E-08 | 3.8630E+16 | 1.9036E+09 |
| Cm-244 | 4.1651E-03 | 5.1483E-08 | 1.2706E+17 | 1.5411E+08 |

Environment Transport Group Inventory:

| Time (h) = 8.0000 | Total Release | Release Rate/s |
|---|---|---|
| Noble gases (atoms) | 6.4528E+21 | 2.2405E+17 |
| Elemental I (atoms) | 3.6145E+18 | 1.2550E+14 |
| Organic I (atoms) | 5.5910E+17 | 1.9413E+13 |
| Aerosols (kg) | 2.3316E-03 | 8.0959E-08 |

| | |
|---|---|
| Dose Effective (Ci) I-131 (Thyroid) | 1.9823E+03 |
| Dose Effective (Ci) I-131 (ICRP2 Thyroid) | 2.3898E+03 |
| Total I (Ci) | 7.2266E+03 |

Sprayed to Environment Transport Group Inventory:
Time (h) = 8.0000 Leakage Transport

| | |
|---|---|
| Noble gases (atoms) | 3.6783E+21 |
| Elemental I (atoms) | 1.7253E+18 |
| Organic I (atoms) | 3.1906E+17 |
| Aerosols (kg) | 1.0915E-03 |

Unsprayed to Environment Transport Group Inventory:
Time (h) = 8.0000 Leakage Transport

| | |
|---|---|
| Noble gases (atoms) | 2.7753E+21 |
| Elemental I (atoms) | 1.8937E+18 |
| Organic I (atoms) | 2.4073E+17 |
| Aerosols (kg) | 1.2402E-03 |

TSC Filtered Air Intake Transport Group Inventory:

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**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 2 | System Nos. | Sheet 985 of 1000 |
|---|---|---|---|---|

| Time (h) = 8.0000 | Pathway Filtered | Transported |
|---|---|---|
| Noble gases (atoms) | 0.0000E+00 | 2.1881E+17 |
| Elemental I (atoms) | 7.7400E+13 | 4.4515E+13 |
| Organic I (atoms) | 1.3578E+13 | 5.3570E+12 |
| Aerosols (kg) | 3.1497E-08 | 4.2059E-08 |

TSC Unfiltered Inleakage Transport Group Inventory:

| Time (h) = 8.0000 | Pathway Filtered | Transported |
|---|---|---|
| Noble gases (atoms) | 0.0000E+00 | 7.3990E+16 |
| Elemental I (atoms) | 0.0000E+00 | 3.5834E+13 |
| Organic I (atoms) | 0.0000E+00 | 6.2859E+12 |
| Aerosols (kg) | 0.0000E+00 | 1.3256E-08 |

TSC Exhaust to Environment Transport Group Inventory:

| Time (h) = 8.0000 | Pathway Filtered | Transported |
|---|---|---|
| Noble gases (atoms) | 2.5282E+17 | 0.0000E+00 |
| Elemental I (atoms) | 3.9562E+13 | 0.0000E+00 |
| Organic I (atoms) | 5.2609E+12 | 0.0000E+00 |
| Aerosols (kg) | 3.1298E-08 | 0.0000E+00 |

TSC Compartment Nuclide Inventory:

| Time (h) = 8.0000 | Ci | kg | Atoms | Decay |
|---|---|---|---|---|
| Co-58 | 2.7683E-08 | 8.7058E-16 | 9.0392E+09 | 2.3770E+08 |
| Co-60 | 2.1254E-08 | 1.8802E-14 | 1.8872E+11 | 1.8209E+08 |
| Kr-85 | 1.8544E-03 | 4.7265E-09 | 3.3487E+16 | 1.4331E+12 |
| Kr-85m | 1.0179E-02 | 1.2368E-12 | 8.7628E+12 | 1.3155E+13 |
| Kr-87 | 5.9714E-04 | 2.1081E-14 | 1.4592E+11 | 4.1262E+12 |
| Kr-88 | 1.2645E-02 | 1.0084E-12 | 6.9010E+12 | 2.2890E+13 |
| Rb-86 | 7.2272E-07 | 8.8822E-15 | 6.2197E+10 | 7.3508E+09 |
| Sr-89 | 2.5915E-05 | 8.9202E-13 | 6.0358E+12 | 2.2273E+11 |
| Sr-90 | 2.8098E-06 | 2.0598E-11 | 1.3783E+14 | 2.4071E+10 |
| Sr-91 | 1.8069E-05 | 4.9846E-15 | 3.2987E+10 | 2.3601E+11 |
| Sr-92 | 3.5272E-06 | 2.8062E-16 | 1.8369E+09 | 1.3639E+11 |
| Y-90 | 2.6237E-08 | 4.8224E-17 | 3.2268E+08 | 2.3917E+08 |
| Y-91 | 3.1741E-07 | 1.2943E-14 | 8.5653E+10 | 2.7268E+09 |
| Y-92 | 6.1418E-08 | 6.3828E-18 | 4.1781E+07 | 1.6571E+09 |
| Y-93 | 2.2088E-07 | 6.6205E-17 | 4.2870E+08 | 2.8131E+09 |
| Zr-95 | 4.0902E-07 | 1.9039E-14 | 1.2069E+11 | 3.5130E+09 |
| Zr-97 | 2.8710E-07 | 1.5018E-16 | 9.3238E+08 | 3.1146E+09 |
| Nb-95 | 4.1082E-07 | 1.0506E-14 | 6.6598E+10 | 3.5359E+09 |
| Mo-99 | 5.1201E-06 | 1.0675E-14 | 6.4938E+10 | 4.6585E+10 |
| Tc-99m | 1.7076E-06 | 3.2474E-16 | 1.9754E+09 | 2.8556E+10 |
| Ru-103 | 4.5058E-06 | 1.3961E-13 | 8.1627E+11 | 3.8763E+10 |
| Ru-105 | 7.1654E-07 | 1.0660E-16 | 6.1137E+08 | 1.5265E+10 |
| Ru-106 | 1.7076E-06 | 5.1040E-13 | 2.8997E+12 | 1.4635E+10 |
| Rh-105 | 2.3806E-06 | 2.8205E-15 | 1.6176E+10 | 2.2824E+10 |
| Sb-127 | 5.7971E-06 | 2.1708E-14 | 1.0293E+11 | 5.1844E+10 |
| Sb-129 | 4.2767E-06 | 7.6052E-16 | 3.5504E+09 | 9.3483E+10 |
| Te-127 | 3.1099E-06 | 1.1784E-15 | 5.5877E+09 | 4.0899E+10 |
| Te-127m | 8.2452E-07 | 8.7412E-14 | 4.1449E+11 | 7.0741E+09 |
| Te-129 | 7.6109E-08 | 3.6342E-18 | 1.6966E+07 | 2.4164E+10 |
| Te-129m | 2.7449E-06 | 9.1115E-13 | 4.2536E+11 | 2.3630E+10 |
| Te-131m | 6.8559E-06 | 8.5977E-15 | 3.9524E+10 | 6.7069E+10 |
| Te-132 | 7.7927E-05 | 2.5668E-13 | 1.1710E+12 | 7.0238E+11 |
| I-131 | 4.7523E-04 | 3.8333E-12 | 1.7622E+13 | 4.1487E+12 |
| I-132 | 4.4906E-05 | 4.3504E-15 | 1.9848E+10 | 2.4059E+12 |
| I-133 | 7.5652E-04 | 6.6783E-13 | 3.0239E+12 | 7.8711E+12 |
| I-134 | 8.4588E-07 | 3.1708E-17 | 1.4250E+08 | 1.0888E+12 |
| I-135 | 3.6600E-04 | 1.0422E-13 | 4.6490E+11 | 5.8422E+12 |

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**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 2 | System Nos. | Sheet 986 of 1000 |
|---|---|---|---|---|

| | | | | |
|---|---|---|---|---|
| Xe-133 | 2.5232E-01 | 1.3480E-09 | 6.1036E+15 | 1.9830E+14 |
| Xe-135 | 4.8974E-02 | 1.9177E-11 | 8.5547E+13 | 4.8236E+13 |
| Cs-134 | 7.6422E-05 | 5.9067E-11 | 2.6545E+14 | 7.7034E+11 |
| Cs-136 | 2.0715E-05 | 2.8264E-13 | 1.2516E+12 | 2.1152E+11 |
| Cs-137 | 5.1218E-05 | 5.8884E-10 | 2.5884E+15 | 5.1617E+11 |
| Ba-139 | 4.4865E-07 | 2.7429E-17 | 1.1883E+08 | 7.8870E+10 |
| Ba-140 | 4.3232E-05 | 5.9053E-13 | 2.5402E+12 | 3.7519E+11 |
| La-140 | 3.8204E-07 | 6.8734E-16 | 2.9566E+09 | 3.6127E+09 |
| La-141 | 8.2185E-08 | 1.4532E-17 | 6.2067E+07 | 1.9748E+09 |
| La-142 | 7.9328E-09 | 5.5416E-19 | 2.3501E+06 | 1.0023E+09 |
| Ce-141 | 1.0029E-06 | 3.5197E-14 | 1.5033E+11 | 8.6351E+09 |
| Ce-143 | 8.2794E-07 | 1.2467E-15 | 5.2504E+09 | 8.0020E+09 |
| Ce-144 | 8.1359E-07 | 2.5508E-13 | 1.0668E+12 | 6.9738E+09 |
| Pr-143 | 3.8736E-07 | 5.7524E-15 | 2.4225E+10 | 3.3591E+09 |
| Nd-147 | 1.6122E-07 | 1.9928E-15 | 8.1639E+09 | 1.4020E+09 |
| Np-239 | 9.9896E-06 | 4.3060E-14 | 1.0850E+11 | 9.1814E+10 |
| Pu-238 | 3.2108E-09 | 1.8755E-13 | 4.7456E+11 | 2.7506E+07 |
| Pu-239 | 2.4990E-10 | 4.0205E-12 | 1.0131E+13 | 2.1408E+06 |
| Pu-240 | 2.6949E-10 | 1.1827E-12 | 2.9676E+12 | 2.3086E+06 |
| Pu-241 | 1.1160E-07 | 1.0834E-12 | 2.7071E+12 | 9.5607E+08 |
| Am-241 | 6.8639E-11 | 1.9999E-14 | 4.9973E+10 | 5.8801E+05 |
| Cm-242 | 1.6108E-08 | 4.8602E-15 | 1.2095E+10 | 1.3813E+08 |
| Cm-244 | 1.3052E-09 | 1.6133E-14 | 3.9817E+10 | 1.1181E+07 |

TSC Transport Group Inventory:

| Time (h) = 8.0000 | Atmosphere | Sump | |
|---|---|---|---|
| Noble gases (atoms) | 3.9692E+16 | 0.0000E+00 | |
| Elemental I (atoms) | 2.7513E+12 | 0.0000E+00 | |
| Organic I (atoms) | 4.8262E+11 | 0.0000E+00 | |
| Aerosols (kg) | 6.8306E-10 | 0.0000E+00 | |
| Dose Effective (Ci/cc) | I-131 (Thyroid) | | 5.1460E-13 |
| Dose Effective (Ci/cc) | I-131 (ICRP2 Thyroid) | | 5.9659E-13 |
| Total I (Ci) | | | 1.6435E-03 |

| Time (h) = 8.0000 | Deposition Surfaces | Recirculating Filter |
|---|---|---|
| Noble gases (atoms) | 0.0000E+00 | 0.0000E+00 |
| Elemental I (atoms) | 0.0000E+00 | 3.7258E+13 |
| Organic I (atoms) | 0.0000E+00 | 5.8121E+12 |
| Aerosols (kg) | 0.0000E+00 | 2.3319E-08 |

TSC Filtered Air Intake Transport Group Inventory:

| Time (h) = 8.0000 | Pathway Filtered | Transported |
|---|---|---|
| Noble gases (atoms) | 0.0000E+00 | 2.1881E+17 |
| Elemental I (atoms) | 7.7400E+13 | 4.4515E+13 |
| Organic I (atoms) | 1.3578E+13 | 5.3570E+12 |
| Aerosols (kg) | 3.1497E-08 | 4.2059E-08 |

TSC Unfiltered Inleakage Transport Group Inventory:

| Time (h) = 8.0000 | Pathway Filtered | Transported |
|---|---|---|
| Noble gases (atoms) | 0.0000E+00 | 7.3990E+16 |
| Elemental I (atoms) | 0.0000E+00 | 3.5834E+13 |
| Organic I (atoms) | 0.0000E+00 | 6.2859E+12 |
| Aerosols (kg) | 0.0000E+00 | 1.3256E-08 |

TSC Exhaust to Environment Transport Group Inventory:

| Time (h) = 8.0000 | Pathway Filtered | Transported |
|---|---|---|
| Noble gases (atoms) | 2.5282E+17 | 0.0000E+00 |
| Elemental I (atoms) | 3.9562E+13 | 0.0000E+00 |

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**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 2 | System Nos. | Sheet 987 of 1000 |
|---|---|---|---|---|

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Organic I (atoms)      5.2609E+12  0.0000E+00
Aerosols (kg)          3.1298E-08  0.0000E+00

Exclusion Area Boundary Doses:

Time (h) =  24.0000    Whole Body   Thyroid       TEDE
Delta dose (rem)        1.6336E+00  4.2989E+02  2.4146E+01
Accumulated dose (rem)  5.4111E+00  1.0528E+03  6.0223E+01

Low Population Zone Doses:

Time (h) =  24.0000    Whole Body   Thyroid       TEDE
Delta dose (rem)        7.9639E-02  1.0778E+01  6.4405E-01
Accumulated dose (rem)  4.9534E-01  8.4645E+01  4.8787E+00

TSC Doses:

Time (h) =  24.0000    Whole Body   Thyroid       TEDE
Delta dose (rem)        3.0986E-03  3.7014E+00  1.9371E-01
Accumulated dose (rem)  1.5738E-02  5.4093E+01  2.8004E+00

Travel Path Doses:

Time (h) =  24.0000    Whole Body   Thyroid       TEDE
Delta dose (rem)        0.0000E+00  0.0000E+00  0.0000E+00
Accumulated dose (rem)  6.1420E-02  1.2087E+01  6.7910E-01

Environment Integral Nuclide Release:

Time (h) =  24.0000       Ci           kg          Atoms         Bq
Co-58                  1.5396E-01  4.8419E-09  5.0273E+16  5.6966E+09
Co-60                  1.1823E-01  1.0459E-07  1.0498E+18  4.3745E+09
Kr-85                  9.9654E+02  2.5400E-03  1.7996E+22  3.6872E+13
Kr-85m                 4.2786E+03  5.1990E-07  3.6835E+18  1.5831E+14
Kr-87                  1.1613E+03  4.0999E-08  2.8379E+17  4.2968E+13
Kr-88                  6.4809E+03  5.1685E-07  3.5370E+18  2.3979E+14
Rb-86                  4.1871E+00  5.1459E-08  3.6034E+17  1.5492E+11
Sr-89                  1.4412E+02  4.9607E-06  3.3567E+19  5.3324E+12
Sr-90                  1.5630E+01  1.1458E-04  7.6671E+20  5.7831E+11
Sr-91                  1.0954E+02  3.0219E-08  1.9998E+17  4.0531E+12
Sr-92                  4.7382E+01  3.7696E-09  2.4675E+16  1.7531E+12
Y-90                   1.4562E-01  2.6766E-10  1.7910E+15  5.3880E+09
Y-91                   1.7653E+00  7.1982E-08  4.7636E+17  6.5315E+10
Y-92                   6.0503E-01  6.2878E-11  4.1159E+14  2.2386E+10
Y-93                   1.3246E+00  3.9702E-10  2.5709E+15  4.9010E+10
Zr-95                  2.2748E+00  1.0589E-07  6.7123E+17  8.4166E+10
Zr-97                  1.6311E+00  8.5325E-10  5.2973E+15  6.0352E+10
Nb-95                  2.2844E+00  5.8420E-08  3.7033E+17  8.4523E+10
Mo-99                  2.8417E+01  5.9250E-08  3.6042E+17  1.0514E+12
Tc-99m                 1.1830E+01  2.2497E-09  1.3685E+16  4.3769E+11
Ru-103                 2.5056E+01  7.7636E-07  4.5392E+18  9.2708E+11
Ru-105                 5.8642E+00  8.7238E-10  5.0034E+15  2.1697E+11
Ru-106                 9.4984E+00  2.8391E-06  1.6130E+19  3.5144E+11
Rh-105                 1.3246E+01  1.5693E-08  9.0006E+16  4.9010E+11
Sb-127                 3.2177E+01  1.2049E-07  5.7134E+17  1.1905E+12
Sb-129                 3.5681E+01  6.3451E-09  2.9621E+16  1.3202E+12
Te-127                 1.8911E+01  7.1657E-09  3.3978E+16  6.9970E+11
Te-127m                4.5860E+00  4.8619E-07  2.3054E+18  1.6968E+11
Te-129                 8.0314E+00  3.8350E-10  1.7903E+15  2.9716E+11
Te-129m                1.5263E+01  5.0665E-06  2.3652E+18  5.6473E+11
Te-131m                3.8223E+01  4.7935E-08  2.2036E+17  1.4143E+12
Te-132                 4.3250E+02  1.4246E-06  6.4993E+18  1.6002E+13
I-131                  2.5768E+03  2.0785E-05  9.5550E+19  9.5342E+13
I-132                  7.7075E+02  7.4669E-08  3.4066E+17  2.8518E+13
I-133                  4.1342E+03  3.6495E-06  1.6525E+19  1.5296E+14
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| | | | | |
|---|---|---|---|---|
| I-134 | 3.5834E+02 | 1.3433E-08 | 6.0368E+16 | 1.3258E+13 |
| I-135 | 2.3659E+03 | 6.7368E-07 | 3.0052E+18 | 8.7537E+13 |
| Xe-133 | 1.3200E+05 | 7.0519E-04 | 3.1930E+21 | 4.8839E+15 |
| Xe-135 | 2.0627E+04 | 8.0773E-06 | 3.6031E+19 | 7.6320E+14 |
| Cs-134 | 4.4282E+02 | 3.4226E-04 | 1.5381E+21 | 1.6384E+13 |
| Cs-136 | 1.2001E+02 | 1.6374E-06 | 7.2506E+18 | 4.4404E+12 |
| Cs-137 | 2.9678E+02 | 3.4120E-03 | 1.4998E+22 | 1.0981E+13 |
| Ba-139 | 2.6002E+01 | 1.5896E-09 | 6.8871E+15 | 9.6206E+11 |
| Ba-140 | 2.4025E+02 | 3.2818E-06 | 1.4117E+19 | 8.8894E+12 |
| La-140 | 2.1235E+00 | 3.8204E-09 | 1.6434E+16 | 7.8569E+10 |
| La-141 | 7.3756E-01 | 1.3042E-10 | 5.5702E+14 | 2.7290E+10 |
| La-142 | 3.3041E-01 | 2.3082E-11 | 9.7887E+13 | 1.2225E+10 |
| Ce-141 | 5.5764E+00 | 1.9571E-07 | 8.3588E+17 | 2.0633E+11 |
| Ce-143 | 4.6101E+00 | 6.9420E-09 | 2.9235E+16 | 1.7057E+11 |
| Ce-144 | 4.5256E+00 | 1.4189E-06 | 5.9339E+18 | 1.6745E+11 |
| Pr-143 | 2.1528E+00 | 3.1970E-08 | 1.3463E+17 | 7.9654E+10 |
| Nd-147 | 8.9581E-01 | 1.1073E-08 | 4.5364E+16 | 3.3145E+10 |
| Np-239 | 5.5453E+01 | 2.3903E-07 | 6.0229E+17 | 2.0518E+12 |
| Pu-238 | 1.7861E-02 | 1.0433E-06 | 2.6399E+18 | 6.6085E+08 |
| Pu-239 | 1.3901E-03 | 2.2365E-05 | 5.6354E+19 | 5.1435E+07 |
| Pu-240 | 1.4991E-03 | 6.5789E-06 | 1.6508E+19 | 5.5467E+07 |
| Pu-241 | 6.2080E-01 | 6.0265E-06 | 1.5059E+19 | 2.2970E+10 |
| Am-241 | 3.8183E-04 | 1.1125E-07 | 2.7799E+17 | 1.4128E+07 |
| Cm-242 | 8.9598E-02 | 2.7034E-08 | 6.7274E+16 | 3.3151E+09 |
| Cm-244 | 7.2603E-03 | 8.9742E-08 | 2.2149E+17 | 2.6863E+08 |

Environment Transport Group Inventory:

| Time (h) = 24.0000 | Total Release | Release Rate/s |
|---|---|---|
| Noble gases (atoms) | 2.1232E+22 | 2.4574E+17 |
| Elemental I (atoms) | 1.0133E+19 | 1.1728E+14 |
| Organic I (atoms) | 1.7025E+18 | 1.9705E+13 |
| Aerosols (kg) | 3.9507E-03 | 4.5726E-08 |

| | |
|---|---|
| Dose Effective (Ci) I-131 (Thyroid) | 3.3384E+03 |
| Dose Effective (Ci) I-131 (ICRP2 Thyroid) | 3.9126E+03 |
| Total I (Ci) | 1.0206E+04 |

Sprayed to Environment Transport Group Inventory:
Time (h) = 24.0000 Leakage Transport

| | |
|---|---|
| Noble gases (atoms) | 1.2112E+22 |
| Elemental I (atoms) | 5.4789E+18 |
| Organic I (atoms) | 9.7752E+17 |
| Aerosols (kg) | 2.0262E-03 |

Unsprayed to Environment Transport Group Inventory:
Time (h) = 24.0000 Leakage Transport

| | |
|---|---|
| Noble gases (atoms) | 9.1388E+21 |
| Elemental I (atoms) | 4.7258E+18 |
| Organic I (atoms) | 7.3754E+17 |
| Aerosols (kg) | 1.9247E-03 |

TSC Filtered Air Intake Transport Group Inventory:

| Time (h) = 24.0000 | Pathway Filtered | Transported |
|---|---|---|
| Noble gases (atoms) | 0.0000E+00 | 4.4927E+17 |
| Elemental I (atoms) | 1.6971E+14 | 5.4772E+13 |
| Organic I (atoms) | 2.9771E+13 | 7.1563E+12 |
| Aerosols (kg) | 5.6463E-08 | 4.2311E-08 |

TSC Unfiltered Inleakage Transport Group Inventory:

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**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 2 | System Nos. | Sheet 989 of 1000 |
|---|---|---|---|---|

| Time (h) = 24.0000 | Pathway Filtered | Transported |
|---|---|---|
| Noble gases (atoms) | 0.0000E+00 | 1.7002E+17 |
| Elemental I (atoms) | 0.0000E+00 | 7.8571E+13 |
| Organic I (atoms) | 0.0000E+00 | 1.3783E+13 |
| Aerosols (kg) | 0.0000E+00 | 2.3764E-08 |

TSC Exhaust to Environment Transport Group Inventory:

| Time (h) = 24.0000 | Pathway Filtered | Transported |
|---|---|---|
| Noble gases (atoms) | 6.0205E+17 | 0.0000E+00 |
| Elemental I (atoms) | 6.1545E+13 | 0.0000E+00 |
| Organic I (atoms) | 9.1170E+12 | 0.0000E+00 |
| Aerosols (kg) | 3.5583E-08 | 0.0000E+00 |

TSC Compartment Nuclide Inventory:

| Time (h) = 24.0000 | Ci | kg | Atoms | Decay |
|---|---|---|---|---|
| Co-58 | 6.5973E-09 | 2.0747E-16 | 2.1542E+09 | 2.5627E+08 |
| Co-60 | 5.0971E-09 | 4.5092E-15 | 4.5258E+10 | 1.9638E+08 |
| Kr-85 | 7.9046E-04 | 2.0148E-09 | 1.4274E+16 | 3.2279E+12 |
| Kr-85m | 3.6501E-04 | 4.4354E-14 | 3.1424E+11 | 1.7112E+13 |
| Kr-87 | 4.1519E-08 | 1.4658E-18 | 1.0146E+07 | 4.2128E+12 |
| Kr-88 | 1.0857E-04 | 8.6581E-15 | 5.9250E+10 | 2.6397E+13 |
| Rb-86 | 1.6912E-07 | 2.0785E-15 | 1.4555E+10 | 7.8316E+09 |
| Sr-89 | 6.1598E-06 | 2.1203E-13 | 1.4347E+12 | 2.4009E+11 |
| Sr-90 | 6.7397E-07 | 4.9409E-12 | 3.3061E+13 | 2.5960E+10 |
| Sr-91 | 1.3487E-06 | 3.7207E-16 | 2.4622E+09 | 2.4375E+11 |
| Sr-92 | 1.4129E-08 | 1.1241E-18 | 7.3582E+06 | 1.3711E+11 |
| Y-90 | 5.2924E-09 | 9.7275E-18 | 6.5089E+07 | 2.5555E+08 |
| Y-91 | 7.5541E-08 | 3.0803E-15 | 2.0385E+10 | 2.9396E+09 |
| Y-92 | 6.4224E-10 | 6.6745E-20 | 4.3690E+05 | 1.6724E+09 |
| Y-93 | 1.7671E-08 | 5.2967E-18 | 3.4298E+07 | 2.9100E+09 |
| Zr-95 | 9.7408E-08 | 4.5342E-15 | 2.8743E+10 | 3.7871E+09 |
| Zr-97 | 3.5729E-08 | 1.8690E-17 | 1.1603E+08 | 3.2625E+09 |
| Nb-95 | 9.7259E-08 | 2.4872E-15 | 1.5767E+10 | 3.8106E+09 |
| Mo-99 | 1.0382E-06 | 2.1647E-15 | 1.3168E+10 | 4.9790E+10 |
| Tc-99m | 6.4906E-08 | 1.2344E-17 | 7.5087E+07 | 2.9147E+10 |
| Ru-103 | 1.0682E-06 | 3.3098E-14 | 1.9352E+11 | 4.1777E+10 |
| Ru-105 | 1.4140E-08 | 2.1035E-18 | 1.2064E+07 | 1.5472E+10 |
| Ru-106 | 4.0909E-07 | 1.2228E-13 | 6.9470E+11 | 1.5782E+10 |
| Rh-105 | 4.1732E-07 | 4.9443E-16 | 2.8357E+09 | 2.4227E+10 |
| Sb-127 | 1.2333E-06 | 4.6182E-15 | 2.1899E+10 | 5.5546E+10 |
| Sb-129 | 7.8736E-08 | 1.4002E-17 | 6.5364E+07 | 9.4699E+10 |
| Te-127 | 2.2783E-07 | 8.6327E-17 | 4.0935E+08 | 4.2223E+10 |
| Te-127m | 1.9695E-07 | 2.0880E-14 | 9.9007E+10 | 7.6276E+09 |
| Te-129m | 6.4944E-07 | 2.1558E-13 | 1.0064E+11 | 2.5465E+10 |
| Te-131m | 1.1363E-06 | 1.4250E-15 | 6.5509E+09 | 7.1018E+10 |
| Te-132 | 1.6221E-05 | 5.3431E-14 | 2.4376E+11 | 7.5169E+11 |
| I-131 | 1.2042E-04 | 9.7129E-13 | 4.4651E+12 | 4.4786E+12 |
| I-132 | 9.7033E-08 | 9.4005E-18 | 4.2887E+07 | 2.4142E+12 |
| I-133 | 1.1912E-04 | 1.0516E-13 | 4.7615E+11 | 8.3010E+12 |
| I-135 | 1.8346E-05 | 5.2241E-15 | 2.3304E+10 | 5.9808E+12 |
| Xe-133 | 9.8497E-02 | 5.2621E-10 | 2.3826E+15 | 4.3264E+14 |
| Xe-135 | 6.1635E-03 | 2.4135E-12 | 1.0766E+13 | 7.6672E+13 |
| Cs-134 | 1.8321E-05 | 1.4160E-11 | 6.3638E+13 | 8.2172E+11 |
| Cs-136 | 4.7969E-06 | 6.5450E-14 | 2.8981E+11 | 2.2524E+11 |
| Cs-137 | 1.2286E-05 | 1.4124E-10 | 6.2087E+14 | 5.5061E+11 |
| Ba-140 | 1.0001E-05 | 1.3661E-13 | 5.8763E+11 | 4.0381E+11 |
| La-140 | 6.9583E-08 | 1.2519E-16 | 5.3850E+08 | 3.8414E+09 |
| La-141 | 1.1728E-09 | 2.0737E-19 | 8.8570E+05 | 1.9968E+09 |
| Ce-141 | 2.3717E-07 | 8.3237E-15 | 3.5551E+10 | 9.3054E+09 |
| Ce-143 | 1.4192E-07 | 2.1370E-16 | 8.9997E+08 | 8.4855E+09 |
| Ce-144 | 1.9484E-07 | 6.1090E-14 | 2.5548E+11 | 7.5205E+09 |

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**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 2 | System Nos. | Sheet 990 of 1000 |
|---|---|---|---|---|

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Pr-143                 8.9806E-08  1.3336E-15  5.6164E+09  3.6158E+09
Nd-147                 3.7078E-08  4.5833E-16  1.8776E+09  1.5085E+09
Np-239                 1.9693E-06  8.4888E-15  2.1389E+10  9.7994E+10
Pu-238                 7.7019E-10  4.4988E-14  1.1383E+11  2.9665E+07
Pu-239                 5.9945E-11  9.6443E-13  2.4301E+12  2.3088E+06
Pu-240                 6.4645E-11  2.8370E-13  7.1186E+11  2.4899E+06
Pu-241                 2.6768E-08  2.5985E-13  6.4932E+11  1.0311E+09
Am-241                 1.6465E-11  4.7973E-15  1.1987E+10  6.3417E+05
Cm-242                 3.8531E-09  1.1626E-15  2.8930E+09  1.4895E+08
Cm-244                 3.1306E-10  3.8696E-15  9.5505E+09  1.2059E+07

TSC Transport Group Inventory:
Time (h) =  24.0000    Atmosphere     Sump
Noble gases (atoms)    1.6668E+16  0.0000E+00
Elemental I (atoms)    1.0262E+12  0.0000E+00
Organic I (atoms)      1.8002E+11  0.0000E+00
Aerosols (kg)          1.6369E-10  0.0000E+00
Dose Effective (Ci/cc) I-131 (Thyroid)         1.1837E-13
Dose Effective (Ci/cc) I-131 (ICRP2 Thyroid)   1.2931E-13
Total I (Ci)                                   2.5798E-04

                       Deposition Recirculating
Time (h) =  24.0000     Surfaces     Filter
Noble gases (atoms)    0.0000E+00  0.0000E+00
Elemental I (atoms)    0.0000E+00  6.9843E+13
Organic I (atoms)      0.0000E+00  1.1528E+13
Aerosols (kg)          0.0000E+00  3.0306E-08

TSC Filtered Air Intake Transport Group Inventory:

                         Pathway
Time (h) =  24.0000     Filtered   Transported
Noble gases (atoms)    0.0000E+00  4.4927E+17
Elemental I (atoms)    1.6971E+14  5.4772E+13
Organic I (atoms)      2.9771E+13  7.1563E+12
Aerosols (kg)          5.6463E-08  4.2311E-08

TSC Unfiltered Inleakage Transport Group Inventory:

                         Pathway
Time (h) =  24.0000     Filtered   Transported
Noble gases (atoms)    0.0000E+00  1.7002E+17
Elemental I (atoms)    0.0000E+00  7.8571E+13
Organic I (atoms)      0.0000E+00  1.3783E+13
Aerosols (kg)          0.0000E+00  2.3764E-08

TSC Exhaust to Environment Transport Group Inventory:

                         Pathway
Time (h) =  24.0000     Filtered   Transported
Noble gases (atoms)    6.0205E+17  0.0000E+00
Elemental I (atoms)    6.1545E+13  0.0000E+00
Organic I (atoms)      9.1170E+12  0.0000E+00
Aerosols (kg)          3.5583E-08  0.0000E+00

Exclusion Area Boundary Doses:

Time (h) =  96.0000    Whole Body   Thyroid       TEDE
Delta dose (rem)        1.1222E+00  5.2623E+02  3.0921E+01
Accumulated dose (rem)  6.5334E+00  1.5791E+03  9.1144E+01

Low Population Zone Doses:

Time (h) =  96.0000    Whole Body   Thyroid       TEDE
Delta dose (rem)        2.2445E-02  6.9161E+00  4.1409E-01
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**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 2 | System Nos. | Sheet 991 of 1000 |
|---|---|---|---|---|

| | | | |
|---|---|---|---|
| Accumulated dose (rem) | 5.1778E-01 | 9.1561E+01 | 5.2928E+00 |

TSC Doses:

| Time (h) = 96.0000 | Whole Body | Thyroid | TEDE |
|---|---|---|---|
| Delta dose (rem) | 7.9810E-04 | 1.8256E+00 | 1.0101E-01 |
| Accumulated dose (rem) | 1.6536E-02 | 5.5918E+01 | 2.9014E+00 |

Travel Path Doses:

| Time (h) = 96.0000 | Whole Body | Thyroid | TEDE |
|---|---|---|---|
| Delta dose (rem) | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 |
| Accumulated dose (rem) | 6.1420E-02 | 1.2087E+01 | 6.7910E-01 |

Environment Integral Nuclide Release:

| Time (h) = 96.0000 | Ci | kg | Atoms | Bq |
|---|---|---|---|---|
| Co-58 | 2.5054E-01 | 7.8791E-09 | 8.1809E+16 | 9.2700E+09 |
| Co-60 | 1.9391E-01 | 1.7154E-07 | 1.7218E+18 | 7.1747E+09 |
| Kr-85 | 2.5610E+03 | 6.5276E-03 | 4.6247E+22 | 9.4757E+13 |
| Kr-85m | 4.3255E+03 | 5.2560E-07 | 3.7238E+18 | 1.6004E+14 |
| Kr-87 | 1.1613E+03 | 4.0999E-08 | 2.8379E+17 | 4.2968E+13 |
| Kr-88 | 6.4881E+03 | 5.1743E-07 | 3.5409E+18 | 2.4006E+14 |
| Rb-86 | 6.5641E+00 | 8.0672E-08 | 5.6491E+17 | 2.4287E+11 |
| Sr-89 | 2.3376E+02 | 8.0464E-06 | 5.4445E+19 | 8.6493E+12 |
| Sr-90 | 2.5642E+01 | 1.8798E-04 | 1.2578E+21 | 9.4874E+11 |
| Sr-91 | 1.1313E+02 | 3.1210E-08 | 2.0654E+17 | 4.1860E+12 |
| Sr-92 | 4.7390E+01 | 3.7702E-09 | 2.4679E+16 | 1.7534E+12 |
| Y-90 | 2.0011E-01 | 3.6781E-10 | 2.4611E+15 | 7.4041E+09 |
| Y-91 | 2.8677E+00 | 1.1694E-07 | 7.7385E+17 | 1.0611E+11 |
| Y-92 | 6.0554E-01 | 6.2931E-11 | 4.1193E+14 | 2.2405E+10 |
| Y-93 | 1.3748E+00 | 4.1208E-10 | 2.6684E+15 | 5.0869E+10 |
| Zr-95 | 3.6985E+00 | 1.7216E-07 | 1.0913E+18 | 1.3684E+11 |
| Zr-97 | 1.7985E+00 | 9.4082E-10 | 5.8410E+15 | 6.6546E+10 |
| Nb-95 | 3.6872E+00 | 9.4294E-08 | 5.9774E+17 | 1.3643E+11 |
| Mo-99 | 3.9218E+01 | 8.1771E-08 | 4.9741E+17 | 1.4511E+12 |
| Tc-99m | 1.1932E+01 | 2.2692E-09 | 1.3804E+16 | 4.4149E+11 |
| Ru-103 | 4.0511E+01 | 1.2552E-06 | 7.3390E+18 | 1.4989E+12 |
| Ru-105 | 5.8794E+00 | 8.7465E-10 | 5.0164E+15 | 2.1754E+11 |
| Ru-106 | 1.5559E+01 | 4.6505E-06 | 2.6421E+19 | 5.7567E+11 |
| Rh-105 | 1.6552E+01 | 1.9610E-08 | 1.1247E+17 | 6.1243E+11 |
| Sb-127 | 4.6316E+01 | 1.7343E-07 | 8.2239E+17 | 1.7137E+12 |
| Sb-129 | 3.5763E+01 | 6.3597E-09 | 2.9689E+16 | 1.3232E+12 |
| Te-127 | 1.9507E+01 | 7.3917E-09 | 3.5050E+16 | 7.2177E+11 |
| Te-127m | 7.4840E+00 | 7.9342E-07 | 3.7623E+18 | 2.7691E+11 |
| Te-129 | 8.0314E+00 | 3.8350E-10 | 1.7903E+15 | 2.9716E+11 |
| Te-129m | 2.4617E+01 | 8.1717E-06 | 3.8148E+18 | 9.1084E+11 |
| Te-131m | 4.6399E+01 | 5.8187E-08 | 2.6749E+17 | 1.7167E+12 |
| Te-132 | 6.1036E+02 | 2.0104E-06 | 9.1721E+18 | 2.2583E+13 |
| I-131 | 4.1143E+03 | 3.3187E-05 | 1.5256E+20 | 1.5223E+14 |
| I-132 | 7.7079E+02 | 7.4673E-08 | 3.4067E+17 | 2.8519E+13 |
| I-133 | 4.7741E+03 | 4.2144E-06 | 1.9082E+19 | 1.7664E+14 |
| I-134 | 3.5834E+02 | 1.3433E-08 | 6.0368E+16 | 1.3258E+13 |
| I-135 | 2.3968E+03 | 6.8249E-07 | 3.0445E+18 | 8.8682E+13 |
| Xe-133 | 2.9122E+05 | 1.5558E-03 | 7.0447E+21 | 1.0775E+16 |
| Xe-135 | 2.2521E+04 | 8.8189E-06 | 3.9340E+19 | 8.3328E+14 |
| Cs-134 | 7.1462E+02 | 5.5233E-04 | 2.4822E+21 | 2.6441E+13 |
| Cs-136 | 1.8588E+02 | 2.5362E-06 | 1.1230E+19 | 6.8776E+12 |
| Cs-137 | 4.7928E+02 | 5.5101E-03 | 2.4221E+22 | 1.7733E+13 |
| Ba-139 | 2.6002E+01 | 1.5896E-09 | 6.8871E+15 | 9.6206E+11 |
| Ba-140 | 3.7729E+02 | 5.1536E-06 | 2.2168E+19 | 1.3960E+13 |
| La-140 | 2.7138E+00 | 4.8825E-09 | 2.1002E+16 | 1.0041E+11 |
| La-141 | 7.3863E-01 | 1.3061E-10 | 5.5783E+14 | 2.7329E+10 |
| La-142 | 3.3041E-01 | 2.3082E-11 | 9.7888E+13 | 1.2225E+10 |
| Ce-141 | 8.9891E+00 | 3.1548E-07 | 1.3474E+18 | 3.3260E+11 |

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Ce-143                  5.6913E+00  8.5702E-09  3.6091E+16  2.1058E+11
Ce-144                  7.4096E+00  2.3231E-06  9.7154E+18  2.7415E+11
Pr-143                  3.3893E+00  5.0332E-08  2.1196E+17  1.2540E+11
Nd-147                  1.3974E+00  1.7274E-08  7.0766E+16  5.1705E+10
Np-239                  7.4839E+01  3.2259E-07  8.1284E+17  2.7690E+12
Pu-238                  2.9302E-02  1.7116E-06  4.3309E+18  1.0842E+09
Pu-239                  2.2807E-03  3.6692E-05  9.2455E+19  8.4385E+07
Pu-240                  2.4595E-03  1.0793E-05  2.7083E+19  9.1001E+07
Pu-241                  1.0184E+00  9.8861E-06  2.4703E+19  3.7680E+10
Am-241                  6.2643E-04  1.8252E-07  4.5607E+17  2.3178E+07
Cm-242                  1.4647E-01  4.4195E-08  1.0998E+17  5.4195E+09
Cm-244                  1.1910E-02  1.4722E-07  3.6335E+17  4.4069E+08

Environment Transport Group Inventory:

                          Total      Release
Time (h) =  96.0000     Release     Rate/s
Noble gases (atoms)    5.3339E+22  1.5434E+17
Elemental I (atoms)    2.1491E+19  6.2184E+13
Organic I (atoms)      3.6949E+18  1.0691E+13
Aerosols (kg)          6.3792E-03  1.8458E-08
Dose Effective (Ci) I-131 (Thyroid)            4.9833E+03
Dose Effective (Ci) I-131 (ICRP2 Thyroid)      5.6238E+03
Total I  (Ci)                                  1.2414E+04

Sprayed to Environment Transport Group Inventory:
Time (h) =  96.0000  Leakage Transport

Noble gases (atoms)      3.0462E+22
Elemental I (atoms)      1.2082E+19
Organic I (atoms)        2.1359E+18
Aerosols (kg)            3.4126E-03

Unsprayed to Environment Transport Group Inventory:
Time (h) =  96.0000  Leakage Transport

Noble gases (atoms)      2.2984E+22
Elemental I (atoms)      9.7082E+18
Organic I (atoms)        1.6116E+18
Aerosols (kg)            2.9671E-03

TSC Filtered Air Intake Transport Group Inventory:

                          Pathway
Time (h) =  96.0000     Filtered   Transported
Noble gases (atoms)    0.0000E+00  7.7017E+17
Elemental I (atoms)    2.7365E+14  6.6320E+13
Organic I (atoms)      4.8003E+13  9.1821E+12
Aerosols (kg)          8.0431E-08  4.2553E-08

TSC Unfiltered Inleakage Transport Group Inventory:

                          Pathway
Time (h) =  96.0000     Filtered   Transported
Noble gases (atoms)    0.0000E+00  3.0372E+17
Elemental I (atoms)    0.0000E+00  1.2669E+14
Organic I (atoms)      0.0000E+00  2.2224E+13
Aerosols (kg)          0.0000E+00  3.3851E-08

TSC Exhaust to Environment Transport Group Inventory:

                          Pathway
Time (h) =  96.0000     Filtered   Transported
Noble gases (atoms)    1.0489E+18  0.0000E+00
Elemental I (atoms)    8.7276E+13  0.0000E+00
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Organic I (atoms)      1.3631E+13  0.0000E+00
Aerosols (kg)          3.9785E-08  0.0000E+00

TSC Compartment Nuclide Inventory:

Time (h) =  96.0000       Ci           kg          Atoms       Decay
Co-58                  1.5028E-09  4.7261E-17  4.9071E+08  2.7328E+08
Co-60                  1.1944E-09  1.0566E-15  1.0605E+10  2.0970E+08
Kr-85                  2.5243E-04  6.4340E-10  4.5584E+15  5.6534E+12
Kr-85m                 1.6936E-09  2.0580E-19  1.4580E+06  1.7213E+13
Rb-86                  3.5489E-08  4.3616E-16  3.0542E+09  8.2514E+09
Sr-89                  1.3867E-06  4.7730E-14  3.2297E+11  2.5589E+11
Sr-90                  1.5807E-07  1.1588E-12  7.7539E+12  2.7723E+10
Sr-91                  1.6547E-09  4.5648E-19  3.0208E+06  2.4449E+11
Y-90                   5.6922E-10  1.0462E-18  7.0006E+06  2.6536E+08
Y-91                   1.7102E-08  6.9735E-16  4.6148E+09  3.1339E+09
Y-93                   2.9621E-11  8.8784E-21  5.7491E+04  2.9202E+09
Zr-95                  2.2119E-08  1.0296E-15  6.5268E+09  4.0380E+09
Zr-97                  4.3733E-10  2.2877E-19  1.4203E+06  3.2945E+09
Nb-95                  2.1504E-08  5.4994E-16  3.4861E+09  4.0580E+09
Mo-99                  1.1434E-07  2.3839E-16  1.4501E+09  5.1732E+10
Ru-103                 2.3766E-07  7.3638E-15  4.3054E+10  4.4502E+10
Ru-106                 9.5424E-08  2.8523E-14  1.6204E+11  1.6849E+10
Rh-105                 2.3867E-08  2.8277E-17  1.6218E+08  2.4832E+10
Sb-127                 1.6857E-07  6.3124E-16  2.9933E+09  5.8073E+10
Te-127                 2.5692E-10  9.7352E-20  4.6163E+05  4.2345E+10
Te-127m                4.5327E-08  4.8053E-15  2.2786E+10  8.1380E+09
Te-129m                1.4320E-07  4.7536E-14  2.2191E+10  2.7115E+10
Te-131m                5.0503E-08  6.3335E-17  2.9115E+08  7.2526E+10
Te-132                 2.0101E-06  6.6209E-15  3.0206E+10  7.8357E+11
I-131                  2.3728E-05  1.9140E-13  8.7986E+11  4.7691E+12
I-133                  2.7598E-06  2.4363E-15  1.1031E+10  8.4292E+12
I-135                  2.4630E-09  7.0134E-19  3.1286E+06  5.9879E+12
Xe-133                 2.1171E-02  1.1310E-10  5.1211E+14  6.8228E+14
Xe-135                 8.1269E-06  3.1824E-15  1.4196E+10  8.0117E+13
Cs-134                 4.2858E-06  3.3125E-12  1.4887E+13  8.6957E+11
Cs-136                 9.6008E-07  1.3100E-14  5.8006E+10  2.3689E+11
Cs-137                 2.8814E-06  3.3126E-11  1.4561E+14  5.8274E+11
Ba-140                 1.9927E-06  2.7220E-14  1.1709E+11  4.2805E+11
La-140                 4.7272E-09  8.5047E-18  3.6583E+07  3.9490E+09
Ce-141                 5.2187E-08  1.8316E-15  7.8226E+09  9.9072E+09
Ce-143                 7.3372E-09  1.1049E-17  4.6529E+07  8.6841E+09
Ce-144                 4.5373E-08  1.4226E-14  5.9493E+10  8.0283E+09
Pr-143                 1.8071E-08  2.6837E-16  1.1302E+09  3.8344E+09
Nd-147                 7.1971E-09  8.8965E-17  3.6446E+08  1.5973E+09
Np-239                 1.9104E-07  8.2349E-16  2.0750E+09  1.0149E+11
Pu-238                 1.8066E-10  1.0553E-14  2.6701E+10  3.1679E+07
Pu-239                 1.4062E-11  2.2623E-13  5.7005E+11  2.4656E+06
Pu-240                 1.5164E-11  6.6549E-14  1.6699E+11  2.6589E+06
Pu-241                 6.2767E-09  6.0932E-14  1.5226E+11  1.1011E+09
Am-241                 3.8623E-12  1.1253E-15  2.8120E+09  6.7723E+05
Cm-242                 8.9237E-10  2.6925E-16  6.7003E+08  1.5897E+08
Cm-244                 7.3414E-11  9.0744E-16  2.2396E+09  1.2878E+07

TSC Transport Group Inventory:
Time (h) =  96.0000    Atmosphere     Sump
Noble gases (atoms)    5.0706E+15  0.0000E+00
Elemental I (atoms)    2.3056E+11  0.0000E+00
Organic I (atoms)      4.0444E+10  0.0000E+00
Aerosols (kg)          3.8304E-11  0.0000E+00
Dose Effective (Ci/cc) I-131 (Thyroid)          2.0338E-14
Dose Effective (Ci/cc) I-131 (ICRP2 Thyroid)    2.0572E-14
Total I (Ci)                                    2.6491E-05

                       Deposition Recirculating
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Time (h) =  96.0000     Surfaces     Filter
Noble gases (atoms)    0.0000E+00  0.0000E+00
Elemental I (atoms)    0.0000E+00  1.0799E+14
Organic I (atoms)      0.0000E+00  1.8219E+13
Aerosols (kg)          0.0000E+00  3.7158E-08

TSC Filtered Air Intake Transport Group Inventory:

                         Pathway
Time (h) =  96.0000     Filtered   Transported
Noble gases (atoms)    0.0000E+00  7.7017E+17
Elemental I (atoms)    2.7365E+14  6.6320E+13
Organic I (atoms)      4.8003E+13  9.1821E+12
Aerosols (kg)          8.0431E-08  4.2553E-08

TSC Unfiltered Inleakage Transport Group Inventory:

                         Pathway
Time (h) =  96.0000     Filtered   Transported
Noble gases (atoms)    0.0000E+00  3.0372E+17
Elemental I (atoms)    0.0000E+00  1.2669E+14
Organic I (atoms)      0.0000E+00  2.2224E+13
Aerosols (kg)          0.0000E+00  3.3851E-08

TSC Exhaust to Environment Transport Group Inventory:

                         Pathway
Time (h) =  96.0000     Filtered   Transported
Noble gases (atoms)    1.0489E+18  0.0000E+00
Elemental I (atoms)    8.7276E+13  0.0000E+00
Organic I (atoms)      1.3631E+13  0.0000E+00
Aerosols (kg)          3.9785E-08  0.0000E+00

Exclusion Area Boundary Doses:

Time (h) = 720.0000    Whole Body   Thyroid       TEDE
Delta dose (rem)        1.8816E+00  8.1537E+02  6.0620E+01
Accumulated dose (rem)  8.4150E+00  2.3944E+03  1.5176E+02

Low Population Zone Doses:

Time (h) = 720.0000    Whole Body   Thyroid       TEDE
Delta dose (rem)        9.4079E-03  2.6791E+00  2.0240E-01
Accumulated dose (rem)  5.2719E-01  9.4240E+01  5.4952E+00

TSC Doses:

Time (h) = 720.0000    Whole Body   Thyroid       TEDE
Delta dose (rem)        7.3516E-04  1.5911E+00  1.0875E-01
Accumulated dose (rem)  1.7271E-02  5.7509E+01  3.0101E+00

Travel Path Doses:

Time (h) = 720.0000    Whole Body   Thyroid       TEDE
Delta dose (rem)        0.0000E+00  0.0000E+00  0.0000E+00
Accumulated dose (rem)  6.1420E-02  1.2087E+01  6.7910E-01

Environment Integral Nuclide Release:

Time (h) = 720.0000       Ci           kg          Atoms         Bq
Co-58                  4.7659E-01  1.4988E-08  1.5562E+17  1.7634E+10
Co-60                  3.8701E-01  3.4237E-07  3.4364E+18  1.4320E+10
Kr-85                  1.5987E+04  4.0750E-02  2.8870E+23  5.9154E+14
Kr-85m                 4.3255E+03  5.2560E-07  3.7238E+18  1.6004E+14
Kr-87                  1.1613E+03  4.0999E-08  2.8379E+17  4.2968E+13
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**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 2 | System Nos. | Sheet 995 of 1000 |
|---|---|---|---|---|

| | | | | |
|---|---|---|---|---|
| Kr-88 | 6.4881E+03 | 5.1743E-07 | 3.5409E+18 | 2.4006E+14 |
| Rb-86 | 1.0976E+01 | 1.3489E-07 | 9.4455E+17 | 4.0609E+11 |
| Sr-89 | 4.3637E+02 | 1.5020E-05 | 1.0163E+20 | 1.6146E+13 |
| Sr-90 | 5.1257E+01 | 3.7577E-04 | 2.5143E+21 | 1.8965E+12 |
| Sr-91 | 1.1315E+02 | 3.1213E-08 | 2.0656E+17 | 4.1865E+12 |
| Sr-92 | 4.7390E+01 | 3.7702E-09 | 2.4679E+16 | 1.7534E+12 |
| Y-90 | 2.2770E-01 | 4.1851E-10 | 2.8004E+15 | 8.4248E+09 |
| Y-91 | 5.4012E+00 | 2.2024E-07 | 1.4575E+18 | 1.9984E+11 |
| Y-92 | 6.0554E-01 | 6.2931E-11 | 4.1193E+14 | 2.2405E+10 |
| Y-93 | 1.3751E+00 | 4.1216E-10 | 2.6689E+15 | 5.0879E+10 |
| Zr-95 | 6.9999E+00 | 3.2584E-07 | 2.0655E+18 | 2.5900E+11 |
| Zr-97 | 1.8052E+00 | 9.4430E-10 | 5.8626E+15 | 6.6792E+10 |
| Nb-95 | 6.6963E+00 | 1.7125E-07 | 1.0856E+18 | 2.4776E+11 |
| Mo-99 | 4.4886E+01 | 9.3587E-08 | 5.6929E+17 | 1.6608E+12 |
| Tc-99m | 1.1932E+01 | 2.2692E-09 | 1.3804E+16 | 4.4149E+11 |
| Ru-103 | 7.4262E+01 | 2.3010E-06 | 1.3453E+19 | 2.7477E+12 |
| Ru-105 | 5.8794E+00 | 8.7465E-10 | 5.0164E+15 | 2.1754E+11 |
| Ru-106 | 3.0804E+01 | 9.2075E-06 | 5.2310E+19 | 1.1398E+12 |
| Rh-105 | 1.7272E+01 | 2.0463E-08 | 1.1736E+17 | 6.3906E+11 |
| Sb-127 | 5.6852E+01 | 2.1289E-07 | 1.0095E+18 | 2.1035E+12 |
| Sb-129 | 3.5763E+01 | 6.3597E-09 | 2.9689E+16 | 1.3232E+12 |
| Te-127 | 1.9510E+01 | 7.3925E-09 | 3.5054E+16 | 7.2185E+11 |
| Te-127m | 1.4481E+01 | 1.5352E-06 | 7.2796E+18 | 5.3579E+11 |
| Te-129 | 8.0314E+00 | 3.8350E-10 | 1.7903E+15 | 2.9716E+11 |
| Te-129m | 4.4527E+01 | 1.4781E-05 | 6.9001E+18 | 1.6475E+12 |
| Te-131m | 4.7717E+01 | 5.9841E-08 | 2.7509E+17 | 1.7655E+12 |
| Te-132 | 7.2273E+02 | 2.3806E-06 | 1.0861E+19 | 2.6741E+13 |
| I-131 | 6.6977E+03 | 5.4024E-05 | 2.4835E+20 | 2.4781E+14 |
| I-132 | 7.7079E+02 | 7.4673E-08 | 3.4067E+17 | 2.8519E+13 |
| I-133 | 4.8237E+03 | 4.2581E-06 | 1.9281E+19 | 1.7848E+14 |
| I-134 | 3.5834E+02 | 1.3433E-08 | 6.0368E+16 | 1.3258E+13 |
| I-135 | 2.3968E+03 | 6.8250E-07 | 3.0445E+18 | 8.8683E+13 |
| Xe-133 | 6.0662E+05 | 3.2408E-03 | 1.4674E+22 | 2.2445E+16 |
| Xe-135 | 2.2529E+04 | 8.8219E-06 | 3.9353E+19 | 8.3357E+14 |
| Cs-134 | 1.4045E+03 | 1.0855E-03 | 4.8786E+21 | 5.1967E+13 |
| Cs-136 | 2.9401E+02 | 4.0115E-06 | 1.7763E+19 | 1.0878E+13 |
| Cs-137 | 9.4622E+02 | 1.0878E-02 | 4.7818E+22 | 3.5010E+13 |
| Ba-139 | 2.6002E+01 | 1.5896E-09 | 6.8871E+15 | 9.6206E+11 |
| Ba-140 | 5.9971E+02 | 8.1917E-06 | 3.5237E+19 | 2.2189E+13 |
| La-140 | 2.8730E+00 | 5.1688E-09 | 2.2234E+16 | 1.0630E+11 |
| La-141 | 7.3863E-01 | 1.3061E-10 | 5.5783E+14 | 2.7329E+10 |
| La-142 | 3.3041E-01 | 2.3082E-11 | 9.7888E+13 | 1.2225E+10 |
| Ce-141 | 1.6209E+01 | 5.6887E-07 | 2.4297E+18 | 5.9974E+11 |
| Ce-143 | 5.8997E+00 | 8.8839E-09 | 3.7413E+16 | 2.1829E+11 |
| Ce-144 | 1.4628E+01 | 4.5862E-06 | 1.9180E+19 | 5.4122E+11 |
| Pr-143 | 5.4467E+00 | 8.0886E-08 | 3.4063E+17 | 2.0153E+11 |
| Nd-147 | 2.1607E+00 | 2.6709E-08 | 1.0942E+17 | 7.9947E+10 |
| Np-239 | 8.3272E+01 | 3.5895E-07 | 9.0444E+17 | 3.0811E+12 |
| Pu-238 | 5.8588E-02 | 3.4223E-06 | 8.6594E+18 | 2.1678E+09 |
| Pu-239 | 4.5606E-03 | 7.3373E-05 | 1.8488E+20 | 1.6874E+08 |
| Pu-240 | 4.9181E-03 | 2.1583E-05 | 5.4158E+19 | 1.8197E+08 |
| Pu-241 | 2.0350E+00 | 1.9755E-05 | 4.9364E+19 | 7.5296E+10 |
| Am-241 | 1.2526E-03 | 3.6497E-07 | 9.1198E+17 | 4.6347E+07 |
| Cm-242 | 2.8645E-01 | 8.6429E-08 | 2.1508E+17 | 1.0599E+10 |
| Cm-244 | 2.3804E-02 | 2.9423E-07 | 7.2618E+17 | 8.8073E+08 |

Environment Transport Group Inventory:

| Time (h) = 720.0000 | Total Release | Release Rate/s | |
|---|---|---|---|
| Noble gases (atoms) | 3.0343E+23 | 1.1706E+17 | |
| Elemental I (atoms) | 5.4318E+19 | 2.0956E+13 | |
| Organic I (atoms) | 9.4535E+18 | 3.6472E+12 | |
| Aerosols (kg) | 1.2568E-02 | 4.8489E-09 | |
| Dose Effective (Ci) I-131 (Thyroid) | | | 7.5749E+03 |

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**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 2 | System Nos. | Sheet 996 of 1000 |
|---|---|---|---|---|

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Dose Effective (Ci) I-131 (ICRP2 Thyroid)      8.2203E+03
Total I  (Ci)                                  1.5047E+04

Sprayed to Environment Transport Group Inventory:
Time (h) = 720.0000  Leakage Transport

Noble gases (atoms)      1.7310E+23
Elemental I (atoms)      3.1067E+19
Organic I (atoms)        5.4661E+18
Aerosols (kg)            6.9458E-03

Unsprayed to Environment Transport Group Inventory:
Time (h) = 720.0000  Leakage Transport

Noble gases (atoms)      1.3061E+23
Elemental I (atoms)      2.4032E+19
Organic I (atoms)        4.1242E+18
Aerosols (kg)            5.6235E-03

TSC Filtered Air Intake Transport Group Inventory:

                         Pathway
Time (h) = 720.0000     Filtered   Transported
Noble gases (atoms)    0.0000E+00  2.9387E+18
Elemental I (atoms)    5.3340E+14  9.5182E+13
Organic I (atoms)      9.3569E+13  1.4245E+13
Aerosols (kg)          1.3353E-07  4.3090E-08

TSC Unfiltered Inleakage Transport Group Inventory:

                         Pathway
Time (h) = 720.0000     Filtered   Transported
Noble gases (atoms)    0.0000E+00  1.2073E+18
Elemental I (atoms)    0.0000E+00  2.4695E+14
Organic I (atoms)      0.0000E+00  4.3319E+13
Aerosols (kg)          0.0000E+00  5.6198E-08

TSC Exhaust to Environment Transport Group Inventory:

                         Pathway
Time (h) = 720.0000     Filtered   Transported
Noble gases (atoms)    4.1206E+18  0.0000E+00
Elemental I (atoms)    1.4715E+14  0.0000E+00
Organic I (atoms)      2.4134E+13  0.0000E+00
Aerosols (kg)          4.8461E-08  0.0000E+00

TSC Compartment Nuclide Inventory:

Time (h) = 720.0000       Ci           kg          Atoms       Decay
Co-58                  6.8678E-11  2.1598E-18  2.2426E+07  3.0791E+08
Co-60                  6.9750E-11  6.1705E-17  6.1932E+08  2.3926E+08
Kr-85                  2.1561E-04  5.4956E-10  3.8936E+15  2.3732E+13
Rb-86                  7.9639E-10  9.7876E-18  6.8537E+07  8.9286E+09
Sr-89                  5.7208E-08  1.9691E-15  1.3324E+10  2.8694E+11
Sr-90                  9.3021E-09  6.8194E-14  4.5630E+11  3.1643E+10
Y-91                   7.4086E-10  3.0210E-17  1.9992E+08  3.5220E+09
Zr-95                  9.8379E-10  4.5794E-17  2.9029E+08  4.5438E+09
Nb-95                  7.5915E-10  1.9414E-17  1.2307E+08  4.5193E+09
Mo-99                  9.6062E-12  2.0029E-20  1.2184E+05  5.2618E+10
Ru-103                 8.8545E-09  2.7436E-16  1.6041E+09  4.9675E+10
Ru-106                 5.3564E-09  1.6010E-15  9.0959E+09  1.9183E+10
Sb-127                 9.2115E-11  3.4493E-19  1.6356E+06  5.9710E+10
Te-127m                2.2647E-09  2.4010E-16  1.1385E+09  9.2094E+09
Te-129m                4.9372E-09  1.6389E-15  7.6509E+08  3.0167E+10
Te-132                 4.6946E-10  1.5463E-18  7.0548E+06  8.0107E+11
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AmerGen

**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 2 | System Nos. | Sheet 997 of 1000 |
|---|---|---|---|---|

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I-131                  7.6182E-07  6.1449E-15  2.8249E+10  5.2142E+12
Xe-133                 5.8483E-04  3.1244E-12  1.4147E+13  1.1117E+15
Cs-134                 2.4667E-07  1.9065E-13  8.5680E+11  9.7517E+11
Cs-136                 1.4299E-08  1.9510E-16  8.6392E+08  2.5351E+11
Cs-137                 1.6957E-07  1.9495E-12  8.5696E+12  6.5421E+11
Ba-140                 2.8547E-08  3.8995E-16  1.6774E+09  4.6224E+11
Ce-141                 1.7669E-09  6.2012E-17  2.6485E+08  1.1014E+10
Ce-144                 2.5104E-09  7.8708E-16  3.2916E+09  9.1332E+09
Pr-143                 2.8201E-10  4.1880E-18  1.7637E+07  4.1506E+09
Nd-147                 8.2188E-11  1.0159E-18  4.1620E+06  1.7147E+09
Np-239                 5.3472E-12  2.3049E-20  5.8077E+04  1.0281E+11
Pu-238                 1.0643E-11  6.2171E-16  1.5731E+09  3.6161E+07
Pu-239                 8.2892E-13  1.3336E-14  3.3603E+10  2.8146E+06
Pu-240                 8.9390E-13  3.9229E-15  9.8434E+09  3.0352E+06
Pu-241                 3.6874E-10  3.5795E-15  8.9445E+09  1.2567E+09
Am-241                 2.2765E-13  6.6328E-17  1.6574E+08  7.7307E+05
Cm-242                 4.7091E-11  1.4209E-17  3.5358E+07  1.8040E+08
Cm-244                 4.3158E-12  5.3346E-17  1.3166E+08  1.4698E+07

TSC Transport Group Inventory:
Time (h) = 720.0000    Atmosphere     Sump
Noble gases (atoms)    3.9077E+15  0.0000E+00
Elemental I (atoms)    2.0769E+10  0.0000E+00
Organic I (atoms)      3.6433E+09  0.0000E+00
Aerosols (kg)          2.2381E-12  0.0000E+00
Dose Effective (Ci/cc) I-131 (Thyroid)         6.4055E-16
Dose Effective (Ci/cc) I-131 (ICRP2 Thyroid)   6.4055E-16
Total I (Ci)                                   7.6182E-07

                       Deposition Recirculating
Time (h) = 720.0000     Surfaces     Filter
Noble gases (atoms)    0.0000E+00  0.0000E+00
Elemental I (atoms)    0.0000E+00  1.9674E+14
Organic I (atoms)      0.0000E+00  3.3789E+13
Aerosols (kg)          0.0000E+00  5.1304E-08

TSC Filtered Air Intake Transport Group Inventory:

                         Pathway
Time (h) = 720.0000     Filtered   Transported
Noble gases (atoms)    0.0000E+00  2.9387E+18
Elemental I (atoms)    5.3340E+14  9.5182E+13
Organic I (atoms)      9.3569E+13  1.4245E+13
Aerosols (kg)          1.3353E-07  4.3090E-08

TSC Unfiltered Inleakage Transport Group Inventory:

                         Pathway
Time (h) = 720.0000     Filtered   Transported
Noble gases (atoms)    0.0000E+00  1.2073E+18
Elemental I (atoms)    0.0000E+00  2.4695E+14
Organic I (atoms)      0.0000E+00  4.3319E+13
Aerosols (kg)          0.0000E+00  5.6198E-08

TSC Exhaust to Environment Transport Group Inventory:

                         Pathway
Time (h) = 720.0000     Filtered   Transported
Noble gases (atoms)    4.1206E+18  0.0000E+00
Elemental I (atoms)    1.4715E+14  0.0000E+00
Organic I (atoms)      2.4134E+13  0.0000E+00
Aerosols (kg)          4.8461E-08  0.0000E+00

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**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 2 | System Nos. | Sheet 998 of 1000 |
|---|---|---|---|---|

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#####################################################################
                          I-131 Summary
#####################################################################
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| Time (hr) | Sprayed Region I-131 (Curies) | Unsprayed Region I-131 (Curies) | Environment I-131 (Curies) |
|---|---|---|---|
| 0.000 | 2.2633E+03 | 1.7074E+03 | 4.5957E-05 |
| 0.010 | 3.9516E+04 | 2.9806E+04 | 1.4009E-02 |
| 0.021 | 8.4729E+04 | 6.3902E+04 | 6.4411E-02 |
| 0.350 | 7.4824E+05 | 9.7516E+05 | 1.4057E+01 |
| 0.491 | 8.8411E+05 | 1.2845E+06 | 2.5509E+01 |
| 0.500 | 9.1112E+05 | 1.3034E+06 | 2.6358E+01 |
| 0.800 | 3.0375E+06 | 3.3627E+06 | 8.1831E+01 |
| 0.917 | 3.5966E+06 | 4.0757E+06 | 1.1611E+02 |
| 1.000 | 3.9415E+06 | 4.5485E+06 | 1.4417E+02 |
| 1.300 | 4.9246E+06 | 6.0093E+06 | 2.6629E+02 |
| 1.600 | 5.6339E+06 | 7.1346E+06 | 4.1494E+02 |
| 1.800 | 6.0026E+06 | 7.7322E+06 | 5.2548E+02 |
| 2.000 | 4.5672E+06 | 6.5755E+06 | 6.2861E+02 |
| 2.060 | 4.2467E+06 | 6.2437E+06 | 6.5564E+02 |
| 2.360 | 3.1287E+06 | 4.7799E+06 | 7.6973E+02 |
| 2.660 | 2.3734E+06 | 3.6429E+06 | 8.5616E+02 |
| 2.800 | 2.0969E+06 | 3.2095E+06 | 8.8914E+02 |
| 3.200 | 1.4888E+06 | 2.2419E+06 | 9.6360E+02 |
| 3.500 | 1.1631E+06 | 1.7210E+06 | 1.0047E+03 |
| 3.510 | 1.1538E+06 | 1.7060E+06 | 1.0059E+03 |
| 3.910 | 1.3764E+06 | 1.3234E+06 | 1.0522E+03 |
| 4.000 | 1.3878E+06 | 1.2746E+06 | 1.0623E+03 |
| 4.300 | 1.4538E+06 | 1.1704E+06 | 1.0953E+03 |
| 4.600 | 1.4700E+06 | 1.1184E+06 | 1.1279E+03 |
| 4.900 | 1.4655E+06 | 1.0884E+06 | 1.1600E+03 |
| 5.200 | 1.4525E+06 | 1.0677E+06 | 1.1917E+03 |
| 5.500 | 1.4360E+06 | 1.0511E+06 | 1.2230E+03 |
| 5.800 | 1.4184E+06 | 1.0363E+06 | 1.2539E+03 |
| 6.100 | 1.4003E+06 | 1.0223E+06 | 1.2844E+03 |
| 6.400 | 1.3822E+06 | 1.0089E+06 | 1.3145E+03 |
| 6.700 | 1.3643E+06 | 9.9570E+05 | 1.3441E+03 |
| 7.000 | 1.3466E+06 | 9.8278E+05 | 1.3735E+03 |
| 7.300 | 1.3292E+06 | 9.7006E+05 | 1.4024E+03 |
| 7.600 | 1.3119E+06 | 9.5754E+05 | 1.4309E+03 |
| 7.900 | 1.2950E+06 | 9.4520E+05 | 1.4591E+03 |
| 8.000 | 1.2894E+06 | 9.4112E+05 | 1.4684E+03 |
| 8.300 | 1.2727E+06 | 9.2902E+05 | 1.4961E+03 |
| 8.600 | 1.2563E+06 | 9.1709E+05 | 1.5234E+03 |
| 8.900 | 1.2401E+06 | 9.0534E+05 | 1.5504E+03 |
| 9.200 | 1.2242E+06 | 8.9375E+05 | 1.5771E+03 |
| 9.500 | 1.2085E+06 | 8.8234E+05 | 1.6034E+03 |
| 9.800 | 1.1930E+06 | 8.7108E+05 | 1.6293E+03 |
| 10.100 | 1.1777E+06 | 8.5999E+05 | 1.6550E+03 |
| 10.400 | 1.1627E+06 | 8.4906E+05 | 1.6803E+03 |
| 24.000 | 7.4944E+05 | 5.6382E+05 | 2.5768E+03 |
| 96.000 | 4.5490E+05 | 3.4233E+05 | 4.1143E+03 |
| 720.000 | 1.4573E+04 | 1.0989E+04 | 6.6977E+03 |

| Time (hr) | TSC I-131 (Curies) |
|---|---|
| 0.000 | 1.5029E-09 |
| 0.010 | 4.5755E-07 |
| 0.021 | 2.1003E-06 |
| 0.350 | 4.3613E-04 |
| 0.491 | 7.7424E-04 |
| 0.500 | 7.9885E-04 |
| 0.800 | 2.4207E-03 |
| 0.917 | 3.3958E-03 |
| 1.000 | 4.1776E-03 |

| | |
|---|---|
| 1.300 | 7.4264E-03 |
| 1.600 | 1.1092E-02 |
| 1.800 | 1.3639E-02 |
| 2.000 | 1.5737E-02 |
| 2.060 | 1.5821E-02 |
| 2.360 | 1.5846E-02 |
| 2.660 | 1.5396E-02 |
| 2.800 | 1.5076E-02 |
| 3.200 | 4.8472E-03 |
| 3.500 | 2.2734E-03 |
| 3.510 | 2.2209E-03 |
| 3.910 | 1.0361E-03 |
| 4.000 | 9.1732E-04 |
| 4.300 | 6.9243E-04 |
| 4.600 | 6.0152E-04 |
| 4.900 | 5.6224E-04 |
| 5.200 | 5.4289E-04 |
| 5.500 | 5.3129E-04 |
| 5.800 | 5.2273E-04 |
| 6.100 | 5.1541E-04 |
| 6.400 | 5.0861E-04 |
| 6.700 | 5.0208E-04 |
| 7.000 | 4.9571E-04 |
| 7.300 | 4.8945E-04 |
| 7.600 | 4.8330E-04 |
| 7.900 | 4.7723E-04 |
| 8.000 | 4.7523E-04 |
| 8.300 | 3.0542E-04 |
| 8.600 | 2.3830E-04 |
| 8.900 | 2.1086E-04 |
| 9.200 | 1.9878E-04 |
| 9.500 | 1.9266E-04 |
| 9.800 | 1.8886E-04 |
| 10.100 | 1.8597E-04 |
| 10.400 | 1.8347E-04 |
| 24.000 | 1.2042E-04 |
| 96.000 | 2.3728E-05 |
| 720.000 | 7.6182E-07 |

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#####################################################################
                        Cumulative Dose Summary
#####################################################################
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| | Exclusion Area Bounda | | Low Population Zone | | TSC | |
|---|---|---|---|---|---|---|
| Time (hr) | Thyroid (rem) | TEDE (rem) | Thyroid (rem) | TEDE (rem) | Thyroid (rem) | TEDE (rem) |
| 0.000 | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 | 0.0000E+00 |
| 0.010 | 6.0577E-03 | 2.9129E-04 | 1.0601E-03 | 5.0976E-05 | 3.2612E-06 | 1.3804E-07 |
| 0.021 | 2.7849E-02 | 1.3386E-03 | 4.8735E-03 | 2.3425E-04 | 2.6485E-05 | 1.1210E-06 |
| 0.350 | 6.0546E+00 | 2.8983E-01 | 1.0596E+00 | 5.0720E-02 | 8.9820E-02 | 3.8117E-03 |
| 0.491 | 1.0967E+01 | 5.2334E-01 | 1.9192E+00 | 9.1585E-02 | 2.2705E-01 | 9.6377E-03 |
| 0.500 | 1.1330E+01 | 5.4057E-01 | 1.9828E+00 | 9.4600E-02 | 2.3892E-01 | 1.0141E-02 |
| 0.800 | 3.5384E+01 | 1.8273E+00 | 6.1923E+00 | 3.1977E-01 | 9.6589E-01 | 4.2811E-02 |
| 0.917 | 5.0281E+01 | 2.6568E+00 | 8.7992E+00 | 4.6494E-01 | 1.5181E+00 | 6.9049E-02 |
| 1.000 | 6.2472E+01 | 3.3412E+00 | 1.0933E+01 | 5.8471E-01 | 2.0330E+00 | 9.4003E-02 |
| 1.300 | 1.1544E+02 | 6.3440E+00 | 2.0201E+01 | 1.1102E+00 | 4.8576E+00 | 2.3454E-01 |
| 1.600 | 1.7964E+02 | 1.0012E+01 | 3.1437E+01 | 1.7521E+00 | 9.3796E+00 | 4.6479E-01 |
| 1.800 | 2.2720E+02 | 1.2739E+01 | 3.9759E+01 | 2.2293E+00 | 1.3404E+01 | 6.7215E-01 |
| 2.000 | 2.7145E+02 | 1.5289E+01 | 4.7504E+01 | 2.6755E+00 | 1.8192E+01 | 9.2058E-01 |
| 2.060 | 2.8303E+02 | 1.5959E+01 | 4.8373E+01 | 2.7258E+00 | 1.9727E+01 | 1.0005E+00 |
| 2.360 | 3.3184E+02 | 1.8799E+01 | 5.2033E+01 | 2.9388E+00 | 2.7436E+01 | 1.4025E+00 |
| 2.660 | 3.6868E+02 | 2.0962E+01 | 5.4796E+01 | 3.1010E+00 | 3.5010E+01 | 1.7986E+00 |
| 2.800 | 3.8269E+02 | 2.1790E+01 | 5.5847E+01 | 3.1631E+00 | 3.8443E+01 | 1.9784E+00 |
| 3.200 | 4.1425E+02 | 2.3676E+01 | 5.8214E+01 | 3.3045E+00 | 4.4223E+01 | 2.2815E+00 |
| 3.500 | 4.3159E+02 | 2.4728E+01 | 5.9514E+01 | 3.3835E+00 | 4.5850E+01 | 2.3671E+00 |

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**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 2 | System Nos. | Sheet 1000 of 1000 |
|---|---|---|---|---|

| | | | | | | |
|---|---|---|---|---|---|---|
| 3.510 | 4.3209E+02 | 2.4758E+01 | 5.9552E+01 | 3.3858E+00 | 4.5886E+01 | 2.3690E+00 |
| 3.910 | 4.5157E+02 | 2.5947E+01 | 6.1013E+01 | 3.4749E+00 | 4.6852E+01 | 2.4199E+00 |
| 4.000 | 4.5578E+02 | 2.6204E+01 | 6.1329E+01 | 3.4941E+00 | 4.6991E+01 | 2.4273E+00 |
| 4.300 | 4.6960E+02 | 2.7042E+01 | 6.2365E+01 | 3.5570E+00 | 4.7366E+01 | 2.4471E+00 |
| 4.600 | 4.8318E+02 | 2.7861E+01 | 6.3384E+01 | 3.6185E+00 | 4.7670E+01 | 2.4632E+00 |
| 4.900 | 4.9655E+02 | 2.8663E+01 | 6.4387E+01 | 3.6786E+00 | 4.7943E+01 | 2.4776E+00 |
| 5.200 | 5.0970E+02 | 2.9448E+01 | 6.5373E+01 | 3.7375E+00 | 4.8203E+01 | 2.4914E+00 |
| 5.500 | 5.2265E+02 | 3.0217E+01 | 6.6344E+01 | 3.7952E+00 | 4.8454E+01 | 2.5047E+00 |
| 5.800 | 5.3539E+02 | 3.0971E+01 | 6.7299E+01 | 3.8517E+00 | 4.8701E+01 | 2.5177E+00 |
| 6.100 | 5.4793E+02 | 3.1710E+01 | 6.8240E+01 | 3.9071E+00 | 4.8943E+01 | 2.5304E+00 |
| 6.400 | 5.6027E+02 | 3.2435E+01 | 6.9166E+01 | 3.9615E+00 | 4.9181E+01 | 2.5430E+00 |
| 6.700 | 5.7242E+02 | 3.3146E+01 | 7.0077E+01 | 4.0148E+00 | 4.9416E+01 | 2.5553E+00 |
| 7.000 | 5.8439E+02 | 3.3843E+01 | 7.0974E+01 | 4.0671E+00 | 4.9646E+01 | 2.5675E+00 |
| 7.300 | 5.9617E+02 | 3.4528E+01 | 7.1858E+01 | 4.1185E+00 | 4.9874E+01 | 2.5795E+00 |
| 7.600 | 6.0777E+02 | 3.5200E+01 | 7.2728E+01 | 4.1689E+00 | 5.0098E+01 | 2.5912E+00 |
| 7.900 | 6.1919E+02 | 3.5860E+01 | 7.3584E+01 | 4.2184E+00 | 5.0318E+01 | 2.6028E+00 |
| 8.000 | 6.2295E+02 | 3.6077E+01 | 7.3867E+01 | 4.2347E+00 | 5.0391E+01 | 2.6067E+00 |
| 8.300 | 6.3414E+02 | 3.6722E+01 | 7.4147E+01 | 4.2523E+00 | 5.0565E+01 | 2.6158E+00 |
| 8.600 | 6.4516E+02 | 3.7355E+01 | 7.4424E+01 | 4.2696E+00 | 5.0687E+01 | 2.6223E+00 |
| 8.900 | 6.5601E+02 | 3.7977E+01 | 7.4696E+01 | 4.2865E+00 | 5.0788E+01 | 2.6276E+00 |
| 9.200 | 6.6669E+02 | 3.8588E+01 | 7.4963E+01 | 4.3032E+00 | 5.0881E+01 | 2.6325E+00 |
| 9.500 | 6.7722E+02 | 3.9189E+01 | 7.5227E+01 | 4.3195E+00 | 5.0970E+01 | 2.6372E+00 |
| 9.800 | 6.8758E+02 | 3.9780E+01 | 7.5487E+01 | 4.3355E+00 | 5.1056E+01 | 2.6417E+00 |
| 10.100 | 6.9779E+02 | 4.0361E+01 | 7.5743E+01 | 4.3512E+00 | 5.1141E+01 | 2.6462E+00 |
| 10.400 | 7.0785E+02 | 4.0932E+01 | 7.5995E+01 | 4.3666E+00 | 5.1224E+01 | 2.6505E+00 |
| 24.000 | 1.0528E+03 | 6.0223E+01 | 8.4645E+01 | 4.8787E+00 | 5.4093E+01 | 2.8004E+00 |
| 96.000 | 1.5791E+03 | 9.1144E+01 | 9.1561E+01 | 5.2928E+00 | 5.5918E+01 | 2.9014E+00 |
| 720.000 | 2.3944E+03 | 1.5176E+02 | 9.4240E+01 | 5.4952E+00 | 5.7509E+01 | 3.0101E+00 |

Travel Path

| Time (hr) | Thyroid (rem) | TEDE (rem) |
|---|---|---|
| 0.000 | 0.0000E+00 | 0.0000E+00 |
| 0.010 | 0.0000E+00 | 0.0000E+00 |
| 0.021 | 0.0000E+00 | 0.0000E+00 |
| 0.350 | 0.0000E+00 | 0.0000E+00 |
| 0.491 | 0.0000E+00 | 0.0000E+00 |
| 0.500 | 0.0000E+00 | 0.0000E+00 |
| 0.800 | 0.0000E+00 | 0.0000E+00 |
| 0.917 | 0.0000E+00 | 0.0000E+00 |
| 1.000 | 1.2087E+01 | 6.7910E-01 |
| 1.300 | 1.2087E+01 | 6.7910E-01 |
| 1.600 | 1.2087E+01 | 6.7910E-01 |
| 1.800 | 1.2087E+01 | 6.7910E-01 |
| 2.000 | 1.2087E+01 | 6.7910E-01 |
| 2.060 | 1.2087E+01 | 6.7910E-01 |
| 2.360 | 1.2087E+01 | 6.7910E-01 |
| 2.660 | 1.2087E+01 | 6.7910E-01 |
| 2.800 | 1.2087E+01 | 6.7910E-01 |
| 3.200 | 1.2087E+01 | 6.7910E-01 |
| 3.500 | 1.2087E+01 | 6.7910E-01 |
| 3.510 | 1.2087E+01 | 6.7910E-01 |
| 3.910 | 1.2087E+01 | 6.7910E-01 |
| 4.000 | 1.2087E+01 | 6.7910E-01 |
| 4.300 | 1.2087E+01 | 6.7910E-01 |
| 4.600 | 1.2087E+01 | 6.7910E-01 |
| 4.900 | 1.2087E+01 | 6.7910E-01 |
| 5.200 | 1.2087E+01 | 6.7910E-01 |
| 5.500 | 1.2087E+01 | 6.7910E-01 |
| 5.800 | 1.2087E+01 | 6.7910E-01 |
| 6.100 | 1.2087E+01 | 6.7910E-01 |
| 6.400 | 1.2087E+01 | 6.7910E-01 |
| 6.700 | 1.2087E+01 | 6.7910E-01 |
| 7.000 | 1.2087E+01 | 6.7910E-01 |
| 7.300 | 1.2087E+01 | 6.7910E-01 |

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**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 2 | System Nos. | Sheet 100 of 1000 |
|---|---|---|---|---|

```
   7.600 1.2087E+01 6.7910E-01
   7.900 1.2087E+01 6.7910E-01
   8.000 1.2087E+01 6.7910E-01
   8.300 1.2087E+01 6.7910E-01
   8.600 1.2087E+01 6.7910E-01
   8.900 1.2087E+01 6.7910E-01
   9.200 1.2087E+01 6.7910E-01
   9.500 1.2087E+01 6.7910E-01
   9.800 1.2087E+01 6.7910E-01
  10.100 1.2087E+01 6.7910E-01
  10.400 1.2087E+01 6.7910E-01
  24.000 1.2087E+01 6.7910E-01
  96.000 1.2087E+01 6.7910E-01
 720.000 1.2087E+01 6.7910E-01

#################################################################
                        Worst Two-Hour Doses
#################################################################

Exclusion Area Boundary
   Time   Whole Body    Thyroid        TEDE
   (hr)     (rem)        (rem)         (rem)
    0.8   1.7678E+00   3.4731E+02   1.9963E+01
```

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**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 2 | System Nos. | Sheet 100 2 of 1000 |
|---|---|---|---|---|

**Attachment A**

**Conference Call With NRC 3/23/01 (Ref. 3.19)**

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**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 2 | System Nos. | Sheet 100 of 1000 |
|---|---|---|---|---|

> From: Distel, David J.
> Sent: Monday, March 26, 2001 12:30 PM
> To: Hutton, Jim A.; Rombold, George B.; Geiger, Charlotte; Hartman,
> Charlie; Bennett, Pat; Parfitt, Brad; Mscisz, Thomas J.; Auch, Dave;
> Wilkerson, Scott; McGettrick, Dennis J; Schmidt, James W; Skillman, Gordon
> R; McSorley, William
> Subject: TMI-1 License Amendment Request No. 290 - ESF Leakage and
> Control Room Habitability
>
> A conference call with NRC (Tim Colburn- Project Manager, and Jay Lee,
> Staff Radiological reviewer) was held on Friday, March 23, 2001 to discuss
> NRC verbal questions on the TMI-1 amendment request submittal and dose
> analysis. The NRC questions were related to: (1) Calculation of the EAB
> dose based on "any 2 hour period" as stated in 10 CFR 50.67 and the EAB
> X/Q value used; (2) Conservative assumption of RB spray shutoff after
> 28.19 minutes of operation; and (3) Status of Polestar Applied Technology
> Report for ESF leakage partitioning factors. A summary of the conference
> call discussion is provided below.
>
> 1. Calculation of the EAB dose based on "any 2hour period" and the X/Q
> involved.
>
> NRC identified that the EAB dose calculation using alternate source term
> must be determined using the worst 2 hour period of source term release
> based on 10 CFR 50.67 and R.G. 1.183, Section 4.1.5. The TMI-1 calculation
> used the first 2 hours of the LOCA for source term release. It was
> confirmed that the worst 2 hour period is likely to be 1.1 to 3.1 hours
> after the onset of the LOCA. This will result in a higher calculated EAB
> dose. The present TMI-1 calculated EAB dose is 24.863 Rem vs. the limit of
> 25 Rem. It was agreed that the TMI-1 submittal needs to be revised to
> account for the worst 2hour period.
>
> The 2 hour X/Q value of 8.0E-4 was used in the TMI-1 calculation which is
> a conservative 1 hour value which is required by R.G. 1.145. This value
> was correctly used.
>
> 2. NRC questioned the very conservative assumption of RB spray shutoff
> after 28.19 minutes of operation, especially since continued spray
> operation would have a significant impact on the 2 hour EAB dose when
> considering the worst 2 hour period discussed above. The assumption in the
> TMI-1 calculation is based on RB spray initiation 75 seconds after the
> onset of the LOCA, full RB spray flow resulting in depletion of the BWST
> in 28.19 minutes and operator termination of RB spray. Continued spray
> operation was not assumed due to unqualified flow instrumentation
> supporting throttling after switchover from BWST to sump recirculation
> (NPSH issues resolved by procedure to turn pumps off before recirculation
> mode). NRC emphasized that credit for continued spray flow, even for one
> more hour, will significantly reduce calculated EAB dose.
>
> 3. The NRC stated that the Polestar method for determining partioning
> factors will not be reviewed in time to support TMI-1 Technical
> Specification amendment needs. NRC is generically reviewing several
> proposed alternate methods (Polestar, ORNL, Postma) for determining
> partioning factors. An NRC contractor is expected to complete this review
> within 1-2 years. Therefore NRC will not accept the proposed Polestar
> values at this time. **NRC suggested that TMI-1 recalculate doses using a**
**> "reasonable" value of 5% decreasing to 2% (Polestar values: 3% decreasing**

**> to 0.56%) based on engineering judgement, and that NRC may accept this in**
**> the interim. We agreed to evaluate this approach.**
>
>
> No specific commitments were made to NRC during the conference call,
> although we agreed that the dose calculation needs to be corrected to
> account for the worst 2 hour release period. Tom Mscisz and Nucore are
> running addtional dose calculations to determine this impact as well as
> the impact of higher partitioning factors. NRC was subsequently asked to
> determine the acceptability of assuming a partitioning factor of 5% for 24
> hours in lieu of 48 hours. Tim Colburn agreed to discuss with Jay Lee. NRC
> agreed that TMI-1 should look at the double counting of source term
> included in the RADTRAD code as excess conservatism.
>
> Tom stated we should have a series of preliminary revised dose
> calculations by Friday, March 30, 2001. A meeting will be scheduled for
> the week of April 2, 2001 to discuss available options and schedule for
> resolution. Since the revised EAB calculated doses are likely to exceed
> regulatory limits, we could possibly request NRC approval for one more
> cycle based on NRC's ongoing generic review of partioning factor
> methodologies. Additional internal discussion may be necessary to evaluate
> crediting RB spray in the recirculation mode or in some way allowing
> credit for extended spray operation for an additional 1-2 hours.
>
> These actions need to be worked on a priority basis in order to support
> NRC review and issuance of an amendment by 08/01/2001.
>
>

**********
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**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 2 | System Nos. | Sheet 1005 of 1000 |
|---|---|---|---|---|

**Attachment B**

**Spray Engineering Company**

**Excerpt from Catalog Pertaining to Spray Angles**

**(Ref. 3.32)**

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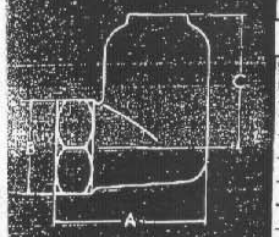
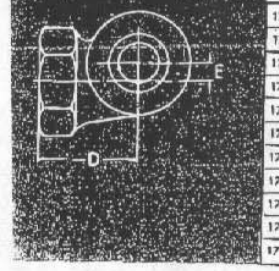
# CALCULATION SHEET
(Ref. EP-006T)

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 2 | System Nos. | Sheet 1006 of 1000 |
|---|---|---|---|---|

5-22-01; 9:32AM ;

one-piece medium and narrow angle ramp bottom nozzles




## MEDIUM ANGLE

| NOZZLE NO. | Female Conn. (inches) | Orifice | FLOW RATE IN GALLONS PER MINUTE at POUNDS PER SQUARE INCH PRESSURE .5 | 1 | 10 | 15 | 20 | 25 | 30 | 40 | 50 | 75 | 100 | Effective Angle at 2' Distance .5 | 15 | 30 | WT. IN LBS. | DIMENSIONS (Inches) A | B(Hex) | C | D | E |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1706 | ¾ | 5/16 | 2.7 | 3.3 | 4.0 | 4.9 | 5.7 | 6.4 | 7.0 | 8.0 | 8.8 | 10.7 | 12.5 | 53° | 67° | 74° | .6 | 2¼ | 1⅜ | 1⅞ | 1½ | ⅜ |
| 1708 | ¾ | 3/8 | 3.8 | 4.3 | 5.2 | 6.3 | 7.3 | 8.1 | 9.0 | 10.4 | 11.7 | 14.2 | 16.5 | 64° | 71° | 74° | .6 | 2¼ | 1⅜ | 1⅞ | 1½ | ⅜ |
| 1710 | ¾ | 3/16 | 4.4 | 5.2 | 6.2 | 7.7 | 8.9 | 10.0 | 10.9 | 12.5 | 13.9 | 16.9 | 19.5 | 69° | 77° | 74° | .6 | 2¼ | 1⅜ | 1⅞ | 1½ | ⅜ |
| 1713 | 1 | 3/8 | 5.4 | 6.4 | 7.7 | 9.5 | 11.0 | 12.3 | 13.6 | 15.2 | 17.3 | 21.4 | 24.6 | 57° | 60° | 64° | .7 | 2 1/16 | 1⅜ | 2⅜ | 1 11/16 | ¼ |
| 1717 | 1 | 3/16 | 6.6 | 7.6 | 9.2 | 11.2 | 13.1 | 14.7 | 16.1 | 18.6 | 20.9 | 25.7 | 29.7 | 62° | 69° | 67° | .7 | 2 1/16 | 1⅜ | 2⅜ | 1 11/16 | ¼ |
| 1721 | 1 | 5/16 | 8.0 | 9.4 | 11.2 | 13.7 | 16.0 | 17.7 | 19.5 | 22.5 | 25.0 | 30.8 | 36.0 | 59° | 78° | 71° | .7 | 2 1/16 | 1⅜ | 2⅜ | 1 11/16 | ¼ |
| 1725 | 1 | 7/16 | 9.0 | 10.8 | 13.2 | 16.2 | 18.5 | 20.8 | 22.8 | 26.5 | 29.6 | 36.0 | 41.5 | 77° | 81° | 78° | .7 | 2 1/16 | 1⅜ | 2⅜ | 1 11/16 | ¼ |
| 1728 | 1¼ | | | | | | | | | | | | | | | | | 3 1/16 | 1⅜ | 2⅜ | 2 | ⅜ |
| 1730 | 1¼ | | | | | | | | | | | | | | | | | 3 1/16 | 1⅜ | 2⅜ | 2 | ⅜ |
| 1732 | 1¼ | | | | | | | | | | | | | | | | | 3 1/16 | 1⅜ | 2⅜ | 2 | ⅜ |
| 1736 | 1½ | | | | | | | | | | | | | | | | | 3 1/16 | 1⅜ | 2⅜ | 2 | ⅜ |
| 1739 | 1½ | | | | | | | | | | | | | | | | | 3¼ | 2⅜ | 3⅜ | 2⅜ | ⅜ |
| 1741 | 1½ | | | | | | | | | | | | | | | | | 3¼ | 2⅜ | 3⅜ | 2⅜ | ⅜ |
| 1743 | 1½ | | | | | | | | | | | | | | | | | 3¼ | 2⅜ | 3⅜ | 2⅜ | ⅜ |
| 1746 | 2 | ⅜ | 31.5 | 37.0 | 44.0 | 54.0 | 62.0 | 69.0 | 75.0 | 87.0 | 97.0 | 118 | 135 | 62° | 68° | 66° | 2.8 | 4⅜ | 2⅜ | 3 11/16 | 2 11/16 | ½ |
| 1748 | 2 | 7/16 | 38.0 | 45.0 | 53.0 | 64.5 | 74.0 | 82.0 | 89.5 | 103 | 115 | 141 | 162 | 71° | 74° | 74° | 2.8 | 4⅜ | 2⅜ | 3 11/16 | 2 11/16 | ½ |
| 1751 | 2 | 1/2 | 43.0 | 53.0 | 63.5 | 79.0 | 90.5 | 101 | 110 | 126 | 141 | 174 | 202 | 77° | 80° | 82° | 2.8 | 4⅜ | 2⅜ | 3 11/16 | 2 11/16 | ½ |
| 1753 | 2 | 9/16 | 50.0 | 60.0 | 72.0 | 89.0 | 103 | 115 | 125 | 143 | 161 | 195 | 225 | 80° | 91° | 85° | 2.8 | 4⅜ | 2⅜ | 3 11/16 | 2 11/16 | ½ |
| 1755 | 2½ | 5/8 | 60.0 | 73.0 | 86.0 | 104 | 120 | 134 | 148 | 173 | 193 | 237 | 275 | 72° | 74° | 74° | 4.5 | 5⅜ | 3½ | 5½ | 3⅜ | 9/16 |
| 1757 | 2½ | 5/8 | 65.0 | 78.0 | 93.0 | 114 | 132 | 147 | 160 | 185 | 207 | 252 | 290 | 78° | 80° | 80° | 4.5 | 5⅜ | 3½ | 5½ | 3⅜ | 9/16 |
| 1759 | 2½ | 11/16 | 75.0 | 88.0 | 107 | 130 | 150 | 166 | 181 | 208 | 232 | 280 | 320 | 78° | 80° | 80° | 4.5 | 5⅜ | 3½ | 5½ | 3⅜ | 9/16 |
| 1761 | 2½ | 3/4 | 83.0 | 100 | 120 | 145 | 166 | 184 | 200 | 229 | 255 | 312 | 360 | 78° | 80° | 80° | 4.5 | 5⅜ | 3½ | 5½ | 3⅜ | 9/16 |

Post-It™ brand fax transmittal memo 7671 | # of pages ▸

| | |
|---|---|
| To GORDON WISSINGER | From CHRISTINE P |
| Co. | Co. SPRAYING SYSTEMS |
| Dept. | Phone # 630-665-5201 x2234 |
| Fax # 610-765-5651 | Fax # 630-260-9727 |

## MEDIUM ANGLE

| NOZZLE NO. | FEMALE CONN (Inches) | Orifice Diameter | FLOW RATE IN GALLONS PER MINUTE at POUNDS PER SQUARE INCH PRESSURES 2 | 3 | 4 | 5 | 10 | 15 | 20 | 40 | 60 | Effective Angle at 2' Distance 3 | 7 | 15 | WT IN LBS. | DIMENSIONS (Inches) A | B | C | D | E |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1763 | 3 | 1 3/16 | 44 | 53 | 61 | 68 | 80 | 94 | 114 | 132 | 183 | 220 | 53° | 58° | 60° | 10.0 | 6⅜ | 4 | 4½ | 4½ | 1 3/16 |
| 1764 | 3 | 1⅜ | 56 | 67 | 77 | 86 | 100 | 119 | 144 | 165 | 230 | 278 | 60° | 64° | 65° | 10.0 | 6⅜ | 4 | 4½ | 4½ | 1 3/16 |
| 1765 | 3 | 1 11/16 | 67 | 80 | 93 | 103 | 120 | 143 | 173 | 198 | 277 | 335 | 60° | 64° | 65° | 10.0 | 6⅜ | 4 | 4½ | 4½ | 1 3/16 |
| 1767 | 3 | 2 1/16 | 78 | 94 | 108 | 120 | 140 | 166 | 202 | 232 | 320 | 388 | 65° | 70° | 75° | 10.0 | 6⅜ | 4 | 4½ | 4½ | 1 3/16 |
| 1768 | 3 | 2 5/32 | 84 | 101 | 115 | 128 | 150 | 178 | 215 | 246 | 341 | 413 | 68° | 74° | 75° | 10.0 | 6⅜ | 4 | 4½ | 4½ | 1 3/16 |
| 1771 | 4 | 2 1/32 | 84 | 101 | 115 | 128 | 150 | 178 | 215 | 246 | 341 | 413 | 62° | 65° | 67° | 32.3 | 8 1/16 | 5 | 7½ | 5⅜ | 1 3/16 |
| 1772 | 4 | 2 5/32 | 98 | 117 | 135 | 150 | 175 | 207 | 250 | 285 | 395 | 480 | 69° | 72° | 76° | 32.3 | 8 1/16 | 5 | 7½ | 5⅜ | 1 3/16 |
| 1774 | 4 | 2½ | 112 | 135 | 154 | 171 | 200 | 236 | 285 | 328 | 450 | 545 | 74° | 78° | 80° | 32.3 | 8 1/16 | 5 | 7½ | 5⅜ | 1 3/16 |
| 1775 | 4 | 2 11/16 | 127 | 152 | 174 | 194 | 225 | 266 | 322 | 368 | 508 | 615 | 76° | 80° | 82° | 32.3 | 8 1/16 | 5 | 7½ | 5⅜ | 1 3/16 |
| 1777 | 4 | 2⅞ | 137 | 165 | 188 | 208 | 245 | 287 | 348 | 399 | 550 | 662 | 78° | 81° | 85° | 32.3 | 8 1/16 | 5 | 7½ | 5⅜ | 1 3/16 |
| 1778 | 4 | 3 1/16 | 167 | 201 | 230 | 255 | 300 | 353 | 428 | 490 | 680 | 820 | 80° | 83° | 87° | 32.3 | 8 1/16 | 5 | 7½ | 5⅜ | 1 3/16 |

## NARROW ANGLE

| | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1763N | 3 | 1 3/16 | 44 | 53 | 61 | 68 | 80 | 94 | 114 | 132 | 183 | 220 | 43° | 45° | 46° | 11.0 | 6⅜ | 4 | 6½ | 4½ | 1 3/16 |
| 1764N | 3 | 1⅜ | 56 | 67 | 77 | 86 | 100 | 119 | 144 | 165 | 230 | 278 | 39° | 45° | 48° | 11.0 | 6⅜ | 4 | 6½ | 4½ | 1 3/16 |
| 1765N | 3 | 1 11/16 | 67 | 80 | 93 | 103 | 120 | 143 | 173 | 198 | 277 | 335 | 42° | 45° | 46° | 11.0 | 6⅜ | 4 | 6½ | 4½ | 1 3/16 |
| 1767N | 3 | 2 1/16 | 78 | 94 | 108 | 120 | 140 | 166 | 202 | 232 | 320 | 388 | 39° | 45° | 48° | 11.0 | 6⅜ | 4 | 6½ | 4½ | 1 3/16 |
| 1768N | 3 | 2 5/32 | 84 | 101 | 115 | 128 | 150 | 178 | 215 | 246 | 341 | 413 | 37° | 45° | 48° | 11.0 | 6⅜ | 4 | 6½ | 4½ | 1 3/16 |
| 1771N | 4 | 2 1/32 | 84 | 101 | 115 | 128 | 150 | 178 | 215 | 246 | 341 | 413 | 40° | 45° | 46° | 35.6 | 8 1/16 | 5 | 9½ | 5⅜ | 1 3/16 |
| 1772N | 4 | 2 5/32 | 98 | 117 | 135 | 150 | 175 | 207 | 250 | 285 | 395 | 480 | 39° | 45° | 50° | 35.6 | 8 1/16 | 5 | 9½ | 5⅜ | 1 3/16 |
| 1774N | 4 | 2½ | 112 | 135 | 154 | 171 | 200 | 236 | 285 | 328 | 450 | 545 | 39° | 45° | 50° | 35.6 | 8 1/16 | 5 | 9½ | 5⅜ | 1 3/16 |
| 1775N | 4 | 2 11/16 | 127 | 152 | 174 | 194 | 225 | 266 | 322 | 368 | 508 | 615 | 39° | 45° | 49° | 35.6 | 8 1/16 | 5 | 9½ | 5⅜ | 1 3/16 |
| 1777N | 4 | 2⅞ | 137 | 165 | 188 | 208 | 245 | 287 | 348 | 399 | 550 | 662 | 39° | 45° | 48° | 35.6 | 8 1/16 | 5 | 9½ | 5⅜ | 1 3/16 |
| 1778N | 4 | 3 1/16 | 167 | 201 | 230 | 255 | 300 | 353 | 428 | 490 | 680 | 820 | 39° | 45° | 47° | 35.6 | 8 1/16 | 5 | 9½ | 5⅜ | 1 3/16 |

See following page for spray coverage data

SPRAY ENGINEERING COMPANY, BURLINGTON, MASSACHUSETTS 01803

15

**Attachment C**

**Communication From SWEC Regarding TSC Atmospheric Dispersion Factors**

AmerGen

**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 2 | System Nos. | Sheet 1008 of 1000 |
|---|---|---|---|---|

Tom,

I copied your e-mail address from an e-mail from Pat...but I must have done something wrong because it bounced!.....let me try again...

> -----Original Message-----
> From: Ferguson, Sreela
> Sent: Wednesday, May 08, 2002 6:19 PM
> To: 'psbrady'
> Cc: 'Thomas_J_Mscisz/Pecon/Genco'; Vigeant, Stephen; Griffin, Peter; Hanley, Norman; Nicholson, James; gerald.lahti@exeloncorp.com
> Subject: TMI : TSC X/Q's using ARCON 96
>
> Pat,
>
> In accordance with the schedule outlined in the S&W Proposal (CEB-TMI-02-002, April 16, 2002) and reflected in the Contract 01000318, attached is a summary of the TMI Technical Support Center post accident atmospheric dispersion factors developed using ARCON96 methodology. The receptor location is the TSC air intake. The three release points are the containment wall, ESF leakage release point and BWST leakage release point. In accordance with the S&W proposal, these values have been checked.
>
> If you have any questions, pls call me at 617 589 8073
>
> Thanks
>
> Sreela
>
> > <<TMI TSC ARCON96 XQ Summary.doc>>

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**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 2 | System Nos. | Sheet 1009 of 1000 |
|---|---|---|---|---|

## TECHNICAL SUPPORT CENTER ATMOSPHERIC DISPERSION FACTORS THREE MILE ISLAND NUCLEAR POWER PLANT

The TMI Technical Support Center (TSC) air intake X/Q values for the Containment Wall, Auxiliary Building (ESF Leakage) and Borated Water Storage Tank (BWST) Leakage radiological releases are calculated using the latest version of the "**A**tmospheric **R**elative **CON**centrations in Building Wakes" (ARCON96) methodology (Ramsdell, 1997). This methodology is recommended for control room X/Q calculations by Draft Regulatory Guide DG-1111 (NRC, 2001). Input data consist of hourly on-site meteorological data, release height, the cross-sectional building area affecting the release, and receptor information (e.g., distance and direction from the release to the control room air intake and intake height).

This methodology is able to evaluate ground-level, vent, and elevated stack releases and treats building wake effects and stable plume meander effects when applicable. However, all of the TMI releases are conservatively treated as ground-level as they are not of sufficient height to escape the aerodynamic effects of the plant buildings (i.e., 2.5 times Containment Building height). This methodology is also able to evaluate diffuse and area source releases using the virtual point source technique, wherein initial values of the dispersion coefficients are assigned based on the size of the diffuse or area source. DG-1111 recommends that the initial values of the horizontal and vertical dispersion coefficients be based on the width and height of the diffuse source, respectively, divided by a factor of 6. Only the Containment Wall release is treated as a diffuse source. The other releases are treated as point sources.

A 4-year period of hourly average data from the TMI meteorological tower (i.e., January 1, 1992 through December 31, 1996 excluding 1994), as supplied by Exelon via e-mail on 4/11/02, is used in this calculation. The release/receptor information is taken from drawings supplied by Exelon (i.e., Site Composite, Underground Facilities and the Architectural Building Elevations, Operations Support Facility). The applicable structure relative to building wake effects on the releases is based on release/receptor orientation. Thus, the containment building cross-sectional area is used for the containment wall release, the auxiliary building for the ESF Leakage releases, and the BWST cross-sectional area is used for the BWST vent release. Where applicable, all input data are consistent with those used in GPU Nuclear Calculation No. C-1101-826-E540-020, "Atmospheric Transport X/Qs Using ARCON96 Code – Control Room Habitability", Rev. 2.

The X/Qs values for the release-receptor combinations are summarized in Table 1.

**References**

Ramsdell, J. V. Jr. and C. A. Simonen, "Atmospheric Relative Concentrations in Building Wakes". Prepared by Pacific Northwest Laboratory for the U.S. Nuclear Regulatory Commission, PNL-10521, NUREG/CR-6331, Rev. 1, May 1997.

U.S. Nuclear Regulatory Commission, Office of Nuclear Regulatory Research, Draft Regulatory Guide DG-1111, "Atmospheric Relative Concentrations for Control Room Habitability Assessments at Nuclear Power Plants", December 2001.

AmerGen

**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 2 | System Nos. | Sheet 1010 of 1000 |
|---|---|---|---|---|

**TABLE 1**
**TMI Unit 1 TSC Air Intake**
**Atmospheric Dispersion Factors (sec/m$^3$)**
**95$^{th}$ Percentile**

| | | Averaging Period | | | | |
|---|---|---|---|---|---|---|
| **Release Point** | **Receptor** | **0-2 hr** | **2-8 hr** | **8-24 hr** | **1-4 d** | **4-30 d** |
| Containment Wall | TSC Air Intake | 2.31E-04 | 1.29E-04 | 5.50E-05 | 3.52E-05 | 3.06E-05 |
| Auxiliary Building | TSC Air Intake | 2.70E-04 | 1.54E-04 | 5.98E-05 | 4.03E-05 | 3.41E-05 |
| BWST Vent | TSC Air Intake | 2.97E-04 | 1.64E-04 | 6.42E-05 | 4.65E-05 | 3.80E-05 |

AmerGen

**CALCULATION SHEET**
**(Ref. EP-006T)**

| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 2 | System Nos. | 1011 Sheet of 1000 |
|---|---|---|---|---|

**Attachment D**

**E-Mail Transmittal (Reference 3.39)**

| AmerGen | CALCULATION SHEET (Ref. EP-006T) | | | |
|---|---|---|---|---|
| Subject: Post-LOCA EAB, LPZ, TSC, and CR Doses Using AST and RG 1.183 Requirements | Calculation No. C-1101-900-E000-087 | Rev. No. 2 | System Nos. | 1012 Sheet of 1000 |

<thomas.mscisz@exeloncorp.com>
05/18/2007 11:57 AM

To <ANTHONY.KLAZURA@sargentlundy.com>
cc <WILLIAM.J.JOHNSON@sargentlundy.com>
bcc
Subject Parameters

Joe and Anthony,

The values for average fall height and containment accident temperature and pressure to be used in your LOCA calc revision are as follows. These values are appropriately conservative for your use.

1. The Average Drop Fall Height to be used is 96 ft and is provided in Table 14B-1 of the TMI FSAR (attached)

2. The Containment Atmosphere Temperature to be used is 250oF and is provided in Table 14B-2 of the TMI FSAR (attached)

3. The Containment Pressure to be used is 75 psia and is provided in Table 14B-2 of the TMI FSAR (attached)

Tom

<<Calc Parameters to Use.doc>> <<TMI FSAR Table 14B-1 and 2.pdf>>

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Thank You.
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> Calc Parameters to Use.doc TMI FSAR Table 14B-1 and 2.pdf