Attachment B

Duquesne Light
Radiological Controls

REVISION 0 1 2 3

Subject
Safety Analysis of the Dose Consequences of a Locked Rotor Accident at BVPS-1 with 18% Fuel Failure -- EAB, LPZ, Control Room

ERS - SFL-89-021

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Reference ----n/a-----
RCM RP/RIP _____ EPP _____ T/S _____ EM _____ DCP _____ Other _____

Review Category
[x] RSC Req'd [ ] RSC Not Req'd

[ ] 10CFR50.59 Required

Purpose
The purpose of this calculation package is to determine the dose consequences at the EAB, LPZ and in the control room from a locked rotor accident at BVPS-1, with the assumption of 18% fuel failures.

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Checklist

[x] PURPOSE	[x] INPUT DATA	[x] DATA SHEETS
[x] ASSUMPTIONS	[x] RESULTS	[x] ILLUSTRATIONS
[x] METHODOLOGY	[x] REFERENCES	[x] PRINTOUTS
		[N/A] CODE LISTING

Attachments

[x] Document Control	[ ] DIR, RadOps-1	[x] Trng. Dept.
[x] Calculation File	[ ] DIR, RadOps-2	[x] Author: S.E. LaVie
[x] MGR, RADCON	[ ] DIR, RadHealth	[x] R. Ireland
[x] DIR, RadEng	[ ] DIR, Eff. & Env.	[ ] _____

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DISCUSSION

The locked rotor is an ANS Condition IV event that is analyzed for determination of peak RCS pressure and peak fuel clad temperature assuming DNB has occurred in the core [Ref: 1]. The Unit 1 UFSAR [Ref: 2] Section 14.2.7 analyzed the locked rotor accident for nuclear and thermodynamic consequences. The evaluation concluded that the peak clad temperature would be less than 2700°F. The Radiological consequences were not evaluated since the UFSAR postulated no fuel damage. The NRC Safety Evaluation Report [Ref: 3] did not address radiological consequences of the locked rotor accident.

For cycle 8 at Unit 1, it is proposed that fuel of a different design be used for the reload. In support of this change and at the request of DLC, Westinghouse prepared a safety evaluation [Ref: 1], based largely on the generic licensing topical report WCAP-10444 [Ref: 4]. The locked rotor analysis performed therein assessed the peak RCS pressure and peak fuel clad temperature concerns, but concluded that because the fuel clad temperature did not exceed 2700°F, there would be no fuel damage, and therefore, no change in postulated consequences.

The NRC, in their acceptance letter for WCAP-10444 (included in Ref: 4), took exception to the conclusions regarding locked rotor accidents noting that: "...It has been and continues to be the NRC position that cladding failure is assumed to occur when the fuel rod DNBR is less than the safety limit...." The acceptance letter further stipulated that all licensees referencing WCAP-10444 should assume that all fuel which experiences a DBNBR of less than the DNBR limit fails and should calculate the offsite dose consequences. The letter established several key analysis assumptions.

Since the peak RCS pressure and fuel clad temperature analyses are performed assuming the existance of DNB in the core, DLC requested that Westinghouse provide an evaluation of DNB resulting from a locked rotor event at Unit 1. A summary of this analysis was provided in Ref: 5. Significant conclusions are listed below:

- 12.5% of the fuel rods will exceed DNB for the cycle 8 fuel rod power census.
- 18% of the fuel rods will exceed DNB based on conservative fuel rod power census. This is expected to bound all fuel cycles.
- There is available margin in the assumed DNB and FΔH limits that could be reduced for cycle 8 should dose consequences exceed limits.
- The existing licensing basis for Unit 1, i.e., maximum fuel clad temperature does not exceed 2700°F, is not exceeded by the new analyses, and therefore, no fuel rod cladding failures are predicted (even though DNB is exceeded).
- Westinghouse has submitted a topical report (WCAP-11157) to the NRC addressing the integrity of fuel rods during locked rotor accidents. However, this report has not been reviewed by the NRC.

In anticipation of NRC comments, an analysis of the radiological consequences was initiated and before the analysis could be documented, the NRC did formally request that DLC provide results of analyses of the radiological consequences (along with other related data). The analysis documented herein, which is based on the Standard Review Plan [Ref: 6] Sections 15.3.3 - 15.3.4, is intended to provide the requested evaluation.

It is important to note that the Standard Review Plan was not part of the original design base for Unit 1. In addition, the Unit 1 FSAR [Ref: 2] postulated accident analyses do not assume coincident loss of offsite power capability, without which loss, the environmental releases are negligible.

METHODOLOGY

This analysis will be performed using the TRAILS code documented in ERS-SFL-89-020 [Ref: 7]. TRAILS is a simple FORTRAN program that mechanizes the solution of first order linear equations and dose calculations. Although the code is documented in detail in reference 7, the more significant methodologies, constants, and assumptions incorporated into the code are listed below:

- The code implements a model of the release that incorporates one or two compartments (or nodes) prior to the release to the environment. The transport of radioactive material through the system is governed by simple first order linear equations based on the postulated flow rates and the radionuclide decay constants.

- The offsite dose calculational methods are those provided in Regulatory Guide 1.4 [Ref: 8]. Thyroid dose conversion factors and breathing rates are those provided in TID14844 [Ref: 9] and Regulatory Guide 1.4. The average energy per disintegration for included isotopes (Kr, Xe, I) were calculated from the spectra data provided in the DRALIST data library [Ref: 10], which is a subset of the ORNL Evaluated Nuclear Structure Data File, and which is available in hardcopy as DOE/TIC-11026 [Ref: 11]. This data source was used in lieu of the suggested 6th Edition, Table of Isotopes, which is no longer in print.

- The control room is treated as a compartment with variable (by time step) intake, filtration, X/Q, breathing rate, and exhaust rates.

The 0-2 hour isotopic releases and EAB doses, the 0-8 hour isotopic releases and LPZ doses, and the duration control room doses will be evaluated. The release modeling that will be utilized is similar to that used by SWEC in the evaluation of the combined control room habitability in 1987 [Ref: 12, 13]. In that analysis, SWEC performed an evaluation of control room doses due to a locked rotor accident at Unit 1 in order to meet Unit 2 licensing commitments, assuming no fuel failures.

Since the control room doses are sensitive to the timing of control room isolation initiated by area radiation monitors, an evaluation of the control room dose rate at various times post-accident is assessed first.

Based on these results, an isolation time is postulated and included as an analysis assumption during evaluation of control room dose over the duration of the accident.

The analyses address the following release components:

1. Release of iodine activity from the three steam generators due to technical specification primary-to-secondary leakage. Iodine partitioning is assumed. The activity is based on 18% fuel clad failure, with the fuel clad activity based on Standard Review Plan assumptions (i.e., 30% Kr-85, 10% all others), with the exception of I-131, which is assumed to be 12% in keeping with the conclusions of NUREG/CR-5009 [Ref: 14].

2. Same as #1, but for noble gases with no credit for partitioning.

3. Release of activity released into the RCS and hence to the three steam generators by an iodine spike that occurs concurrent with the locked rotor. RCS leak rate based on technical specifications.

4. Release of the initial activity contained in the steam in all three steam generators at time=0. This activity based on technical specifications.

5. Release of the initial activity of iodine contained in the secondary liquid in all three steam generators at time=0. (Noble gases are assumed to be in the steam space.) This activity based on technical specifications.

Releases from steam generators are based on the steam mass releases postulated by Westinghouse for 0-2 hours and 0-8 hours [Ref: 18].

The release of activity based on 18% fuel failure results in unisolated, unfiltered control room dose rates that exceed the area radiation monitor alarm setpoint within 30 seconds of the start of the release. This radiation monitor initiates control room isolation and pressurization. To assess a concern that the rapid control room isolation might not be the most restrictive situation, cases 4 and 5 above were evaluated assuming 1% fuel failure (results in an isolation delay of 20 minutes). These cases were not limiting, i.e., did not result in doses in excess of GDC-19 in 10 CFR 50 Appendix A [Ref: 15]. In order to provide flexibility for potential future control room integrity technical specification amendments, the control room analyses were performed assuming a 15 minute isolation period, which includes the previously assumed 3 minute isolation delay (e.g., monitor response time, damper closure time, etc)

INPUT DATA/ASSUMPTIONS

1. General Methodology Based on SRP 15.3.3-15.3.4 [6]

2. Core Inventory from Table 14B-1 [2]

   Based on 2766 MWt

3. Core-Gap Fractions

Kr-85	0.30	[16]
I-131	0.12	[14]
Others	0.10	[16]

The assumptions of references 14 and 16 are included, even though they are not specifically applicable to a locked rotor accident. This is conservative.

4. Fraction of Rods in DNB = 18% [5]

5. Fraction of Rods Assumed Failed = 18% (Section 15.3.3) [6]

6. Concurrent Spike Appearance Rates, μCi/sec (Tbl 15.0-10) [16]

I-131	1.36E6
I-132	2.52E6
I-133	3.08E6
I-134	3.68E6
I-135	2.81E6

7. Concurrent Spike Duration 0-4 hours [18]

Assume appearance rates are 1/500 for 4-8 hours

8. RCS Volume = 3.9E5 lbs [18]

9. RCS Primary-to-Secondary Leakage = 1 gpm total [19]

10. Steam Generator Mass [18]

Liquid = 97900 lbs
Steam = 6460 lbs

11. Steam Generator Mass Release [18]

0-2 hours = 443,878 lbs
2-8 hours = 793,644 lbs

12. Iodine Partitioning in Steam Generators = 0.01 [18]

13. Duration of Plant Cooldown by Secondary System, i.e., Duration of Release = 8 hours [18]

14. Receptor Distances [2]

EAB = 610 meters
LPZ = 3.6 mi (5800 meters)

15. X/Q Values EAB/LPZ [2,20]

0-2 hours EAB = 3.9E-4 sec/m³
0-8 hours LPZ = 4.2E-5*
8-24 hours LPZ = 2.7E-5
24-720 hrs LPZ = 6.8E-6
Worst Sector LPZ Annual Average = 2.56E-6

*UFSAR table 2.2-11 identifies a 0-2 hour value. However, in accordance with reference 22, a 0-8 hour value is used for all time steps upto 8 hours.

16. X/Q Values Control Room Intake [21]

0-8 hours = 2.97E-3 sec/m³
8-24 hours = 1.94E-3 sec/m³
24-96 hours = 6.92E-4 sec/m³
96-720 hrs = 1.54E-4 sec/m³

17. Monitor Response Delay Time = 3 minutes [13]

based on: ramp time of 97 sec to reach 1 mr/hr plus C.R. isolation time (diesel sequence delay) of 77 seconds (BV1 controlling)

18. Control Room Volume = 1.73E5 ft³ [18]

19. Control Room Normal Intake = 500 ft³/min [18]

20. Control Room Pressurization Rate = 690 ft³/min [13]

21. Control Room Infiltration = 10 ft³/min (Section 6.4) [6]

22. Control Room Filter Efficiency = 95% [18]

To account for 10 cfm infiltration bypass, this is reduced to:

$$\frac{690(.95) + 10(0)}{690 + 10} = .936$$

23. Control Room Purge Flow = 33000 ft³/min [2]

Based on recirculation fan flow rate which can be used to purge the control room.

24. Purge Initiation = T=8 hours [Assumption]

CALCULATIONS

1. Calculate X/Q for 1-4 day period for LPZ

The 1-4 day X/Q value for the LPZ was not tabulated in the UFSAR nor in the supporting calculation package ERS-SFL-83-015, but is needed since the 1-4 day time step is included consistent with the original SWEC LRA analysis for control room habitability.

Regulatory Guide 1.145 [Ref: 22] provides that the LPZ X/Q values versus time can be calculated using regression between the 0.5% observation and the annual average X/Q values. The slope is found by:

$$\text{Slope} = \frac{\ln\left(\frac{\text{Annual Avg X/Q}}{\text{0.5\% X/Q}}\right)}{\ln(8760)} = \frac{\ln\left(\frac{2.56E\text{-}6}{9.50E\text{-}5}\right)}{\ln(8760)} = -0.398$$

The 1-4 day (96 hours) X/Q is found from:

$$X/Q = (2.56E\text{-}6)\left(\frac{96}{8760}\right)^{-0.398} = 1.54E\text{-}5$$

(Methodology extracted from PAVAN [Ref: 23] and XOQDOQ [Ref: 24] codes.)

2. Source Term Development

Attachment 1 documents the development of the source terms used for the different cases involved with the locked rotor accident.

The gap activity is calculated from the core inventory values provided in Table 14b-1 of the Unit 1 UFSAR (Ref: 2], using the core-gap fractions provided as input item #3. The gap activity is used as the basis for RCS activity rather than UFSAR table 14B-6, as the latter is based on equilibrium activity (i.e., credit for letdown cleanup). The instantaneous increase is modeled herein.

The 18% and 1% failed fuel gap release is determined from the gap activity as follows:

1% F.F. gap release, Ci = Gap Activity, Ci x 0.01
18% F.F. gap release, Ci = Gap Activity, Ci x 0.18

This analysis assumes that the gap release is instantaneously and homogeneously dispersed throughout the RCS. The initial technical specification concentration (μCi/gm) in the RCS is converted to added activity in Ci and added to the gap release activity to obtain the total activity available for release via a primary-to-secondary leak.

Note: In this analysis, reference is made to technical specification concentrations in the RCS and the steam generators. The BVPS-1 technical specifications [Ref: 19] do not provide isotopic limits, but rather specify dose equivalent iodine of 1.0 μCi/gm in the RCS and 0.1 μCi/gm in the steam generator. Isotopic values that equate

to these limits were developed by SWEC for the control room habitability effort in calculation 12241-UR(B)-451. These isotopic values will be referred to as the "technical specification concentrations" in this package.

The activity, Ci, in the liquid phase of the three steam generators is based on the technical specification concentrations determined from the µCi/gm data provided in SWEC 12241-UR(B)-451, as follows:

Ci = (Sec Conc, µCi/gm)(3 SG)(97900 #/SG)(453.59 gm/#)(1E-6 Ci/µCi)

The activity, Ci, in the steam phase of the three steam generators is based on the technical specification concentrations determined from the µCi/gm data provided in SWEC 12241-UR(B)-451, as follows:

Ci = (Sec Conc, µCi/gm)(3 SG)(6460 #/SG)(453.59 gm/#)(1E-6 Ci/µCi)

3. Determine Transfer Lambdas

The RCS leak rate lambda is obtained from:

$$\frac{1.0\ \frac{gal}{min} \times \frac{min}{60\ sec} \times 8.34\ \frac{lbs}{gal}}{3.9E5\ \#} = 3.564E\text{-}7\ sec^{-1}$$

The 0-2 hour steam generator release lambda is obtained from:

$$\frac{\frac{443878\ \#}{2\ hr} \times \frac{hr}{3600\ sec}}{(3)(97900)\#} = 2.099E\text{-}4\ sec^{-1}$$

The 2-8 hour steam generator release lambda is obtained from:

$$\frac{\frac{793644\ \#}{6\ hr} \times \frac{hr}{3600\ sec}}{(3)(97900)\#} = 1.251E\text{-}4\ sec^{-1}$$

The 0-2 hour value will be used as the base value. The multiplier for the 2-8 hour period is:

1.251E-4 / 2.099E-4 = 0.596

To model the iodine partitioning in the steam generators, the transfer lambda will be reduced by a factor of 100 to 2.099E-6 for those cases involving iodine (other than initial steam). The reduction in transfer lambda is proper in this case, since the partitioned iodine remains in the steam generator.

To model the initial steam release as a puff, the release lambda for this case was taken as 1.28E-3 sec^{-1}. The was based on an SWEC assumption of 99.99% of the release being complete by 2 hours (0.0833 days). However,

it was subsequently decided to increase this by a factor of 100, since initial code runs showed significant activity remaining in the steam generator at time=2 hours. The original value was based on:

$$N_t = N^o e^{-\lambda t}$$

$$\ln \frac{N_t}{N^o} = -\lambda t$$

$$\ln \frac{(1.-.9999)}{1.} = -\lambda(0.0833)$$

$$\lambda = 111\ d^{-1} = 1.285E\text{-}3\ s^{-1} \equiv 1.285E\text{-}1\ s^{-1}$$

4. Release Models

The release models are illustrated in Attachment 2. These models are described briefly below.

In all cases, the offsite X/Q values are set to the values for the LPZ. The 0-2 hour EAB doses will be calculated from the 0-2 hour LPZ value by ratioing the applicable X/Q values.

Case 1a & b

Models 1a and 1b evaluated the technical specification leakage of iodines from the RCS to the three steam generators. The RCS is modeled as compartment one and the three steam generators together are modeled as compartment two. Transfer lambdas determined above are used. S/G lambdas were reduced by 100 to account for partitioning. The RCS release is modeled at a constant rate for 720 hours. The steam generator release is halted at 8 hours. The source terms for cases 1a and 1b are taken from column J of Attachment 1.

Note: Case 1a (18% F.F.) was not evaluated for the control room dose rate evaluation. Case 1b (1% F.F.) had been run first, and based on those results, it was determined that case 2a would be more limiting than case 1a.

Case 2a & 2b

Cases 2a and 2b evaluated the technical specification leakage of noble gases from the RCS to the three steam generators. Since no holdup of noble gases is assumed in the steam generators, the release is modeled as being from the RCS directly to the environment. The RCS is modeled as compartment two (compartment one not used). RCS transfer lambda determined above is the basis of the release. The release is halted at 8 hours. The source terms are taken from column J of Attachment 1.

NOTE: In this package, the terms "model" and "case" are used to denote components of the overall solution, rather than an alternative solution. The total consequence is the sum of the consequences of the individual models or cases. However, cases 1b and 2b are alternate solutions for cases 1a and 2a respectively.

Case 3

Case 3 evaluated the release of concurrent iodine spike activity via primary-to-secondary leakage. The modeling is similar to that of Case 1a, with the following exceptions: (1) there is no initial activity; (2) the iodine spike is introduced into the RCS as an independent production equal to the isotopic appearance rates for 0-4 hours; (3) the production rate is reduced to 1/500 for the period of 4-8 hours. (The concurrent iodine spike is based on the assumption of a 500 times increase in the iodine appearance rate.)

Case 4

Case 4 evaluated the release of the initial activity in the steam space of all three steam generators. The steam generators are modeled as compartment two (compartment one is not used). The activity in the steam space is as shown in column F of Attachment 1. The release duration is 2 hours.

Case 5

Case 5 evaluated the release of the initial activity in the secondary liquid in all three steam generators. The steam generators are modeled as compartment two (compartment one is not used). The activity in the steam space is as shown in column E of Attachment 1. The release duration is 8 hours. S/G transfer lambdas reduced by a factor of 100 to account for partitioning.

5. Control Room Intake Modeling

See Attachment 3.

For the dose rate evaluation, the control room intake and exhaust are set to the normal system arrangement of 500 ft^3/min with no isolation and no filtration. The time steps evaluated were 1000, 1100, 1200, 1300, 1800, 2400, and 3000 seconds for cases 1b, 2b, and 3-5. For case 2a, the time steps were 30, 40, 50, 60, 90, 120, and 180 seconds.

For the dose evaluation, the following modeling was performed:

- The control room intake and exhaust were assumed to be equal to the normal intake rate (500 ft^3/min) without filtration until the area radiation monitor initiates isolation and pressurization (assumed to be 900 seconds).

- For the one hour period following isolation in which the control room is pressurized, the only intake is the unfiltered 10 ft^3/min infiltration. The exhaust is equal to the pressurization rate of 690 ft^3/min plus the infiltration, for a total of 700 ft^3/min.

- At one hour following isolation, the control room ventilation realigns for emergency filtered intake of approximately 1000 ft^3. Since the emergency fans were designed to maintain the requisite 1/8" water gage pressure differential, and since the assumed exfiltration rate is 700 ft^3/min, the air intake necessary to maintain the differential is assumed to be 700 ft^3/min. This emergency ventilation continues for 8 hours.

- Following the stop of the release at 8 hours, the recirculation fans will be used to purge (unfiltered intake) the control room for 30 minutes.

- Normal system alignment is restored at 8.5 hours.

6. Control Room Dose Rate versus Time

Models 1b, 2b, and 3-5 were run. The printouts from these runs are provided in Attachment 4. In summary:

Control Room Photon Dose Rates (mR/hr) versus Time

sec	Case 1b	Case 2b	Case 3	Case 4	Case 5	Total
1000	2.16E-3	7.10E-1	1.55E-5	1.01E-4	2.94E-4	7.12E-1
1100	2.60E-3	7.44E-1	2.07E-5	9.98E-5	3.22E-4	7.47E-1
1200	3.06E-3	7.78E-1	2.68E-5	9.90E-5	3.49E-4	7.81E-1
1300	3.55E-3	8.13E-1	3.39E-5	9.81E-5	3.76E-4	8.17E-1
1800	6.43E-3	9.78E-1	8.65E-5	9.40E-5	5.06E-4	9.84E-1
2400	1.06E-2	1.15E+0	1.94E-4	8.95E-5	6.53E-4	1.16E+0
3000	1.55E-2	1.30E+0	3.60E-4	8.52E-5	7.90E-4	1.32E+0

Control Room Photon Dose Rates (mR/hr) versus Time

sec	Case 2a
30	0.752
40	0.989
50	1.22
60	1.44
90	2.07
120	2.66
180	3.71

See Attachments 5 and 6 for graphs of these results. Based on the these results, the control room dose rate will reach the safety limit of 1.0 mR/hr [Ref: 2] in approximately 32 minutes for the 1% F.F. case and in approximately 42 seconds for the 18% F.F. case. The area radiation monitor is set to alarm at approximately 50% of this value (accounts for response uncertainties).

It is assumed that the total delay time associated with the response time of the monitor and the delay time of the isolation is 3 minutes. See input item 17. Thus, the isolation times are 32 + 3 = 35 minutes for the 1% F.F. cases, and about 4 minutes for the 18% F.F. cases.

In support of a possible future technical specification amendment that will allow short-term reductions in control room pressurization envelope integrity, it has been decided to assume that the control room isolation does not occur until 900 seconds (15 minutes) from the start of the accident. This period includes the assumed monitor isolation delay. (A safety analysis [Ref: 17] was previously performed for the DBAs currently analyzed in the UFSAR.

7. Offsite and Control Room Doses

Attachment 7 includes the printouts for the determination of the offsite dose (LPZ) and control room dose due to Cases 1a, 2a, 3-5. Attachment 8 provides the printouts for Cases 1b and 2b. These calculations were performed using the models, input data, and assumptions developed above.

8. Isotopic Releases

Attachment 9 tabulates the isotopic releases for the time steps upto 2 hours. Attachment 10 tabulates the isotopic release for the duration of the release -- 0-8 hours. These values were obtained from the Attachment 7 printouts.

RESULTS

The results of the dose calculations for 18% fuel failure (i.e., Cases 1a, 2a, 3-5) are provided below:

Control Room Doses, rem
(Duration)

Case	Photon	Beta	Thyroid
1a	0.00108	0.00746	18.9
2a	0.214	2.92	0.0
3	1.01E-5	6.62E-5	0.142
4	2.90E-7	2.67E-6	0.00795
5	1.44E-6	1.23E-5	0.0452
totals	0.215	2.93	19.1

0-2 Hour LPZ Doses, rem

Case	Photon	Beta	Thyroid
1a	0.00236	6.55E-4	1.01
2a	0.106	0.0654	0.0
3	7.44E-6	1.98E-6	0.00247
4	1.71E-7	7.29E-8	1.90E-4
5	3.25E-6	1.30E-6	0.00424
totals	0.108	0.066	1.017

The ratio of the EAB X/Q to the LPZ X/Q used in the calculations 8.9E-4 / 4.2E-5 = 21.19. This factor is multiplied against the 0-2 hour LPZ totals to obtain the 0-2 hour EAB results:

0-2 hour EAB Doses, rem

Case	Photon	Beta	Thyroid
all	2.29	1.40	21.6

0-8 hour LPZ Doses, rem

Case	Photon	Beta	Thyroid
1a	0.0118	0.00391	9.10
2a	0.213	0.136	0.0
3	1.25E-4	3.92E-5	0.0754
4	1.71E-7	7.29E-8	1.90E-4
5	7.46E-6	3.15E-6	0.0113
totals	0.225	0.140	9.19

The results of cases 1b and 2b (i.e., 1% F.F. and 35 minute isolation delay) provide the following:

Duration Control Room Doses (1%F.F.), rem

Case	Photon	Beta	Thyroid
1b	7.18E-5	4.84E-4	1.18
2b	1.19E-2	1.62E-1	0.0
totals	0.0120	0.162	1.18

These cases show that the increased delay in control room isolation due to lower release concentrations does not result in dose consequences more limiting than those for the higher concentrations and faster isolation. In 12241-UR(B)-449 [Ref: 12] SWEC determined that control room isolation was not necessary in order to maintain control room doses below the GDC-19 [Ref: 15] guidelines for technical specification releases with a concurrent iodine spike (accounts for 5.66 rem).

CONCLUSIONS

The offsite dose consequences of a locked rotor accident are a small fraction of the 10 CFR 100 siting guidelines and therefore are acceptable.

The dose consequences to the control room operators from the intake of the activity released from a locked rotor accident are less than the requirements of GDC-19 and therefore are acceptable.

REFERENCES

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ATTACHMENTS

1. Source Term Table

2. Locked Rotor Release Models

3. Control Room Intake/Exhaust Model

4. Control Room Dose Rate Printouts

5. Graph: 18% Dose Rate versus Time

6. Graph: 1% Dose Rate versus Time

7. Offsite and Control Room Dose Printouts

8. Case 1b and 2b Printouts

9. 0-2 Hour Isotopic Releases

10. 0-8 Hour Isotopic Releases

UNIT 1 LOCKED ROTOR ACCIDENT SOURCE TERM DEVELOPMENT

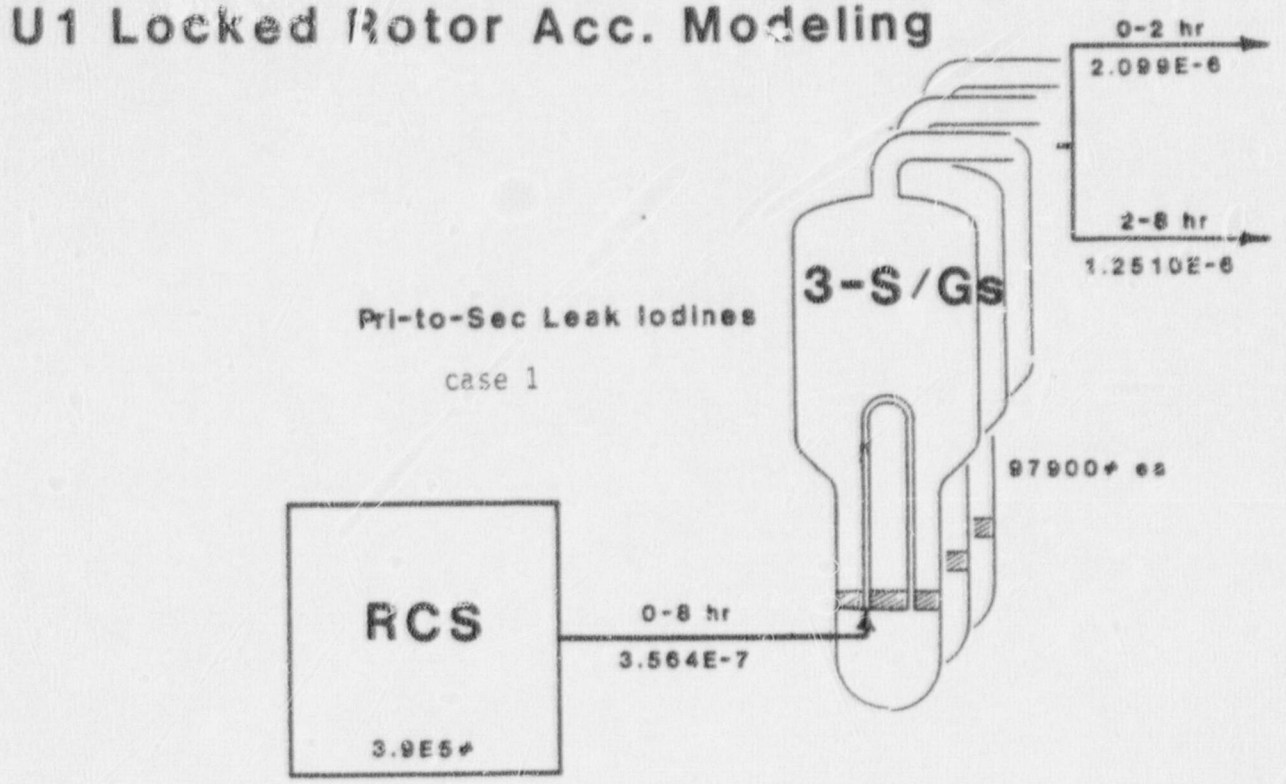
ROW/COL	A= 1	B= 2	C= 3	D= 4	E= 5	F= 6	G= 7	H= 8	I= 9	J=10
1>	NUCLIDE	GAP	SEC LIQ	SEC STM	SEC LIQ	SEC STM	18% GAP	RCS T/S	T/S	TOTAL
2>		ACTIVITY	CONC	CONC	3-SG	3-SG	RELEASE	CONCEN	RCS ACT	RCS ACT
3>		CI	UCI/GM	UCI/GM	CI	CI	CI	UCI/GM	CI	CI
4>	KR-83M	1.27E+06		4.87E-06		4.28E-05	2.29E+05	1.13E-01	2.00E+01	2.29E+05
5>	KR-85M	3.06E+06		2.37E-05		2.08E-04	5.51E+05	5.51E-01	9.75E+01	5.51E+05
6>	KR-85	2.33E+05		1.25E-04		1.10E-03	4.19E+04	2.91E+00	5.15E+02	4.24E+04
7>	KR-87	5.89E+06		1.36E-05		1.20E-04	1.06E+06	3.15E-01	5.57E+01	1.06E+06
8>	KR-88	8.38E+06		3.62E-05		3.18E-04	1.51E+06	8.40E-01	1.49E+02	1.51E+06
9>	KR-89	1.08E+07		1.14E-06		1.00E-05	1.93E+06	2.65E-02	4.69E+00	1.94E+06
10>	XE-131M	5.18E+04		1.22E-06		1.07E-05	9.32E+03	2.83E-02	5.01E+00	9.33E+03
11>	XE-133M	4.00E+05		3.49E-05		3.07E-04	7.20E+04	8.09E-01	1.43E+02	7.21E+04
12>	XE-133	1.58E+07		2.97E-04		2.61E-03	2.84E+06	6.89E+00	1.22E+03	2.85E+06
13>	XE-135M	4.24E+06		1.23E-05		1.08E-04	7.63E+05	2.86E-01	5.06E+01	7.63E+05
14>	XE-135	4.31E+06		3.64E-05		3.20E-04	7.76E+05	8.45E-01	1.49E+02	7.76E+05
15>	XE-137	1.39E+07		1.85E-06		1.63E-05	2.50E+06	4.29E-02	7.59E+00	2.50E+06
16>	XE-138	1.39E+07		7.63E-06		6.71E-05	2.50E+06	1.77E-01	3.13E+01	2.50E+06
17>	I-131	8.20E+06	7.14E-02	7.14E-04	9.51E+00	6.28E-03	1.48E+06	6.60E-01	1.17E+02	1.48E+06
18>	I-132	1.04E+07	1.27E-02	1.27E-04	1.69E+00	1.12E-03	1.87E+06	2.30E-01	4.07E+01	1.87E+06
19>	I-133	1.53E+07	9.32E-02	9.32E-04	1.24E+01	8.19E-03	2.75E+06	1.03E+00	1.82E+02	2.75E+06
20>	I-134	1.79E+07	2.23E-03	2.23E-05	2.97E-01	1.96E-04	3.22E+06	1.44E-01	2.55E+01	3.22E+06
21>	I-135	1.39E+07	3.41E-02	3.41E-04	4.54E+00	3.00E-03	2.50E+06	5.54E-01	9.80E+01	2.50E+06
22>										

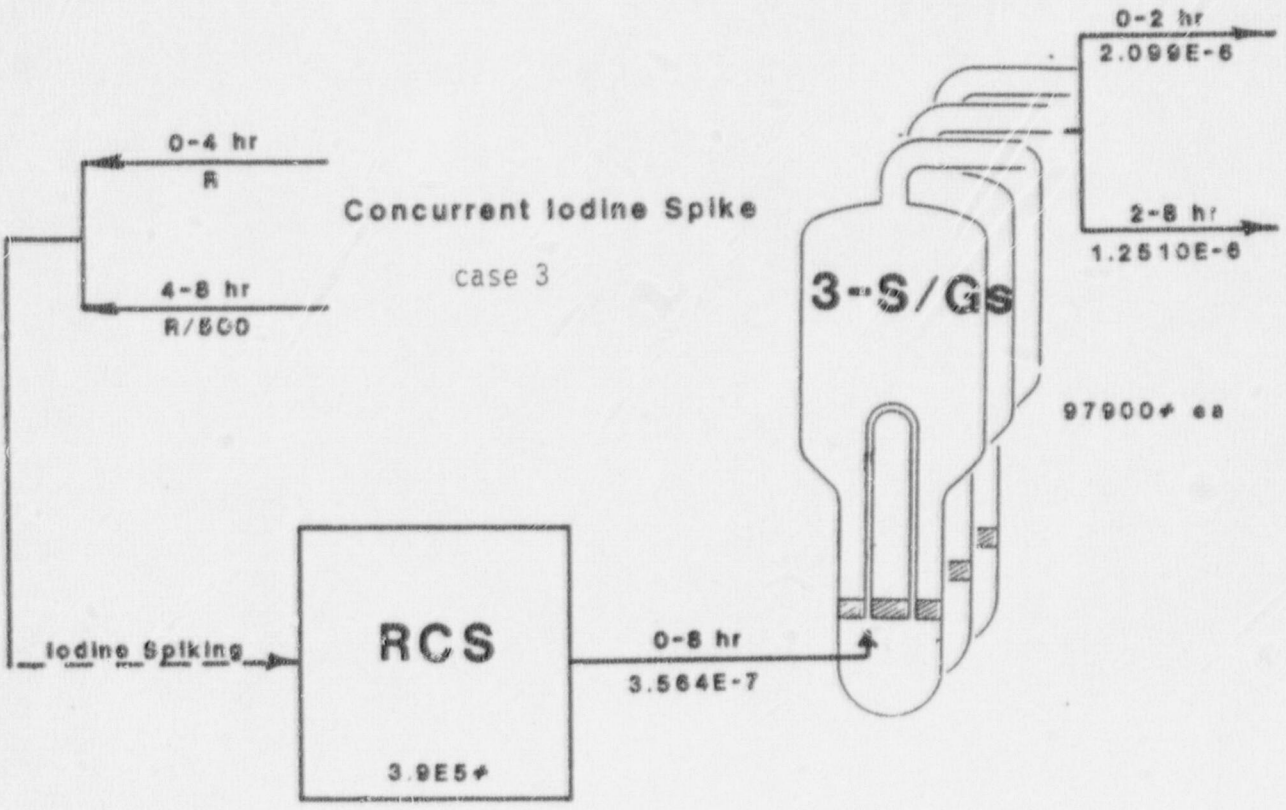
23> COL C,D FROM SWEC 12241-UR(B)-451; COL B FROM UFSAR TBL 14B-1
24> COLUMN E = COLUMN C X (3 SG)(97900 #/SG)(453.59 G/GM)(1E-6)
25> COLUMN F = COLUMN D X (3 SG)(6460 #/SG)(453.59 #/GM)(1E-6)
26> COLUMN G = COLUMN B X 0.18
27> COLUMN H FROM SWEC 12241-UR(B)-451; COLUMN I = H * 390000 * 453.59 * 1E-6
28> COLUMN J = SUM COLUMN G AND COLUMN I

UNIT 1 LOCKED ROTOR ACCIDENT SOURCE TERM DEVELOPMENT

ROW/COL	A= 1	B= 2	G= 3	H= 4	I= 5	J= 6
1>	NUCLIDE	GAP	1% GAP	RCS T/S	T/S	TOTAL
2>		ACTIVITY	RELEASE	CONCEN	RCS ACT	RCS ACT
3>		CI	CI	UCI/GM	CI	CI
4>	KR-83M	1.27E+06	1.27E+04	1.13E-01	2.00E+01	1.27E+04
5>	KR-85M	3.06E+06	3.06E+04	5.51E-01	9.75E+01	3.07E+04
6>	KR-85	2.33E+05	2.33E+03	2.91E+00	5.15E+02	2.84E+03
7>	KR-87	5.89E+06	5.89E+04	3.15E-01	5.57E+01	5.90E+04
8>	KR-88	8.38E+06	8.38E+04	8.40E-01	1.49E+02	8.39E+04
9>	KR-89	1.08E+07	1.08E+05	2.65E-02	4.69E+00	1.08E+05
10>	XE-131M	5.18E+04	5.18E+02	2.83E-02	5.01E+00	5.23E+02
11>	XE-133M	4.00E+05	4.00E+03	8.09E-01	1.43E+02	4.14E+03
12>	XE-133	1.58E+07	1.58E+05	6.89E+00	1.22E+03	1.59E+05
13>	XE-135M	4.24E+06	4.24E+04	2.86E-01	5.06E+01	4.25E+04
14>	XE-135	4.31E+06	4.31E+04	8.45E-01	1.49E+02	4.32E+04
15>	XE-137	1.39E+07	1.39E+05	4.29E-02	7.59E+00	1.39E+05
16>	XE-138	1.39E+07	1.39E+05	1.77E-01	3.13E+01	1.39E+05
17>	I-131	8.20E+06	8.20E+04	6.60E-01	1.17E+02	8.21E+04
18>	I-132	1.04E+07	1.04E+05	2.30E-01	4.07E+01	1.04E+05
19>	I-133	1.53E+07	1.53E+05	1.03E+00	1.82E+02	1.53E+05
20>	I-134	1.79E+07	1.79E+05	1.44E-01	2.55E+01	1.79E+05
21>	I-135	1.39E+07	1.39E+05	5.54E-01	9.80E+01	1.39E+05

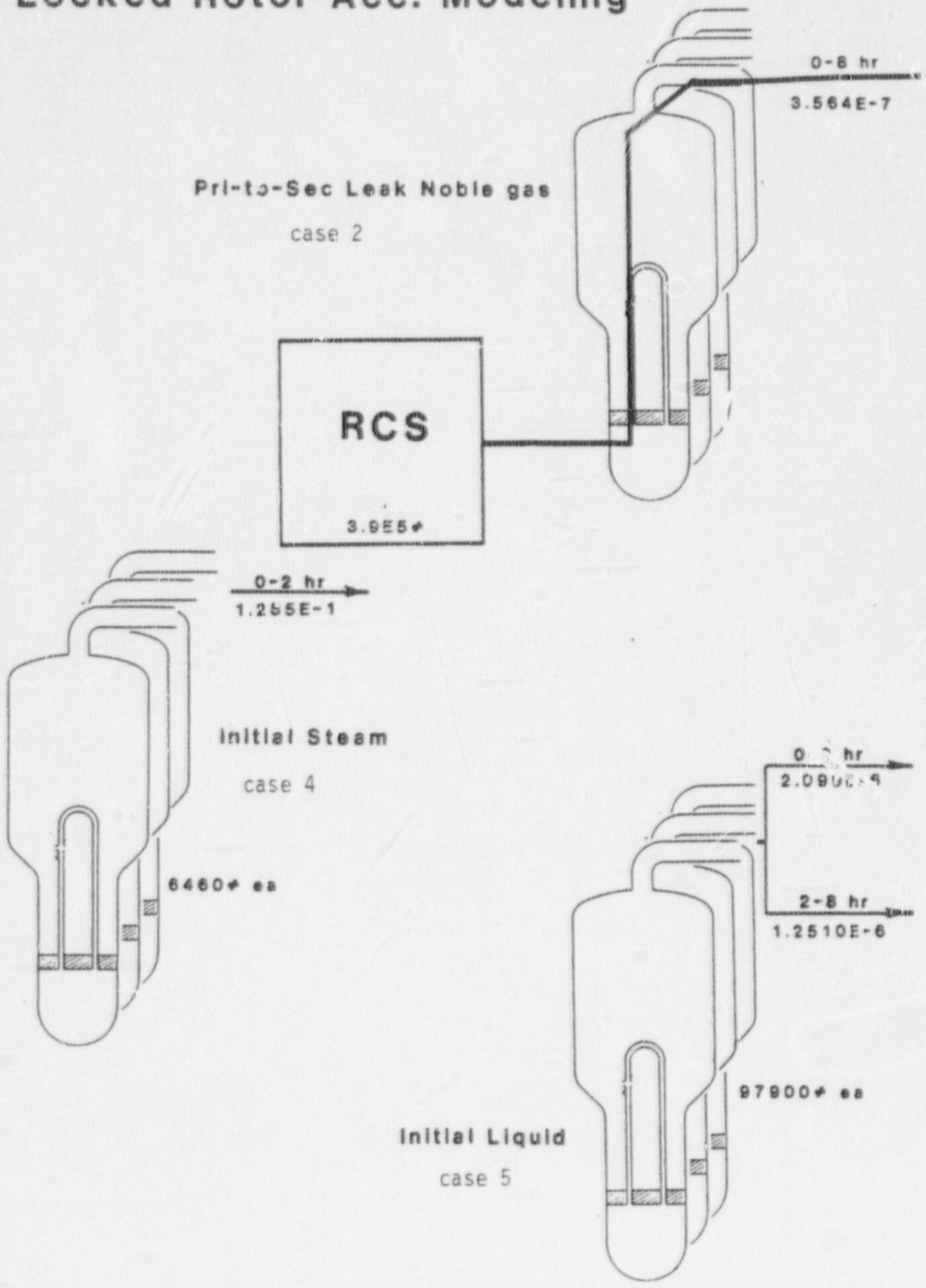
U1 Locked Rotor Acc. Modeling





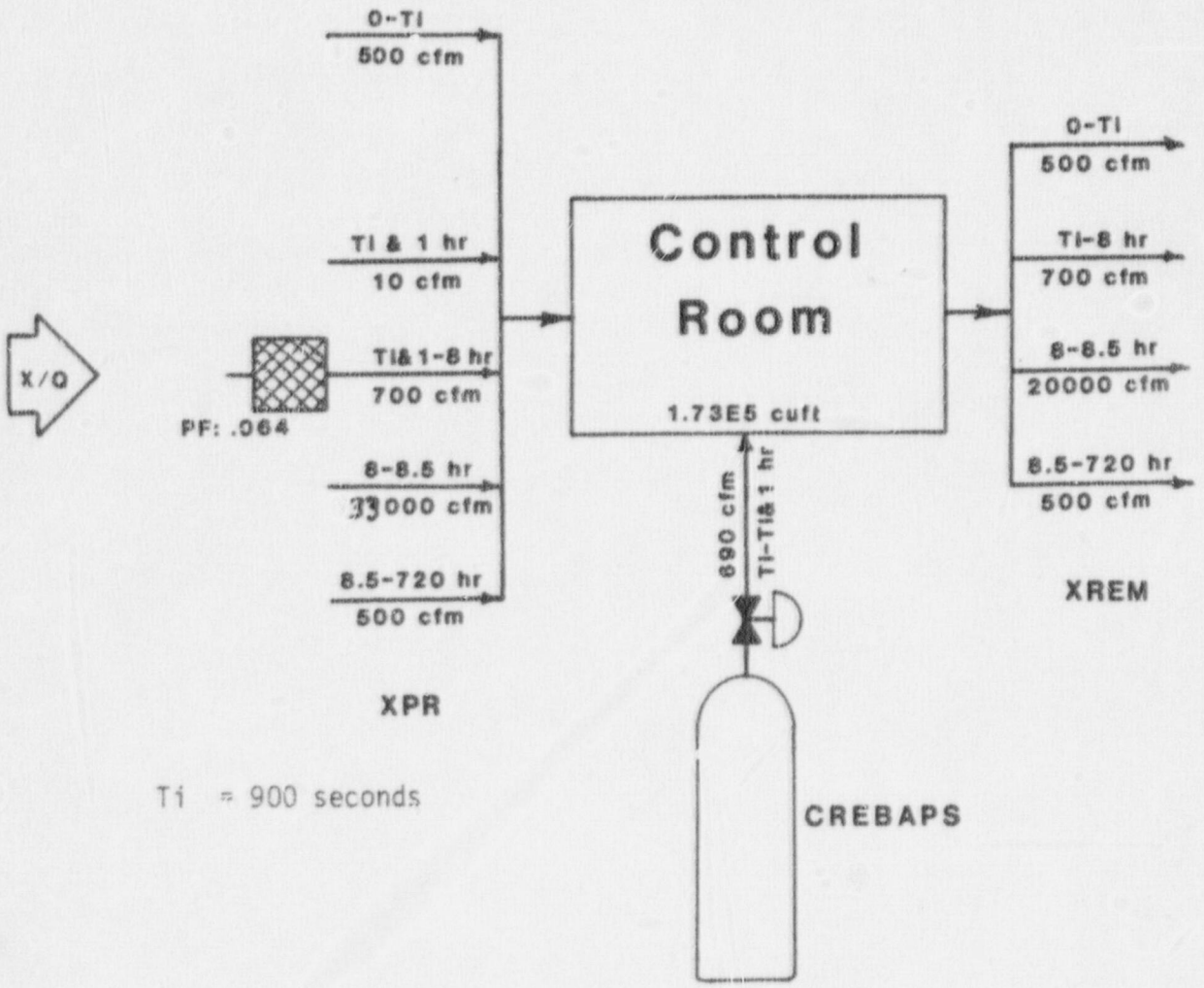
All Transfer Rates are 1/s

U1 Locked Rotor Acc. Modeling



All Transfer Rates are 1/s

CONTROL ROOM MODELING



Ti = 900 seconds

Ti: Dampers Shut - Pressurization

TRAILS -- Transport of Radioactive Material in Linear Systems, v1.0
pri-to-sec leak iodines in U1 LRA; 1% F.F.; for dose rate; no isol

	COMP: RCS 1% FF PER SRP		COMP: 3 Steam Generators		COMP: Control Room	
					VOLUME: 1.730E+05 Cu Ft	
INITIAL:	0.000E+00	KR-83m Ci	0.000E+00	KR-83m	0.000E+00	KR-83m
	0.000E+00	KR-85m	0.000E+00	KR-85m	0.000E+00	KR-85m
	0.000E+00	KR-85	0.000E+00	KR-85	0.000E+00	KR-85
	0.000E+00	KR-87	0.000E+00	KR-87	0.000E+00	KR-87
	0.000E+00	KR-88	0.000E+00	KR-88	0.000E+00	KR-88
	0.000E+00	KR-89	0.000E+00	KR-89	0.000E+00	KR-89
	0.000E+00	KR-90	0.000E+00	KR-90	0.000E+00	KR-90
	0.000E+00	XE-131M	0.000E+00	XE-131M	0.000E+00	XE-131M
	0.000E+00	XE-133M	0.000E+00	XE-133M	0.000E+00	XE-133M
	0.000E+00	XE-133	0.000E+00	XE-133	0.000E+00	XE-133
	0.000E+00	XE-135M	0.000E+00	XE-135M	0.000E+00	XE-135M
	0.000E+00	XE-135	0.000E+00	XE-135	0.000E+00	XE-135
	0.000E+00	XE-137	0.000E+00	XE-137	0.000E+00	XE-137
	0.000E+00	XE-138	0.000E+00	XE-138	0.000E+00	XE-138
	8.210E+04	I-131	0.000E+00	I-131	0.000E+00	I-131
	1.040E+05	I-132	0.000E+00	I-132	0.000E+00	I-132
	1.530E+05	I-133	0.000E+00	I-133	0.000E+00	I-133
	1.790E+05	I-134	0.000E+00	I-134	0.000E+00	I-134
	1.390E+05	I-135	0.000E+00	I-135	0.000E+00	I-135
ACT MULT (to uCi):	1.000E+06		1.000E+00		1.000E+00	
PRODUCTION, uCi/s:	0.000E+00	KR-83m	0.000E+00	KR-83m		
	0.000E+00	KR-85m	0.000E+00	KR-85m		
	0.000E+00	KR-85	0.000E+00	KR-85		
	0.000E+00	KR-87	0.000E+00	KR-87		
	0.000E+00	KR-88	0.000E+00	KR-88		
	0.000E+00	KR-89	0.000E+00	KR-89		
	0.000E+00	KR-90	0.000E+00	KR-90		
	0.000E+00	XE-131M	0.000E+00	XE-131M		
	0.000E+00	XE-133M	0.000E+00	XE-133M		
	0.000E+00	XE-133	0.000E+00	XE-133		
	0.000E+00	XE-135M	0.000E+00	XE-135M		
	0.000E+00	XE-135	0.000E+00	XE-135		
	0.000E+00	XE-137	0.000E+00	XE-137		
	0.000E+00	XE-138	0.000E+00	XE-138		
	0.000E+00	I-131	0.000E+00	I-131		
	0.000E+00	I-132	0.000E+00	I-132		
	0.000E+00	I-133	0.000E+00	I-133		
	0.000E+00	I-134	0.000E+00	I-134		
	0.000E+00	I-135	0.000E+00	I-135	INTAKE: 1.000E+01 CFM	
REMOVAL:	3.564E-07	1/sec	2.099E-06	1/sec	1.000E+01	c+m
NUC 1-14 REL FR:	1.000E+00		0.000E+00		INTAKE REDUCT: 0.000E+00	
NUC 15-20 REL FR:	1.000E+00		0.000E+00		INTAKE FILTER: 0.000E+00	

CASE 1B

TRAILS -- Transp t of Radioactive Material in Linear Systems, v1.0
pri-to-sec leak iodines in U1 LRA; 1% F.F.; for dose rate; no isol

MULTIPLIERS====>

STEP	TIME	XPR	XREM	XRF	XPR	XREM	XRF	XPR	XREM	XRF
1	1.000E+03	0.000E+00	1.00	0.000E+00	0.000E+00	1.00	0.000E+00	50.0	50.0	0.000E+00
2	1.100E+03	0.000E+00	1.00	0.000E+00	0.000E+00	1.00	0.000E+00	50.0	50.0	0.000E+00
3	1.200E+03	0.000E+00	1.00	0.000E+00	0.000E+00	1.00	0.000E+00	50.0	50.0	0.000E+00
4	1.300E+03	0.000E+00	1.00	0.000E+00	0.000E+00	1.00	0.000E+00	50.0	50.0	0.000E+00
5	1.800E+03	0.000E+00	1.00	0.000E+00	0.000E+00	1.00	0.000E+00	50.0	50.0	0.000E+00
6	2.400E+03	0.000E+00	1.00	0.000E+00	0.000E+00	1.00	0.000E+00	50.0	50.0	0.000E+00
7	3.000E+03	0.000E+00	1.00	0.000E+00	0.000E+00	1.00	0.000E+00	50.0	50.0	0.000E+00

	CONTROL ROOM			ENVIRONMENT	
	X/Q s/M3	Breathing Occupancy M3/s		X/Q s/M3	Breathing M3/s
	1.000E-03	3.470E-04	1.000E+00	1.000E+00	3.470E-04

MULTIPLIERS====>

STEP	TIME, s				
1	1.000E+03	2.97	1.00	1.00	0.000E+00	1.00
2	1.100E+03	2.97	1.00	1.00	0.000E+00	1.00
3	1.200E+03	2.97	1.00	1.00	0.000E+00	1.00
4	1.300E+03	2.97	1.00	1.00	0.000E+00	1.00
5	1.800E+03	2.97	1.00	1.00	0.000E+00	1.00
6	2.400E+03	2.97	1.00	1.00	0.000E+00	1.00
7	3.000E+03	2.97	1.00	1.00	0.000E+00	1.00

TRAILS -- Transport of Radioactive Material in Linear Systems, v1.0
pri-to-sec leak iodines in U1 LRA; 1% F.F.; for dose rate; no isol

		RCS 1% FF PER SRP		3 Steam Generators		AVERAGE		CONTROL ROOM		
		CURRENT	INTEGRD	CURRENT	INTEGRD	RELEASED	RELEASE	CURRENT	CURRENT	INTEGRD
STEP	TIME	uCi	uCi-sec	uCi	uCi-sec	uCi	uCi/sec	uCi	uCi/cc	uCi-sec
I-131	INITIAL	8.210E+10		0.000E+00				0.000E+00		
I-131	TOTALS		2.458E+14		1.311E+11	2.752E+05				1.912E+05
I-132	INITIAL	1.040E+11		0.000E+00				0.000E+00		
I-132	TOTALS		2.758E+14		1.410E+11	2.959E+05				2.006E+05
I-133	INITIAL	1.530E+11		0.000E+00				0.000E+00		
I-133	TOTALS		4.524E+14		2.403E+11	5.044E+05				3.497E+05
I-134	INITIAL	1.790E+11		0.000E+00				0.000E+00		
I-134	TOTALS		3.931E+14		1.869E+11	3.923E+05				2.549E+05
I-135	INITIAL	1.390E+11		0.000E+00				0.000E+00		
I-135	TOTALS		3.991E+14		2.098E+11	4.405E+05				3.036E+05
ALL NUCLIDES		5.310E+11		5.663E+08				1.190E+03	2.429E-07	
@ STEP 7										

TRAILS -- Transport of Radioactive Material in Linear Systems, v1.0
pri-to-sec leak iodines in U1 LRA; 1% F.F.; for dose rate; no isol

	ENVIRONMENT						CONTROL ROOM					
	PHOTON-SUBMG		BETA-SUBMG		THYROID-INHAL		PHOTON-SUBMG		BETA-SUBMG		THYROID-INHAL	
	DOSE mrem	DOSE RATE mrem/hr	DOSE mrem	DOSE RATE mrem/hr	DOSE mrem	DOSE RATE mrem/hr	DOSE mrem	DOSE RATE mrem/hr	DOSE mrem	DOSE RATE mrem/hr	DOSE mrem	DOSE RATE mrem/hr
I-131												
TOTALS	0.00E+00		0.00E+00		0.00E+00		1.87E-04		1.71E-03		2.00E+01	
I-132												
TOTALS	0.00E+00		0.00E+00		0.00E+00		1.18E-03		4.62E-03		7.60E-01	
I-133												
TOTALS	0.00E+00		0.00E+00		0.00E+00		5.44E-04		6.73E-03		9.91E+00	
I-134												
TOTALS	0.00E+00		0.00E+00		0.00E+00		1.72E-03		7.27E-03		4.51E-01	
I-135												
TOTALS	0.00E+00		0.00E+00		0.00E+00		1.23E-03		5.25E-03		2.67E+00	
ALL NUCLIDES												
0.2778 h	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.09E-04	2.16E-03	1.59E-03	1.12E-02	1.89E+00	1.35E+01
0.3056 h	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	6.61E-05	2.80E-03	3.41E-04	1.34E-02	4.14E-01	1.63E+01
0.3333 h	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	7.86E-05	3.06E-03	4.06E-04	1.58E-02	4.96E-01	1.94E+01
0.3611 h	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	9.18E-05	3.55E-03	4.75E-04	1.84E-02	5.85E-01	2.27E+01
0.5000 h	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	6.96E-04	6.43E-03	3.62E-03	3.36E-02	4.58E+00	4.31E+01
0.6667 h	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.43E-03	1.06E-02	7.51E-03	5.63E-02	9.89E+00	7.54E+01
0.8333 h	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.18E-03	1.55E-02	1.16E-02	8.30E-02	1.60E+01	1.16E+02
TOTALS	0.00E+00		0.00E+00		0.00E+00		4.85E-03		2.56E-02		3.38E+01	

TRAILS -- Transport of Radioactive Material in Linear Systems, v1.0
Pri-to-sec leak N.G. in U1 LRA 18% F.F. (non-equillibrium) for dose rate

	COMP: NOT USED THIS CASE	COMP: RCB 18%FF PER SRP 3/80	COMP: Control Room
			VOLUME: 1.730E+05 Cu.Ft.
INITIAL:	0.000E+00 KR-83m	2.290E+05 KR-83m Ci	0.000E+00 KR-83m
	0.000E+00 KR-85m	5.510E+05 KR-85m	0.000E+00 KR-85m
	0.000E+00 KR-85	4.240E+04 KR-85	0.000E+00 KR-85
	0.000E+00 KR-87	1.060E+06 KR-87	0.000E+00 KR-87
	0.000E+00 KR-88	1.510E+06 KR-88	0.000E+00 KR-88
	0.000E+00 KR-89	1.940E+06 KR-89	0.000E+00 KR-89
	0.000E+00 KR-90	0.000E+00 KR-90	0.000E+00 KR-90
	0.000E+00 XE-131M	9.330E+03 XE-131M	0.000E+00 XE-131M
	0.000E+00 XE-133M	7.210E+04 XE-133M	0.000E+00 XE-133M
	0.000E+00 XE-133	2.850E+06 XE-133	0.000E+00 XE-133
	0.000E+00 XE-135M	7.630E+05 XE-135M	0.000E+00 XE-135M
	0.000E+00 XE-135	7.760E+05 XE-135	0.000E+00 XE-135
	0.000E+00 XE-137	2.500E+06 XE-137	0.000E+00 XE-137
	0.000E+00 XE-138	2.900E+06 XE-138	0.000E+00 XE-138
	0.000E+00 I-131	0.000E+00 I-131	0.000E+00 I-131
	0.000E+00 I-132	0.000E+00 I-132	0.000E+00 I-132
	0.000E+00 I-133	0.000E+00 I-133	0.000E+00 I-133
	0.000E+00 I-134	0.000E+00 I-134	0.000E+00 I-134
	0.000E+00 I-135	0.000E+00 I-135	0.000E+00 I-135
ACT MULT (to uCi):	1.000E+00	1.000E+06	1.000E+00
PRODUCTION, uCi/s:	0.000E+00 KR-83m	0.000E+00 KR-83m	
	0.000E+00 KR-85m	0.000E+00 KR-85m	
	0.000E+00 KR-85	0.000E+00 KR-85	
	0.000E+00 KR-87	0.000E+00 KR-87	
	0.000E+00 KR-88	0.000E+00 KR-88	
	0.000E+00 KR-89	0.000E+00 KR-89	
	0.000E+00 KR-90	0.000E+00 KR-90	
	0.000E+00 XE-131M	0.000E+00 XE-131M	
	0.000E+00 XE-133M	0.000E+00 XE-133M	
	0.000E+00 XE-133	0.000E+00 XE-133	
	0.000E+00 XE-135M	0.000E+00 XE-135M	
	0.000E+00 XE-135	0.000E+00 XE-135	
	0.000E+00 XE-137	0.000E+00 XE-137	
	0.000E+00 XE-138	0.000E+00 XE-138	
	0.000E+00 I-131	0.000E+00 I-131	
	0.000E+00 I-132	0.000E+00 I-132	
	0.000E+00 I-133	0.000E+00 I-133	
	0.000E+00 I-134	0.000E+00 I-134	
	0.000E+00 I-135	0.000E+00 I-135	INTAKE: 1.000E+01 CFM
REMOVAL:	0.000E+00 1/sec	3.564E-07 1/sec	1.000E+01 cfm
NUC 1-14 REL FR:	0.000E+00	1.000E+00	INTAKE REDUCT: 0.000E+00
NUC 15-20 REL FR:	0.000E+00	1.000E+00	INTAKE FILTER: 0.000E+00

CASE 2A

TRAILS -- Transport of Radioac'ive Material in Linear Systems, v1.0
Pri-to-sec leak N.C. in U1 LR/, 18% F.F. (non-equillibrium) for dose rate

MULTIPLIERS====>										
STEP	TIME	XPR	XREM	XRF	XPR	XREM	XRF	XPR	XREM	XRF
1	3.000E+01	0.000E+00	1.00	0.000E+00	0.000E+00	1.00	0.000E+00	50.0	50.0	0.000E+00
2	4.000E+01	0.000E+00	1.00	0.000E+00	0.000E+00	1.00	0.000E+00	50.0	50.0	0.000E+00
3	5.000E+01	0.000E+00	1.00	0.000E+00	0.000E+00	1.00	0.000E+00	50.0	50.0	0.000E+00
4	6.000E+01	0.000E+00	1.00	0.000E+00	0.000E+00	1.00	0.000E+00	50.0	50.0	0.000E+00
5	9.000E+01	0.000E+00	1.00	0.000E+00	0.000E+00	1.00	0.000E+00	50.0	50.0	0.000E+00
6	1.200E+02	0.000E+00	1.00	0.000E+00	0.000E+00	1.00	0.000E+00	50.0	50.0	0.000E+00
7	1.800E+02	0.000E+00	1.00	0.000E+00	0.000E+00	1.00	0.000E+00	50.0	50.0	0.000E+00

	-------- CONTROL ROOM --------			---- ENVIRONMENT ---	
	X/Q	Breathing	Occupancy	X/Q	Breathing
	s/M3	M3/s		s/M3	M3/s
	1.000E-03	3.470E-04	1.000E+00	1.000E+00	3.470E-04

MULTIPLIERS====>						
STEP	TIME,s					
1	3.000E+01	2.97	1.00	1.00	0.000E+00	1.00
2	4.000E+01	2.97	1.00	1.00	0.000E+00	1.00
3	5.000E+01	2.97	1.00	1.00	0.000E+00	1.00
4	6.000E+01	2.97	1.00	1.00	0.000E+00	1.00
5	9.000E+01	2.97	1.00	1.00	0.000E+00	1.00
6	1.200E+02	2.97	1.00	1.00	0.000E+00	1.00
7	1.800E+02	2.97	1.00	1.00	0.000E+00	1.00

TRAILS -- Transport of Radioactive Material in Linear Systems, v1.0
Pri-to-ser leak N.G. in U1 LRA 18% F.F. (non-equilibrium) for dose rate

STEP	TIME	NOT USED THIS CASE CURRENT uCi	NOT USED THIS CASE INTEGRD uCi-sec	RCS 18%FF PER PRP 3/ CURRENT uCi	RCS 18%FF PER PRP 3/ INTEGRD uCi-sec	AVERAGE RELEASED uCi	AVERAGE RELEASE uCi/sec	CONTROL ROOM CURRENT uCi	CONTROL ROOM CURRENT uCi/cc	CONTROL ROOM INTEGRD uCi-sec
KR-83m	INITIAL	0.000E+00		2.290E+11				0.000E+00		
KR-83m	TOTALS		0.000E+00		4.083E+13	1.455E+07				9.122E+05
KR-85m	INITIAL	0.000E+00		5.510E+11				0.000E+00		
KR-85m	TOTALS		0.000E+00		9.379E+13	3.521E+07				2.212E+06
KR-85	INITIAL	0.000E+00		4.240E+10				0.000E+00		
KR-85	TOTALS		0.000E+00		7.632E+12	2.720E+06				1.711E+05
KR-87	INITIAL	0.000E+00		1.060E+12				0.000E+00		
KR-87	TOTALS		0.000E+00		1.882E+14	6.708E+07				4.199E+06
KR-88	INITIAL	0.000E+00		1.510E+12				0.000E+00		
KR-88	TOTALS		0.000E+00		2.701E+14	9.628E+07				6.042E+06
KR-89	INITIAL	0.000E+00		1.940E+12				0.000E+00		
KR-89	TOTALS		0.000E+00		2.558E+14	9.118E+07				5.088E+06
XE-131M	INITIAL	0.000E+00		9.330E+09				0.000E+00		
XE-131M	TOTALS		0.000E+00		1.679E+12	5.985E+05				3.764E+04
XE-133M	INITIAL	0.000E+00		7.210E+10				0.000E+00		
XE-133M	TOTALS		0.000E+00		1.297E+13	4.624E+06				2.908E+05
XE-133	INITIAL	0.000E+00		2.850E+12				0.000E+00		
XE-133	TOTALS		0.000E+00		5.129E+14	1.828E+08				1.150E+07
XE-135M	INITIAL	0.000E+00		7.630E+11				0.000E+00		
XE-135M	TOTALS		0.000E+00		1.284E+14	4.578E+07				2.811E+06
XE-135	INITIAL	0.000E+00		7.760E+11				0.000E+00		
XE-135	TOTALS		0.000E+00		1.394E+14	4.969E+07				3.123E+06
XE-137	INITIAL	0.000E+00		2.500E+12				0.000E+00		
XE-137	TOTALS		0.000E+00		3.472E+14	1.238E+08				7.057E+06
XE-138	INITIAL	0.000E+00		2.500E+12				0.000E+00		
XE-138	TOTALS		0.000E+00		4.184E+14	1.491E+08				9.139E+06
ALL NUCLIDES		0.000E+00		1.232E+13				5.518E+05	1.126E-04	
@ STEP	7									

TRAILS -- Transport of Radioactive Material in Linear Systems, v1.0
Pri-to-sec leak N.G. in U1 LRA 18% F.F. (non-equillibrium) for dose rate

	ENVIRONMENT						CONTROL ROOM					
	PHOTON-SUBMG		BETA-SUBMG		THYROID-INHAL		PHOTON-SUBMG		BETA-SUBMG		THYROID-INHAL	
	DOSE mrem	DOSE RATE mrem/hr	DOSE mrem	DOSE RATE mrem/hr	DOSE mrem	DOSE RATE mrem/hr	DOSE mrem	DOSE RATE mrem/hr	DOSE mrem	DOSE RATE mrem/hr	DOSE mrem	DOSE RATE mrem/hr
KR-83m												
TOTALS	0.00E+00		0.00E+00		0.00E+00		6.08E-06		1.64E-03		0.00E+00	
KR-85m												
TOTALS	0.00E+00		0.00E+00		0.00E+00		8.95E-04		2.65E-02		0.00E+00	
KR-85												
TOTALS	0.00E+00		0.00E+00		0.00E+00		9.65E-07		2.02E-03		0.00E+00	
KR-87												
TOTALS	0.00E+00		0.00E+00		0.00E+00		8.54E-03		2.61E-01		0.00E+00	
KR-88												
TOTALS	0.00E+00		0.00E+00		0.00E+00		3.03E-02		1.03E-01		0.00E+00	
KR-89												
TOTALS	0.00E+00		0.00E+00		0.00E+00		2.39E-02		3.25E-01		0.00E+00	
XE-131M												
TOTALS	0.00E+00		0.00E+00		0.00E+00		1.94E-06		2.51E-04		0.00E+00	
XE-133M												
TOTALS	0.00E+00		0.00E+00		0.00E+00		3.10E-05		2.60E-03		0.00E+00	
XE-133												
TOTALS	0.00E+00		0.00E+00		0.00E+00		1.34E-03		7.31E-02		0.00E+00	
XE-135M												
TOTALS	0.00E+00		0.00E+00		0.00E+00		3.11E-03		1.26E-02		0.00E+00	
XE-135												
TOTALS	0.00E+00		0.00E+00		0.00E+00		1.99E-03		4.66E-02		0.00E+00	
XE-137												
TOTALS	0.00E+00		0.00E+00		0.00E+00		3.40E-03		5.89E-01		0.00E+00	
XE-138												
TOTALS	0.00E+00		0.00E+00		0.00E+00		2.64E-02		2.71E-01		0.00E+00	
ALL NUCLIDES												
0.0083 h	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.16E-03	7.52E-01	5.75E-02	1.37E+01	0.00E+00	0.00E+00
0.0111 h	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.42E-03	9.89E-01	4.38E-02	1.78E+01	0.00E+00	0.00E+00
0.0139 h	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.07E-03	1.22E+00	5.51E-02	2.18E+01	0.00E+00	0.00E+00
0.0167 h	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.69E-03	1.44E+00	6.60E-02	2.57E+01	0.00E+00	0.00E+00
0.0250 h	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.47E-02	2.07E+00	2.58E-01	3.63E+01	0.00E+00	0.00E+00
0.0333 h	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.97E-02	2.66E+00	3.41E-01	4.56E+01	0.00E+00	0.00E+00
0.0500 h	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	5.32E-02	3.71E+00	8.92E-01	6.13E+01	0.00E+00	0.00E+00
TOTALS	0.00E+00		0.00E+00		0.00E+00		9.99E-02		1.71E+00		0.00E+00	

TRAILS -- Transport of Radioactive Material in Linear Systems, v1.0
Pri-to-sec leak N.G. in U1 LRA 1% F.F. (non-equilibrium) for dose rate

	COMP: NOT USED THIS CASE	COMP: RCS 1%FF PER SRP 3/SG	COMP: Control Room
			VOLUME: 1.730E+05 Cu Ft
INITIAL:	0.000E+00 KR-83m	1.270E+04 KR-83m Ci	0.000E+00 KR-83m
	0.000E+00 KR-85m	3.070E+04 KR-85m	0.000E+00 KR-85m
	0.000E+00 KR-85	2.840E+03 KR-85	0.000E+00 KR-85
	0.000E+00 KR-87	5.900E+04 KR-87	0.000E+00 KR-87
	0.000E+00 KR-88	8.390E+04 KR-88	0.000E+00 KR-88
	0.000E+00 KR-89	1.080E+05 KR-89	0.000E+00 KR-89
	0.000E+00 KR-90	0.000E+00 KR-90	0.000E+00 KR-90
	0.000E+00 XE-131M	5.230E+02 XE-131M	0.000E+00 XE-131M
	0.000E+00 XE-133M	4.140E+03 XE-133M	0.000E+00 XE-133M
	0.000E+00 XE-133	1.590E+05 XE-133	0.000E+00 XE-133
	0.000E+00 XE-135M	4.250E+04 XE-135M	0.000E+00 XE-135M
	0.000E+00 XE-135	4.320E+04 XE-135	0.000E+00 XE-135
	0.000E+00 XE-137	1.390E+05 XE-137	0.000E+00 XE-137
	0.000E+00 XE-138	1.390E+05 XE-138	0.000E+00 XE-138
	0.000E+00 I-131	0.000E+00 I-131	0.000E+00 I-131
	0.000E+00 I-132	0.000E+00 I-132	0.000E+00 I-132
	0.000E+00 I-133	0.000E+00 I-133	0.000E+00 I-133
	0.000E+00 I-134	0.000E+00 I-134	0.000E+00 I-134
	0.000E+00 I-135	0.000E+00 I-135	0.000E+00 I-135
ACT MULT (to uCi):	1.000E+00	1.000E+06	1.000E+00
PRODUCTION, uCi/s:	0.000E+00 KR-83m	0.000E+00 KR-83m	
	0.000E+00 KR-85m	0.000E+00 KR-85m	
	0.000E+00 KR-85	0.000E+00 KR-85	
	0.000E+00 KR-87	0.000E+00 KR-87	
	0.000E+00 KR-88	0.000E+00 KR-88	
	0.000E+00 KR-89	0.000E+00 KR-89	
	0.000E+00 KR-90	0.000E+00 KR-90	
	0.000E+00 XE-131M	0.000E+00 XE-131M	
	0.000E+00 XE-133M	0.000E+00 XE-133M	
	0.000E+00 XE-133	0.000E+00 XE-133	
	0.000E+00 XE-135M	0.000E+00 XE-135M	
	0.000E+00 XE-133	0.000E+00 XE-135	
	0.000E+00 XE-137	0.000E+00 XE-137	
	0.000E+00 XE-138	0.000E+00 XE-138	
	0.000E+00 I-131	0.000E+00 I-131	
	0.000E+00 I-132	0.000E+00 I-132	
	0.000E+00 I-133	0.000E+00 I-133	
	0.000E+00 I-134	0.000E+00 I-134	
	0.000E+00 I-135	0.000E+00 I-135	INTAKE: 1.000E+01 CFM
REMOVAL:	0.000E+00 1/sec	3.544E-07 1/sec	1.000E+01 cfm
NUC 1-14 REL FR:	0.000E+00	1.000E+00	INTAKE REDUCT: 0.000E+00
NUC 15-20 REL FR:	0.000E+00	1.000E+00	INTAKE FILTER: 0.000E+00

CASE 23

TRAILS -- Transport of Radioactive Material in Linear Systems, v1.0
Pri-to-sec leak N.G. in U1 LRA 1% F.F. (non-equilibrium) for dose rate

MULTIPLIERS====>

STEP	TIME	XPR	XREM	XRF	XPR	XREM	XRF	XPR	XREM	XRF
1	1.000E+03	0.000E+00	1.00	0.000E+00	0.000E+00	1.00	0.000E+00	50.0	50.0	0.000E+00
2	1.100E+03	0.000E+00	1.00	0.000E+00	0.000E+00	1.00	0.000E+00	50.0	50.0	0.000E+00
3	1.200E+03	0.000E+00	1.00	0.000E+00	0.000E+00	1.00	0.000E+00	50.0	50.0	0.000E+00
4	1.300E+03	0.000E+00	1.00	0.000E+00	0.000E+00	1.00	0.000E+00	50.0	50.0	0.000E+00
5	1.800E+03	0.000E+00	1.00	0.000E+00	0.000E+00	1.00	0.000E+00	50.0	50.0	0.000E+00
6	2.400E+03	0.000E+00	1.00	0.000E+00	0.000E+00	1.00	0.000E+00	50.0	50.0	0.000E+00
7	3.000E+03	0.000E+00	1.00	0.000E+00	0.000E+00	1.00	0.000E+00	50.0	50.0	0.000E+00

	CONTROL ROOM			ENVIRONMENT	
	X/Q s/M3	Breathing Occupancy M3/s		X/Q s/M3	Breathing M3/s
	1.000E-03	3.470E-04	1.000E+00	1.000E+00	3.470E-04

MULTIPLIERS====>

STEP	TIME, s				
1	1.000E+03	2.97	1.00	1.00	0.000E+00	1.00
2	1.100E+03	2.97	1.00	1.00	0.000E+00	1.00
3	1.200E+03	2.97	1.00	1.00	0.000E+00	1.00
4	1.300E+03	2.97	1.00	1.00	0.000E+00	1.00
5	1.800E+03	2.97	1.00	1.00	0.000E+00	1.00
6	2.400E+03	2.97	1.00	1.00	0.000E+00	1.00
7	3.000E+03	2.97	1.00	1.00	0.000E+00	1.00

TRAILS -- Transport of Radioactive Material in Linear Systems, v1.0
Pri-to-sec leak N.G. in U1 LRA 1% F.F. (non-equilibrium) for dose rate

STEP	TIME	NOT USED THIS CASE CURRENT uCi	NOT USED THIS CASE INTEGRD uCi-sec	RCS 1%FF PER SRP 3/S CURRENT uCi	RCS 1%FF PER SRP 3/S INTEGRD uCi-sec	AVERAGE RELEASED uCi	AVERAGE RELEASE uCi/sec	CONTROL ROOM CURRENT uCi	CONTROL ROOM CURRENT uCi/cc	CONTROL ROOM INTEGRD uCi-sec
KR-83m	INITIAL	0.000E+00		1.270E+10				0.000E+00		
KR-83m	TOTALS		0.000E+00		3.266E+13	1.164E+07				1.104E+07
KR-85m	INITIAL	0.000E+00		3.070E+10				0.000E+00		
KR-85m	TOTALS		0.000E+00		8.636E+13	3.078E+07				3.018E+07
KR-85	INITIAL	0.000E+00		2.840E+09				0.000E+00		
KR-85	TOTALS		0.000E+00		8.515E+12	3.035E+06				3.043E+06
KR-87	INITIAL	0.000E+00		5.900E+10				0.000E+00		
KR-87	TOTALS		0.000E+00		1.422E+14	5.068E+07				4.689E+07
KR-88	INITIAL	0.000E+00		8.390E+10				0.000E+00		
KR-88	TOTALS		0.000E+00		2.276E+14	8.113E+07				7.851E+07
KR-89	INITIAL	0.000E+00		1.080E+11				0.000E+00		
KR-89	TOTALS		0.000E+00		2.954E+13	1.053E+07				1.991E+06
XE-131M	INITIAL	0.000E+00		5.230E+08				0.000E+00		
XE-131M	TOTALS		0.000E+00		1.567E+12	5.583E+05				5.596E+05
XE-133M	INITIAL	0.000E+00		4.140E+09				0.000E+00		
XE-133M	TOTALS		0.000E+00		1.235E+13	4.400E+06				4.403E+06
XE-133	INITIAL	0.000E+00		1.590E+11				0.000E+00		
XE-133	TOTALS		0.000E+00		4.757E+14	1.695E+08				1.698E+08
XE-135M	INITIAL	0.000E+00		4.250E+10				0.000E+00		
XE-135M	TOTALS		0.000E+00		5.057E+13	1.802E+07				1.181E+07
XE-135	INITIAL	0.000E+00		4.320E+10				0.000E+00		
XE-135	TOTALS		0.000E+00		1.255E+14	4.473E+07				4.436E+07
XE-137	INITIAL	0.000E+00		1.390E+11				0.000E+00		
XE-137	TOTALS		0.000E+00		4.608E+13	1.642E+07				3.750E+06
XE-138	INITIAL	0.000E+00		1.390E+11				0.000E+00		
XE-138	TOTALS		0.000E+00		1.553E+14	5.536E+07				3.488E+07
ALL NUCLIDES @ STEP 7		0.000E+00		3.645E+11				2.548E+05	5.202E-05	

TRAILS -- Transport of Radioactive Material in Linear Systems, v1.0
Pri-to-sec leak N.G. in U1 LRA 1% F.F. (non-equillibrium) for dose rate

	ENVIRONMENT						CONTROL ROOM					
	PHOTON-SUBMG		BETA-SUBMG		THYROID-INHAL		PHOTON-SUBMG		BETA-SUBMG		THYROID-INHAL	
	DOSE mrem	DOSE RATE mrem/hr	DOSE mrem	DOSE RATE mrem/hr	DOSE mrem	DOSE RATE mrem/hr	DOSE mrem	DOSE RATE mrem/hr	DOSE mrem	DOSE RATE mrem/hr	DOSE mrem	DOSE RATE mrem/hr
KR-83m												
TOTALS	0.00E+00		0.00E+00		0.00E+00		7.36E-05		1.98E-02		0.00E+00	
KR-85m												
TOTALS	0.00E+00		0.00E+00		0.00E+00		1.22E-02		3.62E-01		0.00E+00	
KR-85												
TOTALS	0.00E+00		0.00E+00		0.00E+00		1.72E-05		3.58E-02		0.00E+00	
KR-87												
TOTALS	0.00E+00		0.00E+00		0.00E+00		9.54E-02		2.91E+00		0.00E+00	
KR-88												
TOTALS	0.00E+00		0.00E+00		0.00E+00		3.94E-01		1.34E+00		0.00E+00	
KR-89												
TOTALS	0.00E+00		0.00E+00		0.00E+00		9.37E-03		1.27E-01		0.00E+00	
XE-131M												
TOTALS	0.00E+00		0.00E+00		0.00E+00		2.88E-05		3.73E-03		0.00E+00	
XE-133M												
TOTALS	0.00E+00		0.00E+00		0.00E+00		4.69E-04		3.93E-02		0.00E+00	
XE-133												
TOTALS	0.00E+00		0.00E+00		0.00E+00		1.97E-02		1.08E+00		0.00E+00	
XE-135M												
TOTALS	0.00E+00		0.00E+00		0.00E+00		1.30E-02		5.31E-02		0.00E+00	
XE-135												
TOTALS	0.00E+00		0.00E+00		0.00E+00		2.82E-02		6.62E-01		0.00E+00	
XE-137												
TOTALS	0.00E+00		0.00E+00		0.00E+00		1.81E-03		3.13E-01		0.00E+00	
XE-138												
TOTALS	0.00E+00		0.00E+00		0.00E+00		1.01E-01		1.03E+00		0.00E+00	
ALL NUCLIDES												
0.2778 h	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.96E-01	7.10E-01	1.40E+00	9.02E+00	0.00E+00	0.00E+00
0.3056 h	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.02E-02	7.44E-01	2.53E-01	9.18E+00	0.00E+00	0.00E+00
0.3333 h	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.11E-02	7.78E-01	2.58E-01	9.40E+00	0.00E+00	0.00E+00
0.3611 h	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.21E-02	8.13E-01	2.65E-01	9.67E+00	0.00E+00	0.00E+00
0.5000 h	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.24E-01	9.78E-01	1.45E+00	1.13E+01	0.00E+00	0.00E+00
0.6667 h	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.77E-01	1.15E+00	2.03E+00	1.32E+01	0.00E+00	0.00E+00
0.8333 h	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.04E-01	1.30E+00	2.33E+00	1.49E+01	0.00E+00	0.00E+00
TOTALS	0.00E+00		0.00E+00		0.00E+00		6.75E-01		7.99E+00		0.00E+00	

TRAILS -- Transport of Radioactive Material in Linear Systems: v1.0
concurrent spike: for c.r. dose rate w/o isolation

	COMP: Reactor Coolant System	COMP: 3 Steam Generators	COMP: Control Room VOLUME: 1.730E+05 Cu.Ft.
INITIAL	0.000E+00 KR-83m	0.000E+00 KR-83m	0.000E+00 KR-83m
	0.000E+00 KR-85m	0.000E+00 KR-85m	0.000E+00 KR-85m
	0.000E+00 KR-85	0.000E+00 KR-85	0.000E+00 KR-85
	0.000E+00 KR-87	0.000E+00 KR-87	0.000E+00 KR-87
	0.000E+00 KR-88	0.000E+00 KR-88	0.000E+00 KR-88
	0.000E+00 KR-89	0.000E+00 KR-89	0.000E+00 KR-89
	0.000E+00 KR-90	0.000E+00 KR-90	0.000E+00 KR-90
	0.000E+00 XE-131M	0.000E+00 XE-131M	0.000E+00 XE-131M
	0.000E+00 XE-133M	0.000E+00 XE-133M	0.000E+00 XE-133M
	0.000E+00 XE-133	0.000E+00 XE-133	0.000E+00 XE-133
	0.000E+00 XE-135M	0.000E+00 XE-135M	0.000E+00 XE-135M
	0.000E+00 XE-135	0.000E+00 XE-135	0.000E+00 XE-135
	0.000E+00 XE-137	0.000E+00 XE-137	0.000E+00 XE-137
	0.000E+00 XE-138	0.000E+00 XE-138	0.000E+00 XE-138
	0.000E+00 I-131	0.000E+00 I-131	0.000E+00 I-131
	0.000E+00 I-132	0.000E+00 I-132	0.000E+00 I-132
	0.000E+00 I-133	0.000E+00 I-133	0.000E+00 I-133
	0.000E+00 I-134	0.000E+00 I-134	0.000E+00 I-134
	0.000E+00 I-135	0.000E+00 I-135	0.000E+00 I-135
ACT MULT (to uCi):	1.000E+00	1.000E+00	1.000E+00
PRODUCTION, uCi/s:	0.000E+00 KR-83m	0.000E+00 KR-83m	
	0.000E+00 KR-85m	0.000E+00 KR-85m	
	0.000E+00 KR-85	0.000E+00 KR-85	
	0.000E+00 KR-87	0.000E+00 KR-87	
	0.000E+00 KR-88	0.000E+00 KR-88	
	0.000E+00 KR-89	0.000E+00 KR-89	
	0.000E+00 KR-90	0.000E+00 KR-90	
	0.000E+00 XE-131M	0.000E+00 XE-131M	
	0.000E+00 XE-133M	0.000E+00 XE-133M	
	0.000E+00 XE-133	0.000E+00 XE-133	
	0.000E+00 XE-135M	0.000E+00 XE-135M	
	0.000E+00 XE-135	0.000E+00 XE-135	
	0.000E+00 XE-137	0.000E+00 XE-137	
	0.000E+00 XE-138	0.000E+00 XE-138	
	1.360E+06 I-131	0.000E+00 I-131	
	2.520E+06 I-132	0.000E+00 I-132	
	3.080E+06 I-133	0.000E+00 I-133	
	3.680E+06 I-134	0.000E+00 I-134	
	2.810E+06 I-135	0.000E+00 I-135	INTAKE: 1.000E+01 CFM
REMOVAL:	3.564E-07 1/sec	2.099E-06 1/sec	1.000E+01 cfm
NUC 1-14 REL FR:	0.000E+00	0.000E+00	INTAKE REDUCT: 0.000E+00
NUC 15-20 REL FR:	0.000E+00	0.000E+00	INTAKE FILTER: 0.000E+00

CASE 3

TRAILS -- Transport of Radioactive Material in Linear Systems, v1.0
concurrent spike; for c.r. dose rate w/o isolation

MULTIPLIERS====>

STEP	TIME	XPR	XREM	XRF	XPR	XREM	XRF	XPR	XREM	XRF
1	1.000E+03	1.00	1.00	0.000E+00	0.000E+00	1.00	0.000E+00	50.0	50.0	0.000E+00
2	1.100E+03	1.00	1.00	0.000E+00	0.000E+00	1.00	0.000E+00	50.0	50.0	0.000E+00
3	1.200E+03	1.00	1.00	0.000E+00	0.000E+00	1.00	0.000E+00	50.0	50.0	0.000E+00
4	1.300E+03	1.00	1.00	0.000E+00	0.000E+00	1.00	0.000E+00	50.0	50.0	0.000E+00
5	1.800E+03	1.00	1.00	0.000E+00	0.000E+00	1.00	0.000E+00	50.0	50.0	0.000E+00
6	2.400E+03	1.00	1.00	0.000E+00	0.000E+00	1.00	0.000E+00	50.0	50.0	0.000E+00
7	3.000E+03	1.00	1.00	0.000E+00	0.000E+00	1.00	0.000E+00	50.0	50.0	0.000E+00

	-------- CONTROL ROOM --------			---- ENVIRONMENT ---	
	X/Q	Breathing	Occupancy	X/Q	Breathing
	s/M3	M3/s		s/M3	M3/s
	1.000E-03	3.470E-04	1.000E+00	1.000E+00	3.470E-04

MULTIPLIERS====>

STEP	TIME,s					
1	1.000E+03	2.97	1.00	1.00	0.000E+00	1.00
2	1.100E+03	2.97	1.00	1.00	0.000E+00	1.00
3	1.200E+03	2.97	1.00	1.00	0.000E+00	1.00
4	1.300E+03	2.97	1.00	1.00	0.000E+00	1.00
5	1.800E+03	2.97	1.00	1.00	0.000E+00	1.00
6	2.400E+03	2.97	1.00	1.00	0.000E+00	1.00
7	3.000E+03	2.97	1.00	1.00	0.000E+00	1.00

TRAILS -- Transport of Radioactive Material in Linear Systems, vi.0
concurrent spike: for c.r. dose rate w/o isolation

		Reactor Coolant Syst		3 Steam Generators		AVERAGE		CONTROL ROOM		
		CURRENT	INTEGRD	CURRENT	INTEGRD	RELEASED	RELEASE	CURRENT	CURRENT	INTEGRD
STEP	TIME	uCi	uCi-sec	uCi	uCi-sec	uCi	uCi/sec	uCi	uCi/cc	uCi-sec
I-131	INITIAL	0.000E+00		0.000E+00				0.000E+00		
I-131	TOTALS		6.112E+12		2.181E+09	4.577E+03				2.442E+03
I-132	INITIAL	0.000E+00		0.000E+00				0.000E+00		
I-132	TOTALS		1.044E+13		3.564E+09	7.482E+03				3.869E+03
I-133	INITIAL	0.000E+00		0.000E+00				0.000E+00		
I-133	TOTALS		1.373E+13		4.864E+09	1.021E+04				5.408E+03
I-134	INITIAL	0.000E+00		0.000E+00				0.000E+00		
I-134	TOTALS		1.345E+13		4.285E+09	8.993E+03				4.434E+03
I-135	INITIAL	0.000E+00		0.000E+00				0.000E+00		
I-135	TOTALS		1.228E+13		4.307E+09	9.040E+03				4.760E+03
ALL NUCLIDES		3.601E+10		1.851E+07				2.575E+01	5.256E-09	

@ STEP 7

TRAILS -- Transport of Radioactive Material in Linear Systems, v1.0
concurrent spike: for c.r. dose rate w/o isolation

	ENVIRONMENT						CONTROL ROOM					
	PHOTON-SUBMG		BETA-SUBMG		THYROID-INHAL		PHOTON-SUBMG		BETA-SUBMG		THYROID-INHAL	
	DOSE mrem	DOSE RATE mrem/hr	DOSE mrem	DOSE RATE mrem/hr	DOSE mrem	DOSE RATE mrem/hr	DOSE mrem	DOSE RATE mrem/hr	DOSE mrem	DOSE RATE mrem/hr	DOSE mrem	DOSE RATE mrem/hr
I-131												
TOTALS	0.00E+00		0.00E+00		0.00E+00		2.39E-06		2.18E-05		2.56E-01	
I-132												
TOTALS	0.00E+00		0.00E+00		0.00E+00		2.27E-05		8.90E-05		1.47E-02	
I-133												
TOTALS	0.00E+00		0.00E+00		0.00E+00		8.42E-06		1.04E-04		1.53E-01	
I-134												
TOTALS	0.00E+00		0.00E+00		0.00E+00		2.99E-05		1.26E-04		7.85E-03	
I-135												
TOTALS	0.00E+00		0.00E+00		0.00E+00		1.92E-05		8.24E-05		4.18E-02	
ALL NUCLIDES												
0.2778 h	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.22E-06	1.55E-05	1.11E-05	7.84E-05	1.16E-02	8.27E-02
0.3056 h	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	5.04E-07	2.07E-05	2.54E-06	1.04E-04	2.68E-03	1.10E-01
0.3333 h	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	6.60E-07	2.68E-05	3.33E-06	1.35E-04	3.51E-03	1.43E-01
0.3611 h	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	8.44E-07	3.39E-05	4.26E-06	1.72E-04	4.51E-03	1.82E-01
0.5000 h	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	8.41E-06	8.65E-05	4.27E-05	4.40E-04	4.58E-02	4.76E-01
0.6667 h	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.36E-05	1.94E-04	1.20E-04	9.98E-04	1.33E-01	1.11E+00
0.8333 h	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	4.64E-05	3.60E-04	2.39E-04	1.86E-03	2.73E-01	2.15E+00
TOTALS	0.00E+00		0.00E+00		0.00E+00		8.26E-05		4.24E-04		4.74E-01	

IRAILS -- Transport of Radioactive Material in Linear Systems, v1.0
initial steam release; for c.r. dose rate w/isol

	COMP: NOT USED THIS CASE	COMP: 3 S/G initial steam rel	COMP: Control Room
			VOLUME: 1.730E+05 Cu.Ft
INITIAL:	0.000E+00 KR-83m	4.280E-05 KR-83m Ci	0.000E+00 KR-83m
	0.000E+00 KR-85m	2.080E-04 KR-85m	0.000E+00 KR-85m
	0.000E+00 KR-85	1.100E-03 KR-85	0.000E+00 KR-85
	0.000E+00 KR-87	1.200E-04 KR-87	0.000E+00 KR-87
	0.000E+00 KR-88	3.180E-04 KR-88	0.000E+00 KR-88
	0.000E+00 KR-89	1.000E-05 KR-89	0.000E+00 KR-89
	0.000E+00 KR-90	0.000E+00 KR-90	0.000E+00 KR-90
	0.000E+00 XE-131M	1.070E-05 XE-131M	0.000E+00 XE-131M
	0.000E+00 XE-133M	3.070E-04 XE-133M	0.000E+00 XE-133M
	0.000E+00 XE-133	2.610E-03 XE-133	0.000E+00 XE-133
	0.000E+00 XE-135M	1.080E-04 XE-135M	0.000E+00 XE-135M
	0.000E+00 XE-135	3.200E-04 XE-135	0.000E+00 XE-135
	0.000E+00 XE-137	1.630E-05 XE-137	0.000E+00 XE-137
	0.000E+00 XE-138	6.710E-05 XE-138	0.000E+00 XE-138
	0.000E+00 I-131	6.280E-03 I-131	0.000E+00 I-131
	0.000E+00 I-132	1.120E-03 I-132	0.000E+00 I-132
	0.000E+00 I-133	8.190E-03 I-133	0.000E+00 I-133
	0.000E+00 I-134	1.960E-04 I-134	0.000E+00 I-134
	0.000E+00 I-135	3.000E-03 I-135	0.000E+00 I-135
ACT MULT (to uCi):	1.000E+00	1.000E+06	1.000E+00
PRODUCTION, uCi/s:	0.000E+00 KR-83m	0.000E+00 KR-83m	
	0.000E+00 KR-85m	0.000E+00 KR-85m	
	0.000E+00 KR-85	0.000E+00 KR-85	
	0.000E+00 KR-87	0.000E+00 KR-87	
	0.000E+00 KR-88	0.000E+00 KR-88	
	0.000E+00 KR-89	0.000E+00 KR-89	
	0.000E+00 KR-90	0.000E+00 KR-90	
	0.000E+00 XE-131M	0.000E+00 XE-131M	
	0.000E+00 XE-133M	0.000E+00 XE-133M	
	0.000E+00 XE-133	0.000E+00 XE-133	
	0.000E+00 XE-135M	0.000E+00 XE-135M	
	0.000E+00 XE-135	0.000E+00 XE-135	
	0.000E+00 XE-137	0.000E+00 XE-137	
	0.000E+00 XE-138	0.000E+00 XE-138	
	0.000E+00 I-131	0.000E+00 I-131	
	0.000E+00 I-132	0.000E+00 I-132	
	0.000E+00 I-133	0.000E+00 I-133	
	0.000E+00 I-134	0.000E+00 I-134	
	0.000E+00 I-135	0.000E+00 I-135	INTAKE: 1.000E+01 CFM
REMOVAL:	0.000E+00 1/sec	1.285E-01 1/sec	1.000E+01 cfm
NUC 1-14 REL FR:	0.000E+00	0.000E+00	INTAKE REDUCT: 0.000E+00
NUC 15-20 REL FR:	0.000E+00	0.000E+00	INTAKE FILTER: 0.000E+00

CASE 4

TRAILS -- Transport of Radioactive Material in Linear Systems, v1.0
initial steam release; for C.R. dose rate w/isol

MULTIPLIERS====>

STEP	TIME	XPR	XREM	XRF	XPR	XREM	XRF	XPR	XREM	XRF
1	1.000E+03	0.000E+00	1.00	0.000E+00	0.000E+00	1.00	0.000E+00	50.0	50.0	0.000E+00
2	1.100E+03	0.000E+00	1.00	0.000E+00	0.000E+00	1.00	0.000E+00	50.0	50.0	0.000E+00
3	1.200E+03	0.000E+00	1.00	0.000E+00	0.000E+00	1.00	0.000E+00	50.0	50.0	0.000E+00
4	1.300E+03	0.000E+00	1.00	0.000E+00	0.000E+00	1.00	0.000E+00	50.0	50.0	0.000E+00
5	1.800E+03	0.000E+00	1.00	0.000E+00	0.000E+00	1.00	0.000E+00	50.0	50.0	0.000E+00
6	2.400E+03	0.000E+00	1.00	0.000E+00	0.000E+00	1.00	0.000E+00	50.0	50.0	0.000E+00
7	3.000E+03	0.000E+00	1.00	0.000E+00	0.000E+00	1.00	0.000E+00	50.0	50.0	0.000E+00

	CONTROL ROOM			ENVIRONMENT	
	X/Q s/M3	Breathing M3/s	Occupancy	X/Q s/M3	Breathing M3/s
	1.000E-03	3.470E-04	1.000E+00	1.000E+00	3.470E-04

MULTIPLIERS====>

STEP	TIME,s				
1	1.000E+03	2.97	1.00	1.00	0.000E+00	1.00
2	1.100E+03	2.97	1.00	1.00	0.000E+00	1.00
3	1.200E+03	2.97	1.00	1.00	0.000E+00	1.00
4	1.300E+03	2.97	1.00	1.00	0.000E+00	1.00
5	1.800E+03	2.97	1.00	1.00	0.000E+00	1.00
6	2.400E+03	2.97	1.00	1.00	0.000E+00	1.00
7	3.000E+03	2.97	1.00	1.00	0.000E+00	1.00

TRAILS -- Transport of Radioactive Material in Linear Systems, v1.0
initial steam release; for c.r. dose rate w/isol

		NOT USED THIS CASE		3 S/G initial steam		AVERAGE		CONTROL ROOM		
		CURRENT	INTEGRD	CURRENT	INTEGRD	RELEASED	RELEASE	CURRENT	CURRENT	INTEGRD
STEP	TIME	uCi	uCi-sec	uCi	uCi-sec	uCi	uCi/sec	uCi	uCi/cc	uCi-sec
KR-83m	INITIAL	0.000E+00		4.280E+01				0.000E+00		
KR-83m	TOTALS		0.000E+00		3.328E+02	4.276E+01				6.211E+01
KR-85m	INITIAL	0.000E+00		2.080E+02				0.000E+00		
KR-85m	TOTALS		0.000E+00		1.618E+03	2.079E+02				3.253E+02
KR-85	INITIAL	0.000E+00		1.100E+03				0.000E+00		
KR-85	TOTALS		0.000E+00		8.560E+03	1.100E+03				1.814E+03
KR-87	INITIAL	0.000E+00		1.200E+02				0.000E+00		
KR-87	TOTALS		0.000E+00		9.328E+02	1.199E+02				1.649E+02
KR-88	INITIAL	0.000E+00		3.180E+02				0.000E+00		
KR-88	TOTALS		0.000E+00		2.473E+03	3.178E+02				4.826E+02
KR-89	INITIAL	0.000E+00		1.000E+01				0.000E+00		
KR-89	TOTALS		0.000E+00		7.567E+01	9.723E+00				1.839E+00
XE-131M	INITIAL	0.000E+00		1.070E+01				0.000E+00		
XE-131M	TOTALS		0.000E+00		8.327E+01	1.070E+01				1.763E+01
XE-133M	INITIAL	0.000E+00		3.070E+02				0.000E+00		
XE-133M	TOTALS		0.000E+00		2.389E+03	3.070E+02				5.041E+02
XE-133	INITIAL	0.000E+00		2.610E+03				0.000E+00		
XE-133	TOTALS		0.000E+00		2.031E+04	2.610E+03				4.297E+03
XE-135M	INITIAL	0.000E+00		1.080E+02				0.000E+00		
XE-135M	TOTALS		0.000E+00		8.356E+02	1.074E+02				8.097E+01
XE-135	INITIAL	0.000E+00		3.200E+02				0.000E+00		
XE-135	TOTALS		0.000E+00		2.490E+03	3.199E+02				5.142E+02
XE-137	INITIAL	0.000E+00		1.630E+01				0.000E+00		
XE-137	TOTALS		0.000E+00		1.239E+02	1.593E+01				3.640E+00
XE-138	INITIAL	0.000E+00		6.710E+01				0.000E+00		
XE-138	TOTALS		0.000E+00		5.189E+02	6.668E+01				4.758E+01
I-131	INITIAL	0.000E+00		6.280E+03				0.000E+00		
I-131	TOTALS		0.000E+00		4.887E+04	6.280E+03				1.035E+04
I-132	INITIAL	0.000E+00		1.120E+03				0.000E+00		
I-132	TOTALS		0.000E+00		8.710E+03	1.119E+03				1.667E+03
I-133	INITIAL	0.000E+00		8.190E+03				0.000E+00		
I-133	TOTALS		0.000E+00		6.373E+04	8.189E+03				1.335E+04
I-134	INITIAL	0.000E+00		1.960E+02				0.000E+00		
I-134	TOTALS		0.000E+00		1.523E+03	1.957E+02				2.491E+02
I-135	INITIAL	0.000E+00		3.000E+03				0.000E+00		
I-135	TOTALS		0.000E+00		2.334E+04	2.999E+03				4.773E+03

TRAILS -- Transport of Radioactive Material in Linear Systems, v1.0
initial steam release; for c.r. dose rate w/isol

	HOT USED THIS CASE		3 S/G initial steam		AVERAGE		CONTROL ROOM		
	CURRENT	INTEGRD	CURRENT	INTEGRD	RELEASED	RELEASE	CURRENT	CURRENT	INTEGRD
STEP TIME	uCi	uCi-sec	uCi	uCi-sec	uCi	uCi/sec	uCi	uCi/cc	uCi-sec
ALL NUCLIDES	0.000E+00		0.000E+00				1.429E+01	2.916E-09	
@ STEP 7									

TRAILS -- Transport of Radioactive Material in Linear Systems, v1.0
Initial steam release: for c.f. dose rate w/isol

	ENVIRONMENT						CONTROL ROOM					
	PHOTON-SUBMG		BETA-SUBMG		THYROID-INHAL		PHOTON-SUBMG		BETA-SUBMG		THYROID-INHAL	
	DOSE mrem	DOSE RATE mrem/hr	DOSE mrem	DOSE RATE mrem/hr	DOSE mrem	DOSE RATE mrem/hr	DOSE mrem	DOSE RATE mrem/hr	DOSE mrem	DOSE RATE mrem/hr	DOSE mrem	DOSE RATE mrem/hr
KR-83m TOTALS	0.00E+00		0.00E+00		0.00E+00		4.14E-10		1.11E-07		0.00E+00	
KR-85m TOTALS	0.00E+00		0.00E+00		0.00E+00		1.32E-07		3.90E-06		0.00E+00	
KR-85 TOTALS	0.00E+00		0.00E+00		0.00E+00		1.02E-08		2.14E-05		0.00E+00	
KR-87 TOTALS	0.00E+00		0.00E+00		0.00E+00		3.35E-07		1.02E-05		0.00E+00	
KR-88 TOTALS	0.00E+00		0.00E+00		0.00E+00		2.42E-06		8.26E-06		0.00E+00	
KR-89 TOTALS	0.00E+00		0.00E+00		0.00E+00		8.66E-09		1.18E-07		0.00E+00	
XE-131M TOTALS	0.00E+00		0.00E+00		0.00E+00		9.09E-10		1.18E-07		0.00E+00	
XE-133M TOTALS	0.00E+00		0.00E+00		0.00E+00		5.37E-08		4.50E-06		0.00E+00	
XE-133 TOTALS	0.00E+00		0.00E+00		0.00E+00		4.99E-07		2.73E-05		0.00E+00	
XE-135M TOTALS	0.00E+00		0.00E+00		0.00E+00		8.95E-08		3.64E-07		0.00E+00	
XE-135 TOTALS	0.00E+00		0.00E+00		0.00E+00		3.27E-07		7.68E-06		0.00E+00	
XE-137 TOTALS	0.00E+00		0.00E+00		0.00E+00		1.75E-09		3.04E-07		0.00E+00	
XE-138 TOTALS	0.00E+00		0.00E+00		0.00E+00		1.37E-07		1.41E-06		0.00E+00	
I-131 TOTALS	0.00E+00		0.00E+00		0.00E+00		1.01E-05		9.25E-05		1.08E+00	
I-132 TOTALS	0.00E+00		0.00E+00		0.00E+00		9.80E-06		3.84E-05		6.32E-03	
I-133 TOTALS	0.00E+00		0.00E+00		0.00E+00		2.08E-05		2.57E-04		3.78E-01	
I-134 TOTALS	0.00E+00		0.00E+00		0.00E+00		1.68E-06		7.11E-06		4.41E-04	

TRAILS -- Transport of Radioactive Material in Linear Systems, v1.0
initial steam release; for c.r. dose rate w/isol

	ENVIRONMENT						CONTROL ROOM					
	PHOTON-SUBMG		BETA-SUBMG		THYROID-INHAL		PHOTON-SUBMG		BETA-SUBMG		THYROID-INHAL	
	DOSE mrem	DOSE RATE mrem/hr	DOSE mrem	DOSE RATE mrem/hr	DOSE mrem	DOSE RATE mrem/hr	DOSE mrem	DOSE RATE mrem/hr	DOSE mrem	DOSE RATE mrem/hr	DOSE mrem	DOSE RATE mrem/hr
I-135												
TOTALS	0.00E+00		0.00E+00		0.00E+00		1.43E-05		8.26E-05		4.19E-02	
ALL NUCLIDES												
0.2778 h	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.42E-05	1.01E-04	1.21E-04	8.57E-04	3.17E-01	2.26E+00
0.3056 h	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.79E-06	9.98E-05	2.37E-05	8.50E-04	6.27E-02	2.25E+00
0.3333 h	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.76E-06	9.90E-05	2.35E-05	8.44E-04	6.24E-02	2.24E+00
0.3611 h	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.74E-06	9.81E-05	2.33E-05	8.38E-04	6.21E-02	2.23E+00
0.5000 h	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.33E-05	9.40E-05	1.14E-04	8.07E-04	3.06E-01	2.17E+00
0.6667 h	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.53E-05	8.95E-05	1.32E-04	7.74E-04	3.56E-01	2.10E+00
0.8333 h	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.46E-05	8.52E-05	1.26E-04	7.42E-04	3.45E-01	2.04E+00
TOTALS	0.00E+00		0.00E+00		0.00E+00		6.57E-05		5.63E-04		1.51E+00	

TRAILS -- Transport of Radioactive Material in Linear Systems, v1.0
initial sec liquid iodine: dose rate w/o isol

	COMP: NOT USED THIS CASE	COMP: 3 Steam Generators	COMP: Control Room VOLUME: 1.730E+05 Cu.Ft.
INITIAL:	0.000E+00 KR-83m	0.000E+00 KR-83m Ci	0.000E+00 KR-83m
	0.000E+00 KR-85m	0.000E+00 KR-85m	0.000E+00 KR-85m
	0.000E+00 KR-85	0.000E+00 KR-85	0.000E+00 KR-85
	0.000E+00 KR-87	0.000E+00 KR-87	0.000E+00 KR-87
	0.000E+00 KR-88	0.000E+00 KR-88	0.000E+00 KR-88
	0.000E+00 KR-89	0.000E+00 KR-89	0.000E+00 KR-89
	0.000E+00 KR-90	0.000E+00 KR-90	0.000E+00 KR-90
	0.000E+00 XE-131M	0.000E+00 XE-131M	0.000E+00 XE-131M
	0.000E+00 XE-133M	0.000E+00 XE-133M	0.000E+00 XE-133M
	0.000E+00 XE-133	0.000E+00 XE-133	0.000E+00 XE-133
	0.000E+00 XE-135M	0.000E+00 XE-135M	0.000E+00 XE-135M
	0.000E+00 XE-135	0.000E+00 XE-135	0.000E+00 XE-135
	0.000E+00 XE-137	0.000E+00 XE-137	0.000E+00 XE-137
	0.000E+00 XE-138	0.000E+00 XE-138	0.000E+00 XE-138
	0.000E+00 I-131	9.510E+00 I-131	0.000E+00 I-131
	0.000E+00 I-132	1.690E+00 I-132	0.000E+00 I-132
	0.000E+00 I-133	1.240E+01 I-133	0.000E+00 I-133
	0.000E+00 I-134	2.970E-01 I-134	0.000E+00 I-134
	0.000E+00 I-135	4.540E+00 I-135	0.000E+00 I-135
ACT MULT (to uCi):	1.000E+00	1.000E+06	1.000E+00
PRODUCTION, uCi/s:	0.000E+00 KR-83m	0.000E+00 KR-83m	
	0.000E+00 KR-85m	0.000E+00 KR-85m	
	0.000E+00 KR-85	0.000E+00 KR-85	
	0.000E+00 KR-87	0.000E+00 KR-87	
	0.000E+00 KR-88	0.000E+00 KR-88	
	0.000E+00 KR-89	0.000E+00 KR-89	
	0.000E+00 KR-90	0.000E+00 KR-90	
	0.000E+00 XE-131M	0.000E+00 XE-131M	
	0.000E+00 XE-133M	0.000E+00 XE-133M	
	0.000E+00 XE-133	0.000E+00 XE-133	
	0.000E+00 XE-135M	0.000E+00 XE-135M	
	0.000E+00 XE-135	0.000E+00 XE-135	
	0.000E+00 XE-137	0.000E+00 XE-137	
	0.000E+00 XE-138	0.000E+00 XE-138	
	0.000E+00 I-131	0.000E+00 I-131	
	0.000E+00 I-132	0.000E+00 I-132	
	0.000E+00 I-133	0.000E+00 I-133	
	0.000E+00 I-134	0.000E+00 I-134	
	0.000E+00 I-135	0.000E+00 I-135	INTAKE: 1.000E+01 CFM
REMOVAL:	0.000E+00 1/sec	2.099E-06 1/sec	1.000E+01 cfm
NUC 1-14 REL FR:	0.000E+00	0.000E+00	INTAKE REDUCT: 0.000E+00
NUC 15-20 REL FR:	0.000E+00	0.000E+00	INTAKE FILTER: 0.000E+00

TRAILS -- Transport of Radioactive Material in Linear Systems, v1.0
initial sec liquid iodine: dose rate w/o isol

MULTIPLIERS====>

STEP	TIME	XPR	XREM	XRF	XPR	XREM	XRF	XPR	XREM	XRF
1	1.000E+03	0.000E+00	1.00	0.000E+00	0.000E+00	1.00	0.000E+00	50.0	50.0	0.000E+00
2	1.100E+03	0.000E+00	1.00	0.000E+00	0.000E+00	1.00	0.000E+00	50.0	50.0	0.000E+00
3	1.200E+03	0.000E+00	1.00	0.000E+00	0.000E+00	1.00	0.000E+00	50.0	50.0	0.000E+00
4	1.300E+03	0.000E+00	1.00	0.000E+00	0.000E+00	1.00	0.000E+00	50.0	50.0	0.000E+00
5	1.800E+03	0.000E+00	1.00	0.000E+00	0.000E+00	1.00	0.000E+00	50.0	50.0	0.000E+00
6	2.400E+03	0.000E+00	1.00	0.000E+00	0.000E+00	1.00	0.000E+00	50.0	50.0	0.000E+00
7	3.000E+03	0.000E+00	1.00	0.000E+00	0.000E+00	1.00	0.000E+00	50.0	50.0	0.000E+00

	CONTROL ROOM			ENVIRONMENT	
	X/Q s/M3	Breathing M3/s	Occupancy	X/Q s/M3	Breathing M3/s
	1.000E-03	3.470E-04	1.000E+00	1.000E+00	3.470E-04

MULTIPLIERS====>

STEP	TIME, s				
1	1.000E+03	2.97	1.00	1.00	0.000E+00	1.00
2	1.100E+03	2.97	1.00	1.00	0.000E+00	1.00
3	1.200E+03	2.97	1.00	1.00	0.000E+00	1.00
4	1.300E+03	2.97	1.00	1.00	0.000E+00	1.00
5	1.800E+03	2.97	1.00	1.00	0.000E+00	1.00
6	2.400E+03	2.97	1.00	1.00	0.000E+00	1.00
7	3.000E+03	2.97	1.00	1.00	0.000E+00	1.00

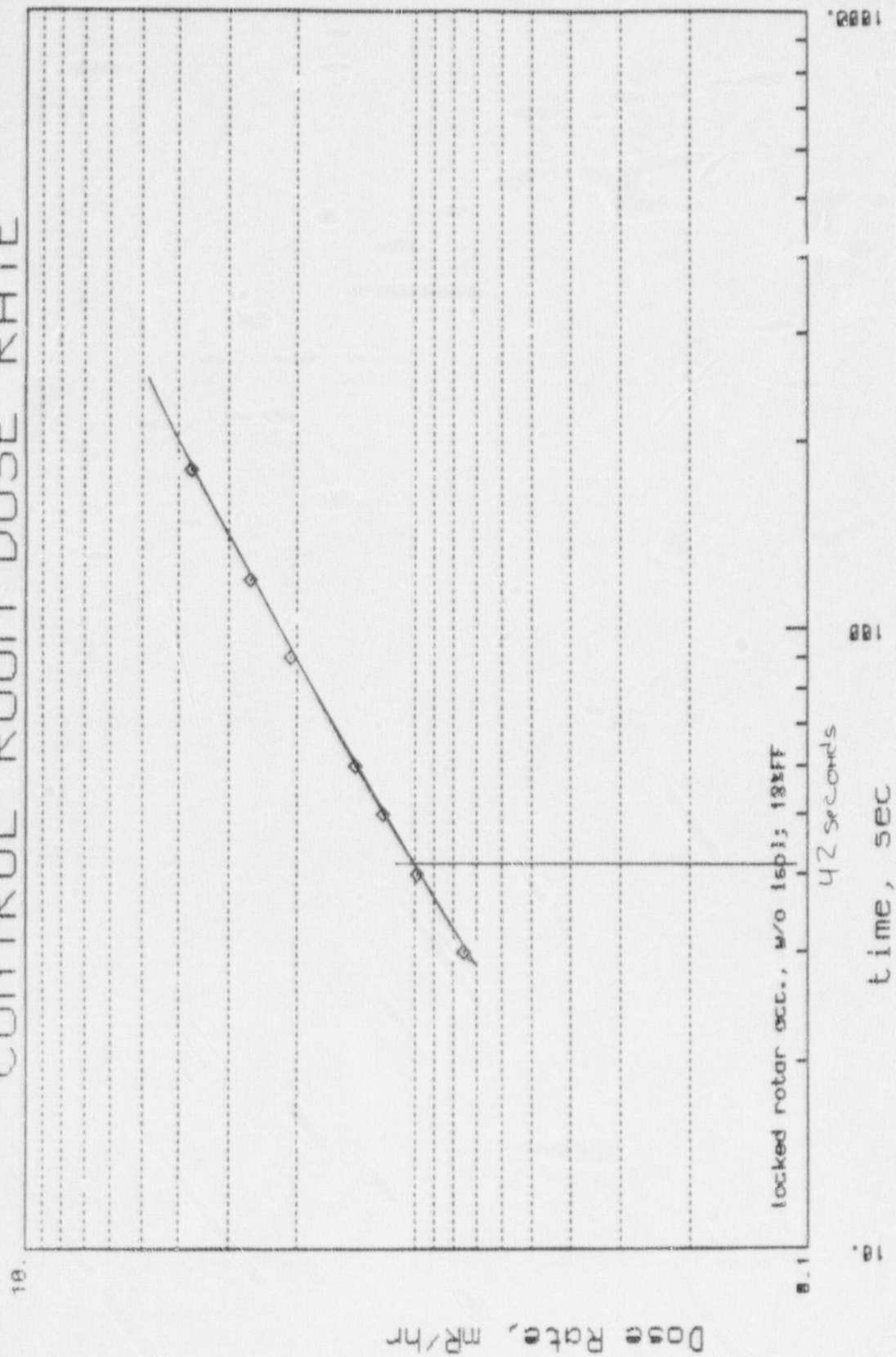
TRAILS -- Transport of Radioactive Material in Linear Systems, v1.0
initial sec liquid iodine; dose rate w/o iso1

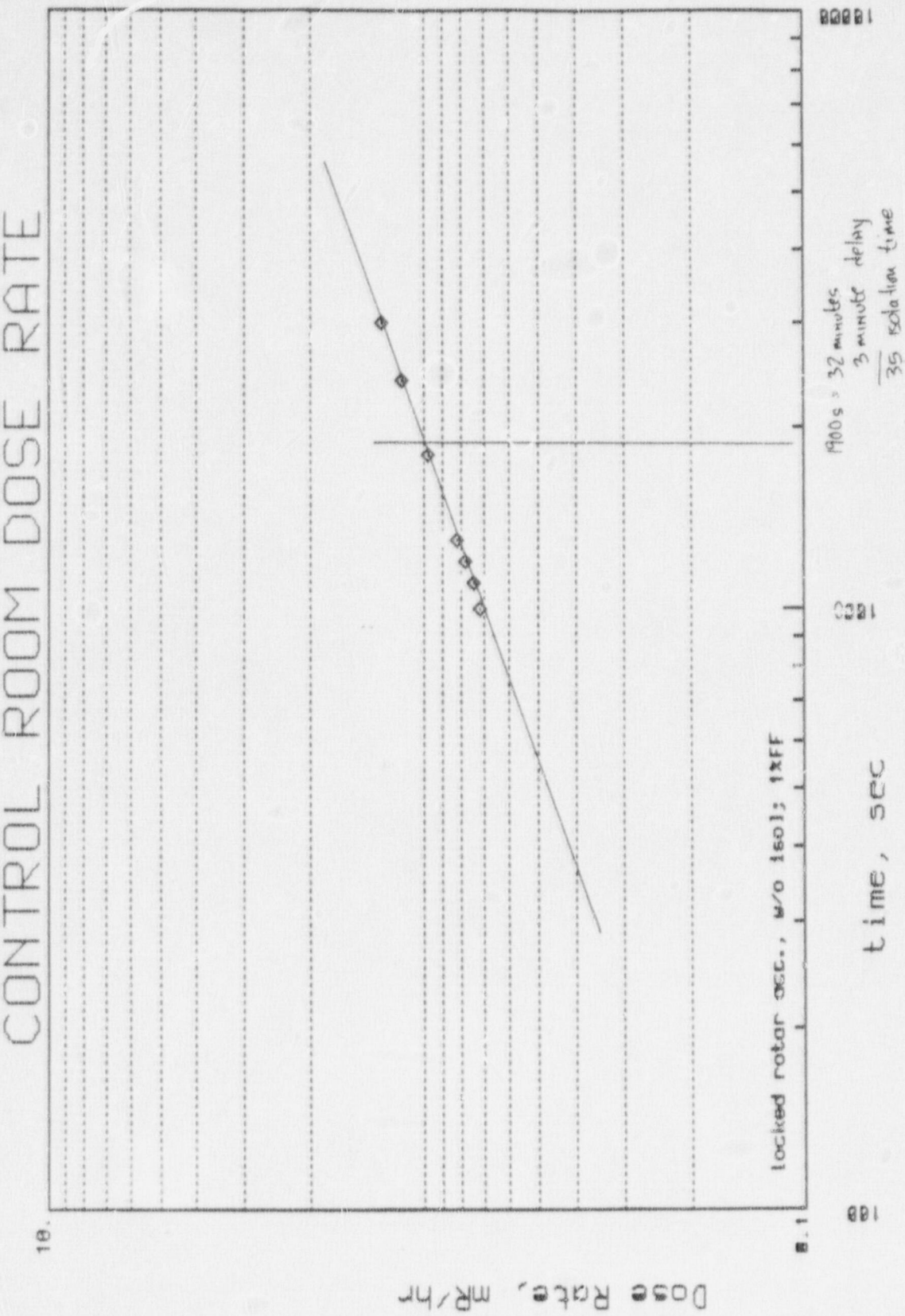
		NOT USED THIS CASE		3 Steam Generators		AVERAGE		----------CONTROL ROOM----------		
		CURRENT	INTEGRD	CURRENT	INTEGRD	RELEASED	RELEASE	CURRENT	CURRENT	INTEGRD
STEP	TIME	uCi	uCi-sec	uCi	uCi-sec	uCi	uCi/sec	uCi	uCi/cc	uCi-sec
I-131	INITIAL	0.000E+00		9.510E+06				0.000E+00		
I-131	TOTALS		0.000E+00		2.840E+10	5.961E+04				5.978E+04
I-132	INITIAL	0.000E+00		1.690E+06				0.000E+00		
I-132	TOTALS		0.000E+00		4.470E+09	9.383E+03				9.010E+03
I-133	INITIAL	0.000E+00		1.240E+07				0.000E+00		
I-133	TOTALS		0.000E+00		3.657E+10	7.677E+04				7.666E+04
I-134	INITIAL	0.000E+00		2.970E+05				0.000E+00		
I-134	TOTALS		0.000E+00		6.508E+08	1.366E+03				1.218E+03
I-135	INITIAL	0.000E+00		4.540E+06				0.000E+00		
I-135	TOTALS		0.000E+00		1.300E+10	2.729E+04				2.697E+04
ALL NUCLIDES		0.000E+00		2.700E+07				1.113E+02	2.272E-08	

@ STEP 7

TRAILS -- Transport of Radioactive Material in Linear Systems, v1.0
initial sec liquid iodine: dose rate w/o isol

	ENVIRONMENT						CONTROL ROOM					
	PHOTON-SUBMG		BETA-SUBMG		THYROID-INHAL		PHOTON-SUBMG		BETA-SUBMG		THYROID-INHAL	
	DOSE mrem	DOSE RATE mrem/hr	DOSE mrem	DOSE RATE mrem/hr	DOSE mrem	DOSE RATE mrem/hr	DOSE mrem	DOSE RATE mrem/hr	DOSE mrem	DOSE RATE mrem/hr	DOSE mrem	DOSE RATE mrem/hr
I-131												
TOTALS	0.00E+00		0.00E+00		0.00E+00		5.84E-05		5.34E-04		5.27E+00	
I-132												
TOTALS	0.00E+00		0.00E+00		0.00E+00		5.30E-05		2.07E-04		3.41E-02	
I-133												
TOTALS	0.00E+00		0.00E+00		0.00E+00		1.19E-04		1.47E-03		2.17E+00	
I-134												
TOTALS	0.00E+00		0.00E+00		0.00E+00		8.20E-06		3.48E-05		2.16E-03	
I-135												
TOTALS	0.00E+00		0.00E+00		0.00E+00		1.09E-04		4.67E-04		2.37E-01	
ALL NUCLIDES												
0.2778 h	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	4.14E-05	2.94E-04	3.19E-04	2.27E-03	1.01E+00	7.17E+00
0.3056 h	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	8.56E-06	3.22E-04	6.62E-05	2.49E-03	2.09E-01	7.87E+00
0.3333 h	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	9.32E-06	3.49E-04	7.21E-05	2.71E-03	2.28E-01	8.56E+00
0.3611 h	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.01E-05	3.76E-04	7.81E-05	2.92E-03	2.47E-01	9.25E+00
0.5000 h	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.35E-05	5.06E-04	4.77E-04	3.95E-03	1.52E+00	1.26E+01
0.6667 h	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	9.67E-05	6.53E-04	7.57E-04	5.13E-03	2.43E+00	1.65E+01
0.8333 h	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.20E-04	7.90E-04	9.48E-04	6.25E-03	3.07E+00	2.03E+01
TOTALS	0.00E+00		0.00E+00		0.00E+00		3.48E-04		2.72E-03		8.71E+00	


CONTROL ROOM DOSE RATE
Dose Rate, MR/hr
time, SEC
locked rotor acc., w/o 16pl; 18%FF
42 seconds
1000.
100.
10.
1.
0.1


CONTROL ROOM DOSE RATE
Dose Rate, MR/hr
10.
1.
.1
time, sec
100
1000
10000
locked rotor acc., w/o isol; 1%FF
1900s = 32 minutes
3 minute delay
35 isolation time

TRAILS -- Transport of Radioactive Material in Linear Systems, v1.0
pri-to-src leak iodines in U1 LRA assuming 18% F.F.

	COMP: RCS 18% FF PER SRP	COMP: 3 Steam Generators	COMP: Control Room
			VOLUME: 1.730E+05 Cu.Ft.
INITIAL:	0.000E+00 KR-83m Ci	0.000E+00 KR-83m	0.000E+00 KR-83m
	0.000E+00 KR-85m	0.000E+00 KR-85m	0.000E+00 KR-85m
	0.000E+00 KR-85	0.000E+00 KR-85	0.000E+00 KR-85
	0.000E+00 KR-87	0.000E+00 KR-87	0.000E+00 KR-87
	0.000E+00 KR-88	0.000E+00 KR-88	0.000E+00 KR-88
	0.000E+00 KR-89	0.000E+00 KR-89	0.000E+00 KR-89
	0.000E+00 KR-90	0.000E+00 KR-90	0.000E+00 KR-90
	0.000E+00 XE-131M	0.000E+00 XE-131M	0.000E+00 XE-131M
	0.000E+00 XE-133M	0.000E+00 XE-133M	0.000E+00 XE-133M
	0.000E+00 XE-133	0.000E+00 XE-133	0.000E+00 XE-133
	0.000E+00 XE-135M	0.000E+00 XE-135M	0.000E+00 XE-135M
	0.000E+00 XE-135	0.000E+00 XE-135	0.000E+00 XE-135
	0.000E+00 XE-137	0.000E+00 XE-137	0.000E+00 XE-137
	0.000E+00 XE-138	0.000E+00 XE-138	0.000E+00 XE-138
	1.480E+06 I-131	0.000E+00 I-131	0.000E+00 I-131
	1.870E+06 I-132	0.000E+00 I-132	0.000E+00 I-132
	2.750E+06 I-133	0.000E+00 I-133	0.000E+00 I-133
	3.220E+06 I-134	0.000E+00 I-134	0.000E+00 I-134
	2.500E+06 I-135	0.000E+00 I-135	0.000E+00 I-135
ACT MULT (to uCi):	1.000E+06	1.000E+00	1.000E+00
PRODUCTION, uCi/s:	0.000E+00 KR-83m	0.000E+00 KR-83m	
	0.000E+00 KR-85m	0.000E+00 KR-85m	
	0.000E+00 KR-85	0.000E+00 KR-85	
	0.000E+00 KR-87	0.000E+00 KR-87	
	0.000E+00 KR-88	0.000E+00 KR-88	
	0.000E+00 KR-89	0.000E+00 KR-89	
	0.000E+00 KR-90	0.000E+00 KR-90	
	0.000E+00 XE-131M	0.000E+00 XE-131M	
	0.000E+00 XE-133M	0.000E+00 XE-133M	
	0.000E+00 XE-133	0.000E+00 XE-133	
	0.000E+00 XE-135M	0.000E+00 XE-135M	
	0.000E+00 XE-135	0.000E+00 XE-135	
	0.000E+00 XE-137	0.000E+00 XE-137	
	0.000E+00 XE-138	0.000E+00 XE-138	
	0.000E+00 I-131	0.000E+00 I-131	
	0.000E+00 I-132	0.000E+00 I-132	
	0.000E+00 I-133	0.000E+00 I-133	
	0.000E+00 I-134	0.000E+00 I-134	
	0.000E+00 I-135	0.000E+00 I-135	INTAKE: 1.000E+01 CFM
REMOVAL:	3.564E-07 1/sec	2.099E-06 1/sec	1.000E+01 cfm
NUC 1-14 REL FR:	1.000E+00	0.000E+00	INTAKE REDUCT: 0.000E+00
NUC 15-20 REL FR:	1.000E+00	0.000E+00	INTAKE FILTER: 9.360E-01

CASE 1A

TRAILS -- Transport of Radioactive Material in Linear Systems, v1.0
pri-to-sec leak iodines in U1 LRA assuming 18% F.F

MULTIPLIERS====>

STEP	TIME	XPR	XREM	XRF	XPR	XREM	XRF	XPR	XREM	XRF
1	7.000E+02	0.000E+00	1.00	0.000E+00	0.000E+00	1.00	0.000E+00	50.0	50.0	0.000E+00
2	4.500E+03	0.000E+00	1.00	0.000E+00	0.000E+00	1.00	0.000E+00	1.00	70.0	0.000E+00
3	7.200E+03	0.000E+00	1.00	0.000E+00	0.000E+00	1.00	0.000E+00	70.0	70.0	1.00
4	1.440E+04	0.000E+00	1.00	0.000E+00	0.000E+00	0.596	0.000E+00	70.0	70.0	1.00
5	2.880E+04	0.000E+00	1.00	0.000E+00	0.000E+00	0.596	0.000E+00	70.0	70.0	1.00
6	3.060E+04	0.000E+00	1.00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	3.300E+03	3.300E+03	0.000E+00
7	8.640E+04	0.000E+00	1.00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	50.0	50.0	0.000E+00
8	3.456E+05	0.000E+00	1.00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	50.0	50.0	0.000E+00
9	2.592E+06	0.000E+00	1.00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	50.0	50.0	0.000E+00

	-------- CONTROL ROOM --------			---- ENVIRONMENT ---	
	X/Q	Breathing	Occupancy	X/Q	Breathing
	s/M3	M3/s		s/M3	M3/s
	1.000E-03	3.470E-04	1.000E+00	1.000E+00	3.470E-04

MULTIPLIERS====>

STEP	TIME, s				
1	7.000E+02	2.97	1.00	1.00	4.200E-05	1.00
2	4.500E+03	2.97	1.00	1.00	4.200E-05	1.00
3	7.200E+03	2.97	1.00	1.00	4.200E-05	1.00
4	1.440E+04	2.97	1.00	1.00	4.200E-05	1.00
5	2.880E+04	2.97	1.00	1.00	4.200E-05	1.00
6	3.060E+04	1.94	1.00	1.00	2.700E-05	1.00
7	8.640E+04	1.94	1.00	1.00	2.700E-05	1.00
8	3.456E+05	0.692	1.00	1.00	1.540E-05	1.00
9	2.592E+06	0.154	1.00	1.00	6.800E-06	1.00

TRAILS -- Transport of Radioactive Material in Linear Systems, v1.0
pri-to-sec leak iodines in U1 LRA assuming 18% F.F.

STEP	TIME	RCS 18% FF PER SRP CURRENT uCi	RCS 18% FF PER SRP INTEGRD uCi-sec	3 Steam Generators CURRENT uCi	3 Steam Generators INTEGRD uCi-sec	AVERAGE RELEASED uCi	AVERAGE RELEASE uCi/sec	CONTROL ROOM CURRENT uCi	CONTROL ROOM CURRENT uCi/cc	CONTROL ROOM INTEGRD uCi-sec
I-131	INITIAL	1.480E+12		0.000E+00				0.000E+00		
1	0.2500 h	1.478E+12	1.331E+15	4.738E+08	2.133E+11	4.478E+05	4.975E+02	3.070E+02	6.266E-08	1.392E+05
2	1.2500 h	1.471E+12	5.309E+15	2.350E+09	5.092E+12	1.069E+07	2.969E+03	3.727E+02	7.608E-08	1.228E+06
3	2.0000 h	1.466E+12	3.964E+15	3.737E+09	8.222E+12	1.726E+07	6.392E+03	1.299E+03	2.652E-07	2.296E+06
4	4.0000 h	1.451E+12	1.050E+16	7.390E+09	4.012E+13	5.019E+07	6.970E+03	3.282E+03	6.700E-07	1.708E+07
5	8.0000 h	1.423E+12	2.070E+16	1.441E+10	1.574E+14	1.969E+08	1.368E+04	9.090E+03	1.856E-06	9.584E+07
6	8.5000 h	1.420E+12	2.559E+15	1.530E+10	2.674E+13	0.000E+00	0.000E+00	2.968E+01	6.059E-09	2.849E+06
7	24.0000 h	1.317E+12	7.631E+16	4.091E+10	1.585E+15	0.000E+00	0.000E+00	1.910E+00	3.899E-10	5.649E+05
8	96.0000 h	9.268E+11	2.878E+17	1.213E+11	2.224E+16	0.000E+00	0.000E+00	5.576E-06	1.138E-15	3.885E+04
9	720.0000 h	4.424E+10	6.518E+17	6.718E+10	2.870E+17	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.134E-01
I-131	TOTALS		1.060E+18		3.111E+17	2.755E+08				1.200E+08
I-132	INITIAL	1.870E+12		0.000E+00				0.000E+00		
1	0.2500 h	1.734E+12	1.621E+15	5.557E+08	2.565E+11	5.385E+05	5.983E+02	3.359E+02	7.264E-08	1.633E+05
2	1.2500 h	1.281E+12	5.385E+15	2.046E+09	4.995E+12	1.048E+07	2.912E+03	3.199E+02	6.530E-08	1.210E+06
3	2.0000 h	1.021E+12	3.094E+15	2.603E+09	6.362E+12	1.335E+07	4.946E+03	9.013E+02	1.840E-07	1.702E+06
4	4.0000 h	5.573E+11	5.514E+15	2.838E+09	2.037E+13	2.549E+07	3.540E+03	1.279E+03	2.611E-07	8.090E+06
5	8.0000 h	1.661E+11	4.654E+15	1.682E+09	3.312E+13	4.144E+07	2.878E+03	1.205E+03	2.460E-07	1.771E+07
6	8.5000 h	1.428E+11	2.775E+14	1.538E+09	2.897E+12	0.000E+00	0.000E+00	3.391E+00	6.921E-10	3.683E+05
7	24.0000 h	1.310E+09	1.683E+15	4.072E+07	2.505E+13	0.000E+00	0.000E+00	2.160E-03	4.408E-13	2.569E+04
8	96.0000 h	4.510E-01	1.559E+13	5.901E-02	5.528E+11	0.000E+00	0.000E+00	3.082E-18	6.291E-28	1.638E+01
9	720.0000 h	0.000E+00	5.364E+03	0.000E+00	7.278E+02	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.337E-14
I-132	TOTALS		2.224E+16		9.362E+13	9.130E+07				2.927E+07
I-133	INITIAL	2.750E+12		0.000E+00				0.000E+00		
1	0.2500 h	2.726E+12	2.464E+15	8.738E+08	3.945E+11	8.280E+05	9.200E+02	3.656E+02	1.154E-07	2.567E+05
2	1.2500 h	2.634E+12	9.647E+15	4.207E+09	9.222E+12	1.936E+07	5.377E+03	6.662E+02	1.360E-07	2.225E+06
3	2.0000 h	2.566E+12	7.019E+15	6.544E+09	1.454E+13	3.053E+07	1.131E+04	2.273E+03	4.640E-07	4.043E+06
4	4.0000 h	2.394E+12	1.785E+16	1.219E+10	6.797E+13	8.503E+07	1.181E+04	5.412E+03	1.105E-06	2.870E+07
5	8.0000 h	2.085E+12	3.220E+16	2.111E+10	2.433E+14	3.044E+08	2.114E+04	1.336E+04	2.728E-06	1.455E+08
6	8.5000 h	2.049E+12	3.721E+15	2.208E+10	3.888E+13	0.000E+00	0.000E+00	4.300E+01	8.777E-09	4.178E+06
7	24.0000 h	1.198E+12	8.850E+16	3.724E+10	1.769E+15	0.000E+00	0.000E+00	1.745E+00	3.562E-10	7.184E+05
8	96.0000 h	9.918E+10	1.143E+17	1.298E+10	7.023E+15	0.000E+00	0.000E+00	5.989E-07	1.222E-16	3.039E+04
9	720.0000 h	4.146E+01	1.032E+16	6.295E+01	1.799E+15	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.043E-02
I-133	TOTALS		2.861E+17		1.097E+16	4.401E+08				1.857E+08
I-134	INITIAL	3.220E+12		0.000E+00				0.000E+00		
1	0.2500 h	2.642E+12	2.629E+15	8.467E+08	4.076E+11	8.555E+05	9.505E+02	5.328E+02	1.088E-07	2.494E+05
2	1.2500 h	1.197E+12	6.569E+15	1.912E+09	5.757E+12	1.208E+07	3.356E+03	2.952E+02	6.025E-08	1.418E+06
3	2.0000 h	6.608E+11	2.436E+15	1.685E+09	4.939E+12	1.037E+07	3.840E+03	5.890E+02	1.202E-07	1.244E+06
4	4.0000 h	1.356E+11	2.388E+15	6.904E+08	8.357E+12	1.045E+07	1.452E+03	3.520E+02	7.186E-08	3.113E+06
5	8.0000 h	5.711E+09	5.906E+14	5.783E+07	3.817E+12	4.776E+06	3.316E+02	7.703E+01	1.573E-08	2.003E+06
6	8.5000 h	3.844E+09	8.489E+12	4.141E+07	8.852E+10	0.000E+00	0.000E+00	1.697E-01	3.465E-11	2.262E+04
7	24.0000 h	1.796E+04	1.748E+13	5.583E+02	2.169E+11	0.000E+00	0.000E+00	5.505E-08	1.124E-17	6.338E+02
8	96.0000 h	3.120E-21	8.167E+07	4.083E-22	2.675E+06	0.000E+00	0.000E+00	3.964E-38	0.000E+00	2.056E-04
9	720.0000 h	0.000E+00	1.418E-17	0.000E+00	1.882E-18	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.480E-34
I-134	TOTALS		1.464E+16		2.358E+13	3.854E+07				8.051E+06

TRAILS -- Transport of Radioactive Material in Linear Systems, v1.0
pri-to-sec leak iodines in U1 LRA assuming 18% F.F.

		RCS 18% FF PER SRP		3 Steam Generators		AVERAGE		CONTROL ROOM		
		CURRENT	INTEGRD	CURRENT	INTEGRD	RELEASED	RELEASE	CURRENT	CURRENT	INTEGRD
STEP	TIME	uCi	uCi-sec	uCi	uCi-sec	uCi	uCi/sec	uCi	uCi/cc	uCi-sec
I-135	INITIAL	2.500E+12		0.000E+00				0.000E+00		
1	0.2500 h	2.435E+12	2.220E+15	7.803E+08	3.544E+11	7.438E+05	8.265E+02	5.036E+02	1.028E-07	2.292E+05
2	1.2500 h	2.189E+12	8.315E+15	3.498E+09	7.886E+12	1.653E+07	4.398E+03	5.517E+02	1.126E-07	1.905E+06
3	2.0000 h	2.022E+12	5.682E+15	5.156E+09	1.175E+13	2.466E+07	9.134E+03	1.788E+03	3.651E-07	3.232E+06
4	4.0000 h	1.635E+12	1.312E+16	8.325E+09	6.954E+13	6.197E+07	8.608E+03	3.697E+03	7.547E-07	2.054E+07
5	8.0000 h	1.069E+12	1.918E+16	1.083E+10	1.427E+14	1.785E+08	1.239E+04	6.974E+03	1.424E-06	8.213E+07
6	8.5000 h	1.014E+12	1.875E+15	1.093E+10	1.958E+13	0.000E+00	0.000E+00	2.165E+01	4.419E-09	2.167E+06
7	24.0000 h	1.957E+11	2.776E+16	6.081E+09	5.059E+14	0.000E+00	0.000E+00	2.898E-01	5.917E-11	2.763E+05
8	96.0000 h	9.381E+07	6.633E+15	1.228E+07	2.895E+14	0.000E+00	0.000E+00	5.763E-10	1.176E-19	3.730E+03
9	720.0000 h	1.605E-21	3.182E+12	2.436E-21	4.604E+11	0.000E+00	0.000E+00	0.000E+00	0.000E+00	7.455E-06
I-135	TOTALS		8.478E+16		1.028E+15	2.824E+08				1.105E+08
ALL NUCLIDES		4.424E+10		6.718E+10				0.000E+00	0.000E+00	

@ STEP 9

TRAILS -- Transport of Radioactive Material in Linear Systems, v1.0
pri-to-sec leak iodines in U1 LRA assuming 18% F F

	ENVIRONMENT						CONTROL ROOM					
	PHOTON-SUBMG		BETA-SUBMG		THYROID-INHAL		PHOTON-SUBMG		BETA-SUBMG		THYROID-INHAL	
	DOSE mrem	DOSE RATE mrem/hr	DOSE mrem	DOSE RATE mrem/hr	DOSE mrem	DOSE RATE mrem/hr	DOSE mrem	DOSE RATE mrem/hr	DOSE mrem	DOSE RATE mrem/hr	DOSE mrem	DOSE RATE mrem/hr
I-131												
0.2500 h	1.79E-03	7.17E-03	8.24E-04	3.30E-03	9.66E+00	3.86E+01	1.36E-04	1.08E-03	1.24E-03	9.88E-03	1.46E+01	1.16E+02
1.2500 h	4.28E-02	4.28E-02	1.97E-02	1.97E-02	2.31E+02	2.31E+02	1.20E-03	1.31E-03	1.10E-02	1.20E-02	1.29E+02	1.41E+02
2.0000 h	6.91E-02	9.21E-02	3.18E-02	4.23E-02	3.72E+02	4.96E+02	2.24E-03	4.57E-03	2.05E-02	4.18E-02	2.41E+02	4.90E+02
4.0000 h	2.01E-01	1.00E-01	9.24E-02	4.62E-02	1.08E+03	5.41E+02	1.67E-02	1.15E-02	1.53E-01	1.06E-01	1.79E+03	1.24E+03
8.0000 h	7.88E-01	1.97E-01	3.62E-01	9.06E-02	4.25E+03	1.06E+03	9.37E-02	3.20E-02	8.57E-01	2.93E-01	1.00E+04	3.43E+03
8.5000 h	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.78E-03	1.04E-04	2.55E-02	9.56E-04	2.99E+02	1.12E+01
24.0000 h	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	5.52E-04	6.72E-06	5.05E-03	6.15E-05	5.92E+01	7.21E-01
96.0000 h	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.80E-05	1.96E-11	3.47E-04	1.80E-10	4.07E+00	2.10E-06
720.0000 h	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.11E-10	0.00E+00	1.01E-09	0.00E+00	1.19E-05	0.00E+00
TOTALS	1.10E+00		5.07E-01		5.94E+03		1.17E-01		1.07E+00		1.26E+04	
I-132												
0.2500 h	1.30E-02	5.18E-02	2.55E-03	1.02E-02	4.20E-01	1.68E+00	9.60E-04	7.53E-03	3.76E-03	2.95E-02	6.19E-01	4.85E+00
1.2500 h	2.52E-01	2.52E-01	4.97E-02	4.97E-02	8.18E+00	8.18E+00	7.11E-03	6.77E-03	2.79E-02	2.65E-02	4.59E+00	4.36E+00
2.0000 h	3.21E-01	4.28E-01	6.33E-02	8.44E-02	1.04E+01	1.39E+01	1.00E-02	1.91E-02	3.92E-02	7.47E-02	6.45E+00	1.23E+01
4.0000 h	6.13E-01	3.07E-01	1.21E-01	6.04E-02	1.99E+01	9.94E+00	4.75E-02	2.71E-02	1.86E-01	1.06E-01	3.07E+01	1.74E+01
8.0000 h	9.97E-01	2.49E-01	1.96E-01	4.91E-02	3.23E+01	8.08E+00	1.04E-01	2.55E-02	4.08E-01	9.99E-02	6.71E+01	1.64E+01
8.5000 h	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.16E-03	7.17E-05	8.48E-03	2.61E-04	1.40E+00	4.63E-02
24.0000 h	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.51E-04	4.57E-08	5.91E-04	1.79E-07	9.74E-02	2.95E-05
96.0000 h	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	9.62E-08	6.52E-23	3.77E-07	2.55E-22	6.21E-05	4.20E-20
720.0000 h	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.37E-22	0.00E+00	5.38E-22	0.00E+00	8.86E-20	0.00E+00
TOTALS	2.20E+00		4.33E-01		7.12E+01		1.72E-01		6.74E-01		1.11E+02	
I-133												
0.2500 h	5.27E-03	2.11E-02	3.28E-03	1.31E-02	4.83E+00	1.93E+01	3.99E-04	3.17E-03	4.94E-03	3.92E-02	7.27E+00	5.77E+01
1.2500 h	1.23E-01	1.23E-01	7.67E-02	7.67E-02	1.13E+02	1.13E+02	3.46E-03	3.73E-03	4.28E-02	4.62E-02	6.31E+01	6.80E+01
2.0000 h	1.94E-01	2.59E-01	1.21E-01	1.61E-01	1.78E+02	2.37E+02	6.29E-03	1.27E-02	7.78E-02	1.57E-01	1.15E+02	2.32E+02
4.0000 h	5.42E-01	2.71E-01	3.37E-01	1.68E-01	4.96E+02	2.48E+02	4.47E-02	3.03E-02	5.52E-01	3.75E-01	8.13E+02	5.52E+02
8.0000 h	1.94E+00	4.85E-01	1.21E+00	3.01E-01	1.77E+03	4.44E+02	2.26E-01	7.49E-02	2.80E+00	9.26E-01	4.12E+03	1.36E+03
8.5000 h	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	6.50E-03	2.41E-04	8.04E-02	2.98E-03	1.18E+02	4.39E+00
24.0000 h	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.12E-03	9.77E-06	1.38E-02	1.21E-04	2.04E+01	1.78E-01
96.0000 h	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	4.73E-05	3.35E-12	5.85E-04	4.15E-11	8.61E-01	6.11E-08
720.0000 h	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.62E-11	0.00E+00	2.01E-10	0.00E+00	2.95E-07	0.00E+00
TOTALS	2.80E+00		1.74E+00		2.57E+03		2.89E-01		3.57E+00		5.26E+03	
I-134												
0.2500 h	2.36E-02	9.43E-02	5.02E-03	2.01E-02	3.12E-01	1.25E+00	1.68E-03	1.29E-02	7.11E-03	5.47E-02	4.42E-01	3.40E+00
1.2500 h	3.33E-01	3.33E-01	7.09E-02	7.09E-02	4.40E+00	4.40E+00	9.55E-03	7.15E-03	4.04E-02	3.03E-02	2.51E+00	1.88E+00
2.0000 h	2.86E-01	3.81E-01	6.09E-02	8.12E-02	3.78E+00	5.04E+00	8.38E-03	1.43E-02	3.55E-02	6.05E-02	2.20E+00	3.76E+00
4.0000 h	2.88E-01	1.44E-01	6.14E-02	3.07E-02	3.81E+00	1.90E+00	2.10E-02	8.53E-03	8.88E-02	3.62E-02	5.51E+00	2.24E+00
8.0000 h	1.32E-01	3.29E-02	2.80E-02	7.01E-03	1.74E+00	4.35E-01	1.35E-02	1.87E-03	5.71E-02	7.91E-03	3.55E+00	4.91E-01
8.5000 h	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.52E-04	4.11E-06	6.45E-04	1.74E-05	4.00E-02	1.08E-03
24.0000 h	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	4.27E-06	1.33E-12	1.81E-05	5.65E-12	1.12E-03	3.51E-10
96.0000 h	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.38E-12	0.00E+00	5.86E-12	0.00E+00	3.64E-10	0.00E+00
720.0000 h	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
TOTALS	1.06E+00		2.26E-01		1.40E+01		5.42E-02		2.30E-01		1.43E+01	

TRAILS -- Transport of Radioactive Material in Linear Systems, v1.0
pri-to-sec leak iodines in U1 LRA assuming 18% F.F.

	ENVIRONMENT						CONTROL ROOM					
	PHOTON-SUBMG		BETA-SUBMG		THYROID-INHAL		PHOTON-SUBMG		BETA-SUBMG		THYROID-INHAL	
	DOSE mrem	DOSE RATE mrem/hr	DOSE mrem	DOSE RATE mrem/hr	DOSE mrem	DOSE RATE mrem/hr	DOSE mrem	DOSE RATE mrem/hr	DOSE mrem	DOSE RATE mrem/hr	DOSE mrem	DOSE RATE mrem/hr
I-135												
0.2500 h	1.23E-02	4.92E-02	2.65E-03	1.06E-02	1.34E+00	5.38E+00	9.26E-04	7.32E-03	3.97E-03	3.14E-02	2.01E+00	1.59E+01
1.2500 h	2.74E-01	2.74E-01	5.90E-02	5.90E-02	2.99E+01	2.99E+01	7.69E-03	8.02E-03	3.30E-02	3.44E-02	1.67E+01	1.74E+01
2.0000 h	4.08E-01	5.44E-01	8.78E-02	1.17E-01	4.46E+01	5.94E+01	1.31E-02	2.60E-02	5.59E-02	1.11E-01	2.84E+01	5.65E+01
4.0000 h	1.02E+00	5.12E-01	2.21E-01	1.10E-01	1.12E+02	5.60E+01	8.30E-02	5.38E-02	3.55E-01	2.30E-01	1.80E+02	1.17E+02
8.0000 h	2.95E+00	7.39E-01	6.36E-01	1.59E-01	3.23E+02	8.06E+01	3.32E-01	1.01E-01	1.42E+00	4.35E-01	7.21E+02	2.21E+02
8.5000 h	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	8.75E-03	3.15E-04	3.75E-02	1.35E-03	1.90E+01	6.84E-01
24.0000 h	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.12E-03	4.21E-06	4.78E-03	1.81E-05	2.43E+00	9.16E-03
96.0000 h	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.51E-05	8.38E-15	6.49E-05	3.59E-14	3.29E-02	1.82E-11
720.0000 h	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.01E-14	0.00E+00	1.29E-13	0.00E+00	6.55E-11	0.00E+00
TOTALS	4.67E+00		1.01E+00		5.10E+02		4.46E-01		1.91E+00		9.70E+02	
ALL NUCLIDES												
0.2500 h	5.59E-02	2.24E-01	1.43E-02	5.73E-02	1.66E+01	6.62E+01	4.10E-03	3.20E-02	2.10E-02	1.69E-01	2.49E+01	1.98E+02
1.2500 h	1.03E+00	1.03E+00	2.76E-01	2.76E-01	3.86E+02	3.86E+02	2.90E-02	2.70E-02	1.55E-01	1.49E-01	2.16E+02	2.3[illegible]E+02
2.0000 h	1.28E+00	1.70E+00	3.65E-01	4.86E-01	6.09E+02	8.12E+02	4.00E-02	7.67E-02	2.29E-01	4.46E-01	3.92E+02	7.95E+02
4.0000 h	2.67E+00	1.33E+00	8.32E-01	4.16E-01	1.71E+03	8.57E+02	2.13E-01	1.31E-01	1.34E+00	8.53E-01	2.82E+03	1.93E+03
8.0000 h	6.81E+00	1.70E+00	2.43E+00	6.07E-01	6.38E+03	1.59E+03	7.69E-01	2.36E-01	5.55E+00	1.76E+00	1.50E+04	5.03E+03
8.5000 h	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.04E-02	7.36E-04	1.52E-01	5.58E-03	4.38E+02	1.63E+01
24.0000 h	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.94E-03	2.08E-05	2.43E-02	2.01E-04	8.21E+01	9.08E-01
96.0000 h	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.01E-04	2.30E-11	9.97E-04	2.21E-10	4.97E+00	2.17E-06
720.0000 h	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.27E-10	0.00E+00	1.21E-09	0.00E+00	1.22E-05	0.00E+00
TOTALS	1.18E+01		3.91E+00		7.10E+03		1.08E+00		7.46E+00		1.85E+04	

TRAILS -- Transport of Radioactive Material in Linear Systems, v1.0
Pri-to-sec leak N.G. in U1 LRA assuming 18% F.F. (non-equil)

	COMP: NOT USED THIS CASE	COMP: RCB 18%FF PER SRC -3/80	COMP: Control Room
			VOLUME: 1.730E+05 Cu.Ft.
INITIAL:	0.000E+00 KR-83m	2.290E+05 KR-83m Ci	0.000E+00 KR-83m
	0.000E+00 KR-85m	5.510E+05 KR-85m	0.000E+00 KR-85m
	0.000E+00 KR-85	4.240E+04 KR-85	0.000E+00 KR-85
	0.000E+00 KR-87	1.060E+06 KR-87	0.000E+00 KR-87
	0.000E+00 KR-88	1.510E+06 KR-88	0.000E+00 KR-88
	0.000E+00 KR-89	1.940E+06 KR-89	0.000E+00 KR-89
	0.000E+00 KR-90	0.000E+00 KR-90	0.000E+00 KR-90
	0.000E+00 XE-131M	9.330E+03 XE-131M	0.000E+00 XE-131M
	0.000E+00 XE-133M	7.210E+04 XE-133M	0.000E+00 XE-133M
	0.000E+00 XE-133	2.850E+06 XE-133	0.000E+00 XE-133
	0.000E+00 XE-135M	7.630E+05 XE-135M	0.000E+00 XE-135M
	0.000E+00 XE-135	7.760E+05 XE-135	0.000E+00 XE-135
	0.000E+00 XE-137	4.500E+06 XE-137	0.000E+00 XE-137
	0.000E+00 XE-138	2.500E+06 XE-138	0.000E+00 XE-138
	0.000E+00 I-131	0.000E+00 I-131	0.000E+00 I-131
	0.000E+00 I-132	0.000E+00 I-132	0.000E+00 I-132
	0.000E+00 I-133	0.000E+00 I-133	0.000E+00 I-133
	0.000E+00 I-134	0.000E+00 I-134	0.000E+00 I-134
	0.000E+00 I-135	0.000E+00 I-135	0.000E+00 I-135
ACT MULT (to uCi):	1.000E+00	1.000E+06	1.000E+00
PRODUCTION, uCi/s:	0.000E+00 KR-83m	0.000E+00 KR-83m	
	0.000E+00 KR-85m	0.000E+00 KR-85m	
	0.000E+00 KR-85	0.000E+00 KR-85	
	0.000E+00 KR-87	0.000E+00 KR-87	
	0.000E+00 KR-88	0.000E+00 KR-88	
	0.000E+00 KR-89	0.000E+00 KR-89	
	0.000E+00 KR-90	0.000E+00 KR-90	
	0.000E+00 XE-131M	0.000E+00 XE-131M	
	0.000E+00 XE-133M	0.000E+00 XE-133M	
	0.000E+00 XE-133	0.000E+00 XE-133	
	0.000E+00 XE-135M	0.000E+00 XE-135M	
	0.000E+00 XE-135	0.000E+00 XE-135	
	0.000E+00 XE-137	0.000E+00 XE-137	
	0.000E+00 XE-138	0.000E+00 XE-138	
	0.000E+00 I-131	0.000E+00 I-131	
	0.000E+00 I-132	0.000E+00 I-132	
	0.000E+00 I-133	0.000E+00 I-133	
	0.000E+00 I-134	0.000E+00 I-134	
	0.000E+00 I-135	0.000E+00 I-135	INTAKE: 1.000E+01 CFM
REMOVAL:	0.000E+00 1/sec	3.564E-07 1/sec	1.000E+01 cfm
NUC 1-14 REL FR:	0.000E+00	1.000E+00	INTAKE REDUCT: 0.000E+00
NUC 15-20 REL FR:	0.000E+00	1.000E+00	INTAKE FILTER: 9.360E-01

CASE 2A

TRAILS -- Transport of Radioactive Material in Linear Systems, v1.0
Pri-to-sec leak N.G. in U1 LRA assuming 18% F.F. (non-equil)

MULTIPLIERS====>

STEP	TIME	XPR	XREM	XRF	XPR	XREM	XRF	XPR	XREM	XRF
1	9.000E+02	0.000E+00	1.00	0.000E+00	0.000E+00	1.00	0.000E+00	50.0	50.0	0.000E+00
2	4.500E+03	0.000E+00	1.00	0.000E+00	0.000E+00	1.00	0.000E+00	1.00	70.0	0.000E+00
3	7.200E+03	0.000E+00	1.00	0.000E+00	0.000E+00	1.00	0.000E+00	70.0	70.0	1.00
4	1.440E+04	0.000E+00	1.00	0.000E+00	0.000E+00	1.00	0.000E+00	70.0	70.0	1.00
5	2.880E+04	0.000E+00	1.00	0.000E+00	0.000E+00	1.00	0.000E+00	70.0	70.0	1.00
6	3.060E+04	0.000E+00	1.00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	3.300E+03	3.300E+03	0.000E+00
7	8.640E+04	0.000E+00	1.00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	50.0	50.0	0.000E+00
8	3.456E+05	0.000E+00	1.00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	50.0	50.0	0.000E+00
9	2.592E+06	0.000E+00	1.00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	50.0	50.0	0.000E+00

	-------- CONTROL ROOM --------			---- ENVIRONMENT ---	
	X/Q	Breathing	Occupancy	X/Q	Breathing
	s/M3	M3/s		s/M3	M3/s
	1.000E-03	3.470E-04	1.000E+00	1.000E+00	3.470E-04

MULTIPLIERS====>

STEP	TIME,s				
1	9.000E+02	2.97	1.00	1.00	4.200E-05	1.00
2	4.500E+03	2.97	1.00	1.00	4.200E-05	1.00
3	7.200E+03	2.97	1.00	1.00	4.200E-05	1.00
4	1.440E+04	2.97	1.00	1.00	4.200E-05	1.00
5	2.880E+04	2.97	1.00	1.00	4.200E-05	1.00
6	3.060E+04	1.94	1.00	1.00	2.700E-05	1.00
7	8.640E+04	1.94	1.00	1.00	2.700E-05	1.00
8	3.456E+05	0.692	1.00	1.00	1.540E-05	1.00
9	2.592E+06	0.154	1.00	1.00	6.800E-06	1.00

TRAILS -- Transport of Radioactive Material in Linear Systems, v1.0
Pri-to-sec leak N.G. in U1 LRA assuming 18% F.F. (non-equil)

STEP	TIME	NOT USED THIS CASE CURRENT uCi	NOT USED THIS CASE INTEGRD uCi-sec	RCS 18%FF PER SRP -3 CURRENT uCi	RCS 18%FF PER SRP -3 INTEGRD uCi-sec	AVERAGE RELEASED uCi	AVERAGE RELEASE uCi/sec	CONTROL ROOM CURRENT uCi	CONTROL ROOM CURRENT uCi/cc	CONTROL ROOM INTEGRD uCi-sec
KR-83m	INITIAL	0.000E+00		2.290E+11				0.000E+00		
1	0.2500 h	0.000E+00	0.000E+00	2.082E+11	1.966E+14	7.007E+07	7.786E+04	4.587E+04	9.364E-06	2.112E+07
2	1.2500 h	0.000E+00	0.000E+00	1.424E+11	6.237E+14	2.223E+08	6.175E+04	2.696E+04	5.503E-06	1.276E+08
3	2.0000 h	0.000E+00	0.000E+00	1.071E+11	3.346E+14	1.192E+08	4.416E+04	1.104E+05	2.254E-05	1.942E+08
4	4.0000 h	0.000E+00	0.000E+00	5.008E+10	5.401E+14	1.925E+08	2.673E+04	1.460E+05	2.857E-05	9.229E+08
5	8.0000 h	0.000E+00	0.000E+00	1.095E+10	3.707E+14	1.321E+08	9.175E+03	5.946E+04	1.214E-05	1.217E+09
6	8.5000 h	0.000E+00	0.000E+00	9.064E+09	1.796E+13	0.000E+00	0.000E+00	1.610E+02	3.285E-08	1.805E+07
7	24.0000 h	0.000E+00	0.000E+00	2.558E+07	8.592E+13	0.000E+00	0.000E+00	3.090E-02	6.303E-12	1.049E+06
8	96.0000 h	0.000E+00	0.000E+00	3.679E-05	2.432E+11	0.000E+00	0.000E+00	1.680E-19	3.429E-29	2.015E+02
9	720.0000 h	0.000E+00	0.000E+00	0.000E+00	3.497E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.095E-15
KR-83m	TOTALS		0.000E+00		2.170E+15	7.362E+08				2.502E+09
KR-85m	INITIAL	0.000E+00		5.510E+11				0.000E+00		
1	0.2500 h	0.000E+00	0.000E+00	5.299E+11	4.864E+14	1.733E+08	1.926E+05	1.166E+05	2.381E-05	5.320E+07
2	1.2500 h	0.000E+00	0.000E+00	4.534E+11	1.766E+15	6.295E+08	1.749E+05	8.566E+04	1.749E-05	3.604E+08
3	2.0000 h	0.000E+00	0.000E+00	4.033E+11	1.155E+15	4.117E+08	1.525E+05	4.129E+05	8.428E-05	6.950E+08
4	4.0000 h	0.000E+00	0.000E+00	2.952E+11	2.494E+15	8.890E+08	1.235E+05	7.882E+05	1.609E-04	4.501E+09
5	8.0000 h	0.000E+00	0.000E+00	1.582E+11	3.162E+15	1.127E+09	7.827E+04	7.144E+05	1.458E-04	1.068E+10
6	8.5000 h	0.000E+00	0.000E+00	1.464E+11	2.740E+14	0.000E+00	0.000E+00	2.163E+03	4.416E-07	2.210E+08
7	24.0000 h	0.000E+00	0.000E+00	1.330E+10	3.097E+15	0.000E+00	0.000E+00	1.337E+01	2.730E-09	2.358E+07
8	96.0000 h	0.000E+00	0.000E+00	1.931E+05	3.095E+14	0.000E+00	0.000E+00	7.338E-10	1.498E-19	1.467E+05
9	720.0000 h	0.000E+00	0.000E+00	0.000E+00	4.492E+09	0.000E+00	0.000E+00	0.000E+00	0.000E+00	8.050E-05
KR-85m	TOTALS		0.000E+00		1.274E+16	3.231E+09				1.654E+10
KR-85	INITIAL	0.000E+00		4.240E+10				0.000E+00		
1	0.2500 h	0.000E+00	0.000E+00	4.239E+10	3.815E+13	1.360E+07	1.511E+04	9.326E+03	1.904E-06	4.227E+06
2	1.2500 h	0.000E+00	0.000E+00	4.233E+10	1.525E+14	5.435E+07	1.510E+04	7.992E+03	1.632E-06	3.108E+07
3	2.0000 h	0.000E+00	0.000E+00	4.229E+10	1.142E+14	4.072E+07	1.509E+04	4.319E+04	8.815E-06	7.053E+07
4	4.0000 h	0.000E+00	0.000E+00	4.218E+10	3.041E+14	1.084E+08	1.505E+04	1.108E+05	2.262E-05	5.740E+08
5	8.0000 h	0.000E+00	0.000E+00	4.196E+10	6.059E+14	2.159E+08	1.499E+04	1.775E+05	3.624E-05	2.153E+09
6	8.5000 h	0.000E+00	0.000E+00	4.196E+10	7.554E+13	0.000E+00	0.000E+00	5.807E+02	1.185E-07	5.565E+07
7	24.0000 h	0.000E+00	0.000E+00	4.196E+10	2.341E+15	0.000E+00	0.000E+00	3.950E+01	8.063E-09	1.124E+07
8	96.0000 h	0.000E+00	0.000E+00	4.194E+10	1.087E+16	0.000E+00	0.000E+00	1.493E-04	3.047E-14	8.200E+05
9	720.0000 h	0.000E+00	0.000E+00	4.174E+10	9.399E+16	0.000E+00	0.000E+00	0.000E+00	0.000E+00	3.099E+00
KR-85	TOTALS		0.000E+00		1.085E+17	4.330E+08				2.900E+09
KR-87	INITIAL	0.000E+00		1.060E+12				0.000E+00		
1	0.2500 h	0.000E+00	0.000E+00	9.247E+11	3.917E+14	3.178E+08	3.531E+05	2.039E+05	4.162E-05	9.409E+07
2	1.2500 h	0.000E+00	0.000E+00	5.355E+11	2.565E+15	9.141E+08	2.539E+05	1.016E+05	2.074E-05	5.259E+08
3	2.0000 h	0.000E+00	0.000E+00	3.554E+11	1.186E+15	4.228E+08	1.566E+05	3.695E+05	7.542E-05	6.714E+08
4	4.0000 h	0.000E+00	0.000E+00	1.592E+11	1.557E+15	5.548E+08	7.706E+04	3.505E+05	7.154E-05	2.573E+09
5	8.0000 h	0.000E+00	0.000E+00	1.340E+10	6.971E+14	2.484E+08	1.725E+04	8.905E+04	1.818E-05	2.309E+09
6	8.5000 h	0.000E+00	0.000E+00	1.021E+10	2.112E+13	0.000E+00	0.000E+00	2.218E+02	4.528E-08	2.667E+07
7	24.0000 h	0.000E+00	0.000E+00	2.187E+06	6.739E+13	0.000E+00	0.000E+00	3.234E-03	6.601E-13	1.111E+06
8	96.0000 h	0.000E+00	0.000E+00	1.981E-11	1.445E+10	0.000E+00	0.000E+00	1.107E-25	2.261E-35	1.620E+01
9	720.0000 h	0.000E+00	0.000E+00	0.000E+00	1.308E-07	0.000E+00	0.000E+00	0.000E+00	0.000E+00	5.349E-22
KR-87	TOTALS		0.000E+00		6.985E+15	2.458E+09				6.203E+09

TRAILS -- Transport of Radioactive Material in Linear Systems, v1.0
Pri-to-sec leak N.G. in U1 LRA assuming 18% F.F. (non-equil)

		NOT USED THIS CASE		RCS 18%FF PER SRP -3		AVERAGE		CONTROL ROOM		
		CURRENT	INTEGRD	CURRENT	INTEGRD	RELEASED	RELEASE	CURRENT	CURRENT	INTEGRD
STEP	TIME	uCi	uCi-sec	uCi	uCi-sec	uCi	uCi/sec	uCi	uCi/cc	uCi-sec
KR-88	INITIAL	0.000E+00		1.510E+12				0.000E+00		
1	0.2500 h	0.000E+00	0.000E+00	1.420E+12	1.318E+15	4.698E+08	5.220E+05	3.127E+05	6.382E-05	1.431E+08
2	1.2500 h	0.000E+00	0.000E+00	1.111E+12	4.534E+15	1.616E+09	4.488E+05	2.101E+05	4.288E-05	9.260E+08
3	2.0000 h	0.000E+00	0.000E+00	9.244E+11	2.740E+15	9.766E+08	3.617E+05	9.486E+05	1.936E-04	1.625E+09
4	4.0000 h	0.000E+00	0.000E+00	5.659E+11	5.260E+15	1.875E+09	2.604E+05	1.534E+06	3.131E-04	9.273E+09
5	8.0000 h	0.000E+00	0.000E+00	2.121E+11	5.191E+15	1.8[illegible]E+09	1.285E+05	1.018E+06	2.078E-04	1.724E+10
6	8.5000 h	0.000E+00	0.000E+00	1.877E+11	3.594E+14	0.000E+00	0.000E+00	2.948E+03	6.017E-07	3.126E+08
7	24.0000 h	0.000E+00	0.000E+00	4.270E+09	2.706E+15	0.000E+00	0.000E+00	4.562E+00	9.312E-10	2.538E+07
8	96.0000 h	0.000E+00	0.000E+00	9.960E+01	6.298E+13	0.000E+00	0.000E+00	4.023E-13	8.212E-23	3.933E+04
9	720.0000 h	0.000E+00	0.000E+00	0.000E+00	1.469E+06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	3.469E-09
KR-88	TOTALS		0.000E+00		2.217E+16	6.787E+09				2.954E+10
KR-89	INITIAL	0.000E+00		1.940E+12				0.000E+00		
1	0.2500 h	0.000E+00	0.000E+00	7.222E+10	5.108E+14	1.821E+08	2.023E+05	3.691E+0[illegible]	7.534E-06	2.448E+07
2	1.2500 h	0.000E+00	0.000E+00	1.387E+05	1.975E+13	7.040E+06	1.955E+03	7.417E+00	1.514E-09	9.937E+06
3	2.0000 h	0.000E+00	0.000E+00	7.156E+00	3.793E+07	1.352E+01	5.007E-03	1.639E-03	3.345E-13	1.995E+03
4	4.0000 h	0.000E+00	0.000E+00	2.640E-11	1.957E+03	6.975E-04	9.688E-08	2.[illegible]53E-08	[illegible]211E-18	4.403E-01
5	8.0000 h	0.000E+00	0.000E+00	3.591E-34	7.219E-09	2.573E-15	1.787E-19	4.706E-20	[illegible]611E-30	6.856E-06
6	8.5000 h	0.000E+00	0.000E+00	4.980E-37	9.810E-32	0.000E+00	0.000E+00	2.136E-25	4.[illegible]60E-35	6.888E-18
7	24.0000 h	0.000E+00	0.000E+00	0.000E+00	1.362E-34	0.000E+00	0.000E+00	0.000E+00	0.[illegible]00E+00	[illegible].766E-23
8	96.0000 h	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000[illegible]	0.000E+00
9	720.0000 h	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
KR-89	TOTALS		0.000E+00		5.306E+14	1.891E+08				3.442E+07
XE-131M	INITIAL	0.000E+00		9.330E+09				0.000E+00		
1	0.2500 h	0.000E+00	0.000E+00	9.321E+09	8.393E+12	2.991E+06	3.324E+03	2.051E+03	4.187E-07	9.297E+05
2	1.2500 h	0.000E+00	0.000E+00	9.287E+09	3.349E+13	1.194E+07	3.316E+03	1.753E+03	3.579E-07	6.826E+06
3	2.0000 h	0.000E+00	0.000E+00	9.261E+09	2.504E+13	8.924E+06	3.305E+03	9.457E+03	1.930E-06	1.545E+07
4	4.0000 h	0.000E+00	0.000E+00	9.192E+09	6.643E+13	2.368E+07	3.288E+03	2.415E+04	4.930E-06	1.253E+08
5	8.0000 h	0.000E+00	0.000E+00	9.056E+09	1.314E+14	4.683E+07	3.252E+03	3.833E+04	7.825E-06	4.663E+08
6	8.5000 h	0.000E+00	0.000E+00	9.045E+09	1.629E+13	0.000E+00	0.000E+00	1.253E+02	2.557E-08	1.202E+07
7	24.0000 h	0.000E+00	0.000E+00	8.710E+09	4.953E+14	0.000E+00	0.000E+00	8.204E+00	1.675E-09	2.396E+06
8	96.0000 h	0.000E+00	0.000E+00	7.307E+09	2.070E+15	0.000E+00	0.000E+00	2.602E-05	5.312E-15	1.680E+05
9	720.0000 h	0.000E+00	0.000E+00	1.595E+09	8.430E+15	0.000E+00	0.000E+00	0.000E+00	0.000E+00	5.327E-01
XE-131M	TOTALS		0.000E+00		1.128E+16	9.435E+07				6.294E+08
XE-133M	INITIAL	0.000E+00		7.210E+10				0.000E+00		
1	0.2500 h	0.000E+00	0.000E+00	7.184E+10	6.477E+13	2.309E+07	2.565E+04	1.581E+04	3.227E-06	7.169E+06
2	1.2500 h	0.000E+00	0.000E+00	7.081E+10	2.568E+14	9.151E+07	2.542E+04	1.337E+04	2.729E-06	5.233E+07
3	2.0000 h	0.000E+00	0.000E+00	7.004E+10	1.901E+14	6.777E+07	2.510E+04	7.153E+04	1.460E-05	1.171E+08
4	4.0000 h	0.000E+00	0.000E+00	6.805E+10	4.971E+14	1.772E+08	2.461E+04	1.789E+05	3.652E-05	9.345E+08
5	8.0000 h	0.000E+00	0.000E+00	6.422E+10	9.520E+14	3.393E+08	2.356E+04	2.726E+05	5.565E-05	3.364E+09
6	8.5000 h	0.000E+00	0.000E+00	6.380E+10	1.152E+14	0.000E+00	0.000E+00	8.860E+02	1.809E-07	8.536E+07
7	24.0000 h	0.000E+00	0.000E+00	5.200E+10	3.220E+15	0.000E+00	0.000E+00	4.913E+01	1.003E-08	1.615E+07
8	96.0000 h	0.000E+00	0.000E+00	2.012E+10	8.703E+15	0.000E+00	0.000E+00	7.188E-05	1.467E-14	9.479E+05
9	720.0000 h	0.000E+00	0.000E+00	5.371E+06	5.492E+15	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.387E+0[illegible]
XE-133M	TOTALS		0.000E+00		1.949E+16	6.988E+08				4.578E+09

TRAILS -- Transport of Radioactive Material in Linear Systems, v1.0
Pri-to-sec leak N.G. in U1 LRA assuming 18% F.F. (non-equil)

		NOT USED THIS CASE		RCS 18%FF PER SRP -3		AVERAGE		CONTROL ROOM		
		CURRENT	INTEGRD	CURRENT	INTEGRD	RELEASED	RELEASE	CURRENT	CURRENT	INTEGRD
STEP	TIME	uCi	uCi-sec	uCi	uCi-sec	uCi	uCi/sec	uCi	uCi/cc	uCi-sec
XE-133	INITIAL	0.000E+00		2.850E+12				0.000E+00		
1	0.2500 h	0.000E+00	0.000E+00	2.845E+12	2.563E+15	9.134E+08	1.015E+06	6.260E+05	1.278E-04	2.838E+08
2	1.2500 h	0.000E+00	0.000E+00	2.826E+12	1.021E+16	3.638E+09	1.011E+06	5.336E+05	1.089E-04	2.080E+09
3	2.0000 h	0.000E+00	0.000E+00	2.812E+12	7.611E+15	2.712E+09	1.005E+06	2.871E+06	5.861E-04	4.694E+09
4	4.0000 h	0.000E+00	0.000E+00	2.774E+12	2.011E+16	7.166E+09	9.953E+05	7.289E+06	1.498E-03	3.789E+10
5	8.0000 h	0.000E+00	0.000E+00	2.699E+12	3.940E+16	1.404E+10	9.752E+05	1.143E+07	2.334E-03	1.397E+11
6	8.5000 h	0.000E+00	0.000E+00	2.692E+12	4.852E+15	0.000E+00	0.000E+00	3.731E+04	7.615E-06	3.583E+09
7	24.0000 h	0.000E+00	0.000E+00	2.472E+12	1.440E+17	0.000E+00	0.000E+00	2.330E+03	4.756E-07	7.037E+08
8	96.0000 h	0.000E+00	0.000E+00	1.662E+12	5.289E+17	0.000E+00	0.000E+00	5.926E-03	1.210E-12	4.688E+07
9	720.0000 h	0.000E+00	0.000E+00	5.347E+10	1.052E+18	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.192E+02
XE-133	TOTALS		0.000E+00		1.809E+18	2.847E+10				1.890E+11
XE-135M	INITIAL	0.000E+00		7.630E+11				0.000E+00		
1	0.2500 h	0.000E+00	0.000E+00	3.876E+11	4.989E+14	1.778E+08	1.975E+05	8.882E+04	1.813E-05	4.472E+07
2	1.2500 h	0.000E+00	0.000E+00	2.582E+10	4.808E+14	1.714E+08	4.760E+04	5.419E+03	1.106E-06	1.047E+08
3	2.0000 h	0.000E+00	0.000E+00	3.386E+09	2.982E+13	1.063E+07	3.936E+03	4.789E+03	9.777E-07	1.349E+07
4	4.0000 h	0.000E+00	0.000E+00	1.502E+07	4.480E+12	1.597E+06	2.217E+02	2.779E+02	5.672E-08	7.416E+06
5	8.0000 h	0.000E+00	0.000E+00	2.958E+02	1.997E+10	7.116E+03	4.942E-01	5.937E-01	1.212E-10	3.468E+05
6	8.5000 h	0.000E+00	0.000E+00	7.640E+01	2.918E+09	0.000E+00	0.000E+00	5.016E-04	1.024E-13	1.509E+02
7	24.0000 h	0.000E+00	0.000E+00	4.539E-17	1.016E+05	0.000E+00	0.000E+00	2.027E-23	4.138E-33	6.268E-01
8	96.0000 h	0.000E+00	0.000E+00	0.000E+00	6.035E-14	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.533E-20
9	720.0000 h	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
XE-135M	TOTALS		0.000E+00		1.014E+15	3.614E+08				1.707E+08
XE-135	INITIAL	0.000E+00		7.760E+11				0.000E+00		
1	0.2500 h	0.000E+00	0.000E+00	7.611E+11	6.917E+14	2.465E+08	2.739E+05	1.675E+05	3.419E-05	7.616E+07
2	1.2500 h	0.000E+00	0.000E+00	7.045E+11	2.637E+15	9.397E+08	2.610E+05	1.330E+05	2.716E-05	5.377E+08
3	2.0000 h	0.000E+00	0.000E+00	6.647E+11	1.848E+15	6.586E+08	2.439E+05	6.795E+05	1.387E-04	1.126E+09
4	4.0000 h	0.000E+00	0.000E+00	5.694E+11	4.434E+15	1.580E+09	2.195E+05	1.505E+06	3.073E-04	8.180E+09
5	8.0000 h	0.000E+00	0.000E+00	4.178E+11	7.052E+15	2.513E+09	1.745E+05	1.814E+06	3.703E-04	2.436E+10
6	8.5000 h	0.000E+00	0.000E+00	4.022E+11	7.380E+14	0.000E+00	0.000E+00	5.712E+03	1.166E-06	5.650E+08
7	24.0000 h	0.000E+00	0.000E+00	1.236E+11	1.318E+16	0.000E+00	0.000E+00	1.194E+02	2.438E-08	8.069E+07
8	96.0000 h	0.000E+00	0.000E+00	5.158E+08	5.824E+15	0.000E+00	0.000E+00	1.884E-06	3.846E-16	1.723E+06
9	720.0000 h	0.000E+00	0.000E+00	1.225E-12	2.440E+13	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.718E-02
XE-135	TOTALS		0.000E+00		3.643E+16	5.938E+09				3.493E+10
XE-137	INITIAL	0.000E+00		2.500E+12				0.000E+00		
1	0.2500 h	0.000E+00	0.000E+00	1.656E+11	7.739E+14	2.758E+08	3.065E+05	6.565E+04	1.340E-05	4.166E+07
2	1.2500 h	0.000E+00	0.000E+00	3.184E+06	5.489E+13	1.956E+07	5.434E+03	2.569E+01	5.245E-09	2.137E+07
3	2.0000 h	0.000E+00	0.000E+00	9.248E+02	1.055E+09	3.761E+02	1.393E-01	5.054E-02	1.032E-11	8.436E+03
4	4.0000 h	0.000E+00	0.000E+00	3.421E-07	3.066E+05	1.093E-01	1.518E-05	4.829E-06	9.858E-16	1.642E+01
5	8.0000 h	0.000E+00	0.000E+00	4.681E-26	1.134E-04	4.042E-11	2.807E-15	8.932E-16	1.823E-25	1.566E-03
6	8.5000 h	0.000E+00	0.000E+00	2.054E-28	1.545E-23	0.000E+00	0.000E+00	1.282E-20	2.617E-30	1.442E-13
7	24.0000 h	0.000E+00	0.000E+00	0.000E+00	6.811E-26	0.000E+00	0.000E+00	0.000E+00	0.000E+00	4.185E-18
8	96.0000 h	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
9	720.0000 h	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
XE-137	TOTALS		0.000E+00		8.288E+14	2.954E+08				6.304E+07

TRAILS -- Transport of Radioactive Material in Linear Systems, v1.0
Pri-to-sec leak N.G. in U1 LRA assuming 18% F.F. (non-equil)

		NOT USED THIS CASE		RCS 18%FF PER SRP -3		AVERAGE		CONTROL ROOM		
		CURRENT	INTEGRD	CURRENT	INTEGRD	RELEASED	RELEASE	CURRENT	CURRENT	INTEGRD
STEP	TIME	uCi	uCi-sec	uCi	uCi-sec	uCi	uCi/sec	uCi	uCi/cc	uCi-sec
XE-138	INITIAL	0.000E+00		2.500E+12				0.000E+00		
1	0.2500 h	0.000E+00	0.000E+00	1.197E+12	1.593E+15	5.675E+08	6.306E+05	2.763E+05	5.640E-05	1.403E+08
2	1.2500 h	0.000E+00	0.000E+00	6.301E+10	1.387E+15	4.943E+08	1.373E+05	1.350E+04	2.757E-06	3.048E+08
3	2.0000 h	0.000E+00	0.000E+00	6.922E+09	6.357E+13	2.444E+07	9.051E+03	1.035E+04	2.113E-06	3.065E+07
4	4.0000 h	0.000E+00	0.000E+00	1.917E+07	8.440E+12	3.008E+06	4.178E+02	4.800E+02	9.799E-08	1.449E+07
5	8.0000 h	0.000E+00	0.000E+00	1.470E+02	2.343E+10	8.352E+03	5.800E-01	6.444E-01	1.315E-10	5.509E+05
6	8.5000 h	0.000E+00	0.000E+00	3.373E+01	1.385E+05	0.000E+00	0.000E+00	4.839E-04	9.877E-14	1.611E+02
7	24.0000 h	0.000E+00	0.000E+00	5.184E-19	4.126E+04	0.000E+00	0.000E+00	5.058E-25	1.033E-34	5.589E-01
8	96.0000 h	0.000E+00	0.000E+00	0.000E+00	6.340E-16	0.000E+00	0.000E+00	0.000E+00	0.000E+00	5.842E-22
9	720.0000 h	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
XE-138	TOTALS		0.000E+00		3.056E+15	1.089E+09				4.908E+08
ALL NUCLIDES		0.000E+00		9.681E+10				0.000E+00	0.000E+00	

@ STEP 9

TRAILS -- Transport of Radioactive Material in Linear Systems, v1.0
Pri-to-sec leak N G in U1 LRA assuming 18% F.F. (non-equil)

	ENVIRONMENT						CONTROL ROOM					
	PHOTON-SUBMG		BETA-SUBMG		THYROID-INHAL		PHOTON-SUBMG		BETA-SUBMG		THYROID-INHAL	
	DOSE mrem	DOSE RATE mrem/hr	DOSE mrem	DOSE RATE mrem/hr	DOSE mrem	DOSE RATE mrem/hr	DOSE mrem	DOSE RATE mrem/hr	DOSE mrem	DOSE RATE mrem/hr	DOSE mrem	DOSE RATE mrem/hr
KR-83m												
0.2500 h	1.91E-03	7.65E-03	2.59E-02	1.03E-01	0.00E+00	0.00E+00	1.41E-04	1.10E-03	3.79E-02	2.96E-01	0.00E+00	0.00E+00
1.2500 h	6.07E-03	6.07E-03	8.20E-02	8.20E-02	0.00E+00	0.00E+00	8.51E-04	6.47E-04	2.29E-01	1.74E-01	0.00E+00	0.00E+00
2.0000 h	3.26E-03	4.34E-03	4.40E-02	5.87E-02	0.00E+00	0.00E+00	1.30E-03	2.65E-03	3.48E-01	7.13E-01	0.00E+00	0.00E+00
4.0000 h	5.25E-03	2.63E-03	7.10E-02	3.55E-02	0.00E+00	0.00E+00	6.15E-03	3.36E-03	1.65E+00	9.04E-01	0.00E+00	0.00E+00
8.0000 h	3.61E-03	9.02E-04	4.88E-02	1.22E-02	0.00E+00	0.00E+00	8.12E-03	1.43E-03	2.18E+00	3.84E-01	0.00E+00	0.00E+00
8.5000 h	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.20E-04	3.86E-06	3.24E-02	1.04E-03	0.00E+00	0.00E+00
24.0000 h	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	7.00E-06	7.42E-10	1.89E-03	2.00E-07	0.00E+00	0.00E+00
96.0000 h	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.34E-09	4.03E-27	3.61E-07	1.08E-24	0.00E+00	0.00E+00
720.0000 h	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	7.31E-27	0.00E+00	1.96E-24	0.00E+00	0.00E+00	0.00E+00
TOTALS	2.01E-02		2.72E-01		0.00E+00		1.67E-02		4.49E+00		0.00E+00	
KR-85m												
0.2500 h	2.87E-01	1.15E+00	4.27E-01	1.71E+00	0.00E+00	0.00E+00	2.15E-02	1.70E-01	6.38E-01	5.03E+00	0.00E+00	0.00E+00
1.2500 h	1.04E+00	1.04E+00	1.55E+00	1.55E+00	0.00E+00	0.00E+00	1.46E-01	1.25E-01	4.32E+00	3.70E+00	0.00E+00	0.00E+00
2.0000 h	6.82E-01	9.09E-01	1.02E+00	1.35E+00	0.00E+00	0.00E+00	2.81E-01	6.01E-01	8.33E+00	1.78E+01	0.00E+00	0.00E+00
4.0000 h	1.47E+00	7.36E-01	2.19E+00	1.10E+00	0.00E+00	0.00E+00	1.82E+00	1.15E+00	5.39E+01	3.40E+01	0.00E+00	0.00E+00
8.0000 h	1.87E+00	4.67E-01	2.78E+00	6.95E-01	0.00E+00	0.00E+00	4.32E+00	1.04E+00	1.28E+02	3.08E+01	0.00E+00	0.00E+00
8.5000 h	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	8.94E-02	3.15E-03	2.65E+00	9.33E-02	0.00E+00	0.00E+00
24.0000 h	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	9.54E-03	1.95E-05	2.83E-01	5.77E-04	0.00E+00	0.00E+00
96.0000 h	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	5.93E-05	1.07E-15	1.76E-03	3.17E-14	0.00E+00	0.00E+00
720.0000 h	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.26E-15	0.00E+00	9.65E-14	0.00E+00	0.00E+00	0.00E+00
TOTALS	5.35E+00		7.97E+00		0.00E+00		6.69E+00		1.98E+02		0.00E+00	
KR-85												
0.2500 h	3.14E-04	1.26E-03	3.30E-02	1.32E-01	0.00E+00	0.00E+00	2.39E-05	1.89E-04	4.98E-02	3.96E-01	0.00E+00	0.00E+00
1.2500 h	1.26E-03	1.26E-03	1.32E-01	1.32E-01	0.00E+00	0.00E+00	1.75E-04	1.62E-04	3.66E-01	3.39E-01	0.00E+00	0.00E+00
2.0000 h	9.41E-04	1.25E-03	1.87E-02	1.32E-01	0.00E+00	0.00E+00	3.98E-04	8.77E-04	8.31E-01	1.83E+00	0.00E+00	0.00E+00
4.0000 h	2.50E-03	1.25E-03	2.63E-01	1.31E-01	0.00E+00	0.00E+00	3.24E-03	2.25E-03	6.76E+00	4.70E+00	0.00E+00	0.00E+00
8.0000 h	4.99E-03	1.25E-03	5.24E-01	1.31E-01	0.00E+00	0.00E+00	1.21E-02	3.61E-03	2.54E+01	7.53E+00	0.00E+00	0.00E+00
8.5000 h	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.14E-04	1.18E-05	6.56E-01	2.46E-02	0.00E+00	0.00E+00
24.0000 h	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	6.34E-05	8.02E-07	1.32E-01	1.68E-03	0.00E+00	0.00E+00
96.0000 h	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	4.63E-06	3.03E-12	9.66E-03	6.33E-09	0.00E+00	0.00E+00
720.0000 h	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.75E-11	0.00E+00	3.65E-08	0.00E+00	0.00E+00	0.00E+00
TOTALS	1.00E-02		1.05E+00		0.00E+00		1.64E-02		3.42E+01		0.00E+00	
KR-87												
0.2500 h	2.65E+00	1.06E+01	4.06E+00	1.63E+01	0.00E+00	0.00E+00	1.92E-01	1.49E+00	5.87E+00	4.56E+01	0.00E+00	0.00E+00
1.2500 h	7.61E+00	7.61E+00	1.17E+01	1.17E+01	0.00E+00	0.00E+00	1.07E+00	7.44E-01	3.27E+01	2.27E+01	0.00E+00	0.00E+00
2.0000 h	3.52E+00	4.69E+00	5.41E+00	7.21E+00	0.00E+00	0.00E+00	1.37E+00	2.71E+00	4.17E+01	8.27E+01	0.00E+00	0.00E+00
4.0000 h	4.62E+00	2.31E+00	7.09E+00	3.55E+00	0.00E+00	0.00E+00	5.24E+00	2.51E+00	1.60E+02	7.84E+01	0.00E+00	0.00E+00
8.0000 h	2.07E+00	5.17E-01	3.18E+00	7.94E-01	0.00E+00	0.00E+00	4.70E+00	6.52E-01	1.43E+02	1.99E+01	0.00E+00	0.00E+00
8.5000 h	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	5.43E-02	1.62E-03	1.66E+00	4.96E-02	0.00E+00	0.00E+00
24.0000 h	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.26E-03	2.37E-08	6.90E-02	7.23E-07	0.00E+00	0.00E+00
96.0000 h	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.30E-08	8.11E-31	1.01E-06	2.48E-29	0.00E+00	0.00E+00
720.0000 h	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.13E-30	0.00E+00	3.45E-29	0.00E+00	0.00E+00	0.00E+00
TOTALS	2.05E+01		3.14E+01		0.00E+00		1.26E+01		3.85E+02		0.00E+00	

TRAILS -- Transport of Radioactive Material in Linear Systems, v1.0
Pri-to-sec leak N.G. in U1 LRA assuming 18% F.F. (non-equil)

	ENVIRONMENT						CONTROL ROOM					
	PHOTON-SUBMG		BETA-SUBMG		THYROID-INHAL		PHOTON-SUBMG		BETA-SUBMG		THYROID-INHAL	
	DOSE mrem	DOSE RATE mrem/hr	DOSE mrem	DOSE RATE mrem/hr	DOSE mrem	DOSE RATE mrem/hr	DOSE mrem	DOSE RATE mrem/hr	DOSE mrem	DOSE RATE mrem/hr	DOSE mrem	DOSE RATE mrem/hr
KR-88												
0.2500 h	9.64E+00	3.86E+01	1.66E+00	6.62E+00	0.00E+00	0.00E+00	7.1dE-01	5.64E+00	2.45E+00	1.93E+01	0.00E+00	0.00E+00
1.2500 h	3.32E+01	3.32E+01	5.69E+00	5.69E+00	0.00E+00	0.00E+00	4.64E+00	3.79E+00	1.59E+01	1.30E+01	0.00E+00	0.00E+00
2.0000 h	2.00E+01	2.67E+01	3.44E+00	4.59E+00	0.00E+00	0.00E+00	8.15E+00	1.71E+01	2.78E+01	5.85E+01	0.00E+00	0.00E+00
4.0000 h	3.85E+01	1.92E+01	6.61E+00	3.30E+00	0.00E+00	0.00E+00	4.55E+01	2.77E+01	1.59E+02	9.46E+01	0.00E+00	0.00E+00
8.0000 h	3.80E+01	9.49E+00	6.52E+00	1.63E+00	0.00E+00	0.00E+00	8.64E+01	1.84E+01	2.95E+02	6.28E+01	0.00E+00	0.00E+00
8.5000 h	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.57E+00	5.32E-02	5.35E+00	1.82E-01	0.00E+00	0.00E+00
24.0000 h	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.27E-01	8.23E-05	4.35E-01	2.81E-04	0.00E+00	0.00E+00
96.0000 h	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.97E-04	7.26E-18	6.74E-04	2.48E-17	0.00E+00	0.00E+00
720.0000 h	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.74E-17	0.00E+00	5.94E-17	0.00E+00	0.00E+00	0.00E+00
TOTALS	1.39E+02		2.39E+01		0.00E+00		1.48E+02		5.06E+02		0.00E+00	
KR-89												
0.2500 h	3.51E+00	1.40E+01	2.40E+00	9.58E+00	0.00E+00	0.00E+00	1.15E-01	6.25E-01	1.57E+00	8.50E+00	0.00E+00	0.00E+00
1.2500 h	1.36E-01	1.36E-01	9.26E-02	9.26E-02	0.00E+00	0.00E+00	4.68E-02	1.25E-04	6.35E-01	1.71E-03	0.00E+00	0.00E+00
2.0000 h	2.60E-07	3.47E-07	1.78E-07	2.37E-07	0.00E+00	0.00E+00	9.39E-06	2.70E-08	1.28E-04	3.77E-07	0.00E+00	0.00E+00
4.0000 h	1.34E-11	6.72E-12	9.18E-12	4.59E-12	0.00E+00	0.00E+00	2.07E-09	4.39E-13	2.81E-08	5.88E-12	0.00E+00	0.00E+00
8.0000 h	4.96E-23	1.24E-23	3.39E-23	8.46E-24	0.00E+00	0.00E+00	3.23E-14	7.97E-25	4.38E-13	1.08E-23	0.00E+00	0.00E+00
8.5000 h	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.24E-26	3.62E-30	4.40E-25	4.92E-29	0.00E+00	0.00E+00
24.0000 h	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.71E-31	0.00E+00	3.69E-30	0.00E+00	0.00E+00	0.00E+00
96.0000 h	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
720.0000 h	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
TOTALS	3.64E+00		2.49E+00		0.00E+00		1.62E-01		2.20E+00		0.00E+00	
XE-131M												
0.2500 h	6.31E-04	2.53E-03	4.11E-03	1.64E-02	0.00E+00	0.00E+00	4.79E-05	3.81E-04	6.21E-03	4.93E-02	0.00E+00	0.00E+00
1.2500 h	2.52E-03	2.52E-03	1.64E-02	1.64E-02	0.00E+00	0.00E+00	3.52E-04	3.25E-04	4.56E-02	4.21E-02	0.00E+00	0.00E+00
2.0000 h	1.88E-03	2.51E-03	1.23E-02	1.63E-02	0.00E+00	0.00E+00	7.97E-04	1.75E-03	1.03E-01	2.27E-01	0.00E+00	0.00E+00
4.0000 h	5.00E-03	2.50E-03	3.25E-02	1.63E-02	0.00E+00	0.00E+00	6.46E-03	4.48E-03	8.36E-01	5.60E-01	0.00E+00	0.00E+00
8.0000 h	9.88E-03	2.47E-03	6.43E-02	1.61E-02	0.00E+00	0.00E+00	2.40E-02	7.11E-03	3.11E+00	9.21E-01	0.00E+00	0.00E+00
8.5000 h	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	6.19E-04	2.32E-05	8.02E-02	3.01E-03	0.00E+00	0.00E+00
24.0000 h	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.24E-04	1.52E-06	1.60E-02	1.97E-04	0.00E+00	0.00E+00
96.0000 h	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	8.66E-06	4.83E-12	1.12E-03	6.25E-10	0.00E+00	0.00E+00
720.0000 h	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.75E-11	0.00E+00	3.56E-09	0.00E+00	0.00E+00	0.00E+00
TOTALS	1.99E-02		1.30E-01		0.00E+00		7.24E-02		4.20E+00		0.00E+00	
XE-133M												
0.2500 h	1.01E-02	4.02E-02	4.24E-02	1.70E-01	0.00E+00	0.00E+00	7.63E-04	6.06E-03	6.40E-02	5.08E-01	0.00E+00	0.00E+00
1.2500 h	3.99E-02	3.99E-02	1.68E-01	1.68E-01	0.00E+00	0.00E+00	5.57E-03	5.12E-03	4.67E-01	4.30E-01	0.00E+00	0.00E+00
2.0000 h	2.95E-02	3.94E-02	1.25E-01	1.66E-01	0.00E+00	0.00E+00	1.25E-02	2.74E-02	1.05E+00	2.30E+00	0.00E+00	0.00E+00
4.0000 h	7.72E-02	3.86E-02	3.26E-01	1.63E-01	0.00E+00	0.00E+00	9.95E-02	6.86E-02	8.34E+00	5.75E+00	0.00E+00	0.00E+00
8.0000 h	1.48E-01	3.70E-02	6.23E-01	1.56E-01	0.00E+00	0.00E+00	3.58E-01	1.04E-01	3.00E+01	8.76E+00	0.00E+00	0.00E+00
8.5000 h	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	9.09E-03	3.39E-04	7.62E-01	2.85E-02	0.00E+00	0.00E+00
24.0000 h	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.72E-03	1.88E-05	1.44E-01	1.58E-03	0.00E+00	0.00E+00
96.0000 h	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.01E-04	2.75E-11	8.46E-03	2.31E-09	0.00E+00	0.00E+00
720.0000 h	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.48E-10	0.00E+00	1.24E-08	0.00E+00	0.00E+00	0.00E+00
TOTALS	3.05E-01		1.28E+00		0.00E+00		4.87E-01		4.09E+01		0.00E+00	

TRAILS -- Transport of Radioactive Material in Linear Systems, v1.0
Pri-to-sec leak N.G. in U1 LRA assuming 18% F.F. (non-equil)

	ENVIRONMENT						CONTROL ROOM					
	PHOTON-SUBMG		BETA-SUBMG		THYROID-INHAL		PHOTON-SUBMG		BETA-SUBMG		THYROID-INHAL	
	DOSE mrem	DOSE RATE mrem/hr	DOSE mrem	DOSE RATE mrem/hr	DOSE mrem	DOSE RATE mrem/hr	DOSE mrem	DOSE RATE mrem/hr	DOSE mrem	DOSE RATE mrem/hr	DOSE mrem	DOSE RATE mrem/hr
XE-133												
0.2500 h	4.34E-01	1.74E+00	1.20E+00	4.78E+00	0.00E+00	0.00E+00	3.30E-02	2.62E-01	1.81E+00	1.43E+01	0.00E+00	0.00E+00
1.2500 h	1.73E+00	1.73E+00	4.76E+00	4.76E+00	0.00E+00	0.00E+00	2.42E-01	2.23E-01	1.32E+01	1.22E+01	0.00E+00	0.00E+00
2.0000 h	1.29E+00	1.72E+00	3.55E+00	4.73E+00	0.00E+00	0.00E+00	5.45E-01	1.20E+00	2.99E+01	6.58E+01	0.00E+00	0.00E+00
4.0000 h	3.41E+00	1.70E+00	9.38E+00	4.69E+00	0.00E+00	0.00E+00	4.40E+00	3.03E+00	2.41E+02	1.67E+02	0.00E+00	0.00E+00
8.0000 h	6.68E+00	1.67E+00	1.84E+01	4.60E+00	0.00E+00	0.00E+00	1.62E+01	4.78E+00	8.88E+02	2.62E+02	0.00E+00	0.00E+00
8.5000 h	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	4.16E-01	1.56E-02	2.28E+01	8.54E-01	0.00E+00	0.00E+00
24.0000 h	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	8.18E-02	9.74E-04	4.48E+00	5.34E-02	0.00E+00	0.00E+00
96.0000 h	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	5.45E-03	2.48E-09	2.98E-01	1.36E-07	0.00E+00	0.00E+00
720.0000 h	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.39E-08	0.00E+00	7.58E-07	0.00E+00	0.00E+00	0.00E+00
TOTALS	1.35E+01		3.73E+01		0.00E+00		2.20E+01		1.20E+03		0.00E+00	
XE-135M												
0.2500 h	8.04E-01	3.22E+00	1.65E-01	6.58E-01	0.00E+00	0.00E+00	4.94E-02	3.53E-01	2.01E-01	1.44E+00	0.00E+00	0.00E+00
1.2500 h	7.75E-01	7.75E-01	1.59E-01	1.59E-01	0.00E+00	0.00E+00	1.16E-01	2.15E-02	4.71E-01	8.77E-02	0.00E+00	0.00E+00
2.0000 h	4.81E-02	6.41E-02	9.83E-03	1.31E-02	0.00E+00	0.00E+00	1.49E-02	1.90E-02	6.07E-02	7.75E-02	0.00E+00	0.00E+00
4.0000 h	7.22E-03	3.61E-03	1.48E-03	7.39E-04	0.00E+00	0.00E+00	8.19E-03	1.10E-03	3.33E-02	4.50E-03	0.00E+00	0.00E+00
8.0000 h	3.22E-05	8.05E-06	6.59E-06	1.65E-06	0.00E+00	0.00E+00	3.83E-04	2.36E-06	1.56E-03	9.61E-06	0.00E+00	0.00E+00
8.5000 h	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.67E-07	1.99E-09	4.78E-07	8.12E-09	0.00E+00	0.00E+00
24.0000 h	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	6.92E-10	8.06E-29	2.82E-09	3.28E-28	0.00E+00	0.00E+00
96.0000 h	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.80E-29	0.00E+00	1.14E-28	0.00E+00	0.00E+00	0.00E+00
720.0000 h	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
TOTALS	1.63E+00		3.34E-01		0.00E+00		1.89E-01		7.67E-01		0.00E+00	
XE-135												
0.2500 h	6.42E-01	2.57E+00	7.58E-01	3.03E+00	0.00E+00	0.00E+00	4.84E-02	3.80E-01	1.14E+00	9.01E+00	0.00E+00	0.00E+00
1.2500 h	2.45E+00	2.45E+00	2.89E+00	2.89E+00	0.00E+00	0.00E+00	3.42E-01	3.04E-01	8.03E+00	7.15E+00	0.00E+00	0.00E+00
2.0000 h	1.71E+00	2.29E+00	2.02E+00	2.70E+00	0.00E+00	0.00E+00	7.16E-01	1.56E+00	1.68E+01	3.65E+01	0.00E+00	0.00E+00
4.0000 h	4.11E+00	2.06E+00	4.86E+00	2.43E+00	0.00E+00	0.00E+00	3.20E+00	3.45E+00	1.22E+02	8.09E+01	0.00E+00	0.00E+00
8.0000 h	6.54E+00	1.64E+00	7.72E+00	1.93E+00	0.00E+00	0.00E+00	1.55E+01	4.15E+00	3.64E+02	9.75E+01	0.00E+00	0.00E+00
8.5000 h	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.59E-01	1.31E-02	8.44E+00	3.07E-01	0.00E+00	0.00E+00
24.0000 h	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	5.13E-02	2.73E-04	1.20E+00	6.42E-03	0.00E+00	0.00E+00
96.0000 h	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.10E-03	4.31E-12	2.57E-02	1.01E-10	0.00E+00	0.00E+00
720.0000 h	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.73E-11	0.00E+00	4.06E-10	0.00E+00	0.00E+00	0.00E+00
TOTALS	1.55E+01		1.82E+01		0.00E+00		2.22E+01		5.21E+02		0.00E+00	
XE-137												
0.2500 h	5.44E-01	2.17E+00	4.74E+00	1.90E+01	0.00E+00	0.00E+00	2.01E-02	1.14E-01	3.48E+00	1.97E+01	0.00E+00	0.00E+00
1.2500 h	3.66E-02	3.86E-02	3.36E-01	3.36E-01	0.00E+00	0.00E+00	1.03E-02	4.45E-05	1.78E+00	7.72E-03	0.00E+00	0.00E+00
2.0000 h	7.41E-07	9.88E-07	6.46E-06	8.61E-06	0.00E+00	0.00E+00	4.06E-06	8.76E-08	7.04E-04	1.52E-05	0.00E+00	0.00E+00
4.0000 h	2.15E-10	1.08E-10	1.88E-09	9.38E-10	0.00E+00	0.00E+00	7.91E-09	8.37E-12	1.37E-06	1.45E-09	0.00E+00	0.00E+00
8.0000 h	7.97E-20	1.99E-20	6.94E-19	1.74E-19	0.00E+00	0.00E+00	7.54E-13	1.55E-21	1.31E-10	2.68E-19	0.00E+00	0.00E+00
8.5000 h	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	6.94E-23	2.22E-26	1.20E-20	3.85E-24	0.00E+00	0.00E+00
24.0000 h	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.01E-27	0.00E+00	3.49E-25	0.00E+00	0.00E+00	0.00E+00
96.0000 h	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
720.0000 h	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
TOTALS	5.82E-01		5.07E+00		0.00E+00		3.04E-02		5.26E+00		0.00E+00	

TRAILS -- Transport of Radioactive Material in Linear Systems, v1.0
Pri-to-sec leak N.G. in U1 LRA assuming 18% F.F. (non-equil)

	ENVIRONMENT						CONTROL ROOM					
	PHOTON-SUBMG		BETA-SUBMG		THYROID-INHAL		PHOTON-SUBMG		BETA-SUBMG		THYROID-INHAL	
	DOSE mrem	DOSE RATE mrem/hr	DOSE mrem	DOSE RATE mrem/hr	DOSE mrem	DOSE RATE mrem/hr	DOSE mrem	DOSE RATE mrem/hr	DOSE mrem	DOSE RATE mrem/hr	DOSE mrem	DOSE RATE mrem/hr
XE-138												
0.2500 h	6.71E+00	2.68E+01	3.46E+00	1.38E+01	0.00E+00	0.00E+00	4.05E-01	2.87E+00	4.16E+00	2.95E+01	0.00E+00	0.00E+00
1.2500 h	5.84E+00	5.84E+00	3.02E+00	3.02E+00	0.00E+00	0.00E+00	8.80E-01	1.40E-01	9.03E+00	1.44E+00	0.00E+00	0.00E+00
2.0000 h	2.89E-01	3.85E-01	1.47E-01	1.99E-01	0.00E+00	0.00E+00	8.85E-02	1.08E-01	9.09E-01	1.10E+00	0.00E+00	0.00E+00
4.0000 h	3.56E-02	1.78E-02	1.83E-02	9.17E-03	0.00E+00	0.00E+00	4.18E-02	4.99E-03	4.29E-01	5.12E-02	0.00E+00	0.00E+00
8.0000 h	9.87E-05	2.47E-05	5.09E-05	1.27E-05	0.00E+00	0.00E+00	1.59E-03	6.70E-06	1.63E-02	6.88E-05	0.00E+00	0.00E+00
8.5000 h	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	4.65E-07	5.03E-09	4.79E-06	5.16E-08	0.00E+00	0.00E+00
24.0000 h	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.61E-09	5.26E-30	1.66E-08	5.40E-29	0.00E+00	0.00E+00
96.0000 h	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.69E-30	0.00E+00	1.73E-29	0.00E+00	0.00E+00	0.00E+00
720.0000 h	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
TOTALS	1.29E+01		6.65E+00		0.00E+00		1.42E+00		1.45E+01		0.00E+00	
ALL NUCLIDES												
0.2500 h	2.52E+01	1.01E+02	1.90E+01	7.59E+01	0.00E+00	0.00E+00	1.60E+00	1.19E+01	2.15E+01	1.54E+02	0.00E+00	0.00E+00
1.2500 h	5.28E+01	5.28E+01	3.06E+01	3.06E+01	0.00E+00	0.00E+00	7.50E+00	5.36E+00	8.71E+01	6.13E+01	0.00E+00	0.00E+00
2.0000 h	2.76E+01	3.68E+01	1.59E+01	2.12E+01	0.00E+00	0.00E+00	1.12E+01	2.33E+01	1.28E+02	2.68E+02	0.00E+00	0.00E+00
4.0000 h	5.22E+01	2.61E+01	3.08E+01	1.54E+01	0.00E+00	0.00E+00	6.33E+01	3.80E+01	7.54E+02	4.67E+02	0.00E+00	0.00E+00
8.0000 h	5.53E+01	1.38E+01	3.98E+01	9.96E+00	0.00E+00	0.00E+00	1.28E+02	2.91E+01	1.88E+03	4.91E+02	0.00E+00	0.00E+00
8.5000 h	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.50E+00	8.70E-02	4.24E+01	1.54E+00	0.00E+00	0.00E+00
24.0000 h	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.74E-01	1.37E-03	6.76E+00	6.41E-02	0.00E+00	0.00E+00
96.0000 h	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	6.91E-03	2.52E-09	3.46E-01	1.45E-07	0.00E+00	0.00E+00
720.0000 h	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.41E-08	0.00E+00	8.11E-07	0.00E+00	0.00E+00	0.00E+00
TOTALS	2.13E+02		1.36E+02		0.00E+00		2.14E+02		2.92E+03		0.00E+00	

TRAILS -- Transport of Radioactive Material in Linear Systems, v1.0
Concurrent iodine spike - LPZ and C.R. Doses

	COMP: Reactor Coolant System	COMP: 3 Steam Generators	COMP: Control Room VOLUME: 1.730E+05 Cu.Ft
INITIAL:	0.000E+00 KR-83m	0.000E+00 KR-83m	0.000E+00 KR-83m
	0.000E+00 KR-85m	0.000E+00 KR-85m	0.000E+00 KR-85m
	0.000E+00 KR-85	0.000E+00 KR-85	0.000E+00 KR-85
	0.000E+00 KR-87	0.000E+00 KR-87	0.000E+00 KR-87
	0.000E+00 KR-88	0.000E+00 KR-88	0.000E+00 KR-88
	0.000E+00 KR-89	0.000E+00 KR-89	0.000E+00 KR-89
	0.000E+00 KR-90	0.000E+00 KR-90	0.000E+00 KR-90
	0.000E+00 XE-131M	0.000E+00 XE-131M	0.000E+00 XE-131M
	0.000E+00 XE-133M	0.000E+00 XE-133M	0.000E+00 XE-133M
	0.000E+00 XE-133	0.000E+00 XE-133	0.000E+00 XE-133
	0.000E+00 XE-135M	0.000E+00 XE-135M	0.000E+00 XE-135M
	0.000E+00 XE-135	0.000E+00 XE-135	0.000E+00 XE-135
	0.000E+00 XE-137	0.000E+00 XE-137	0.000E+00 XE-137
	0.000E+00 XE-138	0.000E+00 XE-138	0.000E+00 XE-138
	0.000E+00 I-131	0.000E+00 I-131	0.000E+00 I-131
	0.000E+00 I-132	0.000E+00 I-132	0.000E+00 I-132
	0.000E+00 I-133	0.000E+00 I-133	0.000E+00 I-133
	0.000E+00 I-134	0.000E+00 I-134	0.000E+00 I-134
	0.000E+00 I-135	0.000E+00 I-135	0.000E+00 I-135
ACT MULT (to uCi):	1.000E+00	1.000E+00	1.000E+00
PRODUCTION, uCi/s:	0.000E+00 KR-83m	0.000E+00 KR-83m	
	0.000E+00 KR-85m	0.000E+00 KR-85m	
	0.000E+00 KR-85	0.000E+00 KR-85	
	0.000E+00 KR-87	0.000E+00 KR-87	
	0.000E+00 KR-88	0.000E+00 KR-88	
	0.000E+00 KR-89	0.000E+00 KR-89	
	0.000E+00 KR-90	0.000E+00 KR-90	
	0.000E+00 XE-131M	0.000E+00 XE-131M	
	0.000E+00 XE-133M	0.000E+00 XE-133M	
	0.000E+00 XE-133	0.000E+00 XE-133	
	0.000E+00 XE-135M	0.000E+00 XE-135M	
	0.000E+00 XE-135	0.000E+00 XE-135	
	0.000E+00 XE-137	0.000E+00 XE-137	
	0.000E+00 XE-138	0.000E+00 XE-138	
	1.360E+06 I-131	0.000E+00 I-131	
	2.520E+06 I-132	0.000E+00 I-132	
	3.080E+06 I-133	0.000E+00 I-133	
	3.680E+06 I-134	0.000E+00 I-134	
	2.810E+06 I-135	0.000E+00 I-135	INTAKE: 1.000E+01 CFM
REMOVAL:	3.564E-07 1/sec	2.099E-06 1/sec	1.000E+01 cfm
NUC 1-14 REL FR:	0.000E+00	0.000E+00	INTAKE REDUCT: 0.000E+00
NUC 15-20 REL FR:	0.000E+00	0.000E+00	INTAKE FILTER: 9.360E-01

CASE 3

TRAILS -- Transport of Radioactive Material in Linear Systems, v1.0
Concurrent iodine spike - LPZ and C.R. Doses

MULTIPLIERS====>

STEP	TIME	XPR	XREM	XRF	XPR	XREM	XRF	XPR	XREM	XRF
1	9.000E+02	1.00	1.00	0.000E+00	0.000E+00	1.00	0.000E+00	30.0	50.0	0.000E+00
2	4.500E+03	1.00	1.00	0.000E+00	0.000E+00	1.00	0.000E+00	1.00	70.0	0.000E+00
3	7.200E+03	1.00	1.00	0.000E+00	0.000E+00	1.00	0.000E+00	70.0	70.0	1.00
4	1.440E+04	1.00	1.00	0.000E+00	0.000E+00	0.596	0.000E+00	70.0	70.0	1.00
5	2.880E+04	2.000E-03	1.00	0.000E+00	0.000E+00	0.596	0.000E+00	70.0	70.0	1.00
6	3.060E+04	0.000E+00	1.00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	3.300E+03	3.300E+03	0.000E+00
7	8.640E+04	0.000E+00	1.00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	50.0	50.0	0.000E+00
8	3.456E+05	0.000E+00	1.00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	50.0	50.0	0.000E+00
9	2.592E+06	0.000E+00	1.00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	50.0	50.0	0.000E+00

	-------- CONTROL ROOM --------			---- ENVIRONMENT ---	
	X/Q	Breathing	Occupancy	X/Q	Breathing
	s/M3	M3/s		s/M3	M3/s
	1.000E-03	3.470E-04	1.000E+00	1.000E+00	3.470E-04

MULTIPLIERS====>

STEP	TIME, s				
1	9.000E+02	2.97	1.00	1.00	4.200E-05	1.00
2	4.500E+03	2.97	1.00	1.00	4.200E-05	1.00
3	7.200E+03	2.97	1.00	1.00	4.200E-05	1.00
4	1.440E+04	2.97	1.00	1.00	4.200E-05	1.00
5	2.880E+04	2.97	1.00	1.00	4.200E-05	1.00
6	3.060E+04	1.94	1.00	1.00	2.700E-05	1.00
7	8.640E+04	1.94	1.00	1.00	2.700E-05	1.00
8	3.456E+05	0.692	1.00	1.00	1.540E-05	1.00
9	2.592E+06	0.154	1.00	1.00	6.800E-06	1.00

TRAILS -- Transport of Radioactive Material in Linear Systems, v1.0
Concurrent iodine spike - LPZ and C.R. Doses

		Reactor Coolant Syst		3 Steam Generators		AVERAGE		----------CONTROL ROOM----------		
		CURRENT	INTEGRD	CURRENT	INTEGRD	RELEASED	RELEASE	CURRENT	CURRENT	INTEGRD
STEP	TIME	uCi	uCi-sec	uCi	uCi-sec	uCi	uCi/sec	uCi	uCi/cc	uCi-sec
I-131	INITIAL	0.000E+00		0.000E+00				0.000E+00		
1	0.2500 h	1.223E+09	5.506E+11	1.960E+05	6.426E+07	1.349E+02	1.499E-01	9.247E-02	1.888E-11	4.192E+01
2	1.2500 h	6.101E+09	1.319E+13	4.875E+06	7.287E+09	1.530E+04	4.249E+00	2.623E-01	5.355E-11	6.512E+02
3	2.0000 h	9.744E+09	2.139E+13	1.243E+07	2.257E+10	4.738E+04	1.755E+01	2.935E+00	5.990E-10	4.427E+03
4	4.0000 h	1.939E+10	1.050E+14	4.937E+07	2.080E+11	2.602E+05	3.614E+01	1.470E+01	3.000E-09	6.693E+04
5	8.0000 h	1.906E+10	2.769E+14	1.449E+08	1.404E+12	1.757E+06	1.220E+02	7.565E+01	1.544E-08	7.214E+05
6	8.5000 h	1.901E+10	3.426E+13	1.568E+08	2.715E+11	0.000E+00	0.000E+00	2.470E-01	5.043E-11	2.371E+04
7	24.0000 h	1.763E+10	1.022E+15	5.024E+08	1.861E+13	0.000E+00	0.000E+00	1.589E-02	3.245E-12	4.701E+03
8	96.0000 h	1.241E+10	3.854E+15	1.389E+09	2.875E+14	0.000E+00	0.000E+00	4.640E-08	9.472E-18	3.233E+02
9	720.0000 h	5.924E+08	8.727E+15	8.957E+08	3.812E+15	0.000E+00	0.000E+00	0.000E+00	0.000E+00	9.437E-04
I-131	TOTALS		1.405E+16		4.120E+15	2.080E+06				8.222E+05
I-132	INITIAL	0.000E+00		0.000E+00				0.000E+00		
1	0.2500 h	2.184E+09	9.953E+11	3.457E+05	1.051E+08	2.206E+02	2.451E-01	1.458E-01	2.975E-11	6.689E+01
2	1.2500 h	9.442E+09	2.158E+13	7.077E+06	1.120E+10	2.352E+04	6.532E+00	3.388E-01	6.916E-11	9.036E+02
3	2.0000 h	1.361E+10	3.133E+13	1.565E+07	3.023E+10	6.345E+04	2.350E+01	3.497E+00	7.138E-10	5.467E+03
4	4.0000 h	2.104E+10	1.274E+14	4.318E+07	2.106E+11	2.634E+05	3.659E+01	1.126E+01	2.298E-09	5.809E+04
5	8.0000 h	6.313E+09	1.761E+14	4.477E+07	7.199E+11	9.005E+05	6.254E+01	2.431E+01	4.963E-09	2.878E+05
6	8.5000 h	5.427E+09	1.055E+13	4.199E+07	7.811E+10	0.000E+00	0.000E+00	6.341E-02	1.396E-11	7.430E+03
7	24.0000 h	4.981E+07	6.396E+13	1.394E+06	7.573E+11	0.000E+00	0.000E+00	4.357E-05	8.894E-15	5.184E+02
8	96.0000 h	1.714E-02	9.925E+11	2.185E-03	1.917E+10	0.000E+00	0.000E+00	6.218E-20	1.269E-29	3.304E-01
9	720.0000 h	0.000E+00	2.039E+02	0.000E+00	2.697E+01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	4.715E-16
I-132	TOTALS		4.325E+14		1.827E+12	1.251E+06				3.603E+05
I-133	INITIAL	0.000E+00		0.000E+00				0.000E+00		
1	0.2500 h	2.760E+09	1.244E+12	4.418E+05	1.308E+08	2.745E+02	3.050E-01	1.875E-01	3.827E-11	8.509E+01
2	1.2500 h	1.356E+10	2.950E+13	1.077E+07	1.614E+10	3.389E+04	9.413E+00	5.573E-01	1.138E-10	1.371E+03
3	2.0000 h	2.143E+10	4.728E+13	2.706E+07	4.948E+10	1.039E+05	3.847E+01	6.344E+00	1.295E-09	9.586E+03
4	4.0000 h	4.142E+10	2.271E+14	1.033E+08	4.421E+11	5.530E+05	7.681E+01	3.034E+01	6.193E-09	1.400E+05
5	8.0000 h	3.615E+10	5.576E+14	2.729E+08	2.772E+12	3.468E+06	2.409E+02	1.419E+02	2.897E-08	1.385E+06
6	8.5000 h	3.553E+10	6.451E+13	2.912E+08	5.079E+11	0.000E+00	0.000E+00	4.566E-01	9.320E-11	4.436E+04
7	24.0000 h	2.078E+10	1.534E+15	5.911E+08	2.668E+13	0.000E+00	0.000E+00	1.853E-02	3.782E-12	7.628E+03
8	96.0000 h	1.720E+07	1.982E+15	2.201E+08	1.164E+14	0.000E+00	0.000E+00	6.359E-09	1.298E-18	3.227E+02
9	720.0000 h	7.188E-01	1.789E+14	1.087E+00	3.066E+13	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.107E-04
I-133	TOTALS		4.623E+15		1.775E+14	4.159E+06				1.588E+06
I-134	INITIAL	0.000E+00		0.000E+00				0.000E+00		
1	0.2500 h	3.005E+09	1.397E+12	4.658E+05	1.444E+08	3.031E+02	3.368E-01	1.888E-01	3.854E-11	8.836E+01
2	1.2500 h	1.051E+10	2.610E+13	7.045E+06	1.228E+10	2.577E+04	7.158E+00	2.924E-01	5.968E-11	8.976E+02
3	2.0000 h	1.330E+10	3.251E+13	1.269E+07	2.681E+10	5.624E+04	2.084E+01	2.593E+00	5.294E-10	4.293E+03
4	4.0000 h	1.603E+10	1.081E+14	2.228E+07	1.310E+11	1.638E+05	2.275E+01	4.676E+00	9.545E-10	2.858E+04
5	8.0000 h	7.070E+08	7.013E+13	4.412E+06	1.941E+11	2.428E+05	1.686E+01	3.704E+00	7.562E-10	5.650E+04
6	8.5000 h	4.758E+08	1.051E+12	3.277E+06	6.876E+09	0.000E+00	0.000E+00	8.161E-03	1.666E-12	1.087E+03
7	24.0000 h	2.224E+03	2.163E+12	6.029E+01	1.843E+10	0.000E+00	0.000E+00	2.647E-09	5.403E-19	3.048E+01
8	96.0000 h	3.862E-22	1.011E+07	4.886E-23	2.910E+05	0.000E+00	0.000E+00	0.000E+00	0.000E+00	9.885E-06
9	720.0000 h	0.000E+00	1.756E-18	0.000E+00	2.253E-19	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
I-134	TOTALS		2.414E+14		3.896E+11	4.889E+05				9.148E+04

TRAILS -- Transport of Radioactive Material in Linear Systems, v1.0
Concurrent iodine spike - LPZ and C.R. Doses

		Reactor Coolant Syst		3 Steam Generators		AVERAGE		----------CONTROL ROOM----------		
		CURRENT	INTEGRD	CURRENT	INTEGRD	RELEASED	RELEASE	CURRENT	CURRENT	INTEGRD
STEP	TIME	uCi	uCi-sec	uCi	uCi-sec	uCi	uCi/sec	uCi	uCi/cc	uCi-sec
I-135	INITIAL	0.000E+00		0.000E+00				0.000E+00		
1	0.2500 h	2.496E+09	1.128E+12	3.983E+05	1.192E+08	2.503E+02	2.781E-01	1.694E-01	3.458E-11	7.713E+01
2	1.2500 h	1.184E+10	2.611E+13	9.262E+06	1.409E+10	2.957E+04	8.215E+00	4.698E-01	9.591E-11	1.182E+03
3	2.0000 h	1.823E+10	4.071E+13	2.247E+07	4.170E+10	8.753E+04	3.242E+01	5.201E+00	1.062E-09	7.932E+03
4	4.0000 h	3.297E+10	1.862E+14	7.828E+07	3.473E+11	4.343E+05	6.035E+01	2.226E+01	4.544E-09	1.059E+05
5	8.0000 h	2.163E+10	3.874E+14	1.607E+08	1.833E+12	2.293E+06	1.592E+02	8.330E+01	1.700E-08	8.587E+05
6	8.5000 h	2.051E+10	3.792E+13	1.656E+08	2.938E+11	0.000E+00	0.000E+00	2.586E-01	5.278E-11	2.588E+04
7	24.0000 h	3.958E+09	5.614E+14	1.121E+08	8.706E+12	0.000E+00	0.000E+00	3.462E-03	7.067E-13	3.300E+03
8	96.0000 h	1.897E+06	1.342E+14	2.426E+05	5.481E+12	0.000E+00	0.000E+00	6.883E-12	1.405E-21	4.479E+01
9	720.0000 h	3.245E-23	6.435E+10	4.906E-23	9.115E+09	0.000E+00	0.000E+00	0.000E+00	0.000E+00	8.905E-08
I-135	TOTALS		1.375E+15		1.673E+13	2.844E+06				1.003E+06
ALL NUCLIDES		5.924E+08		8.957E+08				0.000E+00	0.000E+00	

@ STEP 9

TRAILS -- Transport of Radioactive Material in Linear Systems, v1.0
Concurrent iodine spike - LPZ and C.R. Doses

	ENVIRONMENT						CONTROL ROOM					
	PHOTON-SUBMG		BETA-SUBMG		THYROID-INHAL		PHOTON-SUBMG		BETA-SUBMG		THYROID-INHAL	
	DOSE mrem	DOSE RATE mrem/hr	DOSE mrem	DOSE RATE mrem/hr	DOSE mrem	DOSE RATE mrem/hr	DOSE mrem	DOSE RATE mrem/hr	DOSE mrem	DOSE RATE mrem/hr	DOSE mrem	DOSE RATE mrem/hr
I-131												
0.2500 h	5.40E-07	2.16E-06	2.48E-07	9.93E-07	2.91E-03	1.16E-02	4.10E-08	3.25E-07	3.75E-07	2.98E-06	4.39E-03	3.49E-02
1.2500 h	6.12E-05	6.12E-05	2.81E-05	2.81E-05	3.30E-01	3.30E-01	6.37E-07	9.23E-07	5.82E-06	8.45E-06	6.83E-02	9.90E-02
2.0000 h	1.90E-04	2.53E-04	8.72E-05	1.16E-04	1.02E+00	1.36E+00	4.33E-06	1.03E-05	3.96E-05	9.45E-05	4.64E-01	1.11E+00
4.0000 h	1.04E-03	5.21E-04	4.79E-04	2.39E-04	5.61E+00	2.81E+00	6.54E-05	5.17E-05	5.98E-04	4.73E-04	7.02E+00	5.55E+00
8.0000 h	7.03E-03	1.76E-03	3.23E-03	8.08E-04	3.79E+01	9.47E+00	7.05E-04	2.66E-04	6.45E-03	2.44E-03	7.56E+01	2.86E+01
8.5000 h	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.32E-05	8.69E-07	2.12E-04	7.95E-06	2.49E+00	9.32E-02
24.0000 h	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	4.60E-06	5.59E-08	4.20E-05	5.12E-07	4.93E-01	6.00E-03
96.0000 h	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.16E-07	1.63E-13	2.89E-06	1.49E-12	3.39E-02	1.75E-08
720.0000 h	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	9.22E-13	0.00E+00	8.44E-12	0.00E+00	9.89E-08	0.00E+00
TOTALS	8.32E-03		3.83E-03		4.49E+01		8.04E-04		7.35E-03		8.62E+01	
I-132												
0.2500 h	5.31E-06	2.12E-05	1.04E-06	4.18E-06	1.72E-04	6.88E-04	3.93E-07	3.08E-06	1.54E-06	1.21E-05	2.53E-04	1.99E-03
1.2500 h	5.66E-04	5.66E-04	1.11E-04	1.11E-04	1.83E-02	1.83E-02	5.31E-06	7.17E-06	2.08E-05	2.81E-05	3.42E-03	4.62E-03
2.0000 h	1.53E-03	2.04E-03	3.01E-04	4.01E-04	4.95E-02	6.60E-02	3.21E-05	7.40E-05	1.26E-04	2.90E-04	2.07E-02	4.77E-02
4.0000 h	6.34E-03	3.17E-03	1.25E-03	6.24E-04	2.05E-01	1.03E-01	3.41E-04	2.38E-04	1.34E-03	9.33E-04	2.20E-01	1.54E-01
8.0000 h	2.17E-02	5.42E-03	4.27E-03	1.07E-03	7.02E-01	1.76E-01	1.69E-03	5.14E-04	6.62E-03	2.02E-03	1.09E+00	3.32E-01
8.5000 h	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	4.37E-05	1.45E-06	1.71E-04	5.67E-06	2.82E-02	9.33E-04
24.0000 h	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.05E-06	9.22E-10	1.19E-05	3.61E-09	1.96E-03	5.94E-07
96.0000 h	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.94E-09	1.32E-24	7.60E-09	5.15E-24	1.25E-06	8.48E-22
720.0000 h	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.77E-24	0.00E+00	1.09E-23	0.00E+00	1.79E-21	0.00E+00
TOTALS	3.01E-02		5.93E-03		9.76E-01		2.12E-03		8.29E-03		1.37E+00	
I-133												
0.2500 h	1.75E-06	6.99E-06	1.09E-06	4.35E-06	1.60E-03	6.40E-03	1.32E-07	1.05E-06	1.64E-06	1.30E-05	2.41E-03	1.91E-02
1.2500 h	2.16E-04	2.16E-04	1.34E-04	1.34E-04	1.98E-01	1.98E-01	2.13E-06	3.12E-06	2.64E-05	3.86E-05	3.88E-02	5.68E-02
2.0000 h	6.62E-04	8.82E-04	4.11E-04	5.48E-04	6.05E-01	8.07E-01	1.49E-05	3.55E-05	1.84E-04	4.40E-04	2.72E-01	6.47E-01
4.0000 h	3.52E-03	1.76E-03	2.19E-03	1.09E-03	3.22E+00	1.61E+00	2.18E-04	1.70E-04	2.69E-03	2.10E-03	3.97E+00	3.09E+00
8.0000 h	2.21E-02	5.52E-03	1.37E-02	3.43E-03	2.02E+01	5.05E+00	2.16E-03	7.85E-04	2.66E-02	9.83E-03	3.92E+01	1.45E+01
8.5000 h	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	5.90E-05	2.55E-06	8.54E-04	3.16E-05	1.26E+00	4.66E-02
24.0000 h	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.19E-05	1.03E-07	1.47E-04	1.28E-06	2.16E-01	1.89E-03
96.0000 h	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	5.02E-07	3.56E-14	6.21E-06	4.41E-13	9.13E-03	6.49E-10
720.0000 h	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.72E-13	0.00E+00	2.13E-12	0.00E+00	3.14E-09	0.00E+00
TOTALS	2.65E-02		1.65E-02		2.42E+01		2.47E-03		3.06E-02		4.50E+01	
I-134												
0.2500 h	8.36E-06	3.34E-05	1.78E-06	7.12E-06	1.10E-04	4.42E-04	5.95E-07	4.58E-06	2.52E-06	1.94E-05	1.56E-04	1.20E-03
1.2500 h	7.10E-04	7.10E-04	1.51E-04	1.51E-04	9.39E-03	9.39E-03	6.04E-06	7.09E-06	2.56E-05	3.00E-05	1.59E-03	1.86E-03
2.0000 h	1.55E-03	2.07E-03	3.30E-04	4.40E-04	2.05E-02	2.73E-02	2.89E-05	6.29E-05	1.22E-04	2.66E-04	7.60E-03	1.65E-02
4.0000 h	4.52E-03	2.26E-03	9.62E-04	4.81E-04	3.97E-02	2.98E-02	1.92E-04	1.10E-04	8.15E-04	4.80E-04	5.06E-02	2.98E-02
8.0000 h	6.69E-03	1.67E-03	1.43E-03	3.56E-04	8.85E-02	2.21E-02	3.80E-04	8.98E-05	1.61E-03	3.80E-04	1.00E-01	2.36E-02
8.5000 h	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	7.32E-06	1.98E-07	3.10E-05	8.38E-07	1.93E-03	5.20E-05
24.0000 h	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.05E-07	6.42E-14	8.69E-07	2.72E-13	5.40E-05	1.69E-11
96.0000 h	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	6.66E-14	0.00E+00	2.82E-13	0.00E+00	1.75E-11	0.00E+00
720.0000 h	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
TOTALS	1.35E-02		2.87E-03		1.78E-01		6.16E-04		2.61E-03		1.62E-01	

TRAILS -- Transport of Radioactive Material in Linear Systems, v1.0
Concurrent iodine spike - LPZ and C.R. Doses

	ENVIRONMENT						CONTROL ROOM					
	PHOTON-SUBMG		BETA-SUBMG		THYROID-INHAL		PHOTON-SUBMG		BETA-SUBMG		THYROID-INHAL	
	DOSE mrem	DOSE RATE mrem/hr	DOSE mrem	DOSE RATE mrem/hr	DOSE mrem	DOSE RATE mrem/hr	DOSE mrem	DOSE RATE mrem/hr	DOSE mrem	DOSE RATE mrem/hr	DOSE mrem	DOSE RATE mrem/hr
I-135												
0.2500 h	4.14E-06	1.66E-05	9.91E-07	3.57E-06	4.52E-04	1.81E-03	3.12E-07	2.46E-06	1.33E-06	1.06E-05	6.77E-04	5.36E-03
1.2500 h	4.89E-04	4.89E-04	1.05E-04	1.05E-04	5.34E-02	5.34E-02	4.77E-06	6.83E-06	2.05E-05	2.93E-05	1.04E-02	1.49E-02
2.0000 h	1.45E-03	1.93E-03	3.12E-04	4.16E-04	1.58E-01	2.11E-01	3.20E-05	7.56E-05	1.37E-04	3.24E-04	6.97E-02	1.64E-01
4.0000 h	7.19E-03	3.59E-03	1.55E-03	7.74E-04	7.85E-01	3.93E-01	4.28E-04	3.24E-04	1.83E-03	1.39E-03	9.30E-01	7.04E-01
8.0000 h	3.79E-02	9.48E-03	8.17E-03	2.04E-03	4.14E+00	1.04E+00	3.47E-03	1.21E-03	1.49E-02	5.19E-03	7.54E+00	2.63E+00
8.5000 h	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.05E-04	3.76E-06	4.48E-04	1.61E-05	2.27E-01	8.18E-03
24.0000 h	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.33E-05	5.03E-08	5.71E-05	2.16E-07	2.90E-02	1.09E-04
96.0000 h	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.81E-07	1.00E-16	7.75E-07	4.29E-16	3.93E-04	2.18E-13
720.0000 h	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.60E-16	0.00E+00	1.54E-15	0.00E+00	7.82E-13	0.00E+00
TOTALS	4.70E-02		1.01E-02		5.14E+00		4.05E-03		1.74E-02		8.81E+00	
ALL NUCLIDES												
0.2500 h	2.01E-05	8.04E-05	5.05E-06	2.02E-05	5.24E-03	2.10E-02	1.47E-06	1.15E-05	7.41E-06	5.80E-05	7.89E-03	6.26E-02
1.2500 h	2.04E-03	2.04E-03	5.30E-04	5.30E-04	6.09E-01	6.09E-01	1.89E-05	2.51E-05	9.91E-05	1.34E-04	1.23E-01	1.77E-01
2.0000 h	5.38E-03	7.17E-03	1.44E-03	1.92E-03	1.86E+00	2.47E+00	1.12E-04	2.58E-04	6.10E-04	1.41E-03	8.34E-01	1.98E+00
4.0000 h	2.26E-02	1.13E-02	6.43E-03	3.21E-03	9.89E+00	4.94E+00	1.25E-03	8.97E-04	7.28E-03	5.38E-03	1.22E+01	9.53E+00
8.0000 h	9.54E-02	2.38E-02	3.08E-02	7.71E-03	6.30E+01	1.58E+01	8.40E-03	2.88E-03	5.62E-02	1.99E-02	1.24E+02	4.60E+01
8.5000 h	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.48E-04	8.83E-06	1.72E-03	6.22E-05	4.00E+00	1.49E-01
24.0000 h	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.31E-05	2.11E-07	2.59E-04	2.01E-06	7.40E-01	8.00E-03
96.0000 h	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.00E-06	1.99E-13	9.88E-06	1.94E-12	4.34E-02	1.82E-08
720.0000 h	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.10E-12	0.00E+00	1.06E-11	0.00E+00	1.02E-07	0.00E+00
TOTALS	1.25E-01		3.92E-02		7.54E+01		1.01E-02		6.62E-02		1.42E+02	

TRAILS -- Transport of Radioactive Material in Linear Systems, v1.0
Initial steam release I2 & NG -- LPZ and CR Doses

	COMP: NOT USED THIS CASE	COMP: 3 S/G initial steam rel	COMP: Control Room
			VOLUME: 1.730E+05 Cu Ft.
INITIAL:	0.000E+00 KR-83m	4.280E-05 KR-83m Ci	0.000E+00 KR-83m
	0.000E+00 KR-85m	2.080E-04 KR-85m	0.000E+00 KR-85m
	0.000E+00 KR-85	1.100E-03 KR-85	0.000E+00 KR-85
	0.000E+00 KR-87	1.200E-04 KR-87	0.000E+00 KR-87
	0.000E+00 KR-88	3.180E-04 KR-88	0.000E+00 KR-88
	0.000E+00 KR-89	1.000E-05 KR-89	0.000E+00 KR-89
	0.000E+00 KR-90	0.000E+00 KR-90	0.000E+00 KR-90
	0.000E+00 XE-131M	1.070E-05 XE-131M	0.000E+00 XE-131M
	0.000E+00 XE-133M	3.070E-04 XE-133M	0.000E+00 XE-133M
	0.000E+00 XE-133	2.610E-03 XE-133	0.000E+00 XE-133
	0.000E+00 XE-135M	1.080E-04 XE-135M	0.000E+00 XE-135M
	0.000E+00 XE-135	3.200E-04 XE-135	0.000E+00 XE-135
	0.000E+00 XE-137	1.630E-05 XE-137	0.000E+00 XE-137
	0.000E+00 XE-138	6.710E-05 XE-138	0.000E+00 XE-138
	0.000E+00 I-131	6.280E-03 I-131	0.000E+00 I-131
	0.000E+00 I-132	1.120E-03 I-132	0.000E+00 I-132
	0.000E+00 I-133	8.190E-03 I-133	0.000E+00 I-133
	0.000E+00 I-134	1.960E-04 I-134	0.000E+00 I-134
	0.000E+00 I-135	3.000E-03 I-135	0.000E+00 I-135
ACT MULT (to uCi):	1.000E+00	1.000E+06	1.000E+00
PRODUCTION, uCi/s:	0.000E+00 KR-83m	0.000E+00 KR-83m	
	0.000E+00 KR-85m	0.000E+00 KR-85m	
	0.000E+00 KR-85	0.000E+00 KR-85	
	0.000E+00 KR-87	0.000E+00 KR-87	
	0.000E+00 KR-88	0.000E+00 KR-88	
	0.000E+00 KR-89	0.000E+00 KR-89	
	0.000E+00 KR-90	0.000E+00 KR-90	
	0.000E+00 XE-131M	0.000E+00 XE-131M	
	0.000E+00 XE-133M	0.000E+00 XE-133M	
	0.000E+00 XE-133	0.000E+00 XE-133	
	0.000E+00 XE-135M	0.000E+00 XE-135M	
	0.000E+00 XE-135	0.000E+00 XE-135	
	0.000E+00 XE-137	0.000E+00 XE-137	
	0.000E+00 XE-138	0.000E+00 XE-138	
	0.000E+00 I-131	0.000E+00 I-131	
	0.000E+00 I-132	0.000E+00 I-132	
	0.000E+00 I-133	0.000E+00 I-133	
	0.000E+00 I-134	0.000E+00 I-134	
	0.000E+00 I-135	0.000E+00 I-135	INTAKE: 1.000E+01 CFM
REMOVAL:	0.000E+00 1/sec	1.295E-01 1/sec	1.000E+01 cfm
NUC 1-14 REL FR:	0.000E+00	0.000E+00	INTAKE REDUCT: 0.000E+00
NUC 15-20 REL FR:	0.000E+00	0.000E+00	INTAKE FILTER: 9.360E-01

TRAILS -- Transport of Radioactive Material in Linear Systems, v1.0
Initial steam release I2 & NG -- LPZ and CR Doses

MULTIPLIERS====>

STEP	TIME	XPR	XREM	XRF	XPR	XREM	XRF	XPR	XREM	XRF
1	9.000E+02	0.000E+00	1.00	0.000E+00	0.000E+00	1.00	0.000E+00	50.0	50.0	0.000E+00
2	4.500E+03	0.000E+00	1.00	0.000E+00	0.000E+00	1.00	0.000E+00	1.00	70.0	0.000E+00
3	7.200E+03	0.000E+00	1.00	0.000E+00	0.000E+00	1.00	0.000E+00	70.0	70.0	1.00
4	1.440E+04	0.000E+00	1.00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	70.0	70.0	1.00
5	2.880E+04	0.000E+00	1.00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	70.0	70.0	1.00
6	3.060E+04	0.000E+00	1.00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	3.300E+03	3.300E+03	0.000E+00
7	8.640E+04	0.000E+00	1.00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	50.0	50.0	0.000E+00
8	3.456E+05	0.000E+00	1.00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	50.0	50.0	0.000E+00
9	2.592E+06	0.000E+00	1.00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	50.0	50.0	0.000E+00

-------- CONTROL ROOM --------			---- ENVIRONMENT ---	
X/Q	Breathing	Occupancy	X/Q	Breathing
s/M3	M3/s		s/M3	M3/s
1.000E-03	3.470E-04	1.000E+00	1.000E+00	3.470E-04

MULTIPLIERS====>

STEP	TIME, s				
1	9.000E+02	2.97	1.00	1.00	4.200E-05	1.00
2	4.500E+03	2.97	1.00	1.00	4.200E-05	1.00
3	7.200E+03	2.97	1.00	1.00	4.200E-05	1.00
4	1.440E+04	2.97	1.00	1.00	4.200E-05	1.00
5	2.880E+04	2.97	1.00	1.00	4.200E-05	1.00
6	3.060E+04	1.94	1.00	1.00	2.700E-05	1.00
7	8.640E+04	1.94	1.00	1.00	2.700E-05	1.00
8	3.456E+05	0.692	1.00	1.00	1.840E-05	1.00
9	2.592E+06	0.154	1.00	1.00	6.800E-06	1.00

TRAILS -- Transport of Radioactive Material in Linear Systems, v1.0
Initial steam release I2 & NG -- LPZ and CR Doses

		NOT USED THIS CASE		3 S/G initial steam		AVERAGE		CONTROL ROOM		
		CURRENT	INTEGRD	CURRENT	INTEGRD	RELEASED	RELEASE	CURRENT	CURRENT	INTEGRD
STEP	TIME	uCi	uCi-sec	uCi	uCi-sec	uCi	uCi/sec	uCi	uCi/cc	uCi-sec
KR-83m	INITIAL	0.000E+00		4.280E+01				0.000E+00		
1	0.2500 h	0.000E+00	0.000E+00	0.000E+00	3.328E+02	4.276E+01	4.752E-02	2.809E-02	5.715E-12	1.289E+01
2	1.2500 h	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.574E-02	3.070E-12	7.506E+01
3	2.0000 h	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	9.435E-03	1.926E-12	3.245E+01
4	4.0000 h	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.702E-03	5.557E-13	3.888E+01
5	8.0000 h	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.246E-04	4.626E-14	1.442E+01
6	8.5000 h	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	6.134E-07	1.252E-16	6.881E-02
7	24.0000 h	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.178E-10	2.404E-20	3.999E-03
8	96.0000 h	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	6.403E-26	1.307E-37	7.679E-07
9	720.0000 h	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	4.175E-24
KR-83m	TOTALS		0.000E+00		3.328E+02	4.276E+01				1.738E+02
KR-85m	INITIAL	0.000E+00		2.080E+02				0.000E+00		
1	0.2500 h	0.000E+00	0.000E+00	0.000E+00	1.618E+03	2.079E+02	2.310E-01	1.399E-01	2.856E-11	6.382E+01
2	1.2500 h	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	9.402E-02	1.919E-11	4.156E+02
3	2.0000 h	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	6.978E-02	1.424E-11	2.195E+02
4	4.0000 h	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	3.151E-02	6.433E-12	3.466E+02
5	8.0000 h	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	6.426E-03	1.312E-12	2.272E+02
6	8.5000 h	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.946E-05	3.972E-15	1.988E+00
7	24.0000 h	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.203E-07	2.455E-17	2.121E-01
8	96.0000 h	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	6.600E-18	1.347E-27	1.320E-03
9	720.0000 h	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	7.241E-14
KR-85m	TOTALS		0.000E+00		1.618E+03	2.079E+02				1.279E+03
KR-85	INITIAL	0.000E+00		1.100E+03				0.000E+00		
1	0.2500 h	0.000E+00	0.000E+00	0.000E+00	8.560E+03	1.100E+03	1.222E+00	7.545E-01	1.540E-10	3.420E+02
2	1.2500 h	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	5.918E-01	1.208E-10	2.411E+03
3	2.0000 h	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	4.933E-01	1.007E-10	1.461E+03
4	4.0000 h	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	3.036E-01	6.196E-11	2.814E+03
5	8.0000 h	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.149E-01	2.346E-11	2.797E+03
6	8.5000 h	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	3.760E-04	7.676E-14	3.604E+01
7	24.0000 h	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.558E-05	5.221E-15	7.275E+00
8	96.0000 h	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	9.665E-11	1.973E-20	5.309E-01
9	720.0000 h	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.006E-06
KR-85	TOTALS		0.000E+00		8.560E+03	1.100E+03				9.869E+03
KR-87	INITIAL	0.000E+00		1.200E+02				0.000E+00		
1	0.2500 h	0.000E+00	0.000E+00	0.000E+00	9.328E+02	1.199E+02	1.332E-01	7.689E-02	1.570E-11	3.564E+01
2	1.2500 h	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	3.497E-02	7.139E-12	1.915E+02
3	2.0000 h	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.937E-02	3.954E-12	7.130E+01
4	4.0000 h	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	4.007E-03	8.180E-13	7.020E+01
5	8.0000 h	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.715E-04	3.501E-14	1.753E+01
6	8.5000 h	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	4.272E-07	8.721E-17	5.136E-02
7	24.0000 h	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	6.228E-12	1.271E-21	2.141E-03
8	96.0000 h	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.133E-34	0.000E+00	3.121E-08
9	720.0000 h	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.069E-30
KR-87	TOTALS		0.000E+00		9.328E+02	1.199E+02				3.863E+02

TRAILS -- Transport of Radioactive Material in Linear Systems, v1.0
Initial steam release I2 & NG -- LPZ and CR Doses

		NOT USED THIS CASE		3 S/G initial steam		AVERAGE		CONTROL ROOM		
		CURRENT	INTEGRD	CURRENT	INTEGRD	RELEASED	RELEASE	CURRENT	CURRENT	INTEGRD
STEP	TIME	uCi	uCi-sec	uCi	uCi-sec	uCi	uCi/sec	uCi	uCi/cc	uCi-sec
KR-88	INITIAL	0.000E+00		3.180E+02				0.000E+00		
1	0.2500 h	0.000E+00	0.000E+00	0.000E+00	2.473E+03	3.178E+02	3.531E-01	2.115E-01	4.318E-11	9.684E+01
2	1.2500 h	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.300E-01	2.654E-11	6.029E+02
3	2.0000 h	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	9.023E-02	1.842E-11	2.940E+02
4	4.0000 h	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	3.408E-02	6.956E-12	4.152E+02
5	8.0000 h	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	4.861E-03	9.922E-13	2.160E+02
6	8.5000 h	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.407E-05	2.873E-15	1.493E+00
7	24.0000 h	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.178E-08	4.446E-18	1.212E-01
8	96.0000 h	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.921E-21	3.921E-31	1.878E-04
9	720.0000 h	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.656E-17
KR-88	TOTALS		0.000E+00		2.473E+03	3.178E+02				1.627E+03
KR-89	INITIAL	0.000E+00		1.000E+01				0.000E+00		
1	0.2500 h	0.000E+00	0.000E+00	0.000E+00	7.367E+01	9.723E+00	1.080E-02	1.971E-03	4.024E-13	1.308E+00
2	1.2500 h	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.974E-09	6.070E-19	5.294E-01
3	2.0000 h	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.280E-13	2.613E-23	7.986E-07
4	4.0000 h	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.913E-25	5.946E-35	3.438E-11
5	8.0000 h	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	7.823E-23
6	8.5000 h	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
7	24.0000 h	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
8	96.0000 h	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
9	720.0000 h	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
KR-89	TOTALS		0.000E+00		7.367E+01	9.723E+00				1.837E+00
XE-131M	INITIAL	0.000E+00		1.070E+01				0.000E+00		
1	0.2500 h	0.000E+00	0.000E+00	0.000E+00	8.327E+01	1.070E+01	1.189E-02	7.337E-03	1.498E-12	3.326E+00
2	1.2500 h	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	5.741E-03	1.172E-12	2.342E+01
3	2.0000 h	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	4.777E-03	9.751E-13	1.416E+01
4	4.0000 h	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.925E-03	5.971E-13	2.718E+01
5	8.0000 h	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.097E-03	2.239E-13	2.684E+01
6	8.5000 h	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	3.584E-06	7.316E-16	3.438E-01
7	24.0000 h	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.348E-07	4.792E-17	6.856E-02
8	96.0000 h	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	7.446E-13	1.520E-22	4.806E-03
9	720.0000 h	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.524E-08
XE-131M	TOTALS		0.000E+00		8.327E+01	1.070E+01				9.535E+01
XE-133M	INITIAL	0.000E+00		3.070E+02				0.000E+00		
1	0.2500 h	0.000E+00	0.000E+00	0.000E+00	2.399E+03	3.070E+02	3.411E-01	2.102E-01	4.291E-11	9.533E+01
2	1.2500 h	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.627E-01	3.322E-11	6.677E+02
3	2.0000 h	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.343E-01	2.742E-11	3.998E+02
4	4.0000 h	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	8.050E-02	1.643E-11	7.569E+02
5	8.0000 h	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.892E-02	5.903E-12	7.255E+02
6	8.5000 h	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	9.398E-05	1.918E-14	9.056E+00
7	24.0000 h	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	5.211E-06	1.064E-15	1.713E+00
8	96.0000 h	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	7.624E-12	1.556E-21	1.005E-01
9	720.0000 h	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.471E-07
XE-133M	TOTALS		0.000E+00		2.399E+03	3.070E+02				2.656E+03

TRAILS -- Transport of Radioactive Material in Linear Systems, v1.0
Initial steam release I2 & NG -- LPZ and CR Doses

		NOT USED THIS CASE		3 S/G initial steam		AVERAGE		CONTROL ROOM		
		CURRENT	INTEGRD	CURRENT	INTEGRD	RELEASED	RELEASE	CURRENT	CURRENT	INTEGRD
STEP	TIME	uCi	uCi-sec	uCi	uCi-sec	uCi	uCi/sec	uCi	uCi/cc	uCi-sec
XE-133	INITIAL	0.000E+00		2.610E+03				0.000E+00		
1	0.2500 h	0.000E+00	0.000E+00	0.000E+00	2.031E+04	2.610E+03	2.900E+00	1.789E+00	3.652E-10	8.110E+02
2	1.2500 h	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.396E+00	2.849E-10	5.703E+03
3	2.0000 h	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.158E+00	2.365E-10	3.438E+03
4	4.0000 h	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	7.051E-01	1.439E-10	6.574E+03
5	8.0000 h	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.612E-01	5.331E-11	6.436E+03
6	8.5000 h	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	8.520E-04	1.739E-13	8.184E+01
7	24.0000 h	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	5.322E-05	1.086E-14	1.607E+01
8	96.0000 h	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.353E-10	2.763E-20	1.071E+00
9	720.0000 h	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.723E-06
XE-133	TOTALS		0.000E+00		2.031E+04	2.610E+03				2.306E+04
XE-135M	INITIAL	0.000E+00		1.080E+02				0.000E+00		
1	0.2500 h	0.000E+00	0.000E+00	0.000E+00	8.356E+02	1.074E+02	1.193E-01	5.364E-02	1.095E-11	2.701E+01
2	1.2500 h	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.806E-03	5.729E-13	6.202E+01
3	2.0000 h	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	3.070E-04	6.267E-14	3.050E+00
4	4.0000 h	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	8.405E-07	1.716E-16	3.736E-01
5	8.0000 h	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	6.299E-12	1.286E-21	1.026E-03
6	8.5000 h	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	5.322E-15	1.086E-24	1.601E-09
7	24.0000 h	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.151E-34	0.000E+00	6.650E-12
8	96.0000 h	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.688E-31
9	720.0000 h	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
XE-135M	TOTALS		0.000E+00		8.356E+02	1.074E+02				9.246E+01
XE-135	INITIAL	0.000E+00		3.200E+02				0.000E+00		
1	0.2500 h	0.000E+00	0.000E+00	0.000E+00	2.490E+03	3.199E+02	3.555E-01	2.174E-01	4.437E-11	9.884E+01
2	1.2500 h	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.580E-01	3.226E-11	6.701E+02
3	2.0000 h	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.244E-01	2.540E-11	3.795E+02
4	4.0000 h	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	6.575E-02	1.342E-11	6.623E+02
5	8.0000 h	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.836E-02	3.748E-12	5.350E+02
6	8.5000 h	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	5.783E-05	1.180E-14	5.720E+00
7	24.0000 h	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.209E-06	2.469E-16	8.169E-01
8	96.0000 h	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.907E-14	3.893E-24	1.745E-02
9	720.0000 h	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.752E-10
XE-135	TOTALS		0.000E+00		2.490E+03	3.199E+02				2.352E+03
XE-137	INITIAL	0.000E+00		1.630E+01				0.000E+00		
1	0.2500 h	0.000E+00	0.000E+00	0.000E+00	1.239E+02	1.593E+01	1.770E-02	3.791E-03	7.738E-13	2.406E+00
2	1.2500 h	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	5.726E-08	1.169E-17	1.229E+00
3	2.0000 h	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.388E-11	2.832E-21	1.857E-05
4	4.0000 h	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	3.167E-21	6.464E-31	4.500E-09
5	8.0000 h	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.027E-18
6	8.5000 h	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
7	24.0000 h	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
8	96.0000 h	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
9	720.0000 h	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
XE-137	TOTALS		0.000E+00		1.239E+02	1.593E+01				3.635E+00

TRAILS -- Transport of Radioactive Material in Linear Systems, v1.0
Initial steam release I2 & NG -- LPZ and CR Doses

		NOT USED THIS CASE		3 S/G initial steam		AVERAGE		CONTROL ROOM		
		CURRENT	INTEGRD	CURRENT	INTEGRD	RELEASED	RELEASE	CURRENT	CURRENT	INTEGRD
STEP	TIME	uCi	uCi-sec	uCi	uCi-sec	uCi	uCi/sec	uCi	uCi/cc	uCi-sec
XE-138	INITIAL	0.000E+00		6.710E+01				0.000E+00		
1	0.2500 h	0.000E+00	0.000E+00	0.000E+00	5.189E+02	6.668E+01	7.408E-02	3.246E-02	6.626E-12	1.648E+01
2	1.2500 h	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.342E-03	2.738E-13	3.516E+01
3	2.0000 h	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.230E-04	2.510E-14	1.377E+00
4	4.0000 h	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.101E-07	4.288E-17	1.387E-01
5	8.0000 h	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	6.130E-13	1.251E-22	2.374E-04
6	8.5000 h	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	4.603E-16	9.397E-26	1.533E-10
7	24.0000 h	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	4.812E-37	0.000E+00	5.317E-13
8	96.0000 h	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	5.558E-34
9	720.0000 h	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
XE-138	TOTALS		0.000E+00		5.189E+02	6.668E+01				5.316E+01
I-131	INITIAL	0.000E+00		6.280E+03				0.000E+00		
1	0.2500 h	0.000E+00	0.000E+00	0.000E+00	4.887E+04	6.280E+03	6.978E+00	4.305E+00	8.788E-10	1.952E+03
2	1.2500 h	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	3.365E+00	6.869E-10	1.374E+04
3	2.0000 h	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.797E+00	5.710E-10	8.296E+03
4	4.0000 h	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.709E+00	3.489E-10	1.590E+04
5	8.0000 h	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	6.380E-01	1.302E-10	1.565E+04
6	8.5000 h	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.083E-03	4.253E-13	1.999E+02
7	24.0000 h	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.340E-04	2.736E-14	3.964E+01
8	96.0000 h	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	3.913E-10	7.988E-20	2.726E+00
9	720.0000 h	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	7.959E-06
I-131	TOTALS		0.000E+00		4.887E+04	6.280E+03				5.578E+04
I-132	INITIAL	0.000E+00		1.120E+03				0.000E+00		
1	0.2500 h	0.000E+00	0.000E+00	0.000E+00	8.710E+03	1.119E+03	1.244E+00	7.397E-01	1.510E-10	3.394E+02
2	1.2500 h	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	4.293E-01	8.763E-11	2.054E+03
3	2.0000 h	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.854E-01	5.826E-11	9.517E+02
4	4.0000 h	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	9.613E-02	1.962E-11	1.252E+03
5	8.0000 h	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.090E-02	2.226E-12	5.639E+02
6	8.5000 h	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	3.068E-05	6.263E-15	3.333E+00
7	24.0000 h	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.954E-08	3.989E-18	2.325E-01
8	96.0000 h	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.789E-23	5.693E-33	1.492E-04
9	720.0000 h	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.115E-19
I-132	TOTALS		0.000E+00		8.710E+03	1.119E+03				5.165E+03
I-133	INITIAL	0.000E+00		8.190E+03				0.000E+00		
1	0.2500 h	0.000E+00	0.000E+00	0.000E+00	6.373E+04	8.189E+03	9.099E+00	5.594E+00	1.142E-09	2.539E+03
2	1.2500 h	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	4.244E+00	8.664E-10	1.760E+04
3	2.0000 h	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	3.450E+00	7.043E-10	1.035E+04
4	4.0000 h	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.986E+00	4.055E-10	1.909E+04
5	8.0000 h	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	6.583E-01	1.344E-10	1.732E+04
6	8.5000 h	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.118E-03	4.323E-13	2.058E+02
7	24.0000 h	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	8.595E-05	1.755E-14	3.538E+01
8	96.0000 h	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.950E-11	6.021E-21	1.497E+00
9	720.0000 h	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	5.137E-07
I-133	TOTALS		0.000E+00		6.373E+04	8.189E+03				6.713E+04

TRAILS -- Transport of Radioactive Material in Linear Systems, v1.0
Initial steam release I2 & NG -- LPZ and CR Doses

		NOT USED THIS CASE		3 S/G initial steam		AVERAGE		CONTROL ROOM		
		CURRENT	INTEGRD	CURRENT	INTEGRD	RELEASED	RELEASE	CURRENT	CURRENT	INTEGRD
STEP	TIME	uCi	uCi-sec	uCi	uCi-sec	uCi	uCi/sec	uCi	uCi/cc	uCi-sec
I-134	INITIAL	0.000E+00		1.960E+02				0.000E+00		
1	0.2500 h	0.000E+00	0.000E+00	0.000E+00	1.523E+03	1.957E+02	2.174E-01	1.217E-01	2.488E-11	5.704E+01
2	1.2500 h	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	4.336E-02	8.851E-12	2.735E+02
3	2.0000 h	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.997E-02	4.078E-12	9.147E+01
4	4.0000 h	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.529E-03	5.163E-13	6.078E+01
5	8.0000 h	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	4.054E-05	8.275E-15	8.670E+00
6	8.5000 h	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	8.932E-08	1.823E-17	1.190E-02
7	24.0000 h	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.897E-14	5.913E-24	3.336E-04
8	96.0000 h	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.082E-10
9	720.0000 h	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
I-134	TOTALS		0.000E+00		1.523E+03	1.957E+02				4.814E+02
I-135	INITIAL	0.000E+00		3.000E+03				0.000E+00		
1	0.2500 h	0.000E+00	0.000E+00	0.000E+00	2.334E+04	2.999E+03	3.333E+00	2.031E+00	4.145E-10	9.244E+02
2	1.2500 h	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.434E+00	2.928E-10	6.175E+03
3	2.0000 h	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.105E+00	2.256E-10	3.409E+03
4	4.0000 h	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	5.514E-01	1.126E-10	5.734E+03
5	8.0000 h	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.373E-01	2.802E-11	4.288E+03
6	8.5000 h	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	4.261E-04	8.698E-14	4.265E+01
7	24.0000 h	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	5.705E-06	1.165E-15	5.438E+00
8	96.0000 h	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.134E-14	2.315E-24	7.380E-02
9	720.0000 h	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.467E-10
I-135	TOTALS		0.000E+00		2.334E+04	2.999E+03				2.058E+04
ALL NUCLIDES		0.000E+00		0.000E+00				0.000E+00	0.000E+00	

@ STEP 9

TRAILS -- Transport of Radioactive Material in Linear Systems, v1.0
Initial steam release I2 & NG -- LPZ and CR Doses

	ENVIRONMENT						CONTROL ROOM					
	PHOTON-SUBMG		BETA-SUBMG		THYROID-INHAL		PHOTON-SUBMG		BETA-SUBMG		THYROID-INHAL	
	DOSE mrem	DOSE RATE mrem/hr	DOSE mrem	DOSE RATE mrem/hr	DOSE mrem	DOSE RATE mrem/hr	DOSE mrem	DOSE RATE mrem/hr	DOSE mrem	DOSE RATE mrem/hr	DOSE mrem	DOSE RATE mrem/hr
KR-83m												
0.2500 h	1.17E-09	4.67E-09	1.58E-08	6.31E-08	0.00E+00	0.00E+00	8.59E-11	6.72E-10	2.31E-08	1.81E-07	0.00E+00	0.00E+00
1.2500 h	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	5.01E-10	3.61E-10	1.35E-07	9.71E-08	0.00E+00	0.00E+00
2.0000 h	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.16E-10	2.26E-10	5.82E-08	6.09E-08	0.00E+00	0.00E+00
4.0000 h	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.59E-10	6.53E-11	6.97E-08	1.76E-08	0.00E+00	0.00E+00
8.0000 h	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	9.64E-11	5.44E-12	2.59E-08	1.46E-09	0.00E+00	0.00E+00
8.5000 h	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	4.59E-13	1.47E-14	1.23E-10	3.96E-12	0.00E+00	0.00E+00
24.0000 h	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.67E-14	2.83E-18	7.17E-12	7.60E-16	0.00E+00	0.00E+00
96.0000 h	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	5.12E-18	1.54E-35	1.38E-15	4.13E-33	0.00E+00	0.00E+00
720.0000 h	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.78E-35	0.00E+00	7.49E-33	0.00E+00	0.00E+00	0.00E+00
TOTALS	1.17E-09		1.58E-08		0.00E+00		1.16E-09		3.12E-07		0.00E+00	
KR-85m												
0.2500 h	3.44E-07	1.38E-06	5.13E-07	2.05E-06	0.00E+00	0.00E+00	2.58E-08	2.04E-07	7.65E-07	6.04E-06	0.00E+00	0.00E+00
1.2500 h	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.68E-07	1.37E-07	4.98E-06	4.06E-06	0.00E+00	0.00E+00
2.0000 h	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	8.88E-08	1.02E-07	2.63E-06	3.01E-06	0.00E+00	0.00E+00
4.0000 h	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.40E-07	4.59E-08	4.15E-06	1.36E-06	0.00E+00	0.00E+00
8.0000 h	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	9.19E-08	9.36E-09	2.72E-06	2.77E-07	0.00E+00	0.00E+00
8.5000 h	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	8.04E-10	2.83E-11	2.38E-08	8.40E-10	0.00E+00	0.00E+00
24.0000 h	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	8.58E-11	1.75E-13	2.54E-09	5.19E-12	0.00E+00	0.00E+00
96.0000 h	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	5.34E-13	9.61E-24	1.58E-11	2.85E-22	0.00E+00	0.00E+00
720.0000 h	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.93E-23	0.00E+00	8.68E-22	0.00E+00	0.00E+00	0.00E+00
TOTALS	3.44E-07		5.13E-07		0.00E+00		5.16E-07		1.53E-05		0.00E+00	
KR-85												
0.2500 h	2.54E-08	1.02E-07	2.67E-06	1.07E-05	0.00E+00	0.00E+00	1.93E-09	1.53E-08	4.03E-06	3.20E-05	0.00E+00	0.00E+00
1.2500 h	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.36E-08	1.20E-08	2.84E-05	2.51E-05	0.00E+00	0.00E+00
2.0000 h	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	8.24E-09	1.00E-08	1.72E-05	2.09E-05	0.00E+00	0.00E+00
4.0000 h	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.59E-08	6.17E-09	3.31E-05	1.29E-05	0.00E+00	0.00E+00
8.0000 h	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.58E-08	2.33E-09	3.29E-05	4.88E-06	0.00E+00	0.00E+00
8.5000 h	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.03E-10	7.64E-12	4.25E-07	1.60E-08	0.00E+00	0.00E+00
24.0000 h	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	4.11E-11	5.19E-13	8.57E-08	1.09E-09	0.00E+00	0.00E+00
96.0000 h	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.00E-12	1.96E-18	6.26E-09	4.10E-15	0.00E+00	0.00E+00
720.0000 h	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.13E-17	0.00E+00	2.36E-14	0.00E+00	0.00E+00	0.00E+00
TOTALS	2.54E-08		2.67E-06		0.00E+00		5.57E-08		1.16E-04		0.00E+00	
KR-87												
0.2500 h	9.98E-07	3.99E-06	1.53E-06	6.13E-06	0.00E+00	0.00E+00	7.25E-08	5.63E-07	2.21E-06	1.72E-05	0.00E+00	0.00E+00
1.2500 h	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.90E-07	2.56E-07	1.19E-05	7.82E-06	0.00E+00	0.00E+00
2.0000 h	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.45E-07	1.42E-07	4.43E-06	4.33E-06	0.00E+00	0.00E+00
4.0000 h	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.43E-07	2.93E-08	4.36E-06	8.96E-07	0.00E+00	0.00E+00
8.0000 h	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.57E-08	1.26E-09	1.09E-06	3.84E-08	0.00E+00	0.00E+00
8.5000 h	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.04E-10	3.13E-12	3.19E-09	9.56E-11	0.00E+00	0.00E+00
24.0000 h	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	4.35E-12	4.56E-17	1.33E-10	1.39E-15	0.00E+00	0.00E+00
96.0000 h	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	6.35E-17	0.00E+00	1.94E-15	0.00E+00	0.00E+00	0.00E+00
720.0000 h	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	6.64E-38	0.00E+00	0.00E+00	0.00E+00
TOTALS	9.98E-07		1.53E-06		0.00E+00		7.86E-07		2.40E-05		0.00E+00	

TRAILS -- Transport of Radioactive Material in Linear Systems, v1.0
Initial steam release I2 & NG -- LPZ and CR Doses

	ENVIRONMENT						CONTROL ROOM					
	PHOTON-SUBMG		BETA-SUBMG		THYROID-INHAL		PHOTON-SUBMG		BETA-SUBMG		THYROID-INHAL	
	DOSE mrem	DOSE RATE mrem/hr	DOSE mrem	DOSE RATE mrem/hr	DOSE mrem	DOSE RATE mrem/hr	DOSE mrem	DOSE RATE mrem/hr	DOSE mrem	DOSE RATE mrem/hr	DOSE mrem	DOSE RATE mrem/hr
KR-88												
0 2500 h	6.52E-06	2.61E-05	1.12E-06	4.48E-06	0.00E+00	0.00E+00	4.85E-07	3.82E-06	1.66E-06	1.30E-05	0.00E+00	0.00E+00
1 2500 h	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.02E-06	2.35E-06	1.03E-05	8.02E-06	0.00E+00	0.00E+00
2 0000 h	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.47E-06	1.63E-06	5.03E-06	5.56E-06	0.00E+00	0.00E+00
4 0000 h	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.08E-06	6.15E-07	7.11E-06	2.10E-06	0.00E+00	0.00E+00
8 0000 h	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.08E-06	8.77E-08	3.70E-06	3.00E-07	0.00E+00	0.00E+00
8 5000 h	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	7.48E-09	2.54E-10	2.56E-08	8.68E-10	0.00E+00	0.00E+00
24 0000 h	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	6.08E-10	3.93E-13	2.07E-09	1.34E-12	0.00E+00	0.00E+00
96 0000 h	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	9.42E-13	3.47E-26	3.22E-12	1.18E-25	0.00E+00	0.00E+00
720 0000 h	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	8.30E-26	0.00E+00	2.84E-25	0.00E+00	0.00E+00	0.00E+00
TOTALS	6.52E-06		1.12E-06		0.00E+00		8.15E-06		2.79E-05		0.00E+00	
KR-89												
0 2500 h	1.87E-07	7.49E-07	1.28E-07	5.12E-07	0.00E+00	0.00E+00	6.15E-09	3.34E-08	8.36E-08	4.54E-07	0.00E+00	0.00E+00
1 2500 h	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.49E-09	5.04E-14	3.38E-08	6.85E-13	0.00E+00	0.00E+00
2 0000 h	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.76E-15	2.17E-18	5.11E-14	2.95E-17	0.00E+00	0.00E+00
4 0000 h	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.62E-19	4.93E-30	2.20E-18	6.71E-29	0.00E+00	0.00E+00
8 0000 h	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.68E-31	0.00E+00	5.00E-30	0.00E+00	0.00E+00	0.00E+00
8 5000 h	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
24 0000 h	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
96 0000 h	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
720 0000 h	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
TOTALS	1.87E-07		1.28E-07		0.00E+00		8.64E-09		1.17E-07		0.00E+00	
XE-131M												
0 2500 h	2.26E-09	9.03E-09	1.47E-08	5.88E-08	0.00E+00	0.00E+00	1.71E-10	1.36E-09	2.22E-08	1.76E-07	0.00E+00	0.00E+00
1 2500 h	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.21E-09	1.07E-09	1.56E-07	1.38E-07	0.00E+00	0.00E+00
2 0000 h	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	7.30E-10	8.86E-10	9.45E-08	1.15E-07	0.00E+00	0.00E+00
4 0000 h	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.40E-09	5.43E-10	1.81E-07	7.03E-08	0.00E+00	0.00E+00
8 0000 h	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.38E-09	2.04E-10	1.79E-07	2.64E-08	0.00E+00	0.00E+00
8 5000 h	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.77E-11	6.65E-13	2.29E-09	8.61E-11	0.00E+00	0.00E+00
24 0000 h	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.53E-12	4.36E-14	4.58E-10	5.64E-12	0.00E+00	0.00E+00
96 0000 h	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.48E-13	1.38E-19	3.21E-11	1.79E-17	0.00E+00	0.00E+00
720 0000 h	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	7.86E-19	0.00E+00	1.02E-16	0.00E+00	0.00E+00	0.00E+00
TOTALS	2.26E-09		1.47E-08		0.00E+00		4.92E-09		6.36E-07		0.00E+00	
XE-133M												
0 2500 h	1.34E-07	5.35E-07	5.64E-07	2.26E-06	0.00E+00	0.00E+00	1.01E-08	8.05E-08	8.51E-07	6.76E-06	0.00E+00	0.00E+00
1 2500 h	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	7.11E-08	6.24E-08	5.96E-06	5.23E-06	0.00E+00	0.00E+00
2 0000 h	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	4.26E-08	5.15E-08	3.57E-06	4.32E-06	0.00E+00	0.00E+00
4 0000 h	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	8.06E-08	3.08E-08	6.76E-06	2.59E-06	0.00E+00	0.00E+00
8 0000 h	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	7.72E-08	1.11E-08	6.48E-06	9.30E-07	0.00E+00	0.00E+00
8 5000 h	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	9.64E-10	3.60E-11	8.08E-08	3.02E-09	0.00E+00	0.00E+00
24 0000 h	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.82E-10	2.00E-12	1.53E-08	1.68E-10	0.00E+00	0.00E+00
96 0000 h	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.07E-11	2.92E-18	8.98E-10	2.45E-16	0.00E+00	0.00E+00
720 0000 h	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.57E-17	0.00E+00	1.31E-15	0.00E+00	0.00E+00	0.00E+00
TOTALS	1.34E-07		5.64E-07		0.00E+00		2.83E-07		2.37E-05		0.00E+00	

TRAILS -- Transport of Radioactive Material in Linear Systems, v1.0
Initial steam release I2 & NG -- LPZ and CR Doses

	ENVIRONMENT						CONTROL ROOM					
	PHOTON-SUBMG		BETA-SUBMG		THYROID-INHAL		PHOTON-SUBMG		BETA-SUBMG		THYROID-INHAL	
	DOSE mrem	DOSE RATE mrem/hr	DOSE mrem	DOSE RATE mrem/hr	DOSE mrem	DOSE RATE mrem/hr	DOSE mrem	DOSE RATE mrem/hr	DOSE mrem	DOSE RATE mrem/hr	DOSE mrem	DOSE RATE mrem/hr
XE-133												
0.2500 h	1.24E-06	4.97E-06	3.42E-06	1.37E-05	0.00E+00	0.00E+00	9.42E-08	7.48E-07	5.16E-06	4.10E-05	0.00E+00	0.00E+00
1.2500 h	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	6.63E-07	5.84E-07	3.63E-05	3.20E-05	0.00E+00	0.00E+00
2.0000 h	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.99E-07	4.84E-07	2.19E-05	2.65E-05	0.00E+00	0.00E+00
4.0000 h	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	7.64E-07	2.95E-07	4.18E-05	1.61E-05	0.00E+00	0.00E+00
8.0000 h	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	7.48E-07	1.09E-07	4.09E-05	5.98E-06	0.00E+00	0.00E+00
8.5000 h	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	9.51E-09	3.56E-10	5.20E-07	1.95E-08	0.00E+00	0.00E+00
24.0000 h	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.87E-09	2.23E-11	1.02E-07	1.22E-09	0.00E+00	0.00E+00
96.0000 h	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.24E-10	5.66E-17	6.81E-09	3.10E-15	0.00E+00	0.00E+00
720.0000 h	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.16E-16	0.00E+00	1.73E-14	0.00E+00	0.00E+00	0.00E+00
TOTALS	1.24E-06		3.42E-06		0.00E+00		2.68E-06		1.47E-04		0.00E+00	
XE-135M												
0.2500 h	4.86E-07	1.94E-06	9.94E-08	3.97E-07	0.00E+00	0.00E+00	2.98E-08	2.13E-07	1.21E-07	8.68E-07	0.00E+00	0.00E+00
1.2500 h	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	6.85E-08	1.12E-08	2.79E-07	4.54E-08	0.00E+00	0.00E+00
2.0000 h	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.37E-09	1.22E-09	1.37E-08	4.97E-09	0.00E+00	0.00E+00
4.0000 h	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	4.13E-10	3.34E-12	1.68E-09	1.36E-11	0.00E+00	0.00E+00
8.0000 h	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.13E-12	2.50E-17	4.61E-12	1.02E-16	0.00E+00	0.00E+00
8.5000 h	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.77E-18	2.12E-20	7.20E-18	8.62E-20	0.00E+00	0.00E+00
24.0000 h	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	7.35E-21	0.00E+00	2.99E-20	0.00E+00	0.00E+00	0.00E+00
96.0000 h	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
720.0000 h	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
TOTALS	4.86E-07		9.94E-08		0.00E+00		1.02E-07		4.16E-07		0.00E+00	
XE-135												
0.2500 h	8.33E-07	3.33E-06	9.83E-07	3.93E-06	0.00E+00	0.00E+00	6.26E-08	4.98E-07	1.48E-06	1.17E-05	0.00E+00	0.00E+00
1.2500 h	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	4.26E-07	3.62E-07	1.00E-05	8.50E-06	0.00E+00	0.00E+00
2.0000 h	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.41E-07	2.85E-07	5.67E-06	6.69E-06	0.00E+00	0.00E+00
4.0000 h	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	4.21E-07	1.50E-07	9.89E-06	3.54E-06	0.00E+00	0.00E+00
8.0000 h	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.40E-07	4.20E-08	7.99E-06	9.87E-07	0.00E+00	0.00E+00
8.5000 h	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.64E-09	1.32E-10	8.54E-08	3.11E-09	0.00E+00	0.00E+00
24.0000 h	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	5.19E-10	2.77E-12	1.22E-08	6.50E-11	0.00E+00	0.00E+00
96.0000 h	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.11E-11	4.37E-20	2.61E-10	1.03E-18	0.00E+00	0.00E+00
720.0000 h	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.75E-19	0.00E+00	4.11E-18	0.00E+00	0.00E+00	0.00E+00
TOTALS	8.33E-07		9.83E-07		0.00E+00		1.50E-06		3.51E-05		0.00E+00	
XE-137												
0.2500 h	3.14E-08	1.26E-07	2.74E-07	1.09E-06	0.00E+00	0.00E+00	1.16E-09	6.57E-09	2.01E-07	1.14E-06	0.00E+00	0.00E+00
1.2500 h	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	5.92E-10	9.92E-14	1.03E-07	1.72E-11	0.00E+00	0.00E+00
2.0000 h	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	8.94E-15	2.40E-17	1.55E-12	4.17E-15	0.00E+00	0.00E+00
4.0000 h	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.17E-18	5.49E-27	3.76E-16	9.52E-25	0.00E+00	0.00E+00
8.0000 h	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	4.94E-28	0.00E+00	8.57E-26	0.00E+00	0.00E+00	0.00E+00
8.5000 h	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
24.0000 h	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
96.0000 h	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
720.0000 h	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
TOTALS	3.14E-08		2.74E-07		0.00E+00		1.75E-09		3.03E-07		0.00E+00	

TRAILS -- Transport of Radioactive Material in Linear Systems, v1.0
Initial steam release I2 & NG -- LPZ and CR Doses

	ENVIRONMENT						CONTROL ROOM					
	PHOTON-SUBMG		BETA-SUBMG		THYROID-INHAL		PHOTON-SUBMG		BETA-SUBMG		THYROID-INHAL	
	DOSE mrem	DOSE RATE mrem/hr	DOSE mrem	DOSE RATE mrem/hr	DOSE mrem	DOSE RATE mrem/hr	DOSE mrem	DOSE RATE mrem/hr	DOSE mrem	DOSE RATE mrem/hr	DOSE mrem	DOSE RATE mrem/hr
XE-138												
0.2500 h	7.88E-07	3.15E-06	4.07E-07	1.63E-06	0.00E+00	0.00E+00	4.76E-08	3.37E-07	4.89E-07	3.46E-06	0.00E+00	0.00E+00
1.2500 h	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.02E-07	1.39E-08	1.04E-06	1.43E-07	0.00E+00	0.00E+00
2.0000 h	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.98E-09	1.28E-09	4.08E-08	1.31E-08	0.00E+00	0.00E+00
4.0000 h	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	4.01E-10	2.18E-12	4.11E-09	2.24E-11	0.00E+00	0.00E+00
8.0000 h	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	6.85E-13	6.37E-18	7.04E-12	6.54E-17	0.00E+00	0.00E+00
8.5000 h	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	4.43E-19	4.78E-21	4.54E-18	4.91E-20	0.00E+00	0.00E+00
24.0000 h	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.54E-21	0.00E+00	1.58E-20	0.00E+00	0.00E+00	0.00E+00
96.0000 h	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
720.0000 h	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
TOTALS	7.88E-07		4.07E-07		0.00E+00		1.53E-07		1.58E-06		0.00E+00	
I-131												
0.2500 h	2.51E-05	1.01E-04	1.16E-05	4.62E-05	1.35E-01	5.42E-01	1.91E-06	1.51E-05	1.75E-05	1.39E-04	2.05E-01	1.62E+00
1.2500 h	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.34E-05	1.18E-05	1.23E-04	1.08E-04	1.44E+00	1.27E+00
2.0000 h	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	8.11E-06	9.84E-06	7.42E-05	9.01E-05	8.70E-01	1.06E+00
4.0000 h	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.55E-05	6.01E-06	1.42E-04	5.50E-05	1.67E+00	6.45E-01
8.0000 h	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.53E-05	2.24E-06	1.40E-04	2.05E-05	1.64E+00	2.41E-01
8.5000 h	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.95E-07	7.33E-09	1.79E-06	6.71E-08	2.10E-02	7.86E-04
24.0000 h	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.88E-08	4.72E-10	3.54E-07	4.32E-09	4.16E-03	5.06E-05
96.0000 h	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.66E-09	1.38E-15	2.44E-08	1.26E-14	2.86E-04	1.48E-10
720.0000 h	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	7.78E-15	0.00E+00	7.12E-14	0.00E+00	8.34E-10	0.00E+00
TOTALS	2.51E-05		1.16E-05		1.35E-01		5.45E-05		4.99E-04		5.85E+00	
I-132												
0.2500 h	2.69E-05	1.08E-04	5.30E-06	2.12E-05	8.73E-04	3.49E-03	1.99E-06	1.56E-05	7.81E-06	6.13E-05	1.29E-03	1.01E-02
1.2500 h	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.21E-05	9.08E-06	4.73E-05	3.56E-05	7.78E-03	5.86E-03
2.0000 h	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	5.39E-06	6.04E-06	2.19E-05	2.37E-05	3.61E-03	3.89E-03
4.0000 h	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	7.36E-06	2.03E-06	2.88E-05	7.97E-06	4.75E-03	1.31E-03
8.0000 h	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.31E-06	2.31E-07	1.30E-05	9.04E-07	2.14E-03	1.49E-04
8.5000 h	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.96E-08	6.49E-10	7.67E-08	2.54E-09	1.26E-05	4.19E-07
24.0000 h	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.37E-09	4.13E-13	5.35E-09	1.62E-12	8.81E-07	2.67E-10
96.0000 h	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	8.71E-13	5.90E-28	3.41E-12	2.31E-27	5.42E-10	3.80E-25
720.0000 h	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.24E-27	0.00E+00	4.87E-27	0.00E+00	8.01E-25	0.00E+00
TOTALS	2.69E-05		5.30E-06		8.73E-04		3.04E-05		1.19E-04		1.96E-02	
I-133												
0.2500 h	5.22E-05	2.09E-04	3.24E-05	1.30E-04	4.77E-02	1.91E-01	3.95E-06	3.13E-05	4.88E-05	3.88E-04	7.19E-02	5.71E-01
1.2500 h	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.74E-05	2.38E-05	3.39E-04	2.94E-04	4.99E-01	4.33E-01
2.0000 h	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.61E-05	1.93E-05	1.99E-04	2.39E-04	2.93E-01	3.52E-01
4.0000 h	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.97E-05	1.11E-05	3.67E-04	1.38E-04	5.41E-01	2.03E-01
8.0000 h	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.69E-05	3.69E-06	3.33E-04	4.56E-05	4.91E-01	6.71E-02
8.5000 h	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.20E-07	1.19E-08	3.96E-06	1.47E-07	5.83E-03	2.16E-04
24.0000 h	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	5.51E-08	4.81E-10	6.81E-07	5.95E-09	1.00E-03	8.77E-06
96.0000 h	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.33E-09	1.65E-16	2.88E-08	2.04E-15	4.24E-05	3.01E-12
720.0000 h	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	7.99E-16	0.00E+00	9.88E-15	0.00E+00	1.46E-11	0.00E+00
TOTALS	5.22E-05		3.24E-05		4.77E-02		1.04E-04		1.29E-03		1.90E+00	

TRAILS -- Transport of Radioactive Material in Linear Systems, v1.0
Initial steam release I2 & NG -- LPZ and CR Doses

	ENVIRONMENT						CONTROL ROOM					
	PHOTON-SUBMG		BETA-SUBMG		THYROID-INHAL		PHOTON-SUBMG		BETA-SUBMG		THYROID-INHAL	
	DOSE	DOSE RATE	DOSE	DOSE RATE	DOSE	DOSE RATE	DOSE	DOSE RATE	DOSE	DOSE RATE	DOSE	DOSE RATE
	mrem	mrem/hr	mrem	mrem/hr	mrem	mrem/hr	mrem	mrem/hr	mrem	mrem/hr	mrem	mrem/hr
I-134												
0.2500 h	5.39E-06	2.16E-[illegible]	1.15E-06	4.59E-06	7.13E-05	2.85E-04	3.84E-07	2.95E-06	1.63E-06	1.23E-05	1.01E-04	7.77E-04
1.2500 h	0.00E+00	0.00E+[illegible]	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.84E-06	1.05E-06	7.80E-06	4.45E-06	4.84E-04	2.76E-04
2.0000 h	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	5.49E-07	4.84E-07	2.32E-06	2.05E-06	1.44E-04	1.27E-04
4.0000 h	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	4.09E-07	6.13E-08	1.[illegible]E-06	2.60E-07	1.08E-04	1.61E-05
8.0000 h	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	5.84E-08	9.83E-10	2.42E-07	4.16E-09	1.54E-05	2.58E-07
8.5000 h	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	8.01E-11	2.16E-12	3.39E-10	9.17E-12	2.11E-08	5.69E-10
24.0000 h	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.25E-12	7.02E-19	9.51E-12	2.98E-18	5.91E-10	1.85E-16
96.0000 h	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	7.28E-19	0.00E+00	3.09E-18	0.00E+00	1.92E-16	0.00E+00
720.0000 h	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+[illegible]	0.00E+00	0.00E+00	0.00E+00
TOTALS	5.39E-06		1.15E-06		7.13E-05		3.24E-06		1.37E-05		8.53E-04	
I-135												
0.2500 h	4.96E-05	1.98E-04	1.07E-05	4.27E-05	5.42E-03	2.17E-02	3.73E-06	2.95E-05	1.60E-05	1.27E-04	8.12E-03	6.42E-02
1.2500 h	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.49E-05	2.09E-05	1.07E-04	8.94E-05	5.42E-02	4.54E-02
2.0000 h	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.38E-05	1.61E-05	5.90E-05	6.89E-05	2.99E-02	3.49E-02
4.0000 h	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.32E-05	8.02E-06	9.92E-05	3.44E-05	5.04E-02	1.74E-02
8.0000 h	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.73E-05	2.00E-06	7.42E-05	8.55E-06	3.77E-02	4.34E-03
8.5000 h	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.72E-07	6.20E-09	7.38E-07	2.66E-08	3.75E-04	1.35E-05
24.0000 h	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.20E-08	8.30E-11	9.41E-08	3.56E-10	4.78E-05	1.80E-07
96.0000 h	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.98E-10	1.65E-19	1.28E-09	7.07E-19	6.48E-07	3.59E-16
720.0000 h	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	5.93E-19	0.00E+00	2.54E-18	0.00E+00	1.29E-15	0.00E+00
TOTALS	4.96E-05		1.07E-05		5.42E-03		8.31E-05		3.56E-04		1.81E-01	
ALL NUCLIDES												
0.2500 h	1.71E-04	6.83E-04	7.29E-05	2.91E-04	1.90E-01	7.58E-01	1.28E-05	1.01E-04	1.09E-04	8.61E-04	2.86E-01	2.27E+00
1.2500 h	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	8.46E-05	7.04E-05	7.33E-04	6.23E-04	2.00E+00	1.75E+00
2.0000 h	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	4.65E-05	5.45E-05	4.17E-04	4.95E-04	1.20E+00	1.45E+00
4.0000 h	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	7.98E-05	2.84E-05	7.47E-04	2.75E-04	2.26E+00	8.66E-01
8.0000 h	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	6.53E-05	8.42E-06	6.57E-04	8.90E-05	2.17E+00	3.12E-01
8.5000 h	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	7.30E-07	2.69E-08	7.73E-06	2.86E-07	2.72E-02	1.02E-03
24.0000 h	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.20E-07	1.06E-09	1.36E-06	1.32E-08	5.21E-03	5.95E-05
96.0000 h	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	5.44E-09	1.60E-15	6.87E-08	2.21E-14	3.29E-04	1.51E-10
720.0000 h	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	8.92E-15	0.00E+00	1.23E-13	0.00E+00	8.49E-10	0.00E+00
TOTALS	1.71E-04		7.29E-05		1.90E-01		2.90E-04		2.67E-03		7.95E+00	

TRAILS -- Transport of Radioactive Material in Linear Systems, v1.0
Initial sec liquid iodine - LPZ and CR Doses

	COMP: NOT USED THIS CASE		COMP: 3 Steam Generators		COMP: Control Room VOLUME: 1.730E+05 Cu.Ft.	
INITIAL:	0.000E+00	KR-83m	0.000E+00	KR-83m Ci	0.000E+00	KR-83m
	0.000E+00	KR-85m	0.000E+00	KR-85m	0.000E+00	KR-85m
	0.000E+00	KR-85	0.000E+00	KR-85	0.000E+00	KR-85
	0.000E+00	KR-87	0.000E+00	KR-87	0.000E+00	KR-87
	0.000E+00	KR-88	0.000E+00	KR-88	0.000E+00	KR-88
	0.000E+00	KR-89	0.000E+00	KR-89	0.000E+00	KR-89
	0.000E+00	KR-90	0.000E+00	KR-90	0.000E+00	KR-90
	0.000E+00	XE-131M	0.000E+00	XE-131M	0.000E+00	XE-131M
	0.000E+00	XE-133M	0.000E+00	XE-133M	0.000E+00	XE-133M
	0.000E+00	XE-133	0.000E+00	XE-133	0.000E+00	XE-133
	0.000E+00	XE-135M	0.000E+00	XE-135M	0.000E+00	XE-135M
	0.000E+00	XE-135	0.000E+00	XE-135	0.000E+00	XE-135
	0.000E+00	XE-137	0.000E+00	XE-137	0.000E+00	XE-137
	0.000E+00	XE-138	0.000E+00	XE-138	0.000E+00	XE-138
	0.000E+00	I-131	9.510E+00	I-131	0.000E+00	I-131
	0.000E+00	I-132	1.690E+00	I-132	0.000E+00	I-132
	0.000E+00	I-133	1.240E+01	I-133	0.000E+00	I-133
	0.000E+00	I-134	2.970E-01	I-134	0.000E+00	I-134
	0.000E+00	I-135	4.560E+00	I-135	0.000E+00	I-135
ACT MULT (to uCi):	1.000E+00		1.000E+06		1.000E+00	
PRODUCTION, uCi/s:	0.000E+00	KR-83m	0.000E+00	KR-83m		
	0.000E+00	KR-85m	0.000E+00	KR-85m		
	0.000E+00	KR-85	0.000E+00	KR-85		
	0.000E+00	KR-87	0.000E+00	KR-87		
	0.000E+00	KR-88	0.000E+00	KR-88		
	0.000E+00	KR-89	0.000E+00	KR-89		
	0.000E+00	KR-90	0.000E+00	KR-90		
	0.000E+00	XE-131M	0.000E+00	XE-131M		
	0.000E+00	XE-133M	0.000E+00	XE-133M		
	0.000E+00	XE-133	0.000E+00	XE-133		
	0.000E+00	XE-135M	0.000E+00	XE-135M		
	0.000E+00	XE-135	0.000E+00	XE-135		
	0.000E+00	XE-137	0.000E+00	XE-137		
	0.000E+00	XE-138	0.000E+00	XE-138		
	0.000E+00	I-131	0.000E+00	I-131		
	0.000E+00	I-132	0.000E+00	I-132		
	0.000E+00	I-133	0.000E+00	I-133		
	0.000E+00	I-134	0.000E+00	I-134		
	0.000E+00	I-135	0.000E+00	I-135	INTAKE: 1.000E+01 CFM	
REMOVAL:	0.000E+00 /sec		2.099E-06 1/sec		1.000E+01 cfm	
NUC 1-14 REL FR:	1.000E+00		0.000E+00		INTAKE REDUCT: 0.000E+00	
NUC 15-20 REL FR:	0.000E+00		0.000E+00		INTAKE FILTER: 9.360E-01	

CASE 5

TRAILS -- Transport of Radioactive Material in Linear Systems, v1.0
Initial sec liquid iodine - LPZ and CR Doses

MULTIPLIERS====>

STEP	TIME	XPR	XREM	XRF	XPR	XREM	XRF	XPR	XREM	XRF
1	9.000E+02	0.000E+00	1.00	0.000E+00	0.000E+00	1.00	0.000E+00	50.0	50.0	0.000E+00
2	4.500E+03	0.000E+00	1.00	0.000E+00	0.000E+00	1.00	0.000E+00	1.00	70.0	0.000E+00
3	7.200E+03	0.000E+00	1.00	0.000E+00	0.000E+00	1.00	0.000E+00	70.0	70.0	1.00
4	1.440E+04	0.000E+00	1.00	0.000E+00	0.000E+00	0.596	0.000E+00	70.0	70.0	1.00
5	2.880E+04	0.000E+00	1.00	0.000E+00	0.000E+00	0.596	0.000E+00	70.0	70.0	1.00
6	3.060E+04	0.000E+00	1.00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	3.300E+03	3.300E+03	0.000E+00
7	8.640E+04	0.000E+00	1.00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	50.0	50.0	0.000E+00
8	3.456E+05	0.000E+00	1.00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	50.0	50.0	0.000E+00
9	2.592E+06	0.000E+00	1.00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	50.0	50.0	0.000E+00

	-------- CONTROL ROOM --------			---- ENVIRONMENT ---	
	X/Q	Breathing	Occupancy	X/Q	Breathing
	s/M3	M3/s		s/M3	M3/s
	1.000E-03	3.470E-04	1.000E+00	1.000E+00	3.470E-04

MULTIPLIERS====>

STEP	TIME, s				
1	9.000E+02	2.97	1.00	1.00	4.200E-05	1.00
2	4.500E+03	2.97	1.00	1.00	4.200E-05	1.00
3	7.200E+03	2.97	1.00	1.00	4.200E-05	1.00
4	1.440E+04	2.97	1.00	1.00	4.200E-05	1.00
5	2.880E+04	2.97	1.00	1.00	4.200E-05	1.00
6	3.060E+04	1.94	1.00	1.00	2.700E-05	1.00
7	8.640E+04	1.94	1.00	1.00	2.700E-05	1.00
8	3.456E+05	0.692	1.00	1.00	1.540E-05	1.00
9	2.592E+06	0.134	1.00	1.00	6.800E-06	1.00

TRAILS -- Transport of Radioactive Material in Linear Systems, v1.0
Initial sec liquid iodine - LPZ and CR Doses

		NOT USED THIS CASE		3 Steam Generators		AVERAGE		CONTROL ROOM		
		CURRENT	INTEGRD	CURRENT	INTEGRD	RELEASED	RELEASE	CURRENT	CURRENT	INTEGRD
STEP	TIME	uCi	uCi-sec	uCi	uCi-sec	uCi	uCi/sec	uCi	uCi/cc	uCi-sec
I-131	INITIAL	0.000E+00		9.510E+06				0.000E+00		
1	0.2500 h	0.000E+00	0.000E+00	9.484E+06	5.547E+09	1.794E+04	1.993E+01	1.230E+01	2.511E-09	5.575E+03
2	1.2500 h	0.000E+00	0.000E+00	9.378E+06	3.395E+10	7.126E+04	1.980E+01	1.050E+01	2.143E-09	4.090E+04
3	2.0000 h	0.000E+00	0.000E+00	9.300E+06	2.522E+10	5.293E+04	1.960E+01	1.176E+01	2.401E-09	3.011E+04
4	4.0000 h	0.000E+00	0.000E+00	9.151E+06	6.642E+10	8.310E+04	1.154E+01	1.131E+01	2.308E-09	8.291E+04
5	8.0000 h	0.000E+00	0.000E+00	8.859E+06	1.297E+11	1.622E+05	1.126E+01	1.070E+01	2.184E-09	1.577E+05
6	8.5000 h	0.000E+00	0.000E+00	8.843E+06	1.593E+10	0.000E+00	0.000E+00	3.494E-02	7.131E-12	3.353E+03
7	24.0000 h	0.000E+00	0.000E+00	8.365E+06	4.800E+11	0.000E+00	0.000E+00	2.248E-03	4.588E-13	6.648E+02
8	96.0000 h	0.000E+00	0.000E+00	6.458E+06	1.910E+12	0.000E+00	0.000E+00	6.562E-09	1.339E-18	4.572E+01
9	720.0000 h	0.000E+00	0.000E+00	6.855E+05	5.785E+12	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.335E-04
I-131	TOTALS		0.000E+00		8.455E+12	3.874E+05				3.213E+05
I-132	INITIAL	0.000E+00		1.690E+06				0.000E+00		
1	0.2500 h	0.000E+00	0.000E+00	1.564E+06	1.464E+09	3.072E+03	3.414E+00	2.030E+00	4.145E-10	9.318E+02
2	1.2500 h	0.000E+00	0.000E+00	1.149E+06	4.845E+09	1.017E+04	2.825E+00	1.288E+00	2.630E-10	5.853E+03
3	2.0000 h	0.000E+00	0.000E+00	9.111E+05	2.768E+09	5.811E+03	2.152E+00	1.156E+00	2.360E-10	3.288E+03
4	4.0000 h	0.000E+00	0.000E+00	4.942E+05	4.907E+09	6.139E+03	8.526E-01	6.243E-01	1.274E-10	6.069E+03
5	8.0000 h	0.000E+00	0.000E+00	1.454E+05	4.105E+09	5.136E+03	3.567E-01	2.022E-01	4.127E-11	4.927E+03
6	8.5000 h	0.000E+00	0.000E+00	1.251E+05	2.430E+08	0.000E+00	0.000E+00	5.689E-04	1.161E-13	6.179E+01
7	24.0000 h	0.000E+00	0.000E+00	1.171E+03	1.480E+09	0.000E+00	0.000E+00	3.624E-07	7.397E-17	4.311E+00
8	96.0000 h	0.000E+00	0.000E+00	4.419E-07	1.399E+07	0.000E+00	0.000E+00	5.171E-22	1.056E-31	2.748E-03
9	720.0000 h	0.000E+00	0.000E+00	0.000E+00	5.280E-03	0.000E+00	0.000E+00	0.000E+00	0.000E+00	3.921E-18
I-132	TOTALS		0.000E+00		1.983E+10	3.033E+04				2.113E+04
I-133	INITIAL	0.000E+00		1.240E+07				0.000E+00		
1	0.2500 h	0.000E+00	0.000E+00	1.227E+07	1.110E+10	2.331E+04	2.590E+01	1.592E+01	3.249E-09	7.225E+03
2	1.2500 h	0.000E+00	0.000E+00	1.178E+07	4.330E+10	9.088E+04	2.524E+01	1.319E+01	2.693E-09	5.217E+04
3	2.0000 h	0.000E+00	0.000E+00	1.143E+07	3.133E+10	6.576E+04	2.436E+01	1.445E+01	2.950E-09	3.738E+04
4	4.0000 h	0.000E+00	0.000E+00	1.059E+07	7.924E+10	9.912E+04	1.377E+01	1.310E+01	2.675E-09	9.876E+04
5	8.0000 h	0.000E+00	0.000E+00	9.106E+06	1.416E+11	1.771E+05	1.230E+01	1.108E+01	2.261E-09	1.715E+05
6	8.5000 h	0.000E+00	0.000E+00	8.956E+06	1.626E+10	0.000E+00	0.000E+00	3.563E-02	7.274E-12	3.462E+03
7	24.0000 h	0.000E+00	0.000E+00	5.343E+06	3.903E+11	0.000E+00	0.000E+00	1.446E-03	2.952E-13	5.953E+02
8	96.0000 h	0.000E+00	0.000E+00	4.850E+05	5.248E+11	0.000E+00	0.000E+00	4.963E-10	1.013E-19	2.518E+01
9	720.0000 h	0.000E+00	0.000E+00	4.514E-04	5.239E+10	0.000E+00	0.000E+00	0.000E+00	0.000E+00	8.642E-06
I-133	TOTALS		0.000E+00		1.290E+12	4.562E+05				3.711E+05
I-134	INITIAL	0.000E+00		2.970E+05				0.000E+00		
1	0.2500 h	0.000E+00	0.000E+00	2.433E+05	2.423E+08	5.086E+02	5.651E-01	3.168E-01	6.466E-11	1.483E+02
2	1.2500 h	0.000E+00	0.000E+00	1.095E+05	6.033E+08	1.266E+03	3.518E-01	1.238E-01	2.527E-11	7.342E+02
3	2.0000 h	0.000E+00	0.000E+00	6.019E+04	2.225E+08	4.670E+02	1.730E-01	7.743E-02	1.581E-11	2.636E+02
4	4.0000 h	0.000E+00	0.000E+00	1.227E+04	2.170E+08	2.714E+02	3.770E-02	1.701E-02	3.472E-12	2.699E+02
5	8.0000 h	0.000E+00	0.000E+00	5.102E+02	5.326E+07	6.663E+01	4.627E-03	1.269E-03	2.590E-13	6.941E+01
6	8.5000 h	0.000E+00	0.000E+00	3.436E+02	7.586E+05	0.000E+00	0.000E+00	2.795E-06	5.706E-16	3.724E-01
7	24.0000 h	0.000E+00	0.000E+00	1.638E-03	1.565E+06	0.000E+00	0.000E+00	9.065E-13	1.850E-22	1.044E-02
8	96.0000 h	0.000E+00	0.000E+00	3.120E-28	7.460E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	3.385E-09
9	720.0000 h	0.000E+00	0.000E+00	0.000E+00	1.421E-24	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
I-134	TOTALS		0.000E+00		1.341E+09	2.580E+03				1.486E+03

TRAILS -- Transport of Radioactive Material in Linear Systems, v1.0
Initial sec liquid iodine - LPZ and CR Doses

		NOT USED THIS CASE		3 Steam Generators		AVERAGE		CONTROL ROOM		
		CURRENT	INTEGRD	CURRENT	INTEGRD	RELEASED	RELEASE	CURRENT	CURRENT	INTEGRD
STEP	TIME	uCi	uCi-sec	uCi	uCi-sec	uCi	uCi/sec	uCi	uCi/cc	uCi-sec
I-135	INITIAL	0.000E+00		4.540E+06				0.000E+00		
1	0.2500 h	0.000E+00	0.000E+00	4.414E+06	4.029E+09	8.457E+03	9.397E+00	5.726E+00	1.169E-09	2.606E+03
2	1.2500 h	0.000E+00	0.000E+00	3.945E+06	1.503E+10	3.155E+04	8.764E+00	4.418E+00	9.018E-10	1.812E+04
3	2.0000 h	0.000E+00	0.000E+00	3.626E+06	2.021E+10	2.144E+04	7.941E+00	4.589E+00	9.368E-10	1.217E+04
4	4.0000 h	0.000E+00	0.000E+00	2.913E+06	2.345E+10	2.933E+04	4.074E+00	3.617E+00	7.384E-10	2.914E+04
5	8.0000 h	0.000E+00	0.000E+00	1.881E+06	3.398E+10	4.251E+04	2.952E+00	2.342E+00	4.781E-10	4.085E+04
6	8.5000 h	0.000E+00	0.000E+00	1.785E+06	3.299E+09	0.000E+00	0.000E+00	7.271E-03	1.484E-12	7.278E+02
7	24.0000 h	0.000E+00	0.000E+00	3.513E+05	4.922E+10	0.000E+00	0.000E+00	9.735E-05	1.987E-14	9.280E+01
8	96.0000 h	0.000E+00	0.000E+00	1.847E+02	1.205E+10	0.000E+00	0.000E+00	1.935E-13	3.951E-23	1.259E+00
9	720.0000 h	0.000E+00	0.000E+00	7.037E-27	6.342E+06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.504E-09
I-135	TOTALS		0.000E+00		1.513E+11	1.333E+05				1.037E+05
ALL NUCLIDES		0.000E+00		6.865E+05				0.000E+00	0.000E+00	

@ STEP 9

TRAILS -- Transport of Radioactive Material in Linear Systems, v1.0
Initial sec liquid iodine - LPZ and CR Doses

	ENVIRONMENT						CONTROL ROOM					
	PHOTON-SUBMG		BETA-SUBMG		THYROID-INHAL		PHOTON-SUBMG		BETA-SUBMG		THYROID-INHAL	
	DOSE mrem	DOSE RATE mrem/hr	DOSE mrem	DOSE RATE mrem/hr	DOSE mrem	DOSE RATE mrem/hr	DOSE mrem	DOSE RATE mrem/hr	DOSE mrem	DOSE RATE mrem/hr	DOSE mrem	DOSE RATE mrem/hr
I-131												
0.2500 h	7.18E-05	2.87E-04	3.30E-05	1.32E-04	3.87E-01	1.55E+00	5.45E-06	4.33E-05	4.99E-05	3.96E-04	5.84E-01	4.64E+00
1.2500 h	2.85E-04	2.85E-04	1.31E-04	1.31E-04	1.54E+00	1.54E+00	4.00E-05	3.69E-05	3.66E-04	3.38E-04	4.29E+00	3.96E+00
2.0000 h	2.12E-04	2.82E-04	9.74E-05	1.30E-04	1.14E+00	1.52E+00	2.94E-05	4.14E-05	2.69E-04	3.79E-04	3.16E+00	4.44E+00
4.0000 h	3.33E-04	1.66E-04	1.53E-04	7.65E-05	1.79E+00	8.96E-01	8.10E-05	3.98E-05	7.41E-04	3.64E-04	8.69E+00	4.27E+00
8.0000 h	6.49E-04	1.62E-04	2.99E-04	7.46E-05	3.50E+00	8.75E-01	1.54E-04	3.76E-05	1.41E-03	3.44E-04	1.65E+01	4.04E+00
8.5000 h	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.28E-06	1.23E-07	3.00E-05	1.12E-06	3.52E-01	1.32E-02
24.0000 h	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	6.50E-07	7.91E-09	5.94E-06	7.24E-08	6.97E-02	8.48E-04
96.0000 h	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	4.47E-08	2.31E-14	4.09E-07	2.11E-13	4.79E-03	2.48E-09
720.0000 h	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.30E-13	0.00E+00	1.19E-12	0.00E+00	1.40E-08	0.00E+00
TOTALS	1.55E-03		7.13E-04		8.36E+00		3.14E-04		2.87E-03		3.37E+01	
I-132												
0.2500 h	7.09E-05	2.96E-04	1.46E-05	5.82E-05	2.40E-03	9.58E-03	5.48E-06	4.30E-05	2.14E-05	1.68E-04	3.53E-03	2.77E-02
1.2500 h	2.45E-04	2.45E-04	4.82E-05	4.82E-05	7.93E-03	7.93E-03	3.44E-05	2.73E-05	1.35E-04	1.07E-04	2.22E-02	1.76E-02
2.0000 h	1.40E-04	1.86E-04	2.75E-05	3.67E-05	4.53E-03	6.04E-03	1.93E-05	2.45E-05	7.57E-05	9.58E-05	1.25E-02	1.58E-02
4.0000 h	1.48E-04	7.38E-05	2.91E-05	1.45E-05	4.79E-03	2.39E-03	3.57E-05	1.32E-05	1.40E-04	5.17E-05	2.30E-02	8.52E-03
8.0000 h	1.24E-04	3.09E-05	2.43E-05	6.08E-06	4.00E-03	1.00E-03	2.90E-05	4.28E-06	1.13E-04	1.68E-05	1.87E-02	2.76E-03
8.5000 h	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.63E-07	1.20E-08	1.42E-06	4.72E-08	2.34E-04	7.76E-06
24.0000 h	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.53E-08	7.67E-12	9.92E-08	3.00E-11	1.63E-05	4.94E-09
96.0000 h	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.61E-11	1.09E-26	6.32E-11	4.29E-26	1.04E-08	7.05E-24
720.0000 h	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.30E-26	0.00E+00	9.02E-26	0.00E+00	1.49E-23	0.00E+00
TOTALS	7.30E-04		1.44E-04		2.36E-02		1.24E-04		4.86E-04		8.01E-02	
I-133												
0.2500 h	1.48E-04	5.94E-04	9.23E-05	3.69E-04	1.36E-01	5.43E-01	1.12E-05	8.92E-05	1.39E-04	1.10E-03	2.05E-01	1.62E+00
1.2500 h	5.79E-04	5.79E-04	3.60E-04	3.60E-04	5.30E-01	5.30E-01	8.12E-05	7.39E-05	1.00E-03	9.14E-04	1.48E+00	1.35E+00
2.0000 h	4.19E-04	5.59E-04	2.60E-04	3.47E-04	3.83E-01	5.11E-01	5.82E-05	8.10E-05	7.19E-04	1.00E-03	1.06E+00	1.47E+00
4.0000 h	6.31E-04	3.16E-04	3.92E-04	1.96E-04	5.78E-01	2.89E-01	1.54E-04	7.34E-05	1.90E-03	9.08E-04	2.80E+00	1.34E+00
8.0000 h	1.13E-03	2.82E-04	7.01E-04	1.75E-04	1.03E+00	2.58E-01	2.67E-04	6.20E-05	3.30E-03	7.67E-04	4.86E+00	1.13E+00
8.5000 h	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	5.39E-06	2.00E-07	6.66E-05	2.47E-06	9.81E-02	3.63E-03
24.0000 h	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	9.26E-07	8.10E-09	1.15E-05	1.00E-07	1.69E-02	1.48E-04
96.0000 h	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.92E-08	2.78E-15	4.84E-07	3.44E-14	7.13E-04	5.06E-11
720.0000 h	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.34E-14	0.00E+00	1.66E-13	0.00E+00	2.45E-10	0.00E+00
TOTALS	2.91E-03		1.81E-03		2.66E+00		5.77E-04		7.14E-03		1.05E+01	
I-134												
0.2500 h	1.40E-05	5.61E-05	2.99E-06	1.19E-05	1.85E-04	7.41E-04	9.98E-07	7.68E-06	4.23E-06	3.25E-05	2.63E-04	2.02E-03
1.2500 h	3.49E-05	3.49E-05	7.43E-06	7.43E-06	4.61E-04	4.61E-04	4.94E-06	3.00E-06	2.09E-05	1.27E-05	1.30E-03	7.89E-04
2.0000 h	1.29E-05	1.72E-05	2.74E-06	3.66E-06	1.70E-04	2.27E-04	1.78E-06	1.88E-06	7.52E-06	7.95E-06	4.67E-04	4.94E-04
4.0000 h	7.48E-06	3.74E-06	1.59E-06	7.97E-07	9.89E-05	4.94E-05	1.82E-06	4.12E-07	7.70E-06	1.75E-06	4.78E-04	1.08E-04
8.0000 h	1.84E-06	4.59E-07	3.91E-07	9.78E-08	2.43E-05	6.07E-06	4.67E-07	3.07E-08	1.98E-06	1.30E-07	1.23E-04	8.09E-06
8.5000 h	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.51E-09	6.77E-11	1.06E-08	2.87E-10	6.60E-07	1.78E-08
24.0000 h	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	7.03E-11	2.20E-17	2.98E-10	9.31E-17	1.85E-08	5.78E-15
96.0000 h	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.28E-17	0.00E+00	9.66E-17	0.00E+00	5.99E-15	0.00E+00
720.0000 h	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
TOTALS	7.11E-05		1.51E-05		9.40E-04		1.00E-05		4.24E-05		2.63E-03	

IRAILS -- Transport of Radioactive Material in Linear Systems, v1.0
Initial sec liquid iodine - LPZ and CR Doses

	ENVIRONMENT						CONTROL ROOM					
	PHOTON-SUBMG		BETA-SUBMG		THYROID-INHAL		PHOTON-SUBMG		BETA-SUBMG		THYROID-INHAL	
	DOSE mrem	DOSE RATE mrem/hr	DOSE mrem	DOSE RATE mrem/hr	DOSE mrem	DOSE RATE mrem/hr	DOSE mrem	DOSE RATE mrem/hr	DOSE mrem	DOSE RATE mrem/hr	DOSE mrem	DOSE RATE mrem/hr
I-135												
0.2500 h	1.40E-04	5.59E-04	3.01E-05	1.20E-04	1.53E-02	6.11E-02	1.05E-05	8.33E-05	4.51E-05	3.57E-04	2.29E-02	1.81E-01
1.2500 h	5.22E-04	5.22E-04	1.12E-04	1.12E-04	5.70E-02	5.70E-02	7.32E-05	6.42E-05	3.14E-04	2.75E-04	1.59E-01	1.40E-01
2.0000 h	3.55E-04	4.73E-04	7.64E-05	1.02E-04	3.87E-02	5.17E-02	4.92E-05	6.67E-05	2.11E-04	2.86E-04	1.07E-01	1.45E-01
4.0000 h	4.85E-04	2.43E-04	1.04E-04	5.22E-05	5.30E-02	2.65E-02	1.38E-04	5.26E-05	5.04E-04	2.25E-04	2.56E-01	1.14E-01
8.0000 h	7.03E-04	1.76E-04	1.51E-04	3.79E-05	7.68E-02	1.92E-02	1.65E-04	3.41E-05	7.07E-04	1.46E-04	3.59E-01	7.41E-02
8.5000 h	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.94E-06	1.06E-07	1.26E-05	4.53E-07	6.39E-03	2.30E-04
24.0000 h	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.75E-07	1.42E-09	1.61E-06	6.07E-09	8.15E-04	3.08E-06
96.0000 h	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	5.09E-09	2.81E-18	2.18E-08	1.21E-17	1.11E-05	6.12E-15
720.0000 h	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.01E-17	0.00E+00	4.33E-17	0.00E+00	2.20E-14	0.00E+00
TOTALS	2.20E-03		4.75E-04		2.41E-01		4.19E-04		1.79E-03		9.11E-01	
ALL NUCLIDES												
0.2500 h	4.48E-04	1.79E-03	1.73E-04	6.92E-04	5.41E-01	2.16E+00	3.37E-05	2.66E-04	2.60E-04	2.06E-03	8.16E-01	6.48E+00
1.2500 h	1.67E-03	1.67E-03	6.59E-04	6.59E-04	2.13E+00	2.13E+00	2.34E-04	2.05E-04	1.84E-03	1.65E-03	5.95E+00	5.47E+00
2.0000 h	1.14E-03	1.52E-03	4.64E-04	6.19E-04	1.57E+00	2.09E+00	1.58E-04	2.15E-04	1.28E-03	1.77E-03	4.33E+00	6.07E+00
4.0000 h	1.60E-03	8.02E-04	6.81E-04	3.40E-04	2.43E+00	1.21E+00	3.90E-04	1.79E-04	3.29E-03	1.55E-03	1.18E+01	5.73E+00
8.0000 h	2.61E-03	6.51E-04	1.18E-03	2.94E-04	4.61E+00	1.15E+00	6.15E-04	1.38E-04	5.53E-03	1.27E-03	2.18E+01	5.24E+00
8.5000 h	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.20E-05	4.40E-07	1.11E-04	4.09E-06	4.56E-01	1.71E-02
24.0000 h	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.98E-06	1.74E-08	1.91E-05	1.79E-07	8.74E-02	9.99E-04
96.0000 h	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	8.90E-08	2.59E-14	9.15E-07	2.46E-13	5.52E-03	2.53E-09
720.0000 h	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.44E-13	0.00E+00	1.36E-12	0.00E+00	1.42E-08	0.00E+00
TOTALS	7.46E-03		3.15E-03		1.13E+01		1.44E-03		1.23E-02		4.52E+01	

TRAILS -- Transport of Radioactive Material in Linear Systems, v1.0
pri-to-sec leak iodines in U1 LRA assuming 1% F.F. w/ 35 min isol

	COMP: RCS 1% FF PER SRP		COMP: 3 Steam Generators		COMP: Control Room	
					VOLUME: 1.730E+05 Cu.ft.	
INITIAL:	0.000E+00	KR-83m Ci	0.000E+00	KR-83m	0.000E+00	KR-83m
	0.000E+00	KR-85m	0.000E+00	KR-85m	0.000E+00	KR-85m
	0.000E+00	KR-85	0.000E+00	KR-85	0.000E+00	KR-85
	0.000E+00	KR-87	0.000E+00	KR-87	0.000E+00	KR-87
	0.000E+00	KR-88	0.000E+00	KR-88	0.000E+00	KR-88
	0.000E+00	KR-89	0.000E+00	KR-89	0.000E+00	KR-89
	0.000E+00	KR-90	0.000E+00	KR-90	0.000E+00	KR-90
	0.000E+00	XE-131M	0.000E+00	XE-131M	0.000E+00	XE-131M
	0.000E+00	XE-133M	0.000E+00	XE-133M	0.000E+00	XE-133M
	0.000E+00	XE-133	0.000E+00	XE-133	0.000E+00	XE-133
	0.000E+00	XE-135M	0.000E+00	XE-135M	0.000E+00	XE-135M
	0.000E+00	XE-135	0.000E+00	XE-135	0.000E+00	XE-135
	0.000E+00	XE-137	0.000E+00	XE-137	0.000E+00	XE-137
	0.000E+00	XE-138	0.000E+00	XE-138	0.000E+00	XE-138
	8.210E+04	I-131	0.000E+00	I-131	0.000E+00	I-131
	1.040E+05	I-132	0.000E+00	I-132	0.000E+00	I-132
	1.530E+05	I-133	0.000E+00	I-133	0.000E+00	I-133
	1.790E+05	I-134	0.000E+00	I-134	0.000E+00	I-134
	1.390E+05	I-135	0.000E+00	I-135	0.000E+00	I-135
ACT MULT (to uCi):	1.000E+06		1.000E+00		1.000E+00	
PRODUCTION, uCi/s:	0.000E+00	KR-83m	0.000E+00	KR-83m		
	0.000E+00	KR-85m	0.000E+00	KR-85m		
	0.000E+00	KR-85	0.000E+00	KR-85		
	0.000E+00	KR-87	0.000E+00	KR-87		
	0.000E+00	KR-88	0.000E+00	KR-88		
	0.000E+00	KR-89	0.000E+00	KR-89		
	0.000E+00	KR-90	0.000E+00	KR-90		
	0.000E+00	XE-131M	0.000E+00	XE-131M		
	0.000E+00	XE-133M	0.000E+00	XE-133M		
	0.000E+00	XE-133	0.000E+00	XE-133		
	0.000E+00	XE-135M	0.000E+00	XE-135M		
	0.000E+00	XE-135	0.000E+00	XE-135		
	0.000E+00	XE-137	0.000E+00	XE-137		
	0.000E+00	XE-138	0.000E+00	XE-138		
	0.000E+00	I-131	0.000E+00	I-131		
	0.000E+00	I-132	0.000E+00	I-132		
	0.000E+00	I-133	0.000E+00	I-133		
	0.000E+00	I-134	0.000E+00	I-134		
	0.000E+00	I-135	0.000E+00	I-135	INTAKE: 1.000E+01 CFM	
REMOVAL:	3.564E-07	1/sec	2.099E-06	1/sec	1.000E+01	cfm
NUC 1-14 REL FR:	1.000E+00		0.000E+00		INTAKE REDUCT: 0.000E+00	
NUC 15-20 REL FR:	1.000E+00		0.000E+00		INTAKE FILTER: 9.360E-01	

CASE 18

TRAILS -- Transport of Radioactive Material in Linear Systems, v1.0
pri-to-sec leak iodines in U1 LRA assuming 1% F.F. w/ 35 min isol

MULTIPLIERS====>

STEP	TIME	XPR	XREM	XRF	XPR	XREM	XRF	XPR	XREM	XRF
1	2.100E+03	0.000E+00	1.00	0.000E+00	0.000E+00	1.00	0.000E+00	50.0	50.0	0.000E+00
2	5.700E+03	0.000E+00	1.00	0.000E+00	0.000E+00	1.00	0.000E+00	1.00	70.0	0.000E+00
3	7.200E+03	0.000E+00	1.00	0.000E+00	0.000E+00	1.00	0.000E+00	70.0	70.0	1.00
4	1.440E+04	0.000E+00	1.00	0.000E+00	0.000E+00	0.596	0.000E+00	70.0	70.0	1.00
5	2.880E+04	0.000E+00	1.00	0.000E+00	0.000E+00	0.596	0.000E+00	70.0	70.0	1.00
6	3.060E+04	0.000E+00	1.00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	3.300E+03	3.300E+03	0.000E+00
7	8.640E+04	0.000E+00	1.00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	50.0	50.0	0.000E+00
8	3.456E+05	0.000E+00	1.00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	50.0	50.0	0.000E+00
9	2.592E+06	0.000E+00	1.00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	50.0	50.0	0.000E+00

	CONTROL ROOM			ENVIRONMENT	
	X/Q	Breathing	Occupancy	X/Q	Breathing
	s/M3	M3/s		s/M3	M3/s
	1.000E-03	3.470E-04	1.000E+00	1.000E+00	3.470E-04

MULTIPLIERS====>

STEP	TIME, s				
1	2.100E+03	2.97	1.00	1.00	4.200E-05 1.00
2	5.700E+03	2.97	1.00	1.00	4.200E-05 1.00
3	7.200E+03	2.97	1.00	1.00	4.200E-05 1.00
4	1.440E+04	2.97	1.00	1.00	4.200E-05 1.00
5	2.880E+04	2.97	1.00	1.00	4.200E-05 1.00
6	3.060E+04	1.94	1.00	1.00	2.700E-05 1.00
7	8.640E+04	1.94	1.00	1.00	2.700E-05 1.00
8	3.456E+05	0.692	1.00	1.00	1.540E-05 1.00
9	2.592E+06	0.154	1.00	1.00	6.800E-06 1.00

TRAILS -- Transport of Radioactive Material in Linear Systems, v1.0
pri-to-sec leak iodines in U1 LRA assuming 1% F.F. w/ 35 min isol

		RCS 1% FF PER SRP		3 Steam Generators		AVERAGE		CONTROL ROOM		
		CURRENT	INTEGRD	CURRENT	INTEGRD	RELEASED	RELEASE	CURRENT	CURRENT	INTEGRD
STEP	TIME	uCi	uCi-sec	uCi	uCi-sec	uCi	uCi/sec	uCi	uCi/cc	uCi-sec
I-131	INITIAL	9.210E+10		0.000E+00				0.000E+00		
1	0.5833 h	8.187E+10	1.722E+14	6.116E+07	6.432E+10	1.350E+05	6.429E+01	8.990E+01	1.835E-08	9.602E+04
2	1.5833 h	8.147E+10	2.940E+14	1.647E+08	4.070E+11	8.543E+05	2.373E+02	8.088E+01	1.651E-08	3.067E+05
3	2.0000 h	8.130E+10	1.221E+14	2.073E+08	2.715E+11	5.857E+05	3.905E+02	1.079E+02	2.204E-08	1.420E+05
4	4.0000 h	8.051E+10	5.825E+14	4.099E+08	2.223E+12	2.784E+06	3.867E+02	2.040E+02	4.164E-08	1.151E+06
5	8.0000 h	7.896E+10	1.188E+15	7.995E+08	8.733E+12	1.092E+07	7.587E+02	5.124E+02	1.046E-07	5.517E+06
6	8.5000 h	7.877E+10	1.420E+14	8.486E+08	1.483E+12	0.000E+00	0.000E+00	1.673E+00	3.416E-10	1.606E+05
7	24.0000 h	7.303E+10	4.233E+15	2.270E+09	8.790E+13	0.000E+00	0.000E+00	1.077E-01	2.198E-11	3.184E+04
8	96.0000 h	5.141E+10	1.597E+16	6.728E+09	1.234E+15	0.000E+00	0.000E+00	3.143E-07	6.416E-17	2.190E+03
9	720.0000 h	2.454E+09	3.615E+16	3.726E+07	1.592E+16	0.000E+00	0.000E+00	0.000E+00	0.000E+00	6.393E-03
I-131	TOTALS		5.881E+16		1.726E+16	1.528E+07				7.408E+06
I-132	INITIAL	1.040E+11		0.000E+00				0.000E+00		
1	0.5833 h	8.717E+10	2.002E+14	6.512E+07	7.263E+10	1.525E+05	7.260E+01	9.333E+01	1.905E-08	1.025E+05
2	1.5833 h	6.441E+10	2.708E+14	1.302E+08	3.663E+11	7.689E+05	2.136E+02	6.247E+01	1.275E-08	2.754E+05
3	2.0000 h	5.678E+10	9.077E+13	1.448E+08	2.070E+11	4.344E+05	2.896E+02	7.421E+01	1.515E-08	1.028E+05
4	4.0000 h	3.100E+10	3.067E+14	1.578E+08	1.133E+12	1.417E+06	1.969E+02	7.924E+01	1.617E-08	5.556E+05
5	8.0000 h	9.238E+09	2.538E+14	9.354E+07	1.842E+12	2.305E+06	1.600E+02	6.794E+01	1.387E-08	1.032E+06
6	8.5000 h	7.940E+09	1.543E+13	8.555E+07	1.611E+11	0.000E+00	0.000E+00	1.912E-01	3.902E-11	2.076E+04
7	24.0000 h	7.288E+07	9.359E+13	2.265E+06	1.393E+12	0.000E+00	0.000E+00	1.218E-04	2.485E-14	1.449E+03
8	96.0000 h	2.508E-02	8.669E+11	3.282E-03	3.075E+10	0.000E+00	0.000E+00	1.737E-19	3.547E-29	9.232E-01
9	720.0000 h	0.000E+00	2.983E+02	0.000E+00	4.048E+01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.317E-15
I-132	TOTALS		1.237E+15		5.206E+12	5.078E+06				2.091E+06
I-133	INITIAL	1.530E+11		0.000E+00				0.000E+00		
1	0.5833 h	1.499E+11	3.181E+14	1.120E+08	1.185E+11	2.487E+05	1.134E+02	1.642E+02	3.352E-08	1.759E+05
2	1.5833 h	1.448E+11	5.306E+14	2.928E+08	7.328E+11	1.538E+06	4.273E+02	1.434E+02	2.928E-08	5.520E+05
3	2.0000 h	1.428E+11	2.157E+14	3.641E+08	4.929E+11	1.035E+06	6.898E+02	1.892E+02	3.862E-08	2.501E+05
4	4.0000 h	1.332E+11	9.932E+14	6.783E+08	3.781E+12	4.731E+06	6.570E+02	3.372E+02	6.883E-08	1.944E+06
5	8.0000 h	1.160E+11	1.792E+15	1.175E+09	1.354E+13	1.693E+07	1.176E+03	7.555E+02	1.542E-07	8.411E+06
6	8.5000 h	1.140E+11	2.070E+14	1.228E+09	2.163E+12	0.000E+00	0.000E+00	2.431E+00	4.962E-10	2.362E+05
7	24.0000 h	6.668E+10	4.924E+15	2.072E+09	9.841E+13	0.000E+00	0.000E+00	9.865E-02	2.014E-11	4.061E+04
8	96.0000 h	5.518E+09	6.362E+15	7.221E+08	3.908E+14	0.000E+00	0.000E+00	3.386E-08	6.911E-18	1.718E+03
9	720.0000 h	2.307E+00	5.740E+14	3.502E+00	1.001E+14	0.000E+00	0.000E+00	0.000E+00	0.000E+00	5.895E-04
I-133	TOTALS		1.592E+16		6.101E+14	2.449E+07				1.161E+07
I-134	INITIAL	1.790E+11		0.000E+00				0.000E+00		
1	0.5833 h	1.128E+11	3.010E+14	8.426E+07	1.039E+11	2.181E+05	1.038E+02	1.169E+02	2.386E-08	1.342E+05
2	1.5833 h	5.109E+10	2.805E+14	1.033E+08	3.651E+11	7.663E+05	2.129E+02	4.829E+01	9.858E-09	2.764E+05
3	2.0000 h	3.673E+10	6.528E+13	9.367E+07	1.483E+11	3.112E+05	2.075E+02	4.728E+01	9.651E-09	7.162E+04
4	4.0000 h	7.538E+09	1.327E+14	3.838E+07	4.646E+11	5.812E+05	8.072E+01	2.141E+01	4.370E-09	2.173E+05
5	8.0000 h	3.175E+08	3.283E+13	3.215E+06	2.122E+11	2.655E+05	1.844E+01	4.312E+00	8.802E-10	1.176E+05
6	8.5000 h	2.137E+08	4.719E+11	2.302E+06	4.721E+09	0.000E+00	0.000E+00	9.500E-03	1.939E-12	1.266E+03
7	24.0000 h	9.987E+02	9.715E+11	3.103E+01	1.206E+10	0.000E+00	0.000E+00	3.081E-09	6.289E-19	3.548E+01
8	96.0000 h	1.734E-22	4.540E+06	2.270E-23	1.487E+05	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.151E-05
9	720.0000 h	0.000E+00	7.885E-19	0.000E+00	1.046E-19	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
I-134	TOTALS		8.138E+14		1.311E+12	2.142E+06				8.185E+05

TRAILS -- Transport of Radioactive Material in Linear Systems, v1.0
pri-to-sec peak iodines in U1 LRA assuming 1% F.F. w/ 35 min isol

		RCS 1% FF PER SRP		3 Steam Generators		AVERAGE		CONTROL ROOM		
		CURRENT	INTEGRD	CURRENT	INTEGRD	RELEASED	RELEASE	CURRENT	CURRENT	INTEGRD
STEP	TIME	uCi	uCi-sec	uCi	uCi-sec	uCi	uCi/sec	uCi	uCi/cc	uCi-sec
I-135	INITIAL	1.390E+11		0.000E+00				0.000E+00		
1	0.3833 h	1.307E+11	2.830E+14	9.761E+07	1.047E+11	2.198E+05	1.047E+02	1.422E+02	2.902E-08	1.533E+05
2	1.9833 h	1.175E+11	4.463E+14	2.375E+08	6.130E+11	1.287E+06	3.574E+02	1.157E+02	2.361E-08	4.613E+05
3	3.0000 h	1.124E+11	1.724E+14	2.867E+08	3.936E+11	8.265E+05	5.510E+02	1.484E+02	3.029E-08	1.986E+05
4	4.0000 h	9.091E+10	7.292E+14	4.629E+08	2.754E+1	3.446E+06	4.786E+02	2.300E+02	4.694E-08	1.396E+06
5	8.0000 h	5.946E+10	1.067E+15	6.020E+08	7.932E+12	9.923E+06	6.891E+02	3.938E+02	8.039E-08	4.756E+06
6	6.3000 h	5.638E+10	1.042E+14	6.075E+08	1.089E+12	0.000E+00	0.000E+00	1.222E+00	2.495E-10	1.224E+05
7	24.0000 h	1.088E+10	1.543E+15	3.381E+08	2.813E+13	0.000E+00	0.000E+00	1.637E-02	3.341E-12	1.560E+04
8	96.0000 h	5.216E+08	3.688E+14	6.826E+05	1.609E+13	0.000E+00	0.000E+00	3.234E-11	6.643E-21	2.117E+02
9	720.0000 h	8.921E-23	1.769E+11	1.335E-22	2.560E+10	0.000E+00	0.000E+00	0.000E+00	0.000E+00	4.210E-07
I-135	TOTALS		4.714E+15		5.714E+13	1.570E+07				7.103E+06
ALL NUCLIDES		2.454E+09		3.726E+09				0.000E+00	0.000E+00	

@ STEP 9

TRAILS -- Transport of Radioactive Material in Linear Systems, v1.0
pri-to-sec leak iodines in U1 LRA assuming 1% F.F. w/ 35 min isol

	ENVIRONMENT						CONTROL ROOM					
	PHOTON-SUBMG		BETA-SUBMG		THYROID-INHAL		PHOTON-SUBMG		BETA-SUBMG		THYROID-INHAL	
	DOSE mrem	DOSE RATE mrem/hr	DOSE mrem	DOSE RATE mrem/hr	DOSE mrem	DOSE RATE mrem/hr	DOSE mrem	DOSE RATE mrem/hr	DOSE mrem	DOSE RATE mrem/hr	DOSE mrem	DOSE RATE mrem/hr
I-131												
0.5933 h	5.40E-04	9.26E-04	2.48E-04	4.26E-04	2.91E+00	4.99E+00	9.39E-05	3.16E-04	8.59E-04	2.89E-03	1.01E+01	3.39E+01
1.5833 h	3.42E-03	3.42E-03	1.57E-03	1.57E-03	1.84E+01	1.84E+01	3.00E-04	2.85E-04	2.74E-03	2.60E-03	3.22E+01	3.05E+01
2.0000 h	2.34E-03	5.83E-03	1.08E-03	2.59E-03	1.26E+01	3.03E+01	1.39E-04	3.80E-04	1.27E-03	3.48E-03	1.49E+01	4.07E+01
4.0000 h	1.11E-02	5.57E-03	5.12E-03	2.56E-03	6.00E+01	3.00E+01	1.13E-03	7.18E-04	1.03E-02	6.57E-03	1.21E+02	7.70E+01
8.0000 h	4.37E-02	1.09E-02	2.01E-02	5.03E-03	2.36E+02	5.89E+01	5.39E-03	1.80E-03	4.93E-02	1.65E-02	5.78E+02	1.93E+02
8.5000 h	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.57E-04	5.89E-06	1.44E-03	5.39E-05	1.68E+01	6.32E-01
24.0000 h	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.11E-05	3.79E-07	2.85E-04	3.47E-06	3.34E+00	4.06E-02
96.0000 h	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.14E-06	1.11E-12	1.96E-05	1.01E-11	2.30E-01	1.19E-07
720.0000 h	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	6.25E-12	0.00E+00	5.72E-11	0.00E+00	6.70E-07	0.00E+00
TOTALS	6.12E-02		2.81E-02		3.30E+02		7.24E-03		6.62E-02		7.77E+02	
I-132												
0.5833 h	3.67E-03	6.29E-03	7.22E-04	1.24E-03	1.19E-01	2.04E-01	6.02E-04	1.97E-03	2.36E-03	7.74E-03	3.88E-01	1.27E+00
1.5833 h	1.85E-02	1.85E-02	3.64E-03	3.64E-03	6.00E-01	6.00E-01	1.62E-03	1.32E-03	6.34E-03	5.18E-03	1.04E+00	8.52E-01
2.0000 h	1.05E-02	2.51E-02	2.06E-03	4.94E-03	3.39E-01	8.13E-01	6.04E-04	1.37E-03	2.37E-03	5.15E-03	3.90E-01	1.01E+00
4.0000 h	3.41E-02	1.71E-02	6.71E-03	3.36E-03	1.11E+00	5.53E-01	3.27E-03	1.68E-03	1.28E-02	6.57E-03	2.11E+00	1.08E+00
8.0000 h	5.54E-02	1.39E-02	1.09E-02	2.73E-03	1.80E+00	4.49E-01	6.07E-03	1.44E-03	2.38E-02	5.63E-03	3.91E+00	9.27E-01
8.5000 h	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.22E-04	4.04E-06	4.78E-04	1.58E-05	7.87E-02	2.61E-03
24.0000 h	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	8.51E-06	2.58E-09	3.33E-05	1.01E-08	5.49E-03	1.66E-06
96.0000 h	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	5.43E-09	3.68E-24	2.13E-08	1.44E-23	3.50E-06	2.37E-21
720.0000 h	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	7.74E-24	0.00E+00	3.03E-23	0.00E+00	4.99E-21	0.00E+00
TOTALS	1.22E-01		2.41E-02		3.96E+00		1.23E-02		4.81E-02		7.92E+00	
I-133												
0.5833 h	1.58E-03	2.72E-03	9.85E-04	1.69E-03	1.45E+00	2.49E+00	2.74E-04	9.20E-04	3.38E-03	1.14E-02	4.98E+00	1.67E+01
1.5833 h	9.80E-03	9.80E-03	6.09E-03	6.09E-03	8.97E+00	8.97E+00	8.59E-04	8.03E-04	1.06E-02	9.94E-03	1.56E+01	1.46E+01
2.0000 h	6.59E-03	1.58E-02	4.10E-03	9.83E-03	6.03E+00	1.45E+01	3.89E-04	1.06E-03	4.81E-03	1.31E-02	7.09E+00	1.93E+01
4.0000 h	3.01E-02	1.51E-02	1.87E-02	9.37E-03	2.76E+01	1.38E+01	3.02E-03	1.89E-03	3.74E-02	2.34E-02	5.51E+01	3.44E+01
8.0000 h	1.08E-01	2.70E-02	6.71E-02	1.68E-02	9.87E+01	2.47E+01	1.31E-02	4.23E-03	1.62E-01	5.23E-02	2.38E+02	7.71E+01
8.5000 h	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.68E-04	1.36E-05	4.54E-03	1.68E-04	6.69E+00	2.48E-01
24.0000 h	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	6.32E-05	5.53E-07	7.81E-04	6.83E-06	1.15E+00	1.01E-02
96.0000 h	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.67E-06	1.90E-13	3.30E-05	2.35E-12	4.87E-02	3.45E-09
720.0000 h	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	9.17E-13	0.00E+00	1.13E-11	0.00E+00	1.67E-08	0.00E+00
TOTALS	1.56E-01		9.70E-02		1.43E+02		1.81E-02		2.23E-01		3.29E+02	
I-134												
0.5833 h	6.01E-03	1.03E-02	1.28E-03	2.19E-03	7.95E-02	1.36E-01	9.04E-04	2.83E-03	3.83E-03	1.20E-02	2.38E-01	7.45E-01
1.5833 h	2.11E-02	2.11E-02	4.50E-03	4.50E-03	2.79E-01	2.79E-01	1.86E-03	1.17E-03	7.89E-03	4.96E-03	4.90E-01	3.08E-01
2.0000 h	8.58E-03	2.06E-02	1.83E-03	4.38E-03	1.13E-01	2.72E-01	4.82E-04	1.15E-03	2.04E-03	4.86E-03	1.27E-01	3.01E-01
4.0000 h	1.60E-02	8.01E-03	3.41E-03	1.71E-03	2.12E-01	1.06E-01	1.46E-03	5.19E-04	6.20E-03	2.20E-03	3.85E-01	1.36E-01
8.0000 h	7.32E-03	1.83E-03	1.56E-03	3.90E-04	9.67E-02	2.42E-02	7.92E-04	1.05E-04	3.36E-03	4.43E-04	2.09E-01	2.75E-02
8.5000 h	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	8.52E-06	2.30E-07	3.61E-05	9.76E-07	2.24E-03	6.06E-05
24.0000 h	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.39E-07	7.47E-14	1.01E-06	3.16E-13	6.28E-05	1.96E-11
96.0000 h	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	7.75E-14	0.00E+00	3.28E-13	0.00E+00	2.04E-11	0.00E+00
720.0000 h	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
TOTALS	5.91E-02		1.26E-02		7.81E-01		5.51E-03		2.33E-02		1.45E+00	

TRAILS -- Transport of Radioactive Material in Linear Systems, v1.0
pri-to-sec leak iodines in U1 LRA assuming 1% F.F. w/ 35 min iscl

	ENVIRONMENT						CONTROL ROOM					
	PHOTON-SUBMG		BETA-SUBMG		THYROID-INHAL		PHOTON-SUBMG		BETA-SUBMG		THYROID-INHAL	
	DOSE mrem	DOSE RATE mrem/hr	DOSE mrem	DOSE RATE mrem/hr	DOSE mrem	DOSE RATE mrem/hr	DOSE mrem	DOSE RATE mrem/hr	DOSE mrem	DOSE RATE mrem/hr	DOSE mrem	DOSE RATE mrem/hr
I-135												
0.5833 h	3.63E-03	6.23E-03	7.83E-04	1.34E-03	3.97E-01	6.81E-01	6.19E-04	2.07E-03	2.65E-03	8.86E-03	1.35E+00	4.50E+00
1.5833 h	2.13E-02	2.13E-02	4.58E-03	4.58E-03	2.33E+00	2.33E+00	1.86E-03	1.68E-03	7.98E-03	7.21E-03	4.05E+00	3.66E+00
2.0000 h	1.37E-02	3.28E-02	2.94E-03	7.06E-03	1.49E+00	3.58E+00	8.02E-04	2.16E-03	3.44E-03	9.25E-03	1.74E+00	4.69E+00
4.0000 h	5.70E-02	2.85E-02	1.23E-02	6.14E-03	6.23E+00	3.11E+00	5.64E-03	3.34E-03	2.42E-02	1.43E-02	1.23E+01	7.27E+00
8.0000 h	1.64E-01	4.10E-02	3.53E-02	8.84E-03	1.79E+01	4.48E+00	1.92E-02	5.73E-03	8.23E-02	2.45E-02	4.18E+01	1.25E+01
8.5000 h	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	4.94E-04	1.78E-05	2.12E-03	7.62E-05	1.07E+00	3.87E-02
24.0000 h	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	6.30E-05	2.29E-07	2.70E-04	1.02E-06	1.37E-01	5.18E-04
96.0000 h	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	8.55E-07	4.78E-16	3.66E-06	2.03E-15	1.86E-03	1.03E-12
720.0000 h	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.70E-15	0.00E+00	7.29E-15	0.00E+00	3.70E-12	0.00E+00
TOTALS	2.60E-01		5.59E-02		2.84E+01		2.87E-02		1.23E-01		6.24E+01	
ALL NUCLIDES												
0.5833 h	1.54E-02	2.65E-02	4.02E-03	6.89E-03	4.96E+00	8.50E+00	2.49E-03	8.51E-03	1.31E-02	4.29E-02	1.70E+01	5.78E+01
1.5833 h	7.41E-02	7.41E-02	2.04E-02	2.04E-02	3.06E+01	3.06E+01	6.50E-03	5.26E-03	3.56E-02	2.99E-02	5.34E+01	5.00E+01
2.0000 h	4.16E-02	9.59E-02	1.20E-02	2.88E-02	2.06E+01	4.95E+01	2.42E-03	6.31E-03	1.39E-02	3.68E-02	2.42E+01	6.60E+01
4.0000 h	1.48E-01	7.82E-02	4.63E-02	2.31E-02	9.52E+01	4.76E+01	1.45E-02	8.13E-03	9.08E-02	5.30E-02	1.91E+02	1.20E+02
8.0000 h	3.78E-01	9.46E-02	1.35E-01	3.37E-02	3.54E+02	8.85E+01	4.46E-02	1.33E-02	3.21E-01	9.95E-02	8.63E+02	2.84E+02
8.5000 h	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.15E-03	4.16E-05	8.61E-03	3.15E-04	2.47E+01	9.21E-01
24.0000 h	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.66E-04	1.17E-06	1.37E-03	1.13E-05	4.63E+00	5.12E-02
96.0000 h	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.67E-06	1.30E-12	5.63E-05	1.25E-11	2.80E-01	1.22E-07
720.0000 h	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	7.17E-12	0.00E+00	6.85E-11	0.00E+00	6.87E-07	0.00E+00
TOTALS	6.58E-01		2.18E-01		5.06E+02		7.18E-02		4.84E-01		1.18E+03	

TRAILS -- Transport of Radioactive Material in Linear Systems, v1.0
Pri-to-sec leak N.G. in U1 LRA assuming 1% F.F. (non-equil) W/ 35 DELAY

	COMP: NOT USED THIS CASE		COMP: RCS 1%FF PER SRP -3/SG		COMP: Control Room	
					VOLUME: 1.730E+05 Cu.Ft.	
INITIAL:	0.000E+00	KR-83m	1.270E+04	KR-83m Ci	0.000E+00	KR-83m
	0.000E+00	KR-85m	3.070E+04	KR-85m	0.000E+00	KR-85m
	0.000E+00	KR-85	2.840E+03	KR-85	0.000E+00	KR-85
	0.000E+00	KR-87	5.900E+04	KR-87	0.000E+00	KR-87
	0.000E+00	KR-88	8.390E+04	KR-88	0.000E+00	KR-88
	0.000E+00	KR-89	1.080E+05	KR-89	0.000E+00	KR-89
	0.000E+00	KR-90	0.000E+00	KR-90	0.000E+00	KR-90
	0.000E+00	XE-131M	5.230E+02	XE-131M	0.000E+00	XE-131M
	0.000E+00	XE-133M	4.140E+03	XE-133M	0.000E+00	XE-133M
	0.000E+00	XE-133	1.590E+05	XE-133	0.000E+00	XE-133
	0.000E+00	XE-135M	4.250E+03	XE-135M	0.000E+00	XE-135M
	0.000E+00	XE-135	4.320E+04	XE-135	0.000E+00	XE-135
	0.000E+00	XE-137	1.390E+05	XE-137	0.000E+00	XE-137
	0.000E+00	XE-138	1.390E+05	XE-138	0.000E+00	XE-138
	0.000E+00	I-131	0.000E+00	I-131	0.000E+00	I-131
	0.000E+00	I-132	0.000E+00	I-132	0.000E+00	I-132
	0.000E+00	I-133	0.000E+00	I-133	0.000E+00	I-133
	0.000E+00	I-134	0.000E+00	I-134	0.000E+00	I-134
	0.000E+00	I-135	0.000E+00	I-135	0.000E+00	I-135
ACT MULT (to uCi):	1.000E+00		1.000E+06		1.000E+00	
PRODUCTION, uCi/s:	0.000E+00	KR-83m	0.000E+00	KR-83m		
	0.000E+00	KR-85m	0.000E+00	KR-85m		
	0.000E+00	KR-85	0.000E+00	KR-85		
	0.000E+00	KR-87	0.000E+00	KR-87		
	0.000E+00	KR-88	0.000E+00	KR-88		
	0.000E+00	KR-89	0.000E+00	KR-89		
	0.000E+00	KR-90	0.000E+00	KR-90		
	0.000E+00	XE-131M	0.000E+00	XE-131M		
	0.000E+00	XE-133M	0.000E+00	XE-133M		
	0.000E+00	XE-133	0.000E+00	XE-133		
	0.000E+00	XE-135M	0.000E+00	XE-135M		
	0.000E+00	XE-135	0.000E+00	XE-135		
	0.000E+00	XE-137	0.000E+00	XE-137		
	0.000E+00	XE-138	0.000E+00	XE-138		
	0.000E+00	I-131	0.000E+00	I-131		
	0.000E+00	I-132	0.000E+00	I-132		
	0.000E+00	I-133	0.000E+00	I-133		
	0.000E+00	I-134	0.000E+00	I-134		
	0.000E+00	I-135	0.000E+00	I-135	INTAKE: 1.000E+01 CFM	
REMOVAL:	0.000E+00	1/sec	3.564E-07	1/sec	1.000E+01	cfm
NUC 1-14 REL FR:	0.000E+00		1.000E+00		INTAKE REDUCT: 0.000E+00	
NUC 15-20 REL FR:	0.000E+00		1.000E+00		INTAKE FILTER: 9.360E-01	

CASE 23

TRAILS -- Transport of Radioactive Material in Linear Systems, v1.0
Pri-to-sec leak N.G. in U1 LRA assuming 1% F.F. (non-equil) W/ 35 DELAY

MULTIPLIERS====>

STEP	TIME	XPR	XREM	XRF	XPR	XREM	XRF	XPR	XREM	XRF
1	2.100E+03	0.000E+00	1.00	0.000E+00	0.000E+00	1.00	0.000E+00	50.0	50.0	0.000E+00
2	5.700E+03	0.000E+00	1.00	0.000E+00	0.000E+00	1.00	0.000E+00	1.00	70.0	0.000E+00
3	7.200E+03	0.000E+00	1.00	0.000E+00	0.000E+00	1.00	0.000E+00	70.0	70.0	1.00
4	1.440E+04	0.000E+00	1.00	0.000E+00	0.000E+00	1.00	0.000E+00	70.0	70.0	1.00
5	2.880E+04	0.000E+00	1.00	0.000E+00	0.000E+00	1.00	0.000E+00	70.0	70.0	1.00
6	3.060E+04	0.000E+00	1.00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	3.300E+03	3.300E+03	0.000E+00
7	8.640E+04	0.000E+00	1.00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	50.0	50.0	0.000E+00
8	3.456E+05	0.000E+00	1.00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	50.0	50.0	0.000E+00
9	2.592E+06	0.000E+00	1.00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	50.0	50.0	0.000E+00

	-------- CONTROL ROOM --------			---- ENVIRONMENT ---	
	X/Q	Breathing	Occupancy	X/Q	Breathing
	s/M3	M3/s		s/M3	M3/s
	1.000E-03	3.470E-04	1.000E+00	1.000E+00	3.470E-04

MULTIPLIERS====>

STEP	TIME, s				
1	2.100E+03	2.97	1.00	1.00	4.200E-05	1.00
2	5.700E+03	2.97	1.00	1.00	4.200E-05	1.00
3	7.200E+03	2.97	1.00	1.00	4.200E-05	1.00
4	1.440E+04	2.97	1.00	1.00	4.200E-05	1.00
5	2.880E+04	2.97	1.00	1.00	4.200E-05	1.00
6	3.060E+04	1.94	1.00	1.00	2.700E-05	1.00
7	8.640E+04	1.94	1.00	1.00	2.700E-05	1.00
8	3.456E+05	0.692	1.00	1.00	1.540E-05	1.00
9	2.592E+06	0.154	1.00	1.00	6.800E-06	1.00

TRAILS -- Transport of Radioactive Material in Linear Systems, v1.0
Pri-to-sec leak N.G. in U1 LRA assuming 1% F.F. (non-equil) W/ 35 DELAY

		NOT USED THIS CASE		HCS 1%FF PER SRP -3/		AVERAGE		----------CONTROL ROOM----------		
		CURRENT	INTEGRD	CURRENT	INTEGRD	RELEASED	RELEASE	CURRENT	CURRENT	INTEGRD
STEP	TIME	uCi	uCi-sec	uCi	uCi-sec	uCi	uCi/sec	uCi	uCi/cc	uCi-sec
KR-83m	INITIAL	0.000E+00		1.270E+10				0.000E+00		
1	0.5833 h	0.000E+00	0.000E+00	1.017E+10	2.392E+13	8.525E+06	4.060E+03	5.108E+03	1.043E-06	5.651E+06
2	1.5833 h	0.000E+00	0.000E+00	6.958E+09	3.047E+13	1.086E+07	3.017E+03	2.857E+03	5.832E-07	1.392E+07
3	2.0000 h	0.000E+00	0.000E+00	5.939E+09	9.653E+12	3.440E+06	2.294E+03	5.179E+03	1.057E-06	6.103E+06
4	4.0000 h	0.000E+00	0.000E+00	2.778E+09	2.995E+13	1.068E+07	1.483E+03	7.490E+03	1.529E-06	4.729E+07
5	8.0000 h	0.000E+00	0.000E+00	6.075E+08	2.056E+13	7.327E+06	5.088E+02	3.275E+03	6.685E-07	6.606E+07
6	8.5000 h	0.000E+00	0.000E+00	5.027E+08	9.962E+11	0.000E+00	0.000E+00	8.865E+00	1.810E-09	9.943E+05
7	24.0000 h	0.000E+00	0.000E+00	1.419E+06	4.765E+12	0.000E+00	0.000E+00	1.702E-03	3.474E-13	5.779E+04
8	96.0000 h	0.000E+00	0.000E+00	2.040E-06	1.349E+10	0.000E+00	0.000E+00	9.253E-21	1.889E-30	1.110E+01
9	720.0000 h	0.000E+00	0.000E+00	0.000E+00	1.939E-02	0.000E+00	0.000E+00	0.000E+00	0.000E+00	6.033E-17
KR-83m	TOTALS		0.000E+00		1.203E+14	4.083E+07				1.401E+08
KR-85m	INITIAL	0.000E+00		3.070E+10				0.000E+00		
1	0.5833 h	0.000E+00	0.000E+00	2.803E+10	6.162E+13	2.196E+07	1.046E+04	1.401E+04	2.860E-06	1.518E+07
2	1.5833 h	0.000E+00	0.000E+00	2.398E+10	9.343E+13	3.330E+07	9.249E+03	9.799E+03	2.000E-06	4.235E+07
3	2.0000 h	0.000E+00	0.000E+00	2.247E+10	3.483E+13	1.241E+07	8.277E+03	1.953E+04	3.986E-06	2.220E+07
4	4.0000 h	0.000E+00	0.000E+00	1.645E+10	1.390E+14	4.953E+07	6.880E+03	4.235E+04	8.644E-06	8.335E+08
5	8.0000 h	0.000E+00	0.000E+00	8.813E+09	1.762E+14	6.280E+07	4.361E+03	3.948E+04	8.060E-06	5.839E+08
6	8.5000 h	0.000E+00	0.000E+00	8.156E+09	1.526E+13	0.000E+00	0.000E+00	1.196E+02	2.440E-08	1.222E+07
7	24.0000 h	0.000E+00	0.000E+00	7.412E+08	1.725E+14	0.000E+00	0.000E+00	7.390E-01	1.509E-10	1.303E+06
8	96.0000 h	0.000E+00	0.000E+00	1.076E+04	1.725E+13	0.000E+00	0.000E+00	4.055E-11	8.276E-21	8.108E+03
9	720.0000 h	0.000E+00	0.000E+00	0.000E+00	2.503E+08	0.000E+00	0.000E+00	0.000E+00	0.000E+00	4.449E-07
KR-85m	TOTALS		0.000E+00		7.101E+14	2.800E+08				9.107E+08
KR-85	INITIAL	0.000E+00		2.840E+09				0.000E+00		
1	0.5833 h	0.000E+00	0.000E+00	2.838E+09	5.962E+12	2.125E+06	1.012E+03	1.416E+03	2.891E-07	1.512E+06
2	1.5833 h	0.000E+00	0.000E+00	2.834E+09	1.021E+13	3.639E+06	1.011E+03	1.156E+03	2.360E-07	4.612E+06
3	2.0000 h	0.000E+00	0.000E+00	2.833E+09	4.250E+12	1.515E+06	1.010E+03	2.459E+03	5.019E-07	2.728E+06
4	4.0000 h	0.000E+00	0.000E+00	2.825E+09	2.037E+13	7.260E+06	1.008E+03	7.155E+03	1.461E-06	3.597E+07
5	8.0000 h	0.000E+00	0.000E+00	2.811E+09	4.058E+13	1.446E+07	1.004E+03	1.179E+04	2.406E-06	1.417E+08
6	8.5000 h	0.000E+00	0.000E+00	2.811E+09	5.059E+12	0.000E+00	0.000E+00	3.857E+01	7.872E-09	3.696E+06
7	24.0000 h	0.000E+00	0.000E+00	2.811E+09	1.568E+14	0.000E+00	0.000E+00	2.623E+00	5.355E-10	7.461E+05
8	96.0000 h	0.000E+00	0.000E+00	2.809E+09	7.283E+14	0.000E+00	0.000E+00	9.913E-06	2.024E-15	5.446E+04
9	720.0000 h	0.000E+00	0.000E+00	2.796E+09	6.296E+15	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.058E-01
KR-85	TOTALS		0.000E+00		7.267E+15	2.900E+07				1.910E+08
KR-87	INITIAL	0.000E+00		5.900E+10				0.000E+00		
1	0.5833 h	0.000E+00	0.000E+00	4.290E+10	1.061E+14	3.781E+07	1.801E+04	2.165E+04	4.419E-06	2.431E+07
2	1.5833 h	0.000E+00	0.000E+00	2.484E+10	1.190E+14	4.241E+07	1.178E+04	1.026E+04	2.094E-06	5.477E+07
3	2.0000 h	0.000E+00	0.000E+00	1.978E+10	3.333E+13	1.188E+07	7.918E+03	1.732E+04	3.536E-06	2.097E+07
4	4.0000 h	0.000E+00	0.000E+00	6.634E+09	8.665E+13	3.088E+07	4.289E+03	1.884E+04	3.845E-06	1.315E+08
5	8.0000 h	0.000E+00	0.000E+00	7.460E+08	3.880E+13	1.383E+07	9.603E+02	4.928E+03	1.006E-06	1.256E+08
6	8.5000 h	0.000E+00	0.000E+00	5.680E+08	1.175E+12	0.000E+00	0.000E+00	1.227E+01	2.506E-09	1.476E+06
7	24.0000 h	0.000E+00	0.000E+00	1.217E+05	3.751E+12	0.000E+00	0.000E+00	1.789E-04	3.653E-14	6.151E+04
8	96.0000 h	0.000E+00	0.000E+00	1.103E-12	8.040E+08	0.000E+00	0.000E+00	6.128E-27	1.251E-36	8.966E-01
9	720.0000 h	0.000E+00	0.000E+00	0.000E+00	7.283E-09	0.000E+00	0.000E+00	0.000E+00	0.000E+00	3.071E-23
KR-87	TOTALS		0.000E+00		3.888E+14	1.368E+08				3.587E+08

TRAILS -- Transport of Radioactive Material in Linear Systems, v1.0
Pri-to-sec leak N.G. in U1 LRA assuming 1% F.F. (non-equil) W/ 35 DELAY

		NOT USED THIS CASE		RCS 1%FF PER SRP -3/		AVERAGE		CONTROL ROOM		
		CURRENT	INTEGRD	CURRENT	INTEGRD	RELEASED	RELEASE	CURRENT	CURRENT	INTEGRD
STEP	TIME	uCi	uCi-sec	uCi	uCi-sec	uCi	uCi/sec	uCi	uCi/cc	uCi-sec
KR-88	INITIAL	0.000E+00		8.390E+10				0.000E+00		
1	0.5833 h	0.000E+00	0.000E+00	7.271E+10	1.642E+14	5.851E+07	2.786E+04	3.639E+04	7.429E-06	3.976E+07
2	1.5833 h	0.000E+00	0.000E+00	5.689E+10	2.321E+14	8.273E+07	2.298E+04	2.328E+04	4.753E-06	1.055E+08
3	2.0000 h	0.000E+00	0.000E+00	5.136E+10	8.112E+13	2.891E+07	1.927E+04	4.468E+04	9.121E-06	5.152E+07
4	4.0000 h	0.000E+00	0.000E+00	3.144E+10	1.923E+14	1.042E+08	1.447E+04	8.219E+04	1.678E-05	4.783E+08
5	8.0000 h	0.000E+00	0.000E+00	1.176E+10	2.384E+14	1.028E+08	7.139E+03	5.513E+04	1.146E-05	9.386E+08
6	8.5000 h	0.000E+00	0.000E+00	1.043E+10	1.997E+13	0.000E+00	0.000E+00	1.625E+02	3.318E-08	1.724E+07
7	24.0000 h	0.000E+00	0.000E+00	2.373E+08	1.503E+14	0.000E+00	0.000E+00	2.515E-01	5.134E-11	1.399E+06
8	96.0000 h	0.000E+00	0.000E+00	5.534E+00	3.500E+12	0.000E+00	0.000E+00	2.218E-14	4.528E-24	2.169E+03
9	720.0000 h	0.000E+00	0.000E+00	0.000E+00	8.163E+04	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.913E-10
KR-88	TOTALS		0.000E+00		1.232E+15	3.771E+08				1.632E+09
KR-89	INITIAL	0.000E+00		1.080E+11				0.000E+00		
1	0.5833 h	0.000E+00	0.000E+00	4.998E+07	2.952E+13	1.052E+07	5.011E+03	9.476E+02	1.934E-07	1.735E+06
2	1.5833 h	0.000E+00	0.000E+00	9.598E+01	1.367E+10	4.871E+03	1.353E+00	6.523E-03	1.332E-12	2.545E+05
3	2.0000 h	0.000E+00	0.000E+00	3.984E-01	2.614E+04	9.317E-03	6.211E-06	2.611E-05	5.331E-15	1.747E+00
4	4.0000 h	0.000E+00	0.000E+00	1.469E-12	1.090E+02	3.883E-05	5.393E-09	1.421E-09	2.901E-19	7.023E-03
5	8.0000 h	0.000E+00	0.000E+00	1.999E-35	4.019E-10	1.432E-16	9.947E-21	2.621E-21	5.350E-31	3.817E-07
6	8.5000 h	0.000E+00	0.000E+00	2.773E-38	5.461E-33	0.000E+00	0.000E+00	1.189E-26	2.427E-36	3.835E-19
7	24.0000 h	0.000E+00	0.000E+00	0.000E+00	7.584E-36	0.000E+00	0.000E+00	0.000E+00	0.000E+00	3.210E-24
8	96.0000 h	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
9	720.0000 h	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
KR-89	TOTALS		0.000E+00		2.954E+13	1.053E+07				1.990E+06
XE-131M	INITIAL	0.000E+00		5.230E+08				0.000E+00		
1	0.5833 h	0.000E+00	0.000E+00	5.219E+08	1.097E+12	3.910E+05	1.862E+02	2.605E+02	5.317E-08	2.781E+05
2	1.5833 h	0.000E+00	0.000E+00	5.199E+08	1.875E+12	6.683E+05	1.856E+02	2.121E+02	4.330E-08	8.471E+05
3	2.0000 h	0.000E+00	0.000E+00	5.191E+08	7.793E+11	2.777E+05	1.852E+02	4.506E+02	9.197E-08	5.001E+05
4	4.0000 h	0.000E+00	0.000E+00	5.153E+08	3.724E+12	1.327E+06	1.843E+02	1.305E+03	2.664E-07	6.571E+06
5	8.0000 h	0.000E+00	0.000E+00	5.077E+08	7.365E+12	2.625E+06	1.823E+02	2.131E+03	4.349E-07	2.569E+07
6	8.5000 h	0.000E+00	0.000E+00	5.070E+08	9.132E+11	0.000E+00	0.000E+00	6.961E+00	1.421E-09	6.678E+05
7	24.0000 h	0.000E+00	0.000E+00	4.882E+08	2.776E+13	0.000E+00	0.000E+00	4.560E-01	9.308E-11	1.332E+05
8	96.0000 h	0.000E+00	0.000E+00	4.096E+08	1.161E+14	0.000E+00	0.000E+00	1.446E-06	2.952E-16	9.335E+03
9	720.0000 h	0.000E+00	0.000E+00	8.939E+07	4.725E+14	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.961E-02
XE-131M	TOTALS		0.000E+00		6.321E+14	5.289E+06				3.470E+07
XE-133M	INITIAL	0.000E+00		4.140E+09				0.000E+00		
1	0.5833 h	0.000E+00	0.000E+00	4.105E+09	8.657E+12	3.086E+06	1.469E+03	2.049E+03	4.182E-07	2.190E+06
2	1.5833 h	0.000E+00	0.000E+00	4.046E+09	1.467E+13	5.229E+06	1.453E+03	1.651E+03	3.370E-07	6.629E+06
3	2.0000 h	0.000E+00	0.000E+00	4.022E+09	6.051E+12	2.157E+06	1.438E+03	3.491E+03	7.126E-07	3.881E+06
4	4.0000 h	0.000E+00	0.000E+00	3.907E+09	2.854E+13	1.017E+07	1.413E+03	9.904E+03	2.022E-06	5.018E+07
5	8.0000 h	0.000E+00	0.000E+00	3.687E+09	5.467E+13	1.948E+07	1.353E+03	1.552E+04	3.168E-06	1.899E+08
6	8.5000 h	0.000E+00	0.000E+00	3.663E+09	6.616E+12	0.000E+00	0.000E+00	5.044E+01	1.030E-08	4.861E+06
7	24.0000 h	0.000E+00	0.000E+00	2.986E+09	1.849E+14	0.000E+00	0.000E+00	2.797E+00	5.710E-10	9.193E+05
8	96.0000 h	0.000E+00	0.000E+00	1.155E+09	4.997E+14	0.000E+00	0.000E+00	4.092E-06	8.354E-16	5.397E+04
9	720.0000 h	0.000E+00	0.000E+00	3.084E+05	3.154E+14	0.000E+00	0.000E+00	0.000E+00	0.000E+00	7.895E-02
XE-133M	TOTALS		0.000E+00		1.119E+15	4.013E+07				2.586E+08

TRAILS -- Transport of Radioactive Material in Linear Systems, v1.0
Pri-to-sec leak N.G. in Ui LRA assuming 1% F.F. (non-equil) W/ 35 DELAY

		NOT USED THIS CASE		RCS 1%FF PER SRP -3/		AVERAGE		CONTROL ROOM		
		CURRENT	INTEGRD	CURRENT	INTEGRD	RELEASED	RELEASE	CURRENT	CURRENT	INTEGRD
STEP	TIME	uCi	uCi-sec	uCi	uCi-sec	uCi	uCi/sec	uCi	uCi/cc	uCi-sec
XE-133	INITIAL	0.000E+00		1.590E+11				0.000E+00		
1	0.5833 h	0.000E+00	0.000E+00	1.584E+11	3.332E+14	1.188E+08	5.656E+04	7.904E+04	1.613E-05	8.444E+07
2	1.5833 h	0.000E+00	0.000E+00	1.573E+11	5.682E+14	2.025E+08	5.625E+04	6.418E+04	1.310E-05	2.567E+08
3	2.0000 h	0.000E+00	0.000E+00	1.569E+11	2.356E+14	8.397E+07	5.598E+04	1.361E+05	2.779E-05	1.512E+08
4	4.0000 h	0.000E+00	0.000E+00	1.547E+11	1.122E+15	3.998E+08	5.553E+04	3.920E+05	8.003E-05	1.977E+09
5	8.0000 h	0.000E+00	0.000E+00	1.506E+11	2.198E+15	7.835E+08	5.441E+04	6.325E+05	1.291E-04	7.659E+09
6	8.5000 h	0.000E+00	0.000E+00	1.502E+11	2.707E+14	0.000E+00	0.000E+00	2.064E+03	4.212E-07	1.982E+08
7	24.0000 h	0.000E+00	0.000E+00	1.379E+11	8.032E+15	0.000E+00	0.000E+00	1.289E+02	2.631E-08	3.893E+07
8	96.0000 h	0.000E+00	0.000E+00	9.275E+10	2.950E+16	0.000E+00	0.000E+00	3.278E-04	6.691E-14	2.593E+06
9	720.0000 h	0.000E+00	0.000E+00	2.983E+09	5.867E+16	0.000E+00	0.000E+00	0.000E+00	0.000E+00	6.595E+00
XE-133	TOTALS		0.000E+00		1.009E+17	1.588E+09				1.037E+10
XE-135M	INITIAL	0.000E+00		4.250E+10				0.000E+00		
1	0.5833 h	0.000E+00	0.000E+00	8.753E+09	4.485E+13	1.598E+07	7.612E+03	5.424E+03	1.107E-06	7.220E+06
2	1.5833 h	0.000E+00	0.000E+00	5.830E+08	1.086E+13	3.869E+06	1.075E+03	3.012E+02	6.149E-08	6.317E+06
3	2.0000 h	0.000E+00	0.000E+00	1.886E+08	5.242E+11	1.868E+05	1.246E+02	1.936E+02	3.952E-08	3.550E+05
4	4.0000 h	0.000E+00	0.000E+00	8.368E+05	2.495E+11	8.893E+04	1.235E+01	1.528E+01	3.118E-09	3.241E+05
5	8.0000 h	0.000E+00	0.000E+00	1.648E+01	1.112E+09	3.964E+02	2.753E-02	3.307E-02	6.750E-12	1.908E+04
6	8.5000 h	0.000E+00	0.000E+00	4.256E+00	1.625E+04	0.000E+00	0.000E+00	2.794E-05	5.703E-15	8.405E+00
7	24.0000 h	0.000E+00	0.000E+00	2.528E-18	5.658E+03	0.000E+00	0.000E+00	1.129E-24	2.305E-34	3.491E-02
8	96.0000 h	0.000E+00	0.000E+00	0.000E+00	3.362E-15	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.411E-21
9	720.0000 h	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
XE-135M	TOTALS		0.000E+00		5.648E+13	2.013E+07				1.424E+07
XE-135	INITIAL	0.000E+00		4.320E+10				0.000E+00		
1	0.5833 h	0.000E+00	0.000E+00	4.129E+10	8.870E+13	3.161E+07	1.505E+04	2.062E+04	4.209E-06	2.218E+07
2	1.5833 h	0.000E+00	0.000E+00	3.822E+10	1.430E+14	5.098E+07	1.416E+04	1.560E+04	3.185E-06	6.472E+07
3	2.0000 h	0.000E+00	0.000E+00	3.701E+10	5.641E+13	2.011E+07	1.340E+04	3.213E+04	6.559E-06	3.608E+07
4	4.0000 h	0.000E+00	0.000E+00	3.170E+10	2.468E+14	8.798E+07	1.222E+04	8.080E+04	1.649E-05	4.251E+08
5	8.0000 h	0.000E+00	0.000E+00	2.326E+10	3.926E+14	1.399E+08	9.716E+03	1.001E+05	2.044E-05	1.332E+09
6	8.5000 h	0.000E+00	0.000E+00	2.239E+10	4.108E+13	0.000E+00	0.000E+00	3.154E+02	6.437E-08	3.119E+07
7	24.0000 h	0.000E+00	0.000E+00	6.883E+09	7.336E+14	0.000E+00	0.000E+00	6.594E+00	1.346E-09	4.455E+06
8	96.0000 h	0.000E+00	0.000E+00	2.871E+07	3.242E+14	0.000E+00	0.000E+00	1.040E-07	2.123E-17	9.514E+04
9	720.0000 h	0.000E+00	0.000E+00	6.822E-14	1.358E+12	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.501E-03
XE-135	TOTALS		0.000E+00		2.029E+15	3.306E+08				1.915E+09
XE-137	INITIAL	0.000E+00		1.390E+11				0.000E+00		
1	0.5833 h	0.000E+00	0.000E+00	2.866E+08	4.600E+13	1.639E+07	7.807E+03	1.783E+03	3.639E-07	3.168E+06
2	1.5833 h	0.000E+00	0.000E+00	4.743E+03	8.176E+10	2.914E+04	8.094E+00	6.373E-02	1.301E-11	5.783E+05
3	2.0000 h	0.000E+00	0.000E+00	5.142E+01	1.556E+06	5.544E-01	3.696E-04	7.411E-04	1.513E-13	2.060E+01
4	4.0000 h	0.000E+00	0.000E+00	1.902E-08	1.705E+04	6.075E-03	8.438E-07	2.685E-07	5.481E-17	2.422E-01
5	8.0000 h	0.000E+00	0.000E+00	2.603E-27	6.306E-06	2.247E-12	1.561E-16	4.966E-17	1.014E-26	8.708E-05
6	8.5000 h	0.000E+00	0.000E+00	1.142E-29	8.591E-25	0.000E+00	0.000E+00	7.129E-22	1.455E-31	8.016E-15
7	24.0000 h	0.000E+00	0.000E+00	0.000E+00	3.787E-27	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.327E-19
8	96.0000 h	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
9	720.0000 h	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
XE-137	TOTALS		0.000E+00		4.608E+13	1.642E+07				3.746E+06

TRAILS -- Transport of Radioactive Material in Linear Systems, v1.0
Pri-to-sec leak N.G. in U1 LRA assuming 1% F.F. (non-equil) W/ 35 DELAY

STEP	TIME	NOT USED THIS CASE CURRENT uCi	NOT USED THIS CASE INTEGRD uCi-sec	RCS 1%FF PER SRP -3/ CURRENT uCi	RCS 1%FF PER SRP -3/ INTEGRD uCi-sec	AVERAGE RELEASED uCi	AVERAGE RELEASE uCi/sec	CONTROL ROOM CURRENT uCi	CONTROL ROOM CURRENT uCi/cc	CONTROL ROOM INTEGRD uCi-sec
XE-138	INITIAL	0.000E+00		1.390E+11				0.000E+00		
1	0.5833 h	0.000E+00	0.000E+00	2.495E+10	1.394E+18	4.970E+07	2.366E+04	1.605E+04	3.276E-06	2.189E+07
2	1.5833 h	0.000E+00	0.000E+00	1.313E+09	2.889E+13	1.030E+07	2.861E+03	7.067E+02	1.443E-07	1.750E+07
3	2.0000 h	0.000E+00	0.000E+00	3.849E+08	1.134E+12	4.043E+05	2.695E+02	8.069E+02	8.307E-08	7.869E+05
4	4.0000 h	0.000E+00	0.000E+00	1.066E+06	4.692E+11	1.672E+05	2.323E+01	2.640E+01	5.389E-09	6.154E+05
5	8.0600 h	0.000E+00	0.000E+00	8.171E+00	1.303E+09	2.644E+02	3.225E-02	3.583E-02	7.313E-12	3.031E+04
6	8.5000 h	0.000E+00	0.000E+00	1.876E+00	7.700E+03	0.000E+00	0.000E+00	2.690E-05	5.492E-15	8.957E+00
7	24.0600 h	0.000E+00	0.000E+00	2.882E-20	2.294E+03	0.000E+00	0.000E+00	2.812E-26	5.741E-36	3.107E-02
8	96.0000 h	0.000E+00	0.000E+00	0.000E+00	3.525E-17	0.000E+00	0.000E+00	0.000E+00	0.000E+00	3.248E-23
9	720.0000 h	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
XE-138	TOTALS		0.000E+00		1.699E+18	6.057E+07				4.062E+07
ALL NUCLIDES		0.000E+00		5.869E+09				0.000E+00	0.000E+00	

@ STEP 9

TRAILS -- Transport of Radioactive Material in Linear Systems, v1.0
Pri-to-sec leak N.G. in U1 LRA assuming 1% F.F. (non-equil) W/ 35 DELAY

	ENVIRONMENT						CONTROL ROOM					
	PHOTON-SUBMG		BETA-SUBMG		THYROID-INHAL		PHOTON-SUBMG		BETA-SUBMG		THYROID-INHAL	
	DOSE mrem	DOSE RATE mrem/hr	DOSE mrem	DOSE RATE mrem/hr	DOSE mrem	DOSE RATE mrem/hr	DOSE mrem	DOSE RATE mrem/hr	DOSE mrem	DOSE RATE mrem/hr	DOSE mrem	DOSE RATE mrem/hr
KR-83m												
0.5833 h	2.33E-04	3.99E-04	3.15E-03	5.39E-03	0.00E+00	0.00E+00	3.77E-05	1.23E-04	1.01E-02	3.30E-02	0.00E+00	0.00E+00
1.5833 h	2.97E-04	2.97E-04	4.01E-03	4.01E-03	0.00E+00	0.00E+00	9.28E-05	6.86E-05	2.50E-02	1.84E-02	0.00E+00	0.00E+00
2.0000 h	9.39E-05	2.25E-04	1.27E-03	3.05E-03	0.00E+00	0.00E+00	4.07E-05	1.24E-04	1.09E-02	3.34E-02	0.00E+00	0.00E+00
4.0000 h	2.91E-04	1.46E-04	3.94E-03	1.97E-03	0.00E+00	0.00E+00	3.15E-04	1.80E-04	8.48E-02	4.84E-02	0.00E+00	0.00E+00
8.0000 h	2.00E-04	5.00E-05	2.70E-03	6.76E-04	0.00E+00	0.00E+00	4.41E-04	7.86E-05	1.18E-01	2.11E-02	0.00E+00	0.00E+00
8.5000 h	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	6.63E-06	2.13E-07	1.78E-03	5.72E-05	0.00E+00	0.00E+00
24.0000 h	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.85E-07	4.09E-11	1.04E-04	1.10E-08	0.00E+00	0.00E+00
96.0000 h	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	7.40E-11	2.22E-28	1.99E-08	5.97E-26	0.00E+00	0.00E+00
720.0000 h	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	4.02E-28	0.00E+00	1.08E-25	0.00E+00	0.00E+00	0.00E+00
TOTALS	1.11E-03		1.51E-02		0.00E+00		9.34E-04		2.51E-01		0.00E+00	
KR-85m												
0.5833 h	3.64E-02	6.23E-02	5.42E-02	9.29E-02	0.00E+00	0.00E+00	6.14E-03	2.04E-02	1.82E-01	6.04E-01	0.00E+00	0.00E+00
1.5833 h	5.51E-02	5.51E-02	8.21E-02	8.21E-02	0.00E+00	0.00E+00	1.71E-02	1.43E-02	5.08E-01	4.23E-01	0.00E+00	0.00E+00
2.0000 h	2.06E-02	4.93E-02	3.06E-02	7.35E-02	0.00E+00	0.00E+00	8.98E-03	2.84E-02	2.66E-01	8.43E-01	0.00E+00	0.00E+00
4.0000 h	8.20E-02	4.10E-02	1.22E-01	6.11E-02	0.00E+00	0.00E+00	9.45E-02	6.17E-02	2.80E+00	1.83E+00	0.00E+00	0.00E+00
8.0000 h	1.04E-01	2.60E-02	1.55E-01	3.87E-02	0.00E+00	0.00E+00	2.36E-01	5.75E-02	7.00E+00	1.70E+00	0.00E+00	0.00E+00
8.5000 h	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	4.94E-03	1.74E-04	1.46E-01	5.16E-03	0.00E+00	0.00E+00
24.0000 h	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	5.27E-04	1.08E-06	1.56E-02	3.19E-05	0.00E+00	0.00E+00
96.0000 h	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.28E-06	5.90E-17	9.72E-05	1.75E-15	0.00E+00	0.00E+00
720.0000 h	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.80E-14	0.00E+00	5.33E-13	0.00E+00	0.00E+00	0.00E+00
TOTALS	2.98E-01		4.44E-01		0.00E+00		3.68E-01		1.09E+01		0.00E+00	
KR-85												
0.5833 h	4.91E-05	8.41E-05	5.15E-03	8.83E-03	0.00E+00	0.00E+00	8.53E-06	2.88E-05	1.78E-02	6.01E-02	0.00E+00	0.00E+00
1.5833 h	8.41E-05	8.41E-05	8.82E-03	8.82E-03	0.00E+00	0.00E+00	2.60E-05	2.35E-05	5.43E-02	4.91E-02	0.00E+00	0.00E+00
2.0000 h	3.50E-05	8.40E-05	3.67E-03	8.81E-03	0.00E+00	0.00E+00	1.54E-05	4.99E-05	3.21E-02	1.04E-01	0.00E+00	0.00E+00
4.0000 h	1.68E-04	8.38E-05	1.76E-02	8.80E-03	0.00E+00	0.00E+00	2.03E-04	1.45E-04	4.24E-01	3.04E-01	0.00E+00	0.00E+00
8.0000 h	3.34E-04	8.35E-05	3.51E-02	8.77E-03	0.00E+00	0.00E+00	8.00E-04	2.39E-04	1.67E+00	5.00E-01	0.00E+00	0.00E+00
8.5000 h	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.09E-05	7.83E-07	4.35E-02	1.64E-03	0.00E+00	0.00E+00
24.0000 h	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	4.21E-06	5.33E-08	8.79E-03	1.11E-04	0.00E+00	0.00E+00
96.0000 h	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.07E-07	2.01E-13	6.42E-04	4.21E-10	0.00E+00	0.00E+00
720.0000 h	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.16E-12	0.00E+00	2.42E-09	0.00E+00	0.00E+00	0.00E+00
TOTALS	6.70E-04		7.03E-02		0.00E+00		1.08E-03		2.25E+00		0.00E+00	
KR-87												
0.5833 h	3.15E-01	5.40E-01	4.83E-01	8.29E-01	0.00E+00	0.00E+00	4.95E-02	1.59E-01	1.51E+00	4.84E+00	0.00E+00	0.00E+00
1.5833 h	3.53E-01	3.53E-01	5.42E-01	5.42E-01	0.00E+00	0.00E+00	1.11E-01	7.51E-02	3.40E+00	2.29E+00	0.00E+00	0.00E+00
2.0000 h	9.89E-02	2.37E-01	1.52E-01	3.64E-01	0.00E+00	0.00E+00	4.27E-02	1.27E-01	1.30E+00	3.88E+00	0.00E+00	0.00E+00
4.0000 h	2.57E-01	1.29E-01	3.95E-01	1.97E-01	0.00E+00	0.00E+00	2.68E-01	1.38E-01	8.17E+00	4.21E+00	0.00E+00	0.00E+00
8.0000 h	1.15E-01	2.88E-02	1.77E-01	4.42E-02	0.00E+00	0.00E+00	2.55E-01	3.61E-02	7.80E+00	1.10E+00	0.00E+00	0.00E+00
8.5000 h	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.00E-03	8.99E-05	9.17E-02	2.75E-03	0.00E+00	0.00E+00
24.0000 h	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.25E-04	1.31E-09	3.82E-03	4.00E-08	0.00E+00	0.00E+00
96.0000 h	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.82E-09	4.49E-32	5.57E-08	1.37E-30	0.00E+00	0.00E+00
720.0000 h	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	6.25E-32	0.00E+00	1.91E-30	0.00E+00	0.00E+00	0.00E+00
TOTALS	1.14E+00		1.75E+00		0.00E+00		7.30E-01		2.23E+01		0.00E+00	

TRAILS -- Transport of Radioactive Material in Linear Systems, v1.0
Pri to-sec leak N.G. in U1 LRA assuming 1% F.F. (non-equil) W/ 35 DELAY

	ENVIRONMENT						CONTROL ROOM					
	PHOTON-SUBMG		BETA-SUBMG		THYROID-INHAL		PHOTON-SUBMG		BETA-SUBMG		THYROID-INHAL	
	DOSE mrem	DOSE RATE mrem/hr	DOSE mrem	DOSE RATE mrem/hr	DOSE mrem	DOSE RATE mrem/hr	DOSE mrem	DOSE RATE mrem/hr	DOSE mrem	DOSE RATE mrem/hr	DOSE mrem	DOSE RATE mrem/hr
KR-88												
0.5833 h	1.20E+00	2.06E+00	2.06E-01	3.53E-01	0.00E+00	0.00E+00	1.99E-01	6.57E-01	6.81E-01	2.24E+00	0.00E+00	0.00E+00
1.5833 h	1.70E+00	1.70E+00	2.92E-01	2.92E-01	0.00E+00	0.00E+00	5.29E-01	4.20E-01	1.81E+00	1.44E+00	0.00E+00	0.00E+00
2.0000 h	5.93E-01	1.42E+00	1.02E-01	2.45E-01	0.00E+00	0.00E+00	2.58E-01	8.06E-01	8.82E-01	2.76E+00	0.00E+00	0.00E+00
4.0000 h	2.14E+00	1.07E+00	3.67E-01	1.84E-01	0.00E+00	0.00E+00	2.40E+00	1.48E+00	8.19E+00	5.07E+00	0.00E+00	0.00E+00
8.0000 h	2.11E+00	5.27E-01	3.62E-01	9.05E-02	0.00E+00	0.00E+00	4.71E+00	1.01E+00	1.61E+01	3.46E+00	0.00E+00	0.00E+00
8.5000 h	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	8.64E-02	2.93E-03	2.95E-01	1.00E-02	0.00E+00	0.00E+00
24.0000 h	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	7.02E-03	4.54E-06	2.40E-02	1.55E-03	0.00E+00	0.00E+00
96.0000 h	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.09E-05	4.00E-19	3.71E-05	1.37E-18	0.00E+00	0.00E+00
720.0000 h	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	9.59E-19	0.00E+00	3.27E-18	0.00E+00	0.00E+00	0.00E+00
TOTALS	7.74E+00		1.33E+00		0.00E+00		6.18E+00		2.79E+01		0.00E+00	
KR-89												
0.5833 h	2.03E-01	3.47E-01	1.38E-01	2.37E-01	0.00E+00	0.00E+00	3.16E-03	1.60E-02	1.11E-01	2.18E-01	0.00E+00	0.00E+00
1.5833 h	9.38E-05	9.38E-05	6.41E-05	6.41E-05	0.00E+00	0.00E+00	1.20E-03	1.10E-07	1.63E-02	1.50E-06	0.00E+00	0.00E+00
2.0000 h	1.79E-10	4.31E-10	1.23E-10	2.94E-10	0.00E+00	0.00E+00	8.22E-09	4.42E-10	1.12E-07	6.01E-09	0.00E+00	0.00E+00
4.0000 h	7.48E-13	3.74E-13	5.11E-13	2.55E-13	0.00E+00	0.00E+00	3.30E-11	2.41E-14	4.49E-10	3.27E-13	0.00E+00	0.00E+00
8.0000 h	2.76E-24	6.90E-25	1.88E-24	4.71E-25	0.00E+00	0.00E+00	1.80E-1[illegible]	4.44E-26	2.44E-14	6.03E-25	0.00E+00	0.00E+00
8.5000 h	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.80E-27	2.01E-31	2.45E-26	2.74E-30	0.00E+00	0.00E+00
24.0000 h	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.51E-32	0.00E+00	2.05E-31	0.00E+00	0.00E+00	0.00E+00
96.0000 h	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
720.0000 h	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
TOTALS	2.03E-01		1.39E-01		0.00E+00		9.36E-03		1.27E-01		0.00E+00	
XE-131M												
0.5833 h	8.25E-05	1.41E-04	5.37E-04	9.21E-04	0.00E+00	0.00E+00	1.43E-05	4.83E-05	[illegible]6E-03	6.26E-03	0.00E+00	0.00E+00
1.5833 h	1.41E-04	1.41E-04	9.18E-04	9.18E-04	0.00E+00	0.00E+00	4.37E-05	3.94E-05	5.65E-03	5.10E-03	0.00E+00	0.00E+00
2.0000 h	5.86E-05	1.41E-04	3.82E-04	9.16E-04	0.00E+00	0.00E+00	2.58E-05	8.36E-05	3.34E-03	1.08E-02	0.00E+00	0.00E+00
4.0000 h	2.80E-04	1.40E-04	1.82E-03	9.12E-04	0.00E+00	0.00E+00	3.39E-04	2.42E-04	4.39E-02	3.14E-02	0.00E+00	0.00E+00
8.0000 h	5.54E-04	1.35E-04	3.61E-03	9.01E-04	0.00E+00	0.00E+00	1.32E-03	3.95E-04	1.71E-01	5.12E-02	0.00E+00	0.00E+00
8.5000 h	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.44E-05	1.29E-06	4.46E-03	1.67E-04	0.00E+00	0.00E+00
24.0000 h	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	6.87E-06	6.46E-08	8.89E-04	1.10E-05	0.00E+00	0.00E+00
96.0000 h	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	4.81E-07	2.68E-13	6.23E-05	3.48E-11	0.00E+00	0.00E+00
720.0000 h	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.53E-12	0.00E+00	1.98E-10	0.00E+00	0.00E+00	0.00E+00
TOTALS	1.12E-03		7.27E-03		0.00E+00		1.79E-03		2.32E-01		0.00E+00	
XE-133M												
0.5833 h	1.34E-03	2.30E-03	5.67E-03	9.72E-03	0.00E+00	0.00E+00	2.33E-04	7.85E-04	1.96E-02	6.59E-02	0.00E+00	0.00E+00
1.5833 h	2.28E-03	2.28E-03	9.61E-03	9.61E-03	0.00E+00	0.00E+00	7.06E-04	6.33E-04	5.92E-02	5.31E-02	0.00E+00	0.00E+00
2.0000 h	9.40E-04	2.26E-03	3.96E-03	9.51E-03	0.00E+00	0.00E+00	4.13E-04	1.34E-03	3.46E-02	1.12E-01	0.00E+00	0.00E+00
4.0000 h	4.43E-03	2.22E-03	1.87E-02	9.35E-03	0.00E+00	0.00E+00	5.34E-03	3.79E-03	4.48E-01	3.18E-01	0.00E+00	0.00E+00
8.0000 h	8.49E-03	2.12E-03	3.58E-02	8.95E-03	0.00E+00	0.00E+00	2.02E-02	5.95E-03	1.69E+00	4.99E-01	0.00E+00	0.00E+00
8.5000 h	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	5.17E-04	1.93E-05	4.34E-02	1.62E-03	0.00E+00	0.00E+00
24.0000 h	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	9.78E-05	1.07E-06	8.21E-03	8.99E-05	0.00E+00	0.00E+00
96.0000 h	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	5.74E-06	1.57E-12	4.82E-04	1.32E-10	0.00E+00	0.00E+00
720.0000 h	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	8.40E-12	0.00E+00	7.05E-10	0.00E+00	0.00E+00	0.00E+00
TOTALS	1.75E-02		7.37E-02		0.00E+00		2.75E-02		2.31E+00		0.00E+00	

TRAILS -- Transport of Radioactive Material in Linear Systems, v1.0
Pri-to-sec leak N.G. in U1 LRA assuming 1% F.F. (non-equil) W/ 35 DELAY

	ENVIRONMENT						CONTROL ROOM					
	PHOTON-SUBMG		BETA-SUBMG		THYROID-INHAL		PHOTON-SUBMG		BETA-SUBMG		THYROID-INHAL	
	DOSE mrem	DOSE RATE mrem/hr	DOSE mrem	DOSE RATE mrem/hr	DOSE mrem	DOSE RATE mrem/hr	DOSE mrem	DOSE RATE mrem/hr	DOSE mrem	DOSE RATE mrem/hr	DOSE mrem	DOSE RATE mrem/hr
XE-133												
0.5833 h	5.63E-02	9.68E-02	1.55E-01	2.66E-01	0.00E+00	0.00E+00	9.81E-03	3.31E-02	5.37E-01	1.81E+00	0.00E+00	0.00E+00
1.5833 h	9.63E-02	9.63E-02	2.65E-01	2.65E-01	0.00E+00	0.00E+00	2.98E-02	2.68E-02	1.63E+00	1.47E+00	0.00E+00	0.00E+00
2.0000 h	3.99E-02	9.59E-02	1.10E-01	2.64E-01	0.00E+00	0.00E+00	1.76E-02	5.69E-02	9.61E-01	3.12E+00	0.00E+00	0.00E+00
4.0000 h	1.90E-01	9.51E-02	5.23E-01	2.62E-01	0.00E+00	0.00E+00	2.30E-01	1.64E-01	1.26E+01	8.98E+00	0.00E+00	0.00E+00
8.0000 h	3.73E-01	9.32E-02	1.03E+00	2.56E-01	0.00E+00	0.00E+00	8.90E-01	2.65E-01	4.87E+01	1.45E+01	0.00E+00	0.00E+00
8.5000 h	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.30E-02	8.63E-04	1.26E+00	4.73E-02	0.00E+00	0.00E+00
24.0000 h	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	4.52E-03	5.39E-05	2.48E-01	2.95E-03	0.00E+00	0.00E+00
96.0000 h	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.01E-04	1.37E-10	1.65E-02	7.51E-09	0.00E+00	0.00E+00
720.0000 h	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	7.66E-10	0.00E+00	4.19E-08	0.00E+00	0.00E+00	0.00E+00
TOTALS	7.56E-01		2.08E+00		0.00E+00		1.20E+00		6.59E+01		0.00E+00	
XE-135M												
0.5833 h	7.23E-02	1.24E-01	1.48E-02	2.54E-02	0.00E+00	0.00E+00	7.98E-03	2.16E-02	3.25E-02	8.78E-02	0.00E+00	0.00E+00
1.5833 h	1.75E-02	1.75E-02	3.58E-03	3.58E-03	0.00E+00	0.00E+00	6.98E-03	1.20E-03	2.84E-02	4.88E-03	0.00E+00	0.00E+00
2.0000 h	8.45E-04	2.03E-03	1.73E-04	4.15E-04	0.00E+00	0.00E+00	3.92E-04	7.70E-04	1.60E-03	3.14E-03	0.00E+00	0.00E+00
4.0000 h	4.02E-04	2.01E-04	8.23E-05	4.11E-05	0.00E+00	0.00E+00	3.58E-04	6.07E-05	1.46E-03	2.47E-04	0.00E+00	0.00E+00
8.0000 h	1.79E-06	4.48E-07	3.67E-07	9.17E-08	0.00E+00	0.00E+00	3.11E-05	1.31E-07	8.58E-05	5.35E-07	0.00E+00	0.00E+00
8.5000 h	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	9.28E-09	1.11E-10	3.78E-08	4.52E-10	0.00E+00	0.00E+00
24.0000 h	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.86E-11	4.49E-39	1.57E-10	1.83E-29	0.00E+00	0.00E+00
96.0000 h	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.56E-30	0.00E+00	6.34E-30	0.00E+00	0.00E+00	0.00E+00
720.0000 h	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
TOTALS	9.10E-02		1.86E-02		0.00E+00		1.57E-02		6.40E-02		0.00E+00	
XE-135												
0.5833 h	8.23E-02	1.41E-01	9.71E-02	1.67E-01	0.00E+00	0.00E+00	1.41E-02	4.72E-02	3.31E-01	1.11E+00	0.00E+00	0.00E+00
1.5833 h	1.33E-01	1.33E-01	1.57E-01	1.57E-01	0.00E+00	0.00E+00	4.12E-02	3.57E-02	9.66E-01	8.39E-01	0.00E+00	0.00E+00
2.0000 h	5.23E-02	1.26E-01	6.18E-02	1.48E-01	0.00E+00	0.00E+00	2.29E-02	7.35E-02	5.39E-01	1.73E+00	0.00E+00	0.00E+00
4.0000 h	2.29E-01	1.14E-01	2.70E-01	1.35E-01	0.00E+00	0.00E+00	2.70E-01	1.85E-01	6.35E+00	4.34E+00	0.00E+00	0.00E+00
8.0000 h	3.64E-01	9.10E-02	4.30E-01	1.07E-01	0.00E+00	0.00E+00	8.47E-01	2.29E-01	1.99E+01	5.38E+00	0.00E+00	0.00E+00
8.5000 h	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.98E-02	7.22E-04	4.66E-01	1.70E-02	0.00E+00	0.00E+00
24.0000 h	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.83E-03	1.51E-05	6.65E-02	3.55E-04	0.00E+00	0.00E+00
96.0000 h	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	6.05E-05	2.38E-13	1.42E-03	5.59E-12	0.00E+00	0.00E+00
720.0000 h	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	9.54E-13	0.00E+00	2.24E-11	0.00E+00	0.00E+00	0.00E+00
TOTALS	8.61E-01		1.02E+00		0.00E+00		1.22E+00		2.86E+01		0.00E+00	
XE-137												
0.5833 h	3.23E-02	5.54E-02	2.82E-01	4.83E-01	0.00E+00	0.00E+00	1.53E-03	3.09E-03	2.64E-01	5.36E-01	0.00E+00	0.00E+00
1.5833 h	5.74E-05	5.74E-05	5.01E-04	5.01E-04	0.00E+00	0.00E+00	2.78E-04	1.10E-07	4.83E-02	1.92E-05	0.00E+00	0.00E+00
2.0000 h	1.09E-09	2.62E-09	9.52E-09	2.29E-08	0.00E+00	0.00E+00	9.92E-09	1.28E-09	1.72E-06	2.23E-07	0.00E+00	0.00E+00
4.0000 h	1.20E-11	5.99E-12	1.04E-10	5.22E-11	0.00E+00	0.00E+00	1.17E-10	4.65E-13	2.02E-08	8.07E-11	0.00E+00	0.00E+00
8.0000 h	4.43E-21	1.11E-21	3.86E-20	9.65E-21	0.00E+00	0.00E+00	4.19E-14	8.61E-23	7.27E-12	1.49E-20	0.00E+00	0.00E+00
8.5000 h	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.86E-24	1.24E-27	6.69E-22	2.14E-25	0.00E+00	0.00E+00
24.0000 h	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.12E-28	0.00E+00	1.94E-26	0.00E+00	0.00E+00	0.00E+00
96.0000 h	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
720.0000 h	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
TOTALS	3.24E-02		2.82E-01		0.00E+00		1.80E-03		3.13E-01		0.00E+00	

TRAILS -- Transport of Radioactive Material in Linear Systems, v1.0
Pri-to-sec leak N.G. in U1 LRA assuming 1% F.F. (non-equil) W/ 35 DELAY

	ENVIRONMENT						CONTROL ROOM					
	PHOTON-SUBMG		BETA-SUBMG		THYROID-INHAL		PHOTON-SUBMG		BETA-SUBMG		THYROID-INHAL	
	DOSE mrem	DOSE RATE mrem/hr	DOSE mrem	DOSE RATE mrem/hr	DOSE mrem	DOSE RATE mrem/hr	DOSE mrem	DOSE RATE mrem/hr	DOSE mrem	DOSE RATE mrem/hr	DOSE mrem	DOSE RATE mrem/hr
XE-135												
0.5833 h	5.87E-01	1.01E+00	3.03E-01	5.20E-01	0.00E+00	0.00E+00	6.26E-02	1.67E-01	6.43E-01	1.71E+00	0.00E+00	0.00E+00
1.5833 h	1.22E-01	1.22E-01	6.28E-02	6.28E-02	0.00E+00	0.00E+00	5.05E-02	7.34E-03	5.19E-01	7.54E-02	0.00E+00	0.00E+00
2.0000 h	4.78E-03	1.15E-02	2.47E-03	5.92E-03	0.00E+00	0.00E+00	2.27E-03	4.23E-03	2.33E-02	4.34E-02	0.00E+00	0.00E+00
4.0000 h	1.98E-03	9.88E-04	1.02E-03	5.10E-04	0.00E+00	0.00E+00	1.78E-03	2.74E-04	1.82E-02	2.82E-03	0.00E+00	0.00E+00
8.0000 h	5.49E-06	1.37E-06	2.83E-06	7.08E-07	0.00E+00	0.00E+00	8.75E-05	3.72E-07	8.98E-04	3.82E-06	0.00E+00	0.00E+00
8.5000 h	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.59E-08	2.80E-10	2.65E-07	2.87E-09	0.00E+00	0.00E+00
24.0000 h	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	9.97E-11	2.92E-31	9.21E-10	3.00E-30	0.00E+00	0.00E+00
96.0000 h	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	9.38E-32	0.00E+00	9.63E-31	0.00E+00	0.00E+00	0.00E+00
720.0000 h	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
TOTALS	7.16E-01		3.69E-01		0.00E+00		1.17E-01		1.20E+00		0.00E+00	
ALL NUCLIDES												
0.5833 h	2.59E+00	4.44E+00	1.75E+00	3.00E+00	0.00E+00	0.00E+00	3.59E-01	1.12E+00	4.34E+00	1.33E+01	0.00E+00	0.00E+00
1.5833 h	2.48E+00	2.48E+00	1.43E+00	1.43E+00	0.00E+00	0.00E+00	7.88E-01	5.81E-01	9.07E+00	6.67E+00	0.00E+00	0.00E+00
2.0000 h	8.12E-01	1.95E+00	4.68E-01	1.12E+00	0.00E+00	0.00E+00	3.54E-01	1.10E+00	4.06E+00	1.26E+01	0.00E+00	0.00E+00
4.0000 h	2.90E+00	1.45E+00	1.72E+00	8.60E-01	0.00E+00	0.00E+00	3.27E+00	2.04E+00	3.91E+01	2.51E+01	0.00E+00	0.00E+00
8.0000 h	3.08E+00	7.69E-01	2.23E+00	5.57E-01	0.00E+00	0.00E+00	6.96E+00	1.61E+00	1.03E+02	2.72E+01	0.00E+00	0.00E+00
8.5000 h	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.38E-01	4.80E-03	2.35E+00	8.56E-02	0.00E+00	0.00E+00
24.0000 h	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.51E-02	7.58E-05	3.75E-01	3.57E-03	0.00E+00	0.00E+00
96.0000 h	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.83E-04	1.39E-10	1.92E-02	8.10E-09	0.00E+00	0.00E+00
720.0000 h	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	7.78E-10	0.00E+00	4.53E-08	0.00E+00	0.00E+00	0.00E+00
TOTALS	1.19E+01		7.59E+00		0.00E+00		1.19E+01		1.62E+02		0.00E+00	

0-2 HOUR ISOTOPIC RELEASES -- LOCKED ROTOR ACCIDENT

ROW/COL	A= 1	B= 2	C= 3	D= 4	E= 5	F= 6	G= 7
1>	NUCLIDE	CASE 1A	CASE 2A	CASE 3	CASE 4	CASE 5	TOTAL
2>		UCI	UCI	UCI	UCI	UCI	CI
3>	KR-83M		4.12E+08		4.28E+01		4.12E+02
4>	KR-85M		1.21E+09		2.08E+02		1.21E+03
5>	KR-85		1.09E+08		1.10E+03		1.09E+02
6>	KR-87		1.66E+09		1.20E+02		1.66E+03
7>	KR-88		3.06E+09		3.18E+02		3.06E+03
8>	KR-89		1.89E+08		9.72E+00		1.89E+02
9>	KR-90		0.00E+00		0.00E+00		0.00E+00
10>	XE-131M		2.38E+07		1.07E+01		2.38E+01
11>	XE-133M		1.82E+08		3.07E+02		1.82E+02
12>	XE-133		7.26E+09		2.61E+03		7.26E+03
13>	XE-135M		3.60E+08		1.07E+02		3.60E+02
14>	XE-135		1.84E+09		3.20E+02		1.84E+03
15>	XE-137		2.95E+08		1.59E+01		2.95E+02
16>	XE-138		1.09E+09		6.67E+01		1.09E+03
17>	I-131	2.84E+07		6.28E+04	6.28E+03	1.42E+05	2.86E+01
18>	I-132	2.44E+07		8.72E+04	1.12E+03	1.91E+04	2.45E+01
19>	I-133	5.07E+07		1.38E+05	8.19E+03	1.80E+05	5.10E+01
20>	I-134	2.33E+07		8.23E+04	1.96E+02	2.24E+03	2.34E+01
21>	I-135	4.20E+07		1.17E+05	3.00E+03	6.15E+04	4.22E+01

0-8 HOUR ISOTOPIC RELEASES--LOCKED ROTOR ACCIDENT

ROW/COL	A= 1	B= 2	C= 3	D= 4	E= 5	F= 6	G= 7
1>	NUCLIDE	CASE 1A	CASE 2A	CASE 3	CASE 4	CASE 5	TOTAL
2>		UCI	UCI	UCI	UCI	UCI	CI
3>	KR-83M		7.36E+08		4.28E+01		7.36E+02
4>	KR-85M		3.23E+09		2.08E+02		3.23E+03
5>	KR-85		4.33E+08		1.10E+03		4.33E+02
6>	KR-87		2.46E+09		1.20E+02		2.46E+03
7>	KR-88		6.78E+09		3.18E+02		6.78E+03
8>	KR-89		1.89E+08		9.72E+00		1.89E+02
9>	KR-90		0.00E+00		0.00E+00		0.00E+00
10>	XE-131M		9.43E+07		1.07E+01		9.43E+01
11>	XE-133M		6.99E+08		3.07E+02		6.99E+02
12>	XE-133		2.85E+10		2.61E+03		2.85E+04
13>	XE-135M		3.61E+08		1.07E+02		3.61E+02
14>	XE-135		5.94E+09		3.20E+02		5.94E+03
15>	XE-137		2.96E+08		1.59E+01		2.96E+02
16>	XE-138		1.09E+09		6.67E+01		1.09E+03
17>	I-131	2.75E+06		2.08E+06	6.28E+03	3.87E+05	2.77E+02
18>	I-132	9.13E+07		1.25E+06	1.12E+03	3.03E+04	9.26E+01
19>	I-133	4.40E+08		4.16E+06	8.19E+03	4.56E+05	4.45E+02
20>	I-134	3.85E+07		4.89E+05	1.96E+02	2.58E+03	3.90E+01
21>	I-135	2.82E+08		2.84E+06	3.00E+03	1.33E+05	2.85E+02