ATTACHMENT A.2

PENNSYLVANIA POWER & LIGHT COMPANY
SUSQUEHANNA STEAM ELECTRIC STATION
OFFSITE DOSE CALCULATION MANUAL

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SUMMARY OF ODCM CHANGES

Changes other than those of a minor, editorial nature are summarized below.

1. Section 10.6 "Definition of 'Appropriate Treatment' for Liquid Wastes" has been revised to provide for the use of the atmospheric demineralizer, prior to the startup and use of this system. The atmospheric demineralizer is considered appropriate treatment for the liquid radwaste chemical processing subsystem, specifically intended for organically-contaminated or other high-conductivity liquid waste. For batches containing no identified gamma activity above T. S. Table 4.11.1.1.1-1 LLO level release without treatment is considered appropriate.

2. Figure 1, "Liquid Radwaste System Flow Diagram," has been changed to include the atmospheric demineralizer system. CST berm water has been added as an influent source to the chemical waste system.

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1.0 INTRODUCTION

The purpose of this manual is to provide the parameters and methodology to be used in calculating offsite doses and effluent monitor setpoints for the Susquehanna Steam Electric Station, Units 1 and 2. Included are methods for determining maximum individual, whole-body, and organ doses due to waterborne and airborne effluents to ensure compliance with the dose limitations in the Technical Specifications. Methods are included for performing dose calculations to ensure compliance with the waterborne and airborne treatment system operability sections of the Technical Specifications. This manual includes the methods used for determining quarterly individual doses for inclusion in Effluent and Waste Disposal Semiannual Reports.

The dose models consider two release modes: airborne and waterborne. All airborne effluents are treated as ground-level releases. Dose to each of the seven organs listed in Regulatory Guide 1.109 (bone, liver, total body, thyroid, kidney, lung, and GI-LLI) are computed based on the individual nuclide composition of the effluent. The largest of the doses are compared to 10 CFR 50, Appendix I design objectives.

Liquid effluents discharged into a river undergo mixing prior to consumption as either potable water or through the fish pathway. For releases to the Susquehanna River, river model dilution factors are used. Doses to the seven critical organs are determined from individual nuclide contributions and are compared to the 10 CFR 50 Appendix I design objectives. Compliance with the 10 CFR 20 maximum permissible concentrations is done on a batch-by-batch basis prior to discharge.

This manual discusses the methodology to be used in determining effluent monitor alarm/trip setpoints to be used to ensure compliance with the instantaneous release rate limits in the Technical Specifications. Methods are described for determining the annual cumulative dose to a real individual from liquid effluents, gaseous effluents, and direct radiation for critical organs to ensure compliance with 40 CFR 190 limits. The

exposure of an individual through any of the appropriate pathways.

The Radiological Environmental Monitoring Program is described in Section 9.0 of the manual, which includes the annual land use census survey and interlaboratory comparison program.

It is the responsibility of the Superintendent of Plant-Susquehanna to ensure that this manual is used in performance of the surveillance requirements and for compliance with the limiting conditions of operations stated in the Technical Specifications. It is the responsibility of the Manager-Nuclear Technology to ensure adequacy and correctness of calculational approaches.

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TABLE 1

RADIOLOGICAL EFFLUENT OBJECTIVES & STANDARDS

	10 CFR 50 APPENDIX I DESIGN OBJECTIVES (PER REACTOR UNIT)	40 CFR 190* STANDARDS (BOTH REACTOR UNITS COMBINED)	10 CFR 20 STANDARDS** (BOTH REACTOR UNITS COMBINED)
WATERBORNE EFFLUENTS			
Dose to Total Body From all Pathways	3 mrem/year		
Dose to any Organ From all Pathways	10 mrem/year		
AIRBORNE NOBLE GAS EFFLUENTS			
Dose Rate to Total Body			500 mrem/year
Dose Rate to Skin			3000 mrem/year
Gamma Dose in Air	10 mrad/year		
Beta Dose in Air	20 mrad/year		
Dose to Total Body of an Individual	5 mrem/year		
Dose to Skin of an Individual	15 mrem/year		
AIRBORNE RADIOIODINES AND PARTICULATES			
Dose Rate to any Organ			1500 mrem/year
Dose to any Organ From all Pathways	15 mrem/year		
TOTAL URANIUM FUEL CYCLE			
Dose to Whole Body From all Fuel Cycle Operations		25 mrem/year	
Dose to Thyroid From all Fuel Cycle Operations		75 mrem/year	
Dose to any Other Organ From all Fuel Cycle Operations		25 mrem/year	
TOTAL QUANTITIES RELEASED			
Krypton-85 Released per Gigawatt-Year		50,000 curies	
Iodine-129 Released per Gigawatt-Year		5 millicuries	
Combined Plutonium-239 and Other Alpha - Emitting Radionuclides With Half Lives Greater Than One Year Released per Gigawatt-Year		.5 millicuries	

* As currently reflected in Technical Specification 3.11.4.

**Technical Specification limits set to ensure compliance with 10 CFR 20 limits

2.0 SETPOINTS

2.1 WATERBORNE EFFLUENT MONITORS

SPECIFICATION 3.3.7.10 - THE RADIOACTIVE LIQUID EFFLUENT MONITORING INSTRUMENTATION SHOWN IN TABLE 3.3.7.10-1 SHALL BE OPERABLE WITH THEIR ALARM/TRIP SETPOINTS SET TO ENSURE THAT THE LIMITS OF SPECIFICATION 3.11.1.1 ARE NOT EXCEEDED. THE ALARM/TRIP SETPOINTS OF THESE CHANNELS SHALL BE DETERMINED IN ACCORDANCE WITH THE METHODOLOGY AND PARAMETERS DESCRIBED IN THE OFFSITE DOSE CALCULATION MANUAL (ODCM).

A gross radioactivity monitor providing automatic termination of liquid effluent releases is present on the liquid radwaste effluent line. Flow rate measurement devices are also present on the liquid radwaste effluent line and the discharge line (cooling tower blowdown). Precautions, limitations, and setpoints applicable to the operation of the Susquehanna Steam Electric Station liquid effluent monitors are provided in the applicable plant procedures. Setpoint values are to be calculated to ensure that alarm and trip actions occur upon approaching the MPC limits of 10 CFR 20, Appendix B, Table II, Column 2 at the release point to the unrestricted area. The calculated alarm and trip action setpoints for the liquid effluent monitor and each flow measurement device must satisfy the following equation:

$$\frac{cf}{F + f} \leq C \qquad \text{(Eq. 1)}$$

where:

C = the liquid effluent concentration limit implementing 10 CFR 20 for unrestricted areas (uCi/ml).

c = the setpoint (uCi/ml) of the radioactive liquid effluent monitor measuring the radioactivity concentration in the effluent line prior to dilution and subsequent release.

f = the radwaste discharge flow setpoint, in volume per unit time, in the same units as F.

F = the dilution (cooling tower blowdown) water flow setpoint as measured prior to injection of the radwaste, in volume per unit time.

Radioactive liquid effluents from the SSES are only discharged as batch releases and are discharged through the liquid radwaste effluent line. The radioactive liquid waste stream is diluted in the plant discharge (cooling tower blowdown) line prior to entering the Susquehanna River. The limiting batch release concentration (c) corresponding to the liquid radwaste effluent line monitor setpoint is calculated from the above expression. The MPC value used for the liquid effluent concentration limit (C) in the above expression for the liquid radwaste effluent line monitor setpoint is 1×10^{-7} uCi/ml or the actual MPC for identified mixtures. Therefore, the expression for determining the setpoint on the liquid radwaste effluent line monitor becomes:

$$c \leq (1 \times 10^{-7}) \frac{F + f}{f} \quad (\text{uCi/ml}) \qquad \text{(Eq. 2)}$$

In order to prevent spurious isolations by the LRW effluent radiation monitor, the setpoint concentration, (c) can be defined as:

$c = X(A)$

where (A) is the actual tank concentration and $X \geq 1$

The setpoint dilution factor must then be some factor, Y (where $Y > X$), times the minimum dilution factor.

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$$\left|\frac{F + f}{f}\right|_m = \frac{(A)}{MPC}$$

where $\left|\frac{F + f}{f}\right|_m$ = the minimum dilution factor

$$\frac{F + f}{f} = \frac{Y(A)}{MPC}$$

where $\left|\frac{F + f}{f}\right|$ = the setpoint dilution factor

The requirements of Equation (2) are then met as follows:

$$Y(A) = MPC \left|\frac{F + f}{f}\right|$$

Since, by definition, $Y > X$ and $Y(A) > X(A)$, then:

$$c = X(A) \leq MPC \left|\frac{F + f}{f}\right|$$

The setpoint concentration (c) can be converted to a setpoint count rate by use of the monitor calibration factor.

(Eq. 3)

$$\text{Setpoint (cpm)} = \frac{c \text{ (uCi/ml)}}{\text{Cal. Factor (uCi/ml per cpm)}} + \text{Background (cpm)}$$

The setpoint for the dilution water flow (cooling tower blowdown) is 5000 gpm from both cooling tower basins. The setpoint for the LRW discharge flow can then be determined from:

$$\frac{F + f}{f} = \frac{Y(A)}{MPC} \qquad \text{(Eq. 4)}$$

Sample calculations for determining the release concentration limits and setpoints are given in Section A.1.1 of Appendix A.

The Service Water System provides screened water from the cooling tower basin for cooling plant systems and equipment. The Residual Heat Removal (RHR) Service Water System provides water from the

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Engineered Safeguard Service Water (ESSW) spray pond to the RHR heat exchangers. In post-accident conditions, RHR Service Water can supply water for vessel and containment flooding. The Service Water and RHR Service Water Systems are not normal pathways for liquid effluents. Radiation monitors are in place on these systems to provide indication of leaks across heat exchangers into the service water. The high radiation setpoints for these monitors are set at 2E-5 uCi/cc cesium-137 equivalent. Considering the radionuclides predominant in SSES liquid effluents, e.g., Co-58, Co-60, Fe-59, Mn-54 and Cr-51, use of a setpoint based on the Cs-137 MPC is conservative based on the following parameters:

1) photon abundance (85%)

2) magnitude of applicable MPC (2E-5 uCi/cc)

Because Service Water & RHR Service Water are not normal release pathways for liquid effluents, no credit should be taken for possible dilution scenarios. All service water should be maintained below 2E-5 uCi/cc Cs-137 equivalent.

In order to minimize the chance of a change in the background of a monitor masking a significant trend in monitored activity, the alarm setpoints for the Service Water and RHR Service Water monitors are determined as follows:

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a. When monitor background $\leq$ (2E-5)/Cal. Factor:

HI RAD Setpoint = 0.5 Background + (2E-5)/Cal. Factor

DOWNSCALE or

LOW RAD Setpoint = 0.5 Background

b. When monitor background $>$ (2E-5)/Cal. Factor:

HI RAD Setpoint = Background + 0.5 (2E-5)/Cal. Factor

DOWNSCALE or

LOW RAD Setpoint = Background - 0.5 (2E-5)/Cal. Factor

Where:

Setpoint = Alarm threshold value to be entered into monitor (cps for Service Water, cpm for RHR Service Water).

Background = Monitor background at most recent background determination (cps for Service Water, cpm for RHR Service Water).

(2E-5) = Cs-137 Maximum Permissible Concentration (uCi/ml).

Cal. Factor = Monitor response factor per unit Cs-137 concentration determined during most recent

calibration (uCi/ml per cps for Service Water, uCi/ml per cpm for RHR Service Water).

The ALERT RAD setpoints for the RHR Service Water monitors are maintained at 80% of the applicable HI RAD setpoint (cpm).

2.2 AIRBORNE EFFLUENT MONITORS

SPECIFICATION 3.3.7.11 - THE RADIOACTIVE GASEOUS EFFLUENT MONITORING INSTRUMENTATION CHANNELS SHOWN IN TABLE 3.3.7.11-1 SHALL BE OPERABLE WITH THEIR ALARM/TRIP SETPOINTS SET TO ENSURE THAT THE LIMITS OF SPECIFICATION 3.11.2.1 ARE NOT EXCEEDED. THE ALARM/TRIP SETPOINTS OF THESE CHANNELS SHALL BE DETERMINED IN ACCORDANCE WITH THE METHODOLOGY AND PARAMETERS IN THE ODCM.

Noble gas activity monitors, iodine samplers and monitors, and particulate samplers and monitors are present on the reactor building ventilation system (Units 1 and 2), the turbine building ventilation system (Units 1 and 2), and the standby gas treatment system exhaust vents. Effluent system flow rate and sampler flow rate are measured on all of the systems allowing the vent monitor microprocessor to calculate release rates based on measured flow rates. Precautions, limitations, and setpoints applicable to the operation of the SSES airborne effluent monitors are provided in the applicable plant procedures. Setpoints are conservatively established for each effluent monitor so that the instantaneous dose rates corresponding to annual dose limits in 10 CFR 20.105 for unrestricted areas will not be exceeded.

The general methodology for establishing plant ventilation airborne effluent monitor setpoints is based upon vent release rates derived from site-specific meteorological dispersion conditions, vent flow

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rates, and measured or expected radionuclide mixtures in the gaseous effluents. The vent release rate can then be converted to vent concentrations for input as setpoints for the applicable detectors. Since the vent monitors are programmed to calculate concentrations of iodine-131 and particulate being released based on the rate of accumulation of activity on the filters, setpoints can be established for the iodine and particulate channels.

The following method is used for calculating vent monitor high radiation alarm setpoints:

1. An isotopic mixture is selected for the detector in question, if applicable. Noble gas and particulate detector setpoints are based on actual isotopic mixtures obtained from vent sample analysis or the FSAR/FES expected release mixtures if actual samples do not contain sufficient detectable activity to accurately estimate the mixtures. The assumed isotopic mixtures are periodically reviewed to verify that they remain representative of plant effluents.

2. The selected noble gas or particulate mixture is used in the GASPAR program run to calculate the associated doses. The total source term (total curies used for the calculation) does not matter as long as the proper nuclides are present in the relative proportions indicated in sample analysis data or FSAR/FES tables.

   For the iodine-131 setpoint, any release total for I-131 can be entered. The highest calculated annual average relative

concentrations (X/Qs) at the site boundary are used for these GASPAR calculations.

3. The following ratio concept is used to calculate a release rate limit for the assumed mixture (or I-131):

$$\frac{\text{Calculated Dose (mrem)}}{\text{Total GASPAR Source Term (Ci)}} = \frac{\text{Dose Rate Limit (mrem/yr)}}{\text{Limiting Release Rate (Ci/yr)}}$$

The limiting release rate of the assumed mixture (or I-131) can therefore be calculated:

$$\text{Limiting Release (Ci/yr)} = \frac{\text{(Total GASPAR Source Term, Ci)}\ \text{(Dose Rate Limit, mrem/yr)}}{\text{(Calculated Dose, mrem)}} \qquad \text{(Eq. 5)}$$

For the noble gas setpoint, the calculated whole body and skin dose rates via the plume pathway are subject to the 10 CFR 20-derived limits of 500 and 3000 mrem/yr, respectively. The whole-body dose rate limit is usually most restrictive. For particulates and for iodine-131, the maximum calculated organ dose rate via the inhalation pathway is subject to the limit of 1500 mrem/yr.

4. The limiting release rates are converted to limiting vent concentrations using high limit vent flow rates.

Limiting Vent Concentration, uCi/cc =

$$\frac{\text{(Limiting Release Rate, Ci/yr) (1E6uCi/Ci)}}{\text{(5.26E5 min/yr) (Vent Flow Rate, cc/min)}} \qquad \text{(Eq. 6)}$$

Sample calculations of waterborne and airborne effluent monitor setpoints are presented in Section A.1.2 of Appendix A.

Vent flow rates and sample flow rates are monitored and recorded for each of the five SSES release points. The measured flow rates are used to calculate vent concentrations and release rates. Flow channel setpoints are set at approximately 10% and 90% of the calibrated sensor ranges to provide indication of possibly abnormal flow rates.

The main condenser offgas pre-treatment monitor provides indication of offgas activity prior to input to the holdup system. Alarm setpoints are based on two times and three times the steady state full power offgas activity readings.

SPECIFICATION 3.11.2.6 - THE CONCENTRATION OF HYDROGEN OR OXYGEN IN THE MAIN CONDENSER OFFGAS TREATMENT SYSTEM SHALL BE LIMITED TO LESS THAN OR EQUAL TO 4% BY VOLUME.

Hydrogen recombiners are used at SSES to maintain the relative concentration of components of potentially explosive gas mixtures outside the explosive envelope. The main condenser offgas treatment system explosive gas monitoring system (offgas hydrogen analyzers) have setpoints to alarm at 1% and 2% hydrogen.

3.0 WATERBORNE EFFLUENT CONCENTRATION MEASUREMENTS

SPECIFICATION 3.11.1.1 - THE CONCENTRATION OF RADIOACTIVE MATERIAL RELEASED IN LIQUID EFFLUENTS TO UNRESTRICTED AREAS (SEE FIGURE 5.1.3-1) SHALL BE LIMITED TO THE CONCENTRATIONS SPECIFIED IN 10 CFR PART 20, APPENDIX B, TABLE II, COLUMN 2 FOR RADIONUCLIDES OTHER THAN DISSOLVED OR ENTRAINED NOBLE GASES. FOR DISSOLVED OR ENTRAINED NOBLE GASES, THE CONCENTRATION SHALL BE LIMITED TO THE CONCENTRATIONS SPECIFIED IN TABLE 3.11.1.1-1.

Liquid batch releases are controlled individually and each batch release is authorized based upon sample analysis and the existing dilution flow in the discharge line. The methods for sampling and analysis of each batch prior to release are given in the applicable plant procedures. A release rate limit is calculated for each batch based upon analysis, dilution flow and all procedural conditions being met before it is authorized for release.

Table 3.11.1-1 mentioned in Specification 3.11.1.1 contains the following "Maximum Permissible Concentrations of Dissolved or Entrained Noble Gases Released From the Site to Unrestricted Areas in Liquid Waste":

Nuclide	MPC (uCi/ml)
Kr-85m	2E-4
Kr-85	5E-4
Kr-87	4E-5
Kr-88	9E-5
Ar-41	7E-5
Xe-131m	7E-4
Xe-133m	5E-4
Xe-133	6E-4
Xe-135m	2E-4
Xe-135	2E-4

These values were computed using Equation 20 of ICRP2 (1959), adjusted for infinite cloud submersion in water, with R equal to 0.01 rem/week,

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the density of water equal to 1.0 gm/cm^3, and Pw/Pt equal to 1.0, where Pw/Pt is stopping power of water relative to tissue, and R is the dose rate limit for total body exposure. The MPC value for other liquid effluents is the actual MPC for identified mixtures, or 1E-7 uCi/ml for unidentified mixtures.

The liquid radwaste effluent stream entering the discharge line is monitored and will automatically be terminated if the pre-selected monitor setpoint is exceeded as described in Section 2.1.

Additional monthly and quarterly analyses shall be performed in accordance with Table 4.11-1 of the SSES Technical Specifications.

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4.0 AIRBORNE EFFLUENT DOSE RATES

SPECIFICATION 3.11.2.1. THE DOSE RATE DUE TO RADIOACTIVE MATERIALS RELEASED IN GASEOUS EFFLUENTS FROM THE SITE (SEE FIGURE 5.1.3-1) SHALL BE LIMITED TO THE FOLLOWING:

a. FOR NOBLE GASES: LESS THAN OR EQUAL TO 500 MREM/YR TO THE TOTAL BODY AND LESS THAN OR EQUAL TO 3000 MREM/YR TO THE SKIN, AND

b. FOR IODINE-131, FOR TRITIUM, AND FOR ALL RADIONUCLIDES IN PARTICULATE FORM WITH HALF-LIVES GREATER THAN 8 DAYS: LESS THAN OR EQUAL TO 1500 MREM/YR TO ANY ORGAN (INHALATION PATHWAY ONLY).

4.1 NOBLE GASES

Noble gas activity monitor setpoints are established at release rates which permit some margin for corrective action to be taken before exceeding offsite dose rates corresponding to the 10 CFR 20 annual dose limits as described in Section 2.2. The methods for sampling and analysis of continuous ventilation releases are given in the applicable plant procedures. The dose rate in unrestricted areas due to radioactive materials released in airborne effluents may be determined by the following equation for whole body dose:

$$D_{wb} = \sum_i (K_i)(X/Q)_v (Q'_{iv}) \qquad \text{(Eq. 7)}$$

and by the following equation for skin dose:

$$D_s = \sum_i (L_i + 1.1\ M_i)\ (X/Q)_v\ (Q'_{iv}) \qquad \text{(Eq. 8)}$$

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where:

K_i = the whole-body dose factor due to gamma emissions for each identified noble gas radionuclide (i) (mrem/yr per uCi/m^3) from Table 2.

Q'_{iv} = the release rate of radionuclide (i) from vent (v) (uCi/sec).

$(X/Q)_v$ = the highest calculated annual average relative concentration for any area at or beyond the site boundary in an unrestricted area from vent release point (v) (sec/m^3) such as from Table 3.

D_{wb} = the annual whole-body dose (mrem/yr).

L_i = the skin dose factor due to the beta emissions for each identified noble gas radionuclide (i) (mrem/yr per uCi/m^3) from Table 2.

M_i = the air dose factor due to gamma emissions for each identified noble gas radionuclide (i) (mrad/yr per uCi/m^3) from Table 2 (conversion constant of 1.1 converts air dose-mrad to skin dose-mrem).

D_s = the annual skin dose (mrem/yr).

Sample calculations for determining whole body and skin doses from noble gas radionuclides released from the SSES are given in Section A.2.1 of Appendix A.

4.2 RADIONUCLIDES OTHER THAN NOBLE GASES

The methods for sampling and analysis of continuous ventilation releases for radioiodines and radioactive particulates are given in the applicable plant procedures. Additional monthly and quarterly analyses shall be performed in accordance with Table 4.11.2.1.2-1 of the SSES Technical Specifications. The dose rate in unrestricted areas due to inhalation of radioactive materials released in

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airborne effluents may be determined by the following equation for any organ:

$$D_c = \Sigma (R_i) (W_v) (Q'_{iv}) \quad \text{(Eq. 9)}$$

where:

R_i = the dose rate parameter based on inhalation pathway for radionuclides other than noble gases for the inhalation pathway (mrem/yr per uCi/m^3) from Table 4.

W_v = the highest annual average dispersion parameter for estimating the dose to the critical receptor; relative concentration (X/Q) (sec/m^3) for the inhalation pathway, such as from Table 3.

Q'_{iv} = the release rate of radionuclide (i) from vent(v) (uCi/sec).

D_c = the annual organ dose (mrem/yr).

Sample calculations for determining doses to critical organs from radionuclides other than noble gases released from the SSES are given in Section A.2.2 of Appendix A.

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TABLE 2

DOSE FACTORS FOR NOBLE GASES[a]

Radionuclide	Whole Body Dose Factor K_i (mrem/yr per uCi/m³)	Skin Dose Factor L_i (mrem/yr per uCi/m³)	Gamma Air Dose Factor M_i (mrad/yr per uCi/m³)	Beta Air Dose Factor N_i (mrad/yr per uCi/m³)
Kr-83m	7.56E-02[b]	---	1.93E+01	2.88E+02
Kr-85m	1.17E+03	1.46E+03	1.23E+03	1.97E+03
Kr-85	1.61E+01	1.34E+03	1.72E+01	1.95E+03
Kr-87	5.92E+03	9.73E+03	6.17E+03	1.03E+04
Kr-88	1.47E+04	2.37E+03	1.52E+04	2.93E+03
Kr-89	1.66E+04	1.01E+04	1.73E+04	1.06E+04
Kr-90	1.56E+04	7.29E+03	1.63E+04	7.83E+03
Xe-131m	9.15E+01	4.76E+02	1.56E+02	1.11E+03
Xe-133m	2.51E+02	9.94E+02	3.27E+02	1.48E+03
Xe-133	2.94E+02	3.06E+02	3.53E+02	1.05E+03
Xe-135m	3.12E+03	7.11E+02	3.36E+03	7.39E+02
Xe-135	1.81E+03	1.86E+03	1.92E+03	2.46E+03
Xe-137	1.42E+03	1.22E+04	1.51E+03	1.27E+04
Xe-138	8.83E+03	4.13E+03	9.21E+03	4.75E+03
Ar-41	8.84E+03	2.69E+03	9.30E+03	3.28E+03

[a] The listed dose factors are for radionuclides that may be detected in airborne effluents and derived from Table B-1 in Reg. Guide 1.109.

[b] 7.56E-02 = 7.56×10^{-2}.

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TABLE 3

SAMPLE ANNUAL AVERAGE RELATIVE CONCENTRATIONS AND DEPOSITION RATES[a]

Downwind Sector	Site Boundary (Miles)	Relative Concentrations (X/Q) (sec/m^3)	Relative Deposition Rates (D/Q) (m^{-2})
NNE	.82	8.5E-6	2.2E-8
NE	1.1	2.6E-6	7.3E-9
ENE	.86	4.1E-6	1.4E-8
E	.80	3.6E-6	1.7E-8
ESE	.50	5.7E-6	2.9E-8
SE	.34	6.7E-6	3.7E-8
SSE	.34	5.5E-6	3.5E-8
S	.34	1.0E-5	3.4E-8
SSW	.39	8.9E-6	2.5E-8
SW	.77	1.7E-5	3.4E-8
WSW	1.2	1.8E-5	2.3E-8
W	1.0	2.6E-5	2.9E-8
WNW	.64	1.0E-5	1.2E-8
NW	.64	7.0E-6	1.0E-8
NNW	.61	7.5E-6	1.7E-8
N	.61	7.9E-6	2.1E-8

[a] From 1980 Meteorology Summary for SSES
Data Period: 01/01/80 - 12/31/80

Site Boundary distances are approximate, and current as of 11/88.

TABLE 4

DOSE FACTORS FOR INHALATION, INGESTION AND GROUND EXPOSURE PATHWAYS: RADIONUCLIDES OTHER THAN NOBLE GASES(1)

(1)Reference letter R. K. Barclay to File R9-5: Technical Documentation of Lotus 1-2-3 ODCMTAB and TGTMSTR files: Gaseous Dose Factor Calculation using NUREG-0133/Reg. Guide 1.109 Methodology, PLI 69605, 11/8/91.

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O.D.C.M. MAXIMUM PATHWAY DOSE FACTORS: RADIONUCLIDES OTHER THAN NOBLE GASES*

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PATHWAY	AGE GROUP	BONE	LIVER	T.BODY	THYROID	KIDNEY	LUNG	G.I.	SKIN
GROUND	ADULT	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	TEEN	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	CHILD	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	INFANT	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
GOAT MILK	ADULT	0.00E+00	1.38E+03	1.38E+03	1.38E+03	1.38E+03	1.38E+03	1.38E+03	N/A
	TEEN	0.00E+00	1.80E+03	1.80E+03	1.80E+03	1.80E+03	1.80E+03	1.80E+03	N/A
	CHILD	0.00E+00	2.84E+03	2.84E+03	2.84E+03	2.84E+03	2.84E+03	2.84E+03	N/A
	INFANT	0.00E+00	4.31E+03	4.31E+03	4.31E+03	4.31E+03	4.31E+03	4.31E+03	N/A
COW MILK	ADULT	0.00E+00	6.77E+02	6.77E+02	6.77E+02	6.77E+02	6.77E+02	6.77E+02	N/A
	TEEN	0.00E+00	8.82E+02	8.82E+02	8.82E+02	8.82E+02	8.82E+02	8.82E+02	N/A
	CHILD	0.00E+00	1.39E+03	1.39E+03	1.39E+03	1.39E+03	1.39E+03	1.39E+03	N/A
	INFANT	0.00E+00	2.11E+03	2.11E+03	2.11E+03	2.11E+03	2.11E+03	2.11E+03	N/A
MEAT	ADULT	0.00E+00	2.89E+02	2.89E+02	2.89E+02	2.89E+02	2.89E+02	2.89E+02	N/A
	TEEN	0.00E+00	1.72E+02	1.72E+02	1.72E+02	1.72E+02	1.72E+02	1.72E+02	N/A
	CHILD	0.00E+00	2.08E+02	2.08E+02	2.08E+02	2.08E+02	2.08E+02	2.08E+02	N/A
	INFANT	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	N/A
GTBLE	ADULT	2.11E+10	2.11E+10	2.11E+10	2.11E+10	2.11E+10	2.11E+10	2.11E+10	N/A
	TEEN	1.39E+10	1.39E+10	1.39E+10	1.39E+10	1.39E+10	1.39E+10	1.39E+10	N/A
	CHILD	8.58E+09	8.58E+09	8.58E+09	8.58E+09	8.58E+09	8.58E+09	8.58E+09	N/A
	INFANT	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	N/A
TOTAL INGEST.	ADULT	2.11E+10	2.11E+10	2.11E+10	2.11E+10	2.11E+10	2.11E+10	2.11E+10	N/A
	TEEN	1.39E+10	1.39E+10	1.39E+10	1.39E+10	1.39E+10	1.39E+10	1.39E+10	N/A
	CHILD	8.58E+09	8.58E+09	8.58E+09	8.58E+09	8.58E+09	8.58E+09	8.58E+09	N/A
	INFANT	0.00E+00	6.43E+03	6.43E+03	6.43E+03	6.43E+03	6.43E+03	6.43E+03	N/A
INHAL.	ADULT	0.00E+00	1.26E+03	1.26E+03	1.26E+03	1.26E+03	1.26E+03	1.26E+03	N/A
	TEEN	0.00E+00	1.27E+03	1.27E+03	1.27E+03	1.27E+03	1.27E+03	1.27E+03	N/A
	CHILD	0.00E+00	1.12E+03	1.12E+03	1.12E+03	1.12E+03	1.12E+03	1.12E+03	N/A
	INFANT	0.00E+00	6.47E+02	6.47E+02	6.47E+02	6.47E+02	6.47E+02	6.47E+02	N/A
		BONE	LIVER	T.BODY	THYROID	KIDNEY	LUNG	G.I.	SKIN

*Airborne pathways and tritium ingestion: units are mrem/yr/uCi/m3
Deposition pathways: units are mrem-m2/yr/uCi/sec

MAXIMUM VALUES FOR PATHWAYS

GROUND: T.B./ORG.	GROUND: SKIN	GOAT MILK:	COW MILK:	MEAT:	VEGTBLE:	TOTAL INGEST:	INHAL.
0.00E+00	0.00E+00	4.31E+03	2.11E+03	2.89E+02	2.11E+10	2.11E+10	1.27E+03

APPV PKS
DATE 2/5/92

O.D.C.M. MAXIMUM PATHWAY DOSE FACTORS: RADIONUCLIDES OTHER THAN NOBLE GASES*

ISOTOPE: C-14

PATHWAY	AGE GROUP	BONE	LIVER	T.BODY	THYROID	KIDNEY	LUNG	G.I.	SKIN
GROUND	ADULT	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	TEEN	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	CHILD	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	INFANT	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
GOAT MILK	ADULT	1.69E+08	3.39E+07	3.39E+07	3.39E+07	3.39E+07	3.39E+07	3.39E+07	N/A
	TEEN	3.12E+08	6.24E+07	6.24E+07	6.24E+07	6.24E+07	6.24E+07	6.24E+07	N/A
	CHILD	7.68E+08	1.54E+08	1.54E+08	1.54E+08	1.54E+08	1.54E+08	1.54E+08	N/A
	INFANT	1.50E+09	3.21E+08	3.21E+08	3.21E+08	3.21E+08	3.21E+08	3.21E+08	N/A
COW MILK	ADULT	1.35E+08	2.71E+07	2.71E+07	2.71E+07	2.71E+07	2.71E+07	2.71E+07	N/A
	TEEN	2.50E+08	4.99E+07	4.99E+07	4.99E+07	4.99E+07	4.99E+07	4.99E+07	N/A
	CHILD	6.14E+08	1.23E+08	1.23E+08	1.23E+08	1.23E+08	1.23E+08	1.23E+08	N/A
	INFANT	1.20E+09	2.57E+08	2.57E+08	2.57E+08	2.57E+08	2.57E+08	2.57E+08	N/A
MEAT	ADULT	1.36E+08	2.72E+07	2.72E+07	2.72E+07	2.72E+07	2.72E+07	2.72E+07	N/A
	TEEN	1.15E+08	2.30E+07	2.30E+07	2.30E+07	2.30E+07	2.30E+07	2.30E+07	N/A
	CHILD	2.16E+08	4.33E+07	4.33E+07	4.33E+07	4.33E+07	4.33E+07	4.33E+07	N/A
	INFANT	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	N/A
VEGTBLE	ADULT	2.06E+08	4.13E+07	4.13E+07	4.13E+07	4.13E+07	4.13E+07	4.13E+07	N/A
	TEEN	3.49E+08	6.98E+07	6.98E+07	6.98E+07	6.98E+07	6.98E+07	6.98E+07	N/A
	CHILD	8.53E+08	1.71E+08	1.71E+08	1.71E+08	1.71E+08	1.71E+08	1.71E+08	N/A
	INFANT	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	N/A
TOTAL INGEST.	ADULT	6.47E+08	1.29E+08	1.29E+08	1.29E+08	1.29E+08	1.29E+08	1.29E+08	N/A
	TEEN	1.03E+09	2.05E+08	2.05E+08	2.05E+08	2.05E+08	2.05E+08	2.05E+08	N/A
	CHILD	2.45E+09	4.90E+08	4.90E+08	4.90E+08	4.90E+08	4.90E+08	4.90E+08	N/A
	INFANT	2.71E+09	5.78E+08	5.78E+08	5.78E+08	5.78E+08	5.78E+08	5.78E+08	N/A
INHAL.	ADULT	1.82E+04	3.41E+03	3.41E+03	3.41E+03	3.41E+03	3.41E+03	3.41E+03	N/A
	TEEN	2.60E+04	4.87E+03	4.87E+03	4.87E+03	4.87E+03	4.87E+03	4.87E+03	N/A
	CHILD	3.59E+04	6.73E+03	6.73E+03	6.73E+03	6.73E+03	6.73E+03	6.73E+03	N/A
	INFANT	2.65E+04	5.31E+03	5.31E+03	5.31E+03	5.31E+03	5.31E+03	5.31E+03	N/A
		BONE	LIVER	T.BODY	THYROID	KIDNEY	LUNG	G.I.	SKIN

*Airborne pathways and tritium ingestion: units are mrem/yr/uCi/m3
Deposition pathways: units are mrem-m2/yr/uCi/sec

MAXIMUM VALUES FOR PATHWAYS

GROUND: T.B./ORG.	GROUND: SKIN	GOAT MILK:	COW MILK:	MEAT:	VEGTBLE:	TOTAL INGEST:	INHAL.
0.00E+00	0.00E+00	1.50E+09	1.20E+09	2.16E+08	8.53E+08	2.71E+09	3.59E+04

APPV [illegible]
DATE 2/5/92

O.D.C.M. MAXIMUM PATHWAY DOSE FACTORS: RADIONUCLIDES OTHER THAN NOBLE GASES*

ISOTOPE: P-32

PATHWAY	AGE GROUP	BONE	LIVER	T.BODY	THYROID	KIDNEY	LUNG	G.I.	SKIN
GROUND	ADULT	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	TEEN	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	CHILD	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	INFANT	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
GOAT MILK	ADULT	9.28E+09	5.77E+08	3.59E+08	0.00E+00	0.00E+00	0.00E+00	1.04E+09	N/A
	TEEN	1.71E+10	1.06E+09	6.64E+08	0.00E+00	0.00E+00	0.00E+00	1.44E+09	N/A
	CHILD	4.22E+10	1.98E+09	1.63E+09	0.00E+00	0.00E+00	0.00E+00	1.17E+09	N/A
	INFANT	7.25E+10	5.12E+09	3.37E+09	0.00E+00	0.00E+00	0.00E+00	1.18E+09	N/A
COW MILK	ADULT	4.36E+09	2.71E+08	1.69E+08	0.00E+00	0.00E+00	0.00E+00	4.91E+08	N/A
	TEEN	8.05E+09	4.99E+08	3.12E+08	0.00E+00	0.00E+00	0.00E+00	6.77E+08	N/A
	CHILD	1.99E+10	9.29E+08	7.65E+08	0.00E+00	0.00E+00	0.00E+00	5.49E+08	N/A
	INFANT	4.09E+10	2.41E+09	1.59E+09	0.00E+00	0.00E+00	0.00E+00	5.54E+08	N/A
MEAT	ADULT	1.55E+09	9.63E+07	5.99E+07	0.00E+00	0.00E+00	0.00E+00	1.74E+08	N/A
	TEEN	1.31E+09	8.11E+07	5.07E+07	0.00E+00	0.00E+00	0.00E+00	1.10E+08	N/A
	CHILD	2.47E+09	1.15E+08	9.51E+07	0.00E+00	0.00E+00	0.00E+00	6.82E+07	N/A
	INFANT	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	N/A
.GTBLE	ADULT	7.09E+08	4.41E+07	2.74E+07	0.00E+00	0.00E+00	0.00E+00	7.98E+07	N/A
	TEEN	9.57E+08	5.93E+07	3.71E+07	0.00E+00	0.00E+00	0.00E+00	8.05E+07	N/A
	CHILD	2.16E+09	1.01E+08	8.34E+07	0.00E+00	0.00E+00	0.00E+00	5.98E+07	N/A
	INFANT	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	N/A
TOTAL INGEST.	ADULT	1.59E+10	9.89E+08	6.15E+08	0.00E+00	0.00E+00	0.00E+00	1.79E+09	N/A
	TEEN	2.74E+10	1.70E+09	1.06E+09	0.00E+00	0.00E+00	0.00E+00	2.31E+09	N/A
	CHILD	6.67E+10	3.12E+09	2.57E+09	0.00E+00	0.00E+00	0.00E+00	1.84E+09	N/A
	INFANT	1.13E+11	7.53E+09	4.96E+09	0.00E+00	0.00E+00	0.00E+00	1.73E+09	N/A
INHAL.	ADULT	1.32E+06	7.71E+04	5.01E+04	0.00E+00	0.00E+00	0.00E+00	8.64E+04	N/A
	TEEN	1.89E+06	1.10E+05	7.16E+04	0.00E+00	0.00E+00	0.00E+00	9.28E+04	N/A
	CHILD	2.60E+06	1.14E+05	9.88E+04	0.00E+00	0.00E+00	0.00E+00	4.22E+04	N/A
	INFANT	2.03E+06	1.12E+05	7.74E+04	0.00E+00	0.00E+00	0.00E+00	1.61E+04	N/A
		BONE	LIVER	T.BODY	THYROID	KIDNEY	LUNG	G.I.	SKIN

*Airborne pathways and tritium ingestion: units are mrem/yr/uCi/m3
Deposition pathways: units are mrem-m2/yr/uCi/sec

MAXIMUM VALUES FOR PATHWAYS

GROUND: T.B./ORG.	GROUND: SKIN	GOAT MILK:	COW MILK:	MEAT:	VEGTBLE:	TOTAL INGEST:	INHAL.
0.00E+00	0.00E+00	7.25E+10	4.09E+10	2.47E+09	2.16E+09	1.13E+11	2.60E+06

APPV [illegible]
DATE 2/5/92

O.D.C.M. MAXIMUM PATHWAY DOSE FACTORS: RADIONUCLIDES OTHER THAN NOBLE GASES*

ISOTOPE: Cr-51

PATHWAY	AGE GROUP	BONE	LIVER	T.BODY	THYROID	KIDNEY	LUNG	G.I.	SKIN
GROUND	ADULT	4.61E+06	4.61E+06	4.61E+06	4.61E+06	4.61E+06	4.61E+06	4.61E+06	5.45E+06
	TEEN	4.61E+06	4.61E+06	4.61E+06	4.61E+06	4.61E+06	4.61E+06	4.61E+06	5.45E+06
	CHILD	4.61E+06	4.61E+06	4.61E+06	4.61E+06	4.61E+06	4.61E+06	4.61E+06	5.45E+06
	INFANT	4.61E+06	4.61E+06	4.61E+06	4.61E+06	4.61E+06	4.61E+06	4.61E+06	5.45E+06
GOAT MILK	ADULT	0.00E+00	0.00E+00	1.61E+03	9.64E+02	3.55E+02	2.14E+03	4.06E+05	N/A
	TEEN	0.00E+00	0.00E+00	2.82E+03	1.56E+03	6.17E+02	4.02E+03	4.73E+05	N/A
	CHILD	0.00E+00	0.00E+00	5.74E+03	3.19E+03	8.71E+02	5.82E+03	3.05E+05	N/A
	INFANT	0.00E+00	0.00E+00	9.10E+03	5.94E+03	1.30E+03	1.16E+04	2.65E+05	N/A
COW MILK	ADULT	0.00E+00	0.00E+00	7.99E+03	4.77E+03	1.76E+03	1.06E+04	2.01E+06	N/A
	TEEN	0.00E+00	0.00E+00	1.39E+04	7.75E+03	3.06E+03	1.99E+04	2.34E+06	N/A
	CHILD	0.00E+00	0.00E+00	2.84E+04	1.58E+04	4.32E+03	2.88E+04	1.51E+06	N/A
	INFANT	0.00E+00	0.00E+00	4.51E+04	2.94E+04	6.43E+03	5.72E+04	1.31E+06	N/A
MEAT	ADULT	0.00E+00	0.00E+00	2.50E+03	1.49E+03	5.50E+02	3.31E+03	6.28E+05	N/A
	TEEN	0.00E+00	0.00E+00	2.00E+03	1.11E+03	4.38E+02	2.85E+03	3.36E+05	N/A
	CHILD	0.00E+00	0.00E+00	3.11E+03	1.73E+03	4.72E+02	3.16E+03	1.65E+05	N/A
	INFANT	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	N/A
VEGTBLE	ADULT	0.00E+00	0.00E+00	3.35E+04	2.01E+04	7.39E+03	4.45E+04	8.44E+06	N/A
	TEEN	0.00E+00	0.00E+00	5.02E+04	2.79E+04	1.10E+04	7.17E+04	8.44E+06	N/A
	CHILD	0.00E+00	0.00E+00	9.96E+04	5.53E+04	1.51E+04	1.01E+05	5.28E+06	N/A
	INFANT	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	N/A
TOTAL INGEST.	ADULT	0.00E+00	0.00E+00	4.56E+04	2.73E+04	1.01E+04	6.06E+04	1.15E+07	N/A
	TEEN	0.00E+00	0.00E+00	6.90E+04	3.83E+04	1.51E+04	9.85E+04	1.16E+07	N/A
	CHILD	0.00E+00	0.00E+00	1.37E+05	7.60E+04	2.08E+04	1.39E+05	7.26E+06	N/A
	INFANT	0.00E+00	0.00E+00	5.42E+04	3.53E+04	7.72E+03	6.88E+04	1.58E+06	N/A
INHAL.	ADULT	0.00E+00	0.00E+00	1.00E+02	5.95E+01	2.28E+01	1.44E+04	3.32E+03	N/A
	TEEN	0.00E+00	0.00E+00	1.35E+02	7.50E+01	3.07E+01	2.10E+04	3.00E+03	N/A
	CHILD	0.00E+00	0.00E+00	1.54E+02	8.55E+01	2.43E+01	1.70E+04	1.08E+03	N/A
	INFANT	0.00E+00	0.00E+00	8.95E+01	5.75E+01	1.32E+01	1.28E+04	3.57E+02	N/A
		BONE	LIVER	T.BODY	THYROID	KIDNEY	LUNG	G.I.	SKIN

*Airborne pathways and tritium ingestion: units are mrem/yr/uCi/m3
Deposition pathways: units are mrem-m2/yr/uCi/sec

MAXIMUM VALUES FOR PATHWAYS

GROUND: T.B./ORG.	GROUND: SKIN	GOAT MILK:	COW MILK:	MEAT:	VEGTBLE:	TOTAL INGEST:	INHAL.
4.61E+06	5.45E+06	4.73E+05	2.34E+06	6.28E+05	8.44E+06	1.16E+07	2.10E+04

APPV RCG
DATE 2/17/92

O.D.C.M. MAXIMUM PATHWAY DOSE FACTORS: RADIONUCLIDES OTHER THAN NOBLE GASES*

ISOTOPE: Mn-54

PATHWAY	AGE GROUP	BONE	LIVER	T.BODY	THYROID	KIDNEY	LUNG	G.I.	SKIN
GROUND	ADULT	1.37E+09	1.37E+09	1.37E+09	1.37E+09	1.37E+09	1.37E+09	1.37E+09	1.61E+09
	TEEN	1.37E+09	1.37E+09	1.37E+09	1.37E+09	1.37E+09	1.37E+09	1.37E+09	1.61E+09
	CHILD	1.37E+09	1.37E+09	1.37E+09	1.37E+09	1.37E+09	1.37E+09	1.37E+09	1.61E+09
	INFANT	1.37E+09	1.37E+09	1.37E+09	1.37E+09	1.37E+09	1.37E+09	1.37E+09	1.61E+09
GOAT	ADULT	0.00E+00	6.14E+05	1.17E+05	0.00E+00	1.83E+05	0.00E+00	1.88E+06	N/A
MILK	TEEN	0.00E+00	1.02E+06	2.03E+05	0.00E+00	3.05E+05	0.00E+00	2.10E+06	N/A
	CHILD	0.00E+00	1.53E+06	4.07E+05	0.00E+00	4.29E+05	0.00E+00	1.28E+06	N/A
	INFANT	0.00E+00	2.84E+06	6.45E+05	0.00E+00	6.30E+05	0.00E+00	1.04E+06	N/A
COW	ADULT	0.00E+00	3.92E+06	7.49E+05	0.00E+00	1.17E+06	0.00E+00	1.20E+07	N/A
MILK	TEEN	0.00E+00	6.54E+06	1.30E+06	0.00E+00	1.95E+06	0.00E+00	1.34E+07	N/A
	CHILD	0.00E+00	9.78E+06	2.61E+06	0.00E+00	2.74E+06	0.00E+00	8.21E+06	N/A
	INFANT	0.00E+00	1.82E+07	4.12E+06	0.00E+00	4.03E+06	0.00E+00	6.68E+06	N/A
MEAT	ADULT	0.00E+00	4.79E+06	9.14E+05	0.00E+00	1.43E+06	0.00E+00	1.47E+07	N/A
	TEEN	0.00E+00	3.65E+06	7.25E+05	0.00E+00	1.09E+06	0.00E+00	7.49E+06	N/A
	CHILD	0.00E+00	4.18E+06	1.11E+06	0.00E+00	1.17E+06	0.00E+00	3.51E+06	N/A
	INFANT	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	N/A
VEGTBLE	ADULT	0.00E+00	2.80E+08	5.35E+07	0.00E+00	8.34E+07	0.00E+00	8.58E+08	N/A
	TEEN	0.00E+00	4.27E+08	8.46E+07	0.00E+00	1.27E+08	0.00E+00	8.75E+08	N/A
	CHILD	0.00E+00	6.34E+08	1.69E+08	0.00E+00	1.78E+08	0.00E+00	5.32E+08	N/A
	INFANT	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	N/A
TOTAL	ADULT	0.00E+00	2.90E+08	5.53E+07	0.00E+00	8.62E+07	0.00E+00	8.87E+08	N/A
INGEST.	TEEN	0.00E+00	4.38E+08	8.69E+07	0.00E+00	1.31E+08	0.00E+00	8.98E+08	N/A
	CHILD	0.00E+00	6.49E+08	1.73E+08	0.00E+00	1.82E+08	0.00E+00	5.45E+08	N/A
	INFANT	0.00E+00	2.10E+07	4.77E+06	0.00E+00	4.66E+06	0.00E+00	7.73E+06	N/A
INHAL.	ADULT	0.00E+00	3.96E+04	6.30E+03	0.00E+00	9.84E+03	1.40E+06	7.74E+04	N/A
	TEEN	0.00E+00	5.11E+04	8.40E+03	0.00E+00	1.27E+04	1.98E+06	6.68E+04	N/A
	CHILD	0.00E+00	4.29E+04	9.51E+03	0.00E+00	1.00E+04	1.58E+06	2.29E+04	N/A
	INFANT	0.00E+00	2.53E+04	4.98E+03	0.00E+00	4.98E+03	1.00E+06	7.06E+03	N/A
		BONE	LIVER	T.BODY	THYROID	KIDNEY	LUNG	G.I.	SKIN

*Airborne pathways and tritium ingestion: units are mrem/yr/uCi/m3
Deposition pathways: units are mrem-m2/yr/uCi/sec

MAXIMUM VALUES FOR PATHWAYS

GROUND: T.B./ORG.	GROUND: SKIN	GOAT MILK:	COW MILK:	MEAT:	VEGTBLE:	TOTAL INGEST:	INHAL.
1.37E+09	1.61E+09	2.84E+06	1.82E+07	1.47E+07	8.75E+08	8.98E+08	1.98E+06

APPV
DATE 2/5/92

O.D.C.M. MAXIMUM PATHWAY DOSE FACTORS: RADIONUCLIDES OTHER THAN NOBLE GASES*

ISOTOPE: Fe-55

PATHWAY	AGE GROUP	BONE	LIVER	T.BODY	THYROID	KIDNEY	LUNG	G.I.	SKIN
GROUND	ADULT	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	TEEN	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	CHILD	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	INFANT	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
GOAT MILK	ADULT	2.06E+05	1.42E+05	3.32E+04	0.00E+00	0.00E+00	7.94E+04	8.16E+04	N/A
	TEEN	3.65E+05	2.59E+05	6.04E+04	0.00E+00	0.00E+00	1.64E+05	1.12E+05	N/A
	CHILD	9.17E+05	4.86E+05	1.51E+05	0.00E+00	0.00E+00	2.75E+05	9.01E+04	N/A
	INFANT	8.52E+07	7.16E+05	1.91E+05	0.00E+00	0.00E+00	3.50E+05	9.09E+04	N/A
COW MILK	ADULT	1.25E+07	8.64E+06	2.01E+06	0.00E+00	0.00E+00	4.82E+06	4.95E+06	N/A
	TEEN	2.22E+07	1.57E+07	3.67E+06	0.00E+00	0.00E+00	9.97E+06	6.80E+06	N/A
	CHILD	5.56E+07	2.95E+07	9.14E+06	0.00E+00	0.00E+00	1.67E+07	5.47E+06	N/A
	INFANT	6.73E+07	4.34E+07	1.16E+07	0.00E+00	0.00E+00	2.12E+07	5.52E+06	N/A
MEAT	ADULT	1.61E+08	1.11E+08	2.60E+07	0.00E+00	0.00E+00	6.22E+07	6.39E+07	N/A
	TEEN	1.31E+08	9.29E+07	2.17E+07	0.00E+00	0.00E+00	5.89E+07	4.02E+07	N/A
	CHILD	2.51E+08	1.33E+08	4.13E+07	0.00E+00	0.00E+00	7.54E+07	2.47E+07	N/A
	INFANT	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	N/A
VEGTBLE	ADULT	1.89E+08	1.31E+08	3.05E+07	0.00E+00	0.00E+00	7.30E+07	7.50E+07	N/A
	TEEN	3.08E+08	2.18E+08	5.09E+07	0.00E+00	0.00E+00	1.38E+08	9.44E+07	N/A
	CHILD	7.67E+08	4.07E+08	1.26E+08	0.00E+00	0.00E+00	2.30E+08	7.53E+07	N/A
	INFANT	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	N/A
TOTAL INGEST.	ADULT	3.63E+08	2.51E+08	5.85E+07	0.00E+00	0.00E+00	1.40E+08	1.44E+08	N/A
	TEEN	4.61E+08	3.27E+08	7.62E+07	0.00E+00	0.00E+00	2.07E+08	1.41E+08	N/A
	CHILD	1.07E+09	5.70E+08	1.77E+08	0.00E+00	0.00E+00	3.22E+08	1.06E+08	N/A
	INFANT	1.52E+08	4.42E+07	1.18E+07	0.00E+00	0.00E+00	2.16E+07	5.61E+06	N/A
INHAL.	ADULT	2.46E+04	1.70E+04	3.94E+03	0.00E+00	0.00E+00	7.21E+04	6.03E+03	N/A
	TEEN	3.34E+04	2.38E+04	5.54E+03	0.00E+00	0.00E+00	1.24E+05	6.39E+03	N/A
	CHILD	4.74E+04	2.52E+04	7.77E+03	0.00E+00	0.00E+00	1.11E+05	2.87E+03	N/A
	INFANT	1.97E+04	1.17E+04	3.33E+03	0.00E+00	0.00E+00	8.69E+04	1.09E+03	N/A
		BONE	LIVER	T.BODY	THYROID	KIDNEY	LUNG	G.I.	SKIN

*Airborne pathways and tritium ingestion: units are mrem/yr/uCi/m3
Deposition pathways: units are mrem-m2/yr/uCi/sec

MAXIMUM VALUES FOR PATHWAYS

GROUND: T.B./ORG.	GROUND: SKIN	GOAT MILK:	COW MILK:	MEAT:	VEGTBLE:	TOTAL INGEST:	INHAL.
0.00E+00	0.00E+00	8.52E+07	6.73E+07	2.51E+08	7.67E+08	1.07E+09	1.24E+05

APPV [illegible]
DATE 2/5/92

O.D.C.M. MAXIMUM PATHWAY DOSE FACTORS: RADIONUCLIDES OTHER THAN NOBLE GASES*

ISOTOPE: Mn-56

PATHWAY	AGE GROUP	BONE	LIVER	T.BODY	THYROID	KIDNEY	LUNG	G.I.	SKIN
GROUND	ADULT	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	TEEN	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	CHILD	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	INFANT	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
GOAT MILK	ADULT	0.00E+00	7.17E-04	1.27E-04	0.00E+00	9.11E-04	0.00E+00	2.29E-02	N/A
	TEEN	0.00E+00	1.27E-03	2.26E-04	0.00E+00	1.61E-03	0.00E+00	8.37E-02	N/A
	CHILD	0.00E+00	2.22E-03	5.01E-04	0.00E+00	2.68E-03	0.00E+00	3.21E-01	N/A
	INFANT	0.00E+00	5.43E-03	9.36E-04	0.00E+00	4.67E-03	0.00E+00	4.93E-01	N/A
COW MILK	ADULT	0.00E+00	1.05E-03	1.86E-04	0.00E+00	1.33E-03	0.00E+00	3.34E-02	N/A
	TEEN	0.00E+00	1.85E-03	3.30E-04	0.00E+00	2.35E-03	0.00E+00	1.22E-01	N/A
	CHILD	0.00E+00	3.23E-03	7.30E-04	0.00E+00	3.91E-03	0.00E+00	4.69E-01	N/A
	INFANT	0.00E+00	7.92E-03	1.37E-03	0.00E+00	6.81E-03	0.00E+00	7.19E-01	N/A
MEAT	ADULT	0.00E+00	5.00E-54	8.86E-55	0.00E+00	6.34E-54	0.00E+00	1.59E-52	N/A
	TEEN	0.00E+00	4.06E-54	7.21E-55	0.00E+00	5.14E-54	0.00E+00	2.67E-52	N/A
	CHILD	0.00E+00	5.41E-54	1.22E-54	0.00E+00	6.54E-54	0.00E+00	7.84E-52	N/A
	INFANT	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	N/A
VEGTBLE	ADULT	0.00E+00	5.25E+00	9.31E-01	0.00E+00	6.66E+00	0.00E+00	1.67E+02	N/A
	TEEN	0.00E+00	4.73E+00	8.42E-01	0.00E+00	5.99E+00	0.00E+00	3.11E+02	N/A
	CHILD	0.00E+00	6.19E+00	1.40E+00	0.00E+00	7.49E+00	0.00E+00	8.97E+02	N/A
	INFANT	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	N/A
TOTAL INGEST.	ADULT	0.00E+00	5.25E+00	9.31E-01	0.00E+00	6.66E+00	0.00E+00	1.68E+02	N/A
	TEEN	0.00E+00	4.73E+00	8.42E-01	0.00E+00	5.99E+00	0.00E+00	3.12E+02	N/A
	CHILD	0.00E+00	6.20E+00	1.40E+00	0.00E+00	7.50E+00	0.00E+00	8.98E+02	N/A
	INFANT	0.00E+00	1.34E-02	2.30E-03	0.00E+00	1.15E-02	0.00E+00	1.21E+00	N/A
INHAL.	ADULT	0.00E+00	1.24E+00	1.83E-01	0.00E+00	1.30E+00	9.44E+03	2.02E+04	N/A
	TEEN	0.00E+00	1.70E+00	2.52E-01	0.00E+00	1.79E+00	1.52E+04	5.74E+04	N/A
	CHILD	0.00E+00	1.66E+00	3.12E-01	0.00E+00	1.67E+00	1.31E+04	1.23E+05	N/A
	INFANT	0.00E+00	1.54E+00	2.21E-01	0.00E+00	1.10E+00	1.25E+04	7.17E+04	N/A
		BONE	LIVER	T.BODY	THYROID	KIDNEY	LUNG	G.I.	SKIN

*Airborne pathways and tritium ingestion: units are mrem/yr/uCi/m3
Deposition pathways: units are mrem-m2/yr/uCi/sec

MAXIMUM VALUES FOR PATHWAYS

GROUND: T.B./ORG.	GROUND: SKIN	GOAT MILK:	COW MILK:	MEAT:	VEGTBLE:	TOTAL INGEST:	INHAL.
0.00E+00	0.00E+00	4.93E-01	7.19E-01	7.84E-52	8.97E+02	8.98E+02	1.23E+05

APPV RHS
DATE 2/5/92

O.D.C.M. MAXIMUM PATHWAY DOSE FACTORS: RADIONUCLIDES OTHER THAN NOBLE GASES*

ISOTOPE: Co-58

PATHWAY	AGE GROUP	BONE	LIVER	T.BODY	THYROID	KIDNEY	LUNG	G.I.	SKIN
GROUND	ADULT	3.75E+08	3.75E+08	3.75E+08	3.75E+08	3.75E+08	3.75E+08	3.75E+08	4.39E+08
	TEEN	3.75E+08	3.75E+08	3.75E+08	3.75E+08	3.75E+08	3.75E+08	3.75E+08	4.39E+08
	CHILD	3.75E+08	3.75E+08	3.75E+08	3.75E+08	3.75E+08	3.75E+08	3.75E+08	4.39E+08
	INFANT	3.75E+08	3.75E+08	3.75E+08	3.75E+08	3.75E+08	3.75E+08	3.75E+08	4.39E+08
GOAT MILK	ADULT	0.00E+00	3.00E+05	6.72E+05	0.00E+00	0.00E+00	0.00E+00	6.07E+06	N/A
	TEEN	0.00E+00	5.05E+05	1.16E+06	0.00E+00	0.00E+00	0.00E+00	6.96E+06	N/A
	CHILD	0.00E+00	7.71E+05	2.36E+06	0.00E+00	0.00E+00	0.00E+00	4.50E+06	N/A
	INFANT	0.00E+00	1.54E+06	3.85E+06	0.00E+00	0.00E+00	0.00E+00	3.84E+06	N/A
COW MILK	ADULT	0.00E+00	1.70E+06	3.81E+06	0.00E+00	0.00E+00	0.00E+00	3.44E+07	N/A
	TEEN	0.00E+00	2.86E+06	6.59E+06	0.00E+00	0.00E+00	0.00E+00	3.94E+07	N/A
	CHILD	0.00E+00	4.37E+06	1.34E+07	0.00E+00	0.00E+00	0.00E+00	2.55E+07	N/A
	INFANT	0.00E+00	8.74E+06	2.18E+07	0.00E+00	0.00E+00	0.00E+00	2.18E+07	N/A
MEAT	ADULT	0.00E+00	7.78E+06	1.74E+07	0.00E+00	0.00E+00	0.00E+00	1.58E+08	N/A
	TEEN	0.00E+00	6.00E+06	1.38E+07	0.00E+00	0.00E+00	0.00E+00	8.27E+07	N/A
	CHILD	0.00E+00	7.01E+06	2.14E+07	0.00E+00	0.00E+00	0.00E+00	4.09E+07	N/A
	INFANT	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	N/A
VEGTBLE	ADULT	0.00E+00	2.61E+07	5.86E+07	0.00E+00	0.00E+00	0.00E+00	5.29E+08	N/A
	TEEN	0.00E+00	3.96E+07	9.14E+07	0.00E+00	0.00E+00	0.00E+00	5.47E+08	N/A
	CHILD	0.00E+00	5.99E+07	1.83E+08	0.00E+00	0.00E+00	0.00E+00	3.49E+08	N/A
	INFANT	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	N/A
TOTAL INGEST.	ADULT	0.00E+00	3.59E+07	8.05E+07	0.00E+00	0.00E+00	0.00E+00	7.28E+08	N/A
	TEEN	0.00E+00	4.90E+07	1.13E+08	0.00E+00	0.00E+00	0.00E+00	6.76E+08	N/A
	CHILD	0.00E+00	7.20E+07	2.20E+08	0.00E+00	0.00E+00	0.00E+00	4.20E+08	N/A
	INFANT	0.00E+00	1.03E+07	2.56E+07	0.00E+00	0.00E+00	0.00E+00	2.56E+07	N/A
INHAL.	ADULT	0.00E+00	1.58E+03	2.07E+03	0.00E+00	0.00E+00	9.28E+05	1.06E+05	N/A
	TEEN	0.00E+00	2.07E+03	2.78E+03	0.00E+00	0.00E+00	1.34E+06	9.52E+04	N/A
	CHILD	0.00E+00	1.77E+03	3.16E+03	0.00E+00	0.00E+00	1.11E+06	3.44E+04	N/A
	INFANT	0.00E+00	1.22E+03	1.82E+03	0.00E+00	0.00E+00	7.77E+05	1.11E+04	N/A
		BONE	LIVER	T.BODY	THYROID	KIDNEY	LUNG	G.I.	SKIN

*Airborne pathways and tritium ingestion: units are mrem/yr/uCi/m3
Deposition pathways: units are mrem-m2/yr/uCi/sec

MAXIMUM VALUES FOR PATHWAYS

GROUND: T.B./ORG.	GROUND: SKIN	GOAT MILK:	COW MILK:	MEAT:	VEGTBLE:	TOTAL INGEST:	INHAL.
3.75E+08	4.39E+08	6.96E+06	3.94E+07	1.58E+08	5.47E+08	7.28E+08	1.34E+06

APPV 12/15
DATE 2/5/92

O.D.C.M. MAXIMUM PATHWAY DOSE FACTORS: RADIONUCLIDES OTHER THAN NOBLE GASES*

ISOTOPE: Fe-59

PATHWAY	AGE GROUP	BONE	LIVER	T.BODY	THYROID	KIDNEY	LUNG	G.I.	SKIN
GROUND	ADULT	2.70E+08	2.70E+08	2.70E+08	2.70E+08	2.70E+08	2.70E+08	2.70E+08	3.17E+08
	TEEN	2.70E+08	2.70E+08	2.70E+08	2.70E+08	2.70E+08	2.70E+08	2.70E+08	3.17E+08
	CHILD	2.70E+08	2.70E+08	2.70E+08	2.70E+08	2.70E+08	2.70E+08	2.70E+08	3.17E+08
	INFANT	2.70E+08	2.70E+08	2.70E+08	2.70E+08	2.70E+08	2.70E+08	2.70E+08	3.17E+08
GOAT	ADULT	1.92E+05	4.52E+05	1.73E+05	0.00E+00	0.00E+00	1.26E+05	1.51E+06	N/A
MILK	TEEN	3.35E+05	7.83E+05	3.02E+05	0.00E+00	0.00E+00	2.47E+05	1.85E+06	N/A
	CHILD	7.78E+05	1.26E+06	6.27E+05	0.00E+00	0.00E+00	3.65E+05	1.31E+06	N/A
	INFANT	1.12E+08	2.54E+06	9.99E+05	0.00E+00	0.00E+00	7.49E+05	1.21E+06	N/A
COW	ADULT	9.41E+06	2.21E+07	8.47E+06	0.00E+00	0.00E+00	6.18E+06	7.37E+07	N/A
MILK	TEEN	1.64E+07	3.83E+07	1.48E+07	0.00E+00	0.00E+00	1.21E+07	9.06E+07	N/A
	CHILD	3.81E+07	6.16E+07	3.07E+07	0.00E+00	0.00E+00	1.79E+07	6.41E+07	N/A
	INFANT	7.11E+07	1.24E+08	4.89E+07	0.00E+00	0.00E+00	3.67E+07	5.93E+07	N/A
MEAT	ADULT	1.03E+08	2.42E+08	9.27E+07	0.00E+00	0.00E+00	6.76E+07	8.06E+08	N/A
	TEEN	8.23E+07	1.92E+08	7.41E+07	0.00E+00	0.00E+00	6.05E+07	4.54E+08	N/A
	CHILD	1.46E+08	2.36E+08	1.18E+08	0.00E+00	0.00E+00	6.84E+07	2.46E+08	N/A
	INFANT	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	N/A
.GTBLE	ADULT	1.02E+08	2.39E+08	9.17E+07	0.00E+00	0.00E+00	6.68E+07	7.97E+08	N/A
	TEEN	1.58E+08	3.68E+08	1.42E+08	0.00E+00	0.00E+00	1.16E+08	8.71E+08	N/A
	CHILD	3.60E+08	5.82E+08	2.90E+08	0.00E+00	0.00E+00	1.69E+08	6.06E+08	N/A
	INFANT	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	N/A
TOTAL	ADULT	2.14E+08	5.04E+08	1.93E+08	0.00E+00	0.00E+00	1.41E+08	1.68E+09	N/A
INGEST.	TEEN	2.57E+08	5.99E+08	2.31E+08	0.00E+00	0.00E+00	1.89E+08	1.42E+09	N/A
	CHILD	5.45E+08	8.81E+08	4.39E+08	0.00E+00	0.00E+00	2.55E+08	9.18E+08	N/A
	INFANT	1.83E+08	1.27E+08	4.99E+07	0.00E+00	0.00E+00	3.74E+07	6.05E+07	N/A
INHAL.	ADULT	1.18E+04	2.78E+04	1.06E+04	0.00E+00	0.00E+00	1.02E+06	1.88E+05	N/A
	TEEN	1.59E+04	3.70E+04	1.43E+04	0.00E+00	0.00E+00	1.53E+06	1.78E+05	N/A
	CHILD	2.07E+04	3.34E+04	1.67E+04	0.00E+00	0.00E+00	1.27E+06	7.07E+04	N/A
	INFANT	1.36E+04	2.35E+04	9.48E+03	0.00E+00	0.00E+00	1.01E+06	2.48E+04	N/A
		BONE	LIVER	T.BODY	THYROID	KIDNEY	LUNG	G.I.	SKIN

*Airborne pathways and tritium ingestion: units are mrem/yr/uCi/m3
Deposition pathways: units are mrem-m2/yr/uCi/sec

MAXIMUM VALUES FOR PATHWAYS

GROUND: T.B./ORG.	GROUND: SKIN	GOAT MILK:	COW MILK:	MEAT:	VEGTBLE:	TOTAL INGEST:	INHAL.
2.70E+08	3.17E+08	1.12E+08	1.24E+08	8.06E+08	8.71E+08	1.68E+09	1.53E+06

APPV [illegible]
DATE 4/5/92

O.D.C.M. MAXIMUM PATHWAY DOSE FACTORS: RADIONUCLIDES OTHER THAN NOBLE GASES*

ISOTOPE: Co-60

PATHWAY	AGE GROUP	BONE	LIVER	T.BODY	THYROID	KIDNEY	LUNG	G.I.	SKIN
GROUND	ADULT	2.13E+10	2.13E+10	2.13E+10	2.13E+10	2.13E+10	2.13E+10	2.13E+10	2.51E+10
	TEEN	2.13E+10	2.13E+10	2.13E+10	2.13E+10	2.13E+10	2.13E+10	2.13E+10	2.51E+10
	CHILD	2.13E+10	2.13E+10	2.13E+10	2.13E+10	2.13E+10	2.13E+10	2.13E+10	2.51E+10
	INFANT	2.13E+10	2.13E+10	2.13E+10	2.13E+10	2.13E+10	2.13E+10	2.13E+10	2.51E+10
GOAT MILK	ADULT	0.00E+00	1.25E+06	2.76E+06	0.00E+00	0.00E+00	0.00E+00	2.35E+07	N/A
	TEEN	0.00E+00	2.12E+06	4.78E+06	0.00E+00	0.00E+00	0.00E+00	2.77E+07	N/A
	CHILD	0.00E+00	3.30E+06	9.72E+06	0.00E+00	0.00E+00	0.00E+00	1.83E+07	N/A
	INFANT	0.00E+00	6.73E+06	1.59E+07	0.00E+00	0.00E+00	0.00E+00	1.60E+07	N/A
COW MILK	ADULT	0.00E+00	8.29E+06	1.83E+07	0.00E+00	0.00E+00	0.00E+00	1.56E+08	N/A
	TEEN	0.00E+00	1.41E+07	3.17E+07	0.00E+00	0.00E+00	0.00E+00	1.83E+08	N/A
	CHILD	0.00E+00	2.18E+07	6.44E+07	0.00E+00	0.00E+00	0.00E+00	1.21E+08	N/A
	INFANT	0.00E+00	4.46E+07	1.05E+08	0.00E+00	0.00E+00	0.00E+00	1.06E+08	N/A
MEAT	ADULT	0.00E+00	4.19E+07	9.23E+07	0.00E+00	0.00E+00	0.00E+00	7.86E+08	N/A
	TEEN	0.00E+00	3.25E+07	7.32E+07	0.00E+00	0.00E+00	0.00E+00	4.23E+08	N/A
	CHILD	0.00E+00	3.86E+07	1.14E+08	0.00E+00	0.00E+00	0.00E+00	2.14E+08	N/A
	INFANT	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	N/A
VEGTBLE	ADULT	0.00E+00	1.51E+08	3.34E+08	0.00E+00	0.00E+00	0.00E+00	2.84E+09	N/A
	TEEN	0.00E+00	2.35E+08	5.29E+08	0.00E+00	0.00E+00	0.00E+00	3.06E+09	N/A
	CHILD	0.00E+00	3.62E+08	1.07E+09	0.00E+00	0.00E+00	0.00E+00	2.01E+09	N/A
	INFANT	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	N/A
TOTAL INGEST.	ADULT	0.00E+00	2.03E+08	4.47E+08	0.00E+00	0.00E+00	0.00E+00	3.81E+09	N/A
	TEEN	0.00E+00	2.84E+08	6.39E+08	0.00E+00	0.00E+00	0.00E+00	3.69E+09	N/A
	CHILD	0.00E+00	4.26E+08	1.26E+09	0.00E+00	0.00E+00	0.00E+00	2.36E+09	N/A
	INFANT	0.00E+00	5.13E+07	1.21E+08	0.00E+00	0.00E+00	0.00E+00	1.22E+08	N/A
INHAL.	ADULT	0.00E+00	1.15E+04	1.48E+04	0.00E+00	0.00E+00	5.97E+06	2.85E+05	N/A
	TEEN	0.00E+00	1.51E+04	1.98E+04	0.00E+00	0.00E+00	8.72E+06	2.59E+05	N/A
	CHILD	0.00E+00	1.31E+04	2.26E+04	0.00E+00	0.00E+00	7.07E+06	9.62E+04	N/A
	INFANT	0.00E+00	8.02E+03	1.18E+04	0.00E+00	0.00E+00	4.51E+06	3.19E+04	N/A
		BONE	LIVER	T.BODY	THYROID	KIDNEY	LUNG	G.I.	SKIN

*Airborne pathways and tritium ingestion: units are mrem/yr/uCi/m3
Deposition pathways: units are mrem-m2/yr/uCi/sec

MAXIMUM VALUES FOR PATHWAYS

GROUND: T.B./ORG.	GROUND: SKIN	GOAT MILK:	COW MILK:	MEAT:	VEGTBLE:	TOTAL INGEST:	INHAL.
2.13E+10	2.51E+10	2.77E+07	1.83E+08	7.86E+08	3.06E+09	3.81E+09	8.72E+06

APPV 12CS
DATE 2/5/92

O.D.C.M. MAXIMUM PATHWAY DOSE FACTORS: RADIONUCLIDES OTHER THAN NOBLE GASES*

ISOTOPE: Ni-63

PATHWAY	AGE GROUP	BONE	LIVER	T.BODY	THYROID	KIDNEY	LUNG	G.I.	SKIN
GROUND	ADULT	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	TEEN	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	CHILD	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	INFANT	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
GOAT MILK	ADULT	5.19E+08	3.59E+07	1.74E+07	0.00E+00	0.00E+00	0.00E+00	7.50E+06	N/A
	TEEN	9.11E+08	6.43E+07	3.09E+07	0.00E+00	0.00E+00	0.00E+00	1.02E+07	N/A
	CHILD	2.28E+09	1.22E+08	7.77E+07	0.00E+00	0.00E+00	0.00E+00	8.24E+06	N/A
	INFANT	2.24E+10	1.66E+08	9.34E+07	0.00E+00	0.00E+00	0.00E+00	8.28E+06	N/A
COW MILK	ADULT	3.45E+09	2.39E+08	1.16E+08	0.00E+00	0.00E+00	0.00E+00	5.00E+07	N/A
	TEEN	6.07E+09	4.29E+08	2.06E+08	0.00E+00	0.00E+00	0.00E+00	6.82E+07	N/A
	CHILD	1.52E+10	8.15E+08	5.18E+08	0.00E+00	0.00E+00	0.00E+00	5.49E+07	N/A
	INFANT	1.79E+10	1.11E+09	6.22E+08	0.00E+00	0.00E+00	0.00E+00	5.52E+07	N/A
MEAT	ADULT	1.06E+10	7.38E+08	3.57E+08	0.00E+00	0.00E+00	0.00E+00	1.54E+08	N/A
	TEEN	8.56E+09	6.05E+08	2.90E+08	0.00E+00	0.00E+00	0.00E+00	9.63E+07	N/A
	CHILD	1.64E+10	8.79E+08	5.59E+08	0.00E+00	0.00E+00	0.00E+00	5.92E+07	N/A
	INFANT	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	N/A
VEGTBLE	ADULT	9.43E+09	6.54E+08	3.16E+08	0.00E+00	0.00E+00	0.00E+00	1.36E+08	N/A
	TEEN	1.52E+10	1.07E+09	5.15E+08	0.00E+00	0.00E+00	0.00E+00	1.71E+08	N/A
	CHILD	3.79E+10	2.03E+09	1.29E+09	0.00E+00	0.00E+00	0.00E+00	1.37E+08	N/A
	INFANT	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	N/A
TOTAL INGEST.	ADULT	2.40E+10	1.67E+09	8.07E+08	0.00E+00	0.00E+00	0.00E+00	3.48E+08	N/A
	TEEN	3.07E+10	2.17E+09	1.04E+09	0.00E+00	0.00E+00	0.00E+00	3.46E+08	N/A
	CHILD	7.18E+10	3.84E+09	2.44E+09	0.00E+00	0.00E+00	0.00E+00	2.59E+08	N/A
	INFANT	4.04E+10	1.28E+09	7.16E+08	0.00E+00	0.00E+00	0.00E+00	6.34E+07	N/A
INHAL.	ADULT	4.32E+05	3.14E+04	1.45E+04	0.00E+00	0.00E+00	1.78E+05	1.34E+04	N/A
	TEEN	5.80E+05	4.34E+04	1.98E+04	0.00E+00	0.00E+00	3.07E+05	1.42E+04	N/A
	CHILD	8.21E+05	4.63E+04	2.80E+04	0.00E+00	0.00E+00	2.75E+05	6.33E+03	N/A
	INFANT	3.39E+05	2.04E+04	1.16E+04	0.00E+00	0.00E+00	2.09E+05	2.42E+03	N/A
		BONE	LIVER	T.BODY	THYROID	KIDNEY	LUNG	G.I.	SKIN

*Airborne pathways and tritium ingestion: units are mrem/yr/uCi/m3
Deposition pathways: units are mrem-m2/yr/uCi/sec

MAXIMUM VALUES FOR PATHWAYS

GROUND: T.B./ORG.	GROUND: SKIN	GOAT MILK:	COW MILK:	MEAT:	VEGTBLE:	TOTAL INGEST:	INHAL.
0.00E+00	0.00E+00	2.24E+10	1.79E+10	1.64E+10	3.79E+10	7.18E+10	8.21E+05

APPV RICB
DATE 2/5/92

O.D.C.M. MAXIMUM PATHWAY DOSE FACTORS: RADIONUCLIDES OTHER THAN NOBLE GASES*

ISOTOPE: Zn-65

PATHWAY	AGE GROUP	BONE	LIVER	T.BODY	THYROID	KIDNEY	LUNG	G.I.	SKIN
GROUND	ADULT	7.40E+08	7.40E+08	7.40E+08	7.40E+08	7.40E+08	7.40E+08	7.40E+08	8.50E+08
	TEEN	7.40E+08	7.40E+08	7.40E+08	7.40E+08	7.40E+08	7.40E+08	7.40E+08	8.50E+08
	CHILD	7.40E+08	7.40E+08	7.40E+08	7.40E+08	7.40E+08	7.40E+08	7.40E+08	8.50E+08
	INFANT	7.40E+08	7.40E+08	7.40E+08	7.40E+08	7.40E+08	7.40E+08	7.40E+08	8.50E+08
GOAT MILK	ADULT	9.87E+07	3.14E+08	1.42E+08	0.00E+00	2.10E+08	0.00E+00	1.98E+08	N/A
	TEEN	1.51E+08	5.26E+08	2.45E+08	0.00E+00	3.37E+08	0.00E+00	2.23E+08	N/A
	CHILD	2.97E+08	7.92E+08	4.93E+08	0.00E+00	4.99E+08	0.00E+00	1.39E+08	N/A
	INFANT	3.33E+09	1.37E+09	6.31E+08	0.00E+00	6.64E+08	0.00E+00	1.16E+09	N/A
COW MILK	ADULT	6.24E+08	1.99E+09	8.97E+08	0.00E+00	1.33E+09	0.00E+00	1.25E+09	N/A
	TEEN	9.58E+08	3.33E+09	1.55E+09	0.00E+00	2.13E+09	0.00E+00	1.41E+09	N/A
	CHILD	1.88E+09	5.01E+09	3.12E+09	0.00E+00	3.16E+09	0.00E+00	8.80E+08	N/A
	INFANT	2.53E+09	8.66E+09	3.99E+09	0.00E+00	4.20E+09	0.00E+00	7.31E+09	N/A
MEAT	ADULT	1.82E+08	5.79E+08	2.62E+08	0.00E+00	3.87E+08	0.00E+00	3.65E+08	N/A
	TEEN	1.28E+08	4.44E+08	2.07E+08	0.00E+00	2.84E+08	0.00E+00	1.88E+08	N/A
	CHILD	1.92E+08	5.11E+08	3.18E+08	0.00E+00	3.22E+08	0.00E+00	8.98E+07	N/A
	INFANT	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	N/A
VEGTBLE	ADULT	2.83E+08	9.01E+08	4.07E+08	0.00E+00	6.03E+08	0.00E+00	5.68E+08	N/A
	TEEN	3.97E+08	1.38E+09	6.43E+08	0.00E+00	8.83E+08	0.00E+00	5.84E+08	N/A
	CHILD	7.73E+08	2.06E+09	1.28E+09	0.00E+00	1.30E+09	0.00E+00	3.62E+08	N/A
	INFANT	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	N/A
TOTAL INGEST.	ADULT	1.19E+09	3.78E+09	1.71E+09	0.00E+00	2.53E+09	0.00E+00	2.38E+09	N/A
	TEEN	1.63E+09	5.68E+09	2.65E+09	0.00E+00	3.63E+09	0.00E+00	2.40E+09	N/A
	CHILD	3.14E+09	8.37E+09	5.21E+09	0.00E+00	5.28E+09	0.00E+00	1.47E+09	N/A
	INFANT	5.85E+09	1.00E+10	4.63E+09	0.00E+00	4.86E+09	0.00E+00	8.47E+09	N/A
INHAL.	ADULT	3.24E+04	1.03E+05	4.66E+04	0.00E+00	6.90E+04	8.64E+05	5.34E+04	N/A
	TEEN	3.86E+04	1.34E+05	6.24E+04	0.00E+00	8.64E+04	1.24E+06	4.66E+04	N/A
	CHILD	4.25E+04	1.13E+05	7.03E+04	0.00E+00	7.14E+04	9.95E+05	1.63E+04	N/A
	INFANT	1.93E+04	6.26E+04	3.11E+04	0.00E+00	3.25E+04	6.47E+05	5.14E+04	N/A
		BONE	LIVER	T.BODY	THYROID	KIDNEY	LUNG	G.I.	SKIN

*Airborne pathways and tritium ingestion: units are mrem/yr/uCi/m3
Deposition pathways: units are mrem-m2/yr/uCi/sec

MAXIMUM VALUES FOR PATHWAYS

GROUND: T.B./ORG.	GROUND: SKIN	GOAT MILK:	COW MILK:	MEAT:	VEGTBLE:	TOTAL INGEST:	INHAL.
7.40E+08	8.50E+08	3.33E+09	8.66E+09	5.79E+08	2.06E+09	1.00E+10	1.24E+06

APPV RKB
DATE 2/5/92

O.D.C.M. MAXIMUM PATHWAY DOSE FACTORS: RADIONUCLIDES OTHER THAN NOBLE GASES*

ISOTOPE: Rb-86

PATHWAY	AGE GROUP	BONE	LIVER	T.BODY	THYROID	KIDNEY	LUNG	G.I.	SKIN
GROUND	ADULT	8.89E+06	8.89E+06	8.89E+06	8.89E+06	8.89E+06	8.89E+06	8.89E+06	1.02E+07
	TEEN	8.89E+06	8.89E+06	8.89E+06	8.89E+06	8.89E+06	8.89E+06	8.89E+06	1.02E+07
	CHILD	8.89E+06	8.89E+06	8.89E+06	8.89E+06	8.89E+06	8.89E+06	8.89E+06	1.02E+07
	INFANT	8.89E+06	8.89E+06	8.89E+06	8.89E+06	8.89E+06	8.89E+06	8.89E+06	1.02E+07
GOAT MILK	ADULT	0.00E+00	1.42E+08	6.63E+07	0.00E+00	0.00E+00	0.00E+00	2.80E+07	N/A
	TEEN	0.00E+00	2.59E+08	1.22E+08	0.00E+00	0.00E+00	0.00E+00	3.84E+07	N/A
	CHILD	0.00E+00	4.81E+08	2.96E+08	0.00E+00	0.00E+00	0.00E+00	3.09E+07	N/A
	INFANT	0.00E+00	1.22E+09	6.03E+08	0.00E+00	0.00E+00	0.00E+00	3.12E+07	N/A
COW MILK	ADULT	0.00E+00	6.78E+08	3.16E+08	0.00E+00	0.00E+00	0.00E+00	1.34E+08	N/A
	TEEN	0.00E+00	1.24E+09	5.80E+08	0.00E+00	0.00E+00	0.00E+00	1.83E+08	N/A
	CHILD	0.00E+00	2.29E+09	1.41E+09	0.00E+00	0.00E+00	0.00E+00	1.47E+08	N/A
	INFANT	0.00E+00	5.81E+09	2.87E+09	0.00E+00	0.00E+00	0.00E+00	1.49E+08	N/A
MEAT	ADULT	0.00E+00	1.65E+08	7.67E+07	0.00E+00	0.00E+00	0.00E+00	3.25E+07	N/A
	TEEN	0.00E+00	1.37E+08	6.45E+07	0.00E+00	0.00E+00	0.00E+00	2.03E+07	N/A
	CHILD	0.00E+00	1.95E+08	1.20E+08	0.00E+00	0.00E+00	0.00E+00	1.25E+07	N/A
	INFANT	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	N/A
VEGTBLE	ADULT	0.00E+00	1.32E+08	6.17E+07	0.00E+00	0.00E+00	0.00E+00	2.61E+07	N/A
	TEEN	0.00E+00	1.93E+08	9.07E+07	0.00E+00	0.00E+00	0.00E+00	2.86E+07	N/A
	CHILD	0.00E+00	3.40E+08	2.09E+08	0.00E+00	0.00E+00	0.00E+00	2.19E+07	N/A
	INFANT	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	N/A
TOTAL INGEST.	ADULT	0.00E+00	1.12E+09	5.20E+08	0.00E+00	0.00E+00	0.00E+00	2.20E+08	N/A
	TEEN	0.00E+00	1.83E+09	8.57E+08	0.00E+00	0.00E+00	0.00E+00	2.70E+08	N/A
	CHILD	0.00E+00	3.31E+09	2.03E+09	0.00E+00	0.00E+00	0.00E+00	2.13E+08	N/A
	INFANT	0.00E+00	7.03E+09	3.48E+09	0.00E+00	0.00E+00	0.00E+00	1.80E+08	N/A
INHAL.	ADULT	0.00E+00	1.35E+05	5.90E+04	0.00E+00	0.00E+00	0.00E+00	1.66E+04	N/A
	TEEN	0.00E+00	1.90E+05	8.40E+04	0.00E+00	0.00E+00	0.00E+00	1.77E+04	N/A
	CHILD	0.00E+00	1.98E+05	1.14E+05	0.00E+00	0.00E+00	0.00E+00	7.99E+03	N/A
	INFANT	0.00E+00	1.90E+05	8.82E+04	0.00E+00	0.00E+00	0.00E+00	3.04E+03	N/A
		BONE	LIVER	T.BODY	THYROID	KIDNEY	LUNG	G.I.	SKIN

*Airborne pathways and tritium ingestion: units are mrem/yr/uCi/m3
Deposition pathways: units are mrem-m2/yr/uCi/sec

MAXIMUM VALUES FOR PATHWAYS

GROUND: T.B./ORG.	GROUND: SKIN	GOAT MILK:	COW MILK:	MEAT:	VEGTBLE:	TOTAL INGEST:	INHAL.
8.89E+06	1.02E+07	1.22E+09	5.81E+09	1.95E+08	3.40E+08	7.03E+09	1.98E+05

APPV 4CB
DATE 3/5/92

O.D.C.M. MAXIMUM PATHWAY DOSE FACTORS: RADIONUCLIDES OTHER THAN NOBLE GASES*

ISOTOPE: Sr-89

PATHWAY	AGE GROUP	BONE	LIVER	T.BODY	THYROID	KIDNEY	LUNG	G.I.	SKIN
GROUND	ADULT	2.14E+04	2.14E+04	2.14E+04	2.14E+04	2.14E+04	2.14E+04	2.14E+04	2.49E+04
	TEEN	2.14E+04	2.14E+04	2.14E+04	2.14E+04	2.14E+04	2.14E+04	2.14E+04	2.49E+04
	CHILD	2.14E+04	2.14E+04	2.14E+04	2.14E+04	2.14E+04	2.14E+04	2.14E+04	2.49E+04
	INFANT	2.14E+04	2.14E+04	2.14E+04	2.14E+04	2.14E+04	2.14E+04	2.14E+04	2.49E+04
GOAT MILK	ADULT	1.54E+09	0.00E+00	4.43E+07	0.00E+00	0.00E+00	0.00E+00	2.47E+08	N/A
	TEEN	2.84E+09	0.00E+00	8.14E+07	0.00E+00	0.00E+00	0.00E+00	3.39E+08	N/A
	CHILD	7.04E+09	0.00E+00	2.01E+08	0.00E+00	0.00E+00	0.00E+00	2.72E+08	N/A
	INFANT	6.37E+09	0.00E+00	3.84E+08	0.00E+00	0.00E+00	0.00E+00	2.75E+08	N/A
COW MILK	ADULT	4.76E+08	0.00E+00	1.37E+07	0.00E+00	0.00E+00	0.00E+00	7.64E+07	N/A
	TEEN	8.78E+08	0.00E+00	2.51E+07	0.00E+00	0.00E+00	0.00E+00	1.05E+08	N/A
	CHILD	2.17E+09	0.00E+00	6.20E+07	0.00E+00	0.00E+00	0.00E+00	8.41E+07	N/A
	INFANT	4.13E+09	0.00E+00	1.18E+08	0.00E+00	0.00E+00	0.00E+00	8.49E+07	N/A
MEAT	ADULT	1.20E+08	0.00E+00	3.44E+06	0.00E+00	0.00E+00	0.00E+00	1.92E+07	N/A
	TEEN	1.01E+08	0.00E+00	2.90E+06	0.00E+00	0.00E+00	0.00E+00	1.21E+07	N/A
	CHILD	1.92E+08	0.00E+00	5.48E+06	0.00E+00	0.00E+00	0.00E+00	7.42E+06	N/A
	INFANT	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	N/A
VEGTBLE	ADULT	8.19E+09	0.00E+00	2.35E+08	0.00E+00	0.00E+00	0.00E+00	1.31E+09	N/A
	TEEN	1.35E+10	0.00E+00	3.86E+08	0.00E+00	0.00E+00	0.00E+00	1.60E+09	N/A
	CHILD	3.29E+10	0.00E+00	9.39E+08	0.00E+00	0.00E+00	0.00E+00	1.27E+09	N/A
	INFANT	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	N/A
TOTAL INGEST.	ADULT	1.03E+10	0.00E+00	2.96E+08	0.00E+00	0.00E+00	0.00E+00	1.66E+09	N/A
	TEEN	1.73E+10	0.00E+00	4.95E+08	0.00E+00	0.00E+00	0.00E+00	2.06E+09	N/A
	CHILD	4.23E+10	0.00E+00	1.21E+09	0.00E+00	0.00E+00	0.00E+00	1.64E+09	N/A
	INFANT	1.05E+10	0.00E+00	5.02E+08	0.00E+00	0.00E+00	0.00E+00	3.60E+08	N/A
INHAL.	ADULT	3.04E+05	0.00E+00	8.72E+03	0.00E+00	0.00E+00	1.40E+06	3.50E+05	N/A
	TEEN	4.34E+05	0.00E+00	1.25E+04	0.00E+00	0.00E+00	2.42E+06	3.71E+05	N/A
	CHILD	5.99E+05	0.00E+00	1.72E+04	0.00E+00	0.00E+00	2.16E+06	1.67E+05	N/A
	INFANT	3.98E+05	0.00E+00	1.14E+04	0.00E+00	0.00E+00	2.03E+06	6.40E+04	N/A
		BONE	LIVER	T.BODY	THYROID	KIDNEY	LUNG	G.I.	SKIN

*Airborne pathways and tritium ingestion: units are mrem/yr/uCi/m3
Deposition pathways: units are mrem-m2/yr/uCi/sec

MAXIMUM VALUES FOR PATHWAYS

GROUND: T.B./ORG.	GROUND: SKIN	GOAT MILK:	COW MILK:	MEAT:	VEGTBLE:	TOTAL INGEST:	INHAL.
2.14E+04	2.49E+04	7.04E+09	4.13E+09	1.92E+08	3.29E+10	4.23E+10	2.42E+06

APPV 12KB
DATE 2/5/92

O.D.C.M. MAXIMUM PATHWAY DOSE FACTORS: RADIONUCLIDES OTHER THAN NOBLE GASES*

ISOTOPE: Sr-90

PATHWAY	AGE GROUP	BONE	LIVER	T.BODY	THYROID	KIDNEY	LUNG	G.I.	SKIN
GROUND	ADULT	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	TEEN	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	CHILD	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	INFANT	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
GOAT MILK	ADULT	6.30E+10	0.00E+00	1.55E+10	0.00E+00	0.00E+00	0.00E+00	1.82E+09	N/A
	TEEN	8.91E+10	0.00E+00	2.20E+10	0.00E+00	0.00E+00	0.00E+00	2.50E+09	N/A
	CHILD	1.51E+11	0.00E+00	3.82E+10	0.00E+00	0.00E+00	0.00E+00	2.03E+09	N/A
	INFANT	7.80E+10	0.00E+00	4.17E+10	0.00E+00	0.00E+00	0.00E+00	2.05E+09	N/A
COW MILK	ADULT	2.40E+10	0.00E+00	5.88E+09	0.00E+00	0.00E+00	0.00E+00	6.93E+08	N/A
	TEEN	3.39E+10	0.00E+00	8.37E+09	0.00E+00	0.00E+00	0.00E+00	9.51E+08	N/A
	CHILD	5.72E+10	0.00E+00	1.45E+10	0.00E+00	0.00E+00	0.00E+00	7.71E+08	N/A
	INFANT	6.23E+10	0.00E+00	1.59E+10	0.00E+00	0.00E+00	0.00E+00	7.78E+08	N/A
MEAT	ADULT	7.00E+09	0.00E+00	1.72E+09	0.00E+00	0.00E+00	0.00E+00	2.02E+08	N/A
	TEEN	4.53E+09	0.00E+00	1.12E+09	0.00E+00	0.00E+00	0.00E+00	1.27E+08	N/A
	CHILD	5.85E+09	0.00E+00	1.48E+09	0.00E+00	0.00E+00	0.00E+00	7.88E+07	N/A
	INFANT	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	N/A
TBLE	ADULT	5.48E+11	0.00E+00	1.34E+11	0.00E+00	0.00E+00	0.00E+00	1.58E+10	N/A
	TEEN	7.10E+11	0.00E+00	1.75E+11	0.00E+00	0.00E+00	0.00E+00	1.99E+10	N/A
	CHILD	1.19E+12	0.00E+00	3.02E+11	0.00E+00	0.00E+00	0.00E+00	1.61E+10	N/A
	INFANT	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	N/A
TOTAL INGEST.	ADULT	6.42E+11	0.00E+00	1.58E+11	0.00E+00	0.00E+00	0.00E+00	1.85E+10	N/A
	TEEN	8.37E+11	0.00E+00	2.07E+11	0.00E+00	0.00E+00	0.00E+00	2.35E+10	N/A
	CHILD	1.41E+12	0.00E+00	3.56E+11	0.00E+00	0.00E+00	0.00E+00	1.89E+10	N/A
	INFANT	1.40E+11	0.00E+00	5.76E+10	0.00E+00	0.00E+00	0.00E+00	2.82E+09	N/A
INHAL.	ADULT	9.92E+07	0.00E+00	6.10E+06	0.00E+00	0.00E+00	9.60E+06	7.22E+05	N/A
	TEEN	1.08E+08	0.00E+00	6.68E+06	0.00E+00	0.00E+00	1.65E+07	7.65E+05	N/A
	CHILD	1.01E+08	0.00E+00	6.44E+06	0.00E+00	0.00E+00	1.48E+07	3.43E+05	N/A
	INFANT	4.09E+07	0.00E+00	2.59E+06	0.00E+00	0.00E+00	1.12E+07	1.31E+05	N/A
		BONE	LIVER	T.BODY	THYROID	KIDNEY	LUNG	G.I.	SKIN

*Airborne pathways and tritium ingestion: units are mrem/yr/uCi/m3
Deposition pathways: units are mrem-m2/yr/uCi/sec

MAXIMUM VALUES FOR PATHWAYS

GROUND: T.B./ORG.	GROUND: SKIN	GOAT MILK:	COW MILK:	MEAT:	VEGTBLE:	TOTAL INGEST:	INHAL.
0.00E+00	0.00E+00	1.51E+11	6.23E+10	7.00E+09	1.19E+12	1.41E+12	1.08E+08

APPV KKC 3
DATE 2/5/92

O.D.C.M. MAXIMUM PATHWAY DOSE FACTORS: RADIONUCLIDES OTHER THAN NOBLE GASES*

ISOTOPE: Y-90

PATHWAY	AGE GROUP	BONE	LIVER	T.BODY	THYROID	KIDNEY	LUNG	G.I.	SKIN
GROUND	ADULT	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	TEEN	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	CHILD	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	INFANT	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
GOAT MILK	ADULT	3.83E+00	0.00E+00	1.03E-01	0.00E+00	0.00E+00	0.00E+00	4.06E+04	N/A
	TEEN	7.03E+00	0.00E+00	1.89E-01	0.00E+00	0.00E+00	0.00E+00	5.80E+04	N/A
	CHILD	1.74E+01	0.00E+00	4.66E-01	0.00E+00	0.00E+00	0.00E+00	4.95E+04	N/A
	INFANT	3.07E+02	0.00E+00	9.86E-01	0.00E+00	0.00E+00	0.00E+00	5.08E+04	N/A
COW MILK	ADULT	1.79E+01	0.00E+00	4.79E-01	0.00E+00	0.00E+00	0.00E+00	1.89E+05	N/A
	TEEN	3.28E+01	0.00E+00	8.84E-01	0.00E+00	0.00E+00	0.00E+00	2.71E+05	N/A
	CHILD	8.12E+01	0.00E+00	2.17E+00	0.00E+00	0.00E+00	0.00E+00	2.31E+05	N/A
	INFANT	1.72E+02	0.00E+00	4.60E+00	0.00E+00	0.00E+00	0.00E+00	2.37E+05	N/A
MEAT	ADULT	3.55E+01	0.00E+00	9.52E-01	0.00E+00	0.00E+00	0.00E+00	3.76E+05	N/A
	TEEN	2.99E+01	0.00E+00	8.04E-01	0.00E+00	0.00E+00	0.00E+00	2.46E+05	N/A
	CHILD	5.65E+01	0.00E+00	1.51E+00	0.00E+00	0.00E+00	0.00E+00	1.61E+05	N/A
	INFANT	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	N/A
VEGTBLE	ADULT	4.39E+03	0.00E+00	1.18E+02	0.00E+00	0.00E+00	0.00E+00	4.65E+07	N/A
	TEEN	4.10E+03	0.00E+00	1.10E+02	0.00E+00	0.00E+00	0.00E+00	3.38E+07	N/A
	CHILD	7.61E+03	0.00E+00	2.04E+02	0.00E+00	0.00E+00	0.00E+00	2.17E+07	N/A
	INFANT	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	N/A
TOTAL INGEST.	ADULT	4.44E+03	0.00E+00	1.19E+02	0.00E+00	0.00E+00	0.00E+00	4.71E+07	N/A
	TEEN	4.17E+03	0.00E+00	1.12E+02	0.00E+00	0.00E+00	0.00E+00	3.44E+07	N/A
	CHILD	7.77E+03	0.00E+00	2.08E+02	0.00E+00	0.00E+00	0.00E+00	2.21E+07	N/A
	INFANT	4.78E+02	0.00E+00	5.59E+00	0.00E+00	0.00E+00	0.00E+00	2.88E+05	N/A
INHAL.	ADULT	2.09E+03	0.00E+00	5.61E+01	0.00E+00	0.00E+00	1.70E+05	5.06E+05	N/A
	TEEN	2.98E+03	0.00E+00	8.00E+01	0.00E+00	0.00E+00	2.93E+05	5.59E+05	N/A
	CHILD	4.11E+03	0.00E+00	1.11E+02	0.00E+00	0.00E+00	2.62E+05	2.68E+05	N/A
	INFANT	3.29E+03	0.00E+00	8.82E+01	0.00E+00	0.00E+00	2.69E+05	1.04E+05	N/A
		BONE	LIVER	T.BODY	THYROID	KIDNEY	LUNG	G.I.	SKIN

*Airborne pathways and tritium ingestion: units are mrem/yr/uCi/m3
Deposition pathways: units are mrem-m2/yr/uCi/sec

MAXIMUM VALUES FOR PATHWAYS

GROUND: T.B./ORG.	GROUND: SKIN	GOAT MILK:	COW MILK:	MEAT:	VEGTBLE:	TOTAL INGEST:	INHAL.
0.00E+00	0.00E+00	5.80E+04	2.71E+05	3.76E+05	4.65E+07	4.71E+07	5.59E+05

APPV Rick
DATE 2/5/92

O.D.C.M. MAXIMUM PATHWAY DOSE FACTORS: RADIONUCLIDES OTHER THAN NOBLE GASES*

ISOTOPE: Sr-91

PATHWAY	AGE GROUP	BONE	LIVER	T.BODY	THYROID	KIDNEY	LUNG	G.I.	SKIN
GROUND	ADULT	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	TEEN	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	CHILD	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	INFANT	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
GOAT MILK	ADULT	2.73E+04	0.00E+00	1.10E+03	0.00E+00	0.00E+00	0.00E+00	1.30E+05	N/A
	TEEN	5.02E+04	0.00E+00	2.00E+03	0.00E+00	0.00E+00	0.00E+00	2.28E+05	N/A
	CHILD	1.23E+05	0.00E+00	4.65E+03	0.00E+00	0.00E+00	0.00E+00	2.72E+05	N/A
	INFANT	1.22E+05	0.00E+00	9.29E+03	0.00E+00	0.00E+00	0.00E+00	3.04E+05	N/A
COW MILK	ADULT	7.29E+03	0.00E+00	2.94E+02	0.00E+00	0.00E+00	0.00E+00	3.47E+04	N/A
	TEEN	1.34E+04	0.00E+00	5.32E+02	0.00E+00	0.00E+00	0.00E+00	6.07E+04	N/A
	CHILD	3.28E+04	0.00E+00	1.24E+03	0.00E+00	0.00E+00	0.00E+00	7.25E+04	N/A
	INFANT	6.84E+04	0.00E+00	2.48E+03	0.00E+00	0.00E+00	0.00E+00	8.10E+04	N/A
MEAT	ADULT	5.01E-11	0.00E+00	2.02E-12	0.00E+00	0.00E+00	0.00E+00	2.38E-10	N/A
	TEEN	4.21E-11	0.00E+00	1.68E-12	0.00E+00	0.00E+00	0.00E+00	1.91E-10	N/A
	CHILD	7.90E-11	0.00E+00	2.98E-12	0.00E+00	0.00E+00	0.00E+00	1.74E-10	N/A
	INFANT	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	N/A
VEGTBLE	ADULT	1.01E+05	0.00E+00	4.06E+03	0.00E+00	0.00E+00	0.00E+00	4.79E+05	N/A
	TEEN	9.39E+04	0.00E+00	3.74E+03	0.00E+00	0.00E+00	0.00E+00	4.26E+05	N/A
	CHILD	1.73E+05	0.00E+00	6.53E+03	0.00E+00	0.00E+00	0.00E+00	3.82E+05	N/A
	INFANT	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	N/A
TOTAL INGEST.	ADULT	1.35E+05	0.00E+00	5.46E+03	0.00E+00	0.00E+00	0.00E+00	6.44E+05	N/A
	TEEN	1.58E+05	0.00E+00	6.27E+03	0.00E+00	0.00E+00	0.00E+00	7.14E+05	N/A
	CHILD	3.29E+05	0.00E+00	1.24E+04	0.00E+00	0.00E+00	0.00E+00	7.26E+05	N/A
	INFANT	1.91E+05	0.00E+00	1.18E+04	0.00E+00	0.00E+00	0.00E+00	3.85E+05	N/A
INHAL.	ADULT	6.19E+01	0.00E+00	2.50E+00	0.00E+00	0.00E+00	3.65E+04	1.91E+05	N/A
	TEEN	8.80E+01	0.00E+00	3.51E+00	0.00E+00	0.00E+00	6.07E+04	2.59E+05	N/A
	CHILD	1.21E+02	0.00E+00	4.59E+00	0.00E+00	0.00E+00	5.33E+04	1.74E+05	N/A
	INFANT	9.56E+01	0.00E+00	3.46E+00	0.00E+00	0.00E+00	5.26E+04	7.34E+04	N/A
		BONE	LIVER	T.BODY	THYROID	KIDNEY	LUNG	G.I.	SKIN

*Airborne pathways and tritium ingestion: units are mrem/yr/uCi/m3
Deposition pathways: units are mrem-m2/yr/uCi/sec

MAXIMUM VALUES FOR PATHWAYS

GROUND: T.B./ORG.	GROUND: SKIN	GOAT MILK:	COW MILK:	MEAT:	VEGTBLE:	TOTAL INGEST:	INHAL.
0.00E+00	0.00E+00	3.04E+05	8.10E+04	2.38E-10	4.79E+05	7.26E+05	2.59E+05

APPV Rico
DATE 2/5/92

O.D.C.M. MAXIMUM PATHWAY DOSE FACTORS: RADIONUCLIDES OTHER THAN NOBLE GASES*

ISOTOPE: Y-91

PATHWAY	AGE GROUP	BONE	LIVER	T.BODY	THYROID	KIDNEY	LUNG	G.I.	SKIN
GROUND	ADULT	1.06E+06	1.06E+06	1.06E+06	1.06E+06	1.06E+06	1.06E+06	1.06E+06	1.20E+06
	TEEN	1.06E+06	1.06E+06	1.06E+06	1.06E+06	1.06E+06	1.06E+06	1.06E+06	1.20E+06
	CHILD	1.06E+06	1.06E+06	1.06E+06	1.06E+06	1.06E+06	1.06E+06	1.06E+06	1.20E+06
	INFANT	1.06E+06	1.06E+06	1.06E+06	1.06E+06	1.06E+06	1.06E+06	1.06E+06	1.20E+06
GOAT MILK	ADULT	5.32E+02	0.00E+00	1.42E+01	0.00E+00	0.00E+00	0.00E+00	2.93E+05	N/A
	TEEN	9.79E+02	0.00E+00	2.62E+01	0.00E+00	0.00E+00	0.00E+00	4.01E+05	N/A
	CHILD	2.42E+03	0.00E+00	6.47E+01	0.00E+00	0.00E+00	0.00E+00	3.22E+05	N/A
	INFANT	3.78E+04	0.00E+00	1.21E+02	0.00E+00	0.00E+00	0.00E+00	3.25E+05	N/A
COW MILK	ADULT	2.94E+03	0.00E+00	7.85E+01	0.00E+00	0.00E+00	0.00E+00	1.62E+06	N/A
	TEEN	5.40E+03	0.00E+00	1.45E+02	0.00E+00	0.00E+00	0.00E+00	2.22E+06	N/A
	CHILD	1.34E+04	0.00E+00	3.57E+02	0.00E+00	0.00E+00	0.00E+00	1.78E+06	N/A
	INFANT	2.51E+04	0.00E+00	6.68E+02	0.00E+00	0.00E+00	0.00E+00	1.80E+06	N/A
MEAT	ADULT	4.65E+05	0.00E+00	1.24E+04	0.00E+00	0.00E+00	0.00E+00	2.56E+08	N/A
	TEEN	3.91E+05	0.00E+00	1.05E+04	0.00E+00	0.00E+00	0.00E+00	1.60E+08	N/A
	CHILD	7.39E+05	0.00E+00	1.98E+04	0.00E+00	0.00E+00	0.00E+00	9.85E+07	N/A
	INFANT	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	N/A
VEGTBLE	ADULT	4.27E+06	0.00E+00	1.14E+05	0.00E+00	0.00E+00	0.00E+00	2.35E+09	N/A
	TEEN	7.05E+06	0.00E+00	1.89E+05	0.00E+00	0.00E+00	0.00E+00	2.89E+09	N/A
	CHILD	1.72E+07	0.00E+00	4.60E+05	0.00E+00	0.00E+00	0.00E+00	2.29E+09	N/A
	INFANT	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	N/A
TOTAL INGEST.	ADULT	4.74E+06	0.00E+00	1.27E+05	0.00E+00	0.00E+00	0.00E+00	2.61E+09	N/A
	TEEN	7.45E+06	0.00E+00	2.00E+05	0.00E+00	0.00E+00	0.00E+00	3.05E+09	N/A
	CHILD	1.79E+07	0.00E+00	4.80E+05	0.00E+00	0.00E+00	0.00E+00	2.39E+09	N/A
	INFANT	6.29E+04	0.00E+00	7.88E+02	0.00E+00	0.00E+00	0.00E+00	2.12E+06	N/A
INHAL.	ADULT	4.62E+05	0.00E+00	1.24E+04	0.00E+00	0.00E+00	1.70E+06	3.85E+05	N/A
	TEEN	6.61E+05	0.00E+00	1.77E+04	0.00E+00	0.00E+00	2.94E+06	4.09E+05	N/A
	CHILD	9.14E+05	0.00E+00	2.44E+04	0.00E+00	0.00E+00	2.63E+06	1.84E+05	N/A
	INFANT	5.88E+05	0.00E+00	1.57E+04	0.00E+00	0.00E+00	2.45E+06	7.03E+04	N/A
		BONE	LIVER	T.BODY	THYROID	KIDNEY	LUNG	G.I.	SKIN

*Airborne pathways and tritium ingestion: units are mrem/yr/uCi/m3
Deposition pathways: units are mrem-m2/yr/uCi/sec

MAXIMUM VALUES FOR PATHWAYS

GROUND: T.B./ORG.	GROUND: SKIN	GOAT MILK:	COW MILK:	MEAT:	VEGTBLE:	TOTAL INGEST:	INHAL.
1.06E+06	1.20E+06	4.01E+05	2.22E+06	2.56E+08	2.89E+09	3.05E+09	2.94E+06

APPV RICB
DATE 2/5/92

O.D.C.M. MAXIMUM PATHWAY DOSE FACTORS: RADIONUCLIDES OTHER THAN NOBLE GASES*

ISOTOPE: Nb-95

PATHWAY	AGE GROUP	BONE	LIVER	T.BODY	THYROID	KIDNEY	LUNG	G.I.	SKIN
GROUND	ADULT	1.35E+08	1.35E+08	1.35E+08	1.35E+08	1.35E+08	1.35E+08	1.35E+08	1.59E+08
	TEEN	1.35E+08	1.35E+08	1.35E+08	1.35E+08	1.35E+08	1.35E+08	1.35E+08	1.59E+08
	CHILD	1.35E+08	1.35E+08	1.35E+08	1.35E+08	1.35E+08	1.35E+08	1.35E+08	1.59E+08
	INFANT	1.35E+08	1.35E+08	1.35E+08	1.35E+08	1.35E+08	1.35E+08	1.35E+08	1.59E+08
GOAT	ADULT	4.78E+03	2.66E+03	1.43E+03	0.00E+00	2.63E+03	0.00E+00	1.61E+07	N/A
MILK	TEEN	8.15E+03	4.52E+03	2.49E+03	0.00E+00	4.38E+03	0.00E+00	1.93E+07	N/A
	CHILD	1.84E+04	7.17E+03	5.12E+03	0.00E+00	6.73E+03	0.00E+00	1.33E+07	N/A
	INFANT	2.86E+05	1.42E+04	8.18E+03	0.00E+00	1.01E+04	0.00E+00	1.19E+07	N/A
COW	ADULT	2.44E+04	1.36E+04	7.31E+03	0.00E+00	1.34E+04	0.00E+00	8.25E+07	N/A
MILK	TEEN	4.17E+04	2.31E+04	1.27E+04	0.00E+00	2.24E+04	0.00E+00	9.89E+07	N/A
	CHILD	9.41E+04	3.67E+04	2.62E+04	0.00E+00	3.44E+04	0.00E+00	6.78E+07	N/A
	INFANT	1.76E+05	7.24E+04	4.18E+04	0.00E+00	5.19E+04	0.00E+00	6.11E+07	N/A
MEAT	ADULT	8.48E+05	4.72E+05	2.54E+05	0.00E+00	4.66E+05	0.00E+00	2.86E+09	N/A
	TEEN	6.62E+05	3.67E+05	2.02E+05	0.00E+00	3.56E+05	0.00E+00	1.57E+09	N/A
	CHILD	1.14E+06	4.45E+05	3.18E+05	0.00E+00	4.18E+05	0.00E+00	8.23E+08	N/A
	INFANT	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	N/A
VEGTBLE	ADULT	1.10E+05	6.11E+04	3.28E+04	0.00E+00	6.04E+04	0.00E+00	3.71E+08	N/A
	TEEN	1.64E+05	9.10E+04	5.01E+04	0.00E+00	8.82E+04	0.00E+00	3.89E+08	N/A
	CHILD	3.63E+05	1.41E+05	1.01E+05	0.00E+00	1.33E+05	0.00E+00	2.61E+08	N/A
	INFANT	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	N/A
TOTAL	ADULT	9.87E+05	5.49E+05	2.95E+05	0.00E+00	5.43E+05	0.00E+00	3.33E+09	N/A
INGEST.	TEEN	8.76E+05	4.86E+05	2.68E+05	0.00E+00	4.71E+05	0.00E+00	2.08E+09	N/A
	CHILD	1.62E+06	6.30E+05	4.50E+05	0.00E+00	5.92E+05	0.00E+00	1.17E+09	N/A
	INFANT	4.62E+05	8.65E+04	5.00E+04	0.00E+00	6.20E+04	0.00E+00	7.30E+07	N/A
INHAL.	ADULT	1.41E+04	7.82E+03	4.21E+03	0.00E+00	7.74E+03	5.05E+05	1.04E+05	N/A
	TEEN	1.86E+04	1.03E+04	5.66E+03	0.00E+00	1.00E+04	7.51E+05	9.68E+04	N/A
	CHILD	2.35E+04	9.18E+03	6.55E+03	0.00E+00	8.62E+03	6.14E+05	3.70E+04	N/A
	INFANT	1.57E+04	6.43E+03	3.78E+03	0.00E+00	4.72E+03	4.79E+05	1.27E+04	N/A
		BONE	LIVER	T.BODY	THYROID	KIDNEY	LUNG	G.I.	SKIN

*Airborne pathways and tritium ingestion: units are mrem/yr/uCi/m3
Deposition pathways: units are mrem-m2/yr/uCi/sec

MAXIMUM VALUES FOR PATHWAYS

GROUND: T.B./ORG.	GROUND: SKIN	GOAT MILK:	COW MILK:	MEAT:	VEGTBLE:	TOTAL INGEST:	INHAL.
1.35E+08	1.59E+08	1.93E+07	9.89E+07	2.86E+09	3.89E+08	3.33E+09	7.51E+05

APPV Rick
DATE 2/5/92

O.D.C.M. MAXIMUM PATHWAY DOSE FACTORS: RADIONUCLIDES OTHER THAN NOBLE GASES*

ISOTOPE: Zr-95

PATHWAY	AGE GROUP	BONE	LIVER	T.BODY	THYROID	KIDNEY	LUNG	G.I.	SKIN
GROUND	ADULT	2.42E+08	2.42E+08	2.42E+08	2.42E+08	2.42E+08	2.42E+08	2.42E+08	2.81E+08
	TEEN	2.42E+08	2.42E+08	2.42E+08	2.42E+08	2.42E+08	2.42E+08	2.42E+08	2.81E+08
	CHILD	2.42E+08	2.42E+08	2.42E+08	2.42E+08	2.42E+08	2.42E+08	2.42E+08	2.81E+08
	INFANT	2.42E+08	2.42E+08	2.42E+08	2.42E+08	2.42E+08	2.42E+08	2.42E+08	2.81E+08
GOAT MILK	ADULT	5.92E+01	1.90E+01	1.28E+01	0.00E+00	2.98E+01	0.00E+00	6.01E+04	N/A
	TEEN	1.03E+02	3.26E+01	2.25E+01	0.00E+00	4.80E+01	0.00E+00	7.53E+04	N/A
	CHILD	2.40E+02	5.28E+01	4.70E+01	0.00E+00	7.56E+01	0.00E+00	5.51E+04	N/A
	INFANT	3.56E+03	1.04E+02	7.38E+01	0.00E+00	1.12E+02	0.00E+00	5.18E+04	N/A
COW MILK	ADULT	3.31E+02	1.06E+02	7.18E+01	0.00E+00	1.67E+02	0.00E+00	3.36E+05	N/A
	TEEN	5.79E+02	1.83E+02	1.26E+02	0.00E+00	2.68E+02	0.00E+00	4.21E+05	N/A
	CHILD	1.34E+03	2.95E+02	2.63E+02	0.00E+00	4.23E+02	0.00E+00	3.08E+05	N/A
	INFANT	2.39E+03	5.82E+02	4.12E+02	0.00E+00	6.27E+02	0.00E+00	2.90E+05	N/A
MEAT	ADULT	7.83E+05	2.51E+05	1.70E+05	0.00E+00	3.94E+05	0.00E+00	7.96E+08	N/A
	TEEN	6.27E+05	1.98E+05	1.36E+05	0.00E+00	2.91E+05	0.00E+00	4.57E+08	N/A
	CHILD	1.11E+06	2.45E+05	2.18E+05	0.00E+00	3.50E+05	0.00E+00	2.55E+08	N/A
	INFANT	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	N/A
VEGTBLE	ADULT	9.90E+05	3.17E+05	2.15E+05	0.00E+00	4.98E+05	0.00E+00	1.01E+09	N/A
	TEEN	1.56E+06	4.91E+05	3.38E+05	0.00E+00	7.22E+05	0.00E+00	1.13E+09	N/A
	CHILD	3.57E+06	7.85E+05	6.99E+05	0.00E+00	1.12E+06	0.00E+00	8.19E+08	N/A
	INFANT	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	N/A
TOTAL INGEST.	ADULT	1.77E+06	5.69E+05	3.85E+05	0.00E+00	8.92E+05	0.00E+00	1.80E+09	N/A
	TEEN	2.18E+06	6.89E+05	4.74E+05	0.00E+00	1.01E+06	0.00E+00	1.59E+09	N/A
	CHILD	4.69E+06	1.03E+06	9.17E+05	0.00E+00	1.47E+06	0.00E+00	1.07E+09	N/A
	INFANT	5.94E+03	6.86E+02	4.86E+02	0.00E+00	7.39E+02	0.00E+00	3.41E+05	N/A
INHAL.	ADULT	1.07E+05	3.44E+04	2.33E+04	0.00E+00	5.42E+04	1.77E+06	1.50E+05	N/A
	TEEN	1.46E+05	4.58E+04	3.15E+04	0.00E+00	6.74E+04	2.69E+06	1.49E+05	N/A
	CHILD	1.90E+05	4.18E+04	3.70E+04	0.00E+00	5.96E+04	2.23E+06	6.11E+04	N/A
	INFANT	1.15E+05	2.79E+04	2.03E+04	0.00E+00	3.11E+04	1.75E+06	2.17E+04	N/A
		BONE	LIVER	T.BODY	THYROID	KIDNEY	LUNG	G.I.	SKIN

*Airborne pathways and tritium ingestion: units are mrem/yr/uCi/m3
Deposition pathways: units are mrem-m2/yr/uCi/sec

MAXIMUM VALUES FOR PATHWAYS

GROUND: T.B./ORG.	GROUND: SKIN	GOAT MILK:	COW MILK:	MEAT:	VEGTBLE:	TOTAL INGEST:	INHAL.
2.42E+08	2.81E+08	7.53E+04	4.21E+05	7.96E+08	1.13E+09	1.80E+09	2.69E+06

APPV Rec
DATE 2/5/92

O.D.C.M. MAXIMUM PATHWAY DOSE FACTORS: RADIONUCLIDES OTHER THAN NOBLE GASES*

ISOTOPE: Mo-99

PATHWAY	AGE GROUP	BONE	LIVER	T.BODY	THYROID	KIDNEY	LUNG	G.I.	SKIN
GROUND	ADULT	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	TEEN	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	CHILD	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	INFANT	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
GOAT MILK	ADULT	0.00E+00	1.34E+06	2.55E+05	0.00E+00	3.03E+06	0.00E+00	3.10E+06	N/A
	TEEN	0.00E+00	2.42E+06	4.61E+05	0.00E+00	5.53E+06	0.00E+00	4.33E+06	N/A
	CHILD	0.00E+00	4.39E+06	1.09E+06	0.00E+00	9.38E+06	0.00E+00	3.63E+06	N/A
	INFANT	0.00E+00	1.12E+07	2.19E+06	0.00E+00	1.68E+07	0.00E+00	3.70E+06	N/A
COW MILK	ADULT	0.00E+00	6.24E+06	1.19E+06	0.00E+00	1.41E+07	0.00E+00	1.45E+07	N/A
	TEEN	0.00E+00	1.13E+07	2.15E+06	0.00E+00	2.58E+07	0.00E+00	2.02E+07	N/A
	CHILD	0.00E+00	2.05E+07	5.07E+06	0.00E+00	4.38E+07	0.00E+00	1.70E+07	N/A
	INFANT	0.00E+00	5.24E+07	1.02E+07	0.00E+00	7.83E+07	0.00E+00	1.73E+07	N/A
MEAT	ADULT	0.00E+00	3.30E+04	6.27E+03	0.00E+00	7.46E+04	0.00E+00	7.64E+04	N/A
	TEEN	0.00E+00	2.73E+04	5.20E+03	0.00E+00	6.24E+04	0.00E+00	4.88E+04	N/A
	CHILD	0.00E+00	3.79E+04	9.38E+03	0.00E+00	8.10E+04	0.00E+00	3.14E+04	N/A
	INFANT	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	N/A
VEGTBLE	ADULT	0.00E+00	2.03E+06	3.86E+05	0.00E+00	4.60E+06	0.00E+00	4.71E+06	N/A
	TEEN	0.00E+00	1.86E+06	3.55E+05	0.00E+00	4.27E+06	0.00E+00	3.34E+06	N/A
	CHILD	0.00E+00	2.54E+06	6.30E+05	0.00E+00	5.43E+06	0.00E+00	2.10E+06	N/A
	INFANT	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	N/A
TOTAL INGEST.	ADULT	0.00E+00	9.64E+06	1.83E+06	0.00E+00	2.18E+07	0.00E+00	2.24E+07	N/A
	TEEN	0.00E+00	1.56E+07	2.97E+06	0.00E+00	3.56E+07	0.00E+00	2.79E+07	N/A
	CHILD	0.00E+00	2.75E+07	6.80E+06	0.00E+00	5.87E+07	0.00E+00	2.27E+07	N/A
	INFANT	0.00E+00	6.37E+07	1.24E+07	0.00E+00	9.51E+07	0.00E+00	2.10E+07	N/A
INHAL.	ADULT	0.00E+00	1.21E+02	2.30E+01	0.00E+00	2.91E+02	9.12E+04	2.48E+05	N/A
	TEEN	0.00E+00	1.69E+02	3.22E+01	0.00E+00	4.11E+02	1.54E+05	2.69E+05	N/A
	CHILD	0.00E+00	1.72E+02	4.26E+01	0.00E+00	3.92E+02	1.35E+05	1.27E+05	N/A
	INFANT	0.00E+00	1.65E+02	3.23E+01	0.00E+00	2.65E+02	1.35E+05	4.87E+04	N/A
		BONE	LIVER	T.BODY	THYROID	KIDNEY	LUNG	G.I.	SKIN

*Airborne pathways and tritium ingestion: units are mrem/yr/uCi/m3
Deposition pathways: units are mrem-m2/yr/uCi/sec

MAXIMUM VALUES FOR PATHWAYS

GROUND: T.B./ORG.	GROUND: SKIN	GOAT MILK:	COW MILK:	MEAT:	VEGTBLE:	TOTAL INGEST:	INHAL.
0.00E+00	0.00E+00	1.68E+07	7.83E+07	8.10E+04	5.43E+06	9.51E+07	2.69E+05

APPV BCS
DATE 2/5/92

O.D.C.M. MAXIMUM PATHWAY DOSE FACTORS: RADIONUCLIDES OTHER THAN NOBLE GASES*

ISOTOPE: Tc-99m

PATHWAY	AGE GROUP	BONE	LIVER	T.BODY	THYROID	KIDNEY	LUNG	G.I.	SKIN
GROUND	ADULT	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	TEEN	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	CHILD	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	INFANT	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
GOAT MILK	ADULT	1.79E-01	5.07E-01	6.46E+00	0.00E+00	7.70E+00	2.48E-01	3.00E+02	N/A
	TEEN	3.11E-01	8.68E-01	1.12E+01	0.00E+00	1.29E+01	4.82E-01	5.70E+02	N/A
	CHILD	7.13E-01	1.40E+00	2.32E+01	0.00E+00	2.03E+01	7.10E-01	7.96E+02	N/A
	INFANT	1.24E+01	3.06E+00	3.94E+01	0.00E+00	3.29E+01	1.60E+00	8.89E+02	N/A
COW MILK	ADULT	8.37E-01	2.36E+00	3.01E+01	0.00E+00	3.59E+01	1.16E+00	1.40E+03	N/A
	TEEN	1.45E+00	4.05E+00	5.25E+01	0.00E+00	6.03E+01	2.25E+00	2.66E+03	N/A
	CHILD	3.33E+00	6.53E+00	1.08E+02	0.00E+00	9.49E+01	3.31E+00	3.71E+03	N/A
	INFANT	6.92E+00	1.43E+01	1.84E+02	0.00E+00	1.54E+02	7.47E+00	4.15E+03	N/A
MEAT	ADULT	1.47E-21	4.14E-21	5.28E-20	0.00E+00	6.29E-20	2.03E-21	2.45E-18	N/A
	TEEN	1.16E-21	3.25E-21	4.21E-20	0.00E+00	4.84E-20	1.80E-21	2.13E-18	N/A
	CHILD	2.04E-21	4.01E-21	6.64E-20	0.00E+00	5.82E-20	2.03E-21	2.28E-18	N/A
	INFANT	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	N/A
VEGTBLE	ADULT	1.02E+00	2.89E+00	3.68E+01	0.00E+00	4.39E+01	1.42E+00	1.71E+03	N/A
	TEEN	9.03E-01	2.52E+00	3.26E+01	0.00E+00	3.75E+01	1.40E+00	1.65E+03	N/A
	CHILD	1.55E+00	3.05E+00	5.05E+01	0.00E+00	4.43E+01	1.55E+00	1.73E+03	N/A
	INFANT	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	N/A
TOTAL INGEST.	ADULT	2.04E+00	5.76E+00	7.34E+01	0.00E+00	8.75E+01	2.82E+00	3.41E+03	N/A
	TEEN	2.67E+00	7.43E+00	9.63E+01	0.00E+00	1.11E+02	4.13E+00	4.88E+03	N/A
	CHILD	5.60E+00	1.10E+01	1.82E+02	0.00E+00	1.59E+02	5.57E+00	6.25E+03	N/A
	INFANT	1.93E+01	1.73E+01	2.23E+02	0.00E+00	1.87E+02	9.07E+00	5.04E+03	N/A
INHAL.	ADULT	1.03E-03	2.91E-03	3.70E-02	0.00E+00	4.42E-02	7.64E+02	4.16E+03	N/A
	TEEN	1.38E-03	3.86E-03	4.99E-02	0.00E+00	5.76E-02	1.15E+03	6.13E+03	N/A
	CHILD	1.78E-03	3.48E-03	5.77E-02	0.00E+00	5.07E-02	9.51E+02	4.81E+03	N/A
	INFANT	1.40E-03	2.88E-03	3.72E-02	0.00E+00	3.11E-02	8.11E+02	2.03E+03	N/A
		BONE	LIVER	T.BODY	THYROID	KIDNEY	LUNG	G.I.	SKIN

*Airborne pathways and tritium ingestion: units are mrem/yr/uCi/m3
Deposition pathways: units are mrem-m2/yr/uCi/sec

MAXIMUM VALUES FOR PATHWAYS

GROUND: T.B./ORG.	GROUND: SKIN	GOAT MILK:	COW MILK:	MEAT:	VEGTBLE:	TOTAL INGEST:	INHAL.
0.00E+00	0.00E+00	8.89E+02	4.15E+03	2.45E-18	1.73E+03	6.25E+03	6.13E+03

APPV RLCS
DATE 2/5/92

O.D.C.M. MAXIMUM PATHWAY DOSE FACTORS: RADIONUCLIDES OTHER THAN NOBLE GASES*

ISOTOPE: Ru-106

PATHWAY	AGE GROUP	BONE	LIVER	T.BODY	THYROID	KIDNEY	LUNG	G.I.	SKIN
GROUND	ADULT	4.18E+08	4.18E+08	4.18E+08	4.18E+08	4.18E+08	4.18E+08	4.18E+08	5.01E+08
	TEEN	4.18E+08	4.18E+08	4.18E+08	4.18E+08	4.18E+08	4.18E+08	4.18E+08	5.01E+08
	CHILD	4.18E+08	4.18E+08	4.18E+08	4.18E+08	4.18E+08	4.18E+08	4.18E+08	5.01E+08
	INFANT	4.18E+08	4.18E+08	4.18E+08	4.18E+08	4.18E+08	4.18E+08	4.18E+08	5.01E+08
GOAT	ADULT	1.50E+03	0.00E+00	1.90E+02	0.00E+00	2.90E+03	0.00E+00	9.71E+04	N/A
MILK	TEEN	2.76E+03	0.00E+00	3.48E+02	0.00E+00	5.32E+03	0.00E+00	1.32E+05	N/A
	CHILD	6.79E+03	0.00E+00	8.47E+02	0.00E+00	9.17E+03	0.00E+00	1.06E+05	N/A
	INFANT	1.17E+05	0.00E+00	1.75E+03	0.00E+00	1.65E+04	0.00E+00	1.06E+05	N/A
COW	ADULT	9.65E+03	0.00E+00	1.22E+03	0.00E+00	1.86E+04	0.00E+00	6.24E+05	N/A
MILK	TEEN	1.77E+04	0.00E+00	2.24E+03	0.00E+00	3.42E+04	0.00E+00	8.51E+05	N/A
	CHILD	4.37E+04	0.00E+00	5.45E+03	0.00E+00	5.90E+04	0.00E+00	6.80E+05	N/A
	INFANT	9.00E+04	0.00E+00	1.12E+04	0.00E+00	1.06E+05	0.00E+00	6.83E+05	N/A
MEAT	ADULT	1.48E+09	0.00E+00	1.87E+08	0.00E+00	2.85E+09	0.00E+00	9.56E+10	N/A
	TEEN	1.24E+09	0.00E+00	1.57E+08	0.00E+00	2.40E+09	0.00E+00	5.97E+10	N/A
	CHILD	2.34E+09	0.00E+00	2.92E+08	0.00E+00	3.16E+09	0.00E+00	3.64E+10	N/A
	INFANT	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	N/A
VEGTBLE	ADULT	1.73E+08	0.00E+00	2.19E+07	0.00E+00	3.34E+08	0.00E+00	1.12E+10	N/A
	TEEN	2.91E+08	0.00E+00	3.67E+07	0.00E+00	5.61E+08	0.00E+00	1.40E+10	N/A
	CHILD	7.11E+08	0.00E+00	8.88E+07	0.00E+00	9.61E+08	0.00E+00	1.11E+10	N/A
	INFANT	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	N/A
TOTAL	ADULT	1.65E+09	0.00E+00	2.09E+08	0.00E+00	3.19E+09	0.00E+00	1.07E+11	N/A
INGEST.	TEEN	1.53E+09	0.00E+00	1.93E+08	0.00E+00	2.96E+09	0.00E+00	7.36E+10	N/A
	CHILD	3.05E+09	0.00E+00	3.81E+08	0.00E+00	4.12E+09	0.00E+00	4.75E+10	N/A
	INFANT	2.07E+05	0.00E+00	1.30E+04	0.00E+00	1.23E+05	0.00E+00	7.90E+05	N/A
INHAL.	ADULT	6.91E+04	0.00E+00	8.72E+03	0.00E+00	1.34E+05	9.36E+06	9.12E+05	N/A
	TEEN	9.84E+04	0.00E+00	1.24E+04	0.00E+00	1.90E+05	1.61E+07	9.60E+05	N/A
	CHILD	1.36E+05	0.00E+00	1.69E+04	0.00E+00	1.84E+05	1.43E+07	4.29E+05	N/A
	INFANT	8.68E+04	0.00E+00	1.09E+04	0.00E+00	1.07E+05	1.16E+07	1.64E+05	N/A
		BONE	LIVER	T.BODY	THYROID	KIDNEY	LUNG	G.I.	SKIN

*Airborne pathways and tritium ingestion: units are mrem/yr/uCi/m3
Deposition pathways: units are mrem-m2/yr/uCi/sec

MAXIMUM VALUES FOR PATHWAYS

GROUND: T.B./ORG.	GROUND: SKIN	GOAT MILK:	COW MILK:	MEAT:	VEGTBLE:	TOTAL INGEST:	INHAL.
4.18E+08	5.01E+08	1.32E+05	8.51E+05	9.56E+10	1.40E+10	1.07E+11	1.61E+07

APPV PCG
DATE 2/5/92

O.D.C.M. MAXIMUM PATHWAY DOSE FACTORS: RADIONUCLIDES OTHER THAN NOBLE GASES*

ISOTOPE: Ag-110m

PATHWAY	AGE GROUP	BONE	LIVER	T.BODY	THYROID	KIDNEY	LUNG	G.I.	SKIN
GROUND	ADULT	3.40E+09	3.40E+09	3.40E+09	3.40E+09	3.40E+09	3.40E+09	3.40E+09	3.97E+09
	TEEN	3.40E+09	3.40E+09	3.40E+09	3.40E+09	3.40E+09	3.40E+09	3.40E+09	3.97E+09
	CHILD	3.40E+09	3.40E+09	3.40E+09	3.40E+09	3.40E+09	3.40E+09	3.40E+09	3.97E+09
	INFANT	3.40E+09	3.40E+09	3.40E+09	3.40E+09	3.40E+09	3.40E+09	3.40E+09	3.97E+09
GOAT MILK	ADULT	4.19E+06	3.88E+06	2.30E+06	0.00E+00	7.63E+06	0.00E+00	1.58E+09	N/A
	TEEN	6.93E+06	6.56E+06	3.99E+06	0.00E+00	1.25E+07	0.00E+00	1.84E+09	N/A
	CHILD	1.50E+07	1.02E+07	8.12E+06	0.00E+00	1.89E+07	0.00E+00	1.21E+09	N/A
	INFANT	2.32E+08	2.03E+07	1.34E+07	0.00E+00	2.90E+07	0.00E+00	1.05E+09	N/A
COW MILK	ADULT	2.65E+07	2.46E+07	1.46E+07	0.00E+00	4.83E+07	0.00E+00	1.00E+10	N/A
	TEEN	4.39E+07	4.15E+07	2.53E+07	0.00E+00	7.92E+07	0.00E+00	1.17E+10	N/A
	CHILD	9.52E+07	6.43E+07	5.14E+07	0.00E+00	1.20E+08	0.00E+00	7.65E+09	N/A
	INFANT	1.76E+08	1.28E+08	8.50E+07	0.00E+00	1.84E+08	0.00E+00	6.66E+09	N/A
MEAT	ADULT	3.42E+06	3.17E+06	1.88E+06	0.00E+00	6.23E+06	0.00E+00	1.29E+09	N/A
	TEEN	2.59E+06	2.45E+06	1.49E+06	0.00E+00	4.68E+06	0.00E+00	6.89E+08	N/A
	CHILD	4.30E+06	2.90E+06	2.32E+06	0.00E+00	5.41E+06	0.00E+00	3.45E+08	N/A
	INFANT	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	N/A
VEGTBLE	ADULT	9.41E+06	8.70E+06	5.17E+06	0.00E+00	1.71E+07	0.00E+00	3.55E+09	N/A
	TEEN	1.42E+07	1.34E+07	8.18E+06	0.00E+00	2.56E+07	0.00E+00	3.78E+09	N/A
	CHILD	3.06E+07	2.06E+07	1.65E+07	0.00E+00	3.85E+07	0.00E+00	2.46E+09	N/A
	INFANT	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	N/A
TOTAL INGEST.	ADULT	4.36E+07	4.03E+07	2.39E+07	0.00E+00	7.92E+07	0.00E+00	1.64E+10	N/A
	TEEN	6.76E+07	6.40E+07	3.89E+07	0.00E+00	1.22E+08	0.00E+00	1.80E+10	N/A
	CHILD	1.45E+08	9.80E+07	7.83E+07	0.00E+00	1.83E+08	0.00E+00	1.17E+10	N/A
	INFANT	4.07E+08	1.49E+08	9.84E+07	0.00E+00	2.13E+08	0.00E+00	7.71E+09	N/A
INHAL.	ADULT	1.08E+04	1.00E+04	5.94E+03	0.00E+00	1.97E+04	4.63E+06	3.02E+05	N/A
	TEEN	1.38E+04	1.31E+04	7.99E+03	0.00E+00	2.50E+04	6.75E+06	2.73E+05	N/A
	CHILD	1.69E+04	1.14E+04	9.14E+03	0.00E+00	2.12E+04	5.48E+06	1.00E+05	N/A
	INFANT	9.98E+03	7.22E+03	5.00E+03	0.00E+00	1.09E+04	3.67E+06	3.30E+04	N/A
		BONE	LIVER	T.BODY	THYROID	KIDNEY	LUNG	G.I.	SKIN

*Airborne pathways and tritium ingestion: units are mrem/yr/uCi/m3
Deposition pathways: units are mrem-m2/yr/uCi/sec

MAXIMUM VALUES FOR PATHWAYS

GROUND: T.B./ORG.	GROUND: SKIN	GOAT MILK:	COW MILK:	MEAT:	VEGTBLE:	TOTAL INGEST:	INHAL.
3.40E+09	3.97E+09	1.84E+09	1.17E+10	1.29E+09	3.78E+09	1.80E+10	6.75E+06

APPV RWB
DATE 2/5/92

O.D.C.M. MAXIMUM PATHWAY DOSE FACTORS: RADIONUCLIDES OTHER THAN NOBLE GASES*

ISOTOPE: I-131

PATHWAY	AGE GROUP	BONE	LIVER	T.BODY	THYROID	KIDNEY	LUNG	G.I.	SKIN
GROUND	ADULT	1.70E+07	1.70E+07	1.70E+07	1.70E+07	1.70E+07	1.70E+07	1.70E+07	2.07E+07
	TEEN	1.70E+07	1.70E+07	1.70E+07	1.70E+07	1.70E+07	1.70E+07	1.70E+07	2.07E+07
	CHILD	1.70E+07	1.70E+07	1.70E+07	1.70E+07	1.70E+07	1.70E+07	1.70E+07	2.07E+07
	INFANT	1.70E+07	1.70E+07	1.70E+07	1.70E+07	1.70E+07	1.70E+07	1.70E+07	2.07E+07
GOAT	ADULT	1.60E+08	2.29E+08	1.31E+08	7.50E+10	3.92E+08	0.00E+00	6.04E+07	N/A
MILK	TEEN	2.90E+08	4.06E+08	2.18E+08	1.19E+11	6.99E+08	0.00E+00	8.04E+07	N/A
	CHILD	7.04E+08	7.08E+08	4.02E+08	2.34E+11	1.16E+09	0.00E+00	6.30E+07	N/A
	INFANT	1.22E+09	1.73E+09	7.61E+08	5.69E+11	2.02E+09	0.00E+00	6.18E+07	N/A
COW	ADULT	7.46E+07	1.07E+08	6.12E+07	3.50E+10	1.83E+08	0.00E+00	2.82E+07	N/A
MILK	TEEN	1.35E+08	1.90E+08	1.02E+08	5.53E+10	3.26E+08	0.00E+00	3.75E+07	N/A
	CHILD	3.29E+08	3.30E+08	1.88E+08	1.09E+11	5.42E+08	0.00E+00	2.94E+07	N/A
	INFANT	6.86E+08	8.08E+08	3.55E+08	2.65E+11	9.44E+08	0.00E+00	2.88E+07	N/A
MEAT	ADULT	3.54E+06	5.07E+06	2.90E+06	1.66E+09	8.68E+06	0.00E+00	1.34E+06	N/A
	TEEN	2.94E+06	4.12E+06	2.21E+06	1.20E+09	7.09E+06	0.00E+00	8.15E+05	N/A
	CHILD	5.46E+06	5.49E+06	3.12E+06	1.81E+09	9.01E+06	0.00E+00	4.89E+05	N/A
	INFANT	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	N/A
VEGTBLE	ADULT	2.86E+07	4.10E+07	2.35E+07	1.34E+10	7.02E+07	0.00E+00	1.08E+07	N/A
	TEEN	2.88E+07	4.03E+07	2.16E+07	1.18E+10	6.93E+07	0.00E+00	7.96E+06	N/A
	CHILD	5.54E+07	5.57E+07	3.17E+07	1.84E+10	9.15E+07	0.00E+00	4.96E+06	N/A
	INFANT	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	N/A
TOTAL	ADULT	2.67E+08	3.82E+08	2.19E+08	1.25E+11	6.54E+08	0.00E+00	1.01E+08	N/A
INGEST.	TEEN	4.57E+08	6.40E+08	3.44E+08	1.87E+11	1.10E+09	0.00E+00	1.27E+08	N/A
	CHILD	1.09E+09	1.10E+09	6.25E+08	3.64E+11	1.81E+09	0.00E+00	9.79E+07	N/A
	INFANT	1.91E+09	2.54E+09	1.12E+09	8.34E+11	2.97E+09	0.00E+00	9.06E+07	N/A
INHAL.	ADULT	2.52E+04	3.58E+04	2.05E+04	1.19E+07	6.13E+04	0.00E+00	6.28E+03	N/A
	TEEN	3.54E+04	4.91E+04	2.64E+04	1.46E+07	8.40E+04	0.00E+00	6.49E+03	N/A
	CHILD	4.81E+04	4.81E+04	2.73E+04	1.62E+07	7.88E+04	0.00E+00	2.84E+03	N/A
	INFANT	3.79E+04	4.44E+04	1.96E+04	1.48E+07	5.18E+04	0.00E+00	1.06E+03	N/A
		BONE	LIVER	T.BODY	THYROID	KIDNEY	LUNG	G.I.	SKIN

*Airborne pathways and tritium ingestion: units are mrem/yr/uCi/m3
Deposition pathways: units are mrem-m2/yr/uCi/sec

MAXIMUM VALUES FOR PATHWAYS

GROUND: T.B./ORG.	GROUND: SKIN	GOAT MILK:	COW MILK:	MEAT:	VEGTBLE:	TOTAL INGEST:	INHAL.
1.70E+07	2.07E+07	5.69E+11	2.65E+11	1.81E+09	1.84E+10	8.34E+11	1.62E+07

APPV Rick
DATE 2/5/92

O.D.C.M. MAXIMUM PATHWAY DOSE FACTORS: RADIONUCLIDES OTHER THAN NOBLE GASES*

ISOTOPE: I-132

PATHWAY	AGE GROUP	BONE	LIVER	T.BODY	THYROID	KIDNEY	LUNG	G.I.	SKIN
GROUND	ADULT	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	TEEN	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	CHILD	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	INFANT	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
GOAT MILK	ADULT	8.87E-02	2.37E-01	8.30E-02	8.30E+00	3.78E-01	0.00E+00	4.46E-02	N/A
	TEEN	1.57E-01	4.12E-01	1.48E-01	1.39E+01	6.48E-01	0.00E+00	1.79E-01	N/A
	CHILD	3.72E-01	6.84E-01	3.14E-01	3.17E+01	1.05E+00	0.00E+00	8.05E-01	N/A
	INFANT	6.44E-01	1.57E+00	5.58E-01	7.35E+01	1.75E+00	0.00E+00	1.27E+00	N/A
COW MILK	ADULT	4.14E-02	1.11E-01	3.87E-02	3.87E+00	1.76E-01	0.00E+00	2.08E-02	N/A
	TEEN	7.34E-02	1.92E-01	6.89E-02	6.47E+00	3.03E-01	0.00E+00	8.37E-02	N/A
	CHILD	1.74E-01	3.19E-01	1.47E-01	1.48E+01	4.88E-01	0.00E+00	3.75E-01	N/A
	INFANT	3.60E-01	7.31E-01	2.60E-01	3.43E+01	8.16E-01	0.00E+00	5.93E-01	N/A
MEAT	ADULT	2.30E-59	6.14E-59	2.15E-59	2.15E-57	9.79E-59	0.00E+00	1.15E-59	N/A
	TEEN	1.87E-59	4.88E-59	1.75E-59	1.64E-57	7.69E-59	0.00E+00	2.13E-59	N/A
	CHILD	3.37E-59	6.20E-59	2.85E-59	2.88E-57	9.49E-59	0.00E+00	7.30E-59	N/A
	INFANT	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	N/A
VEGTBLE	ADULT	1.90E+01	5.08E+01	1.78E+01	1.78E+03	8.10E+01	0.00E+00	9.55E+00	N/A
	TEEN	1.71E+01	4.48E+01	1.61E+01	1.51E+03	7.06E+01	0.00E+00	1.95E+01	N/A
	CHILD	3.04E+01	5.59E+01	2.57E+01	2.59E+03	8.56E+01	0.00E+00	6.58E+01	N/A
	INFANT	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	N/A
TOTAL INGEST.	ADULT	1.91E+01	5.12E+01	1.79E+01	1.79E+03	8.15E+01	0.00E+00	9.61E+00	N/A
	TEEN	1.74E+01	4.54E+01	1.63E+01	1.53E+03	7.16E+01	0.00E+00	1.98E+01	N/A
	CHILD	3.10E+01	5.69E+01	2.62E+01	2.64E+03	8.71E+01	0.00E+00	6.70E+01	N/A
	INFANT	1.00E+00	2.30E+00	8.19E-01	1.08E+02	2.57E+00	0.00E+00	1.86E+00	N/A
INHAL.	ADULT	1.16E+03	3.26E+03	1.16E+03	1.14E+05	5.18E+03	0.00E+00	4.06E+02	N/A
	TEEN	1.59E+03	4.38E+03	1.58E+03	1.51E+05	6.92E+03	0.00E+00	1.27E+03	N/A
	CHILD	2.12E+03	4.07E+03	1.88E+03	1.94E+05	6.25E+03	0.00E+00	3.20E+03	N/A
	INFANT	1.69E+03	3.54E+03	1.26E+03	1.69E+05	3.95E+03	0.00E+00	1.90E+03	N/A
		BONE	LIVER	T.BODY	THYROID	KIDNEY	LUNG	G.I.	SKIN

*Airborne pathways and tritium ingestion: units are mrem/yr/uCi/m3
Deposition pathways: units are mrem-m2/yr/uCi/sec

MAXIMUM VALUES FOR PATHWAYS

GROUND: T.B./ORG.	GROUND: SKIN	GOAT MILK:	COW MILK:	MEAT:	VEGTBLE:	TOTAL INGEST:	INHAL.
0.00E+00	0.00E+00	7.35E+01	3.43E+01	2.88E-57	2.59E+03	2.64E+03	1.94E+05

APPV ACS
DATE 3/5/92

O.D.C.M. MAXIMUM PATHWAY DOSE FACTORS: RADIONUCLIDES OTHER THAN NOBLE GASES*

ISOTOPE: Te-132

PATHWAY	AGE GROUP	BONE	LIVER	T.BODY	THYROID	KIDNEY	LUNG	G.I.	SKIN
GROUND	ADULT	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	TEEN	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	CHILD	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	INFANT	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
GOAT MILK	ADULT	1.30E+05	8.39E+04	7.88E+04	9.27E+04	8.08E+05	0.00E+00	3.97E+06	N/A
	TEEN	2.32E+05	1.47E+05	1.38E+05	1.55E+05	1.41E+06	0.00E+00	4.65E+06	N/A
	CHILD	5.53E+05	2.45E+05	2.96E+05	3.57E+05	2.27E+06	0.00E+00	2.47E+06	N/A
	INFANT	9.50E+06	5.64E+05	5.27E+05	8.33E+05	3.53E+06	0.00E+00	2.09E+06	N/A
COW MILK	ADULT	6.05E+05	3.91E+05	3.67E+05	4.32E+05	3.77E+06	0.00E+00	1.85E+07	N/A
	TEEN	1.08E+06	6.85E+05	6.45E+05	7.22E+05	6.57E+06	0.00E+00	2.17E+07	N/A
	CHILD	2.58E+06	1.14E+06	1.38E+06	1.66E+06	1.06E+07	0.00E+00	1.15E+07	N/A
	INFANT	5.32E+06	2.63E+06	2.46E+06	3.89E+06	1.65E+07	0.00E+00	9.74E+06	N/A
MEAT	ADULT	4.68E+05	3.03E+05	2.84E+05	3.34E+05	2.92E+06	0.00E+00	1.43E+07	N/A
	TEEN	3.83E+05	2.43E+05	2.28E+05	2.56E+05	2.33E+06	0.00E+00	7.68E+06	N/A
	CHILD	6.99E+05	3.09E+05	3.74E+05	4.51E+05	2.87E+06	0.00E+00	3.11E+06	N/A
	INFANT	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	N/A
VEGTBLE	ADULT	1.42E+06	9.18E+05	8.62E+05	1.01E+06	8.84E+06	0.00E+00	4.34E+07	N/A
	TEEN	1.29E+06	8.17E+05	7.69E+05	8.61E+05	7.83E+06	0.00E+00	2.59E+07	N/A
	CHILD	2.31E+06	1.02E+06	1.24E+06	1.49E+06	9.49E+06	0.00E+00	1.03E+07	N/A
	INFANT	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	N/A
TOTAL INGEST.	ADULT	2.62E+06	1.70E+06	1.59E+06	1.87E+06	1.63E+07	0.00E+00	8.02E+07	N/A
	TEEN	2.99E+06	1.89E+06	1.78E+06	1.99E+06	1.81E+07	0.00E+00	5.99E+07	N/A
	CHILD	6.15E+06	2.72E+06	3.29E+06	3.96E+06	2.53E+07	0.00E+00	2.74E+07	N/A
	INFANT	1.48E+07	3.20E+06	2.98E+06	4.72E+06	2.00E+07	0.00E+00	1.18E+07	N/A
INHAL.	ADULT	2.60E+02	2.15E+02	1.62E+02	1.90E+02	1.46E+03	2.88E+05	5.10E+05	N/A
	TEEN	3.60E+02	2.90E+02	2.19E+02	2.46E+02	1.95E+03	4.49E+05	4.63E+05	N/A
	CHILD	4.81E+02	2.72E+02	2.63E+02	3.17E+02	1.77E+03	3.77E+05	1.38E+05	N/A
	INFANT	3.72E+02	2.37E+02	1.76E+02	2.79E+02	1.03E+03	3.40E+05	4.41E+04	N/A
		BONE	LIVER	T.BODY	THYROID	KIDNEY	LUNG	G.I.	SKIN

*Airborne pathways and tritium ingestion: units are mrem/yr/uCi/m3
Deposition pathways: units are mrem-m2/yr/uCi/sec

MAXIMUM VALUES FOR PATHWAYS

GROUND: T.B./ORG.	GROUND: SKIN	GOAT MILK:	COW MILK:	MEAT:	VEGTBLE:	TOTAL INGEST:	INHAL.
0.00E+00	0.00E+00	9.50E+06	2.17E+07	1.43E+07	4.34E+07	8.02E+07	5.10E+05

APPV RKS
DATE 2/5/92

O.D.C.M. MAXIMUM PATHWAY DOSE FACTORS: RADIONUCLIDES OTHER THAN NOBLE GASES*

ISOTOPE: I-133

PATHWAY	AGE GROUP	BONE	LIVER	T.BODY	THYROID	KIDNEY	LUNG	G.I.	SKIN
GROUND	ADULT	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	TEEN	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	CHILD	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	INFANT	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
GOAT MILK	ADULT	2.09E+06	3.64E+06	1.11E+06	5.34E+08	6.34E+06	0.00E+00	3.27E+06	N/A
	TEEN	3.82E+06	6.48E+06	1.98E+06	9.04E+08	1.14E+07	0.00E+00	4.90E+06	N/A
	CHILD	9.28E+06	1.15E+07	4.34E+06	2.13E+09	1.91E+07	0.00E+00	4.62E+06	N/A
	INFANT	1.63E+07	2.85E+07	8.35E+06	5.19E+09	3.35E+07	0.00E+00	4.83E+06	N/A
COW MILK	ADULT	9.75E+05	1.70E+06	5.17E+05	2.49E+08	2.96E+06	0.00E+00	1.52E+06	N/A
	TEEN	1.78E+06	3.02E+06	9.21E+05	4.22E+08	5.30E+06	0.00E+00	2.29E+06	N/A
	CHILD	4.33E+06	5.35E+06	2.02E+06	9.94E+08	8.92E+06	0.00E+00	2.16E+06	N/A
	INFANT	9.14E+06	1.33E+07	3.90E+06	2.42E+09	1.56E+07	0.00E+00	2.25E+06	N/A
MEAT	ADULT	1.20E-01	2.09E-01	6.38E-02	3.08E+01	3.65E-01	0.00E+00	1.88E-01	N/A
	TEEN	1.01E-01	1.71E-01	5.21E-02	2.38E+01	3.00E-01	0.00E+00	1.29E-01	N/A
	CHILD	1.87E-01	2.31E-01	8.75E-02	4.30E+01	3.86E-01	0.00E+00	9.32E-02	N/A
	INFANT	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	N/A
VEGTBLE	ADULT	6.88E+05	1.20E+06	3.65E+05	1.76E+08	2.09E+06	0.00E+00	1.08E+06	N/A
	TEEN	6.39E+05	1.08E+06	3.31E+05	1.51E+08	1.90E+06	0.00E+00	8.20E+05	N/A
	CHILD	1.17E+06	1.44E+06	5.45E+05	2.68E+08	2.40E+06	0.00E+00	5.81E+05	N/A
	INFANT	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	N/A
TOTAL INGEST.	ADULT	3.75E+06	6.53E+06	1.99E+06	9.59E+08	1.14E+07	0.00E+00	5.87E+06	N/A
	TEEN	6.24E+06	1.06E+07	3.23E+06	1.48E+09	1.86E+07	0.00E+00	8.01E+06	N/A
	CHILD	1.48E+07	1.83E+07	6.91E+06	3.39E+09	3.04E+07	0.00E+00	7.36E+06	N/A
	INFANT	2.55E+07	4.18E+07	1.22E+07	7.61E+09	4.92E+07	0.00E+00	7.08E+06	N/A
INHAL.	ADULT	8.64E+03	1.48E+04	4.52E+03	2.15E+06	2.58E+04	0.00E+00	8.88E+03	N/A
	TEEN	1.22E+04	2.05E+04	6.22E+03	2.92E+06	3.59E+04	0.00E+00	1.03E+04	N/A
	CHILD	1.66E+04	2.03E+04	7.70E+03	3.85E+06	3.38E+04	0.00E+00	5.48E+03	N/A
	INFANT	1.32E+04	1.92E+04	5.60E+03	3.56E+06	2.24E+04	0.00E+00	2.16E+03	N/A
		BONE	LIVER	T.BODY	THYROID	KIDNEY	LUNG	G.I.	SKIN

*Airborne pathways and tritium ingestion: units are mrem/yr/uCi/m3
Deposition pathways: units are mrem-m2/yr/uCi/sec

MAXIMUM VALUES FOR PATHWAYS

GROUND: T.B./ORG.	GROUND: SKIN	GOAT MILK:	COW MILK:	MEAT:	VEGTBLE:	TOTAL INGEST:	INHAL.
0.00E+00	0.00E+00	5.19E+09	2.42E+09	4.30E+01	2.68E+08	7.61E+09	3.85E+06

APPV RKB
DATE 2/5/92

O.D.C.M. MAXIMUM PATHWAY DOSE FACTORS: RADIONUCLIDES OTHER THAN NOBLE GASES*

ISOTOPE: Cs-134

PATHWAY	AGE GROUP	BONE	LIVER	T.BODY	THYROID	KIDNEY	LUNG	G.I.	SKIN
GROUND	ADULT	6.79E+09	6.79E+09	6.79E+09	6.79E+09	6.79E+09	6.79E+09	6.79E+09	7.92E+09
	TEEN	6.79E+09	6.79E+09	6.79E+09	6.79E+09	6.79E+09	6.79E+09	6.79E+09	7.92E+09
	CHILD	6.79E+09	6.79E+09	6.79E+09	6.79E+09	6.79E+09	6.79E+09	6.79E+09	7.92E+09
	INFANT	6.79E+09	6.79E+09	6.79E+09	6.79E+09	6.79E+09	6.79E+09	6.79E+09	7.92E+09
GOAT	ADULT	1.06E+10	2.53E+10	2.07E+10	0.00E+00	8.19E+09	2.72E+09	4.43E+08	N/A
MILK	TEEN	1.85E+10	4.35E+10	2.02E+10	0.00E+00	1.38E+10	5.27E+09	5.41E+08	N/A
	CHILD	4.26E+10	6.99E+10	1.47E+10	0.00E+00	2.17E+10	7.77E+09	3.77E+08	N/A
	INFANT	2.29E+10	1.28E+11	1.29E+10	0.00E+00	3.30E+10	1.35E+10	3.48E+08	N/A
COW	ADULT	2.79E+09	6.63E+09	5.42E+09	0.00E+00	2.15E+09	7.12E+08	1.16E+08	N/A
MILK	TEEN	4.84E+09	1.14E+10	5.28E+09	0.00E+00	3.62E+09	1.38E+09	1.42E+08	N/A
	CHILD	1.12E+10	1.83E+10	3.86E+09	0.00E+00	5.68E+09	2.04E+09	9.87E+07	N/A
	INFANT	1.80E+10	3.35E+10	3.39E+09	0.00E+00	8.63E+09	3.54E+09	9.11E+07	N/A
MEAT	ADULT	3.59E+08	8.54E+08	6.98E+08	0.00E+00	2.76E+08	9.17E+07	1.49E+07	N/A
	TEEN	2.85E+08	6.71E+08	3.12E+08	0.00E+00	2.13E+08	8.15E+07	8.35E+06	N/A
	CHILD	5.03E+08	8.26E+08	1.74E+08	0.00E+00	2.56E+08	9.18E+07	4.45E+06	N/A
	INFANT	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	N/A
VEGTBLE	ADULT	4.21E+09	1.00E+10	8.19E+09	0.00E+00	3.24E+09	1.08E+09	1.75E+08	N/A
	TEEN	6.70E+09	1.58E+10	7.31E+09	0.00E+00	5.01E+09	1.91E+09	1.96E+08	N/A
	CHILD	1.53E+10	2.52E+10	5.31E+09	0.00E+00	7.80E+09	2.80E+09	1.36E+08	N/A
	INFANT	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	N/A
TOTAL	ADULT	1.80E+10	4.28E+10	3.50E+10	0.00E+00	1.39E+10	4.60E+09	7.49E+08	N/A
INGEST.	TEEN	3.03E+10	7.13E+10	3.31E+10	0.00E+00	2.27E+10	8.65E+09	8.87E+08	N/A
	CHILD	6.96E+10	1.14E+11	2.41E+10	0.00E+00	3.54E+10	1.27E+10	6.16E+08	N/A
	INFANT	4.09E+10	1.62E+11	1.63E+10	0.00E+00	4.16E+10	1.70E+10	4.39E+08	N/A
INHAL.	ADULT	3.73E+05	8.48E+05	7.28E+05	0.00E+00	2.87E+05	9.76E+04	1.04E+04	N/A
	TEEN	5.02E+05	1.13E+06	5.49E+05	0.00E+00	3.75E+05	1.46E+05	9.76E+03	N/A
	CHILD	6.51E+05	1.01E+06	2.25E+05	0.00E+00	3.30E+05	1.21E+05	3.85E+03	N/A
	INFANT	3.96E+05	7.03E+05	7.45E+04	0.00E+00	1.90E+05	7.97E+04	1.33E+03	N/A
		BONE	LIVER	T.BODY	THYROID	KIDNEY	LUNG	G.I.	SKIN

*Airborne pathways and tritium ingestion: units are mrem/yr/uCi/m3
Deposition pathways: units are mrem-m2/yr/uCi/sec

MAXIMUM VALUES FOR PATHWAYS

GROUND: T.B./ORG.	GROUND: SKIN	GOAT MILK:	COW MILK:	MEAT:	VEGTBLE:	TOTAL INGEST:	INHAL.
6.79E+09	7.92E+09	1.28E+11	3.35E+10	8.54E+08	2.52E+10	1.62E+11	1.13E+06

APPV EWB
DATE 7/5/92

O.D.C.M. MAXIMUM PATHWAY DOSE FACTORS: RADIONUCLIDES OTHER THAN NOBLE GASES*

ISOTOPE: I-135

PATHWAY	AGE GROUP	BONE	LIVER	T.BODY	THYROID	KIDNEY	LUNG	G.I.	SKIN
GROUND	ADULT	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	TEEN	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	CHILD	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	INFANT	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
GOAT MILK	ADULT	6.93E+03	1.82E+04	6.70E+03	1.20E+06	2.91E+04	0.00E+00	2.05E+04	N/A
	TEEN	1.23E+04	3.17E+04	1.18E+04	2.04E+06	5.01E+04	0.00E+00	3.51E+04	N/A
	CHILD	2.92E+04	5.25E+04	2.48E+04	4.65E+06	8.05E+04	0.00E+00	4.00E+04	N/A
	INFANT	5.05E+04	1.21E+05	4.40E+04	1.08E+07	1.34E+05	0.00E+00	4.37E+04	N/A
COW MILK	ADULT	3.24E+03	8.47E+03	3.13E+03	5.59E+05	1.36E+04	0.00E+00	9.57E+03	N/A
	TEEN	5.75E+03	1.48E+04	5.48E+03	9.52E+05	2.34E+04	0.00E+00	1.64E+04	N/A
	CHILD	1.36E+04	2.45E+04	1.16E+04	2.17E+06	3.75E+04	0.00E+00	1.87E+04	N/A
	INFANT	2.83E+04	5.63E+04	2.05E+04	5.05E+06	6.27E+04	0.00E+00	2.04E+04	N/A
MEAT	ADULT	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	N/A
	TEEN	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	N/A
	CHILD	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	N/A
	INFANT	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	N/A
VEGTBLE	ADULT	1.29E+04	3.37E+04	1.24E+04	2.22E+06	5.40E+04	0.00E+00	3.80E+04	N/A
	TEEN	1.16E+04	2.99E+04	1.11E+04	1.92E+06	4.73E+04	0.00E+00	3.32E+04	N/A
	CHILD	2.06E+04	3.72E+04	1.76E+04	3.29E+06	5.70E+04	0.00E+00	2.83E+04	N/A
	INFANT	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	N/A
TOTAL INGEST.	ADULT	2.30E+04	6.03E+04	2.23E+04	3.98E+06	9.67E+04	0.00E+00	6.81E+04	N/A
	TEEN	2.97E+04	7.64E+04	2.83E+04	4.92E+06	1.21E+05	0.00E+00	8.47E+04	N/A
	CHILD	6.34E+04	1.14E+05	5.40E+04	1.01E+07	1.75E+05	0.00E+00	8.70E+04	N/A
	INFANT	7.88E+04	1.77E+05	6.45E+04	1.59E+07	1.97E+05	0.00E+00	6.40E+04	N/A
INHAL.	ADULT	2.68E+03	6.98E+03	2.57E+03	4.48E+05	1.11E+04	0.00E+00	5.25E+03	N/A
	TEEN	3.70E+03	9.44E+03	3.49E+03	6.21E+05	1.49E+04	0.00E+00	6.95E+03	N/A
	CHILD	4.92E+03	8.73E+03	4.14E+03	7.92E+05	1.34E+04	0.00E+00	4.44E+03	N/A
	INFANT	3.86E+03	7.60E+03	2.77E+03	6.96E+05	8.47E+03	0.00E+00	1.83E+03	N/A
		BONE	LIVER	T.BODY	THYROID	KIDNEY	LUNG	G.I.	SKIN

*Airborne pathways and tritium ingestion: units are mrem/yr/uCi/m3
Deposition pathways: units are mrem-m2/yr/uCi/sec

MAXIMUM VALUES FOR PATHWAYS

GROUND: T.B./ORG.	GROUND: SKIN	GOAT MILK:	COW MILK:	MEAT:	VEGTBLE:	TOTAL INGEST:	INHAL.
0.00E+00	0.00E+00	1.08E+07	5.05E+06	0.00E+00	3.29E+06	1.59E+07	7.92E+05

APPV [illegible]
DATE 2/5/92

O.D.C.M. MAXIMUM PATHWAY DOSE FACTORS: RADIONUCLIDES OTHER THAN NOBLE GASES*

ISOTOPE: Cs-136

PATHWAY	AGE GROUP	BONE	LIVER	T.BODY	THYROID	KIDNEY	LUNG	G.I.	SKIN
GROUND	ADULT	1.49E+08	1.49E+08	1.49E+08	1.49E+08	1.49E+08	1.49E+08	1.49E+08	1.69E+08
	TEEN	1.49E+08	1.49E+08	1.49E+08	1.49E+08	1.49E+08	1.49E+08	1.49E+08	1.69E+08
	CHILD	1.49E+08	1.49E+08	1.49E+08	1.49E+08	1.49E+08	1.49E+08	1.49E+08	1.69E+08
	INFANT	1.49E+08	1.49E+08	1.49E+08	1.49E+08	1.49E+08	1.49E+08	1.49E+08	1.69E+08
GOAT MILK	ADULT	3.57E+08	1.41E+09	1.01E+09	0.00E+00	7.84E+08	1.07E+08	1.60E+08	N/A
	TEEN	6.07E+08	2.39E+09	1.61E+09	0.00E+00	1.30E+09	2.05E+08	1.92E+08	N/A
	CHILD	1.37E+09	3.77E+09	2.44E+09	0.00E+00	2.01E+09	2.99E+08	1.32E+08	N/A
	INFANT	8.93E+08	7.88E+09	2.94E+09	0.00E+00	3.14E+09	6.42E+08	1.20E+08	N/A
COW MILK	ADULT	6.69E+07	2.64E+08	1.90E+08	0.00E+00	1.47E+08	2.02E+07	3.00E+07	N/A
	TEEN	1.14E+08	4.48E+08	3.01E+08	0.00E+00	2.44E+08	3.85E+07	3.61E+07	N/A
	CHILD	2.57E+08	7.07E+08	4.58E+08	0.00E+00	3.77E+08	5.62E+07	2.48E+07	N/A
	INFANT	5.02E+08	1.48E+09	5.52E+08	0.00E+00	5.89E+08	1.20E+08	2.24E+07	N/A
MEAT	ADULT	4.00E+06	1.58E+07	1.14E+07	0.00E+00	8.78E+06	1.20E+06	1.79E+06	N/A
	TEEN	3.12E+06	1.23E+07	8.24E+06	0.00E+00	6.68E+06	1.05E+06	9.87E+05	N/A
	CHILD	5.38E+06	1.48E+07	9.57E+06	0.00E+00	7.87E+06	1.17E+06	5.20E+05	N/A
	INFANT	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	N/A
VEGTBLE	ADULT	2.03E+07	8.01E+07	5.76E+07	0.00E+00	4.46E+07	6.11E+06	9.10E+06	N/A
	TEEN	2.43E+07	9.58E+07	6.43E+07	0.00E+00	5.21E+07	8.22E+06	7.71E+06	N/A
	CHILD	4.96E+07	1.36E+08	8.82E+07	0.00E+00	7.26E+07	1.08E+07	4.79E+06	N/A
	INFANT	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	N/A
TOTAL INGEST.	ADULT	4.48E+08	1.77E+09	1.27E+09	0.00E+00	9.84E+08	1.35E+08	2.01E+08	N/A
	TEEN	7.49E+08	2.95E+09	1.98E+09	0.00E+00	1.60E+09	2.53E+08	2.37E+08	N/A
	CHILD	1.68E+09	4.63E+09	2.99E+09	0.00E+00	2.46E+09	3.67E+08	1.63E+08	N/A
	INFANT	1.40E+09	9.35E+09	3.49E+09	0.00E+00	3.73E+09	7.62E+08	1.42E+08	N/A
INHAL.	ADULT	3.90E+04	1.46E+05	1.10E+05	0.00E+00	8.56E+04	1.20E+04	1.17E+04	N/A
	TEEN	5.15E+04	1.94E+05	1.37E+05	0.00E+00	1.10E+05	1.78E+04	1.09E+04	N/A
	CHILD	6.51E+04	1.71E+05	1.16E+05	0.00E+00	9.55E+04	1.45E+04	4.18E+03	N/A
	INFANT	4.83E+04	1.35E+05	5.29E+04	0.00E+00	5.64E+04	1.18E+04	1.43E+03	N/A
		BONE	LIVER	T.BODY	THYROID	KIDNEY	LUNG	G.I.	SKIN

*Airborne pathways and tritium ingestion: units are mrem/yr/uCi/m3
Deposition pathways: units are mrem-m2/yr/uCi/sec

MAXIMUM VALUES FOR PATHWAYS

GROUND: T.B./ORG.	GROUND: SKIN	GOAT MILK:	COW MILK:	MEAT:	VEGTBLE:	TOTAL INGEST:	INHAL.
1.49E+08	1.69E+08	7.88E+09	1.48E+09	1.58E+07	1.36E+08	9.35E+09	1.94E+05

APPV Rec3
DATE 2/5/92

O.D.C.M. MAXIMUM PATHWAY DOSE FACTORS: RADIONUCLIDES OTHER THAN NOBLE GASES*

ISOTOPE: Cs-137

PATHWAY	AGE GROUP	BONE	LIVER	T.BODY	THYROID	KIDNEY	LUNG	G.I.	SKIN
GROUND	ADULT	1.02E+10	1.02E+10	1.02E+10	1.02E+10	1.02E+10	1.02E+10	1.02E+10	1.19E+10
	TEEN	1.02E+10	1.02E+10	1.02E+10	1.02E+10	1.02E+10	1.02E+10	1.02E+10	1.19E+10
	CHILD	1.02E+10	1.02E+10	1.02E+10	1.02E+10	1.02E+10	1.02E+10	1.02E+10	1.19E+10
	INFANT	1.02E+10	1.02E+10	1.02E+10	1.02E+10	1.02E+10	1.02E+10	1.02E+10	1.19E+10
GOAT MILK	ADULT	1.42E+10	1.94E+10	1.27E+10	0.00E+00	6.59E+09	2.19E+09	3.76E+08	N/A
	TEEN	2.58E+10	3.43E+10	1.19E+10	0.00E+00	1.17E+10	4.53E+09	4.88E+08	N/A
	CHILD	6.20E+10	5.94E+10	8.77E+09	0.00E+00	1.94E+10	6.96E+09	3.72E+08	N/A
	INFANT	3.30E+10	1.16E+11	8.22E+09	0.00E+00	3.11E+10	1.26E+10	3.62E+08	N/A
COW MILK	ADULT	3.78E+09	5.17E+09	3.39E+09	0.00E+00	1.76E+09	5.84E+08	1.00E+08	N/A
	TEEN	6.86E+09	9.12E+09	3.18E+09	0.00E+00	3.10E+09	1.21E+09	1.30E+08	N/A
	CHILD	1.65E+10	1.58E+10	2.33E+09	0.00E+00	5.15E+09	1.85E+09	9.90E+07	N/A
	INFANT	2.64E+10	3.09E+10	2.19E+09	0.00E+00	8.28E+09	3.35E+09	9.65E+07	N/A
MEAT	ADULT	4.91E+08	6.71E+08	4.40E+08	0.00E+00	2.28E+08	7.58E+07	1.30E+07	N/A
	TEEN	4.08E+08	5.42E+08	1.89E+08	0.00E+00	1.85E+08	7.17E+07	7.72E+06	N/A
	CHILD	7.51E+08	7.19E+08	1.06E+08	0.00E+00	2.34E+08	8.42E+07	4.50E+06	N/A
	INFANT	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	N/A
VEGTBLE	ADULT	5.76E+09	7.88E+09	5.16E+09	0.00E+00	2.68E+09	8.89E+08	1.53E+08	N/A
	TEEN	9.58E+09	1.27E+10	4.44E+09	0.00E+00	4.34E+09	1.69E+09	1.81E+08	N/A
	CHILD	2.29E+10	2.19E+10	3.24E+09	0.00E+00	7.15E+09	2.57E+09	1.37E+08	N/A
	INFANT	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	N/A
TOTAL INGEST.	ADULT	2.42E+10	3.32E+10	2.17E+10	0.00E+00	1.13E+10	3.74E+09	6.42E+08	N/A
	TEEN	4.26E+10	5.67E+10	1.97E+10	0.00E+00	1.93E+10	7.49E+09	8.06E+08	N/A
	CHILD	1.02E+11	9.79E+10	1.44E+10	0.00E+00	3.19E+10	1.15E+10	6.13E+08	N/A
	INFANT	5.94E+10	1.47E+11	1.04E+10	0.00E+00	3.94E+10	1.60E+10	4.59E+08	N/A
INHAL.	ADULT	4.78E+05	6.21E+05	4.28E+05	0.00E+00	2.22E+05	7.52E+04	8.40E+03	N/A
	TEEN	6.70E+05	8.48E+05	3.11E+05	0.00E+00	3.04E+05	1.21E+05	8.48E+03	N/A
	CHILD	9.07E+05	8.25E+05	1.28E+05	0.00E+00	2.82E+05	1.04E+05	3.62E+03	N/A
	INFANT	5.49E+05	6.12E+05	4.55E+04	0.00E+00	1.72E+05	7.13E+04	1.33E+03	N/A
		BONE	LIVER	T.BODY	THYROID	KIDNEY	LUNG	G.I.	SKIN

*Airborne pathways and tritium ingestion: units are mrem/yr/uCi/m3
Deposition pathways: units are mrem-m2/yr/uCi/sec

MAXIMUM VALUES FOR PATHWAYS

GROUND: T.B./ORG.	GROUND: SKIN	GOAT MILK:	COW MILK:	MEAT:	VEGTBLE:	TOTAL INGEST:	INHAL.
1.02E+10	1.19E+10	1.16E+11	3.09E+10	7.51E+08	2.29E+10	1.47E+11	9.07E+05

APPV RLG
DATE 2/5/92

O.D.C.M. MAXIMUM PATHWAY DOSE FACTORS: RADIONUCLIDES OTHER THAN NOBLE GASES*

ISOTOPE: Ba-140

PATHWAY	AGE GROUP	BONE	LIVER	T.BODY	THYROID	KIDNEY	LUNG	G.I.	SKIN
GROUND	ADULT	2.03E+07	2.03E+07	2.03E+07	2.03E+07	2.03E+07	2.03E+07	2.03E+07	2.32E+07
	TEEN	2.03E+07	2.03E+07	2.03E+07	2.03E+07	2.03E+07	2.03E+07	2.03E+07	2.32E+07
	CHILD	2.03E+07	2.03E+07	2.03E+07	2.03E+07	2.03E+07	2.03E+07	2.03E+07	2.32E+07
	INFANT	2.03E+07	2.03E+07	2.03E+07	2.03E+07	2.03E+07	2.03E+07	2.03E+07	2.32E+07
GOAT MILK	ADULT	1.46E+06	1.83E+03	9.54E+04	0.00E+00	6.22E+02	1.05E+03	3.00E+06	N/A
	TEEN	2.63E+06	3.22E+03	1.69E+05	0.00E+00	1.09E+03	2.17E+03	4.05E+06	N/A
	CHILD	6.35E+06	5.56E+03	3.70E+05	0.00E+00	1.81E+03	3.31E+03	3.22E+06	N/A
	INFANT	1.09E+08	1.31E+04	6.73E+05	0.00E+00	3.10E+03	8.02E+03	3.21E+06	N/A
COW MILK	ADULT	6.83E+06	8.58E+03	4.47E+05	0.00E+00	2.92E+03	4.91E+03	1.41E+07	N/A
	TEEN	1.23E+07	1.51E+04	7.94E+05	0.00E+00	5.12E+03	1.02E+04	1.90E+07	N/A
	CHILD	2.97E+07	2.61E+04	1.74E+06	0.00E+00	8.48E+03	1.55E+04	1.51E+07	N/A
	INFANT	6.12E+07	6.12E+04	3.15E+06	0.00E+00	1.45E+04	3.76E+04	1.50E+07	N/A
MEAT	ADULT	9.52E+06	1.20E+04	6.24E+05	0.00E+00	4.07E+03	6.85E+03	1.96E+07	N/A
	TEEN	7.87E+06	9.65E+03	5.07E+05	0.00E+00	3.27E+03	6.49E+03	1.21E+07	N/A
	CHILD	1.45E+07	1.27E+04	8.48E+05	0.00E+00	4.14E+03	7.59E+03	7.36E+06	N/A
	INFANT	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	N/A
VEGTBLE	ADULT	5.98E+07	7.51E+04	3.92E+06	0.00E+00	2.55E+04	4.30E+04	1.23E+08	N/A
	TEEN	7.50E+07	9.19E+04	4.83E+06	0.00E+00	3.12E+04	6.18E+04	1.16E+08	N/A
	CHILD	1.62E+08	1.42E+05	9.48E+06	0.00E+00	4.63E+04	8.48E+04	8.23E+07	N/A
	INFANT	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	N/A
TOTAL INGEST.	ADULT	7.76E+07	9.75E+04	5.08E+06	0.00E+00	3.31E+04	5.58E+04	1.60E+08	N/A
	TEEN	9.78E+07	1.20E+05	6.31E+06	0.00E+00	4.07E+04	8.06E+04	1.51E+08	N/A
	CHILD	2.13E+08	1.87E+05	1.24E+07	0.00E+00	6.08E+04	1.11E+05	1.08E+08	N/A
	INFANT	1.70E+08	7.43E+04	3.83E+06	0.00E+00	1.76E+04	4.56E+04	1.82E+07	N/A
INHAL.	ADULT	3.90E+04	4.90E+01	2.57E+03	0.00E+00	1.67E+01	1.27E+06	2.18E+05	N/A
	TEEN	5.47E+04	6.94E+01	3.52E+03	0.00E+00	2.28E+01	2.03E+06	2.29E+05	N/A
	CHILD	7.40E+04	6.48E+01	4.33E+02	0.00E+00	2.11E+01	1.74E+06	1.02E+05	N/A
	INFANT	5.60E+04	5.60E+01	2.90E+03	0.00E+00	1.34E+01	1.60E+06	3.84E+04	N/A
		BONE	LIVER	T.BODY	THYROID	KIDNEY	LUNG	G.I.	SKIN

*Airborne pathways and tritium ingestion: units are mrem/yr/uCi/m3
Deposition pathways: units are mrem-m2/yr/uCi/sec

MAXIMUM VALUES FOR PATHWAYS

GROUND: T:B./ORG.	GROUND: SKIN	GOAT MILK:	COW MILK:	MEAT:	VEGTBLE:	TOTAL INGEST:	INHAL.
2.03E+07	2.32E+07	1.09E+08	6.12E+07	1.96E+07	1.62E+08	2.13E+08	2.03E+06

APPV RWS
DATE 2/5/92

O.D.C.M. MAXIMUM PATHWAY DOSE FACTORS: RADIONUCLIDES OTHER THAN NOBLE GASES*

ISOTOPE: La-140

PATHWAY	AGE GROUP	BONE	LIVER	T.BODY	THYROID	KIDNEY	LUNG	G.I.	SKIN
GROUND	ADULT	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	TEEN	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	CHILD	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	INFANT	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
GOAT MILK	ADULT	2.44E-01	1.23E-01	3.25E-02	0.00E+00	0.00E+00	0.00E+00	9.02E+03	N/A
	TEEN	4.38E-01	2.15E-01	5.72E-02	0.00E+00	0.00E+00	0.00E+00	1.24E+04	N/A
	CHILD	1.05E+00	3.66E-01	1.23E-01	0.00E+00	0.00E+00	0.00E+00	1.02E+04	N/A
	INFANT	1.82E+01	8.63E-01	2.22E-01	0.00E+00	0.00E+00	0.00E+00	1.01E+04	N/A
COW MILK	ADULT	1.14E+00	5.73E-01	1.51E-01	0.00E+00	0.00E+00	0.00E+00	4.21E+04	N/A
	TEEN	2.04E+00	1.00E+00	2.67E-01	0.00E+00	0.00E+00	0.00E+00	5.76E+04	N/A
	CHILD	4.89E+00	1.71E+00	5.76E-01	0.00E+00	0.00E+00	0.00E+00	4.76E+04	N/A
	INFANT	1.02E+01	4.03E+00	1.04E+00	0.00E+00	0.00E+00	0.00E+00	4.73E+04	N/A
MEAT	ADULT	1.22E-02	6.16E-03	1.63E-03	0.00E+00	0.00E+00	0.00E+00	4.53E+02	N/A
	TEEN	1.01E-02	4.94E-03	1.32E-03	0.00E+00	0.00E+00	0.00E+00	2.84E+02	N/A
	CHILD	1.84E-02	6.44E-03	2.17E-03	0.00E+00	0.00E+00	0.00E+00	1.79E+02	N/A
	INFANT	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	N/A
VEGTBLE	ADULT	6.53E+02	3.29E+02	8.69E+01	0.00E+00	0.00E+00	0.00E+00	2.41E+07	N/A
	TEEN	5.96E+02	2.93E+02	7.79E+01	0.00E+00	0.00E+00	0.00E+00	1.68E+07	N/A
	CHILD	1.07E+03	3.74E+02	1.26E+02	0.00E+00	0.00E+00	0.00E+00	1.04E+07	N/A
	INFANT	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	N/A
TOTAL INGEST.	ADULT	6.54E+02	3.30E+02	8.71E+01	0.00E+00	0.00E+00	0.00E+00	2.42E+07	N/A
	TEEN	5.99E+02	2.94E+02	7.83E+01	0.00E+00	0.00E+00	0.00E+00	1.69E+07	N/A
	CHILD	1.08E+03	3.76E+02	1.27E+02	0.00E+00	0.00E+00	0.00E+00	1.05E+07	N/A
	INFANT	2.85E+01	4.89E+00	1.26E+00	0.00E+00	0.00E+00	0.00E+00	5.74E+04	N/A
INHAL.	ADULT	3.44E+02	1.74E+02	4.58E+01	0.00E+00	0.00E+00	1.36E+05	4.58E+05	N/A
	TEEN	4.79E+02	2.36E+02	6.26E+01	0.00E+00	0.00E+00	2.14E+05	4.87E+05	N/A
	CHILD	6.44E+02	2.25E+02	7.55E+01	0.00E+00	0.00E+00	1.83E+05	2.26E+05	N/A
	INFANT	5.05E+02	2.00E+02	5.15E+01	0.00E+00	0.00E+00	1.68E+05	8.48E+04	N/A
		BONE	LIVER	T.BODY	THYROID	KIDNEY	LUNG	G.I.	SKIN

*Airborne pathways and tritium ingestion: units are mrem/yr/uCi/m3
Deposition pathways: units are mrem-m2/yr/uCi/sec

MAXIMUM VALUES FOR PATHWAYS

GROUND: T.B./ORG.	GROUND: SKIN	GOAT MILK:	COW MILK:	MEAT:	VEGTBLE:	TOTAL INGEST:	INHAL.
0.00E+00	0.00E+00	1.24E+04	5.76E+04	4.53E+02	2.41E+07	2.42E+07	4.87E+05

APPV [illegible]
DATE 2/5/92

O.D.C.M. MAXIMUM PATHWAY DOSE FACTORS: RADIONUCLIDES OTHER THAN NOBLE GASES*

ISOTOPE: Ce-141

PATHWAY	AGE GROUP	BONE—	LIVER	T.BODY	THYROID	KIDNEY	LUNG	G.I.	SKIN
GROUND	ADULT	1.35E+07	1.35E+07	1.35E+07	1.35E+07	1.35E+07	1.35E+07	1.35E+07	1.52E+07
	TEEN	1.35E+07	1.35E+07	1.35E+07	1.35E+07	1.35E+07	1.35E+07	1.35E+07	1.52E+07
	CHILD	1.35E+07	1.35E+07	1.35E+07	1.35E+07	1.35E+07	1.35E+07	1.35E+07	1.52E+07
	INFANT	1.35E+07	1.35E+07	1.35E+07	1.35E+07	1.35E+07	1.35E+07	1.35E+07	1.52E+07
GOAT	ADULT	2.78E+02	1.88E+02	2.13E+01	0.00E+00	8.73E+01	0.00E+00	7.19E+05	N/A
MILK	TEEN	5.10E+02	3.40E+02	3.91E+01	0.00E+00	1.60E+02	0.00E+00	9.74E+05	N/A
	CHILD	1.26E+03	6.26E+02	9.30E+01	0.00E+00	2.75E+02	0.00E+00	7.81E+05	N/A
	INFANT	2.07E+04	1.52E+03	1.79E+02	0.00E+00	4.68E+02	0.00E+00	7.84E+05	N/A
COW	ADULT	1.41E+03	9.51E+02	1.08E+02	0.00E+00	4.42E+02	0.00E+00	3.64E+06	N/A
MILK	TEEN	2.58E+03	1.72E+03	1.98E+02	0.00E+00	8.11E+02	0.00E+00	4.93E+06	N/A
	CHILD	6.35E+03	3.17E+03	4.70E+02	0.00E+00	1.39E+03	0.00E+00	3.95E+06	N/A
	INFANT	1.26E+04	7.68E+03	9.04E+02	0.00E+00	2.37E+03	0.00E+00	3.97E+06	N/A
MEAT	ADULT	5.11E+03	3.46E+03	3.92E+02	0.00E+00	1.61E+03	0.00E+00	1.32E+07	N/A
	TEEN	4.29E+03	2.87E+03	3.29E+02	0.00E+00	1.35E+03	0.00E+00	8.20E+06	N/A
	CHILD	8.08E+03	4.03E+03	5.99E+02	0.00E+00	1.77E+03	0.00E+00	5.03E+06	N/A
	INFANT	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	N/A
EGTBLE	ADULT	1.49E+05	1.01E+05	1.14E+04	0.00E+00	4.69E+04	0.00E+00	3.86E+08	N/A
	TEEN	2.38E+05	1.59E+05	1.83E+04	0.00E+00	7.49E+04	0.00E+00	4.55E+08	N/A
	CHILD	5.73E+05	2.86E+05	4.25E+04	0.00E+00	1.25E+05	0.00E+00	3.57E+08	N/A
	INFANT	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	N/A
TOTAL	ADULT	1.56E+05	1.06E+05	1.20E+04	0.00E+00	4.90E+04	0.00E+00	4.03E+08	N/A
INGEST.	TEEN	2.46E+05	1.64E+05	1.88E+04	0.00E+00	7.72E+04	0.00E+00	4.69E+08	N/A
	CHILD	5.89E+05	2.94E+05	4.36E+04	0.00E+00	1.29E+05	0.00E+00	3.67E+08	N/A
	INFANT	3.33E+04	9.20E+03	1.08E+03	0.00E+00	2.84E+03	0.00E+00	4.75E+06	N/A
INHAL.	ADULT	1.99E+04	1.35E+04	1.53E+03	0.00E+00	6.26E+03	3.62E+05	1.20E+05	N/A
	TEEN	2.84E+04	1.90E+04	2.17E+03	0.00E+00	8.88E+03	6.14E+05	1.26E+05	N/A
	CHILD	3.92E+04	1.95E+04	2.90E+03	0.00E+00	8.55E+03	5.44E+05	5.66E+04	N/A
	INFANT	2.77E+04	1.67E+04	1.99E+03	0.00E+00	5.25E+03	5.17E+05	2.16E+04	N/A
		BONE—	LIVER	T.BODY	THYROID	KIDNEY	LUNG	G.I.	SKIN

*Airborne pathways and tritium ingestion: units are mrem/yr/uCi/m3
Deposition pathways: units are mrem-m2/yr/uCi/sec

MAXIMUM VALUES FOR PATHWAYS

GROUND: T.B./ORG.	GROUND: SKIN	GOAT MILK:	COW MILK:	MEAT:	VEGTBLE:	TOTAL INGEST:	INHAL.
1.35E+07	1.52E+07	9.74E+05	4.93E+06	1.32E+07	4.55E+08	4.69E+08	6.14E+05

APPV PKS
DATE 2/5/92

O.D.C.M. MAXIMUM PATHWAY DOSE FACTORS: RADIONUCLIDES OTHER THAN NOBLE GASES*

ISOTOPE: Pr-143

PATHWAY	AGE GROUP	BONE	LIVER	T.BODY	THYROID	KIDNEY	LUNG	G.I.	SKIN
GROUND	ADULT	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	TEEN	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	CHILD	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	INFANT	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
GOAT MILK	ADULT	8.57E+00	3.44E+00	4.25E-01	0.00E+00	1.98E+00	0.00E+00	3.75E+04	N/A
	TEEN	1.57E+01	6.28E+00	7.83E-01	0.00E+00	3.65E+00	0.00E+00	5.18E+04	N/A
	CHILD	3.89E+01	1.17E+01	1.93E+00	0.00E+00	6.33E+00	0.00E+00	4.20E+04	N/A
	INFANT	6.71E+02	3.01E+01	3.99E+00	0.00E+00	1.12E+01	0.00E+00	4.25E+04	N/A
COW MILK	ADULT	4.02E+01	1.61E+01	1.99E+00	0.00E+00	9.31E+00	0.00E+00	1.76E+05	N/A
	TEEN	7.39E+01	2.95E+01	3.68E+00	0.00E+00	1.71E+01	0.00E+00	2.43E+05	N/A
	CHILD	1.83E+02	5.49E+01	9.07E+00	0.00E+00	2.97E+01	0.00E+00	1.97E+05	N/A
	INFANT	3.78E+02	1.41E+02	1.87E+01	0.00E+00	5.26E+01	0.00E+00	2.00E+05	N/A
MEAT	ADULT	6.96E+03	2.79E+03	3.45E+02	0.00E+00	1.61E+03	0.00E+00	3.05E+07	N/A
	TEEN	5.86E+03	2.34E+03	2.92E+02	0.00E+00	1.36E+03	0.00E+00	1.93E+07	N/A
	CHILD	1.11E+04	3.33E+03	5.50E+02	0.00E+00	1.80E+03	0.00E+00	1.20E+07	N/A
	INFANT	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	N/A
VEGTBLE	ADULT	3.04E+04	1.22E+04	1.51E+03	0.00E+00	7.04E+03	0.00E+00	1.33E+08	N/A
	TEEN	4.00E+04	1.60E+04	1.99E+03	0.00E+00	9.27E+03	0.00E+00	1.31E+08	N/A
	CHILD	8.98E+04	2.69E+04	4.45E+03	0.00E+00	1.46E+04	0.00E+00	9.68E+07	N/A
	INFANT	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	N/A
TOTAL INGEST.	ADULT	3.74E+04	1.50E+04	1.86E+03	0.00E+00	8.67E+03	0.00E+00	1.64E+08	N/A
	TEEN	4.59E+04	1.83E+04	2.28E+03	0.00E+00	1.07E+04	0.00E+00	1.51E+08	N/A
	CHILD	1.01E+05	3.03E+04	5.01E+03	0.00E+00	1.64E+04	0.00E+00	1.09E+08	N/A
	INFANT	1.05E+03	1.72E+02	2.27E+01	0.00E+00	6.38E+01	0.00E+00	2.42E+05	N/A
INHAL.	ADULT	9.36E+03	3.75E+03	4.64E+02	0.00E+00	2.16E+03	2.81E+05	2.00E+05	N/A
	TEEN	1.34E+04	5.31E+03	6.62E+02	0.00E+00	3.09E+03	4.83E+05	2.14E+05	N/A
	CHILD	1.85E+04	5.55E+03	9.14E+02	0.00E+00	3.00E+03	4.33E+05	9.73E+04	N/A
	INFANT	1.40E+04	5.24E+03	6.99E+02	0.00E+00	1.97E+03	4.33E+05	3.72E+04	N/A
		BONE	LIVER	T.BODY	THYROID	KIDNEY	LUNG	G.I.	SKIN

*Airborne pathways and tritium ingestion: units are mrem/yr/uCi/m3
Deposition pathways: units are mrem-m2/yr/uCi/sec

MAXIMUM VALUES FOR PATHWAYS

GROUND: T.B./ORG.	GROUND: SKIN	GOAT MILK:	COW MILK:	MEAT:	VEGTBLE:	TOTAL INGEST:	INHAL.
0.00E+00	0.00E+00	5.18E+04	2.43E+05	3.05E+07	1.33E+08	1.64E+08	4.83E+05

APPV [illegible]
DATE 2/5/92

O.D.C.M. MAXIMUM PATHWAY DOSE FACTORS: RADIONUCLIDES OTHER THAN NOBLE GASES*

ISOTOPE: Ce-144

PATHWAY	AGE GROUP	BONE	LIVER	T.BODY	THYROID	KIDNEY	LUNG	G.I.	SKIN
GROUND	ADULT	6.88E+07	6.88E+07	6.88E+07	6.88E+07	6.88E+07	6.88E+07	6.88E+07	7.96E+07
	TEEN	6.88E+07	6.88E+07	6.88E+07	6.88E+07	6.88E+07	6.88E+07	6.88E+07	7.96E+07
	CHILD	6.88E+07	6.88E+07	6.88E+07	6.88E+07	6.88E+07	6.88E+07	6.88E+07	7.96E+07
	INFANT	6.88E+07	6.88E+07	6.88E+07	6.88E+07	6.88E+07	6.88E+07	6.88E+07	7.96E+07
GOAT	ADULT	2.60E+04	1.09E+04	1.39E+03	0.00E+00	6.44E+03	0.00E+00	8.78E+06	N/A
MILK	TEEN	4.78E+04	1.98E+04	2.57E+03	0.00E+00	1.18E+04	0.00E+00	1.20E+07	N/A
	CHILD	1.18E+05	3.69E+04	6.28E+03	0.00E+00	2.04E+04	0.00E+00	9.63E+06	N/A
	INFANT	1.41E+06	6.91E+04	9.46E+03	0.00E+00	2.79E+04	0.00E+00	9.68E+06	N/A
COW	ADULT	1.65E+05	6.91E+04	8.88E+03	0.00E+00	4.10E+04	0.00E+00	5.59E+07	N/A
MILK	TEEN	3.04E+05	1.26E+05	1.63E+04	0.00E+00	7.52E+04	0.00E+00	7.65E+07	N/A
	CHILD	7.50E+05	2.35E+05	4.00E+04	0.00E+00	1.30E+05	0.00E+00	6.13E+07	N/A
	INFANT	1.07E+06	4.40E+05	6.02E+04	0.00E+00	1.78E+05	0.00E+00	6.17E+07	N/A
MEAT	ADULT	7.55E+05	3.16E+05	4.05E+04	0.00E+00	1.87E+05	0.00E+00	2.55E+08	N/A
	TEEN	6.36E+05	2.63E+05	3.42E+04	0.00E+00	1.57E+05	0.00E+00	1.60E+08	N/A
	CHILD	1.20E+06	3.76E+05	6.40E+04	0.00E+00	2.08E+05	0.00E+00	9.80E+07	N/A
	INFANT	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	N/A
VEGTBLE	ADULT	2.94E+07	1.23E+07	1.58E+06	0.00E+00	7.30E+06	0.00E+00	9.95E+09	N/A
	TEEN	4.95E+07	2.05E+07	2.66E+06	0.00E+00	1.22E+07	0.00E+00	1.24E+10	N/A
	CHILD	1.21E+08	3.80E+07	6.46E+06	0.00E+00	2.10E+07	0.00E+00	9.90E+09	N/A
	INFANT	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	N/A
TOTAL	ADULT	3.04E+07	1.27E+07	1.63E+06	0.00E+00	7.53E+06	0.00E+00	1.03E+10	N/A
INGEST.	TEEN	5.05E+07	2.09E+07	2.71E+06	0.00E+00	1.25E+07	0.00E+00	1.27E+10	N/A
	CHILD	1.23E+08	3.86E+07	6.57E+06	0.00E+00	2.14E+07	0.00E+00	1.01E+10	N/A
	INFANT	2.48E+06	5.09E+05	6.97E+04	0.00E+00	2.06E+05	0.00E+00	7.14E+07	N/A
INHAL.	ADULT	3.43E+06	1.43E+06	1.84E+05	0.00E+00	8.48E+05	7.78E+06	8.16E+05	N/A
	TEEN	4.89E+06	2.02E+06	2.62E+05	0.00E+00	1.21E+06	1.34E+07	8.64E+05	N/A
	CHILD	6.77E+06	2.12E+06	3.61E+05	0.00E+00	1.17E+06	1.20E+07	3.89E+05	N/A
	INFANT	3.19E+06	1.21E+06	1.76E+05	0.00E+00	5.38E+05	9.84E+06	1.48E+05	N/A
		BONE	LIVER	T.BODY	THYROID	KIDNEY	LUNG	G.I.	SKIN

*Airborne pathways and tritium ingestion: units are mrem/yr/uCi/m3
Deposition pathways: units are mrem-m2/yr/uCi/sec

MAXIMUM VALUES FOR PATHWAYS

GROUND: T.B./ORG.	GROUND: SKIN	GOAT MILK:	COW MILK:	MEAT:	VEGTBLE:	TOTAL INGEST:	INHAL.
6.88E+07	7.96E+07	1.20E+07	7.65E+07	2.55E+08	1.24E+10	1.27E+10	1.34E+07

APPV [illegible]
DATE 2/5/92

O.D.C.M. MAXIMUM PATHWAY DOSE FACTORS: RADIONUCLIDES OTHER THAN NOBLE GASES*

ISOTOPE: Pr-144

PATHWAY	AGE GROUP	BONE	LIVER	T.BODY	THYROID	KIDNEY	LUNG	G.I.	SKIN
GROUND	ADULT	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	TEEN	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	CHILD	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	INFANT	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
GOAT MILK	ADULT	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	N/A
	TEEN	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	N/A
	CHILD	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	N/A
	INFANT	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	N/A
COW MILK	ADULT	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	N/A
	TEEN	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	N/A
	CHILD	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	N/A
	INFANT	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	N/A
MEAT	ADULT	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	N/A
	TEEN	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	N/A
	CHILD	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	N/A
	INFANT	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	N/A
VEGTBLE	ADULT	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	N/A
	TEEN	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	N/A
	CHILD	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	N/A
	INFANT	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	N/A
TOTAL INGEST.	ADULT	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	N/A
	TEEN	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	N/A
	CHILD	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	N/A
	INFANT	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	N/A
INHAL.	ADULT	3.01E-02	1.25E-02	1.53E-03	0.00E+00	7.05E-03	1.02E+03	2.15E-08	N/A
	TEEN	4.30E-02	1.76E-02	2.18E-03	0.00E+00	1.01E-02	1.75E+03	2.35E-04	N/A
	CHILD	5.96E-02	1.85E-02	3.00E-03	0.00E+00	9.77E-03	1.57E+03	1.97E+02	N/A
	INFANT	4.79E-02	1.85E-02	2.41E-03	0.00E+00	6.72E-03	1.61E+03	4.28E+03	N/A
		BONE	LIVER	T.BODY	THYROID	KIDNEY	LUNG	G.I.	SKIN

*Airborne pathways and tritium ingestion: units are mrem/yr/uCi/m3
Deposition pathways: units are mrem-m2/yr/uCi/sec

MAXIMUM VALUES FOR PATHWAYS

GROUND: T.B./ORG.	GROUND: SKIN	GOAT MILK:	COW MILK:	MEAT:	VEGTBLE:	TOTAL INGEST:	INHAL.
0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	4.28E+03

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O.D.C.M. MAXIMUM PATHWAY DOSE FACTORS: RADIONUCLIDES OTHER THAN NOBLE GASES*

ISOTOPE: Nd-147

PATHWAY	AGE GROUP	BONE	LIVER	T.BODY	THYROID	KIDNEY	LUNG	G.I.	SKIN
GROUND	ADULT	8.31E+06	8.31E+06	8.31E+06	8.31E+06	8.31E+06	8.31E+06	8.31E+06	9.97E+06
	TEEN	8.31E+06	8.31E+06	8.31E+06	8.31E+06	8.31E+06	8.31E+06	8.31E+06	9.97E+06
	CHILD	8.31E+06	8.31E+06	8.31E+06	8.31E+06	8.31E+06	8.31E+06	8.31E+06	9.97E+06
	INFANT	8.31E+06	8.31E+06	8.31E+06	8.31E+06	8.31E+06	8.31E+06	8.31E+06	9.97E+06
GOAT MILK	ADULT	5.09E+00	5.89E+00	3.52E-01	0.00E+00	3.44E+00	0.00E+00	2.83E+04	N/A
	TEEN	9.80E+00	1.07E+01	6.38E-01	0.00E+00	6.26E+00	0.00E+00	3.84E+04	N/A
	CHILD	2.40E+01	1.95E+01	1.51E+00	0.00E+00	1.07E+01	0.00E+00	3.09E+04	N/A
	INFANT	3.97E+02	4.90E+01	3.00E+00	0.00E+00	1.89E+01	0.00E+00	3.10E+04	N/A
COW MILK	ADULT	2.38E+01	2.75E+01	1.65E+00	0.00E+00	1.61E+01	0.00E+00	1.32E+05	N/A
	TEEN	4.58E+01	4.98E+01	2.98E+00	0.00E+00	2.93E+01	0.00E+00	1.80E+05	N/A
	CHILD	1.12E+02	9.11E+01	7.05E+00	0.00E+00	5.00E+01	0.00E+00	1.44E+05	N/A
	INFANT	2.23E+02	2.29E+02	1.40E+01	0.00E+00	8.82E+01	0.00E+00	1.45E+05	N/A
MEAT	ADULT	2.34E+03	2.70E+03	1.62E+02	0.00E+00	1.58E+03	0.00E+00	1.30E+07	N/A
	TEEN	2.06E+03	2.24E+03	1.34E+02	0.00E+00	1.31E+03	0.00E+00	8.08E+06	N/A
	CHILD	3.86E+03	3.13E+03	2.42E+02	0.00E+00	1.72E+03	0.00E+00	4.96E+06	N/A
	INFANT	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	N/A
VEGTBLE	ADULT	1.39E+04	1.61E+04	9.61E+02	0.00E+00	9.39E+03	0.00E+00	7.71E+07	N/A
	TEEN	1.72E+04	1.87E+04	1.12E+03	0.00E+00	1.10E+04	0.00E+00	6.74E+07	N/A
	CHILD	3.65E+04	2.95E+04	2.29E+03	0.00E+00	1.62E+04	0.00E+00	4.68E+07	N/A
	INFANT	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	N/A
TOTAL INGEST.	ADULT	1.63E+04	1.88E+04	1.12E+03	0.00E+00	1.10E+04	0.00E+00	9.03E+07	N/A
	TEEN	1.93E+04	2.10E+04	1.26E+03	0.00E+00	1.23E+04	0.00E+00	7.57E+07	N/A
	CHILD	4.05E+04	3.28E+04	2.54E+03	0.00E+00	1.80E+04	0.00E+00	5.19E+07	N/A
	INFANT	6.20E+02	2.78E+02	1.70E+01	0.00E+00	1.07E+02	0.00E+00	1.76E+05	N/A
INHAL.	ADULT	5.27E+03	6.10E+03	3.65E+02	0.00E+00	3.56E+03	2.21E+05	1.73E+05	N/A
	TEEN	7.86E+03	8.56E+03	5.13E+02	0.00E+00	5.02E+03	3.72E+05	1.82E+05	N/A
	CHILD	1.08E+04	8.73E+03	6.81E+02	0.00E+00	4.81E+03	3.28E+05	8.21E+04	N/A
	INFANT	7.94E+03	8.13E+03	5.00E+02	0.00E+00	3.15E+03	3.22E+05	3.12E+04	N/A
		BONE	LIVER	T.BODY	THYROID	KIDNEY	LUNG	G.I.	SKIN

*Airborne pathways and tritium ingestion: units are mrem/yr/uCi/m3
Deposition pathways: units are mrem-m2/yr/uCi/sec

MAXIMUM VALUES FOR PATHWAYS

GROUND: T.B./ORG.	GROUND: SKIN	GOAT MILK:	COW MILK:	MEAT:	VEGTBLE:	TOTAL INGEST:	INHAL.
8.31E+06	9.97E+06	3.84E+04	1.80E+05	1.30E+07	7.71E+07	9.03E+07	3.72E+05

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O.D.C.M. MAXIMUM PATHWAY DOSE FACTORS: RADIONUCLIDES OTHER THAN NOBLE GASES*

ISOTOPE: Np-239

PATHWAY	AGE GROUP	BONE	LIVER	T.BODY	THYROID	KIDNEY	LUNG	G.I.	SKIN
GROUND	ADULT	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	TEEN	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	CHILD	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	INFANT	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
GOAT MILK	ADULT	1.98E-01	1.95E-02	1.08E-02	0.00E+00	6.08E-02	0.00E+00	4.00E+03	N/A
	TEEN	3.79E-01	3.57E-02	1.98E-02	0.00E+00	1.12E-01	0.00E+00	5.74E+03	N/A
	CHILD	9.32E-01	6.69E-02	4.70E-02	0.00E+00	1.93E-01	0.00E+00	4.95E+03	N/A
	INFANT	1.64E+01	1.76E-01	9.96E-02	0.00E+00	3.51E-01	0.00E+00	5.09E+03	N/A
COW MILK	ADULT	9.26E-01	9.10E-02	5.02E-02	0.00E+00	2.84E-01	0.00E+00	1.87E+04	N/A
	TEEN	1.77E+00	1.67E-01	9.25E-02	0.00E+00	5.23E-01	0.00E+00	2.68E+04	N/A
	CHILD	4.35E+00	3.12E-01	2.19E-01	0.00E+00	9.02E-01	0.00E+00	2.31E+04	N/A
	INFANT	9.19E+00	8.22E-01	4.64E-01	0.00E+00	1.64E+00	0.00E+00	2.38E+04	N/A
MEAT	ADULT	8.54E-02	8.40E-03	4.63E-03	0.00E+00	2.62E-02	0.00E+00	1.72E+03	N/A
	TEEN	7.47E-02	7.04E-03	3.91E-03	0.00E+00	2.21E-02	0.00E+00	1.13E+03	N/A
	CHILD	1.41E-01	1.01E-02	7.09E-03	0.00E+00	2.92E-02	0.00E+00	7.47E+02	N/A
	INFANT	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	N/A
VEGTBLE	ADULT	4.71E+02	4.63E+01	2.55E+01	0.00E+00	1.45E+02	0.00E+00	9.50E+06	N/A
	TEEN	4.57E+02	4.31E+01	2.40E+01	0.00E+00	1.35E+02	0.00E+00	6.94E+06	N/A
	CHILD	8.44E+02	6.06E+01	4.26E+01	0.00E+00	1.75E+02	0.00E+00	4.49E+06	N/A
	INFANT	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	N/A
TOTAL INGEST.	ADULT	4.72E+02	4.64E+01	2.56E+01	0.00E+00	1.45E+02	0.00E+00	9.53E+06	N/A
	TEEN	4.60E+02	4.33E+01	2.41E+01	0.00E+00	1.36E+02	0.00E+00	6.97E+06	N/A
	CHILD	8.50E+02	6.10E+01	4.29E+01	0.00E+00	1.76E+02	0.00E+00	4.52E+06	N/A
	INFANT	2.56E+01	9.98E-01	5.64E-01	0.00E+00	1.99E+00	0.00E+00	2.89E+04	N/A
INHAL.	ADULT	2.30E+02	2.26E+01	1.24E+01	0.00E+00	7.00E+01	3.76E+04	1.19E+05	N/A
	TEEN	3.38E+02	3.19E+01	1.77E+01	0.00E+00	1.00E+02	6.49E+04	1.32E+05	N/A
	CHILD	4.66E+02	3.34E+01	2.35E+01	0.00E+00	9.73E+01	5.81E+04	6.40E+04	N/A
	INFANT	3.71E+02	3.32E+01	1.88E+01	0.00E+00	6.62E+01	5.95E+04	2.49E+04	N/A
		BONE	LIVER	T.BODY	THYROID	KIDNEY	LUNG	G.I.	SKIN

*Airborne pathways and tritium ingestion: units are mrem/yr/uCi/m3
Deposition pathways: units are mrem-m2/yr/uCi/sec

MAXIMUM VALUES FOR PATHWAYS

GROUND: T.B./ORG.	GROUND: SKIN	GOAT MILK:	COW MILK:	MEAT:	VEGTBLE:	TOTAL INGEST:	INHAL.
0.00E+00	0.00E+00	5.74E+03	2.68E+04	1.72E+03	9.50E+06	9.53E+06	1.32E+05

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5.0 INDIVIDUAL DOSE DUE TO WATERBORNE EFFLUENT

SPECIFICATION 3.11.1.2 - THE DOSE OR DOSE COMMITMENT TO A MEMBER OF THE PUBLIC FROM RADIOACTIVE MATERIALS IN LIQUID EFFLUENTS RELEASED FROM EACH REACTOR UNIT TO UNRESTRICTED AREAS (SEE FIGURE 5.1.3-1) SHALL BE LIMITED:

a. DURING ANY CALENDAR QUARTER TO LESS THAN OR EQUAL TO 1.5 MREM TO THE TOTAL BODY AND TO LESS THAN OR EQUAL TO 5 MREM TO ANY ORGAN, AND

b. DURING ANY CALENDAR YEAR TO LESS THAN OR EQUAL TO 3 MREM TO THE TOTAL BODY AND TO LESS THAN OR EQUAL TO 10 MREM TO ANY ORGAN.

The calculations of dose received by the hypothetical maximally exposed individual from the ingestion of fish and drinking water are based on the nearest public drinking water intake location (Danville Water Authority). Dose contributions from recreation, boating, and swimming have been shown to be negligible in the NRC 10 CFR 50 Appendix I dose analysis (June 1976) and do not need to be routinely evaluated.

The following expression is used to calculate the ingestion pathway dose contributions for the total release period for each batch release from all radionuclides identified in the liquid effluents released to unrestricted areas:

$$D_\tau = \Sigma_i A_{i\tau} (\Delta t\, C_i\, F) \qquad \text{(Eq. 10)}$$

where:

D_τ = the cumulative dose commitment to the total body or any organ (τ) from the liquid effluents for the time period, Δt, of each batch release (mrem).

Δt = the length of the time period for a batch release over which C_i and F are averaged for all liquid releases (hr).

C_i = the average concentration of radionuclide (i) in undiluted liquid effluent during time period, Δt, for any liquid effluent batch release (uCi/ml).

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F = the discharge line dilution factor for C_i during any liquid effluent batch release. Defined as the ratio of the maximum undiluted liquid radwaste effluent line flow during release to the average flow from the plant discharge line to unrestricted receiving waters.

$A_{i\tau}$ = the composite dose parameter for the total body or any organ (c) for each identified principal gamma and beta emitter (i) (mrem/hr per uCi/ml) (see Equation 11, Table 5).

$$A_{i\tau} = k_o \left((U_w + U_f\ BF_i)/D_w\right) DF_{i\tau} \qquad \text{(Eq. 11)}$$

where:

k_o = conversion factor of $1.1 \times 10^5 = \frac{(10^6\ pCi/uCi)(10^3 ml/kg)}{8760\ hr/yr}$

U_w = a receptor person's water consumption by age group from Regulatory Guide 1.109, Table E-5.

D_w = the dilution factor from the near field area of the release point to potable water intake = 321. (The nearest potable water intake is located at Danville; dilution factors and transit times based on river level are also given in Table D-1 of Appendix D. These dilution factors are based on fluorescent dye tracer studies conducted at various river levels during 1985.)

U_f = a receptor person's fish consumption by age group from Regulatory Guide 1.109, Table E-5.

BF_i = the bioaccumulation factor for nuclide (i) in fish (pCi/kg per pCi/l) from Regulatory Guide 1.109, Table A-1.

$DF_{i\tau}$ = the dose conversion factor for nuclide (i) in a receptor person for pre-selected organ (τ), (mrem/pCi) from Regulatory Guide 1.109, Tables E-11, E-12, E-13, and E-14.

The projected quarterly dose contribution from batch releases for which radionuclide concentrations are determined by periodic composite sample analysis, as stated in Table 4.11.1.1.1-1 of the SSES Technical Specification may be approximated by assuming an average concentration based on the previous monthly or quarterly composite analysis.

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However, for reporting purposes, the calculated dose contributions from these radionuclides shall be based on the actual composite analysis. The cumulative dose commitment to the total body or any organ for a quarterly or annual analysis shall be based on the calculated dose contributions from each batch release occurring during that time period.

In actual practice, the LADTAP computer code developed by the NRC to implement the liquid dose methodology of Regulatory Guide 1.109 will be used to perform the individual liquid pathway dose calculations for the SSES. The methods outlined above are consistent with those of the LADTAP code; site specific dose factors have been computed and are available for implementing the method described above, if required.

A discussion of the LADTAP code is given in Section A.3.1 of Appendix A.

TABLE 5

WATERBORNE EFFLUENT DOSE PARAMETERS FOR ADULTS

Radionuclide[a]	Fresh Water Fish Bioaccumulation Factor pCi/kg per pCi/liter	Ingestion Dose Factor for Critical Organ (mrem/pCi)	Critical Organ	Dose Parameter (A_i) (mrem/hr per uCi/ml)
H-3	.9	1.05E-7	Total Body	2.446E-1
Mn-54	400	1.40E-5	GI-LLI[b]	1.294E4
Fe-55	100	2.75E-6	Bone	6.360E2
Co-58	50	1.51E-5	GI-LLI	1.748E3
Fe-59	100	3.40E-5	GI-LLI	7.863E3
Co-60	50	4.02E-5	GI-LLI	4.653E3
Zn-65	2000	1.54E-5	Liver	7.115E4
Sr-89	30	3.08E-4	Bone	2.142E4
Sr-90	30	7.58E-3	Bone	5.272E5
Mo-99	10	9.99E-6	GI-LLI	2.333E2
I-131	15	1.95E-3	Thyroid	6.806E4
Cs-134	2000	1.48E-4	Liver	6.838E5
Cs-137	2000	1.09E-4	Liver	5.036E5
Ce-141	1	2.42E-5	GI-LLI	6.196E1
Ce-144	1	1.65E-4	GI-LLI	4.224E2

[a] Additional factors for isotopes not included in Table 5 may be calculated using the methodology described in NUREG-0133.

[b] GI-LLI = gastro-intestinal tract, lower large intestine.

6.0 INDIVIDUAL DOSE DUE TO AIRBORNE EFFLUENT

6.1 NOBLE GASES

SPECIFICATION 3.11.2.2 - THE AIR DOSE DUE TO NOBLE GASES RELEASED IN GASEOUS EFFLUENTS, FROM EACH REACTOR UNIT, TO AREAS AT AND BEYOND THE SITE BOUNDARY (SEE FIGURE 5.1.3-1) SHALL BE LIMITED TO THE FOLLOWING:

a. DURING ANY CALENDAR QUARTER: LESS THAN OR EQUAL TO 5 MRAD FOR GAMMA RADIATION AND LESS THAN OR EQUAL TO 10 MRAD FOR BETA RADIATION, AND

b. DURING ANY CALENDAR YEAR: LESS THAN OR EQUAL TO 10 MRAD FOR GAMMA RADIATION AND LESS THAN OR EQUAL TO 20 MRAD FOR BETA RADIATION.

The air dose in unrestricted areas beyond the site boundary due to noble gases released in airborne effluents from the site shall be determined by the following equation for gamma radiation during any specific time period:

$$D_g = 3.17 \times 10^{-8} \sum_i M_i \, (X/Q)_v \, Q_{iv} \qquad \text{(Eq. 12)}$$

and by the following equation for beta radiation during any specified time period:

$$D_b = 3.17 \times 10^{-8} \sum_i N_i \, (X/Q)_v \, Q_{iv} \qquad \text{(Eq. 13)}$$

Where:

M_i = the air dose factor due to gamma emissions for each identified noble gas radionuclide (i) (mrad/yr per uCi/m^3) from Table 2.

N_i = the air dose factor due to beta emissions for each identified noble gas radionuclide (i) (mrad/yr per uCi/m^3) from Table 2.

$(X/Q)_v$ = the highest calculated annual average relative concentration for any area at or beyond the site boundary in an unrestricted area from vent release point (v) (sec/m^3) such as from Table 3.

D_g = the total gamma air dose from gaseous effluents for specified time period (mrad).

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D_b = the total beta air dose for gaseous effluents for a specified time period (mrad).

Q_{iv} = the integrated release of each identified noble gas radionuclide (i) in gaseous effluents from all vents (v) for a specified time period (uCi).

3.17×10^{-8} = the inverse of seconds in a year (yr/sec).

A discussion of the method used to calculate the individual dose from gaseous effluents is given in Section A.3.2 of Appendix A. Also, sample calculations for determining gamma and beta air doses from noble gas radionuclides released from the SSES are given.

6.2 RADIONUCLIDES OTHER THAN NOBLE GASES

SPECIFICATION 3.11.2.3 - THE DOSE TO A MEMBER OF THE PUBLIC FROM IODINE-131, TRITIUM, AND ALL RADIONUCLIDES IN PARTICULATE FORM WITH HALF-LIVES GREATER THAN 8 DAYS IN GASEOUS EFFLUENTS RELEASED, FROM EACH REACTOR UNIT, TO AREAS AT AND BEYOND THE SITE BOUNDARY (SEE FIGURE 5.1.3-1) SHALL BE LIMITED TO THE FOLLOWING:

a. DURING ANY CALENDAR QUARTER: LESS THAN OR EQUAL TO 7.5 MREMS TO ANY ORGAN, AND

b. DURING ANY CALENDAR YEAR: LESS THAN OR EQUAL TO 15 MREMS TO ANY ORGAN.

The critical organ dose to an individual from I-131, tritium, and radioactive materials in particulate form with half-lives greater than 8 days released in airborne effluents from the site to unrestricted areas can be determined by the following equation during any specified time period:

$$D_c = 3.17 \times 10^{-8} \sum_i (R_i)(W_v)(Q_{iv}) \qquad \text{(Eq. 14)}$$

where:

D_c = the total dose to a critical organ from radionuclides other than noble gases for a specified time period (mrem).

R_i = the dose parameter for each identified radionuclide (i) for the inhalation pathway (mrem/yr per uCi/m^3) and for food and ground plane pathways (m^2 · mrem/yr per uCi/sec) from Table 4.

W_v = the highest annual average dispersion parameter for estimating the dose to the critical individual; relative concentration (X/Q) (sec/m^3) for the inhalation pathway and relative deposition rate (D/Q) (m^{-2}) for the food and ground pathways such as from Table 3.

Q_{iv} = the integrated release of each identified radionuclide other than noble gases (i) in gaseous effluents from all vents (v) for a specified time period (uCi).

3.17×10^{-8} = the inverse of seconds in a year (yr/sec).

In actual practice, the GASPAR computer code developed by the NRC to implement the airborne dose methodology of Regulatory Guide 1.109 will be used to perform the individual airborne pathway dose calculations for the SSES. The methods outlined above are consistent with those of the GASPAR code; site specific dose factors have been computed and are available for implementing the method described above, if required.

A discussion of the GASPAR code is given in Section A.3.2 of Appendix A.

7.0 TOTAL DOSE

SPECIFICATION 3.11.4 - THE ANNUAL (CALENDAR YEAR) DOSE OR DOSE COMMITMENT TO ANY MEMBER OF THE PUBLIC, DUE TO RELEASES OF RADIOACTIVITY AND RADIATION, FROM URANIUM FUEL CYCLE SOURCES SHALL BE LIMITED TO LESS THAN OR EQUAL TO 25 MREMS TO THE TOTAL BODY OR ANY ORGAN EXCEPT THE THYROID, WHICH SHALL BE LIMITED TO LESS THAN OR EQUAL TO 75 MREMS.

The cumulative dose to any member of the public due to radioactive releases from the SSES site is determined by summing the calculated doses to critical organs from the previously discussed effluent sources. The annual dose to critical organs of a real individual for the liquid effluents is determined by using Equations 10 and 11 of Section 5. The annual dose to critical organs of a real individual for the noble gases released in the gaseous effluents is determined by using Equation 12 modified by replacing M_i with K_i from Table 2 for the whole-body dose and by Equation 13 modified by replacing N_i by $(L_i + 1.1\ M_i)$ from Table 2 for the skin dose of Section 6.0:

$$D_g = 3.17 \times 10^{-8} K_i (X/Q)_v Q_{iv} \qquad \text{(Eq. 15)}$$

$$D_b = 3.17 \times 10^{-8} (L_i + 1.1 M_i)(X/Q)_v Q_{iv} \qquad \text{(Eq. 16)}$$

The annual dose to critical organs of a real individual for the radionuclides other than noble gases released in the gaseous effluents is determined by using Equation 14 of Section 6.0. For all dose calculations from airborne effluents, the deposition rate used in the analysis should be at the receptor location of the individual being evaluated, not the highest calculated annual average relative concentration or relative deposition rate for any area at or beyond the site boundary as given in Table 3. The direct radiation from the site should be determined from the environmental monitoring program's direct radiation (TLD) monitors. Since all other uranium fuel cycle sources are greater than 20 miles away, only the SSES site need be considered as a uranium fuel cycle source for meeting the EPA regulations.

In actual practice, the LADTAP and GASPAR computer code developed by the

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NRC to implement the liquid and gaseous dose methodology of Regulatory Guide 1.109 will be used to perform the total dose calculations for the SSES. The methods outlined above are consistent with those of the LADTAP and GASPAR codes; site specific dose factors have been computed and are available for implementing the method described above, if required.

A discussion of the methods used to calculate the total dose to critical organs of a real individual is given in Section A.4 of Appendix A.

8.0 OPERABILITY OF WASTE TREATMENT SYSTEMS

8.1 LIQUID WASTE TREATMENT

SPECIFICATION 3.11.1.3 - THE LIQUID RADWASTE TREATMENT SYSTEM, AS DESCRIBED IN THE ODCM, SHALL BE OPERABLE. THE APPROPRIATE PORTIONS OF THE SYSTEM SHALL BE USED TO REDUCE THE RADIOACTIVE MATERIALS IN LIQUID WASTE PRIOR TO THEIR DISCHARGE WHEN THE PROJECTED DOSES DUE TO THE LIQUID EFFLUENT, FROM EACH REACTOR UNIT, TO UNRESTRICTED AREA (SEE FIGURE 5.1.3-1) WOULD EXCEED 0.06 MREM TO THE TOTAL BODY OR 0.2 MREM TO ANY ORGAN IN A 31-DAY PERIOD.

The SSES liquid waste treatment system utilizes two 300 ft^3 horizontal centrifugal discharge type filters with 200 gpm normal flow. Liquid from the filters enter a mixed bed demineralizer with a volume of 140 ft^3 and normal flow rate of 200 gpm. High conductivity waste is treated in two stainless steel "pot boiler" evaporators which are heated with auxiliary steam. There are two chemical waste neutralization tanks with 28,000 gal capacity. Low conductivity liquid wastes are collected in three pairs of LRW surge tanks. A flow diagram of the liquid radwaste treatment system is shown in Figure 1.

Appropriate treatment for liquid effluents from SSES is defined in ODCM Policy Statement 10.6. In cases when a batch of liquid waste must be released with treatment less than that specified in Section 10.6, a dose assessment using LADTAP or the methodology of Section 5.0 shall be performed prior to release to ensure that the limits of Specification 3.11.1.3 are not exceeded.

8.2 GASEOUS WASTE TREATMENT

SPECIFICATION 3.11.2.4 - THE GASEOUS RADWASTE TREATMENT SYSTEM SHALL BE IN OPERATION.

APPLICABILITY: WHENEVER THE MAIN CONDENSER AIR EJECTOR (EVACUATION) SYSTEM IS IN OPERATION.

SPECIFICATION 3.11.2.5 - THE APPROPRIATE PORTIONS OF THE VENTILATION EXHAUST TREATMENT SYSTEM SHALL BE OPERABLE AND SHALL BE USED TO REDUCE RADIOACTIVE MATERIALS IN GASEOUS WASTE PRIOR TO THEIR DISCHARGE WHEN THE PROJECTED DOSES DUE TO GASEOUS EFFLUENT RELEASES FROM EACH REACTOR UNIT TO AREAS AT AND BEYOND THE SITE BOUNDARY (SEE

FIGURE 5.1.3-1) WHEN AVERAGED OVER 31 DAYS WOULD EXCEED 0.3 MREM TO ANY ORGAN IN A 31-DAY PERIOD.

The SSES offgas treatment system operates with four steam jet air ejectors maintaining condenser vacuum. Noncondensible gases are passed through one of three recombiners (one for each reactor unit plus a common recombiner), reducing the amount of gases to be filtered and released. Gases pass through a two to nine minute holdup pipe before entering the offgas treatment system, which consists of one 100 percent capacity system per reactor unit. Each system consists of precoolers, chillers, reheaters, guard beds, and five charcoal absorbers and an outlet HEPA filter. Monitored, filtered air then exits to the turbine building vent. A flow diagram of the offgas and recombiner system is shown in Figure 2.

Filtered exhaust systems serve selected areas of Zone I, II, and III of the SSES reactor building. The Zone I and Zone II equipment compartment and Zone III filtered exhaust systems each consist of two 100% capacity redundant fans and two 55% capacity filter trains. Each filter train has, in the direction of air flow, roughing filters, upstream HEPA filters, a charcoal filter bed, and downstream HEPA filters. Exhaust fan discharge is then routed to the atmosphere via the reactor building vents, where effluents are continuously sampled and monitored.

The turbine building filtered exhaust system draws air from those areas of the building that are most likely to become contaminated. Two 100% capacity fans serve each system, which contains two 50% capacity filter housings made up of a particulate prefilter, an upstream HEPA filter, a charcoal filter, and a downstream HEPA filter. Discharged air is released via the turbine building vents, which are continuously sampled and monitored.

The radwaste building filtered exhaust system draws potentially

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contaminated air from selected areas of the radwaste building. The system contains two 100% capacity fans and two 50% capacity filter housings, each containing a particulate filter bank and a HEPA filter. Filtered air is discharged via the turbine building vent.

In order to minimize the quantities of radioactivity in airborne effluents from the station, the ventilation exhaust treatment (filtered exhaust) systems are normally kept in service at SSES.

As the need arises, these systems are periodically rendered inoperable for maintenance or testing activities. If the most recent 31-day dose projection indicates that dose may exceed 0.3 mrem to any organ when averaged over the projected 31-day period, treatment systems rendered inoperable will be restored to operable status as quickly as is practicable.

The dose projections are performed at least once per 31 days based on the most recently available effluent data. If it is known prior to performing the dose projection that a treatment system will be out of service, and if data exists which indicates how the lack of treatment will impact effluents, these factors will be considered when performing the dose projection.

8.3 SOLID WASTE TREATMENT

SPECIFICATION 3.11.3 - THE SOLID RADWASTE SYSTEM SHALL BE USED IN ACCORDANCE WITH A PROCESS CONTROL PROGRAM, FOR THE PROCESSING AND PACKAGING OF RADIOACTIVE WASTES TO ENSURE MEETING THE REQUIREMENTS OF 10 CFR PART 20, 10 CFR PART 71, AND FEDERAL REGULATIONS COVERING THE DISPOSAL OF THE WASTE.

The SSES solid radwaste system was designed to solidify all wet wastes for ultimate offsite disposal. There are two Backwash Receiving Tanks, one per unit, which collect two filter-demineralizer backwashes per tank (2450 gal capacity). Air spargers for resin mixing are driven by instrument air. Regeneration Waste Surge Tanks (4) and Phase Separators (3) have internal mixing

eductors for sludge mixing driven by recirculation flow. The Spent Resin Tank has a reversible progressing cavity pump and internal mixing eductors. Two solidification trains have waste mixing tank progressing cavity feed and mixing pumps, and screw conveyors for feeding of dry Portland cement. Mixing is facilitated by the addition of sodium silicate. Common solidification equipment includes waste container fillport, transfer cart, capper washdown station, and swipe tool; cement silo with rotary feed valve, aeration blower, baghouse, and exhaust fan; sodium silicate tank and pump. Vendor solidification services may be used in accordance with the SSES Process Control Program to supplement the plant solidification system or to take the place of the plant system when the plant system is out of service.

A flow diagram of the SSES solid radwaste treatment system is shown in Figure 3. Dry contaminated waste processing is depicted in Figure 4.

Dry contaminated solids may be compacted with a drum compactor into 55-gallon drums or with a box compactor into steel boxes. The trash compactors utilize hydraulic press pistons with exhaust fans and HEPA filters. In addition, dry contaminated solids may be processed using vendor supercompaction and incineration services. An automated dry active waste (DAW) monitoring system is used to segregate radioactive from non-radioactive solid waste.

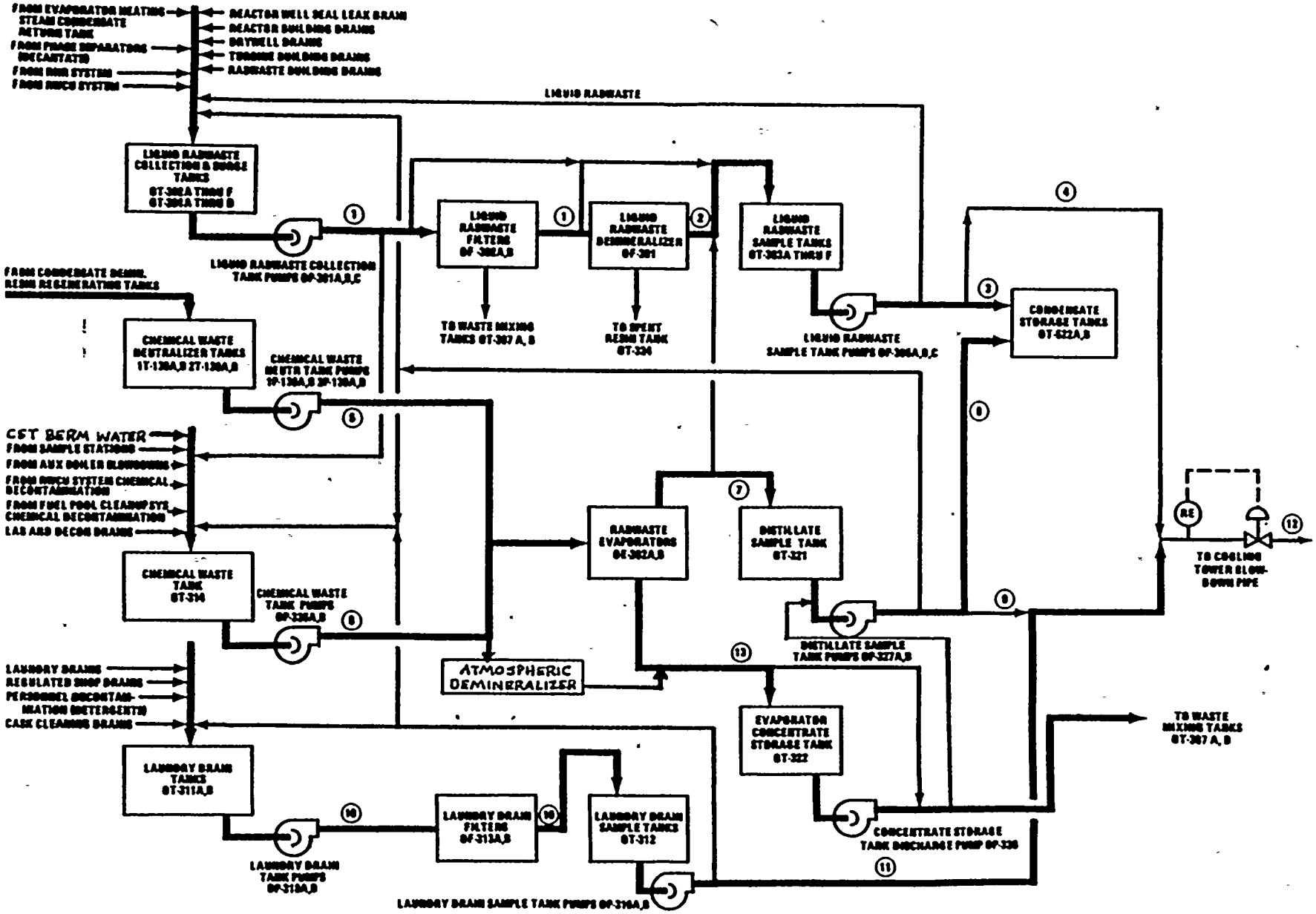

FIGURE 1
LIQUID RADWASTE SYSTEM FLOW DIAGRAM

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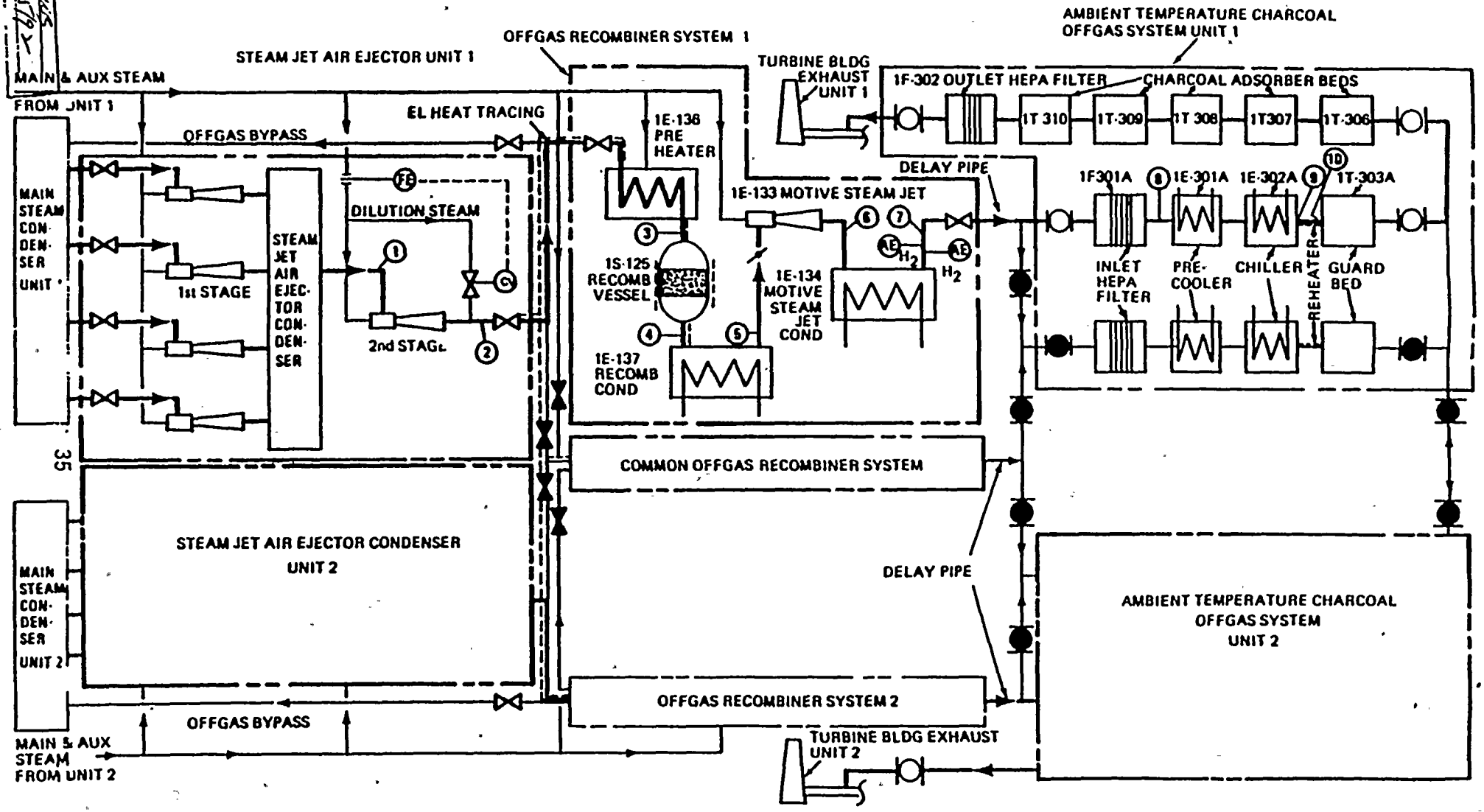


FIGURE 2

OFFGAS AND RECOMBINER SYSTEM FLOW DIAGRAM

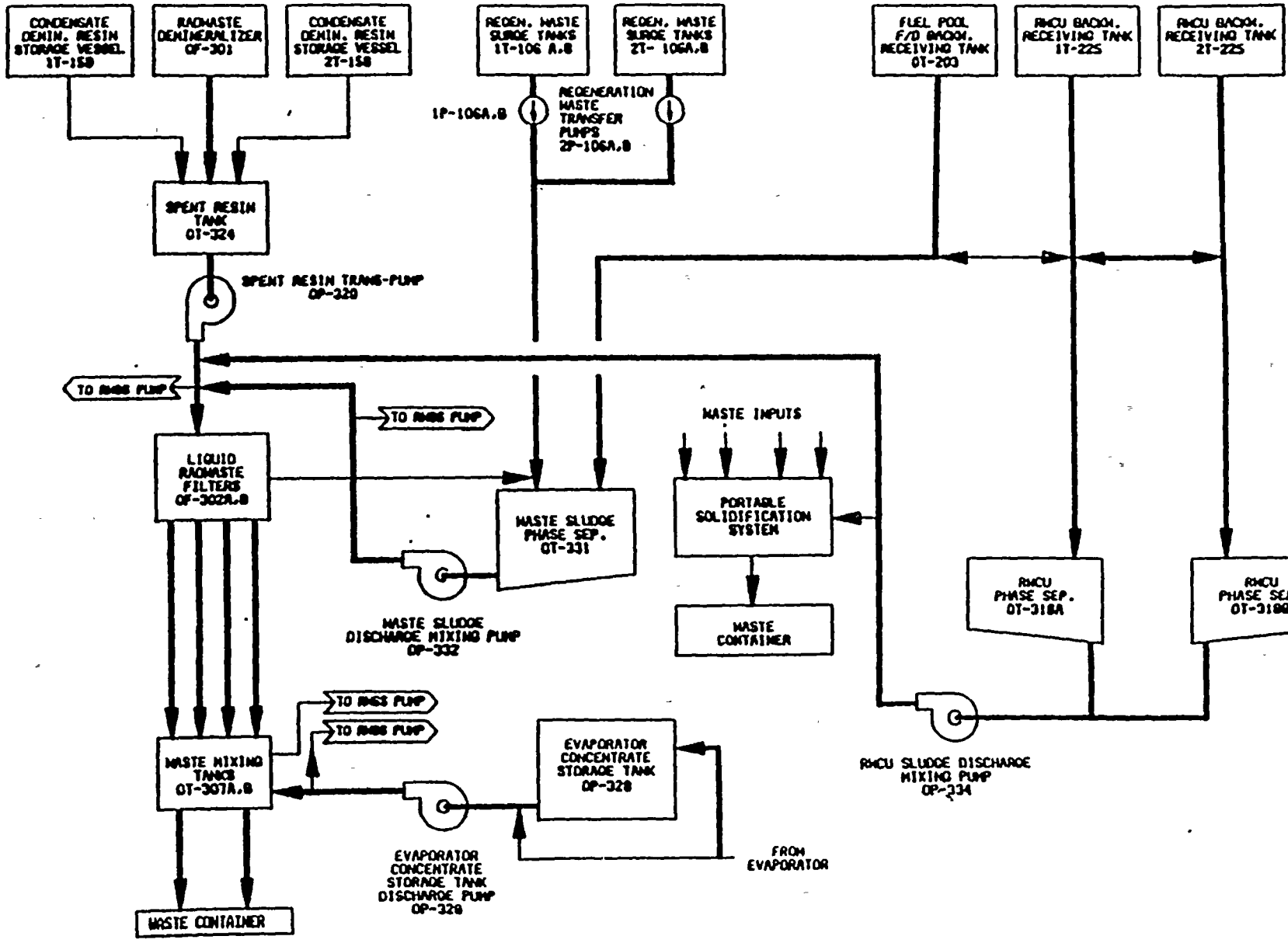
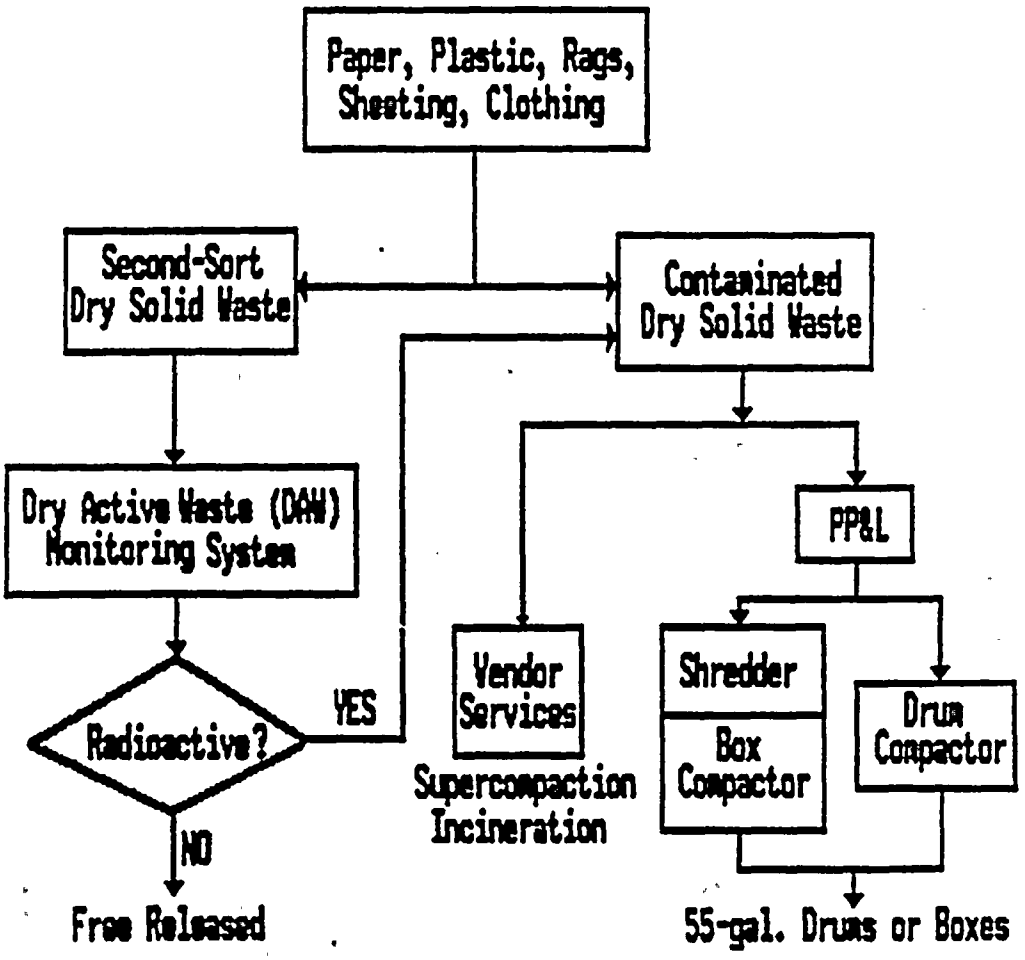


FIGURE 3
SOLID WASTE MANAGEMENT SYSTEM FLOW DIAGRAM
(Excluding Dry Contaminated Waste)

FIGURE 4

SSES DRY CONTAMINATED WASTE PROCESSING



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9.0 RADIOLOGICAL ENVIRONMENTAL MONITORING PROGRAM

9.1 DEFINITIONS

Weekly:	Once in each calendar week at intervals of approximately 7 days, plus or minus 2 days.
Semi-Monthly:	Twice each calendar month at intervals of approximately 15 days, plus or minus 4 days.
Monthly:	Once each calendar month at intervals of approximately 30 days, plus or minus 6 days.
Quarterly:	Once in each three month period of a calendar year at intervals of approximately 13 weeks, plus or minus 3 weeks.

9.2 MONITORING PROGRAM

SPECIFICATION 3.12.1 - THE RADIOLOGICAL ENVIRONMENTAL MONITORING PROGRAM SHALL BE CONDUCTED AS SPECIFIED IN TABLE 3.12.1-1.

Environmental samples shall be collected and analyzed (as a minimum) according to Table 6 at locations shown in Figures 5 and 6. Analytical techniques used shall ensure that the detection capabilities in Table 7 are achieved.

A dust loading study (RMC-TR-81-01) was conducted to assure that the proper transmission factor was used in calculating gross beta activity of air particulate samples. This study concluded that the sample collection frequency of once per week was sufficient and that the use of 1 for the transmission correction factor for gross beta analysis of air particulate samples is valid.

The charcoal sampler cartridges used in the airborne radioiodine sampling program (Science Applications, Inc., Model CP-100) are designed and tested by the manufacturer to assure a high quality of radioiodine capture. A certificate from the manufacturer is supplied and retained with each batch of cartridges certifying the percent retention of radioiodine versus air flow rate through the cartridge.

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The results of the radiological environmental monitoring program are intended to supplement the results of the radiological effluent monitoring by verifying that the measurable concentrations of radioactive materials and levels of radiation are not higher than expected on the basis of the effluent measurements and modeling of the environmental exposure pathways. Thus, the specified environmental monitoring program provides measurements of radiation and of radioactive materials in those exposure pathways and for those radionuclides which lead to the highest potential radiation exposures of individuals resulting from station operation. Program changes may be proposed based on operational experience. Deviations are permitted from the required sampling schedule if specimens are unobtainable due to hazardous conditions, seasonal unavailability, malfunction of automatic sampling equipment, and other legitimate reasons. If specimens are unobtainable due to sampling equipment malfunction, an effort shall be made to complete corrective action prior to the end of the next sampling period. All deviations from the sampling schedule shall be documented in the annual report. Reporting requirements for the radiological environmental surveillance program are given in Appendix B.

9.3 CENSUS PROGRAM

SPECIFICATION 3.12.2 - A LAND-USE CENSUS SHALL BE CONDUCTED AND SHALL IDENTIFY WITHIN A DISTANCE OF 8 KM (5 MILES) THE LOCATION IN EACH OF THE 16 METEOROLOGICAL SECTORS OF THE NEAREST MILK ANIMAL, THE NEAREST RESIDENCE AND THE NEAREST GARDEN* OF GREATER THAN 50 M^2 (500 FT^2) PRODUCING BROAD LEAF VEGETATION.

* Broad leaf vegetation sampling of at least three different kinds of vegetation may be performed at the site boundary in each of two direction sectors with the highest predicted D/Q's in lieu of the garden census. Specifications for broad leaf vegetation sampling in Table 3.12.1-1, item 4C shall be followed, including analysis of control samples.

If a land use census identifies a location(s) with a higher average annual deposition rate (D/Q) than a current indicator location, the following shall apply:

1. If the D/Q is at least 20 percent greater than a previously high D/Q, the new location shall be added to the program within 30 days of documented identification of sampling feasibility. The indicator location having the lowest D/Q may be dropped from the program after October 31st of the year in which the land use census was conducted.

2. If the D/Q is <u>not</u> 20 percent greater than the previously highest D/Q, direction, distance, and D/Q will be considered in deciding whether to replace one of the existing sample locations. If applicable, replacement shall be within 30 days.

Any evaluations of possible location replacement should include the past history of the location, availability of sample, milk production history, and other applicable environmental conditions.

A land use census will be conducted at least once per calendar year by a door-to-door or aerial survey, by consulting local agricultural authorities, or by any combination of these methods.

9.4 <u>INTERLABORATORY COMPARISON PROGRAM</u>

<u>SPECIFICATION 3.12.3</u> - ANALYSES SHALL BE PERFORMED ON RADIOACTIVE MATERIALS SUPPLIED AS PART OF AN INTERLABORATORY COMPARISON PROGRAM WHICH HAS BEEN APPROVED BY THE COMMISSION.

The laboratories of the licensee and licensee's contractors which perform analyses shall participate in the Environmental Protection Agency's (EPA's) Environmental Radioactivity Laboratory Intercomparisons Studies (Crosscheck) Program or an equivalent program which has been approved by the Commission. This participation shall include some of the determinations (sample medium-radionuclide combination) that are offered by EPA and that are

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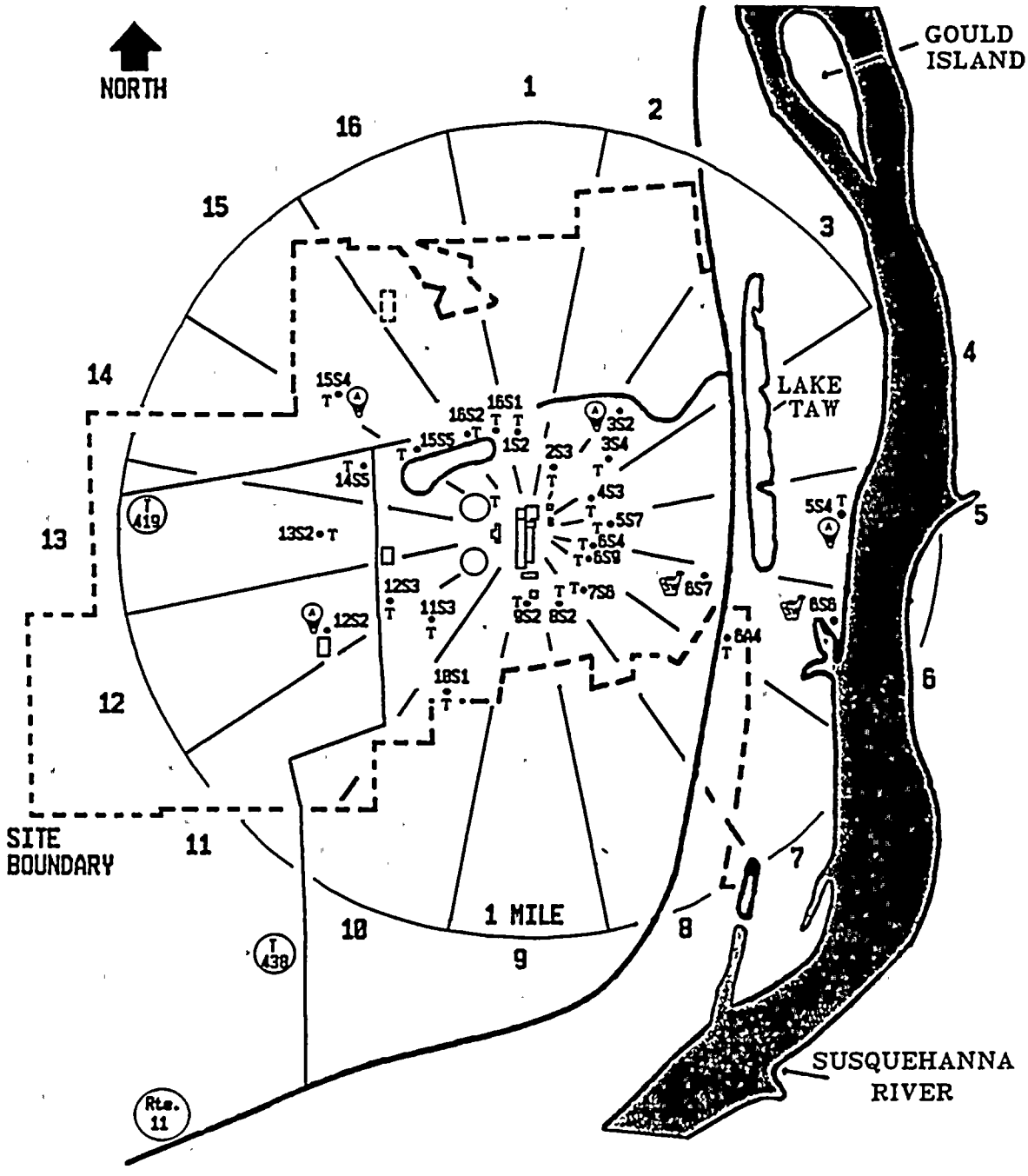
also included in the monitoring program. The results of the analyses of these crosscheck samples shall be included in the annual report. If the results of analyses performed by the licensee or licensee's contractor in conjunction with the EPA crosscheck program (or equivalent program) are outside the specified control limits, the laboratory shall investigate the cause of the problem and take steps to correct it. The results of this investigation and corrective action shall be included in the REMP annual report.

FIGURE 5

ENVIRONMENTAL MONITORING LOCATIONS

WITHIN ONE MILE OF THE SSES



AIR

SURFACE WATER

T THERMOLUMINESCENT DOSIMETRY

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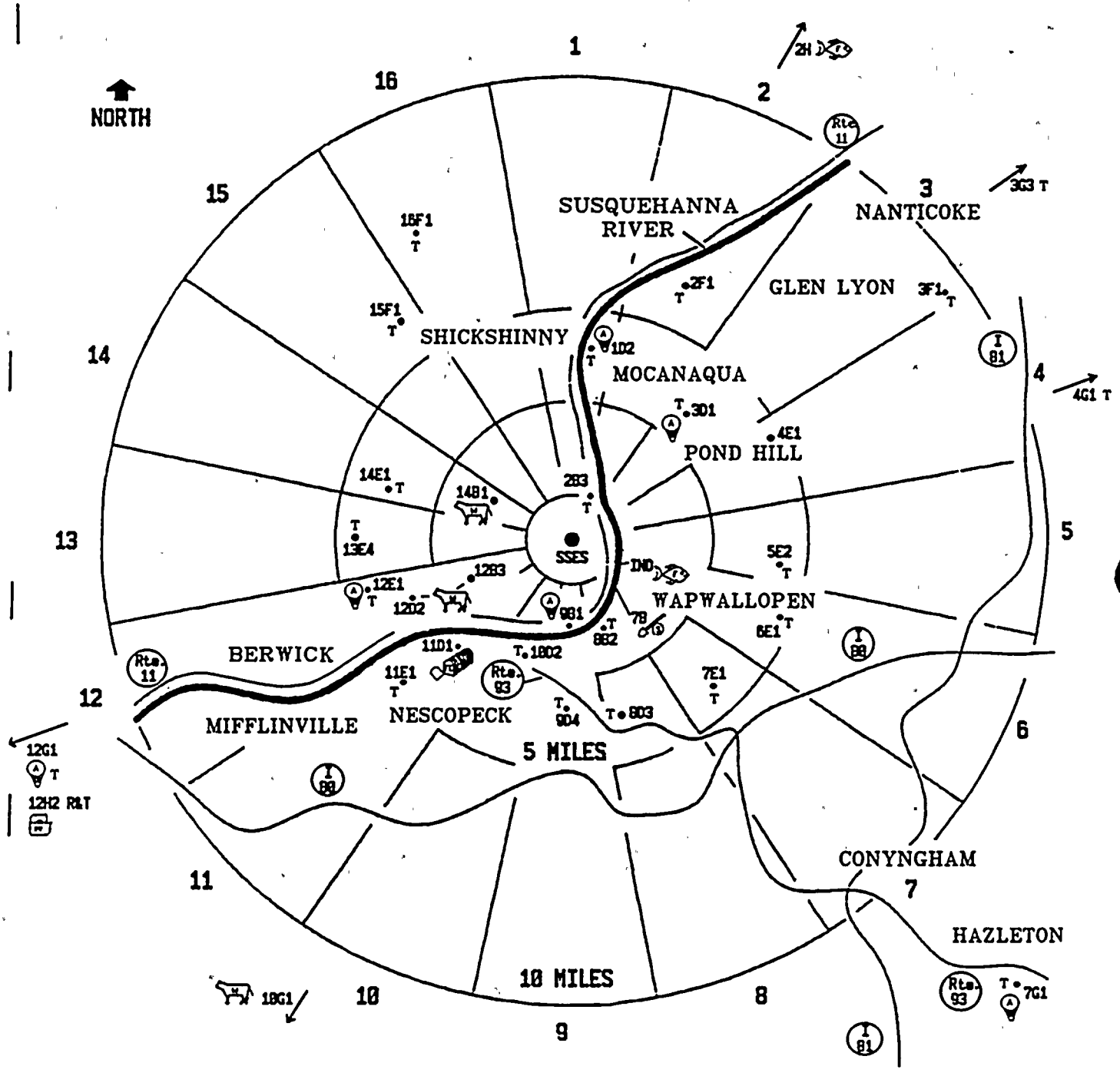
FIGURE 6
ENVIRONMENTAL MONITORING LOCATIONS
GREATER THAN ONE MILE FROM THE SSES



AIR
DRINKING WATER
FISH
FOOD
MILK
SEDIMENT
T THERMOLUMINESCENT DOSIMETRY

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TABLE 6

OPERATIONAL RADIOLOGICAL ENVIRONMENTAL MONITORING PROGRAM

Exposure Pathways and/or Sample	Number of Samples and Locations*	Sampling and Collection Frequency	Type and Frequency of Analysis
Airborne			
Radioiodine and Particulates	12S2 (0.4 mi WSW - E.O.F. Building) 9B1 (1.3 mi S - Transmission Line) 5S4 (0.8 mi E - W of Bio. Consult.) 12E1 (4.7 mi WSW - Berwick Hospital) 7G1 (14 mi SE - PP&L Hazleton Chem Lab)[a] 3S2 (0.5 mi NE - SSES Backup Met. Tower 15S4 (0.6 mi NW - Transmission Corridor 1D2 (3.9 mi N - Nocanaqua Substation) 3D1 (3.4 mi NE - Pond Hill) 12G1 (15 mi WSW - Bloomsburg Service Center)[a]	Continual sampler operation with sample collection weekly.**	Radioiodine Canister: analyze weekly for I-131 Particulate Sample: Analyze for gross beta radioactivity less than 24 hours following filter change. Perform isotopic analysis on composite sample (by location) quarterly.
Direct Radiation	1S2 Perimeter Fence - 0.2 mi N 1D2 Nocanaqua Substation - 4.0 mi N 2S3 Perimeter Fence - 0.2 mi NNE 2B3 Durabond Corporation - 1.3 mi NNE 2F1 St. Adalberts Cemetery - 5.9 mi NNE 3S4 Perimeter Fence - 0.3 mi NE 3D1 Pond Hill - 3.4 mi NE 3F1 Valania Resident (Nanticoke) - 9.1 mi NE 3G3 Wilkes-Barre-Horton St. Substation - 16 mi NE[a] 4S3 Perimeter Fence - 0.2 mi ENE 4E1 Ruckles Hill Road Pole (#) 46422/N35197 - 4.8 mi ENE 4G1 Mountain Top - Industrial Park - 14 mi ENE[a] 5S7 Perimeter Fence - 0.3 mi E 5E2 Bloss Farm - 4.5 mi E 6S4 Perimeter Fence - 0.2 mi ESE 6A4 Former State Police - 0.6 mi ESE	Quarterly	Gamma Dose: Quarterly.

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Exposure Pathways and/or Sample	Number of Samples and Locations*	Sampling and Collection Frequency	Type and Frequency of Analysis
	6E1 St. James Church - 4.7 mi ESE 6S9 Perimeter Fence - 0.2 mi ESE 7S6 Perimeter Fence - 0.2 mi SE 7E1 Harwood Transmission Line Pole #2 - 4.2 mi SE 7G1 Hazleton Chemical Lab - 14 mi SE[a] 8S2 Perimeter Fence - 0.2 mi SSE 8B2 LaWall Residence - 1.4 mi SSE 8D3 Mowry Residence - 4.0 mi SSE 9S2 Security Fence - 0.2 mi S 9D4 Country Folk Store - 3.6 mi S 10S1 Perimeter Fence - 0.4 mi SSW 10D2 Ross Ryman Farm - 3.0 mi SSW 11S3 Security Fence - 0.3 mi SW 11E1 Thomas Residence - 4.7 mi SW 12S3 Perimeter Fence - 0.4 mi WSW 12E1 Berwick Hospital - 4.7 mi WSW 12G1 Bloomsburg - 15 mi WSW[a] 13S2 Perimeter Fence - 0.4 mi W 13E4 Kessler Farm - 4.1 mi W 14S5 Site Pole 43996/N34230 0.5 mi WNW 14E1 Canouse Farm - 4.1 mi WNW 15F1 Zawatski Farm - 5.4 mi NW 15S5 Perimeter Fence - 0.4 mi NW 16S1 Perimeter Fence - 0.3 mi NNW 16S2 Perimeter Fence - 0.3 mi NNW 16F1 Hidlay Residence (Huntington Hills) - 7.8 NNW		
Waterborne			
Surface	6S6 river water intake line[a] 6S7 cooling tower blowdown discharge line	Monthly composite Monthly composite	Gamma isotopic analysis. Composite tritium analysis at least quarterly.
Drinking	12H2 Danville Water Co. (Approximately 30 miles downstream)	Monthly composite[b]	Gross beta and gamma isotopic analyses monthly. Composite for tritium analysis at least quarterly.
Sediment from Shoreline	7B Bell Bend - 1.2 mi SE	Semi-annually	Gamma isotopic analysis semi-annually.

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Exposure Pathways and/or Sample	Number of Samples and Locations*	Sampling and Collection Frequency	Type and Frequency of Analysis
Milk***	12B3 Young Farm - 2.0 mi WSW 10G1 Davis Farm - 14 mi. SSW[a] 14B1 Stola Farm - 1.8 mi. WNW 12D2 Dagostin Farm - 3.7 mi. WSW	Semi-monthly when animals are on pasture, monthly otherwise	Gamma isotopic and I-131 analysis of each sample.
Fish and Invertebrates	Outfall area 2H Falls, PA[a] (Approximately 30 mi NNE)	Semi-annually. One sample[c] from each of two reacreationally important species from any of the following families: bullhead catfish, sunfish, pikes, or perches.	Gamma isotopic on edible portions.
Food Products	11D1 Zehner Farm - 3.3 mi SW vegetable	At time of harvest	Gamma isotopic on edible portions.

*The location of samples and equipment were designed using the guidance in the Branch Technical Position to NRC Rev. Guide 4.8, Rev. 1, Nov. 1979, Reg. Guide 48. 1975 and ORP/SID 72-2 Environmental Radioactivity Surveillance Guide. Therefore, the airborne sampler locations were based upon X/Q and/or D/Q.

**A dust loading study (RMC-TR-81-01) concluded that the assumption of 1 for the transmission correction factor for gross beta analysis of air particulate samples is valid. Air particulate samples need not be weighed to determine a transmission correction factor.

***If a milk sample is unavailable for more than two sampling periods from one or more of the locations, a vegetation sample shall be substituted until a suitable milk location is evaluated. Such an occurrence will be documented in the REMP annual report.

[a] Control sample location.

[b] Two-week composite if calculated doses due to consumption of water exceed one millirem per year. In these cases, I-131 analyses will be performed.

[c] The sample collector will determine the species based upon availability, which may vary seasonally and yearly.

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TABLE 7

DETECTION CAPABILITIES FOR ENVIRONMENTAL SAMPLE ANALYSIS

Lower Limit of Detection (LLD)[a]

Analysis	Water (pCi/l)	Airborne Particulate or Gas (pCi/m³)	Fish (pCi/kg, wet)	Milk (pCi/l)	Food Products (pCi/kg, wet)	Sediment (pCi/kg, dry)
gross beta	4	1×10^{-2}				
H-3	2000					
Mn-54	15		130			
Fe-59	30		260			
Co-58	15		130			
Zn-65	30		260			
Zr-95	30					
I-131	1[b]	7×10^{-2}		1	60	
Cs-134	15	5×10^{-2}	130	15	60	150
Cs-137	18	6×10^{-2}	150	18	80	180
Ba-140	60			60		
La-140	15			15		

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TABLE 7 (Continued)

[a] The LLD is the smallest concentration of radioactive material in a sample that will be detected with 95 percent probability and with 5 percent probability of falsely concluding that a blank observation represents a "real" signal.

For a particular measurement system (which may include radiochemical separation):

$$LLD = \frac{4.66\ s_b}{2.22\ EVY \exp(-\lambda \Delta t)}$$

where:

LLD is the "a priori" lower limit of detection as defined above (as pCi per uit mass or volume).

s_b is the standard deviation of the background counting rate or of the counting rate of a blank sample as appropriate (as counts per minute)

E is the counting efficiency (as counts per transformation)

V is the sample size (in units of mass or volume)

2.22 is the number of disintegrations per minute per picocurie

Y is the fractional radiochemical yield (when applicable)

λ is the radioactive decay constant for the particular radionuclide, and

Δt is the elapsed time between sample collection (or end of the sample collection period) and time of counting.

In calculating the LLD for a radionuclide determined by gamma-ray spectrometry, the background should include the contributions of other radionuclides normally present in the samples (e.g., potassium-40 milk samples). Typical values for E, V, Y, and t should be used in the calculations.

It should be recognized that the LLD is defined as an a priori (before the fact) limit representing the capability of a measurement system and not as a posteriori (after the fact) limit for a particular measurement.

[b] LLD for drinking water.

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10.0 DOSE ASSESSMENT POLICY STATEMENTS

10.1 Selection of Analysis Results for Dose Calculations

For determination of compliance with SSES Technical Specification dose limits, effluent totals shall be based only on activity positively detected at the 95% confidence level.

10.2 Assignment of Releases to the Reactor Units

For determination of compliance with SSES radioactive effluent dose limits which are on a "per reactor unit" basis:

a. Effluents from the Unit 1 Reactor Building vent and the Unit 1 Turbine Building vent shall be included as Unit 1 releases.

b. Effluents from the Unit 2 Reactor Building vent and the Unit 2 Turbine Building vent shall be included as Unit 2 releases.

c. Effluents from the Standby Gas Treatment System vent shall be equally divided between Unit 1 and Unit 2 release totals.

d. Waterborne effluents shall be equally divided between Unit 1 and Unit 2 release totals.

10.3 Evaluation and Monitoring Criteria for Effluent Pathways

Potential unmonitored effluent pathways will be evaluated on a case-by-case basis. Periodic sampling and/or realistic evaluation will be performed in order to demonstrate the significance of a potential effluent pathway. Results of sampling and/or evaluation may be used to classify a potential unmonitored effluent pathway into one of the following categories:

a. Not an Effluent Pathway: Realistic evaluation (e.g., engineering design, system operation, radionuclide inventory)

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demonstrates that the pathway has no potential for release of radioactive material. Although not required, periodic sampling may at times be performed to confirm the result of the evaluation.

b. Insignificant Effluent Pathway: Evaluation and/or periodic sampling demonstrate that the pathway may contain radioactive effluents, however, these effluents may not be reasonably expected to exceed 10 percent of the appropriate unrestricted area MPC value (fractional MPCs summed when appropriate) listed in Table II of Appendix B to 10 CFR 20. A release pathway which falls in this category will be sampled periodically.

c. Significant Effluent Pathway: Evaluation and/or periodic sampling demonstrate that the pathway may contain radioactive effluents, and these effluents may be reasonably expected to exceed 10 percent of the appropriate unrestricted area MPC value (fractional MPCs summed when appropriate) listed in Table II of Appendix B to 10 CFR 20. A release pathway which falls in this category will be sampled continuously.

Analyses of samples will be performed consistent with techniques used for samples of the same types collected from normal effluent pathways. Any radioactive materials detected in samples collected from either the Insignificant or the Significant Release Pathways will be included in determining compliance with site dose limits. Additionally, any such occurrences will be reported in the Semiannual Effluent Report.

10.4 Flow from the SGTS Vent when the System is Not in Use

When the Standby Gas Treatment is not being used, there remains a small amount of flow from the SGTS vent. This residual flow is exhaust from the battery rooms in the control structure. Because there are no identifiable sources of radioactivity in these rooms,

auxiliary particulate and iodine sample and noble gas grab sample at 4-hour intervals are not required from the SGTS vent when the SGTS continuous vent monitor is out of service, provided that -

a. the Standby Gas Treatment System is not being used,

b. there are proper administrative controls in place to ensure that the required sampling will begin within 4 hours if the treatment system is operated.

10.5 ODCM Setpoints are Upper Limit Values

Effluent monitor alarm/trip setpoints calculated in accordance with the ODCM shall be considered upper limit values. Higher (less conservative) setpoints shall not be used, however lower (more conservative) setpoints may be used as required to maximize the utility of the monitor.

10.6 Definition of "Appropriate Treatment" for Liquid Wastes

Technical Specification 3.11.1.3 requires that the appropriate portions of the liquid waste treatment system be operable and be used to reduce radioactivity in liquid wastes prior to their release when projected doses from each reactor unit to unrestricted areas would exceed 0.06 mrem to the total body or 0.2 mrem to any organ in a 31 day period.

o The normal treatment, which is considered appropriate for each subsystem, is as follows:

- Filtration is considered appropriate treatment for the Liquid Radwaste Laundry Processing Subsystem, which consists of high conductivity liquid wastes, such as those from equipment washdown and personnel decontamination facilities, or laundry.

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- The atmospheric demineralizer (a vendor-supplied system which is directed to the Distillate Sample Tank) is considered appropriate for the Liquid Radwaste Chemical Processing Subsystem.

- Demineralization and filtration are considered appropriate treatment for low conductivity/low organic contaminant liquid wastes entering the Liquid Radwaste Processing Subsystem (LRW collection tanks), except for batches which yield projected doses prior to treatment of less than or equal to 6.45-04 mrem to the total body and 2.15E-03 mrem to any organ, where filtration alone is appropriate,

or

o For batches which have no identified gamma activity above the Technical Specification Liquid Effluent LLD level (Table 4.11.1.1.1-1), release without treatment is considered appropriate.

BASES

The projected dose threshold values used are derived by dividing the site-total maximum projected doses without treatment (0.12 and 0.4 mrem) by 31 days and by 6, the maximum possible number of batches released per day, to yield per-batch dose action levels. The two levels of "appropriate" treatment are in place so as not to require application of demineralization for treating low activity, high conductivity water (e.g., from Circulating or Service Water leakage). This would increase the overall efficiency of the solid radwaste program while ensuring calculated doses remain at a suitable fraction of 10 CFR 50 design objectives and Technical Specification 3.11.1.2

limit.[1][2]

10.7 Monitor Line Loss Corrections

In order to correct for airborne effluent monitor sample line loss, the following correction factors shall be applied to monitor data and sample analysis results:

	CORRECTION FACTORS	
ROUTINE EFFLUENT MONITORS	IODINE	PARTICULATES
Reactor Building Unit 1	1.5	3.2
Reactor Building Unit 2	1.5	3.2
Turbine Building Unit 1	1.6	3.6
Standby Gas Treatment	1.5	3.9
Turbine Building Unit 2	1.6	3.6

	CORRECTION FACTORS	
POST ACCIDENT VENT MONITORS	IODINE	PARTICULATES
Turbine Building Unit 1	1.7	4.2
Standby Gas Treatment	1.6	4.4
Turbine Building Unit 2	1.7	4.3

Each indicated iodine and particulates concentration shall be multiplied by the appropriate correction factor to estimate the actual concentration at the inlet to the sample line.

[1] Reference Calculation No. OT-RKB-92.001: Calculation of Liquid Isotope Offsite Dose Consequences for for Use of Atmospheric Demineralizer System, PLI-70360, 2/4/92.

[2] Reference Letter R. K. Barclay to R. A. Breslin: Atmospheric Demineralizer Effluent Results, PLI-70612, 3/4/92.

10.8 Selection of Data for Determination of Dose Rate Compliance

Airborne effluent monitor setpoints are maintained in accordance with Section 2.2 to alarm before the dose rate limits of Specification 3.11.2.1 are exceeded. Station alarm response procedures contain instructions for investigation and verification of monitor alarms. Because setpoint calculations must include assumptions about the composition of the monitored effluent, a monitor high alarm does not necessarily indicate that a dose rate limit has been exceeded.

Valid ten-minute averaged data should be the primary information used to determine the compliance status of an incident. One-minute averaged data should also be reviewed if available, but they may or may not provide additional information depending on the magnitude of the release due to the manner in which the monitors update values to be stored and associated statistical considerations. Averages over a longer period should be used only when data with higher resolution is not available. Grab sample analyses should be performed whenever possible to confirm or disprove monitor data, and to provide indication of the nuclide-specific composition of the effluent. When grab sample data are available which, based on vent monitor data, are indicative of the period of elevated release, dose rate calculations should be performed using the actual effluent mix. The determination of compliance status should not be based on monitor data alone when it is possible to collect and analyze a vent sample which will be representative of the period of elevated release.

10.9 Low-Level Radioactivity in the Sewage Treatment Plant

Like all sewage processing facilities, the SSES sewage treatment plant can under certain conditions receive low levels of radioactive materials. The most notable scenario is when individuals who work on-site have been subjected to the medical administration of radiopharmaceuticals for diagnostic or therapeutic purposes. In these cases, normal biological elimination processes can easily result in levels of radioactivity in sewage treatment plant solutions and suspensions which are within the detection capabilities of the associated sampling and analysis program.

Because disposal of sewage treatment plant sludge by controlled dispersal on specified tracts of land is a common practice, the following guidelines have been established:

a. All sludge collected in the sludge holding tank should be sampled and analyzed prior to land disposal to quantify any radioactivity present above natural background levels.

b. Sludge containing nuclides with short half-lives, for example iodine-131, should be contained on-site to permit decay to less than detectable levels.

c. When sludge is contaminated with nuclides which have half-lives sufficiently long to make hold-up for decay impractical, the following options should be considered:

    1. Dispose of the sludge as low level radioactive waste.

    2. Obtain a special permit pursuant to the requirements of 10 CFR 20.302.

d. The sewage treatment plant effluent should be sampled monthly

for radioactivity. This can be accomplished by drawing a sample from the chlorine contact chamber.

11.0 ODCM REVIEW AND REVISION CONTROL

The Supervisor-Environmental Services-Nuclear shall ensure that a total review of the ODCM is performed during each even-numbered year. Comments shall be documented and revisions initiated as appropriate.

Each ODCM page shall be numbered and provided with an approval and date box. The ODCM Table of Contents shall present the current revision date for each page so that any manual holder can check manual completeness based on a current Table of Contents.

All ODCM revisions shall be reviewed by PORC before approval by the Manager-Nuclear Technology. PORC review shall be indicated by PORC chairperson or designee signature on ODCM cover.

ODCM copies shall be issued in a controlled fashion by the staff of the Nuclear Department Library. The distribution list shall be maintained by the Nuclear Department Library Staff.

Any comments on ODCM contents or proposed revisions should be directed to the Supervisor-Environmental Services-Nuclear.

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APPENDIX A

SAMPLE CALCULATIONS OF ODCM PARAMETERS

A.1 SETPOINTS

A.1.1 Waterborne Effluent Monitors

A.1.1.1 Liquid Radwaste Discharge Line Monitor

For an unidentified mixture with an assumed MPC of 1E-7 uCi/ml, an actual activity concentration of 1E-5 uCi/ml, and a blowdown flow setpoint of 5000 gpm, the high radiation setpoint concentration, c, can be determined from $c = x(A)$. If $x = 3$, then the actual high radiation setpoint concentration is:

$$c = 3\ (A) = 3\ (1E\text{-}5)$$
$$c = 3E\text{-}5 \ \text{uCi/ml}$$

The Alert radiation setpoint is 0.8 times the high radiation setpoint, or 1.6 times the actual activity concentration. The setpoint value for the liquid effluent monitors is then determined by Equation 3 in the ODCM. For the above release conditions, the setpoint value, assuming a typical calibration factor of 1.3×10^{-8} uCi/ml per cpm, would be:

$$\text{Setpoint cpm} = \frac{C}{\text{Cal. Factor}} + \text{Background (cpm)}$$

$$\text{Setpoint cpm} = \frac{3E\text{-}5}{1.3 \times 10^{-8}} + \text{Background}$$

$$\text{Setpoint cpm} = 2.3E3 + \text{Background}$$

The LRW discharge flow setpoint is then determined as follows:

$$\frac{F+f}{f}=\frac{Y(A)}{MPC};$$

$$f=\frac{F}{\left[\frac{(Y(A)}{mpc}-1)\right]}$$

where Y is made equal to 10.

$$\frac{5000+f}{f}=\frac{10(1E-5)}{1E-7}$$

f = 5 gpm

For an identified mixture with an actual MPC of 7.22E-7 uCi/ml and the same activity concentration, blowdown flow and X and Y values as above, the LRW discharge monitor setpoint value and LRW discharge flow setpoint become:

High radiation setpoint concentration (c) = 3E-5 uCi/ml
High radiation setpoint value = 2.3E3 cpm + Background
LRW discharge flow setpoint (f) = 36 gpm

A.1.1.2 Service Water Monitor

Sample Data A:

Background = 300 cps
Calibration Factor = 1.5E-8 uCi/ml per cps
Activity concentration = 2E-5 uCi/ml
(2E-5)/Cal. Factor = 1333 cps

Because 300 cps is less than 1333 cps:

HI RAD Setpoint = 0.5 Background + (2E-5)/Cal. Factor
= 0.5 (300 cps) + (2E-5)/(1.5E-8)
= 150 cps + 1333 cps = 1483 cps

DOWNSCALE Setpoint = 0.5 Background
= (0.5)(300 cps) = 150 cps

Sample Data B: Background = 1400 cps
Calibration Factor = 1.5E-8 uCi/ml per cps

(2E-5)/Cal. Factor = 1333 cps
Because 1400 cps is greater than 1333 cps:

HI RAD Setpoint = Background + (0.5)(2E-5)/Cal. Factor
= 1400 cps + (1E-5)/(1.5E-8)
= 2067 cps

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DOWNSCALE Setpoint = Background - 0.5 (2E-5)/Cal. Factor
= 1400 cps - 0.5 (2E-5)/1.5E-8)
= 1400 cps - 667 cps = 733 cps

A.1.1.3 RHR Service Water Monitor

Sample Data A: Background = 160 cpm
Calibration Factor = 3.9E-9 uCi/ml per cpm

(2E-5)/Cal. Factor = 5128 cpm

Because 160 cpm is less than 5128 cpm:

HI RAD Setpoint = 0.5 Background + (2E-5)/Cal. Factor
= 0.5 (160 cpm) + (2E-5)/(3.9E-9)
= 80 cpm + 5128 cpm = 5208 cpm

LOW RAD Setpoint = 0.5 Background
= 0.5 (160 cpm) = 80 cpm

ALERT Setpoint = 0.8 HI RAD Setpoint = 4166 cpm

Sample Data B: Background = 6000 cpm
Calibration Factor = 3.9E-9 uCi/ml per cpm

(2E-5)/Cal. Factor = 5128 cpm
Because 6000 cpm is greater than 5128 cpm:

HI RAD Setpoint = Background + (0.5)(2E-5)/Cal. Factor
= 6000 cpm + (1E-5)/(3.9E-9)
= 6000 cpm + 2564 cpm
= 8564 cpm

LOW RAD Setpoint = Background - 0.5 (2E-5)/Cal. Factor
= 6000 cpm - 0.5 (2E-5)/(3.9E-9)
= 6000 cpm - 2564 cpm = 3436 cpm

ALERT Setpoint - 0.8 HI RAD Setpoint = 6851 cpm

A.1.2 Gaseous Effluent Monitors

A.1.2.1 Noble Gas Monitor

To determine the release rate limit for noble gases, an isotopic mixture representative of plant effluents is selected. For example, the following mixture from

Argon-41	25	Ci/yr per reactor
Krypton-83m	4	
Krypton-85m	1,700	
Krypton-85	270	
Krypton-87	32	
Krypton-88	660	
Xenon-131m	71	
Xenon-133m	14	
Xenon-133	12,500	
Xenon-135m	220	
Xenon-135	590	
Xenon-138	290	
Total	16,376	Ci/yr per reactor

The above annual release quantities are entered into GASPAR with the following annual average dispersion estimates (Reference: 1982 SSES Meteorology Report):

Relative Concentration	4.1E-5 sec/m^3
Decayed Relative Concentration	4.1E-5 sec/m^3
Decayed Depleted Relative Concentration	3.8E-5 sec/m^3
Deposition Rate	4.2E-8 m^{-2}

This set of annual average meteorological parameters is the most conservative over the period 1973-1982.

The total body dose via the plume pathway which results is 18.3 mrem. Equation 5 of the ODCM is then used to calculate the limiting release rate from each of the five plant release points:

Limiting Release Rate =

$$\frac{(32{,}752\ \text{Ci})\quad(500\ \text{mrem/yr})}{(36.6\ \text{mrem})\qquad(5\ \text{vents})} = 8.95\text{E}4\ \text{Ci/yr per vent}$$

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This limiting release rate is then converted to limiting (setpoint) concentrations using Equation 6 of the ODCM and high limit vent flow rates.

Sample High Limit Vent Flow Rates:

Unit 1 Reactor Building Vent	4.75E9 cc/min
Unit 2 Reactor Building Vent	4.75E9 cc/min
Standby Gas Treatment System Vent	5.04E8 cc/min
Unit 1 Turbine Building Vent	8.63E9 cc/min
Unit 2 Turbine Building Vent	6.50E9 cc/min

Limiting Vent Concentration =

$$\frac{(8.95E4\ Ci/yr/vent)\quad (1E6\ uCi/Ci)}{(5.26E5\ min/yr)\quad (4.75E9\ cc/min)} = 3.58E\text{-}5\ uCi/cc$$

for Reactor Buildings 1&2

Substituting the other vent flow rates into Equation 6 as above, the following noble gas high radiation setpoint concentrations are calculated for the remaining vents:

Standby Gas Treatment System	3.37E-4 uCi/cc
Unit 1 Turbine Building	1.97E-5 uCi/cc
Unit 2 Turbine Building	2.62E-5 uCi/cc

A.1.2.2 Iodine -131 Monitor

When the FES expected annual release quantity for I-131 (2.40E-1 curies) is entered into GASPAR with the dispersion estimates of A.1.2.1, the maximum calculated organ dose via the inhalation pathway is 4.88 mrem to the child thyroid. Using Equation 5 of the ODCM, the limiting I-131 release rate is calculated as follows:

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Limiting Release Rate =

$$\frac{(.24\ \text{Ci})\quad(1500\ \text{mrem/yr})}{(4.88\ \text{mrem})\quad(5\ \text{vents})} = 1.48\text{E}1\ \text{Ci/yr/vent}$$

Using Equation 6 of the ODCM, the limiting (setpoint) I-131 concentrations can be calculated for each of the five plant vents.

Limiting Vent Concentration =

$$\frac{(14.8\ \text{Ci/yr/vent})\quad(1\text{E}6\ \text{uCi/Ci})}{(5.26\text{E}5\ \text{min/yr})\quad(4.75\text{E}9\ \text{cc/min})} = 5.92\text{E-}9\ \text{uCi/cc}$$

for Reactor Buildings 1&2

Substituting the other vent flow rates into Equation 6 of the ODCM above, the high radiation setpoints for the remaining plant vents are calculated to be the following:

Standby Gas Treatment System	5.58E-8	uCi/cc
Unit 1 Turbine Building	3.26E-9	uCi/cc
Unit 2 Turbine Building	4.33E-9	uCi/cc

A.1.2.3 Particulate Monitor

Following are the SSES Final Environmental Statement (FES) expected annual release quantities for particulate radionuclides:

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Cr-51	1.2E-4 Ci/yr per reactor
Mn-54	3.6E-4
Fe-59	1.6E-4
Co-58	5.8E-5
Co-60	1.1E-3
Zn-65	5.5E-5
Sr-89	1.8E-5
Sr-90	3.1E-6
Zr-95	8.7E-6
Sb-124	5.1E-6
Cs-134	1.3E-4
Cs-136	1.3E-3
Cs-137	2.1E-4
Ba-140	4.2E-5
Ce-141	2.9E-5
Total	3.6E-3 Ci/yr per reactor

When the above annual release quantities are entered into GASPAR with the annual average dispersion estimates of A.1.2.1, the maximum calculated organ dose via the inhalation pathway is 1.33E-2 mrem to the teen lung. Using Equation 5 of the ODCM, the limiting release rate of particulates can be calculated:

$$\text{Limiting Release Rate} = \frac{(7.2\text{E-}3\ \text{Ci})\ (1500\ \text{mrem/yr})}{(2.66\text{E-}2\ \text{mrem})\ (5\ \text{vents})} = 8.12\text{E}1\ \text{Ci/yr/vent}$$

Using Equation 6 of the ODCM, the limiting (setpoint) particulate concentrations can be calculated for each of the five plant vents.

Limiting Vent Concentration =

$$\frac{(8.12\text{E}1\ \text{Ci/yr/vent})\quad(1\text{E}6\ \text{uCi/Ci})}{(5.26\text{E}5\ \text{min/yr})\quad(4.75\text{E}9\ \text{cc/min})} = 3.25\text{E-}8\ \text{uCi/cc}$$

for Reactor Buildings 1&2

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When the vent flow rates for the remaining five plant vents are substituted into Equation 6 as above, the following high radiation setpoint concentrations result.

Standby Gas Treatment System	3.06E-7 uCi/cc
Unit 1 Turbine Building	1.79E-8 uCi/cc
Unit 2 Turbine Building	2.38E-8 uCi/cc

A.2 AIRBORNE EFFLUENT DOSE RATE CALCULATIONS

A.2.1 Noble Gases

To evaluate the annual whole-body or skin dose from noble gas release rates, the highest calculated annual average relative concentration for any sector is selected from Table 3. For the SSES site, the critical downwind sector is the West sector with an annual dispersion factor of 2.6×10^{-5} sec/m^3. The expected release rate of the principal noble gas radionuclide, xenon-133, is 396 uCi/sec. To calculate the annual whole-body dose due to the release of any noble gas in the gaseous effluent, Equation 7 in the ODCM should be used. The whole-body dose factor (K_i) from Table 2 for xenon-133 is 2.94×10^2 mrem/yr per uCi/m^3. Substituting these values in Equation 7, the whole-body dose contribution from xenon-133 releases from the SSES would be 3.0 mrem/yr:

$$D_{wb} = (K_i)(X/Q)_v\ (Q'_{iv}) \qquad \text{(Equation 7)}$$

$$D_{wb} = (2.94 \times 10^2 \frac{\text{mrem/yr}}{\text{uCi/m}^3})\ (2.6 \times 10^{-5} \frac{\text{sec}}{\text{m}^3})$$

$$X\ (396\ \text{uCi/sec}) = 3.0\ \text{mrem/year}$$

To calculate the annual skin dose due to release of any noble gas in the gaseous effluent, Equation 8 in

the ODCM should be used. The skin dose factor (L_i) from Table 2 for xenon-133 is 3.06×10^2 mrem/yr per uCi/m^3. The air dose factor (M_i) from Table 2 for xenon-133 is 3.53×10^2 mrad/yr per uCi/m^3. Substituting these values and the previous values for release rate and annual dispersion factor in Equation 8, the skin dose contribution from xenon-133 from the SSES would be 7.1 mrem/yr:

$$D_s = (L_i + 1.1\, M_i)\, (X/Q)_v\, (Q'_{iv}) \qquad \text{(Equation 8)}$$

$$D_s = \left(3.06 \times 10^2 \frac{\text{mrem/yr}}{\text{uCi/m}^3}\right.$$

$$\left. + 1.1 \left(3.53 \times 10^2 \frac{\text{mrad/yr}}{\text{uCi/m}^3}\right)\right) \left(2.6 \times 10^{-5} \frac{\text{sec}}{\text{m}^3}\right)$$

$$\times (396 \text{ uCi/sec}) = 7.1 \text{ mrem/year}$$

A.2.2 Radionuclides Other Than Noble Gases

To evaluate the annual critical organ dose from radionuclides other than noble gases, the highest annual average dispersion parameter for estimating the dose to the critical receptor is selected from Table 3. The highest annual dispersion factor is 2.6×10^{-5} sec/m^3 in the West sector. The expected release rate of iodine-131 is 3.8×10^{-3} uCi/sec. The expected release rate of cesium-137 is 6.66×10^{-6} uCi/sec.

To calculate the annual critical organ dose due to the release of radionuclides other than noble gases in the gaseous effluent, Equation 9 in the ODCM should be used. The inhalation pathway parameter (R_i) from Table 4 for iodine-131 is 1.62×10^7 mrem/yr per uCi/m^3. Substituting these values in Equation 9, the maximum thyroid dose contribution from iodine-131 would be 1.6 mrem/yr from the inhalation pathway.

$$D_c = (R_i)\ (W_v)\ (Q'_{iv}) \qquad \text{(Equation 9)}$$

$$D_c = (1.62 \times 10^7 \ \frac{\text{mrem/yr}}{\text{uCi/m}^3})\ (2.6 \times 10^{-5} \ \frac{\text{sec}}{\text{m}^3})$$

$$X\ (3.8 \times 10^{-3}\ \text{uCi/sec})$$

$$= 1.6\ \text{mrem/year INHALATION PATHWAY, I-131}$$

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A.3 INDIVIDUAL DOSE

A.3.1 Waterborne Effluents

The liquid effluent dose calculations are performed using the Liquid Annual Dose To All Persons (LADTAP) computer program. This program may be used to calculate the quarterly (or any other time period) doses to both the maximum individual and the 50-mile population due to radionuclides released in liquid effluents from the SSES. The procedure involves the use of the computer code LADTAP which was developed by the NRC to perform dose calculations in accordance with Regulatory Guide 1.109. The User's Manual for the LADTAP program contains details of the calculational procedures. The total number of curies released for each radionuclide during the time period being evaluated must be supplied from the SSES radiation monitoring program.

A.3.2 Airborne Effluents

The airborne effluent dose calculations are performed using the GASPAR computer program. This program may be used to calculate the maximum individual and population doses due to radionuclides released in gaseous effluents from the SSES. The code implements the semi-infinite cloud model and the dose calculational models of Regulatory Guide 1.109 and is used to calculate all maximum individual and population doses and maximum individual organ doses from the SSES. A more detailed description of the GASPAR code can be found in the GASPAR dose code manuals dated October 17, 1975, and February 20, 1976. The total number of curies released for each radionuclide during the time period being evaluated must be supplied from the SSES radiation monitoring program. The meteorological parameters must be provided from the SSES meteorology program.

To evaluate the air dose from noble gas release rates, the highest calculated annual average relative concentration for any sector is selected from Table 3. This critical downwind sector is the West sector with an annual dispersion factor of 2.6 x 10^{-5} sec/m^3. The expected release rate of the principal noble gas radionuclide, xenon-133, is 396 uCi/sec. The total release in a calendar quarter would be 7.9 x 10^6 seconds times 396 uCi/sec or 3.13 x 10^9 uCi. To calculate the quarterly gamma air dose due to the Xenon-133 release in the gaseous effluent, Equation 12 in the ODCM should be used. The gamma air dose factor (M_i) from Table 2 for xenon-133 is 3.53 x 10^2 mrad/yr per uCi/m^3. Substituting these values in Equation 12, the quarterly gamma air dose contribution from xenon-133 releases from the SSES would be 0.9 mrad:

$$D_g = 3.17 \times 10^{-8} \frac{yr}{sec} \quad M_i \, (X/Q)_v \, Q_{iv} \qquad \text{(Equation 12)}$$

$$D_g = (3.17 \times 10^{-8} \frac{yr}{sec})(3.53 \times 10^2 \frac{mrad/yr}{uCi/m^3})(2.6 \times 10^{-5} \frac{sec}{m^3})$$

$$X \; (3.13 \times 10^9 \; uCi/qtr)$$

$$= .9 \; mrad/quarter$$

To calculate the quarterly beta air dose due to the xenon-133 release in the gaseous effluent, Equation 13 in the ODCM should be used. The beta air dose factor (N_i) from Table 2 for xenon-133 is 1.05 x 10^3 mrad/yr per uCi/m^3. Substituting these values in Equation 13, the quarterly beta air dose contribution from xenon-133 releases from the SSES would be 2.7 mrad:

$$D_b = 3.17 \times 10^{-8} \frac{yr}{sec} \quad N_i \, (X/Q)_v \, Q'_{iv} \qquad \text{(Equation 13)}$$

$$D_b = (3.17 \times 10^{-8} \frac{yr}{sec})(1.05 \times 10^3 \frac{mrad/yr}{uCi/m^3})(2.6 \times 10^{-5} \frac{sec}{m^3})$$

$X (3.13 \times 10^9 \text{ uCi/qtr}) = 2.7 \text{ mrad/quarter}$

Since the beta air dose is greater than the gamma air dose by a factor of 3 for xenon-133 and the dose limits are only a factor of 2 greater for beta than gamma radiation, the beta air dose would be controlling for xenon-133 releases.

A.4 TOTAL DOSE

The total cumulative annual dose to any member of the public from operations at the SSES should be determined by summing the critical organ doses to real individuals from all three sources of radiation. Only the maximum dose or dose commitment to a real individual needs to be evaluated.

A.4.1 Liquid Effluents

The cumulative dose to any member of the public due to liquid effluents from the SSES should be determined from the LADTAP program used for evaluating the individual doses as stated in Section A.3.1 of this Appendix.

A.4.2 Gaseous Effluents

The cumulative dose to any member of the public due to gaseous effluents from the SSES should be determined from the GASPAR program used for evaluating the individual doses as stated in Section A.3.2 of this Appendix.

A.4.3 Direct Radiation

The direct radiation to any member of the public due to operations at the SSES should be determined from the environmental monitoring program results.

APPENDIX B

REPORTING REQUIREMENTS

B.1 ANNUAL ENVIRONMENTAL OPERATING REPORT, PART B, RADIOLOGICAL

A report on the radiological environmental surveillance program for the previous calendar year shall be submitted to the Director of the NRC Regional Office (with a copy to the Director, Office of Nuclear Reactor Regulation) as a separate document by May of each year. The period of the first report shall begin with the date of initial criticality. The reports shall include a summary (format of Table B-1), interpretations, and an analysis of trends from the results of the radiological environmental surveillance activities for the report period, including a comparison with operational controls, preoperational studies (as appropriate), and previous environmental surveillance reports and an assessment of the observed impacts of the station operation on the environment.

In the event that some results are not available, the report shall be submitted noting and explaining the reasons for the missing results. The missing data shall be submitted as soon as possible in a supplementary report.

B.2 NONROUTINE RADIOLOGICAL ENVIRONMENTAL OPERATING REPORTS

When the level of radioactivity in an environmental sampling medium averaged over any quarterly sampling period exceeds the reporting level given in Table B-2, a written report shall be submitted to the Director of the NRC Regional Office (with a copy to the Director, Office of Nuclear Reactor Regulation) within 30 days from the end of the quarter. If it can be demonstrated that the level is not a result of station effluents (i.e., by comparison with control station or preoperational data) a report need not be submitted, but an explanation shall be given in the annual report.

When more than one of the radionuclides in Table B-2 are detected in the medium, the reporting level will have been exceeded if:

$$\frac{\text{concentration (1)}}{\text{reporting level (1)}} + \frac{\text{concentration (2)}}{\text{reporting level (2)}} + \ldots \geq 1$$

If radionuclides other than those in Table B-2 are detected and are due from station effluents, a reporting level is exceeded if the potential annual dose to an individual is equal to or greater than the design objective doses of 10 CFR Part 50, Appendix I. This report shall include an evaluation of any release conditions, environmental factor, or other aspects necessary to explain the anomalous result.

TABLE B-1

SAMPLE ENVIRONMENTAL RADIOLOGICAL MONITORING PROGRAM ANNUAL SUMMARY
Reporting Period: 1/1/79 - 12/31/79

Medium or Pathway Sampled (Unit of Measurement)	Type and Total Number of Analyses Performed	Lower Limit of Detection (LLD)	All Indicator Locations Mean Range	Location with Highest Annual Mean Name, Distance & Direction	Mean Range	Control Locations Mean Range	Number of Nonroutine Reported Measurements
Air Particulates (10^{-3}pCi/m^3)	Gross Beta 336	--	26.6(234/234) (7.7-71)	1D2 3.7 mi N	29.9(52/52) (11-71)	28.2(102/102) (9.8-64)	0
	Gamma 28 Be-7	--	81(20/20) (37-130)	3D1 3.2 mi NE	82(4/4) (54-130)	85(8/8) (51-140)	0
	Cs-137	0.6	1.6(4/20) (1.1-1.8)	1D2 3.7 mi NE	5.7(2/4) (2.3-9.0)	2.7(1/8) (2.7)	0 0
Air Iodine (10^{-3}pCi/m^3)	1-131 160	1.5	- (0/109) -	N/A	N/A	-(0/51)	0

Note: The example data are provided for illustrative purposes only.

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TABLE B-2

REPORTING LEVELS FOR NONROUTINE OPERATING REPORTS

Analysis	Water (pCi/l)	Airborne Particulate of Gases (pCi/m³)	Fish (pCi/kg, wet)	Milk (pCi/l)	Broad Leaf Vegetation (pCi/kg, wet)
H-3	2×10^4[a]				
Mn-54	1×10^3		3×10^4		
Fe-59	4×10^2		1×10^4		
Co-58	1×10^3		3×10^4		
Co-60	3×10^2		1×10^4		
Zn-65	3×10^2		2×10^4		
Zr-Nb-95	4×10^2[b]				
I-131	2	0.9		3	1×10^2
Cs-134	30	10	1×10^3	60	1×10^3
Cs-137	50	20	2×10^3	70	2×10^3
Ba-La-140	2×10^2[b]			3×10^2[b]	

[a] For drinking water samples. This is 40 CFR Part 141 value.

[b] Total for parent and daughter.

APPENDIX C

SITE SPECIFIC INFORMATION USED BY GASPAR CODE

1) The distance from the facility to the NE corner of the U.S. (Maine) in miles 590 miles.

2) Fraction of year leafy vegetables are grown 0.33

3) Fraction of year cows are on pasture 0.60 (April-Nov.)

4) Fraction of crop from garden 0.76

5) Fraction of daily intake of cows derived from pasture while on pasture 0.42

6) Absolute humidity over growing season 9.0 g/m^3

   Relative humidity is 67.6% if T is supplied.

7) Average temperature over growing season 60.2°F

8) Fraction of year goats are on pasture 0.60

9) Fraction of daily intake of goat from pasture while on pasture 0.75

10) Fraction of year beef cattle are on pasture 0.60

11) Fraction of daily intake of beef cattle derived from pasture while on pasture 0.55

APPENDIX D

SITE SPECIFIC INFORMATION USED BY LADTAP CODE

1) Total discharge from all units: 22 cubic feet per second

2) 50-mile Population: 1,608,000

3) Blowdown Rate: 22 cubic feet per second

4) Total Annual Blowdown Volume: 6.94E8 cubic feet

5) Dose to Maximum Hypothetical Individual; Location = Danville, PA

   a. Shorewidth factor: .2
   b. Dilution factors: 321.0
   c. Transit time to drinking water intake: See Table D-1

6) Sport Fish Harvest:

   a. Zero to ten miles:

   i. 7,000 kg/yr usage
   ii. 219 dilution
   iii. 2.9-hour transit time

   b. Ten to twenty miles:

   i. 8,500 kg/yr usage
   ii. 263 dilution
   iii. 6.8-hour transit time

   c. Twenty to thirty miles:

   i. 8,000 kg/yr usage
   ii. 306 dilution
   iii. 11.6-hour transit time

   d. Thirty to forty miles:

   i. 13,000 kg/yr usage
   ii. 332 dilution
   iii. 16.1-hour transit time

   e. Forty to fifty miles:

   i. 6,800 kg/yr usage
   ii. 361 dilution
   iii. 20.8-hour transit time

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7) Population Drinking Water
Danville, PA (Closest active drinking water supplier)

a. Population: 9,000 served
b. Dilution factor: 321.0
c. Transit time: See Table D-1

8) Population Shoreline (Recreation)

a. Zero to ten miles:

i. Usage: 354,000 manhours per year
ii. 219 dilution
iii. 2.9-hour transit time
iv. Shorewidth factor: .2

b. Ten to twenty miles:

i. Usage: 268,800 manhours per year
ii. 263 dilution
iii. 6.8-hour transit time
iv. Shorewidth factor: .2

c. Twenty to thirty miles:

i. Usage: 259,200 manhours per year
ii. 306 dilution
iii. 11.6-hour transit time
iv. Shorewidth factor: .2

d. Thirty to forty miles:

i. Usage: 422,400 manhours per year
ii. 332 dilution
iii. 16.1-hour transit time
iv. Shorewidth factor: .2

e. Forty to fifty miles:

i. Usage: 211,200 manhours per year
ii. 361 dilution
iii. 20.8-hour transit time
iv. Shorewidth factor: .2

9) Population Boating:

a. Location: 0-10 miles
b. Usage: 96,000 manhours per year
c. Dilution: 219
d. 2.9-hour transit time

10) Biota Dose

a. Location: Plant discharge
b. Dilution: 5
c. .1-hour transit time

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TABLE D-1

DILUTION FACTORS AND TRANSIT TIMES FOR SSES EFFLUENTS TO DANVILLE, PA.

RIVER LEVEL METERS ABOVE MSL*	DILUTION FACTOR	TRANSIT TIMES (HRS) LEADING EDGE	PEAK CONCENTRATION	TRAILING EDGE
147.6	125	70.7	76.3	143.5
147.7	136	68.7	74.3	141.2
147.8	156	66.8	72.3	138.9
147.9	168	64.8	70.3	136.5
148.0	179	61.1	66.5	131.9
148.1	208	59.2	64.4	129.6
148.2	211	57.2	62.3	127.2
148.3	225	45.9	52.4	112.9
148.4	251	40.7	46.8	106.3
148.5	257	35.5	41.2	99.7
148.6	262	34.5	40.0	95.6
148.7	279	33.8	39.2	92.9
148.8	295	33.0	38.3	90.2
148.9	297	31.4	36.4	84.0
149.0	324	30.5	35.4	80.4
149.1	342	29.5	34.3	76.7
149.2	367	26.9	31.3	66.7
149.3	425	25.0	29.3	59.7
149.4	457	23.0	27.2	52.7
149.5	588	21.5	25.6	46.8
149.6	700	20.0	24.0	40.8
149.7	870	16.5	20.5	27.5
149.8	980	15.9	19.9	25.9
149.9	1000	15.3	19.3	24.3
150.0	1072	14.7	18.7	23.7
150.1	1174	14.5	18.5	23.7
150.2	1260	14.2	18.2	23.7
150.3	1285	13.5	17.5	22.5

*Mean Sea Level as measured at SSES.

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