

**Offsite Dose
Assessment Manual
-ODAM-**

For assessment of

**Gaseous and Liquid
Effluents**

at

**COOPER NUCLEAR STATION
Brownville, Nebraska**

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OFFSITE DOSE ASSESSMENT MANUAL
FOR GASEOUS AND LIQUID EFFLUENTS

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OFFSITE DOSE ASSESSMENT MANUAL
FOR GASEOUS AND LIQUID EFFLUENT

1.0 Introduction

This Manual describes acceptable methods of calculating radioactivity concentrations in the environment and the potentially resultant personal dose equivalent commitment offsite* that are associated with LWR liquid and gaseous effluents. The radioactivity concentrations and dose estimates are used to demonstrate compliance with Environmental Technical Specifications required by 10 CFR 50.36. The methodology stated in this Manual is acceptable for use in demonstrating operational compliance with 10 CFR 20.106, 10 CFR 50 Appendix I, and 40 CFR 190. Only the dose attributable to the Station is considered in demonstrating compliance with 40 CFR 190 since no other nuclear facility exists within 50 miles of the Station.

Calculations are made to assess the air dose from radioactive noble gases near ground level at the offsite location that could be occupied by a person where the maximum air dose is expected. The maximum dose commitment to the person offsite potentially experiencing the maximum exposure to all other radioactive material measured in gaseous and liquid effluents released from the Station is also calculated. Alternatively, the dose commitment from effluents other than radioactive noble gases may be calculated to correspond with residence at an occupiable location where airborne exposures are unlikely to underestimate those experienced by the maximally exposed person.

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* Offsite means unrestricted area.

2.0 Liquid Effluent

2.1 Radioactivity In Liquid Waste

The concentration of radionuclides in liquid waste is determined by sampling and analysis in accord with Table 4.20.B.1 of the Technical Specifications. Alternatively, pre-release analysis of the radioactivity concentration in liquid waste required by Specification 4.20.B.C may be done by gross β - γ counting provided an unrestricted area MPC for unidentified emitters, 1×10^{-7} $\mu\text{Ci/ml}$, is applied at the unrestricted area boundary. When a radionuclide concentration is below the LLD for the analysis, it is not reported as being present in the sample.

2.2 Aqueous Concentration

Radioactive material in liquid effluent is diluted successively by water flowing in the discharge canal and in the River. The diluted concentration of radionuclide i in a receiving stream is estimated with the equation

$$C_{zi} = C_i \frac{F_1}{F_2}$$

where C_i = concentration of radionuclide i in liquid radwaste released ($\mu\text{Ci/ml}$)
 C_{zi} = concentration of radionuclide i in the receiving stream ($\mu\text{Ci/ml}$)
 F_1 = release rate of liquid radwaste (ml/sec)*
 F_2 = dilution flow of receiving stream of water (ml/sec)*

* F_1 , F_2 and F_c may have any convenient units of flow (i.e., volume/time) provided the units of all are identical.

For the purpose of calculating the radioactivity concentration in water at the unrestricted area boundary (section 2.4), the flow in the discharge canal, F_c , is assigned to F_2 .

In the River immediately beyond the discharge canal and the restricted area boundary, the effective dilution is

$$F_2 = F_c * M$$

where F_c = discharge canal flow (ml/sec)*

M = factor of additional mixing in the River

A near field mixing ratio from the canal into the near field of the River, $M=5$, is assigned when estimating maximum potential individual doses involving exposure by eating fish or drinking water taken from the River.

In the event water is drawn from the River downstream of the Station, F_2 represents the portion of the River flow into which the liquid effluent from the Station is effectively mixed.

2.3 Method of Establishing Alarm Setpoints

Liquid waste effluent monitors are connected to alarms which provide automatic indication when 10 CFR Part 20 Appendix B, Table 2, Column 2 concentrations are being exceeded offsite. With prompt action to reduce radioactive releases following an alarm, the liquid release limit of 10 CFR Part 20.106 and the limits provided by 10 CFR Part 50 Appendix I, Section IV will not be exceeded after the alarm.

The alarm setpoint for the liquid effluent radiation monitor is derived from the concentration limit provided in 10 CFR Part 20 Appendix B Table 2 Column 2 applied in the unrestricted area where the discharge canal flows into the river. The alarm setpoint does not consider dilution, dispersion, or decay of radioactive material in the unrestricted area. That is, the alarm setpoint is based on a concentration limit in the discharge canal. The radiation monitoring and isolation points are located in each line through which radioactive waste effluent is eventually discharged into the discharge canal.

The alarm setpoint for each liquid effluent monitor is based upon measurement, according to Table 4.20.B.1, of radioactivity in a batch of liquid to be released or in the continuous aqueous discharge. Alternately,

the alarm setpoint may be based upon gross β - γ activity analysis of the liquid waste provided the unrestricted area MPC for unidentified emitters, 1×10^{-7} $\mu\text{Ci/ml}$, is observed.

2.3.1 Setpoint for a Batch Release. A sample of each batch of liquid radwaste is analyzed for I-131, for principal gamma emitters, or for total activity concentration prior to release. The ratio, FMPC_b , of the activity concentration in the tank to the unrestricted area MPC (10 CFR Part 20, Appendix B, Table 2, Column 2) is calculated with the equation

$$\text{FMPC}_{bp} = \left(\sum_i \frac{C_{bpi}}{\text{MPC}_i} \right)_{\text{identified}} + \left(\frac{C_{bp}}{\text{MPC}} \right)_{\text{unidentified}}$$

where FMPC_{bp} = fraction of unrestricted area MPC in batch derived from activity measured prior to release.

C_{bpi} = concentration of radionuclide i (including I-131 and principal gamma emitters) in batch sample taken prior to release ($\mu\text{Ci/ml}$)

C_{bp} = Concentration of unidentified radionuclides in batch sample taken prior to release ($\mu\text{Ci/ml}$)

The concentration of unidentified radionuclides (not specifically identified by analysis of sample) in liquid waste, C_{bp} , is the difference between the total activity concentration and the sum of activity concentrations of identified radionuclides. The MPC of unidentified radionuclides in these wastes is 1×10^{-7} $\mu\text{Ci/ml}$.

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When $FMPC_{bp}$ is derived from analyses identifying iodine and principal gamma emitters as well, the value $FMPC_{bp}$ is adjusted to account for radionuclides measured in the monthly and quarterly composite sample but not measured prior to release. This adjustment, derived from measurements during the previous calendar quarter, is calculated with the equation

$$FMPC_b = FMPC_{bp} \div E_b$$

where $E_b = \frac{\left(\begin{array}{l} \text{Previous quarterly average of the fraction of MPC in the} \\ \text{discharge canal due to I-131 and primary gamma emitters} \end{array} \right)}{\left(\begin{array}{l} \text{previous quarterly average of the fraction of MPC in the} \\ \text{discharge canal due to all radionuclides in batch releases.} \end{array} \right)}$

Whether radioiodine and primary gamma emitters are identified prior to a batch release or not, the liquid radwaste effluent line radiation monitor alarm setpoint is determined with the equation

$$S = \left(\frac{A}{FMPC_b} \right) * \frac{F_{S2}}{F_{S1}} * g$$

- where S = radiation monitor alarm setpoint (cpm)
- A = counting rate (cpm/ml) or activity concentration ($\mu\text{Ci/ml}$) of sample in laboratory
- g = ratio of effluent radiation monitor counting rate to laboratory counting rate or activity concentration in a given batch of liquid (cpm per cpm/ml or cpm per $\mu\text{Ci/ml}$)
- F_{S1} = maximum flow in the batch release line (gal/min)*
- F_{S2} = minimum flow in the discharge canal (gal/min)*

Note that $A \div FMPC_b$ represents the counting rate of a solution having the same radionuclide distribution as the sample and having the maximum permissible concentration of that mixture.

* Any suitable but identical units of flow (volume/time).

Gross β - γ analysis alone may be used to determine the radioactivity in a batch prior to release. In that event, the fraction of the unrestricted area MPC in the batch is:

$$FMPC_{bp} = \frac{C_{bp}}{1 \times 10^{-7}}$$

The value of $FMPC_{bp}$ computed with this expression is substituted in the preceding equation to calculate the setpoint.

2.3.2 Setpoint for a Continuous Release. Continuous aqueous radioactive discharges are sampled and analyzed according to the schedule in Table 4.20.B.1. The ratio, $FMPC_c$, of the activity concentration in each of the continuous release streams to the unrestricted area MPC is calculated with the equations

$$FMPC_{cw} = \left(\sum_i \frac{C_{cwi}}{MPC_i} \right)_{identified} + \left(\frac{C_{cw}}{MPC} \right)_{unidentified}$$

where $FMPC_{cw}$ = fraction of unrestricted area MPC in continuous release based upon activity measured in weekly composite

C_{cwi} = concentration of radionuclide i (including I-131 and principal gamma emitters) in weekly composite sample ($\mu\text{Ci/ml}$)

C_{cw} = concentration of unidentified radionuclides in weekly composite sample ($\mu\text{Ci/ml}$)

$MPC_{unidentified} = 1 \times 10^{-7} \mu\text{Ci/ml}$

Adjustment for radionuclides measured in monthly and quarterly composite samples but not in weekly composite samples is given by the equation

$$FMPC_c = FMPC_{cw} \div E_c$$

where $E_c = \frac{\left(\begin{array}{l} \text{quarterly average fraction of MPC in the discharge canal} \\ \text{due to I-131 and primary gamma emitters measured in weekly} \\ \text{composite samples of} \\ \text{continuous releases during previous quarter} \end{array} \right)}{\left(\begin{array}{l} \text{quarterly average fraction of MPC in the discharge canal} \\ \text{due to all radionuclides in samples of continuous releases} \\ \text{during previous quarter.} \end{array} \right)}$

The alarm setpoint of the radiation monitor on the discharge line is determined with the equation

$$S = \left(\frac{A}{FMPC_c} \right) * \frac{F_{S2}}{F_{S1}} * g$$

where A = counting rate (cpm/ml) or activity concentration (μCi/ml) of weekly composite sample in the laboratory.

Terms g, F_{S1} , and F_{S2} are defined the same as in the setpoint equation for a batch release.

Gross β-γ analysis alone may be used to determine the radioactivity in a liquid radioactive discharge. In that event, the fraction of the unrestricted area MPC in a sample of the release is:

$$FMPC_c = \frac{C}{1 \times 10^{-7}}$$

The value of $FMPC_c$ computed with this expression is substituted in the preceeding equation to calculate the setpoint.

2.4 Radioactivity Concentration in Water at the Unrestricted Area Boundary

Technical Specifications 4.20.B.1.c and 4.20.B.1.d require that measured radioactivity concentrations in liquid releases be used to calculate the concentration in water at the restricted area boundary relative to the unrestricted area MPC.

The quarterly average radionuclide concentration in the discharge canal, expressed as a fraction of MPC, shall be computed from the following six components:

- 1) the average fraction of MPC of the nuclides measured by analyses prior to each batch release
- 2) the average fraction of MPC of the nuclides measured by the monthly composite analyses of the batch releases (H-3, alpha emitters)

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- 3) the average fraction of MPC of the nuclides measured by the quarterly composite analysis of the batch releases (Sr-89, Sr-90)
- 4) the average fraction of MPC of the nuclides measured by the weekly composite analyses of the continuous releases
- 5) the average fraction of MPC of the nuclides measured by the monthly composite analyses of the continuous releases (H-3, and alpha emitters)
- 6) the average fraction of MPC of the nuclides measured by the quarterly composite analysis of the continuous releases (Sr-89, Sr-90).

This may be expressed by the following equation:

$$\overline{FMPC} = \frac{1}{t} \times \left(\sum_p FMPC_{bp} \Delta t_{bp} + \sum_m FMPC_{bm} \Delta t_{bm} + \sum_q FMPC_{bq} \Delta t_{bq} \right. \\ \left. + \sum_w FMPC_{cw} \Delta t_{cw} + \sum_m FMPC_{cm} \Delta t_{cm} + \sum_q FMPC_{cq} \Delta t_{cq} \right)$$

where t is the number of hours in the averaging period (a quarter in this case, 2190 hours).

t_{bp} is the duration of the p -th batch release (hours)

t_{bm} is the sum of the durations of the batch releases which are included in the m -th monthly batch composite analysis (hours)

t_{bq} is the sum of the durations of the durations of the batch releases which are included in the q -th quarterly composite analysis (hours)

t_{cw} is the duration of the continuous release for the w -th weekly composite analysis (hours)

t_{cm} is the duration of the continuous release for the m -th monthly composite analysis (hours)

t_{cq} is the duration of the continuous release for the q -th quarterly analysis (hours)

FMPC is the fraction of unrestricted area MPC in the discharge canal. Modifying subscripts are:

- b, batch release
- c, continuous release
- p, the batch analysis index
- w, the weekly composite analysis index
- m, the monthly composite analysis index
- q, the quarterly composite analysis index.

In actual practice, the average fraction of MPC will be computed on a quarter-to-date basis. That is, as additional data become available, an updated average fraction of MPC may be computed from the previous average and the additional data with the equation

$$\overline{\text{FMPC}}_t = \frac{\overline{\text{FMPC}}_{t'} * t' + \text{FMPC}_{xy} * t_{xy}}{t}$$

where FMPC and t are as defined above and the subscript x represents either b or c, and the subscript y represents p, w, m, or q.
t' is the time period covered by the previous average

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2.5 Accumulated Personal Maximum Dose

Technical Specification 4.20.B.2.a requires the dose or dose commitment to a person offsite due to radioactive material released in liquid effluent to be calculated on a cumulative basis at least once every 31 days. The requirement is satisfied by computing the accumulated dose commitment to the most exposed organ and to the total body of a hypothetical person exposed by eating fish and drinking water taken from the river offsite near the discharge canal.

The accumulated dose commitment is computed at least once every 31 days but may be computed as analyses become available. The computation is made in the following way.

$$D_{ank} = 3.785 \times 10^{-3} \sum_e \sum_i A_{eani} C_{ik} \sum_j \Delta t_j \frac{F_{1j}}{F_{2j}}$$

$$D_{an} = \sum_k D_{ank}$$

where ΔD_{ank} = the dose commitment (mrem) to organ n of age group a due to the isotopes identified in analysis k, where the analyses are those required by Table 4.20.B.1 of the Technical Specifications. Thus the contribution to the dose from gamma emitters become available on a batch basis for batch releases and on a weekly basis for continuous releases. Similarly the contributions from H-3 are available on a monthly basis and the contributions from Sr-89 and Sr-90 become available on a quarterly basis.

D_{an} = the dose commitment during the quarter-to-date to organ n, including total body, of the maximally exposed person in age group a (mrem).

A_{eani} = transfer factor relating a unit release of radionuclide i (C_i) in a unit stream flow (gal/min) to dose commitment to organ n, or total body, of an exposed person in age group a via environmental pathway e $\left(\frac{\text{mrem}}{\frac{C_i}{\text{gal/min}}} \right)$

C_{ik} = the concentration of radionuclide i in the undiluted liquid waste to be discharged ($\mu\text{Ci}/\text{ml}$)

t_j = the period of time (minutes) during the release that F_1/F_2 is the ratio of the discharge flow to the dilution flow.

3.785×10^{-3} = conversion constant ($3785 \text{ ml/gal} * 10^{-6} \text{ Ci}/\mu\text{Ci}$)

Pathway-to-dose transfer factors, A_{eani} , for use in calculating the dose commitment arising from radioactive material released in aqueous effluents are tabulated in Appendix A. Appropriate ones of the tables representing applicable environmental pathways of exposure and most exposed age group(s) are selected and used in calculating the dose commitment. The pathway(s) and/or age group(s) selected may vary by season.

Variables F_1 and F_2 are defined in Section 2.3. In the River offsite near the discharge canal, $F_2 = 5F_c$.

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Section 2.6 Projected Personal Maximum Dose

Technical Specification 4.20.B.2.b requires the maximum total body and organ doses to a person offsite due to radioactive material released in liquid effluent to be projected over a quarter at least one time during every 31 days.

This requirement is satisfied by calculating the projected dose commitment to a hypothetical person exposed by eating fish and drinking water taken from the River offsite near the discharge canal. The potential dose commitments to organs and to the total body are computed separately.

The quarterly dose commitment to a maximally exposed hypothetical person is projected monthly using the following equation:

$$P_{an} = \sum_p \Delta D_{banp} + \sum_m \Delta D_{banm} + \Delta D_{banq} + \sum_w \Delta D_{canw} + \sum_m \Delta D_{canm} + \Delta D_{canq}$$

where P_{an} is the projected dose commitment (mrem) to organ n (including total body) of age group a for the current quarter.

$\sum_p \Delta D_{banp}$ is the dose commitment (mrem) to organ n of age group a for the isotopes identified in the analyses prior to the release of each batch in the last three months.

$\sum_m \Delta D_{banm}$ is the dose commitment (mrem) to organ n of age group a for the isotopes (H-3 identified in the monthly composite analyses of batch releases for each of the last three months

ΔD_{banq} is the dose commitment (mrem) to organ n of age group a for the isotopes (Sr-89, Sr-90) identified in the most recent quarterly composite analysis of batch releases.

$\sum_w \Delta D_{canw}$ is the dose commitment to organ n of age group n for the isotopes identified in the weekly composite analyses of continuous releases for each week in the last three months

$\sum_m \Delta D_{canm}$ is the same as $\sum_m \Delta D_{banm}$ but for continuous releases

ΔD_{canq} is the same as ΔD_{banq} but for continuous releases

3.0 Gaseous Effluent

3.1 Introduction

The Station discharges gaseous effluent through a stack and discharges ventilation air from the radwaste, augmented radwaste turbine, and reactor buildings through the respective building vents. These gaseous effluent streams, radioactivity monitoring points, and effluent discharge points are shown schematically in Figure 3-1. Gaseous release point locations and elevations at Cooper Station are described in Table 3-1. Gaseous discharges from the stack are treated as an elevated release while discharges via building vents are assumed to be ground level releases.

Gaseous release point locations and elevations at the Station are described in Table 3-1.

3.2 Radioactivity in Gaseous Effluent

For the purpose of estimating offsite radionuclide concentrations and radiation doses, measured radionuclide concentrations in gaseous effluent and in ventilation air exhausted from the Station are relied upon. Table 4.20.C.1 in the Technical Specifications identifies specific radionuclides in gaseous discharges for which sampling and analysis is done.

When a radionuclide concentration is below the LLD for the analysis, it is not reported as being present in the sample. Carbon-14 is assumed to be discharged from the stack at the rate of 9.5 curies per year.

3.3 Main Condenser Air Ejector Noble Gas Monitor Alarm Setpoint

A noble gas activity monitor is provided to measure gross gamma activity in gases at the main condenser air ejector. The monitor includes an alarm that is set to report when the gamma radiation level in gas discharged by the main condenser air ejector indicates the gross radioactivity discharge rate exceeds 100 $\mu\text{Ci}/(\text{MWt} \cdot \text{sec})$.

The alarm setpoint is determined with the relation

$$S = 100 P * g * \frac{1}{F}$$

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where S = main condenser air ejector noble gas monitor alarm setpoint (mR/hr)
 P = nominal reactor thermal power (MWt)
 F = air ejector discharge rate (cfm)
 g = noble gas monitor calibration or counting rate response for
gamma radiation $\frac{\text{mR/hr}}{\mu\text{Ci}/(\text{sec} \cdot \text{cfm})}$
100 = discharge rate limit of gross radioactivity in noble gas
($\mu\text{Ci}/(\text{MWt} \cdot \text{sec})$).

3.4 Effluent Noble Gas Monitor Alarm Setpoint

Instrumentation is provided to monitor gamma radiation from radioactive materials released from the Station in gaseous effluents. Each monitor includes an alarm that is set to report when the radioactive noble gas in gaseous effluent from a monitored stack or vent is expected to cause a noble gas concentration at ground level offsite equal to or greater than specified in 10 CFR Part 20 Appendix B Table 2 Column 1 for the mixture.

The unrestricted area concentration specified by 10 CFR Part 20.106 and the limits of 10 CFR Part 50 Appendix I Section IV should not be exceeded after an alarm provided prompt action is taken after alarm initiation to reduce radioactive releases.

The distribution of radioactive noble gases in a gaseous effluent stream is determined by gamma spectrum analysis of identifiable radionuclides in effluent gas sample(s). Results of one or more previous analyses may be averaged to obtain a representative spectrum. In the event the distribution is unobtainable from measured data, the distribution of radioactive noble gases computed by the BWR-GALE code and appearing in Table 3-2 herein, may be assumed.

The gross activity concentration of noble gas corresponding to the 10 CFR Part 20 Appendix B Table 2 Column 1 limit is calculated from the distribution with the equation

$$MPC = \sum_i C_i \div \sum_i \frac{C_i}{MPC_i}$$

where MPC = gross activity concentration of noble gas mixture corresponding to 10 CFR 20 Appendix B Table 2 Column 1 limit ($\mu\text{Ci}/\text{cm}^3$)

C_i = relative concentration of noble gas radionuclide i in gaseous release ($\mu\text{Ci}/\text{cm}^3$)

MPC_i = 10 CFR Part 20 Appendix B Table 2 Column 1 value.

The alarm setpoint for the effluent noble gas monitor is then calculated with the equation

$$S = MPC * g * \frac{1}{4.7 \times 10^{-4} * F * \frac{X}{Q}}$$

where S = alarm counting rate setpoint (cpm) or (mR/hr)

g = effluent noble gas monitor counting rate response

$$\left(\frac{\text{cpm}}{\mu\text{Ci}/\text{cm}^3} \right) \text{ or calibration } \left(\frac{\text{mR/hr}}{\mu\text{Ci}/\text{cm}^3} \right) \text{ for noble gas}$$

gamma radiation

F = discharge rate of gaseous effluent stream (cfm)

X/Q = minimum atmospheric dispersion from release point to
to unrestricted area ($\mu\text{Ci}/\text{m}^3$ per $\mu\text{Ci}/\text{sec}$)

$$4.7 \times 10^{-4} = \text{conversion constant } \left(2.83 \times 10^{-2} \frac{\text{m}^3}{\text{ft}^3} * \frac{1 \text{ min}}{60 \text{ sec}} \right)$$

MPC = maximum permissible concentration according to 10 CFR 20,
Appendix B, Table 2, column 1 ($\mu\text{Ci}/\text{cm}^3$)

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3.5 Noble Gas Gamma Radiation Dose Accumulated in Air

Technical Specification 4.20.C.2.a requires the calculation on a cumulative basis of air dose due to gamma radiation from radioactive noble gas released in gaseous effluents. Specification 3.20.C.2.a requires that the offsite air dose during any calendar quarter not exceed 5 mrad from noble gas gamma radiation.

The distribution of radioactive noble gases in gaseous releases is determined by gamma spectrum analysis of gaseous effluent samples in accord with Technical Specification Table 4.20.C.1. In the event the radioactive noble gas distribution is not obtainable from sample(s) taken during the current period the most recently available data may be assumed or a distribution may be derived from Table 3-2.

The total quantity of radioactive noble gas discharged during an interval of time is determined by integrating the rate measurement signal of each effluent noble gas monitor by using an integrating digital counter or by integrating the strip chart record. The measured activity discharged via a gaseous effluent stream is calculated with the equation

$$Q = 2.8 \times 10^4 \frac{N}{g} * F$$

where Q = total radioactive noble gas release via a gaseous effluent stream during a given time interval (μCi)

N = net counts accumulated during the time interval

g = effluent noble gas monitor counting rate response $\left(\frac{\text{cpm}}{\mu\text{Ci/cm}^3} \right)$

F = gaseous effluent stream discharge rate (cfm)

2.8×10^4 = conversion constant (cm^3/ft^3)

The gamma radiation dose to air offsite as a consequence of noble gas released from the Station is calculated with the equation

$$D = \sum_i Q_{bs_i} * AY_{bs_i} + \sum_i Q_{cs_i} * AY_{cs_i} * \sum_i Q_{bv_i} \left(\frac{X}{Q} \right)_{bv} AY_{v_i} + \sum_i Q_{cv_i} \left(\frac{X}{Q} \right)_{cv} AY_{v_i}$$

where D = noble gas gamma dose to air (mrad)

$Q_{bs_i} = Q_{bs_i}$ = cumulative release of radioactive noble gas nuclide i

from stack on a short-term basis (μCi).

- AY_{bs_i} = factor converting unit noble gas short term stack release to air dose at ground level received from gamma radiation from the overhead plume (mrad/ μ Ci).
- Q_{cs_i} = $\sum \Delta Q_{cs_i}$ = cumulative release of noble gas nuclide i from stack on a continuous basis
- AY_{cs_i} = factor converting unit noble gas continuous stack release to ground level air dose from overhead plume gamma radiation (mrad/ μ Ci).
- Q_{bv_i} = $\sum \Delta Q_{bv_i}$ = cumulative release of noble gas nuclide i from building vents on a short term basis (μ Ci).
- $(X/Q)_{bv}$ = atmospheric dispersion factor for short term, ground level release (sec/m^3).
- AY_{v_i} = factor converting time integrated, ground level concentration of noble gas to air dose from gamma radiation $\left(\frac{\text{mrad}}{\mu\text{Ci} \frac{\text{sec}}{\text{m}^3}} \right)$
- Q_{cv_i} = $\sum \Delta Q_{cv_i}$ = cumulative release of noble gas nuclide i from building vents on a continuous basis (μ Ci).
- $(X/Q)_{cv}$ = atmospheric dispersion factor for continuous ground level release (sec/m^3)

Specification 4.20.C.2.a is satisfied by calculating the noble gas gamma radiation dose to air at the offsite location identified in Figure 3-2 and on the basis of reference* atmospheric dispersion assuming continuous gaseous release. At that location, the reference atmospheric dispersion factor for a vent (ground-level) release is $\frac{X}{Q} = 3.4 \times 10^{-6} \text{ sec}/\text{m}^3$ at the NNW site boundary. Appropriate values of AY_{cs_i} and AY_{v_i} for use in calculating air doses at that location are listed in Table 3-3.

* Onsite meteorological data for the period July 1, 1976 to June 30, 1977 which was used in the Cooper Station Demonstration of Compliance with 10 CFR 50, Appendix I, revision 1, January 1978.

3.6 Noble Gas Beta Radiation Dose Accumulated in Air

Technical Specification 3.20.C.2 requires that the offsite air dose during any calendar quarter not exceed 10 mrad from noble gas beta radiation. Specification 4.20.C.2.a requires the air dose to be calculated on a cumulative basis.

The radioactive noble gas distribution and activity discharged are determined as described in § 3.4 herein.

The beta radiation dose to air offsite as a consequence of noble gas released from the Station is calculated with the equation

$$D = \sum_i \left[Q_{bs_i} \left(\frac{X}{Q} \right)_{bs} + Q_{cs_i} \left(\frac{X}{Q} \right)_{cs} + Q_{bv_i} \left(\frac{X}{Q} \right)_{bv} + Q_{cv_i} \left(\frac{X}{Q} \right)_{cv} \right] \times A\beta_i$$

where D = noble gas beta dose to air (mrad)

$\left(\frac{X}{Q} \right)_{bs}$ = atmospheric dispersion factor for short term stack releases
(sec/m³)

$\left(\frac{X}{Q} \right)_{cs}$ = atmospheric dispersion factor for long term stack releases
(sec/m³)

$A\beta_i$ = factor converting time integrated ground level concentration of noble gas radionuclide i to air dose from beta radiation

$$\left(\frac{\text{mrad}}{(\mu\text{Ci sec})/\text{m}^3} \right)$$

Specification 4.20.C.2.a is satisfied by calculating the noble gas beta radiation dose to air offsite at the location identified in Figure 3-2 and on the basis of reference atmospheric dispersion assuming continuous gaseous discharge. At that location, the reference atmospheric dispersion assuming continuous gaseous discharge. At that location, the reference atmospheric dispersion factors are:

$$\begin{aligned} \left(\frac{X}{Q} \right)_s &= 1.2 \times 10^{-8} \text{ sec/m}^3 \text{ at the NNW site boundary} \\ \left(\frac{X}{Q} \right)_v &= 3.4 \times 10^{-6} \text{ sec/m}^3 \end{aligned}$$

Beta radiation-to-air dose conversion factors, $A\beta_i$, for noble gas radionuclides are listed in Table 3-3.

3.7 Dose Due to Iodine and Particulates in Gaseous Effluents*

Technical Specification 3.20.C.3 requires that radioiodine, radioactive material in particulate form, and radionuclides with half-lives greater than 8 days in gaseous effluents released to the area offsite cause no more than 7.5 mrem to any organ of a member of the public during a calendar quarter. Specification 4.20.C.3.d requires the dose to be calculated at least once every 31 days.

Radionuclides other than noble gases in gaseous effluents that are measured by the sampling and analysis program described in Technical Specification Table 4.20.C.1 are used as the release term in dose calculations. Airborne releases are either of short duration (< 500 hours/yr) or are continuous and are discharged either via a stack as an elevated release or via building vents and treated as a ground level release. For each of these release combinations, samples are analyzed weekly, monthly, quarterly, or for a specific release according to Table 4.20.C.1.

Each sample provides a measure of the concentration of specific radionuclides, C_i , in gaseous effluent discharged at flow, F_a , during a time increment Δt . Thus, each release is quantified according to the relation

$$\Delta Q_{ijk} = C_{ik} F_{aj} \Delta t_j$$

$$Q_{ik} = \sum_j C_{ik} F_{aj} \Delta t_j$$

where Q_{ik} = the quantity of radionuclide i released in a given effluent stream based on analysis k (Ci)

C_{ik} = concentration of radionuclide i in gaseous effluent identified by analysis k (Ci/m³) or (μCi/cm³)

F_{aj} = effluent stream discharge rate during time increment Δt_j (m³/sec)

Δt_j = time increment during which radionuclide i at concentration C_{ik} is being discharged (sec)

*The dose to any organ of a person arising from radioactive iodine, radioactive material in particulate form, and radionuclides with half lives greater than 8 days. Noble gases not considered.

A person may be exposed directly to an airborne concentration of radioactive material discharged in effluent and indirectly via pathways involving deposition of radioactive material onto the ground. Dose estimates account for the separate exposure pathways. The dose commitment to a person offsite associated with a gaseous release, Q_{ik} , of radioactive material other than noble gas is calculated with the appropriate one of the following equations

a short-term release via the stack:

$$D_{anbsk} = Q_{ikbs} \left[\sum_i TA_{ani} \left(\frac{Xd}{Q} \right)_{bs} + \sum_e \sum_i TG_{eani} \left(\frac{D}{Q} \right)_{bse} \right]$$

a continuous release via the stack:

$$D_{ancsk} = Q_{ikcs} \left[\sum_i TA_{ani} \left(\frac{Xd}{Q} \right)_{cs} + \sum_e \sum_i TG_{eani} \left(\frac{D}{Q} \right)_{bse} \right]$$

a short-term release via a vent:

$$D_{anbvk} = Q_{ikbv} \left[\sum_i TA_{ani} \left(\frac{Xd}{Q} \right)_{bv} + \sum_e \sum_i TG_{eani} \left(\frac{D}{Q} \right)_{bve} \right]$$

a continuous release via a vent:

$$D_{ancvk} = Q_{ikcv} \left[\sum_i TA_{ani} \left(\frac{Xd}{Q} \right)_{bv} + \sum_e \sum_i TG_{eani} \left(\frac{D}{Q} \right)_{cve} \right]$$

where D_{anbsk} = the dose commitment (mrem) to organ n of a person in age group a due to radionuclides identified in analysis k of a short-term, stack release where the analysis is those required by Technical Specification Table 4.20.c.1.

D_{ancsk} = the dose commitment from a continuous stack release (mrem)

D_{anbvk} = the dose commitment from a short-term vent release (mrem)

D_{ancvk} = the dose commitment from a continuous vent release (mrem)

TA_{ani} = factor converting airborne concentration of radionuclide i to dose commitment to organ n of a person in age group a

$$\left(\frac{\text{mrem}}{(\text{Ci sec})/\text{m}^3} \right)$$

TG_{eani} = factor converting ground deposition of radionuclide i to dose commitment to organ n of a person in age group a exposed via environmental pathway e (mrem/Ci/m²)

(D/Q) = relative deposition factor (m⁻²)

(Xd/Q) = depleted atmospheric dispersion factor (μCi/m³ per μCi/sec)

The analysis index k may represent either

- p, analysis of a grab sample
- w, a weekly composite analysis
- m, a monthly composite analysis
- q, a quarterly composite analysis

The dose commitment accumulated by a person offsite is computed at least every 31 days but may be calculated as analytical results of effluent measurements, performed according to Table 4.20.c.1 in the Technical Specifications become available.

The dose is accumulated in the following way.

The dose accumulated as a result of stack discharge is

$$D_{ans} = + \sum_w (D_{anbsw} + D_{ancsw}) + \sum_m (D_{anbsm} + D_{ancsm}) + \sum_q D_{ancsq}$$

and the dose accumulated as a result of a vent discharge is

$$D_{anv} = \sum_w (D_{anbvw} + D_{ancvw}) + \sum_m (D_{anbvm} + D_{ancvm}) + \sum_q D_{ancvq}$$

Doses committed during the same time period due to discharges from the stack and vents are additive, thus

$$D_{an} = D_{ans} + \sum_v D_{anv}$$

where D_{an} = the dose commitment accumulated during the quarter to date as a result of all measured radioactive gaseous discharges except noble gases to any organ n, including total body, of a person offsite in age group a (mrem)

When the dose to a person from iodine and particulates discharged in gaseous effluent is calculated as required by Specification 4.20.C.3.a, appropriate environmental pathways of exposure will be evaluated. The pathway(s) and/or age group(s) selected may vary by season. Appropriate pathway-to-dose transfer factors, A_{eani} ; are selected from Appendix A for use in calculating the dose.

The dose to a receptor at the location identified in Figure 3-2, 1.1 miles West of the Station is calculated on the basis of continuous gaseous release and reference meteorological conditions. The reference atmospheric dispersion and deposition factors at that location to be used for assessing compliance with Specification 4.20.C.3.a are:

$$\begin{aligned} \left(\frac{Xd}{Q}\right)_{\text{cs}} &= 8.1 \times 10^{-8} \text{ sec/m}^3 & \left(\frac{D}{Q}\right)_{\text{cs}} &= 4.6 \times 10^{-10} \text{ m}^{-1} \\ \left(\frac{Xd}{Q}\right)_{\text{cv}} &= 4.4 \times 10^{-7} \text{ sec/m}^3 & \left(\frac{D}{Q}\right)_{\text{cv}} &= 9.5 \times 10^{-10} \text{ m}^{-1} \end{aligned}$$

The receptor is assumed to drink milk produced by the milch animal which experiences the maximum D/Q. Maximum values of the relative deposition factors where a real milch animal is located, 3.7 miles NW of the Station, are:

$$\begin{aligned} \left(\frac{D}{Q}\right)_{\text{cs}} &= 1.2 \times 10^{-10} \text{ m}^{-1} \\ \left(\frac{D}{Q}\right)_{\text{cv}} &= 3.7 \times 10^{-10} \text{ m}^{-1} \end{aligned}$$

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3.8 Dose to a Person from Noble Gases

Technical Specifications 4.20.D.1 and 6.7.1.E requires the calculation of dose to a member of the public for the purpose of assessing compliance with 40 CFR Part 190. That assessment includes the calculation of the gamma dose to the total body and the beta plus gamma dose to the skin of the person due to radioactive noble gases in gaseous effluents.

3.8.1 Gamma Dose to Total Body The gamma radiation dose to the whole body of a member of the public as a consequence of noble gas released from the Station is calculated with the equation:

$$D_{\gamma} = \sum_i \left(Q_{bs_i} \times PY_{bs_i} + Q_{cs_i} \times PY_{cs_i} + Q_{bv_i} \left(\frac{X}{Q} \right)_{bv} PY_{vi} + Q_{cv_i} \left(\frac{X}{Q} \right)_{cv} PY_{vi} \right)$$

where D = noble gas gamma dose to total body (mrem)

PY_{bs} = factor converting unit noble gas nuclide i short term stack release to total body dose at ground level received from gamma radiation from the overhead plume (mrem/ μ Ci)

PY_{cs} = factor converting unit noble gas nuclide i continuous stack release to total body dose at ground level received from the overhead plume (mrem/ μ Ci)

PY_{vi} = factor converting time integrated, ground level concentration of noble gas nuclide i to air dose from gamma radiation

$$\left(\frac{\text{mrem}}{\mu\text{Ci} \frac{\text{sec}}{\text{m}^3}} \right)$$

When the total body dose due to gamma radiation from noble gas is computed as required by Technical Specification 4.20.D.1, the nearby resident exposed to maximal ground-level noble gas concentrations (maximum X/Q) is selected as the receptor. The location of the residence is identified in Figure 3-2.

3.8.2 Dose to Skin The beta radiation dose to the skin of a member of the public due to beta radiation from noble gas released from the Station may be calculated with the equation

$$D_{\beta} = \sum_i \left(Q_{bs_i} \left(\frac{X}{Q} \right)_{bs} + Q_{cs_i} \left(\frac{X}{Q} \right)_{cs} + Q_{bv_i} \left(\frac{X}{Q} \right)_{bv} + Q_{cv_i} \left(\frac{X}{Q} \right)_{cv} \right) \times S\beta_i$$

where D_{β} = noble gas beta dose to skin (mrem)

$S\beta_i$ = factor converting time integrated ground level concentration of noble gas radionuclide i to skin dose from beta radiation

$$\left(\frac{\text{mrem}}{(\mu\text{Ci} \text{ sec})/\text{m}^3} \right)$$

values of $S\beta_i$ for noble gases are included in Table 3-4.

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When the skin dose due to noble gas beta radiation is computed as required by Specification 4.20.D.1, the receptor selected is the nearby resident exposed to maximal ground-level concentrations (maximum X/Q). The location of the residence is identified in Figure 3-2.

The total dose to the skin from noble gases is approximately equal to the beta radiation dose to the skin plus the gamma radiation dose to the total body.

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4.0 Dose Commitment from Releases over Extended Time

4.1 Releases during a Quarter

Technical Specification 6.7.1.E requires an annual assessment of radiation doses arising from liquid and gaseous effluents from the Station during each calendar quarter. The assessment includes the following calculations of dose as described by equations for

1. total body and maximally exposed organ doses due to liquid effluent via drinking water and eating fish from the River as in § 2.6
2. total body dose due to noble gas γ as in § 3.8.1
3. skin dose due to noble gas β as in § 3.8.2
4. total body and maximally exposed organ doses due to gaseous effluents* other than noble gases as in § 3.7
5. doses to air offsite due to noble gas γ as in § 3.5 and due to noble gas β as in § 3.6.

The dose calculations are based on liquid and gaseous effluents from the Station during each calendar quarter determined in accord with Technical Specification Tables 4.20.B.1 and 4.20.C.1.

Aqueous concentration is estimated according to § 2.2 on the basis of quarterly averaged stream flow. Quarterly averaged meteorological conditions concurrent with the quarterly gaseous release being evaluated are used to estimate atmospheric dispersion and deposition.

The receptor of the dose is described such that the dose to any resident near the Station is unlikely to be underestimated. That is, the receptor is selected on the basis of the combination of applicable pathways of exposure to gaseous effluent identified in the annual land use census and maximum ground level X/Q at the residence. Conditions (i.e. location, X/Q , and/or pathways) more conservative (i.e. expected to yield higher calculated doses) than appropriate for the maximally exposed individual may be assumed in the dose assessment.

* radioactive iodine, radioactive material in particulate form, and radio-nuclides with half-lives greater than 8 days.

Seasonal appropriateness of exposure pathways may be considered. Exposure by eating fresh vegetation or drinking milk from cows or goats fed fresh forage is an inappropriate assumption during the first or fourth calendar quarter; rather consumption of stored vegetation and stored forage is assumed.

Factors converting stack-released noble gas to gamma radiation dose from the overhead plume are calculated on the basis of quarterly averaged meteorological data for the receptor location. Other environmental pathway-to-dose transfer factors used in the dose calculations are provided in Appendix A.

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4.2 Releases during 12 Months

The regulation governing the maximum allowable dose or dose commitment to a member of the public from a uranium fuel cycle sources of radiation and radioactive material in the environment is stated in 40 CFR Part 190. It requires that the dose or dose commitment to a member of the public from all sources not exceed 25 mrem/yr to any organ or 75 mrem/yr to the thyroid. Technical Specification 4.20.D.1 requires calculation of the dose at least once per year to assess compliance with the regulation.

Fuel cycle sources or nuclear power reactors other than the Station itself do not measurably or significantly increase the radioactivity concentration in the vicinity of the Station; therefore, only radiation and radioactivity in the environment attributable to the Station itself are considered in the assessment of compliance with 40 CFR Part 190.

Contributions to the dose due to liquid and gaseous effluent are calculated as described by the equations for:

1. total body and maximally exposed organ doses due to liquid effluent via drinking water and eating fish from the River as in § 2.6
2. total body dose due to noble gas γ as in § 3.8.1.
3. skin dose due to noble gas β as in § 3.8.2.
4. total body and maximally exposed organ doses due to gaseous effluents* other than noble gases as in § 3.7.

The doses are calculated on the basis of liquid and gaseous effluents from the Station during the preceeding 12 months determined in accord with Technical Specification Table 4.20.B.1 and 4.20.C.1.

Aqueous radioactive material concentrations are estimated according to § 2.2 on the basis of annual averaged stream flow. Annual averaged meteorological conditions during the most recent calendar year are used to estimate atmospheric dispersion, deposition, and elevated plume gamma exposure. The receptor of the dose is described such that the dose to any resident near the Station is not likely to be underestimated. The receptor

* radioactive iodine, radioactive material in particulate form, and radionuclides with half-lives greater than 8 days.

is selected on the basis of the combination of applicable pathways of exposure to gaseous effluent identified in the annual land use census and maximum ground level X/Q at the residence. Conditions more conservative than appropriate for the maximally exposed person may be assumed in the dose assessment.

Factors converting stack-released noble gas to gamma radiation dose from the overhead plume are calculated on the basis of annual averaged meteorological data for the receptor location. Other environmental pathway-to-dose transfer factors used in the dose calculations appear in Appendix A.

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- A = particulate air filter
H = high efficiency particulate air filter
C = charcoal
⊙ = instrument. Table 3.20.A.2 of the CNS Technical Specifications name the instruments associated with the alphanumeric

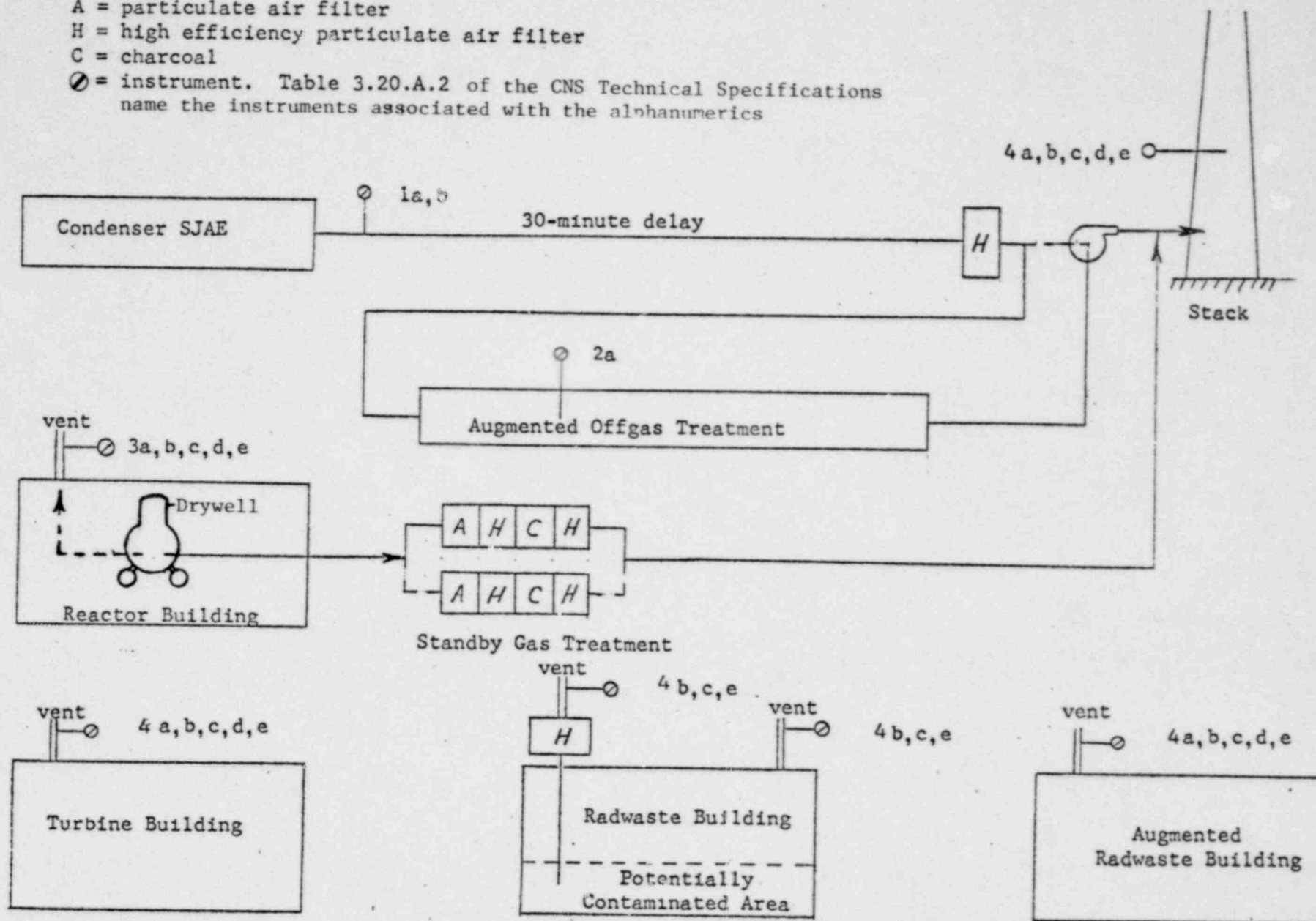


Figure 3-1 Gaseous Effluent Streams, Treatment and Monitoring Equipment, and Discharge Points.

Table 3-1

Atmospheric Gaseous Release Points at the
Cooper Nuclear Generating Station

Structure	Reactor Building	Turbine Building	Radwaste Building	Augmented Radwaste Building	Elevated Release Point
Number of Ducts	1	2	2	1	1
Duct Size (inches)	96" x 48"	48" x 96"	24" x 96"	22" x 35"	14" I.D.
Height of Vent (feet Above Roof)	15	1.3	Horizontal Discharge at roof top	Horizontal Discharge at roof top	325 (above grade)
Flow Rate (cfm)	73405	101420 (both ducts)	40570 Potentially Contaminated 10000 Radwaste Building	16500	3000
Flow Velocity (fps)	3.82	26.4	42.3	50.9	46.7
Exhaust - Winter Temp. (°F) - Summer	70 90	70 90	70 90	70 90	60 90
Release Mode	Partial Elevated	Ground Level	Ground Level	Ground Level	Elevated

Table 3-2

Computed Release of Radioactive Noble Gases
in Gaseous Effluent from Cooper Nuclear Station

Nuclide	Stack Release		Plant Vents Release	
	(Ci/yr)	fraction	(Ci/yr)	fraction
Kr-83m	3.60E+01	8.38E-03	0	0
Kr-85m	6.50E+01	1.51E-02	7.10E+01	1.14E-02
Kr-85	2.00E+02	4.66E-02	0	0
Kr-87	2.13E+02	4.96E-02	1.33E+02	2.13E-02
Kr-88	2.13E+02	4.96E-02	2.33E+02	3.74E-02
Kr-89	1.00E+03	2.33E-01	0	0
Xe-133m	3.00E 00	6.99E-04	0	0
Xe-133	1.51E+02	3.52E-02	2.63E+03	4.22E-01
Xe-135m	7.20E+01	1.68E-02	6.96E+02	1.12E-01
Xe-135	2.64E+02	6.15E-02	1.06E+03	1.70E-01
Xe-137	1.20E+03	2.79E-01	0	0
Xe-138	8.77E+02	2.04E-01	1.41E+03	2.26E-01
Total	4294.	1.0	6233.	1.0

Releases computed by BWR-GALE for Cooper Station Base Case gaseous radwaste treatment.

The release rate (Ci/yr) is included only to show the basis of the radionuclide distribution. To estimate the concentrations of radionuclides in a sample in which only the total radioactivity has been measured, multiply the total activity concentration by the fraction of respective radionuclides listed above.

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Table 3-3

Transfer Factors for Maximum Offsite Air Dose
Based on Reference Meteorology

Radionuclide	Air Dose Transfer Factors		
	$AY_{cs_i}^a$ $\left(\frac{\text{mrad}}{\mu\text{Ci}}\right)$	AY_{v_i} $\left(\frac{\text{mrad}}{\mu\text{Ci sec/m}^3}\right)$	$A\beta_i$ $\left(\frac{\text{mrad}}{\mu\text{Ci sec/m}^3}\right)$
Kr-83m	2.6E-14	6.1E-7	9.13E-6
Kr-85m	4.0E-12	3.9E-5	6.24E-5
Kr-85	5.8E-14	5.4E-7	6.18E-5
Kr-87	1.7E-11	2.0E-4	3.26E-4
Kr-88	4.6E-11	4.8E-4	9.28E-5
Kr-89	2.2E-11	5.5E-4	3.36E-4
Kr-90	--	5.2E-4	2.48E-4
Xe-131m	1.1E-11	4.9E-6	3.52E-5
Xe-133m	8.7E-13	1.0E-5	4.69E-5
Xe-133	9.0E-13	1.1E-5	3.33E-5
Xe-135m	8.3E-12	1.1E-4	2.34E-5
Xe-135	6.3E-12	6.1E-5	7.79E-5
Xe-137	1.8E-12	4.6E-5	4.02E-4
Xe-138	2.7E-11	2.9E-4	1.51E-4
Ar-41	3.2E-11	2.9E-4	1.04E-4

^a Dose at NNW site boundary.

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Table 3-4

Transfer Factors for Maximum Dose to a
Person Offsite due to Radioactive Noble Gases

Radionuclide	Dose Transfer Factors		
	$PF_{cs_i}^{a,b}$ $\left(\frac{\text{mrem}}{\mu\text{Ci}}\right)$	PF_{v_i} $\left(\frac{\text{mrem}}{\mu\text{Ci sec/m}^3}\right)$	SP_i $\left(\frac{\text{mrem}}{\mu\text{Ci sec/m}^3}\right)$
Kr-83m	1.6E-16	2.4E-9	—
Kr-85m	2.4E-12	3.7E-5	4.6E-5
Kr-85	3.0E-14	5.1E-7	4.2E-5
Kr-87	7.9E-12	1.9E-4	3.1E-4
Kr-88	2.3E-11	4.7E-4	7.5E-5
Kr-89	6.7E-12	5.3E-4	3.2E-4
Kr-90	—	4.9E-4	2.3E-4
Xe-131m	7.7E-13	2.9E-6	1.5E-5
Xe-133m	5.9E-13	8.0E-6	3.1E-5
Xe-133	6.9E-13	9.3E-6	9.7E-6
Xe-135m	3.3E-12	9.9E-5	2.3E-5
Xe-135	3.7E-12	5.7E-5	5.9E-5
Xe-137	5.1E-13	4.5E-5	3.9E-4
Xe-138	1.2E-11	2.8E-4	1.3E-4
Ar-41	1.5E-11	2.8E-4	8.5E-5

^a Receptor located at 1.1 miles west of Station.

^b Based on reference meteorology at Cooper Station

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APPENDIX A

PATHWAY-DOSE TRANSFER FACTORS

Environmental pathway transfer factors, usage factors, and dose commitment factors appropriate for each exposure pathway, age, and organ are combined into integrated environmental concentration-to-dose factors for each radionuclide. This appendix includes tables of values of the transfer factors calculated in accord with equations and values recommended in Regulatory Guide 1.109, Revision 0. Appropriate transfer factors from Appendix A are used in performing dose assessment calculations prescribed in the ODAM. The transfer factors have been tabulated for individual pathways. If a single, composite transfer factor is desired, it can be obtained by summing the factors for appropriate pathways for a given organ and age group of interest.

DOSE FACTORS FOR LIQUID DISCHARGES BASED ON 1 CIFYR RELEASE OF EACH ISOTOPE IN DISCHARGE FLOW OF 1 GPM WITH NO ADDITIONAL DILUTION

NUCLIDE	PATHWAY - POTABLE WATER					AGE GROUP - ADULT				
	ORGAN DOSE (MREM)					TOTAL BODY				
	BONE	LIVER	THYROID	KIDNEY	LUNG	GI-LLI	SKIN			
H-3	0.	4.92E+01	4.92E+01	4.92E+01	4.92E+01	4.92E+01	0.	4.92E+01		4.92E+01
P-32	4.35E+03	4.35E+03	0.	0.	0.	7.77E+03	0.	2.08E+03		2.08E+03
CR-51	0.	0.	5.76E-01	2.13E-01	1.28E+00	2.42E+02	0.	9.04E-01		9.04E-01
AN-24	0.	1.68E+03	0.	4.98E+02	0.	5.13E+03	0.	3.20E+02		3.20E+02
FE-55	2.27E+03	1.02E+04	0.	0.	1.19E+04	4.00E+03	0.	2.69E+03		2.69E+03
FE-59	1.58E+03	3.75E+03	0.	0.	1.04E+03	1.24E+04	0.	1.43E+03		1.43E+03
CO-58	0.	2.72E+02	0.	0.	0.	5.51E+03	0.	6.10E+02		6.10E+02
CO-60	0.	7.84E+02	0.	0.	0.	1.48E+04	0.	1.73E+03		1.73E+03
ZN-65	1.78E+03	5.84E+03	0.	3.77E+03	0.	3.55E+03	0.	2.55E+03		2.55E+03
KB-85	0.	7.60E+03	0.	0.	0.	1.50E+03	0.	3.54E+03		3.54E+03
SR-89	1.13E+05	0.	0.	0.	0.	1.80E+04	0.	3.25E+03		3.25E+03
SR-90	2.79E+06	0.	0.	0.	0.	4.20E+04	0.	6.02E+03		6.02E+03
Y-91	5.14E+01	5.57E+00	0.	5.63E+00	0.	2.64E+04	0.	1.36E+03		1.36E+03
ZR-95	1.11E+01	7.95E-02	0.	1.13E-01	0.	1.12E+04	0.	2.41E+00		2.41E+00
ZK-97	3.91E-01	0.	0.	0.	0.	2.56E+04	0.	3.63E-02		3.63E-02
RG-95	2.65E+00	1.26E+00	0.	1.25E+00	0.	7.63E+03	0.	9.94E-01		9.94E-01
HQ-99	5.57E-02	1.40E+03	0.	3.17E+03	7.85E-02	3.53E+03	0.	2.60E+02		2.60E+02
RU-103	6.73E+01	0.	0.	2.57E+02	0.	7.86E+03	0.	2.90E+01		2.90E+01
RU-106	1.01E+03	0.	0.	1.95E+03	0.	6.53E+04	0.	1.28E+02		1.28E+02
AG-110M	5.86E+01	5.42E+01	0.	1.07E+02	0.	2.21E+04	0.	3.22E+01		3.22E+01
SB-124	1.03E+03	1.93E+01	2.46E+00	0.	7.95E+02	2.59E+04	0.	4.05E+02		4.05E+02
SB-125	8.19E+02	9.25E+00	1.10E+00	5.00E+00	8.55E+04	7.23E+03	0.	1.04E+02		1.04E+02
FE-127M	9.77E+02	3.55E+02	2.94E+02	3.98E+03	0.	3.90E+03	0.	1.31E+02		1.31E+02
FE-127M	2.50E+03	8.75E+02	6.50E+02	1.02E+04	0.	1.02E+04	0.	3.67E+02		3.67E+02
FE-129M	4.19E+03	1.56E+03	1.45E+03	1.74E+04	0.	2.10E+04	0.	6.04E+02		6.04E+02
FE-131M	5.34E+02	3.13E+02	2.54E+04	2.50E+03	0.	2.51E+04	0.	2.40E+02		2.40E+02
FE-132	8.41E+03	7.20E+02	2.42E+04	5.50E+03	0.	2.54E+04	0.	3.09E+02		3.09E+02
I-131	1.46E+03	2.10E+03	6.85E+05	3.59E+03	0.	9.52E+02	0.	1.20E+03		1.20E+03
I-133	3.23E+02	6.12E+02	1.18E+05	1.07E+03	0.	5.38E+02	0.	1.87E+02		1.87E+02
CS-134	2.28E+04	9.48E+04	0.	1.79E+04	5.63E+03	9.50E+02	0.	4.44E+04		4.44E+04
CS-135	2.33E+03	3.18E+03	0.	5.11E+03	7.04E+02	1.04E+03	0.	8.61E+03		8.61E+03
CS-137	2.93E+04	4.00E+04	0.	1.35E+04	4.51E+03	7.71E+02	0.	2.62E+04		2.62E+04
BA-140	7.25E+03	9.20E+00	0.	3.10E+00	5.21E+00	2.12E+04	0.	4.79E+02		4.79E+02
LA-140	7.46E-01	3.76E-01	0.	0.	0.	2.70E+04	0.	3.90E-02		3.90E-02
CE-141	3.40E+00	2.30E+00	0.	1.07E+00	0.	8.79E+03	0.	2.01E-01		2.01E-01
CE-143	5.46E-01	3.48E+02	0.	1.70E-01	0.	1.33E+04	0.	4.22E-02		4.22E-02
CE-144	1.79E+02	7.46E+01	0.	4.43E+01	0.	6.05E+04	0.	9.60E+00		9.60E+00
RP-239	3.30E-01	3.08E-02	0.	1.17E-01	0.	7.00E+03	0.	2.07E-02		2.07E-02

POOR ORIGINAL

2273 206

DOSE FACTORS FOR LIQUID DISCHARGES BASED ON 1 CI/YR RELEASE OF EACH ISOTOPE IN DISCHARGE FLOW OF 1 GPM WITH NO ADDITIONAL DILUTION

PATHWAY - FRESH WATER FISH

AGE GROUP - ADULT

NUCLIDE	OR 34 N DOSE (MREM)							AGE GROUP - ADULT	
	BONE	LIVER	THYROID	KIDNEY	LUNG	G.I.-LLI	SKIN	TOTAL BODY	
H-3	0.	1.27E+00	1.27E+00	1.27E+00	1.27E+00	1.27E+00	0.	1.27E+00	1.27E+00
P-32	1.94E+08	1.22E+07	0.	0.	0.	2.18E+07	0.	7.51E+06	7.51E+06
CR-51	0.	0.	3.27E+00	1.21E+00	7.27E+00	1.38E+03	0.	5.48E+03	5.48E+03
MN-54	0.	1.93E+04	0.	5.73E+03	0.	5.90E+04	0.	7.75E+03	7.75E+03
FE-55	6.54E+03	2.94E+04	0.	0.	3.41E+04	1.15E+04	0.	4.07E+03	4.07E+03
FE-59	4.51E+03	1.07E+04	0.	0.	2.97E+03	5.53E+04	0.	8.73E+02	8.73E+02
CU-60	0.	3.90E+02	0.	0.	0.	7.89E+03	0.	2.49E+03	2.49E+03
CU-64	0.	1.13E+03	0.	0.	0.	2.14E+04	0.	1.47E+03	1.47E+03
ZN-65	1.02E+05	3.44E+05	0.	2.17E+05	0.	2.04E+05	0.	2.00E+05	2.00E+05
RB-85	0.	4.29E+05	0.	0.	0.	8.46E+04	0.	2.76E+03	2.76E+03
SR-89	9.05E+04	0.	0.	0.	0.	1.54E+04	0.	5.89E+02	5.89E+02
SR-90	2.41E+06	0.	0.	0.	0.	3.84E+06	0.	9.80E+01	9.80E+01
Y-91	3.68E+01	0.	0.	0.	0.	2.02E+04	0.	8.48E+00	8.48E+00
ZR-95	3.69E+01	2.13E+01	0.	2.13E+01	0.	1.28E+05	0.	6.20E+01	6.20E+01
ZR-97	6.72E+00	1.09E+00	0.	1.98E+00	0.	7.62E+03	0.	4.22E+02	4.22E+02
MO-99	1.93E+03	1.07E+03	0.	1.07E+03	0.	6.52E+06	0.	5.82E+01	5.82E+01
MO-99	2.77E+02	3.55E+02	0.	8.05E+02	3.84E+02	8.09E+02	0.	8.28E+00	8.28E+00
RU-103	1.92E+01	0.	0.	7.33E+01	0.	2.24E+03	0.	3.67E+01	3.67E+01
RU-106	2.90E+02	0.	0.	5.61E+02	0.	1.88E+04	0.	2.13E+00	2.13E+00
AG-110M	3.67E+00	3.58E+00	0.	7.05E+00	0.	1.46E+03	0.	1.16E+01	1.16E+01
SB-124	2.93E+01	5.53E-01	7.09E-02	0.	2.28E+01	8.30E+02	0.	8.51E+00	8.51E+00
SB-124	5.17E+01	1.05E+01	8.52E+00	1.15E+02	2.40E+03	3.21E+02	0.	1.50E+03	1.50E+03
TE-125M	1.12E+04	4.06E+03	3.37E+03	4.55E+04	0.	4.40E+04	0.	3.54E+03	3.54E+03
TE-127M	2.88E+04	1.01E+04	7.54E+03	1.17E+05	0.	1.25E+05	0.	7.50E+03	7.50E+03
TE-129M	4.77E+04	1.78E+04	1.64E+04	2.08E+05	0.	2.40E+05	0.	1.71E+03	1.71E+03
TE-131M	4.17E+03	2.07E+03	2.24E+04	2.04E+04	0.	1.99E+05	0.	2.45E+03	2.45E+03
TE-132	8.03E+04	5.06E+03	1.56E+04	5.40E+04	0.	2.63E+05	0.	4.92E+02	4.92E+02
I-131	6.04E+02	8.66E+02	2.83E+05	1.48E+03	0.	2.28E+02	0.	2.43E+01	2.43E+01
I-133	1.03E+02	1.76E+02	3.42E+04	3.11E+02	0.	1.50E+02	0.	2.52E+03	2.52E+03
CS-134	1.31E+06	3.12E+05	0.	1.01E+05	3.35E+05	5.40E+04	0.	3.70E+03	3.70E+03
CS-135	1.30E+05	5.14E+05	0.	2.86E+05	3.92E+04	5.44E+04	0.	1.21E+03	1.21E+03
CS-137	1.08E+06	2.30E+06	0.	7.83E+05	2.60E+05	4.43E+04	0.	5.35E+01	5.35E+01
BA-140	8.12E+02	1.13E+00	0.	3.47E-01	5.84E-01	9.71E+03	0.	2.63E+02	2.63E+02
LA-140	4.35E-01	2.20E-01	0.	0.	0.	1.61E+04	0.	7.42E-03	7.42E-03
CE-141	3.08E-02	9.55E-02	0.	3.04E-02	0.	2.50E+02	0.	2.52E-03	2.52E-03
CE-143	1.05E-01	7.82E+00	0.	2.51E-02	0.	7.02E+02	0.	2.76E-01	2.76E-01
CE-144	5.10E+00	4.15E+00	0.	1.27E+00	0.	1.74E+03	0.	2.76E-01	2.76E-01
HP-233	3.62E-02	9.55E-03	0.	2.89E-02	0.	1.09E+03	0.	2.13E-03	2.13E-03

POOR ORIGINAL

2273 207

DOSE FACTORS FOR LIQUID DISCHARGES BASED ON 1 CUP/HR RELEASE OF EACH ISOTOPE IN DISCHARGE FLOW OF 1 GPM WITH NO ADDITIONAL DILUTION

ROUTE	PATHWAY - POTABLE WATER					AGE GROUP - TEENAGER				
	DOSE	LIVER	THYROID	KIDNEY	LUNG	G-LLI	SKIN	TOTAL BODY		
H----	0.	2.72E+01	2.72E+01	3.44E+01	2.72E+01	2.72E+01	0.	2.72E+01		
P---J2	4.83E+04	3.03E+03	0.	0.	0.	5.43E+03	0.	1.87E+03		
GR---1	0.	0.	4.03E-01	1.49E-01	0.34E-01	1.69E+02	0.	0.75E-01		
HN---54	0.	1.17E+03	0.	3.48E+02	0.	3.59E+03	0.	2.24E+02		
FE---55	1.59E+03	7.15E+03	0.	0.	8.28E+03	2.79E+03	0.	1.88E+03		
FE---59	1.10E+03	2.62E+03	0.	0.	7.29E+02	8.05E+03	0.	3.97E+02		
CO---58	0.	2.53E+02	0.	0.	0.	3.42E+03	0.	5.77E+02		
CO---60	0.	7.07E+02	0.	0.	0.	8.48E+03	0.	1.62E+03		
ZN---65	1.24E+03	3.94E+03	0.	2.64E+03	0.	2.48E+03	0.	1.78E+03		
RO---66	0.	5.31E+03	0.	0.	0.	1.05E+03	0.	2.48E+03		
SR---89	1.17E+05	0.	0.	0.	0.	1.27E+04	0.	3.35E+03		
SR---90	2.07E+06	0.	0.	0.	1.17E+03	5.98E+04	0.	6.59E+05		
Y---91	5.00E+01	0.	0.	0.	0.	1.92E+04	0.	1.33E+04		
ZR---95	9.51E+00	3.17E+00	0.	3.98E+00	0.	6.87E+03	0.	2.22E+00		
ZR---97	2.73E-01	5.55E-02	0.	8.31E-02	0.	1.65E+04	0.	2.53E-02		
HB---95	1.84E+00	1.11E+00	0.	8.71E-01	0.	4.52E+03	0.	6.24E-01		
MO---99	3.96E-02	9.76E+02	0.	2.21E+03	2.43E-02	2.53E+03	0.	1.87E+02		
KU-103	0.02E+01	0.	0.	1.00E+02	0.	4.70E+03	0.	2.09E+01		
KU-105	1.02E+03	0.	0.	1.35E+03	0.	4.84E+04	0.	1.29E+02		
AG-110M	4.10E+01	3.79E+01	0.	7.43E+01	0.	1.55E+04	0.	2.22E+01		
SD-124	7.16E+02	1.35E+01	1.73E+00	0.	5.26E+02	2.03E+04	0.	2.83E+02		
SD-129	5.72E+02	6.59E+00	8.53E-01	3.50E+00	5.97E+04	3.05E+03	0.	1.15E+02		
TE-125M	9.76E+02	3.49E+02	2.75E+02	2.79E+03	0.	2.73E+03	0.	1.29E+02		
TE-127M	1.75E+03	6.14E+02	4.57E+02	7.10E+03	0.	7.62E+03	0.	2.10E+02		
TE-129M	4.22E+03	1.56E+03	1.36E+03	1.22E+04	0.	1.47E+04	0.	6.64E+02		
TE-131M	3.87E+02	2.37E+02	2.14E+04	1.75E+03	0.	1.61E+04	0.	1.60E+02		
TE-132	8.05E+02	0.37E+02	1.70E+04	3.89E+03	0.	1.84E+04	0.	2.29E+02		
I-131	1.37E+03	1.93E+03	3.57E+03	2.50E+03	0.	3.06E+02	0.	1.15E+03		
I-133	3.50E+02	3.93E+02	1.08E+05	7.47E+02	0.	4.31E+02	0.	1.83E+02		
US-134	2.06E+04	4.97E+04	0.	1.25E+04	0.	5.74E+02	0.	2.32E+04		
US-136	1.03E+03	6.41E+03	0.	3.57E+03	4.83E+02	7.29E+02	0.	4.62E+03		
US-137	2.74E+04	3.09E+04	0.	9.51E+03	4.30E+03	4.52E+02	0.	1.29E+04		
DA-140	7.05E+03	0.70E+00	0.	2.17E+00	3.81E+00	3.51E+03	0.	4.54E+02		
LA-140	7.25E-01	3.59E-01	0.	0.	0.	1.90E+04	0.	9.40E-02		
CL-141	3.20E+00	2.15E+00	0.	7.40E-01	0.	5.81E+03	0.	2.40E-01		
CE-143	3.81E-01	2.43E+02	0.	1.13E-01	0.	4.31E+03	0.	2.95E-02		
CL-144	1.85E+02	7.50E+01	0.	3.10E+01	0.	4.57E+04	0.	4.81E+01		
NP-239	2.74E-01	2.73E-02	0.	8.14E-02	0.	3.31E+03	0.	1.45E-02		

POOR ORIGINAL

DOSE FACTORS FOR LIQUID DISCHARGES BASED ON 1 GL/YR RELEASE OF EACH ISOTOPE IN DISCHARGE FLOW OF 1 GPM WITH NO ADDITIONAL DILUTION

PATHWAY - FRESH WATER FISH

AGE GROUP - TEENAGER

NUCLIDE	ORGAN DOSE (MREM)						TOTAL DOSE
	GONE	LIVER	THYROID	KIDNEY	LUNG	GI-LLI	
H-3	0.	7.67E-01	7.67E-01	9.70E-01	7.67E-01	7.67E-01	7.67E-01
P-32	1.48E+08	9.27E+05	0.	0.	0.	1.00E+07	5.72E+03
CR-51	0.	0.	2.49E+00	9.21E-01	5.54E+00	1.05E+03	4.17E+00
MI-54	0.	1.47E+04	0.	4.57E+03	0.	4.49E+04	4.80E+03
FE-55	4.98E+03	2.24E+04	0.	0.	2.60E+04	8.76E+03	5.89E+03
FE-59	3.44E+03	8.16E+03	0.	0.	2.27E+03	2.63E+04	3.10E+03
CO-58	0.	3.95E+02	0.	0.	0.	5.34E+03	9.00E+02
CO-60	0.	1.11E+03	0.	1.65E+05	0.	1.33E+04	2.53E+03
ZN-62	7.78E+04	2.47E+05	0.	0.	0.	1.50E+05	1.12E+05
KB-86	0.	3.27E+05	0.	0.	0.	8.45E+04	1.93E+05
SR-89	1.10E+05	0.	0.	0.	0.	1.19E+04	3.14E+03
SK-90	2.51E+06	0.	0.	0.	1.72E+03	5.81E+04	9.20E+03
Y-91	3.89E+01	0.	0.	0.	0.	1.50E+04	1.04E+03
ZK-95	3.45E+01	2.04E+01	0.	1.63E+01	0.	8.29E+04	1.10E+01
ZK-97	5.13E+00	1.29E+00	0.	1.51E+00	0.	5.81E+03	4.73E-01
N3-99	1.71E+03	1.03E+03	0.	8.11E+02	0.	4.21E+06	5.82E+02
MO-99	2.11E-02	2.70E+02	0.	6.14E+02	2.93E-02	8.62E+02	5.22E+04
RU-103	1.87E+01	0.	0.	5.59E+01	0.	1.46E+03	8.38E+00
RU-106	3.21E+02	0.	0.	4.27E+02	0.	1.45E+04	4.04E+01
AG-110M	2.95E+00	2.73E+00	0.	5.37E+00	0.	1.11E+03	1.04E+00
SB-124	2.23E+01	4.21E-01	5.40E-02	0.	1.73E+01	8.32E+02	8.82E+00
SB-125	4.85E+01	1.12E+01	8.68E+00	8.74E+01	1.87E+03	2.44E+02	7.68E+00
TE-125M	1.22E+04	4.36E+03	3.43E+03	3.47E+04	0.	3.40E+04	1.62E+03
TE-127M	2.21E+04	7.71E+03	5.80E+03	8.91E+04	0.	1.05E+05	2.72E+03
TE-129M	5.24E+04	1.94E+04	1.68E+04	1.51E+05	0.	1.83E+05	8.25E+03
TE-131M	3.19E+03	1.59E+03	1.94E+04	1.56E+04	0.	1.52E+05	1.32E+03
TE-132	9.25E+03	5.62E+03	1.33E+04	4.12E+04	0.	2.08E+05	5.48E+03
I-131	6.17E+02	8.71E+02	2.51E+05	1.13E+03	0.	1.07E+02	7.13E+02
I-133	1.11E+02	1.08E+02	3.41E+04	2.37E+02	0.	1.37E+02	5.79E+01
CS-134	1.29E+06	3.12E+06	0.	7.71E+05	3.78E+05	3.60E+04	1.40E+03
CS-135	9.93E+04	3.92E+05	0.	2.18E+05	2.93E+04	4.45E+04	2.82E+03
CS-137	1.72E+06	2.32E+06	0.	5.97E+05	3.07E+05	3.09E+04	8.12E+03
BA-140	8.62E+02	1.17E+03	0.	2.65E-01	7.10E-01	8.41E+03	5.55E+01
LA-146	4.03E-01	2.29E-01	0.	0.	0.	1.20E+04	8.02E-02
CE-141	9.92E-02	8.88E-02	0.	2.31E-02	0.	1.80E+02	7.64E-03
CE-143	7.90E-02	2.96E+00	0.	1.92E-02	0.	5.35E+02	4.21E-03
CE-144	2.80E+00	2.38E+00	0.	9.72E-01	0.	1.30E+03	3.07E-01
WP-239	7.37E-02	7.32E-03	0.	2.21E-02	0.	1.44E+03	3.91E-03

POOR ORIGINAL

2273 209

DOSE FACTORS FOR LIQUID DISCHARGES BASED ON 1 CLYR RELEASE OF EACH ISOTOPE IN DISCHARGE FLOW OF 1 GPM WITH NO ADDITIONAL DILUTION

NUCLIDE	PATHWAY - POTABLE WATER					ORGAN DUSE (M R E M)					AGE GROUP - CHILD	
	BONE	LIVER	THYROID	KIDNEY	LUNG	GI-LLI	SKIN	TOTAL BODY				
H-3	0.	5.20E+01	5.20E+01	3.44E+01	5.20E+01	5.20E+01	0.	5.20E+01	0.			
P-32	4.83E+04	3.03E+03	0.	0.	0.	5.43E+03	0.	1.07E+03	0.			
CR-51	0.	0.	4.03E-01	1.49E-01	0.94E-01	1.09E+02	0.	0.73E-01	0.			
HA-54	0.	1.17E+03	0.	3.48E+02	0.	3.59E+03	0.	2.24E+02	0.			
FE-55	1.59E+03	7.15E+03	0.	0.	8.28E+03	2.79E+03	0.	1.06E+03	0.			
FE-59	1.10E+03	2.62E+03	0.	0.	7.28E+02	6.05E+03	0.	9.37E+02	0.			
CU-58	0.	4.72E+02	0.	0.	0.	2.81E+03	0.	1.42E+03	0.			
CU-59	0.	1.33E+03	0.	0.	0.	7.33E+03	0.	3.97E+03	0.			
ZN-65	1.24E+03	3.94E+03	0.	2.64E+03	0.	2.48E+03	0.	1.78E+03	0.			
MO-60	0.	5.31E+03	0.	0.	0.	1.05E+03	0.	2.40E+03	0.			
SR-84	3.51E+03	0.	0.	0.	0.	1.31E+04	0.	1.01E+04	0.			
SR-90	4.41E+06	0.	0.	0.	0.	6.24E+04	0.	1.12E+06	0.			
Y-91	1.49E+02	0.	0.	0.	0.	1.98E+04	0.	3.40E+04	0.			
ZR-93	2.65E+01	6.19E+00	0.	3.94E+00	0.	6.41E+03	0.	5.03E+00	0.			
ZR-97	2.73E-01	5.55E-02	0.	8.31E-02	0.	1.05E+04	0.	2.20E-02	0.			
MO-95	4.95E+00	2.11E+00	0.	8.71E-01	0.	3.60E+03	0.	1.52E+00	0.			
MO-99	3.46E-02	9.76E+02	0.	2.21E+03	5.49E-02	2.33E+03	0.	1.07E+02	0.			
KU-103	1.72E+02	0.	0.	1.80E+02	0.	4.52E+03	0.	6.46E+01	0.			
RU-105	3.05E+03	0.	0.	1.36E+03	0.	4.74E+04	0.	2.79E+02	0.			
AG-110M	4.10E+01	3.79E+01	0.	7.45E+01	0.	1.55E+04	0.	2.25E+01	0.			
SO-124	7.16E+02	1.55E+01	1.73E+00	0.	5.50E+02	2.03E+04	0.	2.83E+02	0.			
SO-125	5.75E+02	7.14E+00	1.54E+00	3.50E+00	5.97E+04	5.05E+03	0.	1.15E+02	0.			
TE-127M	2.91E+03	7.07E+02	8.15E+02	2.78E+03	0.	2.80E+03	0.	3.87E+02	0.			
TE-127M	1.80E+03	6.24E+02	4.88E+02	7.10E+03	0.	8.06E+03	0.	2.22E+02	0.			
TE-129M	1.26E+04	3.50E+03	4.02E+03	1.22E+04	0.	1.51E+04	0.	1.94E+03	0.			
TE-131M	4.07E+02	3.18E+02	5.08E+04	1.72E+03	0.	1.01E+04	0.	2.20E+02	0.			
TE-132	2.40E+03	1.17E+03	1.00E+04	3.84E+03	0.	1.82E+04	0.	1.29E+03	0.			
TE-133	4.00E+03	4.10E+03	1.33E+05	2.50E+03	0.	2.51E+02	0.	3.09E+03	0.			
CS-134	1.03E+03	1.27E+03	3.07E+05	7.47E+02	0.	2.10E+02	0.	5.00E+04	0.			
CS-134	5.74E+04	9.06E+04	0.	1.23E+04	1.07E+04	5.23E+02	0.	4.00E+04	0.			
CS-135	1.63E+03	0.41E+03	0.	3.57E+03	4.03E+02	7.29E+02	0.	4.02E+03	0.			
CS-137	8.00E+04	7.74E+04	0.	9.51E+03	9.07E+03	4.72E+02	0.	1.15E+04	0.			
BA-140	2.00E+04	1.03E+01	0.	2.17E+00	1.08E+01	5.78E+03	0.	1.21E+03	0.			
LA-140	2.11E+00	7.34E-01	0.	7.45E-01	0.	2.00E+04	0.	2.48E-01	0.			
CE-141	9.24E+00	4.77E+00	0.	1.19E-01	0.	2.93E+03	0.	7.10E-01	0.			
CE-143	3.01E-01	2.43E+02	0.	1.19E-01	0.	9.31E+03	0.	2.95E-02	0.			
CE-144	5.48E+02	1.72E+02	0.	3.10E+01	0.	4.40E+04	0.	2.92E+01	0.			
NP-239	2.77E-01	2.76E-02	0.	8.14E-02	0.	5.31E+03	0.	1.40E-02	0.			

DOSE FACTORS FOR LIQUID DISCHARGES BASED ON 1 GPM RELEASE OF EACH ISUOPE IN DISCHARGE FLOW OF 1 GPM WITH NO ADDITIONAL DILUTION

PATHWAY - FRESH WATER FISH

AGE GROUP - CHILD

NO. SLICE	ORGAN USE (MREM)							TOTAL JOINT
	BONE	LIVER	THYROID	KIDNEY	LUNG	GI-LLI	SKIN	
1-1	0.38E+07	6.34E-01	5.34E-01	4.18E-01	0.34E-01	0.34E-01	0.34E-01	0.34E-01
2-1	0.38E+07	4.00E+06	0.	0.	0.	7.17E+06	0.	2.47E+03
3-1	0.	0.	1.08E+00	3.97E-01	0.33E+00	4.73E+06	0.	1.80E+00
4-1	0.	0.33E+03	0.	1.88E+03	0.	1.94E+04	0.	1.21E+03
5-1	2.15E+03	9.67E+03	0.	0.	1.12E+04	3.78E+03	0.	2.34E+03
6-1	1.48E+03	3.52E+03	0.	0.	9.77E+02	1.10E+04	0.	1.33E+03
7-1	0.	3.18E+02	0.	0.	0.	1.89E+03	0.	9.50E+02
8-1	0.	8.90E+02	0.	0.	0.	4.96E+03	0.	2.09E+03
9-1	3.35E+04	1.07E+05	0.	7.12E+04	0.	6.71E+04	0.	4.82E+04
10-1	0.	1.41E+05	0.	0.	0.	2.70E+04	0.	0.50E+04
11-1	1.42E+05	0.	0.	0.	0.	5.29E+03	0.	4.03E+03
12-1	1.79E+05	0.	0.	0.	0.	2.62E+04	0.	4.54E+03
13-1	5.01E+01	0.	0.	0.	0.	6.66E+03	0.	1.34E+03
14-1	4.01E+01	1.09E+01	0.	7.00E+00	0.	2.90E+04	0.	1.24E+01
15-1	2.21E+00	5.57E-01	0.	6.51E-01	0.	2.50E+03	0.	0.34E-01
16-1	1.99E+03	8.49E+02	0.	3.50E+02	0.	1.47E+06	0.	0.23E+02
17-1	9.12E-03	1.17E+02	0.	2.04E+02	1.25E-02	2.85E+02	0.	2.53E+01
18-1	2.31E+01	0.	0.	2.41E+01	0.	6.07E+02	0.	9.34E+03
19-1	4.12E+02	0.	0.	1.04E+02	0.	0.40E+03	0.	5.11E+01
20-1	1.27E+00	1.18E+00	0.	2.32E+00	0.	4.81E+02	0.	7.00E-01
21-1	9.03E+00	1.82E-01	2.33E-02	0.	7.47E+00	2.73E+02	0.	3.01E+03
22-1	4.71E+01	1.11E+01	1.11E+01	3.77E+01	8.08E+02	1.06E+02	0.	6.81E+00
23-1	1.50E+04	4.24E+03	4.39E+03	1.49E+04	0.	1.51E+04	0.	2.00E+03
24-1	3.85E+03	3.41E+03	2.73E+03	3.84E+04	0.	5.31E+04	0.	1.25E+03
25-1	9.73E+04	1.88E+04	2.15E+04	6.54E+04	0.	8.10E+04	0.	1.04E+04
26-1	1.42E+03	7.14E+02	1.80E+04	6.73E+03	0.	6.54E+04	0.	9.92E+02
27-1	1.14E+04	5.00E+03	1.05E+04	1.77E+04	0.	8.84E+04	0.	6.93E+03
28-1	7.78E+02	7.97E+02	2.59E+05	4.87E+02	0.	0.83E+02	0.	0.31E+02
29-1	1.41E+02	1.74E+02	4.19E+04	1.02E+02	0.	7.04E+01	0.	6.83E+01
30-1	1.05E+06	2.61E+06	0.	3.33E+05	2.90E+05	4.44E+04	0.	5.30E+05
31-1	4.28E+04	1.69E+05	0.	9.40E+04	1.23E+04	1.92E+04	0.	1.42E+03
32-1	2.10E+06	2.10E+06	0.	2.57E+05	2.40E+05	1.52E+04	0.	3.42E+03
33-1	1.09E+03	1.05E+00	0.	1.14E-01	5.08E-01	2.52E+04	0.	6.37E+04
34-1	2.79E-01	2.02E-01	0.	0.	0.	5.73E+03	0.	0.82E-02
35-1	1.28E-01	6.38E-02	0.	9.90E-03	0.	8.01E+01	0.	9.51E-03
36-1	3.40E-02	2.57E+00	0.	8.27E-03	0.	2.51E+02	0.	1.81E-03
37-1	7.40E+00	2.32E+00	0.	4.20E-01	0.	6.02E+02	0.	3.94E-01
38-1	3.21E-02	3.18E-03	0.	9.20E-03	0.	0.20E+02	0.	1.70E-03

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DOSE FACTORS FOR LIQUID DISCHARGES BASED ON 1 G1/YR RELEASE OF EACH ISOTOPE IN DISCHARGE FLOW OF 1 GPM WITH 100 ADDITIONAL DILUTION

NUCLIDE	PATHWAY - POTABLE WATER										AGE GROUP - INFANT			
	ORGAN DOSE (MREM)										TOTAL BODY			
	BONE	LIVER	THYROID	KIDNEY	LUNG	GI-LLI	SKIN	TOTAL BODY						
H-3	0.	7.87E+01	7.87E+01	3.44E+01	7.37E+01	7.87E+01	0.	7.87E+01						
P-32	4.83E+04	3.63E+03	0.	0.	0.	5.43E+03	0.	1.37E+03						
SR-90	0.	0.	4.03E-01	1.49E-01	6.94E-01	1.69E+02	0.	0.73E-01						
SR-90	0.	1.17E+03	0.	3.48E+02	0.	3.59E+03	0.	2.24E+02						
FE-59	1.59E+03	7.15E+03	0.	0.	8.28E+03	2.79E+03	0.	1.88E+03						
FE-59	1.10E+03	2.02E+03	0.	0.	7.28E+02	6.05E+03	0.	9.97E+02						
CU-64	0.	9.64E+02	0.	0.	0.	2.50E+03	0.	2.30E+03						
CU-64	0.	2.74E+03	0.	0.	0.	6.77E+03	0.	6.50E+03						
ZN-65	1.24E+03	3.94E+03	0.	2.64E+03	0.	2.48E+03	0.	1.70E+03						
SR-89	0.	5.31E+03	0.	0.	0.	1.05E+03	0.	2.48E+03						
SR-89	7.46E+05	0.	0.	0.	0.	1.40E+04	0.	2.14E+04						
SR-90	0.43E+00	0.	0.	0.	0.	6.63E+04	0.	1.04E+03						
Y-91	3.19E+02	0.	0.	0.	0.	2.11E+04	0.	8.49E+03						
Y-91	0.39E+01	1.36E+01	0.	3.94E+00	0.	6.10E+03	0.	9.67E+03						
ZR-97	2.73E-01	5.55E-02	0.	8.31E-02	0.	1.65E+04	0.	2.53E-02						
NU-239	9.67E+00	4.44E+00	0.	8.71E-01	0.	3.52E+03	0.	2.01E+03						
NU-239	3.96E-02	9.76E+02	0.	2.21E+03	0.	2.53E+03	0.	1.87E+02						
NU-239	3.58E+02	0.	0.	1.60E+02	0.	4.47E+03	0.	1.23E+02						
NU-239	6.71E+03	0.	0.	1.35E+03	0.	5.05E+04	0.	7.99E+02						
AG-110M	4.10E+01	3.79E+01	0.	7.45E+01	0.	1.55E+04	0.	2.27E+01						
SR-124	7.16E+02	1.55E+01	1.73E+00	0.	5.56E+02	2.03E+04	0.	2.83E+02						
SR-124	5.79E+02	8.78E+00	3.08E+00	3.50E+00	0.	2.78E+03	0.	1.16E+02						
TE-125M	6.19E+03	2.09E+03	2.04E+03	2.78E+03	0.	2.98E+03	0.	8.20E+02						
TE-127M	1.67E+03	0.54E+02	5.58E+02	7.10E+03	0.	3.18E+03	0.	2.44E+02						
TE-129M	2.55E+04	9.16E+02	1.00E+04	1.22E+04	0.	1.61E+04	0.	4.00E+03						
TE-131M	0.53E+02	5.41E+02	1.22E+05	1.75E+03	0.	1.61E+04	0.	3.57E+02						
TE-132	4.76E+03	2.55E+03	2.01E+04	3.84E+03	0.	1.86E+04	0.	2.49E+03						
TE-132	8.40E+03	9.94E+03	3.22E+05	2.50E+03	0.	3.76E+02	0.	2.84E+03						
TE-132	2.17E+03	3.17E+03	7.50E+05	7.47E+02	0.	5.02E+02	0.	9.03E+02						
CS-134	1.17E+05	2.11E+05	0.	1.25E+04	0.	2.41E+04	0.	1.79E+04						
CS-134	1.03E+03	0.41E+03	0.	3.57E+03	0.	7.29E+02	0.	4.02E+03						
CS-137	1.07E+05	1.07E+05	0.	9.51E+03	0.	2.20E+04	0.	1.08E+04						
JA-140	4.34E+04	4.41E+01	0.	2.17E+00	0.	2.07E+01	0.	2.24E+03						
LA-140	4.42E+00	1.74E+01	0.	0.	0.	2.17E+04	0.	4.50E-01						
CE-141	2.03E+01	1.42E+01	0.	7.49E+01	0.	0.04E+03	0.	1.40E+03						
CE-141	3.61E-01	2.43E+02	0.	1.19E-01	0.	3.31E+03	0.	2.32E-02						
CE-144	1.15E+03	4.53E+02	0.	3.10E+01	0.	4.74E+04	0.	0.20E+01						
NP-239	2.82E-01	2.82E-02	0.	8.14E-02	0.	7.31E+03	0.	1.47E-02						

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DOSE FACTORS FOR GASEOUS DISCHARGES
 BASED ON 1 CL/YR RELEASE OF EACH ISOTOPE AND A VALUE OF UNITY FOR X/Q, DEPLETED X/Q AND RELATIVE DEPOSITION

NUCLIDE	PATHWAY - INHALATION					ORGAN DOSE (MREM)					AGE GROUP - ADULT	
	BONE	LIVER	THYROID	KIDNEY	LUNG	GI-LLI	SKIN	TOTAL BODY				
H----	0.	3.10E+01	3.10E+01	3.10E+01	3.10E+01	3.10E+01	0.	3.10E+01				
C----	5.28E+02	9.88E+01	9.88E+01	9.88E+01	9.88E+01	9.88E+01	0.	9.88E+01				
P--32	3.82E+04	2.23E+03	0.	0.	0.	2.50E+03	0.	1.45E+03				
AR--41	0.	0.	0.	0.	0.	0.	0.	0.				
MN--54	0.	1.15E+03	0.	2.85E+02	4.05E+04	2.24E+03	0.	1.82E+02				
FE--59	3.40E+02	8.03E+05	0.	0.	2.94E+04	5.44E+03	0.	3.06E+02				
CO--58	0.	4.58E+01	0.	0.	2.63E+04	3.08E+03	0.	6.00E+01				
CO--60	0.	3.33E+02	0.	0.	1.73E+05	8.24E+03	0.	4.28E+02				
ZN--65	9.38E+02	2.99E+03	0.	2.00E+03	2.52E+04	1.55E+03	0.	1.35E+03				
KR-83M	0.	0.	0.	0.	0.	0.	0.	0.				
KR-85M	0.	0.	0.	0.	0.	0.	0.	0.				
KR--85	0.	0.	0.	0.	0.	0.	0.	0.				
KR--87	0.	0.	0.	0.	0.	0.	0.	0.				
KR--88	0.	0.	0.	0.	0.	0.	0.	0.				
KR--89	0.	0.	0.	0.	0.	0.	0.	0.				
KR--90	0.	0.	0.	0.	0.	0.	0.	0.				
RU--86	0.	3.91E+03	0.	0.	0.	4.82E+02	0.	1.71E+03				
SR--89	8.80E+03	0.	0.	0.	4.05E+04	1.01E+04	0.	2.52E+02				
SR--90	2.87E+06	0.	0.	0.	2.78E+05	2.09E+04	0.	1.76E+03				
Y--91	1.34E+04	0.	0.	0.	4.93E+04	1.11E+04	0.	3.59E+02				
ZR--95	3.10E+03	9.95E+02	0.	1.57E+03	5.14E+04	4.35E+03	0.	6.74E+02				
NU--95	4.07E+02	2.26E+02	0.	2.24E+02	1.46E+04	3.01E+03	0.	1.22E+02				
KU--103	4.42E+01	0.	0.	1.69E+02	1.40E+04	3.19E+03	0.	1.91E+01				
KU--106	2.00E+03	0.	0.	3.87E+03	2.73E+05	2.64E+04	0.	2.52E+02				
AG-110M	3.13E+02	2.89E+02	0.	5.69E+02	1.34E+05	8.75E+03	0.	1.72E+02				
CU-115M	0.	5.69E+03	0.	4.58E+03	4.07E+04	1.11E+04	0.	1.84E+02				
SN-123	6.99E+03	1.54E+02	1.31E+02	0.	6.67E+04	9.07E+03	0.	2.27E+02				
SN-125	3.66E+04	9.68E+02	2.85E+02	0.	2.71E+05	3.68E+03	0.	1.39E+03				
SB-124	9.03E+02	1.70E+01	2.19E+00	0.	7.18E+04	1.18E+04	0.	3.59E+02				
SB-125	1.91E+03	2.06E+01	1.70E+00	0.	6.37E+04	2.92E+03	0.	3.84E+02				
FE1274	3.66E+02	1.63E+02	9.51E+01	1.32E+03	2.78E+04	4.33E+03	0.	4.54E+01				
FE129M	2.82E+02	1.35E+02	9.95E+01	1.05E+03	3.56E+04	1.11E+04	0.	4.58E+01				
I--131	7.29E+02	1.04E+03	3.45E+05	1.78E+03	0.	1.82E+02	0.	5.93E+02				
I--133	2.50E+02	4.31E+02	8.47E+04	7.52E+02	0.	2.52E+02	0.	1.31E+02				
XE131M	0.	0.	0.	0.	0.	0.	0.	0.				
XE133M	0.	0.	0.	0.	0.	0.	0.	0.				
XE-133	0.	0.	0.	0.	0.	0.	0.	0.				
XE135M	0.	0.	0.	0.	0.	0.	0.	0.				
XE-137	0.	0.	0.	0.	0.	0.	0.	0.				
XE-137	0.	0.	0.	0.	0.	0.	0.	0.				
CS-138	0.	0.	0.	0.	0.	0.	0.	0.				
CS-134	1.08E+04	2.45E+04	0.	8.35E+03	2.82E+03	3.01E+02	0.	2.11E+04				
CS-136	1.13E+03	4.24E+03	0.	2.48E+03	3.47E+02	3.38E+02	0.	3.42E+03				
CS-137	1.38E+04	1.80E+04	0.	6.49E+03	2.18E+03	2.44E+02	0.	1.24E+04				
BA-140	1.13E+03	1.42E+00	0.	4.84E+01	3.08E+04	9.32E+03	0.	7.43E+01				
GE-141	5.76E+02	3.91E+02	0.	1.81E+02	1.05E+04	3.47E+03	0.	4.42E+01				
GE-144	9.93E+04	4.14E+04	0.	2.49E+04	2.25E+05	2.36E+04	0.	5.32E+03				

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DOSE FACTORS FOR GASEOUS DISCHARGES
 BASED ON 1 C/MR RELEASE OF EACH ISOTOPE AND A VALUE OF UNITY FOR A/Q, UNLIMITED X/Q AND RELATIVE DEPOSITION

NUCLIDE	PATHWAY - GROUND PLANE DEPOSITION						AGE GROUP - ADULT			
	BONE	LIVER	THYROID	KIDNEY	LUNG	GI-LLI	SKIN	TOTAL BODY		
H-3	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
C-14	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
P-32	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
AR-41	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
MN-54	4.39E+07	4.39E+07	4.39E+07	4.39E+07	4.39E+07	4.39E+07	5.14E+07	4.39E+07	4.39E+07	4.39E+07
FE-59	8.73E+06	8.73E+06	8.73E+06	8.73E+06	8.73E+06	8.73E+06	1.03E+07	8.73E+06	8.73E+06	8.73E+06
CO-58	1.21E+07	1.21E+07	1.21E+07	1.21E+07	1.21E+07	1.21E+07	1.41E+07	1.21E+07	1.21E+07	1.21E+07
CO-60	6.80E+08	6.80E+08	6.80E+08	6.80E+08	6.80E+08	6.80E+08	8.00E+08	6.80E+08	6.80E+08	6.80E+08
ZN-65	2.36E+07	2.36E+07	2.36E+07	2.36E+07	2.36E+07	2.36E+07	2.71E+07	2.36E+07	2.36E+07	2.36E+07
KR-83M	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
KR-85M	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
KR-85	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
KR-87	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
KR-88	9.90E+03	9.90E+03	9.90E+03	9.90E+03	9.90E+03	9.90E+03	1.13E+04	9.90E+03	9.90E+03	9.90E+03
KX-89	8.08E+02	8.08E+02	8.08E+02	8.08E+02	8.08E+02	8.08E+02	9.70E+02	8.08E+02	8.08E+02	8.08E+02
KR-90	6.16E-03	6.16E-03	6.16E-03	6.16E-03	6.16E-03	6.16E-03	7.29E-03	6.16E-03	6.16E-03	6.16E-03
RB-86	2.86E+05	2.86E+05	2.86E+05	2.86E+05	2.86E+05	2.86E+05	3.26E+05	2.86E+05	2.86E+05	2.86E+05
SR-89	6.87E+02	6.87E+02	6.87E+02	6.87E+02	6.87E+02	6.87E+02	7.97E+02	6.87E+02	6.87E+02	6.87E+02
SA-90	1.70E+05	1.70E+05	1.70E+05	1.70E+05	1.70E+05	1.70E+05	2.01E+05	1.70E+05	1.70E+05	1.70E+05
Y-91	3.43E+04	3.43E+04	3.43E+04	3.43E+04	3.43E+04	3.43E+04	3.86E+04	3.43E+04	3.43E+04	3.43E+04
ZR-95	1.59E+07	1.59E+07	1.59E+07	1.59E+07	1.59E+07	1.59E+07	1.86E+07	1.59E+07	1.59E+07	1.59E+07
NU-95	4.33E+06	4.33E+06	4.33E+06	4.33E+06	4.33E+06	4.33E+06	5.09E+06	4.33E+06	4.33E+06	4.33E+06
KU-103	3.49E+06	3.49E+06	3.49E+06	3.49E+06	3.49E+06	3.49E+06	4.07E+06	3.49E+06	3.49E+06	3.49E+06
RU-106	1.33E+07	1.33E+07	1.33E+07	1.33E+07	1.33E+07	1.33E+07	1.54E+07	1.33E+07	1.33E+07	1.33E+07
AG-110M	1.13E+08	1.13E+08	1.13E+08	1.13E+08	1.13E+08	1.13E+08	1.32E+08	1.13E+08	1.13E+08	1.13E+08
CU-115M	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
SN-123	0.	0.	0.	0.	0.	0.	4.35E+04	0.	0.	0.
SN-126	1.64E+09	1.64E+09	1.64E+09	1.64E+09	1.64E+09	1.64E+09	1.83E+09	1.64E+09	1.64E+09	1.64E+09
SU-124	1.90E+07	1.90E+07	1.90E+07	1.90E+07	1.90E+07	1.90E+07	2.19E+07	1.90E+07	1.90E+07	1.90E+07
SB-125	7.27E+07	7.27E+07	7.27E+07	7.27E+07	7.27E+07	7.27E+07	8.21E+07	7.27E+07	7.27E+07	7.27E+07
TE-127M	2.79E+04	2.79E+04	2.79E+04	2.79E+04	2.79E+04	2.79E+04	3.09E+04	2.79E+04	2.79E+04	2.79E+04
TE-129M	1.22E+06	1.22E+06	1.22E+06	1.22E+06	1.22E+06	1.22E+06	1.43E+06	1.22E+06	1.22E+06	1.22E+06
I-131	2.73E+05	2.73E+05	2.73E+05	2.73E+05	2.73E+05	2.73E+05	3.22E+05	2.73E+05	2.73E+05	2.73E+05
I-133	3.92E+04	3.92E+04	3.92E+04	3.92E+04	3.92E+04	3.92E+04	4.77E+04	3.92E+04	3.92E+04	3.92E+04
AE-131M	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
XE-133M	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
XE-133	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
XE-135M	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
AE-135	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
XL-137	8.69E+01	8.69E+01	8.69E+01	8.69E+01	8.69E+01	8.69E+01	1.01E+02	8.69E+01	8.69E+01	8.69E+01
XE-138	6.01E+03	6.01E+03	6.01E+03	6.01E+03	6.01E+03	6.01E+03	6.87E+03	6.01E+03	6.01E+03	6.01E+03
CS-134	2.22E+08	2.22E+08	2.22E+08	2.22E+08	2.22E+08	2.22E+08	2.58E+08	2.22E+08	2.22E+08	2.22E+08
CS-136	4.73E+06	4.73E+06	4.73E+06	4.73E+06	4.73E+06	4.73E+06	5.36E+06	4.73E+06	4.73E+06	4.73E+06
CS-137	3.27E+08	3.27E+08	3.27E+08	3.27E+08	3.27E+08	3.27E+08	3.81E+08	3.27E+08	3.27E+08	3.27E+08
UA-140	5.30E+05	5.30E+05	5.30E+05	5.30E+05	5.30E+05	5.30E+05	6.02E+05	5.30E+05	5.30E+05	5.30E+05
CL-141	4.33E+05	4.33E+05	4.33E+05	4.33E+05	4.33E+05	4.33E+05	4.88E+05	4.33E+05	4.33E+05	4.33E+05
CL-144	3.59E+06	3.59E+06	3.59E+06	3.59E+06	3.59E+06	3.59E+06	4.13E+06	3.59E+06	3.59E+06	3.59E+06

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DOSE FACTORS FOR GASEOUS DISCHARGES
 BASED ON 1 CLYK RELEASE OF EACH ISOTOPE AND A VALUE OF UNITY FOR APM, DEPLETED X/M AND RELATIVE DEPOSITION

NUCLIDE	ORGAN DOSE (MREM)							AGE GROUP - ADULT	
	BONE	LIVER	THYROID	KIDNEY	LUNG	GI-LLI	Skin	TOTAL BODY	
H-3	0.	6.80E+00	6.80E+00	6.80E+00	6.80E+00	6.80E+00	0.	6.80E+00	0.
C-14	3.96E+03	7.94E+02	7.94E+02	7.94E+02	7.94E+02	7.94E+02	0.	7.94E+02	0.
P-32	3.59E+07	2.25E+06	0.	0.	0.	4.03E+06	0.	1.33E+03	0.
AR-41	0.	0.	0.	0.	0.	0.	0.	0.	0.
MN-54	0.	1.52E+06	0.	4.52E+05	0.	4.00E+06	0.	2.90E+03	0.
FE-59	1.13E+06	2.68E+06	0.	0.	7.45E+05	8.86E+06	0.	1.02E+03	0.
CO-58	0.	2.13E+05	0.	0.	0.	4.31E+06	0.	4.70E+03	0.
CO-60	0.	7.53E+05	0.	0.	0.	1.41E+07	0.	1.62E+06	0.
ZN-65	2.05E+06	6.49E+06	0.	4.34E+06	0.	4.09E+06	0.	2.94E+06	0.
KR-83M	0.	0.	0.	0.	0.	0.	0.	0.	0.
KR-85M	0.	0.	0.	0.	0.	0.	0.	0.	0.
KR-85	0.	0.	0.	0.	0.	0.	0.	0.	0.
KR-87	0.	2.93E-08	0.	0.	0.	1.37E-09	0.	1.02E-08	0.
KR-88	0.	5.25E-01	0.	0.	0.	0.	0.	2.78E-01	0.
KR-89	3.64E+03	0.	0.	0.	0.	5.82E+02	0.	1.04E+02	0.
KR-90	1.09E+02	0.	0.	0.	0.	2.50E+00	0.	2.62E+01	0.
RB-86	0.	4.15E+06	0.	0.	0.	8.28E+05	0.	1.93E+06	0.
SR-89	8.29E+07	0.	0.	0.	0.	1.33E+07	0.	2.38E+06	0.
SR-90	2.99E+09	0.	0.	0.	0.	7.08E+07	0.	7.30E+08	0.
Y-91	3.89E+04	0.	0.	0.	0.	2.14E+07	0.	1.04E+03	0.
ZR-95	9.02E+03	3.01E+03	0.	4.59E+03	0.	1.02E+07	0.	1.90E+03	0.
NH-95	1.52E+03	8.46E+02	0.	8.39E+02	0.	5.13E+06	0.	3.33E+02	0.
KU-103	4.72E+04	0.	0.	1.80E+05	0.	5.91E+06	0.	2.04E+04	0.
RU-106	9.46E+05	0.	0.	1.83E+06	0.	6.12E+07	0.	1.20E+03	0.
AG-110M	5.78E+04	5.35E+04	0.	1.05E+05	0.	2.18E+07	0.	3.18E+04	0.
CU-115M	0.	4.99E+05	0.	3.96E+05	0.	2.10E+07	0.	1.59E+04	0.
SN-123	3.18E-07	5.27E-09	4.47E-09	0.	0.	6.40E-07	0.	7.70E-09	0.
SM-126	2.96E+07	5.86E+05	1.72E+05	0.	1.55E+05	2.91E+07	0.	9.25E+05	0.
SB-124	7.80E+05	1.47E+04	1.88E+03	0.	6.05E+05	2.21E+07	0.	3.08E+03	0.
SB-129	1.94E+06	2.90E+05	2.35E+05	3.16E+06	7.99E+07	9.86E+06	0.	2.50E+05	0.
TE-127M	3.05E+06	1.07E+06	8.02E+05	1.24E+07	0.	1.39E+07	0.	3.73E+02	0.
TE-129M	3.52E+06	1.24E+06	1.15E+06	1.38E+07	0.	1.67E+07	0.	5.20E+03	0.
I-131	1.23E+06	1.77E+06	5.78E+08	3.03E+06	0.	4.66E+05	0.	1.04E+03	0.
I-133	3.37E+04	5.65E+04	1.13E+07	1.02E+05	0.	5.14E+04	0.	1.79E+04	0.
XE-131M	0.	0.	0.	0.	0.	0.	0.	0.	0.
XE-133M	0.	0.	0.	0.	0.	0.	0.	0.	0.
AE-133	0.	0.	0.	0.	0.	0.	0.	0.	0.
XE-135M	1.11E-04	1.03E-04	0.	3.88E-05	1.17E-05	2.40E-06	0.	4.50E-05	0.
XE-135	3.83E-03	3.54E-03	0.	1.34E-03	4.03E-04	6.27E-05	0.	1.57E-03	0.
AE-137	7.85E+00	1.07E+01	0.	3.65E+00	1.21E+00	2.07E-01	0.	7.03E+00	0.
AE-138	0.	0.	0.	0.	0.	0.	0.	0.	0.
CS-134	2.11E+07	5.01E+07	0.	1.63E+07	5.38E+06	8.77E+05	0.	4.10E+07	0.
CS-136	1.05E+06	4.15E+06	0.	2.31E+06	3.17E+05	4.71E+05	0.	2.99E+05	0.
CS-137	2.95E+07	4.03E+07	0.	1.37E+07	4.54E+06	7.70E+05	0.	2.04E+07	0.
BA-140	3.25E+06	4.28E+03	0.	1.39E+03	2.34E+03	2.11E+07	0.	2.14E+03	0.
GE-141	2.24E+03	1.52E+03	0.	7.03E+02	5.78E+06	5.78E+06	0.	1.77E+02	0.
GE-144	1.58E+05	6.58E+04	0.	3.90E+04	0.	5.32E+07	0.	8.42E+03	0.

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BASED ON 1 C/P/K RELEASE OF EACH ISOTOPE AND A VALUE OF UNITY FOR K/Q, DEPLETED X/Q AND RELATIVE DEPOSITION

DOSE FACTORS, JR GASEOUS DISCHARGES

PATHWAY - STORED FRUITS AND VEGETABLES

AGE GROUP - ADULT

NUCLIDE

ORGAN DOSE (MREM)

	BONE	LIVER	THYROID	KIDNEY	LUNG	GILLI	SKIN	TOTAL BODY
H-3	U.	5.47E+01	5.47E+01	5.47E+01	5.47E+01	5.47E+01	U.	5.47E+01
C-14	3.22E+04	6.45E+03	6.45E+03	6.45E+03	6.45E+03	6.45E+03	U.	6.45E+03
P-32	1.07E+07	1.05E+06	U.	U.	U.	1.08E+06	U.	U.
AR-41	U.	U.	U.	U.	U.	U.	U.	U.
MN-54	U.	1.08E+07	U.	3.22E+06	U.	3.32E+07	U.	2.07E+06
FE-59	3.70E+06	8.79E+06	U.	U.	2.44E+06	2.90E+07	U.	3.35E+03
CO-58	U.	9.72E+05	U.	U.	U.	1.97E+07	U.	2.18E+03
CO-60	U.	5.59E+06	U.	U.	U.	1.12E+08	U.	1.32E+07
ZN-65	1.40E+07	4.40E+07	U.	2.98E+07	U.	2.01E+07	U.	2.02E+07
KR-83M	U.	U.	U.	U.	U.	U.	U.	U.
KR-85M	U.	U.	U.	U.	U.	U.	U.	U.
KR-85	U.	U.	U.	U.	U.	U.	U.	U.
KR-87	U.	2.38E-07	U.	U.	U.	U.	U.	U.
KR-88	U.	U.	U.	U.	U.	1.11E-08	U.	0.27E-08
KR-89	1.32E+04	U.	U.	U.	U.	U.	U.	U.
KR-90	0.70E+02	U.	U.	U.	U.	2.11E+03	U.	3.70E+02
RB-86	U.	3.78E+06	U.	U.	U.	2.21E+01	U.	2.13E+02
SR-89	3.00E+08	U.	U.	U.	U.	7.46E+05	U.	1.70E+06
SR-90	2.42E+10	U.	U.	U.	U.	8.00E+07	U.	8.60E+03
Y-91	1.58E+05	U.	U.	U.	U.	6.00E+08	U.	5.91E+09
ZR-95	4.50E+04	1.64E+04	U.	2.32E+04	U.	0.70E+07	U.	4.24E+03
NB-95	3.85E+03	2.14E+03	U.	2.12E+03	U.	6.41E+07	U.	9.80E+03
RU-103	1.38E+05	U.	U.	5.27E+05	U.	1.30E+07	U.	8.40E+02
RU-106	6.87E+06	U.	U.	1.33E+07	U.	1.01E+07	U.	5.53E+04
AG110M	4.02E+05	3.72E+05	U.	7.30E+05	U.	4.45E+08	U.	8.70E+03
CD115M	U.	1.57E+06	U.	1.24E+06	U.	1.52E+08	U.	2.41E+03
SN-123	U.	U.	U.	U.	U.	6.59E+07	U.	5.01E+04
SN-126	2.41E+08	4.79E+06	1.40E+06	U.	2.12E+06	U.	U.	U.
SB-124	3.21E+06	6.00E+04	7.76E+03	U.	2.49E+06	3.51E+06	U.	8.03E+03
SB-125	1.28E+07	2.55E+06	2.08E+06	2.79E+07	6.23E+08	9.09E+07	U.	1.47E+03
IE127M	1.68E+07	5.87E+06	4.42E+06	6.81E+07	U.	8.01E+07	U.	2.12E+06
IE129M	8.10E+06	3.03E+06	2.79E+06	3.38E+07	U.	7.02E+07	U.	2.07E+03
I-131	6.23E+04	8.93E+04	2.92E+07	1.53E+05	U.	4.07E+07	U.	1.29E+03
I-133	U.	U.	U.	U.	U.	2.55E+04	U.	5.11E+04
XE131M	U.	U.	U.	U.	U.	U.	U.	U.
XE133M	U.	U.	U.	U.	U.	U.	U.	U.
XE-133	U.	U.	U.	U.	U.	U.	U.	U.
XE135M	9.06E-04	8.36E-04	U.	3.17E-04	9.53E-05	1.96E-05	U.	3.72E-04
XE-135	3.13E-02	2.89E-02	U.	1.99E-02	3.29E-03	0.75E-04	U.	1.20E-02
XE-137	6.35E+01	8.68E+01	U.	2.95E+01	9.79E+00	1.67E+00	U.	5.69E+01
XE-138	U.	U.	U.	U.	U.	U.	U.	U.
CS-134	1.62E+08	3.86E+08	U.	1.25E+08	4.12E+07	0.70E+06	U.	3.10E+08
CS-136	3.68E+05	1.45E+06	U.	8.07E+05	1.11E+05	1.05E+05	U.	1.04E+05
CS-137	2.39E+08	3.26E+08	U.	1.11E+08	3.68E+07	0.20E+06	U.	2.14E+08
GA-140	1.44E+03	1.44E+03	U.	4.02E+02	7.78E+02	7.90E+06	U.	7.14E+04
GE-141	5.17E+03	3.50E+03	U.	1.62E+03	U.	1.34E+07	U.	3.90E+02
GE-144	1.11E+06	4.63E+05	U.	2.75E+05	U.	3.75E+08	U.	5.95E+04

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BASED ON 1 G/LYR RELEASE OF EACH ISOTOPE AND A VALUE OF UNITY FOR X/Q, DEPLETED X/Q, AND RELATIVE DEPOSITION

DOSE FACTORS FOR GASEOUS DISCHARGES

PATHWAY - MEAT (CONTAMINATED FORAGE)

AGE GROUP - ADULT

NUCLIDE	ORGAN DOSE (MREM)								AGE GROUP - ADULT	
	BONE	LIVER	THYROID	KIDNEY	LUNG	GI-LLI	SKIN	TOTAL BODY		
H-3	0.	0.99E+00	0.99E+00	0.99E+00	0.99E+00	0.99E+00	0.	0.99E+00		
C-14	1.06E+04	2.12E+03	2.12E+03	2.12E+03	2.12E+03	2.12E+03	0.	2.12E+03		
P-32	1.36E+08	8.50E+06	0.	0.	0.	1.53E+07	0.	5.25E+06		
AR-41	0.	0.	0.	0.	0.	0.	0.	0.		
MN-54	0.	2.17E+03	0.	6.46E+04	0.	6.65E+05	0.	4.15E+04		
FE-59	6.77E+06	1.61E+07	0.	0.	4.40E+06	5.30E+07	0.	0.12E+05		
CO-58	0.	4.50E+03	0.	0.	0.	9.11E+06	0.	1.01E+06		
CO-60	0.	1.77E+06	0.	0.	0.	3.32E+07	0.	3.09E+05		
ZN-65	9.56E+06	3.04E+07	0.	2.03E+07	0.	1.91E+07	0.	1.37E+07		
KR-83M	0.	0.	0.	0.	0.	0.	0.	0.		
KR-85M	0.	0.	0.	0.	0.	0.	0.	0.		
KR-87	0.	1.14E+07	0.	0.	0.	0.	0.	0.		
KR-88	0.	0.	0.	0.	0.	5.32E+09	0.	3.95E+08		
KR-89	3.35E+02	0.	0.	0.	0.	0.	0.	0.		
KR-90	1.12E+01	0.	0.	0.	0.	5.36E+01	0.	9.59E+00		
RU-86	0.	1.35E+07	0.	0.	0.	1.30E+00	0.	2.74E+03		
SR-89	7.63E+06	0.	0.	0.	0.	2.65E+06	0.	6.28E+03		
SR-90	3.08E+08	0.	0.	0.	0.	1.22E+06	0.	2.18E+03		
Y-91	2.83E+04	0.	0.	0.	0.	3.58E+07	0.	7.94E+07		
ZR-93	8.79E+04	5.80E+04	0.	4.64E+04	0.	1.56E+07	0.	7.58E+02		
NU-95	5.96E+04	3.31E+04	0.	3.28E+04	0.	1.85E+08	0.	1.91E+04		
RU-103	2.73E+06	0.	0.	1.04E+07	0.	2.01E+08	0.	1.30E+04		
RU-106	6.08E+07	0.	0.	1.29E+08	0.	3.19E+08	0.	1.18E+05		
AG110M	1.66E+05	1.54E+05	0.	3.02E+05	0.	6.27E+07	0.	9.14E+04		
GO115M	0.	3.80E+04	0.	3.02E+04	0.	1.60E+06	0.	1.22E+03		
SN-123	0.	0.	0.	0.	0.	0.	0.	0.		
SN-120	4.31E+08	0.55E+06	2.51E+06	0.	1.47E+05	1.44E+08	0.	1.24E+07		
SB-124	4.94E+05	9.32E+03	1.19E+03	0.	5.83E+05	1.40E+07	0.	1.92E+03		
SB-125	5.27E+06	1.72E+06	1.42E+06	1.92E+07	5.61E+07	2.37E+07	0.	7.44E+03		
TE127M	3.28E+07	1.15E+07	8.64E+06	1.33E+08	0.	1.49E+08	0.	4.02E+03		
TE129M	3.22E+07	1.20E+07	1.11E+07	1.34E+08	0.	1.61E+08	0.	5.09E+05		
I-131	1.57E+07	2.25E+05	7.36E+07	3.65E+05	0.	5.92E+04	0.	1.29E+03		
I-133	6.51E+03	1.13E+02	2.17E+00	1.47E+02	0.	9.93E+03	0.	3.42E+03		
XE131M	0.	0.	0.	0.	0.	0.	0.	0.		
XE133M	0.	0.	0.	0.	0.	0.	0.	0.		
XE-133	0.	0.	0.	0.	0.	0.	0.	0.		
XE135M	7.59E+05	7.01E+05	0.	2.66E+03	7.98E+00	1.04E+06	0.	3.12E+03		
XE-135	2.62E+03	2.42E+03	0.	9.17E+04	2.70E+04	5.60E+05	0.	1.08E+03		
AE-137	5.57E+00	7.01E+00	0.	2.59E+00	8.58E+01	1.47E+01	0.	4.99E+00		
XE-138	0.	0.	0.	0.	0.	0.	0.	0.		
CS-134	1.54E+07	3.65E+07	0.	1.19E+07	5.42E+06	6.33E+05	0.	2.93E+07		
CS-130	3.34E+05	1.32E+00	0.	7.55E+05	1.01E+05	1.50E+05	0.	9.50E+03		
CS-137	2.09E+07	2.80E+07	0.	9.73E+00	3.23E+00	5.51E+03	0.	1.08E+07		
UA-140	8.12E+05	1.02E+03	0.	3.48E+02	5.80E+02	1.92E+06	0.	5.38E+04		
CC-144	3.67E+02	2.48E+02	0.	1.15E+02	0.	9.47E+05	0.	2.01E+01		
CE-144	3.42E+04	1.43E+04	0.	0.42E+03	0.	1.12E+07	0.	1.03E+03		

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DOSE FACTORS FOR GASEOUS DISCHARGES
 BASED ON 1 CI/YR RELEASE OF EACH ISOTOPE AND A VALUE OF UNITY FOR X/Q, DEPLETED X/Q AND RELATIVE DEPOSITION

NUCLIDE	PATHWAY - MEAT (CONTAMINATED FEED)										AGE GROUP - ADULT		
	ORGAN USE (MREM)												
	BONE	LIVER	THYROID	KIDNEY	LUNG	GI-LLI	SKIN	TOTAL BODY					
H-----3	0.	6.89E+00	6.89E+00	6.89E+00	6.89E+00	6.89E+00	0.	6.89E+00	0.	0.	0.	6.89E+00	
G---14	1.06E+04	2.12E+03	2.12E+03	2.12E+03	2.12E+03	2.12E+03	0.	2.12E+03	0.	0.	0.	2.12E+03	
P---32	7.19E+05	4.51E+04	0.	0.	0.	8.09E+04	0.	8.09E+04	0.	0.	0.	2.70E+04	
AR--41	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	
MN--54	0.	8.20E+04	0.	2.44E+04	0.	2.51E+05	0.	2.51E+05	0.	0.	0.	1.57E+04	
FE--59	7.25E+05	1.72E+06	0.	0.	4.70E+05	5.68E+06	0.	5.68E+06	0.	0.	0.	6.55E+03	
CO--58	0.	8.20E+04	0.	0.	0.	1.66E+06	0.	1.66E+06	0.	0.	0.	1.84E+03	
CO--60	0.	8.09E+05	0.	0.	0.	1.51E+07	0.	1.51E+07	0.	0.	0.	1.78E+05	
ZN--65	3.86E+06	1.23E+07	0.	8.20E+06	0.	7.73E+06	0.	7.73E+06	0.	0.	0.	5.55E+05	
KR-83M	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	
KR-85M	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	
KR--85	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	
KR--87	0.	7.79E-08	0.	0.	0.	3.65E-09	0.	3.65E-09	0.	0.	0.	2.71E-03	
KR--88	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	
KR--89	4.22E+01	0.	0.	0.	0.	6.75E+00	0.	6.75E+00	0.	0.	0.	1.21E+00	
KR--90	5.55E+00	0.	0.	0.	0.	6.46E-01	0.	6.46E-01	0.	0.	0.	1.36E+00	
RB--86	0.	1.94E+05	0.	0.	0.	3.83E+04	0.	3.83E+04	0.	0.	0.	9.07E+04	
SR--89	9.61E+05	0.	0.	0.	0.	1.54E+05	0.	1.54E+05	0.	0.	0.	2.75E+04	
SR--90	1.53E+06	0.	0.	0.	0.	1.78E+07	0.	1.78E+07	0.	0.	0.	3.74E+07	
Y---91	4.27E+03	0.	0.	0.	0.	2.35E+06	0.	2.35E+06	0.	0.	0.	1.15E+02	
ZR--95	2.72E+04	1.33E+04	0.	1.47E+04	0.	7.32E+07	0.	7.32E+07	0.	0.	0.	5.92E+03	
NB--95	4.23E+03	2.35E+03	0.	2.33E+03	0.	1.43E+07	0.	1.43E+07	0.	0.	0.	9.24E+02	
RU-103	2.46E+05	0.	0.	9.38E+05	0.	2.87E+07	0.	2.87E+07	0.	0.	0.	1.06E+05	
KU-106	2.65E+07	0.	0.	5.12E+07	0.	1.71E+09	0.	1.71E+09	0.	0.	0.	3.32E+06	
AG110M	6.32E+04	5.85E+04	0.	1.15E+05	0.	2.39E+07	0.	2.39E+07	0.	0.	0.	3.48E+04	
CO115M	0.	3.92E+03	0.	3.11E+03	0.	1.65E+05	0.	1.65E+05	0.	0.	0.	1.25E+02	
SN-123	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	
SN-125	2.01E+08	4.00E+06	1.17E+06	0.	8.56E+04	6.92E+07	0.	6.92E+07	0.	0.	0.	5.78E+00	
SB-124	7.64E+04	1.44E+03	1.85E+02	0.	5.93E+04	2.16E+06	0.	2.16E+06	0.	0.	0.	3.02E+04	
SB-125	4.95E+06	1.71E+06	1.42E+06	1.92E+07	2.54E+07	2.10E+07	0.	2.10E+07	0.	0.	0.	6.80E+03	
TE127M	9.83E+06	3.44E+06	2.59E+06	3.98E+07	0.	4.46E+07	0.	4.46E+07	0.	0.	0.	1.21E+03	
TE129M	2.38E+06	8.89E+05	8.20E+05	9.93E+06	0.	1.20E+07	0.	1.20E+07	0.	0.	0.	3.78E+03	
I--131	2.58E+01	3.70E+01	1.21E+04	6.33E+01	0.	9.74E+00	0.	9.74E+00	0.	0.	0.	2.12E+01	
I--133	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	
XE131M	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	
XE133M	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	
XE-133	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	
XE135M	3.83E-05	3.54E-05	0.	1.34E-05	4.03E-06	8.28E-07	0.	8.28E-07	0.	0.	0.	1.57E-05	
XE-135	1.32E-03	1.22E-03	0.	4.63E-04	1.39E-04	2.86E-05	0.	2.86E-05	0.	0.	0.	5.43E-04	
XE-137	2.68E+00	3.66E+00	0.	1.25E+00	4.13E-01	7.05E-02	0.	7.05E-02	0.	0.	0.	2.40E+00	
XE-138	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	
CS-134	6.56E+06	1.50E+07	0.	5.00E+05	1.04E+06	2.78E+05	0.	2.78E+05	0.	0.	0.	1.28E+07	
CS-136	1.08E+03	4.27E+03	0.	2.38E+03	3.20E+02	4.85E+02	0.	4.85E+02	0.	0.	0.	3.07E+03	
CS-137	1.01E+07	1.38E+07	0.	4.68E+06	1.92E+06	2.05E+05	0.	2.05E+05	0.	0.	0.	9.02E+00	
UA-140	2.44E+03	3.08E+00	0.	1.04E+00	1.70E+00	5.83E+03	0.	5.83E+03	0.	0.	0.	1.01E+02	
UL-141	2.26E+01	1.53E+01	0.	7.03E+00	0.	5.83E+04	0.	5.83E+04	0.	0.	0.	1.73E+00	
UL-144	1.25E+04	5.21E+03	0.	3.03E+03	0.	4.21E+00	0.	4.21E+00	0.	0.	0.	0.63E+02	

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DOSE FACTORS FOR GASEOUS DISCHARGES
 BASED ON 1 GY/HR RELEASE OF EACH ISOTOPE AND A VALUE OF UNITY FOR X/Q, DEPLETED X/Q AND RELATIVE DEPOSITION

PATHWAY - COWS MILK (CONTAMINATED FORAGE)

AGE GROUP - ADULT

RADIONUCLIDE

ORGAN DOSE (MREM)

	BONE	LIVER	THYROID	KIDNEY	LUNG	GILLI	SKIN	TOTAL BODY
H-----3	0.	1.65E+01	1.65E+01	1.65E+01	1.65E+01	1.65E+01	0.	1.65E+01
C-----14	1.15E+04	2.31E+03	2.31E+03	2.31E+03	2.31E+03	2.31E+03	0.	2.31E+03
P-----32	4.97E+08	3.12E+07	0.	0.	0.	5.59E+07	0.	1.92E+07
AK-----41	0.	0.	0.	0.	0.	0.	0.	0.
MN-----54	0.	1.99E+05	0.	5.92E+04	0.	6.09E+05	0.	3.80E+04
FE-----59	7.55E+05	1.79E+06	0.	0.	4.98E+05	5.92E+06	0.	6.82E+05
CO-----58	0.	1.16E+05	0.	0.	0.	2.35E+06	0.	2.60E+05
CO-----60	0.	3.87E+05	0.	0.	0.	7.24E+06	0.	8.50E+05
ZN-----65	3.69E+07	1.17E+08	0.	7.83E+07	0.	7.38E+07	0.	5.30E+07
KR-83M	0.	0.	0.	0.	0.	0.	0.	0.
KR-85M	0.	0.	0.	0.	0.	0.	0.	0.
KR-85	0.	0.	0.	0.	0.	0.	0.	0.
KR-87	0.	3.10E-07	0.	0.	0.	1.45E-08	0.	1.08E-07
KR-88	0.	0.	0.	0.	0.	0.	0.	0.
KR-89	1.61E+03	0.	0.	0.	0.	2.58E+02	0.	4.61E+01
KR-90	4.21E+01	0.	0.	0.	0.	5.71E-01	0.	1.03E+01
RB-----86	0.	7.15E+07	0.	0.	0.	1.41E+07	0.	3.34E+07
SR-----89	3.67E+07	0.	0.	0.	0.	5.86E+06	0.	1.05E+05
SR-----90	1.16E+09	0.	0.	0.	0.	1.58E+07	0.	2.84E+08
Y-----91	2.14E+02	0.	0.	0.	0.	1.18E+05	0.	5.74E+00
ZR-----95	5.80E+02	3.17E+02	0.	3.18E+02	0.	1.90E+06	0.	1.27E+02
NB-----95	2.14E+03	1.19E+03	0.	1.18E+03	0.	7.22E+06	0.	4.67E+02
RU-----103	2.63E+01	0.	0.	1.01E+02	0.	3.07E+03	0.	1.13E+01
RU-----106	4.87E+02	0.	0.	9.42E+02	0.	3.15E+04	0.	6.17E+01
AG110M	1.45E+06	1.34E+06	0.	2.63E+06	0.	5.46E+08	0.	7.95E+05
CU115M	0.	3.24E+04	0.	2.57E+04	0.	1.37E+06	0.	1.04E+03
SN-----123	0.	0.	0.	0.	0.	0.	0.	0.
SN-----126	3.81E+07	7.56E+05	2.22E+05	0.	9.86E+04	2.41E+07	0.	1.14E+05
SB-----124	6.43E+05	1.21E+04	1.55E+03	0.	4.93E+05	1.82E+07	0.	2.54E+05
SB-----125	7.85E+05	7.54E+04	5.77E+04	7.73E+05	0.22E+07	0.02E+06	0.	1.40E+05
TE127M	1.35E+06	4.74E+05	3.56E+05	5.50E+06	0.	6.15E+06	0.	1.67E+05
TE129M	1.69E+06	6.35E+05	5.86E+05	7.09E+06	0.	8.53E+06	0.	2.67E+05
I-----131	4.31E+06	5.18E+06	2.02E+09	1.05E+07	0.	1.63E+06	0.	3.53E+05
I-----133	5.92E+04	1.03E+05	1.97E+07	1.79E+05	0.	9.02E+04	0.	3.15E+04
XE131M	0.	0.	0.	0.	0.	0.	0.	0.
XE133M	0.	0.	0.	0.	0.	0.	0.	0.
XE-----133	0.	0.	0.	0.	0.	0.	0.	0.
XE135M	6.42E-04	5.93E-04	0.	2.25E-04	0.75E-05	1.59E-05	0.	2.03E-04
XE-----135	2.22E-02	2.05E-02	0.	7.75E-03	2.33E-03	4.73E-04	0.	9.09E-03
XE-----137	4.71E+01	6.44E+01	0.	2.19E+01	7.27E+00	1.24E+00	0.	4.22E+01
XE-----138	0.	0.	0.	0.	0.	0.	0.	0.
CS-----134	1.32E+08	3.14E+08	0.	1.02E+08	3.37E+07	5.49E+06	0.	2.57E+08
CS-----136	7.38E+06	2.91E+07	0.	1.62E+07	2.22E+06	3.31E+06	0.	2.10E+07
CS-----137	1.77E+08	2.42E+08	0.	8.24E+07	2.73E+07	4.66E+06	0.	1.59E+08
UA-----140	7.61E+05	9.56E+02	0.	3.25E+02	5.47E+02	1.61E+06	0.	5.06E+04
CE-----141	7.59E+02	5.13E+02	0.	2.38E+02	0.	1.30E+06	0.	5.81E+01
CE-----144	5.03E+04	2.10E+04	0.	1.25E+04	0.	1.70E+07	0.	2.70E+05

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DOSE FACTORS FOR GASEOUS DISCHARGES
 BASED ON 1 CI/YR RELEASE OF EACH ISOTOPE AND A VALUE OF UNITY FOR A/Q, DEPLETED A/Q AND RELATIVE DEPOSITION

NUCLIDE	PATHWAY - COWS MILK (CONTAMINATED FEED)										AGE GROUP - ADULT		
	ORGAN DOSE (MREM)										GI-LLI	SKIN	TOTAL BODY
	BONE	LIVER	THYROID	KIDNEY	LUNG	GI-LLI	SKIN	TOTAL BODY					
H-3	0.	1.62E+01	1.62E+01	1.62E+01	1.62E+01	1.62E+01	0.	1.62E+01	0.	0.	1.62E+01	0.	1.62E+01
G-14	1.15E+04	2.31E+03	2.31E+03	2.31E+03	2.31E+03	2.31E+03	0.	2.31E+03	0.	0.	2.31E+03	0.	2.31E+03
P-32	2.64E+06	1.65E+05	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.02E+05
AR-41	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
MN-54	0.	7.52E+04	0.	2.24E+04	0.	2.30E+05	0.	2.30E+05	0.	0.	2.30E+05	0.	1.44E+04
FE-59	8.09E+04	1.92E+05	0.	0.	5.33E+04	6.34E+05	0.	6.34E+05	0.	0.	6.34E+05	0.	7.31E+04
CO-58	0.	2.12E+04	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	4.75E+04
CU-60	0.	1.76E+05	0.	0.	0.	3.30E+06	0.	3.30E+06	0.	0.	3.30E+06	0.	3.87E+05
ZN-65	1.49E+07	4.73E+07	0.	3.15E+07	0.	2.98E+07	0.	2.98E+07	0.	0.	2.98E+07	0.	2.14E+07
KR-83M	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
KR-85M	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
KR-87	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
KR-88	0.	2.13E-07	0.	0.	0.	9.96E-09	0.	9.96E-09	0.	0.	9.96E-09	0.	7.44E-08
KR-89	2.03E+02	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
KR-90	2.09E+01	0.	0.	0.	0.	3.24E+01	0.	3.24E+01	0.	0.	3.24E+01	0.	5.81E+00
RB-86	0.	1.03E+06	0.	0.	0.	2.04E+05	0.	2.04E+05	0.	0.	2.04E+05	0.	4.82E+05
SR-89	4.62E+06	0.	0.	0.	0.	7.38E+05	0.	7.38E+05	0.	0.	7.38E+05	0.	1.32E+05
SR-90	5.76E+08	0.	0.	0.	0.	7.80E+06	0.	7.80E+06	0.	0.	7.80E+06	0.	1.41E+08
Y-91	5.23E+01	0.	0.	0.	0.	1.78E+04	0.	1.78E+04	0.	0.	1.78E+04	0.	8.67E-01
Zr-95	5.45E+02	3.02E+02	0.	3.00E+02	0.	1.83E+06	0.	1.83E+06	0.	0.	1.83E+06	0.	1.19E+02
NB-95	1.52E+02	8.45E+01	0.	8.37E+01	0.	5.13E+05	0.	5.13E+05	0.	0.	5.13E+05	0.	3.32E+01
RU-103	2.36E+00	0.	0.	9.03E+00	0.	2.76E+02	0.	2.76E+02	0.	0.	2.76E+02	0.	1.02E+00
RU-106	1.93E+02	0.	0.	3.73E+02	0.	1.25E+04	0.	1.25E+04	0.	0.	1.25E+04	0.	2.44E+01
Ag-110M	5.50E+05	5.08E+05	0.	1.00E+06	0.	2.08E+08	0.	2.08E+08	0.	0.	2.08E+08	0.	3.02E+05
CD-115M	0.	5.34E+03	0.	2.65E+03	0.	1.41E+05	0.	1.41E+05	0.	0.	1.41E+05	0.	1.07E+02
SN-123	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
SN-126	1.79E+07	3.55E+05	1.04E+05	0.	9.52E+04	1.78E+07	0.	1.78E+07	0.	0.	1.78E+07	0.	5.61E+02
SB-124	9.93E+04	1.87E+03	2.40E+02	0.	7.71E+04	2.65E+06	0.	2.65E+06	0.	0.	2.65E+06	0.	3.92E+04
SB-125	4.64E+05	7.66E+04	6.15E+04	8.27E+05	2.72E+07	3.11E+06	0.	3.11E+06	0.	0.	3.11E+06	0.	7.97E+04
TEL-127M	4.05E+05	1.41E+05	1.07E+05	1.65E+06	0.	1.85E+06	0.	1.85E+06	0.	0.	1.85E+06	0.	5.00E+04
TEL-129M	1.25E+05	4.70E+04	4.34E+04	5.24E+05	0.	6.31E+05	0.	6.31E+05	0.	0.	6.31E+05	0.	1.99E+04
I-131	7.09E+02	1.02E+03	3.32E+05	1.74E+03	0.	2.68E+02	0.	2.68E+02	0.	0.	2.68E+02	0.	5.61E+02
I-133	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
XEL-131M	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
XEL-133M	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
XEL-133	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
XEL-135M	3.24E-04	2.99E-04	0.	1.13E-04	3.41E-05	7.00E-06	0.	7.00E-06	0.	0.	7.00E-06	0.	1.33E-04
AL-135	1.12E-02	1.03E-02	0.	3.91E-03	1.18E-03	2.41E-04	0.	2.41E-04	0.	0.	2.41E-04	0.	4.59E-03
XL-137	2.27E+01	3.10E+01	0.	1.05E+01	3.50E+00	5.97E-01	0.	5.97E-01	0.	0.	5.97E-01	0.	2.00E+01
XL-138	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
CS-134	5.04E+07	1.54E+08	0.	4.35E+07	1.44E+07	2.35E+06	0.	2.35E+06	0.	0.	2.35E+06	0.	1.10E+08
CS-136	2.39E+04	9.42E+04	0.	5.24E+04	7.19E+04	1.07E+04	0.	1.07E+04	0.	0.	1.07E+04	0.	0.78E+04
CS-137	8.52E+07	1.16E+08	0.	3.95E+07	1.31E+07	2.24E+06	0.	2.24E+06	0.	0.	2.24E+06	0.	7.03E+07
JA-140	2.28E+03	2.66E+03	0.	9.74E-01	1.04E+00	4.84E+03	0.	4.84E+03	0.	0.	4.84E+03	0.	1.50E+04
CL-141	4.07E+01	3.10E+01	0.	1.47E+01	0.	1.61E+02	0.	1.61E+02	0.	0.	1.61E+02	0.	3.58E+03
CE-144	1.84E+04	7.00E+03	0.	4.55E+03	0.	0.20E+02	0.	0.20E+02	0.	0.	0.20E+02	0.	9.84E+02

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USE FACTORS FOR GASEOUS DISCHARGES
 BASED ON 1 CI/YR RELEASE OF EACH ISOTOPE AND A VALUE OF UNITY FOR X/Q, DEPLETED X/Q AND RELATIVE DEPOSITION

PATHWAY - GOATS MILK (CONTAMINATED FORAGE)													AGE GROUP - ADULT	
NUCLIDE	ORGAN DOSE (MREM)										SKIN	TOTAL BODY		
	BONE	LIVER	THYROID	KIDNEY	LUNG	GI-LLI								
H-3	0.	3.36E+01	3.36E+01	3.35E+01	3.36E+01	3.36E+01	0.	0.	0.	0.	3.36E+01	0.	3.36E+01	
C-14	1.15E+04	2.31E+03	2.31E+03	2.31E+03	2.31E+03	2.31E+03	0.	0.	0.	0.	2.31E+03	0.	2.31E+03	
P-32	6.41E+08	4.02E+07	0.	0.	0.	7.21E+07	0.	0.	0.	0.	7.21E+07	0.	7.21E+07	
AR-41	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	
MN-54	0.	2.39E+04	0.	7.13E+03	0.	7.13E+04	0.	0.	0.	0.	7.13E+04	0.	7.13E+04	
FE-59	1.01E+04	2.39E+04	0.	0.	6.62E+03	7.07E+04	0.	0.	0.	0.	7.07E+04	0.	7.07E+04	
CO-58	0.	1.42E+04	0.	0.	0.	2.87E+05	0.	0.	0.	0.	2.87E+05	0.	2.87E+05	
CU-60	0.	4.65E+04	0.	0.	0.	8.69E+05	0.	0.	0.	0.	8.69E+05	0.	8.69E+05	
ZN-65	4.45E+06	1.41E+07	0.	9.44E+06	0.	8.89E+06	0.	0.	0.	0.	8.89E+06	0.	8.89E+06	
KR-83M	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	
KR-85M	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	
KR-87	0.	3.72E-08	0.	0.	0.	1.74E-09	0.	0.	0.	0.	1.74E-09	0.	1.74E-09	
KR-88	0.	3.75E-10	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	
KR-89	3.45E+03	0.	0.	0.	0.	5.52E+02	0.	0.	0.	0.	5.52E+02	0.	5.52E+02	
KR-90	8.85E+01	0.	0.	0.	0.	1.19E+00	0.	0.	0.	0.	1.19E+00	0.	1.19E+00	
Rb-86	0.	9.07E+06	0.	0.	0.	1.79E+06	0.	0.	0.	0.	1.79E+06	0.	1.79E+06	
SR-89	7.86E+07	0.	0.	0.	0.	1.26E+07	0.	0.	0.	0.	1.26E+07	0.	1.26E+07	
SR-90	2.44E+09	0.	0.	0.	0.	3.27E+07	0.	0.	0.	0.	3.27E+07	0.	3.27E+07	
Y-91	7.62E+01	0.	0.	0.	0.	1.44E+04	0.	0.	0.	0.	1.44E+04	0.	1.44E+04	
ZR-95	6.30E+01	3.43E+01	0.	3.43E+01	0.	2.06E+05	0.	0.	0.	0.	2.06E+05	0.	2.06E+05	
Nb-95	2.65E+02	1.47E+02	0.	1.46E+02	0.	8.92E+05	0.	0.	0.	0.	8.92E+05	0.	8.92E+05	
RU-103	3.24E+00	0.	0.	1.24E+01	0.	3.78E+02	0.	0.	0.	0.	3.78E+02	0.	3.78E+02	
RU-106	5.86E+01	0.	0.	1.13E+02	0.	3.80E+03	0.	0.	0.	0.	3.80E+03	0.	3.80E+03	
AG-110M	1.74E+05	1.61E+05	0.	3.17E+05	0.	6.57E+07	0.	0.	0.	0.	6.57E+07	0.	6.57E+07	
CO-115M	0.	3.99E+03	0.	3.17E+03	0.	1.68E+05	0.	0.	0.	0.	1.68E+05	0.	1.68E+05	
SN-123	1.61E-02	2.68E-04	2.27E-04	0.	0.	3.28E-02	0.	0.	0.	0.	3.28E-02	0.	3.28E-02	
SN-126	4.57E+06	9.08E+04	2.66E+04	0.	0.	2.76E+06	0.	0.	0.	0.	2.76E+06	0.	2.76E+06	
SB-124	7.85E+04	1.48E+03	1.90E+02	0.	0.	2.22E+06	0.	0.	0.	0.	2.22E+06	0.	2.22E+06	
SB-125	9.45E+04	9.12E+03	6.99E+03	9.35E+04	0.	7.24E+05	0.	0.	0.	0.	7.24E+05	0.	7.24E+05	
TE-127M	1.65E+05	5.74E+04	4.31E+04	6.65E+05	0.	7.43E+05	0.	0.	0.	0.	7.43E+05	0.	7.43E+05	
TE-129M	2.11E+05	7.86E+04	7.25E+04	8.77E+05	0.	1.06E+06	0.	0.	0.	0.	1.06E+06	0.	1.06E+06	
I-131	5.89E+06	8.43E+05	2.76E+03	1.44E+07	0.	2.22E+06	0.	0.	0.	0.	2.22E+06	0.	2.22E+06	
I-133	2.33E+05	4.04E+05	7.77E+07	7.06E+05	0.	3.55E+05	0.	0.	0.	0.	3.55E+05	0.	3.55E+05	
XE-131M	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	
XE-133M	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	
XE-137	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	
XE-139M	1.93E-03	1.78E-03	0.	6.74E-04	2.02E-04	4.16E-05	0.	0.	0.	0.	4.16E-05	0.	4.16E-05	
XE-139	6.65E-02	6.14E-02	0.	2.53E-02	0.99E-03	1.44E-03	0.	0.	0.	0.	1.44E-03	0.	1.44E-03	
XE-137	1.41E+02	1.93E+02	0.	6.58E+01	2.18E+01	3.72E+00	0.	0.	0.	0.	3.72E+00	0.	3.72E+00	
XE-138	7.10E-05	1.40E-04	0.	1.03E-04	1.02E-05	5.98E-05	0.	0.	0.	0.	5.98E-05	0.	5.98E-05	
CS-134	3.96E+06	9.43E+08	0.	3.06E+08	1.01E+08	1.65E+07	0.	0.	0.	0.	1.65E+07	0.	1.65E+07	
CS-136	2.40E+07	9.47E+07	0.	5.27E+07	8.19E+07	1.08E+07	0.	0.	0.	0.	1.08E+07	0.	1.08E+07	
CS-137	5.31E+08	7.20E+08	0.	2.47E+08	7.12E+07	1.40E+07	0.	0.	0.	0.	1.40E+07	0.	1.40E+07	
JA-140	9.90E+04	1.24E+02	0.	4.23E+01	7.12E+01	2.09E+05	0.	0.	0.	0.	2.09E+05	0.	2.09E+05	
CE-141	9.40E+01	9.50E+01	0.	2.95E+01	0.	2.43E+05	0.	0.	0.	0.	2.43E+05	0.	2.43E+05	
CE-144	6.06E+03	2.53E+03	0.	1.50E+03	0.	6.04E+06	0.	0.	0.	0.	6.04E+06	0.	6.04E+06	

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BASED ON 1 CL/YR RELEASE OF EACH ISOTOPE AND A VALUE OF UNITY FOR X/Q, DEPLETED X/Q AND RELATIVE DEPOSITION

DOSE FACTORS FOR GASEOUS DISCHARGES

NUCLIDE	ORGAN DOSE (MREM)										AGE GROUP - ADULT	
	BONE	LIVER	THYROID	KIDNEY	LUNG	GI-LLI	SKIN	TOTAL BODY				
H-3	0.	3.31E+01	3.31E+01	3.31E+01	3.31E+01	3.31E+01	0.	3.31E+01	0.	3.31E+01		
C-14	1.15E+04	2.31E+03	2.31E+03	2.31E+03	2.31E+03	2.31E+03	0.	2.31E+03	0.	2.31E+03		
P-32	3.40E+06	2.13E+05	0.	0.	0.	3.83E+05	0.	1.32E+05	0.	1.32E+05		
AR-41	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.		
MN-54	0.	9.05E+03	0.	2.69E+03	0.	2.77E+04	0.	1.73E+03	0.	1.73E+03		
FE-59	1.08E+03	2.56E+03	0.	0.	7.09E+02	8.43E+03	0.	9.72E+02	0.	9.72E+02		
CU-64	0.	2.56E+03	0.	0.	0.	5.23E+04	0.	7.78E+03	0.	7.78E+03		
CO-60	0.	2.12E+04	0.	0.	0.	3.96E+05	0.	4.65E+04	0.	4.65E+04		
ZN-65	1.80E+06	5.70E+05	0.	3.81E+06	0.	3.59E+06	0.	2.58E+06	0.	2.58E+06		
KR-83M	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.		
KR-85M	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.		
KR-85	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.		
KR-87	0.	2.55E-08	0.	0.	0.	1.20E-09	0.	6.88E-03	0.	6.88E-03		
KR-88	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.		
KR-89	4.35E+02	0.	0.	0.	0.	6.95E+01	0.	1.23E+01	0.	1.23E+01		
KR-90	4.39E+01	0.	0.	0.	0.	5.88E-01	0.	1.07E+01	0.	1.07E+01		
RB-86	0.	1.31E+05	0.	0.	0.	2.58E+04	0.	6.11E+04	0.	6.11E+04		
SR-89	9.90E+06	0.	0.	0.	0.	1.58E+06	0.	2.84E+05	0.	2.84E+05		
SR-90	1.21E+09	0.	0.	0.	0.	1.62E+07	0.	2.95E+08	0.	2.95E+08		
Y-91	3.95E+00	0.	0.	0.	0.	2.17E+03	0.	1.06E-01	0.	1.06E-01		
ZR-95	6.66E+01	3.66E+01	0.	3.62E+01	0.	2.21E+05	0.	1.44E+01	0.	1.44E+01		
NB-95	1.88E+01	1.04E+01	0.	1.06E+01	0.	6.34E+04	0.	4.10E+00	0.	4.10E+00		
RU-103	2.91E-01	0.	0.	1.11E+00	0.	3.40E+01	0.	1.26E-01	0.	1.26E-01		
RU-106	2.52E+01	0.	0.	4.43E+01	0.	1.50E+03	0.	2.94E+00	0.	2.94E+00		
AG-110M	6.62E+04	6.12E+04	0.	1.20E+05	0.	2.50E+07	0.	3.64E+04	0.	3.64E+04		
CU-115M	0.	4.11E+02	0.	3.26E+02	0.	1.73E+04	0.	1.31E+01	0.	1.31E+01		
SN-123	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.		
SN-126	2.15E+06	4.26E+04	1.25E+04	0.	1.15E+04	2.14E+06	0.	6.74E+04	0.	6.74E+04		
SB-124	1.21E+04	2.29E+02	2.93E+01	0.	9.41E+03	3.43E+05	0.	4.79E+03	0.	4.79E+03		
SB-125	5.61E+04	3.53E+03	7.48E+03	1.01E+05	3.27E+06	3.76E+05	0.	9.61E+03	0.	9.61E+03		
FE-127M	4.91E+04	1.72E+04	1.29E+04	1.99E+05	0.	2.23E+05	0.	6.05E+03	0.	6.05E+03		
TE-129M	1.55E+04	5.82E+03	5.42E+03	6.49E+04	0.	7.61E+04	0.	2.47E+03	0.	2.47E+03		
I-131	9.68E+02	1.39E+03	4.54E+05	2.37E+03	0.	3.65E+02	0.	7.93E+02	0.	7.93E+02		
I-133	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.		
XE-131M	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.		
XE-133	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.		
XE-135M	9.72E-04	8.98E-04	0.	3.40E-04	1.02E-04	2.10E-05	0.	3.99E-04	0.	3.99E-04		
XE-137	3.55E-02	3.10E-02	0.	1.17E-02	3.53E-03	7.24E-04	0.	1.56E-02	0.	1.56E-02		
AT-138	0.	9.29E+01	0.	3.15E+01	1.05E+01	1.79E+00	0.	0.10E+01	0.	0.10E+01		
CS-134	1.69E+06	4.03E+08	0.	1.51E+08	4.33E+07	7.05E+06	0.	3.30E+08	0.	3.30E+08		
CS-136	7.76E+04	3.06E+05	0.	1.71E+05	2.34E+04	3.48E+04	0.	2.20E+05	0.	2.20E+05		
CS-137	2.56E+08	3.49E+08	0.	1.13E+08	3.94E+07	0.73E+00	0.	2.29E+08	0.	2.29E+08		
BA-140	2.97E+02	3.73E-01	0.	1.27E-01	2.13E-01	0.30E+02	0.	1.96E+01	0.	1.96E+01		
CE-141	5.74E+00	3.92E+04	0.	1.82E+00	0.	1.50E+04	0.	4.44E-01	0.	4.44E-01		
CE-144	2.21E+03	9.23E+02	0.	5.48E+02	0.	7.47E+05	0.	1.13E+06	0.	1.13E+06		

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USE FACTORS FOR 542005 DISCHARGES
 BASED ON 1 CI/YR RELEASE OF EACH ISOTOPE AND A VALUE OF UNITY FOR X/Q, DEPLETED X/Q AND RELATIVE DEPOSITION

NUCLIDE	PATHWAY - INHALATION					ORGAN DOSE (MREM)					AGE GROUP - TEENAGER		
	BONE	LIVER	THYROID	KIDNEY	LUNG	GI-LLI	SKIN	TOTAL BODY					
H-3	0.	1.71E+01	1.71E+01	2.17E+01	1.71E+01	1.71E+01	0.	1.71E+01					
C-14	9.15E+01	9.15E+01	9.15E+01	6.91E+01	9.15E+01	9.15E+01	0.	9.15E+01					
P-32	2.67E+04	1.56E+03	0.	0.	0.	1.75E+03	0.	1.01E+03					
AR-41	0.	0.	0.	0.	0.	0.	0.	0.					
MN-54	0.	8.01E+02	0.	1.99E+02	2.83E+04	1.56E+03	0.	1.27E+02					
FE-59	2.38E+02	5.61E+05	0.	0.	2.05E+04	3.80E+03	0.	2.14E+02					
CU-64	0.	3.56E+00	0.	0.	2.77E+04	1.92E+03	0.	4.74E+00					
CO-60	0.	2.51E+01	0.	0.	1.73E+05	4.76E+03	0.	3.35E+01					
ZN-65	6.55E+02	2.09E+03	0.	1.33E+03	1.70E+04	1.08E+03	0.	9.41E+02					
KR-83M	0.	0.	0.	0.	0.	0.	0.	0.					
KR-85M	0.	0.	0.	0.	0.	0.	0.	0.					
KR-85	0.	0.	0.	0.	0.	0.	0.	0.					
KR-87	0.	0.	0.	0.	0.	0.	0.	0.					
KR-88	0.	0.	0.	0.	0.	0.	0.	0.					
KR-89	0.	0.	0.	0.	0.	0.	0.	0.					
KR-90	0.	0.	0.	0.	0.	0.	0.	0.					
KR-90b	0.	2.73E+03	0.	0.	0.	3.36E+02	0.	1.19E+03					
SR-89	7.83E+02	0.	0.	0.	5.06E+04	7.15E+03	0.	2.29E+01					
SR-90	2.39E+05	0.	0.	0.	3.35E+05	1.46E+04	0.	1.49E+04					
Y-91	1.09E+03	0.	0.	0.	5.77E+04	7.55E+03	0.	2.91E+01					
ZR-95	2.20E+02	7.36E+01	0.	1.10E+03	5.18E+04	2.69E+03	0.	5.13E+01					
NB-95	2.75E+01	1.67E+01	0.	1.56E+02	1.45E+04	1.78E+03	0.	9.35E+03					
RU-103	3.30E+00	0.	0.	1.18E+02	1.52E+04	1.91E+03	0.	1.48E+00					
RU-106	1.70E+02	0.	0.	2.70E+03	3.32E+05	1.88E+04	0.	2.14E+01					
AG-110M	2.18E+02	2.02E+02	0.	3.98E+02	9.38E+04	6.11E+03	0.	1.20E+02					
CU-115M	0.	3.98E+03	0.	3.20E+03	2.85E+04	7.76E+03	0.	1.29E+02					
SN-123	5.64E+02	1.24E+01	9.95E+00	0.	7.91E+04	6.32E+03	0.	1.86E+01					
SN-125	2.58E+04	6.76E+02	1.99E+02	0.	1.89E+05	2.57E+03	0.	9.70E+02					
SB-124	6.31E+02	1.19E+01	1.53E+00	0.	5.01E+04	8.22E+03	0.	2.51E+02					
SB-125	1.36E+03	1.44E+01	1.19E+00	0.	4.45E+04	2.04E+03	0.	2.63E+02					
TE-127M	2.56E+02	1.14E+02	6.65E+01	9.25E+02	1.94E+04	3.02E+03	0.	3.17E+01					
TE-129M	2.41E+01	1.14E+01	7.89E+00	7.39E+02	4.11E+04	7.76E+03	0.	3.88E+00					
I-131	6.81E+02	9.54E+02	2.81E+05	1.24E+03	0.	1.21E+02	0.	5.69E+02					
I-133	2.49E+02	4.17E+02	7.75E+04	5.25E+02	0.	2.02E+02	0.	1.28E+02					
XE-131M	0.	0.	0.	0.	0.	0.	0.	0.					
XE-133M	0.	0.	0.	0.	0.	0.	0.	0.					
XE-133	0.	0.	0.	0.	0.	0.	0.	0.					
XE-135M	0.	0.	0.	0.	0.	0.	0.	0.					
XE-135	0.	0.	0.	0.	0.	0.	0.	0.					
XE-137	0.	0.	0.	0.	0.	0.	0.	0.					
XE-137	0.	0.	0.	0.	0.	0.	0.	0.					
XE-138	0.	0.	0.	0.	0.	0.	0.	0.					
CS-134	9.77E+03	2.23E+04	0.	5.82E+03	2.91E+03	1.81E+02	0.	1.10E+04					
CS-135	7.91E+02	2.90E+03	0.	1.73E+03	2.43E+02	2.30E+02	0.	2.29E+03					
CS-137	1.30E+04	1.67E+04	0.	4.50E+03	2.38E+03	1.55E+02	0.	6.13E+03					
BA-140	1.07E+02	9.80E-02	0.	3.38E-01	4.03E+04	4.29E+02	0.	6.91E+00					
CE-141	4.59E+01	3.07E+01	0.	1.27E+02	1.18E+04	2.30E+03	0.	2.59E+03					
CE-144	6.47E+03	3.55E+03	0.	1.71E+04	2.78E+05	1.70E+04	0.	4.53E+02					

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DOSE FACTORS FOR GASEOUS DISCHARGES
BASED ON 1 CI/YR RELEASE OF EACH ISOTOPE AND A VALUE OF UNITY FOR X/Q, DEPLETED X/Q, AND RELATIVE DEPOSITION

NUCLIDE	PATHWAY - GROUND PLANE DEPOSITION						ORGAN DOSE (MREM)				AGE GROUP - TEENAGER	
	BONE	LIVER	THYROID	KIDNEY	LUNG	GI- LI	SKIN	TOTAL BODY				
H-3	0.	0.	0.	0.	0.	0.	0.	0.				0.
C-14	0.	0.	0.	0.	0.	0.	0.	0.				0.
P-32	0.	0.	0.	0.	0.	0.	0.	0.				0.
AR-41	0.	0.	0.	0.	0.	0.	0.	0.				0.
MA-54	4.39E+07	4.39E+07	4.39E+07	4.39E+07	4.39E+07	4.39E+07	5.14E+07	4.39E+07				4.39E+07
FE-59	8.73E+06	8.73E+06	8.73E+06	8.73E+06	8.73E+06	8.73E+06	1.45E+07	8.73E+06				8.73E+06
CO-58	1.21E+07	1.21E+07	1.21E+07	1.21E+07	1.21E+07	1.21E+07	1.45E+07	1.21E+07				1.21E+07
CO-60	5.80E+08	5.80E+08	5.80E+08	5.80E+08	5.80E+08	5.80E+08	8.00E+08	5.80E+08				5.80E+08
ZN-65	2.36E+07	2.36E+07	2.36E+07	2.36E+07	2.36E+07	2.36E+07	2.71E+07	2.36E+07				2.36E+07
KR-83M	0.	0.	0.	0.	0.	0.	0.	0.				0.
KR-85M	0.	0.	0.	0.	0.	0.	0.	0.				0.
KR-85	0.	0.	0.	0.	0.	0.	0.	0.				0.
KR-87	0.	0.	0.	0.	0.	0.	0.	0.				0.
KR-88	9.90E+03	9.90E+03	9.90E+03	9.90E+03	9.90E+03	9.90E+03	1.13E+04	9.90E+03				9.90E+03
KR-89	8.08E+02	8.08E+02	8.08E+02	8.08E+02	8.08E+02	8.08E+02	9.70E+02	8.08E+02				8.08E+02
KR-90	6.16E-03	6.16E-03	6.16E-03	6.16E-03	6.16E-03	6.16E-03	7.29E-03	6.16E-03				6.16E-03
RU-86	2.86E+05	2.86E+05	2.86E+05	2.86E+05	2.86E+05	2.86E+05	3.26E+05	2.86E+05				2.86E+05
SR-89	6.87E+02	6.87E+02	6.87E+02	6.87E+02	6.87E+02	6.87E+02	7.97E+02	6.87E+02				6.87E+02
SR-90	1.70E+05	1.70E+05	1.70E+05	1.70E+05	1.70E+05	1.70E+05	2.01E+05	1.70E+05				1.70E+05
Y-91	3.43E+04	3.43E+04	3.43E+04	3.43E+04	3.43E+04	3.43E+04	3.80E+04	3.43E+04				3.43E+04
ZR-95	1.59E+07	1.59E+07	1.59E+07	1.59E+07	1.59E+07	1.59E+07	1.80E+07	1.59E+07				1.59E+07
NU-95	4.33E+06	4.33E+06	4.33E+06	4.33E+06	4.33E+06	4.33E+06	5.03E+06	4.33E+06				4.33E+06
RU-103	3.49E+06	3.49E+06	3.49E+06	3.49E+06	3.49E+06	3.49E+06	4.07E+06	3.49E+06				3.49E+06
RU-106	1.33E+07	1.33E+07	1.33E+07	1.33E+07	1.33E+07	1.33E+07	1.59E+07	1.33E+07				1.33E+07
AG-110M	1.13E+08	1.13E+08	1.13E+08	1.13E+08	1.13E+08	1.13E+08	1.32E+08	1.13E+08				1.13E+08
CU-115M	0.	0.	0.	0.	0.	0.	0.	0.				0.
SN-123	0.	0.	0.	0.	0.	0.	4.35E+04	0.				0.
SN-126	1.64E+09	1.64E+09	1.64E+09	1.64E+09	1.64E+09	1.64E+09	1.83E+09	1.64E+09				1.64E+09
SB-124	1.90E+07	1.90E+07	1.90E+07	1.90E+07	1.90E+07	1.90E+07	2.19E+07	1.90E+07				1.90E+07
SB-125	7.27E+07	7.27E+07	7.27E+07	7.27E+07	7.27E+07	7.27E+07	8.21E+07	7.27E+07				7.27E+07
TE-127M	2.79E+04	2.79E+04	2.79E+04	2.79E+04	2.79E+04	2.79E+04	3.09E+04	2.79E+04				2.79E+04
TE-129M	1.22E+06	1.22E+06	1.22E+06	1.22E+06	1.22E+06	1.22E+06	1.43E+06	1.22E+06				1.22E+06
I-131	2.73E+05	2.73E+05	2.73E+05	2.73E+05	2.73E+05	2.73E+05	3.32E+05	2.73E+05				2.73E+05
I-133	3.92E+04	3.92E+04	3.92E+04	3.92E+04	3.92E+04	3.92E+04	4.77E+04	3.92E+04				3.92E+04
XE-131M	0.	0.	0.	0.	0.	0.	0.	0.				0.
XE-133M	0.	0.	0.	0.	0.	0.	0.	0.				0.
XE-133	0.	0.	0.	0.	0.	0.	0.	0.				0.
XE-135M	0.	0.	0.	0.	0.	0.	0.	0.				0.
XE-135	0.	0.	0.	0.	0.	0.	0.	0.				0.
AE-137	8.69E+01	8.69E+01	8.69E+01	8.69E+01	8.69E+01	8.69E+01	1.01E+02	8.69E+01				8.69E+01
XE-139	6.01E+03	6.01E+03	6.01E+03	6.01E+03	6.01E+03	6.01E+03	6.87E+03	6.01E+03				6.01E+03
CS-139	2.22E+08	2.22E+08	2.22E+08	2.22E+08	2.22E+08	2.22E+08	2.58E+08	2.22E+08				2.22E+08
CS-139	4.73E+08	4.73E+08	4.73E+08	4.73E+08	4.73E+08	4.73E+08	5.50E+08	4.73E+08				4.73E+08
CS-137	3.27E+08	3.27E+08	3.27E+08	3.27E+08	3.27E+08	3.27E+08	3.81E+08	3.27E+08				3.27E+08
UA-140	5.30E+06	5.30E+06	5.30E+06	5.30E+06	5.30E+06	5.30E+06	6.02E+06	5.30E+06				5.30E+06
CE-141	4.33E+05	4.33E+05	4.33E+05	4.33E+05	4.33E+05	4.33E+05	4.88E+05	4.33E+05				4.33E+05
CE-144	3.59E+06	3.59E+06	3.59E+06	3.59E+06	3.59E+06	3.59E+06	4.17E+06	3.59E+06				3.59E+06

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DOSE FACTORS FOR GASEOUS DISCHARGES
 BASED ON 1 CI/YR RELEASE OF EACH ISOTOPE AND A VALUE OF UNITY FOR X/Q, DEPLETED X/Q AND RELATIVE DEPOSITION

NUCLIDE	PATHWAY - FRESH FRUITS AND VEGETABLES										AGE GROUP - TEENAGER			
	ORGAN USE (MKEM)													
	BONE	LIVER	THYROID	KIDNEY	LUNG	GI-LLI	SKIN	TOTAL BODY						
H---3	0.	3.53E+00	3.53E+00	4.45E+00	3.53E+00	3.53E+00	0.	0.	0.	0.	0.	0.	0.	0.
C---14	6.91E+02	6.91E+02	6.91E+02	5.21E+02	6.91E+02	6.91E+02	0.	0.	0.	0.	0.	0.	0.	0.
P---32	2.35E+07	1.40E+05	0.	0.	0.	2.65E+06	0.	0.	0.	0.	0.	0.	0.	0.
AR---41	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
MN---54	0.	9.97E+05	0.	2.97E+05	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
FE---59	7.42E+05	1.76E+06	0.	0.	4.89E+05	0.	0.	0.	0.	0.	0.	0.	0.	0.
CO---58	0.	1.86E+05	0.	0.	0.	5.82E+06	0.	0.	0.	0.	0.	0.	0.	0.
CO---60	0.	6.34E+05	0.	0.	0.	2.51E+06	0.	0.	0.	0.	0.	0.	0.	0.
ZN---65	1.34E+06	4.26E+06	0.	2.85E+05	0.	7.61E+06	0.	0.	0.	0.	0.	0.	0.	0.
KR--83M	0.	0.	0.	0.	0.	2.68E+06	0.	0.	0.	0.	0.	0.	0.	0.
KR--85M	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
KR--85	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
KR--87	0.	1.92E+08	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
KR--88	0.	3.45E-01	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
KR--89	3.56E+03	0.	0.	0.	0.	8.99E-10	0.	0.	0.	0.	0.	0.	0.	0.
KR--90	9.73E+01	2.72E+06	0.	0.	2.69E-01	3.86E+02	0.	0.	0.	0.	0.	0.	0.	0.
KB--86	0.	0.	0.	0.	0.	2.84E+00	0.	0.	0.	0.	0.	0.	0.	0.
SR--89	8.10E+07	0.	0.	0.	0.	5.37E+05	0.	0.	0.	0.	0.	0.	0.	0.
SR--90	2.88E+09	0.	0.	0.	0.	8.79E+06	0.	0.	0.	0.	0.	0.	0.	0.
Y---91	3.55E+04	0.	0.	0.	0.	7.82E+07	0.	0.	0.	0.	0.	0.	0.	0.
ZR--95	7.23E+03	2.51E+03	0.	3.02E+03	0.	1.36E+07	0.	0.	0.	0.	0.	0.	0.	0.
NB--99	1.16E+03	7.00E+02	0.	5.50E+02	0.	5.85E+06	0.	0.	0.	0.	0.	0.	0.	0.
RU-103	3.97E+04	0.	0.	1.18E+05	0.	2.86E+06	0.	0.	0.	0.	0.	0.	0.	0.
KU-106	9.03E+05	0.	0.	1.20E+06	0.	3.10E+06	0.	0.	0.	0.	0.	0.	0.	0.
AG110M	3.80E+04	3.51E+04	0.	6.90E+04	0.	4.09E+07	0.	0.	0.	0.	0.	0.	0.	0.
CO115M	0.	3.27E+05	0.	2.60E+05	0.	1.43E+07	0.	0.	0.	0.	0.	0.	0.	0.
SM-123	2.93E-07	4.84E-09	3.87E-09	0.	0.	4.23E-07	0.	0.	0.	0.	0.	0.	0.	0.
SN-126	1.94E+07	3.85E+05	1.13E+05	0.	1.02E+05	1.91E+07	0.	0.	0.	0.	0.	0.	0.	0.
SB-124	5.12E+05	9.65E+03	1.24E+03	0.	3.97E+05	1.45E+07	0.	0.	0.	0.	0.	0.	0.	0.
SB-125	1.23E+06	2.66E+05	2.06E+05	2.08E+06	5.24E+07	6.47E+06	0.	0.	0.	0.	0.	0.	0.	0.
TE127M	2.01E+06	7.04E+05	5.33E+05	8.12E+06	0.	1.01E+07	0.	0.	0.	0.	0.	0.	0.	0.
TE129M	3.14E+06	1.16E+06	1.00E+06	9.09E+05	0.	1.10E+07	0.	0.	0.	0.	0.	0.	0.	0.
I--131	1.08E+06	1.53E+06	4.42E+06	1.93E+05	0.	2.90E+05	0.	0.	0.	0.	0.	0.	0.	0.
I--133	3.14E+04	5.33E+04	9.68E+06	6.70E+04	0.	3.87E+04	0.	0.	0.	0.	0.	0.	0.	0.
AE131M	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
XE133M	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
XE-133	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
XE135M	7.29E-05	6.73E-05	0.	2.52E-05	7.06E-06	1.57E-06	0.	0.	0.	0.	0.	0.	0.	0.
XE-135	2.51E-03	2.32E-03	0.	8.79E-04	2.86E-06	5.43E-05	0.	0.	0.	0.	0.	0.	0.	0.
XE-137	6.91E+00	9.29E+00	0.	2.39E+00	1.23E+00	1.23E+00	0.	0.	0.	0.	0.	0.	0.	0.
XE-138	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
CS-134	1.79E+07	4.31E+07	0.	1.07E+07	2.22E+06	4.98E+05	0.	0.	0.	0.	0.	0.	0.	0.
CS-135	6.90E+05	2.72E+05	0.	1.52E+06	2.08E+06	3.09E+05	0.	0.	0.	0.	0.	0.	0.	0.
CS-137	2.59E+07	3.49E+07	0.	8.39E+06	4.03E+06	4.06E+05	0.	0.	0.	0.	0.	0.	0.	0.
GA-140	2.97E+06	3.83E+03	0.	9.11E+02	2.55E+03	1.01E+07	0.	0.	0.	0.	0.	0.	0.	0.
GE-141	1.98E+03	1.35E+03	0.	4.01E+02	0.	3.59E+06	0.	0.	0.	0.	0.	0.	0.	0.
GE-144	1.53E+05	0.27E+04	0.	2.56E+04	0.	3.60E+07	0.	0.	0.	0.	0.	0.	0.	0.

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USE FACTORS FOR GASEOUS DISCHARGES
 BASED ON 1 CI/YR RELEASE OF EACH ISOTOPE AND A VALUE OF UNITY FOR X/Q, DEPLETED X/Q AND RELATIVE DEPOSITION

PATHWAY - STORED FRUITS AND VEGETABLES

NUCLIDE

ORGAN USE (MREM)

	BONE	LIVER	THYROID	KIDNEY	LUNG	GI-LLI	SKIN	TOTAL BODY
H-3	0.	5.45E+01	5.25E+01	6.63E+01	5.25E+01	5.25E+01	0.	5.25E+01
C-14	1.04E+04	1.04E+04	1.04E+04	7.82E+03	1.04E+04	1.04E+04	0.	1.04E+04
P-32	2.02E+07	1.27E+06	0.	0.	0.	2.27E+06	0.	7.83E+05
AR-41	0.	0.	0.	0.	0.	0.	0.	0.
AN-54	0.	1.31E+07	0.	3.91E+06	0.	4.02E+07	0.	4.51E+05
FE-59	4.49E+06	1.07E+07	0.	0.	2.96E+06	3.52E+07	0.	4.05E+05
CO-58	0.	1.57E+06	0.	0.	0.	2.12E+07	0.	3.57E+05
CO-60	0.	9.31E+06	0.	0.	0.	1.12E+08	0.	2.13E+07
ZN-65	1.70E+07	5.40E+07	0.	3.61E+07	0.	3.40E+07	0.	2.42E+07
KR-83M	0.	0.	0.	0.	0.	0.	0.	0.
KR-85M	0.	0.	0.	0.	0.	0.	0.	0.
KR-85	0.	0.	0.	0.	0.	0.	0.	0.
KR-87	0.	2.48E-07	0.	0.	0.	1.35E-08	0.	1.00E-07
KR-88	0.	0.	0.	0.	0.	0.	0.	0.
KR-89	2.38E+04	0.	0.	0.	0.	0.	0.	6.83E+02
KR-90	1.45E+03	0.	0.	0.	4.60E+00	4.42E+01	0.	3.59E+02
RB-86	0.	4.58E+05	0.	0.	0.	9.04E+05	0.	2.10E+05
SR-89	5.42E+08	0.	0.	0.	0.	5.87E+07	0.	1.55E+07
SR-90	4.00E+10	0.	0.	0.	1.27E+08	1.22E+09	0.	9.90E+09
Y-91	2.66E+05	0.	0.	0.	0.	1.02E+08	0.	7.10E+03
ZR-95	6.62E+04	2.52E+04	0.	2.81E+04	0.	0.75E+07	0.	1.67E+04
NB-95	5.42E+03	3.26E+03	0.	2.57E+03	0.	1.33E+07	0.	1.84E+03
RU-103	2.14E+05	0.	0.	6.39E+05	0.	1.67E+07	0.	9.58E+04
RU-106	1.21E+07	0.	0.	1.61E+07	0.	5.48E+08	0.	1.52E+05
AG-110M	4.87E+05	4.50E+05	0.	8.85E+05	0.	1.84E+08	0.	2.68E+05
CU-115M	0.	1.90E+06	0.	1.51E+06	0.	7.98E+07	0.	0.05E+04
SN-123	0.	0.	0.	0.	0.	0.	0.	0.
SN-126	2.92E+08	5.81E+06	1.71E+05	0.	2.57E+06	4.26E+08	0.	9.72E+05
SB-124	3.89E+06	7.34E+04	9.40E+03	0.	3.02E+06	1.10E+08	0.	1.54E+05
SB-125	1.91E+07	4.33E+05	3.36E+05	3.38E+07	7.55E+08	9.70E+07	0.	3.03E+05
FE-127M	2.04E+07	7.16E+06	5.41E+06	8.25E+07	0.	1.03E+08	0.	2.53E+05
FE-129M	1.41E+07	5.24E+06	4.53E+06	4.09E+07	0.	4.93E+07	0.	2.25E+06
I-131	1.01E+05	1.43E+05	4.12E+07	1.85E+05	0.	2.71E+04	0.	6.51E+04
I-133	0.	0.	0.	0.	0.	0.	0.	0.
XE-131M	0.	0.	0.	0.	0.	0.	0.	0.
XE-133	0.	0.	0.	0.	0.	0.	0.	0.
XE-133M	0.	0.	0.	0.	0.	0.	0.	0.
XE-135M	1.10E-03	1.01E-03	0.	3.84E-04	1.17E-04	2.37E-05	0.	4.50E-04
XE-135	3.79E-02	3.50E-02	0.	1.33E-02	3.98E-03	8.18E-04	0.	1.55E-02
XE-137	1.03E+02	1.39E+02	0.	3.58E+01	1.84E+01	1.82E+00	0.	4.87E+01
XE-138	0.	0.	0.	0.	0.	0.	0.	0.
CS-134	2.54E+08	6.13E+08	0.	1.52E+08	7.43E+07	7.08E+06	0.	2.80E+08
CS-135	4.45E+05	1.70E+05	0.	9.78E+05	1.34E+05	2.00E+05	0.	1.27E+05
CS-137	3.08E+08	2.62E+08	0.	1.34E+08	0.32E+07	0.90E+06	0.	1.83E+08
BA-140	1.83E+06	2.38E+03	0.	5.60E+02	1.50E+03	7.31E+06	0.	1.17E+05
CE-141	8.42E+03	5.05E+03	0.	1.97E+03	0.	1.53E+07	0.	0.48E+02
CE-144	1.99E+06	6.14E+05	0.	3.33E+05	0.	4.60E+08	0.	1.02E+05

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DOSE FACTORS FOR GASEOUS DISCHARGES
 BASED ON 1 CI/YR RELEASE OF EACH ISOTOPE AND A VALUE OF UNITY FOR A/Q, DEPLETED A/Q AND RELATIVE DEPOSITION

NUCLIDE	PATHWAY - MEAT (CONTAMINATED FORAGE)										AGE GROUP - TEENAGER	
	ORGAN DOSE (MREM)											
	BONE	LIVER	THYROID	KIDNEY	LUNG	GI-LLI	SKIN	TOTAL BODY				
H-----3	0.	3.27E+00	3.27E+00	4.13E+00	3.27E+00	3.27E+00	0.	3.27E+00	0.	3.27E+00	0.	3.27E+00
G-----14	1.66E+03	1.66E+03	1.66E+03	1.25E+03	1.66E+03	1.66E+03	0.	1.66E+03	0.	1.66E+03	0.	1.66E+03
P-----32	8.01E+07	5.02E+06	0.	0.	0.	9.01E+06	0.	9.01E+06	0.	9.01E+06	0.	9.01E+06
AR-----41	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
MN-----54	0.	1.28E+05	0.	3.82E+04	0.	3.93E+05	0.	3.93E+05	0.	3.93E+05	0.	3.93E+05
FE-----59	0.	9.50E+06	0.	0.	2.64E+06	3.13E+07	0.	3.13E+07	0.	3.13E+07	0.	3.13E+07
CU-----64	0.	3.54E+05	0.	0.	0.	4.78E+06	0.	4.78E+06	0.	4.78E+06	0.	4.78E+06
CO-----60	0.	1.35E+06	0.	0.	0.	1.61E+07	0.	1.61E+07	0.	1.61E+07	0.	1.61E+07
ZN-----65	5.65E+06	1.80E+07	0.	1.20E+07	0.	1.13E+07	0.	1.13E+07	0.	1.13E+07	0.	1.13E+07
KR-83M	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
KR-85M	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
KR-----85	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
KR-----87	0.	6.71E-08	0.	0.	0.	3.14E-09	0.	3.14E-09	0.	3.14E-09	0.	3.14E-09
KR-----88	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
KX-----89	2.95E+02	0.	0.	0.	0.	3.20E+01	0.	3.20E+01	0.	3.20E+01	0.	3.20E+01
KX-----90	9.04E+00	0.	0.	0.	2.50E-01	9.17E-01	0.	9.17E-01	0.	9.17E-01	0.	9.17E-01
KX-----90	0.	7.95E+05	0.	0.	0.	1.57E+06	0.	1.57E+06	0.	1.57E+06	0.	1.57E+06
R3-----85	6.71E+06	0.	0.	0.	6.88E+06	7.26E+05	0.	7.26E+05	0.	7.26E+05	0.	7.26E+05
SR-----89	2.49E+08	0.	0.	0.	0.	2.53E+07	0.	2.53E+07	0.	2.53E+07	0.	2.53E+07
SR-----90	2.32E+04	0.	0.	0.	0.	8.93E+06	0.	8.93E+06	0.	8.93E+06	0.	8.93E+06
Y-----91	6.21E+04	2.83E+04	0.	2.75E+04	0.	9.41E+07	0.	9.41E+07	0.	9.41E+07	0.	9.41E+07
ZR-----95	4.09E+04	2.46E+04	0.	1.94E+04	0.	1.01E+08	0.	1.01E+08	0.	1.01E+08	0.	1.01E+08
N3-----95	2.07E+06	0.	0.	6.17E+05	0.	1.61E+08	0.	1.61E+08	0.	1.61E+08	0.	1.61E+08
RU-103	5.76E+07	0.	0.	7.64E+07	0.	2.60E+09	0.	2.60E+09	0.	2.60E+09	0.	2.60E+09
RU-106	9.82E+04	9.08E+04	0.	1.79E+05	0.	3.71E+07	0.	3.71E+07	0.	3.71E+07	0.	3.71E+07
AG110M	0.	2.25E+04	0.	1.78E+04	0.	9.46E+05	0.	9.46E+05	0.	9.46E+05	0.	9.46E+05
GD115M	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
SN-123	0.	5.05E+06	1.48E+09	0.	8.66E+04	8.47E+07	0.	8.47E+07	0.	8.47E+07	0.	8.47E+07
SN-126	2.55E+08	5.51E+03	7.06E+02	0.	2.27E+05	8.26E+06	0.	8.26E+06	0.	8.26E+06	0.	8.26E+06
SB-124	2.92E+05	1.42E+06	1.12E+06	1.13E+07	3.43E+07	1.40E+07	0.	1.40E+07	0.	1.40E+07	0.	1.40E+07
SB-125	4.31E+06	6.83E+06	5.17E+06	7.88E+07	0.	9.80E+07	0.	9.80E+07	0.	9.80E+07	0.	9.80E+07
TE127M	1.95E+07	1.01E+07	8.77E+06	7.93E+07	0.	9.55E+07	0.	9.55E+07	0.	9.55E+07	0.	9.55E+07
TE129M	2.75E+07	1.76E+05	5.06E+07	2.27E+05	0.	3.32E+04	0.	3.32E+04	0.	3.32E+04	0.	3.32E+04
I-----131	1.24E+05	9.26E-03	1.68E+00	1.17E-02	0.	6.73E-03	0.	6.73E-03	0.	6.73E-03	0.	6.73E-03
I-----133	5.46E-03	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
XE131M	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
XE133M	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
XE-133	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
XE135M	4.49E-05	4.19E-05	0.	1.57E-05	4.72E-06	9.09E-07	0.	9.09E-07	0.	9.09E-07	0.	9.09E-07
XE-135	1.55E-03	1.43E-03	0.	5.42E-04	1.63E-04	3.35E-05	0.	3.35E-05	0.	3.35E-05	0.	3.35E-05
XE-137	4.41E+00	5.94E+00	0.	1.53E+00	7.88E-01	7.92E-02	0.	7.92E-02	0.	7.92E-02	0.	7.92E-02
XE-139	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
CS-134	1.17E+07	2.83E+07	0.	7.00E+06	3.43E+06	3.27E+05	0.	3.27E+05	0.	3.27E+05	0.	3.27E+05
CS-136	1.98E+05	7.80E+05	0.	4.34E+05	2.92E+04	8.86E+04	0.	8.86E+04	0.	8.86E+04	0.	8.86E+04
CS-137	1.06E+07	2.25E+07	0.	5.72E+06	2.98E+06	2.98E+05	0.	2.98E+05	0.	2.98E+05	0.	2.98E+05
UA-140	6.71E+05	8.26E+02	0.	2.00E+02	5.53E+02	2.00E+02	0.	2.00E+02	0.	2.00E+02	0.	2.00E+02
CE-141	2.91E+02	1.36E+02	0.	6.88E+01	0.	3.30E+02	0.	3.30E+02	0.	3.30E+02	0.	3.30E+02
CE-144	2.98E+04	1.22E+04	0.	5.00E+03	0.	7.02E+06	0.	7.02E+06	0.	7.02E+06	0.	7.02E+06

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DOSE FACTORS FOR GASEOUS DISCHARGES
 BASED ON 1 C/1YR RELEASE OF EACH ISOTOPE AND A VALUE OF UNITY FOR X/Q, DEPLETED X/Q AND RELATIVE DEPOSITION

NUCLIDE	PATHWAY - MEAT (CONTAMINATED FEED)								AGE GROUP - TEENAGER				
	ORGAN DOSE (MREM)												
	BONE	LIVER	THYROID	KIDNEY	LUNG	GI-LLI	SKIN	TOTAL BODY					
H-3	0.	3.22E+00	3.22E+00	4.07E+00	3.22E+00	3.22E+00	0.	3.22E+00	0.	0.	0.	0.	0.
C-14	1.66E+03	1.66E+03	1.66E+03	1.25E+03	1.66E+03	1.66E+03	0.	1.66E+03	0.	0.	0.	0.	0.
P-32	4.25E+05	2.67E+04	0.	0.	0.	4.78E+04	0.	1.65E+04	0.	0.	0.	0.	0.
AR-41	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
MN-54	0.	4.85E+04	0.	1.44E+04	0.	1.49E+05	0.	9.26E+03	0.	0.	0.	0.	0.
FE-59	4.29E+05	1.02E+06	0.	0.	2.83E+05	3.36E+06	0.	3.87E+03	0.	0.	0.	0.	0.
CO-58	0.	6.45E+04	0.	0.	0.	8.71E+05	0.	1.47E+05	0.	0.	0.	0.	0.
CO-60	0.	6.13E+05	0.	0.	0.	7.36E+06	0.	1.40E+05	0.	0.	0.	0.	0.
ZN-65	2.28E+06	7.25E+06	0.	4.85E+06	0.	4.57E+06	0.	3.28E+06	0.	0.	0.	0.	0.
KR-83M	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
KR-85M	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
KR-85	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
KR-87	0.	4.61E-08	0.	0.	0.	2.16E-09	0.	1.60E-08	0.	0.	0.	0.	0.
KR-88	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
KR-89	3.71E+01	0.	0.	0.	0.	4.03E+00	0.	1.07E+00	0.	0.	0.	0.	0.
KR-90	4.49E+00	0.	0.	0.	1.24E-01	4.55E-01	0.	1.11E+00	0.	0.	0.	0.	0.
KB-86	0.	1.15E+05	0.	0.	0.	2.26E+04	0.	5.36E+04	0.	0.	0.	0.	0.
SR-89	8.45E+05	0.	0.	0.	0.	9.17E+04	0.	2.43E+04	0.	0.	0.	0.	0.
SR-90	1.24E+08	0.	0.	0.	3.41E+06	1.25E+07	0.	3.05E+07	0.	0.	0.	0.	0.
Y-91	3.51E+03	0.	0.	0.	0.	1.35E+06	0.	9.37E+01	0.	0.	0.	0.	0.
ZR-95	1.89E+04	9.90E+03	0.	8.64E+03	0.	3.68E+07	0.	5.84E+03	0.	0.	0.	0.	0.
NB-95	2.91E+03	1.75E+03	0.	1.38E+03	0.	7.35E+06	0.	9.87E+02	0.	0.	0.	0.	0.
RU-103	1.86E+05	0.	0.	5.54E+05	0.	1.45E+07	0.	8.31E+04	0.	0.	0.	0.	0.
RU-106	2.27E+07	0.	0.	3.02E+07	0.	1.03E+05	0.	2.80E+05	0.	0.	0.	0.	0.
AG-110M	3.73E+04	3.45E+04	0.	6.79E+04	0.	1.41E+07	0.	2.05E+04	0.	0.	0.	0.	0.
LO-115M	0.	2.32E+03	0.	1.84E+03	0.	9.75E+04	0.	7.40E+01	0.	0.	0.	0.	0.
SN-123	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
SN-126	1.19E+08	2.36E+06	6.93E+05	0.	5.80E+04	4.10E+07	0.	3.42E+05	0.	0.	0.	0.	0.
SB-124	4.51E+04	8.51E+02	1.09E+02	0.	3.50E+04	1.28E+06	0.	1.78E+04	0.	0.	0.	0.	0.
SB-125	4.12E+06	1.42E+06	1.12E+06	1.13E+07	1.50E+07	1.24E+07	0.	5.57E+05	0.	0.	0.	0.	0.
TE-127M	5.85E+06	2.04E+06	1.55E+06	2.36E+07	0.	2.94E+07	0.	7.25E+05	0.	0.	0.	0.	0.
TE-129M	2.02E+06	7.51E+05	6.49E+05	5.87E+05	0.	7.07E+06	0.	3.19E+05	0.	0.	0.	0.	0.
I-131	2.04E+01	2.89E+01	8.32E+03	3.74E+01	0.	5.46E+00	0.	1.72E+01	0.	0.	0.	0.	0.
I-133	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
XE-131M	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
XE-133M	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
XE-133	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
XE-135M	2.27E-05	2.09E-05	0.	7.92E-06	2.38E-06	4.89E-07	0.	9.29E-05	0.	0.	0.	0.	0.
XE-135	7.82E-04	7.21E-04	0.	2.73E-04	2.42E-05	1.69E-05	0.	3.21E-04	0.	0.	0.	0.	0.
XE-137	2.12E+00	2.86E+00	0.	7.36E-01	3.79E-01	3.81E-02	0.	1.00E+00	0.	0.	0.	0.	0.
XE-138	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
CS-134	5.02E+06	1.21E+07	0.	2.93E+06	1.47E+06	1.40E+05	0.	5.65E+05	0.	0.	0.	0.	0.
CS-136	9.39E+02	2.52E+03	0.	1.40E+03	1.42E+02	2.87E+02	0.	1.82E+03	0.	0.	0.	0.	0.
CS-137	7.97E+06	1.07E+07	0.	2.77E+06	1.42E+06	1.43E+05	0.	3.75E+05	0.	0.	0.	0.	0.
BA-140	2.01E+03	2.48E+00	0.	8.17E-01	1.05E+00	7.78E+02	0.	1.29E+02	0.	0.	0.	0.	0.
CE-141	1.79E+01	1.21E+01	0.	4.19E+00	0.	3.26E+04	0.	1.38E+03	0.	0.	0.	0.	0.
CE-144	1.09E+04	4.40E+03	0.	1.83E+03	0.	2.50E+06	0.	3.76E+02	0.	0.	0.	0.	0.

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DOSE FACTORS FOR GASEOUS DISCHARGES
 BASED ON 1 CI/YR RELEASE OF EACH ISOTOPE AND A VALUE OF UNITY FOR X/Q, DEPLETED X/Q AND RELATIVE DEPOSITION

NUCLIDE	PATHWAY - COWS MILK (CONTAMINATED FORAGE)					AGE GROUP - TEENAGER				
	ORGAN DOSE (MREM)									
	BONE	LIVER	THYROID	KIDNEY	LUNG	GI-LLI	SKIN	TOTAL BODY		
H-3	0.	1.08E+01	1.68E+01	2.12E+01	1.68E+01	1.68E+01	0.	1.68E+01	0.	1.68E+01
C-14	3.95E+03	3.95E+03	3.95E+03	2.98E+03	3.95E+03	3.95E+03	0.	3.95E+03	0.	3.95E+03
P-32	6.41E+08	4.02E+07	0.	0.	0.	7.21E+07	0.	2.48E+07	0.	2.48E+07
AR-41	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
MN-54	0.	2.57E+05	0.	7.64E+04	0.	7.86E+05	0.	4.90E+04	0.	4.90E+04
FE-59	9.75E+05	2.31E+06	0.	0.	6.42E+05	7.04E+06	0.	8.80E+05	0.	8.80E+05
CU-64	0.	2.00E+05	0.	0.	0.	2.70E+06	0.	4.55E+05	0.	4.55E+05
CO-60	0.	6.41E+05	0.	0.	0.	7.09E+06	0.	1.46E+05	0.	1.46E+05
ZN-65	4.76E+07	1.51E+08	0.	1.01E+08	0.	9.52E+07	0.	6.84E+07	0.	6.84E+07
KR-83M	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
KR-85M	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
KR-85	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
KR-87	0.	4.00E-07	0.	0.	0.	0.	0.	1.59E-07	0.	1.59E-07
KR-88	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
KR-89	3.09E+03	0.	0.	0.	0.	3.56E+02	0.	6.88E+01	0.	6.88E+01
KR-90	7.43E+01	0.	0.	0.	2.84E-03	1.58E+00	0.	1.84E+01	0.	1.84E+01
KB-86	0.	9.23E+07	0.	0.	0.	1.82E+07	0.	4.30E+07	0.	4.30E+07
SR-89	7.05E+07	0.	0.	0.	0.	7.64E+06	0.	2.02E+05	0.	2.02E+05
SR-90	2.05E+09	0.	0.	0.	7.83E+04	4.35E+07	0.	5.06E+08	0.	5.06E+08
Y-91	3.84E+02	0.	0.	0.	0.	1.48E+05	0.	1.03E+01	0.	1.03E+01
ZR-95	8.72E+02	5.15E+02	0.	4.10E+02	0.	2.08E+06	0.	2.93E+02	0.	2.93E+02
NB-99	3.21E+03	1.93E+03	0.	1.52E+03	0.	7.89E+06	0.	1.09E+03	0.	1.09E+03
KU-103	4.35E+01	0.	0.	1.30E+02	0.	3.39E+03	0.	1.94E+01	0.	1.94E+01
KU-104	9.14E+02	0.	0.	1.22E+03	0.	4.14E+04	0.	1.15E+02	0.	1.15E+02
AG-110M	1.87E+06	1.73E+06	0.	3.39E+06	0.	7.04E+08	0.	1.03E+05	0.	1.03E+05
CU-115M	0.	4.19E+04	0.	3.32E+04	0.	1.76E+06	0.	1.34E+03	0.	1.34E+03
SN-123	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
SN-124	4.92E+07	9.76E+05	2.86E+05	0.	1.27E+05	3.11E+07	0.	1.46E+05	0.	1.46E+05
SB-124	8.29E+05	1.56E+04	2.00E+03	0.	6.43E+05	2.35E+07	0.	3.28E+07	0.	3.28E+07
SB-129	1.12E+06	1.33E+05	9.95E+04	9.97E+05	8.03E+07	7.77E+06	0.	2.01E+05	0.	2.01E+05
TE-127M	1.76E+06	6.14E+05	4.65E+05	7.09E+06	0.	6.82E+06	0.	2.18E+05	0.	2.18E+05
TE-129M	3.16E+06	1.17E+06	1.01E+06	9.15E+06	0.	1.10E+07	0.	4.97E+05	0.	4.97E+05
I-131	7.45E+06	1.05E+07	3.04E+09	1.36E+07	0.	1.99E+06	0.	6.27E+06	0.	6.27E+06
I-133	1.08E+05	1.84E+05	3.34E+07	2.31E+05	0.	1.34E+05	0.	5.66E+04	0.	5.66E+04
XE-131M	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
XE-133M	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
XE-133	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
XE-135M	8.28E-04	7.65E-04	0.	2.90E-04	8.71E-05	1.79E-05	0.	3.40E-04	0.	3.40E-04
XE-135	2.86E-02	2.64E-02	0.	1.00E-02	3.01E-03	5.18E-04	0.	1.17E-02	0.	1.17E-02
XE-137	8.16E+01	1.10E+02	0.	2.83E+01	1.40E+01	1.40E+01	0.	3.82E+01	0.	3.82E+01
AC-138	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
CS-134	2.20E+08	5.31E+08	0.	1.31E+08	6.43E+07	6.13E+06	0.	2.48E+08	0.	2.48E+08
CS-136	9.53E+06	3.76E+07	0.	2.03E+07	2.07E+06	4.27E+06	0.	2.71E+07	0.	2.71E+07
CS-137	3.07E+08	4.12E+08	0.	1.05E+08	5.47E+07	2.50E+06	0.	1.47E+09	0.	1.47E+09
BA-140	1.57E+06	1.68E+03	0.	4.40E+02	1.13E+03	2.58E+05	0.	8.80E+04	0.	8.80E+04
CE-141	1.32E+03	6.84E+02	0.	3.07E+02	0.	2.39E+06	0.	1.91E+02	0.	1.91E+02
GE-144	9.23E+04	3.93E+04	0.	1.01E+04	0.	2.20E+07	0.	5.06E+05	0.	5.06E+05

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DOSE FACTORS FOR GASEOUS DISCHARGES
 BASED ON 1 CI/YR RELEASE OF EACH ISOTOPE AND A VALUE OF UNITY FOR X/Q, DEPLETED X/Q AND RELATIVE DEPOSITION

NUCLIDE	PATHWAY - COWS MILK (CONTAMINATED FEED)										AGE GROUP - TEENAGER		
	ORGAN DOSE (MREM)												
	BONE	LIVER	THYROID	KIDNEY	LUNG	GI-LLI	SKIN	TOTAL BODY					
H-3	0.	1.66E+01	1.66E+01	2.10E+01	1.66E+01	1.66E+01	0.	1.60E+01					
C-14	3.95E+03	3.95E+03	3.95E+03	2.98E+03	3.95E+03	3.95E+03	0.	3.95E+03					
P-32	3.40E+05	2.13E+05	0.	0.	0.	3.83E+05	0.	1.32E+05					
AR-41	0.	0.	0.	0.	0.	0.	0.	0.					
MN-54	0.	9.70E+04	0.	2.89E+04	0.	2.97E+05	0.	1.85E+04					
FE-59	1.04E+05	2.48E+05	0.	0.	6.88E+04	8.18E+05	0.	9.43E+04					
CO-58	0.	3.64E+04	0.	0.	0.	4.91E+05	0.	8.29E+04					
CU-60	0.	2.92E+05	0.	0.	0.	3.51E+06	0.	6.67E+05					
ZN-65	1.92E+07	6.10E+07	0.	4.08E+07	0.	3.85E+07	0.	2.76E+07					
KR-83M	0.	0.	0.	0.	0.	0.	0.	0.					
KR-85M	0.	0.	0.	0.	0.	0.	0.	0.					
KR-85	0.	0.	0.	0.	0.	0.	0.	0.					
KR-87	0.	2.74E-07	0.	0.	0.	0.	0.	0.					
KR-88	0.	0.	0.	0.	0.	1.28E-08	0.	9.54E-08					
KR-89	3.90E+02	0.	0.	0.	0.	4.23E+01	0.	1.12E+01					
KR-90	3.69E+01	0.	0.	0.	1.54E-03	7.84E-01	0.	9.11E+00					
KB-86	0.	1.33E+06	0.	0.	0.	2.63E+05	0.	6.22E+05					
SR-89	8.87E+05	0.	0.	0.	0.	9.62E+05	0.	2.52E+05					
SR-90	1.02E+09	0.	0.	0.	4.24E+04	2.16E+07	0.	2.51E+08					
Y-91	5.80E+01	0.	0.	0.	0.	2.23E+04	0.	1.25E+03					
ZR-95	8.18E+02	4.91E+02	0.	3.88E+02	0.	2.00E+06	0.	2.77E+02					
NR-95	2.28E+02	1.37E+02	0.	1.08E+02	0.	5.61E+05	0.	7.75E+01					
RU-103	3.91E+00	0.	0.	1.17E+01	0.	3.05E+02	0.	1.75E+00					
RU-106	3.62E+02	0.	0.	4.81E+02	0.	1.64E+04	0.	4.55E+01					
AG-110M	7.09E+05	6.56E+05	0.	1.29E+06	0.	2.68E+08	0.	3.90E+05					
CU-115M	0.	4.32E+03	0.	3.42E+03	0.	1.82E+05	0.	1.38E+02					
SN-123	0.	0.	0.	0.	0.	0.	0.	0.					
SN-126	2.31E+07	4.58E+05	1.34E+05	0.	1.23E+05	2.30E+07	0.	7.25E+05					
SB-124	1.28E+05	2.42E+03	3.10E+02	0.	9.94E+04	3.63E+06	0.	5.08E+04					
SB-125	7.11E+05	1.38E+05	1.06E+05	1.07E+05	3.51E+07	4.02E+06	0.	1.17E+05					
TE-127M	5.25E+05	1.84E+05	1.39E+05	2.12E+06	0.	2.04E+06	0.	6.51E+04					
TE-129M	2.34E+05	8.67E+04	7.49E+04	6.77E+05	0.	8.16E+05	0.	3.08E+04					
I-131	1.23E+03	1.73E+03	4.99E+05	2.24E+03	0.	3.28E+02	0.	1.03E+03					
I-133	0.	0.	0.	0.	0.	0.	0.	0.					
XE-131M	0.	0.	0.	0.	0.	0.	0.	0.					
XE-133M	0.	0.	0.	0.	0.	0.	0.	0.					
XE-133	0.	0.	0.	0.	0.	0.	0.	0.					
XE-135M	4.18E-04	3.86E-04	0.	1.46E-04	4.40E-05	9.03E-06	0.	1.72E-04					
XE-135	1.44E-02	1.33E-02	0.	5.05E-03	1.52E-03	3.12E-04	0.	5.92E-03					
XE-137	3.92E+01	5.28E+01	0.	1.36E+01	7.00E+00	7.04E-01	0.	1.85E+01					
XE-138	0.	0.	0.	0.	0.	0.	0.	0.					
GS-134	9.42E+07	2.27E+08	0.	5.01E+07	2.65E+07	2.62E+06	0.	1.06E+08					
GS-136	3.08E+04	1.22E+05	0.	6.75E+04	3.27E+05	1.38E+04	0.	8.75E+04					
GS-137	1.47E+08	1.98E+08	0.	5.11E+07	2.03E+07	2.05E+06	0.	6.96E+07					
BA-140	4.10E+03	7.04E+00	0.	1.25E+00	3.37E+00	1.47E+02	0.	2.04E+02					
CE-141	8.11E+01	5.49E+01	0.	1.89E+01	0.	1.47E+05	0.	8.24E+00					
CE-144	3.50E+04	1.44E+04	0.	5.07E+03	0.	0.24E+06	0.	1.05E+03					

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DOSE FACTORS FOR GASEOUS DISCHARGES
 BASED ON 1 CI/YR RELEASE OF EACH ISOTOPE AND A VALUE OF UNITY FOR X/Q, DEPLETED X/Q AND RELATIVE DEPOSITION

NUCLIDE	PATHWAY - GOATS MILK (CONTAMINATED FORAGE)										AGE GROUP - TEENAGER		
	ORGAN DOSE (MREM)										TOTAL BODY		
	BONE	LIVER	THYROID	KIDNEY	LUNG	GI-LLI	SKIN						
H-3	0.	3.43E+01	3.43E+01	4.33E+01	3.43E+01	3.43E+01	0.				3.43E+01		
C-14	3.95E+03	3.95E+03	3.95E+03	2.98E+03	3.95E+03	3.95E+03	0.				3.95E+03		
P-32	8.28E+08	5.19E+07	0.	0.	0.	9.30E+07	0.				3.20E+07		
AR-41	0.	0.	0.	0.	0.	0.	0.				0.		
MN-54	0.	3.09E+04	0.	9.13E+03	0.	9.47E+04	0.				5.90E+03		
FE-59	1.30E+04	3.08E+04	0.	0.	8.55E+03	1.02E+05	0.				1.17E+04		
CO-58	0.	2.43E+04	0.	0.	0.	3.28E+05	0.				5.54E+04		
CO-60	0.	7.70E+04	0.	0.	0.	9.23E+05	0.				1.75E+03		
ZN-65	5.74E+06	1.82E+07	0.	1.22E+07	0.	1.15E+07	0.				8.24E+05		
KR-83M	0.	0.	0.	0.	0.	0.	0.				0.		
KR-85M	0.	0.	0.	0.	0.	0.	0.				0.		
KR-87	0.	0.	0.	0.	0.	0.	0.				0.		
KR-88	0.	4.80E-08	0.	0.	0.	2.25E-09	0.				1.67E-03		
KR-89	0.	4.84E-10	0.	0.	0.	0.	0.				2.57E-10		
KR-90	6.63E+03	0.	0.	0.	0.	7.19E+02	0.				1.90E+02		
RB-85	1.56E+02	0.	0.	0.	3.12E-04	3.30E+00	0.				3.85E+01		
SR-89	0.	1.17E+07	0.	0.	0.	2.31E+06	0.				5.40E+03		
SR-90	1.51E+08	0.	0.	0.	0.	1.64E+07	0.				4.33E+06		
SR-95	4.30E+09	0.	0.	0.	8.69E+03	9.09E+07	0.				1.05E+09		
Y-91	4.69E+01	0.	0.	0.	0.	1.80E+04	0.				1.25E+03		
ZR-95	9.45E+01	5.58E+01	0.	4.45E+01	0.	2.25E+05	0.				3.17E+01		
NB-95	3.97E+02	2.39E+02	0.	1.88E+02	0.	9.76E+05	0.				1.35E+02		
RU-103	5.35E+00	0.	0.	1.60E+01	0.	4.18E+02	0.				2.39E+00		
RU-106	1.10E+02	0.	0.	1.45E+02	0.	4.98E+03	0.				1.38E+01		
AG-110M	2.25E+05	2.08E+05	0.	4.03E+05	0.	8.48E+07	0.				1.24E+05		
CU-115M	0.	5.15E+03	0.	4.08E+03	0.	2.17E+05	0.				1.65E+02		
SN-123	2.93E-02	4.83E-04	3.87E-04	0.	0.	4.22E-02	0.				7.22E-04		
SN-126	5.89E+06	1.17E+05	3.43E+04	0.	1.41E+04	3.57E+06	0.				1.75E+05		
SB-124	1.01E+05	1.91E+03	2.45E+02	0.	7.85E+04	2.86E+06	0.				4.00E+04		
SB-125	1.35E+05	1.62E+04	1.21E+04	0.	9.64E+06	9.34E+05	0.				2.41E+04		
TE-127M	2.13E+05	7.45E+04	5.63E+04	8.78E+05	0.	1.06E+06	0.				2.64E+04		
TE-129M	3.91E+05	1.45E+05	1.26E+05	1.13E+06	0.	1.36E+06	0.				9.16E+04		
I-131	1.02E+07	1.44E+07	4.15E+03	1.86E+07	0.	2.72E+06	0.				8.56E+05		
I-133	4.27E+05	7.23E+05	1.31E+08	9.11E+05	0.	5.26E+05	0.				2.23E+05		
AE-131M	0.	0.	0.	0.	0.	0.	0.				0.		
AE-133M	0.	0.	0.	0.	0.	0.	0.				0.		
XE-135	0.	0.	0.	0.	0.	0.	0.				0.		
XE-135H	2.49E-03	2.29E-03	0.	8.63E-04	2.01E-04	2.36E-05	0.				1.02E-03		
AE-135	8.58E-02	7.92E-02	0.	3.00E-02	9.02E-03	1.85E-03	0.				5.52E-02		
AE-137	2.45E+02	3.23E+02	0.	8.48E+01	4.37E+01	4.39E+00	0.				1.16E+02		
XE-138	9.17E-05	1.81E-04	0.	1.33E-04	1.32E-05	7.72E-10	0.				8.96E-05		
CS-134	9.02E+08	1.00E+09	0.	3.95E+08	1.33E+08	1.84E+07	0.				7.45E+08		
CS-135	3.10E+07	1.22E+08	0.	6.80E+07	9.32E+06	1.39E+07	0.				8.80E+07		
CS-137	3.19E+08	1.24E+09	0.	3.14E+08	1.04E+08	1.62E+07	0.				4.34E+08		
GA-140	1.78E+05	2.19E+02	0.	3.46E+01	1.47E+02	3.30E+04	0.				1.15E+04		
GE-141	1.65E+02	1.10E+02	0.	3.81E+01	0.	2.90E+05	0.				1.25E+01		
GE-144	1.15E+04	4.73E+03	0.	1.94E+03	0.	2.72E+06	0.				6.12E+02		

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DOSE FACTORS FOR GASEOUS DISCHARGES
 BASED ON 1 CI/YR RELEASE OF EACH ISOTOPE AND A VALUE OF UNITY FOR X/Q, DEPLETED X/Q AND RELATIVE DEPOSITION

PATHWAY - GOATS MILK (CONTAMINATED FEED) AGE GROUP - TEENAGER

NUCLIDE	ORGAN DOSE (MREM)										TOTAL BODY
	BONE	LIVER	THYROID	KIDNEY	LUNG	GI-LLI	SKIN				
H-----3	0.	3.38E+01	3.38E+01	4.27E+01	3.38E+01	3.38E+01	0.			3.38E+01	
C---14	3.95E+03	3.95E+03	3.95E+03	2.98E+03	3.95E+03	3.95E+03	0.			3.95E+03	
P---32	4.39E+06	2.75E+05	0.	0.	0.	4.94E+05	0.			1.70E+05	
AR-41	0.	0.	0.	0.	0.	0.	0.			0.	
MN-54	0.	1.17E+04	0.	3.48E+03	0.	3.58E+04	0.			2.43E+03	
FE-59	1.39E+03	3.30E+03	0.	0.	9.15E+02	1.09E+04	0.			1.26E+03	
CO--58	0.	4.43E+03	0.	0.	0.	5.98E+04	0.			1.01E+04	
CU--60	0.	3.51E+04	0.	0.	0.	4.21E+05	0.			6.01E+04	
ZN--65	2.32E+05	7.36E+06	0.	4.92E+06	0.	4.63E+06	0.			3.33E+05	
KR-83M	0.	0.	0.	0.	0.	0.	0.			0.	
KR-85M	0.	0.	0.	0.	0.	0.	0.			0.	
KR--87	0.	3.29E-08	0.	0.	0.	1.54E-09	0.			0.	
KR--88	0.	0.	0.	0.	0.	0.	0.			0.	
KR--89	8.35E+02	0.	0.	0.	0.	9.06E+01	0.			2.40E+01	
KR--90	7.74E+01	0.	0.	0.	1.78E-04	1.64E+00	0.			1.91E+01	
KB--80	0.	1.69E+05	0.	0.	0.	3.31E+04	0.			7.89E+04	
SR--89	1.90E+07	0.	0.	0.	0.	2.06E+06	0.			5.40E+05	
SR--90	2.13E+09	0.	0.	0.	0.	4.51E+07	0.			5.27E+03	
Y---91	7.09E+00	0.	0.	0.	0.	2.72E+03	0.			1.09E-01	
ZR--93	9.90E+01	5.94E+01	0.	4.68E+01	0.	2.42E+05	0.			3.30E+01	
NB--95	2.82E+01	1.70E+01	0.	1.34E+01	0.	6.93E+04	0.			9.58E+00	
RU-103	4.81E-01	0.	0.	1.44E+01	0.	3.76E+01	0.			2.15E-01	
RU-105	4.36E+01	0.	0.	5.79E+01	0.	1.97E+03	0.			5.48E+00	
AG-110M	8.54E+04	7.90E+04	0.	1.55E+05	0.	3.23E+07	0.			4.70E+04	
CO-115M	0.	5.31E+02	0.	4.21E+02	0.	2.23E+04	0.			1.70E+01	
SN-123	0.	0.	0.	0.	0.	0.	0.			0.	
SN-125	2.76E+06	5.50E+04	1.61E+04	0.	1.48E+04	2.77E+06	0.			8.69E+04	
SB-124	1.57E+04	2.95E+02	3.78E+01	0.	1.21E+04	4.43E+05	0.			0.18E+03	
SB-125	8.61E+04	1.67E+04	1.29E+04	1.30E+05	4.22E+06	4.85E+05	0.			1.42E+04	
FE-127M	6.37E+04	2.23E+04	1.68E+04	2.57E+05	0.	3.20E+05	0.			7.88E+03	
FE-129M	2.90E+04	1.07E+04	9.36E+03	8.37E+04	0.	1.01E+05	0.			4.52E+03	
I--131	1.67E+03	2.36E+03	6.82E+05	3.05E+03	0.	4.47E+02	0.			1.41E+03	
I--133	0.	0.	0.	0.	0.	0.	0.			0.	
XE-131M	0.	0.	0.	0.	0.	0.	0.			0.	
XE-133M	0.	0.	0.	0.	0.	0.	0.			0.	
XE-133	0.	0.	0.	0.	0.	0.	0.			0.	
XE-135M	1.26E-03	1.16E-03	0.	4.39E-04	1.32E-04	2.71E-05	0.			5.15E-04	
XE-135	4.33E-02	4.00E-02	0.	1.51E-02	4.55E-03	9.35E-04	0.			1.78E-02	
XE-137	1.18E+02	1.58E+02	0.	4.08E+01	2.10E+01	2.11E+00	0.			5.52E+01	
XE-138	0.	0.	0.	0.	0.	0.	0.			0.	
CS-134	2.83E+08	0.02E+08	0.	1.03E+08	8.20E+07	7.67E+06	0.			3.18E+08	
CS-136	1.00E+05	3.95E+05	0.	2.02E+05	3.01E+04	4.49E+04	0.			2.84E+05	
CS-137	4.42E+08	5.95E+08	0.	1.55E+08	7.89E+07	7.93E+06	0.			2.09E+09	
JA-140	5.33E+02	6.56E-01	0.	1.69E-01	4.59E-01	1.04E+02	0.			3.43E+01	
CE-141	1.00E+01	0.74E+00	0.	2.34E+00	0.	1.63E+04	0.			7.75E-01	
CE-144	4.22E+03	1.75E+03	0.	7.09E+02	0.	9.33E+05	0.			2.24E+02	

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DOSE FACTORS FOR GASEOUS DISCHARGES
BASED ON 1 CI/YR RELEASE OF EACH ISOTOPE AND A VALUE OF UNITY FOR X/Q, DEPLETED X/Q AND RELATIVE DEPOSITION

NUCLIDE	PATHWAY - INHALATION							AGE GROUP - CHILD			
	BONE	LIVER	THYROID	KIDNEY	LUNG	GI-LLI	SKIN	TOTAL BODY			
H-3	0.	1.74E+01	1.74E+01	1.15E+01	1.74E+01	1.74E+01	0.	0.	1.74E+01	0.	0.
C-14	1.45E+02	1.45E+02	1.45E+02	3.65E+01	1.45E+02	1.45E+02	0.	0.	1.45E+02	0.	0.
P-32	1.41E+04	8.26E+02	0.	0.	0.	9.25E+02	0.	0.	5.37E+02	0.	0.
AR-41	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
HN-54	0.	4.24E+02	0.	1.05E+02	1.50E+04	8.20E+02	0.	0.	6.74E+01	0.	0.
FE-59	1.25E+02	2.97E+05	0.	0.	1.09E+04	2.01E+03	0.	0.	1.13E+02	0.	0.
CO-58	0.	3.52E+00	0.	0.	2.60E+04	8.37E+02	0.	0.	6.19E+03	0.	0.
CU-60	0.	2.48E+01	0.	0.	1.60E+05	2.17E+03	0.	0.	4.34E+01	0.	0.
ZN-65	3.47E+02	1.10E+03	0.	7.38E+02	9.33E+03	5.72E+02	0.	0.	4.98E+02	0.	0.
KR-83M	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
KR-85M	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
KR-85	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
KR-87	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
KR-88	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
KR-89	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
KR-90	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
RB-86	0.	1.45E+03	0.	0.	0.	0.	0.	0.	0.	0.	0.
SR-89	1.24E+03	0.	0.	0.	0.	1.78E+02	0.	0.	6.32E+02	0.	0.
SR-90	3.79E+05	0.	0.	0.	5.19E+04	3.90E+03	0.	0.	3.50E+01	0.	0.
Y-91	1.72E+03	0.	0.	0.	3.43E+05	7.97E+03	0.	0.	2.31E+04	0.	0.
Zr-95	3.26E+02	7.59E+01	0.	5.80E+02	5.91E+04	4.13E+03	0.	0.	4.59E+01	0.	0.
NB-95	3.94E+01	1.68E+01	0.	8.28E+01	4.90E+04	1.33E+03	0.	0.	6.89E+01	0.	0.
RU-103	5.00E+00	0.	0.	6.24E+01	1.35E+04	7.67E+02	0.	0.	1.23E+01	0.	0.
RU-106	2.67E+02	0.	0.	1.43E+03	3.37E+05	9.76E+02	0.	0.	2.02E+03	0.	0.
AG-110M	1.16E+02	1.07E+02	0.	2.11E+02	4.97E+04	1.01E+04	0.	0.	3.32E+01	0.	0.
CO-115M	0.	2.11E+03	0.	1.70E+03	1.51E+04	3.24E+03	0.	0.	6.36E+01	0.	0.
SN-123	8.30E+02	1.49E+01	1.58E+01	0.	8.10E+04	4.11E+03	0.	0.	6.81E+01	0.	0.
SN-126	1.35E+04	3.58E+02	1.05E+02	0.	1.00E+05	3.45E+03	0.	0.	2.94E+01	0.	0.
SB-124	3.34E+02	6.30E+00	8.08E-01	0.	2.62E+04	4.35E+03	0.	0.	5.14E+02	0.	0.
SB-125	7.07E+02	7.63E+00	6.28E-01	0.	2.35E+04	1.08E+03	0.	0.	1.35E+02	0.	0.
FE-127M	1.35E+02	6.01E+01	3.52E+01	4.90E+02	1.03E+04	1.60E+03	0.	0.	1.42E+02	0.	0.
FE-129M	3.80E+01	1.35E+01	1.25E+01	3.91E+02	4.03E+04	4.22E+03	0.	0.	1.68E+01	0.	0.
I-131	1.05E+03	1.07E+03	3.56E+05	6.57E+02	4.17E+04	6.14E+01	0.	0.	6.02E+03	0.	0.
I-133	3.88E+02	4.74E+02	1.10E+05	2.78E+02	0.	1.28E+02	0.	0.	8.11E+02	0.	0.
XE-131M	0.	0.	0.	0.	0.	0.	0.	0.	1.86E+02	0.	0.
XE-133M	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
XE-133	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
XE-135M	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
XE-135	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
XE-137	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
XE-138	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
CS-137	1.19E+02	3.00E+04	0.	3.08E+03	2.75E+03	8.73E+01	0.	0.	2.75E+03	0.	0.
CS-136	2.00E+04	1.07E+03	0.	9.15E+02	1.28E+02	1.25E+02	0.	0.	1.25E+03	0.	0.
CS-137	1.05E+02	1.06E+01	0.	2.38E+03	4.32E+03	7.89E+01	0.	0.	2.84E+03	0.	0.
GA-140	7.25E+01	3.03E+01	0.	1.77E-01	4.02E+04	2.30E+02	0.	0.	9.70E+03	0.	0.
Ge-141	1.34E+04	4.20E+03	0.	6.70E+01	1.19E+04	1.20E+03	0.	0.	2.39E+03	0.	0.
Ge-144	0.	0.	0.	9.03E+03	2.84E+05	9.25E+03	0.	0.	7.17E+02	0.	0.

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DOSE FACTORS FOR GASEOUS DISCHARGES
 BASED ON 1 CI/YR RELEASE OF EACH ISOTOPE AND A VALUE OF UNITY FOR X/Q, DEPLETED X/Q AND RELATIVE DEPOSITION

NUCLIDE	PATHWAY - GROUND PLANE DEPOSITION							AGE GROUP - CHILD				
	ORGAN DOSE (MREM)											
	BONE	LIVER	THYROID	KIDNEY	LUNG	GI-LLI	SKIN	TOTAL BODY				
H-3	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
C-14	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
P-32	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
AR-41	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
HN-54	4.39E+07	4.39E+07	4.39E+07	4.39E+07	4.39E+07	4.39E+07	4.39E+07	4.39E+07	4.39E+07	4.39E+07	4.39E+07	4.39E+07
FE-59	8.73E+06	8.73E+06	8.73E+06	8.73E+06	8.73E+06	8.73E+06	8.73E+06	8.73E+06	8.73E+06	8.73E+06	8.73E+06	8.73E+06
CO-58	1.21E+07	1.21E+07	1.21E+07	1.21E+07	1.21E+07	1.21E+07	1.21E+07	1.21E+07	1.21E+07	1.21E+07	1.21E+07	1.21E+07
CO-60	6.80E+08	6.80E+08	6.80E+08	6.80E+08	6.80E+08	6.80E+08	6.80E+08	6.80E+08	6.80E+08	6.80E+08	6.80E+08	6.80E+08
ZN-65	2.36E+07	2.36E+07	2.36E+07	2.36E+07	2.36E+07	2.36E+07	2.36E+07	2.36E+07	2.36E+07	2.36E+07	2.36E+07	2.36E+07
KR-83M	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
KR-85M	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
KR-85	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
KR-87	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
KR-88	9.90E+03	9.90E+03	9.90E+03	9.90E+03	9.90E+03	9.90E+03	9.90E+03	9.90E+03	9.90E+03	9.90E+03	9.90E+03	9.90E+03
KR-89	8.08E+02	8.08E+02	8.08E+02	8.08E+02	8.08E+02	8.08E+02	8.08E+02	8.08E+02	8.08E+02	8.08E+02	8.08E+02	8.08E+02
KR-90	6.16E-03	6.16E-03	6.16E-03	6.16E-03	6.16E-03	6.16E-03	6.16E-03	6.16E-03	6.16E-03	6.16E-03	6.16E-03	6.16E-03
RB-86	2.86E+05	2.86E+05	2.86E+05	2.86E+05	2.86E+05	2.86E+05	2.86E+05	2.86E+05	2.86E+05	2.86E+05	2.86E+05	2.86E+05
SR-89	6.87E+02	6.87E+02	6.87E+02	6.87E+02	6.87E+02	6.87E+02	6.87E+02	6.87E+02	6.87E+02	6.87E+02	6.87E+02	6.87E+02
SR-90	1.70E+05	1.70E+05	1.70E+05	1.70E+05	1.70E+05	1.70E+05	1.70E+05	1.70E+05	1.70E+05	1.70E+05	1.70E+05	1.70E+05
Y-91	3.43E+04	3.43E+04	3.43E+04	3.43E+04	3.43E+04	3.43E+04	3.43E+04	3.43E+04	3.43E+04	3.43E+04	3.43E+04	3.43E+04
ZR-95	1.59E+07	1.59E+07	1.59E+07	1.59E+07	1.59E+07	1.59E+07	1.59E+07	1.59E+07	1.59E+07	1.59E+07	1.59E+07	1.59E+07
NB-95	4.33E+06	4.33E+06	4.33E+06	4.33E+06	4.33E+06	4.33E+06	4.33E+06	4.33E+06	4.33E+06	4.33E+06	4.33E+06	4.33E+06
RU-103	3.49E+06	3.49E+06	3.49E+06	3.49E+06	3.49E+06	3.49E+06	3.49E+06	3.49E+06	3.49E+06	3.49E+06	3.49E+06	3.49E+06
RU-106	1.33E+07	1.33E+07	1.33E+07	1.33E+07	1.33E+07	1.33E+07	1.33E+07	1.33E+07	1.33E+07	1.33E+07	1.33E+07	1.33E+07
AG-110M	1.13E+08	1.13E+08	1.13E+08	1.13E+08	1.13E+08	1.13E+08	1.13E+08	1.13E+08	1.13E+08	1.13E+08	1.13E+08	1.13E+08
CO-115M	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
SM-123	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
SN-125	1.64E+09	1.64E+09	1.64E+09	1.64E+09	1.64E+09	1.64E+09	1.64E+09	1.64E+09	1.64E+09	1.64E+09	1.64E+09	1.64E+09
SB-124	1.90E+07	1.90E+07	1.90E+07	1.90E+07	1.90E+07	1.90E+07	1.90E+07	1.90E+07	1.90E+07	1.90E+07	1.90E+07	1.90E+07
SB-125	7.27E+07	7.27E+07	7.27E+07	7.27E+07	7.27E+07	7.27E+07	7.27E+07	7.27E+07	7.27E+07	7.27E+07	7.27E+07	7.27E+07
SE-127M	2.79E+04	2.79E+04	2.79E+04	2.79E+04	2.79E+04	2.79E+04	2.79E+04	2.79E+04	2.79E+04	2.79E+04	2.79E+04	2.79E+04
IE-129M	1.22E+06	1.22E+06	1.22E+06	1.22E+06	1.22E+06	1.22E+06	1.22E+06	1.22E+06	1.22E+06	1.22E+06	1.22E+06	1.22E+06
I-131	2.73E+05	2.73E+05	2.73E+05	2.73E+05	2.73E+05	2.73E+05	2.73E+05	2.73E+05	2.73E+05	2.73E+05	2.73E+05	2.73E+05
I-133	3.92E+04	3.92E+04	3.92E+04	3.92E+04	3.92E+04	3.92E+04	3.92E+04	3.92E+04	3.92E+04	3.92E+04	3.92E+04	3.92E+04
XE-131M	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
XE-133M	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
AE-135	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
XE-135M	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
XE-135	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
XE-137	8.69E+01	8.69E+01	8.69E+01	8.69E+01	8.69E+01	8.69E+01	8.69E+01	8.69E+01	8.69E+01	8.69E+01	8.69E+01	8.69E+01
AE-138	6.01E+03	6.01E+03	6.01E+03	6.01E+03	6.01E+03	6.01E+03	6.01E+03	6.01E+03	6.01E+03	6.01E+03	6.01E+03	6.01E+03
CS-134	2.22E+08	2.22E+08	2.22E+08	2.22E+08	2.22E+08	2.22E+08	2.22E+08	2.22E+08	2.22E+08	2.22E+08	2.22E+08	2.22E+08
CS-136	4.73E+06	4.73E+06	4.73E+06	4.73E+06	4.73E+06	4.73E+06	4.73E+06	4.73E+06	4.73E+06	4.73E+06	4.73E+06	4.73E+06
CS-137	3.27E+08	3.27E+08	3.27E+08	3.27E+08	3.27E+08	3.27E+08	3.27E+08	3.27E+08	3.27E+08	3.27E+08	3.27E+08	3.27E+08
UA-140	5.30E+06	5.30E+06	5.30E+06	5.30E+06	5.30E+06	5.30E+06	5.30E+06	5.30E+06	5.30E+06	5.30E+06	5.30E+06	5.30E+06
GE-141	4.33E+05	4.33E+05	4.33E+05	4.33E+05	4.33E+05	4.33E+05	4.33E+05	4.33E+05	4.33E+05	4.33E+05	4.33E+05	4.33E+05
GE-144	3.59E+06	3.59E+06	3.59E+06	3.59E+06	3.59E+06	3.59E+06	3.59E+06	3.59E+06	3.59E+06	3.59E+06	3.59E+06	3.59E+06

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DOSE FACTORS FOR GASEOUS DISCHARGES
BASED ON 1 CI/YR RELEASE OF EACH ISOTOPE AND A VALUE OF UNITY FOR X/Q, DEPLETED X/Q AND RELATIVE DEPOSITION

NUCLIDE	PATHWAY - FRESH FRUITS AND VEGETABLES										AGE GROUP - CHILD			
	ORGAN DOSE (MREM)													
	BONE	LIVER	THYROID	KIDNEY	LUNG	GI-LLI	SKIN	TOTAL BODY						
H-3	0.	4.18E+00	4.18E+00	2.75E+00	4.18E+00	4.18E+00	0.	4.18E+00						4.18E+00
C-14	1.28E+03	1.28E+03	1.28E+03	3.23E+02	1.28E+03	1.28E+03	0.	1.28E+03						1.28E+03
P-32	1.46E+07	9.13E+05	0.	0.	0.	1.64E+06	0.	5.64E+05						5.64E+05
AR-41	0.	0.	0.	0.	0.	0.	0.	0.						0.
MN-54	0.	6.17E+05	0.	1.84E+05	0.	1.89E+06	0.	1.18E+05						1.18E+05
FE-59	4.60E+05	1.09E+05	0.	0.	3.03E+05	3.60E+06	0.	4.15E+05						4.15E+05
CO-58	0.	2.14E+05	0.	0.	0.	1.28E+06	0.	6.47E+05						6.47E+05
CO-60	0.	7.36E+05	0.	0.	0.	4.07E+06	0.	2.41E+05						2.41E+05
ZN-65	8.31E+05	2.64E+06	0.	1.75E+06	0.	1.66E+06	0.	1.19E+05						1.19E+05
KR-83M	0.	0.	0.	0.	0.	0.	0.	0.						0.
KR-85M	0.	0.	0.	0.	0.	0.	0.	0.						0.
KR-85	0.	0.	0.	0.	0.	0.	0.	0.						0.
KR-87	0.	1.19E+08	0.	0.	0.	5.57E+10	0.	4.14E+03						4.14E+03
KR-88	0.	2.13E+01	0.	0.	0.	0.	0.	1.13E+01						1.13E+01
KR-89	6.61E+03	0.	0.	0.	0.	2.47E+02	0.	1.89E+02						1.89E+02
KR-90	9.96E+01	0.	0.	0.	0.	1.86E+00	0.	2.53E+01						2.53E+01
RB-86	0.	1.69E+06	0.	0.	0.	3.32E+05	0.	7.85E+03						7.85E+03
SR-89	1.50E+08	0.	0.	0.	0.	5.61E+06	0.	4.31E+05						4.31E+05
SR-90	2.74E+09	0.	0.	0.	0.	5.12E+07	0.	6.96E+08						6.96E+08
Y-91	6.55E+04	0.	0.	0.	0.	8.71E+06	0.	1.75E+03						1.75E+03
ZR-95	1.25E+04	3.03E+03	0.	1.87E+03	0.	3.31E+06	0.	2.71E+03						2.71E+03
NB-95	1.94E+03	8.26E+02	0.	3.41E+02	0.	1.43E+06	0.	6.07E+02						6.07E+02
RU-103	7.03E+04	0.	0.	7.33E+04	0.	1.85E+06	0.	2.84E+04						2.84E+04
RU-106	1.66E+06	0.	0.	7.44E+05	0.	2.59E+07	0.	2.07E+05						2.07E+05
AG-110M	2.35E+04	2.17E+04	0.	4.27E+04	0.	8.87E+06	0.	1.29E+04						1.29E+04
CD-115M	0.	2.03E+05	0.	1.01E+05	0.	8.53E+06	0.	6.48E+03						6.48E+03
SN-123	5.43E-07	6.80E-09	7.17E-09	0.	0.	2.70E-07	0.	1.34E-08						1.34E-08
SN-126	1.20E+07	2.38E+05	6.98E+04	0.	6.23E+04	1.18E+07	0.	3.76E+03						3.76E+03
SB-124	3.17E+05	5.97E+03	7.05E+02	0.	2.46E+05	8.96E+06	0.	1.25E+03						1.25E+03
SB-125	1.65E+06	3.67E+05	3.77E+05	1.28E+06	3.25E+07	4.05E+06	0.	2.41E+03						2.41E+03
TE-127M	1.30E+06	4.47E+05	3.66E+05	5.03E+05	0.	7.48E+06	0.	1.06E+03						1.06E+03
TE-129M	5.79E+06	1.61E+06	1.85E+06	5.83E+06	0.	6.97E+06	0.	8.95E+03						8.95E+03
I-131	1.96E+06	2.01E+06	6.54E+08	1.23E+06	0.	1.72E+05	0.	1.52E+03						1.52E+03
I-133	5.73E+04	7.07E+04	1.71E+07	4.15E+04	0.	2.87E+04	0.	2.78E+04						2.78E+04
XE-131M	0.	0.	0.	0.	0.	0.	0.	0.						0.
XE-133M	0.	0.	0.	0.	0.	0.	0.	0.						0.
XE-133	0.	0.	0.	0.	0.	0.	0.	0.						0.
XE-135M	4.51E-05	4.16E-05	0.	1.58E-05	4.74E-06	9.74E-07	0.	1.85E-05						1.85E-05
XE-135	1.56E-03	1.44E-03	0.	5.43E-04	1.04E-04	3.30E-05	0.	6.39E-04						6.39E-04
XE-137	1.25E+01	1.24E+01	0.	1.40E+01	1.41E+00	7.35E-02	0.	1.80E+01						1.80E+01
XE-138	0.	0.	0.	0.	0.	0.	0.	0.						0.
CS-134	3.08E+07	5.19E+07	0.	6.69E+06	5.76E+06	2.81E+05	0.	1.10E+07						1.10E+07
CS-136	4.27E+07	1.69E+07	0.	9.38E+05	1.23E+05	1.72E+05	0.	1.21E+05						1.21E+05
CS-137	4.08E+07	4.53E+07	0.	5.57E+05	5.31E+06	2.76E+05	0.	6.75E+06						6.75E+06
BA-140	5.37E+06	4.93E+05	0.	5.64E+02	2.81E+03	6.28E+06	0.	3.15E+05						3.15E+05
CE-141	3.65E+03	1.03E+03	0.	2.82E+02	0.	2.29E+06	0.	2.72E+02						2.72E+02
CE-144	2.60E+05	6.78E+04	0.	1.53E+04	0.	2.28E+07	0.	1.43E+04						1.43E+04

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BASED ON 1 CI/YR RELEASE OF EACH ISOTOPE AND A VALUE OF UNITY FOR X/Q, DEPLETED X/Q AND RELATIVE DEPOSITION

DOSE FACTORS FOR GASEOUS DISCHARGES

AGE GROUP - CHILD

PATHWAY - STORED FRUITS AND VEGETABLES

NUCLIDE	ORGAN DOSE (MREM)							TOTAL BODY
	BONE	LIVER	THYROID	KIDNEY	LUNG	GI-LLI	SKIN	
H-----3	0.	8.29E+01	8.29E+01	5.47E+01	8.29E+01	8.29E+01	0.	8.29E+01
C---14	2.56E+04	2.56E+04	2.56E+04	6.47E+03	2.56E+04	2.56E+04	0.	2.56E+04
P-----32	1.07E+07	1.05E+06	0.	0.	0.	1.88E+06	0.	6.46E+05
AR---41	0.	0.	0.	0.	0.	0.	0.	0.
MN--54	0.	1.08E+07	0.	3.22E+06	0.	3.32E+07	0.	2.07E+05
FE--59	3.70E+06	8.79E+05	0.	0.	2.44E+06	2.90E+07	0.	3.35E+05
CU--58	0.	2.41E+06	0.	0.	0.	1.43E+07	0.	7.27E+05
CU--60	0.	1.44E+07	0.	0.	0.	7.97E+07	0.	4.32E+07
ZN--65	1.40E+07	4.46E+07	0.	2.98E+07	0.	2.81E+07	0.	2.02E+07
KR--83M	0.	0.	0.	0.	0.	0.	0.	0.
KR--85M	0.	0.	0.	0.	0.	0.	0.	0.
KR--87	0.	2.38E-07	0.	0.	0.	1.11E-08	0.	8.27E-08
KR--88	0.	0.	0.	0.	0.	0.	0.	0.
KR--89	5.89E+04	0.	0.	0.	0.	2.20E+03	0.	1.69E+03
KRKR--90	1.39E+03	0.	0.	0.	0.	3.86E+01	0.	5.03E+02
RB--86	0.	3.78E+06	0.	0.	0.	7.46E+05	0.	1.76E+05
SR--89	1.34E+09	0.	0.	0.	0.	5.00E+07	0.	3.84E+07
SR--90	5.47E+10	0.	0.	0.	0.	1.06E+09	0.	1.39E+10
Y---91	6.56E+05	0.	0.	0.	0.	8.71E+07	0.	1.75E+04
ZR--95	1.51E+05	4.02E+04	0.	2.32E+04	0.	4.91E+07	0.	3.47E+04
NU--95	1.20E+04	5.14E+03	0.	2.12E+03	0.	8.89E+06	0.	3.77E+03
RU--103	5.06E+05	0.	0.	5.27E+05	0.	1.33E+07	0.	2.04E+05
RU--106	2.37E+07	0.	0.	1.33E+07	0.	4.62E+08	0.	3.70E+06
AG-110M	4.02E+05	3.72E+05	0.	7.30E+05	0.	1.52E+08	0.	2.21E+05
CD-115M	0.	1.57E+06	0.	1.24E+06	0.	8.59E+07	0.	5.01E+04
SN--123	0.	0.	0.	0.	0.	0.	0.	0.
SN--126	2.41E+08	4.79E+06	1.40E+06	0.	2.12E+06	3.51E+08	0.	8.03E+05
SB--124	3.21E+06	6.06E+04	7.76E+03	0.	2.49E+06	9.09E+07	0.	1.27E+05
SB--125	3.52E+07	7.97E+06	8.20E+06	2.79E+07	8.23E+08	8.09E+07	0.	5.09E+05
TE-127M	1.76E+07	8.08E+05	4.97E+06	6.81E+07	0.	1.02E+08	0.	2.24E+06
TE-129M	3.48E+07	9.70E+06	1.11E+07	3.38E+07	0.	4.19E+07	0.	5.38E+05
I--131	2.44E+05	2.50E+05	8.14E+07	1.53E+05	0.	2.14E+04	0.	1.89E+05
I--133	0.	0.	0.	0.	0.	0.	0.	0.
XE-131M	0.	0.	0.	0.	0.	0.	0.	0.
XE-133M	0.	0.	0.	0.	0.	0.	0.	0.
XE--133	0.	0.	0.	0.	0.	0.	0.	0.
XE-135M	9.06E-04	8.56E-04	0.	3.17E-04	3.53E-05	1.90E-05	0.	3.72E-04
XE--135	3.13E-02	2.89E-02	0.	1.03E-02	3.23E-03	6.75E-04	0.	1.28E-02
XE-137	2.48E+02	2.40E+02	0.	2.49E+01	2.82E+01	1.47E+00	0.	3.58E+01
AE--138	0.	0.	0.	0.	0.	0.	0.	0.
CS--134	5.84E+08	9.63E+08	0.	1.25E+08	1.03E+08	5.32E+08	0.	2.03E+08
CS--135	3.08E+05	1.45E+05	0.	8.07E+05	1.11E+05	1.05E+05	0.	1.04E+05
CS--137	9.33E+08	9.03E+08	0.	1.11E+08	1.00E+08	5.50E+06	0.	1.35E+08
BA--140	4.40E+06	4.08E+03	0.	4.02E+02	2.50E+03	0.35E+06	0.	2.58E+05
CE--141	2.07E+04	1.44E+04	0.	1.62E+03	0.	1.30E+07	0.	1.54E+03
CL--144	4.06E+06	1.52E+06	0.	2.75E+05	0.	3.35E+08	0.	2.53E+05

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DOSE FACTORS FOR GASEOUS DISCHARGES
 BASED ON 1 CI/YR RELEASE OF EACH ISOTOPE AND A VALUE OF UNITY FOR X/Q, DEPLETED X/Q AND RELATIVE DEPOSITION

NUCLIDE	PATHWAY - MEAT (CONTAMINATED FORAGE)						AGE GROUP - CHILD			
	ORGAN DOSE (MREM)									
	BONE	LIVER	THYROID	KIDNEY	LUNG	GI-LLI	SKIN	TOTAL BODY		
H-3	0.	3.95E+00	3.95E+00	2.61E+00	3.95E+00	3.95E+00	0.	3.95E+00	0.	3.95E+00
C-14	3.13E+03	3.13E+03	3.13E+03	7.88E+02	3.13E+03	3.13E+03	0.	3.13E+03	0.	3.13E+03
P-32	5.05E+07	3.17E+06	0.	0.	0.	5.68E+06	0.	5.68E+06	0.	1.96E+06
AR-41	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
AN-54	0.	8.09E+04	0.	2.41E+04	0.	0.	0.	2.40E+05	0.	1.55E+04
FE-59	2.52E+06	5.99E+06	0.	0.	1.66E+06	0.	0.	1.98E+07	0.	2.28E+05
CO-58	0.	4.16E+05	0.	0.	0.	2.47E+06	0.	2.47E+06	0.	1.25E+05
CO-60	0.	1.59E+05	0.	0.	0.	8.60E+06	0.	8.60E+06	0.	4.77E+05
ZN-65	3.57E+06	1.13E+07	0.	7.57E+06	0.	7.13E+06	0.	7.13E+06	0.	5.12E+05
KR-83M	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
KR-85M	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
KR-85	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
KR-87	0.	4.23E-08	0.	0.	0.	1.98E-09	0.	1.98E-09	0.	1.47E-08
KR-88	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
KR-89	5.58E+02	0.	0.	0.	0.	2.08E+01	0.	2.08E+01	0.	1.60E+01
KR-90	9.43E+00	0.	0.	0.	0.	6.30E-01	0.	6.30E-01	0.	2.39E+00
RB-86	0.	5.02E+06	0.	0.	0.	9.89E+05	0.	9.89E+05	0.	2.34E+05
SR-89	1.27E+07	0.	0.	0.	0.	4.74E+05	0.	4.74E+05	0.	3.63E+05
SR-90	2.60E+08	0.	0.	0.	0.	1.74E+07	0.	1.74E+07	0.	6.59E+07
Y-91	4.38E+04	0.	0.	0.	0.	5.81E+06	0.	5.81E+06	0.	1.17E+03
ZR-95	1.08E+05	3.44E+04	0.	1.73E+04	0.	4.99E+07	0.	4.99E+07	0.	2.77E+04
RB-95	6.95E+04	2.97E+04	0.	1.22E+04	0.	5.13E+07	0.	5.13E+07	0.	2.18E+04
KU-103	3.73E+06	0.	0.	3.89E+06	0.	9.80E+07	0.	9.80E+07	0.	1.51E+06
RU-106	1.08E+08	0.	0.	4.82E+07	0.	1.68E+09	0.	1.68E+09	0.	1.34E+07
AG110M	6.20E+04	5.73E+04	0.	1.13E+05	0.	2.34E+07	0.	2.34E+07	0.	3.41E+04
CO115M	0.	1.42E+04	0.	1.13E+04	0.	5.96E+05	0.	5.96E+05	0.	4.55E+02
SM-123	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
SN-126	1.81E+08	3.19E+06	9.35E+05	0.	5.40E+04	5.34E+07	0.	5.34E+07	0.	4.60E+05
SB-124	1.84E+05	3.47E+03	4.45E+02	0.	1.43E+05	5.21E+06	0.	5.21E+06	0.	7.28E+04
SB-127	7.68E+06	2.05E+06	2.10E+05	7.15E+05	2.17E+07	9.04E+06	0.	9.04E+06	0.	1.04E+05
TE127M	1.29E+07	4.42E+06	3.63E+06	4.97E+07	0.	7.41E+07	0.	7.41E+07	0.	1.64E+05
TE129M	5.14E+07	1.43E+07	1.64E+07	5.00E+07	0.	6.19E+07	0.	6.19E+07	0.	7.96E+05
I-131	2.29E+05	2.35E+05	7.64E+07	1.44E+05	0.	2.01E+04	0.	2.01E+04	0.	1.77E+05
I-133	1.02E-02	1.25E-02	3.02E+00	7.35E-03	0.	5.08E-03	0.	5.08E-03	0.	4.92E-03
XE131M	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
XE133M	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
XE-133	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
XE135M	2.43E-05	2.61E-05	0.	9.90E-06	2.98E-06	6.11E-07	0.	6.11E-07	0.	1.15E-05
XC-135	9.77E-04	3.02E-04	0.	3.42E-04	1.03E-04	2.11E-05	0.	2.11E-05	0.	4.01E-04
XE-137	8.12E+00	7.86E+00	0.	9.65E-01	9.21E-01	4.79E-02	0.	4.79E-02	0.	1.17E+00
XE-138	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
CS-134	2.06E+07	3.47E+07	0.	4.42E+06	3.40E+06	1.88E+05	0.	1.88E+05	0.	7.38E+05
CS-136	1.25E+05	4.92E+05	0.	2.74E+05	3.75E+04	5.59E+04	0.	5.59E+04	0.	3.54E+05
CS-137	3.05E+07	2.95E+07	0.	3.63E+06	3.40E+06	1.80E+05	0.	1.80E+05	0.	4.40E+05
BA-140	1.24E+06	1.08E+05	0.	1.30E+02	0.40E+02	1.77E+05	0.	1.77E+05	0.	7.25E+04
CE-141	5.48E+02	2.74E+02	0.	4.23E+01	0.	3.44E+05	0.	3.44E+05	0.	4.06E+01
CE-144	5.77E+04	1.79E+04	0.	5.13E+03	0.	4.53E+06	0.	4.53E+06	0.	2.97E+03

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DOSE FACTORS FOR GASEOUS DISCHARGES
 BASED ON 1 CI/YR RELEASE OF EACH ISOTOPE AND A VALUE OF UNITY FOR X/Q, DEPLETED X/Q AND RELATIVE DEPOSITION

NUCLIDE	PATHWAY - MEAT (CONTAMINATED FEED)										AGE GROUP - CHILD			
	ORGAN DOSE (MREM)													
	BONE	LIVER	THYROID	KIDNEY	LUNG	GI-LLI	SKIN	TOTAL BODY						
H-3	0.	3.89E+00	3.89E+00	2.57E+00	3.89E+00	3.89E+00	0.	3.89E+00	0.	3.89E+00	0.	3.89E+00	0.	3.89E+00
C-14	3.13E+03	3.13E+03	3.13E+03	7.88E+02	3.13E+03	3.13E+03	0.	3.13E+03	0.	3.13E+03	0.	3.13E+03	0.	3.13E+03
P-32	2.88E+05	1.68E+04	0.	0.	0.	3.02E+04	0.	3.02E+04	0.	3.02E+04	0.	3.02E+04	0.	3.02E+04
AR-41	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
MN-54	0.	3.06E+04	0.	9.10E+03	0.	9.36E+04	0.	9.36E+04	0.	9.36E+04	0.	9.36E+04	0.	9.36E+04
FE-59	2.70E+05	6.42E+05	0.	0.	1.78E+05	2.12E+06	0.	2.12E+06	0.	2.12E+06	0.	2.12E+06	0.	2.12E+06
CU-58	0.	7.58E+04	0.	0.	0.	4.51E+05	0.	4.51E+05	0.	4.51E+05	0.	4.51E+05	0.	4.51E+05
CO-60	0.	7.25E+05	0.	0.	0.	4.01E+06	0.	4.01E+06	0.	4.01E+06	0.	4.01E+06	0.	4.01E+06
ZN-65	1.44E+06	4.57E+06	0.	3.05E+06	0.	2.88E+06	0.	2.88E+06	0.	2.88E+06	0.	2.88E+06	0.	2.88E+06
KR-83M	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
KR-85M	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
KR-85	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
KR-87	0.	2.91E-08	0.	0.	0.	1.36E-09	0.	1.36E-09	0.	1.36E-09	0.	1.36E-09	0.	1.36E-09
KR-88	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
KR-89	7.02E+01	0.	0.	0.	0.	2.62E+00	0.	2.62E+00	0.	2.62E+00	0.	2.62E+00	0.	2.62E+00
KR-90	4.88E+00	0.	0.	0.	0.	3.12E-01	0.	3.12E-01	0.	3.12E-01	0.	3.12E-01	0.	3.12E-01
KR-91	0.	7.25E+04	0.	0.	0.	1.43E+04	0.	1.43E+04	0.	1.43E+04	0.	1.43E+04	0.	1.43E+04
KR-92	1.60E+06	0.	0.	0.	0.	5.97E+04	0.	5.97E+04	0.	5.97E+04	0.	5.97E+04	0.	5.97E+04
KR-93	1.29E+08	0.	0.	0.	0.	8.61E+06	0.	8.61E+06	0.	8.61E+06	0.	8.61E+06	0.	8.61E+06
KR-94	6.61E+03	0.	0.	0.	0.	8.78E+05	0.	8.78E+05	0.	8.78E+05	0.	8.78E+05	0.	8.78E+05
KR-95	3.25E+04	1.20E+04	0.	5.45E+03	0.	1.91E+07	0.	1.91E+07	0.	1.91E+07	0.	1.91E+07	0.	1.91E+07
KR-96	4.94E+03	2.11E+03	0.	8.68E+02	0.	3.65E+06	0.	3.65E+06	0.	3.65E+06	0.	3.65E+06	0.	3.65E+06
KR-97	3.35E+05	0.	0.	3.50E+05	0.	8.80E+06	0.	8.80E+06	0.	8.80E+06	0.	8.80E+06	0.	8.80E+06
KR-100	4.27E+07	0.	0.	1.91E+07	0.	6.63E+08	0.	6.63E+08	0.	6.63E+08	0.	6.63E+08	0.	6.63E+08
KR-105	2.36E+04	2.18E+04	0.	4.28E+04	0.	8.89E+06	0.	8.89E+06	0.	8.89E+06	0.	8.89E+06	0.	8.89E+06
AG110M	0.	1.46E+03	0.	1.16E+03	0.	2.15E+04	0.	2.15E+04	0.	2.15E+04	0.	2.15E+04	0.	2.15E+04
CO115M	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
SN-123	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
SN-126	7.51E+07	1.49E+06	4.36E+05	0.	3.19E+04	2.58E+07	0.	2.58E+07	0.	2.58E+07	0.	2.58E+07	0.	2.58E+07
SB-124	2.85E+04	5.37E+02	6.88E+01	0.	2.21E+04	8.06E+05	0.	8.06E+05	0.	8.06E+05	0.	8.06E+05	0.	8.06E+05
SB-125	7.56E+06	2.03E+06	2.10E+06	7.14E+06	9.48E+06	8.01E+06	0.	8.01E+06	0.	8.01E+06	0.	8.01E+06	0.	8.01E+06
IE127M	3.85E+06	1.32E+06	1.08E+06	1.48E+07	0.	2.22E+07	0.	2.22E+07	0.	2.22E+07	0.	2.22E+07	0.	2.22E+07
IE129M	3.81E+06	1.06E+06	1.22E+06	3.70E+06	0.	4.58E+06	0.	4.58E+06	0.	4.58E+06	0.	4.58E+06	0.	4.58E+06
I-131	3.77E+01	3.86E+01	1.26E+04	2.36E+01	0.	3.31E+00	0.	3.31E+00	0.	3.31E+00	0.	3.31E+00	0.	3.31E+00
I-133	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
XE131M	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
XE133M	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
XE-133	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
XE135M	1.43E-05	1.32E-05	0.	5.00E-05	1.50E-06	3.09E-07	0.	3.09E-07	0.	3.09E-07	0.	3.09E-07	0.	3.09E-07
XE-135	4.93E-04	4.55E-04	0.	1.72E-04	5.18E-05	1.06E-05	0.	1.06E-05	0.	1.06E-05	0.	1.06E-05	0.	1.06E-05
AE-137	3.90E+00	3.78E+00	0.	4.64E-01	4.93E-01	2.30E-02	0.	2.30E-02	0.	2.30E-02	0.	2.30E-02	0.	2.30E-02
AE-138	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
CS-134	8.81E+06	1.46E+07	0.	1.89E+06	1.65E+06	8.02E+04	0.	8.02E+04	0.	8.02E+04	0.	8.02E+04	0.	8.02E+04
CS-134	4.03E+02	1.54E+03	0.	8.85E+02	1.21E+02	1.81E+02	0.	1.81E+02	0.	1.81E+02	0.	1.81E+02	0.	1.81E+02
CS-136	1.47E+07	1.42E+07	0.	1.74E+06	1.00E+06	8.65E+04	0.	8.65E+04	0.	8.65E+04	0.	8.65E+04	0.	8.65E+04
UA-140	3.70E+03	3.26E+00	0.	3.89E+01	1.94E+00	5.11E+02	0.	5.11E+02	0.	5.11E+02	0.	5.11E+02	0.	5.11E+02
CC-141	3.38E+01	1.69E+01	0.	2.04E+00	0.	2.12E+04	0.	2.12E+04	0.	2.12E+04	0.	2.12E+04	0.	2.12E+04
CL-144	2.04E+04	0.37E+03	0.	1.15E+03	0.	1.00E+00	0.	1.00E+00	0.	1.00E+00	0.	1.00E+00	0.	1.00E+00

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DOSE FACTORS FOR GASEOUS DISCHARGES
 BASED ON 1 CI/YR RELEASE OF EACH ISOTOPE AND A VALUE OF UNITY FOR X/Q, DEPLETED X/Q AND RELATIVE DEPOSITION

NUCLIDE	PATHWAY - LOWS MILK (CONTAMINATED FORAGE)										AGE GROUP - CHILD		
	ORGAN DOSE (MREM)										GI-LLI	SKIN	TOTAL BODY
	BONE	LIVER	THYROID	KIDNEY	LUNG	GI-LLI	SKIN	TOTAL BODY					
H-3	0.	2.65E+01	2.65E+01	1.75E+01	2.65E+01	2.65E+01	0.	2.65E+01					2.65E+01
C-14	9.76E+03	9.76E+03	9.76E+03	2.46E+03	9.76E+03	9.76E+03	0.	9.76E+03					9.76E+03
P-32	5.29E+08	3.32E+07	0.	0.	0.	5.95E+07	0.	5.95E+07					5.95E+07
AR-41	0.	0.	0.	0.	0.	0.	0.	0.					0.
MN-54	0.	2.12E+05	0.	0.	0.	6.49E+05	0.	6.49E+05					6.49E+05
FE-59	8.04E+05	1.91E+05	0.	0.	5.30E+05	6.30E+05	0.	7.26E+05					7.26E+05
CO-58	0.	3.07E+05	0.	0.	0.	1.83E+06	0.	9.26E+05					9.26E+05
CO-60	0.	9.91E+05	0.	0.	0.	5.48E+06	0.	2.97E+05					2.97E+05
ZN-65	3.93E+07	1.25E+08	0.	8.34E+07	0.	7.85E+07	0.	5.64E+07					5.64E+07
KR-83M	0.	0.	0.	0.	0.	0.	0.	0.					0.
KR-85M	0.	0.	0.	0.	0.	0.	0.	0.					0.
KR-85	0.	0.	0.	0.	0.	0.	0.	0.					0.
KR-87	0.	3.30E-07	0.	0.	0.	1.54E-08	0.	1.15E-07					1.15E-07
KR-88	0.	0.	0.	0.	0.	0.	0.	0.					0.
KR-89	7.66E+03	0.	0.	0.	0.	2.86E+02	0.	2.19E+02					2.19E+02
KR-90	1.01E+02	0.	0.	0.	0.	1.36E+00	0.	2.57E+01					2.57E+01
KU-80	0.	7.61E+07	0.	0.	0.	1.50E+07	0.	3.55E+07					3.55E+07
SR-89	1.74E+08	0.	0.	0.	0.	6.51E+06	0.	4.99E+05					4.99E+05
Y-91	2.79E+09	0.	0.	0.	0.	3.74E+07	0.	7.08E+08					7.08E+08
ZR-95	9.46E+02	0.	0.	0.	0.	1.26E+05	0.	2.52E+01					2.52E+01
NR-99	1.95E+03	8.11E+02	0.	3.39E+02	0.	1.39E+06	0.	5.99E+02					5.99E+02
RU-103	7.18E+03	3.04E+03	0.	1.25E+03	0.	5.27E+06	0.	2.24E+03					2.24E+03
KU-105	1.03E+02	0.	0.	1.07E+02	0.	2.69E+03	0.	4.15E+01					4.15E+01
AG-110M	2.24E+03	0.	0.	1.00E+03	0.	3.49E+04	0.	2.79E+02					2.79E+02
CU-115M	1.54E+06	1.42E+06	0.	2.80E+06	0.	5.81E+08	0.	8.46E+05					8.46E+05
SN-123	0.	3.45E+04	0.	2.74E+04	0.	1.45E+06	0.	1.10E+03					1.10E+03
SN-126	4.06E+07	0.	0.	0.	0.	0.	0.	0.					0.
SB-124	6.84E+05	8.05E+05	2.36E+05	0.	1.05E+05	2.56E+07	0.	1.21E+06					1.21E+06
SB-127	1.50E+06	2.40E+05	1.65E+03	0.	5.31E+05	1.94E+07	0.	2.70E+05					2.70E+05
IE-127M	1.51E+06	5.21E+05	2.43E+05	8.23E+05	6.62E+07	8.43E+06	0.	2.42E+05					2.42E+05
I-131	7.76E+06	2.16E+05	4.20E+05	5.84E+06	0.	8.72E+06	0.	1.93E+05					1.93E+05
I-133	1.80E+07	1.84E+07	2.48E+06	7.55E+05	0.	9.34E+06	0.	1.20E+05					1.20E+05
XE-133M	2.64E+05	3.25E+05	5.93E+09	1.13E+07	0.	1.58E+06	0.	1.39E+07					1.39E+07
XE-133	0.	0.	7.84E+07	1.91E+05	0.	1.32E+05	0.	1.28E+05					1.28E+05
XE-135M	0.	0.	0.	0.	0.	0.	0.	0.					0.
XE-135	0.	0.	0.	0.	0.	0.	0.	0.					0.
XE-135M	6.83E-04	6.31E-04	0.	2.39E-04	7.18E-05	1.48E-05	0.	2.80E-04					2.80E-04
XE-135	2.36E-02	2.18E-02	0.	8.25E-03	2.48E-03	5.10E-04	0.	9.68E-03					9.68E-03
XE-137	1.96E+02	1.90E+02	0.	2.33E+01	2.23E+01	1.16E+00	0.	2.83E+01					2.83E+01
XE-138	0.	0.	0.	0.	0.	0.	0.	0.					0.
CS-134	5.06E+08	8.51E+08	0.	1.06E+08	9.46E+07	4.01E+06	0.	1.81E+08					1.81E+08
CS-135	7.86E+06	3.10E+07	0.	1.75E+07	2.37E+06	3.53E+06	0.	2.23E+07					2.23E+07
CS-137	7.57E+08	7.14E+08	0.	8.77E+07	8.36E+07	4.35E+06	0.	1.06E+08					1.06E+08
UA-140	5.30E+06	2.69E+05	0.	3.45E+02	1.72E+03	2.19E+05	0.	1.93E+05					1.93E+05
CE-141	5.24E+03	1.02E+03	0.	2.53E+02	0.	2.03E+05	0.	2.41E+02					2.41E+02
CE-144	2.34E+05	7.34E+04	0.	1.33E+04	0.	1.94E+07	0.	1.25E+05					1.25E+05

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USE FACTORS FOR GASEOUS DISCHARGES
 BASED ON 1 CI/YR RELEASE OF EACH ISOTOPE AND A VALUE OF UNITY FOR X/Q, DEPLETED X/Q AND RELATIVE DEPOSITION

PATHWAY - COWS MILK (CONTAMINATED FEED) AGE GROUP - CHILD

NUCLIDE	ORGAN DOSE (MREM)							AGE GROUP - CHILD	
	BONE	LIVER	THYROID	KIDNEY	LUNG	GI-LLI	SKIN	TOTAL BODY	
H-3	0.	2.62E+01	2.62E+01	1.73E+01	2.62E+01	2.62E+01	0.	4.62E+01	
C-14	9.76E+03	9.76E+03	9.76E+03	2.46E+03	9.76E+03	9.76E+03	0.	9.76E+03	
P-32	2.81E+06	1.76E+05	0.	0.	0.	3.16E+05	0.	1.09E+05	
AR-41	0.	0.	0.	0.	0.	0.	0.	0.	
MN-54	0.	8.00E+04	0.	2.38E+04	0.	2.45E+05	0.	1.53E+04	
FE-59	8.01E+04	2.04E+05	0.	0.	5.68E+04	6.75E+05	0.	7.78E+04	
CO-58	0.	5.00E+04	0.	0.	0.	3.33E+05	0.	1.69E+05	
CO-60	0.	4.52E+05	0.	0.	0.	2.50E+06	0.	1.35E+05	
ZN-65	1.59E+07	5.04E+07	0.	3.37E+07	0.	3.17E+07	0.	2.28E+07	
KR-83M	0.	0.	0.	0.	0.	0.	0.	0.	
KR-85M	0.	0.	0.	0.	0.	0.	0.	0.	
KR-85	0.	0.	0.	0.	0.	0.	0.	0.	
KR-87	0.	2.26E-07	0.	0.	0.	0.	0.	0.	
KR-88	0.	0.	0.	0.	0.	1.05E-08	0.	7.87E-08	
KR-89	9.65E+02	0.	0.	0.	0.	0.	0.	0.	
KR-90	5.03E+01	0.	0.	0.	0.	3.60E+01	0.	2.76E+01	
Rb-86	0.	0.	0.	0.	0.	8.73E-01	0.	1.27E+01	
SR-89	2.20E+07	0.	0.	0.	0.	2.17E+05	0.	5.13E+05	
SR-90	1.39E+09	0.	0.	0.	0.	8.20E+05	0.	6.29E+05	
Y-91	1.43E+02	0.	0.	0.	0.	1.85E+07	0.	3.51E+08	
ZR-92	1.81E+03	7.73E+02	0.	3.19E+02	0.	1.90E+04	0.	3.81E+09	
NB-92	5.07E+02	2.16E+02	0.	8.91E+01	0.	1.33E+06	0.	5.68E+02	
RU-103	9.22E+00	0.	0.	9.61E+00	0.	3.74E+05	0.	1.59E+02	
RU-106	8.88E+02	0.	0.	3.97E+02	0.	2.42E+02	0.	3.73E+00	
AG-110M	5.85E+05	5.41E+05	0.	1.05E+06	0.	1.38E+04	0.	1.11E+02	
CU-115M	0.	3.56E+03	0.	2.83E+03	0.	2.21E+08	0.	3.22E+05	
SN-123	0.	0.	0.	0.	0.	1.50E+05	0.	1.14E+02	
SN-125	1.91E+07	3.78E+05	1.11E+05	0.	1.01E+05	1.89E+07	0.	5.97E+05	
SB-124	1.06E+05	1.99E+03	2.56E+02	0.	8.20E+04	2.99E+06	0.	4.18E+04	
SB-125	1.20E+06	2.53E+05	2.53E+05	8.81E+05	2.90E+07	3.34E+06	0.	1.79E+05	
TE-127M	4.52E+05	1.55E+05	1.27E+05	1.75E+06	0.	2.61E+06	0.	5.77E+04	
TE-129M	2.74E+05	1.60E+05	1.83E+05	5.59E+05	0.	6.92E+05	0.	8.84E+04	
I-131	2.96E+03	3.03E+03	9.85E+05	1.65E+03	0.	2.59E+02	0.	2.29E+05	
I-133	0.	0.	0.	0.	0.	0.	0.	0.	
AE-131M	0.	0.	0.	0.	0.	0.	0.	0.	
AE-133M	0.	0.	0.	0.	0.	0.	0.	0.	
AE-133	0.	0.	0.	0.	0.	0.	0.	0.	
AE-135M	3.45E-04	3.19E-04	0.	1.21E-04	3.63E-05	7.45E-06	0.	1.42E-04	
AE-137	1.19E-02	1.10E-02	0.	4.15E-03	1.25E-03	2.57E-04	0.	4.86E-03	
AE-137	9.44E+01	9.13E+01	0.	1.12E+01	1.07E+01	5.57E-01	0.	1.36E+01	
AE-138	0.	0.	0.	0.	0.	0.	0.	0.	
CS-134	2.16E+08	3.04E+08	0.	4.03E+07	4.04E+07	1.97E+06	0.	7.74E+07	
CS-136	2.58E+04	1.00E+05	0.	5.58E+04	7.62E+03	1.14E+04	0.	7.22E+04	
CS-137	3.22E+08	3.43E+08	0.	4.22E+07	4.02E+07	2.09E+06	0.	2.11E+07	
UA-140	9.87E+03	8.67E+00	0.	1.04E+00	2.10E+00	0.75E+02	0.	5.00E+02	
CE-141	2.00E+02	9.78E+01	0.	1.52E+01	0.	1.25E+05	0.	1.49E+01	
CE-144	8.56E+04	2.68E+04	0.	4.84E+03	0.	0.98E+06	0.	4.50E+03	

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BASED ON 1 CIRTH RELEASE OF EACH ISOTOPE AND A VALUE OF UNITY FOR A/Q, DEPLETED A/Q AND RELATIVE DEPOSITION

DOSE FACTORS FOR GASEOUS DISCHARGES

PATHWAY - GOATS MILK (CONTAMINATED FORAGE)

AGE GROUP - CHILD

NUCLIDE	ORGAN DOSE (MREM)							TOTAL BODY
	BONE	LIVER	THYROID	KIDNEY	LUNG	GI-LLI	SKIN	
H-3	0.	5.42E+01	5.42E+01	3.58E+01	5.42E+01	5.42E+01	0.	5.42E+01
C-14	9.76E+03	9.76E+03	9.76E+03	2.46E+03	9.76E+03	9.76E+03	0.	9.76E+03
P-32	6.83E+08	4.48E+07	0.	0.	0.	7.68E+07	0.	2.64E+07
AR-41	0.	0.	0.	0.	0.	0.	0.	0.
HN-54	0.	2.55E+04	0.	7.59E+03	0.	7.81E+04	0.	4.87E+03
FE-59	1.07E+04	2.54E+04	0.	0.	7.05E+03	8.38E+04	0.	9.66E+03
CU-64	0.	3.74E+04	0.	0.	0.	2.22E+05	0.	1.13E+05
CO-60	0.	1.19E+05	0.	0.	0.	6.58E+05	0.	3.57E+05
ZN-65	4.73E+06	1.50E+07	0.	1.01E+07	0.	9.46E+06	0.	6.80E+05
KR-83M	0.	0.	0.	0.	0.	0.	0.	0.
KR-85M	0.	0.	0.	0.	0.	0.	0.	0.
KR-85	0.	0.	0.	0.	0.	0.	0.	0.
KR-87	0.	3.96E-08	0.	0.	0.	0.	0.	0.
KR-88	0.	4.00E-10	0.	0.	0.	1.85E-09	0.	1.38E-08
KR-89	1.64E+04	0.	0.	0.	0.	0.	0.	2.12E-10
KR-90	2.13E+02	0.	0.	0.	0.	6.13E+02	0.	4.70E+02
KB-85	0.	9.66E+06	0.	0.	0.	2.83E+00	0.	5.40E+01
SR-89	3.74E+08	0.	0.	0.	0.	1.90E+06	0.	4.50E+05
SR-90	5.86E+09	0.	0.	0.	0.	1.40E+07	0.	1.07E+07
Y-91	1.16E+02	0.	0.	0.	0.	7.81E+07	0.	1.49E+09
ZR-95	2.10E+02	6.78E+01	0.	3.67E+01	0.	1.53E+04	0.	3.08E+00
NB-95	8.82E+02	3.76E+02	0.	1.55E+02	0.	1.51E+05	0.	6.49E+01
RU-103	1.26E+01	0.	0.	1.32E+01	0.	6.51E+05	0.	2.76E+02
RU-106	2.70E+02	0.	0.	1.21E+02	0.	3.32E+02	0.	5.11E+00
AG-110M	1.85E+05	1.72E+05	0.	3.37E+05	0.	4.4E+03	0.	3.35E+01
CO-115M	0.	4.25E+03	0.	3.37E+03	0.	7.0E+07	0.	1.02E+05
SN-123	7.23E-02	9.05E-04	9.55E-04	0.	0.	1.79E+05	0.	1.30E+02
SN-126	4.87E+06	9.00E+04	2.83E+04	0.	1.10E+04	3.59E+02	0.	1.78E-03
SB-124	8.35E+04	1.58E+03	2.02E+02	0.	6.48E+04	2.94E+06	0.	1.42E+05
SB-125	1.80E+05	2.90E+04	2.93E+04	9.96E+04	7.90E+06	2.36E+06	0.	3.30E+04
FE-127M	1.83E+05	6.31E+04	5.16E+04	7.08E+05	0.	7.74E+05	0.	2.92E+04
FE-129M	9.61E+05	2.68E+05	5.00E+05	9.34E+05	0.	1.05E+06	0.	2.34E+04
I-131	2.46E+07	2.52E+07	8.18E+09	1.54E+07	0.	1.16E+06	0.	1.48E+05
I-133	1.04E+06	1.20E+06	3.09E+08	7.51E+05	0.	2.15E+06	0.	1.90E+07
AE-131M	0.	0.	0.	0.	0.	5.19E+05	0.	5.03E+05
AE-133M	0.	0.	0.	0.	0.	0.	0.	0.
AE-133	0.	0.	0.	0.	0.	0.	0.	0.
AE-135M	2.05E-03	1.69E-03	0.	7.17E-04	2.15E-04	4.43E-05	0.	8.41E-04
AE-135	7.08E-02	6.54E-02	0.	2.48E-02	7.44E-03	1.53E-03	0.	2.90E-02
AE-137	5.89E+02	5.70E+02	0.	7.08E+01	6.68E+01	3.47E+00	0.	8.43E+01
AE-138	7.56E-05	1.49E-04	0.	1.10E-04	1.03E-05	0.37E-10	0.	7.41E-05
CS-134	1.52E+09	2.76E+09	0.	3.45E+08	2.84E+08	1.20E+07	0.	5.44E+08
CS-136	2.55E+07	1.01E+08	0.	5.01E+07	7.03E+08	1.15E+07	0.	7.26E+07
CS-137	2.21E+09	2.14E+09	0.	2.63E+08	2.21E+08	1.20E+07	0.	3.19E+08
UA-140	4.29E+05	3.76E+02	0.	4.51E+01	2.21E+02	2.79E+04	0.	6.22E+04
CE-141	4.01E+02	6.01E+02	0.	3.19E+01	0.	2.22E+05	0.	2.99E+01
CE-144	2.82E+04	8.04E+03	0.	1.00E+03	0.	2.30E+06	0.	1.50E+05

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DOSE FACTORS FOR GASEOUS DISCHARGES
 BASED ON 1 CI/YR RELEASE OF EACH ISOTOPE AND A VALUE OF UNITY FOR X/Q, DEPLETED X/Q AND RELATIVE DEPOSITION

NUCLIDE	PATHWAY - GOATS MILK (CONTAMINATED FEED)										AGE GROUP - CHILD	
	ORGAN DOSE (MREM)										SKIN	TOTAL BODY
	BONE	LIVER	THYROID	KIDNEY	LUNG	GI-LLI						
H-3	0.	5.34E+01	5.34E+01	3.53E+01	5.34E+01	5.34E+01	0.	5.34E+01	5.34E+01	5.34E+01	5.34E+01	5.34E+01
C-14	9.76E+03	9.76E+03	9.76E+03	2.46E+03	9.76E+03	9.76E+03	0.	9.76E+03	9.76E+03	9.76E+03	9.76E+03	9.76E+03
P-32	3.62E+06	2.27E+05	0.	0.	0.	4.07E+05	0.	4.07E+05	4.07E+05	4.07E+05	4.07E+05	4.07E+05
AR-41	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
MN-54	0.	9.63E+03	0.	2.87E+03	0.	2.95E+04	0.	2.95E+04	2.95E+04	2.95E+04	2.95E+04	2.95E+04
FE-59	1.15E+03	2.72E+03	0.	0.	7.55E+02	8.98E+03	0.	8.98E+03	8.98E+03	8.98E+03	8.98E+03	8.98E+03
CO-58	0.	6.82E+03	0.	0.	0.	4.05E+04	0.	4.05E+04	4.05E+04	4.05E+04	4.05E+04	4.05E+04
CO-60	0.	5.42E+04	0.	0.	0.	3.00E+05	0.	3.00E+05	3.00E+05	3.00E+05	3.00E+05	3.00E+05
ZN-65	1.91E+06	6.07E+06	0.	4.05E+06	0.	3.82E+06	0.	3.82E+06	3.82E+06	3.82E+06	3.82E+06	3.82E+06
KR-83M	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
KR-85M	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
KR-85	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
KR-87	0.	2.72E+08	0.	0.	0.	1.27E+09	0.	1.27E+09	1.27E+09	1.27E+09	1.27E+09	1.27E+09
KR-88	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
KR-89	2.07E+03	0.	0.	0.	0.	7.72E+01	0.	7.72E+01	7.72E+01	7.72E+01	7.72E+01	7.72E+01
KR-90	1.06E+02	0.	0.	0.	0.	1.41E+00	0.	1.41E+00	1.41E+00	1.41E+00	1.41E+00	1.41E+00
RB-85	0.	1.40E+05	0.	0.	0.	2.75E+04	0.	2.75E+04	2.75E+04	2.75E+04	2.75E+04	2.75E+04
SR-89	4.71E+07	0.	0.	0.	0.	1.76E+06	0.	1.76E+06	1.76E+06	1.76E+06	1.76E+06	1.76E+06
SR-90	2.91E+09	0.	0.	0.	0.	3.87E+07	0.	3.87E+07	3.87E+07	3.87E+07	3.87E+07	3.87E+07
Y-91	1.75E+01	0.	0.	0.	0.	2.32E+03	0.	2.32E+03	2.32E+03	2.32E+03	2.32E+03	2.32E+03
ZR-95	2.20E+02	9.35E+01	0.	3.87E+01	0.	1.61E+05	0.	1.61E+05	1.61E+05	1.61E+05	1.61E+05	1.61E+05
NB-95	6.27E+01	2.67E+01	0.	1.10E+01	0.	4.63E+04	0.	4.63E+04	4.63E+04	4.63E+04	4.63E+04	4.63E+04
RU-103	1.14E+00	0.	0.	1.18E+00	0.	2.98E+01	0.	2.98E+01	2.98E+01	2.98E+01	2.98E+01	2.98E+01
RU-106	1.07E+02	0.	0.	4.78E+01	0.	1.66E+03	0.	1.66E+03	1.66E+03	1.66E+03	1.66E+03	1.66E+03
AG-110M	7.05E+04	6.52E+04	0.	1.28E+05	0.	2.66E+07	0.	2.66E+07	2.66E+07	2.66E+07	2.66E+07	2.66E+07
CO-115M	0.	4.38E+02	0.	3.47E+02	0.	1.84E+04	0.	1.84E+04	1.84E+04	1.84E+04	1.84E+04	1.84E+04
SN-123	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
SN-126	2.28E+06	4.54E+04	1.33E+04	0.	1.22E+04	2.28E+06	0.	2.28E+06	2.28E+06	2.28E+06	2.28E+06	2.28E+06
SB-124	1.29E+04	2.44E+02	3.12E+01	0.	1.00E+04	3.65E+05	0.	3.65E+05	3.65E+05	3.65E+05	3.65E+05	3.65E+05
SB-125	1.45E+05	3.08E+04	3.15E+04	1.07E+05	3.48E+06	4.02E+05	0.	4.02E+05	4.02E+05	4.02E+05	4.02E+05	4.02E+05
IE-127M	5.48E+04	1.89E+04	1.54E+04	2.12E+05	0.	3.16E+05	0.	3.16E+05	3.16E+05	3.16E+05	3.16E+05	3.16E+05
IE-129M	7.11E+04	1.98E+04	2.30E+04	6.91E+04	0.	8.55E+04	0.	8.55E+04	8.55E+04	8.55E+04	8.55E+04	8.55E+04
I-131	4.04E+03	4.14E+03	1.35E+06	2.53E+03	0.	3.54E+02	0.	3.54E+02	3.54E+02	3.54E+02	3.54E+02	3.54E+02
I-133	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
XE-131M	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
XE-133M	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
XE-133	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
XE-135M	1.04E-03	9.55E-04	0.	3.62E-04	1.09E-04	2.24E-05	0.	2.24E-05	2.24E-05	2.24E-05	2.24E-05	2.24E-05
XE-135	3.57E-02	3.50E-02	0.	1.25E-02	3.75E-03	7.71E-04	0.	7.71E-04	7.71E-04	7.71E-04	7.71E-04	7.71E-04
XE-137	2.83E+02	2.74E+02	0.	3.37E+01	3.21E+01	1.67E+00	0.	1.67E+00	1.67E+00	1.67E+00	1.67E+00	1.67E+00
XE-138	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
CS-134	8.93E+08	1.09E+03	0.	1.39E+08	1.22E+08	5.91E+06	0.	5.91E+06	5.91E+06	5.91E+06	5.91E+06	5.91E+06
CS-136	8.26E+04	3.66E+02	0.	1.61E+05	2.49E+04	3.70E+04	0.	3.70E+04	3.70E+04	3.70E+04	3.70E+04	3.70E+04
CS-137	1.05E+09	1.05E+03	0.	1.27E+08	1.21E+08	9.27E+06	0.	9.27E+06	9.27E+06	9.27E+06	9.27E+06	9.27E+06
BA-140	1.28E+03	1.13E+00	0.	1.35E-01	8.72E-01	8.79E+01	0.	8.79E+01	8.79E+01	8.79E+01	8.79E+01	8.79E+01
CE-141	2.47E+01	1.24E+01	0.	1.93E+00	3.	1.52E+04	0.	1.52E+04	1.52E+04	1.52E+04	1.52E+04	1.52E+04
CE-144	1.03E+04	3.23E+03	0.	5.63E+02	3.	8.38E+02	0.	8.38E+02	8.38E+02	8.38E+02	8.38E+02	8.38E+02

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DOSE FACTORS FOR GASEOUS DISCHARGES
 BASED ON 1 G/YR RELEASE OF EACH ISOTOPE AND A VALUE OF UNITY FOR X/Q, DEPLETED X/Q AND RELATIVE DEPOSITION

NUCLIDE	PATHWAY - INHALATION		ORGAN DOSE (MREM)						AGE GROUP - INFANT		
	BONE	LIVER	THYROID	KIDNEY	LUNG	GI-LLI	SKIN	TOTAL BODY			
H-3	0.	1.85E+01	1.85E+01	8.07E+00	1.85E+01	1.85E+01	0.	1.85E+01	0.	0.	1.85E+01
C-14	2.17E+02	1.89E+02	1.84E+02	2.57E+01	1.84E+02	1.84E+02	0.	1.84E+02	0.	0.	1.84E+02
P-32	9.34E+03	5.81E+02	0.	0.	0.	6.51E+02	0.	6.51E+02	0.	0.	6.51E+02
AR-41	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
MN-54	0.	2.98E+02	0.	7.41E+01	1.05E+04	5.83E+02	0.	5.83E+02	0.	0.	5.83E+02
FE-59	8.86E+01	2.09E+03	0.	0.	7.65E+03	1.42E+03	0.	1.42E+03	0.	0.	1.42E+03
CO-58	0.	5.06E+00	0.	0.	3.78E+04	5.22E+02	0.	5.22E+02	0.	0.	5.22E+02
CU-60	0.	3.62E+01	0.	0.	2.40E+05	1.41E+03	0.	1.41E+03	0.	0.	1.41E+03
ZN-65	2.44E+02	7.77E+02	0.	5.19E+02	6.57E+03	4.03E+02	0.	4.03E+02	0.	0.	4.03E+02
KR-83M	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
KR-85M	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
KR-85	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
KR-87	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
KR-88	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
KR-89	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
KR-90	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
RU-86	0.	1.02E+03	0.	0.	0.	0.	0.	0.	0.	0.	0.
SR-89	1.86E+03	0.	0.	0.	0.	1.25E+02	0.	1.25E+02	0.	0.	1.25E+02
SR-90	5.89E+05	0.	0.	0.	9.34E+04	2.93E+03	0.	2.93E+03	0.	0.	2.93E+03
Y-91	2.57E+03	0.	0.	0.	6.57E+05	5.96E+03	0.	5.96E+03	0.	0.	5.96E+03
ZR-95	4.65E+02	1.18E+02	0.	0.	1.13E+05	3.09E+03	0.	3.09E+03	0.	0.	3.09E+03
HU-97	5.52E+01	2.48E+01	0.	4.08E+02	7.77E+04	6.09E+02	0.	6.09E+02	0.	0.	6.09E+02
RU-103	7.29E+00	0.	0.	5.83E+01	2.05E+04	5.22E+02	0.	5.22E+02	0.	0.	5.22E+02
RU-106	4.01E+02	0.	0.	4.39E+01	2.43E+04	6.81E+02	0.	6.81E+02	0.	0.	6.81E+02
AG-110M	8.13E+01	7.53E+01	0.	1.01E+03	6.45E+05	7.59E+03	0.	7.59E+03	0.	0.	7.59E+03
CD-115M	0.	1.48E+03	0.	1.48E+02	3.49E+04	2.28E+03	0.	2.28E+03	0.	0.	2.28E+03
SN-123	1.34E+03	2.78E+01	0.	1.13E+03	1.06E+04	2.89E+03	0.	2.89E+03	0.	0.	2.89E+03
SN-126	9.52E+03	2.52E+02	2.78E+01	0.	1.55E+05	2.58E+03	0.	2.58E+03	0.	0.	2.58E+03
SB-124	2.35E+02	4.43E+00	7.41E+01	0.	7.05E+04	9.58E+02	0.	9.58E+02	0.	0.	9.58E+02
SB-125	4.98E+02	5.37E+00	5.09E+01	0.	1.87E+04	5.06E+03	0.	5.06E+03	0.	0.	5.06E+03
TE-127M	9.52E+01	4.23E+01	4.42E+01	0.	1.60E+04	7.59E+02	0.	7.59E+02	0.	0.	7.59E+02
TE-129M	5.69E+01	2.49E+01	2.48E+01	3.45E+02	7.23E+03	1.13E+03	0.	1.13E+03	0.	0.	1.13E+03
I-131	1.56E+03	1.84E+03	2.19E+01	2.75E+02	7.89E+04	3.15E+03	0.	3.15E+03	0.	0.	3.15E+03
I-133	5.76E+02	8.31E+02	6.09E+05	4.62E+02	0.	4.82E+01	0.	4.82E+01	0.	0.	4.82E+01
XE-131M	0.	0.	2.01E+05	1.95E+02	0.	9.82E+01	0.	9.82E+01	0.	0.	9.82E+01
XE-133	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
XE-137M	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
AL-137	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
XE-138	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
CS-134	2.07E+04	3.55E+04	0.	2.17E+03	4.52E+03	5.90E+01	0.	5.90E+01	0.	0.	5.90E+01
CS-136	2.35E+02	1.10E+03	0.	6.45E+02	9.02E+01	8.80E+01	0.	8.80E+01	0.	0.	8.80E+01
CS-137	2.95E+04	3.15E+04	0.	1.08E+03	4.07E+03	2.63E+01	0.	2.63E+01	0.	0.	2.63E+01
BA-140	2.45E+02	1.84E+01	0.	1.25E+01	7.03E+04	1.67E+02	0.	1.67E+02	0.	0.	1.67E+02
Ge-141	1.08E+02	0.69E+01	0.	4.72E+01	6.23E+04	8.80E+02	0.	8.80E+02	0.	0.	8.80E+02
Ge-144	2.01E+04	7.63E+03	0.	6.33E+03	5.45E+05	6.33E+03	0.	6.33E+03	0.	0.	6.33E+03

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BASED ON 1 CI/YR RELEASE OF EACH ISOTOPE AND A VALUE OF UNITY FOR X/Q, DEPLETED X/Q AND RELATIVE DEPOSITION

DOSE FACTORS FOR GASEOUS DISCHARGES

NUCLIDE	PATHWAY - GROUND PLANE DEPOSITION						AGE GROUP - INFANT							
	ORGAN DOSE (MREM)						BONE	LIVER	THYROID	KIDNEY	LUNG	GI-LLI	SKIN	TOTAL BODY
H-3	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
C-14	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
P-32	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
AR-41	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
MN-54	4.39E+07	4.39E+07	4.39E+07	4.39E+07	4.39E+07	4.39E+07	4.39E+07	4.39E+07	4.39E+07	4.39E+07	4.39E+07	4.39E+07	4.39E+07	4.39E+07
FE-59	8.73E+06	8.73E+06	8.73E+06	8.73E+06	8.73E+06	8.73E+06	8.73E+06	8.73E+06	8.73E+06	8.73E+06	8.73E+06	8.73E+06	8.73E+06	8.73E+06
CO-58	1.21E+07	1.21E+07	1.21E+07	1.21E+07	1.21E+07	1.21E+07	1.21E+07	1.21E+07	1.21E+07	1.21E+07	1.21E+07	1.21E+07	1.21E+07	1.21E+07
CU-60	6.80E+08	6.80E+08	6.80E+08	6.80E+08	6.80E+08	6.80E+08	6.80E+08	6.80E+08	6.80E+08	6.80E+08	6.80E+08	6.80E+08	6.80E+08	6.80E+08
ZN-65	2.36E+07	2.36E+07	2.36E+07	2.36E+07	2.36E+07	2.36E+07	2.36E+07	2.36E+07	2.36E+07	2.36E+07	2.36E+07	2.36E+07	2.36E+07	2.36E+07
KR-83M	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
KR-85M	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
KR-85	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
KR-87	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
KR-88	9.90E+03	9.90E+03	9.90E+03	9.90E+03	9.90E+03	9.90E+03	9.90E+03	9.90E+03	9.90E+03	9.90E+03	9.90E+03	9.90E+03	9.90E+03	9.90E+03
KR-89	8.08E+02	8.08E+02	8.08E+02	8.08E+02	8.08E+02	8.08E+02	8.08E+02	8.08E+02	8.08E+02	8.08E+02	8.08E+02	8.08E+02	8.08E+02	8.08E+02
KR-90	6.16E-03	6.16E-03	6.16E-03	6.16E-03	6.16E-03	6.16E-03	6.16E-03	6.16E-03	6.16E-03	6.16E-03	6.16E-03	6.16E-03	6.16E-03	6.16E-03
RB-86	2.86E+05	2.86E+05	2.86E+05	2.86E+05	2.86E+05	2.86E+05	2.86E+05	2.86E+05	2.86E+05	2.86E+05	2.86E+05	2.86E+05	2.86E+05	2.86E+05
SR-89	6.87E+02	6.87E+02	6.87E+02	6.87E+02	6.87E+02	6.87E+02	6.87E+02	6.87E+02	6.87E+02	6.87E+02	6.87E+02	6.87E+02	6.87E+02	6.87E+02
SR-90	1.70E+05	1.70E+05	1.70E+05	1.70E+05	1.70E+05	1.70E+05	1.70E+05	1.70E+05	1.70E+05	1.70E+05	1.70E+05	1.70E+05	1.70E+05	1.70E+05
Y-91	3.43E+04	3.43E+04	3.43E+04	3.43E+04	3.43E+04	3.43E+04	3.43E+04	3.43E+04	3.43E+04	3.43E+04	3.43E+04	3.43E+04	3.43E+04	3.43E+04
ZR-93	1.59E+07	1.59E+07	1.59E+07	1.59E+07	1.59E+07	1.59E+07	1.59E+07	1.59E+07	1.59E+07	1.59E+07	1.59E+07	1.59E+07	1.59E+07	1.59E+07
NU-95	4.33E+06	4.33E+06	4.33E+06	4.33E+06	4.33E+06	4.33E+06	4.33E+06	4.33E+06	4.33E+06	4.33E+06	4.33E+06	4.33E+06	4.33E+06	4.33E+06
RU-103	3.49E+06	3.49E+06	3.49E+06	3.49E+06	3.49E+06	3.49E+06	3.49E+06	3.49E+06	3.49E+06	3.49E+06	3.49E+06	3.49E+06	3.49E+06	3.49E+06
RU-106	1.33E+07	1.33E+07	1.33E+07	1.33E+07	1.33E+07	1.33E+07	1.33E+07	1.33E+07	1.33E+07	1.33E+07	1.33E+07	1.33E+07	1.33E+07	1.33E+07
AG-114M	1.13E+08	1.13E+08	1.13E+08	1.13E+08	1.13E+08	1.13E+08	1.13E+08	1.13E+08	1.13E+08	1.13E+08	1.13E+08	1.13E+08	1.13E+08	1.13E+08
CU-115M	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
SN-123	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
SM-123	1.64E+09	1.64E+09	1.64E+09	1.64E+09	1.64E+09	1.64E+09	1.64E+09	1.64E+09	1.64E+09	1.64E+09	1.64E+09	1.64E+09	1.64E+09	1.64E+09
SB-124	1.90E+07	1.90E+07	1.90E+07	1.90E+07	1.90E+07	1.90E+07	1.90E+07	1.90E+07	1.90E+07	1.90E+07	1.90E+07	1.90E+07	1.90E+07	1.90E+07
SB-125	7.27E+07	7.27E+07	7.27E+07	7.27E+07	7.27E+07	7.27E+07	7.27E+07	7.27E+07	7.27E+07	7.27E+07	7.27E+07	7.27E+07	7.27E+07	7.27E+07
FE-127M	2.79E+04	2.79E+04	2.79E+04	2.79E+04	2.79E+04	2.79E+04	2.79E+04	2.79E+04	2.79E+04	2.79E+04	2.79E+04	2.79E+04	2.79E+04	2.79E+04
FE-129M	1.22E+06	1.22E+06	1.22E+06	1.22E+06	1.22E+06	1.22E+06	1.22E+06	1.22E+06	1.22E+06	1.22E+06	1.22E+06	1.22E+06	1.22E+06	1.22E+06
I-131	2.73E+05	2.73E+05	2.73E+05	2.73E+05	2.73E+05	2.73E+05	2.73E+05	2.73E+05	2.73E+05	2.73E+05	2.73E+05	2.73E+05	2.73E+05	2.73E+05
I-133	3.92E+04	3.92E+04	3.92E+04	3.92E+04	3.92E+04	3.92E+04	3.92E+04	3.92E+04	3.92E+04	3.92E+04	3.92E+04	3.92E+04	3.92E+04	3.92E+04
XE-131M	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
AE-133M	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
XE-133	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
XE-135M	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
XE-137	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
AE-137	8.09E+01	8.09E+01	8.09E+01	8.09E+01	8.09E+01	8.09E+01	8.09E+01	8.09E+01	8.09E+01	8.09E+01	8.09E+01	8.09E+01	8.09E+01	8.09E+01
XE-138	8.01E+03	8.01E+03	8.01E+03	8.01E+03	8.01E+03	8.01E+03	8.01E+03	8.01E+03	8.01E+03	8.01E+03	8.01E+03	8.01E+03	8.01E+03	8.01E+03
US-136	2.22E+06	2.22E+06	2.22E+06	2.22E+06	2.22E+06	2.22E+06	2.22E+06	2.22E+06	2.22E+06	2.22E+06	2.22E+06	2.22E+06	2.22E+06	2.22E+06
US-136	4.73E+03	4.73E+03	4.73E+03	4.73E+03	4.73E+03	4.73E+03	4.73E+03	4.73E+03	4.73E+03	4.73E+03	4.73E+03	4.73E+03	4.73E+03	4.73E+03
US-137	3.27E+08	3.27E+08	3.27E+08	3.27E+08	3.27E+08	3.27E+08	3.27E+08	3.27E+08	3.27E+08	3.27E+08	3.27E+08	3.27E+08	3.27E+08	3.27E+08
UA-140	3.30E+06	3.30E+06	3.30E+06	3.30E+06	3.30E+06	3.30E+06	3.30E+06	3.30E+06	3.30E+06	3.30E+06	3.30E+06	3.30E+06	3.30E+06	3.30E+06
CE-141	4.33E+05	4.33E+05	4.33E+05	4.33E+05	4.33E+05	4.33E+05	4.33E+05	4.33E+05	4.33E+05	4.33E+05	4.33E+05	4.33E+05	4.33E+05	4.33E+05
UE-144	3.59E+06	3.59E+06	3.59E+06	3.59E+06	3.59E+06	3.59E+06	3.59E+06	3.59E+06	3.59E+06	3.59E+06	3.59E+06	3.59E+06	3.59E+06	3.59E+06

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DOSE FACTORS FOR GASEOUS DISCHARGES
BASED ON 1 CI/YR RELEASE OF EACH ISOTOPE AND A VALUE OF UNITY FOR A/Q, DEPLETED X/Q AND RELATIVE DEPOSITION

NUCLIDE	PATHWAY - COWS MILK (CONTAMINATED FORAGE)										AGE GROUP - INFANT							
	O R G A N U S E (M R E M)										T O T A L B O D Y							
	BONE	LIVER	THYROID	KIDNEY	LUNG	GI-LLI	SKIN											
H-3	0.	4.01E+01	4.01E+01	1.75E+01	4.01E+01	4.01E+01	0.							4.01E+01				
C-14	2.08E+04	2.08E+04	2.08E+04	2.46E+03	2.08E+04	2.08E+04	0.							2.08E+04				
P-32	5.29E+08	5.32E+07	0.	0.	0.	5.95E+07	0.							2.05E+07				
AR-41	0.	0.	0.	0.	0.	0.	0.							0.				
MN-54	0.	2.12E+05	0.	6.30E+04	0.	6.49E+05	0.							4.04E+04				
FE-59	8.04E+05	1.91E+06	0.	0.	5.30E+05	6.30E+06	0.							7.26E+05				
CO-58	0.	6.27E+05	0.	0.	0.	1.62E+06	0.							1.54E+06				
CU-60	0.	2.05E+06	0.	0.	0.	5.06E+06	0.							4.91E+05				
ZN-65	3.93E+07	1.25E+08	0.	8.34E+07	0.	7.85E+07	0.							5.64E+07				
KR-83M	0.	0.	0.	0.	0.	0.	0.							0.				
KR-85M	0.	0.	0.	0.	0.	0.	0.							0.				
KR-85	0.	0.	0.	0.	0.	0.	0.							0.				
KR-87	0.	3.30E-07	0.	0.	0.	1.54E-08	0.							1.15E-07				
KR-88	0.	0.	0.	0.	0.	0.	0.							0.				
KR-89	1.63E+04	0.	0.	0.	0.	3.04E+02	0.							4.67E+02				
KR-90	1.48E+02	0.	0.	0.	0.	1.44E+00	0.							3.77E+01				
KR-89	0.	7.61E+07	0.	0.	0.	1.50E+07	0.							3.55E+07				
SR-89	3.70E+08	0.	0.	0.	0.	6.92E+06	0.							1.06E+07				
SR-90	4.07E+09	0.	0.	0.	0.	3.96E+07	0.							1.04E+03				
Y-91	2.02E+03	0.	0.	0.	0.	1.34E+05	0.							5.38E+01				
ZR-95	3.87E+03	1.70E+03	0.	3.33E+02	0.	1.35E+06	0.							1.01E+03				
NB-95	1.42E+04	6.40E+03	0.	1.26E+03	0.	5.12E+06	0.							3.77E+03				
KU-103	2.13E+02	0.	0.	1.07E+02	0.	2.66E+03	0.							7.34E+01				
RU-102	4.79E+03	0.	0.	1.00E+03	0.	3.72E+04	0.							5.88E+02				
AG-110M	1.54E+06	1.42E+06	0.	2.80E+06	0.	5.81E+08	0.							8.46E+05				
CU-115M	0.	3.45E+04	0.	2.74E+04	0.	1.45E+06	0.							1.10E+03				
SN-123	0.	0.	0.	0.	0.	0.	0.							0.				
SN-126	4.06E+07	8.05E+05	2.36E+05	0.	1.05E+05	2.56E+07	0.							1.21E+05				
SU-124	6.84E+05	1.29E+04	1.65E+03	0.	5.31E+05	1.94E+07	0.							2.70E+05				
SO-125	2.46E+06	6.25E+05	6.05E+05	8.23E+05	6.62E+07	6.48E+06	0.							3.72E+05				
TE-127M	1.62E+06	5.62E+05	5.22E+05	5.84E+05	0.	9.44E+06	0.							2.16E+05				
TE-129M	1.05E+07	5.06E+06	6.19E+06	7.55E+06	0.	9.92E+06	0.							2.51E+05				
I-131	3.77E+07	4.49E+07	1.45E+10	1.13E+07	0.	1.69E+06	0.							2.63E+07				
I-133	5.55E+05	8.11E+05	1.92E+08	1.91E+05	0.	1.44E+05	0.							2.46E+05				
XE-131M	0.	0.	0.	0.	0.	0.	0.							0.				
XE-133M	0.	0.	0.	0.	0.	0.	0.							0.				
XE-133	0.	0.	0.	0.	0.	0.	0.							0.				
XE-135M	0.	0.	0.	2.33E-04	7.18E-05	1.48E-05	0.							2.80E-04				
AE-137	2.36E-02	2.18E-02	0.	8.23E-03	2.40E-03	5.10E-04	0.							9.68E-03				
XE-137	4.11E+02	4.06E+02	0.	2.33E+01	5.94E+01	1.19E+00	0.							2.04E+01				
XE-138	0.	0.	0.	0.	0.	0.	0.							0.				
CS-134	1.03E+09	1.86E+09	0.	1.08E+08	2.13E+08	4.43E+06	0.							1.57E+08				
CS-136	7.86E+06	3.10E+07	0.	1.73E+07	2.37E+06	3.52E+06	0.							2.23E+07				
CS-137	1.54E+09	1.73E+09	0.	8.77E+07	2.08E+08	4.47E+06	0.							9.92E+07				
UA-140	0.89E+06	0.96E+06	0.	3.46E+02	4.27E+03	2.30E+05	0.							3.59E+05				
GE-141	0.89E+03	4.25E+03	0.	2.53E+02	2.05E+06	2.05E+06	0.							4.90E+02				
UL-144	4.32E+05	1.94E+05	0.	1.33E+02	0.	2.03E+07	0.							2.62E+04				

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DOSE FACTORS FOR GASEOUS DISCHARGES
 BASED ON 1 CIVIK RELEASE OF EACH ISOTOPE AND A VALUE OF UNITY FOR X/Q, DEPLETED X/Q AND RELATIVE ULPOSITION

NUCLIDE	PATHWAY - COWS MILK (CONTAMINATED FEED)										AGE GROUP - INFANT		
	ORGAN DOSE (MREM)												
	BONE	LIVER	THYROID	KIDNEY	LUNG	GI-LLI	SKIN	TOTAL BODY					
H-----3	0.	3.96E+01	3.96E+01	1.73E+01	3.96E+01	3.96E+01	0.	3.96E+01	0.	3.96E+01			
C-----14	2.08E+04	2.08E+04	2.08E+04	2.45E+03	2.08E+04	2.08E+04	0.	2.08E+04	0.	2.08E+04			
P-----32	2.81E+06	1.76E+05	0.	0.	0.	3.18E+05	0.	1.09E+05	0.	1.09E+05			
AR-----41	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.			
MN-----54	0.	8.00E+04	0.	2.38E+04	0.	2.45E+05	0.	1.53E+04	0.	1.53E+04			
FE-----59	8.61E+04	2.04E+05	0.	0.	2.68E+04	6.75E+05	0.	7.78E+04	0.	7.78E+04			
CO-----58	0.	1.14E+05	0.	0.	0.	2.96E+05	0.	2.80E+05	0.	2.80E+05			
CU-----60	0.	9.35E+05	0.	0.	0.	2.31E+06	0.	2.24E+05	0.	2.24E+05			
ZN-----65	1.59E+07	5.04E+07	0.	3.37E+07	0.	3.17E+07	0.	2.28E+07	0.	2.28E+07			
KR-83M	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.			
KR-85M	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.			
KR-----85	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.			
KR-----87	0.	2.26E-07	0.	0.	0.	1.06E-08	0.	7.87E-08	0.	7.87E-08			
KR-----88	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.			
KR-----89	2.05E+03	0.	0.	0.	0.	3.83E+01	0.	5.89E+01	0.	5.89E+01			
KR-----90	7.34E+01	0.	0.	0.	0.	7.14E-01	0.	1.87E+01	0.	1.87E+01			
RU-----86	0.	1.10E+06	0.	0.	0.	2.17E+05	0.	5.13E+05	0.	5.13E+05			
SR-----89	4.66E+07	0.	0.	0.	0.	8.72E+05	0.	1.34E+06	0.	1.34E+06			
SR-----90	2.02E+09	0.	0.	0.	0.	1.97E+07	0.	5.15E+09	0.	5.15E+09			
Y-----91	3.05E+02	0.	0.	0.	0.	2.02E+04	0.	8.13E+00	0.	8.13E+00			
ZR-----95	3.63E+03	1.63E+03	0.	3.19E+02	0.	1.30E+06	0.	9.58E+02	0.	9.58E+02			
NG-----95	1.01E+03	4.55E+02	0.	8.91E+01	0.	3.64E+05	0.	2.68E+02	0.	2.68E+02			
RU-103	1.92E+01	0.	0.	9.61E+00	0.	2.39E+02	0.	6.59E+00	0.	6.59E+00			
RU-105	1.90E+03	0.	0.	3.97E+02	0.	1.47E+04	0.	2.33E+02	0.	2.33E+02			
AG-110M	5.85E+05	5.41E+05	0.	1.06E+06	0.	2.21E+08	0.	3.22E+05	0.	3.22E+05			
CO-115M	0.	3.56E+03	0.	2.83E+03	0.	1.50E+05	0.	1.14E+02	0.	1.14E+02			
SN-123	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.			
SN-126	1.91E+07	3.78E+05	1.11E+05	0.	1.01E+05	1.89E+07	0.	3.97E+05	0.	3.97E+05			
SB-124	1.06E+05	1.99E+03	2.56E+02	0.	8.20E+04	2.99E+06	0.	4.18E+04	0.	4.18E+04			
SB-125	2.24E+06	6.65E+05	6.46E+05	8.81E+05	2.90E+07	3.40E+06	0.	3.18E+05	0.	3.18E+05			
TE-127M	4.83E+05	1.68E+05	1.56E+05	1.75E+06	0.	2.83E+06	0.	6.45E+04	0.	6.45E+04			
TE-129M	1.22E+06	4.19E+05	4.59E+05	5.53E+05	0.	7.35E+05	0.	1.80E+05	0.	1.80E+05			
I-----131	6.20E+03	7.38E+03	2.38E+06	1.85E+03	0.	2.78E+02	0.	4.32E+03	0.	4.32E+03			
I-----133	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.			
XE-131M	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.			
XE-133M	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.			
XE-135	3.45E-04	3.19E-04	0.	1.21E-04	3.63E-05	7.45E-06	0.	1.42E-04	0.	1.42E-04			
XE-135M	1.19E-02	1.10E-02	0.	4.10E-03	1.25E-03	2.57E-04	0.	4.88E-03	0.	4.88E-03			
XE-137	1.98E+02	2.21E+02	0.	1.12E+01	2.67E+01	5.72E-01	0.	1.27E+01	0.	1.27E+01			
XE-138	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.			
CS-134	4.42E+08	7.95E+08	0.	4.63E+07	3.03E+07	1.89E+06	0.	6.75E+07	0.	6.75E+07			
CS-136	2.54E+04	1.60E+02	0.	5.28E+04	7.03E+03	1.14E+04	0.	7.22E+04	0.	7.22E+04			
CS-137	7.42E+08	6.31E+08	0.	4.22E+07	1.00E+08	2.15E+06	0.	4.77E+07	0.	4.77E+07			
UA-140	2.08E+04	2.04E+01	0.	1.04E+00	1.28E+01	7.08E+02	0.	1.07E+03	0.	1.07E+03			
CE-141	4.25E+02	2.61E+02	0.	3.52E+01	0.	1.26E+05	0.	3.05E+01	0.	3.05E+01			
CE-144	1.80E+02	7.08E+04	0.	4.84E+03	0.	7.40E+06	0.	3.68E+03	0.	3.68E+03			

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DOSE FACTORS FOR GASEOUS DISCHARGES
BASED ON 1 CI/YR RELEASE OF EACH ISOTOPE AND A VALUE OF UNITY FOR X/Q, DEPLETED X/Q AND RELATIVE DEPOSITION

AGE GROUP - INFANT

PATHWAY - GOATS MILK (CONTAMINATED) FORAGE)

NUCLIDE

ORGAN DONOR CENTER

	BONE	LIVER	THYROID	KIDNEY	LUNG	GI-LLI	SKIN	TOTAL BOD
H----	0.	8.19E+01	8.19E+01	3.58E+01	8.19E+01	8.19E+01	0.	8.19E+01
G-----14	2.08E+04	2.08E+04	2.08E+04	2.46E+03	2.08E+04	2.08E+04	0.	2.08E+04
P-----32	6.83E+08	4.28E+07	0.	0.	0.	7.68E+07	0.	2.64E+07
AR-----41	0.	0.	0.	0.	0.	0.	0.	0.
MM-----74	0.	2.55E+04	0.	7.59E+03	0.	7.81E+04	0.	4.87E+03
FE-----59	1.07E+04	2.54E+04	0.	0.	7.05E+03	8.38E+04	0.	9.65E+03
CO-----58	0.	7.64E+04	0.	0.	0.	1.98E+05	0.	1.87E+05
CO-----60	0.	2.46E+05	0.	0.	0.	6.08E+05	0.	5.89E+05
ZN-----65	4.73E+06	1.50E+07	0.	1.01E+07	0.	9.46E+06	0.	6.80E+06
KR-----83M	0.	0.	0.	0.	0.	0.	0.	0.
KR-----85M	0.	0.	0.	0.	0.	0.	0.	0.
KR-----45	0.	0.	0.	0.	0.	0.	0.	0.
KR-----87	0.	3.96E-08	0.	0.	0.	1.85E-09	0.	1.38E-08
KR-----88	0.	4.00E-10	0.	0.	0.	0.	0.	2.12E-10
KR-----89	3.49E+04	0.	0.	0.	0.	6.52E+02	0.	1.00E+03
KR-----90	3.11E+02	0.	0.	0.	0.	3.01E+00	0.	7.92E+01
RB-----86	0.	9.66E+06	0.	0.	0.	1.90E+06	0.	4.50E+05
SR-----89	7.94E+08	0.	0.	0.	0.	1.48E+07	0.	2.28E+07
SR-----90	8.56E+09	0.	0.	0.	0.	8.28E+07	0.	2.18E+03
Y-----91	2.47E+02	0.	0.	0.	0.	1.63E+04	0.	6.58E+00
ZR-----95	4.20E+02	1.85E+02	0.	3.67E+01	0.	1.46E+05	0.	1.10E+02
NJ-----97	1.76E+03	7.92E+02	0.	1.55E+02	0.	6.33E+05	0.	4.60E+02
RU-----103	2.63E+01	0.	0.	1.32E+01	0.	3.28E+02	0.	9.04E+00
RU-----106	5.76E+02	0.	0.	1.21E+02	0.	4.47E+03	0.	7.08E+01
AG-----110M	1.85E+05	1.72E+05	0.	3.37E+05	0.	7.00E+07	0.	1.02E+05
CU-----115M	0.	4.25E+03	0.	3.37E+03	0.	1.79E+05	0.	1.36E+02
SN-----123	1.54E-01	2.39E-03	2.39E-03	0.	0.	3.81E-02	0.	3.79E-03
SN-----126	4.87E+06	9.66E+04	2.83E+04	0.	1.16E+04	2.94E+06	0.	1.42E+05
SB-----124	8.35E+04	1.58E+03	2.02E+02	0.	0.48E+04	2.30E+06	0.	3.30E+04
SB-----125	2.98E+05	7.56E+04	7.32E+04	9.95E+04	7.96E+06	7.80E+05	0.	4.49E+04
TE-----127M	1.96E+05	6.80E+04	6.31E+04	7.08E+05	0.	1.14E+06	0.	2.61E+04
TE-----129M	2.04E+06	7.00E+05	7.67E+05	9.34E+05	0.	1.23E+06	0.	3.10E+05
I-----131	5.15E+07	0.13E+07	1.97E+10	1.54E+07	0.	2.31E+06	0.	3.59E+07
I-----133	2.19E+05	3.19E+06	7.55E+08	7.51E+05	0.	5.67E+05	0.	4.68E+05
AE-----131M	0.	0.	0.	0.	0.	0.	0.	0.
AE-----133M	0.	0.	0.	0.	0.	0.	0.	0.
AE-----133	0.	0.	0.	0.	0.	0.	0.	0.
AE-----135M	2.05E-03	1.89E-03	0.	7.17E-04	2.10E-04	4.43E-05	0.	8.41E-04
AE-----135	7.08E-02	6.54E-02	0.	2.48E-02	7.44E-03	1.23E-03	0.	2.50E-02
AE-----137	1.23E+03	1.38E+03	0.	7.00E+01	1.00E+02	3.57E+00	0.	7.32E+01
AE-----138	7.56E-05	1.49E-04	0.	1.10E-04	1.03E-05	6.37E-10	0.	4.41E-05
CS-----134	3.11E+09	5.59E+09	0.	3.20E+08	6.39E+08	1.33E+07	0.	4.73E+08
CS-----136	2.55E+07	1.01E+08	0.	5.61E+07	7.69E+06	1.15E+07	0.	7.20E+07
CS-----137	4.03E+09	5.18E+09	0.	2.63E+08	6.25E+08	1.34E+07	0.	2.38E+08
JA-----140	4.03E+05	4.03E+05	0.	4.51E+01	2.50E+02	2.93E+04	0.	4.67E+04
CE-----141	8.54E+02	5.24E+02	0.	3.14E+01	0.	2.54E+05	0.	6.14E+01
CE-----144	5.92E+04	2.54E+04	0.	1.00E+03	0.	2.44E+06	0.	3.19E+03

01/18/79

DOSE FACTORS FOR GASEOUS DISCHARGES
 BASED ON 1 CI/YR RELEASE OF EACH ISOTOPE AND A VALUE OF UNITY FOR X/Q, DEPLETED X/Q AND RELATIVE DEPOSITION

NUCLIDE	PATHWAY - GOATS MILK (CONTAMINATED FEED)										AGE GROUP - INFANT		
	ORGAN DOSE (MREM)										TOTAL BODY		
	BONE	LIVER	THYROID	KIDNEY	LUNG	GI-LLI	SKIN						
H-3	0.	8.08E+01	8.08E+01	3.53E+01	8.08E+01	8.08E+01	0.	8.08E+01					
C-14	2.08E+04	2.08E+04	2.08E+04	2.46E+03	2.08E+04	2.08E+04	0.	2.08E+04					
P-32	3.62E+06	2.27E+05	0.	0.	0.	4.07E+05	0.	1.40E+05					
AR-41	0.	0.	0.	0.	0.	0.	0.	0.					
MN-54	0.	9.63E+03	0.	2.07E+03	0.	2.95E+04	0.	1.84E+03					
FE-59	1.15E+03	2.72E+03	0.	0.	7.55E+02	8.98E+03	0.	1.04E+03					
CO-58	0.	1.39E+04	0.	0.	0.	3.61E+04	0.	3.41E+04					
CU-60	0.	1.12E+05	0.	0.	0.	2.77E+05	0.	2.69E+05					
ZN-65	1.91E+06	6.07E+06	0.	4.06E+06	0.	3.82E+06	0.	2.75E+06					
KR-83M	0.	0.	0.	0.	0.	0.	0.	0.					
KR-85M	0.	0.	0.	0.	0.	0.	0.	0.					
KR-85	0.	0.	0.	0.	0.	0.	0.	0.					
KR-87	0.	2.72E-08	0.	0.	0.	1.27E-09	0.	9.42E-09					
KR-88	0.	0.	0.	0.	0.	0.	0.	0.					
KR-89	4.39E+03	0.	0.	0.	0.	8.21E+01	0.	1.26E+02					
KR-90	1.54E+02	0.	0.	0.	0.	1.49E+00	0.	3.93E+01					
RB-86	0.	1.40E+05	0.	0.	0.	2.75E+04	0.	6.51E+04					
SR-89	9.99E+07	0.	0.	0.	0.	1.07E+06	0.	2.87E+05					
SR-90	4.24E+09	0.	0.	0.	0.	4.11E+07	0.	1.08E+09					
Y-91	3.73E+01	0.	0.	0.	0.	2.47E+03	0.	9.93E-01					
ZR-95	4.39E+02	1.97E+02	0.	3.07E+01	0.	1.57E+05	0.	1.16E+02					
NB-99	1.25E+02	5.62E+01	0.	1.10E+01	0.	4.50E+04	0.	3.31E+01					
KU-103	2.36E+00	0.	0.	1.18E+00	0.	2.95E+01	0.	8.12E-01					
KU-106	2.28E+02	0.	0.	4.78E+01	0.	1.77E+03	0.	2.80E+01					
AG110M	7.05E+04	6.52E+04	0.	1.28E+05	0.	2.66E+07	0.	3.88E+04					
GO115M	0.	4.38E+02	0.	3.47E+02	0.	1.84E+04	0.	1.44E+01					
SN-123	0.	0.	0.	0.	0.	0.	0.	0.					
SN-126	2.28E+06	4.54E+04	1.33E+04	0.	1.22E+04	2.28E+06	0.	7.17E+04					
SB-124	1.29E+04	2.44E+02	3.12E+01	0.	1.00E+04	3.62E+05	0.	5.10E+03					
SB-125	2.72E+05	8.09E+04	7.87E+04	1.07E+05	3.48E+06	4.09E+05	0.	3.80E+04					
TE127M	5.86E+04	2.04E+04	1.89E+04	2.12E+05	0.	3.42E+05	0.	7.82E+03					
TE129M	1.51E+05	5.18E+04	5.73E+04	6.91E+04	0.	9.09E+04	0.	2.30E+04					
I-131	8.47E+03	1.01E+04	3.25E+06	2.53E+03	0.	3.79E+02	0.	5.90E+03					
I-133	0.	0.	0.	0.	0.	0.	0.	0.					
XE131M	0.	0.	0.	0.	0.	0.	0.	0.					
XE133M	0.	0.	0.	0.	0.	0.	0.	0.					
XE-133	0.	0.	0.	0.	0.	0.	0.	0.					
XE135M	1.04E-03	9.55E-04	0.	3.62E-04	1.09E-04	2.24E-05	0.	4.25E-04					
XE-135	3.57E-02	3.50E-02	0.	1.25E-02	3.75E-03	7.71E-04	0.	1.47E-02					
XE-137	5.93E+02	0.63E+02	0.	3.37E+01	8.00E+01	1.72E+00	0.	3.81E+01					
XE-138	0.	0.	0.	0.	0.	0.	0.	0.					
CS-134	1.33E+09	2.34E+03	0.	1.39E+08	2.75E+08	5.68E+06	0.	2.02E+08					
CS-136	8.26E+04	3.26E+05	0.	1.81E+05	2.43E+04	3.70E+04	0.	2.55E+05					
CS-137	2.23E+09	2.49E+03	0.	1.27E+08	3.00E+08	6.44E+06	0.	1.43E+08					
GA-140	2.71E+03	2.72E+03	0.	1.35E+01	1.00E+00	9.22E+01	0.	1.40E+02					
GE-141	5.26E+01	3.23E+01	0.	1.95E+00	0.	1.57E+04	0.	3.78E+03					
GE-144	2.16E+04	3.53E+03	0.	5.83E+02	0.	6.91E+05	0.	1.17E+03					

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