

Enclosure C
L-16-277

EAL Calculations for Beaver Valley Power Station, Unit No. 2
(157 Pages Follow)

Beaver Valley Power Station

Radiation Protection Technical Position/Evaluation/Calculation

Subject

**BVPS – U2 Gaseous Radioactivity Monitor
Emergency Action Levels**

No.

ERS-MPD-93-008

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Reference

HPP _____

EPP _____

X

T/S _____

CR _____

DCP _____

Category



Technical Position



Technical Evaluation



Calculation

Unit 1

Unit 2



Purpose

To apply guidance contained in the NEI 99-01 EAL document to the appropriate gaseous radiation monitors at BVPS Unit 2.

Note: This Technical Evaluation is not an implementing document. Any application of the information contained herein must be reviewed and approved using the established review/approval process for that application.



ORIGINAL ISSUE



REVISION # 8

Revision description:

Revised to include guidance from NEI 99-01 revision 6, which changed the methodology for Alert Level Declarations.

NOTE: Calculations included in this revision will only become effective if NEI 99-01 is approved by the NRC for implementation at BVPS.

by

Lara M. Renz

10/16/15 date

checker/reviewer

[Signature]

10-19-15 date

independent review (calculation only)

date

Checklist

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☐ MGR, Radiation Protection

☐ Supt, Rad Ops

☐ Supv, RP Services

☐ Supv, Rad Waste/Effluents

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☒ Hal Szklinski BV-SIM

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DISCUSSION

This technical evaluation uses accident source terms, radiation monitor nuclide detection efficiencies and nuclide dose conversion factors (TEDE and child thyroid) to calculate radiation monitor readings that correspond to offsite doses of 10, 100 and 1000 mrem TEDE and 50, 500 and 5000 mrem child thyroid. These are used as indicators of the Alert, Site Area Emergency (SAE) and General Emergency (GE) classifications. Additionally, indicators for the Unusual Event classification are derived. These are simply multiples of the ODCM limit, i.e., 2xODCM limit for the Unusual Event (UE). The calculated radiation monitor readings may be used for Emergency Action Level (EAL) determination following an accident with consequent release of radioactivity, and when the results of more rigorous assessments are not available.

Revision History:

This revision, Revised 8, was done to include guidance from NEI 99-01 revision 6, which changed the methodology for Alert Level Declarations.

Revision 6 was done to incorporate revised LOCA source terms from ERS-MPD-01-002². The affected accident source terms are the DBA LOCA, GAP LOCA, RCS LOCA and RCCA. This revision was prompted by changes made to the reactor building containment sump and to the operation of the recirculation spray system. Additional information regarding these changes and the impact on the accident source term may be found in UFSAR design basis radiological consequence calculation, 10080-UR(B)-487³. This revision makes a change to the TEDE dose conversion factors for iodine by including the dose contribution from 4-day ground contamination. The 4-day ground contamination dose is included when performing dose projections and including it here is consistent with that application. In addition, calculations from previous revisions (addenda) are removed and any prior changes are incorporated in the main body of this technical evaluation. Also, the original main body was edited and retyped in Microsoft WORD. Used revised steam release pressure of 1100 psia. Removed Fuel Building exhaust monitor as there is not EAL value used for this process monitor.

Revision 5 was made to correct the Technical Evaluation number.

Revision 4 used revised source terms developed to consider the extended power up-rate, atmospheric containment conversion and use of alternate source terms. Replace use of the XRADMON FORTRAN program with mathematically equivalent EXCEL spreadsheets.

Revision 3 used revised source terms developed to consider the extended power up-rate, atmospheric containment conversion and use of alternate source terms. The results from this revision were never implemented.

Revision 2 updated the calculations using revised source terms.

Revision 1 updated results for the mid-range WRGM due to use of a different detector.

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METHODOLOGY

The bases for the EAL values for the four emergency classifications are:

UE ODCM limit multiplied by two (x2)

Alert Effluent pathway radiation monitor indication that corresponds to 10 mrem TEDE or 50 mrem child thyroid at the site boundary. The lower of the two values is used.

SAE Effluent pathway radiation monitor indication that corresponds to 100 mrem TEDE or 500 mrem child thyroid at the site boundary. The lower of the two values is used.

GE Effluent pathway radiation monitor indication that corresponds to 1000 mrem TEDE or 5000 mrem child thyroid at the site boundary. The lower of the two values is used.

For the Alert, SAE and GE calculations a release duration is necessary to calculate an integrated dose. Consistent with previous revisions, a release duration of one hour is used. All of the UFSAR accidents that have a radiological consequence analysis, and several variants of the Loss of Coolant Accident (LOCA) are considered, each having a unique source term. The radiation monitor EAL for each radiation monitor is the lowest monitor indication calculated among all accident types.

The original calculation methodology (used in XRADMON) is:

The fraction of each isotope in the accident source term is calculated

$$S_i = A_i / \sum_i A_i \quad [1]$$

Since the activity for each isotope is converted to a unitless fraction, the input activity can be expressed in any normal activity units. Note that the input activity is used strictly to determine the activity ratios – the absolute value or units of the input activity has no meaning in subsequent calculations.

The dose rate, DR_i (mrem/h), at a point downwind from a radiological release is equal to:

$$DR_i = Q_i * (X/Q) * (DCF_i) * (1.1408E-4 \text{ yr/h}) \quad [2]$$

where: Q_i = release rate (uCi/s)

X/Q = dispersion (s/m^3)

DCF_i = dose conversion factor ($\text{mrem-m}^3/\text{uCi-yr}$)

$$1.1408E-4 \text{ is a unit conversion factor} := \left(\frac{1 \text{ year}}{365.25 \text{ day}} * \frac{1 \text{ day}}{24 \text{ hr}} \right)$$

Re-arranging equation [2] to solve for the release rate yields:

$$Q_i = DR_i / ((X/Q) * (DCF_i) * (1.1408E-4)) \quad [3]$$

The dose rate conversion factor for a mixture of nuclides is the sum of the normalized DCF_i for each nuclide, I:

$$DCF_t = \sum_i S_i * DCF_i \quad [4]$$

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Substituting equation [4] into equation [3] gives:

$$Q_t = DR_t / ((1.1408E-4) * (X/Q) * \sum_i S_i * DCF_i) \quad [5]$$

Equation [5] is valid for either TEDE or child thyroid dose, provided the appropriate DCFs are used. In order for the thyroid dose-related monitor reading to be valid, all nuclides must be included in determining S_i . While only radioiodines contribute significantly to thyroid dose, the noble gas nuclides nevertheless contribute to the monitor reading.

Once the release necessary to obtain the desired total dose rate is determined, it can be ratioed by S_i to obtain Q_i , the activity of nuclide i as follows:

$$Q_i = Q_t * S_i$$

To obtain the release concentration, divide by the release flow:

$$C_i = (2.12E-3 * Q_i) / \text{flow}$$

To obtain the monitor count rate for a single nuclide:

$$CR_i = E_i * C_i$$

Where E_i is the efficiency (cpm/uCi/cc) of the monitor for nuclide i . The count rate for the release as a whole is then:

$$CR_t = \sum_i S_i * CR_i$$

At Unit 2, the radiation monitor software uses a conversion factor (CF11) to convert cpm to uCi/cc (and uCi/s for some monitor channels). Because this conversion is nuclide mix specific, the correlation of monitor response to dose requires additional calculations as described later.

The following is a description of the math performed by the EXCEL spreadsheets used in this Technical Evaluation. This has been verified to produce results consistent with the previously used XRADMON application and the math described above.

An EXCEL spreadsheet was made for each accident type and radiation monitor combination that is appropriate for the accident type. Each spreadsheet consists of 15 columns with a row for each radionuclide. At the bottom of each spreadsheet, there is a section used to convert cpm to TEDE and child thyroid. Additionally, each spreadsheet has cells used for inputting release flow rate (cfm) and the atmospheric dispersion factor (X/Q) (s/m^3). Details of all spreadsheet math is provided below:

Column 1 – List of the individual isotopes that comprise the accident source term. Each isotope occupies a row.

Column 2 – Total release quantity (Ci) for each isotope specific to the accident type. These values are taken from ERS-MPD-01-002.

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Column 3 – Activity ratio for each nuclide. This is a unitless fraction of the total for each nuclide calculated by:

$$\text{fraction} = \frac{\text{col 1}}{\sum \text{col 1}} = \frac{A_i}{\sum A_i}$$

where A_i is the activity of each individual nuclide.

Column 4 - List of the TEDE dose conversion factors (DCFs) for each radionuclide (mrem-m³/uCi-yr).

Column 5 – Effective DCF

$$\text{mrem-m}^3/\text{uCi-yr} = \text{col 3} * \text{col 4} = \text{mrem-m}^3/\text{uCi-yr} * \text{unitless}$$

Column 6 – Release rate (uCi/s) that, for each nuclide in the specific accident mix, will result in a TEDE rate of 1 mrem per hour of exposure to the total mix. First, math equivalent of the equation above is performed in the top section of the spreadsheet. Then, for each nuclide, this is multiplied by the unitless activity fraction in column 3.

$$\text{uCi/s} = \text{unitless fraction} * \left(\frac{\text{col 3}}{1 \text{ mrem/h}} / \left(\frac{1 \text{ yr}}{8760 \text{ hr}} \right) * \left(\frac{\text{s}}{\text{m}^3} \right) * \left(\frac{\text{mrem-m}^3}{\text{uCi-yr}} \right) * \sum \text{col 5} \right)$$

One mrem per hour is selected so that the calculated release rate need only be multiplied by the desired total mrem to calculate that release rate that will cause the total mrem over one hour. The ODCM X/Q associated with the release point for the radiation monitor is entered in a cell on each spreadsheet.

Column 7 – Release concentration (uCi/cc) that, for each nuclide in the specific accident mix, will result in a TEDE rate of 1 mrem per hour of exposure to the total mix.

$$\text{uCi/cc} = \frac{\text{col 6}}{\text{flow rate}} = \text{uCi/s} / \text{cc/s}$$

The release pathway flow rate (cfm) for the radiation monitor is entered in a cell on each spreadsheet and converted to cc/s.

Column 8 – List of the monitor specific detection efficiencies (cpm/uCi/cc) for each isotope. These values are taken from ERS-SFL-86-026.

Column 9 – The radiation monitor count rate (cpm) that, if sustained for 1 hour, will cause 1 mrem TEDE to an individual located at the site boundary.

$$\text{cpm} = \text{uCi/cc} / \text{cpm/uCi/cc} = \text{col 7} / \text{col 8}$$

Two additional math operations are performed at the bottom of each spreadsheet. First the calculated cpm for 1 mrem is multiplied by the desired dose (10, 100 and 1000 mrem for TEDE). Then these values are multiplied by the current monitor CF11 (uCi/cc-cpm) to calculate the monitor indication (uCi/cc) that corresponds to each of these doses. Again, this applies at the site boundary for a 1 hour exposure duration.

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Indicators for child thyroid doses of 50, 500 and 5000 mrem are calculated in the manner described above in columns 10 through 15. The only difference is that TEDE DCFs are replaced with child thyroid DCFs.

The main steam and SLCRS pathway monitors are provided with an effluent channel that converts the release rate in units of uCi/cc to units of uCi/s. EAL values are calculated for these channels using the following unit conversion constants and math:

$$\text{uCi/s} = (\text{calculated EAL uCi/cc}) * (\text{pathway flow rate ft}^3/\text{min}) * (1 \text{ min}/60 \text{ s}) * (2.832\text{E}4 \text{ cc/ft}^3)$$

Consistent with previous methodology, the ERS-MPD-01-002 STGR source term is reduced by 0.01 for the release through the Condensate Polishing Vent because this pathway is filtered.

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INPUT DATA / ASSUMPTIONS

1. Release Source Terms

[2]

Iodine reduction is applied as was done in previous revisions for the release via gaseous pathways. This is already applied in ERS-MPD-01-002 for all accidents except the SGTR, MSLB and LRA/LACP. For these accidents (that are not normally associated with a filtered pathway as modeled in the design basis analyses), an iodine reduction factor of 0.01 is applied herein to ERS-MPD-01-002 source terms for use in this evaluation when the monitor is for a pathway expected to be filtered. This reduction factor is also applied for unfiltered pathways, taking credit for other iodine removal mechanisms (plate-out, scavenging by humidity, agglomeration and retention in leakage fluids), again consistent with previous revisions. For releases via the main steam valves, no additional iodine reduction is used for these. Iodine reduction is not applicable for the gaseous waste system failure as this release contains no iodine. Again, iodine reduction as described above is consistent with the intent of the previous revisions and the calculations performed for Unit 1. This is appropriate as these source terms are intended only for use in EPP applications. As such, they are modified to more closely reflect actual plant conditions.

The release source terms used are shown in the spreadsheet calculation printouts included with this evaluation.

2. Unit 2 release point data

[1,5,6]

Release Point	Radiation monitor	Monitor CF11 (uCi/cc-cpm)	Range (uCi/cc)	Pathway flow rate (cfm)	ODCM X/Q (s/m ³)
Ventilation Vent	2HVS-RQ101B	3.65E-8	3.7E-7 to 3.72E-1	23700	1.03E-4
Condensate Polishing Bldg.	2-HVL-RQ112B	5.56E-8	5.6E-7 to 5.6E-1	30556	7.35E-5
Supplementary Collection and Release System (SLCRS)	2HVS*RQ109B	2.45E-8	2.5E-7 to 2.5E-1	59000	9.24E-5
	2HVS*RQ109C	4.09E-5	3.9E-4 to 3.9E2	59000	9.24E-5
	2HVS*RQ109D	1.12E-2	8.9E-2 to 8.9E4	59000	9.24E-5
Waste Gas Tank Vault Vent	2RMQ-RQ303B	2.79E-8	2.8E-7 to 2.8E-1	2000	9.24E-5
Decon Building Vent	2RMQ-RQ301B	5.56E-8	5.6E-7 to 5.6E-1	12400	9.24E-5
Main Steam Exhaust	2MSS*RQ101A,B,C	2.50E-4	2.5E-3 to 2.5E3	5474	9.24E-5

The main steam exhaust flow rate in cfm is calculated as follows:

The maximum release rate from an open main steam safety valve of 811,237 lbm/hr⁸ at 1075 psig (1089.7 psia) is used at the basis for the main steam exhaust flow rate. The specific volume is 0.40485 ft³/lb at saturation conditions.

$$5474 \text{ ft}^3/\text{min} = (811237 \text{ lb/hr}) * (0.40485 \text{ ft}^3/\text{lb}) * (1 \text{ hr}/60 \text{ min})$$

For use in the calculations, spreadsheet math is used to convert this to units of cc/s:

$$2.584\text{E}6 \text{ cc/s} = (5474 \text{ ft}^3/\text{min}) * (1 \text{ min}/60 \text{ s}) * (2.832\text{E}4 \text{ cc}/\text{ft}^3)$$

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In addition to the channels listed above, EAL values will also be calculated for the "effluent channels" of the main steam monitors and 2HVS*RQ-109E. These channels indicate in units of uCi/s. The monitor software calculates indication values for these channels using the uCi/cc values and the pathway flow rate.

3. Radiation monitor nuclide detection efficiencies

[4]

Detection efficiencies for each monitor and for each nuclide are listed on each spreadsheet.

4. Dose conversion factors

[8]

The TEDE conversion factors (DCF_s) are taken from ERS-MPD-91-046 (units of mrem-m³/uCi-yr). In this emergency dose projection application, 4-day dose from ground deposition is included. These DCF_s are equivalent to those in EPA Report 400¹⁰ and are expressed with three significant digits.

The child thyroid conversion factors (DCF_s) are taken from ERS-MPD-91-046 (units of mrem-m³/uCi-yr). These were developed from child thyroid DCF_s provided in USNRC Regulatory Guide 1.109 Table E-9.

All DCF_s listed on each spreadsheet.

5. Accident Types

[2]

Gap LOCA	Loss of Coolant Accident with release of a fraction of fuel rod gap activity
DBA LOCA	Design Basis Loss of Coolant Accident
RCS LOCA	Loss of Coolant Accident with release of T.S. limit concentration RCS activity
TID LOCA	TID 14844 source term release assumptions (failed ESFs)
SB LOCA	Small break LOCA outside of containment
FHA	Fuel Handling Accident
RCCA	Rod Control Cluster ejection Accident
LACP/LRA	Loss of Non-emergency AC Power/Locked (reactor coolant pump) Rotor Accident
MSLB	Main Steam Line Break
SGTR	Steam Generator Tube Rupture
GWS Fail	Gaseous Waste System Failure

6. Accident Types and Applicable Release Pathways

This technical evaluation provides conversions for all accident source terms for each radiation monitor. Because not all accident types necessarily have a release pathway applicable to each monitor, the following tables are provided to identify the most likely combinations.

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Monitor 2HVS-RQ101B, Ventilation Vent

DBA LOCA, GAP LOCA, RCS LOCA, TID LOCA, RCCA	Leakage via penetrations into contiguous areas
SB LOCA	Leakage into contiguous areas
SGTR, LACP/LRA	No reasonable path to this release point
FHA	Fuel handling accident in containment
GWS, MSLB	No physical pathway

Monitor 2HVL-RQ112B, Condensate Polishing Building Vent

DBA LOCA, GAP LOCA, RCS LOCA, TID LOCA, RCCA, SB LOCA, FHA, GWS, MSLB, LACP/LRA	No reasonable pathway
SGTR	Via condensate leakage

Monitor 2HVS*RQ109B, C, D, E (Effluent Channel), SLCRS

DBA LOCA, GAP LOCA, RCS LOCA, TID LOCA, RCCA	Leakage via penetrations into contiguous areas, or to the PAB with diversion
SB LOCA	Leakage into contiguous areas, or to PAB with diversion
FHA	From fuel pool via FHB exhaust or, fuel handling accident in containment
SGTR, LACP/LRA	No likely pathway
GWS, MSLB	No physical pathway

Monitor 2RMQ-RQ303B, Waste Gas Storage Tank Vault Vent

DBA LOCA, GAP LOCA, RCS LOCA, TID LOCA, RCCA, SB LOCA, FHA, SGTR, MSLB, LACP/LRA	No release via this pathway
GWS	Directly to this release point

Monitor 2RMQ-RQ301B, Decon Building Vent

DBA LOCA, GAP LOCA, TID LOCA, RCCA, SB LOCA, FHA, SGTR, MSLB, LACP/LRA, GWS	No release via this pathway
RCS LOCA	Selected as a general source term

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Monitor 2MSS*RQ101 Effluent Channel Main Steam Release Point

DBA LOCA, GAP LOCA, TID No release via this pathway
LOCA, RCCA, SB LOCA, FHA,
MSLB, RCS LOCA, LACP/LRA,
GWS, Kr-85, Xe-133

SGTR, LACP/LRA

Release via a lifted safety valve during the
event. SGTR is used as the limiting accident.

7. 2HVS*RQ109E Effluent Channel

The effluent channel of the SLCRS wide range gas monitor (WRGM), 2HVS*RQ109E, contains software which converts the effluent concentration into a uCi/s release rate. In addition, the software selects a value from one of the three ranges based on a crossover point which is expressed in activity. The value from the low range detector is used until the activity is $1E-2$ uCi/cc, then the value from the middle range detector is used. When the activity reaches $1E2$ uCi/cc, the high range detector is used to determine the release rate. The software selects the conversions factor from the detector in use at the time the calculation is made. This will affect the calculation of the release rate EALs since the effluent channel may be using any of the three detectors. Consistent with previous revisions, the mid-range detector (2HVS*RQ109C) is used to calculate the effluent channel EAL.

8. Application of Monitor Background

Because background indication may vary, it is not considered in this technical evaluation. The EAL values calculated herein are net values, and are in addition to normal monitor background indication.

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RESULTS

Attachment 1 details the UE EAL calculations. Attachment 2 and Attachment 3 provide a summary and details of the Alert, SAE and GE EAL calculations. No value is shown where the calculated value exceeds the monitor range or, for the main steam monitors, no ODCM limit is specified. The summary of all results is:

Release Point	Radiation monitor	UE	Alert	SAE	GE
Ventilation Vent	2HVS-RQ101B	6.02E-4 uCi/cc	1.67E-2 uCi/cc	1.67E-1 uCi/cc	out of range
Condensate Polishing Bldg.	2-HVL-RQ112B	3.22E-3 uCi/cc	8.22E-2 uCi/cc	out of range	out of range
Supplementary Collection and Release System (SLCRS)	2HVS*RQ109B	2.12E-4 uCi/cc	8.13E-3 uCi/cc	8.13E-2 uCi/cc	out of range
	2HVS*RQ109C	n/a	7.26E-3 uCi/cc	7.26E-2 uCi/cc	7.26E-1 uCi/cc
	2HVS*RQ109D	n/a	n/a	out of range	6.45E-1 uCi/cc
	2HVS*RQ109E Effluent Channel	5.88E+3 uCi/s	1.95E+5 uCi/s	1.95E+6 uCi/s	1.95E+7 uCi/s
Waste Gas Tank Vault Vent	2RMQ-RQ303B	5.16E-2 uCi/cc	out of range	out of range	out of range
Decon Building Vent	2RMQ-RQ301B	6.30E-3 uCi/cc	5.28E-1 uCi/cc	out of range	out of range
Main Steam Exhaust	2MSS*RQ101A,B,C	n/a	4.65E-2 uCi/cc	4.65E-1 uCi/cc	4.65E0 uCi/cc
Main Steam Exhaust Eff.	2MSS*RQ101A,B,C Effluent Channels	n/a	1.32E+5 uCi/s	1.32E+6 uCi/s	1.32E+7 uCi/s

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REFERENCES

1. BVPS Offsite Dose Calculation Manual (ODCM), 1/2-ODC-2.02.
2. BVPS Technical Evaluation, ERS-MPD-01-002, "Determination of Release Source Terms for BVPS Accidents for Emergency Planning Purposes".
3. SWEC Calculation 10080-UR(B)-487, "Site Boundary, Control Room and Emergency Response Facility Doses following a Loss-of-Coolant Accident Based on Core Up-rate, and Atmospheric Containment, and Alternative Source Term Methodology".
4. BVPS Technical Evaluation ERS-SFL-86-026, "Unit 2 DRMS Isotopic Efficiencies".
5. Unit 2 DRMS Database
6. Procedure 2-HPP-4.02.021, "DRMS Effluent Monitoring Subsystem".
7. BVPS Unit 2 Operating Manual 2OM-21.2B, "Main Steam System, Precautions, Limitations and Setpoints".
8. BVPS Technical Evaluation ERS-MPD-91-046, "Determination of Dose Conversion Factors for Use in EPP Emergency Action Level (EAL) Indicators".
9. USEPA 400-R-92-001, "Manual of Protective Action Guides and Protection Actions for Nuclear Incidents".
10. USNRC Regulatory Guide 1.109, "Calculation of Annual Doses to Man From Routine Releases of Reactor Effluents for the Purpose of Evaluating Compliance with 10 CFR Part 50, Appendix I".
11. NEI 99-01 Revision 6, Methodology for Development of Emergency Action Levels, November 2012.

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UE EAL Calculations:

Release Point	Radiation monitor	ODCM Limit ⁽¹⁾
Ventilation Vent	2HVS-RQ101B	3.01E-4 uCi/cc
Condensate Polishing Bldg.	2-HVL-RQ112B	1.61E-3 uCi/cc
Supplementary Collection and Release System (SLCRS)	2HVS*RQ109B	1.06E-4 uCi/cc ⁽²⁾
	2HVS*RQ109C	--- ⁽³⁾
	2HVS*RQ109D	--- ⁽³⁾
	2HVS*RQ109E	2.94E+3 uCi/s
Waste Gas Tank Vault Vent	2RMQ-RQ303B	2.58E-2 uCi/cc
Decon Building Vent	2RMQ-RQ301B	3.15E-3 uCi/cc
Main Steam Exhaust	2MSS*RQ101A,B,C	n/a ⁽⁴⁾

⁽¹⁾From 1/2-ODC-2.02

⁽²⁾Values are derived by unit conversion of 2HVS-RQ109E.

⁽³⁾These higher range channels are not used for the low concentrations associated with the ODCM limit.

⁽⁴⁾No ODCM limit associated with these monitors.

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Calculation Summary:

Ventilation Vent:

2HVS-RQ101B:

	Alert	SAE	GE
LOCA Gap	7.6E-02	7.6E-01	7.6E+00 TEDE
	167E-02	167E-01	167E+00 THYROID
DBA LOCA	8.70E-02	8.70E-01	8.70E+00 TEDE
	2.47E-02	2.47E-01	2.47E+00 THYROID
LOCA RCS	5.89E-01	5.89E+00	5.89E+01 TEDE
	163E-01	163E+00	163E+01 THYROID
LOCA TID	199E-02	199E-01	199E+00 TEDE
	198E-02	198E-01	198E+00 THYROID
SB LOCA	6.26E-02	6.26E-01	6.26E+00 TEDE
	3.14E-02	3.14E-01	3.14E+00 THYROID
FHA	2.85E-01	2.85E+00	2.85E+01 TEDE
	6.75E-01	6.75E+00	6.75E+01 THYROID
RCCA	129E-01	129E+00	129E+01 TEDE
	3.58E-01	3.58E+00	3.58E+01 THYROID
Minimum Value =	1.67E-02	1.67E-01	1.67E+00

Condensate Polishing:

2HVS-RQ102B:

	Alert	SAE	GE
SGTR	8.22E-02	8.22E-01	8.22E+00 TEDE
	1.6E+00	1.6E+01	1.6E+02 THYROID
Minimum Value =	8.22E-02	8.22E-01	8.22E+00

SLCRS:

2HVS-RQ109B:

	Alert	SAE	GE
LOCA Gap	3.70E-02	3.70E-01	3.70E+00 TEDE
	8.13E-03	8.13E-02	8.13E-01 THYROID
DBA LOCA	4.20E-02	4.20E-01	4.20E+00 TEDE
	4.20E-02	1.9E-01	1.9E+00 THYROID
LOCA RCS	3.29E-01	3.29E+00	3.29E+01 TEDE
	9.09E-02	9.09E-01	9.09E+00 THYROID
LOCA TID	127E-02	127E-01	127E+00 TEDE
	127E-02	127E-01	127E+00 THYROID
SB LOCA	3.07E-02	3.07E-01	3.07E+00 TEDE
	154E-02	154E-01	154E+00 THYROID
FHA	134E-01	134E+00	134E+01 TEDE
	3.18E-01	3.18E+00	3.18E+01 THYROID
RCCA	6.38E-02	6.38E-01	6.38E+00 TEDE
	176E-01	176E+00	176E+01 THYROID
Minimum Value =	8.13E-03	8.13E-02	8.13E-01

2HVS-RQ109C:

	Alert	SAE	GE
LOCA Gap	3.3E-02	3.3E-01	3.3E+00 TEDE
	7.26E-03	7.26E-02	7.26E-01 THYROID
DBA LOCA	3.83E-02	3.83E-01	3.83E+00 TEDE
	108E-02	108E-01	108E+00 THYROID
LOCA RCS	159E-01	159E+00	159E+01 TEDE
	4.40E-02	4.40E-01	4.40E+00 THYROID
LOCA TID	2.37E-02	2.37E-01	2.37E+00 TEDE
	2.36E-02	2.36E-01	2.36E+00 THYROID
SB LOCA	2.76E-02	2.76E-01	2.76E+00 TEDE
	139E-02	139E-01	139E+00 THYROID
FHA	1.12E-01	1.12E+00	1.12E+01 TEDE
	2.65E-01	2.65E+00	2.65E+01 THYROID
RCCA	5.78E-02	5.78E-01	5.78E+00 TEDE
	160E-01	160E+00	160E+01 THYROID
Minimum Value =	7.26E-03	7.26E-02	7.26E-01
2HVS-RQ109E:			
Minimum Value =	1.95E+06	1.95E+06	1.95E+07

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**BVPS-U2 Gaseous Radioactivity Monitor
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Calculation Summary (continued):

SLCRS (continued): 2HVS*QI09D:

	Alert	SAE	GE	
LOCA Gap	2.94E-02	2.94E-01	2.94E+00	TEDE
	6.45E-03	6.45E-02	6.45E-01	THYROID
DBA LOCA	3.39E-02	3.39E-01	3.39E+00	TEDE
	3.17E+00	9.62E-02	9.62E-01	THYROID
LOCA RCS	147E-01	147E+00	147E+01	TEDE
	4.07E-02	4.07E-01	4.07E+00	THYROID
LOCA TID	2.29E-02	2.29E-01	2.29E+00	TEDE
	2.27E-02	2.27E-01	2.27E+00	THYROID
SB LOCA	2.53E-02	2.53E-01	2.53E+00	TEDE
	127E-02	127E-01	127E+00	THYROID
FHA	9.73E-02	9.73E-01	9.73E+00	TEDE
	2.3E-01	2.3E+00	2.3E+01	THYROID
RCCA	5.14E-02	5.14E-01	5.14E+00	TEDE
	142E-01	142E+00	142E+01	THYROID
Minimum Value =	6.45E-03	6.45E-02	6.45E-01	

Decon Building: 2RMQ-RQI30B:

	Alert	SAE	GE	
LOCA RCS	19E+00	19E+01	19E+02	TEDE
	5.28E-01	5.28E+00	5.28E+01	THYROID
Minimum Value =	5.28E-01	5.28E+00	5.28E+01	

Waste Gas Decay Tank Vault Vent: 2RMQ-RQI303B:

	Alert	SAE	GE	
GWS	2.05E+00	2.05E+01	2.05E+02	TEDE
	n/a	n/a	n/a	THYROID
Minimum Value =	2.05E+00	2.05E+01	2.05E+02	

Main Steam:

2MSS*QI01A,B,C

	Alert	SAE	GE	
SGTR	188E-01	188E+00	188E+01	TEDE
	4.65E-02	4.65E-01	4.65E+00	THYROID
Minimum Value =	4.65E-02	4.65E-01	4.65E+00	
2MSS*QI01A,B,C EFF				
Minimum Value =	1.32E+05	1.32E+06	1.32E+07	

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2HVS-RQ1101 Ventilation Vent:

Monitor efficiencies from ERS-SFL-86-026

Upstream filtration (iodines reduced 0.01)

X/Q = 1.03E-04 s/m³

Release (uCi/s) CF for TEDE = 1.17E+05

Release (uCi/s) CF for Child Thyroid = 5.16E+03

2HVS-RQ1-101B

Release Flow Rate = 2.37E+04 cfm

1.12E+07 cc/s

Isotope	U1 & U2 LOCA Gap (Ci)	Activity Ratio	DCF (mrem-m ³ /uCi-y)	Effective DCF	Release (uCi/s)	Release (uCi/cc)	Efficiency (cpm/uCi/cc)	Count Rate (cpm/mrem/h)	DCF (mrem-m ³ /uCi-y)	Effective DCF	Release (uCi/s)	Release (uCi/cc)	Efficiency (cpm/uCi/cc)	Count Rate (cpm/mrem/h)
Kr-83m	9.01E+01	2.02E-03	4.69E-01	9.48E-04	2.37E+02	2.12E-05	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.04E+01	9.32E-07	0.00E+00	0.00E+00
Kr-85m	2.21E+02	4.96E-03	8.17E+02	4.05E+00	5.82E+02	5.20E-05	3.20E+07	1.66E+03	0.00E+00	0.00E+00	2.56E+01	2.29E-06	3.20E+07	7.31E+01
Kr-85	1.27E+03	2.85E-02	1.12E+01	3.19E-01	3.34E+03	2.99E-04	3.60E+07	1.08E+04	0.00E+00	0.00E+00	1.47E+02	1.31E-05	3.60E+07	4.73E+02
Kr-87	8.45E+01	1.89E-03	4.47E+03	8.47E+00	2.22E+02	1.99E-05	3.73E+07	7.42E+02	0.00E+00	0.00E+00	9.78E+00	8.74E-07	3.73E+07	3.26E+01
Kr-88	3.58E+02	8.03E-03	1.13E+04	9.07E+01	9.43E+02	8.43E-05	3.05E+07	2.57E+03	0.00E+00	0.00E+00	4.14E+01	3.70E-06	3.05E+07	1.13E+02
Kr-89	7.50E-02	1.68E-06	1.02E+04	1.72E-02	1.97E-01	1.77E-08	3.72E+07	6.57E-01	0.00E+00	0.00E+00	8.68E-03	7.76E-10	3.72E+07	2.88E-02
Xe-131m	7.26E+02	1.63E-02	4.29E+01	6.98E-01	1.91E+03	1.71E-04	2.44E+07	4.17E+03	0.00E+00	0.00E+00	8.40E+01	7.51E-06	2.44E+07	1.83E+02
Xe-133m	6.33E+02	1.42E-02	1.49E+02	2.11E+00	1.67E+03	1.49E-04	2.86E+07	4.26E+03	0.00E+00	0.00E+00	7.32E+01	6.55E-06	2.86E+07	1.87E+02
Xe-133	3.72E+04	8.34E-01	1.76E+02	1.47E+02	9.79E+04	8.76E-03	1.80E+07	1.58E+05	0.00E+00	0.00E+00	4.30E+03	3.85E-04	1.80E+07	6.92E+03
Xe-135m	1.24E+03	2.78E-02	2.15E+03	5.98E+01	3.26E+03	2.92E-04	7.22E+06	2.11E+03	0.00E+00	0.00E+00	1.43E+02	1.28E-05	7.22E+06	9.25E+01
Xe-135	2.71E+03	6.08E-02	1.25E+03	7.60E+01	7.14E+03	6.38E-04	3.86E+07	2.46E+04	0.00E+00	0.00E+00	3.14E+02	2.80E-05	3.86E+07	1.08E+03
Xe-137	2.55E-01	5.72E-06	9.55E+02	5.46E-03	6.71E-01	6.00E-08	3.78E+07	2.27E+00	0.00E+00	0.00E+00	2.95E-02	2.64E-09	3.78E+07	9.96E-02
Xe-138	7.80E+00	1.75E-04	6.27E+03	1.10E+00	2.05E+01	1.84E-06	3.52E+07	6.47E+01	0.00E+00	0.00E+00	9.02E-01	8.07E-08	3.52E+07	2.84E+00
I-131	2.73E+01	6.12E-04	4.66E+05	2.85E+02	7.19E+01	6.43E-06	2.98E+05	1.91E+00	2.44E+07	1.49E+04	3.16E+00	2.82E-07	2.98E+05	8.40E-02
I-132	1.32E+01	2.96E-04	4.33E+04	1.28E+01	3.48E+01	3.11E-06	3.72E+05	1.16E+00	2.90E+05	8.58E+01	1.53E+00	1.37E-07	3.72E+05	5.08E-02
I-133	1.06E+01	2.38E-04	1.28E+05	3.04E+01	2.79E+01	2.49E-06	3.69E+05	9.19E-01	5.77E+06	1.37E+03	1.23E+00	1.10E-07	3.69E+05	4.04E-02
I-134	6.51E-01	1.46E-05	2.69E+04	3.93E-01	1.71E+00	1.53E-07	3.78E+05	5.78E-02	7.60E+04	1.11E+00	7.53E-02	6.73E-09	3.78E+05	2.54E-03
I-135	3.38E+00	7.58E-05	7.10E+04	5.38E+00	8.90E+00	7.96E-07	3.49E+05	2.77E-01	1.19E+06	9.02E+01	3.91E-01	3.50E-08	3.49E+05	1.22E-02
	4.46E+04			7.24E+02				2.09E+05		1.65E+04		4.61E-04		9.16E+03

Monitor conversion factor CF11 (uCi/cc-cpm) = 3.65E-08

uCi/cc	TEDE	cpm	uCi/cc	Child Thyroid	cpm
7.61E-02	1.00E+01	2.09E+06	1.67E-02	5.00E+01	4.58E+05
7.61E-01	1.00E+02	2.09E+07	1.67E-01	5.00E+02	4.58E+06
7.61E+00	1.00E+03	2.09E+08	1.67E+00	5.00E+03	4.58E+07

Monitor efficiencies from ERS-SFL-86-026

Upstream filtration (iodines reduced 0.01)

X/Q = 1.03E-04 s/m³

Release (uCi/s) CF for TEDE = 1.36E+05

Release (uCi/s) CF for Child Thyroid = 7.70E+03

2HVS-RQ1-101B

Release Flow Rate = 2.37E+04 cfm

1.12E+07 cc/s

Isotope	U1 & U2 DBA LOCA (Ci)	Activity Ratio	DCF (mrem-m ³ /uCi-y)	Effective DCF	Release (uCi/s)	Release (uCi/cc)	Efficiency (cpm/uCi/cc)	Count Rate (cpm/mrem/h)	DCF (mrem-m ³ /uCi-y)	Effective DCF	Release (uCi/s)	Release (uCi/cc)	Efficiency (cpm/uCi/cc)	Count Rate (cpm/mrem/h)
Kr-83m	1.80E+03	2.05E-03	4.69E-01	9.61E-04	2.78E+02	2.49E-05	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.58E+01	1.41E-06	0.00E+00	0.00E+00
Kr-85m	4.41E+03	5.02E-03	8.17E+02	4.10E+00	6.82E+02	6.08E-05	3.20E+07	1.95E+03	0.00E+00	0.00E+00	3.87E+01	3.46E-06	3.20E+07	1.11E+02
Kr-85	1.27E+04	1.45E-02	1.12E+01	1.62E-01	1.96E+03	1.76E-04	3.60E+07	6.32E+03	0.00E+00	0.00E+00	1.11E+02	9.95E-06	3.60E+07	3.58E+02
Kr-87	1.69E+03	1.92E-03	4.47E+03	8.60E+00	2.61E+02	2.34E-05	3.73E+07	8.71E+02	0.00E+00	0.00E+00	1.48E+01	1.32E-06	3.73E+07	4.94E+01
Kr-88	7.16E+03	8.15E-03	1.13E+04	9.21E+01	1.11E+03	9.89E-05	3.05E+07	3.02E+03	0.00E+00	0.00E+00	6.28E+01	5.61E-06	3.05E+07	1.71E+02
Kr-89	1.50E+00	1.71E-06	1.02E+04	1.74E-02	2.32E-01	2.07E-08	3.72E+07	7.71E-01	0.00E+00	0.00E+00	1.31E-02	1.18E-09	3.72E+07	4.37E-02
Xe-131m	1.45E+04	1.65E-02	4.29E+01	7.08E-01	2.24E+03	2.00E-04	2.44E+07	4.90E+03	0.00E+00	0.00E+00	1.27E+02	1.14E-05	2.44E+07	2.78E+02
Xe-133m	1.27E+04	1.45E-02	1.49E+02	2.16E+00	1.96E+03	1.76E-04	2.88E+07	5.02E+03	0.00E+00	0.00E+00	1.11E+02	9.95E-06	2.86E+07	2.85E+02
Xe-133	7.43E+05	8.46E-01	1.76E+02	1.49E+02	1.15E+05	1.03E-02	1.80E+07	1.85E+05	0.00E+00	0.00E+00	6.51E+03	5.82E-04	1.80E+07	1.05E+04
Xe-135m	2.48E+04	2.82E-02	2.15E+03	6.07E+01	3.83E+03	3.43E-04	7.22E+06	2.47E+03	0.00E+00	0.00E+00	2.17E+02	1.94E-05	7.22E+06	1.40E+02
Xe-135	5.42E+04	6.17E-02	1.25E+03	7.72E+01	8.38E+03	7.49E-04	3.86E+07	2.89E+04	0.00E+00	0.00E+00	4.75E+02	4.25E-05	3.86E+07	1.64E+03
Xe-137	5.09E+00	5.80E-06	9.55E+02	5.54E-03	7.87E-01	7.03E-08	3.78E+07	2.66E+00	0.00E+00	0.00E+00	4.46E-02	3.99E-09	3.78E+07	1.51E-01
Xe-138	1.56E+02	1.78E-04	6.27E+03	1.11E+00	2.41E+01	2.16E-06	3.52E+07	7.59E+01	0.00E+00	0.00E+00	1.37E-00	1.22E-07	3.52E+07	4.31E+00
I-131	3.41E+02	3.88E-04	4.66E+05	1.81E+02	5.27E+01	4.71E-06	2.98E+05	1.40E+00	2.44E+07	9.48E+03	2.99E+00	2.67E-07	2.98E+05	7.95E-02
I-132	2.64E+02	3.01E-04	4.33E+04	1.30E+01	4.08E+01	3.65E-06	3.72E+05	1.35E+00	2.90E+05	8.72E+01	2.31E+00	2.07E-07	3.72E+05	7.69E-02
I-133	2.12E+02	2.41E-04	1.28E+05	3.09E+01	3.28E+01	2.93E-06	3.69E+05	1.08E+00	5.77E+06	1.39E+03	1.85E+00	1.66E-07	3.69E+05	6.12E-02
I-134	1.30E+01	1.48E-05	2.69E+04	3.98E-01	2.01E+00	1.80E-07	3.78E+05	6.78E-02	7.60E+04	1.13E+00	1.14E-01	1.02E-08	3.78E+05	3.85E-03
I-135	6.75E+01	7.69E-05	7.10E+04	5.46E+00	1.04E+01	9.33E-07	3.49E+05	3.25E-01	1.19E+06	9.15E+01	5.92E-01	5.29E-08	3.49E+05	1.84E-02
	8.78E+05			6.27E+02				2.38E+05		1.10E+04		6.88E-04		1.35E+04

Monitor conversion factor CF11 (uCi/cc-cpm) = 3.65E-08

uCi/cc	TEDE	cpm	uCi/cc	Child Thyroid	cpm
8.70E-02	1.00E+01	2.38E+06	2.47E-02	5.00E+01	6.76E+05
8.70E-01	1.00E+02	2.38E+07	2.47E-01	5.00E+02	6.76E+06
8.70E+00	1.00E+03	2.38E+08	2.47E+00	5.00E+03	6.76E+07

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$$X/Q = 1.03E-04 \text{ s/m}^3$$

Release (uCi/s) CF for TEDE = 6.41E+05

Release (uCi/s) CF for Child Thyroid = 3.54E+04

Monitor efficiencies from ERS-SFL-86-026

Upstream filtration (iodines reduced 0.01)

Release Flow Rate = 2.37E+04 cfm : 1.12E+07 cc/s

2HVS-RQI-101B

Monitor conversion factor CF11 (uCi/cc-cpm) = 3.65E-08

uCi/cc	TEDE	cpm	uCi/cc	Child Thyroid	cpm
5.89E-01	1.00E+01	1.61E+07	1.63E-01	5.00E+01	4.46E+08
5.89E+00	1.00E+02	1.61E+08	1.63E+00	5.00E+02	4.46E+09
5.89E+01	1.00E+03	1.61E+09	1.63E+01	5.00E+03	4.46E+08

$$X/Q = 1.03E-04 \text{ s/m}^3$$

Release (uCi/s) CF for TEDE = 2.03E+04

Release (uCi/s) CF for Child Thyroid = 4.04E+03

Monitor efficiencies from ERS-SFL-88-026

Upstream filtration (iodines reduced 0.01)

Release Flow Rate = 2.37E+04 cfm : 1.12E+07 cc/s

2HVS-RQI-101B

Monitor conversion factor CF11 (uCi/cc-cpm) = 3.65E-08

uCl/cc	TEDE	cpm	uCl/cc	Child Thyroid	cpm
1.99E-02	1.00E+01	5.45E+05	1.98E-02	5.00E+01	5.42E+05
1.99E-01	1.00E+02	5.45E+06	1.98E-01	5.00E+02	5.42E+06
1.99E+00	1.00E+03	5.45E+07	1.98E+00	5.00E+03	5.42E+07

Monitor efficiencies from ERS-SFL-86-026										Upstream filtration (Iodines reduced 0.01)		Release (uCi/s) CF for TEDE		Release (uCi/s) CF for Child Thyroid	
2HVS-RQI-101B										Release Flow Rate = 2.37E+04 cfm		1.12E+07 cc/s		X/Q = 1.03E-04 s/m ³ 4.70E+05 2.23E+05	
Isotope	U1 & U2 FHA (Ci)	Activity Ratio	DCF (mrem-m ² /uCi-y)	Effective DCF	Release (uCi/s)	Release (uCi/cc)	Efficiency (cpm/uCi/cc)	Count Rate (cpm/mrem/h)	DCF (mrem-m ² /uCi-y)	Effective DCF	Release (uCi/s)	Release (uCi/cc)	Efficiency (cpm/uCi/cc)	Count Rate (cpm/mrem/h)	
Kr-83m	0.00E+00	0.00E+00	4.69E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	
Kr-85m	1.04E-03	3.07E-08	8.17E+02	2.50E-05	1.44E-02	1.29E-09	3.20E+07	4.12E-02	0.00E+00	0.00E+00	6.83E-03	6.10E-10	3.20E+07	1.95E-02	
Kr-85	4.78E+02	1.41E-02	1.12E+01	1.58E-01	6.62E+03	5.92E-04	3.60E+07	2.13E+04	0.00E+00	0.00E+00	3.14E+03	2.81E-04	3.60E+07	1.01E+04	
Kr-87	0.00E+00	0.00E+00	4.47E+03	0.00E+00	0.00E+00	0.00E+00	3.73E+07	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.73E+07	0.00E+00	
Kr-88	0.00E+00	0.00E+00	1.13E+04	0.00E+00	0.00E+00	0.00E+00	3.05E+07	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.05E+07	0.00E+00	
Kr-89	0.00E+00	0.00E+00	1.02E+04	0.00E+00	0.00E+00	0.00E+00	3.72E+07	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.72E+07	0.00E+00	
Xe-131m	4.66E+02	1.37E-02	4.29E+01	5.89E-01	6.45E+03	5.77E-04	2.44E+07	1.41E+04	0.00E+00	0.00E+00	3.06E+03	2.73E-04	2.44E+07	6.68E+03	
Xe-133m	6.16E+02	1.82E-02	1.49E+02	2.71E+00	8.53E+03	7.63E-04	2.86E+07	2.18E+04	0.00E+00	0.00E+00	4.04E+03	3.62E-04	2.86E+07	1.03E+04	
Xe-133	3.23E+04	9.52E-01	1.76E+02	1.68E+02	4.47E+05	4.00E-02	1.80E+07	7.20E+05	0.00E+00	0.00E+00	2.12E+05	1.90E-02	1.80E+07	3.41E+05	
Xe-135m	2.65E+03	7.81E-05	2.15E+03	1.68E-01	3.67E+01	3.28E-06	7.22E+06	2.37E+01	0.00E+00	0.00E+00	1.74E+01	1.56E-06	7.22E+06	1.12E+01	
Xe-135	6.10E+01	1.80E-03	1.25E+03	2.25E+00	8.45E+02	7.55E-05	3.86E+07	2.91E+03	0.00E+00	0.00E+00	4.00E+02	3.58E-05	3.86E+07	1.38E+03	
Xe-137	0.00E+00	0.00E+00	9.55E+02	0.00E+00	0.00E+00	0.00E+00	3.78E+07	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.78E+07	0.00E+00	
Xe-138	0.00E+00	0.00E+00	6.27E+03	0.00E+00	0.00E+00	0.00E+00	3.52E+07	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.52E+07	0.00E+00	
I-131	5.20E-01	1.53E-05	4.66E+05	7.14E-04	7.20E+00	6.44E-07	2.98E+05	1.92E-01	2.44E+07	3.74E+02	3.41E+00	3.05E-07	2.98E+05	9.08E-02	
I-132	2.52E-01	7.43E-06	4.33E+04	3.22E-01	3.49E+00	3.12E-07	3.72E+05	1.16E-01	2.90E+05	2.15E+00	1.65E+00	1.48E-07	3.72E+05	5.50E-02	
I-133	3.35E-02	9.87E-07	1.28E+05	1.26E-01	4.64E-01	4.15E-08	3.69E+05	1.53E-02	5.77E+06	5.70E+00	2.20E-01	1.97E-08	3.69E+05	7.25E-03	
I-134	0.00E+00	0.00E+00	2.69E+04	0.00E+00	0.00E+00	0.00E+00	3.78E+05	0.00E+00	7.76E+04	0.00E+00	0.00E+00	0.00E+00	3.78E+05	0.00E+00	
I-135	2.23E-05	6.57E-10	7.10E+04	4.67E-05	3.09E-04	2.76E-11	3.49E+05	9.62E-06	1.19E+06	7.82E-04	1.46E-04	1.31E-11	3.49E+05	4.56E-06	
	3.39E+04			1.81E+02				7.80E+05		3.82E+02		1.99E-02		3.70E+05	
Monitor conversion factor CF11 (uCi/cc-cpm) = 3.65E-08										uCi/cc		TEDE		cpm	
										2.85E-01		1.00E+01		7.80E+06	
										2.85E+00		1.00E+02		7.80E+07	
										2.85E+01		1.00E+03		7.80E+08	
										2.85E+02		1.00E+04		7.80E+09	
										2.85E+03		1.00E+05		7.80E+10	
										2.85E+04		1.00E+06		7.80E+11	
										2.85E+05		1.00E+07		7.80E+12	
										2.85E+06		1.00E+08		7.80E+13	
										2.85E+07		1.00E+09		7.80E+14	
										2.85E+08		1.00E+10		7.80E+15	
										2.85E+09		1.00E+11		7.80E+16	
										2.85E+10		1.00E+12		7.80E+17	
										2.85E+11		1.00E+13		7.80E+18	
										2.85E+12		1.00E+14		7.80E+19	
										2.85E+13		1.00E+15		7.80E+20	
										2.85E+14		1.00E+16		7.80E+21	
										2.85E+15		1.00E+17		7.80E+22	
										2.85E+16		1.00E+18		7.80E+23	
										2.85E+17		1.00E+19		7.80E+24	
										2.85E+18		1.00E+20		7.80E+25	
										2.85E+19		1.00E+21		7.80E+26	
										2.85E+20		1.00E+22		7.80E+27	
										2.85E+21		1.00E+23		7.80E+28	
										2.85E+22		1.00E+24		7.80E+29	
										2.85E+23		1.00E+25		7.80E+30	
										2.85E+24		1.00E+26		7.80E+31	
										2.85E+25		1.00E+27		7.80E+32	
										2.85E+26		1.00E+28		7.80E+33	
										2.85E+27		1.00E+29		7.80E+34	
										2.85E+28		1.00E+30		7.80E+35	
										2.85E+29		1.00E+31		7.80E+36	
										2.85E+30		1.00E+32		7.80E+37	
										2.85E+31		1.00E+33		7.80E+38	
										2.85E+32		1.00E+34		7.80E+39	
										2.85E+33		1.00E+35		7.80E+40	
										2.85E+34		1.00E+36		7.80E+41	
										2.85E+35		1.00E+37		7.80E+42	
										2.85E+36		1.00E+38		7.80E+43	
										2.85E+37		1.00E+39		7.80E+44	
										2.85E+38		1.00E+40		7.80E+45	
										2.85E+39		1.00E+41		7.80E+46	
										2.85E+40		1.00E+42		7.80E+47	
										2.85E+41		1.00E+43		7.80E+48	
										2.85E+42		1.00E+44		7.80E+49	
										2.85E+43		1.00E+45		7.80E+50	
										2.85E+44		1.00E+46		7.80E+51	
										2.85E+45		1.00E+47		7.80E+52	
										2.85E+46		1.00E+48		7.80E+53	
										2.85E+47		1.00E+49		7.80E+54	
										2.85E+48		1.00E+50		7.80E+55	
										2.85E+49		1.00E+51		7.80E+56	
										2.85E+50		1.00E+52		7.80E+57	
										2.85E+51		1.00E+53		7.80E+58	
										2.85E+52		1.00E+54		7.80E+59	
										2.85E+53		1.00E+55		7.80E+60	
										2.85E+54		1.00E+56		7.80E+61	
										2.85E+55		1.00E+57		7.80E+62	
										2.85E+56		1.00E+58		7.80E+63	
										2.85E+57		1.00E+59		7.80E+64	
										2.85E+58		1.00E+60		7.80E+65	
										2.85E+59		1.00E+61		7.80E+66	
										2.85E+60		1.00E+62		7.80E+67	
										2.85E+61		1.00E+63		7.80E+68	
										2.85E+62		1.00E+64		7.80E+69	
										2.85E+63		1.00E+65		7.80E+70	
										2.85E+64		1.00E+66		7.80E+71	
										2.85E+65		1.00E+67		7.80E+72	
										2.85E+66		1.00E+68		7.80E+73	
										2.85E+67		1.00E+69		7.80E+74	
										2.85E+68		1.00E+70		7.80E+75	
										2.85E+69		1.00E+71		7.80E+76	
										2.85E+70		1.00E+72		7.80E+77	
										2.85E+71		1.00E+73		7.80E+78	
										2.85E+72		1.00E+74		7.80E+79	
										2.85E+73		1.00E+75		7.80E+80	
										2.85E+74		1.00E+76		7.80E+81	
										2.85E+75		1.00E+77		7.80E+82	
										2.85E+76		1.00E+78		7.80E+83	
										2.85E+77		1.00E+79		7.80E+84	
										2.85E+78		1.00E+80		7.80E+85	
										2.85E+79		1.00E+81		7.80E+86	
										2.85E+80		1.00E+82		7.80E+87	
										2.85E+81		1.00E+83		7.80E+88	
										2.85E+82		1.00E+84		7.80E+89	
										2.85E+83		1.00E+85		7.80E+90	
										2.85E+84		1.00E+86		7.80E+91	
										2.85E+85		1.00E+87		7.80E+92	
										2.85E+86		1.00E+88		7.80E+93	
										2.85E+87		1.00E+89		7.80E+94	
										2.85E+88		1.00E+90		7.80E+95	
										2.85E+89		1.00E+91		7.80E+96	
										2.85E+90		1.00E+92		7.80E+97	
										2.85E+91		1.00E+93		7.80E+98	
										2.85E+92		1.00E+94		7.80E+99	
										2.85E+93		1.00E+95		7.80E+100	
										2.85E+94		1.00E+96		7.80E+101	
										2.85E+95		1.00E+97		7.80E+102	
										2.85E+96		1.00E+98		7.80E+103	
										2.85E+97		1.00E+99		7.80E+104	
										2.85E+98		1.00E+100		7.80E+105	
										2.85E+99		1.00E+101		7.80E+106	
										2.85E+100		1.00E+102		7.80E+107	
										2.85E+101		1.00E+103		7.80E+108	
										2.85E+102		1.00E+104		7.80E+109	
										2.85E+103		1.00E+105		7.80E+110	
										2.85E+104		1.00E+106		7.80E+111	
										2.85E+105		1.00E+107		7.80E+112	
										2.85E+106		1.00E+108		7.80E+113	
										2.85E+107		1.00E+109		7.80E+114	
										2.85E+108		1.00E+110		7.80E+115	
										2.85E+109		1.00E+111		7.80E+116	
										2.85E+110		1.00E+112		7.80E+117	
										2.85E+111		1.00E+113		7.80E+118	
										2.85E+112		1.00E+114		7.80E+119	
										2.85E+113		1.00E+115		7.80E+120	
										2.85E+114		1.00E+116		7.80E+121	
										2.85E+115		1.00E+117		7.80E+122	
										2.85E+116		1.00E+118		7.80E+123	
										2.85E+117		1.00E+119		7.80E+124	
										2.85E+118		1.00E+120		7.80E+125	
										2.85E+119		1.00E+121		7.80E+126	
										2.85E+120		1.00E+122		7.80E+127	
										2.85E+121		1.00E+123		7.80E+128	
										2.85E+122		1.00E+124		7.80E+129	
										2.85E+123		1.00E+125		7.80E+130	
										2.85E+124		1.00E+126		7.80E+131	
										2.85E+125		1.00E+127		7.80E+132	
										2.85E+126		1.00E+128		7.80E+133	
										2.85E+127		1.00E+129		7.80E+134	
										2.85E+128		1.00E+130		7.80E+135	
										2.85E+129		1.00E+131		7.80E+136	
										2.85E+130		1.00E+132		7.80E+137	
										2.85E+131		1.00E+133		7.80E+138	
										2.85E+132		1.00E+134		7.80E+139	
										2.85E+133		1.00E+135		7.80E+140	
										2.85E+134		1.00E+136		7.80E+141	
										2.85E+					

Beaver Valley Power Station

Health Physics Technical Position/Evaluation/Calculation

Subject:

**BVPS-U2 Gaseous Radioactivity Monitor
Emergency Action Levels**

REVISION: 8

No.:

**ERS-MPD-93-008
Attachment 3**

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2HVS-RQ101 Ventilation Vent (cont.):

Monitor efficiencies from ERS-SFL-86-025										Upstream filtration (iodines reduced 0.01)										X/Q = 1.03E-04 s/m ³									
2HVS-RQ1-101B										Release Flow Rate = 2.37E+04 cfm										Release (uCi/s) CF for TEDE = 1.98E+05									
										1.12E+07 cc/s										Release (uCi/s) CF for Child Thyroid = 1.09E+05									
Isotope	U1 & U2 RCCA (Ci)	Activity Ratio	DCF (mrem-m ³ /uCi-y)	Effective DCF	Release (uCi/s)	Release (uCi/cc)	Efficiency (cpm/uCi/cc)	Count Rate (cpm/mrem/h)	DCF (mrem-m ³ /uCi-y)	Effective DCF	Release (uCi/s)	Release (uCi/cc)	Efficiency (cpm/uCi/cc)	Count Rate (cpm/mrem/h)	DCF (mrem-m ³ /uCi-y)	Effective DCF	Release (uCi/s)	Release (uCi/cc)	Efficiency (cpm/uCi/cc)	Count Rate (cpm/mrem/h)									
Kr-83m	3.82E+01	2.48E-03	4.69E-01	1.16E-03	4.89E+02	4.37E-05	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.70E+02	2.42E-05	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.70E+02	2.42E-05	0.00E+00	0.00E+00									
Kr-85m	9.12E+01	5.91E-03	8.17E+02	4.83E+00	1.17E+03	1.04E-04	3.20E+07	3.34E+03	0.00E+00	0.00E+00	6.45E+02	5.77E-05	3.20E+07	1.85E+03	0.00E+00	0.00E+00	6.45E+02	5.77E-05	3.20E+07	1.85E+03									
Kr-85	2.22E+02	1.44E-02	1.12E+01	1.61E-01	2.84E+03	2.54E-04	3.60E+07	9.15E+03	0.00E+00	0.00E+00	1.57E+03	1.40E-04	3.60E+07	5.05E+03	0.00E+00	0.00E+00	1.57E+03	1.40E-04	3.60E+07	5.05E+03									
Kr-87	5.22E+01	3.38E-03	4.47E+03	1.51E+01	6.68E+02	5.97E-05	3.73E+07	2.23E+03	0.00E+00	0.00E+00	3.69E+02	3.30E-05	3.73E+07	1.23E+03	0.00E+00	0.00E+00	3.69E+02	3.30E-05	3.73E+07	1.23E+03									
Kr-88	1.63E+02	1.06E-02	1.13E+04	1.19E+02	2.09E+03	1.87E-04	3.05E+07	5.70E+03	0.00E+00	0.00E+00	1.15E+03	1.03E-04	3.05E+07	3.15E+03	0.00E+00	0.00E+00	1.15E+03	1.03E-04	3.05E+07	3.15E+03									
Kr-89	3.76E+00	2.44E-04	1.02E+04	2.49E+00	4.81E+01	4.30E-06	3.72E+07	1.60E+02	0.00E+00	0.00E+00	2.65E+01	2.38E-06	3.72E+07	8.84E+01	0.00E+00	0.00E+00	2.65E+01	2.38E-06	3.72E+07	8.84E+01									
Xe-131m	1.86E+02	1.21E-02	4.29E+01	5.17E-01	2.38E+03	2.13E-04	2.44E+07	5.20E+03	0.00E+00	0.00E+00	1.32E+03	1.18E-04	2.44E+07	2.87E+03	0.00E+00	0.00E+00	1.32E+03	1.18E-04	2.44E+07	2.87E+03									
Xe-133m	2.23E+02	1.45E-02	1.49E+02	2.15E+00	2.86E+03	2.55E-04	2.86E+07	7.30E+03	0.00E+00	0.00E+00	1.58E+03	1.41E-04	2.86E+07	4.03E+03	0.00E+00	0.00E+00	1.58E+03	1.41E-04	2.86E+07	4.03E+03									
Xe-133	1.32E+04	8.56E-01	1.76E+02	1.51E+02	1.69E+05	1.51E-02	1.80E+07	2.72E+05	0.00E+00	0.00E+00	9.34E+04	8.35E-03	1.80E+07	1.50E+05	0.00E+00	0.00E+00	9.34E+04	8.35E-03	1.80E+07	1.50E+05									
Xe-135m	1.42E+02	9.21E-03	2.15E+03	1.98E+01	1.82E+03	1.63E-04	7.22E+06	1.17E+03	0.00E+00	0.00E+00	1.00E+03	8.98E-05	7.22E+06	6.48E+02	0.00E+00	0.00E+00	1.00E+03	8.98E-05	7.22E+06	6.48E+02									
Xe-135	1.06E+03	6.87E-02	1.25E+03	8.59E+01	1.36E+04	1.21E-03	3.86E+07	4.68E+04	0.00E+00	0.00E+00	7.50E+03	6.70E-04	3.86E+07	2.58E+04	0.00E+00	0.00E+00	7.50E+03	6.70E-04	3.86E+07	2.58E+04									
Xe-137	9.68E+00	6.28E-04	9.55E+02	5.99E-01	1.24E+02	1.11E-05	3.78E+07	4.19E+02	0.00E+00	0.00E+00	6.85E+01	6.12E-06	3.78E+07	2.31E+02	0.00E+00	0.00E+00	6.85E+01	6.12E-06	3.78E+07	2.31E+02									
Xe-138	3.38E+01	2.19E-03	6.27E+03	1.37E+01	4.33E+02	3.87E-05	3.52E+07	1.36E+03	0.00E+00	0.00E+00	2.39E+02	2.14E-05	3.52E+07	7.53E+02	0.00E+00	0.00E+00	2.39E+02	2.14E-05	3.52E+07	7.53E+02									
I-131	4.53E-01	2.94E-05	4.66E+05	1.37E+01	5.80E+00	5.18E-07	2.98E+05	1.54E-01	2.44E+07	7.17E+02	3.20E+00	2.86E-07	2.98E+05	8.52E-02	2.44E+07	7.17E+02	3.20E+00	2.86E-07	2.98E+05	8.52E-02									
I-132	1.56E-02	1.01E-06	4.33E+04	4.38E-02	2.00E-01	1.79E-08	3.72E+05	6.64E-03	2.90E+05	2.93E-01	1.10E-01	9.87E-09	3.72E+05	3.67E-03	2.90E+05	2.93E-01	1.10E-01	9.87E-09	3.72E+05	3.67E-03									
I-133	1.55E-01	1.00E-05	1.28E+05	1.29E+00	1.98E+00	1.77E-07	3.69E+05	6.54E-02	5.77E+06	5.80E+01	1.10E+00	9.80E-08	3.69E+05	3.61E-02	5.77E+06	5.80E+01	1.10E+00	9.80E-08	3.69E+05	3.61E-02									
I-134	9.29E-03	6.02E-07	2.69E+04	1.62E-02	1.19E-01	1.06E-08	3.78E+05	4.01E-03	7.60E+04	4.58E-02	6.57E-02	5.88E-09	3.78E+05	2.22E-03	7.60E+04	4.58E-02	6.57E-02	5.88E-09	3.78E+05	2.22E-03									
I-135	5.80E-02	3.76E-06	7.10E+04	2.67E-01	7.43E-01	6.64E-08	3.49E+05	2.31E-02	1.19E+06	4.47E+00	4.10E-01	3.67E-08	3.49E+05	1.28E-02	1.19E+06	4.47E+00	4.10E-01	3.67E-08	3.49E+05	1.28E-02									
	1.54E+04			4.31E+02				3.55E+05		7.79E+02				1.96E+05															
Monitor conversion factor CF11 (uCi/cc-cpm) = 3.65E-08																													

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X/Q = 7.35E-05 s/m³

1.17E+05

3.29E+05

Release (uCi/s) CF for TEDE =

Release (uCi/s) CF for Child Thyroid =

Upstream filtration (Iodines reduced 0.01)

Release Flow Rate = 3.06E+04 cfm

1.44E+07 cc/s

Monitor efficiencies from ERS-SFL-86-028

2HVS-RQI-112B

Release Rate = 0.00E+00 cpm										Release Rate = 0.00E+00 cpm																																																	
U2 only										U2 only																																																	
Isotope	SGTR	Activity Ratio	DCF	Effective DCF	Release (uCi/s)	Release (uCi/cc)	Efficiency (cpm/uCi/cc)	Count Rate (cpm/mrem/h)	DCF	Effective DCF	Release (uCi/s)	Release (uCi/cc)	Efficiency (cpm/uCi/cc)	Count Rate (cpm/mrem/h)	DCF	Effective DCF	Release (uCi/s)	Release (uCi/cc)	Efficiency (cpm/uCi/cc)	Count Rate (cpm/mrem/h)																																							
Kr-83m	2.87E+00	5.15E-04	4.69E-01	2.41E-04	6.01E+01	1.15E-08	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.69E+02	1.17E-05	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.69E+02	1.17E-05	0.00E+00	0.00E+00																																							
Kr-85m	8.79E+00	1.58E-03	8.17E-02	1.29E+00	1.84E+02	1.28E-05	3.20E+07	4.08E+02	0.00E+00	0.00E+00	5.19E+02	3.60E-05	3.20E+07	1.15E+03	0.00E+00	0.00E+00	5.19E+02	3.60E-05	3.20E+07	1.15E+03																																							
Kr-85	6.29E+02	1.49E-01	1.12E+01	1.66E+00	1.73E+04	1.20E-03	3.60E+07	4.33E+04	0.00E+00	0.00E+00	4.89E+04	3.39E-03	3.60E+07	1.22E+05	0.00E+00	0.00E+00	4.89E+04	3.39E-03	3.60E+07	1.22E+05																																							
Kr-87	4.91E+00	8.80E-04	4.47E-03	3.94E+00	1.03E+02	7.12E-06	3.73E+07	2.66E+02	0.00E+00	0.00E+00	2.79E+02	2.01E-05	3.73E+07	7.50E+02	0.00E+00	0.00E+00	2.79E+02	2.01E-05	3.73E+07	7.50E+02																																							
Kr-88	1.57E+01	2.82E-03	1.13E-04	3.18E-01	3.28E+02	2.28E-05	3.05E+07	6.95E+02	0.00E+00	0.00E+00	9.27E+02	6.43E-05	3.05E+07	1.96E+03	0.00E+00	0.00E+00	9.27E+02	6.43E-05	3.05E+07	1.96E+03																																							
Kr-89	5.02E+02	9.32E-08	1.02E+04	9.51E-02	1.09E+00	7.54E-08	3.72E+07	2.81E+00	0.00E+00	0.00E+00	3.07E+00	2.13E-07	3.72E+07	7.92E+00	0.00E+00	0.00E+00	3.07E+00	2.13E-07	3.72E+07	7.92E+00																																							
Xe-131m	3.42E+01	6.13E-03	4.29E+01	2.63E-01	7.16E+02	4.96E-05	2.44E+07	1.21E+03	0.00E+00	0.00E+00	2.02E+03	1.40E-04	2.44E+07	3.42E+03	0.00E+00	0.00E+00	2.02E+03	1.40E-04	2.44E+07	3.42E+03																																							
Xe-133m	3.25E+01	5.83E-03	1.49E+02	8.68E-01	6.80E+02	4.71E-05	2.88E+07	1.35E+03	0.00E+00	0.00E+00	1.92E+03	1.33E-04	2.88E+07	3.80E+03	0.00E+00	0.00E+00	1.92E+03	1.33E-04	2.88E+07	3.80E+03																																							
Xe-133	2.13E+03	3.82E-01	1.76E+02	6.72E+01	4.46E+04	3.09E-03	1.80E+07	5.56E+04	0.00E+00	0.00E+00	1.29E+05	8.72E-03	1.80E+07	1.57E+05	0.00E+00	0.00E+00	1.29E+05	8.72E-03	1.80E+07	1.57E+05																																							
Xe-135m	2.11E+03	3.78E-01	1.25E+03	8.13E+02	4.41E+04	3.06E-03	7.22E+06	2.21E+04	0.00E+00	0.00E+00	1.25E+05	8.84E-03	7.22E+06	6.23E+04	0.00E+00	0.00E+00	1.25E+05	8.84E-03	7.22E+06	6.23E+04																																							
Xe-135	4.07E+02	7.30E-02	2.15E+03	9.12E+01	8.52E+03	5.90E-04	3.86E+07	2.28E+04	0.00E+00	0.00E+00	2.40E+04	1.67E-03	3.86E+07	6.42E+04	0.00E+00	0.00E+00	2.40E+04	1.67E-03	3.86E+07	6.42E+04																																							
Xe-137	1.57E-01	2.82E-05	9.55E-02	2.69E-02	3.28E+00	2.28E-07	3.78E+07	8.61E+00	0.00E+00	0.00E+00	9.27E+00	6.43E-07	3.78E+07	2.43E-01	0.00E+00	0.00E+00	9.27E+00	6.43E-07	3.78E+07	2.43E-01																																							
Xe-138	1.56E+00	2.80E-04	6.27E-03	1.75E+00	3.26E+01	2.26E-06	3.52E+07	7.97E+01	0.00E+00	0.00E+00	9.21E+01	6.38E-06	3.52E+07	2.25E+02	0.00E+00	0.00E+00	9.21E+01	6.38E-06	3.52E+07	2.25E+02																																							
I-131	5.94E-02	1.07E-05	4.66E+05	4.96E+00	1.24E+00	8.62E-08	2.98E+05	2.56E-02	2.44E+07	2.60E+02	3.51E+00	2.43E-07	2.98E+05	7.23E-02	2.44E+07	2.60E+02	3.51E+00	2.43E-07	2.98E+05	7.23E-02																																							
I-132	2.04E-02	3.66E-06	4.33E+04	1.58E-01	4.27E-01	9.62E-08	3.72E+05	1.10E-02	2.90E+05	1.06E+00	1.20E+00	3.35E-08	3.72E+05	3.11E-02	2.90E+05	1.06E+00	1.20E+00	3.35E-08	3.72E+05	3.11E-02																																							
I-133	8.78E-02	1.57E-05	1.28E+05	2.01E+00	1.83E+00	1.27E-07	3.69E+05	4.68E-02	5.77E+06	9.06E-01	5.17E+00	3.59E-07	3.69E+05	1.32E-01	5.77E+06	9.06E-01	5.17E+00	3.59E-07	3.69E+05	1.32E-01																																							
I-134	9.49E-03	1.70E-08	2.69E+04	4.58E-02	1.99E-01	1.38E-08	3.78E+05	5.20E-03	7.60E+04	1.29E-01	1.50E-01	3.88E-08	3.78E+05	1.47E-02	7.60E+04	1.29E-01	1.50E-01	3.88E-08	3.78E+05	1.47E-02																																							
I-135	4.84E-02	8.68E-06	7.10E+04	6.16E-01	1.01E+00	7.02E-08	3.49E+05	2.45E-02	1.19E+06	1.03E+01	2.86E+00	1.98E-07	3.49E+05	6.90E-02	1.19E+06	1.03E+01	2.86E+00	1.98E-07	3.49E+05	6.90E-02																																							
	5.58E+03			1.02E+03				1.48E+05		3.62E+02		2.26E-02		4.17E+05		3.62E+02		2.26E-02		4.17E+05																																							
Monitor conversion factor CF11 (uCi/cc-cpm) = 5.56E-08																																																											
uCi/cc										TEDE cpm										uCi/cc Child Thyroid cpm																																							
8.22E-02										1.00E+01										1.48E+06										1.16E+00										5.00E+01										2.08E+07									
8.22E-01										1.00E+02										1.48E+07										1.16E+01										5.00E+02										2.08E+08									
8.22E+00										1.00E+03										1.48E+08										1.16E+02										5.00E+03										2.08E+09									

Iodines reduced by X100 for filtration

uCi/cc	TEDE	cpm	uCi/cc	Child Thyroid	cpm
4.20E-02	1.00E+01	1.72E+06	1.19E-02	5.00E+01	4.88E+05
4.20E-01	1.00E+02	1.72E+07	1.19E-01	5.00E+02	4.88E+06
4.20E+00	1.00E+03	1.72E+08	1.19E+00	5.00E+03	4.88E+07

Beaver Valley Power Station

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**BVPS-U2 Gaseous Radioactivity Monitor
Emergency Action Levels**

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2HVS*RA109B Low Range SLCRS (continued):

Monitor efficiencies from ERS-SFL-86-026				Upstream filtration (iodines reduced 0.01)				X/Q = 9.24E-05 s/m ³																							
2HVS*ROI-109B				Release Flow Rate = 5.90E+04 cfm				Release (uCi/s) CF for TEDE = 7.15E+05																							
				2.78E+07 cc/s				Release (uCi/s) CF for Child Thyroid = 3.95E+04																							
Isotope	U2 only LOCA RCS (Ci)	Activity Ratio	DCF (mrem-m ³ /uCi-y)	Effective DCF	Release (uCi/s)	Release (uCi/cc)	Efficiency (cpm/uCi/cc)	Count Rate (cpm/mrem/h)	DCF (mrem-m ³ /uCi-y)	Effective DCF	Release (uCi/s)	Release (uCi/cc)	Efficiency (cpm/uCi/cc)	Count Rate (cpm/mrem/h)	DCF (mrem-m ³ /uCi-y)	Effective DCF	Release (uCi/s)	Release (uCi/cc)	Efficiency (cpm/uCi/cc)	Count Rate (cpm/mrem/h)											
Kr-83m	1.34E-03	2.27E-05	4.69E+01	1.07E-05	1.63E+01	5.84E-07	0.00E+00	0.00E+00	0.00E+00	0.00E+00	8.98E-01	3.22E-08	0.00E+00	0.00E+00	0.00E+00	0.00E+00	8.98E-01	3.22E-08	0.00E+00	0.00E+00											
Kr-85m	5.53E-03	9.39E-05	8.17E+02	7.67E-02	6.71E+01	2.41E-06	5.83E+07	1.41E+02	0.00E+00	0.00E+00	3.71E+00	1.33E-07	5.83E+07	7.76E+00	0.00E+00	0.00E+00	3.71E+00	1.33E-07	5.83E+07	7.76E+00											
Kr-85	3.27E+01	5.55E-01	1.12E+01	6.22E+00	3.97E+05	1.42E-02	7.19E+07	1.02E+06	0.00E+00	0.00E+00	2.19E+04	7.87E-04	7.19E+07	5.66E+04	0.00E+00	0.00E+00	2.19E+04	7.87E-04	7.19E+07	5.66E+04											
Kr-87	7.04E-04	1.19E-05	4.47E+03	5.34E-02	8.54E+00	3.07E-07	8.85E+07	2.71E+01	0.00E+00	0.00E+00	4.72E-01	1.69E-08	8.85E+07	1.50E+00	0.00E+00	0.00E+00	4.72E-01	1.69E-08	8.85E+07	1.50E+00											
Kr-88	6.02E-03	1.02E-04	1.13E+04	1.15E+00	7.30E+01	2.62E-06	6.80E+07	1.78E+02	0.00E+00	0.00E+00	4.03E+00	1.45E-07	6.80E+07	9.86E+00	0.00E+00	0.00E+00	4.03E+00	1.45E-07	6.80E+07	9.86E+00											
Kr-89	2.92E-08	4.96E-10	1.02E+04	5.06E-06	3.54E-04	1.27E-11	8.73E+07	1.11E-03	0.00E+00	0.00E+00	1.96E-05	7.03E-13	8.73E+07	6.14E+05	0.00E+00	0.00E+00	1.96E-05	7.03E-13	8.73E+07	6.14E+05											
Xe-131m	1.18E+00	2.00E-02	4.29E+01	8.59E-01	1.43E+04	5.14E-04	4.61E+04	2.37E+01	0.00E+00	0.00E+00	7.91E+02	2.84E-05	4.61E+04	1.31E+00	0.00E+00	0.00E+00	7.91E+02	2.84E-05	4.61E+04	1.31E+00											
Xe-133m	1.81E-01	3.07E-03	1.49E+02	4.58E-01	2.20E+03	7.88E-05	6.06E+04	4.78E+00	0.00E+00	0.00E+00	1.21E+02	4.36E-06	6.06E+04	2.64E-01	0.00E+00	0.00E+00	1.21E+02	4.36E-06	6.06E+04	2.64E-01											
Xe-133	2.48E+01	4.21E-01	1.76E+02	7.41E+01	3.01E+05	1.08E-02	2.94E+07	3.18E+05	0.00E+00	0.00E+00	1.66E+04	5.97E-04	2.94E+07	1.75E+04	0.00E+00	0.00E+00	1.66E+04	5.97E-04	2.94E+07	1.75E+04											
Xe-135m	1.21E-02	2.05E-04	2.15E+03	4.42E-01	1.47E+02	5.27E-06	1.55E+04	8.16E-02	0.00E+00	0.00E+00	8.11E+00	2.91E-07	1.55E+04	4.51E+03	0.00E+00	0.00E+00	8.11E+00	2.91E-07	1.55E+04	4.51E+03											
Xe-135	1.86E-02	3.16E-04	1.25E+03	3.95E-01	2.26E+02	8.10E-06	7.48E+07	6.06E+02	0.00E+00	0.00E+00	1.25E+01	4.48E-07	7.48E+07	3.35E+01	0.00E+00	0.00E+00	1.25E+01	4.48E-07	7.48E+07	3.35E+01											
Xe-137	1.19E-07	2.02E-09	9.55E+02	1.93E-06	1.44E-03	5.18E-11	9.07E+07	4.70E-03	0.00E+00	0.00E+00	7.97E-05	2.86E-12	9.07E+07	2.60E-04	0.00E+00	0.00E+00	7.97E-05	2.86E-12	9.07E+07	2.60E-04											
Xe-138	1.32E-05	2.24E-07	6.27E+03	1.40E-03	1.60E-01	5.75E-09	7.74E+07	4.45E-01	0.00E+00	0.00E+00	8.85E-03	3.18E-10	7.74E+07	2.46E-02	0.00E+00	0.00E+00	8.85E-03	3.18E-10	7.74E+07	2.46E-02											
I-131	5.41E-03	9.18E-05	4.86E+05	4.28E+01	6.56E-01	2.36E-06	6.23E+05	1.47E+00	2.44E+07	2.24E+03	3.63E+00	1.30E-07	6.23E+05	8.11E-02	2.90E+05	1.78E+01	2.43E+00	8.71E-08	7.91E+05	6.89E-02											
I-132	3.62E-03	6.14E-05	4.33E+04	2.66E+00	4.39E+01	1.58E-06	7.91E+05	1.25E+00	2.90E+05	1.78E+01	2.43E+00	8.71E-08	7.91E+05	6.89E-02	2.90E+05	1.78E+01	2.43E+00	8.71E-08	7.91E+05	6.89E-02											
I-133	1.38E-03	2.34E-05	1.28E+05	3.00E+00	1.67E+01	6.01E-07	7.67E+05	4.61E-01	5.77E+06	1.35E+02	9.25E-01	3.32E-08	7.67E+05	2.55E-02	7.60E+04	4.66E-02	2.42E-02	8.69E-10	8.16E+05	7.09E-04											
I-134	3.61E-05	6.13E-07	2.68E+04	1.65E-02	4.38E-01	1.57E-08	8.16E+05	1.28E-02	7.60E+04	4.66E-02	2.42E-02	8.69E-10	8.16E+05	7.09E-04	1.19E+06	7.59E+00	2.52E-01	9.05E-09	7.32E+05	6.62E-03											
I-135	3.76E-04	6.38E-06	7.10E+04	4.53E-01	4.56E+00	1.64E-07	7.32E+05	1.20E-01	1.19E+06	7.59E+00	2.52E-01	9.05E-09	7.32E+05	6.62E-03	2.40E+03	2.40E+03	2.40E+03	2.40E+03	2.40E+03	2.40E+03											
	5.89E+01			1.33E+02				1.34E+06																							
Monitor conversion factor CF11 (uCi/cc-cpm) = 2.45E-08								uCi/cc				TEDE				cpm				uCi/cc				Child Thyroid				cpm			
								3.29E-01				1.00E+01				1.34E+07				9.09E-02				5.00E+01				3.71E+06			
								3.29E+00				1.00E+02				1.34E+08				9.09E-01				5.00E+02				3.71E+07			
								3.29E+01				1.00E+03				1.34E+09				9.09E+00				5.00E+03				3.71E+08			

Monitor efficiencies from ERS-SFL-86-026			Upstream filtration (iodines reduced 0.01)					Release (uCi/s) CF for TEDE =					X/Q =	9.24E-05	s/m ³
2HVS-RQI-109B			Release Flow Rate = 5.90E+04 cfm					Release (uCi/s) CF for Child Thyroid =					5.24E+05	2.48E+05	
Isotope	U1 & U2 FHA (Ci)	Activity Ratio	DCF (mrem-m ³ /uCi-y)	Effective DCF	Release (uCi/s)	Release (uCi/cc)	Efficiency (cpm/uCi/cc)	Count Rate (cpm/mrem/h)	DCF (mrem-m ³ /uCi-y)	Effective DCF	Release (uCi/s)	Release (uCi/cc)	Efficiency (cpm/uCi/cc)	Count Rate (cpm/mrem/h)	
Kr-83m	0.00E+00	0.00E+00	4.69E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	
Kr-85m	1.04E-03	3.07E-08	8.17E+02	2.50E-05	1.61E-02	5.77E-10	5.83E+07	3.36E-02	0.00E+00	0.00E+00	7.61E-03	2.73E-10	5.83E+07	1.59E-02	
Kr-85	4.78E+02	1.41E-02	1.12E+01	1.58E-01	7.38E+03	2.65E-04	7.19E+07	1.91E+04	0.00E+00	0.00E+00	3.50E+03	1.26E-04	7.19E+07	9.03E+03	
Kr-87	0.00E+00	0.00E+00	4.47E+03	0.00E+00	0.00E+00	0.00E+00	8.85E+07	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	8.85E+07	0.00E+00	
Kr-88	0.00E+00	0.00E+00	1.13E+04	0.00E+00	0.00E+00	0.00E+00	6.80E+07	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	6.80E+07	0.00E+00	
Kr-89	0.00E+00	0.00E+00	1.02E+04	0.00E+00	0.00E+00	0.00E+00	8.73E+07	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	8.73E+07	0.00E+00	
Xe-131m	4.66E+02	1.37E-02	4.29E+01	5.89E-01	7.19E+03	2.58E-04	4.61E+04	1.19E+01	0.00E+00	0.00E+00	3.41E+03	1.22E-04	4.61E+04	5.65E+00	
Xe-133m	6.16E+02	1.82E-02	1.49E+02	2.71E+00	9.51E+03	3.41E-04	6.06E+04	2.07E+01	0.00E+00	0.00E+00	4.51E+03	1.62E-04	6.06E+04	9.81E+00	
Xe-133	3.23E+04	9.52E-01	1.76E+02	1.68E-02	4.99E+05	1.79E-02	2.94E+07	5.26E+05	0.00E+00	0.00E+00	2.36E+05	8.49E-03	2.94E+07	2.50E+05	
Xe-135m	2.65E+00	7.81E-05	2.15E+03	1.68E-01	4.09E+01	1.47E-06	1.55E+04	2.28E-02	0.00E+00	0.00E+00	1.94E+01	6.96E-07	1.55E+04	1.08E-02	
Xe-135	6.10E+01	1.80E-03	1.25E+03	2.25E+00	9.42E-02	3.38E-05	7.48E+07	2.53E+03	0.00E+00	0.00E+00	4.46E-02	1.60E-05	7.48E+07	1.20E+03	
Xe-137	0.00E+00	0.00E+00	9.55E+02	0.00E+00	0.00E+00	0.00E+00	9.07E+07	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	9.07E+07	0.00E+00	
Xe-138	0.00E+00	0.00E+00	6.27E+03	0.00E+00	0.00E+00	0.00E+00	7.74E+07	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	7.74E+07	0.00E+00	
I-131	5.20E-01	1.53E-05	4.66E+05	7.14E+00	8.03E+00	2.88E-07	6.23E+05	1.80E-01	2.44E+07	3.74E+02	3.81E+00	1.37E-07	6.23E+05	8.52E-02	
I-132	2.52E-01	7.43E-06	4.33E+04	3.22E-01	3.89E+00	1.40E-07	7.91E+05	1.11E-01	2.90E+05	2.15E+00	1.84E+00	6.62E-08	7.91E+05	5.24E-02	
I-133	3.35E-02	9.87E-07	1.28E+05	1.26E-01	5.17E-01	1.86E-08	6.67E+05	1.42E-02	5.77E+06	5.70E+00	2.45E-01	8.80E-09	6.67E+05	6.75E-03	
I-134	0.00E+00	0.00E+00	2.69E+04	0.00E+00	0.00E+00	0.00E+00	8.16E+05	0.00E+00	7.60E+04	0.00E+00	0.00E+00	0.00E+00	8.16E+05	0.00E+00	
I-135	2.23E-05	6.57E-10	7.10E+04	4.67E-05	3.44E-04	1.24E-11	7.32E+05	9.05E-06	1.19E+06	7.82E-04	1.63E-04	5.88E-12	7.32E+05	4.29E-06	
	3.39E+04			1.81E+02				5.48E+05		3.82E+02		8.92E-03		2.60E+05	
Monitor conversion factor CF11 (uCi/cc-cpm) = 2.45E-08									uCi/cc	TEDE	cpm	uCi/cc	Child Thyroid	cpm	
									1.34E-01	1.00E+01	5.48E+08	3.18E-01	5.00E+01	1.30E+07	
									1.34E+00	1.00E+02	5.48E+07	3.18E+00	5.00E+02	1.30E+08	
									1.34E+01	1.00E+03	5.48E+06	3.18E+01	5.00E+03	1.30E+09	

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2HVS*RQ1109B Low Range SLCRS (continued):

Monitor efficiencies from ERS-SFL-86-026
2HVS*RQ1-109B

Upstream filtration (iodines reduced 0.01)
Release Flow Rate = 5.90E+04 cfm : 2.78E+07 cc/s

X/Q = 9.24E-05 sm³
Release (uCi/s) CF for TEDE = 2.20E+06
Release (uCi/s) CF for Child Thyroid = 1.22E+05

Isotope	U1 & U2 RCCA (Ci)	Activity Ratio	DCF (mrem-m ³ /uCi-y)	Effective DCF	Release (uCi/s)	Release (uCi/cc)	Efficiency (cpm/uCi/cc)	Count Rate (cpm/mrem/h)	DCF (mrem-m ³ /uCi-y)	Effective DCF	Release (uCi/s)	Release (uCi/cc)	Efficiency (cpm/uCi/cc)	Count Rate (cpm/mrem/h)
Kr-83m	3.82E+01	2.48E-03	4.69E-01	1.16E-03	5.45E+02	1.96E-05	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.01E+02	1.08E-05	0.00E+00	0.00E+00
Kr-85m	9.12E+01	5.91E-03	8.17E+02	4.83E+00	1.30E+03	4.67E-05	5.83E+07	2.73E+03	0.00E+00	0.00E+00	7.19E+02	2.58E-05	5.83E+07	1.51E+03
Kr-85	2.22E+02	1.44E-02	1.12E+01	1.61E-01	3.17E+03	1.14E-04	7.19E+07	8.18E+03	0.00E+00	0.00E+00	1.75E+03	6.29E-05	7.19E+07	4.52E+03
Kr-87	5.22E+01	3.38E-03	4.47E+03	1.51E+01	7.45E+02	2.68E-05	8.85E+07	2.37E+03	0.00E+00	0.00E+00	4.12E+02	1.48E-05	8.85E+07	1.31E+03
Kr-88	1.63E+02	1.06E-02	1.13E+04	1.19E+02	2.33E+03	8.35E-05	6.80E+07	5.68E+03	0.00E+00	0.00E+00	1.29E+03	4.62E-05	6.80E+07	3.14E+03
Kr-89	3.76E+00	2.44E-04	1.02E+04	2.49E+00	5.37E+01	1.93E-06	8.73E+07	1.68E+02	0.00E+00	0.00E+00	2.97E+01	1.06E-06	8.73E+07	9.30E+01
Xe-131m	1.86E+02	1.21E-02	4.29E+01	5.17E-01	2.65E+03	9.53E-05	4.61E+04	4.40E+00	0.00E+00	0.00E+00	1.47E+03	5.27E-05	4.61E+04	2.43E+00
Xe-133m	2.23E+02	1.45E-02	1.49E+02	2.15E+00	3.18E+03	1.14E-04	6.06E+04	6.93E+00	0.00E+00	0.00E+00	1.76E+03	6.32E-05	6.06E+04	3.83E+00
Xe-133	1.32E+04	8.56E-01	1.76E+02	1.51E+02	1.88E+05	6.77E-03	2.94E+07	1.99E+05	0.00E+00	0.00E+00	1.04E+05	3.74E-03	2.94E+07	1.10E+05
Xe-135m	1.42E+02	9.21E-03	2.15E+03	1.98E+01	2.03E+03	7.28E-05	1.55E+04	1.13E+00	0.00E+00	0.00E+00	1.12E+03	4.02E-05	1.55E+04	6.23E-01
Xe-135	1.06E+03	6.87E-02	1.25E+03	8.59E+01	1.51E+04	5.43E-04	7.48E+07	4.06E+04	0.00E+00	0.00E+00	8.36E+03	3.00E-04	7.48E+07	2.24E+04
Xe-137	9.68E+00	6.28E-04	9.55E+02	5.99E-01	1.38E+02	4.96E-06	9.07E+07	4.50E+02	0.00E+00	0.00E+00	7.63E+01	2.74E-06	9.07E+07	2.49E+02
Xe-138	3.38E+01	2.19E-03	6.27E+03	1.37E+01	4.82E+02	1.73E-05	7.74E+07	1.34E+03	0.00E+00	0.00E+00	2.67E+02	9.57E-06	7.74E+07	7.41E+02
I-131	4.53E-01	2.94E-05	4.66E+05	1.37E+01	6.47E+00	2.32E-07	6.23E+05	1.45E-01	2.44E+07	7.17E+02	3.57E+00	1.28E-07	6.23E+05	7.99E-02
I-132	1.56E-02	1.01E-06	4.33E+04	4.38E-02	2.23E-01	8.00E-09	7.91E+05	6.33E-03	2.90E+05	2.93E-01	1.23E-01	4.42E-09	7.91E+05	3.50E-03
I-133	1.55E-01	1.00E-05	1.28E+05	1.29E+00	2.21E+00	7.94E-08	7.67E+05	6.09E-02	5.77E+06	5.80E+01	1.22E+00	4.39E-08	7.67E+05	3.37E-02
I-134	9.29E-03	6.02E-07	2.69E+04	1.62E-02	1.33E-01	4.76E-09	8.16E+05	3.88E-03	7.60E+04	4.58E-02	7.33E-02	2.63E-09	8.16E+05	2.15E-03
I-135	5.80E-02	3.76E-06	7.10E+04	2.67E-01	8.26E-01	2.97E-08	7.32E+05	2.16E-02	1.19E+06	4.47E+00	4.57E-01	1.64E-08	7.32E+05	1.20E-02
	1.54E+04			4.31E+02				2.60E+05		7.79E+02		4.37E-03		1.44E+05

Monitor conversion factor CF11 (uCi/cc-cpm) = 2.45E-08

uCi/cc	TEDE	cpm	uCi/cc	Child Thyroid	cpm
6.38E-02	1.00E+01	2.60E+06	1.76E-01	5.00E+01	7.20E+06
6.38E-01	1.00E+02	2.60E+07	1.76E+00	5.00E+02	7.20E+07
6.38E+00	1.00E+03	2.60E+08	1.76E+01	5.00E+03	7.20E+08

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2HVS*ROI109C Mid Range SLCRS:

Monitor efficiencies from ERS-SFL-86-026										Upstream filtration (Iodines reduced 0.01)										X/Q = 9.24E-05 s/m ³													
2HVS*ROI-109C										Release Flow Rate = 5.90E+04 cfm : 2.78E+07 cc/s										Release (uCi/s) CF for TEDE = 1.31E+05													
										Release (uCi/s) CF for Child Thyroid = 5.75E+03																							
Isotope	U1 & U2 LOCA Gap (Ci)	Activity Ratio	DCF (mrem-m ³ /uCi-y)	Effective DCF	Release (uCi/s)	Release (uCi/cc)	Efficiency (cpm/uCi/cc)	Count Rate (cpm/mrem/h)	DCF (mrem-m ³ /uCi-y)	Effective DCF	Release (uCi/s)	Release (uCi/cc)	Efficiency (cpm/uCi/cc)	Count Rate (cpm/mrem/h)	DCF (mrem-m ³ /uCi-y)	Effective DCF	Release (uCi/s)	Release (uCi/cc)	Efficiency (cpm/uCi/cc)	Count Rate (cpm/mrem/h)	DCF (mrem-m ³ /uCi-y)	Effective DCF	Release (uCi/s)	Release (uCi/cc)	Efficiency (cpm/uCi/cc)	Count Rate (cpm/mrem/h)	DCF (mrem-m ³ /uCi-y)	Effective DCF	Release (uCi/s)	Release (uCi/cc)	Efficiency (cpm/uCi/cc)	Count Rate (cpm/mrem/h)	
Kr-83m	9.01E+01	2.02E-03	4.69E-01	9.48E-04	2.64E+02	9.50E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.16E+01	4.17E-07	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.16E+01	4.17E-07	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.16E+01	4.17E-07	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.16E+01	4.17E-07	0.00E+00	0.00E+00
Kr-85m	2.21E+02	4.96E-03	8.17E+02	4.05E+00	6.49E+02	2.33E-05	4.88E+04	1.14E+00	0.00E+00	0.00E+00	2.85E+01	1.02E-06	4.88E+04	4.99E-02	0.00E+00	0.00E+00	0.00E+00	2.85E+01	1.02E-06	4.88E+04	4.99E-02	0.00E+00	0.00E+00	2.85E+01	1.02E-06	4.88E+04	4.99E-02	0.00E+00	0.00E+00	2.85E+01	1.02E-06	4.88E+04	4.99E-02
Kr-85	1.27E+03	2.85E-02	1.12E+01	3.19E-01	3.73E+03	1.34E-04	1.51E+04	2.02E+00	0.00E+00	0.00E+00	1.64E+02	5.88E-06	1.51E+04	8.88E-02	0.00E+00	0.00E+00	0.00E+00	1.64E+02	5.88E-06	1.51E+04	8.88E-02	0.00E+00	0.00E+00	1.64E+02	5.88E-06	1.51E+04	8.88E-02	0.00E+00	0.00E+00	1.64E+02	5.88E-06	1.51E+04	8.88E-02
Kr-87	8.45E+01	1.89E-03	4.47E+03	8.47E+00	2.48E+02	8.91E-06	1.09E+05	9.71E-01	0.00E+00	0.00E+00	1.09E+01	3.91E-07	1.09E+05	4.27E-02	0.00E+00	0.00E+00	0.00E+00	1.09E+01	3.91E-07	1.09E+05	4.27E-02	0.00E+00	0.00E+00	1.09E+01	3.91E-07	1.09E+05	4.27E-02	0.00E+00	0.00E+00	1.09E+01	3.91E-07	1.09E+05	4.27E-02
Kr-88	3.58E+02	8.03E-03	1.13E+04	9.07E+01	1.05E+03	3.77E-05	4.28E+04	1.61E+00	0.00E+00	0.00E+00	4.62E+01	1.66E-06	4.28E+04	7.10E-02	0.00E+00	0.00E+00	0.00E+00	4.62E+01	1.66E-06	4.28E+04	7.10E-02	0.00E+00	0.00E+00	4.62E+01	1.66E-06	4.28E+04	7.10E-02	0.00E+00	0.00E+00	4.62E+01	1.66E-06	4.28E+04	7.10E-02
Kr-89	7.50E-02	1.68E-06	1.02E+04	1.72E-02	2.20E-01	7.90E-09	1.18E+05	9.33E-04	0.00E+00	0.00E+00	9.67E-03	3.47E-10	1.18E+05	4.10E-05	0.00E+00	0.00E+00	0.00E+00	9.67E-03	3.47E-10	1.18E+05	4.10E-05	0.00E+00	0.00E+00	9.67E-03	3.47E-10	1.18E+05	4.10E-05	0.00E+00	0.00E+00	9.67E-03	3.47E-10	1.18E+05	4.10E-05
Xe-131m	7.26E+02	1.63E-02	4.29E+01	6.98E-01	2.13E+03	7.65E-05	5.74E+03	4.39E-01	0.00E+00	0.00E+00	9.36E+01	3.36E-06	5.74E+03	1.93E-02	0.00E+00	0.00E+00	0.00E+00	9.36E+01	3.36E-06	5.74E+03	1.93E-02	0.00E+00	0.00E+00	9.36E+01	3.36E-06	5.74E+03	1.93E-02	0.00E+00	0.00E+00	9.36E+01	3.36E-06	5.74E+03	1.93E-02
Xe-133m	6.33E+02	1.42E-02	1.49E+02	2.11E+00	1.86E+03	6.67E-05	1.41E+04	9.41E-01	0.00E+00	0.00E+00	8.16E+01	2.93E-06	1.41E+04	4.13E-02	0.00E+00	0.00E+00	0.00E+00	8.16E+01	2.93E-06	1.41E+04	4.13E-02	0.00E+00	0.00E+00	8.16E+01	2.93E-06	1.41E+04	4.13E-02	0.00E+00	0.00E+00	8.16E+01	2.93E-06	1.41E+04	4.13E-02
Xe-133	3.72E+04	8.34E-01	1.76E+02	1.47E+02	1.09E+05	3.92E-03	1.38E+04	5.41E+01	0.00E+00	0.00E+00	4.80E+03	1.72E-04	1.38E+04	2.38E+00	0.00E+00	0.00E+00	0.00E+00	4.80E+03	1.72E-04	1.38E+04	2.38E+00	0.00E+00	0.00E+00	4.80E+03	1.72E-04	1.38E+04	2.38E+00	0.00E+00	0.00E+00	4.80E+03	1.72E-04	1.38E+04	2.38E+00
Xe-135m	1.24E+03	2.78E-02	2.15E+03	5.98E+01	3.64E+03	1.31E-04	1.87E+04	2.44E+00	0.00E+00	0.00E+00	1.60E+02	5.74E-06	1.87E+04	1.07E-01	0.00E+00	0.00E+00	0.00E+00	1.60E+02	5.74E-06	1.87E+04	1.07E-01	0.00E+00	0.00E+00	1.60E+02	5.74E-06	1.87E+04	1.07E-01	0.00E+00	0.00E+00	1.60E+02	5.74E-06	1.87E+04	1.07E-01
Xe-135	2.71E+03	6.08E-02	1.25E+03	7.60E+01	7.95E+03	2.86E-04	4.47E+04	1.28E+01	0.00E+00	0.00E+00	3.49E+02	1.25E-05	4.47E+04	5.61E-01	0.00E+00	0.00E+00	0.00E+00	3.49E+02	1.25E-05	4.47E+04	5.61E-01	0.00E+00	0.00E+00	3.49E+02	1.25E-05	4.47E+04	5.61E-01	0.00E+00	0.00E+00	3.49E+02	1.25E-05	4.47E+04	5.61E-01
Xe-137	2.55E-01	5.72E-06	9.55E+02	5.46E-03	7.48E-01	2.69E-08	1.19E+05	3.20E-03	0.00E+00	0.00E+00	3.29E-02	1.18E-09	1.19E+05	1.41E-04	0.00E+00	0.00E+00	0.00E+00	3.29E-02	1.18E-09	1.19E+05	1.41E-04	0.00E+00	0.00E+00	3.29E-02	1.18E-09	1.19E+05	1.41E-04	0.00E+00	0.00E+00	3.29E-02	1.18E-09	1.19E+05	1.41E-04
Xe-138	7.80E+00	1.75E-04	6.27E+03	1.10E+00	2.29E+01	8.22E-07	8.00E+04	6.58E-02	0.00E+00	0.00E+00	1.01E+00	3.61E-08	8.00E+04	2.89E-03	0.00E+00	0.00E+00	0.00E+00	1.01E+00	3.61E-08	8.00E+04	2.89E-03	0.00E+00	0.00E+00	1.01E+00	3.61E-08	8.00E+04	2.89E-03	0.00E+00	0.00E+00	1.01E+00	3.61E-08	8.00E+04	2.89E-03
I-131	2.73E+01	6.12E-04	4.66E+05	2.65E+02	8.01E+01	2.88E-06	2.16E+02	6.21E-04	2.44E+07	1.49E+04	3.52E+00	1.26E-07	2.16E+02	2.73E-05	2.44E+07	1.49E+04	3.52E+00	1.26E-07	2.16E+02	2.73E-05	2.44E+07	1.49E+04	3.52E+00	1.26E-07	2.16E+02	2.73E-05	2.44E+07	1.49E+04	3.52E+00	1.26E-07	2.16E+02	2.73E-05	
I-132	1.32E+01	2.96E-04	4.33E+04	1.28E+01	3.87E+01	1.39E-06	7.47E+02	1.04E-03	2.90E+05	8.58E+01	1.70E+00	6.11E-08	7.47E+02	4.57E-05	2.90E+05	8.58E+01	1.70E+00	6.11E-08	7.47E+02	4.57E-05	2.90E+05	8.58E+01	1.70E+00	6.11E-08	7.47E+02	4.57E-05	2.90E+05	8.58E+01	1.70E+00	6.11E-08	7.47E+02	4.57E-05	
I-133	1.06E+01	2.38E-04	1.28E+05	3.04E+01	3.11E+01	1.12E-06	5.39E+02	6.02E-04	5.77E+06	1.37E+03	1.37E+00	4.91E-08	5.39E+02	2.65E-05	5.77E+06	1.37E+03	1.37E+00	4.91E-08	5.39E+02	2.65E-05	5.77E+06	1.37E+03	1.37E+00	4.91E-08	5.39E+02	2.65E-05	5.77E+06	1.37E+03	1.37E+00	4.91E-08	5.39E+02	2.65E-05	
I-134	6.51E-01	1.46E-05	2.69E+04	3.93E-01	1.91E+00	6.86E-08	9.41E+02	6.46E-05	7.60E+04	1.11E+00	8.39E-02	3.01E-09	9.41E+02	2.84E-06	7.60E+04	1.11E+00	8.39E-02	3.01E-09	9.41E+02	2.84E-06	7.60E+04	1.11E+00	8.39E-02	3.01E-09	9.41E+02	2.84E-06	7.60E+04	1.11E+00	8.39E-02	3.01E-09	9.41E+02	2.84E-06	
I-135	3.38E+00	7.58E-05	7.10E+04	5.38E+00	9.92E+00	3.56E-07	4.78E+02	1.70E-04	1.19E+06	9.02E+01	4.36E-01	1.57E-08	4.78E+02	7.48E-06	1.19E+06	9.02E+01	4.36E-01	1.57E-08	4.78E+02	7.48E-06	1.19E+06	9.02E+01	4.36E-01	1.57E-08	4.78E+02	7.48E-06	1.19E+06	9.02E+01	4.36E-01	1.57E-08	4.78E+02	7.48E-06	
	4.46E+04			7.24E+02				7.65E+01																									
Monitor conversion factor CF11 (uCi/cc-cpm) = 4.32E-05																																	

Beaver Valley Power Station

Health Physics Technical Position/Evaluation/Calculation

Subject:

**BVPS-U2 Gaseous Radioactivity Monitor
Emergency Action Levels**

Revision: 8

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**ERS-MPD-93-008
Attachment 3**

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2HVS*ROI109C Mid Range SLCRS (continued):

Monitor efficiencies from ERS-SFL-86-026

Upstream filtration (Iodines reduced 0.01)

X/Q = 9.24E-05 s/m³

Release (uCi/s) CF for TEDE = 7.15E+05
Release (uCi/s) CF for Child Thyroid = 3.95E+04

U2 only		Activity Ratio	Effective		Count		Effective		Count		
Isotope	LOCA RCS (Ci)		DCF (mrem-m ³ /uCi-y)	DCF (uCi/s)	Release (uCi/cc)	Efficiency (cpm/uCi/cc)	DCF (mrem-m ³ /uCi-y)	DCF (uCi/s)	Release (uCi/cc)	Efficiency (cpm/uCi/cc)	
Kr-83m	1.34E-03	2.27E-05	4.89E-01	1.07E-05	1.63E-01	5.84E-07	0.00E+00	0.00E+00	8.98E-01	3.22E-08	0.00E+00
Kr-85m	5.53E-03	9.39E-05	8.17E+02	7.67E-02	6.71E+01	2.41E-06	4.88E+04	1.18E-01	0.00E+00	0.00E+00	0.00E+00
Kr-85	3.27E+01	5.55E-01	1.12E+01	6.22E+00	3.97E+05	1.42E-02	1.51E+04	2.15E+02	0.00E+00	0.00E+00	0.00E+00
Kr-87	7.04E-04	1.19E-05	4.47E+03	5.34E-02	6.54E+00	3.07E-07	1.09E+05	3.34E-02	0.00E+00	0.00E+00	0.00E+00
Kr-88	6.02E-03	1.02E-04	1.13E+04	1.15E+00	7.30E+01	2.62E-06	4.28E+04	1.12E-01	0.00E+00	0.00E+00	0.00E+00
Kr-89	2.92E-08	4.96E-10	1.02E+04	5.06E-06	3.54E-04	1.27E-11	1.18E+05	1.50E-06	0.00E+00	0.00E+00	0.00E+00
Xe-131m	1.18E+00	2.00E-02	4.29E+01	8.59E-01	1.43E+04	5.14E-04	5.74E+03	2.95E+00	0.00E+00	0.00E+00	0.00E+00
Xe-133m	1.81E-01	3.07E-03	1.49E+02	4.58E-01	2.20E+03	7.88E-05	1.41E+04	1.11E+00	0.00E+00	0.00E+00	0.00E+00
Xe-133	2.48E+01	4.21E-01	1.76E+02	7.41E+01	3.01E+05	1.08E-02	1.38E+04	1.49E+02	0.00E+00	0.00E+00	0.00E+00
Xe-135m	1.21E-02	2.05E-04	2.15E+03	4.42E-01	1.47E+02	5.27E-06	1.87E+04	9.86E-02	0.00E+00	0.00E+00	0.00E+00
Xe-135	1.85E-02	3.16E-04	1.25E+03	3.95E-01	2.26E+02	8.10E-06	4.47E+04	3.62E-01	0.00E+00	0.00E+00	0.00E+00
Xe-137	1.19E-07	2.02E-09	9.55E+02	1.93E-06	1.44E-03	5.18E-11	1.19E+05	6.17E-06	0.00E+00	0.00E+00	0.00E+00
Xe-138	1.32E-05	2.24E-07	6.27E+03	1.40E-03	1.60E-01	5.75E-09	8.00E+04	4.60E-04	0.00E+00	0.00E+00	0.00E+00
I-131	5.41E-03	9.18E-05	4.66E+05	4.28E+01	6.56E+01	2.36E-06	2.16E+02	5.09E-04	2.44E+07	2.24E+03	3.63E+00
I-132	3.62E-03	6.14E-05	4.33E+04	2.66E+00	4.39E+01	1.58E-06	7.47E+02	1.18E-03	2.90E+05	1.78E+01	2.43E+00
I-133	1.38E-03	2.34E-05	1.28E+05	3.00E+00	1.67E+01	6.01E-07	5.39E+02	3.24E-04	5.77E+06	1.35E+02	9.25E-01
I-134	3.61E-05	6.13E-07	2.69E+04	1.65E-02	4.38E-01	1.57E-08	9.41E+02	1.48E-05	7.60E+04	4.66E-02	2.42E-02
I-135	3.76E-04	6.38E-06	7.10E+04	4.53E-01	4.56E+00	1.64E-07	4.78E+02	7.83E-05	1.19E+06	7.59E+00	2.52E-01
	5.89E+01			1.33E+02				3.66E+02		2.40E+03	1.42E-03

Monitor conversion factor CF11 (uCi/cc-cpm) = 4.32E-05

uCi/cc	TEDE	cpm	uCi/cc	Child Thyroid	cpm
1.59E-01	1.00E+01	3.69E+03	4.40E-02	5.00E+01	1.02E+03
1.59E-00	1.00E+02	3.69E+04	4.40E-01	5.00E+02	1.02E+04
1.59E-01	1.00E+03	3.69E+05	4.40E+00	5.00E+03	1.02E+05

Monitor efficiencies from ERS-SFL-86-026

Upstream filtration (Iodines reduced 0.01)

X/Q = 9.24E-05 s/m³

Release (uCi/s) CF for TEDE = 2.26E+04
Release (uCi/s) CF for Child Thyroid = 4.50E+03

U1 & U2		Activity Ratio	Release (U1+U2) = 3.50E+04 Ci/m					Release (U1+U2) = 2.76E+04 Ci/m					Release (U1+U2) for Child Thyroid = 4.50E+03					Count Rate
Isotope	LOCA TID (Ci)		DCF (mrem-m ³ /uCi-y)	Effective DCF (uCi/s)	Release (uCi/cc)	Efficiency (cpm/uCi/cc)	Count (cpm/mrem/h)	DCF (mrem-m ³ /uCi-y)	Effective DCF (uCi/s)	Release (uCi/cc)	Efficiency (cpm/uCi/cc)	Count (cpm/mrem/h)	DCF (mrem-m ³ /uCi-y)	Effective DCF (uCi/s)	Release (uCi/cc)	Efficiency (cpm/uCi/cc)	Count (cpm/mrem/h)	
Kr-83m	9.46E+05	1.31E-02	4.69E-01	6.13E-03	2.96E+02	1.06E-05	0.00E+00	0.00E+00	0.00E+00	0.00E+00	5.88E+01	2.11E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	
Kr-85m	1.95E+07	2.69E-02	8.17E+02	2.20E+01	6.10E+02	2.19E-05	4.88E+04	1.07E+00	0.00E+00	0.00E+00	1.21E+02	4.35E-06	4.88E+04	1.07E+00	0.00E+00	2.13E-01	0.00E+00	
Kr-85	8.27E+05	1.14E-03	1.12E+01	1.28E-02	2.59E+01	9.28E-07	1.51E+04	1.40E-02	0.00E+00	0.00E+00	5.14E+00	1.85E-07	1.51E+04	1.40E-02	0.00E+00	2.79E-03	0.00E+00	
Kr-87	3.91E+07	5.40E-02	4.47E+03	2.41E+02	1.22E+03	4.39E-05	1.09E+05	4.78E+00	0.00E+00	0.00E+00	2.43E+02	8.73E-06	1.09E+05	4.78E+00	0.00E+00	9.52E-01	0.00E+00	
Kr-88	5.43E+07	7.50E-02	1.13E+04	8.47E+02	1.70E+03	6.10E-05	4.28E+04	2.61E+00	0.00E+00	0.00E+00	3.38E+02	1.21E-05	4.28E+04	2.61E+00	0.00E+00	5.19E-01	0.00E+00	
Kr-89	6.75E+07	9.32E-02	1.02E+04	9.51E+02	2.11E+03	7.58E-05	1.18E+05	8.94E+00	0.00E+00	0.00E+00	4.20E+02	1.51E-05	1.18E+05	8.94E+00	0.00E+00	1.78E+00	0.00E+00	
Xe-131m	1.08E+06	1.49E-03	4.29E+01	6.40E-02	3.38E+01	1.21E-06	5.74E+03	6.96E-03	0.00E+00	0.00E+00	6.72E+00	2.41E-07	5.74E+03	6.96E-03	0.00E+00	1.38E-03	0.00E+00	
Xe-133m	5.05E+06	6.97E-03	1.49E+02	1.04E+00	1.58E+02	5.67E-06	1.41E+04	7.99E-02	0.00E+00	0.00E+00	3.14E+01	1.13E-06	1.41E+04	7.99E-02	0.00E+00	1.59E-02	0.00E+00	
Xe-133	1.60E+08	2.21E-01	1.76E+02	3.89E+01	5.00E+03	1.80E-04	1.38E+04	2.48E+00	0.00E+00	0.00E+00	9.95E+02	3.57E-05	1.38E+04	2.48E+00	0.00E+00	4.93E-01	0.00E+00	
Xe-135m	3.36E+07	4.64E-02	2.15E+03	9.97E+01	1.05E+03	3.77E-05	1.87E+04	7.05E-01	0.00E+00	0.00E+00	2.09E+02	7.50E-06	1.87E+04	7.05E-01	0.00E+00	1.40E-01	0.00E+00	
Xe-135	4.84E+07	6.68E-02	1.25E+03	8.35E+01	1.51E+03	5.43E-05	4.47E+04	2.43E+00	0.00E+00	0.00E+00	3.01E+02	1.08E-05	4.47E+04	2.43E+00	0.00E+00	4.83E-01	0.00E+00	
Xe-137	1.46E+08	2.02E-01	9.55E+02	1.93E+02	4.56E+03	1.64E-04	1.19E+05	1.95E+01	0.00E+00	0.00E+00	9.08E+02	3.26E-05	1.19E+05	1.95E+01	0.00E+00	3.86E+00	0.00E+00	
Xe-138	1.36E+08	1.88E-01	6.27E+03	1.18E+03	4.25E+03	1.53E-04	8.00E+04	1.22E+01	0.00E+00	0.00E+00	8.46E+02	3.04E-05	8.00E+04	1.22E+01	0.00E+00	2.43E+00	0.00E+00	
I-131	3.89E+05	5.37E-04	4.66E+05	2.50E+02	1.22E+01	4.37E-07	2.16E+02	9.43E-05	2.44E+07	1.31E+04	2.42E+00	8.69E-08	2.16E+02	9.43E-05	2.44E+07	1.31E+04	1.88E-05	
I-132	5.70E+05	7.87E-04	4.33E+04	3.41E+01	1.78E+01	6.40E-07	7.47E+02	4.78E-04	2.90E+05	2.28E+02	3.54E+00	1.27E-07	7.47E+02	4.78E-04	2.90E+05	2.28E+02	9.51E-05	
I-133	8.00E+05	1.10E-03	1.28E+05	1.41E+02	2.50E+01	8.98E-07	5.39E+02	4.84E-04	5.77E+06	6.37E+03	4.98E+00	1.79E-07	5.39E+02	4.84E-04	5.77E+06	6.37E+03	9.63E-05	
I-134	8.85E+05	1.22E-03	2.69E+04	3.29E+01	2.77E+01	9.93E-07	9.41E+02	9.35E-04	7.60E+04	9.29E+01	5.50E+00	1.98E-07	9.41E+02	9.35E-04	7.60E+04	9.29E+01	1.86E-04	
I-135	7.60E+05	1.05E-03	7.10E+04	7.45E+01	2.38E+01	8.53E-07	4.78E+02	4.08E-04	1.19E+06	1.25E+03	4.73E+00	1.70E-07	4.78E+02	4.08E-04	1.19E+06	1.25E+03	8.11E-05	
	7.24E+08			4.19E+03				5.48E+01		2.10E+04	1.62E-04					1.09E-01		

Monitor conversion factor CF11 (uCi/cc-cpm) = 4.32E-05

uCi/cc	TEDE	cpm	uCi/cc	Child Thyroid	cpm
2.37E-02	1.00E+01	5.48E+02	2.36E-02	5.00E+01	5.45E+02
2.37E-01	1.00E+02	5.48E+03	2.36E-01	5.00E+02	5.45E+03
2.37E+00	1.00E+03	5.48E+04	2.36E+00	5.00E+03	5.45E+04

Monitor efficiencies from ERS-SFL-86-026				Upstream filtration (Iodines reduced 0.01)				Release (uCi/s) CF for TEDE				X/Q = 9.24E-05 s/m ³			
2HVS'RQI-109C				Release Flow Rate = 5.90E+04 cfm				Release (uCi/s) CF for Child Thyroid = 2.48E+05				5.24E+05			
Isotope	U1 & U2 FHA (Ci)	Activity Ratio	DCF (mrem-m ² /uCi-y)	Effective DCF	Release (uCi/s)	Release (uCi/cc)	Efficiency (cpm/uCi/cc)	Count Rate (cpm/mrem/h)	DCF (mrem-m ² /uCi-y)	Effective DCF	Release (uCi/s)	Release (uCi/cc)	Efficiency (cpm/uCi/cc)	Count Rate (cpm/mrem/h)	
Kr-83m	0.00E+00	0.00E+00	4.69E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	
Kr-85m	1.04E-03	3.07E-08	8.17E-02	2.50E-05	1.61E-02	5.77E-10	4.88E+04	2.81E-05	0.00E+00	0.00E+00	7.61E-03	2.73E-10	4.88E+04	1.33E-05	
Kr-85	4.78E+02	1.41E-02	1.12E+01	1.58E-01	7.38E+03	2.65E-04	1.51E+04	4.00E+00	0.00E+00	0.00E+00	3.50E+03	1.26E-04	1.51E+04	1.90E+00	
Kr-87	0.00E+00	0.00E+00	4.47E+03	0.00E+00	0.00E+00	0.00E+00	1.09E+05	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.09E+05	0.00E+00	0.00E+00	
Kr-88	0.00E+00	0.00E+00	1.13E+04	0.00E+00	0.00E+00	0.00E+00	4.28E+04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	4.28E+04	0.00E+00	
Kr-89	0.00E+00	0.00E+00	1.02E+04	0.00E+00	0.00E+00	0.00E+00	1.18E+05	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.18E+05	0.00E+00	
Xe-131m	4.66E+02	1.37E-02	4.29E+01	5.89E-01	7.19E+03	2.58E-04	5.74E+03	1.48E+00	0.00E+00	0.00E+00	3.41E+03	1.22E-04	5.74E+03	7.03E-01	
Xe-133m	6.16E+02	1.82E-02	1.49E+02	2.71E+00	9.51E+03	3.41E-04	1.41E+04	4.81E+00	0.00E+00	0.00E+00	4.51E+03	1.62E-04	1.41E+04	2.28E+00	
Xe-133	3.23E+04	9.52E-01	1.76E+02	1.68E+02	4.99E+05	1.79E-02	1.38E+04	2.47E+02	0.00E+00	0.00E+00	2.36E+05	8.49E-03	1.38E+04	1.17E+02	
Xe-135m	2.65E+00	7.81E-05	2.15E+03	1.68E-01	4.09E+01	1.47E-06	1.87E+04	2.75E-02	0.00E+00	0.00E+00	1.94E+01	6.96E-07	1.87E+04	1.30E-02	
Xe-135	6.10E+01	1.80E-03	1.25E+03	2.25E+00	9.42E+02	3.38E-05	4.47E+04	1.51E+00	0.00E+00	0.00E+00	4.46E+02	1.60E-05	4.47E+04	7.17E-01	
Xe-137	0.00E+00	0.00E+00	9.55E+02	0.00E+00	0.00E+00	0.00E+00	1.19E+05	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.19E+05	0.00E+00	
Xe-138	0.00E+00	0.00E+00	6.27E+03	0.00E+00	0.00E+00	0.00E+00	8.00E+04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	8.00E+04	0.00E+00	
I-131	5.00E-01	1.53E-05	4.66E+05	7.14E+00	8.03E+00	2.89E-07	2.16E+02	6.23E-05	2.44E+07	3.74E+02	3.81E+00	1.37E-07	2.16E+02	2.95E-05	
I-132	2.52E-01	7.43E-06	4.33E+04	3.22E-01	3.89E+00	1.40E-07	7.47E+02	1.04E-04	2.90E+05	2.15E+00	1.84E+00	6.62E-08	7.47E+02	4.95E-05	
I-133	3.35E-02	9.87E-07	1.28E+05	1.26E-01	5.17E-01	1.86E-08	5.39E+02	1.00E-05	5.77E+06	5.70E+00	2.45E-01	8.80E-09	5.39E+02	4.75E-06	
I-134	0.00E+00	0.00E+00	2.69E+04	0.00E+00	0.00E+00	0.00E+00	9.41E+02	0.00E+00	7.60E+04	0.00E+00	0.00E+00	0.00E+00	9.41E+02	0.00E+00	
I-135	2.23E-05	6.57E-10	7.10E+04	4.67E-05	3.44E-04	1.24E-11	4.78E+02	5.91E-09	1.19E+06	7.82E-04	1.63E-04	5.86E-12	4.78E+02	2.80E-09	
	3.39E+04			1.81E+02				2.59E+02		3.82E+02		8.92E-03		1.23E+02	
Monitor conversion factor CF11 (uCi/cc-cpm) =				4.32E-05				uCi/cc				TEDE			
								cpm				Child Thyroid			
								1.12E-01				1.00E+01			
								1.12E+00				2.59E+03			
								1.12E+01				2.59E+04			
								1.12E+01				2.59E+05			
								1.12E+01				2.59E+05			

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ZHVS*RAI109C Mid Range SLCRS (continued):

Monitor efficiencies from ERS-SFL-86-026			Upstream filtration (iodines reduced 0.01)				X/Q = 9.24E-05 sm ³							
2HVS*ROI-109C			Release Flow Rate = 5.90E+04 cfm				Release (uCi/s) CF for TEDE = 2.20E+05							
			2.78E+07 cc/s				Release (uCi/s) CF for Child Thyroid = 1.22E+05							
Isotope	U1 & U2 RCCA (Ci)	Activity Ratio	DCF (mrem-m ³ /uCi-y)	Effective DCF	Release (uCi/s)	Release (uCi/cc)	Efficiency (cpm/uCi/cc)	Count Rate (cpm/mrem/h)	DCF (mrem-m ³ /uCi-y)	Effective DCF	Release (uCi/s)	Release (uCi/cc)	Efficiency (cpm/uCi/cc)	Count Rate (cpm/mrem/h)
Kr-83m	3.82E+01	2.48E-03	4.69E-01	1.16E-03	5.45E+02	1.96E-05	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.01E+02	1.08E-05	0.00E+00	0.00E+00
Kr-85m	9.12E+01	5.91E-03	8.17E+02	4.83E+00	1.30E+03	4.67E-05	4.88E+04	2.28E+00	0.00E+00	0.00E+00	7.19E+02	2.58E-05	4.88E+04	1.26E+00
Kr-85	2.22E+02	1.44E-02	1.12E+01	1.61E-01	3.17E+03	1.14E-04	1.51E+04	1.72E+00	0.00E+00	0.00E+00	1.75E+03	6.29E-05	1.51E+04	9.49E-01
Kr-87	5.22E+01	3.38E-03	4.47E+03	1.51E+01	7.45E+02	2.68E-05	1.09E+05	2.92E+00	0.00E+00	0.00E+00	4.12E+02	1.48E-05	1.09E+05	1.61E+00
Kr-88	1.63E+02	1.06E-02	1.13E+04	1.19E+02	2.33E+03	8.35E-05	4.28E+04	3.58E+00	0.00E+00	0.00E+00	1.29E+03	4.62E-05	4.28E+04	1.98E+00
Kr-89	3.76E+00	2.44E-04	1.02E+04	2.49E+00	5.37E+01	1.93E-06	1.18E+05	2.27E-01	0.00E+00	0.00E+00	2.97E+01	1.06E-06	1.18E+05	1.26E-01
Xe-131m	1.66E+02	1.21E-02	4.29E+01	5.17E-01	2.65E+03	9.53E-05	5.74E+03	5.47E-01	0.00E+00	0.00E+00	1.47E+03	5.27E-05	5.74E+03	3.02E-01
Xe-133m	2.23E+02	1.45E-02	1.49E+02	2.15E+00	3.18E+03	1.14E-04	1.41E+04	1.61E+00	0.00E+00	0.00E+00	1.76E+03	6.32E-05	1.41E+04	8.90E-01
Xe-133	1.32E+04	8.56E-01	1.76E+02	1.51E+02	1.88E+05	6.77E-03	1.38E+04	9.34E+01	0.00E+00	0.00E+00	1.04E+05	3.74E-03	1.38E+04	5.16E+01
Xe-135m	1.42E+02	9.21E-03	2.15E+03	1.98E+01	2.03E+03	7.28E-05	1.87E+04	1.36E+00	0.00E+00	0.00E+00	1.12E+03	4.02E-05	1.87E+04	7.52E-01
Xe-135	1.06E+03	6.87E-02	1.25E+03	8.59E+01	1.51E+04	5.43E-04	4.47E+04	2.43E+01	0.00E+00	0.00E+00	8.36E+03	3.00E-04	4.47E+04	1.34E+01
Xe-137	9.68E+00	6.28E-04	9.55E+02	5.99E-01	1.38E+02	4.96E-06	1.19E+05	5.90E-01	0.00E+00	0.00E+00	7.63E+01	2.74E-06	1.19E+05	3.26E-01
Xe-138	3.38E+01	2.19E-03	6.27E+03	1.37E+01	4.82E+02	1.73E-05	8.00E+04	1.39E+00	0.00E+00	0.00E+00	2.67E+02	9.57E-06	8.00E+04	7.66E-01
I-131	4.53E-01	2.94E-05	4.66E+05	1.37E+01	6.47E+00	2.32E-07	2.16E+02	5.01E-05	2.44E+07	7.17E+02	3.57E+00	1.28E-07	2.16E+02	2.77E-05
I-132	1.56E-02	1.01E-06	4.33E+04	4.38E-02	2.23E-01	8.00E-09	7.47E+02	5.97E-06	2.90E+05	2.93E-01	1.23E-01	4.42E-09	7.47E+02	3.30E-06
I-133	1.55E-01	1.00E-05	1.28E+05	1.29E+00	2.21E+00	7.94E-08	5.39E+02	4.28E-05	5.77E+06	5.80E+01	1.22E+00	4.39E-08	5.39E+02	2.37E-05
I-134	9.29E-03	6.02E-07	2.69E+04	1.62E-02	1.33E-01	4.76E-09	9.41E+02	4.48E-06	7.60E+04	4.58E-02	7.33E-02	2.63E-09	9.41E+02	2.48E-06
I-135	5.80E-02	3.76E-06	7.10E+04	2.67E-01	8.28E-01	2.97E-08	4.78E+02	1.42E-05	1.19E+06	4.47E+00	4.57E-01	1.64E-08	4.78E+02	7.85E-06
	1.54E+04			4.31E+02				1.34E+02		7.79E+02		4.37E-03		7.40E+01
Monitor conversion factor CF11 (uCi/cc-cpm) = 4.32E-05									uCi/cc	TEDE	cpm	uCi/cc	Child Thyroid	cpm
									5.76E-02	1.00E+01	1.34E+03	1.60E-01	5.00E+01	3.70E+03
									5.78E-01	1.00E+02	1.34E+04	1.60E+00	5.00E+02	3.70E+04
									5.78E+00	1.00E+03	1.34E+05	1.60E+01	5.00E+03	3.70E+05

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2HVS*RAI109D High Range SLCRS:

Monitor efficiencies from ERS-SFL-86-026										Upstream filtration (iodines reduced 0.01)										X/Q = 9.24E-05 s/m ³																																																	
2HVS*RCI-109D										Release Flow Rate = 5.90E+04 cfm										Release (uCi/s) CF for TEDE = 1.31E+05																																																	
										2.78E+07 cc/s										Release (uCi/s) CF for Child Thyroid = 5.75E+03																																																	
isotope	U1 & U2 LOCA Gap (Ci)	Activity Ratio	DCF (mrem-m ³ /uCi-y)	Effective DCF	Release (uCi/s)	Release (uCi/cc)	Efficiency (cpm/uCi/cc)	Count Rate (cpm/mrem/h)	DCF (mrem-m ³ /uCi-y)	Effective DCF	Release (uCi/s)	Release (uCi/cc)	Efficiency (cpm/uCi/cc)	Count Rate (cpm/mrem/h)	DCF (mrem-m ³ /uCi-y)	Effective DCF	Release (uCi/s)	Release (uCi/cc)	Efficiency (cpm/uCi/cc)	Count Rate (cpm/mrem/h)	DCF (mrem-m ³ /uCi-y)	Effective DCF	Release (uCi/s)	Release (uCi/cc)	Efficiency (cpm/uCi/cc)	Count Rate (cpm/mrem/h)	DCF (mrem-m ³ /uCi-y)	Effective DCF	Release (uCi/s)	Release (uCi/cc)	Efficiency (cpm/uCi/cc)	Count Rate (cpm/mrem/h)																																					
Kr-83m	9.01E+01	2.02E-03	4.69E-01	9.48E-04	2.64E+02	9.50E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.16E+01	4.17E-07	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00																																				
Kr-85m	2.21E+02	4.96E-03	8.17E+02	4.05E+00	6.49E+02	2.33E-05	1.79E+02	4.17E-03	0.00E+00	0.00E+00	2.85E+01	1.02E-06	1.79E+02	1.83E-04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00																																				
Kr-85	1.27E+03	2.85E-02	1.12E+01	3.19E-01	3.73E+03	1.34E-04	5.89E+01	7.88E-03	0.00E+00	0.00E+00	1.64E+02	5.89E-06	5.89E+01	3.46E-04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00																																				
Kr-87	8.45E+01	1.89E-03	4.47E+03	8.47E+00	2.48E+02	8.91E-06	4.31E+02	3.84E-03	0.00E+00	0.00E+00	1.09E+01	3.91E-07	4.31E+02	1.69E-04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00																																				
Kr-88	3.58E+02	8.03E-03	1.13E+04	9.07E+01	1.05E+03	3.77E-05	1.63E+02	6.15E-03	0.00E+00	0.00E+00	4.62E+01	1.66E-06	1.63E+02	2.70E-04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00																																				
Kr-89	7.50E-02	1.68E-06	1.02E+04	1.72E-02	2.20E-01	7.90E-09	4.63E+02	3.66E-06	0.00E+00	0.00E+00	9.67E-03	3.47E-10	4.63E+02	1.61E-07	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00																																				
Xe-131m	7.26E+02	1.63E-02	4.29E+01	6.98E-01	2.13E+03	7.65E-05	2.25E+01	1.72E-03	0.00E+00	0.00E+00	9.36E+01	3.36E-06	2.25E+01	7.56E-05	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00																																				
Xe-133m	6.33E+02	1.42E-02	1.49E+02	2.11E+00	1.86E+03	6.67E-05	5.50E+01	3.67E-03	0.00E+00	0.00E+00	8.16E+01	2.93E-06	5.50E+01	1.61E-04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00																																				
Xe-133	3.72E+04	8.34E-01	1.76E+02	1.47E+02	1.09E+05	3.92E-03	4.82E+01	1.89E-01	0.00E+00	0.00E+00	4.80E+03	1.72E-04	4.82E+01	8.30E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00																																			
Xe-135m	1.24E+03	2.78E-02	2.15E+03	5.98E+01	3.64E+03	1.31E-04	7.16E+01	9.36E-03	0.00E+00	0.00E+00	1.60E+02	5.74E-06	7.16E+01	4.11E-04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00																																			
Xe-135	2.71E+03	6.08E-02	1.25E+03	7.60E+01	7.95E+03	2.86E-04	1.69E+02	4.83E-02	0.00E+00	0.00E+00	3.49E+02	1.25E-05	1.69E+02	2.12E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00																																			
Xe-137	2.55E-01	5.72E-06	9.55E+02	5.46E-03	7.48E-01	2.69E-08	4.72E+02	1.27E-05	0.00E+00	0.00E+00	3.29E-02	1.18E-09	4.72E+02	5.57E-07	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00																																			
Xe-138	7.80E+00	1.75E-04	6.27E+03	1.10E+00	2.29E+01	8.22E-07	3.11E+02	2.56E-04	0.00E+00	0.00E+00	1.01E+00	3.61E-08	3.11E+02	1.12E-05	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00																																			
I-131	2.73E+01	6.12E-04	4.66E+05	2.85E-02	8.01E+01	2.88E-06	8.07E-01	2.32E-06	2.44E+07	1.49E+04	3.52E+00	1.26E-07	8.07E-01	1.02E-07	2.90E+05	8.58E+01	1.70E+00	6.11E-08	2.87E+00	1.75E-07	5.77E+06	1.37E+03	1.37E+00	4.91E-08	2.10E+00	1.03E-07	7.60E+04	1.11E+00	8.39E-02	3.01E-09	3.64E+00	1.10E-08	1.19E+06	9.02E+01	4.36E-01	1.57E-08	1.86E+00	2.91E-08																															
I-132	1.32E+01	2.96E-04	4.33E+04	1.28E+01	3.07E+01	1.39E-06	2.67E+00	3.99E-06	2.90E+05	8.58E+01	1.70E+00	6.11E-08	2.87E+00	1.75E-07	5.77E+06	1.37E+03	1.37E+00	4.91E-08	2.10E+00	1.03E-07	7.60E+04	1.11E+00	8.39E-02	3.01E-09	3.64E+00	1.10E-08	1.19E+06	9.02E+01	4.36E-01	1.57E-08	1.86E+00	2.91E-08	1.21E-02	2.07E-04	2.07E-04	2.07E-04	2.07E-04																																
I-133	1.06E+01	2.38E-04	1.28E+05	3.04E+01	3.11E+01	1.12E-06	2.10E+00	2.35E-06	2.90E+05	8.58E+01	1.70E+00	6.11E-08	2.87E+00	1.75E-07	5.77E+06	1.37E+03	1.37E+00	4.91E-08	2.10E+00	1.03E-07	7.60E+04	1.11E+00	8.39E-02	3.01E-09	3.64E+00	1.10E-08	1.19E+06	9.02E+01	4.36E-01	1.57E-08	1.86E+00	2.91E-08	1.21E-02	2.07E-04	2.07E-04	2.07E-04	2.07E-04																																
I-134	6.51E-01	1.46E-05	2.69E+04	3.93E-01	1.91E+00	6.86E-08	3.64E+00	2.50E-07	2.90E+05	8.58E+01	1.70E+00	6.11E-08	2.87E+00	1.75E-07	5.77E+06	1.37E+03	1.37E+00	4.91E-08	2.10E+00	1.03E-07	7.60E+04	1.11E+00	8.39E-02	3.01E-09	3.64E+00	1.10E-08	1.19E+06	9.02E+01	4.36E-01	1.57E-08	1.86E+00	2.91E-08	1.21E-02	2.07E-04	2.07E-04	2.07E-04	2.07E-04																																
I-135	3.38E+00	7.58E-05	7.10E+04	5.38E+00	9.92E+00	3.56E-07	1.86E+00	6.63E-07	2.90E+05	8.58E+01	1.70E+00	6.11E-08	2.87E+00	1.75E-07	5.77E+06	1.37E+03	1.37E+00	4.91E-08	2.10E+00	1.03E-07	7.60E+04	1.11E+00	8.39E-02	3.01E-09	3.64E+00	1.10E-08	1.19E+06	9.02E+01	4.36E-01	1.57E-08	1.86E+00	2.91E-08	1.21E-02	2.07E-04	2.07E-04	2.07E-04	2.07E-04																																
	4.46E+04			7.24E+02				2.74E-01																																																													
Monitor conversion factor CF11 (uCi/cc-cpm) = 1.07E-02																																																																					
										uCi/cc										TEDE										cpm										uCi/cc										Child Thyroid										cpm									
										2.94E-02										1.00E+01										2.74E+03										6.45E-03										5.00E-01										6.93E-01									
										2.94E-01										1.00E+02										2.74E+01										6.45E-02										5.00E-02										6.03E+00									
										2.94E+00										1.00E+03										2.74E+02										6.45E-01										5.00E+03										6.03E+01									

Monitor conversion factor CF11 (uCi/cc-cpm) = 1.07E-02

uCi/cc	TEDE	cpm	uCi/cc	Child Thyroid	cpm
2.94E-02	1.00E+01	2.74E+08	6.45E-03	5.00E+01	6.93E-01
2.94E-01	1.00E+02	2.74E+09	6.45E-02	5.00E+02	6.93E+00
2.94E+00	1.00E+03	2.74E+10	6.45E-01	5.00E+03	6.93E+01

Monitor efficiencies from ERS-SFL-86-026										Upstream filtration (iodines reduced 0.01)			
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2HVS*RAI109D High Range SLCRS (continued):

Monitor efficiencies from ERS-SFL-86-026					Upstream filtration (iodines reduced 0.01)					X/Q = 9.24E-05 s/m ³				
2HVS*RQI-109D					Release Flow Rate = 5.90E+04 cfm					Release (uCi/s) CF for TEDE = 7.15E+05				
					Release (uCi/s) CF for Child Thyroid = 3.95E+04									
Isotope	U2 only LOCA RCS (Ci)	Activity Ratio	DCF (mrem-m ³ /uCi-y)	Effective DCF	Release (uCi/s)	Release (uCi/cc)	Efficiency (cpm/uCi/cc)	Count Rate (cpm/mrem/h)	DCF (mrem-m ³ /uCi-y)	Effective DCF	Release (uCi/s)	Release (uCi/cc)	Efficiency (cpm/uCi/cc)	Count Rate (cpm/mrem/h)
Kr-83m	1.34E-03	2.27E-05	4.69E-01	1.07E-05	1.63E+01	5.84E-07	0.00E+00	0.00E+00	0.00E+00	0.00E+00	8.98E-01	3.22E-08	0.00E+00	0.00E+00
Kr-85m	5.53E-03	9.39E-05	8.17E+02	7.67E-02	6.71E+01	2.41E-06	1.79E+02	4.31E-04	0.00E+00	0.00E+00	3.71E+00	1.33E-07	1.79E+02	2.38E-05
Kr-85	3.27E+01	5.55E-01	1.12E+01	6.22E+00	3.97E+05	1.42E-02	5.89E+01	8.39E-01	0.00E+00	0.00E+00	2.19E+04	7.87E-04	5.89E+01	4.63E-02
Kr-87	7.04E-04	1.19E-05	4.47E+03	5.34E-02	8.54E+00	3.07E-07	4.31E+02	1.32E-04	0.00E+00	0.00E+00	4.72E-01	1.69E-08	4.31E+02	7.30E-06
Kr-88	6.02E-03	1.02E-04	1.13E+04	1.15E+00	7.30E+01	2.62E-06	1.63E+02	4.27E-04	0.00E+00	0.00E+00	4.03E+00	1.45E-07	1.63E+02	2.36E-05
Kr-89	2.92E-08	4.96E-10	1.02E+04	5.06E-06	3.54E-04	1.27E-11	4.63E+02	5.89E-09	0.00E+00	0.00E+00	1.96E-05	7.03E-13	4.63E+02	3.25E-10
Xe-131m	1.18E+00	2.00E-02	4.29E+01	8.59E-01	1.43E+04	5.14E-04	2.25E+01	1.16E-02	0.00E+00	0.00E+00	7.91E+02	2.84E-05	2.25E+01	6.39E-04
Xe-133m	1.81E-01	3.07E-03	1.49E+02	4.58E-01	2.20E+03	7.88E-05	5.50E+01	4.34E-03	0.00E+00	0.00E+00	1.21E+02	4.36E-06	5.50E+01	2.40E-04
Xe-133	2.48E+01	4.21E-01	1.76E+02	7.41E+01	3.01E+05	1.08E-02	4.82E+01	5.21E-01	0.00E+00	0.00E+00	1.66E+04	5.97E-04	4.82E+01	2.88E-02
Xe-135m	1.21E-02	2.05E-04	2.15E+03	4.42E-01	1.47E+02	5.27E-06	7.16E+01	3.77E-04	0.00E+00	0.00E+00	8.11E+00	2.91E-07	7.16E+01	2.08E-05
Xe-135	1.88E-02	3.16E-04	1.25E+03	3.95E-01	2.26E+02	8.10E-06	1.69E+02	1.37E-03	0.00E+00	0.00E+00	1.25E+01	4.48E-07	1.69E+02	7.56E-05
Xe-137	1.19E-07	2.02E-09	9.55E+02	1.93E-06	1.44E-03	5.18E-11	4.72E+02	2.45E-08	0.00E+00	0.00E+00	7.97E-05	2.86E-12	4.72E+02	1.35E-09
Xe-138	1.32E-05	2.24E-07	6.27E+03	1.40E-03	1.60E-01	5.75E-09	3.11E+02	1.79E-06	0.00E+00	0.00E+00	8.85E-03	3.18E-10	3.11E+02	9.88E-08
I-131	5.41E-03	9.18E-05	4.66E+05	4.28E+01	6.56E+01	2.36E-06	8.07E-01	1.90E-06	2.44E+07	2.24E+03	3.63E+00	1.30E-07	8.07E-01	1.05E-07
I-132	3.62E-03	6.14E-05	4.33E+04	2.66E+00	4.39E+01	1.58E-06	2.87E+00	4.53E-06	2.90E+05	1.78E+01	2.43E+00	8.71E-08	2.87E+00	2.50E-07
I-133	1.38E-03	2.34E-05	1.28E+05	3.00E+00	1.67E+01	6.01E-07	2.10E+00	1.26E-06	5.77E+06	1.35E+02	9.25E-01	3.32E-08	2.10E+00	6.97E-08
I-134	3.61E-05	6.13E-07	2.69E+04	1.65E-02	4.38E-01	1.57E-08	3.64E+00	5.72E-08	7.60E+04	4.66E-02	2.42E-02	8.69E-10	3.64E+00	3.16E-09
I-135	3.76E-04	6.38E-06	7.10E+04	4.53E-01	4.56E+00	1.64E-07	1.86E+00	3.05E-07	1.19E+06	7.59E+00	2.52E-01	9.05E-09	1.86E+00	1.68E-08
	5.89E+01			1.33E+02				1.38E+00		2.40E+03		1.42E-03		7.61E-02
Monitor conversion factor CF11 (uCi/cc-cpm) = 1.07E-02														

Monitor efficiencies from ERS-SFL-86-026			Upstream filtration (iodines reduced 0.01)				Release (uCi/s) CF for TEDE = 5.24E+05				X/Q = 9.24E-05 s/m ³			
2HVS*RQI-109D			Release Flow Rate = 5.90E+04 cfm				2.78E+07 c/s				Release (uCi/s) CF for Child Thyroid = 2.48E+05			
Isotope	U1 & U2 FHA (Ci)	Activity Ratio	DCF (mrem-m ² /uCi-y)	Effective DCF	Release (uCi/s)	Release (uCi/cc)	Efficiency (cpm/uCi/cc)	Count Rate (cpm/mrem/h)	DCF (mrem-m ² /uCi-y)	Effective DCF	Release (uCi/s)	Release (uCi/cc)	Efficiency (cpm/uCi/cc)	Count Rate (cpm/mrem/h)
Kr-83m	0.00E+00	0.00E+00	4.69E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Kr-85m	1.04E-03	3.07E-08	8.17E+02	2.50E-05	1.61E-02	5.77E-10	1.79E+02	1.03E-07	0.00E+00	0.00E+00	7.61E-03	2.73E-10	1.79E+02	4.89E-08
Kr-85	4.78E+02	1.41E-02	1.12E+01	1.58E-01	7.38E+03	2.65E-04	5.89E+01	1.56E-02	0.00E+00	0.00E+00	3.50E-03	1.26E-04	5.89E+01	7.40E-03
Kr-87	0.00E+00	0.00E+00	4.47E+03	0.00E+00	0.00E+00	0.00E+00	4.31E+02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	4.31E+02	0.00E+00
Kr-88	0.00E+00	0.00E+00	1.13E+04	0.00E+00	0.00E+00	0.00E+00	1.63E+02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.63E+02	0.00E+00
Kr-89	0.00E+00	0.00E+00	1.02E+04	0.00E+00	0.00E+00	0.00E+00	4.63E+02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	4.63E+02	0.00E+00
Xe-131m	4.66E+02	1.37E-02	4.29E+01	5.89E-01	7.19E+03	2.58E-04	2.25E+01	5.81E-03	0.00E+00	0.00E+00	3.41E-03	1.22E-04	2.25E+01	2.75E-03
Xe-133m	6.16E+02	1.82E-02	1.49E+02	2.71E+00	9.51E+03	3.41E-04	5.50E+01	1.88E-02	0.00E+00	0.00E+00	4.51E-03	1.62E-04	5.50E+01	8.90E-03
Xe-133	3.23E+04	9.52E-01	1.76E+02	1.68E+02	4.99E+05	1.79E-02	4.82E+01	8.63E-01	0.00E+00	0.00E+00	2.36E+05	8.49E-03	4.82E+01	4.09E-01
Xe-135m	2.65E+00	7.81E-05	2.15E+03	1.68E-01	4.09E+01	1.47E-06	7.16E+01	1.05E-04	0.00E+00	0.00E+00	1.94E+01	6.96E-07	7.16E+01	4.99E-05
Xe-135	6.10E+01	1.80E-03	1.25E+03	2.25E+00	9.42E-02	3.38E-05	1.69E+02	5.71E-03	0.00E+00	0.00E+00	4.46E+02	1.60E-05	1.69E+02	2.71E-03
Xe-137	0.00E+00	0.00E+00	9.55E+02	0.00E+00	0.00E+00	0.00E+00	4.72E+02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	4.72E+02	0.00E+00
Xe-138	0.00E+00	0.00E+00	6.27E+03	0.00E+00	0.00E+00	0.00E+00	3.11E+02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.11E+02	0.00E+00
I-131	5.20E-01	1.53E-05	4.66E+05	7.14E+00	8.03E+00	2.88E-07	8.07E-01	2.33E-07	2.44E+07	3.74E+02	3.81E+00	1.37E-07	8.07E-01	1.10E-07
I-132	2.52E-01	7.43E-06	4.33E+04	3.22E-01	3.89E+00	1.40E-07	2.87E+00	4.01E-07	2.90E+05	2.15E+00	1.84E+00	6.62E-08	2.87E+00	1.90E-07
I-133	3.35E-02	9.87E-07	1.28E+05	1.26E-01	5.17E-01	1.86E-08	2.10E+00	3.90E-08	5.77E+06	5.70E+00	2.45E-01	8.80E-09	2.10E+00	1.85E-08
I-134	0.00E+00	0.00E+00	2.69E+04	0.00E+00	0.00E+00	0.00E+00	3.64E+00	0.00E+00	7.60E+04	0.00E+00	0.00E+00	0.00E+00	3.64E+00	0.00E+00
I-135	2.23E-05	6.57E-10	7.10E+04	4.67E-05	3.44E-04	1.24E-11	1.86E+00	2.30E-11	1.19E+08	7.82E-04	1.63E-04	5.85E-12	1.86E+00	1.09E-11
	3.39E+04			1.81E+02				9.09E-01		3.62E+02		8.92E-03		4.31E-01
Monitor conversion factor CF11 (uCi/cc-cpm) = 1.07E-02														
							uCi/cc	TEDE	cpm	uCi/cc	Child Thyroid	cpm		
							9.73E-02	1.00E+01	9.09E+00	2.31E-01	5.00E+01	2.15E+01		
							9.73E-01	1.00E+02	9.09E+01	2.31E+00	5.00E+02	2.15E+02		
							9.73E+00	1.00E+03	9.09E+02	2.31E+01	5.00E+03	2.15E+03		

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2HVS*RA109D High Range SLCRS (continued):

Monitor efficiencies from ERS-SFL-86-026										X/Q = 9.24E-05 s/m ³					
Upstream filtration (iodines reduced 0.01)										Release (uCi/s) CF for TEDE = 2.20E+05					
2HVS*ROL109D										Release (uCi/s) CF for Child Thyroid = 1.22E+05					
Release Flow Rate = 5.90E+04 cfm 2.78E+07 cc/s															
Isotope	U1 & U2 RCCA (Ci)	Activity Ratio	DCF (mrem-m ³ /uCi-y)	Effective DCF	Release (uCi/s)	Release (uCi/cc)	Efficiency (cpm/uCi/cc)	Count Rate (cpm/mrem/h)	DCF (mrem-m ³ /uCi-y)	Effective DCF	Release (uCi/s)	Release (uCi/cc)	Efficiency (cpm/uCi/cc)	Count Rate (cpm/mrem/h)	Count Rate
Kr-83m	3.82E+01	2.48E-03	4.69E-01	1.16E-03	5.45E+02	1.96E-05	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.01E+02	1.08E-05	0.00E+00	0.00E+00	0.00E+00
Kr-85m	9.12E+01	5.91E-03	8.17E+02	4.83E+00	1.30E+03	4.67E-05	1.79E+02	8.37E-03	0.00E+00	0.00E+00	7.19E+02	2.58E-05	1.79E+02	4.62E-03	4.62E-03
Kr-85	2.22E+02	1.44E-02	1.12E+01	1.61E-01	3.17E+03	1.14E-04	5.89E+01	6.70E-03	0.00E+00	0.00E+00	1.75E+03	6.29E-05	5.89E+01	3.70E-03	3.70E-03
Kr-87	5.22E+01	3.38E-03	4.47E+03	1.51E+01	7.45E+02	2.68E-05	4.31E+02	1.15E-02	0.00E+00	0.00E+00	4.12E+02	1.48E-05	4.31E+02	6.37E-03	6.37E-03
Kr-88	1.63E+02	1.06E-02	1.13E+04	1.19E+02	2.33E+03	8.35E-05	1.63E+02	1.36E-02	0.00E+00	0.00E+00	1.29E+03	4.62E-05	1.63E+02	7.52E-03	7.52E-03
Kr-89	3.76E+00	2.44E-04	1.02E+04	2.49E+00	5.37E+01	1.93E-06	4.63E+02	8.92E-04	0.00E+00	0.00E+00	2.97E+01	1.06E-06	4.63E+02	4.93E-04	4.93E-04
Xe-131m	1.86E+02	1.21E-02	4.29E+01	5.17E-01	2.65E+03	9.53E-05	2.25E+01	2.14E-03	0.00E+00	0.00E+00	1.47E+03	5.27E-05	2.25E+01	1.19E-03	1.19E-03
Xe-133m	2.23E+02	1.45E-02	1.49E+02	2.15E+00	3.18E+03	1.14E-04	5.50E+01	6.29E-03	0.00E+00	0.00E+00	1.76E+03	6.32E-05	5.50E+01	3.47E-03	3.47E-03
Xe-133	1.32E+04	8.56E-01	1.76E+02	1.51E+02	1.88E+05	6.77E-03	4.82E+01	3.26E-01	0.00E+00	0.00E+00	1.04E+05	3.74E-03	4.82E+01	1.80E-01	1.80E-01
Xe-135m	1.42E+02	9.21E-03	2.15E+03	1.98E+01	2.03E+03	7.28E-05	7.16E+01	5.21E-03	0.00E+00	0.00E+00	1.12E+03	4.02E-05	7.16E+01	2.88E-03	2.88E-03
Xe-135	1.06E+03	6.87E-02	1.25E+03	8.59E+01	1.51E+04	5.43E-04	1.69E+02	9.18E-02	0.00E+00	0.00E+00	8.36E+03	3.00E-04	1.69E+02	5.07E-02	5.07E-02
Xe-137	9.68E+00	6.28E-04	9.55E+02	5.99E-01	1.38E+02	4.96E-06	4.72E+02	2.34E-03	0.00E+00	0.00E+00	7.63E+01	2.74E-06	4.72E+02	1.29E-03	1.29E-03
Xe-138	3.38E+01	2.19E-03	6.27E+03	1.37E+01	4.82E+02	1.73E-05	3.11E+02	5.39E-03	0.00E+00	0.00E+00	2.67E+02	9.57E-06	3.11E+02	2.98E-03	2.98E-03
I-131	4.53E-01	2.94E-05	4.66E+05	1.37E+01	6.47E+00	2.32E-07	8.07E-01	1.87E-07	2.44E+07	7.17E+02	3.57E+00	1.28E-07	8.07E-01	1.04E-07	1.04E-07
I-132	1.56E-02	1.01E-06	4.33E+04	4.38E-02	2.23E-01	8.00E-09	2.87E+00	2.29E-08	2.90E+05	2.93E-01	1.23E-01	4.42E-09	2.87E+00	1.27E-08	1.27E-08
I-133	1.55E-01	1.00E-05	1.28E+05	1.29E+00	2.21E+00	7.94E-08	2.10E+00	1.67E-07	5.77E+06	5.80E+01	1.22E+00	4.39E-08	2.10E+00	9.22E-08	9.22E-08
I-134	9.29E-03	6.02E-07	2.69E+04	1.52E-02	1.33E-01	4.76E-09	3.64E+00	1.73E-08	7.60E+04	4.58E-02	7.33E-02	2.63E-09	3.64E+00	9.58E-09	9.58E-09
I-135	5.80E-02	3.76E-06	7.10E+04	2.67E-01	8.28E-01	2.97E-08	1.86E+00	5.53E-08	1.19E+06	4.47E+00	4.57E-01	1.84E-08	1.86E+00	3.05E-08	3.05E-08
	1.54E+04			4.31E+02				4.80E-01		7.79E+02		4.37E-03		2.65E-01	2.65E-01

Monitor conversion factor CF11 (uCi/cc-cpm) = 1.07E-02

uCi/cc	TEDE	cpm	uCi/cc	Child Thyroid	cpm
5.14E-02	1.00E+01	4.80E+00	1.42E-01	5.00E+01	1.33E+01
5.14E-01	1.00E+02	4.80E+01	1.42E+00	5.00E+02	1.33E+02
5.14E+00	1.00E+03	4.80E+02	1.42E+01	5.00E+03	1.33E+03

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2HVS-RMQ301B Decon Building Vent:

Monitor efficiencies from ERS-SFL-86-026				Upstream filtration (iodines reduced 0.01)				X/Q = 9.24E-05 s/m ³						
2RMO-RQI-301B				Release Flow Rate = 1.24E+04 cfm				Release (uCi/s) CF for TEDE = 7.15E+05						
				5.85E+06 c/s				Release (uCi/s) CF for Child Thyroid = 3.95E+04						
Isotope	U2 only LOCA RCS (Ci)	Activity Ratio	DCF (mrem-m ³ /uCi-v)	Effective DCF	Release (uCi/s)	Release (uCi/cc)	Efficiency (cpm/uCi/cc)	Count Rate (cpm/mrem/h)	DCF (mrem-m ³ /uCi-v)	Effective DCF	Release (uCi/s)	Release (uCi/cc)	Efficiency (cpm/uCi/cc)	Count Rate (cpm/mrem/h)
Kr-83m	1.34E-03	2.27E-05	4.69E-01	1.07E-05	1.63E+01	2.78E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	8.98E-01	1.53E-07	0.00E+00	0.00E+00
Kr-85m	5.53E-03	9.39E-05	8.17E+02	7.67E-02	6.71E+01	1.15E-05	3.20E+07	3.67E+02	0.00E+00	0.00E+00	3.71E+00	6.33E-07	3.20E+07	2.03E+01
Kr-85	3.27E+01	5.55E-01	1.12E+01	6.22E+00	3.97E+05	6.78E-02	3.60E+07	2.44E+06	0.00E+00	0.00E+00	2.19E+04	3.74E-03	3.60E+07	1.35E+05
Kr-87	7.04E-04	1.19E-05	4.47E+03	5.34E-02	8.54E+00	1.46E-06	3.73E+07	5.44E+01	0.00E+00	0.00E+00	4.72E-01	8.06E-08	3.73E+07	3.01E+00
Kr-88	6.02E-03	1.02E-04	1.13E+04	1.15E+00	7.30E+01	1.25E-05	3.05E+07	3.81E+02	0.00E+00	0.00E+00	4.03E+00	6.89E-07	3.05E+07	2.10E+01
Kr-89	2.92E-08	4.96E-10	1.02E+04	5.06E-06	3.54E-04	6.05E-11	3.72E+07	2.25E-03	0.00E+00	0.00E+00	1.96E-05	3.34E-12	3.72E+07	1.24E-04
Xe-131m	1.18E+00	2.00E-02	4.29E+01	8.59E-01	1.43E+04	2.45E-03	2.44E+07	5.97E+04	0.00E+00	0.00E+00	7.91E+02	1.35E-04	2.44E+07	3.30E+03
Xe-133m	1.81E-01	3.07E-03	1.49E+02	4.58E-01	2.20E+03	3.75E-04	2.86E+07	1.07E+04	0.00E+00	0.00E+00	1.21E+02	2.07E-05	2.86E+07	5.93E+02
Xe-133	2.48E+01	4.21E-01	1.76E+02	7.41E+01	3.01E+05	5.14E-02	1.80E+07	9.25E+05	0.00E+00	0.00E+00	1.56E+04	2.84E-03	1.80E+07	5.11E+04
Xe-135m	1.21E-02	2.05E-04	2.15E+03	4.42E-01	1.47E+02	2.51E-05	7.22E+06	1.81E+02	0.00E+00	0.00E+00	8.11E+00	1.39E-06	7.22E+06	1.00E+01
Xe-135	1.86E-02	3.16E-04	1.25E+03	3.95E-01	2.26E+02	3.85E-05	3.88E+07	1.49E+03	0.00E+00	0.00E+00	1.25E+01	2.13E-06	3.86E+07	8.21E+01
Xe-137	1.19E-07	2.02E-09	9.55E+02	1.93E-06	1.44E-03	2.47E-10	3.78E+07	9.32E-03	0.00E+00	0.00E+00	7.97E-05	1.36E-11	3.78E+07	5.15E-04
Xe-138	1.32E-05	2.24E-07	6.27E+03	1.40E-03	1.60E-01	2.74E-08	3.52E+07	9.64E-01	0.00E+00	0.00E+00	8.85E-03	1.51E-09	3.52E+07	5.32E-02
I-131	5.41E-03	9.18E-05	4.66E+05	4.28E+01	6.56E+01	1.12E-05	2.98E+05	3.34E+00	2.44E+07	2.24E+03	3.63E+00	6.19E-07	2.98E+05	1.84E-01
I-132	3.62E-03	6.14E-05	4.33E+04	2.66E+00	4.39E+01	7.50E-06	3.72E+05	2.79E+00	2.90E+05	1.78E+01	2.43E+00	4.14E-07	3.72E+05	1.54E-01
I-133	1.38E-03	2.34E-05	1.28E+05	3.00E+00	1.67E+01	2.86E-06	3.69E+05	1.05E+00	5.77E+06	1.35E+02	9.25E-01	1.58E-07	3.69E+05	5.82E-02
I-134	3.61E-05	6.13E-07	2.69E+04	1.65E-02	4.38E-01	7.48E-08	3.76E+05	2.82E-02	7.60E+04	4.66E-02	2.42E-02	4.13E-09	3.78E+05	1.56E-03
I-135	3.76E-04	6.38E-06	7.10E+04	4.53E-01	4.56E+00	7.79E-07	3.49E+05	2.72E-01	1.19E+06	7.59E+00	2.52E-01	4.31E-08	3.49E+05	1.50E-02
	5.89E+01			1.33E+02				3.44E+06		2.40E+03		6.75E-03		1.90E+05
Monitor conversion factor CF11 (uCi/cc-cpm) = 5.56E-08								uCi/cc	TEDE	cpm	uCi/cc	Child Thyroid	cpm	
								1.91E+00	1.00E+01	3.44E+07	5.28E-01	5.00E+01	9.50E+08	
								1.91E+01	1.00E+02	3.44E+08	5.28E+00	5.00E+02	9.50E+07	
								1.91E+02	1.00E+03	3.44E+09	5.28E+01	5.00E+03	9.50E+06	

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2HVS-RMQ303B Waste Gas Tank Vault Vent:

Monitor efficiencies from ERS-SFL-89-026										X/Q = 9.24E-05 s/m ³					
Upstream filtration (iodines reduced 0.01)										Release (uCi/s) CF for TEDE = 2.94E+05					
Release Flow Rate = 2.00E+03 cfm										Release (uCi/s) CF for Thyrloid = #DIV/0!					
2RMQ-RQ1-303B															
Isotope	U2 only GWS (Ci)	Activity Ratio	DCF (mrem-m ² /uCi-v)	Effective DCF	Release (uCi/s)	Release (uCi/cc)	Efficiency (cpm/uCi/cc)	Count Rate (cpm/mrem/h)	DCF (mrem-m ² /uCi-v)	Effective DCF	Release (uCi/s)	Release (uCi/cc)	Efficiency (cpm/uCi/cc)	Count Rate (cpm/mrem/h)	
Kr-83m	3.18E+00	1.44E-03	4.69E-01	6.74E-04	4.23E+02	4.48E-04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	#DIV/0!	#DIV/0!	0.00E+00	#DIV/0!	
Kr-85m	1.14E+01	5.15E-03	8.17E+02	4.21E+00	1.52E+03	1.61E-03	3.20E+07	5.14E+04	0.00E+00	0.00E+00	#DIV/0!	#DIV/0!	3.20E+07	#DIV/0!	
Kr-85	5.17E+02	2.34E-01	1.12E+01	2.62E+00	6.88E+04	7.28E-02	3.60E+07	2.62E+06	0.00E+00	0.00E+00	#DIV/0!	#DIV/0!	3.60E+07	#DIV/0!	
Kr-87	6.71E+00	3.03E-03	4.47E+03	1.36E+01	8.92E+02	9.45E-04	3.73E+07	3.53E+04	0.00E+00	0.00E+00	#DIV/0!	#DIV/0!	3.73E+07	#DIV/0!	
Kr-88	2.20E+01	9.94E-03	1.13E+04	1.12E+02	2.93E+03	3.10E-03	3.05E+07	9.46E+04	0.00E+00	0.00E+00	#DIV/0!	#DIV/0!	3.05E+07	#DIV/0!	
Kr-89	2.39E-01	1.08E-04	1.02E+04	1.10E+00	3.18E+01	3.37E-05	3.72E+07	1.25E+03	0.00E+00	0.00E+00	#DIV/0!	#DIV/0!	3.72E+07	#DIV/0!	
Xe-131m	1.98E+01	8.95E-03	4.29E+01	3.84E+01	2.63E+03	2.79E-03	2.44E+07	6.81E+04	0.00E+00	0.00E+00	#DIV/0!	#DIV/0!	2.44E+07	#DIV/0!	
Xe-133m	2.79E+01	1.26E-02	1.49E+02	1.88E+00	3.71E+03	3.93E-03	2.86E+07	1.12E+05	0.00E+00	0.00E+00	#DIV/0!	#DIV/0!	2.86E+07	#DIV/0!	
Xe-133	1.50E+03	6.78E-01	1.76E+02	1.19E+02	1.99E+05	2.11E-01	1.80E+07	3.80E+06	0.00E+00	0.00E+00	#DIV/0!	#DIV/0!	1.80E+07	#DIV/0!	
Xe-135m	3.80E+00	1.72E-03	2.15E+03	3.69E+00	5.05E+02	5.35E-04	7.22E+06	3.85E+03	0.00E+00	0.00E+00	#DIV/0!	#DIV/0!	7.22E+06	#DIV/0!	
Xe-135	9.81E+01	4.43E-02	1.25E+03	5.54E+01	1.30E+04	1.38E-02	3.86E+07	5.33E+05	0.00E+00	0.00E+00	#DIV/0!	#DIV/0!	3.86E+07	#DIV/0!	
Xe-137	6.30E-01	2.65E-04	9.55E+02	2.72E-01	8.38E-01	8.88E-05	3.78E+07	3.35E+03	0.00E+00	0.00E+00	#DIV/0!	#DIV/0!	3.78E+07	#DIV/0!	
Xe-138	2.61E+00	1.18E-03	8.27E+03	7.39E+00	3.47E+02	3.68E-04	3.52E+07	1.29E+04	0.00E+00	0.00E+00	#DIV/0!	#DIV/0!	3.52E+07	#DIV/0!	
I-131	0.00E+00	0.00E+00	4.66E+05	0.00E+00	0.00E+00	0.00E+00	2.98E+05	0.00E+00	2.44E+07	0.00E+00	#DIV/0!	#DIV/0!	2.98E+05	#DIV/0!	
I-132	0.00E+00	0.00E+00	4.33E+04	0.00E+00	0.00E+00	0.00E+00	3.72E+05	0.00E+00	2.90E+05	0.00E+00	#DIV/0!	#DIV/0!	3.72E+05	#DIV/0!	
I-133	0.00E+00	0.00E+00	1.28E+05	0.00E+00	0.00E+00	0.00E+00	3.69E+05	0.00E+00	5.77E+06	0.00E+00	#DIV/0!	#DIV/0!	3.69E+05	#DIV/0!	
I-134	0.00E+00	0.00E+00	2.69E+04	0.00E+00	0.00E+00	0.00E+00	3.78E+05	0.00E+00	7.60E+04	0.00E+00	#DIV/0!	#DIV/0!	3.78E+05	#DIV/0!	
I-135	0.00E+00	0.00E+00	7.10E+04	0.00E+00	0.00E+00	0.00E+00	3.49E+05	0.00E+00	1.19E+06	0.00E+00	#DIV/0!	#DIV/0!	3.49E+05	#DIV/0!	
	2.21E+03		3.22E+02					7.34E+06		0.00E+00		#DIV/0!		#DIV/0!	
Monitor conversion factor CF11 (uCi/cc-cpm) = 2.79E-08															
										uCi/cc	TEDE	cpm	uCi/cc	Child Thyrloid	cpm
										2.05E+00	1.00E+01	7.34E+07	#DIV/0!	5.00E+01	#DIV/0!
										2.05E+01	1.00E+02	7.34E+08	#DIV/0!	5.00E+02	#DIV/0!
										2.05E+02	1.00E+03	7.34E+09	#DIV/0!	5.00E+03	#DIV/0!

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2MSS*RQI101A,B,C Main Steam:

Monitor efficiencies from ERS-SFL-86-026										X/Q = 9.24E-05 s/m ³					
2MSS*RQI-101A,B,C										Release (uCi/s) CF for TEDE = 5.31E+04					
Release Flow Rate = 6.009E+03 cfm										Release (uCi/s) CF for Child Thyroid = 2.63E+03					
Isotope	U2 only SGTR (Ci)	Activity Ratio	Effective		Release (uCi/s)	Release (uCi/cc)	Efficiency (cpm/uCi/cc)	Count Rate (cpm/mmrem/h)	DCF (mmrem-m ³ /uCi-y)	Effective		Release (uCi/s)	Release (uCi/cc)	Efficiency (cpm/uCi/cc)	Count Rate (cpm/mmrem/h)
			DCF	DCF						DCF	DCF				
Kr-83m	2.87E+00	5.13E-04	4.69E-01	2.40E-04	2.72E+01	9.59E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.35E+00	4.75E-07	0.00E+00	0.00E+00
Kr-85m	8.79E+00	1.57E-03	8.17E+02	1.28E+00	8.33E+01	2.94E-05	7.72E+03	2.27E-01	0.00E+00	0.00E+00	0.00E+00	4.13E+00	1.46E-06	7.72E+03	1.12E-02
Kr-85	8.29E+02	1.48E-01	1.12E+01	1.66E+00	7.86E+03	2.77E-03	4.50E+01	1.25E-01	0.00E+00	0.00E+00	0.00E+00	3.89E+02	1.37E-04	4.50E+01	6.18E-03
Kr-87	4.91E+00	8.77E-04	4.47E+03	3.92E+00	4.66E+01	1.64E-05	8.00E+03	1.31E-01	0.00E+00	0.00E+00	0.00E+00	2.31E+00	8.13E-07	8.00E+03	6.50E-03
Kr-88	1.57E+01	2.80E-03	1.13E+04	3.17E+01	1.49E+02	5.25E-05	1.13E+04	5.93E-01	0.00E+00	0.00E+00	0.00E+00	7.37E+00	2.60E-06	1.13E+04	2.94E-02
Kr-89	5.20E-02	9.29E-06	1.02E+04	9.47E-02	4.93E-01	1.74E-07	1.49E+04	2.59E-03	0.00E+00	0.00E+00	0.00E+00	2.44E-02	8.61E-09	1.49E+04	1.28E-04
Xe-131m	3.42E+01	6.11E-03	4.29E+01	2.62E-01	3.24E+02	1.14E-04	1.74E+02	1.99E-02	0.00E+00	0.00E+00	0.00E+00	1.61E+01	5.66E-06	1.74E+02	9.85E-04
Xe-133m	3.25E+01	5.80E-03	1.49E+02	8.65E-01	3.08E+02	1.09E-04	1.04E+03	1.13E-01	0.00E+00	0.00E+00	0.00E+00	1.53E+01	5.38E-06	1.04E+03	5.60E-03
Xe-133	2.13E+03	3.80E-01	1.76E+02	8.70E+01	2.02E+04	7.12E-03	7.85E+01	5.59E-01	0.00E+00	0.00E+00	0.00E+00	1.00E+03	3.53E-04	7.85E+01	2.77E-02
Xe-135m	2.11E+03	3.77E-01	2.15E+03	8.10E+02	2.00E+04	7.05E-03	8.38E+03	5.90E+01	0.00E+00	0.00E+00	0.00E+00	9.91E+02	3.49E-04	8.36E+03	2.92E+00
Xe-135	4.07E+02	7.27E-02	1.25E+03	9.09E+01	3.86E+03	1.35E-03	9.74E+03	1.33E+01	0.00E+00	0.00E+00	0.00E+00	1.91E+02	6.74E-05	9.74E+03	6.56E-01
Xe-137	1.57E-01	2.80E-05	9.55E+02	2.68E-02	1.49E+00	5.25E-07	3.56E+03	1.87E-03	0.00E+00	0.00E+00	0.00E+00	7.37E-02	2.60E-08	3.56E+03	9.25E-05
Xe-138	1.56E+00	2.79E-04	6.27E+03	1.75E+00	1.48E+01	5.21E-06	1.15E+04	6.00E-02	0.00E+00	0.00E+00	0.00E+00	7.33E-01	2.58E-07	1.15E+04	2.97E-03
I-131	5.94E+00	1.06E-03	4.66E+05	4.94E+02	5.63E+01	1.99E-05	1.07E+04	2.12E-01	2.44E+07	2.59E+04	2.79E+00	9.83E-07	1.07E+04	1.05E-02	1.05E-02
I-132	2.04E+00	3.64E-04	4.33E+04	1.58E+01	1.93E+01	6.82E-06	2.90E+04	1.98E-01	2.90E+05	1.06E+02	9.58E-01	3.38E-07	2.90E+04	9.79E-03	9.79E-03
I-133	8.76E+00	1.56E-03	1.28E+05	2.00E+02	8.31E+01	2.93E-05	1.06E+04	3.10E-01	5.77E+06	9.03E+03	4.11E+00	1.45E-06	1.06E+04	1.54E-02	1.54E-02
I-134	9.49E-01	1.59E-04	2.69E+04	4.56E+00	9.00E+00	3.17E-06	2.86E+04	9.07E-02	7.50E+04	1.29E+01	4.46E-01	1.57E-07	2.86E+04	4.49E-03	4.49E-03
I-135	4.84E+00	8.54E-04	7.10E+04	6.14E+01	4.59E+01	1.62E-05	1.18E+04	1.91E-01	1.19E+06	1.03E+03	2.27E+00	8.01E-07	1.18E+04	9.46E-03	9.46E-03
	5.60E+03			1.79E+03				7.51E+01		3.61E+04		9.27E-04		3.72E+00	
Monitor conversion factor CF11 (uCi/cc-cpm) = 2.50E-04															
										uCi/cc	TEDE	cpm	uCi/cc	Child Thyroid	cpm
										1.88E-01	1.00E-01	7.51E-02	4.65E-02	5.00E-01	1.88E-02
										1.88E+00	1.00E-02	7.51E+03	4.65E-01	5.00E-02	1.88E-03
										1.88E+01	1.00E+03	7.51E+04	4.65E+00	5.00E+03	1.88E+04