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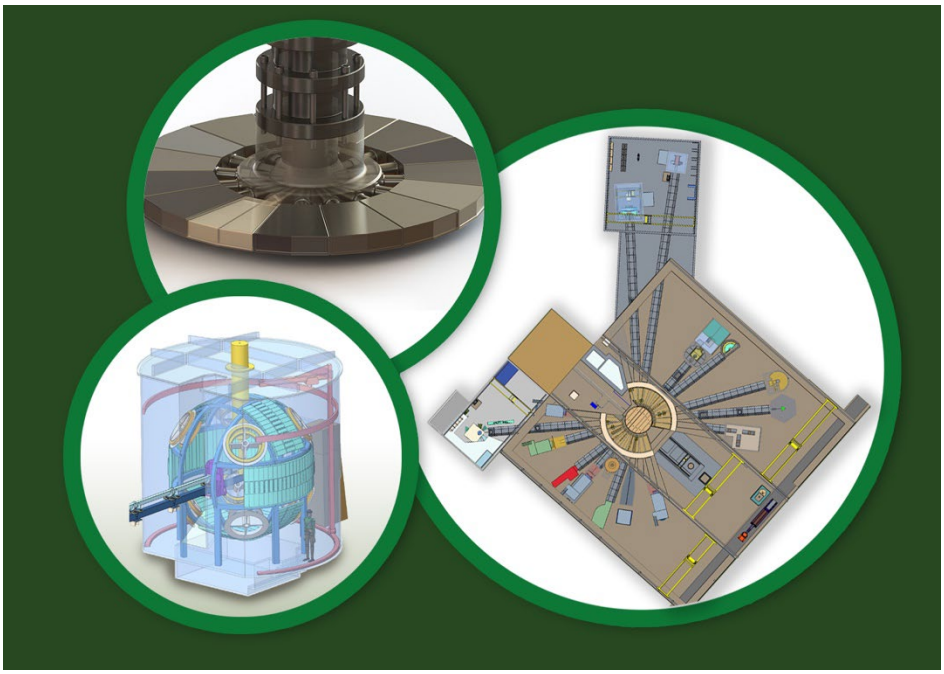
SECOND TARGET STATION (STS) PROJECT
STS Bounding Accident Dose Estimates



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SECOND TARGET STATION (STS) PROJECT

Second Target Station Bounding Accident Dose Estimates

July 2019

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CONTENTS

LIST OF FIGURES

LIST OF TABLES

1. INTRODUCTION AND BACKGROUND

1.1 INTRODUCTION

This Preliminary Hazard Analysis Report (PHAR) has been issued for the Second Target Station (STS) Project at the Spallation Neutron Source (SNS) as part of the Critical Decision 1 (CD-1) process. This project will construct a Second Target Station (STS) on the SNS site, an initial set of neutron scattering instruments and the required proton beamline transport to the target. Accident analysis will be done during Preliminary Design. The purpose of this document is to provide initial preliminary bounding dose evaluations of the hazards to workers and the public. The Hazard Evaluation (HE) tables from the PHAR identified approximately 225 events. From these, two types of event were judged to be bounding for unmitigated dose: loss of target cooling with continued beam operation and seismic events leading to a hydrogen detonation adjacent to the target. Dose estimates were made for on site at 100 m and the worst case off-side based on the conceptual design.

1.2 BACKGROUND

DOE Order 420.2C, *Safety of Accelerator Facilities*, states the applicability of the Order to all DOE accelerator facilities while unambiguously confirming the distinctions between accelerator facilities and nuclear facilities. As a new accelerator project, the STS Project must undergo formal project management reviews as required by DOE Order 413.3B, *Program and Project Management for the Acquisition of Capital Assets*. A hazard analysis (HA) will be conducted as part of the design process. Specifically, a preliminary hazard analysis (PHA) document will be prepared during at the CD-1 level, and the subsequent HA will continue throughout the CD-2 and CD-3 phases. By the time the project reaches the CD-4 level, the HA will be complete and the respective safety assessment document (SAD) will be prepared.

2. PROJECT DESCRIPTION

The SNS facility at ORNL initially included a First Target Station (FTS) with 24 instrument beamlines. The original SNS Campus Master Plan included provision for an STS. This provision has been further developed to accommodate growth and expansion of the accelerator facilities, target facilities, instrument buildings, laboratories, offices, and secondary supporting facilities. A PPU Project has been started, which will increase the accelerator power capability from 1.4 MW to 2.8 MW at 60 Hz. This capability will allow the accelerator to provide up 700 kW at 15 Hz to the new target station when available. The STS Project will provide the proton beam transport to the STS, the target station, an initial set of 8 neutron scattering instruments with the capacity for up to 22 instruments, and the supporting buildings and facilities. A full description of the CD is given in the STS *Conceptual Design Report*.[5] A short summary is included in this section.

Figure 2-1 highlights the site layout for the proposed new facilities (in red).

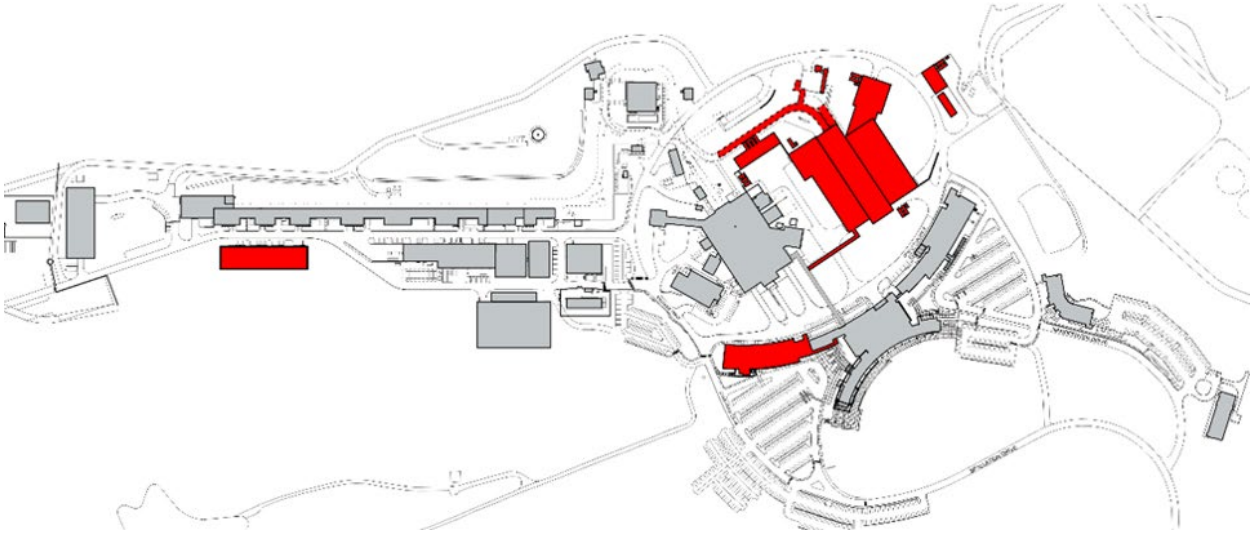

Figure 2-1. STS Site Plan.

The ring-to–second target (RTST) tunnel will house the proton beamline shown schematically in Figure 2-2 that extends from the existing ring-to-target beam transport (RTBT) tunnel to the STS Target Building. Because of the radiological levels that will occur during operation of the proton beamline, it will be shielded with a combination of concrete and earth, providing total shielding dimensions of 18 ft, 6 in. minimum measured from the interior tunnel surfaces to the exterior grade.

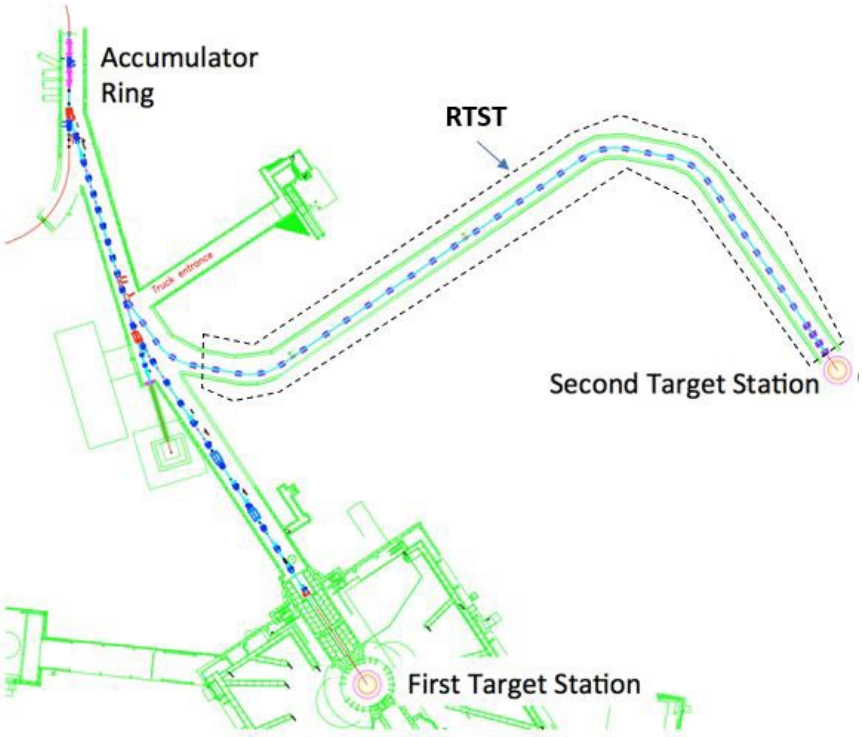

Figure 2-2. Ring-to–second target beamline.

The STS Target Building will house the second target monolith, where the RTST proton beamline terminates and the 22 STS neutron beamlines originate. The STS Target Building will also house all

utility systems necessary to support the target, space supporting long-term maintenance of the target, and numerous other functions that are critical to operation of the target facility. The STS will include three instrument buildings. The 40M Instrument Building will house up to 11 instruments; the 50M Instrument Building will house up to 9 instruments; and the 90M Instrument Building will house 2 instruments. The ST01 and ST02 (Zeeman's Instrument) are included in the 40M Instrument Building. A building and instrument layout is shown in Figure 2-3 with the 50M and 90M building to the north. An initial set of eight instruments is planned, along with the associated infrastructure. A listing of these instruments is shown in the highlighted text in Figure 2-3.

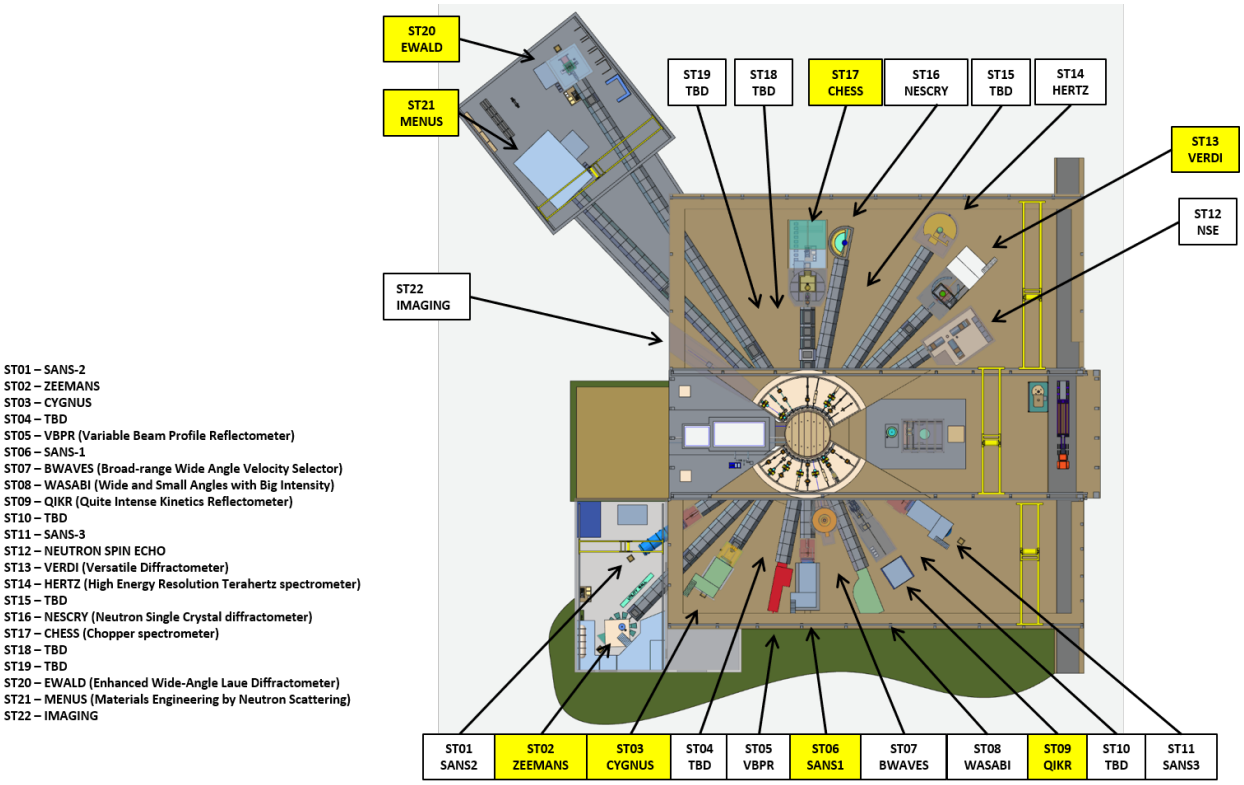

Figure 2-3. Target and instrument buildings with proposed instrument set.

A perspective view of the Target Building from the high bay area is shown in Figure 2-4, and a cutaway view at the elevation of the proton beam is shown in Figure 2.5.

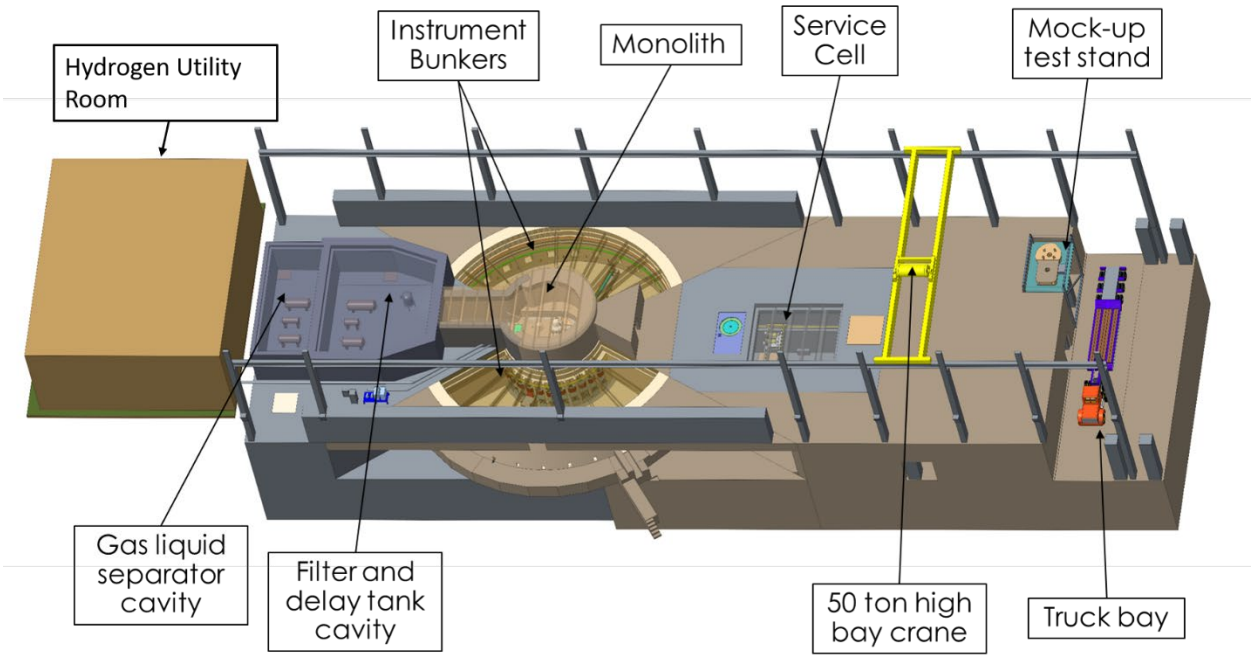

Figure 2-4. Target Building.

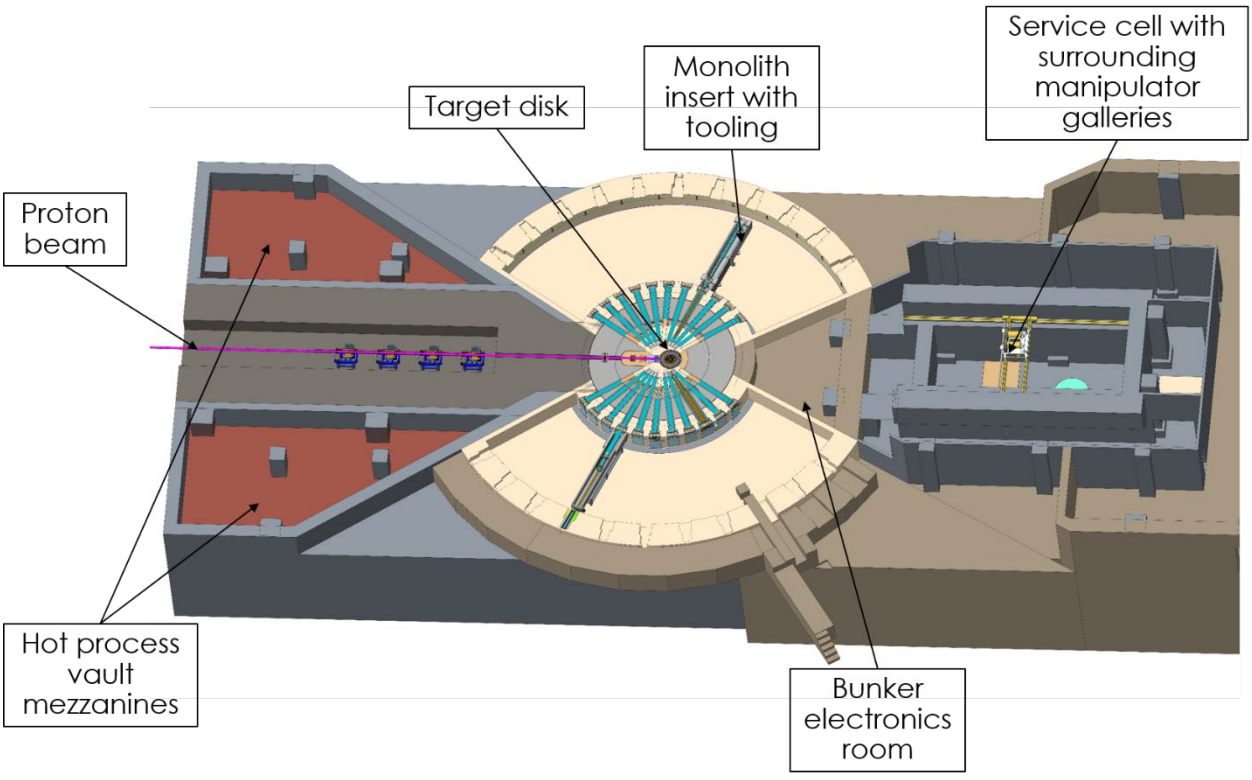

Figure 2-5. Target Building at proton beam elevation.

The 700 kW incident proton beam will operate at 15 Hz with short pulses. A water-cooled rotating tungsten target will produce neutrons that will be moderated in two liquid hydrogen moderators to the

energies required for the neutron instruments. Figures 2-6 and 2-7 show views of the central monolith and target region.

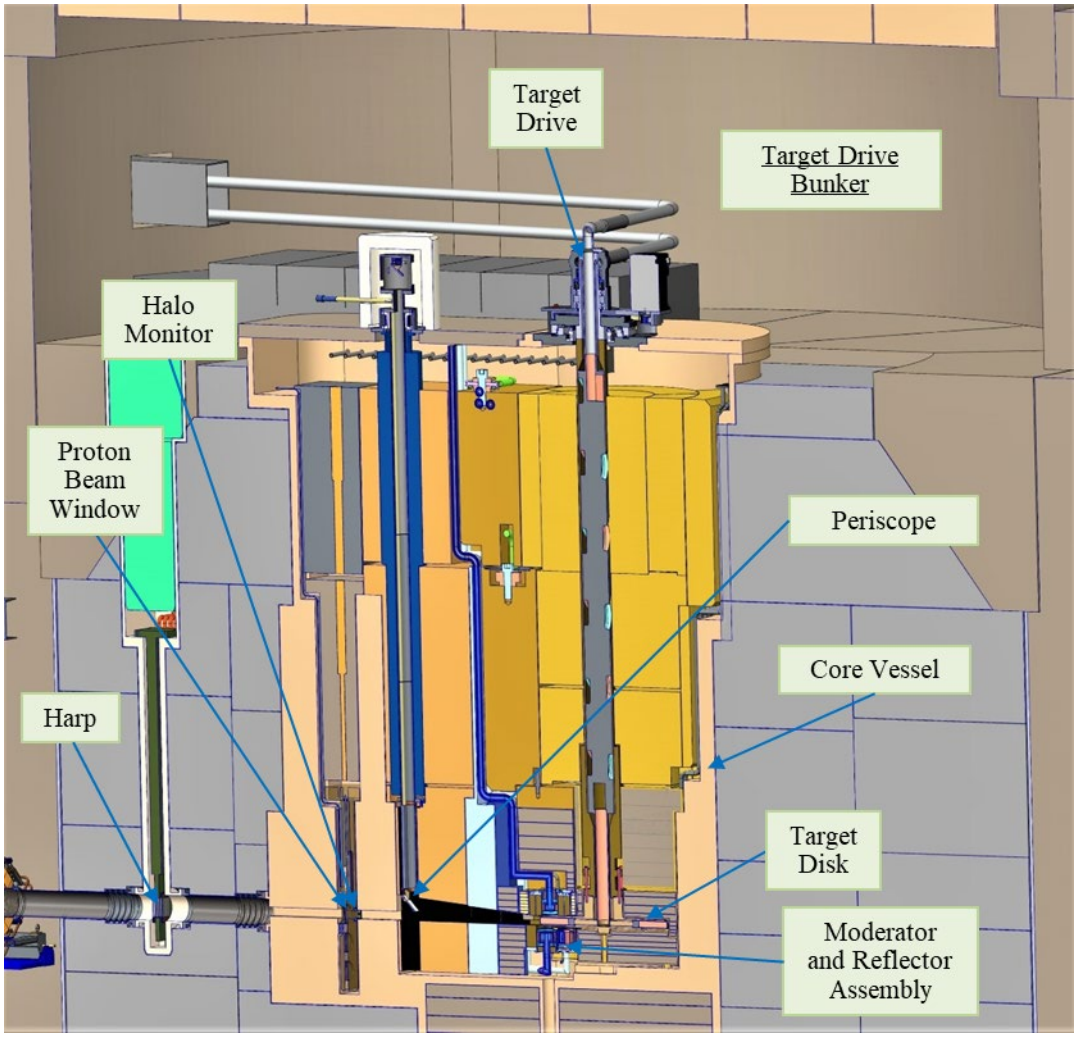

Figure 2-6. Target monolith central region.

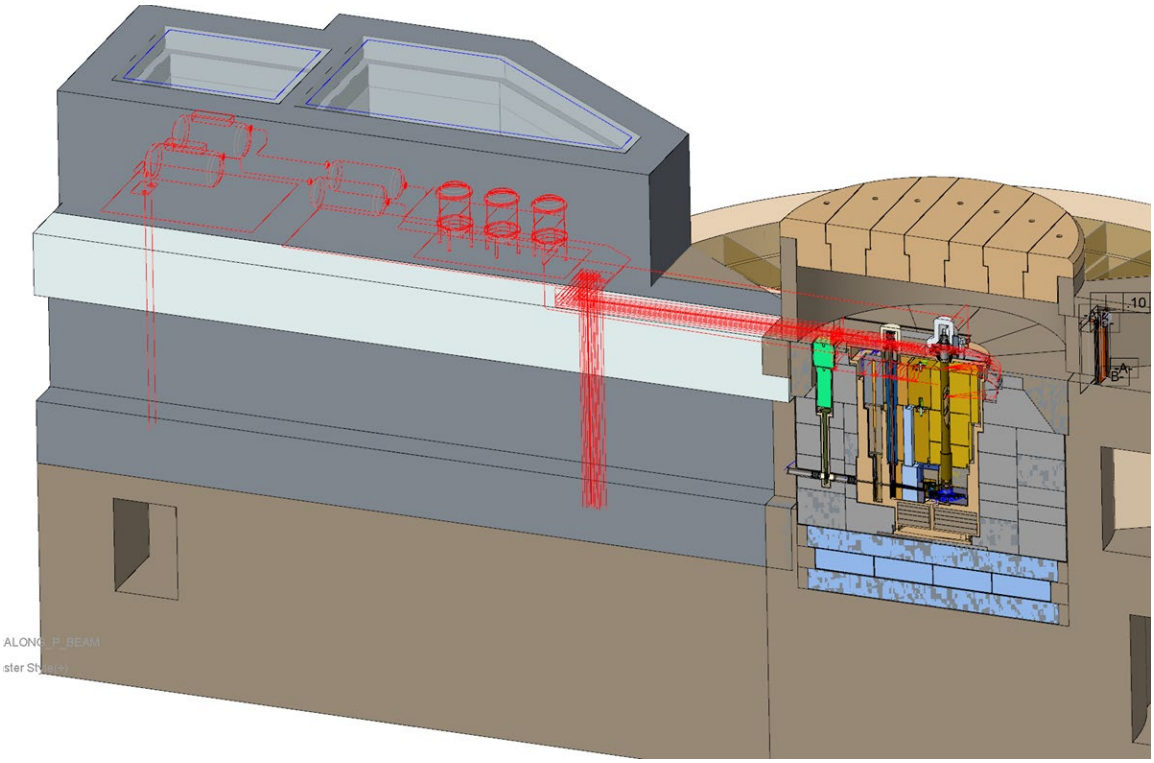

Figure 2-7 Monolith Layout.

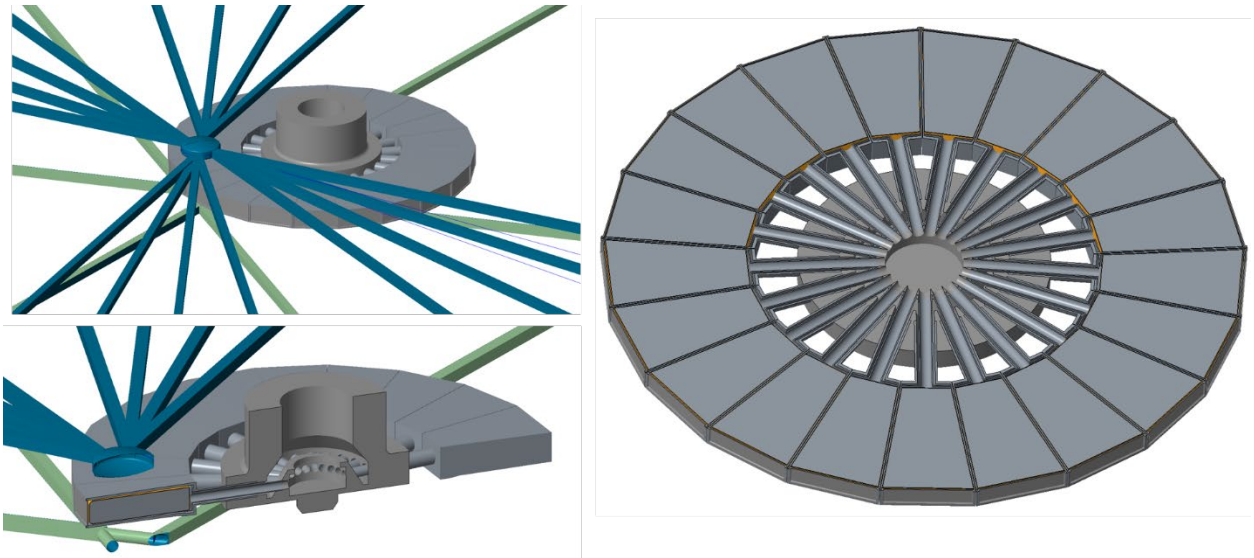

Figure 2-8 1.14 m diameter 21 segment target

3. SUMMARY OF HAZARDS

3.1 OVERVIEW

Except for events associated with the rotating solid target or mercury target, many of the hazards at the STS are very similar to those at the FTS. Since the FTS has been an operating facility for over 10 years with current FSADs, these hazards are well understood. The STS project hazards identified in the PHAR for the accelerator RTST beamline are common with the FTS, and evaluations from the FSAD-PF will be used. The STS instrument set also is expected to have a common set of hazards as identified in the FSAD-NF and those evaluations will also be used for STS. Events associated with the rotating tungsten target and the qualitative impacts on workers and the public were evaluated for STS.

The primary reason for the selection of a rotating target is that the decay heat can be passively removed by thermal radiation to the surrounding shielding without reaching temperatures that could cause a significant radiological release. The potential mechanisms for release associated with elevated temperatures are oxidation of the tungsten or a reaction between tungsten and steam that produces a tungstic acid aerosol and hydrogen gas.[6,7] This reaction starts at approximately 800°C. Preliminary evaluations of the baseline design showed that with no cooling except thermal radiation to the surrounding shielding, the peak tungsten temperature was on the order of 400°C or less, which is well below the threshold for a tungsten/steam reaction.[6,7] After completion of the initial hazard event evaluations, two primary types of unmitigated events appeared to be bounding for radiological dose exposure to workers or the public. The first primary type is a loss of cooling with continued beam operation, and the second is a seismic event followed by a hydrogen detonation adjacent to the target. These events are summarized in the following sections.

Neutronic calculations of the radionuclide inventories have been done assuming 700 kW beam operation for 5000 hours per year for 10 and 20 years of operation and the latter used for all dose estimates. The 2018 target design assumed 1 mm tantalum cladding over 20 segments. Some design changes have been made in 2019 including going to 21 segments, but these are not expected to significantly impact the inventory. The total inventory after 20 years was calculated to be approximately 1.5 x 10^6 curies. Table 1 lists the top 10 nuclides ranked by activity at shutdown and the full list is given in Appendix A.

Table 1 20 year Inventory

Isotope	Half Life (s)	Curies at shutdown
W -187	8.54E+04	3.86E+05
TA-182	9.89E+06	3.75E+05
W -185	6.49E+06	1.78E+05
W -181	1.05E+07	4.44E+04
MN- 56	9.28E+03	1.90E+04
TA-183	4.41E+05	1.87E+04
W -179	2.25E+03	1.67E+04
H - 3	3.89E+08	1.60E+04
TA-178	5.59E+02	1.58E+04
TA-179	5.74E+07	1.51E+04

3.2 LOSS OF COOLING EVENTS

Unmitigated events with inadequate cooling and continued proton beam operation can result in very high target temperatures in short time periods, with associated releases of target material by vaporization. Multiple causes have been identified for such events, including over-focused beams, water cooling loop malfunctions, loss of rotation, or shroud failure from fatigue or radiation damage. An estimate of the temperature rise without water cooling and only thermal radiation to surrounding shielding was done assuming rotation continues. Figure 3.1 shows the model used and the temperatures after 10 minutes. Figure 3.2 shows the peak tungsten and steel temperatures versus time . The steel shell is likely to fail between 800 C and 1400 C or by about 8 minutes.

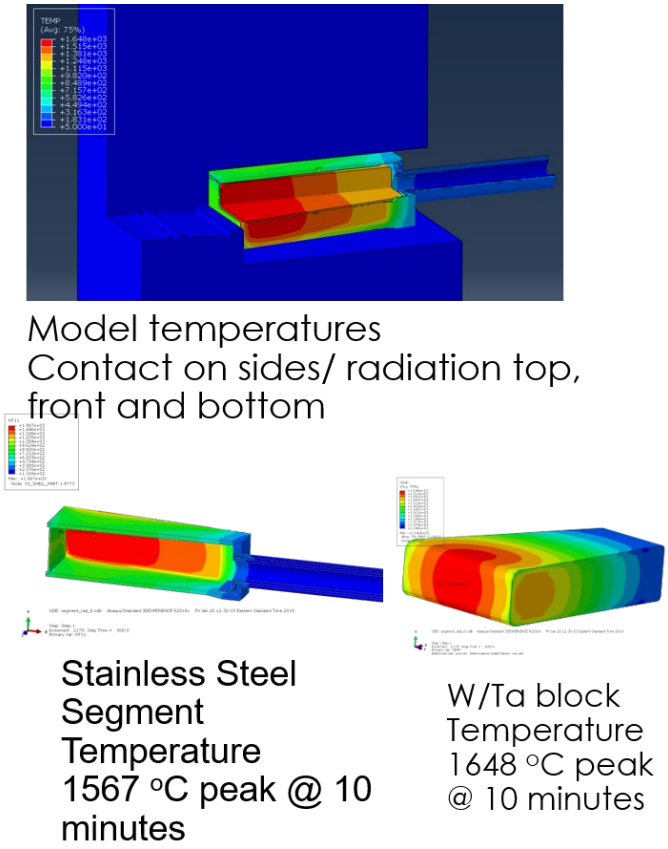

Figure 3-1 Loss of cooling model for one segment

The accident analysis for this case assumes that rotation stops when the shroud collapses onto the shielding below which only exposes a few segments to direct heating and vaporization after collapse. A very conservative assumption was made that ½ the tungsten and tantalum vaporize due to the tungsten-steam reaction. The collapse could also cause a failure of the hydrogen moderator vessel below the target. The core vessel will be operated in an inert atmosphere, either vacuum or helium. The loss of cooling does not affect the core boundary, so the reaction products and any hydrogen release from the moderator can vent through core vessel hydrogen safe vent line with an elevated release. The Hazard Event table for a typical loss of cooling event from the PHAR is given in Appendix D. A summary of the assumptions is given below:

- 700 kW beam operation
- An inert atmosphere of helium or rough vacuum is maintained within the core vessel

- All water cooling stops at time t=0 and no water remains in the target
- Heat transfer is by thermal radiation only with an emissivity of 0.6 for stainless steel in the target shroud and surrounding shielding and 0.14 for the tantalum clad
- Rotation continues until shroud structural integrity is lost due to high temperature and the target collapses onto the shielding
- ½ of the tungsten and tantalum vaporize
- The hydrogen moderator vessel under the target could fail and release hydrogen into the core vessel
- When the core vessel pressure reaches 1.5 bar (7 psig) a burst disk will rupture and relieve pressure through a hydrogen safe vent to the roof of the target building
- Neutron beam windows and other core vessel boundaries remain intact
- ½ the tungsten and tantalum vaporize due to the tungsten/steam reaction
- Reaction powders and possibly hydrogen are released from the elevated stack

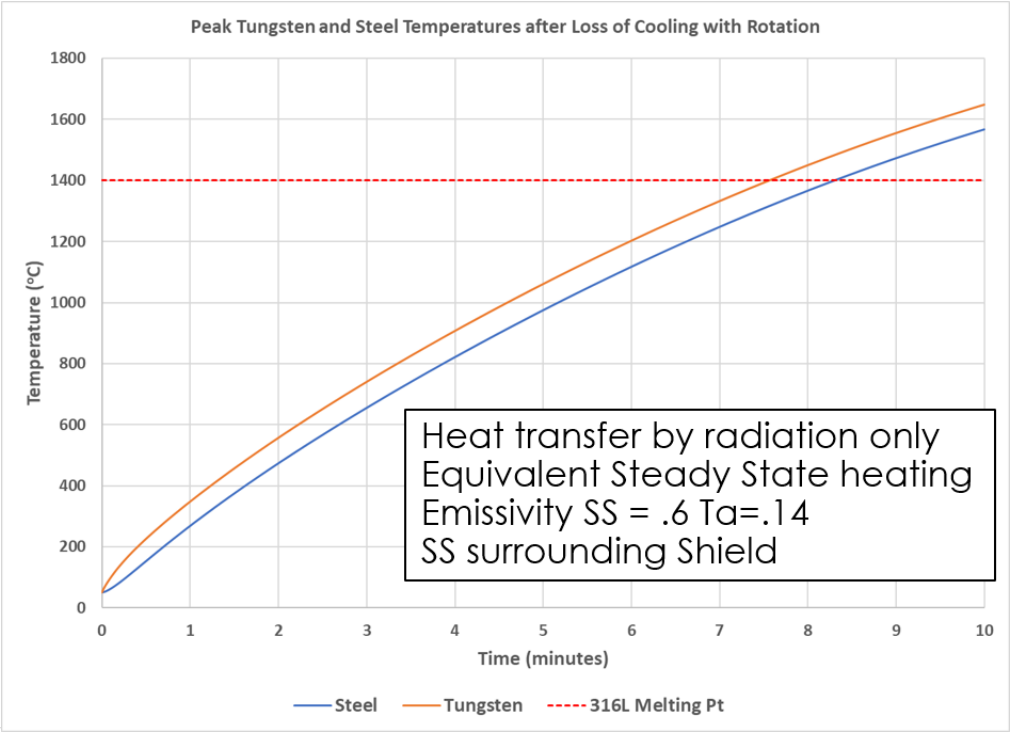

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Figure 3-2 Temperature versus time for loss of cooling

3.2.1 Evaluation of Airborne Release and Respirable Fractions

DOE handbook 3010-94 gives recommended values for non-volatile Airborne Release Fractions (ARF) and Respirable Fractions (RF) for several types of powder releases. For low pressure (<25 psig) powder release these were an ARF of 0.5% with an RF of 0.4. The powder from tungsten was assumed to result from a tungsten steam reaction which produces a Tungstic Acid ($WO_2(OH)_2$) aerosol. The reaction starts at approximately 800 ºC but the reaction rate is exponential with temperature and does not become significant until above 1000-1400 C. The European Spallation Source (ESS) performed safety related testing of unclad tungsten blocks in air at up to 1700 C to evaluate the ARF and measure particle size.

This test series was called TOAST [7] and found a worst case ARF of 46% for tungsten oxide particles. Particle size distributions were also found to be generally sub-micon which would imply an RF of 1. Testing with steam was not successful and no useful data was obtained. The ESS accident analysis also assumed that other non-volatile aerosols would have the same ARF as the tungsten nuclides.

The loss of cooling accident cases for STS are assumed to have vaporization from steam and not air. Also, because of the tantalum cladding, isotope Ta182 has a large curie inventory as shown in table 1. It is therefore important to have realistic ARF values for this isotope. There is good evidence that tantalum does not form an aerosol and can be expected to remain near the target. There is test data from INEL in 2000 where an alloy of tantalum with 10 % tungsten was tested in air at up to 1200 C. While about 1/3 of the tungsten was mobilized and deposited outside the test chamber the tantalum remained in the chamber and tended to spall with small flake-like particles.[8] Another indication is from an event at the ISIS facility with their TS2 target. As shown in figure 3-3 the front tantalum window failed, and tantalum particles were deposited below the failure location.

Figure 3-3 ISIS TS2 tantalum window failure

It is believed that the tantalum window had a peak temperature of approximately 1300 ºC and that there was also a water leak from outside onto the window. It is theorized that the water dissociated and the oxygen attacked the grain boundaries causing grains to fall out.

The indications from these two cases are that the tantalum is not trapped on the tungsten particles and does not form an aerosol at up to 1300 ºC.

3.2.2 STS ARF and RF Assumptions

STS has assumed an ARF of 0.4 with an RF=1 for all tungsten nuclides based on the ESS testing and accident analysis. Based on the INEL testing and ISIS experience, we are using the DOE handbook 3010-94 values for a low pressure powder discharge for all other non-aerosol nuclides. STS is also planning to conduct ARF testing on representative tantalum clad tungsten samples in steam to validate the assumptions.

The original FTS safety evaluation found normalized downwind concentrations (χ/Q) for both ground level and for a 15 m elevated release[10]. The latter corresponds to releases from the windows at the top of the experiment halls. Since the loss of cooling event is assumed to be released from the core vessel vent line stack, the elevated release factor was used for off site dose estimates for loss of cooling events. The 100 m on-site (χ/Q) factor has not been evaluated yet, and so preliminary estimates will use the same factor of 20 above off-site as was found for the FTS ground level release.

3.2.3 Loss of Cooling Dose Estimates

Table 2 gives the constants used in the maximally exposed offsite individual (MEOI) dose estimate with an elevated release. The constants for breathing rate (BR), Cloud Shine and dose uncertainty are the same as used for the FTS FSAD-NF. The dose uncertainty is calculated as 1.5 for calculational uncertainty and 1.05 for proton power for a total of 1.575. The Damage Ratio is 0.5 because of the assumption that half the target material is vaporized.

Table 2 Dose Estimate Constants Used for Loss of Cooling Event Dose Estimates

Breathing Rate (m^3/s)	BR	3.47E-04
Dispersion factor (elevated release)	X/Q	1.42E-05
dose uncertainty		1.58
Cloud shine		1.08
Damage Ratio	DR	0.5
ARF (non-volatile aerosols)	ARF	.005
RF (non-volatile aerosols)	RF	0.4
ARF*RF	ARF*RF	2.00e-3
ARF*RF (gases)	ARF*RF	1.0
ARF*RF (semi-volatile compounds)	ARF*RF	0.5
Tungsten ARF	ARF	0.4
Tungsten RF	RF	1.0
Tungsten ARF*RF	ARF*RF	0.4
(On site dose)/Off site dose (100 m) ground release ratio		20.4

It would take some time for releases to reach a worker at 100m or the site boundary. To be conservative, inventories at 1 minute after shutdown were used as the source terms. These were based on 20 years of operation at 5000 hours per year. The dose estimate from the top 14 nuclides is shown below and the complete list is given in Appendix B. The DCF are the Dose Conversion Factors as found in reference 11.

Table 3 Loss of Cooling MEOI Dose Estimate

	Down 1 Min Curies	Half-life	Curies * DR	DCF (Sv/Bq) 2/07/05	ARF*RF	CEDE dose (rem)	With cloudshine	With dose uncertainty
	1.46E+06				2.00E-03	5.12E-01	5.53E-01	8.71E-01
W 187	3.86E+05	8.54E+04	1.93E+05	2.00E-10	4.00E-01	2.81E-01	3.04E-01	4.79E-01
W 185	1.78E+05	6.49E+06	8.90E+04	1.40E-10	4.00E-01	9.09E-02	9.81E-02	1.55E-01
Ta182	3.75E+05	9.89E+06	1.88E+05	9.70E-09	2.00E-03	6.63E-02	7.16E-02	1.13E-01
I 125	4.22E+02	5.20E+06	2.11E+02	1.40E-08	5.00E-01	2.69E-02	2.91E-02	4.58E-02
Gd148	1.19E+02	2.35E+09	5.95E+01	1.10E-05	2.00E-03	2.39E-02	2.58E-02	4.06E-02
W 181	4.44E+04	1.05E+07	2.22E+04	2.80E-11	4.00E-01	4.53E-03	4.90E-03	7.71E-03
I 124	5.13E+01	3.61E+05	2.57E+01	1.20E-08	5.00E-01	2.81E-03	3.03E-03	4.77E-03
H 3	1.60E+04	3.89E+08	8.00E+03	1.80E-11	1.00E+00	2.63E-03	2.84E-03	4.47E-03
I 126	1.29E+01	1.13E+06	6.45E+00	2.60E-08	5.00E-01	1.53E-03	1.65E-03	2.60E-03
P32	1.04E+02	1.23E+06	5.20E+01	3.20E-09	5.00E-01	1.52E-03	1.64E-03	2.58E-03
Hf172	3.01E+03	5.90E+07	1.51E+03	1.90E-08	2.00E-03	1.04E-03	1.13E-03	1.77E-03
Co 60	1.86E+03	1.66E+08	9.30E+02	2.90E-08	2.00E-03	9.83E-04	1.06E-03	1.67E-03
W 176	5.71E+03	8.30E+03	2.86E+03	4.40E-11	4.00E-01	9.16E-04	9.89E-04	1.56E-03
W 177	7.32E+03	8.10E+03	3.66E+03	2.60E-11	4.00E-01	6.94E-04	7.49E-04	1.18E-03

Table 4 Loss of Cooling Dose Summary

Off-site MEOI dose	**0.87**	**rem**
On-site 100m dose	**17.77**	**rem**

3.3 SEISMIC EVENTS

A beyond-design-basis seismic event can result in a hydrogen release from the moderator systems into the core vessel. The seismic event could also cause the core vessel boundary to fail allowing air to enter the vessel so that the potential for either a hydrogen deflagration or detonation exists. Detonation in the free volumes adjacent to the rotating target is assumed to cause a release of a fraction of the target mass.

3.3.1 Assumptions for Analysis

The following set of assumptions were used for the evaluation:

1. Proton beam trips off due to seismically induced motion of LINAC components
2. Moderator boundary and core vessel boundary failure with hydrogen and air release into core vessel
3. Hydrogen released into vessel warms on contact with 50 ^{o}C shielding to STP conditions (20 ^{o}C)
4. Hydrogen/air mixture at 1 bar in a volume of 0.2 m^3 near the target exists
5. Void volumetric shape does not prevent hydrogen detonation
6. Hydrogen Detonation occurs next to solid target

7. Target mass release estimate does not consider protection by stainless steel target shroud
8. Target mass release is equal to TNT mass equivalent of hydrogen (per DOE-HDBK-3010-94 for detonation next to solid materials) with an RF=1
9. Monolith shielding does not reduce release fraction (no material deposits inside core vessel)
10. Detonation in larger free volume (2.5 m3) does not release target material or significantly reconfigure shielding
11. Detonation opens moderators and releases remaining trapped hydrogen from the system into vessel
12. Second stoichiometric detonation occurs after most hydrogen vents through core vessel boundary failures
13. Some monolith shielding motion possible from seismic event but is retained by concrete outer wall
14. Ground level release is assumed because of loss of core vessel boundary integrity
15. Target is unlikely to be exposed or heated by an external fire
16. Decay heat would still be removed by conduction and thermal radiation to adjacent shielding, even if some collapse occurs

Comments on the assumptions;
(1) Passive trip from seismic motion may not be accepted and a credited system could be needed
(3) Lower temperature hydrogen and air could produce a more energetic detonation but is considered unlikely
(4) Void space adjacent to solid target was estimated from the 2017 3-D model as shown in figure 3.4. The current 2019 model is still close to this. Larger ullage space volumes are separated from the target by shielding.

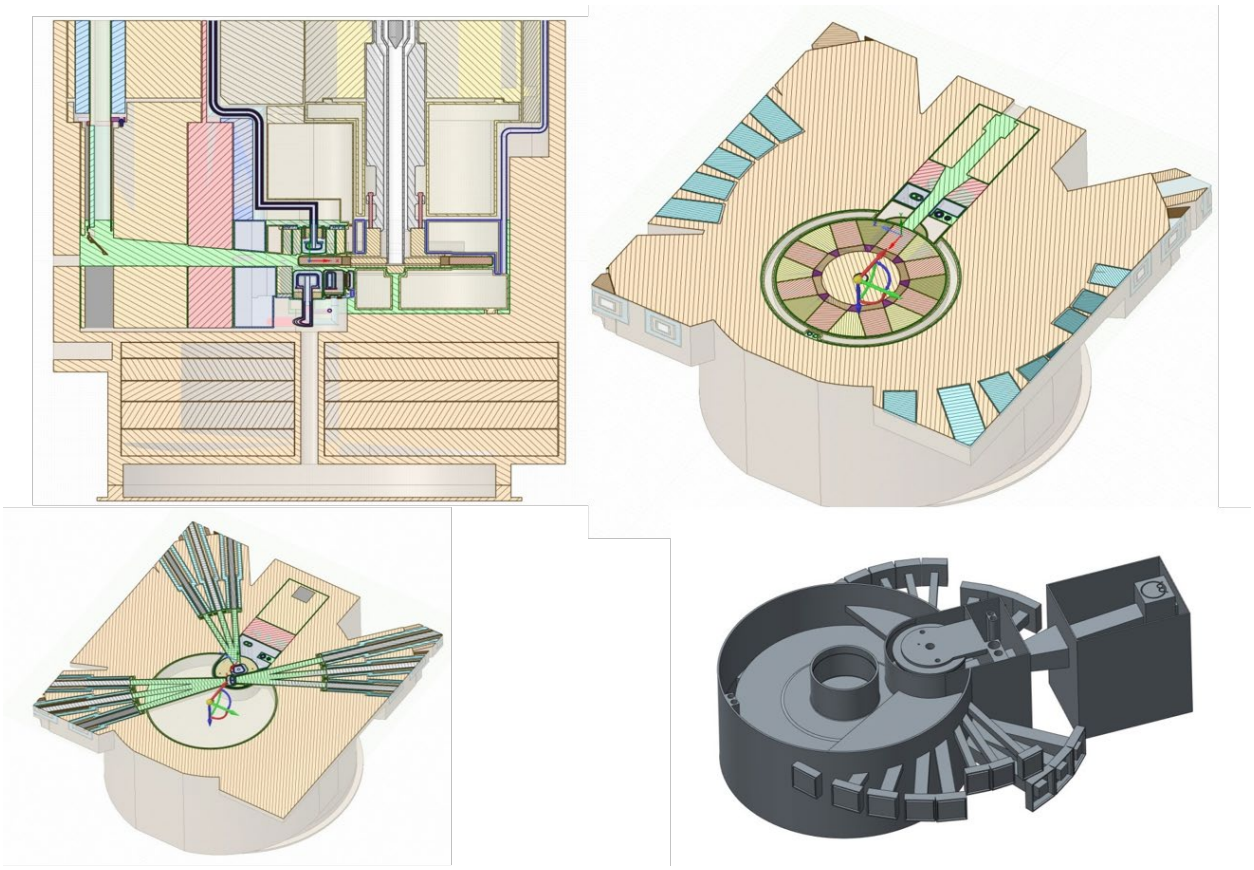

Figure 3-4 Void Space Adjacent to Target

In figure 3.4 the void space is in green an includes target gaps, proton beam line with the core vessel, neutron beam channels and miscellaneous gaps. The gray model shows only the void sections and has a total volume of 0.208 m^3. The void does not include the ullage space under shielding or at the top of the core vessel.

(5) It is likely that some of the thin channels would not support a detonation, but are included to be conservative

(7) The stainless steel shroud around the tungsten could offer significant protection from the blast and some credit may be taken in the future, but for now it is not assumed to mitigate the accident.

(9) No leak path factor credit taken for powder deposition within the monolith

(8) The high mass ratio could justify a lower RF

(10) Target is protected by shielding from any detonation in the ullage space

(11) Transfer lines within the target building could be blocked from falling debris and any trapped hydrogen forced into the core vessel for release.

(12) Assumes the initial moderator failure and detonation would release so much hydrogen the vessel hydrogen concentration would be above the range for detonation. As the hydrogen leaks out and air leaks into the vessel the range for detonation could be reached a second time.

(13) Assume outer concrete wall can retain iron shielding in position and not open large gaps to the outside for an SD-3 event

(16) Decay heat can be removed by conduction or thermal radiation and stay well below 800 C even if shielding collapses onto it.

3.3.2 Hydrogen Detonation Analysis

The effects of a detonation of hydrogen were evaluated using the approach given in DOE Handbook 3010-94 as given below.

"Explosive Stress

The effect most closely resembling stresses in a given explosive-type accident scenario is chosen. There is no need to assume cumulative releases for all effects cited.

- Shock Effects. For detonations in or contiguous to solid metal, a respirable release of a mass of inert material equal to the TNT equivalent is assessed to be bounding. At low mass ratios (mass inert material/mass TNT equivalent), the respirable release is comparable to the total material release. As mass ratios increase, the respirable fraction becomes significantly less than the total amount of material released, which decreases with increasing mass ratio as well.

The use of an equivalent mass of TNT for hydrogen detonations was also used in the FSAD-NF for the FTS.

For the STS seismic event with a volume of 0.2 m^3 adjacent to the target the equivalent TNT mass is 0.13 kg as shown in table 5 below with a fraction release of target material of 1.79×10^{-4}.

Table 5 STS Calculation of hydrogen detonation equivalent TNT mass

Free Volume	0.2	m^3
Hydrogen Fraction	0.3	
Volume H_2	0.06	m^3
Hydrogen Density (20 ^oC)	0.0826	kg/m^3
Hydrogen Mass (20 ^oC)	4.960E-03	kg
Fraction detonated	1	
dhcg (heat of combustion of hydrogen)	120,000	kJ/kg
dhtnt (heat of combustion of TNT)	4760[12]	kJ/kg
Mass TNT	0.13	kg
Mass target	700	kg
fractional release	1.79E-04	
Mass ratio	5600	
Respirable Fraction (RF)	1	

The Respirable Fraction has been conservatively assumed to be equal to 1 even though the very high mass ratio would indicate there should be a significant reduction.

3.3.3 Seismic Event Dose Estimates

A summary of the constants used is given in table 6. The dose estimate was made assuming 20 years of operation at 5000 hours per year and with the assumptions given in section 3.3.1. A ground level release was assumed with the dispersion factors (X/Q) used for the SNS FSAD. For the calculation the Damage Ratio was taken as 1.0 with an Airborne Release Fraction (ARF) equal to the fractional release of 1.79×10^{-4} from table 6 and an RF=1.0 for all non-volatile nuclides. A dose uncertainty factor of 1.58 was used to account for nuclides with no dose conversion factors and calculational uncertainties as done for the SNS FSAD evaluations.

Table 6 Seismic Dose Estimate Constants

Breathing Rate (m^3/s)	BR	3.47E-04
Dispersion factor	X/Q	3.62E-05
dose uncertainty		1.58E+00
Cloud shine		1.08E+00
Damage Ratio	DR	1.00E+00
ARF x RF		1.79E-04
W ARF x RF		1.79E-04
(On site dose)/Off site dose (100 m) ground release		2.04E+01

Table 7 gives the dose estimate of 0.4 rem after one detonation. The top 10 nuclides shown contribute 97% of the total for the 666 nuclides evaluated for both detonations.

Table 7 Dose Estimate after 1 hydrogen detonation

Nuclide	Curies @ 1 minute	Half-life	DCF (Sv/Bq) 2/07/05	ARF*RF	CEDE dose (rem)	With cloudshine	MEOI dose - 1 det with dose uncertainty (rem)
Totals	1.46E+06				2.32E-01	2.51E-01	**3.95E-01**
I 125	4.22E+02	5.20E+06	1.40E-08	5.00E-01	1.37E-01	1.48E-01	2.34E-01
Ta182	3.75E+05	9.89E+06	9.70E-09	1.79E-04	3.02E-02	3.26E-02	5.14E-02
Gd148	1.19E+02	2.35E+09	1.10E-05	1.79E-04	1.09E-02	1.17E-02	1.85E-02
I 124	5.13E+01	3.61E+05	1.20E-08	5.00E-01	1.43E-02	1.55E-02	2.43E-02
H 3	1.60E+04	3.89E+08	1.80E-11	1.00E+00	1.34E-02	1.45E-02	2.28E-02
I 126	1.29E+01	1.13E+06	2.60E-08	5.00E-01	7.79E-03	8.42E-03	1.33E-02
P32	1.04E+02	1.23E+06	3.20E-09	5.00E-01	7.73E-03	8.35E-03	1.32E-02
I 123	3.51E+02	4.75E+04	2.10E-10	5.00E-01	1.71E-03	1.85E-03	2.91E-03
I 120	2.09E+02	4.86E+03	3.00E-10	5.00E-01	1.46E-03	1.57E-03	2.48E-03
P33	3.90E+01	2.19E+06	1.40E-09	5.00E-01	1.27E-03	1.37E-03	2.16E-03

Using the curie inventory left after the first detonation the contribution from a second detonation was found to be 0.22 rem giving a total for both detonations of 0.62 rem as shown in table 8. The dose estimates for all nuclides having Dose Conversion Factors is given in Appendix C.

Table 8 MEOI Seismic Dose after 2 Detonations

Nuclide	Curies after 1 detonation	DCF (Sv/Bq) 2/07/05	ARF*RF	CEDE dose (rem)	With cloudshine	MEOI dose - 2nd det with dose uncertainty	MEOI dose - total 2 detonations
Totals	1.45E+06			1.32E-01	1.42E-01	**2.24E-01**	**6.19E-01**
I 125	2.11E+02	1.40E-08	5.00E-01	6.86E-02	7.41E-02	1.17E-01	3.50E-01
Ta182	3.75E+05	9.70E-09	1.79E-04	3.02E-02	3.26E-02	5.14E-02	1.03E-01
Gd148	1.19E+02	1.10E-05	1.79E-04	1.09E-02	1.17E-02	1.85E-02	3.70E-02
I 124	2.57E+01	1.20E-08	5.00E-01	7.15E-03	7.73E-03	1.22E-02	3.65E-02
H 3	0.00E+00	1.80E-11	1.00E+00	0.00E+00	0.00E+00	0.00E+00	2.28E-02
I 126	6.45E+00	2.60E-08	5.00E-01	3.90E-03	4.21E-03	6.63E-03	1.99E-02
P32	5.20E+01	3.20E-09	5.00E-01	3.87E-03	4.18E-03	6.58E-03	1.97E-02
I 123	1.76E+02	2.10E-10	5.00E-01	8.56E-04	9.25E-04	1.46E-03	4.37E-03
I 120	1.05E+02	3.00E-10	5.00E-01	7.29E-04	7.87E-04	1.24E-03	3.72E-03
P33	1.95E+01	1.40E-09	5.00E-01	6.34E-04	6.85E-04	1.08E-03	3.24E-03

The results for on site at 100m and offsite are given in table 9.

Table 9 Seismic Dose Estimate Summary

Off-site MEOI dose	**0.62**	**rem**
On-site max dose	**12.63**	**rem**

3.3.4 Summary

Both bounding events had estimated MEOI off site dose levels below 1 rem and on-site at 100 m below 18 rem. Accident analysis for the events identified in the PHAR will need to be done starting in preliminary design to confirm that these results are bounding. If the target design is changed to replace the tantalum clad with a stainless steel or zircaloy "can", the dose levels would likely decrease. Also, testing with representative tantalum clad tungsten samples in steam to determine the ARF for STS conditions is planned to be conducted after CD-1. These results will be incorporated into the accident analysis for the events.

4. REFERENCES

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APPENDIX A. **Inventory for 20 year 15 Hz operation**

Isotope	half-life (s)	Disk Activity at shutdown (curies)	Disk Activity at 1 minute (curies)
H - 3	3.89E+08	1.60E+04	1.60E+04
HE- 6	8.07E-01	1.84E-23	2.13E-23
HE- 8	1.19E-01	4.17E-153	4.17E-153
LI- 8	8.40E-01	2.28E-22	2.53E-22
LI- 9	1.78E-01	5.56E-103	5.92E-103
BE- 7	4.60E+06	2.62E+00	3.16E+00
BE- 8	7.00E-17	2.18E-22	2.43E-22
BE- 10	4.76E+13	7.37E-06	8.65E-06
BE- 11	1.38E+01	4.17E-03	4.44E-03
B - 8	7.70E-01	5.59E-25	6.35E-25
B - 9	8.00E-19	1.11E-144	1.11E-144
C - 9	1.27E-01	1.11E-144	1.11E-144
C - 10	1.93E+01	3.02E-02	3.40E-02
C - 11	1.22E+03	5.46E+00	6.81E+00
C - 14	1.80E+11	1.45E-03	1.50E-03
C - 15	2.45E+00	4.40E-09	4.63E-09
C - 16	7.47E-01	1.90E-25	1.90E-25
C - 17	1.93E-01	7.10E-96	7.10E-96
C - 18	9.20E-02	4.74E-198	4.74E-198
N - 13	5.98E+02	1.06E+00	1.12E+00
N - 16	7.13E+00	1.46E-03	1.49E-03
N - 17	4.17E+00	1.12E-05	1.12E-05
N - 18	6.22E-01	1.84E-30	1.84E-30
N - 19	2.71E-01	3.59E-68	3.59E-68
N - 20	1.30E-01	9.67E-141	9.67E-141
O - 14	7.06E+01	2.72E-02	2.72E-02
O - 15	1.22E+02	6.74E-01	7.06E-01
O - 19	2.65E+01	6.00E-02	6.04E-02
O - 20	1.35E+01	1.38E-02	1.38E-02
O - 21	3.42E+00	1.50E-06	1.50E-06
O - 22	2.25E+00	3.19E-09	3.19E-09
F - 17	6.45E+01	1.53E-02	1.53E-02
F - 18	6.59E+03	1.20E+01	1.31E+01
F - 20	1.12E+01	1.04E-01	1.08E-01
F - 21	4.16E+00	1.06E-04	1.08E-04
F - 22	4.23E+00	5.86E-05	5.91E-05

F - 23	2.23E+00	3.60E-09	3.60E-09
F - 24	4.00E-01	1.31E-46	1.31E-46
NE- 17	1.09E-01	1.44E-168	1.44E-168
NE- 18	1.67E+00	8.15E-13	8.15E-13
NE- 19	1.72E+01	6.82E-02	7.33E-02
NE- 23	3.72E+01	4.36E-01	4.55E-01
NE- 24	2.03E+02	6.65E-01	6.73E-01
NE- 25	6.02E-01	3.95E-31	3.95E-31
NE- 26	1.97E-01	6.81E-93	6.81E-93
NA- 19	5.44E-01	3.43E-36	3.43E-36
NA- 20	4.46E-01	2.49E-42	2.72E-42
NA- 21	2.25E+01	2.49E-02	2.60E-02
NA- 22	8.21E+07	1.55E+01	1.80E+01
NA- 24	5.38E+04	1.01E+01	1.16E+01
NA- 25	5.91E+01	1.73E+00	1.90E+00
NA- 26	1.08E+00	1.93E-17	2.01E-17
NA- 27	3.01E-01	5.49E-61	5.51E-61
MG- 20	1.00E-01	3.07E-183	3.07E-183
MG- 21	1.22E-01	2.28E-150	2.28E-150
MG- 22	3.86E+00	2.53E-06	2.61E-06
MG- 23	1.13E+01	2.71E-02	3.10E-02
MG- 27	5.68E+02	4.89E+00	5.64E+00
MG- 28	7.53E+04	1.60E+00	1.68E+00
MG- 29	1.30E+00	7.00E-15	7.02E-15
MG- 30	3.35E-01	7.98E-55	7.98E-55
MG- 31	2.30E-01	6.81E-80	6.81E-80
MG- 32	9.50E-02	2.38E-191	2.38E-191
MG- 33	9.05E-02	2.40E-201	2.40E-201
AL- 22	7.00E-02	6.86E-261	6.86E-261
AL- 23	4.70E-01	7.44E-41	7.44E-41
AL- 24	2.07E+00	2.40E-10	2.53E-10
AL- 24*	1.30E-01	1.03E-140	1.09E-140
AL- 25	7.18E+00	4.38E-03	5.44E-03
AL- 26	2.27E+13	3.36E-04	4.25E-04
AL- 26*	6.34E+00	5.97E-02	7.64E-02
AL- 28	1.34E+02	1.00E+02	1.17E+02
AL- 29	3.94E+02	1.28E+01	1.45E+01
AL- 30	3.60E+00	2.79E-05	2.99E-05
AL- 31	6.44E-01	9.88E-29	9.91E-29
AL- 32	3.17E-02	3.48E-191	3.48E-191
AL- 33	1.00E-19	1.99E-201	1.99E-201

SI- 24	1.00E-01	2.19E-183	2.19E-183
SI- 25	2.20E-01	5.50E-84	5.50E-84
SI- 26	2.21E+00	9.40E-09	1.13E-08
SI- 27	4.17E+00	1.06E-03	1.37E-03
SI- 31	9.44E+03	3.65E+01	4.41E+01
SI- 32	4.17E+09	2.13E-01	2.21E-01
SI- 33	6.18E+00	7.25E-04	7.29E-04
SI- 34	2.77E+00	3.45E-07	3.45E-07
SI- 35	7.80E-01	1.42E-24	1.42E-24
SI- 36	4.50E-01	4.09E-41	4.09E-41
P - 27	3.00E-01	1.81E-62	1.92E-62
P - 28	2.70E-01	7.13E-69	7.68E-69
P - 29	4.14E+00	7.81E-06	9.15E-06
P - 30	1.50E+02	2.41E+01	2.66E+01
P - 32	1.23E+06	1.04E+02	1.15E+02
P - 33	2.19E+06	3.90E+01	4.25E+01
P - 34	1.24E+01	2.74E-01	2.92E-01
P - 35	4.73E+01	8.89E-01	9.21E-01
P - 36	5.60E+00	5.99E-04	6.00E-04
P - 37	2.31E+00	1.28E-08	1.29E-08
P - 38	6.40E-01	3.05E-29	3.05E-29
S - 29	1.87E-01	9.41E-99	9.41E-99
S - 30	1.18E+00	3.83E-17	4.51E-17
S - 31	2.57E+00	8.81E-08	1.11E-07
S - 35	7.56E+06	3.05E+01	3.37E+01
S - 37	3.03E+02	1.88E+00	1.91E+00
S - 38	1.02E+04	1.76E+00	1.76E+00
S - 39	1.15E+01	2.87E-02	2.88E-02
S - 40	8.80E+00	8.64E-03	8.64E-03
S - 41	1.99E+00	3.69E-10	3.69E-10
S - 44	1.23E-01	1.59E-148	1.59E-148
CL- 31	1.50E-01	3.31E-123	3.31E-123
CL- 32	2.98E-01	4.46E-63	4.46E-63
CL- 33	2.51E+00	4.31E-09	4.66E-09
CL- 34	1.53E+00	1.25E+00	1.36E+00
CL- 34*	1.93E+03	2.80E+00	3.05E+00
CL- 36	9.50E+12	3.86E-03	4.31E-03
CL- 38	2.23E+03	1.45E+01	1.63E+01
CL- 38*	7.70E-01	5.51E-24	6.27E-24
CL- 39	3.34E+03	5.64E+00	6.04E+00
CL- 40	8.10E+01	1.57E+00	1.61E+00

CL- 41	3.84E+01	5.71E-01	5.75E-01
CL- 42	6.80E+00	2.47E-03	2.47E-03
CL- 43	3.07E+00	1.19E-06	1.19E-06
CL- 44	5.60E-01	2.43E-33	2.43E-33
AR- 33	1.73E-01	5.03E-107	5.03E-107
AR- 34	8.45E-01	1.99E-23	1.99E-23
AR- 35	1.77E+00	1.29E-11	1.38E-11
AR- 37	3.03E+06	1.08E+02	1.21E+02
AR- 39	8.49E+09	1.71E+00	1.95E+00
AR- 41	6.58E+03	8.01E+00	8.85E+00
AR- 42	1.04E+09	9.23E-01	9.83E-01
AR- 43	3.22E+02	1.92E+00	1.94E+00
AR- 44	7.12E+02	1.48E+00	1.48E+00
AR- 45	2.15E+01	1.44E-01	1.44E-01
AR- 46	8.40E+00	5.04E-03	5.04E-03
K - 35	1.90E-01	3.15E-98	3.15E-98
K - 36	3.42E-01	3.68E-55	3.68E-55
K - 37	1.23E+00	7.26E-17	7.26E-17
K - 38	4.58E+02	3.52E+00	3.95E+00
K - 38*	9.24E-01	1.06E-19	1.20E-19
K - 40	4.03E+16	1.14E-06	1.32E-06
K - 42	4.45E+04	5.68E+01	6.74E+01
K - 43	8.03E+04	2.55E+01	3.00E+01
K - 44	1.33E+03	7.83E+00	8.85E+00
K - 45	1.04E+03	3.96E+00	4.25E+00
K - 46	1.05E+02	1.46E+00	1.48E+00
K - 47	1.75E+01	1.16E-01	1.17E-01
K - 48	6.80E+00	1.20E-03	1.20E-03
K - 49	1.26E+00	1.88E-15	1.88E-15
K - 50	4.72E-01	1.15E-39	1.15E-39
K - 51	3.65E-01	2.80E-51	2.80E-51
K - 52	1.05E-01	5.07E-174	5.07E-174
CA- 36	1.00E-01	4.38E-184	4.38E-184
CA- 37	1.75E-01	2.24E-106	2.24E-106
CA- 38	4.40E-01	1.95E-43	1.95E-43
CA- 39	8.60E-01	1.24E-22	1.33E-22
CA- 41	3.25E+12	1.19E-02	1.39E-02
CA- 45	1.41E+07	3.69E+01	4.55E+01
CA- 47	3.92E+05	6.69E+00	7.71E+00
CA- 49	5.23E+02	8.34E-01	8.35E-01
CA- 50	1.39E+01	4.30E-02	4.31E-02

CA- 51	1.00E+01	5.37E-03	5.37E-03
CA- 52	4.60E+00	3.18E-05	3.18E-05
CA- 53	9.00E-02	3.34E-202	3.34E-202
SC- 40	1.82E-01	1.07E-101	1.07E-101
SC- 41	5.96E-01	1.44E-32	1.44E-32
SC- 42	6.81E-01	9.21E-27	1.05E-26
SC- 42*	6.16E+01	6.40E-01	7.46E-01
SC- 43	1.40E+04	1.20E-01	1.33E-01
SC- 44	1.41E+04	3.11E+02	3.81E+02
SC- 44*	2.11E+05	2.12E+01	2.58E+01
SC- 45*	3.16E-01	2.03E-55	2.55E-55
SC- 46	7.24E+06	2.00E+02	2.56E+02
SC- 46*	1.87E+01	9.12E+00	1.17E+01
SC- 47	2.89E+05	1.49E+02	1.93E+02
SC- 48	1.57E+05	4.50E+01	5.94E+01
SC- 49	3.43E+03	1.74E+01	2.23E+01
SC- 50	1.02E+02	2.64E+00	2.96E+00
SC- 50*	3.50E-01	5.21E-52	6.03E-52
SC- 51	1.24E+01	9.02E-02	9.27E-02
SC- 52	8.20E+00	1.20E-02	1.20E-02
SC- 53	1.00E-19	3.32E-202	3.32E-202
SC- 54	2.60E-01	7.98E-71	7.98E-71
TI- 41	8.00E-02	2.76E-228	2.76E-228
TI- 42	1.99E-01	3.14E-93	3.14E-93
TI- 43	4.90E-01	9.88E-39	1.16E-38
TI- 44	1.49E+09	2.94E+00	3.55E+00
TI- 45	1.11E+04	8.48E+01	1.04E+02
TI- 51	3.46E+02	1.58E+01	2.02E+01
TI- 52	1.02E+02	4.13E+00	4.73E+00
TI- 53	3.27E+01	3.74E-01	3.96E-01
TI- 54	1.50E+00	1.21E-12	1.21E-12
V - 43	1.67E-01	3.82E-111	3.82E-111
V - 44	9.00E-02	1.05E-202	1.05E-202
V - 45	5.39E-01	1.13E-35	1.18E-35
V - 46	4.22E-01	2.82E-42	3.19E-42
V - 47	1.96E+03	8.34E+01	1.06E+02
V - 48	1.38E+06	7.20E+02	9.44E+02
V - 49	2.92E+07	1.01E+03	1.35E+03
V - 50	4.70E+24	7.52E-14	1.02E-13
V - 52	2.25E+02	3.68E+02	4.65E+02
V - 53	9.60E+01	4.15E+01	5.40E+01

V - 54	4.98E+01	3.21E+00	3.77E+00
V - 55	6.54E+00	4.20E-03	4.25E-03
V - 59	7.50E-02	4.88E-242	4.88E-242
CR- 44	7.66E-02	8.77E-239	8.77E-239
CR- 46	2.60E-01	1.09E-71	1.16E-71
CR- 47	5.08E-01	7.58E-37	8.70E-37
CR- 48	7.76E+04	1.40E+01	1.81E+01
CR- 49	2.54E+03	1.60E+02	2.08E+02
CR- 51	2.39E+06	9.74E+03	1.21E+04
CR- 55	2.10E+02	1.26E+02	1.57E+02
CR- 56	3.56E+02	4.83E+00	5.22E+00
CR- 57	2.11E+01	3.63E-01	3.66E-01
CR- 58	7.00E+00	5.62E-03	5.62E-03
CR- 59	4.60E-01	5.67E-40	5.68E-40
CR- 60	5.60E-01	4.86E-33	4.86E-33
CR- 66	7.00E-02	4.81E-260	4.81E-260
MN- 47	4.60E-01	9.88E-43	9.88E-43
MN- 48	1.50E-01	7.04E-123	9.15E-123
MN- 49	3.84E-01	1.23E-48	1.48E-48
MN- 50	2.83E-01	6.64E-64	8.41E-64
MN- 50*	1.05E+02	1.72E+00	2.17E+00
MN- 51	2.77E+03	1.04E+02	1.36E+02
MN- 52	4.83E+05	3.04E+02	4.10E+02
MN- 52*	1.27E+03	6.18E+02	8.35E+02
MN- 53	1.18E+14	7.05E-03	9.51E-03
MN- 54	2.70E+07	3.36E+03	4.43E+03
MN- 56	9.28E+03	1.90E+04	2.34E+04
MN- 57	8.54E+01	2.52E+01	3.06E+01
MN- 58	3.00E+00	9.83E-03	9.83E-03
MN- 58*	3.00E+00	1.56E-06	1.61E-06
MN- 59	4.59E+00	4.40E-04	4.46E-04
MN- 60	5.10E+01	6.92E-01	6.93E-01
MN- 60*	1.77E+00	5.16E-11	5.19E-11
MN- 61	6.70E-01	1.97E-27	1.98E-27
MN- 62	1.78E-01	3.25E-102	3.25E-102
MN- 66	6.44E-02	6.02E-259	6.02E-259
FE- 49	7.50E-02	2.73E-244	2.73E-244
FE- 51	3.10E-01	3.08E-59	3.56E-59
FE- 52	2.98E+04	1.48E+01	1.88E+01
FE- 52*	4.60E+01	2.95E-02	3.61E-02
FE- 53	5.11E+02	1.88E+02	2.46E+02

FE- 53*	1.50E+02	8.82E-01	1.12E+00
FE- 55	8.62E+07	7.52E+03	9.47E+03
FE- 59	3.84E+06	1.73E+02	2.16E+02
FE- 60	4.73E+13	4.63E-05	4.96E-05
FE- 61	3.59E+02	3.99E+00	4.11E+00
FE- 62	6.80E+01	1.98E+00	2.02E+00
FE- 63	6.10E+00	1.90E-03	1.91E-03
FE- 64	2.00E+00	3.37E-09	3.37E-09
FE- 65	1.30E+00	9.11E-15	9.11E-15
FE- 66	4.40E-01	5.68E-42	5.68E-42
FE- 67	3.94E-01	5.22E-47	5.22E-47
FE- 68	1.87E-01	6.23E-98	6.23E-98
FE- 69	1.09E-01	1.79E-167	1.79E-167
FE- 70	9.40E-02	7.76E-194	7.76E-194
FE- 71	1.48E-01	5.68E-124	5.68E-124
FE- 72	1.02E-01	2.54E-179	2.54E-179
CO- 53	2.40E-01	1.40E-76	1.67E-76
CO- 54	1.93E-01	1.83E-93	2.27E-93
CO- 54*	8.88E+01	1.05E+00	1.30E+00
CO- 55	6.31E+04	5.69E+01	7.39E+01
CO- 56	6.80E+06	4.03E+02	5.40E+02
CO- 57	2.35E+07	1.04E+03	1.34E+03
CO- 58	6.13E+06	2.22E+03	2.67E+03
CO- 58*	3.29E+04	1.69E+03	2.02E+03
CO- 60	1.66E+08	1.86E+03	2.42E+03
CO- 60*	6.28E+02	1.72E+03	2.24E+03
CO- 61	5.94E+03	3.64E+01	4.43E+01
CO- 62	9.00E+01	7.21E+00	7.89E+00
CO- 62*	8.35E+02	2.65E+00	3.08E+00
CO- 63	2.69E+01	2.04E+00	2.27E+00
CO- 64	3.00E-01	3.96E-09	3.96E-09
CO- 65	1.20E+00	1.71E-15	1.71E-15
CO- 66	1.94E-01	1.02E-41	1.02E-41
CO- 67	4.25E-01	1.84E-42	1.84E-42
CO- 68	7.78E-02	1.05E-97	1.05E-97
CO- 69	2.27E-01	1.57E-80	1.57E-80
CO- 70	5.58E-02	1.87E-124	1.87E-124
CO- 71	9.70E-02	1.30E-123	1.30E-123
CO- 72	9.00E-02	1.73E-178	1.73E-178
NI- 55	1.89E-01	1.94E-96	2.40E-96
NI- 56	5.27E+05	2.20E+01	2.85E+01

NI- 57	1.28E+05	2.25E+02	2.92E+02
NI- 59	2.37E+12	2.01E+00	2.42E+00
NI- 63	3.16E+09	2.24E+02	2.68E+02
NI- 65	9.06E+03	9.29E+01	1.11E+02
NI- 66	1.97E+05	4.90E+00	4.90E+00
NI- 67	2.10E+01	4.01E-01	4.01E-01
NI- 68	2.90E+01	5.01E-01	5.01E-01
NI- 69	1.15E+01	3.18E-02	3.18E-02
NI- 70	6.00E+00	8.75E-04	8.75E-04
NI- 71	2.56E+00	4.00E-08	4.00E-08
NI- 72	1.57E+00	1.21E-12	1.21E-12
NI- 73	8.40E-01	5.20E-23	5.20E-23
NI- 74	6.80E-01	3.04E-28	3.04E-28
NI- 75	6.00E-01	6.60E-32	6.60E-32
NI- 76	4.70E-01	1.78E-40	1.78E-40
NI- 77	2.08E-01	1.48E-89	1.48E-89
NI- 78	2.24E-01	7.25E-83	7.25E-83
CU- 57	2.33E-01	4.52E-79	5.40E-79
CU- 58	3.20E+00	1.17E-06	1.33E-06
CU- 59	8.15E+01	2.63E-01	3.14E-01
CU- 60	1.46E+03	1.72E+00	2.02E+00
CU- 61	1.23E+04	5.64E+00	5.86E+00
CU- 62	5.84E+02	1.29E+01	1.31E+01
CU- 64	4.57E+04	1.39E+01	1.40E+01
CU- 66	3.07E+02	1.06E+01	1.07E+01
CU- 67	2.23E+05	8.60E+00	8.60E+00
CU- 68	3.11E+01	2.17E+00	2.17E+00
CU- 68*	2.25E+02	3.25E-01	3.25E-01
CU- 69	1.71E+02	3.03E+00	3.03E+00
CU- 70	4.50E+00	1.72E-03	1.72E-03
CU- 70*	4.70E+01	2.99E-01	2.99E-01
CU- 71	1.94E+01	2.06E-01	2.06E-01
CU- 72	6.60E+00	2.09E-03	2.09E-03
CU- 73	4.20E+00	3.74E-05	3.74E-05
CU- 74	1.59E+00	1.83E-12	1.83E-12
CU- 75	1.22E+00	6.77E-16	6.77E-16
CU- 76	2.60E-01	3.17E-40	3.17E-40
CU- 77	4.69E-01	2.99E-40	2.99E-40
CU- 78	3.42E-01	1.02E-54	1.02E-54
CU- 79	1.88E-01	1.62E-98	1.62E-98
CU- 80	8.49E-02	1.20E-215	1.20E-215

CU- 81	8.08E-02	3.91E-226	3.91E-226
ZN- 59	1.84E-01	5.20E-101	5.20E-101
ZN- 60	1.43E+02	5.44E-03	5.44E-03
ZN- 61	8.91E+01	3.08E-02	3.08E-02
ZN- 62	3.33E+04	5.38E-01	5.39E-01
ZN- 63	2.29E+03	2.20E+00	2.21E+00
ZN- 65	2.11E+07	1.23E+01	1.24E+01
ZN- 69	3.38E+03	8.39E+00	8.40E+00
ZN- 69*	4.95E+04	1.48E+00	1.48E+00
ZN- 71	1.47E+02	2.33E+00	2.33E+00
ZN- 71*	1.42E+04	8.94E-01	8.94E-01
ZN- 72	1.67E+05	3.19E+00	3.19E+00
ZN- 73	2.35E+01	2.82E-01	2.82E-01
ZN- 73*	5.80E+00	3.33E-04	3.33E-04
ZN- 74	9.56E+01	8.43E-01	8.43E-01
ZN- 75	1.02E+01	1.20E-02	1.20E-02
ZN- 76	5.70E+00	3.31E-04	3.31E-04
ZN- 77	2.08E+00	6.34E-10	6.34E-10
ZN- 77*	1.05E+00	3.31E-19	3.31E-19
ZN- 78	1.47E+00	1.09E-13	1.09E-13
ZN- 79	9.95E-01	5.62E-20	5.62E-20
ZN- 80	5.45E-01	4.32E-35	4.32E-35
ZN- 81	2.90E-01	1.23E-64	1.23E-64
ZN- 82	2.75E-01	5.51E-68	5.51E-68
ZN- 83	2.17E-01	5.45E-86	5.45E-86
ZN- 84	1.55E-01	5.93E-120	5.93E-120
GA- 62	1.16E-01	5.37E-158	5.37E-158
GA- 63	3.24E+01	2.02E-03	2.02E-03
GA- 64	1.58E+02	8.13E-02	8.13E-02
GA- 65	9.12E+02	7.58E-01	7.63E-01
GA- 66	3.42E+04	6.39E+00	6.43E+00
GA- 67	2.82E+05	1.70E+01	1.72E+01
GA- 68	4.06E+03	2.24E+01	2.26E+01
GA- 70	1.27E+03	8.80E+00	8.81E+00
GA- 72	5.08E+04	6.95E+00	6.95E+00
GA- 73	1.75E+04	5.11E+00	5.11E+00
GA- 74	4.87E+02	2.96E+00	2.96E+00
GA- 74*	9.50E+00	7.06E-01	7.06E-01
GA- 75	1.26E+02	1.65E+00	1.65E+00
GA- 76	3.26E+01	3.88E-01	3.88E-01
GA- 77	1.32E+01	4.02E-02	4.02E-02

GA- 78	5.09E+00	1.63E-04	1.63E-04
GA- 79	2.85E+00	1.53E-07	1.53E-07
GA- 80	1.70E+00	4.51E-12	4.51E-12
GA- 81	1.22E+00	1.89E-16	1.89E-16
GA- 82	5.99E-01	3.95E-32	3.95E-32
GA- 83	3.08E-01	9.26E-61	9.26E-61
GA- 84	8.50E-02	5.03E-120	5.03E-120
GA- 85	2.04E-01	4.41E-91	4.41E-91
GA- 86	1.28E-01	5.94E-145	5.94E-145
GA- 87	6.85E-02	2.69E-267	2.69E-267
GE- 64	6.37E+01	9.47E-04	9.47E-04
GE- 65	3.09E+01	7.10E-03	7.10E-03
GE- 66	8.14E+03	1.85E-01	1.86E-01
GE- 67	1.12E+03	6.03E-01	6.08E-01
GE- 68	2.34E+07	5.88E+00	5.95E+00
GE- 69	1.41E+05	1.41E+01	1.43E+01
GE- 71	9.88E+05	2.72E+01	2.75E+01
GE- 73*	4.99E-01	5.04E+00	5.04E+00
GE- 75	4.97E+03	5.37E+00	5.37E+00
GE- 75*	4.77E+01	7.13E-01	7.13E-01
GE- 77	4.07E+04	9.34E-01	9.34E-01
GE- 77*	5.29E+01	8.45E-01	8.45E-01
GE- 78	5.28E+03	1.71E+00	1.71E+00
GE- 79	1.90E+01	8.59E-02	8.59E-02
GE- 79*	3.90E+01	5.27E-02	5.27E-02
GE- 80	2.95E+01	1.56E-01	1.56E-01
GE- 81	8.00E+00	1.19E-03	1.19E-03
GE- 81*	7.50E+00	4.48E-04	4.48E-04
GE- 82	4.55E+00	2.52E-05	2.52E-05
GE- 83	1.85E+00	1.29E-11	1.29E-11
GE- 84	9.54E-01	6.94E-21	6.94E-21
GE- 85	5.40E-01	6.47E-36	6.47E-36
GE- 86	6.45E-01	2.85E-30	2.85E-30
GE- 87	3.52E-01	4.79E-54	4.79E-54
GE- 88	1.62E-01	2.65E-114	2.65E-114
AS- 66	9.58E-02	2.64E-191	2.64E-191
AS- 67	4.25E+01	3.42E-03	3.42E-03
AS- 68	1.52E+02	4.84E-02	4.98E-02
AS- 69	9.14E+02	2.89E-01	2.90E-01
AS- 70	3.16E+03	2.98E+00	3.03E+00
AS- 71	2.35E+05	1.29E+01	1.31E+01

AS- 72	9.36E+04	2.11E+01	2.14E+01
AS- 73	6.94E+06	2.46E+01	2.49E+01
AS- 74	1.54E+06	1.37E+01	1.37E+01
AS- 76	9.48E+04	6.42E+00	6.43E+00
AS- 77	1.40E+05	7.77E+00	7.78E+00
AS- 78	5.44E+03	4.49E+00	4.49E+00
AS- 79	5.41E+02	2.97E+00	2.97E+00
AS- 80	1.52E+01	3.50E-01	3.50E-01
AS- 81	3.33E+01	3.81E-01	3.81E-01
AS- 82	1.91E+01	6.28E-02	6.28E-02
AS- 82*	1.36E+01	6.75E-03	6.75E-03
AS- 83	1.34E+01	1.68E-02	1.68E-02
AS- 84	5.50E+00	7.53E-05	7.53E-05
AS- 84*	6.00E-01	2.44E-32	2.44E-32
AS- 85	2.02E+00	1.42E-10	1.42E-10
AS- 86	9.45E-01	8.52E-21	8.52E-21
AS- 87	6.10E-01	1.55E-31	1.55E-31
AS- 88	4.28E-01	1.03E-44	1.03E-44
AS- 89	2.10E-01	1.45E-88	1.45E-88
SE- 68	2.00E+00	5.08E-12	5.08E-12
SE- 69	2.74E+01	3.99E-04	3.99E-04
SE- 70	2.47E+03	4.65E-02	4.65E-02
SE- 71	2.84E+02	2.26E-01	2.28E-01
SE- 72	7.26E+05	3.85E+00	3.93E+00
SE- 73	2.57E+04	7.35E+00	7.50E+00
SE- 73*	2.39E+03	6.16E+00	6.30E+00
SE- 75	1.04E+07	1.89E+01	1.92E+01
SE- 77*	1.74E+01	3.29E-01	3.30E-01
SE- 79	1.04E+12	1.69E-03	1.69E-03
SE- 79*	2.35E+02	4.70E+00	4.71E+00
SE- 81	1.11E+03	2.82E+00	2.82E+00
SE- 81*	3.44E+03	7.10E-01	7.10E-01
SE- 82	4.40E+27	1.27E-19	1.27E-19
SE- 83	1.34E+03	4.06E-01	4.06E-01
SE- 83*	7.01E+01	3.31E-01	3.31E-01
SE- 84	1.86E+02	6.65E-01	6.65E-01
SE- 85	3.17E+01	7.24E-02	7.24E-02
SE- 86	1.53E+01	1.34E-02	1.34E-02
SE- 87	5.50E+00	6.52E-05	6.52E-05
SE- 88	1.53E+00	1.40E-13	1.40E-13
SE- 89	4.10E-01	2.10E-46	2.10E-46

SE- 90	7.22E-01	2.68E-27	2.68E-27
SE- 91	2.70E-01	1.83E-69	1.83E-69
SE- 92	1.37E-01	1.53E-134	1.53E-134
BR- 71	2.14E+01	5.21E-04	5.21E-04
BR- 72	7.86E+01	9.08E-03	9.08E-03
BR- 73	2.04E+02	8.06E-02	8.06E-02
BR- 74	1.52E+03	7.12E-01	7.33E-01
BR- 74*	2.76E+03	6.27E-01	6.52E-01
BR- 75	5.82E+03	7.59E+00	7.76E+00
BR- 76	5.83E+04	1.79E+01	1.85E+01
BR- 76*	1.31E+00	1.15E-13	1.19E-13
BR- 77	2.05E+05	2.49E+01	2.55E+01
BR- 77*	2.57E+02	3.51E+00	3.58E+00
BR- 78	3.88E+02	1.24E+01	1.26E+01
BR- 79*	4.86E+00	8.07E-04	8.14E-04
BR- 80	1.06E+03	7.95E+00	8.01E+00
BR- 80*	1.59E+04	3.36E+00	3.38E+00
BR- 82	1.27E+05	3.50E+00	3.51E+00
BR- 82*	3.68E+02	2.38E+00	2.38E+00
BR- 83	8.64E+03	3.84E+00	3.84E+00
BR- 84	1.91E+03	1.94E+00	1.94E+00
BR- 84*	3.60E+02	2.36E-01	2.36E-01
BR- 85	1.74E+02	1.15E+00	1.15E+00
BR- 86	5.51E+01	3.34E-01	3.34E-01
BR- 87	5.56E+01	2.27E-01	2.27E-01
BR- 88	1.64E+01	1.97E-02	1.97E-02
BR- 89	4.40E+00	1.07E-05	1.07E-05
BR- 90	1.91E+00	3.41E-11	3.41E-11
BR- 91	5.41E-01	2.68E-35	2.68E-35
BR- 92	3.43E-01	7.65E-55	7.65E-55
BR- 93	1.02E-01	1.86E-179	1.86E-179
BR- 94	7.00E-02	7.62E-261	7.62E-261
KR- 72	1.72E+01	3.24E-04	3.24E-04
KR- 73	2.70E+01	1.17E-03	1.17E-03
KR- 74	6.90E+02	2.05E-02	2.23E-02
KR- 75	2.58E+02	1.64E-01	1.66E-01
KR- 76	5.33E+04	2.25E+00	2.35E+00
KR- 77	4.46E+03	8.29E+00	8.62E+00
KR- 79	1.26E+05	2.15E+01	2.24E+01
KR- 79*	5.00E+01	2.63E+00	2.73E+00
KR- 81	6.72E+12	1.23E-03	1.28E-03

KR- 81*	1.30E+01	1.91E-01	1.95E-01
KR- 83*	6.59E+03	6.12E+00	6.15E+00
KR- 85	3.40E+08	7.44E-01	7.44E-01
KR- 85*	1.61E+04	2.69E+00	2.69E+00
KR- 87	4.58E+03	1.19E+00	1.19E+00
KR- 88	1.02E+04	8.80E-01	8.82E-01
KR- 89	1.89E+02	3.56E-01	3.56E-01
KR- 90	3.23E+01	1.03E-01	1.03E-01
KR- 91	8.57E+00	1.35E-03	1.35E-03
KR- 92	1.84E+00	1.81E-11	1.81E-11
KR- 93	1.29E+00	4.34E-16	4.34E-16
KR- 94	2.10E-01	5.68E-88	5.68E-88
KR- 95	1.14E-01	4.39E-161	4.39E-161
KR- 96	8.00E-02	4.00E-228	4.00E-228
RB- 75	1.72E+01	3.24E-04	3.24E-04
RB- 76	3.91E+01	3.77E-03	3.77E-03
RB- 77	2.25E+02	3.94E-02	3.94E-02
RB- 78	1.06E+03	1.35E-01	1.43E-01
RB- 78*	3.44E+02	4.66E-01	5.03E-01
RB- 79	1.37E+03	3.03E+00	3.21E+00
RB- 80	3.40E+01	4.12E+00	4.37E+00
RB- 81	1.65E+04	2.07E+01	2.19E+01
RB- 81*	1.83E+03	4.04E+00	4.26E+00
RB- 82	7.64E+01	2.05E+01	2.20E+01
RB- 82*	2.33E+04	6.67E+00	6.93E+00
RB- 83	7.45E+06	3.10E+01	3.29E+01
RB- 84	2.84E+06	1.16E+01	1.19E+01
RB- 84*	1.23E+03	2.97E+00	3.05E+00
RB- 86	1.61E+06	5.49E+00	5.56E+00
RB- 86*	6.10E+01	5.82E-01	5.89E-01
RB- 87	1.52E+18	7.73E-10	7.81E-10
RB- 88	1.07E+03	2.35E+00	2.36E+00
RB- 89	9.09E+02	1.46E+00	1.46E+00
RB- 90	1.58E+02	5.92E-01	5.92E-01
RB- 90*	2.58E+02	2.47E-01	2.47E-01
RB- 91	5.84E+01	2.96E-01	2.96E-01
RB- 92	4.49E+00	3.93E-05	3.93E-05
RB- 93	5.84E+00	1.82E-04	1.82E-04
RB- 94	2.70E+00	3.26E-08	3.26E-08
RB- 95	3.78E-01	1.45E-49	1.45E-49
RB- 96	5.46E-02	1.22E-227	1.22E-227

RB- 97	1.70E-01	2.23E-108	2.23E-108
RB- 98	1.14E-01	9.58E-161	9.58E-161
SR- 77	9.00E+00	3.58E-05	3.58E-05
SR- 78	1.50E+02	1.10E-02	1.24E-02
SR- 79	1.35E+02	8.28E-02	8.82E-02
SR- 80	6.38E+03	9.63E-01	1.03E+00
SR- 81	1.34E+03	2.74E+00	2.96E+00
SR- 82	2.21E+06	1.44E+01	1.57E+01
SR- 83	1.17E+05	1.87E+01	2.04E+01
SR- 83*	4.95E+00	1.02E-03	1.11E-03
SR- 85	5.60E+06	3.02E+01	3.35E+01
SR- 85*	4.06E+03	7.54E+00	8.05E+00
SR- 87*	1.01E+04	4.52E+00	4.73E+00
SR- 89	4.37E+06	3.93E+00	4.01E+00
SR- 90	9.09E+08	7.10E-01	7.16E-01
SR- 91	3.47E+04	1.61E+00	1.63E+00
SR- 92	9.58E+03	1.16E+00	1.16E+00
SR- 93	4.45E+02	5.49E-01	5.50E-01
SR- 94	7.53E+01	2.80E-01	2.81E-01
SR- 95	2.39E+01	4.20E-02	4.23E-02
SR- 96	1.07E+00	2.41E-18	2.42E-18
SR- 97	4.29E-01	8.26E-44	8.26E-44
SR- 98	6.53E-01	2.05E-29	2.05E-29
SR- 99	2.69E-01	2.67E-69	2.67E-69
SR-100	2.02E-01	1.89E-91	1.89E-91
SR-101	1.18E-01	1.03E-155	1.03E-155
SR-102	6.90E-02	2.39E-264	2.39E-264
SR-104	7.07E-02	2.83E-258	2.83E-258
Y - 80	3.38E+01	1.22E-02	1.49E-02
Y - 81	7.24E+01	1.46E-02	1.56E-02
Y - 82	9.50E+00	6.39E-03	6.73E-03
Y - 83	4.25E+02	3.46E-01	3.77E-01
Y - 83*	1.71E+02	2.98E-01	3.32E-01
Y - 84	4.60E+00	1.76E-01	2.05E-01
Y - 84*	2.40E+03	1.64E+00	1.88E+00
Y - 85	9.65E+03	9.07E+00	1.04E+01
Y - 85*	1.75E+04	6.53E+00	7.50E+00
Y - 86	5.31E+04	3.04E+01	3.51E+01
Y - 86*	2.88E+03	1.76E+00	2.00E+00
Y - 87	2.89E+05	4.14E+01	4.82E+01
Y - 87*	4.64E+04	9.87E+00	1.11E+01

Y - 88	9.21E+06	4.37E+01	5.14E+01
Y - 89*	1.61E+01	5.42E+01	6.70E+01
Y - 90	2.30E+05	6.40E+00	6.90E+00
Y - 90*	1.15E+04	1.03E+00	1.12E+00
Y - 91	5.06E+06	5.32E+00	5.65E+00
Y - 91*	2.98E+03	2.91E+00	3.05E+00
Y - 92	1.27E+04	3.37E+00	3.51E+00
Y - 93	3.66E+04	2.26E+00	2.39E+00
Y - 93*	8.20E-01	1.90E-01	1.91E-01
Y - 94	1.12E+03	1.36E+00	1.43E+00
Y - 95	6.18E+02	7.62E-01	7.94E-01
Y - 96	5.34E+00	1.05E-04	1.06E-04
Y - 96*	9.60E+00	4.04E-03	4.11E-03
Y - 96+	1.00E-01	7.40E-188	7.58E-188
Y - 97	3.75E+00	3.13E-06	3.13E-06
Y - 97*	1.23E+00	2.18E-16	2.22E-16
Y - 98	5.48E-01	1.27E-28	1.27E-28
Y - 98*	2.00E+00	3.39E-12	3.39E-12
Y - 99	1.47E+00	7.35E-14	7.35E-14
Y -100	7.35E-01	2.24E-26	2.24E-26
Y -100*	9.40E-01	1.77E-21	1.77E-21
Y -101	4.26E-01	2.21E-44	2.21E-44
Y -102	9.00E-01	3.72E-22	3.72E-22
Y -103	2.24E-01	5.90E-83	5.90E-83
Y -104	1.80E-01	8.82E-103	8.82E-103
ZR- 81	1.50E+01	1.14E-04	1.14E-04
ZR- 82	3.20E+01	2.97E-03	2.97E-03
ZR- 83	4.40E+01	2.12E-02	2.47E-02
ZR- 84	1.55E+03	1.75E-01	2.04E-01
ZR- 85	4.72E+02	2.00E+00	2.37E+00
ZR- 85*	1.09E+01	5.69E-03	6.49E-03
ZR- 86	5.94E+04	1.28E+01	1.53E+01
ZR- 87	6.24E+03	1.99E+01	2.40E+01
ZR- 87*	1.40E+01	9.31E-02	1.13E-01
ZR- 88	7.21E+06	3.94E+01	4.76E+01
ZR- 89	2.82E+05	5.37E+01	6.65E+01
ZR- 89*	2.51E+02	1.33E+01	1.62E+01
ZR- 90*	8.09E-01	7.92E-22	9.60E-22
ZR- 93	4.83E+13	6.22E-05	7.32E-05
ZR- 95	5.53E+06	4.20E+00	4.98E+00
ZR- 97	6.08E+04	1.18E+00	1.32E+00

ZR- 98	3.07E+01	2.24E-01	2.49E-01
ZR- 99	2.10E+00	1.67E-09	1.69E-09
ZR-100	7.10E+00	8.04E-04	8.04E-04
ZR-101	2.30E+00	2.00E-09	2.00E-09
ZR-102	2.90E+00	8.09E-08	8.09E-08
ZR-103	1.30E+00	8.28E-16	8.28E-16
ZR-104	1.20E+00	4.08E-17	4.08E-17
ZR-105	6.00E-01	1.82E-32	1.82E-32
ZR-106	3.22E-01	1.75E-58	1.75E-58
ZR-107	1.77E-01	5.00E-105	5.00E-105
ZR-108	1.62E-01	2.90E-114	2.90E-114
ZR-110	7.62E-02	2.54E-240	2.54E-240
NB- 84	1.20E+01	1.14E-04	1.14E-04
NB- 85	1.38E+02	9.42E-03	9.42E-03
NB- 86	8.80E+01	5.44E-02	6.12E-02
NB- 87	1.56E+02	1.71E-01	2.10E-01
NB- 87*	2.29E+02	1.52E-01	1.93E-01
NB- 88	8.70E+02	3.78E-01	4.79E-01
NB- 88*	4.68E+02	1.68E+00	2.15E+00
NB- 89	7.32E+03	5.09E+00	6.57E+00
NB- 89*	3.96E+03	5.01E+00	6.54E+00
NB- 90	5.26E+04	4.23E+01	5.50E+01
NB- 90*	1.88E+01	1.23E+00	1.61E+00
NB- 91	2.15E+10	1.34E+00	1.70E+00
NB- 91*	5.36E+06	3.17E+01	4.09E+01
NB- 92	1.10E+15	3.11E-06	3.87E-06
NB- 92*	8.77E+05	2.93E+01	3.77E+01
NB- 93*	5.09E+08	7.36E+00	9.42E+00
NB- 94	6.41E+11	1.44E-02	1.86E-02
NB- 94*	3.76E+02	2.20E+01	2.85E+01
NB- 95	3.02E+06	3.66E+01	4.74E+01
NB- 95*	3.12E+05	1.27E+01	1.67E+01
NB- 96	8.41E+04	2.02E+01	2.64E+01
NB- 97	4.33E+03	1.99E+01	2.61E+01
NB- 97*	6.00E+01	4.89E+00	6.28E+00
NB- 98	2.86E+00	2.47E-01	2.74E-01
NB- 98*	3.08E+03	2.77E+00	3.58E+00
NB- 99	1.50E+01	2.30E-01	2.95E-01
NB- 99*	1.56E+02	1.04E+00	1.31E+00
NB-100	1.50E+00	1.02E-03	1.02E-03
NB-100*	2.98E+00	1.92E-07	1.99E-07

NB-101	7.10E+00	1.45E-03	1.45E-03
NB-102	1.30E+00	1.47E-07	1.47E-07
NB-102*	4.30E+00	3.21E-06	3.21E-06
NB-103	1.50E+00	5.47E-13	5.47E-13
NB-104	4.80E+00	2.01E-05	2.01E-05
NB-104*	1.00E+00	7.89E-21	7.89E-21
NB-105	2.95E+00	6.58E-08	6.58E-08
NB-106	9.20E-01	1.10E-21	1.10E-21
NB-107	3.00E-01	1.81E-62	1.81E-62
NB-108	1.93E-01	2.01E-95	2.01E-95
NB-109	1.90E-01	1.14E-97	1.14E-97
NB-110	1.70E-01	3.62E-109	3.62E-109
NB-111	1.51E-01	4.55E-123	4.55E-123
MO- 87	1.46E+01	5.27E-04	7.37E-04
MO- 88	4.80E+02	1.45E-01	1.80E-01
MO- 89	1.22E+02	5.06E-01	6.57E-01
MO- 89*	1.90E-01	9.30E-97	1.26E-96
MO- 90	2.04E+04	8.13E+00	1.06E+01
MO- 91	9.29E+02	2.66E+01	3.41E+01
MO- 91*	6.52E+01	3.66E+00	4.72E+00
MO- 93	1.10E+11	4.62E-01	6.07E-01
MO- 93*	2.50E+04	1.35E+01	1.81E+01
MO- 99	2.37E+05	1.08E+03	1.51E+03
MO-101	8.77E+02	1.96E+02	2.69E+02
MO-102	6.78E+02	7.82E-01	7.82E-01
MO-103	6.75E+01	2.21E-01	2.21E-01
MO-104	6.00E+01	1.79E-01	1.79E-01
MO-105	3.56E+01	5.49E-02	5.49E-02
MO-106	8.73E+00	1.04E-03	1.04E-03
MO-107	3.50E+00	3.19E-07	3.19E-07
MO-108	1.09E+00	1.84E-18	1.84E-18
MO-109	5.30E-01	3.35E-36	3.35E-36
MO-110	3.00E-01	1.09E-62	1.09E-62
MO-111	8.08E-01	3.74E-26	3.74E-26
MO-112	5.81E-01	5.75E-34	5.75E-34
MO-113	1.21E-01	8.29E-153	8.29E-153
MO-114	1.03E-01	6.03E-178	6.03E-178
TC- 90	7.90E+00	1.41E-04	1.51E-04
TC- 90*	4.92E+01	4.69E-03	4.69E-03
TC- 91	1.88E+02	5.55E-02	6.42E-02
TC- 91*	1.98E+02	1.03E-02	1.33E-02

TC- 92	2.64E+02	3.20E-01	3.51E-01
TC- 93	9.90E+03	3.73E+00	4.08E+00
TC- 93*	2.61E+03	1.65E+00	1.80E+00
TC- 94	1.76E+04	3.28E+00	3.40E+00
TC- 94*	3.12E+03	5.94E+00	6.43E+00
TC- 95	7.20E+04	1.22E+01	1.27E+01
TC- 95*	5.27E+06	4.81E+00	5.11E+00
TC- 96	3.70E+05	1.06E+01	1.11E+01
TC- 96*	3.09E+03	8.22E+00	8.64E+00
TC- 97	8.20E+13	8.73E-05	8.90E-05
TC- 97*	7.82E+06	4.55E+00	4.75E+00
TC- 98	1.32E+14	1.46E-05	1.50E-05
TC- 99	6.66E+12	4.03E-02	5.66E-02
TC- 99*	2.16E+04	9.51E+02	1.34E+03
TC-100	1.58E+01	8.89E-01	1.23E+00
TC-101	8.53E+02	2.08E+02	2.84E+02
TC-102	5.28E+00	7.93E-01	7.93E-01
TC-102*	2.61E+02	2.09E-01	2.09E-01
TC-103	5.42E+01	7.43E-01	7.43E-01
TC-104	1.10E+03	7.10E-01	7.10E-01
TC-105	4.56E+02	5.00E-01	5.00E-01
TC-106	3.56E+01	1.02E-01	1.02E-01
TC-107	2.12E+01	2.61E-02	2.61E-02
TC-108	5.17E+00	4.78E-05	4.78E-05
TC-109	8.60E-01	1.52E-22	1.52E-22
TC-110	9.20E-01	7.47E-22	7.47E-22
TC-111	2.90E-01	5.83E-26	5.83E-26
TC-112	2.90E-01	1.14E-33	1.14E-33
TC-113	1.70E-01	9.18E-109	9.18E-109
TC-114	1.50E-01	7.14E-123	7.14E-123
TC-115	7.07E-02	4.77E-260	4.77E-260
RU- 91	9.00E+00	1.79E-05	1.79E-05
RU- 92	2.19E+02	7.52E-03	7.52E-03
RU- 93	5.97E+01	2.58E-02	2.58E-02
RU- 93*	1.08E+01	5.03E-04	5.03E-04
RU- 94	3.11E+03	1.66E+00	1.66E+00
RU- 95	5.90E+03	4.95E+00	4.95E+00
RU- 97	2.51E+05	1.65E+01	1.65E+01
RU-103	3.39E+06	3.90E+00	3.90E+00
RU-105	1.60E+04	1.32E+00	1.32E+00
RU-106	3.23E+07	6.72E-01	6.72E-01

RU-107	2.25E+02	4.19E-01	4.19E-01
RU-108	2.73E+02	2.96E-01	2.96E-01
RU-109	3.45E+01	6.28E-02	6.28E-02
RU-109*	1.30E+01	2.01E-11	2.01E-11
RU-110	1.16E+01	3.69E-03	3.69E-03
RU-111	2.12E+00	1.97E-10	1.97E-10
RU-112	1.75E+00	2.98E-12	2.98E-12
RU-113	8.00E-01	1.21E-24	1.21E-24
RU-114	5.30E-01	2.60E-36	2.60E-36
RU-115	7.40E-01	3.72E-27	3.72E-27
RU-116	5.40E-01	5.71E-36	5.71E-36
RU-117	1.64E-01	3.33E-113	3.33E-113
RU-118	2.12E-01	1.87E-88	1.87E-88
RU-119	1.66E-01	1.48E-112	1.48E-112
RU-120	1.08E-01	2.45E-170	2.45E-170
RH- 94	7.06E+01	3.03E-03	3.03E-03
RH- 95	3.01E+02	2.69E-02	2.69E-02
RH- 95*	1.18E+02	8.94E-03	8.94E-03
RH- 96	5.94E+02	2.67E-01	2.67E-01
RH- 96*	9.06E+01	1.44E-01	1.44E-01
RH- 97	1.87E+03	2.17E+00	2.17E+00
RH- 97*	2.66E+03	1.01E+00	1.01E+00
RH- 98	5.22E+02	4.90E+00	4.90E+00
RH- 98*	2.10E+02	1.69E+00	1.69E+00
RH- 99	1.39E+06	7.60E+00	7.60E+00
RH- 99*	1.69E+04	9.43E+00	9.43E+00
RH-100	7.49E+04	2.62E+01	2.62E+01
RH-100*	2.76E+02	5.89E+00	5.89E+00
RH-101	1.04E+08	1.56E+01	1.56E+01
RH-101*	3.75E+05	1.28E+01	1.28E+01
RH-102	1.79E+07	1.28E+01	1.28E+01
RH-102*	1.18E+08	1.22E-02	1.22E-02
RH-103*	3.37E+03	4.88E+01	4.88E+01
RH-104	4.23E+01	5.76E+00	5.76E+00
RH-104*	2.60E+02	2.68E+00	2.68E+00
RH-105	1.27E+05	8.17E+00	8.17E+00
RH-105*	4.50E+01	1.15E+00	1.15E+00
RH-106	2.98E+01	1.09E+00	1.09E+00
RH-106*	7.80E+03	1.17E+00	1.17E+00
RH-107	1.30E+03	2.39E+00	2.39E+00
RH-108	1.68E+01	3.81E-01	3.81E-01

RH-108*	3.60E+02	7.07E-06	7.07E-06
RH-109	8.00E+01	5.30E-01	5.30E-01
RH-109*	5.00E+01	7.66E-02	7.66E-02
RH-110	3.16E+00	2.52E-07	2.52E-07
RH-110*	2.85E+01	6.93E-02	6.93E-02
RH-111	1.10E+01	6.13E-03	6.13E-03
RH-112	1.50E+00	2.06E-11	2.06E-11
RH-112*	6.80E+00	1.28E-04	1.28E-04
RH-113	2.80E+00	4.98E-08	4.98E-08
RH-114	1.70E+00	1.25E-12	1.25E-12
RH-114*	1.85E+00	4.39E-12	4.39E-12
RH-115	9.90E-01	3.98E-20	3.98E-20
RH-116	9.49E-01	4.24E-21	4.24E-21
RH-116*	9.00E-01	9.32E-23	9.32E-23
RH-117	4.40E-01	2.13E-43	2.13E-43
RH-118	3.10E-01	1.12E-60	1.12E-60
RH-119	1.08E-01	4.11E-112	4.11E-112
RH-120	8.27E-02	1.01E-169	1.01E-169
PD- 95	1.34E+01	8.16E-05	8.16E-05
PD- 96	1.22E+02	2.59E-03	2.59E-03
PD- 97	1.86E+02	7.42E-03	7.42E-03
PD- 98	1.06E+03	4.60E-01	4.60E-01
PD- 99	1.28E+03	1.52E+00	1.52E+00
PD-100	3.14E+05	7.80E+00	7.80E+00
PD-101	3.05E+04	1.39E+01	1.39E+01
PD-103	1.47E+06	3.72E+01	3.72E+01
PD-107	2.05E+14	9.75E-06	9.75E-06
PD-107*	2.13E+01	1.77E-01	1.77E-01
PD-109	4.93E+04	2.25E+00	2.25E+00
PD-109*	2.81E+02	3.92E-01	3.92E-01
PD-111	1.40E+03	5.80E-01	5.80E-01
PD-111*	1.98E+04	1.16E-01	1.16E-01
PD-112	7.57E+04	4.76E-01	4.76E-01
PD-113	9.30E+01	1.95E-01	1.95E-01
PD-113*	1.00E+02	4.32E-02	4.32E-02
PD-114	1.45E+02	1.28E-01	1.28E-01
PD-115	2.50E+01	1.98E-02	1.98E-02
PD-116	1.18E+01	3.01E-03	3.01E-03
PD-117	4.30E+00	2.87E-06	2.87E-06
PD-118	1.90E+00	1.51E-11	1.51E-11
PD-119	9.20E-01	3.53E-22	3.53E-22

PD-120	5.00E-01	1.20E-38	1.20E-38
PD-121	1.27E+00	6.24E-17	6.24E-17
PD-122	9.51E-01	5.76E-22	5.76E-22
PD-123	3.97E-01	5.44E-49	5.44E-49
PD-124	2.89E-01	2.06E-65	2.06E-65
PD-125	2.65E-01	4.34E-71	4.34E-71
PD-126	2.22E-01	1.59E-85	1.59E-85
PD-127	2.10E-01	1.47E-89	1.47E-89
AG- 97	2.10E+01	2.51E-04	2.51E-04
AG- 98	4.45E+01	1.43E-03	1.43E-03
AG- 99	1.24E+02	7.92E-03	7.92E-03
AG- 99*	1.05E+01	3.46E-05	3.46E-05
AG-100	1.21E+02	2.13E-02	2.13E-02
AG-100*	1.34E+02	2.13E-02	2.13E-02
AG-101	6.66E+02	8.72E-01	8.72E-01
AG-101*	3.10E+00	6.08E-07	6.08E-07
AG-102	7.74E+02	2.89E+00	2.89E+00
AG-102*	4.60E+02	1.72E+00	1.72E+00
AG-103	3.94E+03	1.49E+01	1.49E+01
AG-103*	5.70E+00	3.94E-03	3.94E-03
AG-104	4.15E+03	2.39E+01	2.39E+01
AG-104*	2.01E+03	9.30E+00	9.30E+00
AG-105	3.57E+06	4.99E+01	4.99E+01
AG-105*	4.34E+02	1.57E+01	1.57E+01
AG-106	1.44E+03	1.71E+01	1.71E+01
AG-106*	7.31E+05	9.21E+00	9.21E+00
AG-107*	4.43E+01	6.44E+01	6.44E+01
AG-108	1.42E+02	7.38E+00	7.38E+00
AG-108*	1.32E+10	8.99E-02	8.99E-02
AG-109*	3.96E+01	6.72E+01	6.72E+01
AG-110	2.46E+01	1.08E+00	1.08E+00
AG-110*	2.16E+07	1.17E+00	1.17E+00
AG-111	6.44E+05	3.42E+00	3.42E+00
AG-111*	6.48E+01	1.49E+00	1.49E+00
AG-112	1.13E+04	1.56E+00	1.56E+00
AG-113	1.93E+04	9.34E-01	9.34E-01
AG-113*	6.87E+01	2.58E-01	2.58E-01
AG-114	4.60E+00	1.33E-01	1.33E-01
AG-114*	1.20E+02	1.84E-06	1.84E-06
AG-115	1.20E+03	1.82E-01	1.82E-01
AG-115*	1.80E+01	2.64E-02	2.64E-02

AG-116	1.61E+02	1.36E-01	1.36E-01
AG-116*	1.04E+01	1.03E-03	1.03E-03
AG-117	7.36E+01	3.27E-02	3.27E-02
AG-117*	5.34E+00	6.69E-05	6.69E-05
AG-118	3.76E+00	1.96E-06	1.96E-06
AG-118*	2.00E+00	3.27E-10	3.27E-10
AG-119	2.10E+00	1.76E-10	1.76E-10
AG-120	1.23E+00	9.68E-17	9.68E-17
AG-120*	3.20E-01	2.62E-59	2.62E-59
AG-121	7.90E-01	1.64E-16	1.64E-16
AG-122	4.80E-01	1.16E-21	1.16E-21
AG-122*	1.50E+00	1.65E-15	1.65E-15
AG-123	2.96E-01	2.14E-48	2.14E-48
AG-124	1.11E-01	3.32E-65	3.32E-65
AG-125	1.66E-01	1.13E-70	1.13E-70
AG-126	1.07E-01	2.95E-85	2.95E-85
AG-127	7.90E-02	2.17E-89	2.17E-89
CD-100	4.91E+01	1.56E-03	1.56E-03
CD-101	8.20E+01	4.38E-03	4.38E-03
CD-102	3.30E+02	3.13E-01	3.13E-01
CD-103	4.38E+02	1.58E+00	1.58E+00
CD-104	3.46E+03	1.02E+01	1.02E+01
CD-105	3.33E+03	2.03E+01	2.03E+01
CD-107	2.34E+04	5.95E+01	5.95E+01
CD-109	4.00E+07	6.27E+01	6.27E+01
CD-111*	2.92E+03	6.63E+01	6.63E+01
CD-113	2.93E+23	1.95E-15	1.95E-15
CD-113*	4.45E+08	4.44E-01	4.44E-01
CD-115	1.92E+05	8.55E-01	8.55E-01
CD-115*	3.85E+06	3.80E-01	3.80E-01
CD-117	8.96E+03	2.61E-01	2.61E-01
CD-117*	1.21E+04	8.14E-02	8.14E-02
CD-118	3.02E+03	2.78E-01	2.78E-01
CD-119	1.61E+02	6.10E-02	6.10E-02
CD-119*	1.32E+02	3.61E-02	3.61E-02
CD-120	5.08E+01	4.93E-02	4.93E-02
CD-121	1.35E+01	1.97E-03	1.97E-03
CD-121*	4.80E+00	1.57E-06	1.57E-06
CD-122	5.24E+00	1.77E-05	1.77E-05
CD-123	2.10E+00	6.56E-11	6.56E-11
CD-123*	1.90E+00	5.67E-13	5.67E-13

CD-124	1.25E+00	1.20E-16	1.20E-16
CD-125	1.55E+00	1.59E-14	1.59E-14
CD-126	5.15E-01	8.76E-38	8.76E-38
CD-127	3.70E-01	1.01E-51	1.01E-51
CD-133	1.86E-01	1.67E-100	1.67E-100
IN-102	2.30E+01	2.98E-04	2.98E-04
IN-103	6.50E+01	1.07E-03	1.07E-03
IN-104	1.02E+02	3.88E-03	3.88E-03
IN-104*	1.60E+01	2.70E-04	2.70E-04
IN-105	3.04E+02	1.31E-01	1.31E-01
IN-105*	4.80E+01	2.91E-02	2.91E-02
IN-106	3.72E+02	6.14E-01	6.14E-01
IN-106*	3.12E+02	7.69E-01	7.69E-01
IN-107	1.94E+03	8.47E+00	8.47E+00
IN-107*	5.04E+01	1.10E+00	1.10E+00
IN-108	3.48E+03	7.84E+00	7.84E+00
IN-108*	2.38E+03	1.49E+01	1.49E+01
IN-109	1.51E+04	5.50E+01	5.50E+01
IN-109*	8.00E+01	8.35E+00	8.35E+00
IN-109+	2.10E-01	1.39E-86	1.39E-86
IN-110	1.76E+04	5.59E+01	5.59E+01
IN-110*	4.15E+03	3.07E+01	3.07E+01
IN-111	2.44E+05	1.20E+02	1.20E+02
IN-111*	4.62E+02	1.54E+01	1.54E+01
IN-112	8.64E+02	3.56E+01	3.56E+01
IN-112*	1.23E+03	1.90E+01	1.90E+01
IN-113*	5.97E+03	1.20E+02	1.20E+02
IN-114	7.19E+01	9.78E+00	9.78E+00
IN-114*	4.28E+06	4.58E+00	4.58E+00
IN-115	1.39E+22	1.57E-13	1.57E-13
IN-115*	1.62E+04	4.03E+00	4.03E+00
IN-116	1.41E+01	5.62E-02	5.62E-02
IN-116*	3.25E+03	2.52E+00	2.52E+00
IN-116+	2.18E+00	7.28E-09	7.28E-09
IN-117	2.59E+03	1.60E+00	1.60E+00
IN-117*	6.99E+03	8.18E-01	8.18E-01
IN-118	2.33E+01	3.24E-01	3.24E-01
IN-118*	2.67E+02	2.82E-01	2.82E-01
IN-118+	8.50E+00	6.96E-04	6.96E-04
IN-119	1.44E+02	2.54E-01	2.54E-01
IN-119*	1.08E+03	2.07E-01	2.07E-01

IN-120	3.08E+00	5.25E-02	5.25E-02
IN-120*	4.62E+01	1.55E-02	1.55E-02
IN-120+	4.73E+01	9.06E-03	9.06E-03
IN-121	2.31E+01	1.42E-02	1.42E-02
IN-121*	2.33E+02	8.88E-02	8.88E-02
IN-122	1.50E+00	2.48E-05	2.48E-05
IN-122*	1.03E+01	4.81E-04	4.81E-04
IN-122+	1.08E+01	1.16E-04	1.16E-04
IN-123	5.98E+00	5.43E-05	5.43E-05
IN-123*	4.78E+01	1.33E-02	1.33E-02
IN-124	3.17E+00	1.50E-07	1.50E-07
IN-124*	2.40E+00	5.42E-11	5.42E-11
IN-125	2.36E+00	7.59E-10	7.59E-10
IN-125*	1.22E+01	3.14E-04	3.14E-04
IN-126	1.45E+00	4.45E-15	4.45E-15
IN-126*	1.50E+00	1.71E-14	1.71E-14
IN-127	1.09E+00	1.98E-19	1.98E-19
IN-127*	3.76E+00	1.84E-07	1.84E-07
IN-128	8.40E-01	1.72E-24	1.72E-24
IN-129	6.11E-01	5.00E-33	5.00E-33
IN-129*	1.26E+00	1.68E-17	1.68E-17
IN-130	3.20E-01	2.62E-59	2.62E-59
IN-131	2.80E-01	1.69E-67	1.69E-67
IN-132	2.06E-01	1.62E-90	1.62E-90
IN-133	1.65E-01	4.33E-100	4.33E-100
SN-103	7.00E+00	4.78E-06	4.78E-06
SN-104	2.10E+01	2.53E-04	2.53E-04
SN-105	2.80E+01	1.97E-05	1.97E-05
SN-106	1.26E+02	9.15E-03	9.15E-03
SN-107	1.74E+02	8.45E-02	8.45E-02
SN-108	6.18E+02	1.94E+00	1.94E+00
SN-109	1.08E+03	8.74E+00	8.74E+00
SN-110	1.48E+04	3.86E+01	3.86E+01
SN-111	2.12E+03	6.11E+01	6.11E+01
SN-113	9.94E+06	1.09E+02	1.09E+02
SN-113*	1.28E+03	3.75E+01	3.75E+01
SN-117*	1.18E+06	3.76E+00	3.76E+00
SN-119*	2.53E+07	6.94E-01	6.94E-01
SN-121	9.73E+04	4.16E-01	4.16E-01
SN-121*	1.74E+09	1.85E-02	1.85E-02
SN-123	1.12E+07	2.68E-02	2.68E-02

SN-123*	2.40E+03	1.15E-01	1.15E-01
SN-125	8.33E+05	1.73E-02	1.73E-02
SN-125*	5.71E+02	5.27E-02	5.27E-02
SN-126	7.26E+12	2.40E-06	2.40E-06
SN-127	7.56E+03	1.36E-02	1.36E-02
SN-127*	2.48E+02	2.79E-02	2.79E-02
SN-128	3.54E+03	3.24E-02	3.24E-02
SN-128*	6.50E+00	6.05E-06	6.05E-06
SN-129	1.34E+02	1.06E-02	1.06E-02
SN-129*	4.02E+02	1.81E-03	1.81E-03
SN-130	2.23E+02	5.77E-03	5.77E-03
SN-130*	1.02E+02	1.41E-03	1.41E-03
SN-131	5.60E+01	3.44E-03	3.44E-03
SN-131*	6.12E+01	4.57E-05	4.57E-05
SN-132	3.97E+01	2.28E-03	2.28E-03
SN-133	1.45E+00	8.90E-16	8.90E-16
SN-134	1.12E+00	1.36E-19	1.36E-19
SN-137	1.90E-01	3.15E-98	3.15E-98
SB-108	7.00E+00	4.81E-06	4.81E-06
SB-109	1.67E+01	1.85E-03	1.85E-03
SB-110	2.30E+01	2.65E-02	2.65E-02
SB-111	7.50E+01	5.76E+00	5.76E+00
SB-112	5.14E+01	1.09E+01	1.09E+01
SB-113	4.00E+02	6.08E+01	6.08E+01
SB-114	2.09E+02	9.65E+01	9.65E+01
SB-115	1.93E+03	1.76E+02	1.76E+02
SB-116	9.50E+02	2.16E+02	2.16E+02
SB-116*	3.62E+03	2.39E+01	2.39E+01
SB-117	1.01E+04	2.53E+02	2.53E+02
SB-118	2.16E+02	3.14E+02	3.14E+02
SB-118*	1.80E+04	3.35E+00	3.35E+00
SB-119	1.37E+05	2.94E+02	2.94E+02
SB-120	9.53E+02	7.57E+00	7.57E+00
SB-120*	4.98E+05	2.79E+00	2.79E+00
SB-122	2.33E+05	3.67E+00	3.67E+00
SB-122*	2.53E+02	3.00E-01	3.00E-01
SB-124	5.20E+06	2.90E-01	2.90E-01
SB-124*	9.30E+01	1.24E-01	1.24E-01
SB-124+	1.21E+03	9.85E-02	9.85E-02
SB-125	8.71E+07	1.73E-01	1.73E-01
SB-126	1.07E+06	1.72E-02	1.72E-02

SB-126*	1.14E+03	6.89E-02	6.89E-02
SB-126+	1.10E+01	9.98E-04	9.98E-04
SB-127	3.33E+05	9.01E-02	9.01E-02
SB-128	3.24E+04	1.94E-02	1.94E-02
SB-128*	6.24E+02	3.45E-02	3.45E-02
SB-129	1.58E+04	4.91E-02	4.91E-02
SB-129*	1.06E+03	3.98E-09	3.98E-09
SB-130	2.37E+03	3.89E-03	3.89E-03
SB-130*	3.78E+02	1.50E-02	1.50E-02
SB-131	1.38E+03	2.14E-02	2.14E-02
SB-132	1.67E+02	4.26E-03	4.26E-03
SB-132*	1.68E+02	5.94E-03	5.94E-03
SB-133	1.50E+02	3.54E-03	3.54E-03
SB-134	8.50E-01	4.68E-19	4.68E-19
SB-135	1.68E+00	1.35E-14	1.35E-14
SB-136	9.23E-01	1.47E-22	1.47E-22
SB-137	4.50E-01	1.93E-43	1.93E-43
TE-108	2.10E+00	1.39E-11	1.39E-11
TE-109	4.60E+00	2.15E-07	2.15E-07
TE-111	1.93E+01	6.32E-04	6.32E-04
TE-112	1.20E+02	1.25E-01	1.25E-01
TE-113	1.02E+02	1.33E+00	1.33E+00
TE-114	9.10E+02	1.22E+01	1.22E+01
TE-115	3.48E+02	3.95E+01	3.95E+01
TE-115*	4.02E+02	1.40E+01	1.40E+01
TE-116	8.96E+03	1.50E+02	1.50E+02
TE-117	3.72E+03	1.71E+02	1.71E+02
TE-117*	1.03E-01	2.33E-174	2.33E-174
TE-118	5.18E+05	2.85E+02	2.85E+02
TE-119	5.78E+04	2.24E+02	2.24E+02
TE-119*	4.05E+05	4.21E+01	4.21E+01
TE-121	1.45E+06	3.17E+02	3.17E+02
TE-121*	1.33E+07	1.01E+01	1.01E+01
TE-123	3.91E+20	2.15E-10	2.15E-10
TE-123*	1.03E+07	3.74E+00	3.74E+00
TE-125*	5.01E+06	1.23E+00	1.23E+00
TE-127	3.37E+04	3.17E-01	3.17E-01
TE-127*	9.42E+06	1.18E-01	1.18E-01
TE-129	4.18E+03	8.61E-02	8.61E-02
TE-129*	2.90E+06	1.77E-02	1.77E-02
TE-131	1.50E+03	3.57E-02	3.57E-02

TE-131*	1.08E+05	5.12E-03	5.12E-03
TE-132	2.77E+05	2.65E-02	2.65E-02
TE-133	7.50E+02	1.18E-02	1.18E-02
TE-133*	3.32E+03	6.18E-03	6.18E-03
TE-134	2.51E+03	8.91E-03	8.91E-03
TE-135	1.90E+01	3.52E-04	3.52E-04
TE-136	1.76E+01	6.69E-04	6.69E-04
TE-137	2.49E+00	5.74E-11	5.74E-11
TE-138	1.40E+00	2.28E-16	2.28E-16
TE-139	2.10E+00	4.78E-12	4.78E-12
I -112	3.42E+00	5.30E-08	5.30E-08
I -114	2.10E+00	4.10E-11	4.10E-11
I -115	7.80E+01	6.08E-02	6.08E-02
I -116	2.91E+00	7.31E-03	7.31E-03
I -117	1.38E+02	2.30E+01	2.30E+01
I -118	8.20E+02	6.33E+01	6.33E+01
I -118*	5.10E+02	6.71E+00	6.71E+00
I -119	1.15E+03	1.60E+02	1.60E+02
I -120	4.86E+03	2.09E+02	2.09E+02
I -120*	3.18E+03	6.17E+00	6.17E+00
I -121	7.63E+03	2.81E+02	2.81E+02
I -122	2.18E+02	2.94E+02	2.94E+02
I -123	4.75E+04	3.51E+02	3.51E+02
I -124	3.61E+05	5.13E+01	5.13E+01
I -125	5.20E+06	4.22E+02	4.22E+02
I -126	1.12E+06	1.29E+01	1.29E+01
I -128	1.50E+03	4.68E+00	4.68E+00
I -129	4.96E+14	4.24E-07	4.24E-07
I -130	4.45E+04	1.88E-01	1.88E-01
I -130*	5.40E+02	9.25E-02	9.25E-02
I -131	6.93E+05	1.39E-01	1.39E-01
I -132	8.26E+03	6.95E-02	6.95E-02
I -132*	5.02E+03	3.61E-03	3.61E-03
I -133	7.49E+04	5.01E-02	5.01E-02
I -133*	9.00E+00	6.31E-04	6.31E-04
I -134	3.15E+03	2.87E-02	2.87E-02
I -134*	2.21E+02	3.01E-03	3.01E-03
I -135	2.36E+04	8.58E-03	8.58E-03
I -136	8.34E+01	8.36E-03	8.36E-03
I -136*	4.69E+01	1.04E-10	1.04E-10
I -137	2.41E+01	1.15E-03	1.15E-03

I -138	6.23E+00	5.99E-06	5.99E-06
I -139	2.28E+00	2.12E-10	2.12E-10
XE-112	2.70E+00	3.72E-10	3.72E-10
XE-116	5.60E+01	6.92E-03	6.92E-03
XE-117	6.10E+01	5.52E-02	5.52E-02
XE-118	3.60E+02	1.56E+00	1.56E+00
XE-119	3.48E+02	7.97E+00	7.97E+00
XE-120	2.40E+03	4.42E+01	4.42E+01
XE-121	2.41E+03	8.52E+01	8.52E+01
XE-122	7.24E+04	1.89E+02	1.89E+02
XE-123	7.49E+03	2.42E+02	2.42E+02
XE-125	6.08E+04	4.23E+02	4.23E+02
XE-125*	5.70E+01	7.64E+00	7.64E+00
XE-127	3.14E+06	4.94E+02	4.94E+02
XE-127*	6.92E+01	3.45E+00	3.45E+00
XE-129*	7.68E+05	1.44E+00	1.44E+00
XE-131*	1.03E+06	8.98E-01	8.98E-01
XE-133	4.53E+05	1.15E-01	1.15E-01
XE-133*	1.89E+05	1.87E-02	1.87E-02
XE-134*	2.90E-01	6.94E-05	6.94E-05
XE-135	3.29E+04	3.37E-02	3.37E-02
XE-135*	9.17E+02	6.57E-03	6.57E-03
XE-137	2.29E+02	1.31E-02	1.31E-02
XE-138	8.45E+02	5.84E-03	5.84E-03
XE-139	3.97E+01	2.97E-03	2.97E-03
XE-142	1.22E+00	5.70E-18	5.70E-18
XE-143	5.11E-01	8.20E-39	8.20E-39
XE-145	1.88E-01	1.54E-99	1.54E-99
XE-148	1.17E-01	4.05E-158	4.05E-158
CS-118	1.40E+01	1.40E-03	1.40E-03
CS-118*	1.70E+01	1.10E-03	1.10E-03
CS-119	3.77E+01	4.59E-02	4.59E-02
CS-119*	2.80E+01	2.26E-02	2.26E-02
CS-120	6.06E+01	2.26E+00	2.26E+00
CS-120*	6.00E+01	1.76E-01	1.76E-01
CS-121	1.26E+02	6.25E+00	6.25E+00
CS-121*	1.20E+02	5.83E+00	5.83E+00
CS-122	2.10E+01	1.84E+01	1.84E+01
CS-122*	2.70E+02	1.21E+00	1.21E+00
CS-122+	3.60E-01	1.97E-49	1.97E-49
CS-123	3.52E+02	1.65E+02	1.65E+02

CS-123*	1.60E+00	2.63E-10	2.63E-10
CS-124	3.08E+01	1.98E+02	1.98E+02
CS-124*	6.30E+00	5.22E-02	5.22E-02
CS-125	2.70E+03	3.66E+02	3.66E+02
CS-126	9.84E+01	4.82E+02	4.82E+02
CS-127	2.25E+04	4.90E+02	4.90E+02
CS-128	2.17E+02	6.08E+02	6.08E+02
CS-129	1.15E+05	5.54E+02	5.54E+02
CS-130	1.79E+03	1.01E+01	1.01E+01
CS-130*	2.08E+02	4.08E+00	4.08E+00
CS-131	8.37E+05	6.20E+02	6.20E+02
CS-132	5.59E+05	1.74E+00	1.74E+00
CS-134	6.51E+07	1.44E+00	1.44E+00
CS-134*	1.05E+04	2.36E-01	2.36E-01
CS-135	7.26E+13	4.08E-07	4.08E-07
CS-135*	3.18E+03	9.67E-03	9.67E-03
CS-136	1.14E+06	2.26E-02	2.26E-02
CS-136*	1.90E+01	4.38E-04	4.38E-04
CS-137	9.52E+08	1.05E-02	1.05E-02
CS-138	2.00E+03	1.62E-02	1.62E-02
CS-138*	1.75E+02	2.87E-03	2.87E-03
CS-139	5.56E+02	1.63E-02	1.63E-02
CS-140	6.37E+01	9.47E-04	9.47E-04
CS-141	2.48E+01	1.03E-03	1.03E-03
CS-142	1.69E+00	3.02E-13	3.02E-13
CS-143	1.79E+00	3.57E-13	3.57E-13
CS-144	1.02E+00	3.78E-21	3.78E-21
CS-145	5.82E-01	2.36E-34	2.36E-34
CS-147	2.25E-01	2.14E-84	2.14E-84
CS-148	1.46E-01	1.93E-126	1.93E-126
CS-149	1.93E-01	3.58E-97	3.58E-97
BA-120	3.20E+01	1.83E-02	1.83E-02
BA-121	2.97E+01	1.46E-01	1.46E-01
BA-122	1.17E+02	6.48E+00	6.48E+00
BA-123	1.62E+02	3.14E+01	3.14E+01
BA-124	7.10E+02	1.52E+02	1.52E+02
BA-125	2.10E+02	1.85E+02	1.85E+02
BA-126	6.00E+03	4.10E+02	4.10E+02
BA-127	7.62E+02	3.86E+02	3.86E+02
BA-128	2.10E+05	5.71E+02	5.71E+02
BA-129	8.00E+03	4.23E+02	4.23E+02

BA-129*	7.81E+03	1.01E+02	1.01E+02
BA-131	1.02E+06	6.15E+02	6.15E+02
BA-131*	8.76E+02	2.20E+01	2.20E+01
BA-133	3.32E+08	2.82E+02	2.82E+02
BA-133*	1.40E+05	4.38E+00	4.38E+00
BA-135*	1.03E+05	1.45E+00	1.45E+00
BA-136*	3.08E-01	2.52E-03	2.52E-03
BA-137*	1.53E+02	4.17E-02	4.17E-02
BA-139	4.99E+03	3.45E-02	3.45E-02
BA-140	1.10E+06	1.09E-02	1.09E-02
BA-141	1.10E+03	1.24E-02	1.24E-02
BA-142	6.36E+02	1.71E-02	1.71E-02
BA-143	1.45E+01	7.55E-04	7.55E-04
BA-144	1.15E+01	1.59E-04	1.59E-04
BA-145	4.31E+00	2.33E-07	2.33E-07
BA-146	2.22E+00	4.86E-13	4.86E-13
BA-147	8.93E-01	7.85E-24	7.85E-24
BA-148	6.12E-01	2.22E-32	2.22E-32
BA-149	3.44E-01	4.96E-56	4.96E-56
BA-151	2.82E-01	2.02E-67	2.02E-67
LA-122	9.00E+00	1.79E-05	1.79E-05
LA-123	1.70E+01	2.52E-03	2.52E-03
LA-124	3.00E+01	2.40E-01	2.40E-01
LA-125	7.60E+01	3.97E+00	3.97E+00
LA-126	6.00E+01	2.65E+01	2.65E+01
LA-127	2.30E+02	1.01E+02	1.01E+02
LA-128	3.00E+02	2.02E+02	2.02E+02
LA-129	6.96E+02	3.28E+02	3.28E+02
LA-129*	5.60E-01	5.41E-31	5.41E-31
LA-130	5.22E+02	4.86E+02	4.86E+02
LA-131	3.54E+03	5.46E+02	5.46E+02
LA-132	1.73E+04	6.49E+02	6.49E+02
LA-132*	1.46E+03	7.36E+01	7.36E+01
LA-133	1.41E+04	6.54E+02	6.54E+02
LA-134	3.87E+02	8.07E+02	8.07E+02
LA-135	7.02E+04	7.72E+02	7.72E+02
LA-136	5.92E+02	8.06E+00	8.06E+00
LA-136*	1.14E-01	1.95E-159	1.95E-159
LA-137	1.89E+12	1.15E-01	1.15E-01
LA-138	3.31E+18	2.69E-10	2.69E-10
LA-140	1.45E+05	7.03E-01	7.03E-01

LA-141	1.41E+04	1.27E-02	1.27E-02
LA-142	5.47E+03	2.36E-02	2.36E-02
LA-143	8.52E+02	2.27E-02	2.27E-02
LA-144	4.08E+01	5.47E-03	5.47E-03
LA-145	2.48E+01	1.78E-03	1.78E-03
LA-146	6.27E+00	2.52E-06	2.52E-06
LA-147	4.01E+00	1.60E-07	1.60E-07
LA-148	1.26E+00	5.55E-17	5.55E-17
LA-149	1.05E+00	7.97E-21	7.97E-21
LA-150	5.10E-01	7.66E-39	7.66E-39
LA-151	7.43E-01	2.20E-27	2.20E-27
CE-124	6.00E+00	1.78E-06	1.78E-06
CE-125	1.10E+01	1.04E-03	1.04E-03
CE-126	5.00E+01	5.19E-01	5.19E-01
CE-127	3.20E+01	2.14E+00	2.14E+00
CE-128	7.20E+02	3.57E+01	3.57E+01
CE-129	2.10E+02	4.76E+01	4.76E+01
CE-130	1.50E+03	2.73E+02	2.73E+02
CE-131	6.00E+02	2.07E+02	2.07E+02
CE-131*	3.00E+02	7.27E+01	7.27E+01
CE-132	1.26E+04	5.17E+02	5.17E+02
CE-133	1.76E+04	3.86E+02	3.86E+02
CE-133*	5.82E+03	1.68E+02	1.68E+02
CE-134	2.73E+05	7.67E+02	7.67E+02
CE-135	6.37E+04	7.48E+02	7.48E+02
CE-135*	2.00E+01	6.30E+00	6.30E+00
CE-137	3.24E+04	8.75E+02	8.75E+02
CE-137*	1.24E+05	1.16E+01	1.16E+01
CE-139	1.19E+07	8.05E+02	8.05E+02
CE-139*	5.48E+01	1.03E+00	1.03E+00
CE-141	2.81E+06	3.35E-01	3.35E-01
CE-142	1.58E+24	1.59E-17	1.59E-17
CE-143	1.19E+05	5.64E-02	5.64E-02
CE-144	2.46E+07	2.48E-02	2.48E-02
CE-145	1.81E+02	1.80E-02	1.80E-02
CE-146	8.11E+02	1.91E-02	1.91E-02
CE-147	5.64E+01	5.03E-03	5.03E-03
CE-148	5.60E+01	3.58E-03	3.58E-03
CE-149	5.30E+00	3.93E-07	3.93E-07
CE-150	4.00E+00	8.52E-08	8.52E-08
CE-151	1.02E+00	2.60E-20	2.60E-20

CE-152	1.10E+00	6.92E-20	6.92E-20
CE-158	1.59E-01	4.38E-117	4.38E-117
PR-127	1.51E+01	3.47E-04	3.47E-04
PR-128	3.20E+00	1.51E-06	1.51E-06
PR-129	2.40E+01	1.13E+00	1.13E+00
PR-130	4.00E+01	6.03E+00	6.03E+00
PR-131	1.02E+02	4.48E+01	4.48E+01
PR-132	1.08E+02	1.15E+02	1.15E+02
PR-133	3.90E+02	2.64E+02	2.64E+02
PR-134	1.02E+03	4.51E+02	4.51E+02
PR-134*	6.60E+02	1.22E+01	1.22E+01
PR-135	1.44E+03	6.17E+02	6.17E+02
PR-136	7.86E+02	8.89E+02	8.89E+02
PR-137	4.61E+03	8.37E+02	8.37E+02
PR-138	8.70E+01	9.33E+02	9.33E+02
PR-138*	7.60E+03	3.02E+01	3.02E+01
PR-139	1.59E+04	1.04E+03	1.04E+03
PR-140	2.03E+02	1.10E+03	1.10E+03
PR-142	6.88E+04	2.34E+00	2.34E+00
PR-142*	8.76E+02	7.52E-01	7.52E-01
PR-143	1.17E+06	4.78E-01	4.78E-01
PR-144	1.04E+03	1.51E-01	1.51E-01
PR-144*	4.32E+02	7.83E-02	7.83E-02
PR-145	2.15E+04	6.35E-02	6.35E-02
PR-146	1.45E+03	2.89E-02	2.89E-02
PR-147	8.04E+02	2.55E-02	2.55E-02
PR-148	1.36E+02	9.44E-03	9.44E-03
PR-148*	1.20E+02	5.76E-09	5.76E-09
PR-149	1.36E+02	1.91E-03	1.91E-03
PR-150	6.19E+00	1.54E-05	1.54E-05
PR-151	1.89E+01	1.78E-03	1.78E-03
PR-152	3.63E+00	1.05E-07	1.05E-07
PR-153	4.28E+00	1.10E-07	1.10E-07
PR-154	2.30E+00	7.65E-11	7.65E-11
PR-155	3.48E-01	2.16E-55	2.16E-55
PR-156	1.42E-01	1.15E-130	1.15E-130
PR-157	1.61E-01	1.79E-115	1.79E-115
PR-158	1.21E-01	1.78E-116	1.78E-116
ND-129	4.90E+00	8.99E-06	8.99E-06
ND-130	2.80E+01	1.52E-01	1.52E-01
ND-131	2.40E+01	4.24E-01	4.24E-01

ND-132	1.08E+02	1.65E+01	1.65E+01
ND-133	7.20E+01	4.15E+01	4.15E+01
ND-134	5.10E+02	1.88E+02	1.88E+02
ND-135	7.40E+02	1.53E+02	1.53E+02
ND-135*	3.30E+02	9.42E+01	9.42E+01
ND-136	3.04E+03	7.07E+02	7.07E+02
ND-137	2.31E+03	6.78E+02	6.78E+02
ND-137*	1.60E+00	1.01E-09	1.01E-09
ND-138	1.81E+04	9.02E+02	9.02E+02
ND-139	1.78E+03	8.72E+02	8.72E+02
ND-139*	1.98E+04	1.30E+02	1.30E+02
ND-140	2.91E+05	1.09E+03	1.09E+03
ND-141	8.96E+03	1.02E+03	1.02E+03
ND-141*	6.24E+01	1.52E+01	1.52E+01
ND-144	6.60E+22	3.01E-13	3.01E-13
ND-145	1.89E+24	4.53E-14	4.53E-14
ND-147	9.49E+05	1.23E-01	1.23E-01
ND-149	6.22E+03	2.07E-02	2.07E-02
ND-151	7.46E+02	1.70E-02	1.70E-02
ND-152	6.84E+02	1.72E-02	1.72E-02
ND-153	3.16E+01	2.52E-03	2.52E-03
ND-154	2.59E+01	1.93E-03	1.93E-03
ND-155	8.90E+00	3.52E-05	3.52E-05
ND-156	5.49E+00	3.75E-06	3.75E-06
ND-157	5.04E-01	6.94E-40	6.94E-40
ND-158	1.26E+00	7.81E-18	7.81E-18
ND-160	5.62E-01	1.02E-37	1.02E-37
ND-161	3.81E-01	2.67E-51	2.67E-51
ND-162	3.08E-01	2.71E-62	2.71E-62
PM-131	8.45E+00	1.33E-05	1.33E-05
PM-132	6.00E+00	2.15E-04	2.15E-04
PM-133	1.20E+01	2.96E-02	2.96E-02
PM-134	2.40E+01	1.93E+00	1.93E+00
PM-135	4.90E+01	1.13E+01	1.13E+01
PM-136	1.07E+02	5.98E+01	5.98E+01
PM-137	1.44E+02	1.36E+02	1.36E+02
PM-138	1.00E+01	4.15E+01	4.15E+01
PM-138*	1.94E+02	7.48E+01	7.48E+01
PM-139	2.49E+02	5.55E+02	5.55E+02
PM-139*	1.80E-01	7.80E-99	7.80E-99
PM-140	9.20E+00	2.57E+02	2.57E+02

PM-140*	3.57E+02	1.86E+02	1.86E+02
PM-141	1.25E+03	9.04E+02	9.04E+02
PM-142	4.05E+01	8.92E+02	8.92E+02
PM-143	2.29E+07	7.32E+02	7.32E+02
PM-144	3.14E+07	4.93E+01	4.93E+01
PM-145	5.59E+08	3.78E+02	3.78E+02
PM-146	1.74E+08	9.78E+00	9.78E+00
PM-147	8.28E+07	4.24E+00	4.24E+00
PM-148	4.64E+05	8.13E-01	8.13E-01
PM-148*	3.57E+06	7.10E-01	7.10E-01
PM-149	1.91E+05	6.62E-01	6.62E-01
PM-150	9.65E+03	1.41E-01	1.41E-01
PM-151	1.02E+05	8.14E-02	8.14E-02
PM-152	2.46E+02	2.12E-02	2.12E-02
PM-152*	4.51E+02	1.67E-03	1.67E-03
PM-152+	1.08E+03	4.28E-06	4.28E-06
PM-153	3.15E+02	1.66E-02	1.66E-02
PM-154	1.03E+02	1.12E-02	1.12E-02
PM-154*	1.61E+02	2.81E-03	2.81E-03
PM-155	4.15E+01	2.39E-03	2.39E-03
PM-156	2.67E+01	2.30E-03	2.30E-03
PM-157	1.06E+01	4.10E-05	4.10E-05
PM-158	4.80E+00	3.74E-07	3.74E-07
PM-159	1.47E+00	1.20E-20	1.20E-20
PM-160	4.74E-01	6.47E-37	6.47E-37
PM-161	3.18E-01	1.62E-50	1.62E-50
PM-162	2.42E-01	1.24E-61	1.24E-61
SM-134	1.10E+01	2.49E-04	2.49E-04
SM-135	1.00E+01	8.24E-04	8.24E-04
SM-136	4.27E+01	2.86E-01	2.86E-01
SM-137	4.50E+01	3.31E+00	3.31E+00
SM-138	1.80E+02	3.58E+01	3.58E+01
SM-139	1.54E+02	7.61E+01	7.61E+01
SM-139*	1.07E+01	9.43E-01	9.43E-01
SM-140	8.89E+02	2.51E+02	2.51E+02
SM-141	6.12E+02	1.94E+02	1.94E+02
SM-141*	1.36E+03	1.63E+02	1.63E+02
SM-142	4.35E+03	7.54E+02	7.54E+02
SM-143	5.30E+02	8.02E+02	8.02E+02
SM-143*	6.60E+01	8.37E+01	8.37E+01
SM-145	2.94E+07	8.22E+02	8.22E+02

SM-146	3.25E+15	1.18E-04	1.18E-04
SM-147	3.34E+18	9.01E-08	9.01E-08
SM-148	2.50E+23	1.71E-13	1.71E-13
SM-149	6.31E+22	1.98E-12	1.98E-12
SM-151	2.84E+09	1.82E-01	1.82E-01
SM-153	1.67E+05	2.46E+00	2.46E+00
SM-155	1.34E+03	1.63E-02	1.63E-02
SM-156	3.38E+04	1.99E-02	1.99E-02
SM-157	4.82E+02	3.62E-03	3.62E-03
SM-158	3.18E+02	2.98E-03	2.98E-03
SM-159	1.14E+01	4.69E-05	4.69E-05
SM-160	9.60E+00	2.42E-05	2.42E-05
SM-161	4.80E+00	1.36E-07	1.36E-07
SM-162	2.40E+00	3.73E-11	3.73E-11
EU-136	3.90E+00	4.25E-08	4.25E-08
EU-137	4.50E+01	2.17E-03	2.17E-03
EU-138	1.21E+01	6.67E-03	6.67E-03
EU-139	1.79E+01	3.59E-01	3.59E-01
EU-140	1.54E+00	9.27E-03	9.27E-03
EU-140*	2.00E+01	1.21E-01	1.21E-01
EU-141	4.00E+01	8.37E+00	8.37E+00
EU-141*	2.70E+00	5.47E-06	5.47E-06
EU-142	2.40E+00	6.78E+00	6.78E+00
EU-142*	7.32E+01	2.85E+01	2.85E+01
EU-143	1.58E+02	2.64E+02	2.64E+02
EU-144	1.02E+01	8.54E+01	8.54E+01
EU-145	5.12E+05	1.08E+03	1.08E+03
EU-146	3.97E+05	1.39E+03	1.39E+03
EU-147	2.07E+06	1.18E+03	1.18E+03
EU-148	4.71E+06	1.32E+02	1.32E+02
EU-149	8.04E+06	1.00E+03	1.00E+03
EU-150	1.13E+09	4.13E+00	4.13E+00
EU-150*	4.54E+04	1.45E+01	1.45E+01
EU-152	4.21E+08	4.38E+01	4.38E+01
EU-152*	3.36E+04	1.13E+02	1.13E+02
EU-152+	5.76E+03	7.27E-01	7.27E-01
EU-154	2.71E+08	1.31E+01	1.31E+01
EU-154*	2.76E+03	5.98E+00	5.98E+00
EU-155	1.50E+08	5.66E-01	5.66E-01
EU-156	1.31E+06	2.71E-01	2.71E-01
EU-157	5.46E+04	2.77E-02	2.77E-02

EU-158	2.75E+03	6.98E-03	6.98E-03
EU-159	1.09E+03	5.27E-03	5.27E-03
EU-160	3.80E+01	1.42E-03	1.42E-03
EU-161	2.60E+01	9.16E-04	9.16E-04
EU-162	1.06E+01	6.43E-05	6.43E-05
EU-163	1.72E+01	1.62E-04	1.62E-04
EU-164	8.57E+00	1.42E-05	1.42E-05
EU-165	5.71E+00	1.24E-06	1.24E-06
EU-166	1.65E+00	2.10E-14	2.10E-14
GD-140	1.80E+01	8.48E-03	8.48E-03
GD-141	2.10E+01	2.81E-03	2.81E-03
GD-141*	2.50E+01	9.99E-03	9.99E-03
GD-142	9.00E+01	6.60E+00	6.60E+00
GD-143	3.90E+01	3.68E+00	3.68E+00
GD-143*	1.12E+02	9.55E+00	9.55E+00
GD-144	2.70E+02	7.28E+01	7.28E+01
GD-145	1.38E+03	3.52E+02	3.52E+02
GD-145*	8.50E+01	7.99E+01	7.99E+01
GD-146	4.17E+06	1.01E+03	1.01E+03
GD-147	1.37E+05	8.97E+02	8.97E+02
GD-148	2.35E+09	1.19E+02	1.19E+02
GD-149	8.10E+05	1.12E+03	1.12E+03
GD-150	5.65E+13	4.84E-03	4.84E-03
GD-151	1.07E+07	9.43E+02	9.43E+02
GD-152	3.41E+21	1.07E-10	1.07E-10
GD-153	2.09E+07	8.81E+02	8.81E+02
GD-159	6.65E+04	1.35E-01	1.35E-01
GD-161	2.19E+02	8.54E-03	8.54E-03
GD-162	5.04E+02	7.75E-03	7.75E-03
GD-163	6.80E+01	1.27E-03	1.27E-03
GD-164	4.50E+01	8.90E-04	8.90E-04
GD-165	1.03E+01	1.02E-04	1.02E-04
GD-166	4.80E+00	4.76E-07	4.76E-07
TB-141	3.50E+00	1.26E-08	1.26E-08
TB-142	6.00E-01	3.45E-11	3.45E-11
TB-142*	3.00E-01	1.13E-63	1.13E-63
TB-143	1.20E+01	9.09E-04	9.09E-04
TB-144	1.00E+00	2.06E-04	2.06E-04
TB-144*	4.25E+00	1.79E-05	1.79E-05
TB-145	2.95E+01	6.90E-01	6.90E-01
TB-146	8.00E+00	9.13E-01	9.13E-01

TB-146*	2.30E+01	2.79E+00	2.79E+00
TB-147	5.90E+03	2.12E+02	2.12E+02
TB-147*	1.10E+02	7.17E+01	7.17E+01
TB-148	3.60E+03	5.63E+02	5.63E+02
TB-148*	1.32E+02	6.05E+01	6.05E+01
TB-149	1.49E+04	7.01E+02	7.01E+02
TB-149*	2.50E+02	1.74E+02	1.74E+02
TB-150	1.25E+04	7.02E+02	7.02E+02
TB-150*	3.48E+02	1.44E+02	1.44E+02
TB-151	6.34E+04	1.07E+03	1.07E+03
TB-151*	2.50E+01	3.90E+01	3.90E+01
TB-152	6.30E+04	1.34E+03	1.34E+03
TB-152*	2.58E+02	7.39E+01	7.39E+01
TB-153	2.02E+05	1.27E+03	1.27E+03
TB-154	7.74E+04	1.03E+01	1.03E+01
TB-154*	3.24E+04	2.40E+01	2.40E+01
TB-154+	8.17E+04	7.86E+01	7.86E+01
TB-155	4.60E+05	1.53E+03	1.53E+03
TB-156	4.62E+05	2.49E+01	2.49E+01
TB-156*	1.91E+04	2.76E+00	2.76E+00
TB-156+	8.80E+04	2.03E+00	2.03E+00
TB-157	4.73E+09	7.72E+01	7.72E+01
TB-158	4.73E+09	2.87E+00	2.87E+00
TB-158*	1.05E+01	3.81E-01	3.81E-01
TB-160	6.25E+06	2.19E+01	2.19E+01
TB-161	5.97E+05	2.06E-01	2.06E-01
TB-162	4.56E+02	6.07E-02	6.07E-02
TB-163	1.17E+03	3.17E-02	3.17E-02
TB-164	1.80E+02	1.33E-02	1.33E-02
TB-165	1.27E+02	9.46E-03	9.46E-03
TB-166	2.56E+01	4.69E-04	4.69E-04
DY-142	2.30E+00	2.55E-11	2.55E-11
DY-144	9.10E+00	1.69E-04	1.69E-04
DY-145	1.40E+01	8.58E-03	8.58E-03
DY-146	2.90E+01	6.16E-01	6.16E-01
DY-146*	1.50E-01	7.18E-122	7.18E-122
DY-147	7.50E+01	6.04E+00	6.04E+00
DY-147*	5.90E+01	3.08E+00	3.08E+00
DY-148	1.86E+02	2.21E+02	2.21E+02
DY-149	2.54E+02	3.46E+02	3.46E+02
DY-150	4.30E+02	5.97E+02	5.97E+02

DY-151	1.07E+03	6.67E+02	6.67E+02
DY-152	8.53E+03	1.08E+03	1.08E+03
DY-153	2.30E+04	1.05E+03	1.05E+03
DY-154	9.47E+13	3.69E-03	3.69E-03
DY-155	3.60E+04	1.46E+03	1.46E+03
DY-156	3.16E+25	1.25E-14	1.25E-14
DY-157	2.93E+04	1.59E+03	1.59E+03
DY-159	1.25E+07	1.36E+03	1.36E+03
DY-165	8.40E+03	2.19E+00	2.19E+00
DY-165*	7.55E+01	7.85E-01	7.85E-01
DY-166	2.94E+05	5.46E-02	5.46E-02
DY-167	3.72E+02	2.44E-02	2.44E-02
DY-168	5.22E+02	1.18E-02	1.18E-02
DY-169	3.90E+01	1.25E-03	1.25E-03
DY-170	6.74E+01	9.82E-04	9.82E-04
DY-171	1.33E+00	3.35E-29	3.35E-29
HO-147	5.80E+00	1.40E-06	1.40E-06
HO-148	2.20E+00	3.70E-10	3.70E-10
HO-148*	9.00E+00	5.19E-04	5.19E-04
HO-149	5.80E+01	7.33E+00	7.33E+00
HO-150	8.80E+01	3.38E+01	3.38E+01
HO-150*	2.60E+01	2.23E+00	2.23E+00
HO-151	3.52E+01	3.67E+01	3.67E+01
HO-151*	4.72E+01	2.80E+01	2.80E+01
HO-152	1.62E+02	2.60E+02	2.60E+02
HO-152*	4.95E+01	2.20E+01	2.20E+01
HO-153	1.20E+02	2.81E+02	2.81E+02
HO-153*	5.60E+02	1.71E+02	1.71E+02
HO-154	7.10E+02	7.63E+02	7.63E+02
HO-154*	1.95E+02	1.16E+02	1.16E+02
HO-155	2.88E+03	1.17E+03	1.17E+03
HO-156	3.36E+03	1.38E+03	1.38E+03
HO-157	7.56E+02	1.44E+03	1.44E+03
HO-158	6.60E+02	1.76E+03	1.76E+03
HO-158*	1.62E+03	1.21E+02	1.21E+02
HO-158+	1.28E+03	1.91E+01	1.91E+01
HO-159	1.98E+03	1.73E+03	1.73E+03
HO-159*	8.30E+00	2.52E-01	2.52E-01
HO-160	1.54E+03	1.95E+03	1.95E+03
HO-160*	1.81E+04	5.08E+01	5.08E+01
HO-160+	3.00E+00	1.87E-05	1.87E-05

HO-161	8.93E+03	2.04E+03	2.04E+03
HO-161*	6.73E+00	6.30E-02	6.30E-02
HO-162	9.00E+02	2.06E+01	2.06E+01
HO-162*	4.02E+03	9.05E+00	9.05E+00
HO-163	1.44E+11	3.75E+00	3.75E+00
HO-163*	1.09E+00	1.64E-16	1.64E-16
HO-164	1.74E+03	6.96E+01	6.96E+01
HO-164*	2.25E+03	2.71E+01	2.71E+01
HO-166	9.66E+04	4.55E+01	4.55E+01
HO-166*	3.79E+10	8.18E-03	8.18E-03
HO-167	1.12E+04	5.15E-01	5.15E-01
HO-168	1.79E+02	1.50E-01	1.50E-01
HO-169	2.82E+02	1.32E-01	1.32E-01
HO-170	1.68E+02	1.73E-02	1.73E-02
HO-170*	4.30E+01	6.91E-03	6.91E-03
HO-171	5.30E+01	1.33E-02	1.33E-02
HO-172	2.50E+01	4.82E-03	4.82E-03
ER-149	1.07E+01	5.88E-04	5.88E-04
ER-149*	8.90E+00	6.80E-05	6.80E-05
ER-150	1.85E+01	7.74E-01	7.74E-01
ER-151	2.35E+01	3.63E+00	3.63E+00
ER-151*	5.80E-01	2.14E-32	2.14E-32
ER-152	1.01E+01	2.17E+00	2.17E+00
ER-153	3.71E+01	5.41E+01	5.41E+01
ER-154	2.21E+02	3.35E+02	3.35E+02
ER-155	3.18E+02	4.71E+02	4.71E+02
ER-156	1.17E+03	8.46E+02	8.46E+02
ER-157	1.12E+03	1.00E+03	1.00E+03
ER-158	8.10E+03	1.51E+03	1.51E+03
ER-159	2.16E+03	1.51E+03	1.51E+03
ER-160	1.03E+05	1.87E+03	1.87E+03
ER-161	1.16E+04	1.97E+03	1.97E+03
ER-163	4.50E+03	2.21E+03	2.21E+03
ER-165	3.73E+04	2.47E+03	2.47E+03
ER-167*	2.28E+00	5.93E-02	5.93E-02
ER-169	8.12E+05	2.87E+00	2.87E+00
ER-171	2.71E+04	6.08E-01	6.08E-01
ER-172	1.78E+05	3.54E-01	3.54E-01
ER-173	8.60E+01	1.05E-01	1.05E-01
ER-174	1.92E+02	7.18E-02	7.18E-02
ER-175	7.20E+01	1.63E-02	1.63E-02

TM-151	5.20E+00	4.53E-06	4.53E-06
TM-151*	4.13E+00	3.85E-07	3.85E-07
TM-152	5.20E+00	1.21E-05	1.21E-05
TM-152*	8.00E+00	6.43E-04	6.43E-04
TM-153	1.59E+00	1.95E-05	1.95E-05
TM-154	8.10E+00	9.10E-02	9.10E-02
TM-154*	3.30E+00	1.15E-05	1.15E-05
TM-155	3.40E+01	1.89E+01	1.89E+01
TM-156	8.38E+01	4.78E+01	4.78E+01
TM-156*	1.90E+01	1.15E+01	1.15E+01
TM-157	2.10E+02	3.68E+02	3.68E+02
TM-158	2.41E+02	6.39E+02	6.39E+02
TM-159	5.49E+02	9.68E+02	9.68E+02
TM-160	5.64E+02	9.41E+02	9.41E+02
TM-160*	7.45E+01	2.28E+02	2.28E+02
TM-161	2.28E+03	1.68E+03	1.68E+03
TM-162	1.30E+03	1.82E+03	1.82E+03
TM-162*	2.43E+01	6.41E+01	6.41E+01
TM-163	6.52E+03	2.08E+03	2.08E+03
TM-164	1.20E+02	2.15E+03	2.15E+03
TM-164*	3.06E+02	1.41E+02	1.41E+02
TM-165	1.08E+05	2.42E+03	2.42E+03
TM-166	2.77E+04	2.76E+03	2.76E+03
TM-167	7.98E+05	3.10E+03	3.10E+03
TM-168	8.04E+06	4.75E+01	4.75E+01
TM-170	1.11E+07	7.37E+01	7.37E+01
TM-171	6.06E+07	7.46E+00	7.46E+00
TM-172	2.29E+05	6.22E+00	6.22E+00
TM-173	2.97E+04	3.94E+00	3.94E+00
TM-174	3.24E+02	1.77E+00	1.77E+00
TM-175	9.12E+02	1.27E+00	1.27E+00
TM-176	1.11E+02	3.58E-01	3.58E-01
YB-152	3.10E+00	2.71E-09	2.71E-09
YB-153	4.00E+00	4.99E-07	4.99E-07
YB-154	4.02E-01	1.15E-09	1.15E-09
YB-155	1.71E+00	3.74E-07	3.74E-07
YB-156	2.61E+01	4.85E+00	4.85E+00
YB-157	3.86E+01	2.19E+01	2.19E+01
YB-158	9.90E+01	1.45E+02	1.45E+02
YB-159	8.40E+01	2.03E+02	2.03E+02
YB-160	2.88E+02	6.21E+02	6.21E+02

YB-161	2.52E+02	7.86E+02	7.86E+02
YB-162	1.13E+03	1.27E+03	1.27E+03
YB-163	6.63E+02	1.45E+03	1.45E+03
YB-164	4.55E+03	2.00E+03	2.00E+03
YB-165	5.94E+02	2.09E+03	2.09E+03
YB-166	2.04E+05	2.61E+03	2.61E+03
YB-167	1.05E+03	2.97E+03	2.97E+03
YB-169	2.77E+06	5.04E+03	5.04E+03
YB-169*	4.60E+01	1.48E+02	1.48E+02
YB-175	3.62E+05	2.32E+01	2.32E+01
YB-175*	6.82E-02	3.87E-265	3.87E-265
YB-176*	1.14E+01	2.96E-02	2.96E-02
YB-177	6.88E+03	9.42E+00	9.42E+00
YB-177*	6.41E+00	4.72E-03	4.72E-03
YB-178	4.44E+03	6.26E+00	6.26E+00
YB-179	4.80E+02	2.39E+00	2.39E+00
YB-180	1.44E+02	9.51E-01	9.51E-01
LU-155	7.00E-02	5.14E-261	5.14E-261
LU-156	5.00E-01	4.10E-39	4.10E-39
LU-156*	1.80E-01	1.65E-103	1.65E-103
LU-157	5.40E+00	2.20E-04	2.20E-04
LU-158	1.04E+01	1.33E-01	1.33E-01
LU-159	1.23E+01	1.26E+00	1.26E+00
LU-160	3.55E+01	3.15E+01	3.15E+01
LU-161	7.20E+01	1.44E+02	1.44E+02
LU-162	8.22E+01	1.98E+02	1.98E+02
LU-162*	1.14E+02	5.97E+01	5.97E+01
LU-163	2.38E+02	6.36E+02	6.36E+02
LU-164	1.88E+02	8.81E+02	8.81E+02
LU-165	6.44E+02	1.43E+03	1.43E+03
LU-166	1.59E+02	1.25E+03	1.25E+03
LU-166*	8.50E+01	2.57E+02	2.57E+02
LU-166+	1.27E+02	1.96E+02	1.96E+02
LU-167	3.09E+03	2.51E+03	2.51E+03
LU-168	3.30E+02	2.39E+03	2.39E+03
LU-168*	4.02E+02	4.29E+02	4.29E+02
LU-169	1.23E+05	3.74E+03	3.74E+03
LU-169*	1.60E+02	7.85E+02	7.85E+02
LU-170	1.73E+05	4.66E+03	4.66E+03
LU-170*	6.70E-01	3.16E-25	3.16E-25
LU-171	7.12E+05	5.38E+03	5.38E+03

LU-171*	7.90E+01	1.02E+02	1.02E+02
LU-172	5.79E+05	3.65E+03	3.65E+03
LU-172*	2.20E+02	1.52E+02	1.52E+02
LU-173	4.32E+07	4.52E+03	4.52E+03
LU-174	1.04E+08	2.21E+02	2.21E+02
LU-174*	1.23E+07	8.58E+01	8.58E+01
LU-176	1.14E+18	1.80E-08	1.80E-08
LU-176*	1.32E+04	2.17E+02	2.17E+02
LU-177	5.74E+05	1.96E+02	1.96E+02
LU-177*	1.39E+07	6.80E+00	6.80E+00
LU-178	1.70E+03	7.51E+01	7.51E+01
LU-178*	1.39E+03	5.03E+01	5.03E+01
LU-179	1.65E+04	1.00E+02	1.00E+02
LU-180	3.42E+02	4.44E+01	4.44E+01
LU-181	2.10E+02	2.82E+01	2.82E+01
LU-182	1.20E+02	9.39E+00	9.39E+00
LU-183	5.80E+01	3.33E+00	3.33E+00
LU-184	2.00E+01	1.48E-01	1.48E-01
HF-158	2.90E+00	2.15E-09	2.15E-09
HF-159	5.60E+00	2.17E-06	2.17E-06
HF-160	1.20E+01	1.75E-02	1.75E-02
HF-161	1.70E+01	7.63E-02	7.63E-02
HF-162	3.76E+01	8.86E+00	8.86E+00
HF-163	4.00E+01	2.33E+01	2.33E+01
HF-164	1.68E+02	1.49E+02	1.49E+02
HF-165	1.02E+02	2.19E+02	2.19E+02
HF-166	4.06E+02	6.15E+02	6.15E+02
HF-167	1.23E+02	7.14E+02	7.14E+02
HF-168	1.56E+03	1.54E+03	1.54E+03
HF-169	1.94E+02	1.96E+03	1.96E+03
HF-170	5.76E+04	3.50E+03	3.50E+03
HF-171	4.36E+04	4.31E+03	4.31E+03
HF-172	5.90E+07	3.01E+03	3.01E+03
HF-173	8.64E+04	6.59E+03	6.59E+03
HF-174	6.31E+22	2.76E-11	2.76E-11
HF-175	6.05E+06	8.03E+03	8.03E+03
HF-177*	1.08E+00	5.57E-16	5.57E-16
HF-177+	3.08E+03	9.92E-01	9.92E-01
HF-178*	4.00E+00	5.07E-03	5.07E-03
HF-178+	9.78E+08	1.24E+00	1.24E+00
HF-179*	1.87E+01	9.27E+01	9.27E+01

HF-179+	2.17E+06	3.93E+01	3.93E+01
HF-180*	1.98E+04	7.75E+01	7.75E+01
HF-181	3.66E+06	6.08E+02	6.08E+02
HF-182	2.84E+14	3.45E-04	3.45E-04
HF-182*	3.69E+03	4.26E+01	4.26E+01
HF-183	3.84E+03	1.89E+02	1.89E+02
HF-184	1.48E+04	1.34E+02	1.34E+02
HF-185	2.10E+02	1.16E+01	1.16E+01
HF-186	1.56E+02	4.18E-03	4.18E-03
HF-187	4.78E+01	2.84E-14	2.84E-14
TA-160	1.40E+00	2.28E-16	2.28E-16
TA-161	2.70E+00	5.95E-09	5.95E-09
TA-162	3.52E+00	3.38E-06	3.38E-06
TA-163	1.10E+01	6.64E-02	6.64E-02
TA-164	1.36E+01	7.63E-01	7.63E-01
TA-165	3.10E+01	1.40E+01	1.40E+01
TA-166	3.44E+01	3.35E+01	3.35E+01
TA-167	8.40E+01	1.67E+02	1.67E+02
TA-168	1.46E+02	3.63E+02	3.63E+02
TA-169	2.94E+02	9.28E+02	9.28E+02
TA-170	4.06E+02	1.51E+03	1.51E+03
TA-171	1.40E+03	2.68E+03	2.68E+03
TA-172	2.21E+03	3.02E+03	3.02E+03
TA-173	1.13E+04	4.96E+03	4.96E+03
TA-174	4.25E+03	5.42E+03	5.42E+03
TA-175	3.78E+04	7.51E+03	7.51E+03
TA-176	2.91E+04	9.56E+03	9.56E+03
TA-177	2.04E+05	1.29E+04	1.29E+04
TA-178	5.59E+02	1.58E+04	1.58E+04
TA-178*	8.50E+03	1.89E+03	1.89E+03
TA-179	5.74E+07	1.51E+04	1.51E+04
TA-180	2.94E+04	5.84E+03	5.84E+03
TA-180*	3.79E+22	2.65E-11	2.65E-11
TA-182	9.89E+06	3.75E+05	3.75E+05
TA-182*	2.83E-01	9.03E+02	9.03E+02
TA-182+	9.50E+02	9.03E+02	9.03E+02
TA-183	4.41E+05	1.87E+04	1.87E+04
TA-184	3.13E+04	2.11E+03	2.11E+03
TA-185	2.96E+03	2.86E+03	2.86E+03
TA-186	6.30E+02	1.31E+02	1.31E+02
TA-187	6.73E+02	4.63E-05	4.63E-05

TA-188	1.48E+02	2.39E-09	2.39E-09
W -164	6.40E+00	1.37E-05	1.37E-05
W -165	5.10E+00	1.31E-05	1.31E-05
W -166	1.60E+01	7.15E-02	7.15E-02
W -167	1.99E+01	4.63E-01	4.63E-01
W -168	5.30E+01	9.09E+00	9.09E+00
W -169	7.80E+01	3.10E+01	3.10E+01
W -170	2.40E+02	1.58E+02	1.58E+02
W -171	1.44E+02	2.20E+02	2.20E+02
W -172	4.00E+02	6.11E+02	6.11E+02
W -173	4.78E+02	1.16E+03	1.16E+03
W -174	1.76E+03	2.24E+03	2.24E+03
W -175	2.04E+03	2.97E+03	2.97E+03
W -176	8.30E+03	5.71E+03	5.71E+03
W -177	8.10E+03	7.32E+03	7.32E+03
W -178	1.87E+06	1.24E+04	1.24E+04
W -179	2.25E+03	1.67E+04	1.67E+04
W -179*	3.84E+02	4.88E+03	4.88E+03
W -181	1.05E+07	4.44E+04	4.44E+04
W -183*	5.20E+00	1.04E+03	1.04E+03
W -185	6.49E+06	1.78E+05	1.78E+05
W -185*	1.00E+02	7.09E+03	7.09E+03
W -187	8.54E+04	3.86E+05	3.86E+05
W -188	6.03E+06	2.24E-01	2.24E-01
W -189	6.96E+02	1.34E-06	1.34E-06
W -190	1.80E+03	2.36E-17	2.36E-17
W -191	9.53E+00	1.94E-21	1.94E-21
W -192	3.62E+01	5.92E-27	5.92E-27
W -193	1.28E+01	4.74E-32	4.74E-32
RE-166	2.20E+00	7.85E-11	7.85E-11
RE-167	6.10E+00	6.17E-05	6.17E-05
RE-168	6.90E+00	1.57E-03	1.57E-03
RE-169	1.29E+01	1.06E-01	1.06E-01
RE-170	8.00E+00	4.95E-02	4.95E-02
RE-171	1.52E+01	1.97E+00	1.97E+00
RE-172	1.50E+01	2.71E+00	2.71E+00
RE-172*	5.50E+01	9.20E+00	9.20E+00
RE-173	1.19E+02	9.46E+01	9.46E+01
RE-174	1.38E+02	1.49E+02	1.49E+02
RE-175	3.48E+02	3.32E+02	3.32E+02
RE-176	3.40E+02	4.28E+02	4.28E+02

RE-177	8.40E+02	7.64E+02	7.64E+02
RE-178	7.92E+02	7.87E+02	7.87E+02
RE-179	1.17E+03	1.26E+03	1.26E+03
RE-180	1.46E+02	9.98E+02	9.98E+02
RE-181	7.20E+04	1.64E+03	1.64E+03
RE-182	2.30E+05	5.52E+02	5.52E+02
RE-182*	4.57E+04	5.67E+02	5.67E+02
RE-183	6.05E+06	9.37E+02	9.37E+02
RE-184	3.28E+06	4.55E+02	4.55E+02
RE-184*	1.43E+07	9.31E+01	9.31E+01
RE-186	3.26E+05	5.22E+03	5.22E+03
RE-186*	6.31E+12	1.34E-03	1.34E-03
RE-187	1.58E+18	6.09E-05	6.09E-05
RE-188	6.12E+04	3.09E+03	3.09E+03
RE-188*	1.12E+03	1.19E+02	1.19E+02
RE-189	8.75E+04	3.84E-03	3.84E-03
RE-190	1.86E+02	1.74E-08	1.74E-08
RE-190*	1.15E+04	3.01E-09	3.01E-09
RE-191	5.88E+02	2.17E-13	2.17E-13
RE-192	1.60E+01	3.78E-16	3.78E-16
RE-193	4.15E+02	7.29E-22	7.29E-22
RE-194	7.08E+01	1.03E-25	1.03E-25
RE-195	3.25E+00	1.16E-46	1.16E-46
OS-169	3.50E+00	1.26E-08	1.26E-08
OS-170	7.10E+00	3.64E-05	3.64E-05
OS-171	8.00E+00	7.64E-04	7.64E-04
OS-172	1.90E+01	9.05E-02	9.05E-02
OS-173	1.60E+01	1.25E-01	1.25E-01
OS-174	4.40E+01	1.53E+00	1.53E+00
OS-175	8.40E+01	2.63E+00	2.63E+00
OS-176	1.80E+02	6.29E+00	6.29E+00
OS-177	1.68E+02	4.88E+00	4.88E+00
OS-178	3.00E+02	6.92E+00	6.92E+00
OS-179	3.90E+02	6.09E+00	6.09E+00
OS-180	1.29E+03	5.68E+00	5.68E+00
OS-181	1.62E+02	2.80E+00	2.80E+00
OS-181*	6.30E+03	2.86E-07	2.86E-07
OS-182	7.96E+04	2.85E+00	2.85E+00
OS-183	4.68E+04	9.85E-01	9.85E-01
OS-183*	3.56E+04	4.85E-01	4.85E-01
OS-185	8.09E+06	7.89E-01	7.89E-01

OS-186	6.00E+22	1.02E-11	1.02E-11
OS-189*	1.73E+04	5.88E+00	5.88E+00
OS-190*	5.94E+02	5.47E-06	5.47E-06
OS-191	1.33E+06	5.41E-05	5.41E-05
OS-191*	4.72E+04	5.04E-05	5.04E-05
OS-192*	5.90E+00	6.05E-14	6.05E-14
OS-193	1.08E+05	3.11E-12	3.11E-12
OS-194	1.89E+08	3.33E-19	3.33E-19
OS-195	3.90E+02	4.55E-23	4.55E-23
OS-196	2.09E+03	5.84E-36	5.84E-36
OS-197	1.55E+02	2.04E-41	2.04E-41
OS-199	1.07E+02	5.33E-62	5.33E-62
IR-174	4.00E+00	5.55E-08	5.55E-08
IR-175	4.50E+00	8.81E-07	8.81E-07
IR-176	8.00E+00	1.41E-04	1.41E-04
IR-177	2.10E+01	4.02E-03	4.02E-03
IR-178	1.20E+01	1.14E-03	1.14E-03
IR-179	2.40E+02	2.60E-02	2.60E-02
IR-180	9.00E+01	1.83E-02	1.83E-02
IR-181	2.94E+02	1.26E-02	1.26E-02
IR-182	9.00E+02	8.68E-03	8.68E-03
IR-183	3.30E+03	5.39E-03	5.39E-03
IR-184	1.09E+04	1.39E-31	1.39E-31
IR-185	5.00E+04	3.01E-29	3.01E-29
IR-186	5.99E+04	2.17E-23	2.17E-23
IR-186*	7.20E+03	2.48E-23	2.48E-23
IR-187	3.78E+04	1.34E-16	1.34E-16
IR-188	1.49E+05	2.17E-15	2.17E-15
IR-189	1.14E+06	6.03E-10	6.03E-10
IR-190	1.02E+06	4.04E-09	4.04E-09
IR-190*	4.32E+03	4.00E-10	4.00E-10
IR-190+	1.15E+04	6.40E-11	6.40E-11
IR-191*	4.94E+00	1.65E-12	1.65E-12
IR-191+	6.00E+00	4.76E-12	4.76E-12
IR-192	6.38E+06	6.14E-07	6.14E-07
IR-192*	8.64E+01	2.61E-07	2.61E-07
IR-192+	7.60E+09	2.30E-10	2.30E-10
IR-193*	9.16E+05	1.43E-09	1.43E-09
IR-194	6.94E+04	1.75E-11	1.75E-11
IR-194*	1.48E+07	4.98E-13	4.98E-13
IR-195	9.00E+03	1.83E-16	1.83E-16

IR-195*	1.37E+04	1.39E-16	1.39E-16
IR-196	5.20E+01	1.87E-25	1.87E-25
IR-196*	5.04E+03	2.05E-25	2.05E-25
IR-197	3.48E+02	2.41E-32	2.41E-32
IR-197*	5.34E+02	1.97E-32	1.97E-32
IR-198	8.00E+00	1.29E-38	1.29E-38
IR-199	3.71E+02	7.97E-53	7.97E-53
IR-200	1.24E+02	1.47E-56	1.47E-56
PT-186	7.20E+03	1.48E-24	1.48E-24
PT-187	8.46E+03	2.70E-23	2.70E-23
PT-188	8.80E+05	2.30E-17	2.30E-17
PT-189	3.92E+04	3.09E-16	3.09E-16
PT-190	1.89E+19	9.09E-24	9.09E-24
PT-191	2.51E+05	4.42E-11	4.42E-11
PT-193	1.58E+09	1.92E-11	1.92E-11
PT-193*	3.74E+05	9.10E-11	9.10E-11
PT-195*	3.47E+05	2.45E-16	2.45E-16
PT-197	7.16E+04	2.51E-22	2.51E-22
PT-197*	5.66E+03	1.65E-23	1.65E-23
PT-199	1.85E+03	1.24E-32	1.24E-32
PT-199*	1.36E+01	3.07E-35	3.07E-35
PT-200	4.50E+04	7.61E-46	7.61E-46
PT-201	1.50E+02	4.53E-51	4.53E-51
PT-202	1.58E+05	4.92E-56	4.92E-56
AU-190	2.57E+03	1.00E-51	1.00E-51
AU-191	1.14E+04	4.46E-42	4.46E-42
AU-191*	9.20E-01	1.76E-62	1.76E-62
AU-192	1.78E+04	2.80E-39	2.80E-39
AU-193	6.35E+04	1.05E-33	1.05E-33
AU-193*	3.90E+00	1.33E-38	1.33E-38
AU-194	1.42E+05	1.29E-32	1.29E-32
AU-194*	6.00E-01	6.25E-63	6.25E-63
AU-194+	4.20E-01	1.94E-76	1.94E-76
AU-195	1.61E+07	4.26E-28	4.26E-28
AU-195*	3.05E+01	1.11E-28	1.11E-28
AU-196	5.34E+05	9.00E-27	9.00E-27
AU-196*	8.10E+00	2.73E-29	2.73E-29
AU-196+	3.49E+04	3.56E-28	3.56E-28
AU-197*	7.80E+00	9.22E-29	9.22E-29
AU-198	2.33E+05	4.21E-25	4.21E-25
AU-198*	1.99E+05	1.55E-27	1.55E-27

AU-199	2.71E+05	2.68E-28	2.68E-28
AU-200	2.90E+03	4.07E-34	4.07E-34
AU-200*	6.73E+04	2.59E-36	2.59E-36
AU-201	1.56E+03	2.59E-42	2.59E-42
AU-202	2.88E+01	7.25E-47	7.25E-47
AU-203	5.30E+01	3.59E-52	3.59E-52
AU-204	3.98E+01	2.90E-57	2.90E-57
HG-191	2.90E+03	9.28E-47	9.28E-47
HG-192	1.75E+04	2.40E-39	2.40E-39
HG-193	1.37E+04	3.61E-38	3.61E-38
HG-193*	4.25E+04	2.67E-38	2.67E-38
HG-194	1.64E+10	2.26E-36	2.26E-36
HG-195	3.56E+04	1.63E-32	1.63E-32
HG-195*	1.50E+05	2.21E-32	2.21E-32
HG-197	2.31E+05	1.80E-29	1.80E-29
HG-197*	8.57E+04	6.55E-30	6.55E-30
HG-199*	2.56E+03	8.75E-31	8.75E-31
HG-203	4.03E+06	9.28E-44	9.28E-44
HG-205	3.12E+02	3.04E-55	3.04E-55
HG-206	4.89E+02	4.38E-76	4.38E-76
HG-207	1.74E+02	2.36E-91	2.36E-91
HG-208	2.52E+03	2.38E-91	2.38E-91
HG-209	3.70E+01	1.46E-98	1.46E-98
TL-197	1.02E+04	2.53E-74	2.53E-74
TL-197*	5.40E-01	6.06E-108	6.06E-108
TL-198	1.91E+04	2.78E-63	2.78E-63
TL-198*	6.73E+03	1.37E-63	1.37E-63
TL-199	2.67E+04	6.05E-57	6.05E-57
TL-200	9.40E+04	2.80E-55	2.80E-55
TL-201	2.62E+05	2.21E-49	2.21E-49
TL-202	1.06E+06	1.76E-48	1.76E-48
TL-204	1.19E+08	5.30E-49	5.30E-49
TL-206	2.52E+02	1.49E-58	1.49E-58
TL-206*	2.26E+02	6.74E-59	6.74E-59
TL-207	2.86E+02	9.45E-72	9.45E-72
TL-207*	1.33E+00	5.47E-86	5.47E-86
TL-208	1.83E+02	1.30E-77	1.30E-77
TL-209	1.30E+02	1.42E-87	1.42E-87
TL-210	7.80E+01	3.44E-93	3.44E-93
PB-198	8.60E+03	3.67E-69	3.67E-69
PB-199	5.40E+03	8.07E-68	8.07E-68

PB-199*	7.32E+02	3.46E-68	3.46E-68
PB-200	7.74E+04	1.53E-60	1.53E-60
PB-201	3.36E+04	7.86E-60	7.86E-60
PB-201*	6.12E+01	1.47E-60	1.47E-60
PB-202	1.66E+12	8.61E-60	8.61E-60
PB-202*	1.27E+04	1.74E-55	1.74E-55
PB-203	1.87E+05	1.49E-53	1.49E-53
PB-203*	6.30E+00	9.30E-57	9.30E-57
PB-203+	4.80E-01	2.73E-93	2.73E-93
PB-204	4.42E+24	1.93E-66	1.93E-66
PB-204*	4.01E+03	1.06E-53	1.06E-53
PB-205	4.80E+14	2.62E-61	2.62E-61
PB-207*	8.05E-01	8.72E-88	8.72E-88
PB-209	1.17E+04	1.23E-76	1.23E-76
PB-210	7.04E+08	3.21E-87	3.21E-87
PB-211	2.17E+03	6.47E-92	6.47E-92
BI-201	6.48E+03	5.89E-104	5.89E-104
BI-202	6.01E+03	1.06E-102	1.06E-102
BI-203	4.23E+04	1.26E-95	1.26E-95
BI-204	4.04E+04	2.81E-94	2.81E-94
BI-205	1.32E+06	6.64E-89	6.64E-89
BI-206	5.39E+05	1.28E-87	1.28E-87
BI-207	1.02E+09	8.35E-85	8.35E-85
BI-208	1.16E+13	3.27E-88	3.27E-88
BI-209	3.16E+26	1.60E-96	1.60E-96
BI-210	4.33E+05	5.75E-83	5.75E-83
BI-210*	9.47E+13	8.75E-91	8.75E-91
BI-211	1.28E+02	1.14E-89	1.14E-89
PO-204	1.27E+04	8.12E-103	8.12E-103
PO-205	5.98E+03	2.01E-101	2.01E-101
PO-206	7.60E+05	2.68E-95	2.68E-95
PO-207	2.09E+04	5.90E-94	5.90E-94
PO-207*	2.79E+00	1.55E-101	1.55E-101
PO-208	9.14E+07	3.69E-90	3.69E-90
PO-209	3.22E+09	1.37E-90	1.37E-90
PO-210	1.20E+07	2.56E-83	2.56E-83
PO-211	5.16E-01	3.15E-92	3.15E-92
PO-211*	2.55E+01	1.66E-93	1.66E-93
TOTAL			**1.47E+06**

APPENDIX B. **LOSS OF COOLING DOSE ESTIMATE TABLE**

Nuclide	Down 1 Min Curies	Half-life	Curies * DR	DCF (Sv/Bq) 2/07/05	ARF*RF	CEDE dose (rem)	With cloudshine	With dose uncertainty
	1.46E+06				2.00E-03	5.12E-01	5.53E-01	8.71E-01
W 187	3.86E+05	8.54E+04	1.93E+05	2.00E-10	4.00E-01	2.81E-01	3.04E-01	4.79E-01
W 185	1.78E+05	6.49E+06	8.90E+04	1.40E-10	4.00E-01	9.09E-02	9.81E-02	1.55E-01
Ta182	3.75E+05	9.89E+06	1.88E+05	9.70E-09	2.00E-03	6.63E-02	7.16E-02	1.13E-01
I 125	4.22E+02	5.20E+06	2.11E+02	1.40E-08	5.00E-01	2.69E-02	2.91E-02	4.58E-02
Gd148	1.19E+02	2.35E+09	5.95E+01	1.10E-05	2.00E-03	2.39E-02	2.58E-02	4.06E-02
W 181	4.44E+04	1.05E+07	2.22E+04	2.80E-11	4.00E-01	4.53E-03	4.90E-03	7.71E-03
I 124	5.13E+01	3.61E+05	2.57E+01	1.20E-08	5.00E-01	2.81E-03	3.03E-03	4.77E-03
H 3	1.60E+04	3.89E+08	8.00E+03	1.80E-11	1.00E+00	2.63E-03	2.84E-03	4.47E-03
I 126	1.29E+01	1.13E+06	6.45E+00	2.60E-08	5.00E-01	1.53E-03	1.65E-03	2.60E-03
P32	1.04E+02	1.23E+06	5.20E+01	3.20E-09	5.00E-01	1.52E-03	1.64E-03	2.58E-03
Hf172	3.01E+03	5.90E+07	1.51E+03	1.90E-08	2.00E-03	1.04E-03	1.13E-03	1.77E-03
Co 60	1.86E+03	1.66E+08	9.30E+02	2.90E-08	2.00E-03	9.83E-04	1.06E-03	1.67E-03
W 176	5.71E+03	8.30E+03	2.86E+03	4.40E-11	4.00E-01	9.16E-04	9.89E-04	1.56E-03
W 177	7.32E+03	8.10E+03	3.66E+03	2.60E-11	4.00E-01	6.94E-04	7.49E-04	1.18E-03
Ta183	1.87E+04	4.41E+05	9.35E+03	2.00E-09	2.00E-03	6.82E-04	7.36E-04	1.16E-03
I 123	3.51E+02	4.75E+04	1.76E+02	2.10E-10	5.00E-01	3.36E-04	3.63E-04	5.71E-04
W 179*	1.67E+04	3.84E+02	8.35E+03	4.80E-12	4.00E-01	2.92E-04	3.16E-04	4.97E-04
I 120	2.09E+02	4.86E+03	1.05E+02	3.00E-10	5.00E-01	2.86E-04	3.09E-04	4.86E-04
Yb169	5.04E+03	2.77E+06	2.52E+03	2.80E-09	2.00E-03	2.57E-04	2.78E-04	4.38E-04
P33	3.90E+01	2.19E+06	1.95E+01	1.40E-09	5.00E-01	2.49E-04	2.69E-04	4.23E-04
W 175	2.97E+03	2.04E+03	1.49E+03	1.87E-11	4.00E-01	2.03E-04	2.19E-04	3.44E-04
Lu173	4.52E+03	4.32E+07	2.26E+03	2.30E-09	2.00E-03	1.90E-04	2.05E-04	3.22E-04
S35	3.05E+01	7.56E+06	1.53E+01	1.30E-09	5.00E-01	1.81E-04	1.95E-04	3.07E-04
Hf175	8.03E+03	6.05E+06	4.02E+03	1.10E-09	2.00E-03	1.61E-04	1.74E-04	2.74E-04
Ta179	1.51E+04	5.75E+07	7.55E+03	5.20E-10	2.00E-03	1.43E-04	1.55E-04	2.44E-04

W 174	2.24E+03	1.76E+03	1.12E+03	1.47E-11	4.00E-01	1.20E-04	1.30E-04	2.04E-04
Gd146	1.01E+03	4.17E+06	5.05E+02	6.00E-09	2.00E-03	1.10E-04	1.19E-04	1.88E-04
I 121	2.81E+02	7.63E+03	1.41E+02	8.60E-11	5.00E-01	1.10E-04	1.19E-04	1.87E-04
Re186	5.22E+03	3.26E+05	2.61E+03	1.10E-09	2.00E-03	1.05E-04	1.13E-04	1.78E-04
Lu172	3.65E+03	5.79E+05	1.83E+03	1.50E-09	2.00E-03	9.98E-05	1.08E-04	1.70E-04
Mn 54	3.36E+03	2.70E+07	1.68E+03	1.50E-09	2.00E-03	9.19E-05	9.92E-05	1.56E-04
Ho166*	4.55E+01	3.79E+10	2.28E+01	1.10E-07	2.00E-03	9.12E-05	9.85E-05	1.55E-04
Lu171	5.38E+03	7.12E+05	2.69E+03	8.30E-10	2.00E-03	8.14E-05	8.79E-05	1.38E-04
Co 58	2.22E+03	6.13E+06	1.11E+03	2.00E-09	2.00E-03	8.09E-05	8.74E-05	1.38E-04
W 173	1.16E+03	4.78E+02	5.80E+02	1.69E-11	4.00E-01	7.14E-05	7.72E-05	1.22E-04
Tm167	3.10E+03	7.98E+05	1.55E+03	1.10E-09	2.00E-03	6.22E-05	6.71E-05	1.06E-04
Tb157	7.72E+01	4.73E+09	3.86E+01	4.30E-08	2.00E-03	6.05E-05	6.54E-05	1.03E-04
W 179	1.67E+04	2.25E+03	8.35E+03	9.90E-13	4.00E-01	6.03E-05	6.51E-05	1.03E-04
Lu170	4.66E+03	1.73E+05	2.33E+03	6.70E-10	2.00E-03	5.69E-05	6.15E-05	9.68E-05
Tb149	7.01E+02	1.49E+04	3.51E+02	4.30E-09	2.00E-03	5.50E-05	5.94E-05	9.35E-05
Lu177*	1.96E+02	1.39E+07	9.80E+01	1.50E-08	2.00E-03	5.36E-05	5.79E-05	9.12E-05
Hf181	6.08E+02	3.66E+06	3.04E+02	4.70E-09	2.00E-03	5.21E-05	5.63E-05	8.86E-05
Fe 55	7.52E+03	8.62E+07	3.76E+03	3.70E-10	2.00E-03	5.07E-05	5.48E-05	8.63E-05
Re184*	4.55E+02	1.43E+07	2.28E+02	6.10E-09	2.00E-03	5.06E-05	5.46E-05	8.61E-05
Re183	9.37E+02	6.05E+06	4.69E+02	2.77E-09	2.00E-03	4.73E-05	5.11E-05	8.05E-05
I 118	6.33E+01	8.20E+02	3.17E+01	1.62E-10	5.00E-01	4.67E-05	5.05E-05	7.95E-05
Co 56	4.03E+02	6.81E+06	2.02E+02	6.30E-09	2.00E-03	4.63E-05	5.00E-05	7.87E-05
Mn 56	1.90E+04	9.28E+03	9.50E+03	1.30E-10	2.00E-03	4.50E-05	4.86E-05	7.66E-05
I 119	1.60E+02	1.15E+03	8.00E+01	5.11E-11	5.00E-01	3.73E-05	4.02E-05	6.34E-05
Ta176	9.56E+03	2.91E+04	4.78E+03	2.10E-10	2.00E-03	3.66E-05	3.95E-05	6.23E-05
Yb166	2.61E+03	2.04E+05	1.31E+03	7.60E-10	2.00E-03	3.62E-05	3.91E-05	6.15E-05
Br 76	1.79E+01	5.83E+04	8.95E+00	4.20E-10	5.00E-01	3.43E-05	3.70E-05	5.83E-05
K42	5.68E+01	4.45E+04	2.84E+01	1.30E-10	5.00E-01	3.37E-05	3.63E-05	5.72E-05
Eu152	4.38E+01	4.21E+08	2.19E+01	3.90E-08	2.00E-03	3.11E-05	3.36E-05	5.30E-05
Re188	3.09E+03	6.12E+04	1.55E+03	5.50E-10	2.00E-03	3.10E-05	3.35E-05	5.27E-05

Gd153	8.81E+02	2.09E+07	4.41E+02	1.90E-09	2.00E-03	3.05E-05	3.30E-05	5.19E-05
W 172	6.11E+02	4.00E+02	3.06E+02	1.36E-11	4.00E-01	3.04E-05	3.28E-05	5.17E-05
V48	7.20E+02	1.38E+06	3.60E+02	2.30E-09	2.00E-03	3.02E-05	3.26E-05	5.14E-05
Ce139	8.05E+02	1.19E+07	4.03E+02	1.80E-09	2.00E-03	2.64E-05	2.85E-05	4.49E-05
Lu169	3.74E+03	1.23E+05	1.87E+03	3.80E-10	2.00E-03	2.59E-05	2.80E-05	4.41E-05
I 122	2.94E+02	2.18E+02	1.47E+02	1.85E-11	5.00E-01	2.48E-05	2.68E-05	4.22E-05
Te121*	3.17E+02	1.33E+07	1.59E+02	4.20E-09	2.00E-03	2.43E-05	2.62E-05	4.13E-05
Ta177	1.29E+04	2.04E+05	6.45E+03	1.00E-10	2.00E-03	2.35E-05	2.54E-05	4.00E-05
Sc 46	2.00E+02	7.24E+06	1.00E+02	6.40E-09	2.00E-03	2.33E-05	2.52E-05	3.97E-05
Sm145	8.22E+02	2.94E+07	4.11E+02	1.50E-09	2.00E-03	2.25E-05	2.43E-05	3.82E-05
Nd140	1.09E+03	2.91E+05	5.45E+02	1.13E-09	2.00E-03	2.25E-05	2.43E-05	3.82E-05
Eu147	1.18E+03	2.07E+06	5.90E+02	1.00E-09	2.00E-03	2.15E-05	2.32E-05	3.66E-05
Eu146	1.39E+03	3.97E+05	6.95E+02	8.20E-10	2.00E-03	2.08E-05	2.24E-05	3.53E-05
Hf170	3.50E+03	5.76E+04	1.75E+03	3.20E-10	2.00E-03	2.04E-05	2.21E-05	3.47E-05
Ta178*	1.58E+04	8.50E+03	7.90E+03	6.90E-11	2.00E-03	1.99E-05	2.15E-05	3.38E-05
Hf173	6.59E+03	8.64E+04	3.30E+03	1.60E-10	2.00E-03	1.92E-05	2.08E-05	3.27E-05
Ta175	7.51E+03	3.78E+04	3.76E+03	1.40E-10	2.00E-03	1.92E-05	2.07E-05	3.26E-05
Mo 99	1.08E+03	2.37E+05	5.40E+02	9.70E-10	2.00E-03	1.91E-05	2.06E-05	3.25E-05
Ce134	7.67E+02	2.73E+05	3.84E+02	1.30E-09	2.00E-03	1.82E-05	1.96E-05	3.09E-05
Co 57	1.04E+03	2.35E+07	5.20E+02	9.40E-10	2.00E-03	1.78E-05	1.92E-05	3.03E-05
K43	2.55E+01	8.03E+04	1.28E+01	1.50E-10	5.00E-01	1.74E-05	1.88E-05	2.97E-05
Er160	1.87E+03	1.03E+05	9.35E+02	5.09E-10	2.00E-03	1.74E-05	1.87E-05	2.95E-05
Pm143	7.32E+02	2.29E+07	3.66E+02	1.30E-09	2.00E-03	1.73E-05	1.87E-05	2.95E-05
W 178	1.24E+04	1.87E+06	6.20E+03	7.60E-11	2.00E-03	1.72E-05	1.86E-05	2.92E-05
Ta184	2.11E+03	3.13E+04	1.06E+03	4.40E-10	2.00E-03	1.69E-05	1.83E-05	2.88E-05
Lu174	2.21E+02	1.05E+08	1.11E+02	3.90E-09	2.00E-03	1.57E-05	1.70E-05	2.67E-05
Hf171	4.31E+03	4.36E+04	2.16E+03	1.97E-10	2.00E-03	1.55E-05	1.67E-05	2.63E-05
Lu174*	2.21E+02	1.23E+07	1.11E+02	3.80E-09	2.00E-03	1.53E-05	1.65E-05	2.60E-05
Re184	4.55E+02	3.28E+06	2.28E+02	1.80E-09	2.00E-03	1.49E-05	1.61E-05	2.54E-05
Pm145	3.78E+02	5.59E+08	1.89E+02	2.10E-09	2.00E-03	1.45E-05	1.56E-05	2.46E-05

Gd149	1.12E+03	8.10E+05	5.60E+02	7.00E-10	2.00E-03	1.43E-05	1.54E-05	2.43E-05
Gd151	9.43E+02	1.07E+07	4.72E+02	8.10E-10	2.00E-03	1.39E-05	1.50E-05	2.37E-05
Na 24	1.01E+01	5.39E+04	5.05E+00	2.90E-10	5.00E-01	1.33E-05	1.44E-05	2.27E-05
Re182	5.52E+02	2.30E+05	2.76E+02	1.30E-09	2.00E-03	1.31E-05	1.41E-05	2.23E-05
I 131	1.39E-01	6.93E+05	6.95E-02	2.00E-08	5.00E-01	1.27E-05	1.37E-05	2.16E-05
Eu154	1.31E+01	2.71E+08	6.55E+00	5.00E-08	2.00E-03	1.19E-05	1.29E-05	2.03E-05
Te118	2.85E+02	5.18E+05	1.43E+02	2.25E-09	2.00E-03	1.17E-05	1.26E-05	1.99E-05
Fe 59	1.73E+02	3.84E+06	8.65E+01	3.50E-09	2.00E-03	1.10E-05	1.19E-05	1.88E-05
Eu145	1.08E+03	5.12E+05	5.40E+02	5.60E-10	2.00E-03	1.10E-05	1.19E-05	1.88E-05
Ta173	4.96E+03	1.13E+04	2.48E+03	1.20E-10	2.00E-03	1.09E-05	1.17E-05	1.85E-05
Br 82	3.50E+00	1.27E+05	1.75E+00	6.40E-10	5.00E-01	1.02E-05	1.10E-05	1.74E-05
Br 77	2.49E+01	2.05E+05	1.25E+01	8.70E-11	5.00E-01	9.87E-06	1.07E-05	1.68E-05
Tm165	2.42E+03	1.08E+05	1.21E+03	2.19E-10	2.00E-03	9.66E-06	1.04E-05	1.64E-05
Tm166	2.76E+03	2.77E+04	1.38E+03	1.80E-10	2.00E-03	9.06E-06	9.78E-06	1.54E-05
Tm170	7.37E+01	1.11E+07	3.69E+01	6.60E-09	2.00E-03	8.87E-06	9.58E-06	1.51E-05
Dy159	1.36E+03	1.25E+07	6.80E+02	3.50E-10	2.00E-03	8.68E-06	9.37E-06	1.48E-05
Ba128	5.71E+02	2.10E+05	2.86E+02	8.00E-10	2.00E-03	8.33E-06	8.99E-06	1.42E-05
Mn 52	3.04E+02	4.83E+05	1.52E+02	1.40E-09	2.00E-03	7.76E-06	8.38E-06	1.32E-05
Ba133	2.82E+02	3.32E+08	1.41E+02	1.50E-09	2.00E-03	7.71E-06	8.33E-06	1.31E-05
Re181	1.64E+03	7.20E+04	8.20E+02	2.50E-10	2.00E-03	7.47E-06	8.07E-06	1.27E-05
Tb152	1.34E+03	6.30E+04	6.70E+02	3.02E-10	2.00E-03	7.38E-06	7.97E-06	1.25E-05
Ce135	7.48E+02	6.37E+04	3.74E+02	5.10E-10	2.00E-03	6.95E-06	7.51E-06	1.18E-05
Ce137*	8.75E+02	1.24E+05	4.38E+02	4.30E-10	2.00E-03	6.86E-06	7.41E-06	1.17E-05
Gd147	8.97E+02	1.37E+05	4.49E+02	4.10E-10	2.00E-03	6.70E-06	7.24E-06	1.14E-05
Cd109	6.27E+01	4.00E+07	3.14E+01	5.80E-09	2.00E-03	6.63E-06	7.16E-06	1.13E-05
F18	1.20E+01	6.59E+03	6.00E+00	6.00E-11	1.00E+00	6.56E-06	7.09E-06	1.12E-05
Eu148	1.32E+02	4.71E+06	6.60E+01	2.70E-09	2.00E-03	6.50E-06	7.02E-06	1.11E-05
Ti 44	2.94E+00	1.49E+09	1.47E+00	1.20E-07	2.00E-03	6.43E-06	6.95E-06	1.09E-05
Cr 51	9.74E+03	2.39E+06	4.87E+03	3.60E-11	2.00E-03	6.39E-06	6.90E-06	1.09E-05
Pm144	4.93E+01	3.14E+07	2.47E+01	7.00E-09	2.00E-03	6.29E-06	6.79E-06	1.07E-05

Cl 38	1.45E+01	2.23E+03	7.25E+00	4.70E-11	1.00E+00	6.21E-06	6.71E-06	1.06E-05
Tb155	1.53E+03	4.60E+05	7.65E+02	2.10E-10	2.00E-03	5.86E-06	6.33E-06	9.96E-06
Ta180	5.84E+03	2.94E+04	2.92E+03	4.70E-11	2.00E-03	5.00E-06	5.40E-06	8.51E-06
Sn113	1.09E+02	9.94E+06	5.45E+01	2.50E-09	2.00E-03	4.97E-06	5.37E-06	8.45E-06
Eu149	1.00E+03	8.04E+06	5.00E+02	2.70E-10	2.00E-03	4.92E-06	5.32E-06	8.37E-06
Tb153	1.27E+03	2.02E+05	6.35E+02	2.00E-10	2.00E-03	4.63E-06	5.00E-06	7.88E-06
Tb151	1.07E+03	6.34E+04	5.35E+02	2.30E-10	2.00E-03	4.49E-06	4.85E-06	7.63E-06
Ta174	5.42E+03	4.25E+03	2.71E+03	4.40E-11	2.00E-03	4.35E-06	4.70E-06	7.40E-06
Nd138	9.02E+02	1.81E+04	4.51E+02	2.60E-10	2.00E-03	4.28E-06	4.62E-06	7.27E-06
W 170	1.58E+02	2.40E+02	7.90E+01	7.39E-12	4.00E-01	4.26E-06	4.60E-06	7.24E-06
Dy150	5.97E+02	4.30E+02	2.99E+02	3.83E-10	2.00E-03	4.17E-06	4.50E-06	7.09E-06
Lu177	1.96E+02	5.74E+05	9.80E+01	1.10E-09	2.00E-03	3.93E-06	4.25E-06	6.69E-06
Tm168	4.75E+01	8.04E+06	2.38E+01	4.40E-09	2.00E-03	3.81E-06	4.12E-06	6.48E-06
Eu150	4.13E+00	1.13E+09	2.07E+00	5.00E-08	2.00E-03	3.76E-06	4.07E-06	6.40E-06
Rh102	1.28E+01	1.79E+07	6.40E+00	1.60E-08	2.00E-03	3.73E-06	4.03E-06	6.35E-06
Er158	1.51E+03	8.10E+03	7.55E+02	1.26E-10	2.00E-03	3.47E-06	3.75E-06	5.90E-06
Y88	4.37E+01	9.21E+06	2.19E+01	4.10E-09	2.00E-03	3.27E-06	3.53E-06	5.56E-06
Pm146	9.78E+00	1.75E+08	4.89E+00	1.60E-08	2.00E-03	2.85E-06	3.08E-06	4.85E-06
Ba125	1.85E+02	2.10E+02	9.25E+01	8.30E-10	2.00E-03	2.80E-06	3.02E-06	4.76E-06
Br 80*	7.95E+00	1.59E+04	3.98E+00	7.60E-11	5.00E-01	2.75E-06	2.97E-06	4.68E-06
Tb160	2.19E+01	6.25E+06	1.10E+01	6.60E-09	2.00E-03	2.64E-06	2.85E-06	4.48E-06
Hf179+	3.93E+01	2.17E+06	1.97E+01	3.60E-09	2.00E-03	2.58E-06	2.79E-06	4.39E-06
Ba131	6.15E+02	1.02E+06	3.08E+02	2.30E-10	2.00E-03	2.58E-06	2.79E-06	4.39E-06
Hf178+	1.24E+00	9.78E+08	6.20E-01	1.10E-07	2.00E-03	2.49E-06	2.69E-06	4.23E-06
Cl 39	5.64E+00	3.34E+03	2.82E+00	4.80E-11	1.00E+00	2.47E-06	2.67E-06	4.20E-06
Dy153	1.05E+03	2.30E+04	5.25E+02	1.26E-10	2.00E-03	2.41E-06	2.60E-06	4.10E-06
Zr 88	3.94E+01	7.21E+06	1.97E+01	3.30E-09	2.00E-03	2.37E-06	2.56E-06	4.03E-06
Te121	3.17E+02	1.45E+06	1.59E+02	3.90E-10	2.00E-03	2.25E-06	2.43E-06	3.83E-06
Dy155	1.46E+03	3.60E+04	7.30E+02	8.00E-11	2.00E-03	2.13E-06	2.30E-06	3.62E-06
Te119*	2.24E+02	4.05E+05	1.12E+02	5.18E-10	2.00E-03	2.12E-06	2.28E-06	3.60E-06

Ni 57	2.25E+02	1.28E+05	1.13E+02	5.10E-10	2.00E-03	2.09E-06	2.26E-06	3.56E-06
Re182*	5.52E+02	4.57E+04	2.76E+02	2.00E-10	2.00E-03	2.01E-06	2.17E-06	3.42E-06
La132	6.49E+02	1.73E+04	3.25E+02	1.70E-10	2.00E-03	2.01E-06	2.17E-06	3.42E-06
Ta172	3.02E+03	2.21E+03	1.51E+03	3.60E-11	2.00E-03	1.98E-06	2.14E-06	3.37E-06
S38	1.76E+00	1.02E+04	8.80E-01	2.44E-10	5.00E-01	1.96E-06	2.11E-06	3.33E-06
Sc 47	1.49E+02	2.89E+05	7.45E+01	7.00E-10	2.00E-03	1.90E-06	2.05E-06	3.23E-06
Er161	1.97E+03	1.16E+04	9.85E+02	5.10E-11	2.00E-03	1.83E-06	1.98E-06	3.12E-06
Ca 45	3.69E+01	1.41E+07	1.85E+01	2.70E-09	2.00E-03	1.82E-06	1.96E-06	3.09E-06
Ni 63	2.24E+02	3.16E+09	1.12E+02	4.40E-10	2.00E-03	1.80E-06	1.94E-06	3.06E-06
Lu167	2.51E+03	3.09E+03	1.26E+03	3.91E-11	2.00E-03	1.79E-06	1.93E-06	3.04E-06
I 130	1.88E-01	4.45E+04	9.40E-02	1.90E-09	5.00E-01	1.63E-06	1.76E-06	2.77E-06
Dy151	6.67E+02	1.07E+03	3.34E+02	1.31E-10	2.00E-03	1.59E-06	1.72E-06	2.71E-06
Rh102*	1.28E+01	1.18E+08	6.40E+00	6.70E-09	2.00E-03	1.56E-06	1.69E-06	2.66E-06
Yb164	2.00E+03	4.55E+03	1.00E+03	4.24E-11	2.00E-03	1.55E-06	1.67E-06	2.63E-06
Rh101	1.56E+01	1.04E+08	7.80E+00	5.00E-09	2.00E-03	1.42E-06	1.54E-06	2.42E-06
Tb150	7.02E+02	1.25E+04	3.51E+02	1.10E-10	2.00E-03	1.41E-06	1.52E-06	2.39E-06
Ge 68	5.88E+00	2.34E+07	2.94E+00	1.30E-08	2.00E-03	1.39E-06	1.51E-06	2.37E-06
I 128	4.68E+00	1.50E+03	2.34E+00	6.50E-11	5.00E-01	1.39E-06	1.50E-06	2.36E-06
Tm163	2.08E+03	6.52E+03	1.04E+03	3.65E-11	2.00E-03	1.38E-06	1.49E-06	2.35E-06
Ho156	1.38E+03	3.36E+03	6.90E+02	5.45E-11	2.00E-03	1.37E-06	1.48E-06	2.33E-06
Ce132	5.17E+02	1.26E+04	2.59E+02	1.41E-10	2.00E-03	1.33E-06	1.44E-06	2.26E-06
Ta171	2.68E+03	1.40E+03	1.34E+03	2.45E-11	2.00E-03	1.20E-06	1.29E-06	2.04E-06
Dy152	1.08E+03	8.53E+03	5.40E+02	5.99E-11	2.00E-03	1.18E-06	1.27E-06	2.01E-06
Sc 44	3.11E+02	1.41E+04	1.56E+02	1.90E-10	2.00E-03	1.08E-06	1.16E-06	1.83E-06
Nb 95	3.66E+01	3.02E+06	1.83E+01	1.60E-09	2.00E-03	1.07E-06	1.15E-06	1.82E-06
In114*	9.78E+00	4.28E+06	4.89E+00	5.90E-09	2.00E-03	1.05E-06	1.14E-06	1.79E-06
Sm142	7.54E+02	4.35E+03	3.77E+02	7.40E-11	2.00E-03	1.02E-06	1.10E-06	1.73E-06
Ba133*	2.82E+02	1.40E+05	1.41E+02	1.90E-10	2.00E-03	9.77E-07	1.05E-06	1.66E-06
Dy157	1.59E+03	2.93E+04	7.95E+02	3.20E-11	2.00E-03	9.28E-07	1.00E-06	1.58E-06
I 133	5.01E-02	7.49E+04	2.51E-02	4.00E-09	5.00E-01	9.13E-07	9.86E-07	1.55E-06

Sc 48	4.50E+01	1.57E+05	2.25E+01	1.10E-09	2.00E-03	9.02E-07	9.75E-07	1.54E-06
Hf168	1.54E+03	1.56E+03	7.70E+02	3.11E-11	2.00E-03	8.73E-07	9.43E-07	1.49E-06
Ce133	3.86E+02	1.76E+04	1.93E+02	1.23E-10	2.00E-03	8.66E-07	9.35E-07	1.47E-06
Br 83	3.84E+00	8.64E+03	1.92E+00	4.80E-11	5.00E-01	8.40E-07	9.07E-07	1.43E-06
Y91	5.32E+00	5.06E+06	2.66E+00	8.40E-09	2.00E-03	8.15E-07	8.80E-07	1.39E-06
Re188*	3.09E+03	1.12E+03	1.55E+03	1.40E-11	2.00E-03	7.89E-07	8.52E-07	1.34E-06
Ru106	6.72E-01	3.23E+07	3.36E-01	6.20E-08	2.00E-03	7.60E-07	8.20E-07	1.29E-06
K44	7.83E+00	1.33E+03	3.92E+00	2.10E-11	5.00E-01	7.49E-07	8.09E-07	1.27E-06
Br 78	1.24E+01	3.88E+02	6.20E+00	1.31E-11	5.00E-01	7.42E-07	8.02E-07	1.26E-06
Tb148	5.63E+02	3.60E+03	2.82E+02	7.09E-11	2.00E-03	7.28E-07	7.86E-07	1.24E-06
Nd136	7.07E+02	3.04E+03	3.54E+02	5.60E-11	2.00E-03	7.22E-07	7.80E-07	1.23E-06
Ag105	4.99E+01	3.57E+06	2.50E+01	7.80E-10	2.00E-03	7.10E-07	7.66E-07	1.21E-06
Tm161	1.68E+03	2.28E+03	8.40E+02	2.30E-11	2.00E-03	7.04E-07	7.61E-07	1.20E-06
Zn 65	1.23E+01	2.11E+07	6.15E+00	2.90E-09	2.00E-03	6.50E-07	7.02E-07	1.11E-06
Co 58*	2.22E+03	3.29E+04	1.11E+03	1.60E-11	2.00E-03	6.48E-07	6.99E-07	1.10E-06
Tb154+	7.86E+01	8.17E+04	3.93E+01	4.33E-10	2.00E-03	6.20E-07	6.70E-07	1.06E-06
V49	1.01E+03	2.92E+07	5.05E+02	3.20E-11	2.00E-03	5.89E-07	6.36E-07	1.00E-06
Ba126	4.10E+02	6.00E+03	2.05E+02	7.80E-11	2.00E-03	5.83E-07	6.30E-07	9.92E-07
Sr 82	1.44E+01	2.21E+06	7.20E+00	2.20E-09	2.00E-03	5.78E-07	6.24E-07	9.82E-07
Co 55	5.69E+01	6.31E+04	2.85E+01	5.50E-10	2.00E-03	5.71E-07	6.16E-07	9.71E-07
Nb 95*	3.66E+01	3.12E+05	1.83E+01	8.50E-10	2.00E-03	5.67E-07	6.13E-07	9.65E-07
Ho166	4.55E+01	9.66E+04	2.28E+01	6.60E-10	2.00E-03	5.47E-07	5.91E-07	9.31E-07
Tb156	2.49E+01	4.62E+05	1.25E+01	1.20E-09	2.00E-03	5.45E-07	5.88E-07	9.27E-07
Zr 89	5.37E+01	2.82E+05	2.69E+01	5.50E-10	2.00E-03	5.38E-07	5.82E-07	9.16E-07
Nb 90	4.23E+01	5.26E+04	2.12E+01	6.90E-10	2.00E-03	5.32E-07	5.75E-07	9.05E-07
Tm162	1.82E+03	1.30E+03	9.10E+02	1.60E-11	2.00E-03	5.31E-07	5.73E-07	9.03E-07
As 74	1.37E+01	1.54E+06	6.85E+00	2.10E-09	2.00E-03	5.25E-07	5.66E-07	8.92E-07
In111	1.20E+02	2.45E+05	6.00E+01	2.30E-10	2.00E-03	5.03E-07	5.43E-07	8.56E-07
Se 75	1.89E+01	1.04E+07	9.45E+00	1.40E-09	2.00E-03	4.82E-07	5.21E-07	8.21E-07
W 188	2.24E-01	6.03E+06	1.12E-01	5.90E-10	4.00E-01	4.82E-07	5.20E-07	8.20E-07

Ta178	1.58E+04	5.59E+02	7.90E+03	1.66E-12	2.00E-03	4.78E-07	5.16E-07	8.13E-07
Er159	1.51E+03	2.16E+03	7.55E+02	1.72E-11	2.00E-03	4.74E-07	5.11E-07	8.05E-07
Lu168	2.39E+03	3.30E+02	1.20E+03	1.08E-11	2.00E-03	4.71E-07	5.08E-07	8.00E-07
Ho160	1.95E+03	1.54E+03	9.75E+02	1.32E-11	2.00E-03	4.69E-07	5.07E-07	7.98E-07
Cs129	5.54E+02	1.15E+05	2.77E+02	4.50E-11	2.00E-03	4.55E-07	4.91E-07	7.73E-07
Dy149	3.46E+02	2.54E+02	1.73E+02	6.93E-11	2.00E-03	4.37E-07	4.72E-07	7.44E-07
Si 32	2.13E-01	4.17E+09	1.07E-01	1.10E-07	2.00E-03	4.27E-07	4.61E-07	7.27E-07
Ho155	1.17E+03	2.88E+03	5.85E+02	2.00E-11	2.00E-03	4.27E-07	4.61E-07	7.26E-07
Zr 95	4.20E+00	5.53E+06	2.10E+00	5.50E-09	2.00E-03	4.21E-07	4.55E-07	7.16E-07
As 73	2.46E+01	6.94E+06	1.23E+01	9.30E-10	2.00E-03	4.17E-07	4.50E-07	7.09E-07
Rb 83	3.10E+01	7.45E+06	1.55E+01	7.10E-10	2.00E-03	4.01E-07	4.33E-07	6.83E-07
Te119	2.24E+02	5.78E+04	1.12E+02	9.82E-11	2.00E-03	4.01E-07	4.33E-07	6.82E-07
Ho158	1.76E+03	6.60E+02	8.80E+02	1.21E-11	2.00E-03	3.88E-07	4.19E-07	6.60E-07
Ta170	1.51E+03	4.06E+02	7.55E+02	1.39E-11	2.00E-03	3.82E-07	4.13E-07	6.50E-07
Pr139	1.04E+03	1.59E+04	5.20E+02	2.00E-11	2.00E-03	3.79E-07	4.10E-07	6.45E-07
Er165	2.47E+03	3.73E+04	1.24E+03	8.30E-12	2.00E-03	3.74E-07	4.04E-07	6.36E-07
Yb167	2.97E+03	1.05E+03	1.49E+03	6.90E-12	2.00E-03	3.74E-07	4.04E-07	6.36E-07
Lu165	1.43E+03	6.44E+02	7.15E+02	1.41E-11	2.00E-03	3.68E-07	3.97E-07	6.25E-07
Nd137	6.78E+02	2.31E+03	3.39E+02	2.94E-11	2.00E-03	3.63E-07	3.92E-07	6.18E-07
Br 80	7.95E+00	1.06E+03	3.98E+00	1.00E-11	5.00E-01	3.62E-07	3.91E-07	6.16E-07
Ta182+	9.03E+02	9.50E+02	4.52E+02	2.20E-11	2.00E-03	3.62E-07	3.91E-07	6.16E-07
Pm147	4.24E+00	8.28E+07	2.12E+00	4.60E-09	2.00E-03	3.56E-07	3.84E-07	6.05E-07
As 72	2.11E+01	9.36E+04	1.06E+01	9.20E-10	2.00E-03	3.54E-07	3.82E-07	6.02E-07
Tm160	9.41E+02	5.64E+02	4.71E+02	2.06E-11	2.00E-03	3.53E-07	3.82E-07	6.01E-07
Tm159	9.68E+02	5.49E+02	4.84E+02	1.99E-11	2.00E-03	3.52E-07	3.80E-07	5.99E-07
Ni 56	2.20E+01	5.27E+05	1.10E+01	8.60E-10	2.00E-03	3.45E-07	3.73E-07	5.87E-07
Ag106*	1.71E+01	7.31E+05	8.55E+00	1.10E-09	2.00E-03	3.43E-07	3.70E-07	5.83E-07
Er157	1.00E+03	1.12E+03	5.00E+02	1.86E-11	2.00E-03	3.39E-07	3.66E-07	5.77E-07
Pr137	8.37E+02	4.61E+03	4.19E+02	2.20E-11	2.00E-03	3.36E-07	3.63E-07	5.71E-07
Yb162	1.27E+03	1.13E+03	6.35E+02	1.40E-11	2.00E-03	3.24E-07	3.50E-07	5.51E-07

Cs131	6.20E+02	8.37E+05	3.10E+02	2.80E-11	2.00E-03	3.16E-07	3.42E-07	5.38E-07
Sr 90	7.10E-01	9.09E+08	3.55E-01	2.40E-08	2.00E-03	3.11E-07	3.36E-07	5.28E-07
Tb147	2.12E+02	5.90E+03	1.06E+02	7.90E-11	2.00E-03	3.05E-07	3.30E-07	5.19E-07
Ba129*	4.23E+02	7.81E+03	2.12E+02	3.93E-11	2.00E-03	3.03E-07	3.27E-07	5.16E-07
Y87	4.14E+01	2.89E+05	2.07E+01	4.00E-10	2.00E-03	3.02E-07	3.26E-07	5.14E-07
Er156	8.46E+02	1.17E+03	4.23E+02	1.93E-11	2.00E-03	2.98E-07	3.21E-07	5.06E-07
Yb175	2.32E+01	3.62E+05	1.16E+01	7.00E-10	2.00E-03	2.96E-07	3.20E-07	5.04E-07
K45	3.96E+00	1.04E+03	1.98E+00	1.60E-11	5.00E-01	2.89E-07	3.12E-07	4.91E-07
W 183*	1.04E+03	5.20E+00	5.20E+02	7.40E-14	4.00E-01	2.81E-07	3.03E-07	4.77E-07
Re179	1.26E+03	1.17E+03	6.30E+02	1.22E-11	2.00E-03	2.80E-07	3.03E-07	4.77E-07
Sm143	8.02E+02	5.30E+02	4.01E+02	1.91E-11	2.00E-03	2.79E-07	3.02E-07	4.75E-07
Y86	3.04E+01	5.31E+04	1.52E+01	4.90E-10	2.00E-03	2.72E-07	2.93E-07	4.62E-07
Pd103	3.72E+01	1.47E+06	1.86E+01	4.00E-10	2.00E-03	2.71E-07	2.93E-07	4.61E-07
La133	6.54E+02	1.41E+04	3.27E+02	2.27E-11	2.00E-03	2.71E-07	2.92E-07	4.60E-07
Pm141	9.04E+02	1.25E+03	4.52E+02	1.60E-11	2.00E-03	2.64E-07	2.85E-07	4.49E-07
Se 72	3.85E+00	7.26E+05	1.93E+00	3.65E-09	2.00E-03	2.56E-07	2.77E-07	4.36E-07
Pr134	4.51E+02	1.02E+03	2.26E+02	3.09E-11	2.00E-03	2.54E-07	2.74E-07	4.32E-07
Nb 96	2.02E+01	8.41E+04	1.01E+01	6.80E-10	2.00E-03	2.50E-07	2.70E-07	4.26E-07
Pr136	8.89E+02	7.86E+02	4.45E+02	1.50E-11	2.00E-03	2.43E-07	2.63E-07	4.14E-07
Pr135	6.17E+02	1.44E+03	3.09E+02	2.13E-11	2.00E-03	2.40E-07	2.59E-07	4.08E-07
Ag110*	1.08E+00	2.16E+07	5.40E-01	1.20E-08	2.00E-03	2.36E-07	2.55E-07	4.02E-07
Ho161	2.04E+03	8.93E+03	1.02E+03	6.30E-12	2.00E-03	2.34E-07	2.53E-07	3.99E-07
Rb 84	1.16E+01	2.84E+06	5.80E+00	1.10E-09	2.00E-03	2.33E-07	2.51E-07	3.96E-07
La131	5.46E+02	3.54E+03	2.73E+02	2.30E-11	2.00E-03	2.29E-07	2.47E-07	3.89E-07
Xe127	4.94E+02	3.15E+06	2.47E+02	5.00E-14	1.00E+00	2.25E-07	2.43E-07	3.83E-07
Yb163	1.45E+03	6.63E+02	7.25E+02	8.33E-12	2.00E-03	2.20E-07	2.38E-07	3.75E-07
Ca 47	6.69E+00	3.92E+05	3.35E+00	1.80E-09	2.00E-03	2.20E-07	2.37E-07	3.73E-07
Lu179	1.00E+02	1.65E+04	5.00E+01	1.20E-10	2.00E-03	2.19E-07	2.36E-07	3.72E-07
Re178	7.87E+02	7.92E+02	3.94E+02	1.50E-11	2.00E-03	2.15E-07	2.32E-07	3.66E-07
Sr 85	3.02E+01	5.60E+06	1.51E+01	3.90E-10	2.00E-03	2.15E-07	2.32E-07	3.65E-07

Nb 93*	7.36E+00	5.09E+08	3.68E+00	1.60E-09	2.00E-03	2.15E-07	2.32E-07	3.65E-07
Ho154	7.63E+02	7.10E+02	3.82E+02	1.54E-11	2.00E-03	2.14E-07	2.31E-07	3.64E-07
La135	7.72E+02	7.02E+04	3.86E+02	1.50E-11	2.00E-03	2.11E-07	2.28E-07	3.59E-07
Hf169	1.96E+03	1.94E+02	9.80E+02	5.74E-12	2.00E-03	2.05E-07	2.22E-07	3.49E-07
Ru103	3.90E+00	3.39E+06	1.95E+00	2.80E-09	2.00E-03	1.99E-07	2.15E-07	3.39E-07
Ho159	1.73E+03	1.98E+03	8.65E+02	6.30E-12	2.00E-03	1.99E-07	2.15E-07	3.38E-07
Sb119	2.94E+02	1.37E+05	1.47E+02	3.70E-11	2.00E-03	1.98E-07	2.14E-07	3.37E-07
Hf180*	7.75E+01	1.98E+04	3.88E+01	1.40E-10	2.00E-03	1.98E-07	2.14E-07	3.36E-07
Br 82*	3.50E+00	3.68E+02	1.75E+00	1.23E-11	5.00E-01	1.97E-07	2.12E-07	3.35E-07
Cs127	4.90E+02	2.25E+04	2.45E+02	2.20E-11	2.00E-03	1.97E-07	2.12E-07	3.34E-07
Re177	7.64E+02	8.40E+02	3.82E+02	1.40E-11	2.00E-03	1.95E-07	2.11E-07	3.32E-07
Xe125	4.23E+02	6.08E+04	2.12E+02	5.00E-14	1.00E+00	1.93E-07	2.08E-07	3.28E-07
Yb165	2.09E+03	5.94E+02	1.05E+03	5.05E-12	2.00E-03	1.92E-07	2.08E-07	3.27E-07
Ar 43	1.92E+00	3.22E+02	9.60E-01	1.05E-11	1.00E+00	1.84E-07	1.99E-07	3.13E-07
Cs134	1.44E+00	6.51E+07	7.20E-01	6.80E-09	2.00E-03	1.79E-07	1.93E-07	3.04E-07
Tm171	7.46E+00	6.06E+07	3.73E+00	1.30E-09	2.00E-03	1.77E-07	1.91E-07	3.01E-07
Rh100	2.62E+01	7.49E+04	1.31E+01	3.70E-10	2.00E-03	1.77E-07	1.91E-07	3.01E-07
Ce130	2.73E+02	1.50E+03	1.37E+02	3.53E-11	2.00E-03	1.76E-07	1.90E-07	2.99E-07
Eu152*	4.38E+01	3.36E+04	2.19E+01	2.20E-10	2.00E-03	1.76E-07	1.90E-07	2.99E-07
Ce137	8.75E+02	3.24E+04	4.38E+02	1.10E-11	2.00E-03	1.75E-07	1.90E-07	2.98E-07
Y90	6.40E+00	2.30E+05	3.20E+00	1.50E-09	2.00E-03	1.75E-07	1.89E-07	2.98E-07
Nd139	8.72E+02	1.78E+03	4.36E+02	1.10E-11	2.00E-03	1.75E-07	1.89E-07	2.97E-07
Ta169	9.28E+02	2.94E+02	4.64E+02	9.43E-12	2.00E-03	1.59E-07	1.72E-07	2.71E-07
Sn117*	3.76E+00	1.18E+06	1.88E+00	2.30E-09	2.00E-03	1.58E-07	1.70E-07	2.68E-07
Hf166	6.15E+02	4.06E+02	3.08E+02	1.39E-11	2.00E-03	1.56E-07	1.68E-07	2.65E-07
Ba129	4.23E+02	8.00E+03	2.12E+02	1.99E-11	2.00E-03	1.53E-07	1.66E-07	2.61E-07
Ti 45	8.48E+01	1.11E+04	4.24E+01	9.60E-11	2.00E-03	1.48E-07	1.60E-07	2.52E-07
Ni 65	9.29E+01	9.06E+03	4.65E+01	8.70E-11	2.00E-03	1.47E-07	1.59E-07	2.51E-07
Sm140	2.51E+02	8.89E+02	1.26E+02	3.22E-11	2.00E-03	1.47E-07	1.59E-07	2.51E-07
Ni 66	4.90E+00	1.97E+05	2.45E+00	1.60E-09	2.00E-03	1.43E-07	1.54E-07	2.43E-07

In110	5.59E+01	1.76E+04	2.80E+01	1.40E-10	2.00E-03	1.43E-07	1.54E-07	2.43E-07
Sb120*	7.57E+00	4.98E+05	3.79E+00	1.00E-09	2.00E-03	1.38E-07	1.49E-07	2.35E-07
Tc 96	1.06E+01	3.70E+05	5.30E+00	7.10E-10	2.00E-03	1.37E-07	1.48E-07	2.33E-07
Gd145	3.52E+02	1.38E+03	1.76E+02	2.10E-11	2.00E-03	1.35E-07	1.46E-07	2.29E-07
Br 74	7.12E-01	1.52E+03	3.56E-01	4.10E-11	5.00E-01	1.33E-07	1.44E-07	2.26E-07
Tm172	6.22E+00	2.29E+05	3.11E+00	1.10E-09	2.00E-03	1.25E-07	1.35E-07	2.12E-07
Ho157	1.44E+03	7.56E+02	7.20E+02	4.50E-12	2.00E-03	1.18E-07	1.28E-07	2.01E-07
Pd100	7.80E+00	3.14E+05	3.90E+00	8.30E-10	2.00E-03	1.18E-07	1.27E-07	2.01E-07
Cd115*	8.55E-01	3.85E+06	4.28E-01	7.30E-09	2.00E-03	1.14E-07	1.23E-07	1.94E-07
Sn110	3.86E+01	1.48E+04	1.93E+01	1.60E-10	2.00E-03	1.13E-07	1.22E-07	1.92E-07
Yb161	7.86E+02	2.52E+02	3.93E+02	7.83E-12	2.00E-03	1.12E-07	1.21E-07	1.91E-07
Xe123	2.42E+02	7.49E+03	1.21E+02	5.00E-14	1.00E+00	1.10E-07	1.19E-07	1.88E-07
Cr 49	1.60E+02	2.54E+03	8.00E+01	3.70E-11	2.00E-03	1.08E-07	1.17E-07	1.84E-07
Ag111	3.42E+00	6.44E+05	1.71E+00	1.70E-09	2.00E-03	1.06E-07	1.14E-07	1.80E-07
Zr 86	1.28E+01	5.94E+04	6.40E+00	4.50E-10	2.00E-03	1.05E-07	1.13E-07	1.79E-07
Yb160	6.21E+02	2.88E+02	3.11E+02	9.20E-12	2.00E-03	1.04E-07	1.12E-07	1.77E-07
Lu166	1.25E+03	1.59E+02	6.25E+02	4.51E-12	2.00E-03	1.03E-07	1.11E-07	1.75E-07
La130	4.86E+02	5.22E+02	2.43E+02	1.15E-11	2.00E-03	1.02E-07	1.10E-07	1.73E-07
Nb 91*	1.34E+00	5.36E+06	6.70E-01	4.12E-09	2.00E-03	1.01E-07	1.09E-07	1.71E-07
Nd141	1.02E+03	8.96E+03	5.10E+02	5.30E-12	2.00E-03	9.86E-08	1.06E-07	1.68E-07
I 132	6.95E-02	8.26E+03	3.48E-02	3.10E-10	5.00E-01	9.82E-08	1.06E-07	1.67E-07
Mo101	1.96E+02	8.77E+02	9.80E+01	2.70E-11	2.00E-03	9.65E-08	1.04E-07	1.64E-07
Te117	1.71E+02	3.72E+03	8.55E+01	3.09E-11	2.00E-03	9.63E-08	1.04E-07	1.64E-07
Rb 86	5.49E+00	1.61E+06	2.75E+00	9.60E-10	2.00E-03	9.61E-08	1.04E-07	1.63E-07
Cd107	5.95E+01	2.34E+04	2.98E+01	8.70E-11	2.00E-03	9.44E-08	1.02E-07	1.61E-07
As 71	1.29E+01	2.35E+05	6.45E+00	4.00E-10	2.00E-03	9.41E-08	1.02E-07	1.60E-07
Cu 67	8.60E+00	2.23E+05	4.30E+00	5.80E-10	2.00E-03	9.09E-08	9.82E-08	1.55E-07
Er155	4.71E+02	3.18E+02	2.36E+02	1.04E-11	2.00E-03	8.89E-08	9.61E-08	1.51E-07
Lu164	8.81E+02	1.88E+02	4.41E+02	5.53E-12	2.00E-03	8.88E-08	9.59E-08	1.51E-07
Ho152	2.60E+02	1.62E+02	1.30E+02	1.87E-11	2.00E-03	8.86E-08	9.57E-08	1.51E-07

Cs125	3.66E+02	2.70E+03	1.83E+02	1.30E-11	2.00E-03	8.67E-08	9.37E-08	1.48E-07
As 76	6.42E+00	9.48E+04	3.21E+00	7.40E-10	2.00E-03	8.66E-08	9.35E-08	1.47E-07
Tm158	6.39E+02	2.41E+02	3.20E+02	7.43E-12	2.00E-03	8.65E-08	9.34E-08	1.47E-07
Xe122	1.89E+02	7.24E+04	9.45E+01	5.00E-14	1.00E+00	8.61E-08	9.30E-08	1.47E-07
Lu163	6.36E+02	2.38E+02	3.18E+02	7.32E-12	2.00E-03	8.48E-08	9.16E-08	1.44E-07
Re176	4.28E+02	3.40E+02	2.14E+02	1.05E-11	2.00E-03	8.19E-08	8.85E-08	1.39E-07
La134	8.07E+02	3.87E+02	4.04E+02	5.55E-12	2.00E-03	8.17E-08	8.82E-08	1.39E-07
Mn 51	1.04E+02	2.77E+03	5.20E+01	4.30E-11	2.00E-03	8.15E-08	8.81E-08	1.39E-07
Pm148*	8.13E-01	3.57E+06	4.07E-01	5.40E-09	2.00E-03	8.00E-08	8.64E-08	1.36E-07
Sb117	2.53E+02	1.01E+04	1.27E+02	1.70E-11	2.00E-03	7.84E-08	8.47E-08	1.33E-07
Pm139	5.55E+02	2.49E+02	2.78E+02	7.72E-12	2.00E-03	7.81E-08	8.44E-08	1.33E-07
Nd135	1.53E+02	7.40E+02	7.65E+01	2.70E-11	2.00E-03	7.53E-08	8.13E-08	1.28E-07
Ge 69	1.41E+01	1.41E+05	7.05E+00	2.90E-10	2.00E-03	7.45E-08	8.05E-08	1.27E-07
Te125*	1.23E+00	5.01E+06	6.15E-01	3.30E-09	2.00E-03	7.40E-08	7.99E-08	1.26E-07
La129	3.28E+02	6.96E+02	1.64E+02	1.20E-11	2.00E-03	7.18E-08	7.75E-08	1.22E-07
Sr 89	3.93E+00	4.37E+06	1.97E+00	1.00E-09	2.00E-03	7.16E-08	7.74E-08	1.22E-07
Tb154	1.03E+01	7.74E+04	5.15E+00	3.80E-10	2.00E-03	7.14E-08	7.71E-08	1.21E-07
Ga 67	1.70E+01	2.82E+05	8.50E+00	2.30E-10	2.00E-03	7.13E-08	7.70E-08	1.21E-07
Re175	3.32E+02	3.48E+02	1.66E+02	1.15E-11	2.00E-03	6.99E-08	7.54E-08	1.19E-07
Zn 72	3.19E+00	1.67E+05	1.60E+00	1.20E-09	2.00E-03	6.98E-08	7.54E-08	1.19E-07
Ga 72	6.95E+00	5.08E+04	3.48E+00	5.50E-10	2.00E-03	6.97E-08	7.53E-08	1.19E-07
Eu155	5.66E-01	1.50E+08	2.83E-01	6.50E-09	2.00E-03	6.71E-08	7.24E-08	1.14E-07
Sb122	3.67E+00	2.33E+05	1.84E+00	1.00E-09	2.00E-03	6.69E-08	7.23E-08	1.14E-07
Pr133	2.64E+02	3.90E+02	1.32E+02	1.32E-11	2.00E-03	6.37E-08	6.88E-08	1.08E-07
S37	1.88E+00	3.03E+02	9.40E-01	7.38E-12	5.00E-01	6.32E-08	6.83E-08	1.08E-07
Nd134	1.88E+02	5.10E+02	9.40E+01	1.83E-11	2.00E-03	6.26E-08	6.76E-08	1.06E-07
Tm164	2.15E+03	1.20E+02	1.08E+03	1.58E-12	2.00E-03	6.19E-08	6.69E-08	1.05E-07
Rh101*	1.56E+01	3.75E+05	7.80E+00	2.10E-10	2.00E-03	5.97E-08	6.45E-08	1.02E-07
Sr 83	1.87E+01	1.17E+05	9.35E+00	1.70E-10	2.00E-03	5.80E-08	6.26E-08	9.86E-08
Tb158	2.87E+00	4.73E+09	1.44E+00	1.10E-09	2.00E-03	5.76E-08	6.22E-08	9.79E-08

Sm141	1.94E+02	6.12E+02	9.70E+01	1.60E-11	2.00E-03	5.66E-08	6.11E-08	9.63E-08
Sb116	2.16E+02	9.50E+02	1.08E+02	1.40E-11	2.00E-03	5.51E-08	5.95E-08	9.38E-08
Ba127	3.86E+02	7.62E+02	1.93E+02	7.81E-12	2.00E-03	5.50E-08	5.94E-08	9.35E-08
Mo 90	8.13E+00	2.04E+04	4.07E+00	3.70E-10	2.00E-03	5.48E-08	5.92E-08	9.33E-08
As 77	7.77E+00	1.40E+05	3.89E+00	3.80E-10	2.00E-03	5.38E-08	5.81E-08	9.16E-08
Ga 66	6.39E+00	3.42E+04	3.20E+00	4.60E-10	2.00E-03	5.36E-08	5.79E-08	9.12E-08
Ce131	2.07E+02	6.00E+02	1.04E+02	1.42E-11	2.00E-03	5.36E-08	5.79E-08	9.12E-08
Si 31	3.65E+01	9.44E+03	1.83E+01	8.00E-11	2.00E-03	5.32E-08	5.75E-08	9.06E-08
Er169	2.87E+00	8.12E+05	1.44E+00	9.80E-10	2.00E-03	5.13E-08	5.54E-08	8.72E-08
Rh105	8.17E+00	1.27E+05	4.09E+00	3.40E-10	2.00E-03	5.06E-08	5.47E-08	8.61E-08
Er163	2.21E+03	4.50E+03	1.11E+03	1.24E-12	2.00E-03	5.00E-08	5.40E-08	8.50E-08
Tc101	2.08E+02	8.53E+02	1.04E+02	1.30E-11	2.00E-03	4.93E-08	5.32E-08	8.39E-08
Pr140	1.10E+03	2.03E+02	5.50E+02	2.42E-12	2.00E-03	4.85E-08	5.24E-08	8.26E-08
V47	8.34E+01	1.96E+03	4.17E+01	3.10E-11	2.00E-03	4.71E-08	5.09E-08	8.02E-08
Ba131*	6.15E+02	8.76E+02	3.08E+02	4.10E-12	2.00E-03	4.60E-08	4.96E-08	7.82E-08
Nb 91	1.34E+00	2.15E+10	6.70E-01	1.84E-09	2.00E-03	4.50E-08	4.85E-08	7.65E-08
Sb115	1.76E+02	1.93E+03	8.80E+01	1.40E-11	2.00E-03	4.49E-08	4.85E-08	7.64E-08
Pm137	1.36E+02	1.44E+02	6.80E+01	1.80E-11	2.00E-03	4.46E-08	4.82E-08	7.59E-08
Ba124	1.52E+02	7.10E+02	7.60E+01	1.60E-11	2.00E-03	4.43E-08	4.79E-08	7.54E-08
In109	5.50E+01	1.51E+04	2.75E+01	4.40E-11	2.00E-03	4.41E-08	4.76E-08	7.50E-08
Co 60*	1.86E+03	6.28E+02	9.30E+02	1.30E-12	2.00E-03	4.41E-08	4.76E-08	7.50E-08
In113*	1.20E+02	5.97E+03	6.00E+01	2.00E-11	2.00E-03	4.38E-08	4.73E-08	7.44E-08
Hf167	7.14E+02	1.23E+02	3.57E+02	3.31E-12	2.00E-03	4.31E-08	4.66E-08	7.34E-08
Tm157	3.68E+02	2.10E+02	1.84E+02	6.30E-12	2.00E-03	4.22E-08	4.56E-08	7.18E-08
Tb154*	1.03E+01	3.24E+04	5.15E+00	2.24E-10	2.00E-03	4.21E-08	4.54E-08	7.15E-08
Tb156*	2.49E+01	1.91E+04	1.25E+01	9.20E-11	2.00E-03	4.18E-08	4.51E-08	7.10E-08
Te127*	3.17E-01	9.42E+06	1.59E-01	7.20E-09	2.00E-03	4.16E-08	4.49E-08	7.08E-08
Er154	3.35E+02	2.21E+02	1.68E+02	6.69E-12	2.00E-03	4.09E-08	4.41E-08	6.95E-08
Re180	9.98E+02	1.46E+02	4.99E+02	2.21E-12	2.00E-03	4.02E-08	4.34E-08	6.84E-08
Zn 69*	8.39E+00	4.95E+04	4.20E+00	2.60E-10	2.00E-03	3.98E-08	4.30E-08	6.76E-08

Xe121	8.52E+01	2.41E+03	4.26E+01	5.00E-14	1.00E+00	3.88E-08	4.19E-08	6.61E-08
Lu178	7.51E+01	1.70E+03	3.76E+01	2.60E-11	2.00E-03	3.56E-08	3.84E-08	6.06E-08
La128	2.02E+02	3.00E+02	1.01E+02	9.66E-12	2.00E-03	3.56E-08	3.84E-08	6.05E-08
Cs128	6.08E+02	2.17E+02	3.04E+02	3.17E-12	2.00E-03	3.51E-08	3.79E-08	5.98E-08
Mg 28	1.60E+00	7.53E+04	8.00E-01	1.20E-09	2.00E-03	3.50E-08	3.78E-08	5.95E-08
V52	3.68E+02	2.25E+02	1.84E+02	5.20E-12	2.00E-03	3.49E-08	3.77E-08	5.93E-08
Cs123	1.65E+02	3.52E+02	8.25E+01	1.15E-11	2.00E-03	3.47E-08	3.75E-08	5.91E-08
Co 61	3.64E+01	5.94E+03	1.82E+01	5.10E-11	2.00E-03	3.38E-08	3.66E-08	5.76E-08
Ru 97	1.65E+01	2.51E+05	8.25E+00	1.10E-10	2.00E-03	3.31E-08	3.57E-08	5.63E-08
Zr 87	1.99E+01	6.24E+03	9.95E+00	9.10E-11	2.00E-03	3.30E-08	3.57E-08	5.62E-08
Sb124	2.90E-01	5.20E+06	1.45E-01	6.10E-09	2.00E-03	3.23E-08	3.48E-08	5.49E-08
Sn121*	4.16E-01	1.74E+09	2.08E-01	4.20E-09	2.00E-03	3.19E-08	3.44E-08	5.42E-08
Pm148	8.13E-01	4.64E+05	4.07E-01	2.10E-09	2.00E-03	3.11E-08	3.36E-08	5.29E-08
Cu 64	1.39E+01	4.57E+04	6.95E+00	1.20E-10	2.00E-03	3.04E-08	3.28E-08	5.17E-08
Pr138	9.33E+02	8.70E+01	4.67E+02	1.66E-12	2.00E-03	2.82E-08	3.05E-08	4.80E-08
Cd111*	6.63E+01	2.92E+03	3.32E+01	2.31E-11	2.00E-03	2.79E-08	3.02E-08	4.75E-08
Sm153	2.46E+00	1.67E+05	1.23E+00	6.10E-10	2.00E-03	2.74E-08	2.95E-08	4.65E-08
Ta168	3.63E+02	1.46E+02	1.82E+02	4.07E-12	2.00E-03	2.69E-08	2.91E-08	4.58E-08
Sn119*	6.94E-01	2.53E+07	3.47E-01	2.00E-09	2.00E-03	2.53E-08	2.73E-08	4.30E-08
Pr142	2.34E+00	6.88E+04	1.17E+00	5.60E-10	2.00E-03	2.39E-08	2.58E-08	4.06E-08
Tc 95	1.22E+01	7.20E+04	6.10E+00	1.00E-10	2.00E-03	2.22E-08	2.40E-08	3.78E-08
Ce144	2.48E-02	2.46E+07	1.24E-02	4.90E-08	2.00E-03	2.22E-08	2.39E-08	3.77E-08
Ce141	3.35E-01	2.81E+06	1.68E-01	3.60E-09	2.00E-03	2.20E-08	2.37E-08	3.74E-08
Os185	7.89E-01	8.09E+06	3.95E-01	1.50E-09	2.00E-03	2.16E-08	2.33E-08	3.67E-08
Zr 97	1.18E+00	6.08E+04	5.90E-01	1.00E-09	2.00E-03	2.15E-08	2.32E-08	3.66E-08
Se 73	7.35E+00	2.57E+04	3.68E+00	1.60E-10	2.00E-03	2.14E-08	2.32E-08	3.65E-08
Eu143	2.64E+02	1.58E+02	1.32E+02	4.41E-12	2.00E-03	2.12E-08	2.29E-08	3.61E-08
Sb118	3.14E+02	2.16E+02	1.57E+02	3.69E-12	2.00E-03	2.11E-08	2.28E-08	3.59E-08
Dy148	2.21E+02	1.86E+02	1.11E+02	5.22E-12	2.00E-03	2.10E-08	2.27E-08	3.58E-08
Ga 68	2.24E+01	4.06E+03	1.12E+01	5.10E-11	2.00E-03	2.08E-08	2.25E-08	3.54E-08

Os182	2.85E+00	7.96E+04	1.43E+00	3.90E-10	2.00E-03	2.03E-08	2.19E-08	3.45E-08
Pr143	4.78E-01	1.17E+06	2.39E-01	2.30E-09	2.00E-03	2.00E-08	2.16E-08	3.41E-08
Mo 93	4.62E-01	1.10E+11	2.31E-01	2.20E-09	2.00E-03	1.85E-08	2.00E-08	3.15E-08
Cs126	4.82E+02	9.84E+01	2.41E+02	2.02E-12	2.00E-03	1.78E-08	1.92E-08	3.02E-08
Y93	2.26E+00	3.67E+04	1.13E+00	4.30E-10	2.00E-03	1.77E-08	1.91E-08	3.01E-08
Ho163	3.75E+00	1.44E+11	1.88E+00	2.56E-10	2.00E-03	1.75E-08	1.89E-08	2.98E-08
Ag104	2.39E+01	4.15E+03	1.20E+01	4.00E-11	2.00E-03	1.74E-08	1.88E-08	2.96E-08
Cd115	8.55E-01	1.93E+05	4.28E-01	1.10E-09	2.00E-03	1.71E-08	1.85E-08	2.92E-08
Nb 97	1.99E+01	4.33E+03	9.95E+00	4.70E-11	2.00E-03	1.71E-08	1.84E-08	2.90E-08
Eu156	2.71E-01	1.31E+06	1.36E-01	3.30E-09	2.00E-03	1.63E-08	1.76E-08	2.77E-08
Pd101	1.39E+01	3.05E+04	6.95E+00	6.40E-11	2.00E-03	1.62E-08	1.75E-08	2.76E-08
W 171	2.20E+02	1.44E+02	1.10E+02	4.00E-12	2.00E-03	1.61E-08	1.73E-08	2.73E-08
Y85	9.07E+00	9.65E+03	4.54E+00	9.52E-11	2.00E-03	1.57E-08	1.70E-08	2.68E-08
Sn111	6.11E+01	2.12E+03	3.06E+01	1.40E-11	2.00E-03	1.56E-08	1.68E-08	2.65E-08
Ho164*	6.96E+01	2.25E+03	3.48E+01	1.20E-11	2.00E-03	1.52E-08	1.64E-08	2.59E-08
Sb113	6.08E+01	4.00E+02	3.04E+01	1.36E-11	2.00E-03	1.51E-08	1.63E-08	2.57E-08
Pd109	2.25E+00	4.93E+04	1.13E+00	3.60E-10	2.00E-03	1.48E-08	1.59E-08	2.51E-08
Eu150*	4.13E+00	4.54E+04	2.07E+00	1.90E-10	2.00E-03	1.43E-08	1.55E-08	2.43E-08
Sb125	1.73E-01	8.71E+07	8.65E-02	4.50E-09	2.00E-03	1.42E-08	1.53E-08	2.41E-08
La140	7.03E-01	1.45E+05	3.52E-01	1.10E-09	2.00E-03	1.41E-08	1.52E-08	2.40E-08
Ga 73	5.11E+00	1.75E+04	2.56E+00	1.50E-10	2.00E-03	1.40E-08	1.51E-08	2.38E-08
Rb 81	2.07E+01	1.65E+04	1.04E+01	3.70E-11	2.00E-03	1.40E-08	1.51E-08	2.38E-08
In112*	3.56E+01	1.23E+03	1.78E+01	2.13E-11	2.00E-03	1.38E-08	1.49E-08	2.35E-08
Hf164	1.49E+02	1.68E+02	7.45E+01	4.82E-12	2.00E-03	1.31E-08	1.41E-08	2.23E-08
Sc 49	1.74E+01	3.43E+03	8.70E+00	4.10E-11	2.00E-03	1.30E-08	1.40E-08	2.21E-08
Tm173	3.94E+00	2.97E+04	1.97E+00	1.80E-10	2.00E-03	1.29E-08	1.40E-08	2.20E-08
Y92	3.37E+00	1.27E+04	1.69E+00	2.00E-10	2.00E-03	1.23E-08	1.33E-08	2.09E-08
Sm151	1.82E-01	2.84E+09	9.10E-02	3.70E-09	2.00E-03	1.23E-08	1.33E-08	2.09E-08
Nb 89	5.09E+00	7.32E+03	2.55E+00	1.30E-10	2.00E-03	1.21E-08	1.30E-08	2.05E-08
Gd144	7.28E+01	2.70E+02	3.64E+01	8.51E-12	2.00E-03	1.13E-08	1.22E-08	1.92E-08

Sb114	9.65E+01	2.09E+02	4.83E+01	6.27E-12	2.00E-03	1.10E-08	1.19E-08	1.88E-08
Ho164	6.96E+01	1.74E+03	3.48E+01	8.60E-12	2.00E-03	1.09E-08	1.18E-08	1.86E-08
Re174	1.49E+02	1.38E+02	7.45E+01	3.80E-12	2.00E-03	1.03E-08	1.12E-08	1.76E-08
Mo 91	2.66E+01	9.29E+02	1.33E+01	2.07E-11	2.00E-03	1.00E-08	1.08E-08	1.71E-08
Te129*	8.61E-02	2.90E+06	4.31E-02	6.30E-09	2.00E-03	9.89E-09	1.07E-08	1.68E-08
Kr 79	2.15E+01	1.26E+05	1.08E+01	5.00E-14	1.00E+00	9.80E-09	1.06E-08	1.67E-08
Pd112	4.76E-01	7.57E+04	2.38E-01	1.09E-09	2.00E-03	9.46E-09	1.02E-08	1.61E-08
Cr 55	1.26E+02	2.10E+02	6.30E+01	4.04E-12	2.00E-03	9.28E-09	1.00E-08	1.58E-08
Cd105	2.03E+01	3.33E+03	1.02E+01	2.37E-11	2.00E-03	8.77E-09	9.47E-09	1.49E-08
Pm149	6.62E-01	1.91E+05	3.31E-01	7.20E-10	2.00E-03	8.69E-09	9.38E-09	1.48E-08
Sn113*	1.09E+02	1.28E+03	5.45E+01	4.20E-12	2.00E-03	8.35E-09	9.01E-09	1.42E-08
Ho162*	2.06E+01	4.02E+03	1.03E+01	2.20E-11	2.00E-03	8.26E-09	8.92E-09	1.41E-08
Cu 61	5.64E+00	1.23E+04	2.82E+00	8.00E-11	2.00E-03	8.23E-09	8.88E-09	1.40E-08
Tc 94	3.28E+00	1.76E+04	1.64E+00	1.30E-10	2.00E-03	7.77E-09	8.40E-09	1.32E-08
Cs132	1.74E+00	5.59E+05	8.70E-01	2.40E-10	2.00E-03	7.61E-09	8.22E-09	1.30E-08
Ag103	1.49E+01	3.94E+03	7.45E+00	2.80E-11	2.00E-03	7.61E-09	8.21E-09	1.29E-08
As 78	4.49E+00	5.44E+03	2.25E+00	9.20E-11	2.00E-03	7.53E-09	8.13E-09	1.28E-08
Tb156+	2.03E+00	8.80E+04	1.02E+00	2.00E-10	2.00E-03	7.40E-09	7.99E-09	1.26E-08
Cd104	1.02E+01	3.46E+03	5.10E+00	3.70E-11	2.00E-03	6.88E-09	7.43E-09	1.17E-08
In108	7.84E+00	3.48E+03	3.92E+00	4.78E-11	2.00E-03	6.83E-09	7.38E-09	1.16E-08
Al 28	1.00E+02	1.35E+02	5.00E+01	3.38E-12	2.00E-03	6.16E-09	6.66E-09	1.05E-08
Ge 77	9.34E-01	4.07E+04	4.67E-01	3.60E-10	2.00E-03	6.13E-09	6.62E-09	1.04E-08
Te114	1.22E+01	9.10E+02	6.10E+00	2.70E-11	2.00E-03	6.01E-09	6.49E-09	1.02E-08
Nd147	1.23E-01	9.49E+05	6.15E-02	2.30E-09	2.00E-03	5.16E-09	5.57E-09	8.77E-09
Ag112	1.56E+00	1.13E+04	7.80E-01	1.80E-10	2.00E-03	5.12E-09	5.53E-09	8.71E-09
In112	3.56E+01	8.64E+02	1.78E+01	7.80E-12	2.00E-03	5.06E-09	5.47E-09	8.61E-09
Sr 91	1.61E+00	3.47E+04	8.05E-01	1.70E-10	2.00E-03	4.99E-09	5.39E-09	8.49E-09
Ag106	1.71E+01	1.44E+03	8.55E+00	1.60E-11	2.00E-03	4.99E-09	5.39E-09	8.48E-09
Ge 71	2.72E+01	9.88E+05	1.36E+01	1.00E-11	2.00E-03	4.96E-09	5.36E-09	8.44E-09
Zn 62	5.38E-01	3.33E+04	2.69E-01	4.70E-10	2.00E-03	4.61E-09	4.98E-09	7.84E-09

Tb161	2.06E-01	5.97E+05	1.03E-01	1.20E-09	2.00E-03	4.51E-09	4.87E-09	7.67E-09
Ru105	1.32E+00	1.60E+04	6.60E-01	1.80E-10	2.00E-03	4.33E-09	4.68E-09	7.37E-09
Zn 69	8.39E+00	3.38E+03	4.20E+00	2.80E-11	2.00E-03	4.28E-09	4.63E-09	7.29E-09
Ba135*	1.45E+00	1.03E+05	7.25E-01	1.50E-10	2.00E-03	3.97E-09	4.28E-09	6.75E-09
As 70	2.98E+00	3.16E+03	1.49E+00	7.20E-11	2.00E-03	3.91E-09	4.22E-09	6.65E-09
In107	8.47E+00	1.94E+03	4.24E+00	2.46E-11	2.00E-03	3.80E-09	4.10E-09	6.46E-09
Kr 77	8.29E+00	4.46E+03	4.15E+00	5.00E-14	1.00E+00	3.78E-09	4.08E-09	6.43E-09
Sn123	2.68E-02	1.12E+07	1.34E-02	7.70E-09	2.00E-03	3.76E-09	4.06E-09	6.40E-09
Ge 75	5.37E+00	4.97E+03	2.69E+00	3.70E-11	2.00E-03	3.62E-09	3.91E-09	6.16E-09
Os183	9.85E-01	4.68E+04	4.93E-01	1.87E-10	2.00E-03	3.36E-09	3.63E-09	5.71E-09
Ti 51	1.58E+01	3.46E+02	7.90E+00	1.14E-11	2.00E-03	3.30E-09	3.56E-09	5.61E-09
Ru 95	4.95E+00	5.90E+03	2.48E+00	3.61E-11	2.00E-03	3.26E-09	3.52E-09	5.54E-09
La136	8.06E+00	5.92E+02	4.03E+00	2.18E-11	2.00E-03	3.21E-09	3.47E-09	5.46E-09
Al 29	1.28E+01	3.94E+02	6.40E+00	1.34E-11	2.00E-03	3.13E-09	3.38E-09	5.32E-09
Cu 62	1.29E+01	5.84E+02	6.45E+00	1.31E-11	2.00E-03	3.08E-09	3.33E-09	5.24E-09
Ge 78	1.71E+00	5.28E+03	8.55E-01	9.70E-11	2.00E-03	3.02E-09	3.27E-09	5.14E-09
Kr 83*	6.12E+00	6.59E+03	3.06E+00	5.00E-14	1.00E+00	2.79E-09	3.01E-09	4.74E-09
Ag113	9.34E-01	1.93E+04	4.67E-01	1.63E-10	2.00E-03	2.78E-09	3.00E-09	4.72E-09
Rb 81*	2.07E+01	1.83E+03	1.04E+01	7.30E-12	2.00E-03	2.75E-09	2.98E-09	4.69E-09
Os183*	9.85E-01	3.56E+04	4.93E-01	1.47E-10	2.00E-03	2.64E-09	2.85E-09	4.49E-09
Sb127	9.01E-02	3.33E+05	4.51E-02	1.60E-09	2.00E-03	2.63E-09	2.84E-09	4.47E-09
Ga 70	8.80E+00	1.27E+03	4.40E+00	1.60E-11	2.00E-03	2.57E-09	2.77E-09	4.37E-09
Be7	2.62E+00	4.61E+06	1.31E+00	5.20E-11	2.00E-03	2.48E-09	2.68E-09	4.23E-09
Tc 93	3.73E+00	9.90E+03	1.87E+00	3.60E-11	2.00E-03	2.45E-09	2.64E-09	4.16E-09
Er171	6.08E-01	2.71E+04	3.04E-01	2.20E-10	2.00E-03	2.44E-09	2.63E-09	4.15E-09
Dy165	2.19E+00	8.40E+03	1.10E+00	6.10E-11	2.00E-03	2.44E-09	2.63E-09	4.14E-09
Se 73*	7.35E+00	2.39E+03	3.68E+00	1.80E-11	2.00E-03	2.41E-09	2.60E-09	4.10E-09
Sr 92	1.16E+00	9.58E+03	5.80E-01	1.10E-10	2.00E-03	2.33E-09	2.51E-09	3.96E-09
Rh103*	4.88E+01	3.37E+03	2.44E+01	2.50E-12	2.00E-03	2.22E-09	2.40E-09	3.78E-09
In117*	1.60E+00	6.99E+03	8.00E-01	7.30E-11	2.00E-03	2.13E-09	2.30E-09	3.62E-09

Mg 27	4.89E+00	5.68E+02	2.45E+00	2.08E-11	2.00E-03	1.85E-09	2.00E-09	3.15E-09
Sn109	8.74E+00	1.08E+03	4.37E+00	1.15E-11	2.00E-03	1.83E-09	1.98E-09	3.12E-09
Sr 85*	3.02E+01	4.06E+03	1.51E+01	3.10E-12	2.00E-03	1.71E-09	1.84E-09	2.90E-09
Sn121	4.16E-01	9.73E+04	2.08E-01	2.20E-10	2.00E-03	1.67E-09	1.80E-09	2.84E-09
Hf177+	9.92E-01	3.08E+03	4.96E-01	9.20E-11	2.00E-03	1.66E-09	1.80E-09	2.83E-09
Os180	5.68E+00	1.29E+03	2.84E+00	1.50E-11	2.00E-03	1.55E-09	1.68E-09	2.64E-09
Cs130	1.01E+01	1.79E+03	5.05E+00	8.40E-12	2.00E-03	1.55E-09	1.67E-09	2.63E-09
Zn 63	2.20E+00	2.29E+03	1.10E+00	3.80E-11	2.00E-03	1.52E-09	1.65E-09	2.59E-09
Mo 93*	4.62E-01	2.50E+04	2.31E-01	1.80E-10	2.00E-03	1.52E-09	1.64E-09	2.58E-09
Tc 96*	1.06E+01	3.09E+03	5.30E+00	7.70E-12	2.00E-03	1.49E-09	1.61E-09	2.53E-09
Os179	6.09E+00	3.90E+02	3.05E+00	1.32E-11	2.00E-03	1.47E-09	1.59E-09	2.50E-09
Ru 94	1.66E+00	3.11E+03	8.30E-01	4.60E-11	2.00E-03	1.39E-09	1.50E-09	2.37E-09
Br 84	1.94E+00	1.91E+03	9.70E-01	3.90E-11	2.00E-03	1.38E-09	1.49E-09	2.35E-09
Sr 80	9.63E-01	6.38E+03	4.82E-01	7.60E-11	2.00E-03	1.33E-09	1.44E-09	2.27E-09
Rh 98	4.90E+00	5.22E+02	2.45E+00	1.29E-11	2.00E-03	1.15E-09	1.24E-09	1.96E-09
Cu 60	1.72E+00	1.46E+03	8.60E-01	3.60E-11	2.00E-03	1.13E-09	1.22E-09	1.92E-09
Cu 66	1.06E+01	3.07E+02	5.30E+00	5.82E-12	2.00E-03	1.12E-09	1.21E-09	1.91E-09
Sr 81	2.74E+00	1.34E+03	1.37E+00	2.20E-11	2.00E-03	1.10E-09	1.19E-09	1.87E-09
Ho162	2.06E+01	9.00E+02	1.03E+01	2.90E-12	2.00E-03	1.09E-09	1.18E-09	1.85E-09
Y91*	5.32E+00	2.98E+03	2.66E+00	1.10E-11	2.00E-03	1.07E-09	1.15E-09	1.81E-09
Te132	2.65E-02	2.77E+05	1.33E-02	2.20E-09	2.00E-03	1.06E-09	1.15E-09	1.81E-09
As 79	2.97E+00	5.41E+02	1.49E+00	1.96E-11	2.00E-03	1.06E-09	1.14E-09	1.80E-09
Cr 56	4.83E+00	3.56E+02	2.42E+00	1.19E-11	2.00E-03	1.04E-09	1.13E-09	1.78E-09
Eu154*	1.31E+01	2.76E+03	6.55E+00	4.32E-12	2.00E-03	1.03E-09	1.11E-09	1.76E-09
Kr 76	2.25E+00	5.33E+04	1.13E+00	5.00E-14	1.00E+00	1.03E-09	1.11E-09	1.74E-09
Sb120	7.57E+00	9.53E+02	3.79E+00	7.40E-12	2.00E-03	1.02E-09	1.10E-09	1.74E-09
Ag102	2.89E+00	7.74E+02	1.45E+00	1.90E-11	2.00E-03	1.00E-09	1.08E-09	1.70E-09
Rb 84*	1.16E+01	1.23E+03	5.80E+00	4.73E-12	2.00E-03	1.00E-09	1.08E-09	1.70E-09
Cd117*	2.61E-01	1.21E+04	1.31E-01	2.10E-10	2.00E-03	9.99E-10	1.08E-09	1.70E-09
Sr 87*	4.52E+00	1.01E+04	2.26E+00	1.20E-11	2.00E-03	9.89E-10	1.07E-09	1.68E-09

Sn125	1.73E-02	8.33E+05	8.65E-03	3.00E-09	2.00E-03	9.46E-10	1.02E-09	1.61E-09
Rh 97	2.17E+00	1.87E+03	1.09E+00	2.38E-11	2.00E-03	9.42E-10	1.02E-09	1.60E-09
Rb 79	3.03E+00	1.37E+03	1.52E+00	1.70E-11	2.00E-03	9.39E-10	1.01E-09	1.60E-09
Ga 74	2.96E+00	4.87E+02	1.48E+00	1.73E-11	2.00E-03	9.33E-10	1.01E-09	1.59E-09
Cs137	1.05E-02	9.52E+08	5.25E-03	4.80E-09	2.00E-03	9.19E-10	9.92E-10	1.56E-09
In117	1.60E+00	2.59E+03	8.00E-01	3.00E-11	2.00E-03	8.75E-10	9.45E-10	1.49E-09
Sb126	1.72E-02	1.07E+06	8.60E-03	2.70E-09	2.00E-03	8.47E-10	9.14E-10	1.44E-09
Ce143	5.64E-02	1.19E+05	2.82E-02	8.10E-10	2.00E-03	8.33E-10	9.00E-10	1.42E-09
Cd117	2.61E-01	8.96E+03	1.31E-01	1.70E-10	2.00E-03	8.09E-10	8.74E-10	1.38E-09
Se 81*	2.82E+00	3.44E+03	1.41E+00	1.50E-11	2.00E-03	7.71E-10	8.33E-10	1.31E-09
Rh107	2.39E+00	1.30E+03	1.20E+00	1.70E-11	2.00E-03	7.41E-10	8.00E-10	1.26E-09
Rb 88	2.35E+00	1.07E+03	1.18E+00	1.70E-11	2.00E-03	7.28E-10	7.87E-10	1.24E-09
Y94	1.36E+00	1.12E+03	6.80E-01	2.90E-11	2.00E-03	7.19E-10	7.77E-10	1.22E-09
Te127	3.17E-01	3.37E+04	1.59E-01	1.20E-10	2.00E-03	6.94E-10	7.49E-10	1.18E-09
Pm151	8.14E-02	1.02E+05	4.07E-02	4.50E-10	2.00E-03	6.68E-10	7.21E-10	1.14E-09
Ho167	5.15E-01	1.12E+04	2.58E-01	7.10E-11	2.00E-03	6.67E-10	7.20E-10	1.13E-09
Gd159	1.35E-01	6.65E+04	6.75E-02	2.70E-10	2.00E-03	6.65E-10	7.18E-10	1.13E-09
Xe129*	1.44E+00	7.68E+05	7.20E-01	5.00E-14	1.00E+00	6.56E-10	7.09E-10	1.12E-09
Rb 82	2.05E+01	7.64E+01	1.03E+01	1.72E-12	2.00E-03	6.43E-10	6.94E-10	1.09E-09
Zr 85	2.00E+00	4.72E+02	1.00E+00	1.66E-11	2.00E-03	6.06E-10	6.54E-10	1.03E-09
Os176	6.29E+00	1.80E+02	3.15E+00	5.23E-12	2.00E-03	6.00E-10	6.48E-10	1.02E-09
Os189*	5.88E+00	1.73E+04	2.94E+00	5.40E-12	2.00E-03	5.79E-10	6.25E-10	9.85E-10
Kr 87	1.19E+00	4.58E+03	5.95E-01	5.00E-14	1.00E+00	5.42E-10	5.86E-10	9.23E-10
Cs136	2.26E-02	1.14E+06	1.13E-02	1.30E-09	2.00E-03	5.36E-10	5.78E-10	9.11E-10
N13	1.06E+00	5.98E+02	5.30E-01	5.00E-14	1.00E+00	4.83E-10	5.22E-10	8.22E-10
Os177	4.88E+00	1.68E+02	2.44E+00	4.82E-12	2.00E-03	4.29E-10	4.63E-10	7.29E-10
Xe131*	8.98E-01	1.03E+06	4.49E-01	5.00E-14	1.00E+00	4.09E-10	4.42E-10	6.96E-10
Cd118	2.78E-01	3.02E+03	1.39E-01	8.07E-11	2.00E-03	4.09E-10	4.42E-10	6.96E-10
Kr 88	8.80E-01	1.02E+04	4.40E-01	5.00E-14	1.00E+00	4.01E-10	4.33E-10	6.82E-10
Sn108	1.94E+00	6.18E+02	9.70E-01	1.13E-11	2.00E-03	4.00E-10	4.32E-10	6.80E-10

Ag109*	6.72E+01	3.96E+01	3.36E+01	3.25E-13	2.00E-03	3.98E-10	4.30E-10	6.77E-10
Cs134*	1.44E+00	1.05E+04	7.20E-01	1.50E-11	2.00E-03	3.94E-10	4.25E-10	6.70E-10
Tc104	7.10E-01	1.10E+03	3.55E-01	3.00E-11	2.00E-03	3.88E-10	4.19E-10	6.61E-10
Rb 89	1.46E+00	9.09E+02	7.30E-01	1.40E-11	2.00E-03	3.73E-10	4.02E-10	6.34E-10
Mo102	7.82E-01	6.78E+02	3.91E-01	2.53E-11	2.00E-03	3.61E-10	3.90E-10	6.14E-10
Pm150	1.41E-01	9.65E+03	7.05E-02	1.40E-10	2.00E-03	3.60E-10	3.89E-10	6.12E-10
Kr 85*	7.44E-01	1.61E+04	3.72E-01	5.00E-14	1.00E+00	3.39E-10	3.66E-10	5.77E-10
Kr 85	7.44E-01	3.40E+08	3.72E-01	5.00E-14	1.00E+00	3.39E-10	3.66E-10	5.77E-10
Ge 66	1.85E-01	8.14E+03	9.25E-02	9.20E-11	2.00E-03	3.10E-10	3.35E-10	5.28E-10
Pr142*	2.34E+00	8.76E+02	1.17E+00	7.10E-12	2.00E-03	3.03E-10	3.27E-10	5.15E-10
Ge 67	6.03E-01	1.12E+03	3.02E-01	2.60E-11	2.00E-03	2.86E-10	3.09E-10	4.86E-10
Pd111	5.80E-01	1.40E+03	2.90E-01	2.66E-11	2.00E-03	2.81E-10	3.04E-10	4.78E-10
Ca 49	8.34E-01	5.23E+02	4.17E-01	1.76E-11	2.00E-03	2.68E-10	2.89E-10	4.55E-10
Sc 43	1.20E-01	1.40E+04	6.00E-02	1.20E-10	2.00E-03	2.63E-10	2.84E-10	4.47E-10
Ga 65	7.58E-01	9.12E+02	3.79E-01	1.80E-11	2.00E-03	2.49E-10	2.69E-10	4.23E-10
Se 83	4.06E-01	1.34E+03	2.03E-01	3.30E-11	2.00E-03	2.44E-10	2.64E-10	4.15E-10
Y95	7.62E-01	6.18E+02	3.81E-01	1.70E-11	2.00E-03	2.36E-10	2.55E-10	4.02E-10
Os181	2.80E+00	1.62E+02	1.40E+00	4.61E-12	2.00E-03	2.35E-10	2.54E-10	4.00E-10
Pd 98	4.60E-01	1.06E+03	2.30E-01	2.77E-11	2.00E-03	2.32E-10	2.51E-10	3.95E-10
Ag101	8.72E-01	6.66E+02	4.36E-01	1.37E-11	2.00E-03	2.18E-10	2.35E-10	3.70E-10
Sb129	4.91E-02	1.58E+04	2.46E-02	2.40E-10	2.00E-03	2.15E-10	2.32E-10	3.65E-10
Nb 88	3.78E-01	8.70E+02	1.89E-01	3.00E-11	2.00E-03	2.07E-10	2.23E-10	3.52E-10
Pr145	6.35E-02	2.15E+04	3.18E-02	1.70E-10	2.00E-03	1.97E-10	2.13E-10	3.35E-10
Zr 84	1.75E-01	1.55E+03	8.75E-02	5.59E-11	2.00E-03	1.78E-10	1.93E-10	3.03E-10
Eu157	2.77E-02	5.47E+04	1.39E-02	3.20E-10	2.00E-03	1.62E-10	1.75E-10	2.75E-10
Sr 93	5.49E-01	4.45E+02	2.75E-01	1.55E-11	2.00E-03	1.55E-10	1.68E-10	2.64E-10
Pd114	1.28E-01	1.45E+02	6.40E-02	6.54E-11	2.00E-03	1.53E-10	1.65E-10	2.60E-10
Sb128	1.94E-02	3.24E+04	9.70E-03	4.20E-10	2.00E-03	1.49E-10	1.60E-10	2.53E-10
Tc105	5.00E-01	4.56E+02	2.50E-01	1.60E-11	2.00E-03	1.46E-10	1.58E-10	2.48E-10
In106	6.14E-01	3.72E+02	3.07E-01	1.25E-11	2.00E-03	1.40E-10	1.51E-10	2.38E-10

As 69	2.89E-01	9.14E+02	1.45E-01	2.20E-11	2.00E-03	1.16E-10	1.25E-10	1.97E-10
Eu152+	7.27E-01	5.76E+03	3.64E-01	8.73E-12	2.00E-03	1.16E-10	1.25E-10	1.97E-10
In106*	6.14E-01	3.12E+02	3.07E-01	1.00E-11	2.00E-03	1.12E-10	1.21E-10	1.91E-10
Rh 96	2.67E-01	5.94E+02	1.34E-01	2.19E-11	2.00E-03	1.07E-10	1.15E-10	1.82E-10
Y83	3.46E-01	4.25E+02	1.73E-01	1.47E-11	2.00E-03	9.25E-11	9.99E-11	1.57E-10
Sm156	1.99E-02	3.38E+04	9.95E-03	2.10E-10	2.00E-03	7.62E-11	8.23E-11	1.30E-10
In114	9.78E+00	7.19E+01	4.89E+00	4.15E-13	2.00E-03	7.40E-11	7.99E-11	1.26E-10
Se 70	4.65E-02	2.47E+03	2.33E-02	7.30E-11	2.00E-03	6.19E-11	6.68E-11	1.05E-10
Te129	8.61E-02	4.18E+03	4.31E-02	3.80E-11	2.00E-03	5.96E-11	6.44E-11	1.01E-10
Xe133	1.15E-01	4.53E+05	5.75E-02	5.00E-14	1.00E+00	5.24E-11	5.66E-11	8.92E-11
Xe133*	1.15E-01	1.89E+05	5.75E-02	5.00E-14	1.00E+00	5.24E-11	5.66E-11	8.92E-11
Pr144	1.51E-01	1.04E+03	7.55E-02	1.90E-11	2.00E-03	5.23E-11	5.65E-11	8.90E-11
Ru107	4.19E-01	2.25E+02	2.10E-01	6.84E-12	2.00E-03	5.22E-11	5.64E-11	8.89E-11
In116*	5.62E-02	3.25E+03	2.81E-02	4.80E-11	2.00E-03	4.92E-11	5.31E-11	8.37E-11
Rb 78	1.35E-01	1.06E+03	6.75E-02	1.96E-11	2.00E-03	4.82E-11	5.21E-11	8.21E-11
Ru108	2.96E-01	2.73E+02	1.48E-01	8.62E-12	2.00E-03	4.65E-11	5.03E-11	7.92E-11
La142	2.36E-02	5.47E+03	1.18E-02	9.30E-11	2.00E-03	4.00E-11	4.32E-11	6.81E-11
La141	1.27E-02	1.41E+04	6.35E-03	1.50E-10	2.00E-03	3.47E-11	3.75E-11	5.91E-11
Nd149	2.07E-02	6.22E+03	1.04E-02	9.00E-11	2.00E-03	3.40E-11	3.67E-11	5.78E-11
Sn127	1.36E-02	7.56E+03	6.80E-03	1.30E-10	2.00E-03	3.22E-11	3.48E-11	5.48E-11
Re189	3.84E-03	8.75E+04	1.92E-03	4.30E-10	2.00E-03	3.01E-11	3.25E-11	5.12E-11
Te131	3.57E-02	1.50E+03	1.79E-02	3.80E-11	2.00E-03	2.47E-11	2.67E-11	4.21E-11
Ba139	3.45E-02	4.99E+03	1.73E-02	3.50E-11	2.00E-03	2.20E-11	2.38E-11	3.74E-11
Sb131	2.14E-02	1.38E+03	1.07E-02	5.20E-11	2.00E-03	2.03E-11	2.19E-11	3.45E-11
Tb162	6.07E-02	4.56E+02	3.04E-02	1.64E-11	2.00E-03	1.81E-11	1.96E-11	3.09E-11
Ag111*	3.42E+00	6.48E+01	1.71E+00	2.91E-13	2.00E-03	1.81E-11	1.96E-11	3.09E-11
Pr146	2.89E-02	1.45E+03	1.45E-02	2.96E-11	2.00E-03	1.56E-11	1.68E-11	2.65E-11
Xe135	3.37E-02	3.29E+04	1.69E-02	5.00E-14	1.00E+00	1.54E-11	1.66E-11	2.61E-11
Ho168	1.50E-01	1.79E+02	7.50E-02	5.23E-12	2.00E-03	1.43E-11	1.55E-11	2.43E-11
Tc 99*	4.03E-02	2.16E+04	2.02E-02	1.90E-11	2.00E-03	1.40E-11	1.51E-11	2.37E-11

Sn123*	2.68E-02	2.41E+03	1.34E-02	2.80E-11	2.00E-03	1.37E-11	1.48E-11	2.33E-11
Rh106	1.09E+00	2.98E+01	5.45E-01	6.43E-13	2.00E-03	1.28E-11	1.38E-11	2.17E-11
Ce146	1.91E-02	8.11E+02	9.55E-03	2.64E-11	2.00E-03	9.19E-12	9.93E-12	1.56E-11
La143	2.27E-02	8.52E+02	1.14E-02	2.20E-11	2.00E-03	9.10E-12	9.83E-12	1.55E-11
Cs138	1.62E-02	2.01E+03	8.10E-03	2.60E-11	2.00E-03	7.68E-12	8.29E-12	1.31E-11
Nd152	1.72E-02	6.84E+02	8.60E-03	2.37E-11	2.00E-03	7.43E-12	8.03E-12	1.26E-11
Sn125*	1.73E-02	5.71E+02	8.65E-03	2.09E-11	2.00E-03	6.59E-12	7.12E-12	1.12E-11
Ga 64	8.13E-02	1.58E+02	4.07E-02	4.41E-12	2.00E-03	6.53E-12	7.05E-12	1.11E-11
Cs139	1.63E-02	5.56E+02	8.15E-03	2.03E-11	2.00E-03	6.02E-12	6.50E-12	1.02E-11
Nd151	1.70E-02	7.46E+02	8.50E-03	1.80E-11	2.00E-03	5.58E-12	6.03E-12	9.49E-12
Sm155	1.63E-02	1.34E+03	8.15E-03	1.70E-11	2.00E-03	5.05E-12	5.46E-12	8.59E-12
Ba142	1.71E-02	6.36E+02	8.55E-03	1.60E-11	2.00E-03	4.99E-12	5.39E-12	8.48E-12
Ba141	1.24E-02	1.10E+03	6.20E-03	2.20E-11	2.00E-03	4.97E-12	5.37E-12	8.46E-12
Tc 97*	8.73E-05	7.82E+06	4.37E-05	3.10E-09	2.00E-03	4.93E-12	5.33E-12	8.39E-12
Ir181	1.26E-02	2.94E+02	6.30E-03	1.85E-11	2.00E-03	4.25E-12	4.59E-12	7.23E-12
Ir182	8.68E-03	9.00E+02	4.34E-03	2.50E-11	2.00E-03	3.96E-12	4.27E-12	6.73E-12
Ir183	5.39E-03	3.30E+03	2.70E-03	4.00E-11	2.00E-03	3.93E-12	4.25E-12	6.69E-12
Sb130	3.89E-03	2.37E+03	1.95E-03	5.40E-11	2.00E-03	3.83E-12	4.14E-12	6.51E-12
Ir179	2.60E-02	2.40E+02	1.30E-02	7.39E-12	2.00E-03	3.50E-12	3.78E-12	5.96E-12
Gd162	7.75E-03	5.04E+02	3.88E-03	1.80E-11	2.00E-03	2.54E-12	2.75E-12	4.33E-12
Pm152	2.12E-02	2.46E+02	1.06E-02	5.80E-12	2.00E-03	2.24E-12	2.42E-12	3.81E-12
Eu159	5.27E-03	1.09E+03	2.64E-03	2.31E-11	2.00E-03	2.22E-12	2.40E-12	3.78E-12
Os191	5.41E-05	1.33E+06	2.71E-05	1.80E-09	2.00E-03	1.78E-12	1.92E-12	3.02E-12
Sn126	2.40E-06	7.26E+12	1.20E-06	2.70E-08	2.00E-03	1.18E-12	1.28E-12	2.01E-12
Ba137*	4.17E-02	1.53E+02	2.09E-02	5.33E-13	2.00E-03	4.05E-13	4.38E-13	6.89E-13
Se 79*	1.69E-03	2.35E+02	8.45E-04	7.19E-12	2.00E-03	2.22E-13	2.39E-13	3.77E-13
Os191*	5.41E-05	4.72E+04	2.71E-05	1.50E-10	2.00E-03	1.48E-13	1.60E-13	2.52E-13
Nb 94	1.44E-02	6.41E+11	7.20E-03	3.38E-13	2.00E-03	8.87E-14	9.58E-14	1.51E-13
Ir192	6.14E-07	6.38E+06	3.07E-07	6.20E-09	2.00E-03	6.94E-14	7.50E-14	1.18E-13
W 189	1.34E-06	6.96E+02	6.70E-07	1.14E-11	4.00E-01	5.57E-14	6.02E-14	9.47E-14

Nb 92*	3.11E-06	8.77E+05	1.56E-06	4.41E-10	2.00E-03	2.50E-14	2.70E-14	4.25E-14
Os190*	5.47E-06	5.94E+02	2.74E-06	7.04E-12	2.00E-03	7.02E-16	7.58E-16	1.19E-15
Lu176*	1.80E-08	1.33E+04	9.00E-09	1.20E-10	2.00E-03	3.94E-17	4.25E-17	6.70E-17
Te123*	2.15E-10	1.03E+07	1.08E-10	3.90E-09	2.00E-03	1.53E-17	1.65E-17	2.60E-17
Cd113*	1.95E-15	4.45E+08	9.75E-16	3.00E-08	2.00E-03	1.07E-21	1.15E-21	1.81E-21
In115*	1.57E-13	1.62E+04	7.85E-14	6.00E-11	2.00E-03	1.72E-22	1.85E-22	2.92E-22
Ar 37	1.08E+02	3.03E+06	5.40E+01	0.00E+00	1.00E+00	0.00E+00	0.00E+00	0.00E+00
Ar 41	8.01E+00	6.58E+03	4.01E+00	0.00E+00	1.00E+00	0.00E+00	0.00E+00	0.00E+00
Ar 44	1.48E+00	7.12E+02	7.40E-01	0.00E+00	1.00E+00	0.00E+00	0.00E+00	0.00E+00
Ar 39	1.71E+00	8.49E+09	8.55E-01	0.00E+00	1.00E+00	0.00E+00	0.00E+00	0.00E+00
Ar 42	9.23E-01	1.04E+09	4.62E-01	0.00E+00	1.00E+00	0.00E+00	0.00E+00	0.00E+00

APPENDIX C. **SEISMIC EVENT DOSE ESTIMATE TABLE**

NB15:Y50uclide	Curies @ 1 minute	Half-life	Curies * DR	DCF (Sv/Bq) 2/07/05	ARF*RF	CEDE dose (rem)	With cloudshine	MEOI dose - 1 det with dose uncertainty		Curies after 1 detonation	detonation ARF*RF	CEDE dose (rem)	With cloudshine	MEOI dose - 2nd det with dose uncertainty	MEOI dose - total 2 detonations
Totals	1.46E+06					2.32E-01	2.51E-01	**3.95E-01**		1.45E+06		1.32E-01	1.42E-01	**2.24E-01**	**6.19E-01**
I 125	4.22E+02	5.20E+06	4.22E+02	1.40E-08	5.00E-01	1.37E-01	1.48E-01	2.34E-01		2.11E+02	5.00E-01	6.86E-02	7.41E-02	1.17E-01	3.50E-01
Ta182	3.75E+05	9.89E+06	3.75E+05	9.70E-09	1.79E-04	3.02E-02	3.26E-02	5.14E-02		3.75E+05	1.79E-04	3.02E-02	3.26E-02	5.14E-02	1.03E-01
Gd148	1.19E+02	2.35E+09	1.19E+02	1.10E-05	1.79E-04	1.09E-02	1.17E-02	1.85E-02		1.19E+02	1.79E-04	1.09E-02	1.17E-02	1.85E-02	3.70E-02
I 124	5.13E+01	3.61E+05	5.13E+01	1.20E-08	5.00E-01	1.43E-02	1.55E-02	2.43E-02		2.57E+01	5.00E-01	7.15E-03	7.73E-03	1.22E-02	3.65E-02
H 3	1.60E+04	3.89E+08	1.60E+04	1.80E-11	1.00E+00	1.34E-02	1.45E-02	2.28E-02		0.00E+00	1.00E+00	0.00E+00	0.00E+00	0.00E+00	2.28E-02
I 126	1.29E+01	1.13E+06	1.29E+01	2.60E-08	5.00E-01	7.79E-03	8.42E-03	1.33E-02		6.45E+00	5.00E-01	3.90E-03	4.21E-03	6.63E-03	1.99E-02
P32	1.04E+02	1.23E+06	1.04E+02	3.20E-09	5.00E-01	7.73E-03	8.35E-03	1.32E-02		5.20E+01	5.00E-01	3.87E-03	4.18E-03	6.58E-03	1.97E-02
I 123	3.51E+02	4.75E+04	3.51E+02	2.10E-10	5.00E-01	1.71E-03	1.85E-03	2.91E-03		1.76E+02	5.00E-01	8.56E-04	9.25E-04	1.46E-03	4.37E-03
I 120	2.09E+02	4.86E+03	2.09E+02	3.00E-10	5.00E-01	1.46E-03	1.57E-03	2.48E-03		1.05E+02	5.00E-01	7.29E-04	7.87E-04	1.24E-03	3.72E-03
P33	3.90E+01	2.19E+06	3.90E+01	1.40E-09	5.00E-01	1.27E-03	1.37E-03	2.16E-03		1.95E+01	5.00E-01	6.34E-04	6.85E-04	1.08E-03	3.24E-03
S35	3.05E+01	7.56E+06	3.05E+01	1.30E-09	5.00E-01	9.21E-04	9.95E-04	1.57E-03		1.53E+01	5.00E-01	4.61E-04	4.98E-04	7.84E-04	2.35E-03
W 187	3.86E+05	8.54E+04	3.86E+05	2.00E-10	1.79E-04	6.41E-04	6.92E-04	1.09E-03		3.86E+05	1.79E-04	6.41E-04	6.92E-04	1.09E-03	2.18E-03
Hf172	3.01E+03	5.90E+07	3.01E+03	1.90E-08	1.79E-04	4.75E-04	5.13E-04	8.08E-04		3.01E+03	1.79E-04	4.75E-04	5.13E-04	8.07E-04	1.62E-03
Co 60	1.86E+03	1.66E+08	1.86E+03	2.90E-08	1.79E-04	4.48E-04	4.84E-04	7.62E-04		1.86E+03	1.79E-04	4.48E-04	4.84E-04	7.62E-04	1.52E-03
I 121	2.81E+02	7.63E+03	2.81E+02	8.60E-11	5.00E-01	5.62E-04	6.07E-04	9.55E-04		1.41E+02	5.00E-01	2.81E-04	3.03E-04	4.78E-04	1.43E-03
Ta183	1.87E+04	4.41E+05	1.87E+04	2.00E-09	1.79E-04	3.10E-04	3.35E-04	5.28E-04		1.87E+04	1.79E-04	3.10E-04	3.35E-04	5.28E-04	1.06E-03
W 185	1.78E+05	6.49E+06	1.78E+05	1.40E-10	1.79E-04	2.07E-04	2.23E-04	3.52E-04		1.78E+05	1.79E-04	2.07E-04	2.23E-04	3.52E-04	7.04E-04
I 118	6.33E+01	8.20E+02	6.33E+01	1.62E-10	5.00E-01	2.38E-04	2.57E-04	4.05E-04		3.17E+01	5.00E-01	1.19E-04	1.29E-04	2.03E-04	6.08E-04
I 119	1.60E+02	1.15E+03	1.60E+02	5.11E-11	5.00E-01	1.90E-04	2.05E-04	3.23E-04		8.00E+01	5.00E-01	9.50E-05	1.03E-04	1.62E-04	4.85E-04
Br 76	1.79E+01	5.83E+04	1.79E+01	4.20E-10	5.00E-01	1.75E-04	1.89E-04	2.97E-04		8.95E+00	5.00E-01	8.74E-05	9.43E-05	1.49E-04	4.46E-04
K42	5.68E+01	4.45E+04	5.68E+01	1.30E-10	5.00E-01	1.72E-04	1.85E-04	2.92E-04		2.84E+01	5.00E-01	8.58E-05	9.27E-05	1.46E-04	4.38E-04
Yb169	5.04E+03	2.77E+06	5.04E+03	2.80E-09	1.79E-04	1.17E-04	1.27E-04	1.99E-04		5.04E+03	1.79E-04	1.17E-04	1.27E-04	1.99E-04	3.99E-04
I 122	2.94E+02	2.18E+02	2.94E+02	1.85E-11	5.00E-01	1.26E-04	1.37E-04	2.15E-04		1.47E+02	5.00E-01	6.32E-05	6.83E-05	1.07E-04	3.22E-04
Lu173	4.52E+03	4.32E+07	4.52E+03	2.30E-09	1.79E-04	8.63E-05	9.32E-05	1.47E-04		4.52E+03	1.79E-04	8.63E-05	9.32E-05	1.47E-04	2.94E-04
Hf175	8.03E+03	6.05E+06	8.03E+03	1.10E-09	1.79E-04	7.33E-05	7.92E-05	1.25E-04		8.03E+03	1.79E-04	7.33E-05	7.92E-05	1.25E-04	2.49E-04
K43	2.55E+01	8.03E+04	2.55E+01	1.50E-10	5.00E-01	8.89E-05	9.60E-05	1.51E-04		1.28E+01	5.00E-01	4.44E-05	4.80E-05	7.56E-05	2.27E-04
Ta179	1.51E+04	5.75E+07	1.51E+04	5.20E-10	1.79E-04	6.52E-05	7.04E-05	1.11E-04		1.51E+04	1.79E-04	6.52E-05	7.04E-05	1.11E-04	2.22E-04
Na 24	1.01E+01	5.39E+04	1.01E+01	2.90E-10	5.00E-01	6.81E-05	7.35E-05	1.16E-04		5.05E+00	5.00E-01	3.40E-05	3.68E-05	5.79E-05	1.74E-04
Gd146	1.01E+03	4.17E+06	1.01E+03	6.00E-09	1.79E-04	5.03E-05	5.43E-05	8.56E-05		1.01E+03	1.79E-04	5.03E-05	5.43E-05	8.56E-05	1.71E-04
I 131	1.39E-01	6.93E+05	1.39E-01	2.00E-08	5.00E-01	6.46E-05	6.98E-05	1.10E-04		6.95E-02	5.00E-01	3.23E-05	3.49E-05	5.49E-05	1.65E-04
Re186	5.22E+03	3.26E+05	5.22E+03	1.10E-09	1.79E-04	4.77E-05	5.15E-05	8.11E-05		5.22E+03	1.79E-04	4.77E-05	5.15E-05	8.11E-05	1.62E-04
Lu172	3.65E+03	5.79E+05	3.65E+03	1.50E-09	1.79E-04	4.55E-05	4.91E-05	7.73E-05		3.65E+03	1.79E-04	4.54E-05	4.91E-05	7.73E-05	1.55E-04
Mn 54	3.36E+03	2.70E+07	3.36E+03	1.50E-09	1.79E-04	4.18E-05	4.52E-05	7.12E-05		3.36E+03	1.79E-04	4.18E-05	4.52E-05	7.12E-05	1.42E-04
Ho166*	4.55E+01	3.79E+10	4.55E+01	1.10E-07	1.79E-04	4.15E-05	4.49E-05	7.07E-05		4.55E+01	1.79E-04	4.15E-05	4.49E-05	7.07E-05	1.41E-04
Br 82	3.50E+00	1.27E+05	3.50E+00	6.40E-10	5.00E-01	5.21E-05	5.62E-05	8.85E-05		1.75E+00	5.00E-01	2.60E-05	2.81E-05	4.43E-05	1.33E-04
Br 77	2.49E+01	2.05E+05	2.49E+01	8.70E-11	5.00E-01	5.03E-05	5.44E-05	8.56E-05		1.25E+01	5.00E-01	2.52E-05	2.72E-05	4.28E-05	1.28E-04
Lu171	5.38E+03	7.12E+05	5.38E+03	8.30E-10	1.79E-04	3.71E-05	4.00E-05	6.31E-05		5.38E+03	1.79E-04	3.71E-05	4.00E-05	6.30E-05	1.26E-04
Co 58	2.22E+03	6.13E+06	2.22E+03	2.00E-09	1.79E-04	3.69E-05	3.98E-05	6.27E-05		2.22E+03	1.79E-04	3.69E-05	3.98E-05	6.27E-05	1.25E-04

Tm167	3.10E+03	7.98E+05	3.10E+03	1.10E-09	1.79E-04	2.83E-05	3.06E-05	4.82E-05		3.10E+03	1.79E-04	2.83E-05	3.06E-05	4.81E-05	9.63E-05
Tb157	7.72E+01	4.73E+09	7.72E+01	4.30E-08	1.79E-04	2.76E-05	2.98E-05	4.69E-05		7.72E+01	1.79E-04	2.76E-05	2.98E-05	4.69E-05	9.37E-05
Lu170	4.66E+03	1.73E+05	4.66E+03	6.70E-10	1.79E-04	2.59E-05	2.80E-05	4.41E-05		4.66E+03	1.79E-04	2.59E-05	2.80E-05	4.41E-05	8.82E-05
Tb149	7.01E+02	1.49E+04	7.01E+02	4.30E-09	1.79E-04	2.50E-05	2.70E-05	4.26E-05		7.01E+02	1.79E-04	2.50E-05	2.70E-05	4.26E-05	8.51E-05
Lu177*	1.96E+02	1.39E+07	1.96E+02	1.50E-08	1.79E-04	2.44E-05	2.64E-05	4.15E-05		1.96E+02	1.79E-04	2.44E-05	2.64E-05	4.15E-05	8.30E-05
Hf181	6.08E+02	3.66E+06	6.08E+02	4.70E-09	1.79E-04	2.37E-05	2.56E-05	4.04E-05		6.08E+02	1.79E-04	2.37E-05	2.56E-05	4.03E-05	8.07E-05
Fe 55	7.52E+03	8.62E+07	7.52E+03	3.70E-10	1.79E-04	2.31E-05	2.49E-05	3.93E-05		7.52E+03	1.79E-04	2.31E-05	2.49E-05	3.93E-05	7.86E-05
Re184*	4.55E+02	1.43E+07	4.55E+02	6.10E-09	1.79E-04	2.30E-05	2.49E-05	3.92E-05		4.55E+02	1.79E-04	2.30E-05	2.49E-05	3.92E-05	7.84E-05
Re183	9.37E+02	6.05E+06	9.37E+02	2.77E-09	1.79E-04	2.15E-05	2.33E-05	3.67E-05		9.37E+02	1.79E-04	2.15E-05	2.33E-05	3.66E-05	7.33E-05
Co 56	4.03E+02	6.81E+06	4.03E+02	6.30E-09	1.79E-04	2.11E-05	2.28E-05	3.59E-05		4.03E+02	1.79E-04	2.11E-05	2.28E-05	3.58E-05	7.17E-05
Mn 56	1.90E+04	9.28E+03	1.90E+04	1.30E-10	1.79E-04	2.05E-05	2.21E-05	3.49E-05		1.90E+04	1.79E-04	2.05E-05	2.21E-05	3.49E-05	6.98E-05
F18	1.20E+01	6.59E+03	1.20E+01	6.00E-11	1.00E+00	3.35E-05	3.61E-05	5.69E-05		0.00E+00	1.00E+00	0.00E+00	0.00E+00	0.00E+00	5.69E-05
Ta176	9.56E+03	2.91E+04	9.56E+03	2.10E-10	1.79E-04	1.67E-05	1.80E-05	2.83E-05		9.56E+03	1.79E-04	1.67E-05	1.80E-05	2.83E-05	5.67E-05
Yb166	2.61E+03	2.04E+05	2.61E+03	7.60E-10	1.79E-04	1.65E-05	1.78E-05	2.80E-05		2.61E+03	1.79E-04	1.65E-05	1.78E-05	2.80E-05	5.60E-05
Cl 38	1.45E+01	2.23E+03	1.45E+01	4.70E-11	1.00E+00	3.17E-05	3.42E-05	5.39E-05		0.00E+00	1.00E+00	0.00E+00	0.00E+00	0.00E+00	5.39E-05
Eu152	4.38E+01	4.21E+08	4.38E+01	3.90E-08	1.79E-04	1.42E-05	1.53E-05	2.41E-05		4.38E+01	1.79E-04	1.42E-05	1.53E-05	2.41E-05	4.82E-05
Re188	3.09E+03	6.12E+04	3.09E+03	5.50E-10	1.79E-04	1.41E-05	1.52E-05	2.40E-05		3.09E+03	1.79E-04	1.41E-05	1.52E-05	2.40E-05	4.80E-05
Gd153	8.81E+02	2.09E+07	8.81E+02	1.90E-09	1.79E-04	1.39E-05	1.50E-05	2.36E-05		8.81E+02	1.79E-04	1.39E-05	1.50E-05	2.36E-05	4.73E-05
V48	7.20E+02	1.38E+06	7.20E+02	2.30E-09	1.79E-04	1.37E-05	1.48E-05	2.34E-05		7.20E+02	1.79E-04	1.37E-05	1.48E-05	2.34E-05	4.68E-05
Ce139	8.05E+02	1.19E+07	8.05E+02	1.80E-09	1.79E-04	1.20E-05	1.30E-05	2.05E-05		8.05E+02	1.79E-04	1.20E-05	1.30E-05	2.05E-05	4.09E-05
Lu169	3.74E+03	1.23E+05	3.74E+03	3.80E-10	1.79E-04	1.18E-05	1.27E-05	2.01E-05		3.74E+03	1.79E-04	1.18E-05	1.27E-05	2.01E-05	4.01E-05
Te121*	3.17E+02	1.33E+07	3.17E+02	4.20E-09	1.79E-04	1.11E-05	1.19E-05	1.88E-05		3.17E+02	1.79E-04	1.11E-05	1.19E-05	1.88E-05	3.76E-05
Ta177	1.29E+04	2.04E+05	1.29E+04	1.00E-10	1.79E-04	1.07E-05	1.16E-05	1.82E-05		1.29E+04	1.79E-04	1.07E-05	1.16E-05	1.82E-05	3.64E-05
Sc 46	2.00E+02	7.24E+06	2.00E+02	6.40E-09	1.79E-04	1.06E-05	1.15E-05	1.81E-05		2.00E+02	1.79E-04	1.06E-05	1.15E-05	1.81E-05	3.61E-05
Br 80*	7.95E+00	1.59E+04	7.95E+00	7.60E-11	5.00E-01	1.40E-05	1.52E-05	2.39E-05		3.98E+00	5.00E-01	7.02E-06	7.58E-06	1.19E-05	3.58E-05
W 181	4.44E+04	1.05E+07	4.44E+04	2.80E-11	1.79E-04	1.03E-05	1.11E-05	1.76E-05		4.44E+04	1.79E-04	1.03E-05	1.11E-05	1.76E-05	3.51E-05
Sm145	8.22E+02	2.94E+07	8.22E+02	1.50E-09	1.79E-04	1.02E-05	1.11E-05	1.74E-05		8.22E+02	1.79E-04	1.02E-05	1.11E-05	1.74E-05	3.48E-05
Nd140	1.09E+03	2.91E+05	1.09E+03	1.13E-09	1.79E-04	1.02E-05	1.10E-05	1.74E-05		1.09E+03	1.79E-04	1.02E-05	1.10E-05	1.74E-05	3.48E-05
Eu147	1.18E+03	2.07E+06	1.18E+03	1.00E-09	1.79E-04	9.80E-06	1.06E-05	1.67E-05		1.18E+03	1.79E-04	9.79E-06	1.06E-05	1.67E-05	3.33E-05
Eu146	1.39E+03	3.97E+05	1.39E+03	8.20E-10	1.79E-04	9.46E-06	1.02E-05	1.61E-05		1.39E+03	1.79E-04	9.46E-06	1.02E-05	1.61E-05	3.22E-05
Hf170	3.50E+03	5.76E+04	3.50E+03	3.20E-10	1.79E-04	9.30E-06	1.00E-05	1.58E-05		3.50E+03	1.79E-04	9.30E-06	1.00E-05	1.58E-05	3.16E-05
Ta178*	1.58E+04	8.50E+03	1.58E+04	6.90E-11	1.79E-04	9.05E-06	9.77E-06	1.54E-05		1.58E+04	1.79E-04	9.05E-06	9.77E-06	1.54E-05	3.08E-05
Hf173	6.59E+03	8.64E+04	6.59E+03	1.60E-10	1.79E-04	8.75E-06	9.45E-06	1.49E-05		6.59E+03	1.79E-04	8.75E-06	9.45E-06	1.49E-05	2.98E-05
Ta175	7.51E+03	3.78E+04	7.51E+03	1.40E-10	1.79E-04	8.73E-06	9.43E-06	1.48E-05		7.51E+03	1.79E-04	8.73E-06	9.42E-06	1.48E-05	2.97E-05
Mo 99	1.08E+03	2.37E+05	1.08E+03	9.70E-10	1.79E-04	8.70E-06	9.39E-06	1.48E-05		1.08E+03	1.79E-04	8.70E-06	9.39E-06	1.48E-05	2.96E-05
Ce134	7.67E+02	2.73E+05	7.67E+02	1.30E-09	1.79E-04	8.28E-06	8.94E-06	1.41E-05		7.67E+02	1.79E-04	8.28E-06	8.94E-06	1.41E-05	2.82E-05
Co 57	1.04E+03	2.35E+07	1.04E+03	9.40E-10	1.79E-04	8.12E-06	8.76E-06	1.38E-05		1.04E+03	1.79E-04	8.11E-06	8.76E-06	1.38E-05	2.76E-05
Er160	1.87E+03	1.03E+05	1.87E+03	5.09E-10	1.79E-04	7.90E-06	8.53E-06	1.34E-05		1.87E+03	1.79E-04	7.90E-06	8.53E-06	1.34E-05	2.69E-05
Pm143	7.32E+02	2.29E+07	7.32E+02	1.30E-09	1.79E-04	7.90E-06	8.53E-06	1.34E-05		7.32E+02	1.79E-04	7.90E-06	8.53E-06	1.34E-05	2.69E-05
W 178	1.24E+04	1.87E+06	1.24E+04	7.60E-11	1.79E-04	7.82E-06	8.45E-06	1.33E-05		1.24E+04	1.79E-04	7.82E-06	8.45E-06	1.33E-05	2.66E-05

Ta184	2.11E+03	3.13E+04	2.11E+03	4.40E-10	1.79E-04	7.71E-06	8.32E-06	1.31E-05	2.11E+03	1.79E-04	7.71E-06	8.32E-06	1.31E-05	2.62E-05
S38	1.76E+00	1.02E+04	1.76E+00	2.44E-10	5.00E-01	9.98E-06	1.08E-05	1.70E-05	8.80E-01	5.00E-01	4.99E-06	5.39E-06	8.49E-06	2.55E-05
Lu174	2.21E+02	1.05E+08	2.21E+02	3.90E-09	1.79E-04	7.16E-06	7.73E-06	1.22E-05	2.21E+02	1.79E-04	7.15E-06	7.73E-06	1.22E-05	2.43E-05
Hf171	4.31E+03	4.36E+04	4.31E+03	1.97E-10	1.79E-04	7.05E-06	7.61E-06	1.20E-05	4.31E+03	1.79E-04	7.05E-06	7.61E-06	1.20E-05	2.40E-05
Lu174*	2.21E+02	1.23E+07	2.21E+02	3.80E-09	1.79E-04	6.97E-06	7.53E-06	1.19E-05	2.21E+02	1.79E-04	6.97E-06	7.53E-06	1.19E-05	2.37E-05
Re184	4.55E+02	3.28E+06	4.55E+02	1.80E-09	1.79E-04	6.80E-06	7.34E-06	1.16E-05	4.55E+02	1.79E-04	6.80E-06	7.34E-06	1.16E-05	2.31E-05
Pm145	3.78E+02	5.59E+08	3.78E+02	2.10E-09	1.79E-04	6.59E-06	7.12E-06	1.12E-05	3.78E+02	1.79E-04	6.59E-06	7.12E-06	1.12E-05	2.24E-05
Gd149	1.12E+03	8.10E+05	1.12E+03	7.00E-10	1.79E-04	6.51E-06	7.03E-06	1.11E-05	1.12E+03	1.79E-04	6.51E-06	7.03E-06	1.11E-05	2.21E-05
Gd151	9.43E+02	1.07E+07	9.43E+02	8.10E-10	1.79E-04	6.34E-06	6.85E-06	1.08E-05	9.43E+02	1.79E-04	6.34E-06	6.85E-06	1.08E-05	2.16E-05
Cl 39	5.64E+00	3.34E+03	5.64E+00	4.80E-11	1.00E+00	1.26E-05	1.36E-05	2.14E-05	0.00E+00	1.00E+00	0.00E+00	0.00E+00	0.00E+00	2.14E-05
I 130	1.88E-01	4.45E+04	1.88E-01	1.90E-09	5.00E-01	8.30E-06	8.96E-06	1.41E-05	9.40E-02	5.00E-01	4.15E-06	4.48E-06	7.06E-06	2.12E-05
Re182	5.52E+02	2.30E+05	5.52E+02	1.30E-09	1.79E-04	5.96E-06	6.43E-06	1.01E-05	5.52E+02	1.79E-04	5.96E-06	6.43E-06	1.01E-05	2.03E-05
Eu154	1.31E+01	2.71E+08	1.31E+01	5.00E-08	1.79E-04	5.44E-06	5.87E-06	9.25E-06	1.31E+01	1.79E-04	5.44E-06	5.87E-06	9.25E-06	1.85E-05
Te118	2.85E+02	5.18E+05	2.85E+02	2.25E-09	1.79E-04	5.32E-06	5.75E-06	9.06E-06	2.85E+02	1.79E-04	5.32E-06	5.75E-06	9.05E-06	1.81E-05
I 128	4.68E+00	1.50E+03	4.68E+00	6.50E-11	5.00E-01	7.07E-06	7.63E-06	1.20E-05	2.34E+00	5.00E-01	3.53E-06	3.82E-06	6.01E-06	1.80E-05
Fe 59	1.73E+02	3.84E+06	1.73E+02	3.50E-09	1.79E-04	5.03E-06	5.43E-06	8.55E-06	1.73E+02	1.79E-04	5.03E-06	5.43E-06	8.55E-06	1.71E-05
Eu145	1.08E+03	5.12E+05	1.08E+03	5.60E-10	1.79E-04	5.02E-06	5.42E-06	8.54E-06	1.08E+03	1.79E-04	5.02E-06	5.42E-06	8.54E-06	1.71E-05
Ta173	4.96E+03	1.13E+04	4.96E+03	1.20E-10	1.79E-04	4.94E-06	5.34E-06	8.40E-06	4.96E+03	1.79E-04	4.94E-06	5.34E-06	8.40E-06	1.68E-05
Tm165	2.42E+03	1.08E+05	2.42E+03	2.19E-10	1.79E-04	4.40E-06	4.75E-06	7.48E-06	2.42E+03	1.79E-04	4.40E-06	4.75E-06	7.48E-06	1.50E-05
Tm166	2.76E+03	2.77E+04	2.76E+03	1.80E-10	1.79E-04	4.12E-06	4.45E-06	7.02E-06	2.76E+03	1.79E-04	4.12E-06	4.45E-06	7.01E-06	1.40E-05
Tm170	7.37E+01	1.11E+07	7.37E+01	6.60E-09	1.79E-04	4.04E-06	4.36E-06	6.87E-06	7.37E+01	1.79E-04	4.04E-06	4.36E-06	6.87E-06	1.37E-05
Dy159	1.36E+03	1.25E+07	1.36E+03	3.50E-10	1.79E-04	3.95E-06	4.27E-06	6.72E-06	1.36E+03	1.79E-04	3.95E-06	4.27E-06	6.72E-06	1.34E-05
Ba128	5.71E+02	2.10E+05	5.71E+02	8.00E-10	1.79E-04	3.79E-06	4.10E-06	6.45E-06	5.71E+02	1.79E-04	3.79E-06	4.09E-06	6.45E-06	1.29E-05
Mn 52	3.04E+02	4.83E+05	3.04E+02	1.40E-09	1.79E-04	3.53E-06	3.82E-06	6.01E-06	3.04E+02	1.79E-04	3.53E-06	3.82E-06	6.01E-06	1.20E-05
Ba133	2.82E+02	3.32E+08	2.82E+02	1.50E-09	1.79E-04	3.51E-06	3.79E-06	5.97E-06	2.82E+02	1.79E-04	3.51E-06	3.79E-06	5.97E-06	1.19E-05
I 133	5.01E-02	7.49E+04	5.01E-02	4.00E-09	5.00E-01	4.66E-06	5.03E-06	7.92E-06	2.51E-02	5.00E-01	2.33E-06	2.51E-06	3.96E-06	1.19E-05
Re181	1.64E+03	7.20E+04	1.64E+03	2.50E-10	1.79E-04	3.40E-06	3.68E-06	5.79E-06	1.64E+03	1.79E-04	3.40E-06	3.68E-06	5.79E-06	1.16E-05
Tb152	1.34E+03	6.30E+04	1.34E+03	3.02E-10	1.79E-04	3.36E-06	3.63E-06	5.71E-06	1.34E+03	1.79E-04	3.36E-06	3.63E-06	5.71E-06	1.14E-05
Br 83	3.84E+00	8.64E+03	3.84E+00	4.80E-11	5.00E-01	4.28E-06	4.63E-06	7.29E-06	1.92E+00	5.00E-01	2.14E-06	2.31E-06	3.64E-06	1.09E-05
Ce135	7.48E+02	6.37E+04	7.48E+02	5.10E-10	1.79E-04	3.17E-06	3.42E-06	5.39E-06	7.48E+02	1.79E-04	3.17E-06	3.42E-06	5.39E-06	1.08E-05
Ce137*	8.75E+02	1.24E+05	8.75E+02	4.30E-10	1.79E-04	3.12E-06	3.37E-06	5.31E-06	8.75E+02	1.79E-04	3.12E-06	3.37E-06	5.31E-06	1.06E-05
Gd147	8.97E+02	1.37E+05	8.97E+02	4.10E-10	1.79E-04	3.05E-06	3.30E-06	5.19E-06	8.97E+02	1.79E-04	3.05E-06	3.30E-06	5.19E-06	1.04E-05
Cd109	6.27E+01	4.00E+07	6.27E+01	5.80E-09	1.79E-04	3.02E-06	3.26E-06	5.14E-06	6.27E+01	1.79E-04	3.02E-06	3.26E-06	5.13E-06	1.03E-05
Eu148	1.32E+02	4.71E+06	1.32E+02	2.70E-09	1.79E-04	2.96E-06	3.20E-06	5.03E-06	1.32E+02	1.79E-04	2.96E-06	3.19E-06	5.03E-06	1.01E-05
Ti 44	2.94E+00	1.49E+09	2.94E+00	1.20E-07	1.79E-04	2.93E-06	3.16E-06	4.98E-06	2.94E+00	1.79E-04	2.93E-06	3.16E-06	4.98E-06	9.96E-06
Cr 51	9.74E+03	2.39E+06	9.74E+03	3.60E-11	1.79E-04	2.91E-06	3.14E-06	4.95E-06	9.74E+03	1.79E-04	2.91E-06	3.14E-06	4.95E-06	9.90E-06
K44	7.83E+00	1.33E+03	7.83E+00	2.10E-11	5.00E-01	3.82E-06	4.13E-06	6.50E-06	3.92E+00	5.00E-01	1.91E-06	2.06E-06	3.25E-06	9.75E-06
Pm144	4.93E+01	3.14E+07	4.93E+01	7.00E-09	1.79E-04	2.86E-06	3.09E-06	4.87E-06	4.93E+01	1.79E-04	2.86E-06	3.09E-06	4.87E-06	9.75E-06
Br 78	1.24E+01	3.88E+02	1.24E+01	1.31E-11	5.00E-01	3.78E-06	4.09E-06	6.44E-06	6.20E+00	5.00E-01	1.89E-06	2.04E-06	3.22E-06	9.66E-06
Tb155	1.53E+03	4.60E+05	1.53E+03	2.10E-10	1.79E-04	2.67E-06	2.88E-06	4.54E-06	1.53E+03	1.79E-04	2.67E-06	2.88E-06	4.54E-06	9.07E-06

Ta180	5.84E+03	2.94E+04	5.84E+03	4.70E-11	1.79E-04	2.28E-06	2.46E-06	3.88E-06		5.84E+03	1.79E-04	2.28E-06	2.46E-06	3.88E-06	7.75E-06
Sn113	1.09E+02	9.94E+06	1.09E+02	2.50E-09	1.79E-04	2.26E-06	2.44E-06	3.85E-06		1.09E+02	1.79E-04	2.26E-06	2.44E-06	3.85E-06	7.70E-06
Eu149	1.00E+03	8.04E+06	1.00E+03	2.70E-10	1.79E-04	2.24E-06	2.42E-06	3.81E-06		1.00E+03	1.79E-04	2.24E-06	2.42E-06	3.81E-06	7.62E-06
Tb153	1.27E+03	2.02E+05	1.27E+03	2.00E-10	1.79E-04	2.11E-06	2.28E-06	3.59E-06		1.27E+03	1.79E-04	2.11E-06	2.28E-06	3.59E-06	7.17E-06
W 176	5.71E+03	8.30E+03	5.71E+03	4.40E-11	1.79E-04	2.09E-06	2.25E-06	3.55E-06		5.71E+03	1.79E-04	2.09E-06	2.25E-06	3.55E-06	7.09E-06
Tb151	1.07E+03	6.34E+04	1.07E+03	2.30E-10	1.79E-04	2.04E-06	2.21E-06	3.48E-06		1.07E+03	1.79E-04	2.04E-06	2.21E-06	3.47E-06	6.95E-06
Ta174	5.42E+03	4.25E+03	5.42E+03	4.40E-11	1.79E-04	1.98E-06	2.14E-06	3.37E-06		5.42E+03	1.79E-04	1.98E-06	2.14E-06	3.37E-06	6.73E-06
Nd138	9.02E+02	1.81E+04	9.02E+02	2.60E-10	1.79E-04	1.95E-06	2.10E-06	3.31E-06		9.02E+02	1.79E-04	1.95E-06	2.10E-06	3.31E-06	6.62E-06
Dy150	5.97E+02	4.30E+02	5.97E+02	3.83E-10	1.79E-04	1.90E-06	2.05E-06	3.23E-06		5.97E+02	1.79E-04	1.90E-06	2.05E-06	3.23E-06	6.46E-06
Lu177	1.96E+02	5.74E+05	1.96E+02	1.10E-09	1.79E-04	1.79E-06	1.93E-06	3.04E-06		1.96E+02	1.79E-04	1.79E-06	1.93E-06	3.04E-06	6.09E-06
Tm168	4.75E+01	8.04E+06	4.75E+01	4.40E-09	1.79E-04	1.74E-06	1.87E-06	2.95E-06		4.75E+01	1.79E-04	1.73E-06	1.87E-06	2.95E-06	5.90E-06
Eu150	4.13E+00	1.13E+09	4.13E+00	5.00E-08	1.79E-04	1.71E-06	1.85E-06	2.92E-06		4.13E+00	1.79E-04	1.71E-06	1.85E-06	2.92E-06	5.83E-06
Rh102	1.28E+01	1.79E+07	1.28E+01	1.60E-08	1.79E-04	1.70E-06	1.84E-06	2.89E-06		1.28E+01	1.79E-04	1.70E-06	1.84E-06	2.89E-06	5.78E-06
W 177	7.32E+03	8.10E+03	7.32E+03	2.60E-11	1.79E-04	1.58E-06	1.71E-06	2.69E-06		7.32E+03	1.79E-04	1.58E-06	1.71E-06	2.69E-06	5.37E-06
Er158	1.51E+03	8.10E+03	1.51E+03	1.26E-10	1.79E-04	1.58E-06	1.71E-06	2.69E-06		1.51E+03	1.79E-04	1.58E-06	1.71E-06	2.69E-06	5.37E-06
Y88	4.37E+01	9.21E+06	4.37E+01	4.10E-09	1.79E-04	1.49E-06	1.61E-06	2.53E-06		4.37E+01	1.79E-04	1.49E-06	1.61E-06	2.53E-06	5.06E-06
Br 80	7.95E+00	1.06E+03	7.95E+00	1.00E-11	5.00E-01	1.85E-06	2.00E-06	3.14E-06		3.98E+00	5.00E-01	9.24E-07	9.98E-07	1.57E-06	4.71E-06
Pm146	9.78E+00	1.75E+08	9.78E+00	1.60E-08	1.79E-04	1.30E-06	1.40E-06	2.21E-06		9.78E+00	1.79E-04	1.30E-06	1.40E-06	2.21E-06	4.42E-06
Ba125	1.85E+02	2.10E+02	1.85E+02	8.30E-10	1.79E-04	1.27E-06	1.38E-06	2.17E-06		1.85E+02	1.79E-04	1.27E-06	1.38E-06	2.17E-06	4.34E-06
Tb160	2.19E+01	6.25E+06	2.19E+01	6.60E-09	1.79E-04	1.20E-06	1.30E-06	2.04E-06		2.19E+01	1.79E-04	1.20E-06	1.30E-06	2.04E-06	4.08E-06
Hf179+	3.93E+01	2.17E+06	3.93E+01	3.60E-09	1.79E-04	1.17E-06	1.27E-06	2.00E-06		3.93E+01	1.79E-04	1.17E-06	1.27E-06	2.00E-06	4.00E-06
Ba131	6.15E+02	1.02E+06	6.15E+02	2.30E-10	1.79E-04	1.17E-06	1.27E-06	2.00E-06		6.15E+02	1.79E-04	1.17E-06	1.27E-06	2.00E-06	3.99E-06
Hf178+	1.24E+00	9.78E+08	1.24E+00	1.10E-07	1.79E-04	1.13E-06	1.22E-06	1.93E-06		1.24E+00	1.79E-04	1.13E-06	1.22E-06	1.93E-06	3.85E-06
K45	3.96E+00	1.04E+03	3.96E+00	1.60E-11	5.00E-01	1.47E-06	1.59E-06	2.50E-06		1.98E+00	5.00E-01	7.36E-07	7.95E-07	1.25E-06	3.76E-06
Dy153	1.05E+03	2.30E+04	1.05E+03	1.26E-10	1.79E-04	1.10E-06	1.19E-06	1.87E-06		1.05E+03	1.79E-04	1.10E-06	1.19E-06	1.87E-06	3.74E-06
Zr 88	3.94E+01	7.21E+06	3.94E+01	3.30E-09	1.79E-04	1.08E-06	1.17E-06	1.84E-06		3.94E+01	1.79E-04	1.08E-06	1.17E-06	1.84E-06	3.67E-06
Te121	3.17E+02	1.45E+06	3.17E+02	3.90E-10	1.79E-04	1.03E-06	1.11E-06	1.75E-06		3.17E+02	1.79E-04	1.03E-06	1.11E-06	1.75E-06	3.49E-06
Dy155	1.46E+03	3.60E+04	1.46E+03	8.00E-11	1.79E-04	9.70E-07	1.05E-06	1.65E-06		1.46E+03	1.79E-04	9.69E-07	1.05E-06	1.65E-06	3.30E-06
Te119*	2.24E+02	4.05E+05	2.24E+02	5.18E-10	1.79E-04	9.63E-07	1.04E-06	1.64E-06		2.24E+02	1.79E-04	9.63E-07	1.04E-06	1.64E-06	3.28E-06
Ni 57	2.25E+02	1.28E+05	2.25E+02	5.10E-10	1.79E-04	9.53E-07	1.03E-06	1.62E-06		2.25E+02	1.79E-04	9.52E-07	1.03E-06	1.62E-06	3.24E-06
Re182*	5.52E+02	4.57E+04	5.52E+02	2.00E-10	1.79E-04	9.16E-07	9.90E-07	1.56E-06		5.52E+02	1.79E-04	9.16E-07	9.90E-07	1.56E-06	3.12E-06
La132	6.49E+02	1.73E+04	6.49E+02	1.70E-10	1.79E-04	9.16E-07	9.89E-07	1.56E-06		6.49E+02	1.79E-04	9.16E-07	9.89E-07	1.56E-06	3.12E-06
Ta172	3.02E+03	2.21E+03	3.02E+03	3.60E-11	1.79E-04	9.03E-07	9.75E-07	1.54E-06		3.02E+03	1.79E-04	9.02E-07	9.75E-07	1.53E-06	3.07E-06
Sc 47	1.49E+02	2.89E+05	1.49E+02	7.00E-10	1.79E-04	8.66E-07	9.35E-07	1.47E-06		1.49E+02	1.79E-04	8.66E-07	9.35E-07	1.47E-06	2.95E-06
Er161	1.97E+03	1.16E+04	1.97E+03	5.10E-11	1.79E-04	8.34E-07	9.01E-07	1.42E-06		1.97E+03	1.79E-04	8.34E-07	9.01E-07	1.42E-06	2.84E-06
Ca 45	3.69E+01	1.41E+07	3.69E+01	2.70E-09	1.79E-04	8.27E-07	8.93E-07	1.41E-06		3.69E+01	1.79E-04	8.27E-07	8.93E-07	1.41E-06	2.81E-06
Ni 63	2.24E+02	3.16E+09	2.24E+02	4.40E-10	1.79E-04	8.18E-07	8.84E-07	1.39E-06		2.24E+02	1.79E-04	8.18E-07	8.84E-07	1.39E-06	2.78E-06
Lu167	2.51E+03	3.09E+03	2.51E+03	3.91E-11	1.79E-04	8.15E-07	8.80E-07	1.39E-06		2.51E+03	1.79E-04	8.15E-07	8.80E-07	1.39E-06	2.77E-06
Br 82*	3.50E+00	3.68E+02	3.50E+00	1.23E-11	5.00E-01	1.00E-06	1.08E-06	1.71E-06		1.75E+00	5.00E-01	5.02E-07	5.42E-07	8.53E-07	2.56E-06
Dy151	6.67E+02	1.07E+03	6.67E+02	1.31E-10	1.79E-04	7.25E-07	7.83E-07	1.23E-06		6.67E+02	1.79E-04	7.25E-07	7.83E-07	1.23E-06	2.47E-06

Sr 82	1.44E+01	2.21E+06	1.44E+01	2.20E-09	1.79E-04	2.63E-07	2.84E-07	4.47E-07	1.44E+01	1.79E-04	2.63E-07	2.84E-07	4.47E-07	8.95E-07
Co 55	5.69E+01	6.31E+04	5.69E+01	5.50E-10	1.79E-04	2.60E-07	2.81E-07	4.42E-07	5.69E+01	1.79E-04	2.60E-07	2.81E-07	4.42E-07	8.84E-07
Nb 95*	3.66E+01	3.12E+05	3.66E+01	8.50E-10	1.79E-04	2.58E-07	2.79E-07	4.39E-07	3.66E+01	1.79E-04	2.58E-07	2.79E-07	4.39E-07	8.79E-07
Ho166	4.55E+01	9.66E+04	4.55E+01	6.60E-10	1.79E-04	2.49E-07	2.69E-07	4.24E-07	4.55E+01	1.79E-04	2.49E-07	2.69E-07	4.24E-07	8.48E-07
Tb156	2.49E+01	4.62E+05	2.49E+01	1.20E-09	1.79E-04	2.48E-07	2.68E-07	4.22E-07	2.49E+01	1.79E-04	2.48E-07	2.68E-07	4.22E-07	8.44E-07
Zr 89	5.37E+01	2.82E+05	5.37E+01	5.50E-10	1.79E-04	2.45E-07	2.65E-07	4.17E-07	5.37E+01	1.79E-04	2.45E-07	2.65E-07	4.17E-07	8.34E-07
Nb 90	4.23E+01	5.26E+04	4.23E+01	6.90E-10	1.79E-04	2.42E-07	2.62E-07	4.12E-07	4.23E+01	1.79E-04	2.42E-07	2.62E-07	4.12E-07	8.24E-07
S37	1.88E+00	3.03E+02	1.88E+00	7.38E-12	5.00E-01	3.22E-07	3.48E-07	5.48E-07	9.40E-01	5.00E-01	1.61E-07	1.74E-07	2.74E-07	8.23E-07
Tm162	1.82E+03	1.30E+03	1.82E+03	1.60E-11	1.79E-04	2.42E-07	2.61E-07	4.11E-07	1.82E+03	1.79E-04	2.42E-07	2.61E-07	4.11E-07	8.22E-07
As 74	1.37E+01	1.54E+06	1.37E+01	2.10E-09	1.79E-04	2.39E-07	2.58E-07	4.06E-07	1.37E+01	1.79E-04	2.39E-07	2.58E-07	4.06E-07	8.12E-07
In111	1.20E+02	2.45E+05	1.20E+02	2.30E-10	1.79E-04	2.29E-07	2.47E-07	3.90E-07	1.20E+02	1.79E-04	2.29E-07	2.47E-07	3.90E-07	7.79E-07
Se 75	1.89E+01	1.04E+07	1.89E+01	1.40E-09	1.79E-04	2.20E-07	2.37E-07	3.74E-07	1.89E+01	1.79E-04	2.20E-07	2.37E-07	3.74E-07	7.47E-07
Xe122	1.89E+02	7.24E+04	1.89E+02	5.00E-14	1.00E+00	4.39E-07	4.74E-07	7.47E-07	0.00E+00	1.00E+00	0.00E+00	0.00E+00	0.00E+00	7.47E-07
Ta178	1.58E+04	5.59E+02	1.58E+04	1.66E-12	1.79E-04	2.18E-07	2.35E-07	3.70E-07	1.58E+04	1.79E-04	2.18E-07	2.35E-07	3.70E-07	7.41E-07
Er159	1.51E+03	2.16E+03	1.51E+03	1.72E-11	1.79E-04	2.16E-07	2.33E-07	3.67E-07	1.51E+03	1.79E-04	2.16E-07	2.33E-07	3.67E-07	7.33E-07
Lu168	2.39E+03	3.30E+02	2.39E+03	1.08E-11	1.79E-04	2.14E-07	2.31E-07	3.64E-07	2.39E+03	1.79E-04	2.14E-07	2.31E-07	3.64E-07	7.29E-07
Ho160	1.95E+03	1.54E+03	1.95E+03	1.32E-11	1.79E-04	2.14E-07	2.31E-07	3.63E-07	1.95E+03	1.79E-04	2.14E-07	2.31E-07	3.63E-07	7.27E-07
Cs129	5.54E+02	1.15E+05	5.54E+02	4.50E-11	1.79E-04	2.07E-07	2.24E-07	3.52E-07	5.54E+02	1.79E-04	2.07E-07	2.23E-07	3.52E-07	7.04E-07
Dy149	3.46E+02	2.54E+02	3.46E+02	6.93E-11	1.79E-04	1.99E-07	2.15E-07	3.39E-07	3.46E+02	1.79E-04	1.99E-07	2.15E-07	3.39E-07	6.77E-07
Si 32	2.13E-01	4.17E+09	2.13E-01	1.10E-07	1.79E-04	1.95E-07	2.10E-07	3.31E-07	2.13E-01	1.79E-04	1.94E-07	2.10E-07	3.31E-07	6.62E-07
Ho155	1.17E+03	2.88E+03	1.17E+03	2.00E-11	1.79E-04	1.94E-07	2.10E-07	3.30E-07	1.17E+03	1.79E-04	1.94E-07	2.10E-07	3.30E-07	6.61E-07
Zr 95	4.20E+00	5.53E+06	4.20E+00	5.50E-09	1.79E-04	1.92E-07	2.07E-07	3.26E-07	4.20E+00	1.79E-04	1.92E-07	2.07E-07	3.26E-07	6.52E-07
As 73	2.46E+01	6.94E+06	2.46E+01	9.30E-10	1.79E-04	1.90E-07	2.05E-07	3.23E-07	2.46E+01	1.79E-04	1.90E-07	2.05E-07	3.23E-07	6.46E-07
Rb 83	3.10E+01	7.45E+06	3.10E+01	7.10E-10	1.79E-04	1.83E-07	1.97E-07	3.11E-07	3.10E+01	1.79E-04	1.83E-07	1.97E-07	3.11E-07	6.22E-07
Te119	2.24E+02	5.78E+04	2.24E+02	9.82E-11	1.79E-04	1.83E-07	1.97E-07	3.11E-07	2.24E+02	1.79E-04	1.83E-07	1.97E-07	3.11E-07	6.21E-07
Ho158	1.76E+03	6.60E+02	1.76E+03	1.21E-11	1.79E-04	1.77E-07	1.91E-07	3.01E-07	1.76E+03	1.79E-04	1.77E-07	1.91E-07	3.01E-07	6.01E-07
Ta170	1.51E+03	4.06E+02	1.51E+03	1.39E-11	1.79E-04	1.74E-07	1.88E-07	2.96E-07	1.51E+03	1.79E-04	1.74E-07	1.88E-07	2.96E-07	5.92E-07
Pr139	1.04E+03	1.59E+04	1.04E+03	2.00E-11	1.79E-04	1.73E-07	1.86E-07	2.94E-07	1.04E+03	1.79E-04	1.73E-07	1.86E-07	2.94E-07	5.87E-07
Er165	2.47E+03	3.73E+04	2.47E+03	8.30E-12	1.79E-04	1.70E-07	1.84E-07	2.89E-07	2.47E+03	1.79E-04	1.70E-07	1.84E-07	2.89E-07	5.79E-07
Yb167	2.97E+03	1.05E+03	2.97E+03	6.90E-12	1.79E-04	1.70E-07	1.84E-07	2.89E-07	2.97E+03	1.79E-04	1.70E-07	1.84E-07	2.89E-07	5.79E-07
Lu165	1.43E+03	6.44E+02	1.43E+03	1.41E-11	1.79E-04	1.67E-07	1.81E-07	2.85E-07	1.43E+03	1.79E-04	1.67E-07	1.81E-07	2.85E-07	5.69E-07
Nd137	6.78E+02	2.31E+03	6.78E+02	2.94E-11	1.79E-04	1.65E-07	1.79E-07	2.81E-07	6.78E+02	1.79E-04	1.65E-07	1.79E-07	2.81E-07	5.63E-07
Ta182+	9.03E+02	9.50E+02	9.03E+02	2.20E-11	1.79E-04	1.65E-07	1.78E-07	2.81E-07	9.03E+02	1.79E-04	1.65E-07	1.78E-07	2.80E-07	5.61E-07
W 173	1.16E+03	4.78E+02	1.16E+03	1.69E-11	1.79E-04	1.63E-07	1.76E-07	2.77E-07	1.16E+03	1.79E-04	1.63E-07	1.76E-07	2.77E-07	5.53E-07
Pm147	4.24E+00	8.28E+07	4.24E+00	4.60E-09	1.79E-04	1.62E-07	1.75E-07	2.75E-07	4.24E+00	1.79E-04	1.62E-07	1.75E-07	2.75E-07	5.51E-07
As 72	2.11E+01	9.36E+04	2.11E+01	9.20E-10	1.79E-04	1.61E-07	1.74E-07	2.74E-07	2.11E+01	1.79E-04	1.61E-07	1.74E-07	2.74E-07	5.48E-07
Tm160	9.41E+02	5.64E+02	9.41E+02	2.06E-11	1.79E-04	1.61E-07	1.74E-07	2.74E-07	9.41E+02	1.79E-04	1.61E-07	1.74E-07	2.74E-07	5.47E-07
Tm159	9.68E+02	5.49E+02	9.68E+02	1.99E-11	1.79E-04	1.60E-07	1.73E-07	2.73E-07	9.68E+02	1.79E-04	1.60E-07	1.73E-07	2.73E-07	5.45E-07
Ni 56	2.20E+01	5.27E+05	2.20E+01	8.60E-10	1.79E-04	1.57E-07	1.70E-07	2.67E-07	2.20E+01	1.79E-04	1.57E-07	1.70E-07	2.67E-07	5.34E-07
Ag106*	1.71E+01	7.31E+05	1.71E+01	1.10E-09	1.79E-04	1.56E-07	1.69E-07	2.66E-07	1.71E+01	1.79E-04	1.56E-07	1.69E-07	2.66E-07	5.31E-07

Er157	1.00E+03	1.12E+03	1.00E+03	1.86E-11	1.79E-04	1.54E-07	1.67E-07	2.63E-07	1.00E+03	1.79E-04	1.54E-07	1.67E-07	2.63E-07	5.25E-07
Pr137	8.37E+02	4.61E+03	8.37E+02	2.20E-11	1.79E-04	1.53E-07	1.65E-07	2.60E-07	8.37E+02	1.79E-04	1.53E-07	1.65E-07	2.60E-07	5.20E-07
Yb162	1.27E+03	1.13E+03	1.27E+03	1.40E-11	1.79E-04	1.48E-07	1.59E-07	2.51E-07	1.27E+03	1.79E-04	1.48E-07	1.59E-07	2.51E-07	5.02E-07
Cs131	6.20E+02	8.37E+05	6.20E+02	2.80E-11	1.79E-04	1.44E-07	1.56E-07	2.45E-07	6.20E+02	1.79E-04	1.44E-07	1.56E-07	2.45E-07	4.90E-07
Sr 90	7.10E-01	9.09E+08	7.10E-01	2.40E-08	1.79E-04	1.41E-07	1.53E-07	2.41E-07	7.10E-01	1.79E-04	1.41E-07	1.53E-07	2.41E-07	4.81E-07
Tb147	2.12E+02	5.90E+03	2.12E+02	7.90E-11	1.79E-04	1.39E-07	1.50E-07	2.36E-07	2.12E+02	1.79E-04	1.39E-07	1.50E-07	2.36E-07	4.73E-07
Ba129*	4.23E+02	7.81E+03	4.23E+02	3.93E-11	1.79E-04	1.38E-07	1.49E-07	2.35E-07	4.23E+02	1.79E-04	1.38E-07	1.49E-07	2.35E-07	4.69E-07
Y87	4.14E+01	2.89E+05	4.14E+01	4.00E-10	1.79E-04	1.37E-07	1.48E-07	2.34E-07	4.14E+01	1.79E-04	1.37E-07	1.48E-07	2.34E-07	4.68E-07
W 179	1.67E+04	2.25E+03	1.67E+04	9.90E-13	1.79E-04	1.37E-07	1.48E-07	2.33E-07	1.67E+04	1.79E-04	1.37E-07	1.48E-07	2.33E-07	4.67E-07
Er156	8.46E+02	1.17E+03	8.46E+02	1.93E-11	1.79E-04	1.36E-07	1.46E-07	2.31E-07	8.46E+02	1.79E-04	1.36E-07	1.46E-07	2.31E-07	4.61E-07
Yb175	2.32E+01	3.62E+05	2.32E+01	7.00E-10	1.79E-04	1.35E-07	1.46E-07	2.29E-07	2.32E+01	1.79E-04	1.35E-07	1.46E-07	2.29E-07	4.59E-07
Re179	1.26E+03	1.17E+03	1.26E+03	1.22E-11	1.79E-04	1.28E-07	1.38E-07	2.17E-07	1.26E+03	1.79E-04	1.28E-07	1.38E-07	2.17E-07	4.34E-07
Sm143	8.02E+02	5.30E+02	8.02E+02	1.91E-11	1.79E-04	1.27E-07	1.37E-07	2.16E-07	8.02E+02	1.79E-04	1.27E-07	1.37E-07	2.16E-07	4.33E-07
Y86	3.04E+01	5.31E+04	3.04E+01	4.90E-10	1.79E-04	1.24E-07	1.34E-07	2.10E-07	3.04E+01	1.79E-04	1.24E-07	1.34E-07	2.10E-07	4.21E-07
Pd103	3.72E+01	1.47E+06	3.72E+01	4.00E-10	1.79E-04	1.24E-07	1.33E-07	2.10E-07	3.72E+01	1.79E-04	1.24E-07	1.33E-07	2.10E-07	4.20E-07
La133	6.54E+02	1.41E+04	6.54E+02	2.27E-11	1.79E-04	1.23E-07	1.33E-07	2.10E-07	6.54E+02	1.79E-04	1.23E-07	1.33E-07	2.10E-07	4.19E-07
Pm141	9.04E+02	1.25E+03	9.04E+02	1.60E-11	1.79E-04	1.20E-07	1.30E-07	2.04E-07	9.04E+02	1.79E-04	1.20E-07	1.30E-07	2.04E-07	4.08E-07
Se 72	3.85E+00	7.26E+05	3.85E+00	3.65E-09	1.79E-04	1.17E-07	1.26E-07	1.98E-07	3.85E+00	1.79E-04	1.17E-07	1.26E-07	1.98E-07	3.97E-07
Pr134	4.51E+02	1.02E+03	4.51E+02	3.09E-11	1.79E-04	1.16E-07	1.25E-07	1.97E-07	4.51E+02	1.79E-04	1.16E-07	1.25E-07	1.97E-07	3.94E-07
Nb 96	2.02E+01	8.41E+04	2.02E+01	6.80E-10	1.79E-04	1.14E-07	1.23E-07	1.94E-07	2.02E+01	1.79E-04	1.14E-07	1.23E-07	1.94E-07	3.88E-07
Pr136	8.89E+02	7.86E+02	8.89E+02	1.50E-11	1.79E-04	1.11E-07	1.20E-07	1.88E-07	8.89E+02	1.79E-04	1.11E-07	1.20E-07	1.88E-07	3.77E-07
Pr135	6.17E+02	1.44E+03	6.17E+02	2.13E-11	1.79E-04	1.09E-07	1.18E-07	1.86E-07	6.17E+02	1.79E-04	1.09E-07	1.18E-07	1.86E-07	3.71E-07
Ag110*	1.08E+00	2.16E+07	1.08E+00	1.20E-08	1.79E-04	1.08E-07	1.16E-07	1.83E-07	1.08E+00	1.79E-04	1.08E-07	1.16E-07	1.83E-07	3.66E-07
Ho161	2.04E+03	8.93E+03	2.04E+03	6.30E-12	1.79E-04	1.07E-07	1.15E-07	1.81E-07	2.04E+03	1.79E-04	1.07E-07	1.15E-07	1.81E-07	3.63E-07
Rb 84	1.16E+01	2.84E+06	1.16E+01	1.10E-09	1.79E-04	1.06E-07	1.14E-07	1.80E-07	1.16E+01	1.79E-04	1.06E-07	1.14E-07	1.80E-07	3.60E-07
La131	5.46E+02	3.54E+03	5.46E+02	2.30E-11	1.79E-04	1.04E-07	1.13E-07	1.77E-07	5.46E+02	1.79E-04	1.04E-07	1.13E-07	1.77E-07	3.55E-07
Yb163	1.45E+03	6.63E+02	1.45E+03	8.33E-12	1.79E-04	1.00E-07	1.08E-07	1.71E-07	1.45E+03	1.79E-04	1.00E-07	1.08E-07	1.71E-07	3.41E-07
Ca 47	6.69E+00	3.92E+05	6.69E+00	1.80E-09	1.79E-04	1.00E-07	1.08E-07	1.70E-07	6.69E+00	1.79E-04	1.00E-07	1.08E-07	1.70E-07	3.40E-07
Lu179	1.00E+02	1.65E+04	1.00E+02	1.20E-10	1.79E-04	9.96E-08	1.08E-07	1.69E-07	1.00E+02	1.79E-04	9.96E-08	1.08E-07	1.69E-07	3.39E-07
Xe121	8.52E+01	2.41E+03	8.52E+01	5.00E-14	1.00E+00	1.98E-07	2.14E-07	3.37E-07	0.00E+00	1.00E+00	0.00E+00	0.00E+00	0.00E+00	3.37E-07
Re178	7.87E+02	7.92E+02	7.87E+02	1.50E-11	1.79E-04	9.80E-08	1.06E-07	1.67E-07	7.87E+02	1.79E-04	9.80E-08	1.06E-07	1.67E-07	3.33E-07
Sr 85	3.02E+01	5.60E+06	3.02E+01	3.90E-10	1.79E-04	9.78E-08	1.06E-07	1.66E-07	3.02E+01	1.79E-04	9.78E-08	1.06E-07	1.66E-07	3.33E-07
Nb 93*	7.36E+00	5.09E+08	7.36E+00	1.60E-09	1.79E-04	9.78E-08	1.06E-07	1.66E-07	7.36E+00	1.79E-04	9.77E-08	1.06E-07	1.66E-07	3.33E-07
Ho154	7.63E+02	7.10E+02	7.63E+02	1.54E-11	1.79E-04	9.75E-08	1.05E-07	1.66E-07	7.63E+02	1.79E-04	9.75E-08	1.05E-07	1.66E-07	3.32E-07
La135	7.72E+02	7.02E+04	7.72E+02	1.50E-11	1.79E-04	9.61E-08	1.04E-07	1.64E-07	7.72E+02	1.79E-04	9.61E-08	1.04E-07	1.63E-07	3.27E-07
Hf169	1.96E+03	1.94E+02	1.96E+03	5.74E-12	1.79E-04	9.34E-08	1.01E-07	1.59E-07	1.96E+03	1.79E-04	9.34E-08	1.01E-07	1.59E-07	3.18E-07
Ru103	3.90E+00	3.39E+06	3.90E+00	2.80E-09	1.79E-04	9.07E-08	9.79E-08	1.54E-07	3.90E+00	1.79E-04	9.06E-08	9.79E-08	1.54E-07	3.08E-07
Ho159	1.73E+03	1.98E+03	1.73E+03	6.30E-12	1.79E-04	9.05E-08	9.77E-08	1.54E-07	1.73E+03	1.79E-04	9.05E-08	9.77E-08	1.54E-07	3.08E-07
Sb119	2.94E+02	1.37E+05	2.94E+02	3.70E-11	1.79E-04	9.03E-08	9.75E-08	1.54E-07	2.94E+02	1.79E-04	9.03E-08	9.75E-08	1.54E-07	3.07E-07
Hf180*	7.75E+01	1.98E+04	7.75E+01	1.40E-10	1.79E-04	9.01E-08	9.73E-08	1.53E-07	7.75E+01	1.79E-04	9.01E-08	9.73E-08	1.53E-07	3.06E-07

Cs127	4.90E+02	2.25E+04	4.90E+02	2.20E-11	1.79E-04	8.95E-08	9.67E-08	1.52E-07	4.90E+02	1.79E-04	8.95E-08	9.66E-08	1.52E-07	3.04E-07
Re177	7.64E+02	8.40E+02	7.64E+02	1.40E-11	1.79E-04	8.88E-08	9.59E-08	1.51E-07	7.64E+02	1.79E-04	8.88E-08	9.59E-08	1.51E-07	3.02E-07
Yb165	2.09E+03	5.94E+02	2.09E+03	5.05E-12	1.79E-04	8.76E-08	9.46E-08	1.49E-07	2.09E+03	1.79E-04	8.76E-08	9.46E-08	1.49E-07	2.98E-07
Cs134	1.44E+00	6.51E+07	1.44E+00	6.80E-09	1.79E-04	8.13E-08	8.78E-08	1.38E-07	1.44E+00	1.79E-04	8.13E-08	8.78E-08	1.38E-07	2.77E-07
Tm171	7.46E+00	6.06E+07	7.46E+00	1.30E-09	1.79E-04	8.05E-08	8.69E-08	1.37E-07	7.46E+00	1.79E-04	8.05E-08	8.69E-08	1.37E-07	2.74E-07
Rh100	2.62E+01	7.49E+04	2.62E+01	3.70E-10	1.79E-04	8.05E-08	8.69E-08	1.37E-07	2.62E+01	1.79E-04	8.05E-08	8.69E-08	1.37E-07	2.74E-07
Ce130	2.73E+02	1.50E+03	2.73E+02	3.53E-11	1.79E-04	8.00E-08	8.64E-08	1.36E-07	2.73E+02	1.79E-04	8.00E-08	8.64E-08	1.36E-07	2.72E-07
Eu152*	4.38E+01	3.36E+04	4.38E+01	2.20E-10	1.79E-04	8.00E-08	8.64E-08	1.36E-07	4.38E+01	1.79E-04	8.00E-08	8.64E-08	1.36E-07	2.72E-07
Ce137	8.75E+02	3.24E+04	8.75E+02	1.10E-11	1.79E-04	7.99E-08	8.63E-08	1.36E-07	8.75E+02	1.79E-04	7.99E-08	8.63E-08	1.36E-07	2.72E-07
Y90	6.40E+00	2.30E+05	6.40E+00	1.50E-09	1.79E-04	7.97E-08	8.61E-08	1.36E-07	6.40E+00	1.79E-04	7.97E-08	8.61E-08	1.36E-07	2.71E-07
Nd139	8.72E+02	1.78E+03	8.72E+02	1.10E-11	1.79E-04	7.96E-08	8.60E-08	1.35E-07	8.72E+02	1.79E-04	7.96E-08	8.60E-08	1.35E-07	2.71E-07
Ta169	9.28E+02	2.94E+02	9.28E+02	9.43E-12	1.79E-04	7.26E-08	7.84E-08	1.24E-07	9.28E+02	1.79E-04	7.26E-08	7.84E-08	1.24E-07	2.47E-07
Sn117*	3.76E+00	1.18E+06	3.76E+00	2.30E-09	1.79E-04	7.18E-08	7.75E-08	1.22E-07	3.76E+00	1.79E-04	7.18E-08	7.75E-08	1.22E-07	2.44E-07
Hf166	6.15E+02	4.06E+02	6.15E+02	1.39E-11	1.79E-04	7.09E-08	7.66E-08	1.21E-07	6.15E+02	1.79E-04	7.09E-08	7.66E-08	1.21E-07	2.41E-07
Ba129	4.23E+02	8.00E+03	4.23E+02	1.99E-11	1.79E-04	6.99E-08	7.55E-08	1.19E-07	4.23E+02	1.79E-04	6.99E-08	7.55E-08	1.19E-07	2.38E-07
W 172	6.11E+02	4.00E+02	6.11E+02	1.36E-11	1.79E-04	6.92E-08	7.47E-08	1.18E-07	6.11E+02	1.79E-04	6.92E-08	7.47E-08	1.18E-07	2.35E-07
Ti 45	8.48E+01	1.11E+04	8.48E+01	9.60E-11	1.79E-04	6.76E-08	7.30E-08	1.15E-07	8.48E+01	1.79E-04	6.76E-08	7.30E-08	1.15E-07	2.30E-07
Ni 65	9.29E+01	9.06E+03	9.29E+01	8.70E-11	1.79E-04	6.71E-08	7.25E-08	1.14E-07	9.29E+01	1.79E-04	6.71E-08	7.25E-08	1.14E-07	2.28E-07
Sm140	2.51E+02	8.89E+02	2.51E+02	3.22E-11	1.79E-04	6.71E-08	7.25E-08	1.14E-07	2.51E+02	1.79E-04	6.71E-08	7.25E-08	1.14E-07	2.28E-07
Ni 66	4.90E+00	1.97E+05	4.90E+00	1.60E-09	1.79E-04	6.51E-08	7.03E-08	1.11E-07	4.90E+00	1.79E-04	6.51E-08	7.03E-08	1.11E-07	2.21E-07
In110	5.59E+01	1.76E+04	5.59E+01	1.40E-10	1.79E-04	6.50E-08	7.02E-08	1.11E-07	5.59E+01	1.79E-04	6.50E-08	7.02E-08	1.10E-07	2.21E-07
Sb120*	7.57E+00	4.98E+05	7.57E+00	1.00E-09	1.79E-04	6.28E-08	6.79E-08	1.07E-07	7.57E+00	1.79E-04	6.28E-08	6.79E-08	1.07E-07	2.14E-07
Tc 96	1.06E+01	3.70E+05	1.06E+01	7.10E-10	1.79E-04	6.25E-08	6.75E-08	1.06E-07	1.06E+01	1.79E-04	6.25E-08	6.75E-08	1.06E-07	2.13E-07
Gd145	3.52E+02	1.38E+03	3.52E+02	2.10E-11	1.79E-04	6.14E-08	6.63E-08	1.04E-07	3.52E+02	1.79E-04	6.14E-08	6.63E-08	1.04E-07	2.09E-07
Tm172	6.22E+00	2.29E+05	6.22E+00	1.10E-09	1.79E-04	5.68E-08	6.13E-08	9.66E-08	6.22E+00	1.79E-04	5.68E-08	6.13E-08	9.66E-08	1.93E-07
Ho157	1.44E+03	7.56E+02	1.44E+03	4.50E-12	1.79E-04	5.38E-08	5.81E-08	9.15E-08	1.44E+03	1.79E-04	5.38E-08	5.81E-08	9.15E-08	1.83E-07
Pd100	7.80E+00	3.14E+05	7.80E+00	8.30E-10	1.79E-04	5.37E-08	5.80E-08	9.14E-08	7.80E+00	1.79E-04	5.37E-08	5.80E-08	9.14E-08	1.83E-07
Cd115*	8.55E-01	3.85E+06	8.55E-01	7.30E-09	1.79E-04	5.18E-08	5.60E-08	8.81E-08	8.55E-01	1.79E-04	5.18E-08	5.59E-08	8.81E-08	1.76E-07
Sn110	3.86E+01	1.48E+04	3.86E+01	1.60E-10	1.79E-04	5.13E-08	5.54E-08	8.72E-08	3.86E+01	1.79E-04	5.13E-08	5.54E-08	8.72E-08	1.74E-07
Yb161	7.86E+02	2.52E+02	7.86E+02	7.83E-12	1.79E-04	5.11E-08	5.52E-08	8.70E-08	7.86E+02	1.79E-04	5.11E-08	5.52E-08	8.69E-08	1.74E-07
Cr 49	1.60E+02	2.54E+03	1.60E+02	3.70E-11	1.79E-04	4.91E-08	5.31E-08	8.36E-08	1.60E+02	1.79E-04	4.91E-08	5.31E-08	8.36E-08	1.67E-07
Ag111	3.42E+00	6.44E+05	3.42E+00	1.70E-09	1.79E-04	4.83E-08	5.21E-08	8.21E-08	3.42E+00	1.79E-04	4.83E-08	5.21E-08	8.21E-08	1.64E-07
Zr 86	1.28E+01	5.94E+04	1.28E+01	4.50E-10	1.79E-04	4.78E-08	5.16E-08	8.13E-08	1.28E+01	1.79E-04	4.78E-08	5.16E-08	8.13E-08	1.63E-07
Yb160	6.21E+02	2.88E+02	6.21E+02	9.20E-12	1.79E-04	4.74E-08	5.12E-08	8.06E-08	6.21E+02	1.79E-04	4.74E-08	5.12E-08	8.06E-08	1.61E-07
Lu166	1.25E+03	1.59E+02	1.25E+03	4.51E-12	1.79E-04	4.68E-08	5.05E-08	7.96E-08	1.25E+03	1.79E-04	4.68E-08	5.05E-08	7.96E-08	1.59E-07
La130	4.86E+02	5.22E+02	4.86E+02	1.15E-11	1.79E-04	4.64E-08	5.01E-08	7.89E-08	4.86E+02	1.79E-04	4.64E-08	5.01E-08	7.89E-08	1.58E-07
Nb 91*	1.34E+00	5.36E+06	1.34E+00	4.12E-09	1.79E-04	4.58E-08	4.95E-08	7.80E-08	1.34E+00	1.79E-04	4.58E-08	4.95E-08	7.79E-08	1.56E-07
Nd141	1.02E+03	8.96E+03	1.02E+03	5.30E-12	1.79E-04	4.49E-08	4.85E-08	7.63E-08	1.02E+03	1.79E-04	4.49E-08	4.85E-08	7.63E-08	1.53E-07
Mo101	1.96E+02	8.77E+02	1.96E+02	2.70E-11	1.79E-04	4.39E-08	4.74E-08	7.47E-08	1.96E+02	1.79E-04	4.39E-08	4.74E-08	7.47E-08	1.49E-07
Te117	1.71E+02	3.72E+03	1.71E+02	3.09E-11	1.79E-04	4.39E-08	4.74E-08	7.46E-08	1.71E+02	1.79E-04	4.39E-08	4.74E-08	7.46E-08	1.49E-07

Rb 86	5.49E+00	1.61E+06	5.49E+00	9.60E-10	1.79E-04	4.38E-08	4.73E-08	7.44E-08	5.49E+00	1.79E-04	4.37E-08	4.72E-08	7.44E-08	1.49E-07
Cd107	5.95E+01	2.34E+04	5.95E+01	8.70E-11	1.79E-04	4.30E-08	4.64E-08	7.31E-08	5.95E+01	1.79E-04	4.30E-08	4.64E-08	7.31E-08	1.46E-07
As 71	1.29E+01	2.35E+05	1.29E+01	4.00E-10	1.79E-04	4.28E-08	4.63E-08	7.29E-08	1.29E+01	1.79E-04	4.28E-08	4.63E-08	7.29E-08	1.46E-07
Cu 67	8.60E+00	2.23E+05	8.60E+00	5.80E-10	1.79E-04	4.14E-08	4.47E-08	7.04E-08	8.60E+00	1.79E-04	4.14E-08	4.47E-08	7.04E-08	1.41E-07
Er155	4.71E+02	3.18E+02	4.71E+02	1.04E-11	1.79E-04	4.05E-08	4.37E-08	6.89E-08	4.71E+02	1.79E-04	4.05E-08	4.37E-08	6.89E-08	1.38E-07
Lu164	8.81E+02	1.88E+02	8.81E+02	5.53E-12	1.79E-04	4.04E-08	4.37E-08	6.88E-08	8.81E+02	1.79E-04	4.04E-08	4.36E-08	6.87E-08	1.37E-07
Ho152	2.60E+02	1.62E+02	2.60E+02	1.87E-11	1.79E-04	4.04E-08	4.36E-08	6.87E-08	2.60E+02	1.79E-04	4.04E-08	4.36E-08	6.86E-08	1.37E-07
Cs125	3.66E+02	2.70E+03	3.66E+02	1.30E-11	1.79E-04	3.95E-08	4.27E-08	6.72E-08	3.66E+02	1.79E-04	3.95E-08	4.27E-08	6.72E-08	1.34E-07
As 76	6.42E+00	9.48E+04	6.42E+00	7.40E-10	1.79E-04	3.94E-08	4.26E-08	6.71E-08	6.42E+00	1.79E-04	3.94E-08	4.26E-08	6.71E-08	1.34E-07
Tm158	6.39E+02	2.41E+02	6.39E+02	7.43E-12	1.79E-04	3.94E-08	4.25E-08	6.70E-08	6.39E+02	1.79E-04	3.94E-08	4.25E-08	6.70E-08	1.34E-07
Lu163	6.36E+02	2.38E+02	6.36E+02	7.32E-12	1.79E-04	3.86E-08	4.17E-08	6.57E-08	6.36E+02	1.79E-04	3.86E-08	4.17E-08	6.57E-08	1.31E-07
Re176	4.28E+02	3.40E+02	4.28E+02	1.05E-11	1.79E-04	3.73E-08	4.03E-08	6.35E-08	4.28E+02	1.79E-04	3.73E-08	4.03E-08	6.34E-08	1.27E-07
La134	8.07E+02	3.87E+02	8.07E+02	5.55E-12	1.79E-04	3.72E-08	4.02E-08	6.32E-08	8.07E+02	1.79E-04	3.72E-08	4.01E-08	6.32E-08	1.26E-07
Mn 51	1.04E+02	2.77E+03	1.04E+02	4.30E-11	1.79E-04	3.71E-08	4.01E-08	6.31E-08	1.04E+02	1.79E-04	3.71E-08	4.01E-08	6.31E-08	1.26E-07
Pm148*	8.13E-01	3.57E+06	8.13E-01	5.40E-09	1.79E-04	3.64E-08	3.94E-08	6.20E-08	8.13E-01	1.79E-04	3.64E-08	3.94E-08	6.20E-08	1.24E-07
Sb117	2.53E+02	1.01E+04	2.53E+02	1.70E-11	1.79E-04	3.57E-08	3.86E-08	6.07E-08	2.53E+02	1.79E-04	3.57E-08	3.86E-08	6.07E-08	1.21E-07
Pm139	5.55E+02	2.49E+02	5.55E+02	7.72E-12	1.79E-04	3.56E-08	3.84E-08	6.05E-08	5.55E+02	1.79E-04	3.56E-08	3.84E-08	6.05E-08	1.21E-07
Nd135	1.53E+02	7.40E+02	1.53E+02	2.70E-11	1.79E-04	3.43E-08	3.70E-08	5.83E-08	1.53E+02	1.79E-04	3.43E-08	3.70E-08	5.83E-08	1.17E-07
Ge 69	1.41E+01	1.41E+05	1.41E+01	2.90E-10	1.79E-04	3.39E-08	3.67E-08	5.77E-08	1.41E+01	1.79E-04	3.39E-08	3.67E-08	5.77E-08	1.15E-07
Te125*	1.23E+00	5.01E+06	1.23E+00	3.30E-09	1.79E-04	3.37E-08	3.64E-08	5.73E-08	1.23E+00	1.79E-04	3.37E-08	3.64E-08	5.73E-08	1.15E-07
La129	3.28E+02	6.96E+02	3.28E+02	1.20E-11	1.79E-04	3.27E-08	3.53E-08	5.56E-08	3.28E+02	1.79E-04	3.27E-08	3.53E-08	5.56E-08	1.11E-07
Sr 89	3.93E+00	4.37E+06	3.93E+00	1.00E-09	1.79E-04	3.26E-08	3.52E-08	5.55E-08	3.93E+00	1.79E-04	3.26E-08	3.52E-08	5.55E-08	1.11E-07
Tb154	1.03E+01	7.74E+04	1.03E+01	3.80E-10	1.79E-04	3.25E-08	3.51E-08	5.53E-08	1.03E+01	1.79E-04	3.25E-08	3.51E-08	5.53E-08	1.11E-07
Ga 67	1.70E+01	2.82E+05	1.70E+01	2.30E-10	1.79E-04	3.25E-08	3.51E-08	5.52E-08	1.70E+01	1.79E-04	3.25E-08	3.50E-08	5.52E-08	1.10E-07
Re175	3.32E+02	3.48E+02	3.32E+02	1.15E-11	1.79E-04	3.18E-08	3.44E-08	5.41E-08	3.32E+02	1.79E-04	3.18E-08	3.43E-08	5.41E-08	1.08E-07
Zn 72	3.19E+00	1.67E+05	3.19E+00	1.20E-09	1.79E-04	3.18E-08	3.43E-08	5.41E-08	3.19E+00	1.79E-04	3.18E-08	3.43E-08	5.40E-08	1.08E-07
Ga 72	6.95E+00	5.08E+04	6.95E+00	5.50E-10	1.79E-04	3.17E-08	3.43E-08	5.40E-08	6.95E+00	1.79E-04	3.17E-08	3.43E-08	5.40E-08	1.08E-07
Eu155	5.66E-01	1.50E+08	5.66E-01	6.50E-09	1.79E-04	3.05E-08	3.30E-08	5.20E-08	5.66E-01	1.79E-04	3.05E-08	3.30E-08	5.19E-08	1.04E-07
Sb122	3.67E+00	2.33E+05	3.67E+00	1.00E-09	1.79E-04	3.05E-08	3.29E-08	5.18E-08	3.67E+00	1.79E-04	3.05E-08	3.29E-08	5.18E-08	1.04E-07
Pr133	2.64E+02	3.90E+02	2.64E+02	1.32E-11	1.79E-04	2.90E-08	3.13E-08	4.93E-08	2.64E+02	1.79E-04	2.90E-08	3.13E-08	4.93E-08	9.86E-08
Nd134	1.88E+02	5.10E+02	1.88E+02	1.83E-11	1.79E-04	2.85E-08	3.08E-08	4.85E-08	1.88E+02	1.79E-04	2.85E-08	3.08E-08	4.85E-08	9.69E-08
Tm164	2.15E+03	1.20E+02	2.15E+03	1.58E-12	1.79E-04	2.82E-08	3.05E-08	4.80E-08	2.15E+03	1.79E-04	2.82E-08	3.05E-08	4.80E-08	9.59E-08
Rh101*	1.56E+01	3.75E+05	1.56E+01	2.10E-10	1.79E-04	2.72E-08	2.94E-08	4.63E-08	1.56E+01	1.79E-04	2.72E-08	2.94E-08	4.63E-08	9.25E-08
Sr 83	1.87E+01	1.17E+05	1.87E+01	1.70E-10	1.79E-04	2.64E-08	2.85E-08	4.49E-08	1.87E+01	1.79E-04	2.64E-08	2.85E-08	4.49E-08	8.98E-08
Tb158	2.87E+00	4.73E+09	2.87E+00	1.10E-09	1.79E-04	2.62E-08	2.83E-08	4.46E-08	2.87E+00	1.79E-04	2.62E-08	2.83E-08	4.46E-08	8.92E-08
Sm141	1.94E+02	6.12E+02	1.94E+02	1.60E-11	1.79E-04	2.58E-08	2.78E-08	4.38E-08	1.94E+02	1.79E-04	2.58E-08	2.78E-08	4.38E-08	8.77E-08
Sb116	2.16E+02	9.50E+02	2.16E+02	1.40E-11	1.79E-04	2.51E-08	2.71E-08	4.27E-08	2.16E+02	1.79E-04	2.51E-08	2.71E-08	4.27E-08	8.54E-08
Ba127	3.86E+02	7.62E+02	3.86E+02	7.81E-12	1.79E-04	2.50E-08	2.70E-08	4.26E-08	3.86E+02	1.79E-04	2.50E-08	2.70E-08	4.26E-08	8.51E-08
Kr 79	2.15E+01	1.26E+05	2.15E+01	5.00E-14	1.00E+00	5.00E-08	5.40E-08	8.50E-08	0.00E+00	1.00E+00	0.00E+00	0.00E+00	0.00E+00	8.50E-08
Mo 90	8.13E+00	2.04E+04	8.13E+00	3.70E-10	1.79E-04	2.50E-08	2.70E-08	4.25E-08	8.13E+00	1.79E-04	2.50E-08	2.70E-08	4.25E-08	8.49E-08

As 77	7.77E+00	1.40E+05	7.77E+00	3.80E-10	1.79E-04	2.45E-08	2.65E-08	4.17E-08		7.77E+00	1.79E-04	2.45E-08	2.65E-08	4.17E-08	8.34E-08
Ga 66	6.39E+00	3.42E+04	6.39E+00	4.60E-10	1.79E-04	2.44E-08	2.64E-08	4.15E-08		6.39E+00	1.79E-04	2.44E-08	2.63E-08	4.15E-08	8.30E-08
Ce131	2.07E+02	6.00E+02	2.07E+02	1.42E-11	1.79E-04	2.44E-08	2.64E-08	4.15E-08		2.07E+02	1.79E-04	2.44E-08	2.63E-08	4.15E-08	8.30E-08
Si 31	3.65E+01	9.44E+03	3.65E+01	8.00E-11	1.79E-04	2.42E-08	2.62E-08	4.12E-08		3.65E+01	1.79E-04	2.42E-08	2.62E-08	4.12E-08	8.25E-08
Er169	2.87E+00	8.12E+05	2.87E+00	9.80E-10	1.79E-04	2.33E-08	2.52E-08	3.97E-08		2.87E+00	1.79E-04	2.33E-08	2.52E-08	3.97E-08	7.94E-08
Rh105	8.17E+00	1.27E+05	8.17E+00	3.40E-10	1.79E-04	2.31E-08	2.49E-08	3.92E-08		8.17E+00	1.79E-04	2.31E-08	2.49E-08	3.92E-08	7.84E-08
Er163	2.21E+03	4.50E+03	2.21E+03	1.24E-12	1.79E-04	2.27E-08	2.46E-08	3.87E-08		2.21E+03	1.79E-04	2.27E-08	2.46E-08	3.87E-08	7.74E-08
Tc101	2.08E+02	8.53E+02	2.08E+02	1.30E-11	1.79E-04	2.24E-08	2.42E-08	3.82E-08		2.08E+02	1.79E-04	2.24E-08	2.42E-08	3.82E-08	7.64E-08
Pr140	1.10E+03	2.03E+02	1.10E+03	2.42E-12	1.79E-04	2.21E-08	2.39E-08	3.76E-08		1.10E+03	1.79E-04	2.21E-08	2.39E-08	3.76E-08	7.52E-08
V47	8.34E+01	1.96E+03	8.34E+01	3.10E-11	1.79E-04	2.15E-08	2.32E-08	3.65E-08		8.34E+01	1.79E-04	2.15E-08	2.32E-08	3.65E-08	7.30E-08
Ba131*	6.15E+02	8.76E+02	6.15E+02	4.10E-12	1.79E-04	2.09E-08	2.26E-08	3.56E-08		6.15E+02	1.79E-04	2.09E-08	2.26E-08	3.56E-08	7.12E-08
Nb 91	1.34E+00	2.15E+10	1.34E+00	1.84E-09	1.79E-04	2.05E-08	2.21E-08	3.48E-08		1.34E+00	1.79E-04	2.05E-08	2.21E-08	3.48E-08	6.96E-08
Sb115	1.76E+02	1.93E+03	1.76E+02	1.40E-11	1.79E-04	2.05E-08	2.21E-08	3.48E-08		1.76E+02	1.79E-04	2.05E-08	2.21E-08	3.48E-08	6.96E-08
Pm137	1.36E+02	1.44E+02	1.36E+02	1.80E-11	1.79E-04	2.03E-08	2.19E-08	3.46E-08		1.36E+02	1.79E-04	2.03E-08	2.19E-08	3.46E-08	6.91E-08
Ba124	1.52E+02	7.10E+02	1.52E+02	1.60E-11	1.79E-04	2.02E-08	2.18E-08	3.43E-08		1.52E+02	1.79E-04	2.02E-08	2.18E-08	3.43E-08	6.87E-08
In109	5.50E+01	1.51E+04	5.50E+01	4.40E-11	1.79E-04	2.01E-08	2.17E-08	3.42E-08		5.50E+01	1.79E-04	2.01E-08	2.17E-08	3.42E-08	6.83E-08
Co 60*	1.86E+03	6.28E+02	1.86E+03	1.30E-12	1.79E-04	2.01E-08	2.17E-08	3.41E-08		1.86E+03	1.79E-04	2.01E-08	2.17E-08	3.41E-08	6.83E-08
In113*	1.20E+02	5.97E+03	1.20E+02	2.00E-11	1.79E-04	1.99E-08	2.15E-08	3.39E-08		1.20E+02	1.79E-04	1.99E-08	2.15E-08	3.39E-08	6.78E-08
Hf167	7.14E+02	1.23E+02	7.14E+02	3.31E-12	1.79E-04	1.96E-08	2.12E-08	3.34E-08		7.14E+02	1.79E-04	1.96E-08	2.12E-08	3.34E-08	6.68E-08
Tm157	3.68E+02	2.10E+02	3.68E+02	6.30E-12	1.79E-04	1.92E-08	2.08E-08	3.27E-08		3.68E+02	1.79E-04	1.92E-08	2.08E-08	3.27E-08	6.54E-08
Tb154*	1.03E+01	3.24E+04	1.03E+01	2.24E-10	1.79E-04	1.92E-08	2.07E-08	3.26E-08		1.03E+01	1.79E-04	1.92E-08	2.07E-08	3.26E-08	6.52E-08
Tb156*	2.49E+01	1.91E+04	2.49E+01	9.20E-11	1.79E-04	1.90E-08	2.05E-08	3.23E-08		2.49E+01	1.79E-04	1.90E-08	2.05E-08	3.23E-08	6.47E-08
Te127*	3.17E-01	9.42E+06	3.17E-01	7.20E-09	1.79E-04	1.89E-08	2.05E-08	3.22E-08		3.17E-01	1.79E-04	1.89E-08	2.05E-08	3.22E-08	6.45E-08
Er154	3.35E+02	2.21E+02	3.35E+02	6.69E-12	1.79E-04	1.86E-08	2.01E-08	3.17E-08		3.35E+02	1.79E-04	1.86E-08	2.01E-08	3.17E-08	6.33E-08
Re180	9.98E+02	1.46E+02	9.98E+02	2.21E-12	1.79E-04	1.83E-08	1.98E-08	3.11E-08		9.98E+02	1.79E-04	1.83E-08	1.98E-08	3.11E-08	6.23E-08
Zn 69*	8.39E+00	4.95E+04	8.39E+00	2.60E-10	1.79E-04	1.81E-08	1.96E-08	3.08E-08		8.39E+00	1.79E-04	1.81E-08	1.96E-08	3.08E-08	6.16E-08
Lu178	7.51E+01	1.70E+03	7.51E+01	2.60E-11	1.79E-04	1.62E-08	1.75E-08	2.76E-08		7.51E+01	1.79E-04	1.62E-08	1.75E-08	2.76E-08	5.51E-08
La128	2.02E+02	3.00E+02	2.02E+02	9.66E-12	1.79E-04	1.62E-08	1.75E-08	2.75E-08		2.02E+02	1.79E-04	1.62E-08	1.75E-08	2.75E-08	5.51E-08
Cs128	6.08E+02	2.17E+02	6.08E+02	3.17E-12	1.79E-04	1.60E-08	1.73E-08	2.72E-08		6.08E+02	1.79E-04	1.60E-08	1.73E-08	2.72E-08	5.44E-08
Mg 28	1.60E+00	7.53E+04	1.60E+00	1.20E-09	1.79E-04	1.59E-08	1.72E-08	2.71E-08		1.60E+00	1.79E-04	1.59E-08	1.72E-08	2.71E-08	5.42E-08
V52	3.68E+02	2.25E+02	3.68E+02	5.20E-12	1.79E-04	1.59E-08	1.72E-08	2.70E-08		3.68E+02	1.79E-04	1.59E-08	1.72E-08	2.70E-08	5.40E-08
Cs123	1.65E+02	3.52E+02	1.65E+02	1.15E-11	1.79E-04	1.58E-08	1.71E-08	2.69E-08		1.65E+02	1.79E-04	1.58E-08	1.71E-08	2.69E-08	5.38E-08
Co 61	3.64E+01	5.94E+03	3.64E+01	5.10E-11	1.79E-04	1.54E-08	1.66E-08	2.62E-08		3.64E+01	1.79E-04	1.54E-08	1.66E-08	2.62E-08	5.24E-08
Ru 97	1.65E+01	2.51E+05	1.65E+01	1.10E-10	1.79E-04	1.51E-08	1.63E-08	2.56E-08		1.65E+01	1.79E-04	1.51E-08	1.63E-08	2.56E-08	5.13E-08
Zr 87	1.99E+01	6.24E+03	1.99E+01	9.10E-11	1.79E-04	1.50E-08	1.62E-08	2.56E-08		1.99E+01	1.79E-04	1.50E-08	1.62E-08	2.56E-08	5.11E-08
Sb124	2.90E-01	5.20E+06	2.90E-01	6.10E-09	1.79E-04	1.47E-08	1.59E-08	2.50E-08		2.90E-01	1.79E-04	1.47E-08	1.59E-08	2.50E-08	5.00E-08
Sn121*	4.16E-01	1.74E+09	4.16E-01	4.20E-09	1.79E-04	1.45E-08	1.57E-08	2.47E-08		4.16E-01	1.79E-04	1.45E-08	1.57E-08	2.47E-08	4.93E-08
Pm148	8.13E-01	4.64E+05	8.13E-01	2.10E-09	1.79E-04	1.42E-08	1.53E-08	2.41E-08		8.13E-01	1.79E-04	1.42E-08	1.53E-08	2.41E-08	4.82E-08
Cu 64	1.39E+01	4.57E+04	1.39E+01	1.20E-10	1.79E-04	1.38E-08	1.50E-08	2.36E-08		1.39E+01	1.79E-04	1.38E-08	1.50E-08	2.35E-08	4.71E-08
Pr138	9.33E+02	8.70E+01	9.33E+02	1.66E-12	1.79E-04	1.29E-08	1.39E-08	2.19E-08		9.33E+02	1.79E-04	1.29E-08	1.39E-08	2.19E-08	4.37E-08

Cd111*	6.63E+01	2.92E+03	6.63E+01	2.31E-11	1.79E-04	1.27E-08	1.37E-08	2.16E-08	6.63E+01	1.79E-04	1.27E-08	1.37E-08	2.16E-08	4.32E-08
Sm153	2.46E+00	1.67E+05	2.46E+00	6.10E-10	1.79E-04	1.25E-08	1.35E-08	2.12E-08	2.46E+00	1.79E-04	1.25E-08	1.35E-08	2.12E-08	4.24E-08
Ta168	3.63E+02	1.46E+02	3.63E+02	4.07E-12	1.79E-04	1.23E-08	1.32E-08	2.09E-08	3.63E+02	1.79E-04	1.23E-08	1.32E-08	2.09E-08	4.17E-08
Sn119*	6.94E-01	2.53E+07	6.94E-01	2.00E-09	1.79E-04	1.15E-08	1.24E-08	1.96E-08	6.94E-01	1.79E-04	1.15E-08	1.24E-08	1.96E-08	3.92E-08
Pr142	2.34E+00	6.88E+04	2.34E+00	5.60E-10	1.79E-04	1.09E-08	1.17E-08	1.85E-08	2.34E+00	1.79E-04	1.09E-08	1.17E-08	1.85E-08	3.70E-08
Tc 95	1.22E+01	7.20E+04	1.22E+01	1.00E-10	1.79E-04	1.01E-08	1.09E-08	1.72E-08	1.22E+01	1.79E-04	1.01E-08	1.09E-08	1.72E-08	3.45E-08
Ce144	2.48E-02	2.46E+07	2.48E-02	4.90E-08	1.79E-04	1.01E-08	1.09E-08	1.72E-08	2.48E-02	1.79E-04	1.01E-08	1.09E-08	1.72E-08	3.43E-08
Ce141	3.35E-01	2.81E+06	3.35E-01	3.60E-09	1.79E-04	1.00E-08	1.08E-08	1.70E-08	3.35E-01	1.79E-04	1.00E-08	1.08E-08	1.70E-08	3.41E-08
Os185	7.89E-01	8.09E+06	7.89E-01	1.50E-09	1.79E-04	9.82E-09	1.06E-08	1.67E-08	7.89E-01	1.79E-04	9.82E-09	1.06E-08	1.67E-08	3.34E-08
Zr 97	1.18E+00	6.08E+04	1.18E+00	1.00E-09	1.79E-04	9.80E-09	1.06E-08	1.67E-08	1.18E+00	1.79E-04	9.79E-09	1.06E-08	1.67E-08	3.33E-08
Se 73	7.35E+00	2.57E+04	7.35E+00	1.60E-10	1.79E-04	9.76E-09	1.05E-08	1.66E-08	7.35E+00	1.79E-04	9.76E-09	1.05E-08	1.66E-08	3.32E-08
W 170	1.58E+02	2.40E+02	1.58E+02	7.39E-12	1.79E-04	9.69E-09	1.05E-08	1.65E-08	1.58E+02	1.79E-04	9.69E-09	1.05E-08	1.65E-08	3.30E-08
Eu143	2.64E+02	1.58E+02	2.64E+02	4.41E-12	1.79E-04	9.66E-09	1.04E-08	1.64E-08	2.64E+02	1.79E-04	9.66E-09	1.04E-08	1.64E-08	3.29E-08
Kr 77	8.29E+00	4.46E+03	8.29E+00	5.00E-14	1.00E+00	1.93E-08	2.08E-08	3.28E-08	0.00E+00	1.00E+00	0.00E+00	0.00E+00	0.00E+00	3.28E-08
Sb118	3.14E+02	2.16E+02	3.14E+02	3.69E-12	1.79E-04	9.62E-09	1.04E-08	1.64E-08	3.14E+02	1.79E-04	9.62E-09	1.04E-08	1.64E-08	3.27E-08
Dy148	2.21E+02	1.86E+02	2.21E+02	5.22E-12	1.79E-04	9.58E-09	1.03E-08	1.63E-08	2.21E+02	1.79E-04	9.58E-09	1.03E-08	1.63E-08	3.26E-08
Ga 68	2.24E+01	4.06E+03	2.24E+01	5.10E-11	1.79E-04	9.48E-09	1.02E-08	1.61E-08	2.24E+01	1.79E-04	9.48E-09	1.02E-08	1.61E-08	3.23E-08
Os182	2.85E+00	7.96E+04	2.85E+00	3.90E-10	1.79E-04	9.23E-09	9.97E-09	1.57E-08	2.85E+00	1.79E-04	9.23E-09	9.96E-09	1.57E-08	3.14E-08
Pr143	4.78E-01	1.17E+06	4.78E-01	2.30E-09	1.79E-04	9.13E-09	9.86E-09	1.55E-08	4.78E-01	1.79E-04	9.13E-09	9.86E-09	1.55E-08	3.10E-08
Mo 93	4.62E-01	1.10E+11	4.62E-01	2.20E-09	1.79E-04	8.44E-09	9.11E-09	1.44E-08	4.62E-01	1.79E-04	8.44E-09	9.11E-09	1.44E-08	2.87E-08
Cs126	4.82E+02	9.84E+01	4.82E+02	2.02E-12	1.79E-04	8.08E-09	8.73E-09	1.37E-08	4.82E+02	1.79E-04	8.08E-09	8.73E-09	1.37E-08	2.75E-08
Y93	2.26E+00	3.67E+04	2.26E+00	4.30E-10	1.79E-04	8.07E-09	8.71E-09	1.37E-08	2.26E+00	1.79E-04	8.07E-09	8.71E-09	1.37E-08	2.74E-08
Ho163	3.75E+00	1.44E+11	3.75E+00	2.56E-10	1.79E-04	7.97E-09	8.61E-09	1.36E-08	3.75E+00	1.79E-04	7.97E-09	8.61E-09	1.36E-08	2.71E-08
Ag104	2.39E+01	4.15E+03	2.39E+01	4.00E-11	1.79E-04	7.94E-09	8.57E-09	1.35E-08	2.39E+01	1.79E-04	7.93E-09	8.57E-09	1.35E-08	2.70E-08
Cd115	8.55E-01	1.93E+05	8.55E-01	1.10E-09	1.79E-04	7.81E-09	8.43E-09	1.33E-08	8.55E-01	1.79E-04	7.81E-09	8.43E-09	1.33E-08	2.66E-08
Nb 97	1.99E+01	4.33E+03	1.99E+01	4.70E-11	1.79E-04	7.76E-09	8.39E-09	1.32E-08	1.99E+01	1.79E-04	7.76E-09	8.38E-09	1.32E-08	2.64E-08
Eu156	2.71E-01	1.31E+06	2.71E-01	3.30E-09	1.79E-04	7.42E-09	8.02E-09	1.26E-08	2.71E-01	1.79E-04	7.42E-09	8.02E-09	1.26E-08	2.53E-08
Pd101	1.39E+01	3.05E+04	1.39E+01	6.40E-11	1.79E-04	7.39E-09	7.98E-09	1.26E-08	1.39E+01	1.79E-04	7.38E-09	7.97E-09	1.26E-08	2.51E-08
W 171	2.20E+02	1.44E+02	2.20E+02	4.00E-12	1.79E-04	7.31E-09	7.90E-09	1.24E-08	2.20E+02	1.79E-04	7.31E-09	7.89E-09	1.24E-08	2.49E-08
Y85	9.07E+00	9.65E+03	9.07E+00	9.52E-11	1.79E-04	7.17E-09	7.74E-09	1.22E-08	9.07E+00	1.79E-04	7.17E-09	7.74E-09	1.22E-08	2.44E-08
Kr 83*	6.12E+00	6.59E+03	6.12E+00	5.00E-14	1.00E+00	1.42E-08	1.54E-08	2.42E-08	0.00E+00	1.00E+00	0.00E+00	0.00E+00	0.00E+00	2.42E-08
Sn111	6.11E+01	2.12E+03	6.11E+01	1.40E-11	1.79E-04	7.10E-09	7.67E-09	1.21E-08	6.11E+01	1.79E-04	7.10E-09	7.67E-09	1.21E-08	2.42E-08
Ho164*	6.96E+01	2.25E+03	6.96E+01	1.20E-11	1.79E-04	6.93E-09	7.49E-09	1.18E-08	6.96E+01	1.79E-04	6.93E-09	7.49E-09	1.18E-08	2.36E-08
Sb113	6.08E+01	4.00E+02	6.08E+01	1.36E-11	1.79E-04	6.88E-09	7.44E-09	1.17E-08	6.08E+01	1.79E-04	6.88E-09	7.43E-09	1.17E-08	2.34E-08
Pd109	2.25E+00	4.93E+04	2.25E+00	3.60E-10	1.79E-04	6.72E-09	7.26E-09	1.14E-08	2.25E+00	1.79E-04	6.72E-09	7.26E-09	1.14E-08	2.29E-08
Eu150*	4.13E+00	4.54E+04	4.13E+00	1.90E-10	1.79E-04	6.51E-09	7.04E-09	1.11E-08	4.13E+00	1.79E-04	6.51E-09	7.03E-09	1.11E-08	2.22E-08
Sb125	1.73E-01	8.71E+07	1.73E-01	4.50E-09	1.79E-04	6.46E-09	6.98E-09	1.10E-08	1.73E-01	1.79E-04	6.46E-09	6.98E-09	1.10E-08	2.20E-08
La140	7.03E-01	1.45E+05	7.03E-01	1.10E-09	1.79E-04	6.42E-09	6.93E-09	1.09E-08	7.03E-01	1.79E-04	6.42E-09	6.93E-09	1.09E-08	2.18E-08
Ga 73	5.11E+00	1.75E+04	5.11E+00	1.50E-10	1.79E-04	6.36E-09	6.87E-09	1.08E-08	5.11E+00	1.79E-04	6.36E-09	6.87E-09	1.08E-08	2.16E-08
Rb 81	2.07E+01	1.65E+04	2.07E+01	3.70E-11	1.79E-04	6.36E-09	6.87E-09	1.08E-08	2.07E+01	1.79E-04	6.36E-09	6.87E-09	1.08E-08	2.16E-08

In112*	3.56E+01	1.23E+03	3.56E+01	2.13E-11	1.79E-04	6.29E-09	6.80E-09	1.07E-08		3.56E+01	1.79E-04	6.29E-09	6.80E-09	1.07E-08	2.14E-08
Hf164	1.49E+02	1.68E+02	1.49E+02	4.82E-12	1.79E-04	5.96E-09	6.43E-09	1.01E-08		1.49E+02	1.79E-04	5.96E-09	6.43E-09	1.01E-08	2.03E-08
Sc 49	1.74E+01	3.43E+03	1.74E+01	4.10E-11	1.79E-04	5.92E-09	6.40E-09	1.01E-08		1.74E+01	1.79E-04	5.92E-09	6.40E-09	1.01E-08	2.01E-08
Tm173	3.94E+00	2.97E+04	3.94E+00	1.80E-10	1.79E-04	5.89E-09	6.36E-09	1.00E-08		3.94E+00	1.79E-04	5.89E-09	6.36E-09	1.00E-08	2.00E-08
Y92	3.37E+00	1.27E+04	3.37E+00	2.00E-10	1.79E-04	5.60E-09	6.04E-09	9.52E-09		3.37E+00	1.79E-04	5.59E-09	6.04E-09	9.52E-09	1.90E-08
Sm151	1.82E-01	2.84E+09	1.82E-01	3.70E-09	1.79E-04	5.59E-09	6.04E-09	9.51E-09		1.82E-01	1.79E-04	5.59E-09	6.04E-09	9.51E-09	1.90E-08
Nb 89	5.09E+00	7.32E+03	5.09E+00	1.30E-10	1.79E-04	5.49E-09	5.93E-09	9.34E-09		5.09E+00	1.79E-04	5.49E-09	5.93E-09	9.34E-09	1.87E-08
Gd144	7.28E+01	2.70E+02	7.28E+01	8.51E-12	1.79E-04	5.14E-09	5.56E-09	8.75E-09		7.28E+01	1.79E-04	5.14E-09	5.55E-09	8.75E-09	1.75E-08
Sb114	9.65E+01	2.09E+02	9.65E+01	6.27E-12	1.79E-04	5.03E-09	5.43E-09	8.55E-09		9.65E+01	1.79E-04	5.02E-09	5.43E-09	8.55E-09	1.71E-08
Ho164	6.96E+01	1.74E+03	6.96E+01	8.60E-12	1.79E-04	4.97E-09	5.37E-09	8.45E-09		6.96E+01	1.79E-04	4.97E-09	5.37E-09	8.45E-09	1.69E-08
Re174	1.49E+02	1.38E+02	1.49E+02	3.80E-12	1.79E-04	4.70E-09	5.08E-09	8.00E-09		1.49E+02	1.79E-04	4.70E-09	5.08E-09	8.00E-09	1.60E-08
Mo 91	2.66E+01	9.29E+02	2.66E+01	2.07E-11	1.79E-04	4.57E-09	4.94E-09	7.78E-09		2.66E+01	1.79E-04	4.57E-09	4.94E-09	7.77E-09	1.55E-08
Te129*	8.61E-02	2.90E+06	8.61E-02	6.30E-09	1.79E-04	4.50E-09	4.86E-09	7.66E-09		8.61E-02	1.79E-04	4.50E-09	4.86E-09	7.66E-09	1.53E-08
Pd112	4.76E-01	7.57E+04	4.76E-01	1.09E-09	1.79E-04	4.31E-09	4.65E-09	7.33E-09		4.76E-01	1.79E-04	4.31E-09	4.65E-09	7.33E-09	1.47E-08
Cr 55	1.26E+02	2.10E+02	1.26E+02	4.04E-12	1.79E-04	4.23E-09	4.56E-09	7.19E-09		1.26E+02	1.79E-04	4.23E-09	4.56E-09	7.19E-09	1.44E-08
Cd105	2.03E+01	3.33E+03	2.03E+01	2.37E-11	1.79E-04	3.99E-09	4.31E-09	6.79E-09		2.03E+01	1.79E-04	3.99E-09	4.31E-09	6.79E-09	1.36E-08
Pm149	6.62E-01	1.91E+05	6.62E-01	7.20E-10	1.79E-04	3.96E-09	4.27E-09	6.73E-09		6.62E-01	1.79E-04	3.96E-09	4.27E-09	6.73E-09	1.35E-08
Sn113*	1.09E+02	1.28E+03	1.09E+02	4.20E-12	1.79E-04	3.80E-09	4.10E-09	6.46E-09		1.09E+02	1.79E-04	3.80E-09	4.10E-09	6.46E-09	1.29E-08
Ho162*	2.06E+01	4.02E+03	2.06E+01	2.20E-11	1.79E-04	3.76E-09	4.06E-09	6.40E-09		2.06E+01	1.79E-04	3.76E-09	4.06E-09	6.40E-09	1.28E-08
Cu 61	5.64E+00	1.23E+04	5.64E+00	8.00E-11	1.79E-04	3.75E-09	4.05E-09	6.37E-09		5.64E+00	1.79E-04	3.75E-09	4.04E-09	6.37E-09	1.27E-08
Tc 94	3.28E+00	1.76E+04	3.28E+00	1.30E-10	1.79E-04	3.54E-09	3.82E-09	6.02E-09		3.28E+00	1.79E-04	3.54E-09	3.82E-09	6.02E-09	1.20E-08
Cs132	1.74E+00	5.59E+05	1.74E+00	2.40E-10	1.79E-04	3.47E-09	3.74E-09	5.90E-09		1.74E+00	1.79E-04	3.47E-09	3.74E-09	5.90E-09	1.18E-08
Ag103	1.49E+01	3.94E+03	1.49E+01	2.80E-11	1.79E-04	3.46E-09	3.74E-09	5.89E-09		1.49E+01	1.79E-04	3.46E-09	3.74E-09	5.89E-09	1.18E-08
As 78	4.49E+00	5.44E+03	4.49E+00	9.20E-11	1.79E-04	3.43E-09	3.70E-09	5.83E-09		4.49E+00	1.79E-04	3.43E-09	3.70E-09	5.83E-09	1.17E-08
Tb156+	2.03E+00	8.80E+04	2.03E+00	2.00E-10	1.79E-04	3.37E-09	3.64E-09	5.73E-09		2.03E+00	1.79E-04	3.37E-09	3.64E-09	5.73E-09	1.15E-08
Cd104	1.02E+01	3.46E+03	1.02E+01	3.70E-11	1.79E-04	3.13E-09	3.38E-09	5.33E-09		1.02E+01	1.79E-04	3.13E-09	3.38E-09	5.33E-09	1.07E-08
In108	7.84E+00	3.48E+03	7.84E+00	4.78E-11	1.79E-04	3.11E-09	3.36E-09	5.29E-09		7.84E+00	1.79E-04	3.11E-09	3.36E-09	5.29E-09	1.06E-08
Al 28	1.00E+02	1.35E+02	1.00E+02	3.38E-12	1.79E-04	2.81E-09	3.03E-09	4.77E-09		1.00E+02	1.79E-04	2.81E-09	3.03E-09	4.77E-09	9.54E-09
Ge 77	9.34E-01	4.07E+04	9.34E-01	3.60E-10	1.79E-04	2.79E-09	3.01E-09	4.75E-09		9.34E-01	1.79E-04	2.79E-09	3.01E-09	4.75E-09	9.50E-09
Te114	1.22E+01	9.10E+02	1.22E+01	2.70E-11	1.79E-04	2.73E-09	2.95E-09	4.65E-09		1.22E+01	1.79E-04	2.73E-09	2.95E-09	4.65E-09	9.30E-09
Kr 76	2.25E+00	5.33E+04	2.25E+00	5.00E-14	1.00E+00	5.23E-09	5.65E-09	8.89E-09		0.00E+00	1.00E+00	0.00E+00	0.00E+00	0.00E+00	8.89E-09
Nd147	1.23E-01	9.49E+05	1.23E-01	2.30E-09	1.79E-04	2.35E-09	2.54E-09	3.99E-09		1.23E-01	1.79E-04	2.35E-09	2.54E-09	3.99E-09	7.99E-09
Ag112	1.56E+00	1.13E+04	1.56E+00	1.80E-10	1.79E-04	2.33E-09	2.52E-09	3.97E-09		1.56E+00	1.79E-04	2.33E-09	2.52E-09	3.96E-09	7.93E-09
In112	3.56E+01	8.64E+02	3.56E+01	7.80E-12	1.79E-04	2.31E-09	2.49E-09	3.92E-09		3.56E+01	1.79E-04	2.30E-09	2.49E-09	3.92E-09	7.84E-09
Sr 91	1.61E+00	3.47E+04	1.61E+00	1.70E-10	1.79E-04	2.27E-09	2.45E-09	3.86E-09		1.61E+00	1.79E-04	2.27E-09	2.45E-09	3.86E-09	7.73E-09
Ag106	1.71E+01	1.44E+03	1.71E+01	1.60E-11	1.79E-04	2.27E-09	2.45E-09	3.86E-09		1.71E+01	1.79E-04	2.27E-09	2.45E-09	3.86E-09	7.73E-09
Ge 71	2.72E+01	9.88E+05	2.72E+01	1.00E-11	1.79E-04	2.26E-09	2.44E-09	3.84E-09		2.72E+01	1.79E-04	2.26E-09	2.44E-09	3.84E-09	7.68E-09
Zn 62	5.38E-01	3.33E+04	5.38E-01	4.70E-10	1.79E-04	2.10E-09	2.27E-09	3.57E-09		5.38E-01	1.79E-04	2.10E-09	2.27E-09	3.57E-09	7.14E-09
Tb161	2.06E-01	5.97E+05	2.06E-01	1.20E-09	1.79E-04	2.05E-09	2.22E-09	3.49E-09		2.06E-01	1.79E-04	2.05E-09	2.22E-09	3.49E-09	6.98E-09
Ru105	1.32E+00	1.60E+04	1.32E+00	1.80E-10	1.79E-04	1.97E-09	2.13E-09	3.36E-09		1.32E+00	1.79E-04	1.97E-09	2.13E-09	3.35E-09	6.71E-09

Zn 69	8.39E+00	3.38E+03	8.39E+00	2.80E-11	1.79E-04	1.95E-09	2.11E-09	3.32E-09	8.39E+00	1.79E-04	1.95E-09	2.11E-09	3.32E-09	6.63E-09
Ba135*	1.45E+00	1.03E+05	1.45E+00	1.50E-10	1.79E-04	1.81E-09	1.95E-09	3.07E-09	1.45E+00	1.79E-04	1.81E-09	1.95E-09	3.07E-09	6.14E-09
As 70	2.98E+00	3.16E+03	2.98E+00	7.20E-11	1.79E-04	1.78E-09	1.92E-09	3.03E-09	2.98E+00	1.79E-04	1.78E-09	1.92E-09	3.03E-09	6.06E-09
In107	8.47E+00	1.94E+03	8.47E+00	2.46E-11	1.79E-04	1.73E-09	1.87E-09	2.94E-09	8.47E+00	1.79E-04	1.73E-09	1.87E-09	2.94E-09	5.88E-09
Sn123	2.68E-02	1.12E+07	2.68E-02	7.70E-09	1.79E-04	1.71E-09	1.85E-09	2.91E-09	2.68E-02	1.79E-04	1.71E-09	1.85E-09	2.91E-09	5.83E-09
Xe129*	1.44E+00	7.68E+05	1.44E+00	5.00E-14	1.00E+00	3.35E-09	3.61E-09	5.69E-09	0.00E+00	1.00E+00	0.00E+00	0.00E+00	0.00E+00	5.69E-09
Ge 75	5.37E+00	4.97E+03	5.37E+00	3.70E-11	1.79E-04	1.65E-09	1.78E-09	2.81E-09	5.37E+00	1.79E-04	1.65E-09	1.78E-09	2.81E-09	5.61E-09
Os183	9.85E-01	4.68E+04	9.85E-01	1.87E-10	1.79E-04	1.53E-09	1.65E-09	2.60E-09	9.85E-01	1.79E-04	1.53E-09	1.65E-09	2.60E-09	5.20E-09
Ti 51	1.58E+01	3.46E+02	1.58E+01	1.14E-11	1.79E-04	1.50E-09	1.62E-09	2.55E-09	1.58E+01	1.79E-04	1.50E-09	1.62E-09	2.55E-09	5.11E-09
Ru 95	4.95E+00	5.90E+03	4.95E+00	3.61E-11	1.79E-04	1.48E-09	1.60E-09	2.52E-09	4.95E+00	1.79E-04	1.48E-09	1.60E-09	2.52E-09	5.05E-09
La136	8.06E+00	5.92E+02	8.06E+00	2.18E-11	1.79E-04	1.46E-09	1.58E-09	2.49E-09	8.06E+00	1.79E-04	1.46E-09	1.58E-09	2.49E-09	4.97E-09
Al 29	1.28E+01	3.94E+02	1.28E+01	1.34E-11	1.79E-04	1.42E-09	1.54E-09	2.42E-09	1.28E+01	1.79E-04	1.42E-09	1.54E-09	2.42E-09	4.84E-09
Cu 62	1.29E+01	5.84E+02	1.29E+01	1.31E-11	1.79E-04	1.40E-09	1.52E-09	2.39E-09	1.29E+01	1.79E-04	1.40E-09	1.51E-09	2.39E-09	4.77E-09
Kr 87	1.19E+00	4.58E+03	1.19E+00	5.00E-14	1.00E+00	2.77E-09	2.99E-09	4.70E-09	0.00E+00	1.00E+00	0.00E+00	0.00E+00	0.00E+00	4.70E-09
Ge 78	1.71E+00	5.28E+03	1.71E+00	9.70E-11	1.79E-04	1.38E-09	1.49E-09	2.34E-09	1.71E+00	1.79E-04	1.38E-09	1.49E-09	2.34E-09	4.68E-09
Ag113	9.34E-01	1.93E+04	9.34E-01	1.63E-10	1.79E-04	1.26E-09	1.36E-09	2.15E-09	9.34E-01	1.79E-04	1.26E-09	1.36E-09	2.15E-09	4.30E-09
Rb 81*	2.07E+01	1.83E+03	2.07E+01	7.30E-12	1.79E-04	1.25E-09	1.35E-09	2.13E-09	2.07E+01	1.79E-04	1.25E-09	1.35E-09	2.13E-09	4.27E-09
N13	1.06E+00	5.98E+02	1.06E+00	5.00E-14	1.00E+00	2.46E-09	2.66E-09	4.19E-09	0.00E+00	1.00E+00	0.00E+00	0.00E+00	0.00E+00	4.19E-09
Os183*	9.85E-01	3.56E+04	9.85E-01	1.47E-10	1.79E-04	1.20E-09	1.30E-09	2.04E-09	9.85E-01	1.79E-04	1.20E-09	1.30E-09	2.04E-09	4.09E-09
Sb127	9.01E-02	3.33E+05	9.01E-02	1.60E-09	1.79E-04	1.20E-09	1.29E-09	2.04E-09	9.01E-02	1.79E-04	1.20E-09	1.29E-09	2.04E-09	4.07E-09
Ga 70	8.80E+00	1.27E+03	8.80E+00	1.60E-11	1.79E-04	1.17E-09	1.26E-09	1.99E-09	8.80E+00	1.79E-04	1.17E-09	1.26E-09	1.99E-09	3.98E-09
Be7	2.62E+00	4.61E+06	2.62E+00	5.20E-11	1.79E-04	1.13E-09	1.22E-09	1.92E-09	2.62E+00	1.79E-04	1.13E-09	1.22E-09	1.92E-09	3.85E-09
Tc 93	3.73E+00	9.90E+03	3.73E+00	3.60E-11	1.79E-04	1.11E-09	1.20E-09	1.90E-09	3.73E+00	1.79E-04	1.11E-09	1.20E-09	1.90E-09	3.79E-09
Er171	6.08E-01	2.71E+04	6.08E-01	2.20E-10	1.79E-04	1.11E-09	1.20E-09	1.89E-09	6.08E-01	1.79E-04	1.11E-09	1.20E-09	1.89E-09	3.78E-09
Dy165	2.19E+00	8.40E+03	2.19E+00	6.10E-11	1.79E-04	1.11E-09	1.20E-09	1.89E-09	2.19E+00	1.79E-04	1.11E-09	1.20E-09	1.89E-09	3.77E-09
Se 73*	7.35E+00	2.39E+03	7.35E+00	1.80E-11	1.79E-04	1.10E-09	1.19E-09	1.87E-09	7.35E+00	1.79E-04	1.10E-09	1.19E-09	1.87E-09	3.74E-09
W 188	2.24E-01	6.03E+06	2.24E-01	5.90E-10	1.79E-04	1.10E-09	1.18E-09	1.87E-09	2.24E-01	1.79E-04	1.10E-09	1.18E-09	1.87E-09	3.73E-09
Sr 92	1.16E+00	9.58E+03	1.16E+00	1.10E-10	1.79E-04	1.06E-09	1.14E-09	1.80E-09	1.16E+00	1.79E-04	1.06E-09	1.14E-09	1.80E-09	3.60E-09
Xe131*	8.98E-01	1.03E+06	8.98E-01	5.00E-14	1.00E+00	2.09E-09	2.25E-09	3.55E-09	0.00E+00	1.00E+00	0.00E+00	0.00E+00	0.00E+00	3.55E-09
Kr 88	8.80E-01	1.02E+04	8.80E-01	5.00E-14	1.00E+00	2.04E-09	2.21E-09	3.48E-09	0.00E+00	1.00E+00	0.00E+00	0.00E+00	0.00E+00	3.48E-09
Rh103*	4.88E+01	3.37E+03	4.88E+01	2.50E-12	1.79E-04	1.01E-09	1.09E-09	1.72E-09	4.88E+01	1.79E-04	1.01E-09	1.09E-09	1.72E-09	3.45E-09
In117*	1.60E+00	6.99E+03	1.60E+00	7.30E-11	1.79E-04	9.70E-10	1.05E-09	1.65E-09	1.60E+00	1.79E-04	9.69E-10	1.05E-09	1.65E-09	3.30E-09
Kr 85*	7.44E-01	1.61E+04	7.44E-01	5.00E-14	1.00E+00	1.73E-09	1.87E-09	2.94E-09	0.00E+00	1.00E+00	0.00E+00	0.00E+00	0.00E+00	2.94E-09
Kr 85	7.44E-01	3.40E+08	7.44E-01	5.00E-14	1.00E+00	1.73E-09	1.87E-09	2.94E-09	0.00E+00	1.00E+00	0.00E+00	0.00E+00	0.00E+00	2.94E-09
Mg 27	4.89E+00	5.68E+02	4.89E+00	2.08E-11	1.79E-04	8.43E-10	9.10E-10	1.43E-09	4.89E+00	1.79E-04	8.43E-10	9.10E-10	1.43E-09	2.87E-09
Sn109	8.74E+00	1.08E+03	8.74E+00	1.15E-11	1.79E-04	8.34E-10	9.01E-10	1.42E-09	8.74E+00	1.79E-04	8.34E-10	9.01E-10	1.42E-09	2.84E-09
Sr 85*	3.02E+01	4.06E+03	3.02E+01	3.10E-12	1.79E-04	7.77E-10	8.39E-10	1.32E-09	3.02E+01	1.79E-04	7.77E-10	8.39E-10	1.32E-09	2.64E-09
Sn121	4.16E-01	9.73E+04	4.16E-01	2.20E-10	1.79E-04	7.60E-10	8.21E-10	1.29E-09	4.16E-01	1.79E-04	7.60E-10	8.20E-10	1.29E-09	2.58E-09
Hf177+	9.92E-01	3.08E+03	9.92E-01	9.20E-11	1.79E-04	7.58E-10	8.18E-10	1.29E-09	9.92E-01	1.79E-04	7.58E-10	8.18E-10	1.29E-09	2.58E-09
Os180	5.68E+00	1.29E+03	5.68E+00	1.50E-11	1.79E-04	7.07E-10	7.64E-10	1.20E-09	5.68E+00	1.79E-04	7.07E-10	7.64E-10	1.20E-09	2.41E-09

Cs130	1.01E+01	1.79E+03	1.01E+01	8.40E-12	1.79E-04	7.04E-10	7.61E-10	1.20E-09	1.01E+01	1.79E-04	7.04E-10	7.61E-10	1.20E-09	2.40E-09
Zn 63	2.20E+00	2.29E+03	2.20E+00	3.80E-11	1.79E-04	6.94E-10	7.50E-10	1.18E-09	2.20E+00	1.79E-04	6.94E-10	7.49E-10	1.18E-09	2.36E-09
Mo 93*	4.62E-01	2.50E+04	4.62E-01	1.80E-10	1.79E-04	6.90E-10	7.46E-10	1.17E-09	4.62E-01	1.79E-04	6.90E-10	7.45E-10	1.17E-09	2.35E-09
Tc 96*	1.06E+01	3.09E+03	1.06E+01	7.70E-12	1.79E-04	6.78E-10	7.32E-10	1.15E-09	1.06E+01	1.79E-04	6.77E-10	7.32E-10	1.15E-09	2.30E-09
Os179	6.09E+00	3.90E+02	6.09E+00	1.32E-11	1.79E-04	6.69E-10	7.22E-10	1.14E-09	6.09E+00	1.79E-04	6.69E-10	7.22E-10	1.14E-09	2.28E-09
W 183*	1.04E+03	5.20E+00	1.04E+03	7.40E-14	1.79E-04	6.39E-10	6.90E-10	1.09E-09	1.04E+03	1.79E-04	6.39E-10	6.90E-10	1.09E-09	2.17E-09
Ru 94	1.66E+00	3.11E+03	1.66E+00	4.60E-11	1.79E-04	6.34E-10	6.85E-10	1.08E-09	1.66E+00	1.79E-04	6.34E-10	6.85E-10	1.08E-09	2.16E-09
Br 84	1.94E+00	1.91E+03	1.94E+00	3.90E-11	1.79E-04	6.28E-10	6.78E-10	1.07E-09	1.94E+00	1.79E-04	6.28E-10	6.78E-10	1.07E-09	2.14E-09
Sr 80	9.63E-01	6.38E+03	9.63E-01	7.60E-11	1.79E-04	6.08E-10	6.56E-10	1.03E-09	9.63E-01	1.79E-04	6.07E-10	6.56E-10	1.03E-09	2.07E-09
Rh 98	4.90E+00	5.22E+02	4.90E+00	1.29E-11	1.79E-04	5.25E-10	5.67E-10	8.93E-10	4.90E+00	1.79E-04	5.25E-10	5.67E-10	8.92E-10	1.79E-09
Cu 60	1.72E+00	1.46E+03	1.72E+00	3.60E-11	1.79E-04	5.14E-10	5.55E-10	8.74E-10	1.72E+00	1.79E-04	5.14E-10	5.55E-10	8.74E-10	1.75E-09
Cu 66	1.06E+01	3.07E+02	1.06E+01	5.82E-12	1.79E-04	5.12E-10	5.53E-10	8.71E-10	1.06E+01	1.79E-04	5.12E-10	5.53E-10	8.71E-10	1.74E-09
Sr 81	2.74E+00	1.34E+03	2.74E+00	2.20E-11	1.79E-04	5.00E-10	5.40E-10	8.51E-10	2.74E+00	1.79E-04	5.00E-10	5.40E-10	8.51E-10	1.70E-09
Ho162	2.06E+01	9.00E+02	2.06E+01	2.90E-12	1.79E-04	4.96E-10	5.36E-10	8.44E-10	2.06E+01	1.79E-04	4.96E-10	5.36E-10	8.43E-10	1.69E-09
Y91*	5.32E+00	2.98E+03	5.32E+00	1.10E-11	1.79E-04	4.86E-10	5.25E-10	8.26E-10	5.32E+00	1.79E-04	4.86E-10	5.25E-10	8.26E-10	1.65E-09
Te 132	2.65E-02	2.77E+05	2.65E-02	2.20E-09	1.79E-04	4.84E-10	5.23E-10	8.23E-10	2.65E-02	1.79E-04	4.84E-10	5.23E-10	8.23E-10	1.65E-09
As 79	2.97E+00	5.41E+02	2.97E+00	1.96E-11	1.79E-04	4.83E-10	5.21E-10	8.21E-10	2.97E+00	1.79E-04	4.83E-10	5.21E-10	8.21E-10	1.64E-09
Cr 56	4.83E+00	3.56E+02	4.83E+00	1.19E-11	1.79E-04	4.76E-10	5.14E-10	8.09E-10	4.83E+00	1.79E-04	4.75E-10	5.14E-10	8.09E-10	1.62E-09
Eu154*	1.31E+01	2.76E+03	1.31E+01	4.32E-12	1.79E-04	4.70E-10	5.07E-10	7.99E-10	1.31E+01	1.79E-04	4.70E-10	5.07E-10	7.99E-10	1.60E-09
Sb120	7.57E+00	9.53E+02	7.57E+00	7.40E-12	1.79E-04	4.65E-10	5.02E-10	7.91E-10	7.57E+00	1.79E-04	4.65E-10	5.02E-10	7.91E-10	1.58E-09
Ag102	2.89E+00	7.74E+02	2.89E+00	1.90E-11	1.79E-04	4.56E-10	4.92E-10	7.75E-10	2.89E+00	1.79E-04	4.56E-10	4.92E-10	7.75E-10	1.55E-09
Rb 84*	1.16E+01	1.23E+03	1.16E+01	4.73E-12	1.79E-04	4.55E-10	4.92E-10	7.75E-10	1.16E+01	1.79E-04	4.55E-10	4.92E-10	7.75E-10	1.55E-09
Cd117*	2.61E-01	1.21E+04	2.61E-01	2.10E-10	1.79E-04	4.55E-10	4.91E-10	7.74E-10	2.61E-01	1.79E-04	4.55E-10	4.91E-10	7.74E-10	1.55E-09
Sr 87*	4.52E+00	1.01E+04	4.52E+00	1.20E-11	1.79E-04	4.50E-10	4.86E-10	7.66E-10	4.52E+00	1.79E-04	4.50E-10	4.86E-10	7.66E-10	1.53E-09
Sn125	1.73E-02	8.33E+05	1.73E-02	3.00E-09	1.79E-04	4.31E-10	4.65E-10	7.33E-10	1.73E-02	1.79E-04	4.31E-10	4.65E-10	7.33E-10	1.47E-09
Rh 97	2.17E+00	1.87E+03	2.17E+00	2.38E-11	1.79E-04	4.29E-10	4.63E-10	7.29E-10	2.17E+00	1.79E-04	4.29E-10	4.63E-10	7.29E-10	1.46E-09
Rb 79	3.03E+00	1.37E+03	3.03E+00	1.70E-11	1.79E-04	4.28E-10	4.62E-10	7.27E-10	3.03E+00	1.79E-04	4.28E-10	4.62E-10	7.27E-10	1.45E-09
Ga 74	2.96E+00	4.87E+02	2.96E+00	1.73E-11	1.79E-04	4.25E-10	4.59E-10	7.22E-10	2.96E+00	1.79E-04	4.25E-10	4.59E-10	7.22E-10	1.44E-09
Cs137	1.05E-02	9.52E+08	1.05E-02	4.80E-09	1.79E-04	4.18E-10	4.52E-10	7.12E-10	1.05E-02	1.79E-04	4.18E-10	4.52E-10	7.12E-10	1.42E-09
In117	1.60E+00	2.59E+03	1.60E+00	3.00E-11	1.79E-04	3.98E-10	4.30E-10	6.78E-10	1.60E+00	1.79E-04	3.98E-10	4.30E-10	6.78E-10	1.36E-09
Sb126	1.72E-02	1.07E+06	1.72E-02	2.70E-09	1.79E-04	3.86E-10	4.16E-10	6.56E-10	1.72E-02	1.79E-04	3.85E-10	4.16E-10	6.56E-10	1.31E-09
Ce143	5.64E-02	1.19E+05	5.64E-02	8.10E-10	1.79E-04	3.79E-10	4.10E-10	6.45E-10	5.64E-02	1.79E-04	3.79E-10	4.10E-10	6.45E-10	1.29E-09
Cd117	2.61E-01	8.96E+03	2.61E-01	1.70E-10	1.79E-04	3.68E-10	3.98E-10	6.27E-10	2.61E-01	1.79E-04	3.68E-10	3.98E-10	6.26E-10	1.25E-09
Se 81*	2.82E+00	3.44E+03	2.82E+00	1.50E-11	1.79E-04	3.51E-10	3.79E-10	5.97E-10	2.82E+00	1.79E-04	3.51E-10	3.79E-10	5.97E-10	1.19E-09
Rh107	2.39E+00	1.30E+03	2.39E+00	1.70E-11	1.79E-04	3.37E-10	3.64E-10	5.74E-10	2.39E+00	1.79E-04	3.37E-10	3.64E-10	5.74E-10	1.15E-09
Rb 88	2.35E+00	1.07E+03	2.35E+00	1.70E-11	1.79E-04	3.32E-10	3.58E-10	5.64E-10	2.35E+00	1.79E-04	3.32E-10	3.58E-10	5.64E-10	1.13E-09
Y94	1.36E+00	1.12E+03	1.36E+00	2.90E-11	1.79E-04	3.27E-10	3.54E-10	5.57E-10	1.36E+00	1.79E-04	3.27E-10	3.54E-10	5.57E-10	1.11E-09
Te127	3.17E-01	3.37E+04	3.17E-01	1.20E-10	1.79E-04	3.16E-10	3.41E-10	5.37E-10	3.17E-01	1.79E-04	3.16E-10	3.41E-10	5.37E-10	1.07E-09
Pm151	8.14E-02	1.02E+05	8.14E-02	4.50E-10	1.79E-04	3.04E-10	3.28E-10	5.17E-10	8.14E-02	1.79E-04	3.04E-10	3.28E-10	5.17E-10	1.03E-09
Ho167	5.15E-01	1.12E+04	5.15E-01	7.10E-11	1.79E-04	3.04E-10	3.28E-10	5.16E-10	5.15E-01	1.79E-04	3.03E-10	3.28E-10	5.16E-10	1.03E-09

Gd159	1.35E-01	6.65E+04	1.35E-01	2.70E-10	1.79E-04	3.03E-10	3.27E-10	5.15E-10		1.35E-01	1.79E-04	3.03E-10	3.27E-10	5.15E-10	1.03E-09
Rb 82	2.05E+01	7.64E+01	2.05E+01	1.72E-12	1.79E-04	2.93E-10	3.16E-10	4.98E-10		2.05E+01	1.79E-04	2.93E-10	3.16E-10	4.98E-10	9.96E-10
Zr 85	2.00E+00	4.72E+02	2.00E+00	1.66E-11	1.79E-04	2.76E-10	2.98E-10	4.69E-10		2.00E+00	1.79E-04	2.76E-10	2.98E-10	4.69E-10	9.39E-10
Os176	6.29E+00	1.80E+02	6.29E+00	5.23E-12	1.79E-04	2.73E-10	2.95E-10	4.65E-10		6.29E+00	1.79E-04	2.73E-10	2.95E-10	4.65E-10	9.29E-10
Os189*	5.88E+00	1.73E+04	5.88E+00	5.40E-12	1.79E-04	2.64E-10	2.85E-10	4.48E-10		5.88E+00	1.79E-04	2.64E-10	2.85E-10	4.48E-10	8.97E-10
Cs136	2.26E-02	1.14E+06	2.26E-02	1.30E-09	1.79E-04	2.44E-10	2.63E-10	4.15E-10		2.26E-02	1.79E-04	2.44E-10	2.63E-10	4.15E-10	8.30E-10
Os177	4.88E+00	1.68E+02	4.88E+00	4.82E-12	1.79E-04	1.95E-10	2.11E-10	3.32E-10		4.88E+00	1.79E-04	1.95E-10	2.11E-10	3.32E-10	6.64E-10
Cd118	2.78E-01	3.02E+03	2.78E-01	8.07E-11	1.79E-04	1.86E-10	2.01E-10	3.17E-10		2.78E-01	1.79E-04	1.86E-10	2.01E-10	3.17E-10	6.34E-10
Sn108	1.94E+00	6.18E+02	1.94E+00	1.13E-11	1.79E-04	1.82E-10	1.97E-10	3.10E-10		1.94E+00	1.79E-04	1.82E-10	1.97E-10	3.10E-10	6.19E-10
Ag109*	6.72E+01	3.96E+01	6.72E+01	3.25E-13	1.79E-04	1.81E-10	1.96E-10	3.08E-10		6.72E+01	1.79E-04	1.81E-10	1.96E-10	3.08E-10	6.17E-10
Cs134*	1.44E+00	1.05E+04	1.44E+00	1.50E-11	1.79E-04	1.79E-10	1.94E-10	3.05E-10		1.44E+00	1.79E-04	1.79E-10	1.94E-10	3.05E-10	6.10E-10
Tc104	7.10E-01	1.10E+03	7.10E-01	3.00E-11	1.79E-04	1.77E-10	1.91E-10	3.01E-10		7.10E-01	1.79E-04	1.77E-10	1.91E-10	3.01E-10	6.02E-10
Rb 89	1.46E+00	9.09E+02	1.46E+00	1.40E-11	1.79E-04	1.70E-10	1.83E-10	2.89E-10		1.46E+00	1.79E-04	1.70E-10	1.83E-10	2.89E-10	5.77E-10
Mo102	7.82E-01	6.78E+02	7.82E-01	2.53E-11	1.79E-04	1.64E-10	1.77E-10	2.79E-10		7.82E-01	1.79E-04	1.64E-10	1.77E-10	2.79E-10	5.59E-10
Pm150	1.41E-01	9.65E+03	1.41E-01	1.40E-10	1.79E-04	1.64E-10	1.77E-10	2.79E-10		1.41E-01	1.79E-04	1.64E-10	1.77E-10	2.79E-10	5.57E-10
Ge 66	1.85E-01	8.14E+03	1.85E-01	9.20E-11	1.79E-04	1.41E-10	1.53E-10	2.40E-10		1.85E-01	1.79E-04	1.41E-10	1.53E-10	2.40E-10	4.81E-10
Pr142*	2.34E+00	8.76E+02	2.34E+00	7.10E-12	1.79E-04	1.38E-10	1.49E-10	2.35E-10		2.34E+00	1.79E-04	1.38E-10	1.49E-10	2.35E-10	4.69E-10
Xe133	1.15E-01	4.53E+05	1.15E-01	5.00E-14	1.00E+00	2.67E-10	2.89E-10	4.55E-10		0.00E+00	1.00E+00	0.00E+00	0.00E+00	0.00E+00	4.55E-10
Xe133*	1.15E-01	1.89E+05	1.15E-01	5.00E-14	1.00E+00	2.67E-10	2.89E-10	4.55E-10		0.00E+00	1.00E+00	0.00E+00	0.00E+00	0.00E+00	4.55E-10
Ge 67	6.03E-01	1.12E+03	6.03E-01	2.60E-11	1.79E-04	1.30E-10	1.41E-10	2.21E-10		6.03E-01	1.79E-04	1.30E-10	1.41E-10	2.21E-10	4.43E-10
Pd111	5.80E-01	1.40E+03	5.80E-01	2.66E-11	1.79E-04	1.28E-10	1.38E-10	2.18E-10		5.80E-01	1.79E-04	1.28E-10	1.38E-10	2.18E-10	4.36E-10
Ca 49	8.34E-01	5.23E+02	8.34E-01	1.76E-11	1.79E-04	1.22E-10	1.32E-10	2.07E-10		8.34E-01	1.79E-04	1.22E-10	1.32E-10	2.07E-10	4.15E-10
Sc 43	1.20E-01	1.40E+04	1.20E-01	1.20E-10	1.79E-04	1.20E-10	1.29E-10	2.03E-10		1.20E-01	1.79E-04	1.20E-10	1.29E-10	2.03E-10	4.07E-10
Ga 65	7.58E-01	9.12E+02	7.58E-01	1.80E-11	1.79E-04	1.13E-10	1.22E-10	1.93E-10		7.58E-01	1.79E-04	1.13E-10	1.22E-10	1.93E-10	3.85E-10
Se 83	4.06E-01	1.34E+03	4.06E-01	3.30E-11	1.79E-04	1.11E-10	1.20E-10	1.89E-10		4.06E-01	1.79E-04	1.11E-10	1.20E-10	1.89E-10	3.78E-10
Y95	7.62E-01	6.18E+02	7.62E-01	1.70E-11	1.79E-04	1.08E-10	1.16E-10	1.83E-10		7.62E-01	1.79E-04	1.08E-10	1.16E-10	1.83E-10	3.66E-10
Os181	2.80E+00	1.62E+02	2.80E+00	4.61E-12	1.79E-04	1.07E-10	1.16E-10	1.82E-10		2.80E+00	1.79E-04	1.07E-10	1.16E-10	1.82E-10	3.65E-10
Pd 98	4.60E-01	1.06E+03	4.60E-01	2.77E-11	1.79E-04	1.06E-10	1.14E-10	1.80E-10		4.60E-01	1.79E-04	1.06E-10	1.14E-10	1.80E-10	3.60E-10
Ag101	8.72E-01	6.66E+02	8.72E-01	1.37E-11	1.79E-04	9.92E-11	1.07E-10	1.69E-10		8.72E-01	1.79E-04	9.92E-11	1.07E-10	1.69E-10	3.37E-10
Sb129	4.91E-02	1.58E+04	4.91E-02	2.40E-10	1.79E-04	9.78E-11	1.06E-10	1.66E-10		4.91E-02	1.79E-04	9.78E-11	1.06E-10	1.66E-10	3.33E-10
Nb 88	3.78E-01	8.70E+02	3.78E-01	3.00E-11	1.79E-04	9.41E-11	1.02E-10	1.60E-10		3.78E-01	1.79E-04	9.41E-11	1.02E-10	1.60E-10	3.20E-10
Pr145	6.35E-02	2.15E+04	6.35E-02	1.70E-10	1.79E-04	8.96E-11	9.68E-11	1.52E-10		6.35E-02	1.79E-04	8.96E-11	9.68E-11	1.52E-10	3.05E-10
Zr 84	1.75E-01	1.55E+03	1.75E-01	5.59E-11	1.79E-04	8.12E-11	8.77E-11	1.38E-10		1.75E-01	1.79E-04	8.12E-11	8.77E-11	1.38E-10	2.76E-10
Eu157	2.77E-02	5.47E+04	2.77E-02	3.20E-10	1.79E-04	7.36E-11	7.95E-11	1.25E-10		2.77E-02	1.79E-04	7.36E-11	7.95E-11	1.25E-10	2.50E-10
Sr 93	5.49E-01	4.45E+02	5.49E-01	1.55E-11	1.79E-04	7.07E-11	7.64E-11	1.20E-10		5.49E-01	1.79E-04	7.07E-11	7.64E-11	1.20E-10	2.41E-10
Pd114	1.28E-01	1.45E+02	1.28E-01	6.54E-11	1.79E-04	6.95E-11	7.51E-11	1.18E-10		1.28E-01	1.79E-04	6.95E-11	7.50E-11	1.18E-10	2.36E-10
Sb128	1.94E-02	3.24E+04	1.94E-02	4.20E-10	1.79E-04	6.76E-11	7.31E-11	1.15E-10		1.94E-02	1.79E-04	6.76E-11	7.30E-11	1.15E-10	2.30E-10
Tc105	5.00E-01	4.56E+02	5.00E-01	1.60E-11	1.79E-04	6.64E-11	7.17E-11	1.13E-10		5.00E-01	1.79E-04	6.64E-11	7.17E-11	1.13E-10	2.26E-10
In106	6.14E-01	3.72E+02	6.14E-01	1.25E-11	1.79E-04	6.37E-11	6.88E-11	1.08E-10		6.14E-01	1.79E-04	6.37E-11	6.88E-11	1.08E-10	2.17E-10
As 69	2.89E-01	9.14E+02	2.89E-01	2.20E-11	1.79E-04	5.28E-11	5.70E-11	8.98E-11		2.89E-01	1.79E-04	5.28E-11	5.70E-11	8.98E-11	1.80E-10

Eu152+	7.27E-01	5.76E+03	7.27E-01	8.73E-12	1.79E-04	5.27E-11	5.69E-11	8.96E-11	7.27E-01	1.79E-04	5.27E-11	5.69E-11	8.96E-11	1.79E-10
In106*	6.14E-01	3.12E+02	6.14E-01	1.00E-11	1.79E-04	5.12E-11	5.53E-11	8.71E-11	6.14E-01	1.79E-04	5.12E-11	5.53E-11	8.71E-11	1.74E-10
Rh 96	2.67E-01	5.94E+02	2.67E-01	2.19E-11	1.79E-04	4.86E-11	5.25E-11	8.27E-11	2.67E-01	1.79E-04	4.86E-11	5.25E-11	8.26E-11	1.65E-10
Y83	3.46E-01	4.25E+02	3.46E-01	1.47E-11	1.79E-04	4.21E-11	4.55E-11	7.17E-11	3.46E-01	1.79E-04	4.21E-11	4.55E-11	7.17E-11	1.43E-10
Xe135	3.37E-02	3.29E+04	3.37E-02	5.00E-14	1.00E+00	7.83E-11	8.46E-11	1.33E-10	0.00E+00	1.00E+00	0.00E+00	0.00E+00	0.00E+00	1.33E-10
Sm156	1.99E-02	3.38E+04	1.99E-02	2.10E-10	1.79E-04	3.47E-11	3.75E-11	5.90E-11	1.99E-02	1.79E-04	3.47E-11	3.75E-11	5.90E-11	1.18E-10
In114	9.78E+00	7.19E+01	9.78E+00	4.15E-13	1.79E-04	3.37E-11	3.64E-11	5.73E-11	9.78E+00	1.79E-04	3.37E-11	3.64E-11	5.73E-11	1.15E-10
Se 70	4.65E-02	2.47E+03	4.65E-02	7.30E-11	1.79E-04	2.82E-11	3.04E-11	4.79E-11	4.65E-02	1.79E-04	2.82E-11	3.04E-11	4.79E-11	9.59E-11
Te129	8.61E-02	4.18E+03	8.61E-02	3.80E-11	1.79E-04	2.72E-11	2.93E-11	4.62E-11	8.61E-02	1.79E-04	2.72E-11	2.93E-11	4.62E-11	9.24E-11
Pr144	1.51E-01	1.04E+03	1.51E-01	1.90E-11	1.79E-04	2.38E-11	2.57E-11	4.05E-11	1.51E-01	1.79E-04	2.38E-11	2.57E-11	4.05E-11	8.10E-11
Ru107	4.19E-01	2.25E+02	4.19E-01	6.84E-12	1.79E-04	2.38E-11	2.57E-11	4.05E-11	4.19E-01	1.79E-04	2.38E-11	2.57E-11	4.05E-11	8.09E-11
In116*	5.62E-02	3.25E+03	5.62E-02	4.80E-11	1.79E-04	2.24E-11	2.42E-11	3.81E-11	5.62E-02	1.79E-04	2.24E-11	2.42E-11	3.81E-11	7.62E-11
Rb 78	1.35E-01	1.06E+03	1.35E-01	1.96E-11	1.79E-04	2.20E-11	2.37E-11	3.74E-11	1.35E-01	1.79E-04	2.20E-11	2.37E-11	3.74E-11	7.47E-11
Ru108	2.96E-01	2.73E+02	2.96E-01	8.62E-12	1.79E-04	2.12E-11	2.29E-11	3.60E-11	2.96E-01	1.79E-04	2.12E-11	2.29E-11	3.60E-11	7.21E-11
La142	2.36E-02	5.47E+03	2.36E-02	9.30E-11	1.79E-04	1.82E-11	1.97E-11	3.10E-11	2.36E-02	1.79E-04	1.82E-11	1.97E-11	3.10E-11	6.20E-11
La141	1.27E-02	1.41E+04	1.27E-02	1.50E-10	1.79E-04	1.58E-11	1.71E-11	2.69E-11	1.27E-02	1.79E-04	1.58E-11	1.71E-11	2.69E-11	5.38E-11
Nd149	2.07E-02	6.22E+03	2.07E-02	9.00E-11	1.79E-04	1.55E-11	1.67E-11	2.63E-11	2.07E-02	1.79E-04	1.55E-11	1.67E-11	2.63E-11	5.26E-11
Sn127	1.36E-02	7.56E+03	1.36E-02	1.30E-10	1.79E-04	1.47E-11	1.59E-11	2.50E-11	1.36E-02	1.79E-04	1.47E-11	1.58E-11	2.50E-11	4.99E-11
Re189	3.84E-03	8.75E+04	3.84E-03	4.30E-10	1.79E-04	1.37E-11	1.48E-11	2.33E-11	3.84E-03	1.79E-04	1.37E-11	1.48E-11	2.33E-11	4.66E-11
Te131	3.57E-02	1.50E+03	3.57E-02	3.80E-11	1.79E-04	1.13E-11	1.22E-11	1.92E-11	3.57E-02	1.79E-04	1.13E-11	1.22E-11	1.92E-11	3.83E-11
Ba139	3.45E-02	4.99E+03	3.45E-02	3.50E-11	1.79E-04	1.00E-11	1.08E-11	1.71E-11	3.45E-02	1.79E-04	1.00E-11	1.08E-11	1.70E-11	3.41E-11
Sb131	2.14E-02	1.38E+03	2.14E-02	5.20E-11	1.79E-04	9.24E-12	9.98E-12	1.57E-11	2.14E-02	1.79E-04	9.24E-12	9.98E-12	1.57E-11	3.14E-11
Tb162	6.07E-02	4.56E+02	6.07E-02	1.64E-11	1.79E-04	8.26E-12	8.93E-12	1.41E-11	6.07E-02	1.79E-04	8.26E-12	8.92E-12	1.41E-11	2.81E-11
Ag111*	3.42E+00	6.48E+01	3.42E+00	2.91E-13	1.79E-04	8.26E-12	8.92E-12	1.41E-11	3.42E+00	1.79E-04	8.26E-12	8.92E-12	1.41E-11	2.81E-11
Pr146	2.89E-02	1.45E+03	2.89E-02	2.96E-11	1.79E-04	7.10E-12	7.67E-12	1.21E-11	2.89E-02	1.79E-04	7.10E-12	7.67E-12	1.21E-11	2.42E-11
Ho168	1.50E-01	1.79E+02	1.50E-01	5.23E-12	1.79E-04	6.52E-12	7.04E-12	1.11E-11	1.50E-01	1.79E-04	6.51E-12	7.04E-12	1.11E-11	2.22E-11
Tc 99*	4.03E-02	2.16E+04	4.03E-02	1.90E-11	1.79E-04	6.36E-12	6.87E-12	1.08E-11	4.03E-02	1.79E-04	6.36E-12	6.86E-12	1.08E-11	2.16E-11
Sn123*	2.68E-02	2.41E+03	2.68E-02	2.80E-11	1.79E-04	6.23E-12	6.73E-12	1.06E-11	2.68E-02	1.79E-04	6.23E-12	6.73E-12	1.06E-11	2.12E-11
Rh106	1.09E+00	2.98E+01	1.09E+00	6.43E-13	1.79E-04	5.82E-12	6.28E-12	9.90E-12	1.09E+00	1.79E-04	5.82E-12	6.28E-12	9.90E-12	1.98E-11
Ce146	1.91E-02	8.11E+02	1.91E-02	2.64E-11	1.79E-04	4.19E-12	4.52E-12	7.12E-12	1.91E-02	1.79E-04	4.19E-12	4.52E-12	7.12E-12	1.42E-11
La143	2.27E-02	8.52E+02	2.27E-02	2.20E-11	1.79E-04	4.15E-12	4.48E-12	7.05E-12	2.27E-02	1.79E-04	4.15E-12	4.48E-12	7.05E-12	1.41E-11
Cs138	1.62E-02	2.01E+03	1.62E-02	2.60E-11	1.79E-04	3.50E-12	3.78E-12	5.95E-12	1.62E-02	1.79E-04	3.50E-12	3.78E-12	5.95E-12	1.19E-11
Nd152	1.72E-02	6.84E+02	1.72E-02	2.37E-11	1.79E-04	3.38E-12	3.65E-12	5.76E-12	1.72E-02	1.79E-04	3.38E-12	3.65E-12	5.76E-12	1.15E-11
Sn125*	1.73E-02	5.71E+02	1.73E-02	2.09E-11	1.79E-04	3.00E-12	3.24E-12	5.11E-12	1.73E-02	1.79E-04	3.00E-12	3.24E-12	5.10E-12	1.02E-11
Ga 64	8.13E-02	1.58E+02	8.13E-02	4.41E-12	1.79E-04	2.97E-12	3.21E-12	5.06E-12	8.13E-02	1.79E-04	2.97E-12	3.21E-12	5.06E-12	1.01E-11
Cs139	1.63E-02	5.56E+02	1.63E-02	2.03E-11	1.79E-04	2.74E-12	2.96E-12	4.66E-12	1.63E-02	1.79E-04	2.74E-12	2.96E-12	4.66E-12	9.33E-12
Nd151	1.70E-02	7.46E+02	1.70E-02	1.80E-11	1.79E-04	2.54E-12	2.74E-12	4.32E-12	1.70E-02	1.79E-04	2.54E-12	2.74E-12	4.32E-12	8.64E-12
Sm155	1.63E-02	1.34E+03	1.63E-02	1.70E-11	1.79E-04	2.30E-12	2.48E-12	3.91E-12	1.63E-02	1.79E-04	2.30E-12	2.48E-12	3.91E-12	7.83E-12
Ba142	1.71E-02	6.36E+02	1.71E-02	1.60E-11	1.79E-04	2.27E-12	2.45E-12	3.86E-12	1.71E-02	1.79E-04	2.27E-12	2.45E-12	3.86E-12	7.73E-12
Ba141	1.24E-02	1.10E+03	1.24E-02	2.20E-11	1.79E-04	2.26E-12	2.45E-12	3.85E-12	1.24E-02	1.79E-04	2.26E-12	2.45E-12	3.85E-12	7.70E-12

Tc 97*	8.73E-05	7.82E+06	8.73E-05	3.10E-09	1.79E-04	2.25E-12	2.43E-12	3.82E-12	8.73E-05	1.79E-04	2.25E-12	2.43E-12	3.82E-12	7.64E-12
Ir181	1.26E-02	2.94E+02	1.26E-02	1.85E-11	1.79E-04	1.94E-12	2.09E-12	3.29E-12	1.26E-02	1.79E-04	1.93E-12	2.09E-12	3.29E-12	6.58E-12
Ir182	8.68E-03	9.00E+02	8.68E-03	2.50E-11	1.79E-04	1.80E-12	1.95E-12	3.06E-12	8.68E-03	1.79E-04	1.80E-12	1.95E-12	3.06E-12	6.13E-12
Ir183	5.39E-03	3.30E+03	5.39E-03	4.00E-11	1.79E-04	1.79E-12	1.93E-12	3.04E-12	5.39E-03	1.79E-04	1.79E-12	1.93E-12	3.04E-12	6.09E-12
Sb130	3.89E-03	2.37E+03	3.89E-03	5.40E-11	1.79E-04	1.74E-12	1.88E-12	2.97E-12	3.89E-03	1.79E-04	1.74E-12	1.88E-12	2.97E-12	5.93E-12
Ir179	2.60E-02	2.40E+02	2.60E-02	7.39E-12	1.79E-04	1.59E-12	1.72E-12	2.71E-12	2.60E-02	1.79E-04	1.59E-12	1.72E-12	2.71E-12	5.43E-12
Gd162	7.75E-03	5.04E+02	7.75E-03	1.80E-11	1.79E-04	1.16E-12	1.25E-12	1.97E-12	7.75E-03	1.79E-04	1.16E-12	1.25E-12	1.97E-12	3.94E-12
Pm152	2.12E-02	2.46E+02	2.12E-02	5.80E-12	1.79E-04	1.02E-12	1.10E-12	1.74E-12	2.12E-02	1.79E-04	1.02E-12	1.10E-12	1.74E-12	3.47E-12
Eu159	5.27E-03	1.09E+03	5.27E-03	2.31E-11	1.79E-04	1.01E-12	1.09E-12	1.72E-12	5.27E-03	1.79E-04	1.01E-12	1.09E-12	1.72E-12	3.44E-12
Os191	5.41E-05	1.33E+06	5.41E-05	1.80E-09	1.79E-04	8.08E-13	8.73E-13	1.38E-12	5.41E-05	1.79E-04	8.08E-13	8.73E-13	1.37E-12	2.75E-12
Sn126	2.40E-06	7.26E+12	2.40E-06	2.70E-08	1.79E-04	5.38E-13	5.81E-13	9.15E-13	2.40E-06	1.79E-04	5.38E-13	5.81E-13	9.15E-13	1.83E-12
Ba137*	4.17E-02	1.53E+02	4.17E-02	5.33E-13	1.79E-04	1.85E-13	1.99E-13	3.14E-13	4.17E-02	1.79E-04	1.84E-13	1.99E-13	3.14E-13	6.28E-13
Se 79*	1.69E-03	2.35E+02	1.69E-03	7.19E-12	1.79E-04	1.01E-13	1.09E-13	1.72E-13	1.69E-03	1.79E-04	1.01E-13	1.09E-13	1.72E-13	3.43E-13
Os191*	5.41E-05	4.72E+04	5.41E-05	1.50E-10	1.79E-04	6.74E-14	7.28E-14	1.15E-13	5.41E-05	1.79E-04	6.74E-14	7.27E-14	1.15E-13	2.29E-13
Nb 94	1.44E-02	6.41E+11	1.44E-02	3.38E-13	1.79E-04	4.04E-14	4.36E-14	6.87E-14	1.44E-02	1.79E-04	4.04E-14	4.36E-14	6.87E-14	1.37E-13
Ir192	6.14E-07	6.38E+06	6.14E-07	6.20E-09	1.79E-04	3.16E-14	3.41E-14	5.38E-14	6.14E-07	1.79E-04	3.16E-14	3.41E-14	5.37E-14	1.08E-13
Nb 92*	3.11E-06	8.77E+05	3.11E-06	4.41E-10	1.79E-04	1.14E-14	1.23E-14	1.94E-14	3.11E-06	1.79E-04	1.14E-14	1.23E-14	1.94E-14	3.87E-14
Os190*	5.47E-06	5.94E+02	5.47E-06	7.04E-12	1.79E-04	3.20E-16	3.45E-16	5.44E-16	5.47E-06	1.79E-04	3.20E-16	3.45E-16	5.44E-16	1.09E-15
W 189	1.34E-06	6.96E+02	1.34E-06	1.14E-11	1.79E-04	1.27E-16	1.37E-16	2.16E-16	1.34E-06	1.79E-04	1.27E-16	1.37E-16	2.16E-16	4.31E-16
Lu176*	1.80E-08	1.33E+04	1.80E-08	1.20E-10	1.79E-04	1.79E-17	1.94E-17	3.05E-17	1.80E-08	1.79E-04	1.79E-17	1.94E-17	3.05E-17	6.10E-17
Te123*	2.15E-10	1.03E+07	2.15E-10	3.90E-09	1.79E-04	6.96E-18	7.52E-18	1.18E-17	2.15E-10	1.79E-04	6.96E-18	7.52E-18	1.18E-17	2.37E-17
Cd113*	1.95E-15	4.45E+08	1.95E-15	3.00E-08	1.79E-04	4.86E-22	5.24E-22	8.26E-22	1.95E-15	1.79E-04	4.86E-22	5.24E-22	8.26E-22	1.65E-21
In115*	1.57E-13	1.62E+04	1.57E-13	6.00E-11	1.79E-04	7.82E-23	8.45E-23	1.33E-22	1.57E-13	1.79E-04	7.82E-23	8.44E-23	1.33E-22	2.66E-22
Ar 37	1.08E+02	3.03E+06	1.08E+02	0.00E+00	1.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Ar 41	8.01E+00	6.58E+03	8.01E+00	0.00E+00	1.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Ar 44	1.48E+00	7.12E+02	1.48E+00	0.00E+00	1.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Ar 39	1.71E+00	8.49E+09	1.71E+00	0.00E+00	1.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Ar 42	9.23E-01	1.04E+09	9.23E-01	0.00E+00	1.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

APPENDIX D. **HAZARD EVALUATION TABLES**

Event Number
TS3-4

Event Description:
Release of activated Target cooling water into Core Vessel due to catastrophic failure of target shell caused by loss of material integrity.

Assumptions and Initial Conditions:

1. Core vessel operating in inert helium near atmospheric pressure or in vacuum
2. After loss of cooling with beam trip decay heat cannot raise target temperature to 800 C threshold for tungsten/steam reaction
3. Core vessel ullage, burst disk and vent system designed to limit peak core vessel pressure to below 1.5 bar even with rapid water loss from the target and/or credible hydrogen moderator failures
4. Neutron beam windows remain intact throughout event

Causes:
Loss of material integrity:

1 Manufacturing error
2 High Coolant pressure
3 Material fatigue caused by thermal cycles
4 Radiation damage to material

Initiating Event Frequency
U

Unmitigated Impact on Systems:
Target rotation continues so whole target heats from beam until loss of shell strength at elevated temperatures causes disk to collapse onto steel shielding and stops rotation. Possible moderator vessel failure and hydrogen release after target shroud collapses Half of tungsten assumed vaporized. Hydrogen and water vapor vents through core vessel burst disk and hydrogen safe vent. Bulk of water released from target retained in ullage or drain tank.

Unmitigated Consequences

Radiological	**Chemical**	**ODH**
Public: Low **WG1**:moderate **WG2:**moderate	**Public**: **WG1**: **WG2**:	**Public**: **WG1**: **WG2**:

Safety Function:

Method of Detection:	
Core Vessel leak detection probe	
Target cooling loop gas liquid separator tank water level	
Target cooling loop return flow, pressure and temperature	
Core vessel pressure change	
RGA on core vessel off-gas	
Preventive Features – Attributes:	**Credited:**
Design: Design techniques- Appropriate National Codes or Standards on Target materials will be used.	
Administrative: Operating Procedures and Training; Surveillance & Maintenance; Periodic target replacement	

Event Number **TS3-4**	
Mitigative Features – Attributes:	**Credited:**
Beam Cut-off by TPS upon detection of low cooling pressure in return, low return flow or low separator tank level	
Beam Cut-off by TPS upon detection of water by Core Vessel Liquid Detection Probe.	
Beam Cut-off by TPS for core vessel burst disk rupture	
Inert core vessel atmosphere	
Core vessel pressure relief system – burst disk and hydrogen safe vent	
MPS trip on Target cooling loop level, flow, temperature and pressure monitors out of limits	
MPS trip on high core vessel helium or vacuum pressure during operation	
MPS trip on loss of moderator system vacuum	
Passive decay heat removal to fixed monolith shielding in mitigated case after beam trip	
Proton Beam Window cooling common with target cooling so loss of target cooling likely to fail proton beam window with passive shut down accelerator	
Collection of Water by the Core Vessel; Confinement by Core Vessel and neutron beam windows	

Planned analysis, assumption validations, and Risk/Opportunities:	**Mitigated Consequences:**		
1. Accident analysis including on site and off site dose estimates 2. Proton Beam Window thermal analysis for loss of cooling 3. Set point analysis for beam trip system 4. Moderator system boundary failure for target loss of cooling 5. Core vessel pressure response for rapid water boundary failure with following moderator boundary failure	**Radiological** **Public**: Negligible **WG1**: Low **WG2:** Negligible	**Chemical** **Public**: **WG1:** **WG2:**	**ODH** **Public**: **WG1:** **WG2:**

Notes:	**Mitigated Frequency**
1. This event in the FTS included a mercury release which does not apply to the rotating target. 2. TPS potential CEC	

Event Number

BG7-1 Natural Phenomenon event with follow-on explosion and fire

Event Description:
Damage to target building and subsequent release of hazardous material due to NPH event followed by an explosion and follow-on fire.

Assumptions and Initial Conditions:

1. The earthquake may, as a secondary effect, cause fire and/or hydrogen explosion for events > SDC2.
2. Active cooling or electric power are not needed for decay heat removal
3. The earthquake causes loss of the accelerator proton beam
4. Monolith iron shielding and core vessel components position retained by external concrete structure
5. Target radionuclides are protected from possible effects of fire by massive steel and concrete shielding of the monolith structure.
6. Core vessel boundary seals fail and inert atmosphere lost

Causes:
Earthquakes are natural phenomena

Initiating Event Frequency EU

Unmitigated Impact on Systems:
Damage to building structures and systems. Partial release of target radionuclides from detonation adjacent to target

Unmitigated Consequences

Radiological	Chemical	ODH
Public: low	Public:.	Public:
WG1:low	WG1:	WG1:
WG2: low	WG2:	WG2:

Safety Function: Seismic qualification of the cryogenic hydrogen system and surrounding or adjacent structures prevents the loss of hydrogen to the interior of the core vessel for SDC-2 or less event. SDC-3 Seismic qualification for the monolith concrete and building steel structure.

Method of Detection:
Audible, visual, tactile.

Preventive Features – Attributes: Credited:
Design: Building design to IBC standards
Administrative:

Event Number
BG7-1 (continued)

Mitigative Features – Attributes:	**Credited:**
Design: Building structures seismically qualified to protect evacuation paths; cryogenic hydrogen systems seismically qualified to prevent release of hydrogen into interior of core vessel and subsequent possible detonation to SDC-2. Monolith concrete shielding and building steel structures qualified to SDC-3. Note: building structures around the cryogenic hydrogen systems will have the same seismic qualification as the H2 system due to 2-over-1 considerations. Design: Fire barriers minimize consequences of large fire.	
Administrative: Combustible materials control program reduce probability of a large fire; Emergency procedures and training; fire department response.	.

Planned analysis, assumption validations, and Risk/Opportunities:	**Mitigated Consequences:**		
Passive decay heat removal characteristic of target is subject to confirmation. Seismic qualification parameters of SSCs with SDC-2 or SDC-3 safety functions need to be confirmed including limit states. Detailed accident analysis to be done.	**Radiological Public**: **WG1**: **WG2:**	**Chemical Public**: **WG1:** **WG2:**	**ODH Public**: **WG1:** **WG2:**
Notes: Event number was BG7-1 in 2016 PHAR and FTS HE reports			**Mitigated Frequency**