

INL/RPT-23-75720

***Gamma-Ray Emitting
Radionuclides Concentrations
and Decontamination Factors
of ATR Loop Liquid Samples
Cycle 171B***

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February 15, 2024

ATR FINAL LOOP ACTIVITY REPORT

FOR THE PERIOD

Jun. 21, 2023 to Sep. 26, 2023

CYCLE 171B-1

DATE OF REPORT

February 15, 2024

GAMMA-RAY EMITTING RADIONUCLIDES CONCENTRATIONS AND
DECONTAMINATION FACTORS OF ATR LOOP LIQUID SAMPLES
CYCLE 171B-1

This report contains the gamma-ray emitting radionuclides concentration and decontamination factor results from gamma-ray spectrometry measurements of ATR loop liquid samples by the Radiation Measurements Laboratory (RML) for ATR Cycle 171B Jun. 20, 2023, to Sep. 27, 2023. This report consists of five subsections, one for each loop. Each subsection contains the results for each sampling of the loop along with the date and time of sampling, spectral data identifications, sample type, and reactor power (MW). The results are reported in units of disintegrations per minute per milliliter of sample. The results are obtained with the gamma-ray spectral data analysis routines of the RML computer. Some of this report is also generated by RML data storage and handling routines.

For certain types of samples, no results appear for certain radionuclides because meaningful results for the radionuclides cannot be obtained from the sample type. The nomenclatures of the sample types are listed below.

BIX = water sample before ion exchange
BIX-7= recount after allowing 7 days for decay
AIX = water sample after ion exchange
PIX = pressurized water sample
DFX = decontamination factor for water samples

All radionuclides concentration results have been decay-corrected back to the time of sampling.

The decontamination factor (DFX) calculation consists of the following logic where $B = BIX$ and $A = AIX$,

If ($B > 0$ and $A > 0$), $DFX = B/A$
If ($B > 0$ and $A = 0$), no DFX is reported
If ($B > 0$ and A is a limit value), $DFX = >B/A$
If (B is a limit value or $B = 0$), no DFX is reported

In these results a limit value is designated by the < symbol. A limit value is a type of detection limit which is defined in the computer analysis documentation of the RML. The limit value for a given radionuclide will vary from sample to sample because of the detection systems, counting geometry, counting time, the radionuclide mix, and intensity in the samples.

The results in this report have been obtained by use of the RML procedures for ATR loop radionuclide analysis. The results have been reviewed and checked for correctness by the RML staff.

The uncertainties for these results are for the random counting component obtained from the photopeak-fitting procedure. No other components are included.

There is only one PIX sample per cycle for each loop. Therefore, PIX results will be found with one sampling of each loop.

1C-W sampled on 7/31/23 BIX-7 count was 20 minutes instead of 12 hours.

FROM JUL 21, 2023 TO SEP 26, 2023

LOOP IC-W CYCLE 171B POWER 111.0 MW

SAMPLE TYPE	SAMPLE ID	DATE SAMPLED	TIME SAMPLED	PIX		BIX		AIX		BIX-7	
				DPM/ML	%ERR	DPM/ML	%ERR	DPM/ML	%ERR	DPM/ML	%ERR
11 Na	24			0.0		6.59E+01	5.3	<1.39E+00		>4.74E+01	
21 Sc	46					<5.32E+00		<5.30E-01		Undeterminable	
24 Cr	51									4.86E-01	47.9
25 Mn	54									1.50E+01	14.3
25 Mn	56					7.45E+01	11.8	<3.13E+00		1.61E+01	4.7
26 Fe	59										
27 Co	58										
27 Co	60										
30 Zn	65					9.17E+00	28.7	<1.63E+00		1.16E+01	9.4
37 Rb	88			0.0		<1.07E+01		<2.56E+00		2.08E+00	21.1
37 Rb	89			0.0		1.56E+02	31.8	<2.26E+01	47.8	1.18E+01	5.7
38 Sr	91					4.94E+02	6.1	<1.81E+01		3.10E+00	21.2
38 Sr	92					1.69E+01	32.0	<2.54E+00			
38 Sr	92					1.98E+01	20.6	<1.23E+00			
39 Y	90					<5.29E+00		<3.08E-01			
39 Y	92					<3.78E+01		<4.28E+00			
39 Y	93					<9.58E+01		<4.81E+00			
40 Zr	95					<9.01E+00		<9.49E-01			
40 Zr	97					3.11E+02	22.4	<5.08E+01		<5.41E-01	
41 Nb	95										
42 Mo	99										
43 TCM	99					<5.76E+01		<4.45E-01		6.44E-01	39.3
44 Ru	103					<6.65E+00		<4.04E-01		3.52E+02	1.7
45 Rh	106										
47 AgM	110										
51 Sb	122										
51 Sb	124										
52 Te	132										
53 I	131					<9.71E+00		<4.03E-01		<9.17E-01	
53 I	132			0.0		2.58E+02	2.4	<1.07E+00		6.17E+00	11.8
53 I	133					9.68E+01	3.4	<2.85E-01			
53 I	134			0.0		8.60E+02	1.9	<1.52E+00			
53 I	135			0.0		2.12E+02	6.7	<2.65E+00			
55 Cs	134										
55 Cs	136					<4.91E+00		1.41E+00	42.4	<7.88E-01	
55 Cs	137										
55 Cs	138			0.0		8.75E+02	2.5	2.47E+01	14.5	<7.03E-01	
56 Ba	140					<1.16E+01		<1.54E+00		8.24E-01	41.6
56 Ba	141					<3.61E+01		<5.28E+00		<4.04E+00	

FROM JUL 21, 2023 TO SEP 26, 2023

LOOP 1C-W CYCLE 171B POWER 111.0 MW

SAMPLE TYPE SAMPLE ID DATE SAMPLED TIME SAMPLED	PIX		BIX		AIX		BIX-7	
	DPM/ML	%ERR	DPM/ML	%ERR	DPM/ML	%ERR	DPM/ML	%ERR
57 La 140			<2.04E+00		<6.44E-01		2.25E+01	24.4
57 La 142			<3.10E+01		<1.36E+01			
58 Ce 141			<8.80E+00		<5.82E-01		<3.18E-01	
58 Ce 143			<1.37E+01		<5.74E-01			
58 Ce 144							<3.49E+00	
63 EuM 152			<4.48E+01		<4.69E+00			
63 Eu 152			<3.22E+01		<2.56E+00		<1.89E+00	
63 Eu 154			<8.78E+00		<1.31E+00		<8.93E-01	
63 Eu 155							<1.51E+00	
63 Eu 156			<7.16E+01		<5.42E+00		<1.27E+01	
68 Er 171			<7.28E+00		<9.89E-01		<6.54E+00	
71 Lu 177			<3.85E+01		<2.25E+00		<2.07E-01	
72 Hf 175							<2.66E-01	
72 Hf 181			<1.03E+01		<2.87E-01		<1.15E+00	
73 Ta 182							<2.50E+00	
73 Ta 183							1.11E+03	9.1
74 W 187			1.20E+03	1.8	<1.35E+00			
93 Np 239			<3.08E+01		<3.19E+00			
18 Ar 41	0.0							
36 KrM 85	0.0							
36 Kr 87	0.0							
36 Kr 88	0.0							
54 Xe 133	0.0							
54 XeM 135	0.0							
54 Xe 135	0.0							
54 Xe 138	0.0							

FROM JUL 21, 2023 TO SEP 26, 2023

LOOP 1C-W CYCLE 171B POWER 111.0 MW

SAMPLE TYPE SAMPLE ID DATE SAMPLED TIME SAMPLED	PIX		BIX		AIX		BIX-7	
	DPM/ML	%ERR	DPM/ML	%ERR	DPM/ML	%ERR	DPM/ML	%ERR
11 Na 24	<2.38E+02		5.91E+01	7.9	<6.24E-01		9.63E-01	20.1
21 Sc 46			<1.19E+01		<5.79E-01		5.40E+02	0.7
24 Cr 51							8.68E+01	0.9
25 Mn 54								
25 Mn 56			1.64E+02	9.5	<2.35E+00		1.91E+02	0.7
26 Fe 59							2.15E+01	0.9
27 Co 58							3.38E+02	1.0
27 Co 60							1.51E+01	3.0
30 Zn 65			3.19E+02	4.6	7.62E-01	32.9	4.18E+02	33.3
37 Rb 88	<2.30E+03		2.65E+01	26.6	<1.33E+00		>1.99E+01	
37 Rb 89	<1.57E+03		2.24E+02	26.2	<6.21E+01		>3.61E+00	
38 Sr 91			5.73E+02	5.7	<1.82E+01		>3.15E+01	
38 Sr 92			2.73E+01	48.6	<3.25E+00		>8.40E+00	
39 Y 90			1.40E+01	28.0	1.06E+00	36.1	1.32E+01	45.6
39 Y 92			<7.83E+00		<7.58E-01		Undeterminable	
39 Y 93			<6.17E+01		<4.94E+00		Undeterminable	
40 Zr 95			<1.11E+02		<8.54E+00		Undeterminable	
40 Zr 97			<2.14E+01		<1.31E+00		Undeterminable	
41 Nb 95			<3.67E+02		3.99E+01	35.6	8.55E+00	6.1
42 Mo 99							1.19E+01	1.4
43 Tcm 99							2.15E+02	2.2
44 Ru 103			<6.98E+01		<5.61E-01		<1.97E-01	
44 Ru 106			<1.30E+01		<4.10E-01		<2.04E+00	
47 AgM 110							<1.47E-01	
51 Sb 122							8.89E+00	14.7
52 Te 124			1.33E+01	41.4	<2.86E-01		7.10E+00	2.0
53 I 131			3.59E+02	2.4	<7.72E-01		<5.11E-01	
53 I 132	2.88E+02	14.6	9.10E+01	6.2	<8.29E-01		6.50E+00	2.2
53 I 133			9.01E+02	2.6	<2.07E+00			
53 I 134	7.79E+02	16.5	2.07E+02	9.0	<2.04E+00			
53 I 135	<2.60E+02							
55 Cs 134			<9.20E+00		<1.13E+00		<3.31E-01	
55 Cs 136							<5.92E-01	
55 Cs 137							1.09E+00	13.4
55 Cs 138	6.90E+02	47.9	8.10E+02	4.3	2.27E+01	36.7	1.88E+00	24.7
56 Ba 140			<3.48E+01		<1.76E+00			
56 Ba 141			<3.42E+01		<6.16E+00			

FROM JUL 21, 2023 TO SEP 26, 2023

LOOP IC-W CYCLE 171B POWER 111.0 MW

SAMPLE TYPE	PIX		BIX		AIX		BIX-7	
	DATE SAMPLED	TIME SAMPLED	DATE SAMPLED	TIME SAMPLED	DATE SAMPLED	TIME SAMPLED	DATE SAMPLED	TIME SAMPLED
RADIONUCLIDE	DPM/ML	%ERR	DPM/ML	%ERR	DPM/ML	%ERR	DPM/ML	%ERR
57 La 140			<4.15E+00		<4.80E-01		4.24E+01	4.1
57 La 142			<4.25E+01		<9.10E+00		Undeterminable	
58 Ce 141			<1.17E+01		<1.23E+00		<3.32E-01	
58 Ce 143			<1.71E+01		<9.98E-01		Undeterminable	
58 Ce 144							<4.21E+00	
63 EuM 152			<7.51E+01		<4.59E+00		Undeterminable	
63 Eu 152			<2.80E+01		<2.20E+00		<3.50E-01	
63 Eu 154			1.54E+01	48.2	<1.05E+00		<4.66E-01	
63 Eu 155							<6.96E-01	
63 Eu 156			<1.01E+02		<9.13E+00		<2.29E+00	
68 Er 171			<1.06E+01		<5.84E-01		Undeterminable	
71 Lu 177			<6.99E+01		<4.06E+00		Undeterminable	
72 Hf 175			<1.01E+01		<6.53E-01		<1.70E+00	
72 Hf 181							1.33E-01	48.6
73 Ta 182							1.83E+00	4.9
73 Ta 183							7.28E-01	46.7
74 W 187							<1.02E+00	
93 Np 239			4.68E+02	3.6	<1.40E+00		4.00E+02	9.8
18 Ar 41		8.0	<5.62E+01		<3.39E+00		<8.41E+00	
36 KrM 85								
36 Kr 87			<2.58E+02					
36 Kr 88			<2.95E+02					
36 Kr 88		32.6	3.70E+02					
54 Xe 133			<1.23E+03					
54 XeM 135		27.5	7.64E+02					
54 Xe 135		8.2	4.51E+02					
54 Xe 138		44.0	1.30E+03					

FROM JUL 21, 2023 TO SEP 26, 2023

LOOP 1C-W CYCLE 171B POWER 110.5 MW

SAMPLE TYPE SAMPLE ID DATE SAMPLED TIME SAMPLED	PIX		BIX		AIX		BIX-7	
	DPM/ML	%ERR	DPM/ML	%ERR	DPM/ML	%ERR	DPM/ML	%ERR
11 Na 24	0.0		7.48E+01	4.8	<4.19E-01		<2.08E-01	
21 Sc 46			<4.05E+00		<8.23E-01		1.80E+02	1.0
24 Cr 51							3.78E+01	2.0
25 Mn 54								
25 Mn 56			7.67E+01	12.6	<4.99E+00		5.56E+01	2.3
26 Fe 59							1.24E+01	1.5
27 Co 58							6.24E+01	1.6
27 Co 60							1.58E+01	2.4
30 Zn 65			6.93E+01	4.8	4.80E+00	13.6	1.45E+01	14.4
37 Rb 88	0.0		1.36E+01	36.5	<1.44E+00		>9.46E+00	
37 Rb 89	0.0		3.15E+02	14.2	<6.01E+01		>5.25E+00	
38 Sr 91			6.09E+02	4.0	<2.33E+01		>2.61E+01	
38 Sr 92			<1.70E+01		<3.95E+00		Undeterminable	
39 Y 92			1.75E+01	15.4	<1.26E+00		>1.39E+01	
39 Y 93			<6.81E+00		<6.39E-01		Undeterminable	
40 Zr 95			<4.02E+01		<5.19E+00		Undeterminable	
40 Zr 97			<7.37E+01		<4.52E+00		Undeterminable	
41 Nb 95			2.33E+01	16.2	<1.56E+00		>1.49E+01	2.1
42 Mo 99			<1.54E+02		<4.43E+01		Undeterminable	
43 TCM 99							1.23E+01	2.2
44 Ru 103			<4.45E+01		<4.23E-01		2.48E+02	1.8
45 Rh 106			<8.80E+00		<7.14E-01			
47 AgM 110							<1.41E-01	
51 Sb 122							<1.29E+00	
51 Sb 124							<1.40E-01	
52 Te 132							9.14E+00	6.5
53 I 131			6.45E+00	48.8	<4.99E-01		3.82E+00	3.1
53 I 132	0.0		4.07E+02	1.8	<9.83E-01		<3.23E-01	
53 I 133			1.14E+02	3.3	<9.59E-01		7.32E+00	3.9
53 I 134	0.0		9.72E+02	2.9	<2.37E+00			
53 I 135	0.0		2.58E+02	4.5	<3.80E+00			
55 Cs 134								
55 Cs 136			<6.61E+00		<1.14E+00		3.23E-01	27.4
55 Cs 137							5.88E-01	48.0
55 Cs 138	0.0		1.01E+03	1.7	3.18E+01	16.6	9.12E-01	10.9
56 Ba 140			<1.94E+01		<1.85E+00		3.20E+00	11.1
56 Ba 141			<3.79E+01		<4.83E+00			

FROM JUL 21, 2023 TO SEP 26, 2023

LOOP 1C-W CYCLE 171B POWER 110.5 MW

SAMPLE TYPE	PIX		BIX		AIX		BIX-7	
	DPM/ML	%ERR	DPM/ML	%ERR	DPM/ML	%ERR	DPM/ML	%ERR
SAMPLE ID	00/00/00		091123010		091123011		091823010	
DATE SAMPLED	00:00		09/11/23		09/11/23		09/11/23	
TIME SAMPLED			14:14		14:08		14:14	
RADIONUCLIDE	DPM/ML	%ERR	DPM/ML	%ERR	DFX	%ERR	DPM/ML	%ERR
57 La 140			<4.48E+00				4.36E+01	3.8
57 La 142			<2.98E+01		Undeterminable			
58 Ce 141			<8.80E+00		Undeterminable		<2.71E-01	
58 Ce 143			<1.10E+01		Undeterminable			
58 Ce 144					Undeterminable		<7.40E+00	
63 EuM 152			<4.83E+01		Undeterminable			
63 Eu 152			<1.27E+01		Undeterminable		<3.27E-01	
63 Eu 154			<1.36E+01		Undeterminable		<2.30E-01	
63 Eu 155					Undeterminable		<4.24E-01	
63 Eu 156			<6.46E+01		Undeterminable		<2.89E+00	
68 Er 171			<1.22E+01		Undeterminable		<1.12E+00	
71 Lu 177			<6.97E+01		Undeterminable		<8.05E-02	
72 Hf 175			<4.55E+00		Undeterminable		6.98E-01	13.6
72 Hf 181					Undeterminable		<4.28E-01	
73 Ta 182					Undeterminable		<1.35E+00	
73 Ta 183					Undeterminable		4.59E+02	6.4
74 W 187			4.66E+02	2.4	>1.94E+02			
93 Np 239			<4.39E+01		Undeterminable		<6.94E+00	
18 Ar 41	0.0							
36 KrM 85	0.0							
36 Kr 87	0.0							
36 Kr 88	0.0							
54 Xe 133	0.0							
54 XeM 135	0.0							
54 Xe 135	0.0							
54 Xe 138	0.0							

FROM JUL 21, 2023 TO SEP 26, 2023

LOOP 1D-N CYCLE 171B POWER 111.0 MW

SAMPLE TYPE SAMPLE ID DATE SAMPLED TIME SAMPLED	PIX		BIX		AIX		BIX-7	
	DPM/ML	%ERR	DPM/ML	%ERR	DPM/ML	%ERR	DPM/ML	%ERR
11 Na 24	0.00E+00		1.02E+02	4.1	<1.56E+00		<7.41E-02	
21 Sc 46			<4.91E+00		<7.19E-01		1.65E+00	11.5
24 Cr 51							1.95E+01	1.3
25 Mn 54								
25 Mn 56								
26 Fe 59			4.99E+01	13.3	<4.09E+00		1.13E+01	1.6
27 Co 58							1.78E+00	3.0
27 Co 60							1.35E+01	1.3
27 Co 65							<2.43E-01	
30 Zn 65								
37 Rb 88	0.00E+00		7.76E+00	18.2	2.92E+00	28.4	2.66E+00	33.7
37 Rb 89	0.00E+00		<7.08E+00		<2.20E+00		Undeterminable	
38 Sr 91			1.34E+02	36.7	<2.32E+01		>5.80E+00	
38 Sr 92			2.83E+02	7.0	<1.23E+01		>2.31E+01	
39 Y 90			<2.31E+01		<1.48E+00		Undeterminable	
39 Y 92			<4.64E+00		<1.01E+00		Undeterminable	
39 Y 93			<4.89E+00		<5.52E-01		Undeterminable	
40 Zr 95			2.13E+01	48.5	<5.30E+00	47.3	>4.02E+00	
40 Zr 97			<1.32E+02		5.03E+00		Undeterminable	
41 Nb 95			<5.41E+00		<1.29E+00		Undeterminable	
42 Mo 99			<1.15E+02		<6.39E+01		Undeterminable	
43 TCM 99							1.07E-01	27.7
44 Ru 103			<8.94E+00		<4.80E-01		1.35E+01	1.7
45 Rh 106			<5.00E+00		<4.24E-01			
47 AgM 110							<5.20E-02	
51 Sb 122							<6.38E-01	
51 Sb 124							<4.08E-02	
52 Te 132							1.68E+00	26.0
53 I 131			<5.39E+00		<8.65E-01		5.49E-01	7.4
53 I 132	0.00E+00		1.23E+02	3.2	<7.36E-01		<1.70E-01	
53 I 133			3.42E+01	6.6	<3.47E-01		1.96E+00	3.1
53 I 134	0.00E+00		4.28E+02	2.3	<2.80E+00			
53 I 135	0.00E+00		9.70E+01	7.0	<3.50E+00			
55 Cs 134			<6.20E+00		<9.84E-01		<1.17E-01	
55 Cs 136							<2.35E-01	4.0
55 Cs 137							1.25E+00	
55 Cs 138	0.00E+00		3.69E+02	5.2	<1.39E+01		6.25E-01	23.2
56 Ba 140			<9.42E+00		<2.33E+00			
56 Ba 141			<2.56E+01		<2.94E+00			

FROM JUL 21, 2023 TO SEP 26, 2023

LOOP ID-N CYCLE 171B POWER 111.0 MW

SAMPLE TYPE SAMPLE ID DATE SAMPLED TIME SAMPLED	PIX		BIX		AIX		BIX-7	
	DPM/ML	%ERR	DPM/ML	%ERR	DPM/ML	%ERR	DPM/ML	%ERR
11 Na 24	1.04E+02	25.0	8.66E+01	7.4	<6.26E-01	<1.38E+02	<1.02E-01	
21 Sc 46			<5.36E+00		<4.04E-01	Undeterminable	3.27E+00	6.7
24 Cr 51							2.30E+01	1.3
25 Mn 54								
25 Mn 56			2.62E+02	16.9	<1.61E+00	>1.63E+02	1.43E+01	1.8
26 Fe 59							2.59E+00	2.3
27 Co 58							1.33E+01	1.4
27 Co 60							<1.54E-01	
30 Zn 65			9.77E+00	24.3	3.94E+00	2.48E+00		
37 Rb 88			<8.79E+00		<9.53E-01	Undeterminable		
37 Rb 89	<1.45E+03		1.82E+02	21.6	<2.12E+01	>8.60E+00		
38 Sr 91	<5.55E+02		1.86E+02	13.9	<1.07E+01	>1.73E+01		
38 Sr 92			<1.14E+01		<1.02E+00	Undeterminable		
39 Ym 90			6.33E+00	40.1	<3.80E-01	>1.67E+01		
39 Y 92			<7.89E+00		<2.29E-01	Undeterminable		
39 Y 93			<4.55E+01		<5.73E+00	Undeterminable		
40 Zr 95			<1.84E+02		<2.90E+00	Undeterminable		
40 Zr 97			<6.59E+00		<5.89E-01	Undeterminable	<1.44E-01	
41 Nb 95			<1.00E+02		<1.37E+01	Undeterminable		
42 Mo 99							<1.12E-01	2.6
43 Tcm 99			<7.57E+00		<3.14E-01	Undeterminable	1.13E+01	
44 Ru 103			<6.84E+00		<2.86E-01	Undeterminable	5.84E-02	47.2
45 Rh 106							<8.07E-01	
47 Agm 110							<4.70E-02	
51 Sb 122							<8.44E-01	
51 Sb 124							<1.08E-01	
52 Te 132							<2.73E-01	
53 I 131			<1.42E+01		<1.97E-01	Undeterminable	1.83E+00	3.2
53 I 132	1.64E+02	17.8	1.34E+02	4.1	<3.55E-01	>3.78E+02		
53 I 133			2.73E+01	10.7	<2.16E-01	>1.26E+02		
53 I 134	3.05E+02	23.0	3.64E+02	4.2	<7.38E-01	>4.92E+02		
53 I 135	2.09E+02	39.6	7.08E+01	14.4	<7.71E-01	>9.18E+01		
55 Cs 134			<8.53E+00		<3.21E-01	Undeterminable	7.23E-02	32.3
55 Cs 136							1.54E-01	46.7
55 Cs 137							1.23E+00	3.6
55 Cs 138	5.65E+02	15.7	3.24E+02	5.0	1.09E+01	2.98E+01	1.40E+00	25.8
56 Ba 140			<1.38E+01		<5.75E-01	Undeterminable		
56 Ba 141			<4.08E+01		<2.82E+00	Undeterminable		

FROM JUL 21, 2023 TO SEP 26, 2023

LOOP ID-N CYCLE 171B POWER 111.0 MW

SAMPLE TYPE	PIX		BIX		AIX		BIX-7	
	DATE SAMPLED	TIME SAMPLED	DATE SAMPLED	TIME SAMPLED	DATE SAMPLED	TIME SAMPLED	DATE SAMPLED	TIME SAMPLED
RADIONUCLIDE	DPM/ML	%ERR	DPM/ML	%ERR	DPM/ML	%ERR	DPM/ML	%ERR
57 La 140			<3.82E+00		<3.94E-01		1.69E+01	5.1
57 La 142			<4.31E+01		<6.85E+00		<6.26E-02	
58 Ce 141			<1.19E+01		<4.14E-01			
58 Ce 143			<2.94E+01		<3.89E-01			
58 Ce 144							<3.86E-01	
63 EuM 152			<3.94E+01		<1.98E+00			
63 Eu 152			<2.06E+01		<1.36E+00		<1.95E-01	
63 Eu 154			<1.52E+01		<7.08E-01		<1.13E-01	
63 Eu 155			<5.97E+01		<6.32E+00		<1.82E-01	
63 Eu 156			<1.94E+01		<3.02E-01		<1.16E+00	
68 Er 171			<1.07E+02		<1.44E+00		<7.01E-01	
71 Lu 177							<4.35E-02	
72 Hf 175			<6.73E+00		<1.10E-01		<7.99E-02	
72 Hf 181							<1.40E-01	
73 Ta 182							1.08E+00	11.2
73 Ta 183							6.00E+01	19.3
74 W 187							<3.35E+00	
93 Np 239			6.28E+01	32.7	<1.20E+00			
18 Ar 41		15.4	<3.87E+01		<1.21E+00			
36 KrM 85			3.06E+02					
36 Kr 85			<1.32E+02					
36 Kr 87			<2.87E+02					
36 Kr 88			<3.74E+02					
54 Xe 133			<1.18E+03					
54 XeM 135			<3.54E+02					
54 Xe 135		13.5	2.51E+02					
54 Xe 138			<1.27E+03					
					>5.24E+01			
					Undeterminable			

FROM JUL 21, 2023 TO SEP 26, 2023

LOOP 1D-N CYCLE 171B POWER 110.5 MW

SAMPLE TYPE SAMPLE ID DATE SAMPLED TIME SAMPLED	PIX		BIX		AIX		BIX-7	
	DPM/ML	%ERR	DPM/ML	%ERR	DPM/ML	%ERR	DPM/ML	%ERR
57 La 140			<2.53E+00		<7.87E-01		1.22E+01	6.0
57 La 142			<2.97E+01		<1.26E+01		Undeterminable	
58 Ce 141			<9.00E+00		<6.65E-01		Undeterminable	
58 Ce 143			1.34E+01	48.7	<8.15E-01		<6.69E-02	
58 Ce 144							<4.56E-01	
63 EuM 152			<3.29E+01		<4.08E+00		2.05E-01	49.0
63 Eu 152			<1.07E+01		<2.51E+00		<1.26E-01	
63 Eu 154			<6.83E+00		<1.94E+00		<1.38E-01	
63 Eu 155							<7.43E-01	
63 Eu 156			<4.64E+01		<1.11E+01		<6.41E-01	
68 Er 171			<8.11E+00		<5.35E-01		<6.80E-02	
71 Lu 177			<5.89E+01		<3.60E+00		<5.60E-02	
72 Hf 175			<4.45E+00		<3.58E-01		<2.30E-01	
72 Hf 181							<3.33E-01	
73 Ta 182							9.53E+01	13.3
73 Ta 183							<2.79E+00	
74 W 187			1.04E+02	8.9	<1.25E+00			
93 Np 239			<3.61E+01		<1.96E+00			
18 Ar 41	0.0							
36 KrM 85	0.0							
36 Kr 87	0.0							
36 Kr 88	0.0							
54 Xe 133	0.0							
54 XeM 135	0.0							
54 Xe 135	0.0							
54 Xe 138	0.0							

FROM JUL 21, 2023 TO SEP 26, 2023

LOOP 2B-SE CYCLE 171B POWER 111.0 MW

SAMPLE TYPE SAMPLE ID DATE SAMPLED TIME SAMPLED	PIX		BIX		AIX		BIX-7	
	DPM/ML	%ERR	DPM/ML	%ERR	DPM/ML	%ERR	DPM/ML	%ERR
11 Na	0.0		3.36E+01	9.5	<2.06E+00		<2.02E-01	
21 Sc			<6.76E+00		<1.82E+00		1.83E+01	2.4
24 Cr							3.58E+01	1.8
25 Mn								
25 Mn			3.57E+02	5.7	<1.17E+01		1.06E+01	1.9
26 Fe							9.95E+00	1.5
27 Co							3.39E+01	2.2
27 Co							<2.34E-01	
30 Zn			3.74E+01	15.2	4.64E+00	22.7	8.05E+00	27.3
37 Rb	0.0		<1.01E+01		<3.00E+00		Undeterminable	
37 Rb	0.0		9.69E+02	8.8	8.69E+01	43.7	1.11E+01	44.6
38 Sr			2.37E+03	2.2	8.57E+01	14.2	2.77E+01	14.3
38 Sr			3.99E+01	18.0	<7.44E+00		>5.36E+00	
38 Sr			2.55E+01	16.4	<1.78E+00		>1.43E+01	
39 Y			<6.46E+00		<8.06E-01		Undeterminable	
39 Y			<6.16E+01		<1.96E+01		Undeterminable	
39 Y			<1.34E+02		<9.23E+00		Undeterminable	
40 Zr			<1.60E+01		<2.26E+00		Undeterminable	
40 Zr			6.70E+02	44.0	<8.43E+01		>7.94E+00	5.4
41 Nb							3.27E+00	3.3
42 Mo							1.09E+02	2.0
43 TCM			<5.03E+01		<9.17E-01		Undeterminable	
44 Ru			<1.29E+01		<7.72E-01		Undeterminable	
45 Rh							<1.39E-01	
47 AgM							<7.83E-01	
51 Sb							<7.54E-02	
51 Sb							<1.28E+00	
52 Te							<1.29E-01	
53 I			9.63E+00	39.0	<7.53E-01		<3.35E-01	
53 I	0.0		5.57E+02	1.6	<2.89E+00		9.59E+00	1.7
53 I			1.88E+02	2.8	<8.38E-01			
53 I	0.0		2.26E+03	1.5	<4.88E+00			
53 I	0.0		4.65E+02	3.2	<7.28E+00			
55 Cs			<8.49E+00		<1.77E+00		<1.92E-01	
55 Cs							<2.08E-01	
55 Cs	0.0		2.26E+03	2.0	2.27E+01	47.7	2.53E+00	3.1
56 Ba			<2.75E+01		<3.10E+00		2.38E+00	21.2
56 Ba			<3.86E+01		<7.07E+00			

FROM JUL 21, 2023 TO SEP 26, 2023

LOOP 2B-SE CYCLE 171B POWER 111.0 MW

SAMPLE TYPE SAMPLE ID DATE SAMPLED TIME SAMPLED	PIX		BIX		AIX		BIX-7	
	DPM/ML	%ERR	DPM/ML	%ERR	DPM/ML	%ERR	DPM/ML	%ERR
57 La 140			<4.77E+00		<1.62E+00		2.87E+01	4.2
57 La 142			<5.96E+01		<1.97E+01		Undeterminable	
58 Ce 141			<9.03E+00		<2.19E+00		Undeterminable	
58 Ce 143			<2.00E+01		<1.63E+00		Undeterminable	
58 Ce 144							<4.16E+00	
63 EuM 152			<7.29E+01		<6.75E+00		Undeterminable	
63 Eu 152			2.49E+01	41.9	<8.14E+00		>3.06E+00	
63 Eu 154			<1.33E+01		<4.55E+00		Undeterminable	
63 Eu 155							Undeterminable	
63 Eu 156			<6.84E+01		<1.61E+01		Undeterminable	
68 Er 171			<1.19E+01		<9.92E-01		Undeterminable	
71 Lu 177			<5.77E+01		<7.04E+00		Undeterminable	
72 Hf 175							<7.98E-01	
72 Hf 181			<1.62E+01		<1.32E+00		<9.69E-02	
73 Ta 182							1.09E+00	4.9
73 Ta 183							5.05E-01	16.3
74 W 187			7.71E+02	2.6	3.97E+00	48.1	1.57E+00	16.9
93 Np 239			<4.55E+01		<4.34E+00		6.80E+02	5.2
18 Ar 41	0.0						<3.83E+00	
36 KrM 85	0.0							
36 Kr 87	0.0							
36 Kr 88	0.0							
54 Xe 133	0.0							
54 XeM 135	0.0							
54 Xe 135	0.0							
54 Xe 138	0.0							

FROM JUL 21, 2023 TO SEP 26, 2023

LOOP 2B-SE CYCLE 171B POWER 111.0 MW

SAMPLE TYPE	PIX		BIX		AIX		BIX-7	
	DPM/ML	%ERR	DPM/ML	%ERR	DPM/ML	%ERR	DPM/ML	%ERR
11 Na 24	<1.39E+02		3.73E+01	18.7	<2.02E-01		<2.20E-01	
21 Sc 46			<7.99E+00		<8.53E-01		4.56E+01	1.9
24 Cr 51							5.37E+01	1.1
25 Mn 54								
25 Mn 56								
26 Fe 59			5.00E+02	5.1	<3.98E+00		5.61E+01	0.9
27 Co 58							7.39E+01	1.5
27 Co 60							1.90E+02	1.1
30 Zn 65							<7.99E-01	
37 Rb 88			1.80E+02	3.5	9.37E+00	7.1		
37 Rb 89	<3.18E+03	18.8	<1.75E+01		<1.46E+00			
38 Sr 91	2.95E+03		8.06E+02	17.2	<1.09E+02			
38 Sr 92			2.32E+03	2.9	<4.89E+01			
39 Y 90			<4.75E+01		<3.44E+00			
39 Y 92			3.96E+01	14.8	<9.68E-01			
39 Y 93			<1.15E+01		<5.98E-01			
40 Zr 95			<9.85E+01		<6.44E+00			
40 Zr 97			<1.30E+02		<9.47E+00			
41 Nb 95			2.20E+01	33.6	1.43E+00	47.1	2.73E+01	1.3
42 Mo 99			4.62E+02	35.3	<7.98E+01			
43 TCM 99							3.05E+01	1.2
44 Ru 103			<1.19E+01		<4.86E-01		7.52E+01	1.8
45 Rh 106			<1.22E+01		<5.76E-01			
47 AgM 110							<3.26E-01	
51 Sb 122							<1.64E+00	
51 Sb 124							<1.92E-01	
52 Te 132							<1.95E+00	
53 I 131			1.45E+01	37.6	<7.22E-01		5.40E-01	14.1
53 I 132	8.36E+02	10.0	7.48E+02	2.0	<1.81E+00		<3.21E-01	
53 I 133			1.74E+02	3.9	<6.35E-01		9.06E+00	1.9
53 I 134	2.72E+03	6.9	2.35E+03	1.8	<3.00E+00			
53 I 135	4.28E+02	28.4	4.56E+02	5.2	<3.27E+00			
55 Cs 134			<1.08E+01		<1.21E+00		<2.30E-01	
55 Cs 136							<6.32E-01	
55 Cs 137							2.85E+00	3.3
55 Cs 138	2.50E+03	24.4	2.25E+03	2.5	<4.44E+01			
56 Ba 140	<2.45E+01		<1.62E+00		<1.62E+00		3.49E+00	13.0
56 Ba 141	<6.03E+01		<7.62E+00		<7.62E+00			

FROM JUL 21, 2023 TO SEP 26, 2023
LOOP 2B-SE CYCLE 171B POWER 111.0 MW

SAMPLE TYPE	PIX		BIX		AIX		BIX-7	
	DPM/ML	%ERR	DPM/ML	%ERR	DPM/ML	%ERR	DPM/ML	%ERR
SAMPLE ID	082323008		082323007		082323009		083023007	
DATE SAMPLED	08/23/23		08/23/23		08/23/23		08/23/23	
TIME SAMPLED	14:20		14:25		14:10		41:25	
RADIONUCLIDE	DPM/ML	%ERR	DPM/ML	%ERR	DPM/ML	%ERR	DPM/ML	%ERR
57 La 140			<6.85E+00		<6.13E-01		2.65E+01	2.8
57 La 142			<4.63E+01		<1.11E+01		Undeterminable	
58 Ce 141			<2.56E+01		<1.03E+00		<5.08E-01	
58 Ce 143			<3.94E+01		<8.35E-01		Undeterminable	
58 Ce 144							<3.92E+00	
63 EuM 152			<7.79E+01		<4.61E+00		Undeterminable	
63 Eu 152			<4.33E+01		<3.73E+00		Undeterminable	
63 Eu 154			<1.46E+01		<1.95E+00		Undeterminable	
63 Eu 155							<2.81E-01	
63 Eu 156			<2.06E+02		<7.67E+00		<2.06E-01	
68 Er 171			<1.32E+01		<7.04E-01		<2.40E-01	
71 Lu 177			<7.48E+01		<3.95E+00		<2.09E+00	
72 Hf 175							<1.00E+00	
72 Hf 181			3.57E+01	14.0	<4.06E-01		1.17E+00	3.7
73 Ta 182							2.30E+01	1.2
73 Ta 183							7.79E+00	3.2
74 W 187							1.86E+01	1.7
93 Np 239							3.06E+02	4.7
18 Ar 41							<3.87E+00	
36 KrM 85							Undeterminable	
36 Kr 87							Undeterminable	
36 Kr 88							Undeterminable	
54 Xe 133							Undeterminable	
54 XeM 135							Undeterminable	
54 Xe 135							Undeterminable	
54 Xe 138							Undeterminable	

FROM JUL 21, 2023 TO SEP 26, 2023

LOOP 2B-SE CYCLE 171B POWER 111.0 MW

SAMPLE TYPE SAMPLE ID DATE SAMPLED TIME SAMPLED	PIX		BIX		AIX		BIX-7	
	DPM/ML	%ERR	DPM/ML	%ERR	DPM/ML	%ERR	DPM/ML	%ERR
11 Na 24	0.0		4.55E+01	10.8	<1.51E+00		<2.74E-01	
21 Sc 46			<1.28E+01		<9.38E-01		4.80E+01	1.6
24 Cr 51							6.87E+01	1.0
25 Mn 54								
25 Mn 56			6.15E+02	4.7	<3.86E+00		5.76E+01	1.8
26 Fe 59							6.34E+01	0.7
27 Co 58							1.69E+02	1.0
27 Co 60							<4.94E-01	
30 Zn 65			1.57E+02	4.6	3.26E+00	41.6	4.82E+01	41.9
37 Rb 88	0.0		<3.04E+01		<2.32E+00		Undeterminable	
37 Rb 89	0.0		1.07E+03	10.8	<2.94E+02		>3.65E+00	
37 Rb 91			2.23E+03	4.2	7.88E+01	40.1	2.83E+01	40.3
38 Sr 92			<5.49E+01		<3.08E+00		Undeterminable	
39 Y 92			2.72E+01	20.3	<2.62E+00		>1.04E+01	
39 Y 93			<1.45E+01		<7.16E-01		Undeterminable	
40 Zr 95			<1.76E+01		<9.01E+00		Undeterminable	
40 Zr 97			2.75E+01	21.8	2.15E+00	40.4	1.28E+01	45.9
41 Nb 95			7.47E+02	30.7	<3.56E+01		>2.10E+01	
42 Mo 99							3.49E+01	0.8
43 Tcm 99			<2.44E+01		<5.50E-01		8.81E+01	2.5
44 Ru 103			<1.39E+01		<6.27E-01		Undeterminable	
45 Rh 106							Undeterminable	
47 AgM 110							<3.25E-01	
51 Sb 122							<1.88E+00	
51 Sb 124							<1.85E-01	
52 Te 132							1.62E+00	38.2
53 I 131			1.75E+01	41.0	<7.21E-01		7.23E-01	13.7
53 I 132	0.0		7.49E+02	1.9	<1.88E+00		<7.02E-01	
53 I 133			1.78E+02	3.8	<5.71E-01		1.02E+01	1.4
53 I 134	0.0		2.28E+03	1.4	<3.28E+00			
53 I 135	0.0		4.72E+02	4.8	<5.84E+00			
55 Cs 134							>2.42E+01	
55 Cs 136			<1.23E+01		<1.55E+00		>3.99E+02	
55 Cs 137							>3.12E+02	
55 Cs 138	0.0		2.19E+03	2.7	<8.77E+01		>6.94E+02	
56 Ba 140			<4.72E+01		<2.71E+00		>8.08E+01	
56 Ba 141			<9.17E+01		<1.97E+01		Undeterminable	
56 Ba 141							>2.50E+01	
							Undeterminable	
							3.07E+00	12.3

FROM JUL 21, 2023 TO SEP 26, 2023

LOOP 2B-SE CYCLE 171B POWER 111.0 MW

SAMPLE TYPE SAMPLE ID DATE SAMPLED TIME SAMPLED	PIX		BIX		AIX		BIX-7	
	DPM/ML	%ERR	DPM/ML	%ERR	DPM/ML	%ERR	DPM/ML	%ERR
57 La 140			<6.54E+00		<1.51E+00		4.52E+01	2.7
57 La 142			<5.65E+01		<3.69E+01		Undeterminable	
58 Ce 141			<3.64E+01		<1.22E+00		<4.76E-01	
58 Ce 143			<3.99E+01		<1.31E+00		Undeterminable	
58 Ce 144			<7.19E+01		<4.48E+00		<4.54E+00	
63 EuM 152			<7.57E+01		<5.26E+00		<4.09E-01	
63 Eu 152			<3.33E+01		<2.09E+00		<3.50E-01	
63 Eu 154			<1.53E+02		<2.88E+01		<2.95E-01	
63 Eu 155			<1.40E+01		<8.35E-01		<1.56E+00	
63 Eu 156			<9.39E+01		<9.79E+00		<1.08E+00	
68 Er 171			<9.40E+00		<6.57E-01		7.41E-01	5.5
71 Lu 177							1.05E+01	1.3
72 Hf 175							5.71E+00	4.1
73 Ta 182							2.07E+01	2.5
73 Ta 183							1.31E+03	3.2
74 W 187							<5.33E+00	
93 Np 239			1.33E+03	2.0	<4.71E+00			
18 Ar 41	0.0		<8.71E+01		<4.12E+00			
36 KrM 85	0.0							
36 Kr 87	0.0							
36 Kr 88	0.0							
54 Xe 133	0.0							
54 XeM 135	0.0							
54 Xe 135	0.0							
54 Xe 138	0.0							

FROM JUL 21, 2023 TO SEP 26, 2023

LOOP 2D-SW CYCLE 171B POWER 111.0 MW

SAMPLE TYPE SAMPLE ID DATE SAMPLED TIME SAMPLED	PIX		BIX		AIX		BIX-7	
	DPM/ML	%ERR	DPM/ML	%ERR	DPM/ML	%ERR	DPM/ML	%ERR
11 Na 24	0.0		7.19E+01	4.9	<1.77E-01		<1.04E-01	
21 Sc 46			<3.82E+00		<8.98E-01		8.78E+00	5.6
24 Cr 51							3.54E+01	1.2
25 Mn 54								
25 Mn 56								
26 Fe 59			6.57E+02	3.1	<1.85E+00		1.55E+01	1.3
27 Co 58							2.34E+01	1.4
27 Co 60							3.07E+01	1.0
30 Zn 65			3.45E+01	9.1	2.38E+01	3.9	3.14E-01	27.9
37 Rb 88	0.0		<5.78E+00		<2.44E+00		Undeterminable	
37 Rb 89	0.0		1.49E+02	35.5	<3.51E+01		Undeterminable	
38 Sr 91			4.21E+02	8.1	1.15E+01	38.6	>4.23E+00	
38 Sr 92			<2.35E+01		<3.07E+00		3.65E+01	39.5
39 Y 90			1.96E+01	13.7	<5.91E-01		Undeterminable	
39 Y 92			<5.23E+00		<7.07E-01		>3.31E+01	
39 Y 93			<5.08E+01		<8.07E+00		Undeterminable	
40 Zr 95			<7.40E+01		<1.48E-01		Undeterminable	
40 Zr 97			<8.25E+00		<1.11E+00		Undeterminable	
41 Nb 95			<2.20E+02		<4.45E+01		Undeterminable	
42 Mo 99							1.93E+00	4.3
43 TCM 99			<3.07E+01		<7.68E-01		2.44E+00	2.7
44 Ru 103			<6.12E+00		<1.02E+00		5.36E+01	5.1
45 Rh 106							<1.36E-01	
47 AgM 110							<9.07E-01	
51 Sb 122							<1.73E-01	
51 Sb 124							<1.93E+00	
52 Te 132							<1.74E-01	
53 I 131			6.37E+00	45.2	<3.24E-01		<4.84E-01	
53 I 132	0.0		1.79E+02	3.0	<9.03E-01		2.82E+00	3.4
53 I 133			5.11E+01	6.5	<8.17E-01			
53 I 134	0.0		5.61E+02	2.4	<1.60E+00			
53 I 135	0.0		1.38E+02	5.9	<3.89E+00			
55 Cs 134			<4.73E+00		<1.25E+00		<1.60E-01	
55 Cs 136							<3.63E-01	
55 Cs 137							2.19E-01	17.9
55 Cs 138	0.0		5.05E+02	6.6	2.26E+01	23.5	1.47E+00	15.2
56 Ba 140			<1.82E+01		1.66E+00	49.7		
56 Ba 141			<4.15E+01		<6.69E+00			

FROM JUL 21, 2023 TO SEP 26, 2023

LOOP 2D-SW CYCLE 171B POWER 111.0 MW

SAMPLE TYPE SAMPLE ID DATE SAMPLED TIME SAMPLED	PIX		BIX		AIX		BIX-7	
	DPM/ML	%ERR	DPM/ML	%ERR	DPM/ML	%ERR	DPM/ML	%ERR
57 La 140			<3.36E+00		<6.02E-01		1.15E+02	3.7
57 La 142			<3.84E+01		<9.78E+00		Undeterminable	
58 Ce 141			<8.43E+00		<9.71E-01		<8.27E-02	
58 Ce 143			<1.52E+01		<7.38E-01		Undeterminable	
58 Ce 144							<6.09E+00	
63 EuM 152			<2.17E+01		<2.99E+00		Undeterminable	
63 Eu 152			<1.66E+01		<1.96E+00		Undeterminable	
63 Eu 154			<4.30E+00		<2.37E+00		Undeterminable	
63 Eu 155							<1.50E-01	
63 Eu 156			<7.81E+01		<4.34E+00		<1.07E-01	
68 Er 171			<9.61E+01		<9.01E-01		<1.58E-01	
71 Lu 177			<3.92E+01		<2.93E+00		<1.05E+00	
72 Hf 175							<1.13E+00	
72 Hf 181			1.39E+01	20.6	2.00E+00	17.2	8.35E-01	3.4
73 Ta 182							1.08E+01	1.0
73 Ta 183							<5.64E-01	
74 W 187			4.73E+02	2.2	<2.56E+00		1.49E+00	20.0
93 Np 239			<6.23E+01		<2.67E+00		0.00E+00	NaN
18 Ar 41	0.0						<1.40E+01	
36 KrM 85	0.0						Undeterminable	
36 Kr 87	0.0							
36 Kr 88	0.0							
54 Xe 133	0.0							
54 XeM 135	0.0							
54 Xe 135	0.0							
54 Xe 138	0.0							

FROM JUL 21, 2023 TO SEP 26, 2023

LOOP 2D-SW CYCLE 171B POWER 110.5 MW

SAMPLE TYPE SAMPLE ID DATE SAMPLED TIME SAMPLED	PIX		BIX		AIX		BIX-7	
	DPM/ML	%ERR	DPM/ML	%ERR	DPM/ML	%ERR	DPM/ML	%ERR
11 Na 24	<1.49E+02		9.46E+01	4.2	<6.04E-01		<1.36E-01	
21 Sc 46			<5.69E+00		<5.49E-01		1.07E+01	8.7
24 Cr 51							3.39E+01	0.8
25 Mn 54								
25 Mn 56			3.57E+02	4.3	<1.60E+00		1.78E+01	1.4
26 Fe 59							2.60E+01	0.9
27 Co 58							2.49E+01	1.0
27 Co 60							<4.31E-01	
30 Zn 65								
37 Rb 88			3.19E+01	7.6	7.68E+00	7.3	4.16E+00	10.5
37 Rb 89	<8.53E+02	29.8	<5.78E+00		<8.88E-01		Undeterminable	
38 Sr 91	1.05E+03		1.44E+02	29.0	<3.08E+01		>4.67E+00	
38 Sr 92			3.84E+02	6.2	1.08E+01	42.0	3.56E+01	42.4
39 Y 90			<2.31E+01		<1.72E+00		Undeterminable	
39 Y 92			1.40E+01	19.2	<5.06E-01		>2.76E+01	
39 Y 93			<5.40E+00		<2.78E-01		Undeterminable	
40 Zr 95			3.60E+01	34.9	<5.64E+00		>6.39E+00	
40 Zr 97			<1.05E+02		<3.32E+00		Undeterminable	
41 Nb 95			<1.06E+01		<8.86E-01		Undeterminable	
42 Mo 99			<1.08E+02		<3.06E+01		4.76E+00	2.4
43 Tcm 99							1.75E+01	1.4
44 Ru 103			<3.20E+01		<3.56E-01		5.63E+01	3.3
45 Rh 106			<6.17E+00		<5.08E-01		<1.06E-01	
47 AgM 110							1.63E+00	43.2
51 Sb 122							<1.92E-01	
51 Sb 124							<3.26E+00	
52 Te 132							<1.50E-01	
53 I 131							<1.38E+00	
53 I 132	2.91E+02	22.4	<1.32E+01		<2.52E-01		3.19E+00	4.1
53 I 133			2.31E+02	2.2	<4.72E-01		>4.90E+02	
53 I 134			6.01E+01	5.6	<5.72E-01		>1.05E+02	
53 I 135	5.64E+02	17.4	6.21E+02	2.6	<1.14E+00		>5.45E+02	
55 Cs 134	2.11E+02	43.8	1.32E+02	6.8	<1.69E+00		>7.80E+01	
55 Cs 136			<4.19E+00		<8.97E-01		Undeterminable	
55 Cs 137							<2.81E-01	
55 Cs 138	8.37E+02	15.7	6.04E+02	3.1	1.14E+01	28.0	2.65E-01	21.8
56 Ba 140	<2.98E+01		<2.98E+01		<1.09E+00		1.74E+00	19.4
56 Ba 141	<3.50E+01		<3.50E+01		<3.62E+00		Undeterminable	

FROM JUL 21, 2023 TO SEP 26, 2023

LOOP 2D-SW CYCLE 171B POWER 111.0 MW

SAMPLE TYPE	SAMPLE ID	DATE SAMPLED	TIME SAMPLED	PIX		BIX		AIX		BIX-7	
				DPM/ML	%ERR	DPM/ML	%ERR	DPM/ML	%ERR	DPM/ML	%ERR
11 Na	24			0.0							
21 Sc	46					8.65E+01	10.1	<4.12E-01		>2.10E+02	<1.15E-01
24 Cr	51					7.01E+00	37.8	<5.10E-01		>1.38E+01	4.17E+01 1.3
25 Mn	54										4.03E+01 1.5
25 Mn	56										2.40E+01 2.4
26 Fe	59					3.29E+02	6.8	<4.67E+00		>7.04E+01	3.89E+01 1.0
27 Co	58										3.15E+01 1.1
27 Co	60										4.52E-01 19.7
30 Zn	65										
37 Rb	88			0.0		3.62E+01	8.8	8.11E+00	11.0	4.46E+00	14.1
37 Rb	89			0.0		<8.35E+00		<3.58E+00		Undeterminable	
38 Sr	91			0.0		1.59E+02	24.1	<3.23E+01		>4.92E+00	
38 Sr	92					3.87E+02	6.7	<1.14E+01		>3.40E+01	
39 Y	93					<2.11E+01		<4.53E+00		Undeterminable	
39 Y	93					1.85E+01	24.1	<6.63E-01		>2.79E+01	
40 Zr	95					<9.63E+00		<4.47E-01		Undeterminable	
40 Zr	97					<4.43E+01		<9.03E+00		Undeterminable	
41 Nb	95					<1.83E+02		<6.77E+00		Undeterminable	
42 Mo	99					<1.95E+01		<1.23E+00		Undeterminable	
43 TCM	99					2.86E+02	37.0	<5.75E+01		>4.97E+00	9.94E+00 2.1
44 Ru	103										1.08E+01 1.1
45 Rh	106										5.72E+01 3.6
47 AgM	110					<1.09E+01		<5.05E-01		Undeterminable	
51 Sb	122					<9.73E+00		<9.49E-01		Undeterminable	
51 Sb	124										<9.79E-02
52 Te	132										<1.02E+00
53 I	131										<1.26E-01
53 I	132			0.0		<1.03E+01		<4.87E-01		Undeterminable	9.87E-01 43.4
53 I	133			0.0		2.45E+02	3.1	<1.06E+00		>2.31E+02	
53 I	134			0.0		4.96E+01	7.9	<4.34E-01		>1.14E+02	
53 I	135			0.0		6.18E+02	2.9	<1.74E+00		>3.55E+02	
55 Cs	134					1.30E+02	8.9	<3.90E+00		>3.33E+01	
55 Cs	136					<6.65E+00		<2.99E+00		Undeterminable	
55 Cs	137										<1.05E-01
55 Cs	138			0.0		6.30E+02	2.7	2.22E+01	16.5	2.83E+01	21.4
56 Ba	140					<2.27E+01		<1.86E+00		Undeterminable	
56 Ba	141					<3.89E+01		<4.59E+00		Undeterminable	

FROM JUL 21, 2023 TO SEP 26, 2023
 LOOP 2E-NW CYCLE 171B POWER 111.0 MW

SAMPLE TYPE SAMPLE ID DATE SAMPLED TIME SAMPLED	PIX		BIX		AIX		BIX-7	
	DPM/ML	%ERR	DPM/ML	%ERR	DPM/ML	%ERR	DPM/ML	%ERR
11 Na 24	0.0		6.19E+02	2.4	<7.22E-01		<9.57E-02	
21 Sc 46			<5.66E+00		<6.59E-01		5.27E+00	6.4
24 Cr 51							3.84E+01	1.3
25 Mn 54								
25 Mn 56								
26 Fe 59			7.75E+02	4.4	4.58E+00	29.4	1.20E+01	2.2
27 Co 58							8.01E+00	1.4
27 Co 60							1.75E+01	1.0
30 Zn 65			1.12E+01	30.7	8.70E+00	9.9	4.44E-01	31.6
37 Rb 88	0.0		<1.59E+01		<1.58E+00			
37 Rb 89	0.0		6.01E+02	26.2	<2.42E+02			
38 Sr 91			1.07E+03	7.6	<3.69E+01			
38 Sr 92			<3.33E+01		<2.10E+00			
38 Sr 92			1.54E+01	29.0	<6.93E-01			
39 Y 90			<8.01E+00		<6.02E-01			
39 Y 92			1.31E+02	21.3	<5.24E+00			
39 Y 93			<1.57E+02		<8.68E+00			
40 Zr 95			<1.83E+01		<1.78E+00			
40 Zr 97			<7.54E+02		5.01E+01	32.5	1.11E+00	8.8
41 Nb 95								
42 Mo 99								
43 Tcm 99			<9.10E+01		<6.74E-01			
44 Ru 103			<1.04E+01		<7.53E-01			
45 Rh 106								
47 AgM 110								
51 Sb 122								
51 Sb 124								
52 Te 132								
53 I 131			1.39E+01	35.4	<6.36E-01			
53 I 132	0.0		5.38E+02	1.7	<8.92E-01			
53 I 133			1.60E+02	3.8	<3.64E-01			
53 I 134	0.0		1.67E+03	2.3	<1.89E+00			
53 I 135	0.0		3.84E+02	5.2	<2.41E+00			
55 Cs 134			<9.83E+00		<1.06E+00			
55 Cs 136								
55 Cs 137								
55 Cs 138	0.0		1.72E+03	2.1	<4.42E+01			
56 Ba 140			<2.00E+01		<1.47E+00			
56 Ba 141			<1.68E+02		<9.83E+00			

FROM JUL 21, 2023 TO SEP 26, 2023

LOOP 2E-NW CYCLE 171B POWER 111.0 MW

SAMPLE TYPE SAMPLE ID DATE SAMPLED TIME SAMPLED	PIX		BIX		AIX		BIX-7	
	DPM/ML	%ERR	DPM/ML	%ERR	DPM/ML	%ERR	DPM/ML	%ERR
57 La 140			<1.03E+01		<8.70E-01		1.54E+02	3.9
57 La 142			<6.18E+01		<8.87E+00		Undeterminable	
58 Ce 141			<1.41E+01		<1.69E+00		<1.03E-01	
58 Ce 143			<2.70E+01		<8.94E-01		Undeterminable	
58 Ce 144							<5.71E-01	
63 EuM 152			<4.83E+01		<3.76E+00		Undeterminable	
63 Eu 152			<3.20E+01		<3.31E+00		3.07E-01	36.7
63 Eu 154			<1.92E+01		<1.36E+00		<2.09E-01	
63 Eu 155							<3.68E-01	
63 Eu 156			<7.69E+01		<7.39E+00		<1.55E+00	
68 Er 171			<2.87E+01		<6.21E-01		<1.21E+00	
71 Lu 177			<9.05E+01		<5.31E+00		<6.61E-02	
72 Hf 175							<2.76E-01	15.2
72 Hf 181			<7.98E+00		<4.26E-01		4.76E-01	
73 Ta 182							8.54E-01	44.5
73 Ta 183							0.00E+00	NaN
74 W 187			1.73E+03	1.5	<1.73E+00		9.93E+00	40.8
93 Np 239			<7.08E+01		<3.96E+00		Undeterminable	
18 Ar 41	0.0							
36 KrM 85	0.0							
36 Kr 87	0.0							
36 Kr 88	0.0							
54 Xe 133	0.0							
54 XeM 135	0.0							
54 Xe 135	0.0							
54 Xe 138	0.0							

FROM JUL 21, 2023 TO SEP 26, 2023

LOOP 2E-NW CYCLE 171B POWER 110.5 MW

SAMPLE TYPE SAMPLE ID DATE SAMPLED TIME SAMPLED	PIX		BIX		AIX		BIX-7	
	DPM/ML	%ERR	DPM/ML	%ERR	DPM/ML	%ERR	DPM/ML	%ERR
11 Na 24	6.57E+02	9.2	6.31E+02	4.0	<7.12E-01		<7.28E-02	
21 Sc 46			<1.03E+01		<6.98E-01		8.46E+00	4.2
24 Cr 51							2.86E+01	1.6
25 Mn 54								
25 Mn 56								
26 Fe 59			9.77E+02	4.6	<4.44E+00		1.63E+01	2.5
27 Co 58							8.33E+00	1.7
27 Co 60							2.37E+01	1.2
30 Zn 65			4.25E+01	11.2	1.14E+02	2.0	2.26E-01	23.3
37 Rb 88	2.84E+03	36.8	<1.95E+01		<3.96E+00			
37 Rb 89	1.65E+03	19.4	4.12E+02	25.8	4.44E+01	48.1		
38 Sr 91			1.05E+03	4.8	<3.39E+01			
38 Sr 92			<1.84E+01		<2.80E+00			
39 Y 90			<1.32E+01		<1.09E+00			
39 Y 92			<8.52E+01		<4.73E-01			
39 Y 93			<2.72E+02		<7.34E+00			
40 Zr 95			<2.09E+01		<6.43E+00			
40 Zr 97			5.09E+02	35.4	<2.26E+00		6.78E-01	9.3
41 Nb 95					<5.32E+01		7.75E-01	4.6
42 Mo 99							2.71E+02	1.3
43 TCM 99			<1.38E+02		<1.12E+00			
44 Ru 103			<2.07E+01		<5.45E-01			
45 Rh 106							<6.20E-02	
47 AgM 110							<9.32E-01	
51 Sb 124							<8.37E-02	
52 Te 132							<1.17E+00	
53 I 131			2.22E+01	32.4	<5.83E-01		<6.23E-02	
53 I 132	6.73E+02	10.5	6.50E+02	1.9	<1.04E+00		<3.68E-01	
53 I 133			1.76E+02	3.8	<6.20E-01		9.43E+00	1.5
53 I 134	1.63E+03	8.8	1.67E+03	2.4	<2.80E+00			
53 I 135	3.33E+02	40.5	4.11E+02	6.0	<4.00E+00			
55 Cs 134			<1.50E+01		<1.72E+00			
55 Cs 136							<1.05E-01	
55 Cs 137							2.06E+00	2.5
55 Cs 138	1.38E+03	25.9	1.58E+03	1.7	2.60E+01	22.6	2.54E+00	7.2
56 Ba 140			<3.65E+01		<2.71E+00			
56 Ba 141			<5.55E+01		<4.39E+00			

