INL/RPT-24-79989-Revision-0

Gamma-Ray Emitting Radionuclides Concentrations and Decontamination Factors of ATR Loop Liquid Samples Cycle 173A Revision 0

August 2024

Dani G Ottaway, Kelly M McCary

Changing the World's Energy Future

Idaho National Laboratory

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Gamma-Ray Emitting Radionuclides Concentrations and Decontamination Factors of ATR Loop Liquid Samples

Cycle 173A-1 Revision 0

D. G. Ottaway and K. M. McCary

August 6, 2024

ATR FINAL LOOP ACTIVITY REPORT

FOR THE PERIOD

May 3, 2024, to July 6, 2024

CYCLE 173A-1

DATE OF REPORT

August 6, 2024

GAMMA-RAY EMITTING RADIONUCLIDES CONCENTRATIONS AND DECONTAMINATION FACTORS OF ATR LOOP LIQUID SAMPLES CYCLE 173A-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 173A running May 3, 2024, to July 6, 2024. 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.

FROM MAR 20, 2024 TO JUL 6, 2024

LOOP 1C-W CYCLE 173A POWER 109.0 MW

SAMPLE TYPE		PIX		BIX		AIX				BIX-7	
SAMPLE ID				052024009		052024010				052724001	
DATE SAMPLED		00/00/00		05/20/24		05/20/24				05/20/24	
TIME SAMPLED		00:00		14:24		14:14				14:24	
RADIONUCLIDE		DPM/ML	%ERR	DPM/ML	%ERR	DPM/ML	%ERR	DFX	%ERR	DPM/ML	%ERR
11 Na	24	0.0		6.93E+01	5.9	<1.35E+00		>5.15E+01			
21 Sc	46			<2.94E+00		<1.15E+00		Undeterminable		<4.89E-02	
24 Cr	51									<2.87E-01	
25 Mn	54									8.43E+00	1.1
25 Mn	56			<2.17E+01		<5.46E+00		Undeterminable			
26 Fe	59									8.64E-01	7.7
27 Co	58									2.20E-01	9.6
27 Co	60			<4.19E+00		1.38E+00	25.9	Undeterminable		2.14E+00	2.3
30 Zn	65			<1.10E+01		<2.11E+00		Undeterminable		1.12E+00	7.6
37 Rb	88	0.0		3.09E+02	13.6	6.42E+01	22.7	4.81E+00	26.5		
37 Rb	89	0.0		5.77E+02	4.5	2.85E+01	21.8	2.02E+01	22.2		
38 Sr	91			<1.88E+01		<5.56E+00		Undeterminable			
38 Sr	92			2.15E+01	15.5	<1.79E+00		>1.20E+01			
39 YM	90			<5.09E+00		<5.57E-01		Undeterminable			
39 Y	92			<4.03E+01		<4.78E+00		Undeterminable			
39 Y	93			<8.57E+01		<6.74E+00		Undeterminable			
40 Zr	95			<7.60E+00		<2.22E+00		Undeterminable		<6.83E-02	
40 Zr	97			<2.59E+02		<3.45E+01		Undeterminable			
41 Nb	95									<5.68E-02	
42 Mo	99									2.22E+02	1.5
43 TcM	99			<4.45E+01		<2.91E-01		Undeterminable			
44 Ru	103			<6.76E+00		<4.36E-01		Undeterminable		<5.69E-02	
45 Rh	106									<3.01E-01	
47 AgM	110									<5.48E-02	
51 Sb	122									3.43E+00	6.6
51 Sb	124									4.99E-01	10.3
52 Te	132									<1.37E-01	
53 I	131			9.01E+00	33.8	<5.01E-01		>1.80E+01		6.71E+00	1.4
53 I	132	0.0		3.12E+02	2.1	<8.62E-01		>3.62E+02			
53 I	133			1.20E+02	4.0	<3.35E-01		>3.60E+02			
53 I	134	0.0		1.03E+03	1.5	<1.59E+00		>6.53E+02			
53 I	135	0.0		2.80E+02	4.1	<2.29E+00		>1.22E+02			
55 Cs	134									1.83E-01	10.6
55 Cs	136			<5.12E+00		<1.53E+00		Undeterminable		<1.45E-01	
55 Cs	137									8.50E-01	6.8
55 Cs	138	0.0		9.65E+02	2.2	3.53E+01	13.6	2.73E+01	13.8		
56 Ba	140			<1.89E+01		<2.54E+00		Undeterminable		1.53E+00	7.9
56 Ba	141			<2.44E+01		<3.13E+00		Undeterminable			

FROM MAR 20, 2024 TO JUL 6, 2024

LOOP 1C-W CYCLE 173A POWER 109.0 MW

SAMPLE TYPE	PIX		BIX		AIX				BIX-7	
SAMPLE ID			052024009		052024010				052724001	
DATE SAMPLED	00/00/00		05/20/24		05/20/24				05/20/24	
TIME SAMPLED	00:00		14:24		14:14				14:24	
RADIONUCLIDE	DPM/ML	%ERR	DPM/ML	%ERR	DPM/ML	%ERR	DFX	%ERR	DPM/ML	%ERR
57 La 140			<3.80E+00		<1.01E+00		Undeterminable		<7.25E+00	
57 La 142			<4.21E+01		<1.41E+01		Undeterminable			
58 Ce 141			<1.06E+01		<1.02E+00		Undeterminable		<1.08E-01	
58 Ce 143			<1.56E+01		<8.00E-01		Undeterminable			
58 Ce 144									<4.28E-01	
63 EuM 152			<3.75E+01		<4.00E+00		Undeterminable			
63 Eu 152			<2.62E+01		<2.93E+00		Undeterminable		<1.55E-01	
63 Eu 154			<1.03E+01		4.35E+00	34.2	Undeterminable		<9.38E-02	
63 Eu 155									<1.71E-01	
63 Eu 156			<6.48E+01		<6.58E+00		Undeterminable		<7.63E-01	
68 Er 171			<7.45E+00		<9.78E-01		Undeterminable			
71 Lu 177			<5.52E+01		<3.27E+00		Undeterminable		<6.64E-01	
72 Hf 175									<2.70E-02	
72 Hf 181			<4.43E+00		<3.32E-01		Undeterminable		<5.74E-02	
73 Ta 182									<1.10E-01	
73 Ta 183									<2.30E-01	
74 W 187			3.86E+02	3.7	2.57E+00	38.7	1.50E+02	38.9	3.32E+02	3.7
93 Np 239			<3.63E+01		<2.06E+00		Undeterminable		<1.64E+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 MAR 20, 2024 TO JUL 6, 2024

LOOP 1C-W CYCLE 173A POWER 108.5 MW

SAMPLE TYPE	PIX		BIX		AIX				BIX-7	
SAMPLE ID	060324007		060324005		060324006				061024005	
DATE SAMPLED	06/03/24		06/03/24		06/03/24				06/03/24	
TIME SAMPLED	14:16		14:24		14:02				14:24	
RADIONUCLIDE	DPM/ML	%ERR	DPM/ML	%ERR	DPM/ML	%ERR	DFX	%ERR	DPM/ML	%ERR
11 Na 24	<1.11E+02		6.47E+01	7.1	<6.29E-01		>1.03E+02			
21 Sc 46			<5.97E+00		<4.67E-01		Undeterminable		<1.02E-01	
24 Cr 51									1.80E+02	0.7
25 Mn 54									1.39E+01	1.6
25 Mn 56			5.76E+01	19.6	<4.02E+00		>1.43E+01			
26 Fe 59									3.01E+00	3.7
27 Co 58									9.06E-01	5.4
27 Co 60			9.79E+00	27.5	1.10E+00	22.2	8.89E+00	35.4	1.31E+01	2.1
30 Zn 65			<1.34E+01		<1.68E+00		Undeterminable		2.21E+00	5.1
37 Rb 88	2.45E+03	43.4	<2.67E+02		<1.11E+02		Undeterminable			
37 Rb 89	<1.35E+03		5.08E+02	8.9	<2.53E+01		>2.01E+01			
38 Sr 91			2.14E+01	36.8	<1.79E+00		>1.20E+01			
38 Sr 92			1.28E+01	27.4	<1.01E+00		>1.26E+01			
39 YM 90			<7.98E+00		<3.85E-01		Undeterminable			
39 Y 92			<6.47E+01		<6.81E+00		Undeterminable			
39 Y 93			<6.86E+01		<4.49E+00		Undeterminable			
40 Zr 95			<8.47E+00		<8.82E-01		Undeterminable		<1.21E-01	
40 Zr 97			<4.72E+02		<3.58E+01		Undeterminable			
41 Nb 95									2.30E-01	20.0
42 Mo 99									1.47E+02	2.5
43 TcM 99			<5.13E+01		3.51E-01	49.8	Undeterminable			
44 Ru 103			<9.98E+00		<4.94E-01		Undeterminable		<8.12E-02	
45 Rh 106									<7.94E-01	
47 AgM 110									<4.67E-02	
51 Sb 122									2.58E+00	11.1
51 Sb 124									4.74E-01	15.6
52 Te 132									<2.52E-01	
53 I 131			<1.11E+01		<4.98E-01		Undeterminable		7.45E+00	4.3
53 I 132	3.60E+02	13.2	4.09E+02	2.2	<8.66E-01		>4.72E+02			
53 I 133			9.74E+01	9.0	<5.27E-01		>1.85E+02			
53 I 134	9.61E+02	10.5	1.01E+03	1.9	<2.24E+00		>4.51E+02			
53 I 135	<3.37E+02		2.59E+02	5.6	<2.10E+00		>1.24E+02			
55 Cs 134									2.33E-01	14.5
55 Cs 136			<8.95E+00		<1.06E+00		Undeterminable		<1.62E-01	
55 Cs 137									9.79E-01	4.9
55 Cs 138	1.63E+03	13.5	1.03E+03	2.6	3.02E+01	49.8	3.41E+01	49.8		
56 Ba 140			<2.54E+01		<1.13E+00		Undeterminable		2.24E+00	8.5
56 Ba 141			<8.17E+01		<7.02E+00		Undeterminable			

FROM MAR 20, 2024 TO JUL 6, 2024

LOOP 1C-W CYCLE 173A POWER 108.5 MW

SAMPLE TYPE	PIX		BIX		AIX				BIX-7	
SAMPLE ID	060324007		060324005		060324006				061024005	
DATE SAMPLED	06/03/24		06/03/24		06/03/24				06/03/24	
TIME SAMPLED	14:16		14:24		14:02				14:24	
RADIONUCLIDE	DPM/ML	%ERR	DPM/ML	%ERR	DPM/ML	%ERR	DFX	%ERR	DPM/ML	%ERR
57 La 140			<2.62E+00		<2.76E-01		Undeterminable		<7.85E+00	
57 La 142			<4.81E+01		<9.87E+00		Undeterminable			
58 Ce 141			<9.13E+00		<5.77E-01		Undeterminable		<6.81E-02	
58 Ce 143			<1.38E+01		<5.19E-01		Undeterminable			
58 Ce 144									<3.83E+00	
63 EuM 152			<2.59E+01		<5.30E+00		Undeterminable			
63 Eu 152			<1.85E+01		<3.65E+00		Undeterminable		<3.23E-01	
63 Eu 154			<1.99E+01		<1.08E+00		Undeterminable		<1.74E-01	
63 Eu 155									<2.31E-01	
63 Eu 156			<5.28E+01		<6.13E+00		Undeterminable		<1.11E+00	
68 Er 171			<1.59E+01		<5.15E-01		Undeterminable			
71 Lu 177			<7.25E+01		<2.90E+00		Undeterminable		<8.05E-01	
72 Hf 175									<4.12E-02	
72 Hf 181			<5.29E+00		<2.66E-01		Undeterminable		<9.09E-02	
73 Ta 182									<3.96E-01	
73 Ta 183									<5.88E-01	
74 W 187			2.96E+02	4.4	<1.26E+00		>2.35E+02		2.87E+02	6.8
93 Np 239			<5.19E+01		<1.44E+00		Undeterminable		<2.41E+00	
18 Ar 41	1.48E+03	8.6								
36 KrM 85	<2.14E+02									
36 Kr 87	2.03E+02	37.3								
36 Kr 88	<4.25E+02									
54 Xe 133	<1.05E+03									
54 XeM 135	<1.04E+03									
54 Xe 135	6.72E+02	7.7								
54 Xe 138	<3.08E+03									

FROM MAR 20, 2024 TO JUL 6, 2024

LOOP 1C-W CYCLE 173A POWER 110.0 MW

SAMPLE TYPE		PIX		BIX		AIX				BIX-7	
SAMPLE ID				062424006		062424007				070124008	
DATE SAMPLED		00/00/00		06/24/24		06/24/24				06/24/24	
TIME SAMPLED		00:00		14:16		14:12				14:16	
RADIONUCLIDE		DPM/ML	%ERR	DPM/ML	%ERR	DPM/ML	%ERR	DFX	%ERR	DPM/ML	%ERR
11 Na	24	0.0		6.97E+01	7.4	<1.47E+00		>4.73E+01			
21 Sc	46			<9.46E+00		<9.81E-01		Undeterminable		<1.62E-01	
24 Cr	51									3.25E+01	1.5
25 Mn	54									1.47E+01	1.6
25 Mn	56			5.86E+01	22.4	<4.99E+00		>1.17E+01			
26 Fe	59									6.45E+00	1.7
27 Co	58									1.73E+00	3.0
27 Co	60			4.30E+01	10.5	2.82E+00	19.3	1.52E+01	22.0	3.00E+01	1.6
30 Zn	65			1.46E+01	42.3	<2.18E+00		>6.72E+00		3.71E+00	2.7
37 Rb	88	0.0		2.85E+02	15.5	<5.79E+01		>4.92E+00			
37 Rb	89	0.0		5.53E+02	4.6	1.71E+01	36.0	3.24E+01	36.3		
38 Sr	91			<4.58E+01		<2.65E+00		Undeterminable			
38 Sr	92			1.93E+01	20.7	<1.07E+00		>1.81E+01			
39 YM	90			<8.47E+00		<8.35E-01		Undeterminable			
39 Y	92			<6.16E+01		<7.69E+00		Undeterminable			
39 Y	93			<1.40E+02		<9.40E+00		Undeterminable			
40 Zr	95			<1.95E+01		<3.39E+00		Undeterminable		9.26E-01	8.5
40 Zr	97			<6.71E+02		<4.06E+01		Undeterminable			
41 Nb	95									9.14E-01	5.0
42 Mo	99									1.17E+02	2.6
43 TcM	99			9.41E+00	42.8	<5.08E-01		>1.85E+01			
44 Ru	103			<1.09E+01		<5.85E-01		Undeterminable		<8.97E-02	
45 Rh	106									<4.23E-01	
47 AgM	110									<5.34E-02	
51 Sb	122									2.56E+00	13.4
51 Sb	124									9.10E-01	6.1
52 Te	132									<2.21E-01	
53 I	131			<1.36E+01		<6.31E-01		Undeterminable		7.95E+00	3.2
53 I	132	0.0		4.47E+02	2.1	<1.46E+00		>3.06E+02			
53 I	133			1.15E+02	6.5	<9.25E-01		>1.24E+02			
53 I	134	0.0		1.05E+03	2.5	<1.46E+00		>7.19E+02			
53 I	135	0.0		3.00E+02	5.2	<2.50E+00		>1.20E+02			
55 Cs	134									3.11E-01	13.1
55 Cs	136			<8.10E+00		<3.37E+00		Undeterminable		<2.63E-01	
55 Cs	137									9.59E-01	4.1
55 Cs	138	0.0		1.02E+03	2.2	3.21E+01	11.0	3.17E+01	11.2		
56 Ba	140			<2.25E+01		<2.27E+00		Undeterminable		2.68E+00	5.4
56 Ba	141			<5.90E+01		<4.25E+00		Undeterminable			

FROM MAR 20, 2024 TO JUL 6, 2024

LOOP 1C-W CYCLE 173A POWER 110.0 MW

SAMPLE TYPE	PIX		BIX		AIX				BIX-7	
SAMPLE ID			062424006		062424007				070124008	
DATE SAMPLED	00/00/00		06/24/24		06/24/24				06/24/24	
TIME SAMPLED	00:00		14:16		14:12				14:16	
RADIONUCLIDE	DPM/ML	%ERR	DPM/ML	%ERR	DPM/ML	%ERR	DFX	%ERR	DPM/ML	%ERR
57 La 140			<3.30E+00		<8.97E-01		Undeterminable		<4.76E+00	
57 La 142			<4.93E+01		<2.00E+01		Undeterminable			
58 Ce 141			<2.34E+01		<1.15E+00		Undeterminable		<1.16E-01	
58 Ce 143			<2.55E+01		<1.04E+00		Undeterminable			
58 Ce 144									<3.17E+00	
63 EuM 152			<3.72E+01		<1.06E+01		Undeterminable			
63 Eu 152			<6.63E+01		<4.00E+00		Undeterminable		<1.70E-01	
63 Eu 154			<2.81E+01		<3.02E+00		Undeterminable		<1.29E-01	
63 Eu 155									<2.32E-01	
63 Eu 156			<1.88E+02		<2.22E+01		Undeterminable		<1.02E+00	
68 Er 171			<2.31E+01		<1.57E+00		Undeterminable			
71 Lu 177			<9.33E+01		<4.07E+00		Undeterminable		<7.46E-01	
72 Hf 175									<4.78E-02	
72 Hf 181			<1.17E+01		<4.90E-01		Undeterminable		<4.67E-02	
73 Ta 182									<2.62E-01	
73 Ta 183									<4.26E-01	
74 W 187			3.46E+02	4.1	<2.27E+00		>1.52E+02		3.30E+02	4.0
93 Np 239			<5.24E+01		<2.91E+00		Undeterminable		<3.14E+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 MAR 20, 2024 TO JUL 6, 2024

LOOP 1D-N CYCLE 173A POWER 109.0 MW

SAMPLE TYPE		PIX		BIX		AIX				BIX-7	
SAMPLE ID				052124009		052124010				052824011	
DATE SAMPLED		00/00/00		05/21/24		05/21/24				05/21/24	
TIME SAMPLED		00:00		14:46		14:40				14:46	
RADIONUCLIDE		DPM/ML	%ERR	DPM/ML	%ERR	DPM/ML	%ERR	DFX	%ERR	DPM/ML	%ERR
11 Na	24	0.0		9.64E+01	4.0	<1.55E+00		>6.21E+01			
21 Sc	46			<5.36E+00		<1.15E+00		Undeterminable		<1.06E-01	
24 Cr	51									1.25E+00	22.1
25 Mn	54									2.11E+01	0.7
25 Mn	56			3.42E+01	17.9	<3.15E+00		>1.09E+01			
26 Fe	59									6.96E+00	2.3
27 Co	58									2.19E+00	3.9
27 Co	60			4.18E+01	5.2	1.80E+00	25.0	2.33E+01	25.6	3.89E+01	1.2
30 Zn	65			<8.51E+00		<1.39E+00		Undeterminable		<2.15E-01	
37 Rb	88	0.0		6.97E+01	28.2	<2.44E+01		>2.86E+00			
37 Rb	89	0.0		2.70E+02	4.9	<1.49E+01		>1.82E+01			
38 Sr	91			<1.11E+01		<2.11E+00		Undeterminable			
38 Sr	92			3.99E+00	34.0	<6.77E-01		>5.90E+00			
39 YM	90			<7.19E+00		<4.12E-01		Undeterminable			
39 Y	92			<2.80E+01		<7.78E+00		Undeterminable			
39 Y	93			<7.21E+01		<5.31E+00		Undeterminable			
40 Zr	95			<4.72E+00		<1.04E+00		Undeterminable		<2.17E-01	
40 Zr	97			<1.03E+02		<3.01E+01		Undeterminable			
41 Nb	95									9.83E-02	40.5
42 Mo	99									1.41E+01	1.1
43 TcM	99			<4.77E+00		<3.62E-01		Undeterminable			
44 Ru	103			<6.33E+00		<3.78E-01		Undeterminable		<7.60E-02	
45 Rh	106									<6.47E-01	
47 AgM	110									<8.72E-02	
51 Sb	122									7.04E+00	4.6
51 Sb	124									1.30E+00	4.0
52 Te	132									<1.79E-01	
53 I	131			<1.22E+01		<3.87E-01		Undeterminable		2.13E+00	3.1
53 I	132	0.0		1.39E+02	2.6	<9.43E-01		>1.48E+02			
53 I	133			3.57E+01	7.6	<3.03E-01		>1.18E+02			
53 I	134	0.0		4.50E+02	1.9	<1.41E+00		>3.18E+02			
53 I	135	0.0		8.47E+01	7.7	<2.02E+00		>4.18E+01			
55 Cs	134									1.06E-01	34.0
55 Cs	136			<4.13E+00		<1.09E+00		Undeterminable		<1.96E-01	
55 Cs	137									1.06E+00	4.6
55 Cs	138	0.0		4.30E+02	2.4	1.25E+01	19.2	3.43E+01	19.3		
56 Ba	140			<1.71E+01		<2.37E+00		Undeterminable		7.58E-01	19.3
56 Ba	141			<2.55E+01		<2.15E+00		Undeterminable			

FROM MAR 20, 2024 TO JUL 6, 2024

LOOP 1D-N CYCLE 173A POWER 109.0 MW

SAMPLE TYPE	PIX		BIX		AIX			BIX-7	
SAMPLE ID			052124009		052124010			052824011	
DATE SAMPLED	00/00/00		05/21/24		05/21/24			05/21/24	
TIME SAMPLED	00:00		14:46		14:40			14:46	
RADIONUCLIDE	DPM/ML	%ERR	DPM/ML	%ERR	DPM/ML	%ERR	DFX %ERR	DPM/ML	%ERR
57 La 140			<2.41E+00		<7.07E-01		Undeterminable	<4.81E+00	
57 La 142			<2.37E+01		<1.56E+01		Undeterminable		
58 Ce 141			<7.29E+00		<8.53E-01		Undeterminable	<7.50E-02	
58 Ce 143			<1.98E+01		<6.40E-01		Undeterminable		
58 Ce 144								<3.58E-01	
63 EuM 152			<1.42E+01		<8.06E+00		Undeterminable		
63 Eu 152			<8.08E+00		<2.93E+00		Undeterminable	<1.89E-01	
63 Eu 154			<6.49E+00		<2.63E+00		Undeterminable	<1.57E-01	
63 Eu 155								<1.63E-01	
63 Eu 156			<4.96E+01		<9.09E+00		Undeterminable	<9.08E-01	
68 Er 171			<9.05E+00		<5.05E-01		Undeterminable		
71 Lu 177			<4.00E+01		<2.20E+00		Undeterminable	<6.05E-01	
72 Hf 175								<4.10E-02	
72 Hf 181			<4.24E+00		<2.84E-01		Undeterminable	<1.06E-01	
73 Ta 182								<4.42E-01	
73 Ta 183								8.45E-01	17.2
74 W 187			1.36E+02	8.4	<1.33E+00		>1.02E+02	1.31E+02	11.2
93 Np 239			<5.91E+01		<1.91E+00		Undeterminable	<1.99E+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 MAR 20, 2024 TO JUL 6, 2024

LOOP 1D-N CYCLE 173A POWER 108.5 MW

SAMPLE TYPE	PIX		BIX		AIX				BIX-7	
SAMPLE ID	060524007		060524006		060524008				061224009	
DATE SAMPLED	06/05/24		06/05/24		06/05/24				06/05/24	
TIME SAMPLED	15:16		15:22		15:03				15:22	
RADIONUCLIDE	DPM/ML	%ERR	DPM/ML	%ERR	DPM/ML	%ERR	DFX	%ERR	DPM/ML	%ERR
11 Na 24	1.17E+02	25.9	1.13E+02	9.2	<7.75E-01		>1.45E+02			
21 Sc 46			<4.42E+00		<9.92E-01		Undeterminable		7.80E-02	41.7
24 Cr 51									4.11E+00	5.5
25 Mn 54									2.04E+01	1.2
25 Mn 56			2.80E+02	9.0	<1.75E+00		>1.59E+02			
26 Fe 59									6.79E+00	1.6
27 Co 58									1.68E+00	2.5
27 Co 60			2.44E+01	11.2	1.43E+00	17.6	1.71E+01	20.8	1.50E+01	1.6
30 Zn 65			<1.67E+01		<1.78E+00		Undeterminable		<1.07E-01	
37 Rb 88	<3.00E+03		<2.41E+02		<6.04E+01		Undeterminable			
37 Rb 89	<3.11E+03		1.71E+02	24.9	<6.65E+01		>2.57E+00			
38 Sr 91			2.07E+01	36.8	<2.41E+00		>8.60E+00			
38 Sr 92			<9.64E+00		<8.94E-01		Undeterminable			
39 YM 90			<9.04E+00		<6.44E-01		Undeterminable			
39 Y 92			<4.32E+01		<6.48E+00		Undeterminable			
39 Y 93			<1.32E+02		<6.13E+00		Undeterminable			
40 Zr 95			<6.49E+00		<1.02E+00		Undeterminable		<1.49E-01	
40 Zr 97			<1.92E+02		<3.98E+01		Undeterminable			
41 Nb 95									5.67E-02	43.6
42 Mo 99									1.25E+01	1.7
43 TcM 99			<5.26E+00		<3.90E-01		Undeterminable			
44 Ru 103			<6.49E+00		<3.44E-01		Undeterminable		<4.60E-02	
45 Rh 106									<5.92E-01	
47 AgM 110									<6.73E-02	
51 Sb 122									6.78E-01	20.5
51 Sb 124									1.35E-01	14.3
52 Te 132									<1.31E-01	
53 I 131			<9.66E+00		<4.25E-01		Undeterminable		2.06E+00	3.2
53 I 132	<2.13E+02		1.53E+02	4.1	<7.83E-01		>1.96E+02			
53 I 133			3.57E+01	10.1	<4.66E-01		>7.66E+01			
53 I 134	4.22E+02	34.3	4.11E+02	4.5	<1.85E+00		>2.22E+02			
53 I 135	<1.87E+02		7.79E+01	11.5	<1.15E+00		>6.75E+01			
55 Cs 134									<1.06E-01	
55 Cs 136			<8.22E+00		<1.24E+00		Undeterminable		<2.39E-01	
55 Cs 137									1.18E+00	3.5
55 Cs 138	8.55E+02	21.7	5.00E+02	5.8	<2.07E+01		>2.41E+01			
56 Ba 140			<1.98E+01		<1.68E+00		Undeterminable		1.71E+00	17.9
56 Ba 141			<7.95E+01		<8.70E+00		Undeterminable			

FROM MAR 20, 2024 TO JUL 6, 2024

LOOP 1D-N CYCLE 173A POWER 108.5 MW

SAMPLE TYPE	PIX		BIX		AIX				BIX-7	
SAMPLE ID	060524007		060524006		060524008				061224009	
DATE SAMPLED	06/05/24		06/05/24		06/05/24				06/05/24	
TIME SAMPLED	15:16		15:22		15:03				15:22	
RADIONUCLIDE	DPM/ML	%ERR	DPM/ML	%ERR	DPM/ML	%ERR	DFX	%ERR	DPM/ML	%ERR
57 La 140			<4.01E+00		<3.26E-01		Undeterminable		<8.94E+00	
57 La 142			<6.04E+01		<8.10E+00		Undeterminable			
58 Ce 141			<8.80E+00		<5.29E-01		Undeterminable		<4.88E-02	
58 Ce 143			<1.75E+01		<5.00E-01		Undeterminable			
58 Ce 144									<2.70E-01	
63 EuM 152			<1.85E+01		<3.81E+00		Undeterminable			
63 Eu 152			<1.99E+01		<1.77E+00		Undeterminable		<1.31E-01	
63 Eu 154			<8.99E+00		<2.73E+00		Undeterminable		<6.49E-02	
63 Eu 155									<2.41E-01	
63 Eu 156			<1.02E+02		<5.49E+00		Undeterminable		<6.35E-01	
68 Er 171			<9.11E+00		<4.47E-01		Undeterminable			
71 Lu 177			<4.88E+01		<2.06E+00		Undeterminable		<1.20E+00	
72 Hf 175									<3.81E-02	
72 Hf 181			<5.03E+00		3.65E-01	45.0	Undeterminable		<5.89E-02	
73 Ta 182									<1.50E-01	
73 Ta 183									7.55E-01	15.2
74 W 187			3.93E+02	3.6	<1.51E+00		>2.61E+02		3.27E+02	4.3
93 Np 239			<3.96E+01		<1.50E+00		Undeterminable		<1.67E+00	
18 Ar 41	3.88E+03	5.4								
36 KrM 85	<2.12E+02									
36 Kr 87	<4.71E+02									
36 Kr 88	<4.17E+02									
54 Xe 133	<1.22E+03									
54 XeM 135	<1.22E+03									
54 Xe 135	2.86E+02	11.5								
54 Xe 138	<3.39E+03									

FROM MAR 20, 2024 TO JUL 6, 2024

LOOP 1D-N CYCLE 173A POWER 111.5 MW

SAMPLE TYPE		PIX		BIX		AIX				BIX-7	
SAMPLE ID				062524010		062524011				070224012	
DATE SAMPLED		00/00/00		06/25/24		06/25/24				06/25/24	
TIME SAMPLED		00:00		13:39		13:35				13:39	
RADIONUCLIDE		DPM/ML	%ERR	DPM/ML	%ERR	DPM/ML	%ERR	DFX	%ERR	DPM/ML	%ERR
11 Na	24	0.0		1.16E+02	5.8	<1.37E+00		>8.43E+01			
21 Sc	46			<5.82E+00		<1.39E+00		Undeterminable		<2.53E-01	
24 Cr	51									4.77E+01	2.5
25 Mn	54									3.97E+01	1.0
25 Mn	56			5.49E+02	4.3	<3.47E+00		>1.58E+02			
26 Fe	59									2.27E+01	1.1
27 Co	58									5.38E+00	1.7
27 Co	60			3.08E+01	15.0	1.76E+00	24.4	1.75E+01	28.6	3.78E+01	1.2
30 Zn	65			<1.03E+01		<3.94E+00		Undeterminable		<2.92E-01	
37 Rb	88	0.0		1.89E+02	19.2	<2.73E+01		>6.94E+00			
37 Rb	89	0.0		2.40E+02	9.2	<2.13E+01		>1.13E+01			
38 Sr	91			<3.26E+01		<4.82E+00		Undeterminable			
38 Sr	92			<1.35E+01		<9.72E-01		Undeterminable			
39 YM	90			8.91E+00	49.8	<4.71E-01		>1.89E+01			
39 Y	92			<6.46E+01		<1.08E+01		Undeterminable			
39 Y	93			<1.32E+02		<8.13E+00		Undeterminable			
40 Zr	95			<1.48E+01		<3.14E+00		Undeterminable		<2.27E-01	
40 Zr	97			<2.58E+02		<1.02E+02		Undeterminable			
41 Nb	95									3.31E-01	16.6
42 Mo	99									1.29E+01	2.0
43 TcM	99			<1.36E+01		<3.84E-01		Undeterminable			
44 Ru	103			<7.97E+00		<6.79E-01		Undeterminable		<8.83E-02	
45 Rh	106									<9.91E-01	
47 AgM	110									<5.89E-02	
51 Sb	122									<7.94E-01	
51 Sb	124									<1.20E-01	
52 Te	132									<1.99E-01	
53 I	131			<1.02E+01		<7.75E-01		Undeterminable		2.24E+00	3.1
53 I	132	0.0		1.64E+02	3.7	<2.11E+00		>7.78E+01			
53 I	133			3.44E+01	10.2	<7.67E-01		>4.49E+01			
53 I	134	0.0		4.52E+02	3.0	<3.15E+00		>1.43E+02			
53 I	135	0.0		1.04E+02	11.3	<3.35E+00		>3.11E+01			
55 Cs	134									<1.34E-01	
55 Cs	136			<8.34E+00		<3.05E+00		Undeterminable		<2.04E-01	
55 Cs	137									1.40E+00	3.9
55 Cs	138	0.0		4.53E+02	3.6	2.35E+01	11.5	1.93E+01	12.0		
56 Ba	140			<1.92E+01		<4.87E+00		Undeterminable		2.13E+00	10.5
56 Ba	141			<5.41E+01		<3.25E+00		Undeterminable			

FROM MAR 20, 2024 TO JUL 6, 2024

LOOP 1D-N CYCLE 173A POWER 111.5 MW

SAMPLE TYPE	PIX		BIX		AIX				BIX-7	
SAMPLE ID			062524010		062524011				070224012	
DATE SAMPLED	00/00/00		06/25/24		06/25/24				06/25/24	
TIME SAMPLED	00:00		13:39		13:35				13:39	
RADIONUCLIDE	DPM/ML	%ERR	DPM/ML	%ERR	DPM/ML	%ERR	DFX	%ERR	DPM/ML	%ERR
57 La 140			<4.93E+00		<9.50E-01		Undeterminable		<7.03E+00	
57 La 142			<4.21E+01		<4.12E+00		Undeterminable			
58 Ce 141			<2.01E+01		<6.13E-01		Undeterminable		<8.65E-02	
58 Ce 143			<1.97E+01		<1.59E+00		Undeterminable			
58 Ce 144									<4.02E-01	
63 EuM 152			<3.01E+01		<1.18E+01		Undeterminable			
63 Eu 152			<3.25E+01		<2.45E+00		Undeterminable		<2.01E-01	
63 Eu 154			<1.09E+01		3.96E+00	37.1	Undeterminable		<1.60E-01	
63 Eu 155									<1.13E-01	
63 Eu 156			<4.68E+01		<1.99E+01		Undeterminable		<1.14E+00	
68 Er 171			1.71E+01	43.1	<9.77E-01		>1.75E+01			
71 Lu 177			<1.21E+02		4.47E+00	49.0	Undeterminable		<6.49E-01	
72 Hf 175									<4.88E-02	
72 Hf 181			<6.86E+00		<7.98E-01		Undeterminable		<1.21E-01	
73 Ta 182									6.62E-01	12.6
73 Ta 183									4.38E+00	4.0
74 W 187			2.87E+02	4.9	<3.67E+00		>7.83E+01		2.68E+02	7.5
93 Np 239			<5.48E+01		<3.26E+00		Undeterminable		<2.43E+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 MAR 20, 2024 TO JUL 6, 2024

LOOP 2B-SE CYCLE 173A POWER 109.0 MW

SAMPLE TYPE		PIX		BIX		AIX				BIX-7	
SAMPLE ID				052224006		052224007				052924008	
DATE SAMPLED		00/00/00		05/22/24		05/22/24				05/22/24	
TIME SAMPLED		00:00		14:16		14:09				14:16	
RADIONUCLIDE		DPM/ML	%ERR	DPM/ML	%ERR	DPM/ML	%ERR	DFX	%ERR	DPM/ML	%ERR
11 Na	24	0.0		7.66E+01	9.6	<1.38E+00		>5.54E+01			
21 Sc	46			<1.14E+01		<6.41E-01		Undeterminable		<3.83E-01	
24 Cr	51									4.65E+01	2.0
25 Mn	54									6.64E+01	0.9
25 Mn	56			2.87E+02	10.0	<5.18E+00		>5.54E+01			
26 Fe	59									5.99E+01	0.9
27 Co	58									5.93E+01	0.8
27 Co	60			1.14E+03	1.5	<2.43E+00		>4.71E+02		6.09E+02	1.1
30 Zn	65			<1.68E+01		<3.09E+00		Undeterminable		<9.72E-01	
37 Rb	88	0.0		5.90E+02	16.6	<8.67E+01		>6.81E+00			
37 Rb	89	0.0		1.94E+03	3.6	7.28E+01	15.4	2.67E+01	15.8		
38 Sr	91			5.74E+01	42.9	<5.13E+00		>1.12E+01			
38 Sr	92			7.45E+01	9.0	<3.30E+00		>2.26E+01			
39 YM	90			<9.93E+00		<9.84E-01		Undeterminable			
39 Y	92			1.14E+02	35.6	<8.44E+00		>1.35E+01			
39 Y	93			<1.53E+02		<7.31E+00		Undeterminable			
40 Zr	95			2.97E+01	24.8	<3.09E+00		>9.60E+00		1.53E+01	1.7
40 Zr	97			7.28E+02	25.3	6.79E+01	41.2	1.07E+01	48.3		
41 Nb	95									2.60E+01	1.2
42 Mo	99									1.54E+02	0.8
43 TcM	99			2.32E+01	26.2	<9.21E-01		>2.52E+01			
44 Ru	103			<1.21E+01		<9.47E-01		Undeterminable		<3.64E-01	
45 Rh	106									<2.00E+00	
47 AgM	110									<2.54E-01	
51 Sb	122									2.58E+00	33.6
51 Sb	124									1.27E+00	8.5
52 Te	132									<8.59E-01	
53 I	131			<2.23E+01		<8.09E-01		Undeterminable		8.62E+00	2.4
53 I	132	0.0		5.37E+02	2.0	<2.06E+00		>2.61E+02			
53 I	133			1.63E+02	4.1	<6.21E-01		>2.62E+02			
53 I	134	0.0		2.03E+03	2.0	<2.36E+00		>8.60E+02			
53 I	135	0.0		4.54E+02	6.4	<4.63E+00		>9.80E+01			
55 Cs	134									<4.91E-01	
55 Cs	136			<1.50E+01		<3.10E+00		Undeterminable		<1.07E+00	
55 Cs	137									2.79E+00	5.4
55 Cs	138	0.0		1.99E+03	2.5	7.10E+01	11.9	2.81E+01	12.1		
56 Ba	140			<2.59E+01		<2.57E+00		Undeterminable		5.62E+00	12.6
56 Ba	141			<9.21E+01		<4.99E+00		Undeterminable			

FROM MAR 20, 2024 TO JUL 6, 2024

LOOP 2B-SE CYCLE 173A POWER 109.0 MW

SAMPLE TYPE	PIX		BIX		AIX			BIX-7	
SAMPLE ID			052224006		052224007			052924008	
DATE SAMPLED	00/00/00		05/22/24		05/22/24			05/22/24	
TIME SAMPLED	00:00		14:16		14:09			14:16	
RADIONUCLIDE	DPM/ML	%ERR	DPM/ML	%ERR	DPM/ML	%ERR	DFX %ERR	DPM/ML	%ERR
57 La 140			<5.80E+00		<1.45E+00		Undeterminable	<2.13E+01	
57 La 142			<4.48E+01		<1.86E+01		Undeterminable		
58 Ce 141			<1.66E+01		<1.69E+00		Undeterminable	<3.45E-01	
58 Ce 143			<2.33E+01		<2.11E+00		Undeterminable		
58 Ce 144								<5.14E+00	
63 EuM 152			<7.41E+01		<5.17E+00		Undeterminable		
63 Eu 152			<3.41E+01		<7.39E+00		Undeterminable	<2.64E-01	
63 Eu 154			<3.67E+01		<3.58E+00		Undeterminable	<3.85E-01	
63 Eu 155								<4.28E-01	
63 Eu 156			<1.29E+02		<1.90E+01		Undeterminable	<2.73E+00	
68 Er 171			<1.32E+01		<9.49E-01		Undeterminable		
71 Lu 177			<7.75E+01		<5.51E+00		Undeterminable	<1.69E+00	
72 Hf 175								5.81E+00	1.3
72 Hf 181			6.64E+01	9.1	<7.62E-01		>8.71E+01	4.12E+01	2.0
73 Ta 182								1.19E+01	2.5
73 Ta 183								4.52E+01	5.1
74 W 187			6.51E+02	4.0	<3.98E+00		>1.64E+02	6.40E+02	7.8
93 Np 239			<1.07E+02		<4.59E+00		Undeterminable	<6.97E+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 MAR 20, 2024 TO JUL 6, 2024

LOOP 2B-SE CYCLE 173A POWER 108.5 MW

SAMPLE TYPE		PIX		BIX		AIX				BIX-7	
SAMPLE ID		060624006		060624005		060624007				061324005	
DATE SAMPLED		06/06/24		06/06/24		06/06/24				06/06/24	
TIME SAMPLED		14:51		14:55		14:41				14:55	
RADIONUCLIDE		DPM/ML	%ERR	DPM/ML	%ERR	DPM/ML	%ERR	DFX	%ERR	DPM/ML	%ERR
11 Na	24	<1.16E+02		6.36E+01	14.5	<6.08E-01		>1.05E+02			
21 Sc	46			8.52E+00	43.7	<9.11E-01		>9.36E+00		<5.66E-02	
24 Cr	51									1.39E+00	11.7
25 Mn	54									1.78E+01	1.0
25 Mn	56			1.50E+02	11.3	<2.11E+00		>7.13E+01			
26 Fe	59									3.54E+00	2.5
27 Co	58									2.20E+00	2.1
27 Co	60			1.77E+01	29.1	2.75E+00	13.4	6.45E+00	32.0	1.53E+01	1.2
30 Zn	65			<1.52E+01		<9.97E-01		Undeterminable		<1.52E-01	
37 Rb	88	<1.96E+03		5.34E+02	13.3	6.33E+01	23.4	8.44E+00	26.9		
37 Rb	89	1.67E+03	28.2	1.51E+03	3.0	2.30E+01	27.4	6.55E+01	27.6		
38 Sr	91			4.51E+01	45.5	<1.59E+00		>2.84E+01			
38 Sr	92			2.32E+01	19.1	<5.67E-01		>4.09E+01			
39 YM	90			<1.18E+01		<3.34E-01		Undeterminable			
39 Y	92			<7.69E+01		<4.37E+00		Undeterminable			
39 Y	93			<1.23E+02		<5.47E+00		Undeterminable			
40 Zr	95			<1.36E+01		<7.56E-01		Undeterminable		1.97E-01	18.2
40 Zr	97			5.42E+02	30.9	<2.15E+01		>2.52E+01			
41 Nb	95									5.00E-01	6.0
42 Mo	99									1.62E+02	2.3
43 TcM	99			9.79E+00	47.8	<4.32E-01		>2.27E+01			
44 Ru	103			<2.13E+01		<7.27E-01		Undeterminable		<5.68E-02	
45 Rh	106									<6.86E-01	
47 AgM	110									<4.69E-02	
51 Sb	122									<7.60E-01	
51 Sb	124									<9.44E-02	
52 Te	132									<2.04E-01	
53 I	131			1.33E+01	40.1	<5.53E-01		>2.40E+01		8.35E+00	1.2
53 I	132	7.05E+02	7.8	6.00E+02	2.2	<9.00E-01		>6.67E+02			
53 I	133			1.45E+02	4.7	<4.29E-01		>3.39E+02			
53 I	134	2.13E+03	6.2	1.84E+03	1.7	<1.14E+00		>1.62E+03			
53 I	135	6.17E+02	22.4	3.92E+02	4.9	<9.25E-01		>4.24E+02			
55 Cs	134									<7.44E-02	
55 Cs	136			<2.00E+01		<8.04E-01		Undeterminable		<1.78E-01	
55 Cs	137									2.99E+00	1.7
55 Cs	138	1.09E+03	27.8	1.78E+03	2.7	5.61E+01	8.1	3.18E+01	8.5		
56 Ba	140			3.94E+01	49.3	<1.23E+00		>3.20E+01		3.49E+00	5.7
56 Ba	141			<8.17E+01		<3.24E+00		Undeterminable			

FROM MAR 20, 2024 TO JUL 6, 2024

LOOP 2B-SE CYCLE 173A POWER 108.5 MW

SAMPLE TYPE	PIX		BIX		AIX				BIX-7	
SAMPLE ID	060624006		060624005		060624007				061324005	
DATE SAMPLED	06/06/24		06/06/24		06/06/24				06/06/24	
TIME SAMPLED	14:51		14:55		14:41				14:55	
RADIONUCLIDE	DPM/ML	%ERR	DPM/ML	%ERR	DPM/ML	%ERR	DFX	%ERR	DPM/ML	%ERR
57 La 140			<1.06E+01		<9.22E-01		Undeterminable		<6.24E+00	
57 La 142			<5.89E+01		<8.66E+00		Undeterminable			
58 Ce 141			<1.78E+01		<9.05E-01		Undeterminable		<7.11E-02	
58 Ce 143			<2.04E+01		<9.56E-01		Undeterminable			
58 Ce 144									<3.84E+00	
63 EuM 152			<5.29E+01		<4.03E+00		Undeterminable			
63 Eu 152			<5.14E+01		<4.23E+00		Undeterminable		<1.36E-01	
63 Eu 154			<2.24E+01		<1.39E+00		Undeterminable		<1.25E-01	
63 Eu 155									<2.49E-01	
63 Eu 156			<6.79E+01		<8.68E+00		Undeterminable		<8.32E-01	
68 Er 171			<1.80E+01		<8.98E-01		Undeterminable			
71 Lu 177			<7.98E+01		<4.83E+00		Undeterminable		<6.15E-01	
72 Hf 175									<6.76E-02	
72 Hf 181			<1.43E+01		<3.53E-01		Undeterminable		2.09E-01	14.3
73 Ta 182									<3.11E-01	
73 Ta 183									6.70E-01	20.8
74 W 187			9.72E+02	2.2	<1.66E+00		>5.86E+02		9.35E+02	2.0
93 Np 239			<7.01E+01		<2.30E+00		Undeterminable		<1.28E+00	
18 Ar 41	1.74E+03	5.9								
36 KrM 85	1.83E+02	28.4								
36 Kr 87	7.75E+02	14.3								
36 Kr 88	7.37E+02	14.7								
54 Xe 133	<1.60E+03									
54 XeM 135	<4.86E+02									
54 Xe 135	1.01E+03	8.5								
54 Xe 138	3.54E+03	14.0								

FROM MAR 20, 2024 TO JUL 6, 2024

LOOP 2B-SE CYCLE 173A POWER 111.5 MW

SAMPLE TYPE	PIX		BIX		AIX				BIX-7	
SAMPLE ID			062524012		062524013				070224013	
DATE SAMPLED	00/00/00		06/25/24		06/25/24				06/25/24	
TIME SAMPLED	00:00		15:28		15:22				15:28	
RADIONUCLIDE	DPM/ML	%ERR	DPM/ML	%ERR	DPM/ML	%ERR	DFX	%ERR	DPM/ML	%ERR
11 Na 24	0.0		5.05E+01	12.4	<1.57E+00		>3.22E+01			
21 Sc 46			<8.44E+00		<1.59E+00		Undeterminable		<1.74E-01	
24 Cr 51									9.22E-01	21.3
25 Mn 54									2.62E+01	1.4
25 Mn 56			1.48E+02	12.2	<7.77E+00		>1.91E+01			
26 Fe 59									5.65E+00	3.0
27 Co 58									3.24E+00	2.3
27 Co 60			1.45E+01	26.2	9.43E+00	12.5	1.54E+00	29.0	1.33E+01	2.1
30 Zn 65			<1.39E+01		<4.92E+00		Undeterminable		<1.51E-01	
37 Rb 88	0.0		5.86E+02	9.9	1.03E+02	23.7	5.71E+00	25.6		
37 Rb 89	0.0		1.49E+03	2.9	4.50E+01	14.1	3.31E+01	14.4		
38 Sr 91			5.76E+01	30.3	<1.50E+01		>3.85E+00			
38 Sr 92			3.49E+01	17.1	3.11E+00	42.0	1.12E+01	45.4		
39 YM 90			<1.21E+01		<1.29E+00		Undeterminable			
39 Y 92			<6.75E+01		<2.56E+01		Undeterminable			
39 Y 93			<1.41E+02		<1.71E+01		Undeterminable			
40 Zr 95			<2.37E+01		<3.47E+00		Undeterminable		2.58E-01	28.0
40 Zr 97			<3.92E+02		1.44E+02	32.4	Undeterminable			
41 Nb 95									4.54E-01	8.7
42 Mo 99									1.50E+02	2.1
43 TcM 99			<7.51E+01		<2.03E+00		Undeterminable			
44 Ru 103			<1.46E+01		<9.28E-01		Undeterminable		<8.15E-02	
45 Rh 106									<6.09E-01	
47 AgM 110									1.01E-01	29.1
51 Sb 122									<1.22E+00	
51 Sb 124									<1.40E-01	
52 Te 132									<3.24E-01	
53 I 131			<2.10E+01		<1.49E+00		Undeterminable		8.62E+00	4.8
53 I 132	0.0		6.06E+02	2.0	<3.10E+00		>1.95E+02			
53 I 133			1.62E+02	4.3	<1.54E+00		>1.05E+02			
53 I 134	0.0		1.79E+03	1.4	<3.42E+00		>5.23E+02			
53 I 135	0.0		3.92E+02	5.0	<7.05E+00		>5.55E+01			
55 Cs 134									<1.07E-01	
55 Cs 136			<1.16E+01		<6.40E+00		Undeterminable		1.34E-01	43.7
55 Cs 137									2.66E+00	2.5
55 Cs 138	0.0		1.78E+03	2.1	1.05E+02	8.3	1.70E+01	8.6		
56 Ba 140			<4.03E+01		<4.23E+00		Undeterminable		3.08E+00	7.3
56 Ba 141			4.31E+01	41.6	<5.04E+00		>8.56E+00			

FROM MAR 20, 2024 TO JUL 6, 2024

LOOP 2B-SE CYCLE 173A POWER 111.5 MW

SAMPLE TYPE	PIX		BIX		AIX				BIX-7	
SAMPLE ID			062524012		062524013				070224013	
DATE SAMPLED	00/00/00		06/25/24		06/25/24				06/25/24	
TIME SAMPLED	00:00		15:28		15:22				15:28	
RADIONUCLIDE	DPM/ML	%ERR	DPM/ML	%ERR	DPM/ML	%ERR	DFX	%ERR	DPM/ML	%ERR
57 La 140			<6.48E+00		<1.91E+00		Undeterminable		<7.87E+00	
57 La 142			<4.06E+01		<1.02E+01		Undeterminable			
58 Ce 141			<2.68E+01		<1.67E+00		Undeterminable		<6.35E-02	
58 Ce 143			<3.18E+01		<2.55E+00		Undeterminable			
58 Ce 144									<4.89E+00	
63 EuM 152			<6.26E+01		<1.41E+01		Undeterminable			
63 Eu 152			<5.65E+01		<1.93E+01		Undeterminable		<2.68E-01	
63 Eu 154			<1.57E+01		<8.85E+00		Undeterminable		<1.24E-01	
63 Eu 155									<2.20E-01	
63 Eu 156			<9.24E+01		2.82E+01	47.1	Undeterminable		<1.34E+00	
68 Er 171			<1.48E+01		<1.82E+00		Undeterminable			
71 Lu 177			<1.02E+02		<1.03E+01		Undeterminable		<7.94E-01	
72 Hf 175									<7.63E-02	
72 Hf 181			<1.20E+01		<9.80E-01		Undeterminable		3.75E-01	12.3
73 Ta 182									<4.50E-01	
73 Ta 183									1.42E+00	15.7
74 W 187			9.62E+02	3.6	<5.69E+00		>1.69E+02		9.44E+02	2.2
93 Np 239			<6.78E+01		<6.32E+00		Undeterminable		<2.90E+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 MAR 20, 2024 TO JUL 6, 2024

LOOP 2D-SW CYCLE 173A POWER 108.5 MW

SAMPLE TYPE		PIX		BIX		AIX				BIX-7	
SAMPLE ID				052824009		052824010				060424009	
DATE SAMPLED		00/00/00		05/28/24		05/28/24				05/28/24	
TIME SAMPLED		00:00		14:17		14:10				14:17	
RADIONUCLIDE		DPM/ML	%ERR	DPM/ML	%ERR	DPM/ML	%ERR	DFX	%ERR	DPM/ML	%ERR
11 Na	24	0.0		1.01E+02	6.2	<3.56E+00		>2.83E+01			
21 Sc	46			<8.33E+00		<1.75E+00		Undeterminable		<1.15E-01	
24 Cr	51									8.16E-01	21.1
25 Mn	54									2.11E+01	1.0
25 Mn	56			1.86E+02	8.3	<8.39E+00		>2.22E+01			
26 Fe	59									4.37E+00	3.0
27 Co	58									6.15E+00	1.6
27 Co	60			1.80E+01	27.1	6.00E+00	22.4	2.99E+00	35.2	2.68E+01	0.9
30 Zn	65			<1.22E+01		<4.71E+00		Undeterminable		2.07E-01	38.3
37 Rb	88	0.0		2.41E+02	28.4	<9.12E+01		>2.64E+00			
37 Rb	89	0.0		7.34E+02	6.9	<5.48E+01		>1.34E+01			
38 Sr	91			<3.60E+01		<9.37E+00		Undeterminable			
38 Sr	92			2.22E+01	18.7	<2.47E+00		>8.97E+00			
39 YM	90			<8.88E+00		<1.10E+00		Undeterminable			
39 Y	92			<8.06E+01		<2.28E+01		Undeterminable			
39 Y	93			<1.19E+02		<1.70E+01		Undeterminable			
40 Zr	95			<1.46E+01		4.98E+00	36.0	Undeterminable		<2.32E-01	
40 Zr	97			<4.88E+02		<1.16E+02		Undeterminable			
41 Nb	95									3.22E-01	13.3
42 Mo	99									3.43E+01	3.0
43 TcM	99			<1.07E+01		<8.86E-01		Undeterminable			
44 Ru	103			<1.41E+01		<1.10E+00		Undeterminable		<5.86E-02	
45 Rh	106									<9.26E-01	
47 AgM	110									5.65E-02	43.2
51 Sb	122									<7.43E-01	
51 Sb	124									<8.90E-02	
52 Te	132									<1.72E-01	
53 I	131			<1.20E+01		<1.06E+00		Undeterminable		4.46E+00	1.7
53 I	132	0.0		3.42E+02	2.4	<3.05E+00		>1.12E+02			
53 I	133			7.97E+01	6.0	<2.26E+00		>3.53E+01			
53 I	134	0.0		1.02E+03	1.8	<4.78E+00		>2.13E+02			
53 I	135	0.0		2.04E+02	6.8	<8.03E+00		>2.54E+01			
55 Cs	134									<1.69E-01	
55 Cs	136			<9.47E+00		<4.71E+00		Undeterminable		<1.81E-01	
55 Cs	137									2.67E-01	14.3
55 Cs	138	0.0		1.09E+03	2.3	3.64E+01	26.7	2.99E+01	26.8		
56 Ba	140			<2.99E+01		<5.23E+00		Undeterminable		3.31E+00	7.8
56 Ba	141			<5.67E+01		<9.55E+00		Undeterminable			

FROM MAR 20, 2024 TO JUL 6, 2024

LOOP 2D-SW CYCLE 173A POWER 108.5 MW

SAMPLE TYPE	PIX		BIX		AIX				BIX-7	
SAMPLE ID			052824009		052824010				060424009	
DATE SAMPLED	00/00/00		05/28/24		05/28/24				05/28/24	
TIME SAMPLED	00:00		14:17		14:10				14:17	
RADIONUCLIDE	DPM/ML	%ERR	DPM/ML	%ERR	DPM/ML	%ERR	DFX	%ERR	DPM/ML	%ERR
57 La 140			7.57E+00	33.2	<1.72E+00		>4.41E+00		<9.18E+00	
57 La 142			<4.48E+01		<3.71E+01		Undeterminable			
58 Ce 141			<1.51E+01		<1.47E+00		Undeterminable		<5.56E-02	
58 Ce 143			<3.10E+01		<2.72E+00		Undeterminable			
58 Ce 144									<8.80E-01	
63 EuM 152			<3.28E+01		<1.16E+01		Undeterminable			
63 Eu 152			<3.32E+01		<8.75E+00		Undeterminable		<1.71E-01	
63 Eu 154			<2.52E+01		<1.03E+01		Undeterminable		<2.36E-01	
63 Eu 155									<1.36E-01	
63 Eu 156			<1.84E+02		<2.53E+01		Undeterminable		<1.32E+00	
68 Er 171			<1.37E+01		<2.88E+00		Undeterminable			
71 Lu 177			<1.00E+02		<9.90E+00		Undeterminable		<6.74E-01	
72 Hf 175									<6.87E-02	
72 Hf 181			<7.04E+00		<2.06E+00		Undeterminable		2.98E-01	9.5
73 Ta 182									<1.51E-01	
73 Ta 183									<4.54E-01	
74 W 187			5.64E+02	3.4	<9.00E+00		>6.27E+01		5.09E+02	3.2
93 Np 239			<5.58E+01		<9.39E+00		Undeterminable		<1.83E+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 MAR 20, 2024 TO JUL 6, 2024

LOOP 2D-SW CYCLE 173A POWER 108.5 MW

SAMPLE TYPE		PIX		BIX		AIX				BIX-7	
SAMPLE ID		061124010		061124009		061124011				061824009	
DATE SAMPLED		06/11/24		06/11/24		06/11/24				06/11/24	
TIME SAMPLED		14:24		14:29		14:09				14:29	
RADIONUCLIDE		DPM/ML	%ERR	DPM/ML	%ERR	DPM/ML	%ERR	DFX	%ERR	DPM/ML	%ERR
11 Na	24	<1.49E+02		1.12E+02	5.2	<7.31E-01		>1.53E+02			
21 Sc	46			<5.40E+00		<7.99E-01		Undeterminable		<1.27E-01	
24 Cr	51									1.27E+00	23.5
25 Mn	54									2.91E+01	1.5
25 Mn	56			2.13E+02	9.4	<2.93E+00		>7.26E+01			
26 Fe	59									8.47E+00	2.6
27 Co	58									9.35E+00	1.8
27 Co	60			2.35E+01	13.7	6.10E+00	7.6	3.85E+00	15.6	2.67E+01	1.4
30 Zn	65			<1.56E+01		<2.57E+00		Undeterminable		<3.47E-01	
37 Rb	88	<1.34E+03		2.89E+02	17.8	<4.61E+01		>6.28E+00			
37 Rb	89	<1.57E+03		6.02E+02	5.3	<4.47E+01		>1.35E+01			
38 Sr	91			<4.36E+01		<2.84E+00		Undeterminable			
38 Sr	92			1.51E+01	20.4	<8.70E-01		>1.74E+01			
39 YM	90			<8.98E+00		<4.95E-01		Undeterminable			
39 Y	92			<7.58E+01		<9.04E+00		Undeterminable			
39 Y	93			<1.50E+02		<4.72E+00		Undeterminable			
40 Zr	95			<8.52E+00		<9.89E-01		Undeterminable		3.37E-01	25.6
40 Zr	97			<2.22E+02		<5.52E+01		Undeterminable			
41 Nb	95									2.41E-01	16.5
42 Mo	99									3.47E+01	2.2
43 TcM	99			<1.40E+01		<6.22E-01		Undeterminable			
44 Ru	103			<1.09E+01		<4.09E-01		Undeterminable		<1.37E-01	
45 Rh	106									<1.09E+00	
47 AgM	110									<6.65E-02	
51 Sb	122									<6.66E-01	
51 Sb	124									<1.31E-01	
52 Te	132									<1.96E-01	
53 I	131			<1.29E+01		<6.63E-01		Undeterminable		4.73E+00	2.4
53 I	132	3.41E+02	17.0	3.25E+02	2.7	<1.15E+00		>2.84E+02			
53 I	133			7.65E+01	5.6	<4.90E-01		>1.56E+02			
53 I	134	6.79E+02	17.0	9.25E+02	2.4	<3.95E+00		>2.34E+02			
53 I	135	<4.57E+02		1.82E+02	8.0	<1.93E+00		>9.47E+01			
55 Cs	134									1.26E-01	43.6
55 Cs	136			<8.96E+00		<1.70E+00		Undeterminable		<2.34E-01	
55 Cs	137									2.65E-01	22.3
55 Cs	138	1.47E+03	11.0	9.47E+02	2.4	2.78E+01	30.7	3.41E+01	30.8		
56 Ba	140			<2.57E+01		<1.53E+00		Undeterminable		3.92E+00	7.9
56 Ba	141			<6.54E+01		<4.98E+00		Undeterminable			

FROM MAR 20, 2024 TO JUL 6, 2024

LOOP 2D-SW CYCLE 173A POWER 108.5 MW

SAMPLE TYPE	PIX		BIX		AIX				BIX-7	
SAMPLE ID	061124010		061124009		061124011				061824009	
DATE SAMPLED	06/11/24		06/11/24		06/11/24				06/11/24	
TIME SAMPLED	14:24		14:29		14:09				14:29	
RADIONUCLIDE	DPM/ML	%ERR	DPM/ML	%ERR	DPM/ML	%ERR	DFX	%ERR	DPM/ML	%ERR
57 La 140			<4.13E+00		<4.71E-01		Undeterminable		<1.03E+01	
57 La 142			<4.52E+01		<1.03E+01		Undeterminable			
58 Ce 141			<1.88E+01		<8.05E-01		Undeterminable		<6.47E-02	
58 Ce 143			<2.49E+01		<9.15E-01		Undeterminable			
58 Ce 144									<9.58E-01	
63 EuM 152			<2.89E+01		<6.99E+00		Undeterminable			
63 Eu 152			<1.67E+01		<2.67E+00		Undeterminable		<2.38E-01	
63 Eu 154			<2.57E+01		<1.55E+00		Undeterminable		<1.56E-01	
63 Eu 155									<1.57E-01	
63 Eu 156			<9.25E+01		<8.65E+00		Undeterminable		<1.35E+00	
68 Er 171			<1.19E+01		<9.68E-01		Undeterminable			
71 Lu 177			<1.07E+02		<3.17E+00		Undeterminable		<1.05E+00	
72 Hf 175									7.40E-02	35.9
72 Hf 181			<6.82E+00		<4.64E-01		Undeterminable		3.00E-01	15.8
73 Ta 182									<4.02E-01	
73 Ta 183									<3.78E-01	
74 W 187			4.47E+02	3.2	<2.41E+00		>1.85E+02		4.25E+02	4.3
93 Np 239			<5.90E+01		<2.11E+00		Undeterminable		<3.20E+00	
18 Ar 41	2.87E+03	4.7								
36 KrM 85	2.36E+02	20.4								
36 Kr 87	3.74E+02	28.3								
36 Kr 88	<9.08E+02									
54 Xe 133	<9.88E+02									
54 XeM 135	<6.99E+02									
54 Xe 135	4.85E+02	8.5								
54 Xe 138	<2.53E+03									

FROM MAR 20, 2024 TO JUL 6, 2024

LOOP 2D-SW CYCLE 173A POWER 112.0 MW

SAMPLE TYPE	PIX		BIX		AIX				BIX-7	
SAMPLE ID			070124006		070124007				070924005	
DATE SAMPLED	00/00/00		07/01/24		07/01/24				07/01/24	
TIME SAMPLED	00:00		14:26		14:17				14:26	
RADIONUCLIDE	DPM/ML	%ERR	DPM/ML	%ERR	DPM/ML	%ERR	DFX	%ERR	DPM/ML	%ERR
11 Na 24	0.0		1.02E+02	10.4	<1.28E+00		>7.92E+01			
21 Sc 46			<7.88E+00		<1.48E+00		Undeterminable		<2.18E-01	
24 Cr 51									9.77E+00	5.1
25 Mn 54									8.08E+01	0.9
25 Mn 56			2.31E+02	6.7	<3.53E+00		>6.55E+01			
26 Fe 59									6.90E+01	0.6
27 Co 58									6.70E+01	1.2
27 Co 60			1.17E+02	4.6	1.21E+01	6.9	9.65E+00	8.3	1.48E+02	1.0
30 Zn 65			<2.72E+01		<1.90E+00		Undeterminable		1.59E+00	13.3
37 Rb 88	0.0		1.94E+02	26.7	3.18E+01	46.8	6.12E+00	53.9		
37 Rb 89	0.0		5.66E+02	6.7	<2.86E+01		>1.98E+01			
38 Sr 91			3.68E+01	23.9	<3.43E+00		>1.07E+01			
38 Sr 92			<6.45E+01		<1.37E+00		Undeterminable			
39 YM 90			<1.36E+01		<4.24E-01		Undeterminable			
39 Y 92			<9.27E+01		<7.77E+00		Undeterminable			
39 Y 93			<1.64E+02		<7.19E+00		Undeterminable			
40 Zr 95			<1.08E+01		<2.80E+00		Undeterminable		8.61E-01	13.4
40 Zr 97			<2.81E+02		<4.11E+01		Undeterminable			
41 Nb 95									1.75E+00	4.6
42 Mo 99									3.23E+01	1.7
43 TcM 99			<1.25E+01		<3.95E-01		Undeterminable			
44 Ru 103			<8.37E+00		<8.21E-01		Undeterminable		<1.66E-01	
45 Rh 106									<2.21E+00	
47 AgM 110									<1.31E-01	
51 Sb 122									<1.63E+00	
51 Sb 124									<2.82E-01	
52 Te 132									<4.41E-01	
53 I 131			1.42E+01	41.2	<5.08E-01		>2.80E+01		4.28E+00	2.8
53 I 132	0.0		3.07E+02	2.9	<2.02E+00		>1.51E+02			
53 I 133			6.83E+01	8.0	<3.90E-01		>1.75E+02			
53 I 134	0.0		8.74E+02	2.0	<2.18E+00		>4.02E+02			
53 I 135	0.0		1.90E+02	8.3	<4.14E+00		>4.59E+01			
55 Cs 134									<2.24E-01	
55 Cs 136			<8.11E+00		<3.10E+00		Undeterminable		<4.20E-01	
55 Cs 137									2.53E-01	36.2
55 Cs 138	0.0		7.82E+02	4.0	4.61E+01	9.7	1.70E+01	10.5		
56 Ba 140			<2.11E+01		<1.97E+00		Undeterminable		4.07E+00	18.1
56 Ba 141			<6.26E+01		<6.97E+00		Undeterminable			

FROM MAR 20, 2024 TO JUL 6, 2024

LOOP 2D-SW CYCLE 173A POWER 112.0 MW

SAMPLE TYPE	PIX		BIX		AIX				BIX-7	
SAMPLE ID			070124006		070124007				070924005	
DATE SAMPLED	00/00/00		07/01/24		07/01/24				07/01/24	
TIME SAMPLED	00:00		14:26		14:17				14:26	
RADIONUCLIDE	DPM/ML	%ERR	DPM/ML	%ERR	DPM/ML	%ERR	DFX	%ERR	DPM/ML	%ERR
57 La 140			<7.01E+00		<5.66E-01		Undeterminable		<3.21E+01	
57 La 142			<5.27E+01		1.25E+01	47.3	Undeterminable			
58 Ce 141			<2.40E+01		<1.31E+00		Undeterminable		<1.18E-01	
58 Ce 143			<4.97E+01		<8.39E-01		Undeterminable			
58 Ce 144									<1.25E+00	
63 EuM 152			<3.09E+01		<7.44E+00		Undeterminable			
63 Eu 152			<3.82E+01		<6.51E+00		Undeterminable		<2.13E-01	
63 Eu 154			<1.57E+01		<1.55E+00		Undeterminable		<3.69E-01	
63 Eu 155									<2.73E-01	
63 Eu 156			<5.92E+01		<1.23E+01		Undeterminable		2.28E+00	38.6
68 Er 171			<1.73E+01		<6.36E-01		Undeterminable			
71 Lu 177			<7.98E+01		<3.96E+00		Undeterminable		2.12E+00	36.2
72 Hf 175									8.98E-01	4.8
72 Hf 181			9.49E+00	42.5	<4.15E-01		>2.29E+01		7.12E+00	2.3
73 Ta 182									<6.49E-01	
73 Ta 183									<1.17E+00	
74 W 187			5.02E+02	3.2	<2.86E+00		>1.76E+02		4.35E+02	11.8
93 Np 239			<7.76E+01		<2.36E+00		Undeterminable		<5.33E+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 MAR 20, 2024 TO JUL 6, 2024

LOOP 2E-NW CYCLE 173A POWER 108.5 MW

SAMPLE TYPE		PIX		BIX		AIX				BIX-7	
SAMPLE ID				052924006		052924007				060524009	
DATE SAMPLED		00/00/00		05/29/24		05/29/24				05/29/24	
TIME SAMPLED		00:00		14:50		14:42				14:50	
RADIONUCLIDE		DPM/ML	%ERR	DPM/ML	%ERR	DPM/ML	%ERR	DFX	%ERR	DPM/ML	%ERR
11 Na	24	0.0		1.14E+02	5.4	<1.19E+00		>9.60E+01			
21 Sc	46			<9.77E+00		<4.27E+00		Undeterminable		<7.94E-02	
24 Cr	51									6.59E+00	4.4
25 Mn	54									2.65E+01	1.3
25 Mn	56			9.91E+02	3.1	<9.06E+00		>1.09E+02			
26 Fe	59									7.09E+00	1.9
27 Co	58									6.62E+00	1.7
27 Co	60			2.35E+01	13.4	7.11E+01	4.4	3.30E-01	14.1	1.33E+01	1.3
30 Zn	65			<2.00E+01		<3.33E+00		Undeterminable		<1.25E-01	
37 Rb	88	0.0		3.51E+02	20.1	<1.01E+02		>3.47E+00			
37 Rb	89	0.0		5.36E+02	7.4	<2.64E+01		>2.03E+01			
38 Sr	91			<2.66E+01		<5.23E+00		Undeterminable			
38 Sr	92			1.53E+01	26.5	<1.84E+00		>8.30E+00			
39 YM	90			<1.25E+01		<1.17E+00		Undeterminable			
39 Y	92			<4.57E+01		<1.40E+01		Undeterminable			
39 Y	93			<2.12E+02		<2.08E+01		Undeterminable			
40 Zr	95			<9.30E+00		<3.73E+00		Undeterminable		1.45E+00	5.4
40 Zr	97			<3.20E+02		<6.00E+01		Undeterminable			
41 Nb	95									6.46E-01	6.5
42 Mo	99									8.57E+01	2.1
43 TcM	99			<6.91E+01		<7.66E-01		Undeterminable			
44 Ru	103			<1.08E+01		<2.18E+00		Undeterminable		<5.02E-02	
45 Rh	106									<1.29E+00	
47 AgM	110									<6.62E-02	
51 Sb	122									<7.56E-01	
51 Sb	124									6.75E-02	35.5
52 Te	132									<3.22E-01	
53 I	131			<2.34E+01		<1.06E+00		Undeterminable		5.24E+00	2.2
53 I	132	0.0		4.06E+02	2.2	<2.45E+00		>1.66E+02			
53 I	133			1.04E+02	6.1	<5.29E-01		>1.96E+02			
53 I	134	0.0		1.03E+03	2.3	<5.28E+00		>1.96E+02			
53 I	135	0.0		2.96E+02	5.6	<5.41E+00		>5.48E+01			
55 Cs	134									<5.16E-02	
55 Cs	136			<1.01E+01		<3.20E+00		Undeterminable		<1.91E-01	
55 Cs	137									<8.60E-02	
55 Cs	138	0.0		1.00E+03	3.3	<3.08E+01		>3.24E+01			
56 Ba	140			<2.63E+01		<4.23E+00		Undeterminable		2.98E+00	5.9
56 Ba	141			<1.41E+02		<6.94E+00		Undeterminable			

FROM MAR 20, 2024 TO JUL 6, 2024

LOOP 2E-NW CYCLE 173A POWER 108.5 MW

SAMPLE TYPE	PIX		BIX		AIX			BIX-7	
SAMPLE ID			052924006		052924007			060524009	
DATE SAMPLED	00/00/00		05/29/24		05/29/24			05/29/24	
TIME SAMPLED	00:00		14:50		14:42			14:50	
RADIONUCLIDE	DPM/ML	%ERR	DPM/ML	%ERR	DPM/ML	%ERR	DFX	DPM/ML	%ERR
57 La 140			<6.91E+00		<1.91E+00		Undeterminable	<5.54E+00	
57 La 142			<4.80E+01		<3.77E+01		Undeterminable		
58 Ce 141			<1.70E+01		<1.79E+00		Undeterminable	<5.50E-02	
58 Ce 143			<3.61E+01		<1.95E+00		Undeterminable		
58 Ce 144								<2.36E+00	
63 EuM 152			<5.31E+01		<1.41E+01		Undeterminable		
63 Eu 152			<3.17E+01		<6.64E+00		Undeterminable	<1.30E-01	
63 Eu 154			<1.35E+01		<3.95E+00		Undeterminable	<9.72E-02	
63 Eu 155								<1.53E-01	
63 Eu 156			<1.32E+02		<2.51E+01		Undeterminable	<7.08E-01	
68 Er 171			<2.24E+01		<1.57E+00		Undeterminable		
71 Lu 177			<9.64E+01		<1.06E+01		Undeterminable	<5.87E-01	
72 Hf 175								1.06E-01	16.3
72 Hf 181			<1.49E+01		<9.17E-01		Undeterminable	1.92E+00	2.2
73 Ta 182								2.39E-01	29.6
73 Ta 183								6.51E-01	22.0
74 W 187			7.41E+02	3.5	<3.88E+00		>1.91E+02	5.55E+02	2.6
93 Np 239			<1.32E+02		<6.18E+00		Undeterminable	<3.80E+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 MAR 20, 2024 TO JUL 6, 2024

LOOP 2E-NW CYCLE 173A POWER 108.5 MW

SAMPLE TYPE		PIX		BIX		AIX				BIX-7	
SAMPLE ID		061224007		061224006		061224008				061924006	
DATE SAMPLED		06/12/24		06/12/24		06/12/24				06/12/24	
TIME SAMPLED		14:20		14:26		14:14				14:26	
RADIONUCLIDE		DPM/ML	%ERR	DPM/ML	%ERR	DPM/ML	%ERR	DFX	%ERR	DPM/ML	%ERR
11 Na	24	<1.62E+02		1.09E+02	7.6	<5.73E-01		>1.90E+02			
21 Sc	46			<7.89E+00		<4.53E-01		Undeterminable		<7.33E-02	
24 Cr	51									9.72E+00	4.1
25 Mn	54									4.85E+01	1.7
25 Mn	56			1.11E+03	3.8	<1.71E+00		>6.54E+02			
26 Fe	59									1.27E+01	2.1
27 Co	58									1.48E+01	1.2
27 Co	60			1.53E+01	26.1	3.27E+00	12.1	4.68E+00	28.8	1.35E+01	1.8
30 Zn	65			<2.22E+01		<8.42E-01		Undeterminable		<3.09E-01	
37 Rb	88	<1.78E+03		3.60E+02	18.7	<4.28E+01		>8.42E+00			
37 Rb	89	<1.04E+03		5.96E+02	7.7	<1.54E+01		>3.87E+01			
38 Sr	91			<3.28E+01		<1.44E+00		Undeterminable			
38 Sr	92			1.83E+01	39.8	<5.55E-01		>3.31E+01			
39 YM	90			<2.17E+01		<3.27E-01		Undeterminable			
39 Y	92			<9.35E+01		<5.68E+00		Undeterminable			
39 Y	93			<2.95E+02		<2.85E+00		Undeterminable			
40 Zr	95			<1.75E+01		<1.03E+00		Undeterminable		2.65E+00	4.6
40 Zr	97			<8.02E+02		<1.96E+01		Undeterminable			
41 Nb	95									1.40E+00	4.0
42 Mo	99									1.11E+02	2.7
43 TcM	99			2.42E+01	28.9	<3.20E-01		>7.56E+01			
44 Ru	103			<1.50E+01		<3.72E-01		Undeterminable		<1.15E-01	
45 Rh	106									<1.12E+00	
47 AgM	110									<1.21E-01	
51 Sb	122									<1.64E+00	
51 Sb	124									1.91E-01	32.0
52 Te	132									<3.84E-01	
53 I	131			<3.30E+01		<5.07E-01		Undeterminable		3.08E+00	35.8
53 I	132	4.01E+02	11.6	4.56E+02	2.5	<6.15E-01		>7.42E+02			
53 I	133			1.21E+02	7.5	<3.20E-01		>3.77E+02			
53 I	134	7.40E+02	16.2	1.13E+03	2.3	<1.13E+00		>1.00E+03			
53 I	135	<3.69E+02		2.99E+02	6.9	<1.32E+00		>2.26E+02			
55 Cs	134									<9.38E-02	
55 Cs	136			<1.35E+01		<1.00E+00		Undeterminable		<2.47E-01	
55 Cs	137									<1.61E-01	
55 Cs	138	<9.52E+02		1.11E+03	2.7	2.88E+01	11.9	3.85E+01	12.2		
56 Ba	140			<2.68E+01		<1.95E+00		Undeterminable		5.75E+00	6.0
56 Ba	141			<8.04E+01		<2.54E+00		Undeterminable			

FROM MAR 20, 2024 TO JUL 6, 2024

LOOP 2E-NW CYCLE 173A POWER 108.5 MW

SAMPLE TYPE	PIX		BIX		AIX				BIX-7	
SAMPLE ID	061224007		061224006		061224008				061924006	
DATE SAMPLED	06/12/24		06/12/24		06/12/24				06/12/24	
TIME SAMPLED	14:20		14:26		14:14				14:26	
RADIONUCLIDE	DPM/ML	%ERR	DPM/ML	%ERR	DPM/ML	%ERR	DFX	%ERR	DPM/ML	%ERR
57 La 140			<1.29E+01		<4.04E-01		Undeterminable		<1.07E+01	
57 La 142			<7.22E+01		<6.17E+00		Undeterminable			
58 Ce 141			<2.52E+01		<8.69E-01		Undeterminable		<8.48E-02	
58 Ce 143			<7.48E+01		<6.54E-01		Undeterminable			
58 Ce 144									<4.70E+00	
63 EuM 152			<6.19E+01		<3.40E+00		Undeterminable			
63 Eu 152			<3.78E+01		<1.35E+00		Undeterminable		<4.26E-01	
63 Eu 154			<2.46E+01		<7.03E-01		Undeterminable		<1.86E-01	
63 Eu 155									<1.85E-01	
63 Eu 156			<1.45E+02		<3.74E+00		Undeterminable		<1.18E+00	
68 Er 171			<3.86E+01		<4.79E-01		Undeterminable			
71 Lu 177			<2.09E+02		<2.43E+00		Undeterminable		<8.14E-01	
72 Hf 175									1.63E-01	15.4
72 Hf 181			1.64E+01	41.8	<4.92E-01		>3.32E+01		1.97E+00	3.4
73 Ta 182									<2.53E-01	
73 Ta 183									7.49E-01	25.2
74 W 187			6.88E+02	3.9	<1.30E+00		>5.28E+02		6.39E+02	3.3
93 Np 239			<1.12E+02		<1.93E+00		Undeterminable		<3.30E+00	
18 Ar 41	1.36E+03	7.7								
36 KrM 85	<1.33E+02									
36 Kr 87	<4.21E+02									
36 Kr 88	<3.49E+02									
54 Xe 133	<2.05E+03									
54 XeM 135	<6.36E+02									
54 Xe 135	6.65E+02	7.4								
54 Xe 138	2.61E+03	29.6								

FROM MAR 20, 2024 TO JUL 6, 2024

LOOP 2E-NW CYCLE 173A POWER 111.5 MW

SAMPLE TYPE		PIX		BIX		AIX				BIX-7	
SAMPLE ID				070224010		070224011				070924006	
DATE SAMPLED		00/00/00		07/02/24		07/02/24				07/02/24	
TIME SAMPLED		00:00		14:16		14:08				14:16	
RADIONUCLIDE		DPM/ML	%ERR	DPM/ML	%ERR	DPM/ML	%ERR	DFX	%ERR	DPM/ML	%ERR
11 Na	24	0.0		1.25E+02	7.0	<1.30E+00		>9.57E+01			
21 Sc	46			<8.24E+00		<1.20E+00		Undeterminable		1.38E-01	40.5
24 Cr	51									1.96E+01	2.5
25 Mn	54									5.33E+01	2.0
25 Mn	56			9.46E+02	3.6	<3.18E+00		>2.98E+02			
26 Fe	59									2.39E+01	2.4
27 Co	58									3.04E+01	1.6
27 Co	60			3.37E+01	14.1	1.19E+01	11.9	2.84E+00	18.5	2.31E+01	2.5
30 Zn	65			<1.55E+01		<4.15E+00		Undeterminable		<4.18E-01	
37 Rb	88	0.0		4.55E+02	17.7	<6.50E+01		>7.00E+00			
37 Rb	89	0.0		5.98E+02	10.0	1.79E+01	37.7	3.35E+01	39.0		
38 Sr	91			<3.21E+01		<3.43E+00		Undeterminable			
38 Sr	92			2.93E+01	47.9	<1.38E+00		>2.13E+01			
39 YM	90			<1.93E+01		<1.15E+00		Undeterminable			
39 Y	92			<5.87E+01		<1.05E+01		Undeterminable			
39 Y	93			<2.34E+02		<7.73E+00		Undeterminable			
40 Zr	95			<2.15E+01		<3.39E+00		Undeterminable		5.55E+00	2.7
40 Zr	97			<4.83E+02		<7.78E+01		Undeterminable			
41 Nb	95									3.73E+00	2.9
42 Mo	99									1.06E+02	2.5
43 TcM	99			<9.20E+01		<5.15E-01		Undeterminable			
44 Ru	103			<2.21E+01		<5.82E-01		Undeterminable		<1.24E-01	
45 Rh	106									<1.23E+00	
47 AgM	110									1.55E-01	43.2
51 Sb	122									<1.60E+00	
51 Sb	124									2.59E-01	21.8
52 Te	132									<3.54E-01	
53 I	131			<2.58E+01		<4.26E-01		Undeterminable		8.30E+00	4.3
53 I	132	0.0		5.00E+02	2.5	<1.92E+00		>2.61E+02			
53 I	133			1.29E+02	5.7	<6.98E-01		>1.85E+02			
53 I	134	0.0		1.18E+03	2.3	<3.69E+00		>3.19E+02			
53 I	135	0.0		3.42E+02	6.2	<4.80E+00		>7.13E+01			
55 Cs	134									<1.27E-01	
55 Cs	136			<1.17E+01		<2.41E+00		Undeterminable		<3.51E-01	
55 Cs	137									1.21E-01	48.5
55 Cs	138	0.0		1.08E+03	3.7	2.97E+01	18.0	3.64E+01	18.4		
56 Ba	140			<2.77E+01		<2.46E+00		Undeterminable		4.52E+00	9.7
56 Ba	141			<1.30E+02		<4.42E+00		Undeterminable			

FROM MAR 20, 2024 TO JUL 6, 2024

LOOP 2E-NW CYCLE 173A POWER 111.5 MW

SAMPLE TYPE	PIX		BIX		AIX				BIX-7	
SAMPLE ID			070224010		070224011				070924006	
DATE SAMPLED	00/00/00		07/02/24		07/02/24				07/02/24	
TIME SAMPLED	00:00		14:16		14:08				14:16	
RADIONUCLIDE	DPM/ML	%ERR	DPM/ML	%ERR	DPM/ML	%ERR	DFX	%ERR	DPM/ML	%ERR
57 La 140			<8.67E+00		1.16E+00	48.0	Undeterminable		<1.39E+01	
57 La 142			<9.36E+01		<1.93E+01		Undeterminable			
58 Ce 141			<2.43E+01		<8.61E-01		Undeterminable		<1.23E-01	
58 Ce 143			<5.01E+01		<1.15E+00		Undeterminable			
58 Ce 144									<4.43E+00	
63 EuM 152			<4.50E+01		<4.31E+00		Undeterminable			
63 Eu 152			<3.41E+01		<4.90E+00		Undeterminable		<2.29E-01	
63 Eu 154			<3.44E+01		<3.15E+00		Undeterminable		<1.69E-01	
63 Eu 155									<3.38E-01	
63 Eu 156			<2.67E+02		<1.74E+01		Undeterminable		<1.75E+00	
68 Er 171			<2.28E+01		<9.14E-01		Undeterminable			
71 Lu 177			<1.77E+02		<5.74E+00		Undeterminable		<9.43E-01	
72 Hf 175									4.28E-01	7.3
72 Hf 181			<2.31E+01		8.72E-01	35.1	Undeterminable		5.96E+00	1.6
73 Ta 182									3.57E-01	38.6
73 Ta 183									1.49E+00	17.9
74 W 187			8.96E+02	4.3	<2.54E+00		>3.53E+02		8.61E+02	4.2
93 Np 239			<1.18E+02		<5.41E+00		Undeterminable		<3.78E+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									