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Quad Cities 1 – Quarterly Performance Indicators

4Q/2017 Performance Indicators

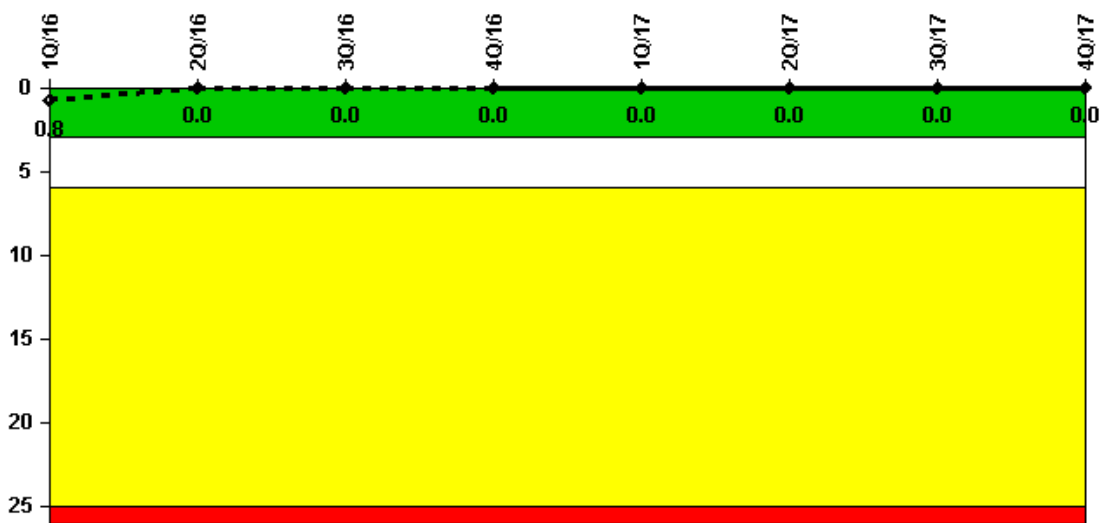
The solid trend line represents the current reporting period.

Licensee's General Comments: none

On this page:

- Unplanned Scrams (IE01)
- Unplanned Power Changes per 7000 Critical Hours (IE03)
- Unplanned Scrams with Complications (IE04)
- Safety System Functional Failures (MS05)
- Emergency AC Power Systems (MS06)
- High Pressure Injection Systems (MS07)
- Heat Removal Systems (MS08)
- Residual Heat Removal Systems (MS09)
- Cooling Water Systems (MS10)
- Reactor Coolant System Activity (BI01)
- Reactor Coolant System Leakage (BI02)
- Drill/Exercise Performance (EP01)
- Emergency Response Organization Drill Participation (EP02)
- Alert and Notification System Reliability (EP03)
- Occupational Exposure Control Effectiveness (OR01)
- RETS/OCDM Radiological Effluent Occurrence (PR01)
- Protected Area Equipment (PP01)

Unplanned Scrams per 7000 Critical Hrs



Thresholds: White > 3.0 Yellow > 6.0 Red > 25.0

Notes

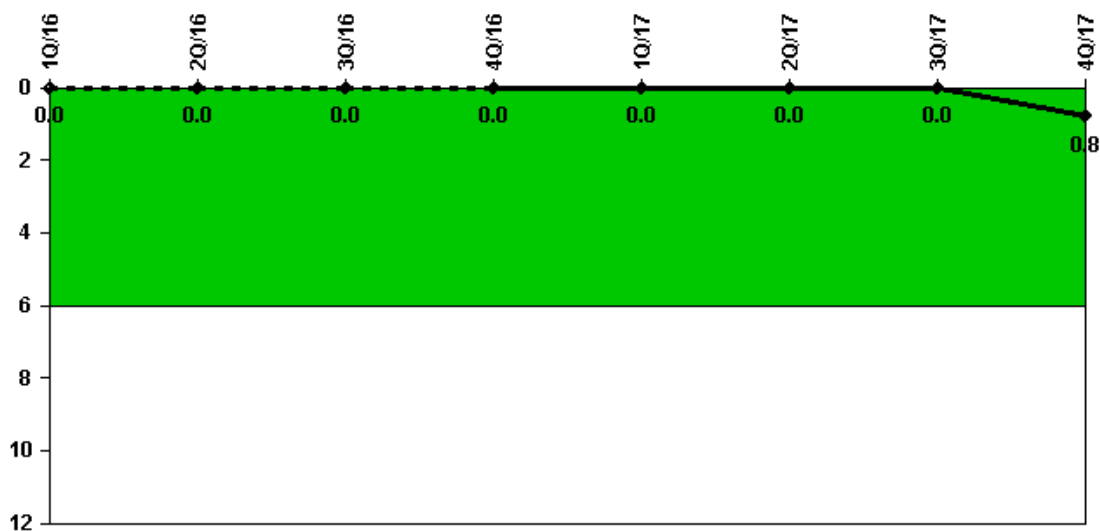
Unplanned Scrams per 7000 Critical Hrs	1Q/16	2Q/16	3Q/16	4Q/16	1Q/17	2Q/17	3Q/17	4Q/17
Unplanned scrams	0	0	0	0	0	0	0	0
Critical hours	2183.0	2184.0	2208.0	2209.0	2040.4	1873.4	2208.0	2209.0

Indicator value	0.8	0	0	0	0	0	0	0
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Licensee Comments: none

Unplanned Power Changes per 7000 Critical Hrs



Thresholds: White > 6.0

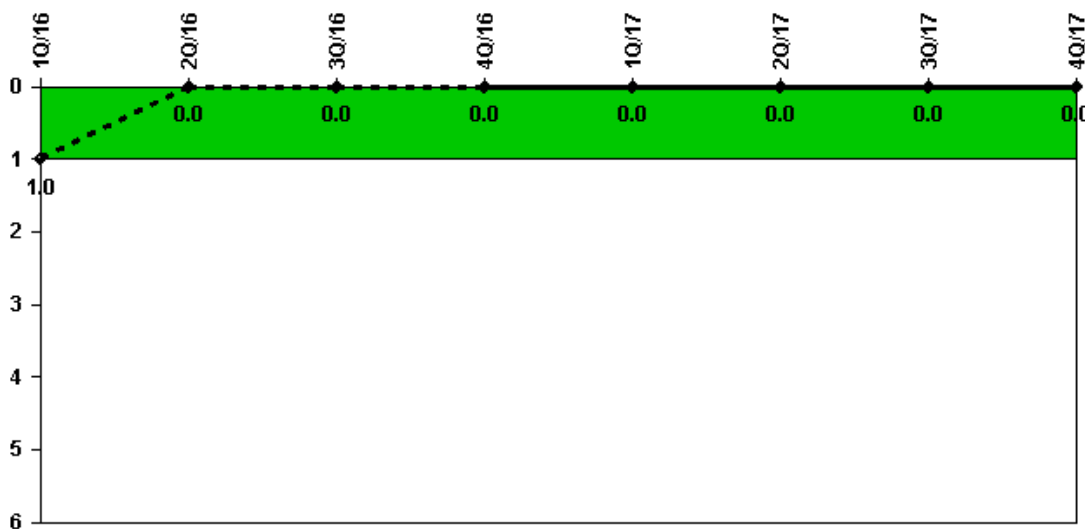
Notes

Unplanned Power Changes per 7000 Critical Hrs	1Q/16	2Q/16	3Q/16	4Q/16	1Q/17	2Q/17	3Q/17	4Q/17
Unplanned power changes	0	0	0	0	0	0	0	1.0
Critical hours	2183.0	2184.0	2208.0	2209.0	2040.4	1873.4	2208.0	2209.0
Indicator value	0	0	0	0	0	0	0	0.8

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Licensee Comments: none

Unplanned Scrams with Complications



Thresholds: White > 1.0

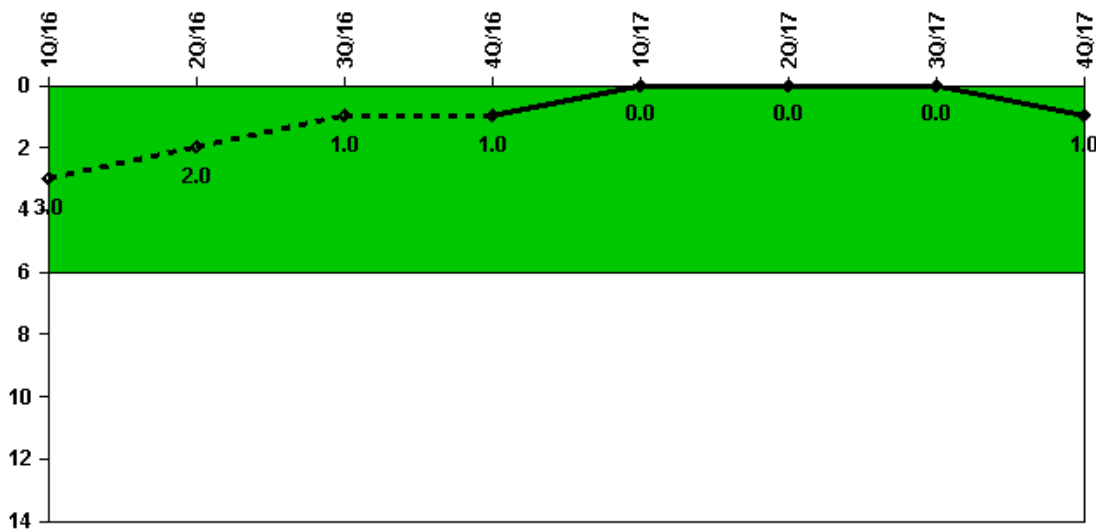
Notes

Unplanned Scrams with Complications	1Q/16	2Q/16	3Q/16	4Q/16	1Q/17	2Q/17	3Q/17	4Q/17
Scrams with complications	0	0	0	0	0	0	0	0
Indicator value	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

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Licensee Comments: none

Safety System Functional Failures (BWR)



Thresholds: White > 6.0

Notes

Safety System Functional Failures (BWR) 1Q/16 2Q/16 3Q/16 4Q/16 1Q/17 2Q/17 3Q/17 4Q/17

Safety System Functional Failures 1 0 0 0 0 0 0 1

Indicator value 3 2 1 1 0 0 0 1

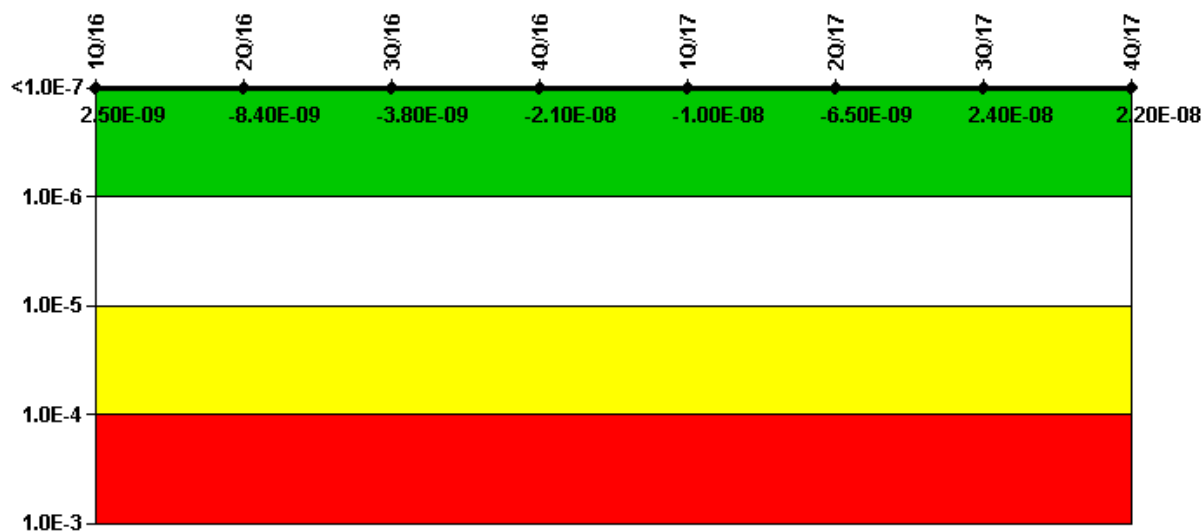
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Licensee Comments:

4Q/17: LER 254/2017-003-00, Control Room Emergency Ventilation Air Conditioning Piping Refrigerant Leak Due to High Cycle Fatigue (affects Units 1 and 2)

1Q/16: LER 254/2015-010-00, Loss of Control Room Emergency Ventilation System Due to Differential Pressure Switch Failure

Mitigating Systems Performance Index, Emergency AC Power System



Thresholds: White > 1.00E-6 Yellow > 1.00E-5 Red > 1.00E-4

Notes

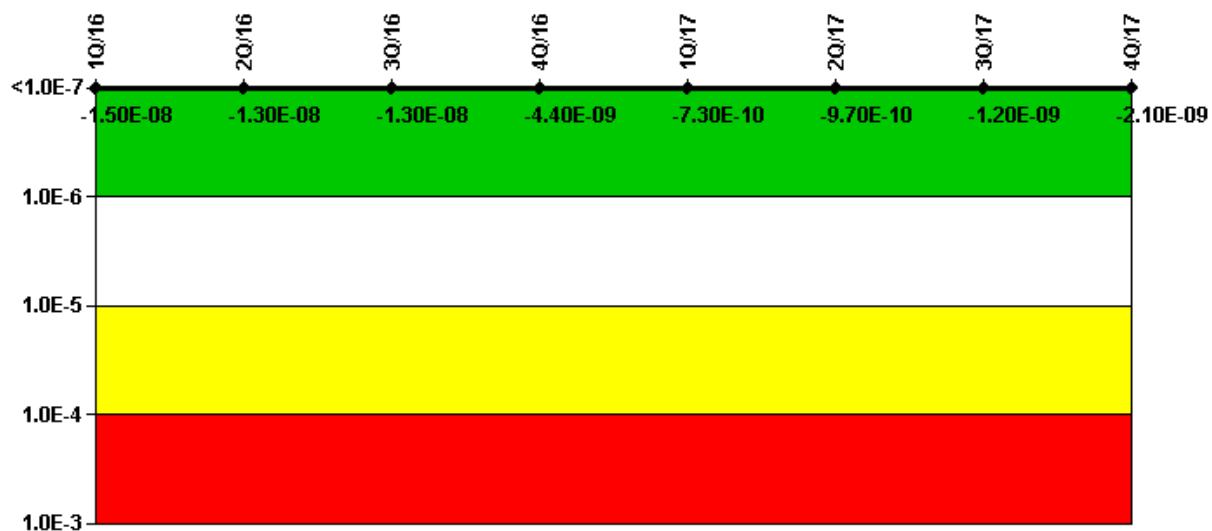
Mitigating Systems Performance Index, Emergency AC Power System

	1Q/16	2Q/16	3Q/16	4Q/16	1Q/17	2Q/17	3Q/17	4Q/17
UAI (Δ CDF)	6.83E-08	5.76E-08	6.16E-08	4.75E-08	5.82E-08	6.20E-08	9.18E-08	8.94E-08
URI (Δ CDF)	-6.59E-08	-6.60E-08	-6.54E-08	-6.82E-08	-6.86E-08	-6.85E-08	-6.80E-08	-6.70E-08
PLE	NO	NO	NO	NO	NO	NO	NO	NO
Indicator value	2.50E-09	-8.40E-09	-3.80E-09	-2.10E-08	-1.00E-08	-6.50E-09	2.40E-08	2.20E-08

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Licensee Comments: none

Mitigating Systems Performance Index, High Pressure Injection System



Thresholds: White > 1.00E-6 Yellow > 1.00E-5 Red > 1.00E-4

Notes

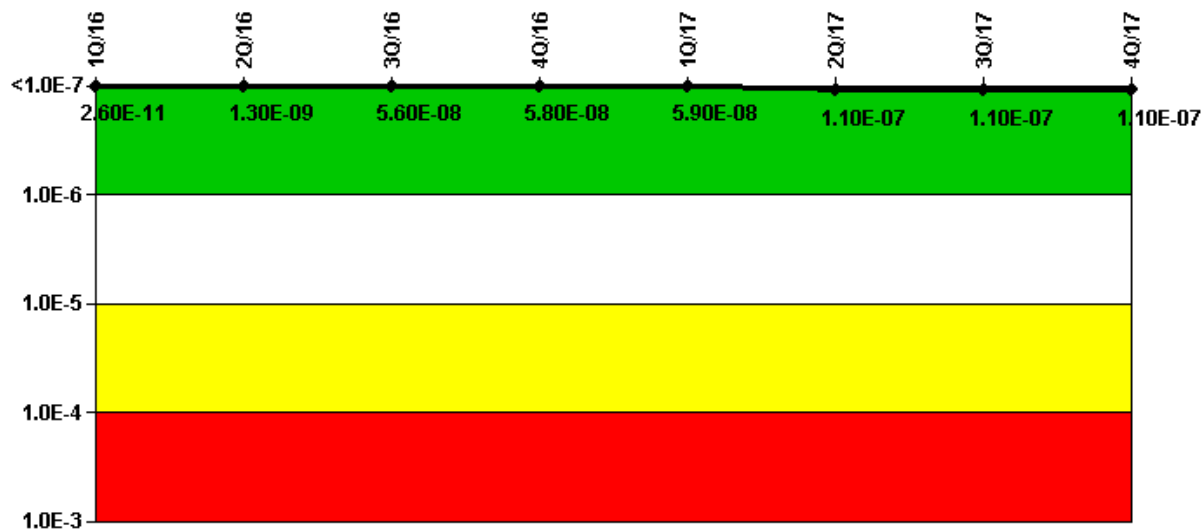
Mitigating Systems Performance Index, High Pressure Injection System

	1Q/16	2Q/16	3Q/16	4Q/16	1Q/17	2Q/17	3Q/17	4Q/17
UAI (Δ CDF)	5.18E-09	5.17E-09	5.39E-09	1.35E-08	1.72E-08	1.84E-08	1.82E-08	1.80E-08
URI (Δ CDF)	-2.01E-08	-1.79E-08	-1.79E-08	-1.79E-08	-1.79E-08	-1.94E-08	-1.94E-08	-2.01E-08
PLE	NO	NO	NO	NO	NO	NO	NO	NO
Indicator value	-1.50E-08	-1.30E-08	-1.30E-08	-4.40E-09	-7.30E-10	-9.70E-10	-1.20E-09	-2.10E-09

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Licensee Comments: none

Mitigating Systems Performance Index, Heat Removal System



Thresholds: White > 1.00E-6 Yellow > 1.00E-5 Red > 1.00E-4

Notes

Mitigating Systems Performance Index, Heat Removal System

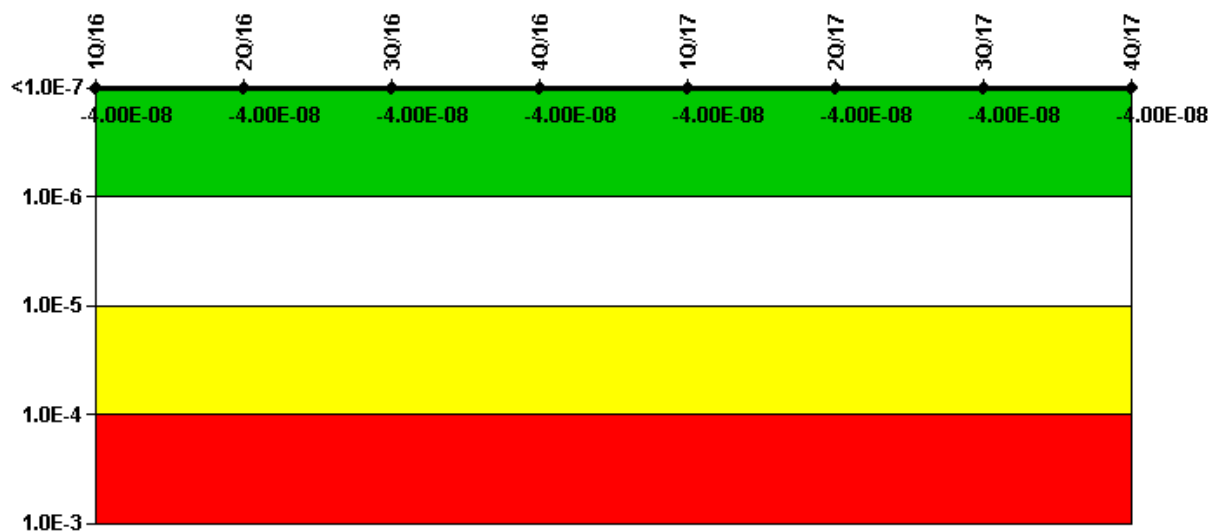
	1Q/16	2Q/16	3Q/16	4Q/16	1Q/17	2Q/17	3Q/17	4Q/17
UAI (ΔCDF)	1.25E-09	1.99E-09	3.66E-09	4.77E-09	6.71E-09	1.09E-08	1.04E-08	8.73E-09
URI (ΔCDF)	-1.22E-09	-7.28E-10	5.28E-08	5.28E-08	5.28E-08	9.96E-08	9.96E-08	9.96E-08
PLE	NO	NO	NO	NO	NO	NO	NO	NO
Indicator value	2.60E-11	1.30E-09	5.60E-08	5.80E-08	5.90E-08	1.10E-07	1.10E-07	1.10E-07

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Licensee Comments:

3Q/16: July - Reference IR 02696095 (U-1 RCIC FIC, WO 01941037)

Mitigating Systems Performance Index, Residual Heat Removal System



Thresholds: White > 1.00E-6 Yellow > 1.00E-5 Red > 1.00E-4

Notes

Mitigating Systems Performance Index, Residual Heat Removal System

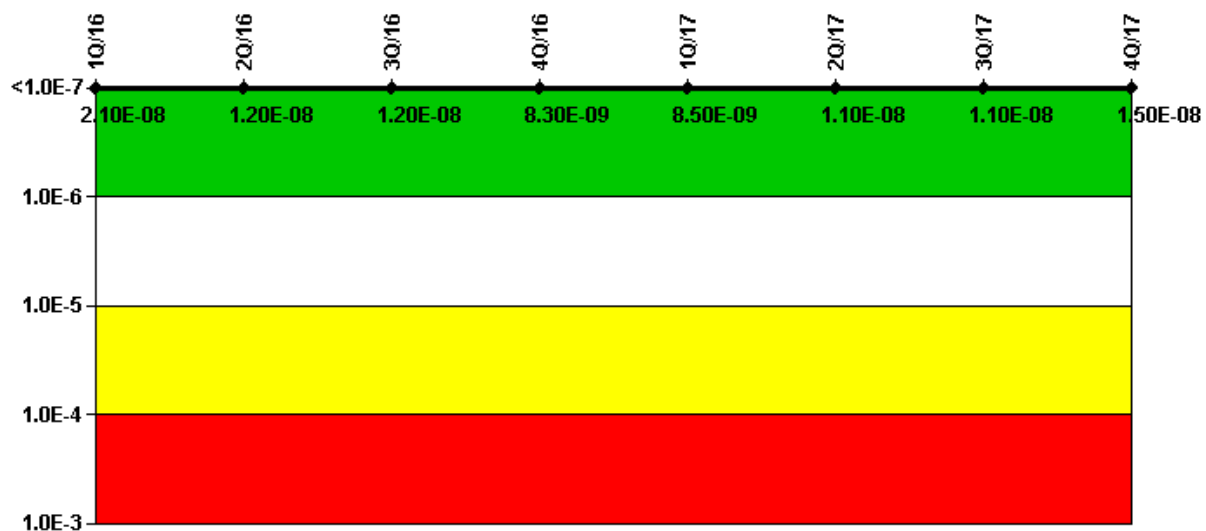
	1Q/16	2Q/16	3Q/16	4Q/16	1Q/17	2Q/17	3Q/17	4Q/17
UAI (Δ CDF)	-1.35E-08	-1.35E-08	-1.35E-08	-1.35E-08	-1.35E-08	-1.35E-08	-1.35E-08	-1.35E-08
URI (Δ CDF)	-2.65E-08	-2.65E-08	-2.65E-08	-2.65E-08	-2.65E-08	-2.65E-08	-2.65E-08	-2.65E-08
PLE	NO	NO	NO	NO	NO	NO	NO	NO
Indicator value	-4.00E-08	-4.00E-08	-4.00E-08	-4.00E-08	-4.00E-08	-4.00E-08	-4.00E-08	-4.00E-08

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Licensee Comments:

3Q/16: 1B HRH Seal Cooler 7/27/2016 04:00 - 7/28/2016 20:15

Mitigating Systems Performance Index, Cooling Water Systems



Thresholds: White > 1.00E-6 Yellow > 1.00E-5 Red > 1.00E-4

Notes

Mitigating Systems Performance Index, Cooling Water Systems

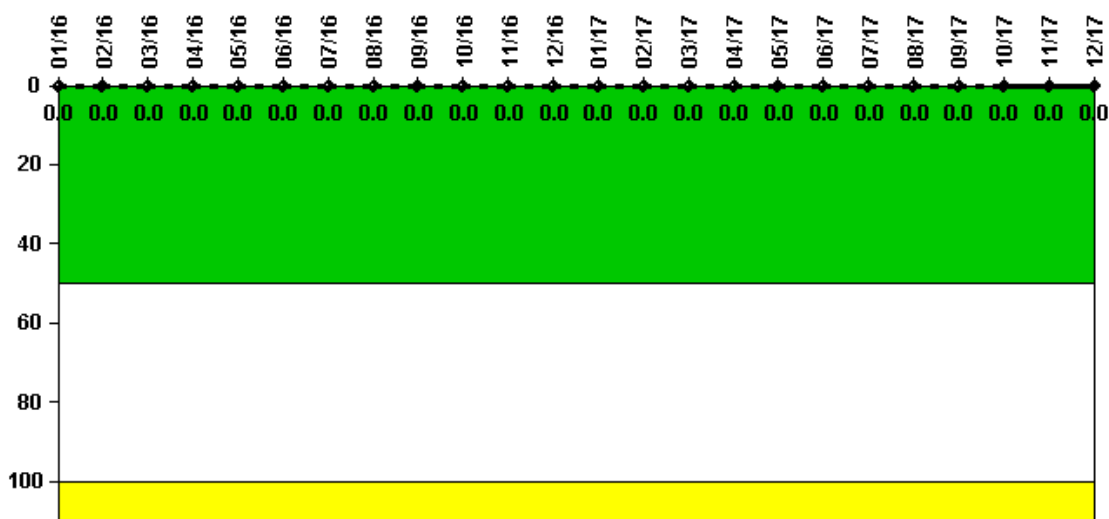
	1Q/16	2Q/16	3Q/16	4Q/16	1Q/17	2Q/17	3Q/17	4Q/17
UAI (Δ CDF)	2.13E-08	1.25E-08	1.25E-08	8.45E-09	8.59E-09	1.13E-08	1.13E-08	1.53E-08
URI (Δ CDF)	-1.39E-10	-1.39E-10	-1.39E-10	-1.39E-10	-1.39E-10	-1.39E-10	-1.39E-10	-1.39E-10
PLE	NO	NO	NO	NO	NO	NO	NO	NO

Indicator value 2.10E-08 1.20E-08 1.20E-08 8.30E-09 8.50E-09 1.10E-08 1.10E-08 1.50E-08

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Licensee Comments: none

Reactor Coolant System Activity



Thresholds: White > 50.0 Yellow > 100.0

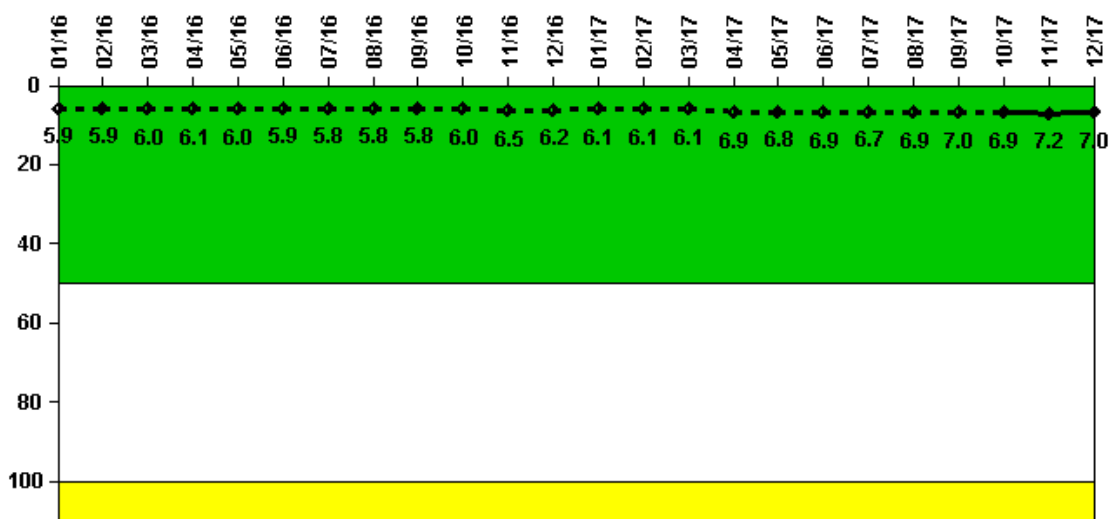
Notes

Reactor Coolant System Activity	1/16	2/16	3/16	4/16	5/16	6/16	7/16	8/16	9/16	10/16	11/16	12/16
Maximum activity	0.000046	0.000040	0.000047	0.000049	0.000067	0.000068	0.000040	0.000068	0.000055	0.000052	0.000055	0.000052
Technical specification limit	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
Indicator value	0	0	0	0	0	0	0	0	0	0	0	0
Reactor Coolant System Activity	1/17	2/17	3/17	4/17	5/17	6/17	7/17	8/17	9/17	10/17	11/17	12/17
Maximum activity	0.000054	0.000063	0.000067	0.000016	0.000019	0.000021	0.000022	0.000036	0.000033	0.000033	0.000022	0.000027
Technical specification limit	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
Indicator value	0	0	0	0	0	0	0	0	0	0	0	0

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Licensee Comments: none

Reactor Coolant System Leakage



Thresholds: White > 50.0 Yellow > 100.0

Notes

Reactor Coolant System Leakage	1/16	2/16	3/16	4/16	5/16	6/16	7/16	8/16	9/16	10/16	11/16	12/16
Maximum leakage	1.465	1.478	1.490	1.521	1.495	1.474	1.459	1.459	1.452	1.501	1.619	1.542
Technical specification limit	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0

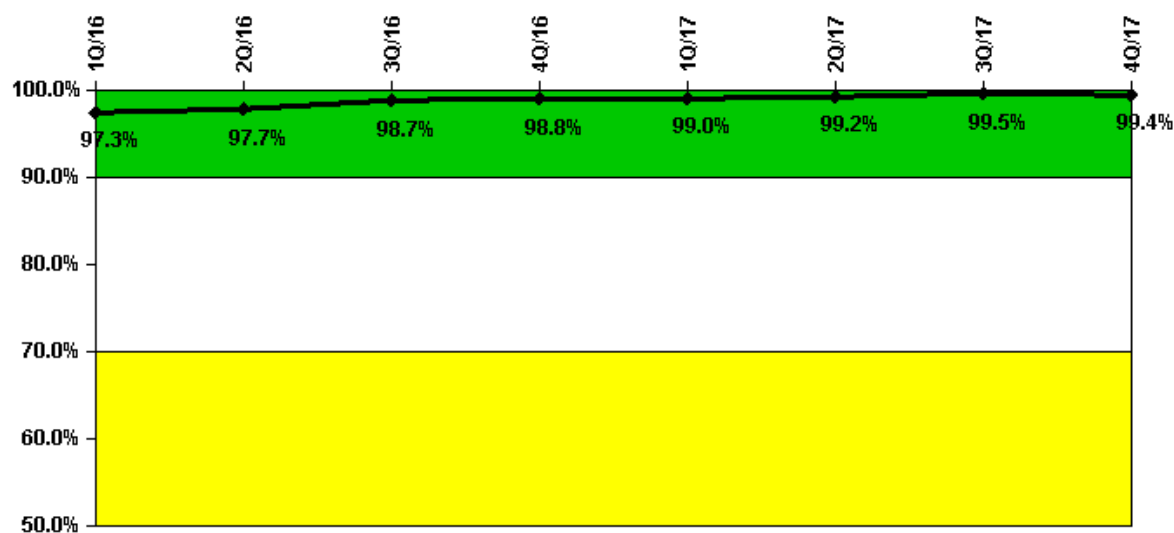
Indicator value	5.9	5.9	6.0	6.1	6.0	5.9	5.8	5.8	5.8	6.0	6.5	6.2
Reactor Coolant System Leakage	1/17	2/17	3/17	4/17	5/17	6/17	7/17	8/17	9/17	10/17	11/17	12/17
Maximum leakage	1.526	1.537	1.516	1.719	1.710	1.722	1.685	1.715	1.739	1.737	1.811	1.752
Technical specification limit	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0

Indicator value	6.1	6.1	6.1	6.9	6.8	6.9	6.7	6.9	7.0	6.9	7.2	7.0
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Licensee Comments: none

Drill/Exercise Performance



Thresholds: White < 90.0% Yellow < 70.0%

Notes

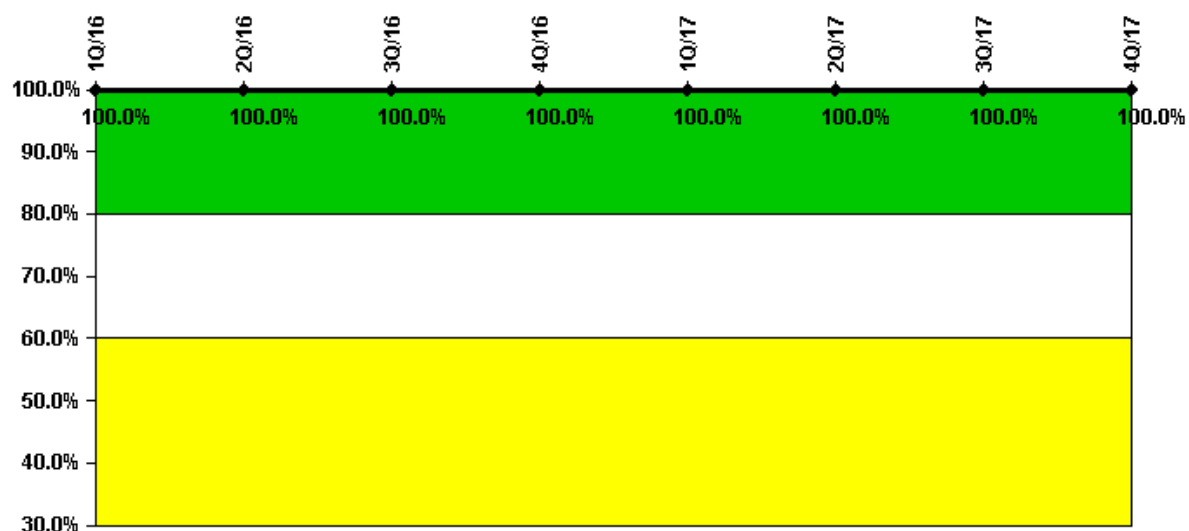
Drill/Exercise Performance	1Q/16	2Q/16	3Q/16	4Q/16	1Q/17	2Q/17	3Q/17	4Q/17
Successful opportunities	35.0	70.0	34.0	42.0	92.0	37.0	23.0	22.0
Total opportunities	35.0	70.0	36.0	42.0	92.0	37.0	23.0	22.0

Indicator value 97.3% 97.7% 98.7% 98.8% 99.0% 99.2% 99.5% 99.4%

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Licensee Comments: none

ERO Drill Participation



Thresholds: White < 80.0% Yellow < 60.0%

Notes

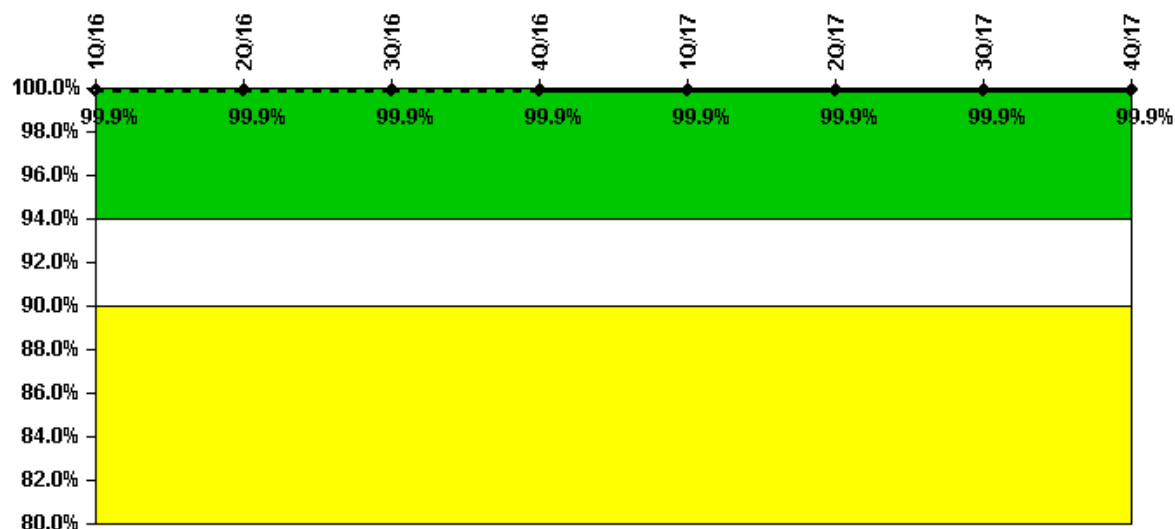
ERO Drill Participation	1Q/16	2Q/16	3Q/16	4Q/16	1Q/17	2Q/17	3Q/17	4Q/17
Participating Key personnel	74.0	76.0	85.0	86.0	87.0	85.0	81.0	83.0
Total Key personnel	74.0	76.0	85.0	86.0	87.0	85.0	81.0	83.0

Indicator value **100.0% 100.0% 100.0% 100.0% 100.0% 100.0% 100.0% 100.0%**

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Licensee Comments: none

Alert & Notification System



Thresholds: White < 94.0% Yellow < 90.0%

Notes

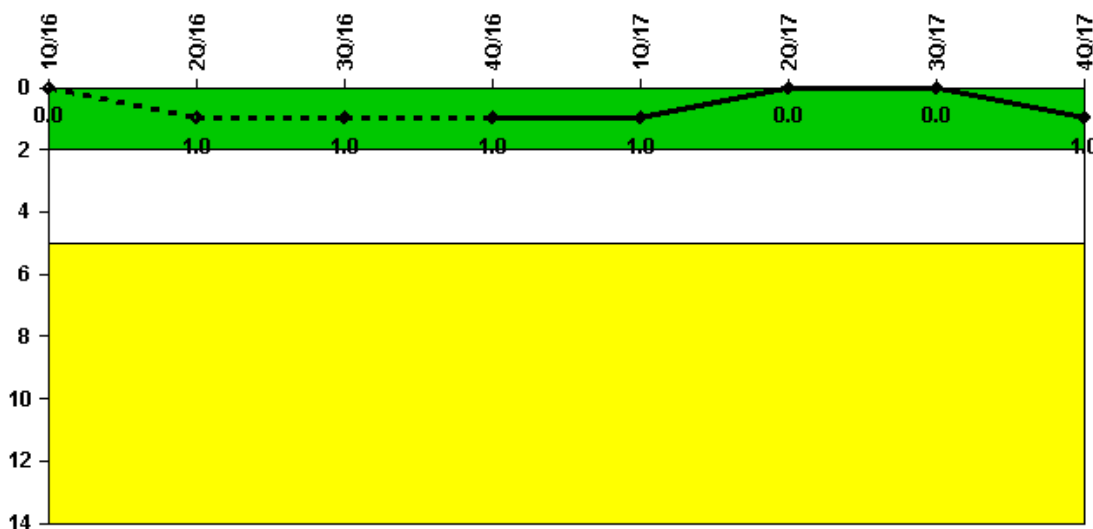
Alert & Notification System	1Q/16	2Q/16	3Q/16	4Q/16	1Q/17	2Q/17	3Q/17	4Q/17
Successful siren-tests	2687	2687	2682	2604	2729	2686	2641	2644
Total sirens-tests	2688	2688	2688	2604	2730	2688	2646	2646

Indicator value **99.9% 99.9% 99.9% 99.9% 99.9% 99.9% 99.9% 99.9%**

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Licensee Comments: none

Occupational Exposure Control Effectiveness



Thresholds: White > 2.0 Yellow > 5.0

Notes

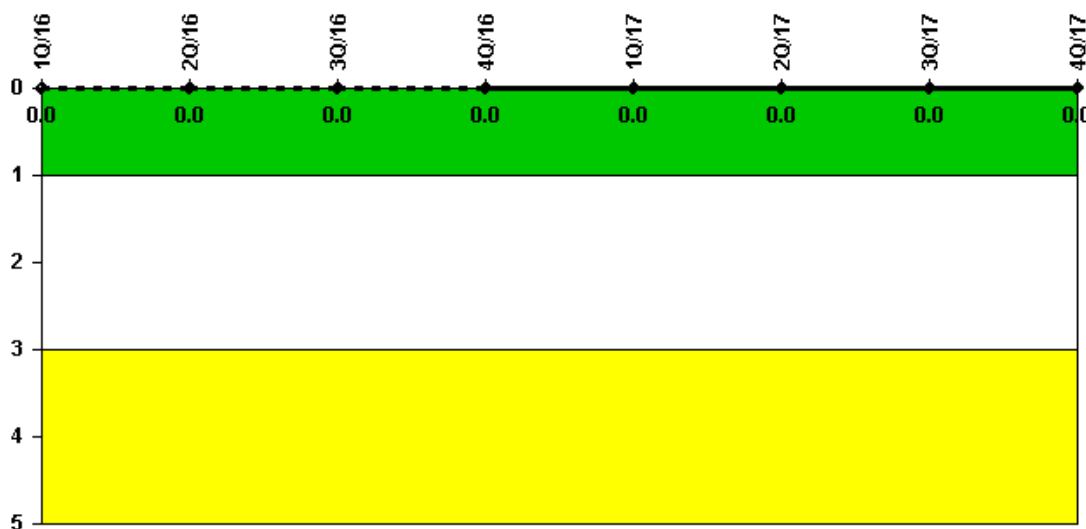
Occupational Exposure Control Effectiveness 1Q/16 2Q/16 3Q/16 4Q/16 1Q/17 2Q/17 3Q/17 4Q/17

High radiation area occurrences	0	1	0	0	0	0	0	1
Very high radiation area occurrences	0	0	0	0	0	0	0	0
Unintended exposure occurrences	0	0	0	0	0	0	0	0
Indicator value	0	1	1	1	1	0	0	1

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Licensee Comments: none

RETS/ODCM Radiological Effluent



Thresholds: White > 1.0 Yellow > 3.0

Notes

RETS/ODCM Radiological Effluent 1Q/16 2Q/16 3Q/16 4Q/16 1Q/17 2Q/17 3Q/17 4Q/17

RETS/ODCM occurrences 0 0 0 0 0 0 0 0

Indicator value 0 0 0 0 0 0 0 0

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Licensee Comments: none

Although the Security Cornerstone is included in the Reactor Oversight Process assessment program, the Commission has decided that specific information related to findings and performance indicators pertaining to the Security Cornerstone will not be publicly available to ensure that security information is not provided to a possible adversary. Other than the fact that a finding or performance indicator is Green or Greater-Than-Green, security related information will not be displayed on the public web page.

Current data as of: February 1, 2018

Page Last Reviewed/Updated Monday, November 06, 2017