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Limerick 2 – Quarterly Performance Indicators

1Q/2017 Performance Indicators

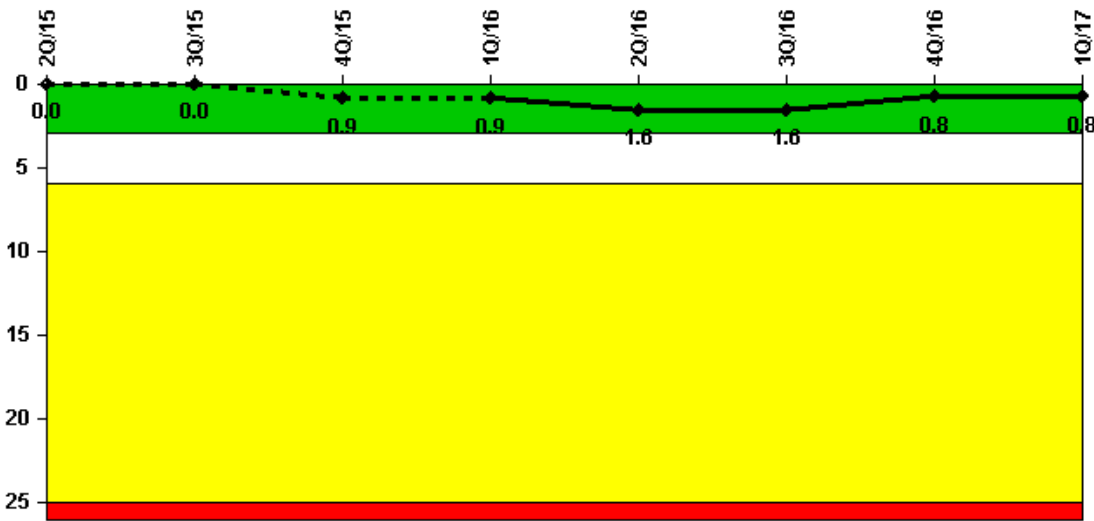
The solid trend line represents the current reporting period.

Licensee's General Comments: none

On this page:

- Unplanned Scrams (IE01)
- Unplanned Power Changes per 7000 Critical Hours (IE03)
- Unplanned Scrams with Complications (IE04)
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- 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)
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- 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

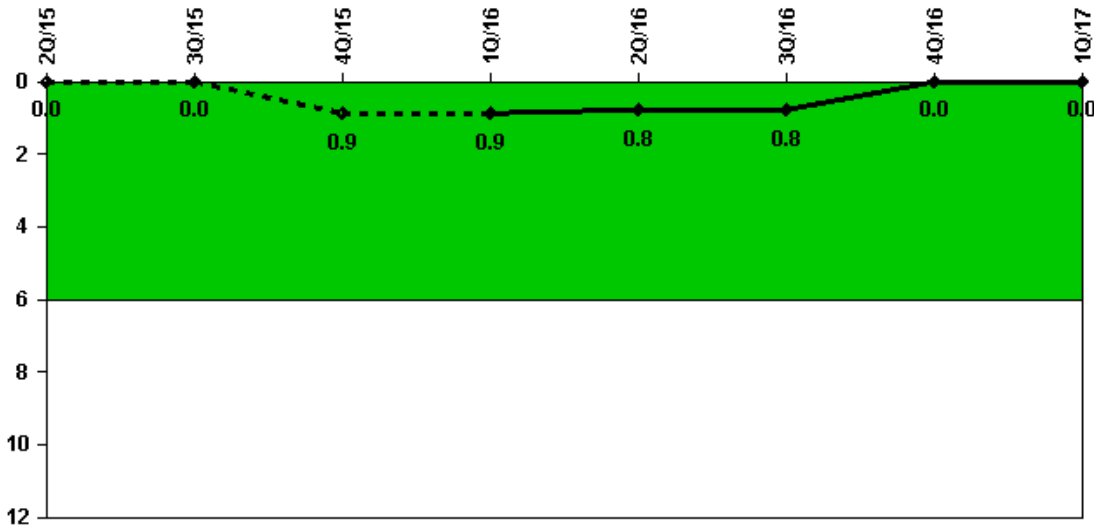
Unplanned Scrams per 7000 Critical Hrs	2Q/15	3Q/15	4Q/15	1Q/16	2Q/16	3Q/16	4Q/16	1Q/17
Unplanned scrams	0	0	1.0	0	1.0	0	0	0
Critical hours	1649.2	2208.0	2059.6	2183.0	2156.0	2208.0	2209.0	2159.0

Indicator value: 0 0 0.9 0.9 1.6 1.6 0.8 0.8

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Licensee Comments: none

Unplanned Power Changes per 7000 Critical Hrs



Thresholds: White > 6.0

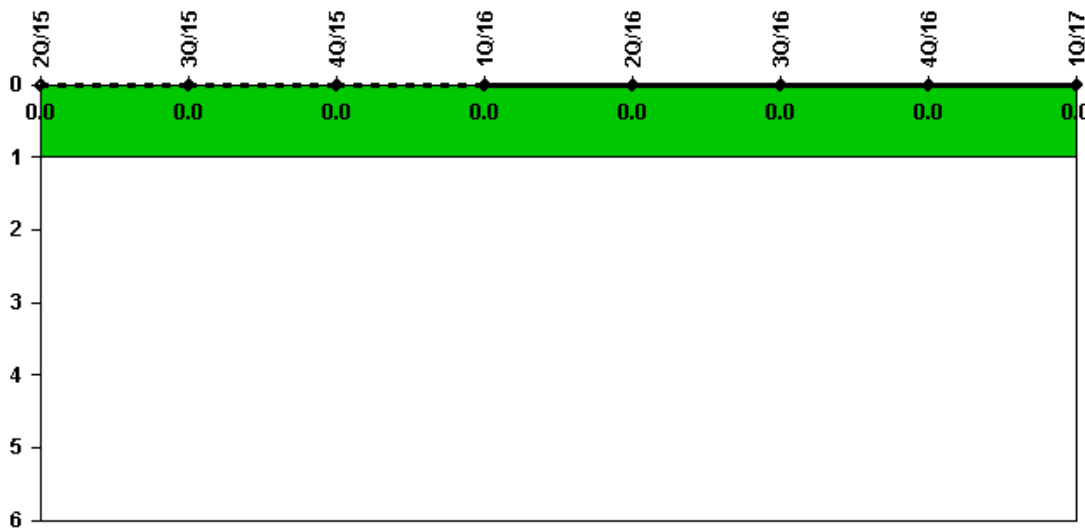
Notes

Unplanned Power Changes per 7000 Critical Hrs	2Q/15	3Q/15	4Q/15	1Q/16	2Q/16	3Q/16	4Q/16	1Q/17
Unplanned power changes	0	0	1.0	0	0	0	0	0
Critical hours	1649.2	2208.0	2059.6	2183.0	2156.0	2208.0	2209.0	2159.0
Indicator value	0	0	0.9	0.9	0.8	0.8	0	0

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Licensee Comments: none

Unplanned Scrams with Complications



Thresholds: White > 1.0

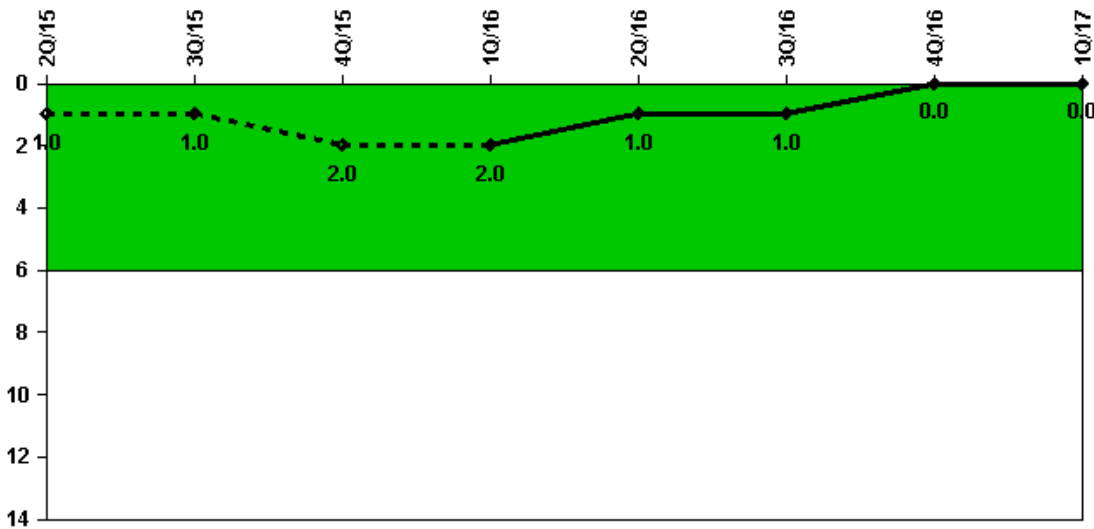
Notes

Unplanned Scrams with Complications	2Q/15	3Q/15	4Q/15	1Q/16	2Q/16	3Q/16	4Q/16	1Q/17
Scrams with complications	0	0	0	0	0	0	0	0
Indicator value	0.0	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) 2Q/15 3Q/15 4Q/15 1Q/16 2Q/16 3Q/16 4Q/16 1Q/17

Safety System Functional Failures 1 0 2 2 1 1 0 0

Indicator value 1 1 2 2 1 1 0 0

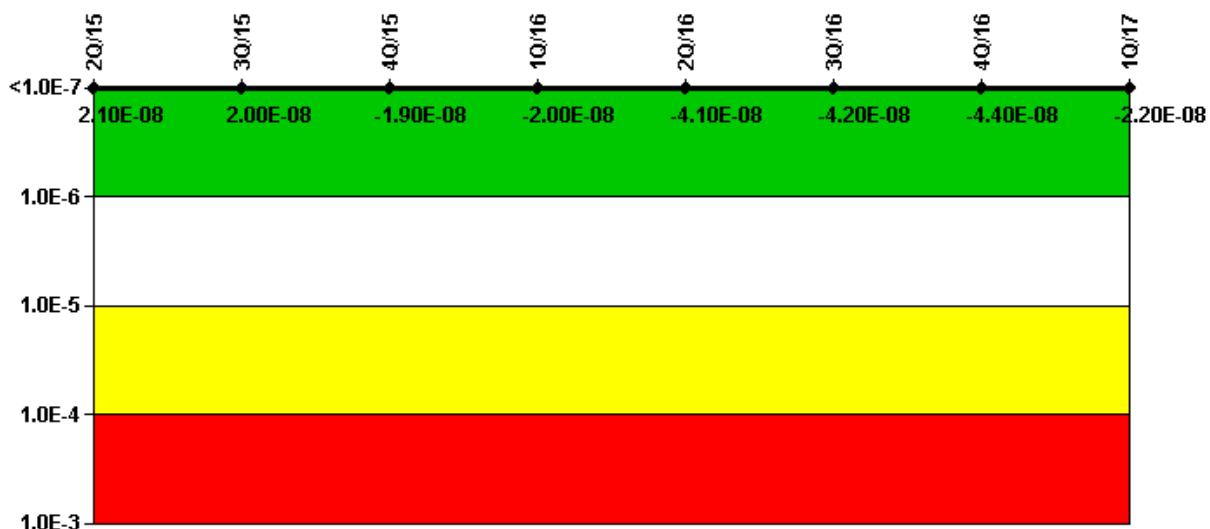
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Licensee Comments:

4Q/15: 1/21/16-LER 2015-005-00 was submitted on November 2, 2015 due to a Division 4 high steam flow isolation actuation failure on the HPCI system which rendered HPCI inoperable. No color threshold change resulted from this event.

2Q/15: LER 2015-001-00 was submitted on June 4, 2015 due to a small electrical fire in one compartment of a 250 VDC MCC which rendered HPCI inoperable. The fire was extinguished within 8 minutes. No color threshold resulted from this event.

Mitigating Systems Performance Index, Emergency AC Power System



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

Notes

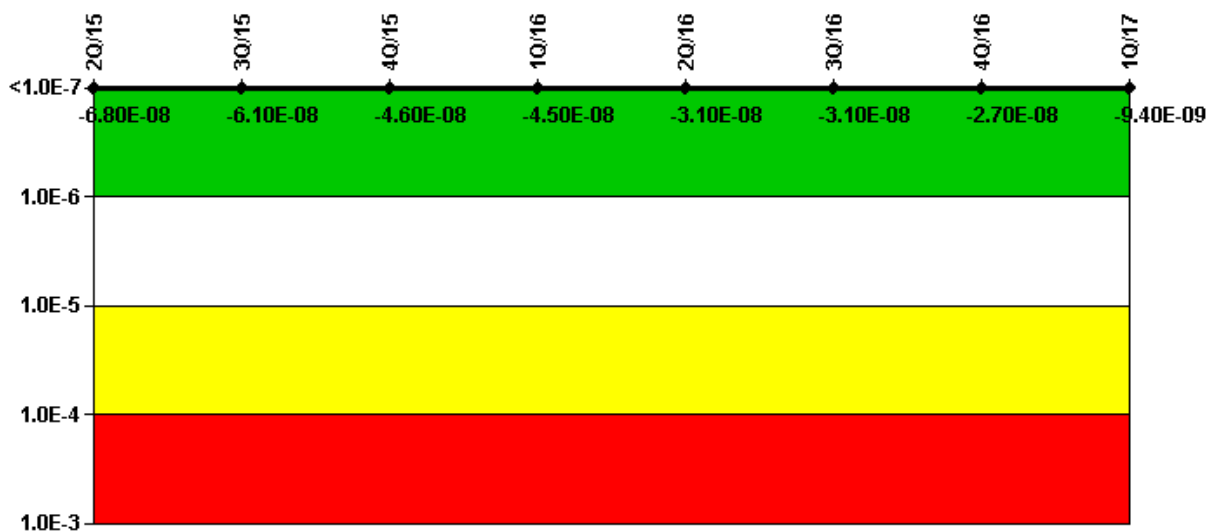
Mitigating Systems Performance Index, Emergency AC Power System

	2Q/15	3Q/15	4Q/15	1Q/16	2Q/16	3Q/16	4Q/16	1Q/17
UAI (ΔCDF)	2.44E-09	2.50E-09	4.11E-09	3.45E-09	3.20E-09	2.66E-09	1.44E-09	1.20E-09
URI (ΔCDF)	1.87E-08	1.73E-08	-2.26E-08	-2.35E-08	-4.46E-08	-4.46E-08	-4.52E-08	-2.34E-08
PLE	NO	NO	NO	NO	NO	NO	NO	NO
Indicator value	2.10E-08	2.00E-08	-1.90E-08	-2.00E-08	-4.10E-08	-4.20E-08	-4.40E-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

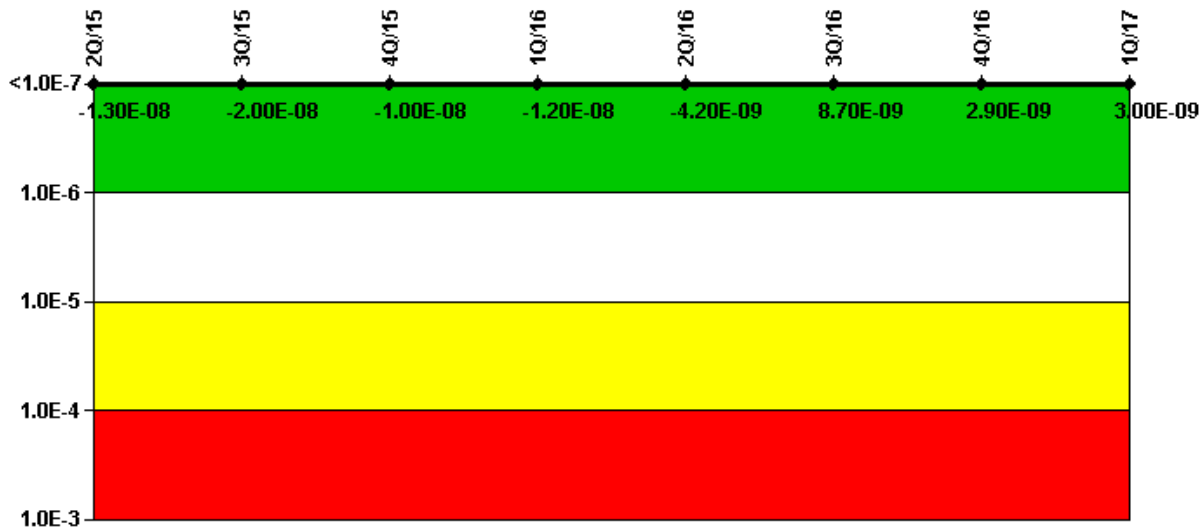
Mitigating Systems Performance Index, High Pressure Injection System

	2Q/15	3Q/15	4Q/15	1Q/16	2Q/16	3Q/16	4Q/16	1Q/17
UAI (ΔCDF)	-1.77E-08	-1.09E-08	4.69E-09	5.08E-09	1.91E-08	1.92E-08	2.36E-08	4.09E-08
URI (ΔCDF)	-5.03E-08	-5.03E-08	-5.03E-08	-5.03E-08	-5.03E-08	-5.03E-08	-5.03E-08	-5.03E-08
PLE	NO	NO	NO	NO	NO	NO	NO	NO
Indicator value	-6.80E-08	-6.10E-08	-4.60E-08	-4.50E-08	-3.10E-08	-3.10E-08	-2.70E-08	-9.40E-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

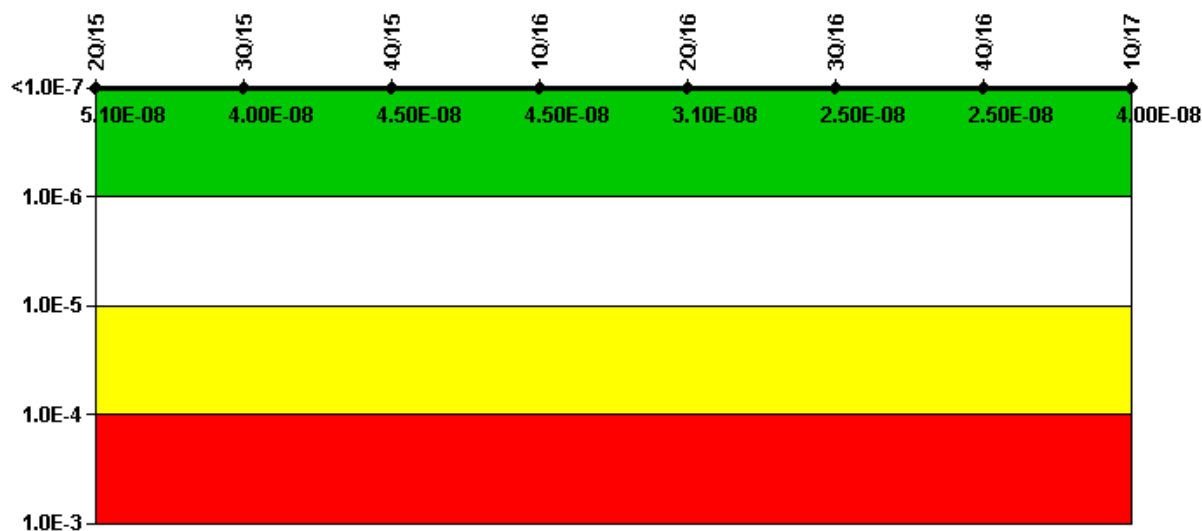
Mitigating Systems Performance Index, Heat Removal System

	2Q/15	3Q/15	4Q/15	1Q/16	2Q/16	3Q/16	4Q/16	1Q/17
UAI (Δ CDF)	6.49E-09	5.40E-11	9.55E-09	7.54E-09	1.55E-08	2.84E-08	2.26E-08	2.27E-08
URI (Δ CDF)	-1.97E-08	-1.97E-08	-1.97E-08	-1.97E-08	-1.97E-08	-1.97E-08	-1.97E-08	-1.97E-08
PLE	NO	NO	NO	NO	NO	NO	NO	NO
Indicator value	-1.30E-08	-2.00E-08	-1.00E-08	-1.20E-08	-4.20E-09	8.70E-09	2.90E-09	3.00E-09

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Licensee Comments: none

Mitigating Systems Performance Index, Residual Heat Removal System



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

Notes

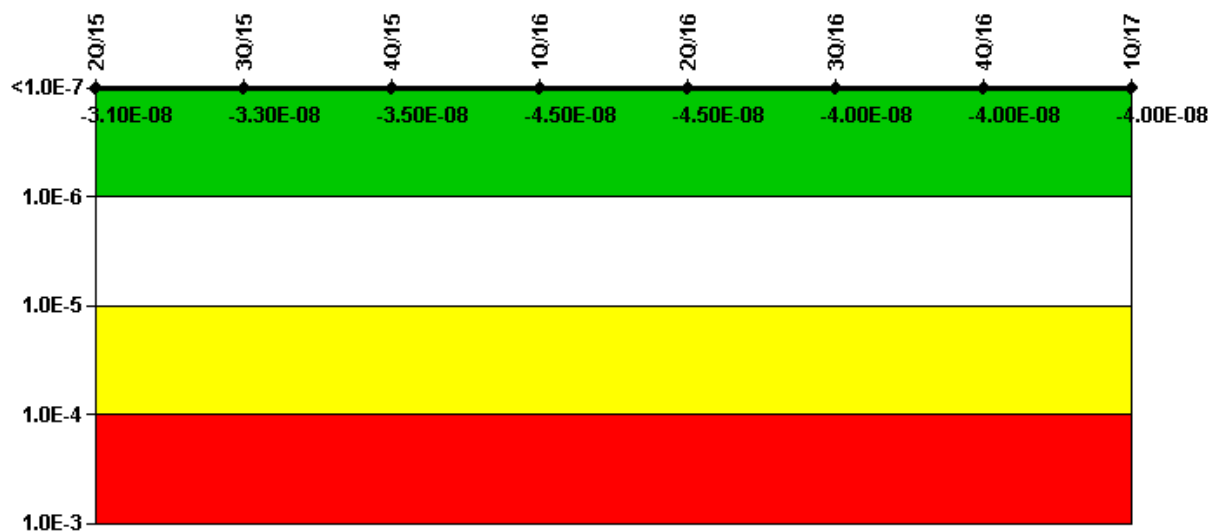
Mitigating Systems Performance Index, Residual Heat Removal System

	2Q/15	3Q/15	4Q/15	1Q/16	2Q/16	3Q/16	4Q/16	1Q/17
UAI (ΔCDF)	6.32E-08	5.17E-08	5.68E-08	5.69E-08	4.11E-08	3.53E-08	3.53E-08	4.96E-08
URI (ΔCDF)	-1.18E-08	-1.17E-08	-1.19E-08	-1.16E-08	-1.01E-08	-1.00E-08	-9.95E-09	-1.00E-08
PLE	NO	NO	NO	NO	NO	NO	NO	NO
Indicator value	5.10E-08	4.00E-08	4.50E-08	4.50E-08	3.10E-08	2.50E-08	2.50E-08	4.00E-08

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Licensee Comments: none

Mitigating Systems Performance Index, Cooling Water Systems



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

Notes

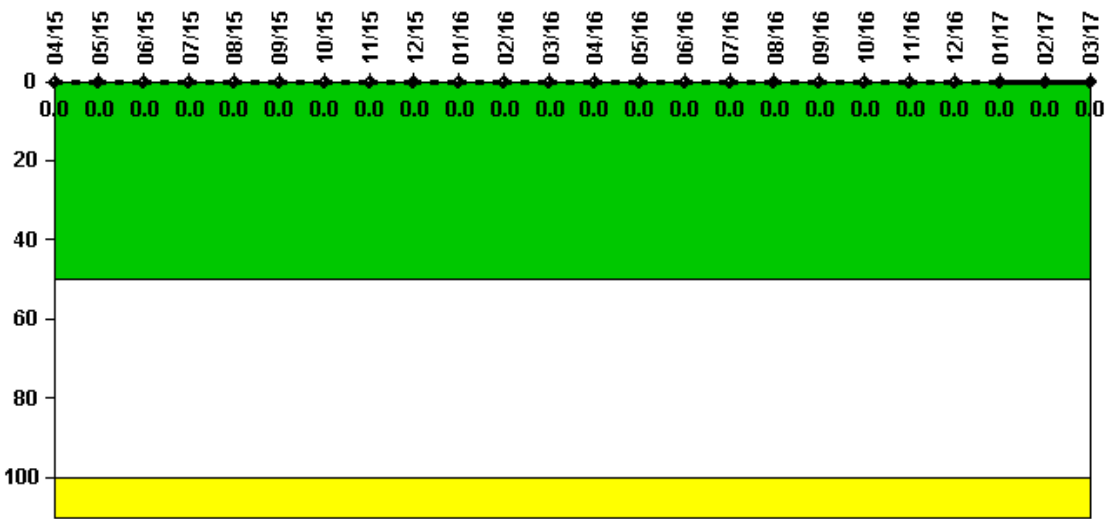
Mitigating Systems Performance Index, Cooling Water Systems

	2Q/15	3Q/15	4Q/15	1Q/16	2Q/16	3Q/16	4Q/16	1Q/17
UAI (ΔCDF)	4.15E-08	3.99E-08	3.70E-08	3.02E-08	2.90E-08	3.55E-08	3.63E-08	3.38E-08
URI (ΔCDF)	-7.24E-08	-7.27E-08	-7.24E-08	-7.50E-08	-7.41E-08	-7.52E-08	-7.58E-08	-7.40E-08
PLE	NO	NO	NO	NO	NO	NO	NO	NO
Indicator value	-3.10E-08	-3.30E-08	-3.50E-08	-4.50E-08	-4.50E-08	-4.00E-08	-4.00E-08	-4.00E-08

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Licensee Comments: none

Reactor Coolant System Activity



Thresholds: White > 50.0 Yellow > 100.0

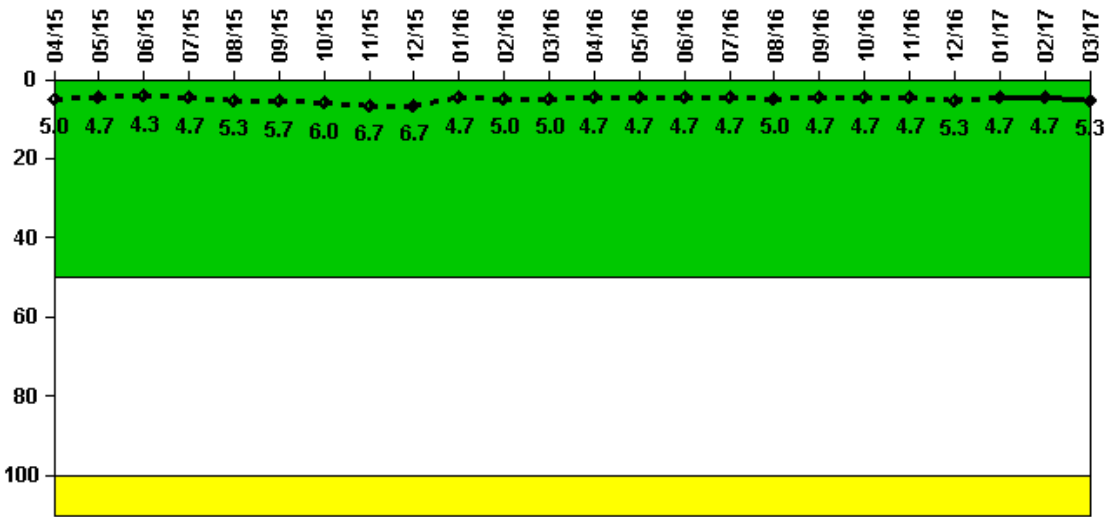
Notes

Reactor Coolant System Activity	4/15	5/15	6/15	7/15	8/15	9/15	10/15	11/15	12/15	1/16	2/16	3/16
Maximum activity	0.000006	0.000005	0.000005	0.000007	0.000005	0.000006	0.000009	0.000008	0.000008	0.000007	0.000007	0.000008
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	4/16	5/16	6/16	7/16	8/16	9/16	10/16	11/16	12/16	1/17	2/17	3/17
Maximum activity	0.000008	0.000008	0.000009	0.000010	0.000009	0.000011	0.000010	0.000010	0.000009	0.000011	0.000012	0.000011
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	4/15	5/15	6/15	7/15	8/15	9/15	10/15	11/15	12/15	1/16	2/16	3/16
Maximum leakage	1.500	1.400	1.300	1.400	1.600	1.700	1.800	2.000	2.000	1.400	1.500	1.500
Technical specification limit	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0

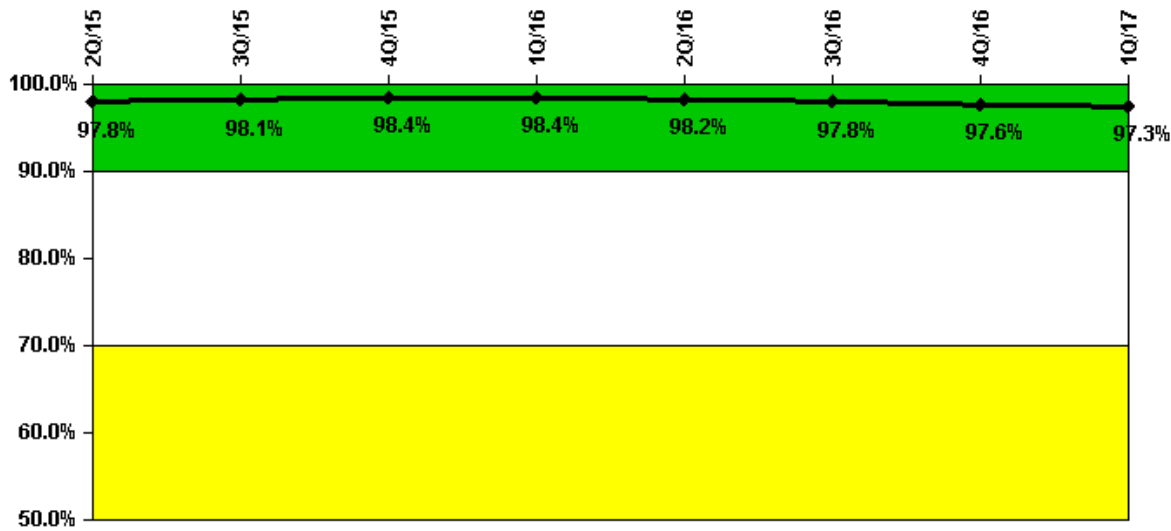
Indicator value	5.0	4.7	4.3	4.7	5.3	5.7	6.0	6.7	6.7	4.7	5.0	5.0
Reactor Coolant System Leakage	4/16	5/16	6/16	7/16	8/16	9/16	10/16	11/16	12/16	1/17	2/17	3/17
Maximum leakage	1.400	1.400	1.400	1.400	1.500	1.400	1.400	1.400	1.600	1.400	1.400	1.600
Technical specification limit	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0

Indicator value	4.7	4.7	4.7	4.7	5.0	4.7	4.7	4.7	5.3	4.7	4.7	5.3
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Licensee Comments: none

Drill/Exercise Performance



Thresholds: White < 90.0% Yellow < 70.0%

Notes

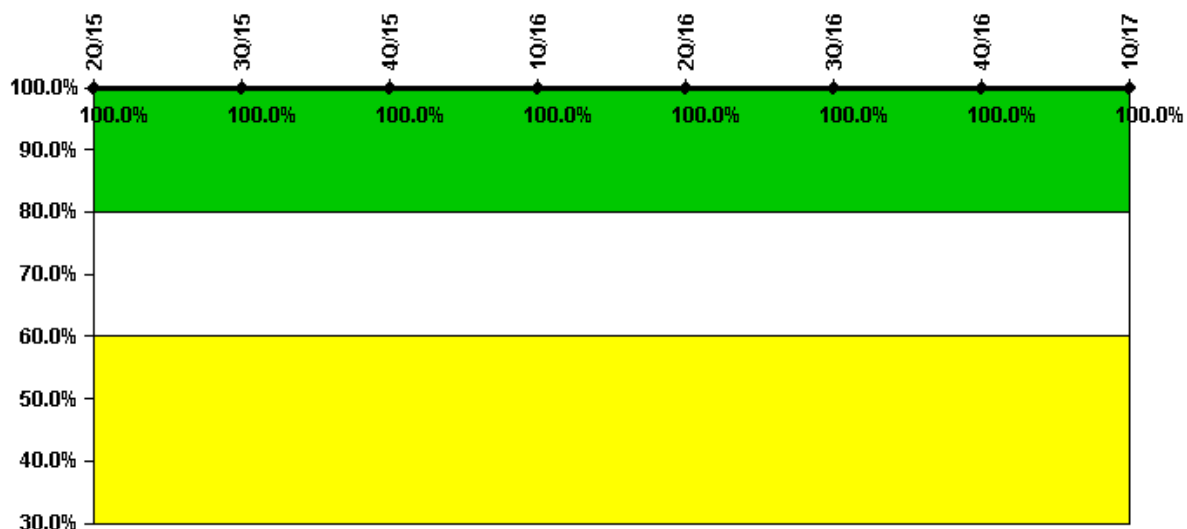
Drill/Exercise Performance	2Q/15	3Q/15	4Q/15	1Q/16	2Q/16	3Q/16	4Q/16	1Q/17
Successful opportunities	32.0	48.0	26.0	30.0	34.0	73.0	16.0	30.0
Total opportunities	34.0	49.0	26.0	30.0	36.0	75.0	16.0	31.0

Indicator value 97.8% 98.1% 98.4% 98.4% 98.2% 97.8% 97.6% 97.3%

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Licensee Comments: none

ERO Drill Participation



Thresholds: White < 80.0% Yellow < 60.0%

Notes

ERO Drill Participation	2Q/15	3Q/15	4Q/15	1Q/16	2Q/16	3Q/16	4Q/16	1Q/17
Participating Key personnel	66.0	66.0	65.0	63.0	66.0	68.0	67.0	70.0
Total Key personnel	66.0	66.0	65.0	63.0	66.0	68.0	67.0	70.0

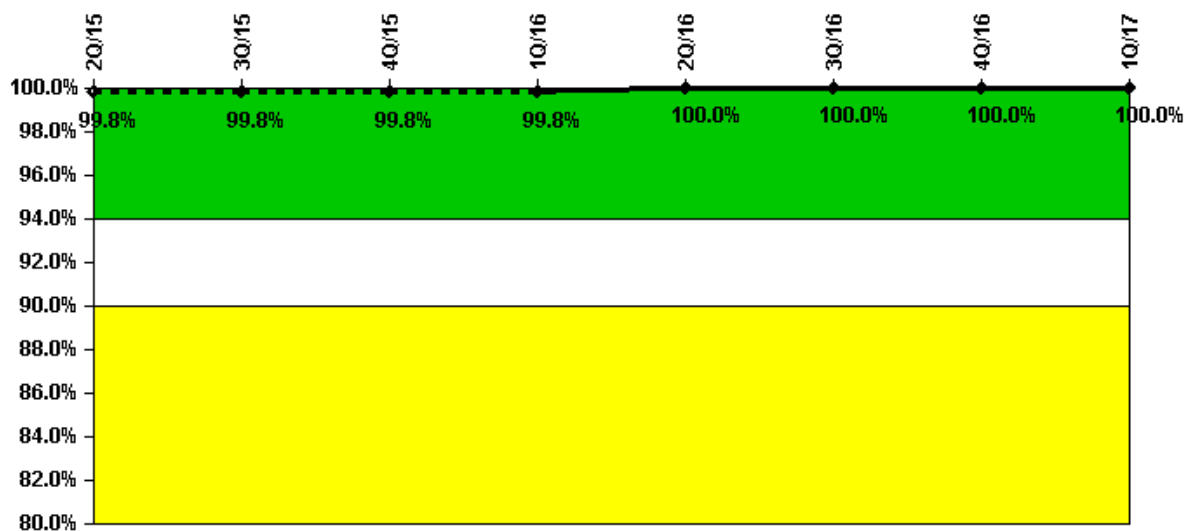
Indicator value **100.0% 100.0% 100.0% 100.0% 100.0% 100.0% 100.0% 100.0%**

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Licensee Comments:

2Q/15: 10/21/15 - The number of participating key personnel and total key personnel was corrected for 2nd quarter 2014 after an EP self assessment identified that offsite ERO members had not been included. No color or PI threshold change is impacted by this correction.

Alert & Notification System



Thresholds: White < 94.0% Yellow < 90.0%

Notes

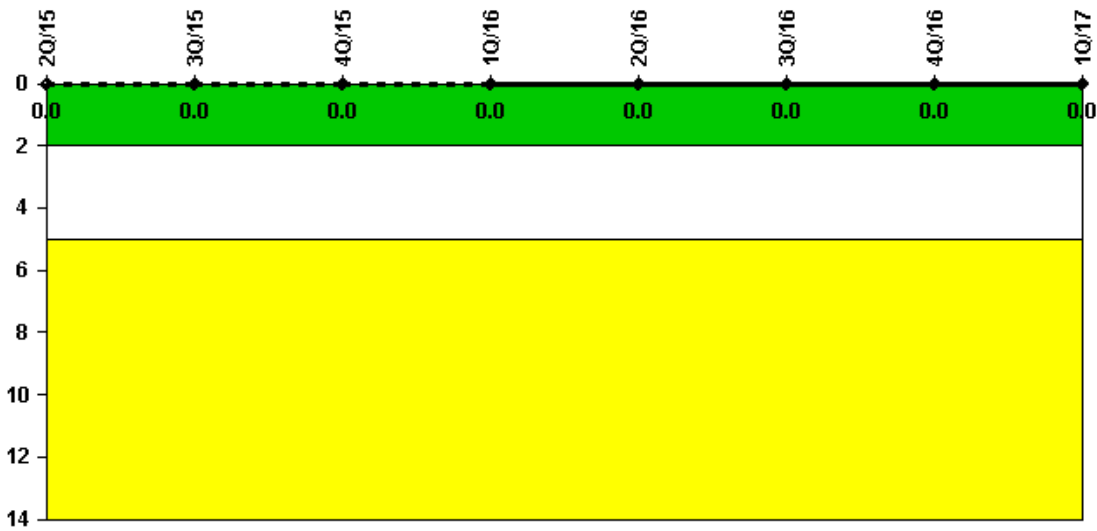
Alert & Notification System	2Q/15	3Q/15	4Q/15	1Q/16	2Q/16	3Q/16	4Q/16	1Q/17
Successful siren-tests	2133	2145	2143	2145	2144	2144	2144	2145
Total sirens-tests	2145	2145	2145	2145	2145	2145	2145	2145

Indicator value **99.8%** **99.8%** **99.8%** **99.8%** **100.0%** **100.0%** **100.0%** **100.0%**

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Licensee Comments: none

Occupational Exposure Control Effectiveness



Thresholds: White > 2.0 Yellow > 5.0

Notes

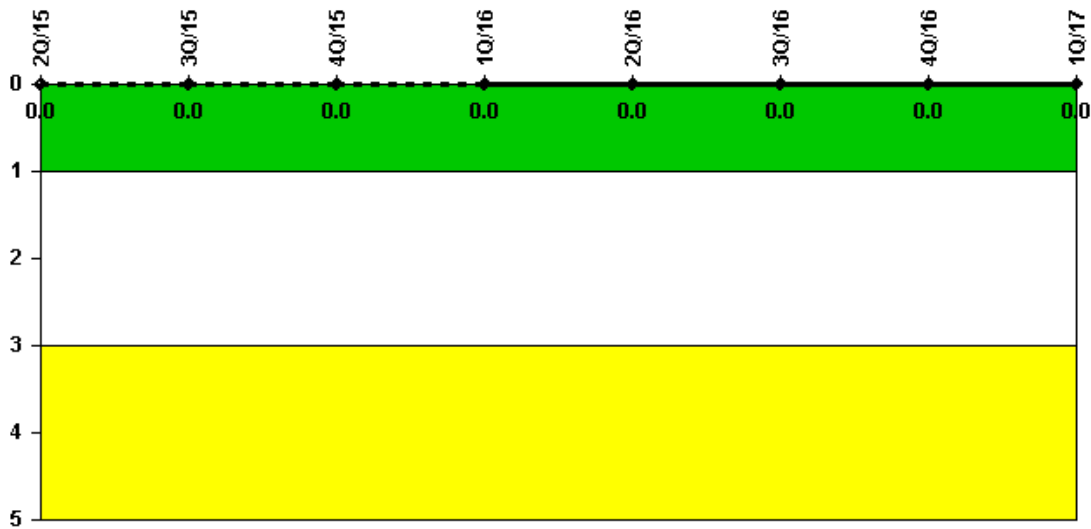
Occupational Exposure Control Effectiveness 2Q/15 3Q/15 4Q/15 1Q/16 2Q/16 3Q/16 4Q/16 1Q/17

High radiation area occurrences	0	0	0	0	0	0	0	0
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	0	0	0	0	0	0	0

TOP

Licensee Comments: none

RETS/ODCM Radiological Effluent



Thresholds: White > 1.0 Yellow > 3.0

Notes

RETS/ODCM Radiological Effluent 2Q/15 3Q/15 4Q/15 1Q/16 2Q/16 3Q/16 4Q/16 1Q/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: May 5, 2017

Page Last Reviewed/Updated Wednesday, June 07, 2017