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Columbia Generating Station – Quarterly Performance Indicators

1Q/2017 Performance Indicators

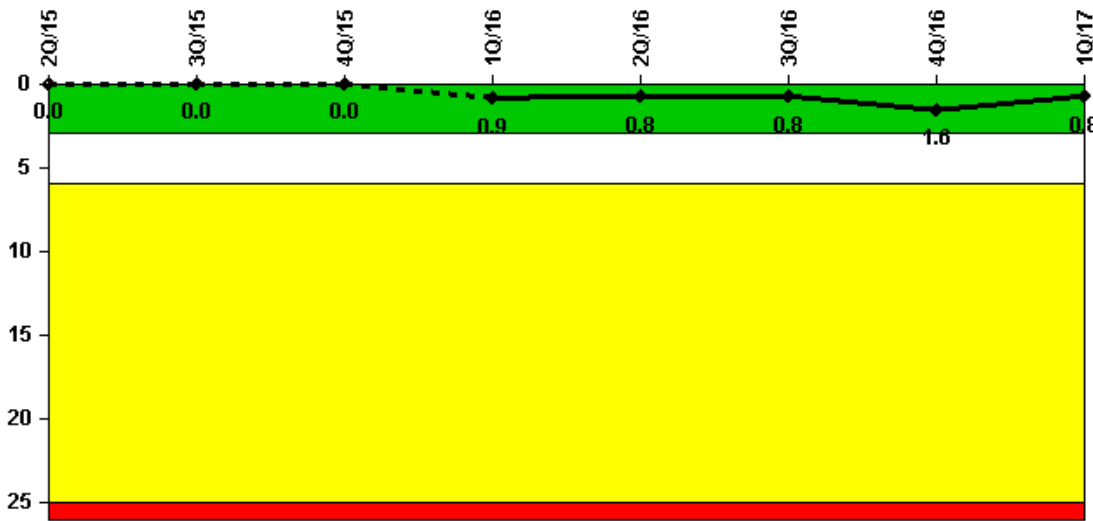
The solid trend line represents the current reporting period.

Licensee's General Comments: none

On this page:

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

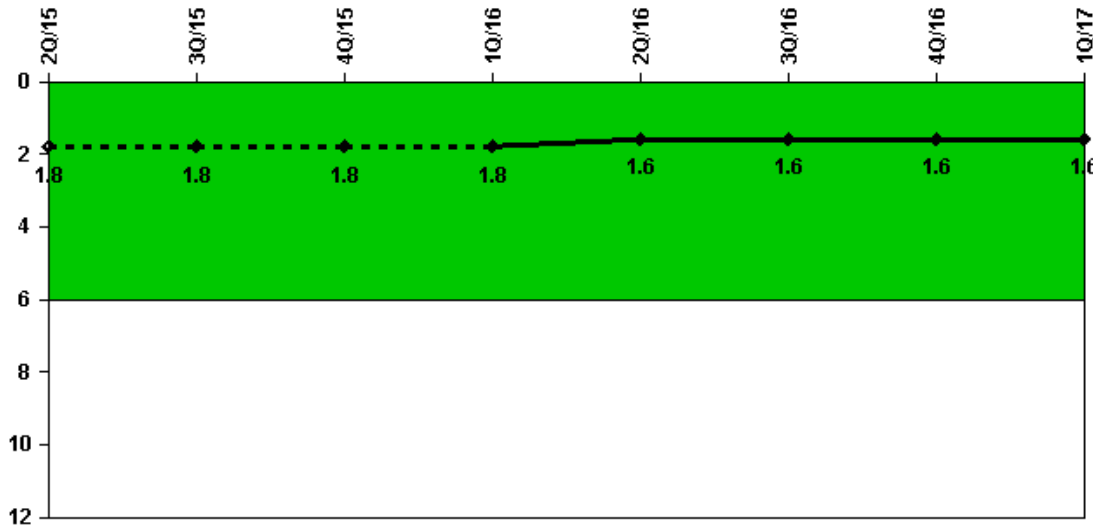
Unplanned Scrams per 7000 Critical Hrs	2Q/15	3Q/15	4Q/15	1Q/16	2Q/16	3Q/16	4Q/16	1Q/17
Unplanned scrams	0	0	0	1.0	0	0	1.0	0
Critical hours	1046.6	2208.0	2209.0	2135.8	2184.0	2208.0	2067.2	2159.0

Indicator value	0	0	0	0.9	0.8	0.8	1.6	0.8
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Licensee Comments: none

Unplanned Power Changes per 7000 Critical Hrs



Thresholds: White > 6.0

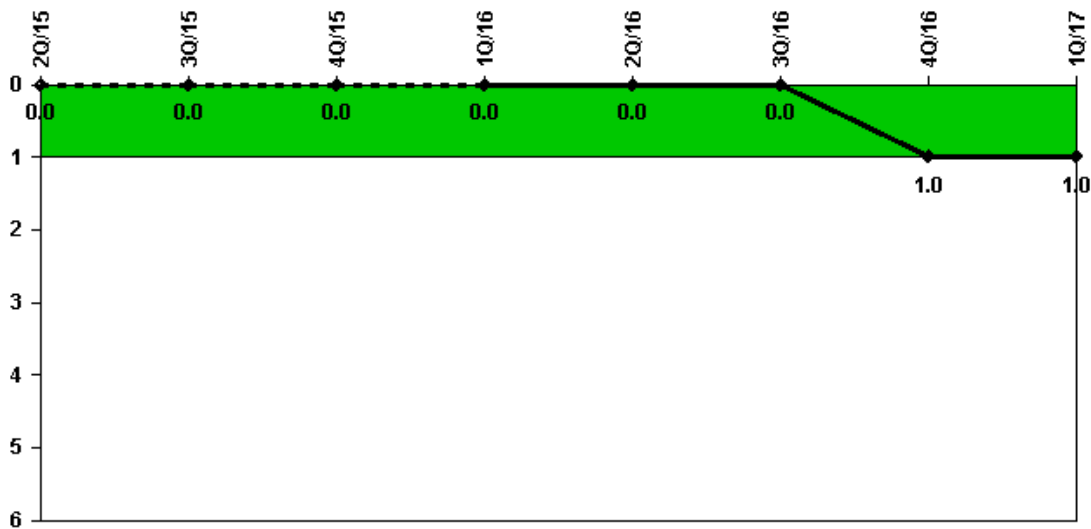
Notes

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	2.0	0	0	0	2.0	0	0
Critical hours	1046.6	2208.0	2209.0	2135.8	2184.0	2208.0	2067.2	2159.0
Indicator value	1.8	1.8	1.8	1.8	1.6	1.6	1.6	1.6

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Licensee Comments: none

Unplanned Scrams with Complications



Thresholds: White > 1.0

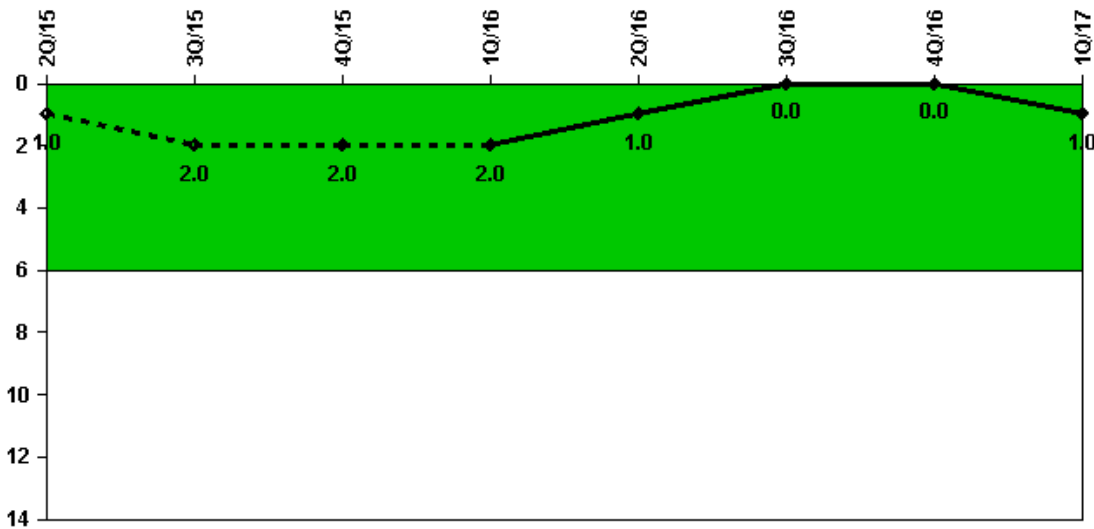
Notes

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	1.0	0
Indicator value	0.0	0.0	0.0	0.0	0.0	0.0	1.0	1.0

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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 1 0 0 0 0 0 0 1

Indicator value 1 2 2 2 1 0 0 1

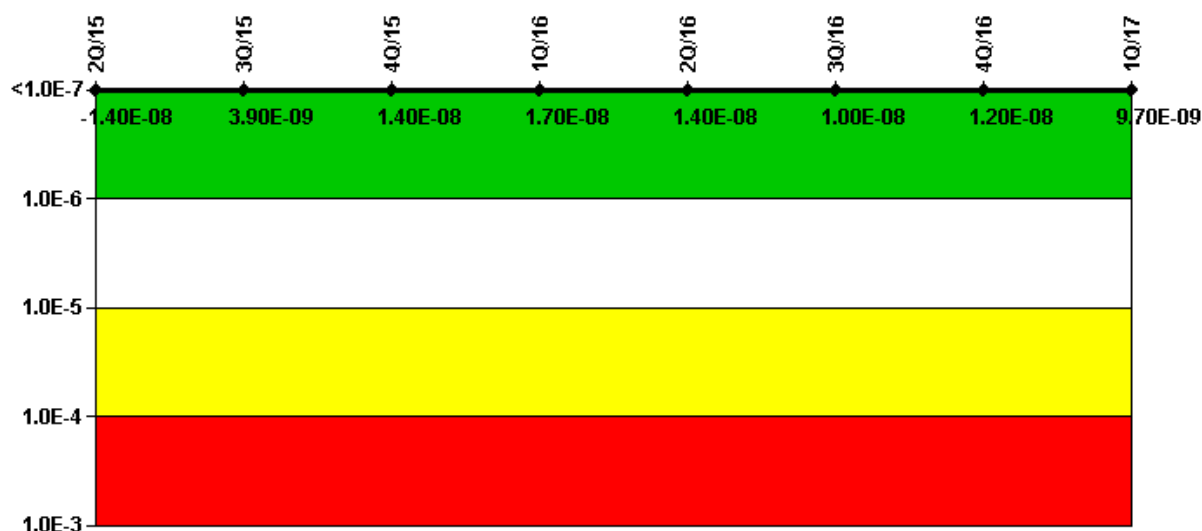
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Licensee Comments:

1Q/17: 2016-005-0 Leak in Minimum Flow Line Makes HPCS and Primary Containment Inoperable 2/15/2017

3Q/15: LER 2015-005-00 Reactor Pressure Vessel Level Indication Switch Failures

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)	6.20E-09	7.10E-09	1.75E-08	1.98E-08	1.69E-08	1.33E-08	1.56E-08	1.30E-08
URI (ΔCDF)	-2.02E-08	-3.22E-09	-3.22E-09	-3.22E-09	-2.87E-09	-2.87E-09	-3.23E-09	-3.23E-09
PLE	NO	NO	NO	NO	NO	NO	NO	NO
Indicator value	-1.40E-08	3.90E-09	1.40E-08	1.70E-08	1.40E-08	1.00E-08	1.20E-08	9.70E-09

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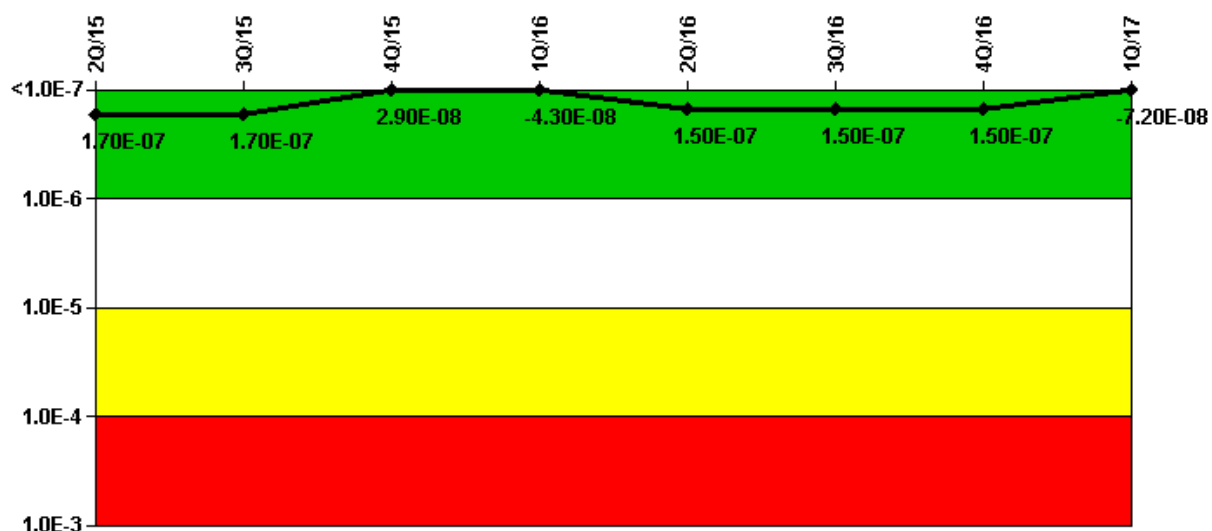
Licensee Comments:

4Q/15: Additional the CDE is being revised to remove the MSPI failure for the DG-1 event date 12/10/15) and Unplanned unavailability (Dec) was adjusted (MSPI) associated with the event. Engineering completed evaluation under EC 15426 and determined that even with the observed load oscillations that DG1 was still available. Changed previously submitted data regarding Diesel generator fuel oil pump (DO-P-3A2) failure due to broken lug in fused disconnect, event date May 26, 2013 is also being revised to indicate that this was not an MSPI failure. Engineer evaluation (EC 13256) determined that engine driven fuel pump was adequate to run the diesel generator.

3Q/15: Changed previously submitted data regarding Diesel generator fuel oil pump (DO-P-3A2) failure due to broken lug in fused disconnect, event date May 26, 2013 is also being revised to indicate that this was not an MSPI failure. Engineer evaluation (EC 13256) determined that engine driven fuel pump was adequate to run the diesel generator.

2Q/15: Changed previously submitted data regarding Diesel generator fuel oil pump (DO-P-3A2) failure due to broken lug in fused disconnect, event date May 26, 2013 is also being revised to indicate that this was not an MSPI failure. Engineer evaluation (EC 13256) determined that engine driven fuel pump was adequate to run the diesel generator.

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

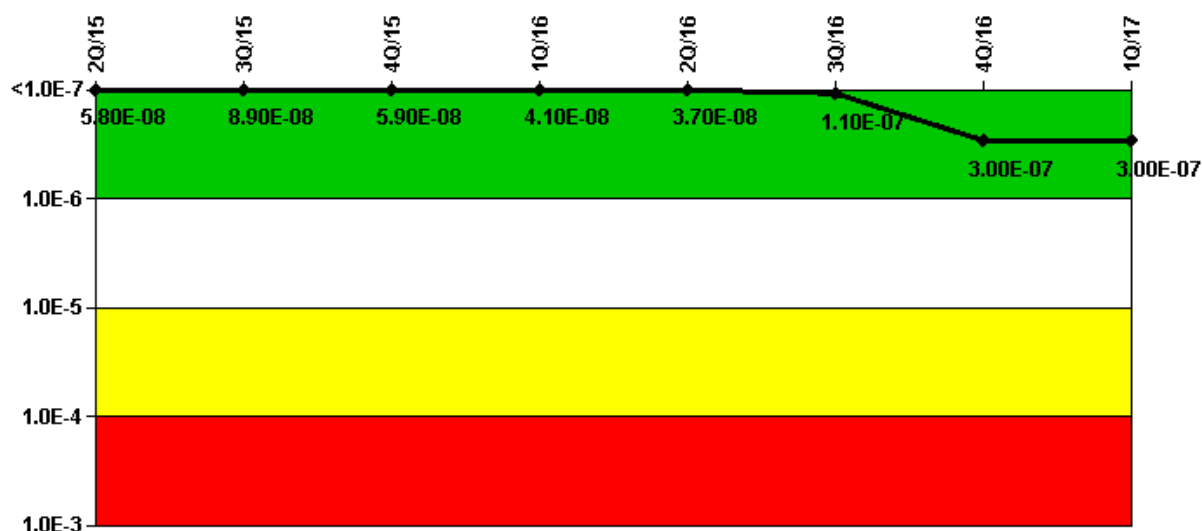
	2Q/15	3Q/15	4Q/15	1Q/16	2Q/16	3Q/16	4Q/16	1Q/17
UAI (ΔCDF)	4.51E-07	4.48E-07	3.02E-07	2.32E-07	4.29E-07	4.32E-07	4.34E-07	2.14E-07
URI (ΔCDF)	-2.76E-07	-2.74E-07	-2.73E-07	-2.75E-07	-2.77E-07	-2.79E-07	-2.84E-07	-2.86E-07
PLE	NO	NO	NO	NO	NO	NO	NO	NO
Indicator value	1.70E-07	1.70E-07	2.90E-08	-4.30E-08	1.50E-07	1.50E-07	1.50E-07	-7.20E-08

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Licensee Comments:

4Q/15: MSPI basis document revised HPCS runtimes and demands to reflect changes greater than 25% per NEI 99-02 Rev 7, Section F 2.2.1.

Mitigating Systems Performance Index, Heat Removal System



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

Notes

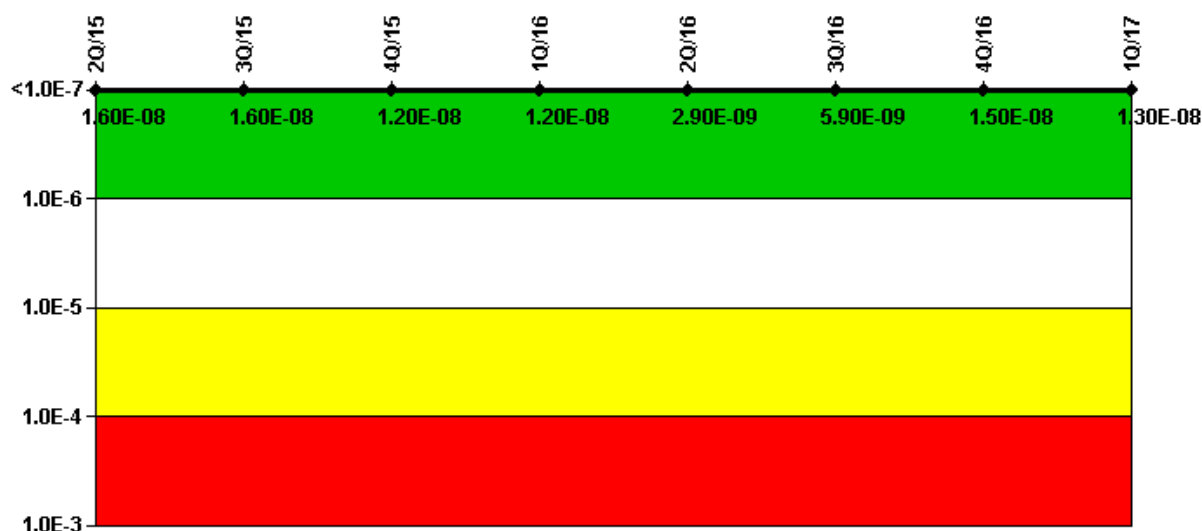
Mitigating Systems Performance Index, Heat Removal System

	2Q/15	3Q/15	4Q/15	1Q/16	2Q/16	3Q/16	4Q/16	1Q/17
UAI (ΔCDF)	2.33E-08	5.34E-08	2.08E-08	3.53E-09	-1.40E-09	6.74E-08	6.61E-08	6.42E-08
URI (ΔCDF)	3.43E-08	3.61E-08	3.80E-08	3.80E-08	3.80E-08	3.80E-08	2.34E-07	2.34E-07
PLE	NO	NO	NO	NO	NO	NO	NO	NO
Indicator value	5.80E-08	8.90E-08	5.90E-08	4.10E-08	3.70E-08	1.10E-07	3.00E-07	3.00E-07

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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

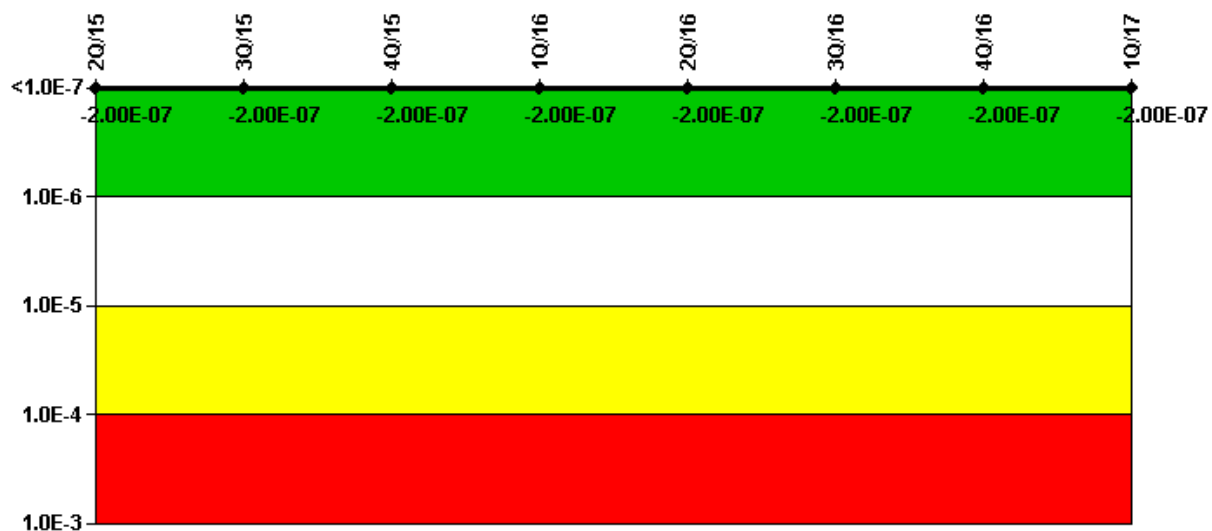
	2Q/15	3Q/15	4Q/15	1Q/16	2Q/16	3Q/16	4Q/16	1Q/17
UAI (Δ CDF)	3.93E-08	3.78E-08	3.21E-08	3.22E-08	2.32E-08	2.61E-08	3.60E-08	3.39E-08
URI (Δ CDF)	-2.34E-08	-2.20E-08	-2.03E-08	-2.03E-08	-2.03E-08	-2.03E-08	-2.05E-08	-2.05E-08
PLE	NO	NO	NO	NO	NO	NO	NO	NO
Indicator value	1.60E-08	1.60E-08	1.20E-08	1.20E-08	2.90E-09	5.90E-09	1.50E-08	1.30E-08

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Licensee Comments:

1Q/16: The MSPI Bases Document was revised to remove the remove 130 Planned UA hours from RHR-SYS-B as these hour will no longer be applicable. These hours were added when planned maintenance was performed to replace the pump in May 2013. The CDE was updated to reflected the original UABLP value.

Mitigating Systems Performance Index, Cooling Water Systems



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

Notes

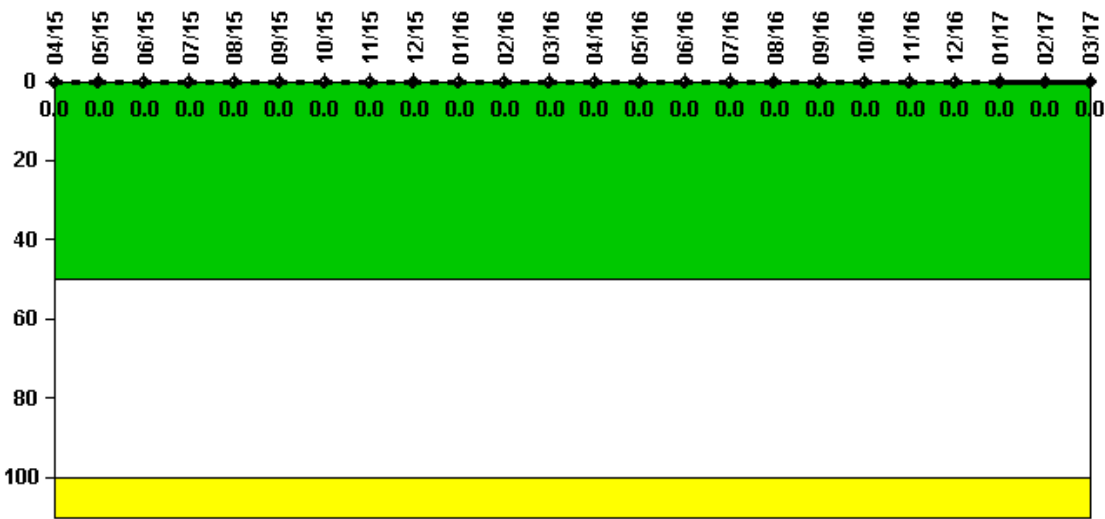
Mitigating Systems Performance Index, Cooling Water Systems

	2Q/15	3Q/15	4Q/15	1Q/16	2Q/16	3Q/16	4Q/16	1Q/17
UAI (ΔCDF)	-3.88E-08	-3.88E-08	-3.88E-08	-3.88E-08	-3.88E-08	-3.88E-08	-3.88E-08	-3.88E-08
URI (ΔCDF)	-1.66E-07	-1.65E-07	-1.64E-07	-1.64E-07	-1.64E-07	-1.64E-07	-1.64E-07	-1.64E-07
PLE	NO	NO	NO	NO	NO	NO	NO	NO
Indicator value	-2.00E-07	-2.00E-07	-2.00E-07	-2.00E-07	-2.00E-07	-2.00E-07	-2.00E-07	-2.00E-07

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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	0	0.000003	0.000003	0.000001	0.000001	0.000001	0.000002	0.000001	0.000003	0.000002	0.000002
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

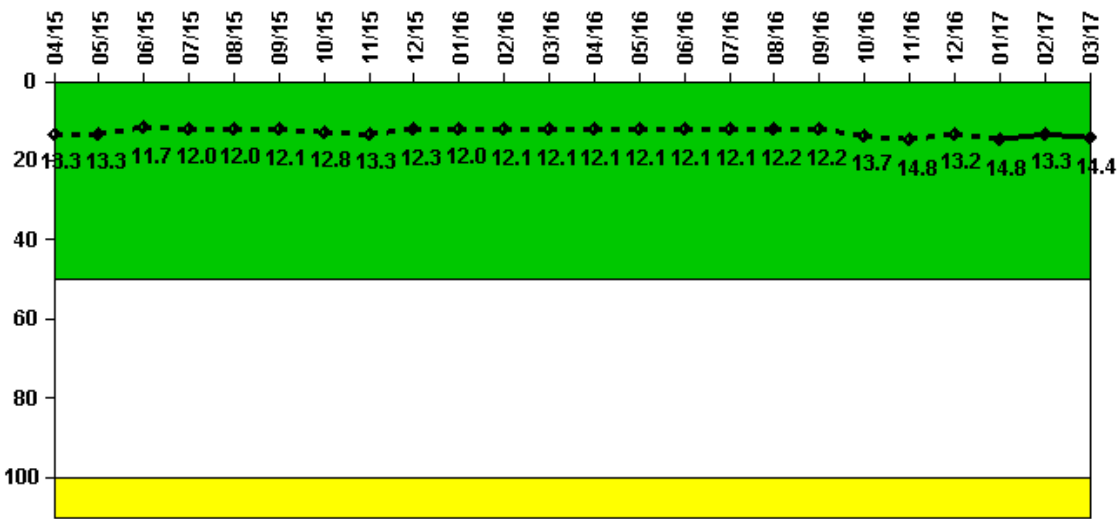
Reactor Coolant System Activity	4/16	5/16	6/16	7/16	8/16	9/16	10/16	11/16	12/16	1/17	2/17	3/17
Maximum activity	0.000048	0.000011	0.000009	0.000030	0.000019	0.000015	0.000009	0.000009	0.000008	0.000008	0.000023	0.000009
Technical specification limit	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2

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	3.330	3.320	2.930	2.990	3.010	3.020	3.210	3.320	3.070	3.010	3.020	3.030
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

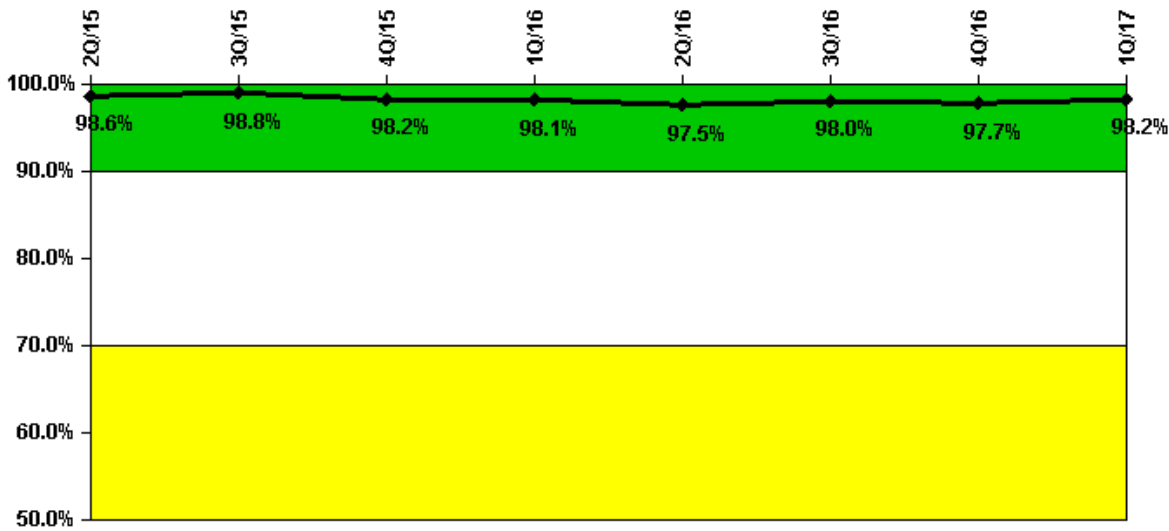
Indicator value	4/15	5/15	6/15	7/15	8/15	9/15	10/15	11/15	12/15	1/16	2/16	3/16
Reactor Coolant System Leakage	13.3	13.3	11.7	12.0	12.0	12.1	12.8	13.3	12.3	12.0	12.1	12.1
Maximum leakage	3.030	3.030	3.030	3.030	3.040	3.040	3.430	3.710	3.310	3.700	3.320	3.590
Technical specification limit	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0

Indicator value	4/16	5/16	6/16	7/16	8/16	9/16	10/16	11/16	12/16	1/17	2/17	3/17
Reactor Coolant System Leakage	12.1	12.1	12.1	12.1	12.2	12.2	13.7	14.8	13.2	14.8	13.3	14.4

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Licensee Comments: none

Drill/Exercise Performance



Thresholds: White < 90.0% Yellow < 70.0%

Notes

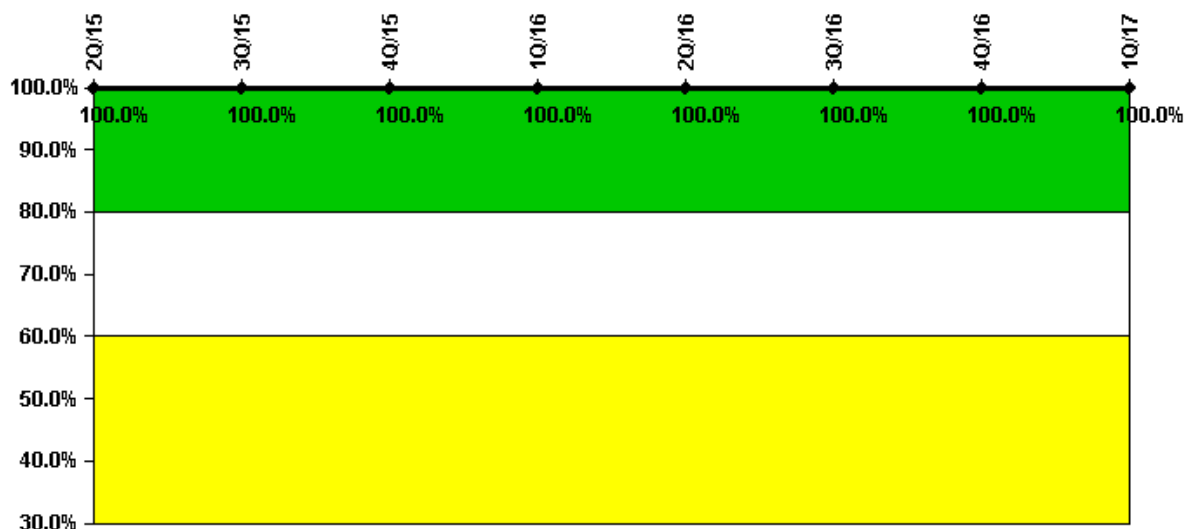
Drill/Exercise Performance	2Q/15	3Q/15	4Q/15	1Q/16	2Q/16	3Q/16	4Q/16	1Q/17
Successful opportunities	4.0	68.0	30.0	44.0	39.0	24.0	54.0	56.0
Total opportunities	4.0	68.0	33.0	44.0	41.0	24.0	55.0	56.0

Indicator value **98.6% 98.8% 98.2% 98.1% 97.5% 98.0% 97.7% 98.2%**

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Licensee Comments: none

ERO Drill Participation



Thresholds: White < 80.0% Yellow < 60.0%

Notes

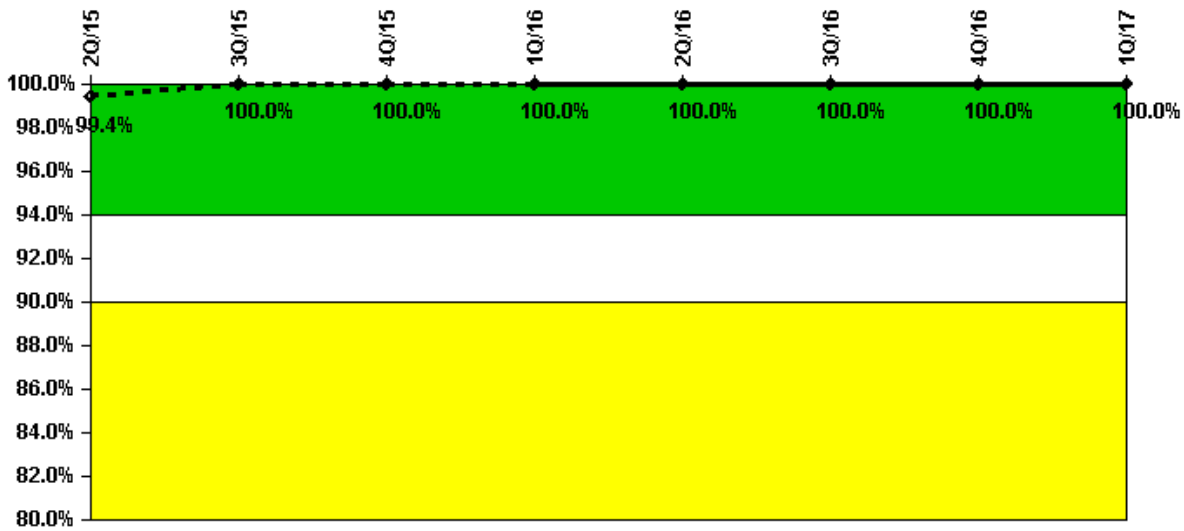
ERO Drill Participation	2Q/15	3Q/15	4Q/15	1Q/16	2Q/16	3Q/16	4Q/16	1Q/17
Participating Key personnel	46.0	46.0	42.0	39.0	43.0	44.0	42.0	44.0
Total Key personnel	46.0	46.0	42.0	39.0	43.0	44.0	42.0	44.0

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

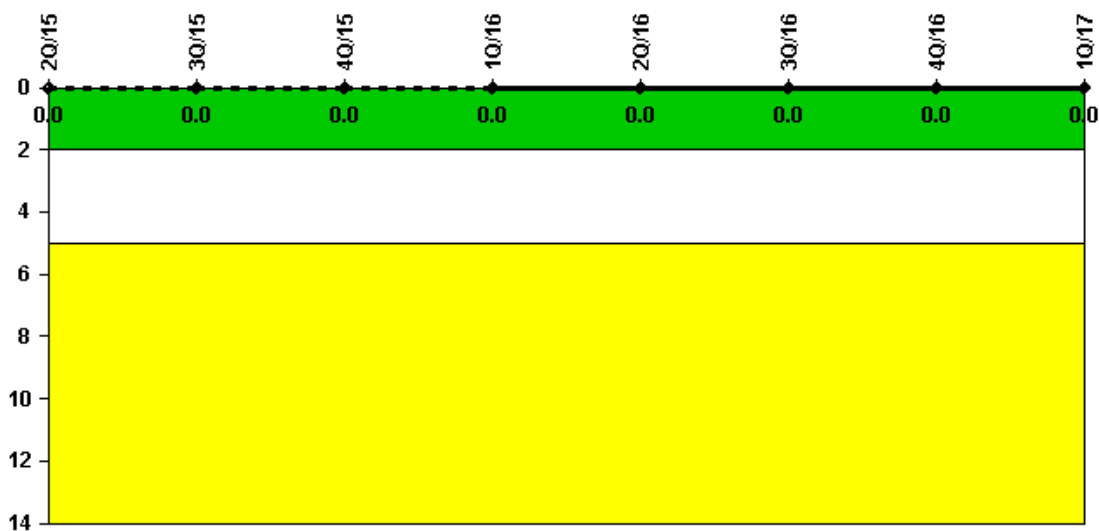
Alert & Notification System	2Q/15	3Q/15	4Q/15	1Q/16	2Q/16	3Q/16	4Q/16	1Q/17
Successful siren-tests	182	182	182	182	169	169	182	442
Total sirens-tests	182	182	182	182	169	169	182	442

Indicator value **99.4% 100.0% 100.0% 100.0% 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

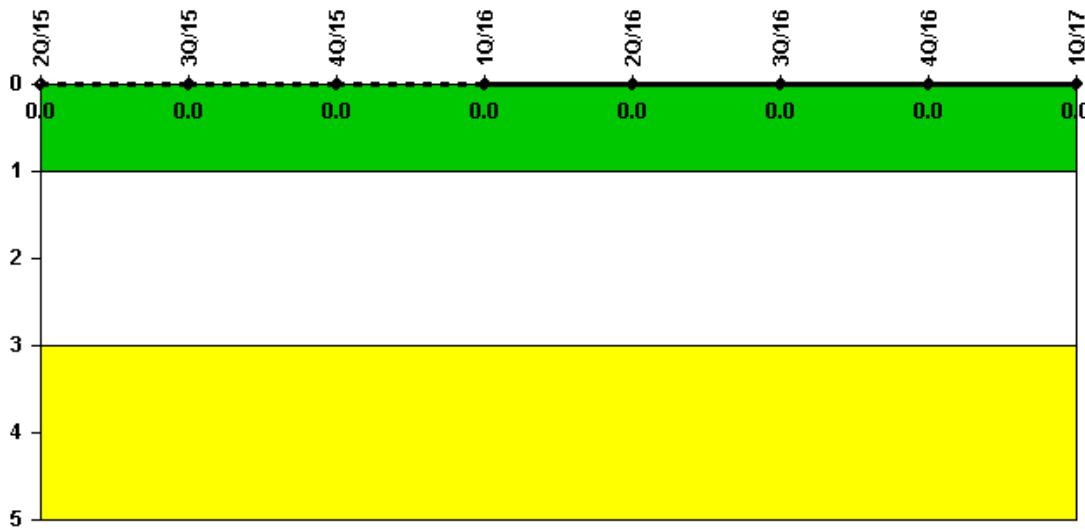
Occupational Exposure Control Effectiveness 2Q/15 3Q/15 4Q/15 1Q/16 2Q/16 3Q/16 4Q/16 1Q/17

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

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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