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FitzPatrick – Quarterly Performance Indicators

4Q/2017 Performance Indicators

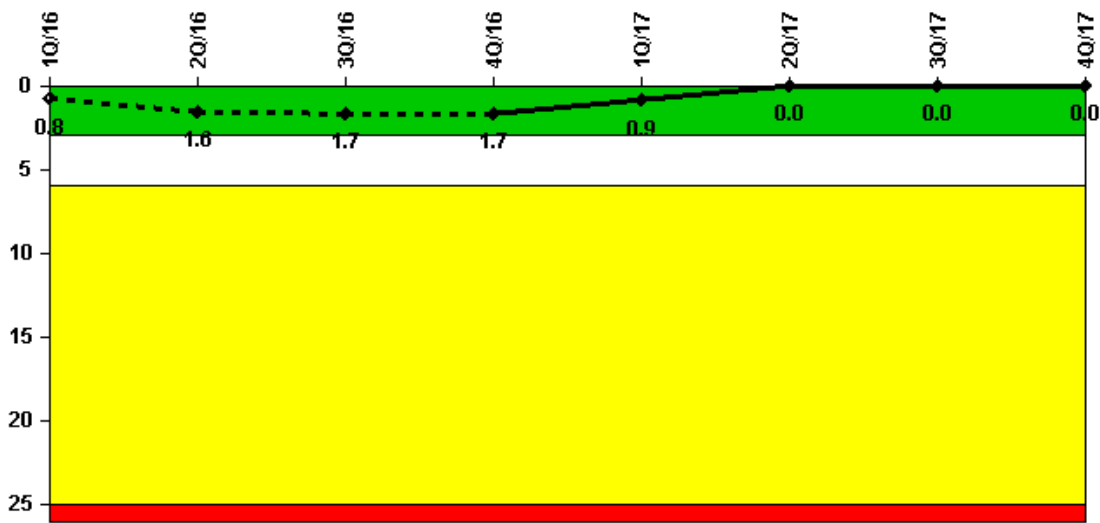
The solid trend line represents the current reporting period.

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

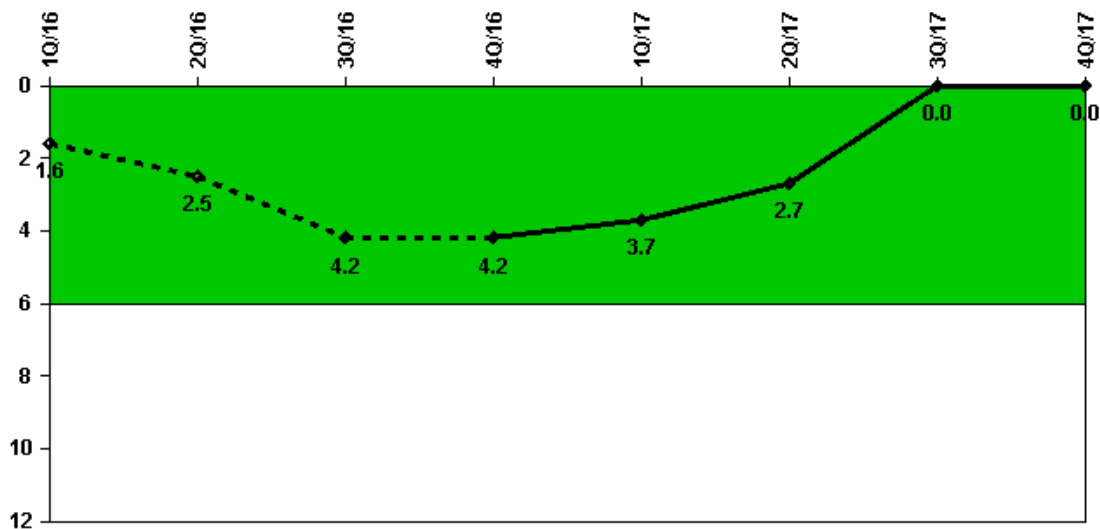
Unplanned Scrams per 7000 Critical Hrs	1Q/16	2Q/16	3Q/16	4Q/16	1Q/17	2Q/17	3Q/17	4Q/17
Unplanned scrams	1.0	1.0	0	0	0	0	0	0
Critical hours	2058.8	2028.6	2080.5	2209.0	1197.7	2184.0	2208.0	2209.0

Indicator value: 0.8 1.6 1.7 1.7 0.9 0 0 0

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Licensee Comments: none

Unplanned Power Changes per 7000 Critical Hrs



Thresholds: White > 6.0

Notes

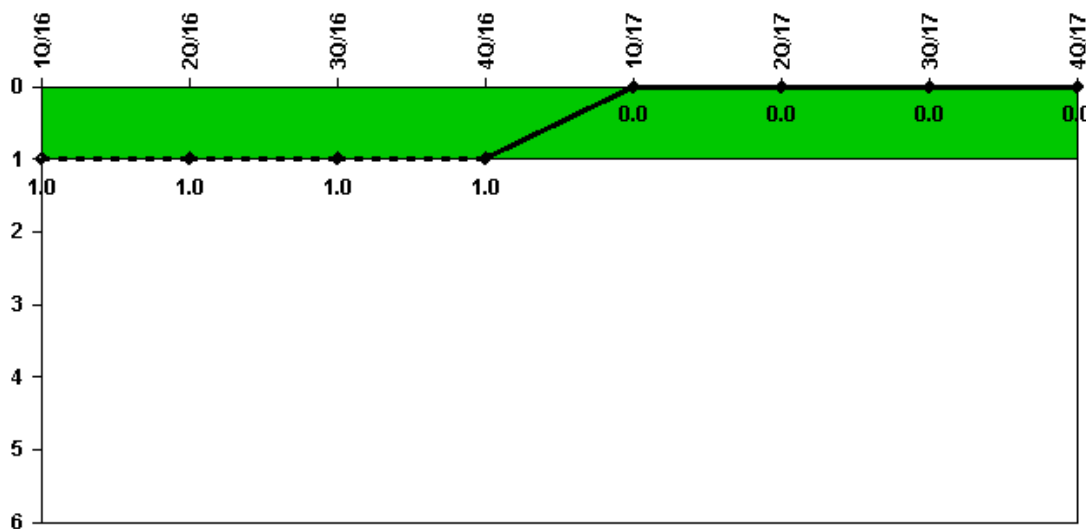
Unplanned Power Changes per 7000 Critical Hrs	1Q/16	2Q/16	3Q/16	4Q/16	1Q/17	2Q/17	3Q/17	4Q/17
Unplanned power changes	1.0	1.0	3.0	0	0	0	0	0
Critical hours	2058.8	2028.6	2080.5	2209.0	1197.7	2184.0	2208.0	2209.0

Indicator value	1.6	2.5	4.2	4.2	3.7	2.7	0	0
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Licensee Comments: none

Unplanned Scrams with Complications



Thresholds: White > 1.0

Notes

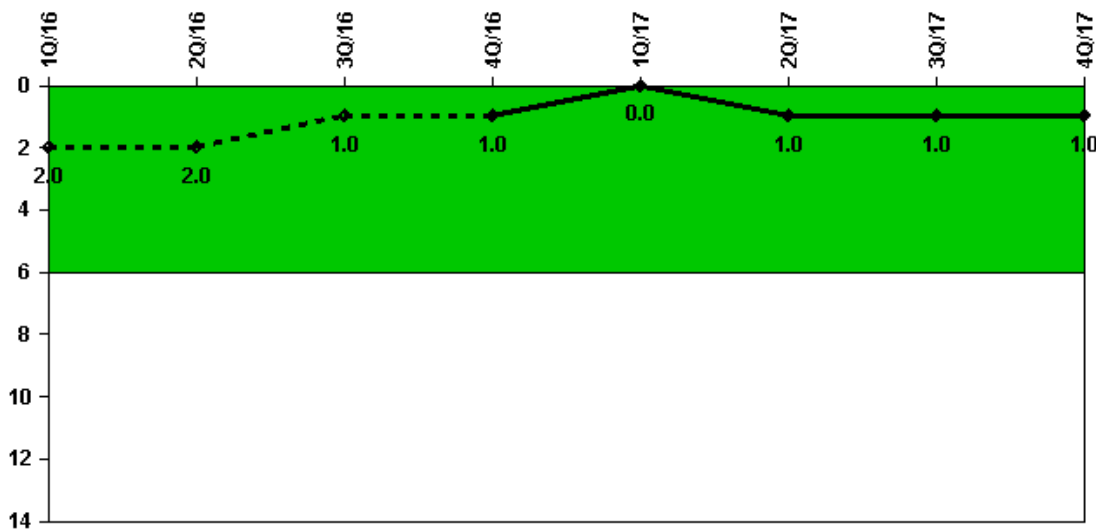
Unplanned Scrams with Complications	1Q/16	2Q/16	3Q/16	4Q/16	1Q/17	2Q/17	3Q/17	4Q/17
Scrams with complications	1.0	0	0	0	0	0	0	0

Indicator value	1.0	1.0	1.0	1.0	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 1 0 0

Indicator value 2 2 1 1 0 1 1 1

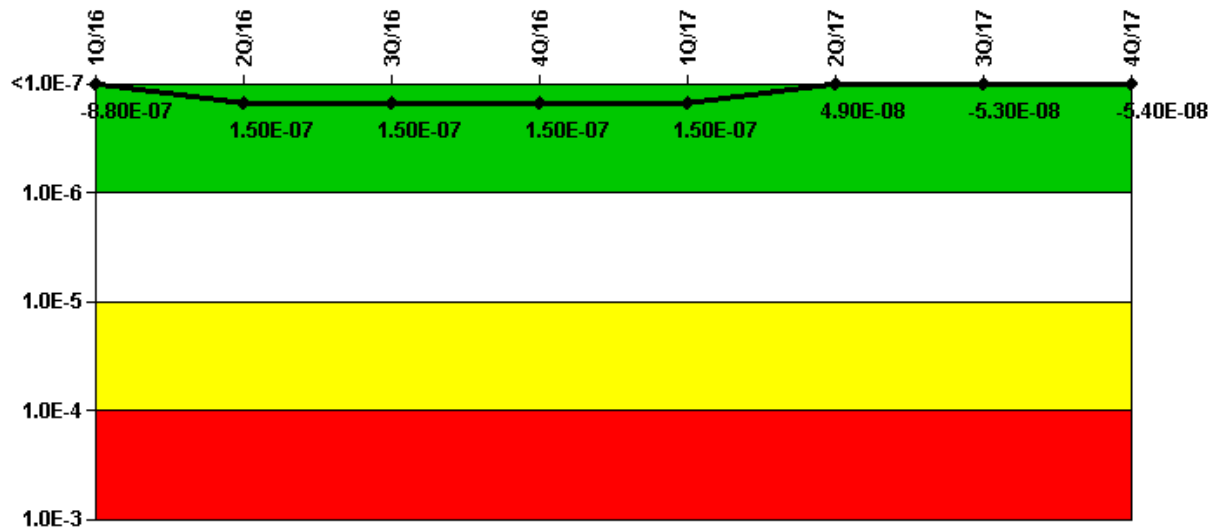
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Licensee Comments:

2Q/17: LER-17-003, Inadvertent Isolation of the High Pressure Coolant Injection System

1Q/16: LER-15-008, Containment Atmosphere Dilution System Reliability Degraded due to Manufacturer Defect in Temperature Transmitters

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 (ΔCDF)	5.41E-09	1.25E-09	-3.67E-10	-5.06E-10	-4.04E-10	-8.48E-10	9.22E-10	1.79E-09
URI (ΔCDF)	-8.84E-07	1.49E-07	1.49E-07	1.48E-07	1.49E-07	4.96E-08	-5.34E-08	-5.56E-08
PLE	NO	NO	NO	NO	NO	NO	NO	NO
Indicator value	-8.80E-07	1.50E-07	1.50E-07	1.50E-07	1.50E-07	4.90E-08	-5.30E-08	-5.40E-08

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Licensee Comments:

1Q/17: Unavailability was entered as a 1.83 instead of 1.53 in error. Data corrected does not change indicator significance level from green.

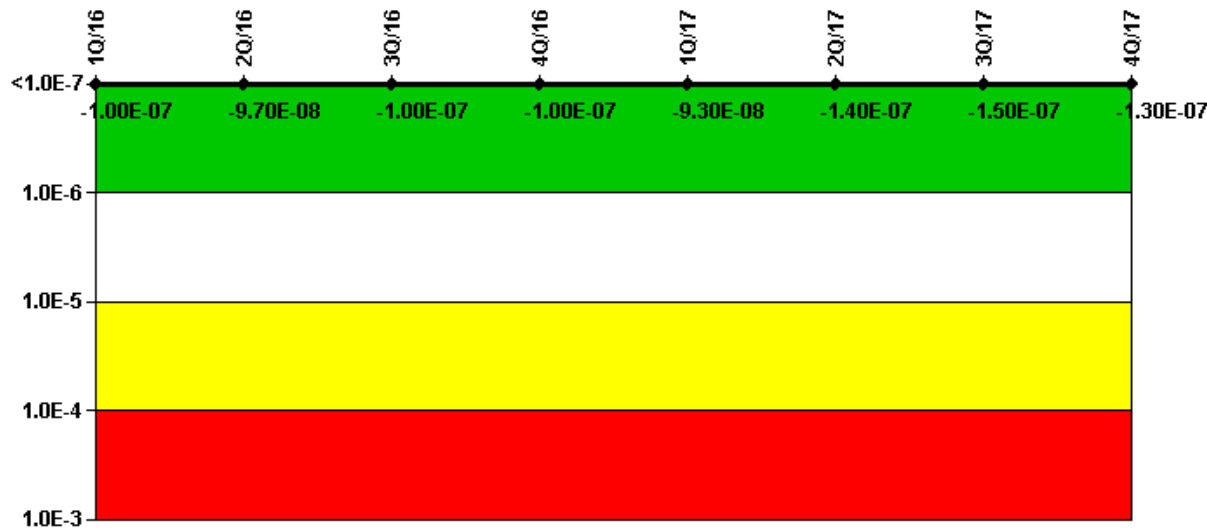
3Q/16: Data in May 2016 was changed to correct for unavailability hours attributed to the Emergency Diesel Generators (EDG) rather than the Emergency Service Water (ESW) System. This correction is in accordance with NEI 99-02 "No Cascading of Unavailability" rule. The change does not affect the indicator significance "color" of Green.

2Q/16: Data in May 2016 was changed to correct for unavailability hours attributed to the Emergency Diesel Generators (EDG) rather than the Emergency Service Water (ESW) System. This correction is in accordance with NEI 99-02 "No Cascading of Unavailability" rule. The change does not affect the indicator significance "color" of Green.

2Q/16: Starting in April 2016, MSPI value is affected by a change to EDG risk, in accordance with NEI 99-02. Previously the Risk utilized affected both trains of EDG per NEI 99.02 Section F1.1.1.

1Q/16: Revised the EDG risk in accordance with NEI 99-02. Previously the Risk utilized affected both trains of EDG per NEI 99.02 Section F1.1.1.

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

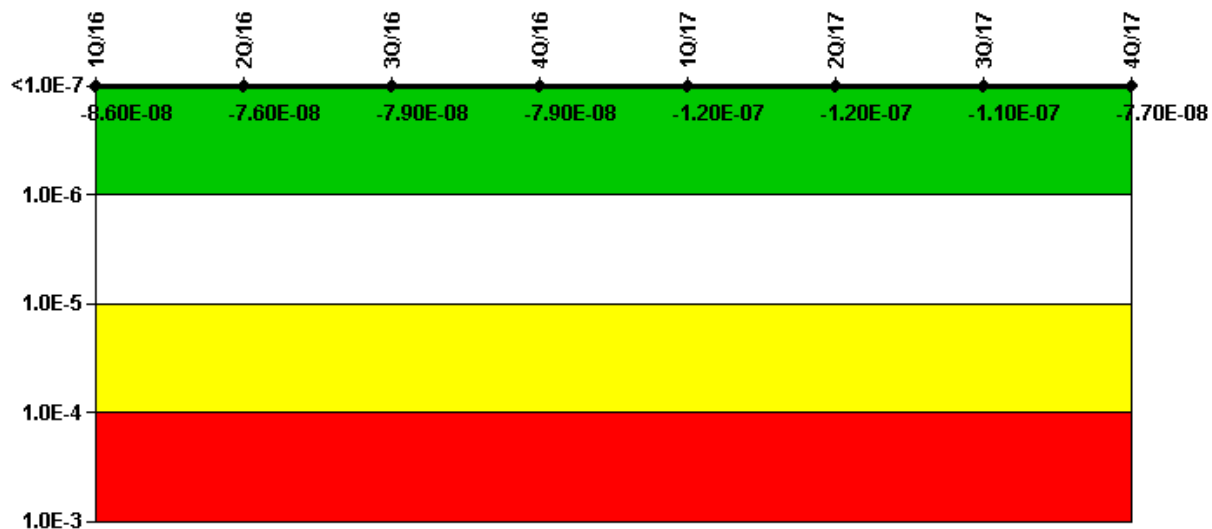
	1Q/16	2Q/16	3Q/16	4Q/16	1Q/17	2Q/17	3Q/17	4Q/17
UAI (Δ CDF)	-8.16E-09	-4.58E-09	-8.65E-09	-4.68E-09	4.55E-09	-3.58E-08	-4.13E-08	-2.91E-08
URI (Δ CDF)	-9.22E-08	-9.25E-08	-9.43E-08	-9.61E-08	-9.79E-08	-1.01E-07	-1.06E-07	-9.98E-08
PLE	NO	NO	NO	NO	NO	NO	NO	NO
Indicator value	-1.00E-07	-9.70E-08	-1.00E-07	-1.00E-07	-9.30E-08	-1.40E-07	-1.50E-07	-1.30E-07

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Licensee Comments:

2Q/17: HPCI unavailability was reviewed with the NRC resident and it was identified that the Clearance Tags Hung was the start of the unavailability period in April 2017, a more conservative time. This change does not affect the significance color "Green" of this indicator.

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

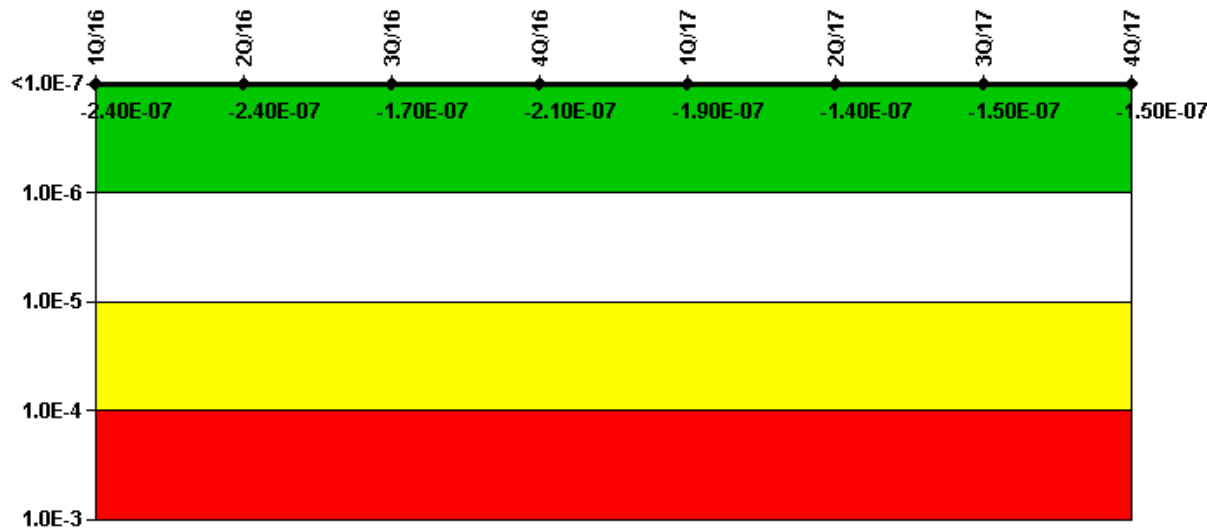
	1Q/16	2Q/16	3Q/16	4Q/16	1Q/17	2Q/17	3Q/17	4Q/17
UAI (Δ CDF)	-2.89E-09	9.48E-09	8.92E-09	8.92E-09	-2.69E-08	-2.69E-08	-2.05E-08	1.40E-08
URI (Δ CDF)	-8.34E-08	-8.59E-08	-8.83E-08	-8.83E-08	-9.19E-08	-9.19E-08	-9.40E-08	-9.07E-08
PLE	NO	NO	NO	NO	NO	NO	NO	NO
Indicator value	-8.60E-08	-7.60E-08	-7.90E-08	-7.90E-08	-1.20E-07	-1.20E-07	-1.10E-07	-7.70E-08

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Licensee Comments:

3Q/17: RCIC planned unavailability hours were reduced based on credit taken for an operator in the main control room within close proximity to restore the equipment when needed, per NEI 99-02 F 1.2.

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

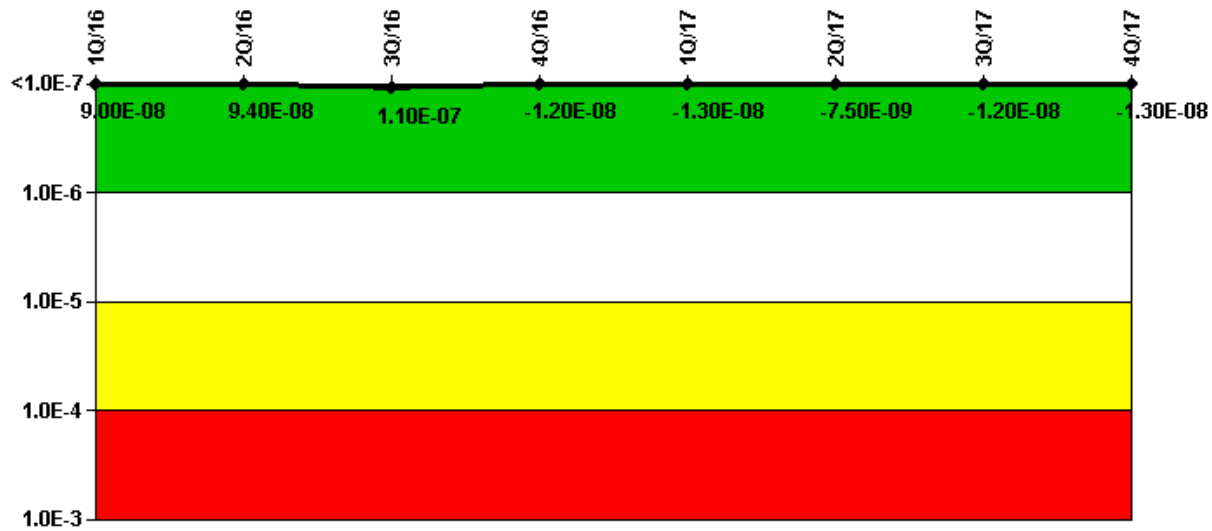
	1Q/16	2Q/16	3Q/16	4Q/16	1Q/17	2Q/17	3Q/17	4Q/17
UAI (Δ CDF)	-6.26E-09	-5.89E-09	7.18E-08	2.92E-08	6.41E-08	1.15E-07	8.81E-08	8.56E-08
URI (Δ CDF)	-2.37E-07	-2.38E-07	-2.43E-07	-2.43E-07	-2.57E-07	-2.54E-07	-2.40E-07	-2.35E-07
PLE	NO	NO	NO	NO	NO	NO	NO	NO
Indicator value	-2.40E-07	-2.40E-07	-1.70E-07	-2.10E-07	-1.90E-07	-1.40E-07	-1.50E-07	-1.50E-07

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Licensee Comments:

2Q/17: RHR UNA was reviewed with the NRC resident and it was identified that the Narrative Log Entry for the start of a Surveillance Test was used inadvertently as the end time in May 2017. This change corrects that error and it does not affect the significance color "Green" of this indicator.

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 (ΔCDF)	1.02E-07	1.07E-07	1.21E-07	8.51E-10	-1.53E-10	4.96E-09	-1.92E-10	-3.11E-10
URI (ΔCDF)	-1.27E-08	-1.30E-08	-1.24E-08	-1.24E-08	-1.25E-08	-1.25E-08	-1.20E-08	-1.22E-08
PLE	NO	NO	NO	NO	NO	NO	NO	NO
Indicator value	9.00E-08	9.40E-08	1.10E-07	-1.20E-08	-1.30E-08	-7.50E-09	-1.20E-08	-1.30E-08

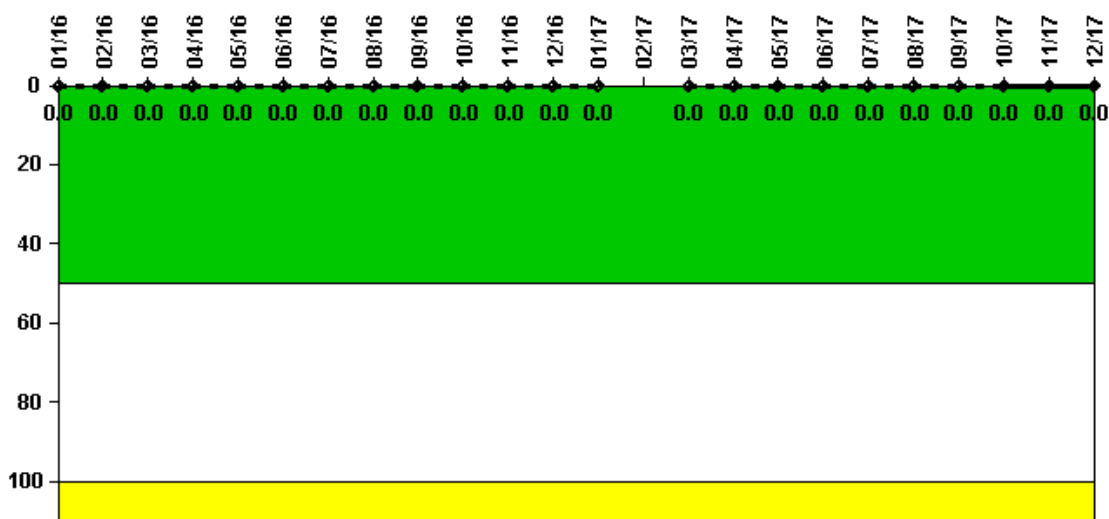
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Licensee Comments:

3Q/16: Data in May 2016 was changed to correct for unavailability hours attributed to the Emergency Diesel Generators (EDG) rather than the Emergency Service Water (ESW) System. This correction is in accordance with NEI 99-02 "No Cascading of Unavailability" rule. The change does not affect the indicator significance "color" of Green.

2Q/16: Data in May 2016 was changed to correct for unavailability hours attributed to the Emergency Diesel Generators (EDG) rather than the Emergency Service Water (ESW) System. This correction is in accordance with NEI 99-02 "No Cascading of Unavailability" rule. The change does not affect the indicator significance "color" of Green.

Reactor Coolant System Activity



Thresholds: White > 50.0 Yellow > 100.0

Notes

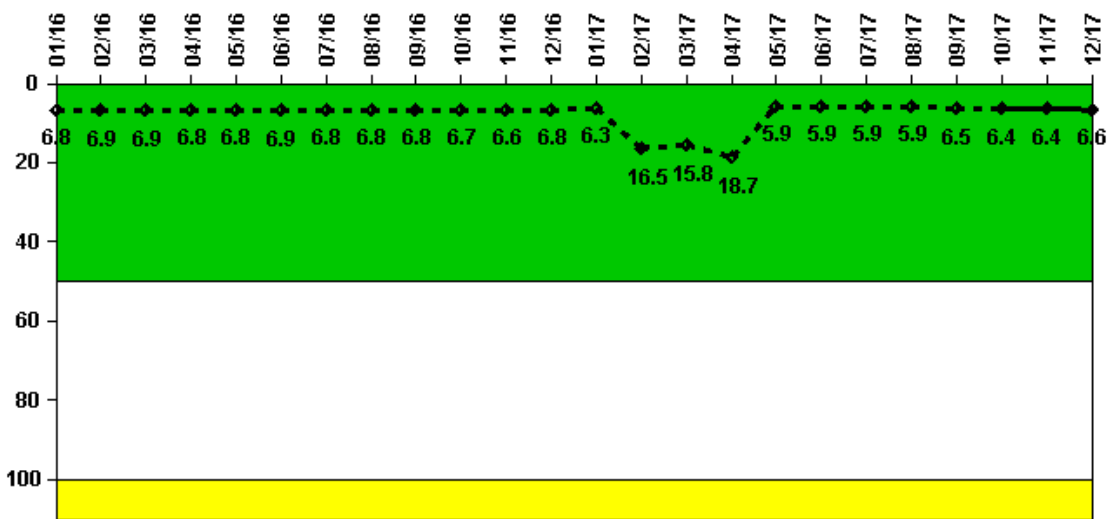
Reactor Coolant System Activity	1/16	2/16	3/16	4/16	5/16	6/16	7/16	8/16	9/16	10/16	11/16	12/16
Maximum activity	0.000006	0.000019	0.000008	0.000005	0.000008	0.000007	0.000012	0.000009	0.000009	0.000011	0.000020	0.000023
Technical specification limit	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
Indicator 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	0.000038	N/A	0.000008	0.000004	0.000009	0.000008	0.000011	0.000005	0.000004	0.000007	0.000008	0.000005
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	N/A	0	0	0	0	0	0	0	0	0	0

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Licensee Comments:

3/17: The refuel outage during February 2017 prevents RCS Activity from being calculated; therefore, data was reported as NA.

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	1.710	1.730	1.720	1.710	1.700	1.720	1.690	1.690	1.690	1.680	1.660	1.700
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

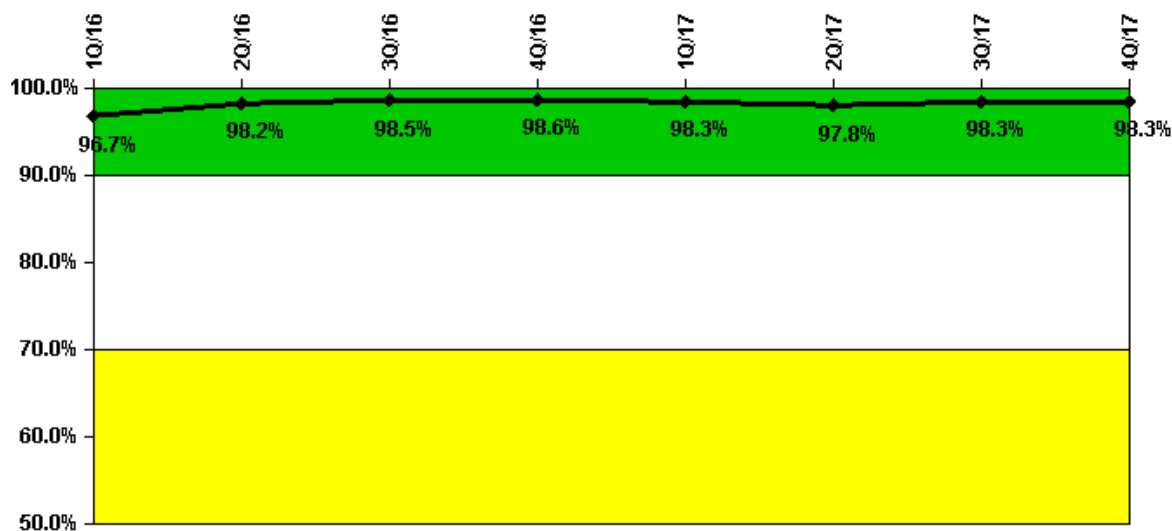
Indicator value	6.8	6.9	6.9	6.8	6.8	6.9	6.8	6.8	6.8	6.8	6.7	6.6	6.8
Reactor Coolant System Leakage	1/17	2/17	3/17	4/17	5/17	6/17	7/17	8/17	9/17	10/17	11/17	12/17	
Maximum leakage	1.570	4.130	3.940	4.670	1.480	1.470	1.470	1.470	1.630	1.590	1.590	1.660	
Technical specification limit	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	

Indicator value	6.3	16.5	15.8	18.7	5.9	5.9	5.9	5.9	6.5	6.4	6.4	6.6
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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	66.0	41.0	36.0	14.0	41.0	48.0	42.0	57.0
Total opportunities	67.0	42.0	36.0	14.0	42.0	50.0	42.0	58.0

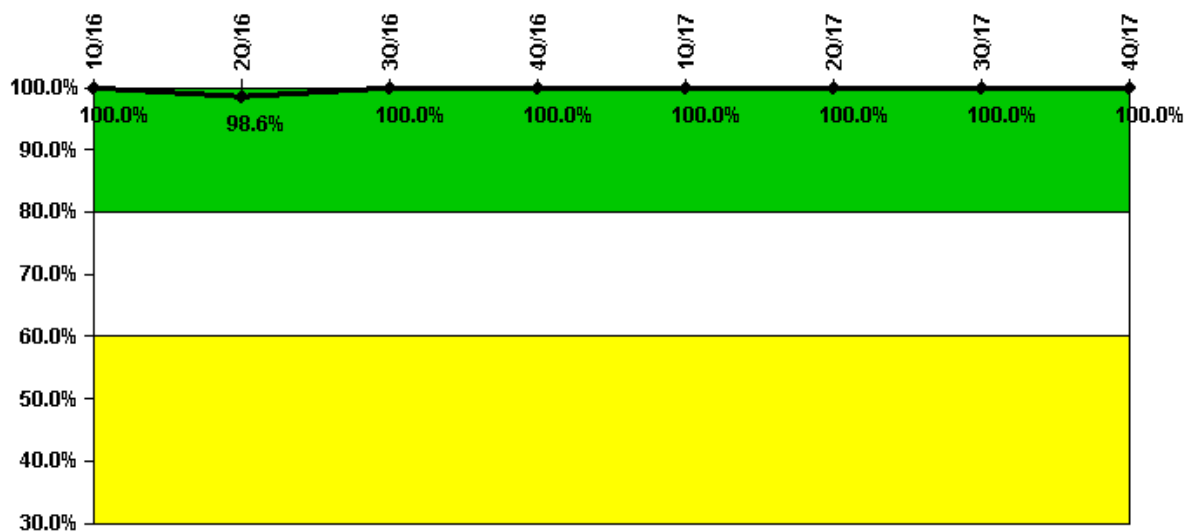
Indicator value **96.7% 98.2% 98.5% 98.6% 98.3% 97.8% 98.3% 98.3%**

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Licensee Comments:

3Q/17: A change was made to March 2016 data. Indicator color remains Green. It was discovered that there were 43 successes and 44 opportunities instead of 44 and 45 respectively.

ERO Drill Participation



Thresholds: White < 80.0% Yellow < 60.0%

Notes

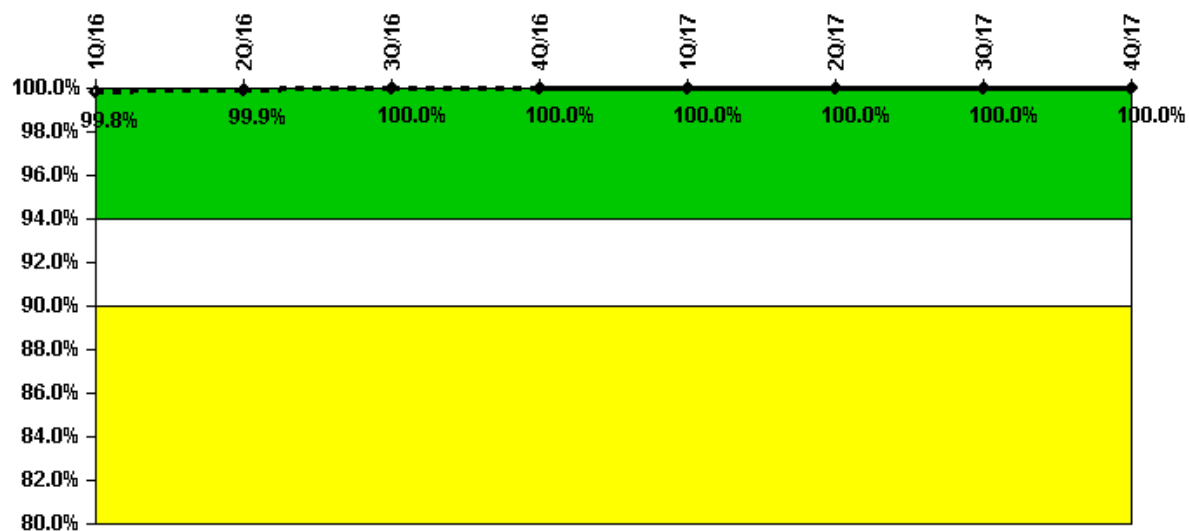
ERO Drill Participation	1Q/16	2Q/16	3Q/16	4Q/16	1Q/17	2Q/17	3Q/17	4Q/17
Participating Key personnel	71.0	73.0	69.0	70.0	64.0	70.0	77.0	72.0
Total Key personnel	71.0	74.0	69.0	70.0	64.0	70.0	77.0	72.0

Indicator value **100.0% 98.6% 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

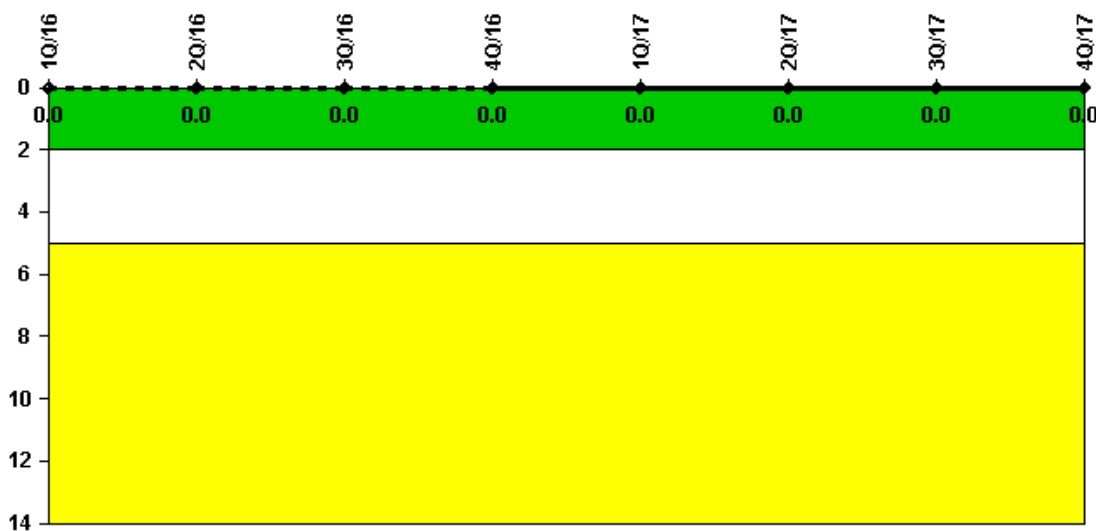
Alert & Notification System	1Q/16	2Q/16	3Q/16	4Q/16	1Q/17	2Q/17	3Q/17	4Q/17
Successful siren-tests	348	520	520	520	2440	520	520	520
Total sirens-tests	348	520	520	520	2440	520	520	520

Indicator value **99.8%** **99.9%** **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

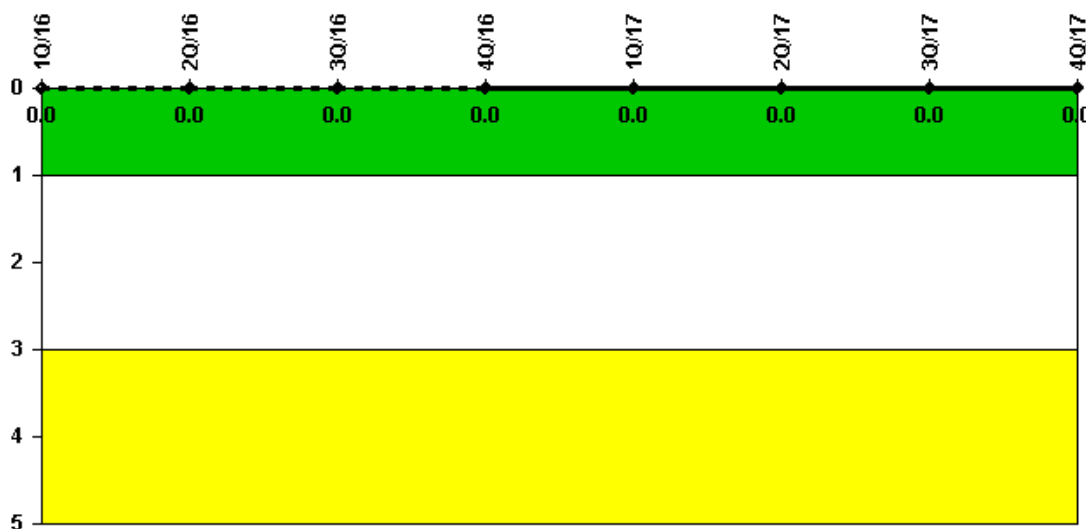
Occupational Exposure Control Effectiveness 1Q/16 2Q/16 3Q/16 4Q/16 1Q/17 2Q/17 3Q/17 4Q/17

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 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