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## Turkey Point 4 – Quarterly Performance Indicators

### 4Q/2017 Performance Indicators

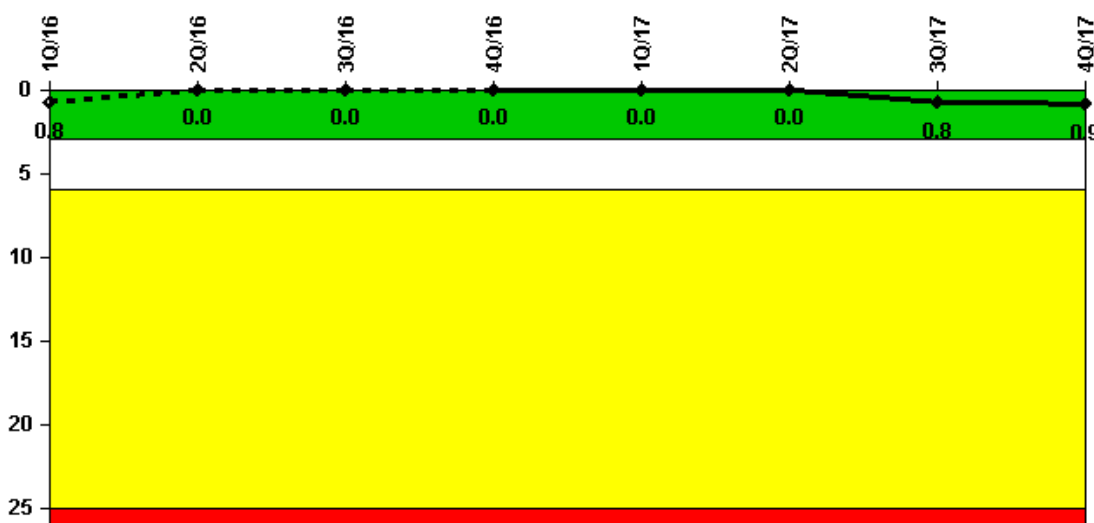
The solid trend line represents the current reporting period.

Licensee's General Comments: none

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### 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	1.0	0
Critical hours	2112.4	1538.1	2208.0	2209.0	2159.0	2184.0	2074.4	1566.1

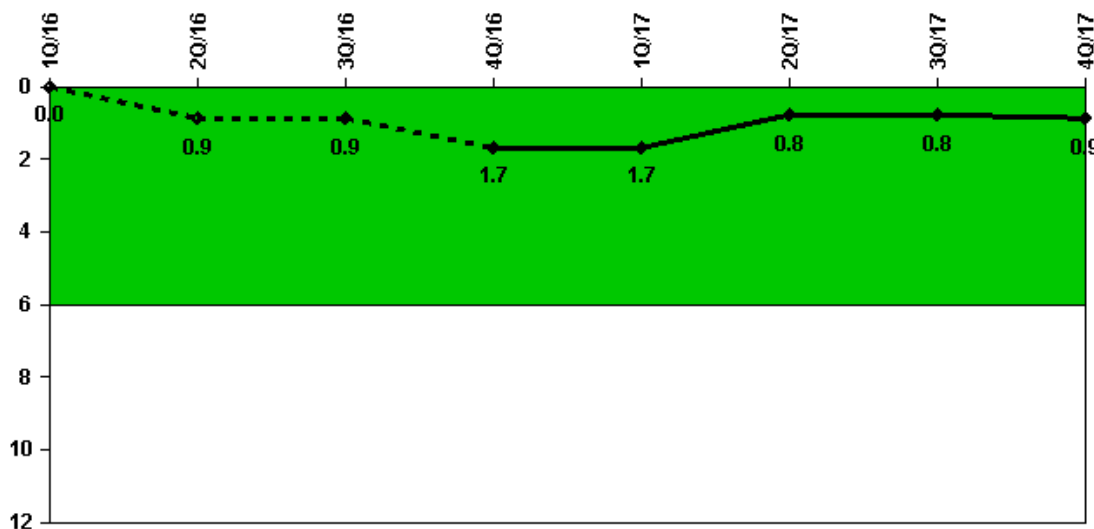
Indicator value	0.8	0	0	0	0	0	0.8	0.9
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Licensee Comments:

3Q/17: Unit 4 Manual Reactor Trip due to SG C level perturbations caused by Feedwater FCV controls failure

### 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	1.0	0	1.0	0	0	0	1.0
Critical hours	2112.4	1538.1	2208.0	2209.0	2159.0	2184.0	2074.4	1566.1
<b>Indicator value</b>	<b>0</b>	<b>0.9</b>	<b>0.9</b>	<b>1.7</b>	<b>1.7</b>	<b>0.8</b>	<b>0.8</b>	<b>0.9</b>

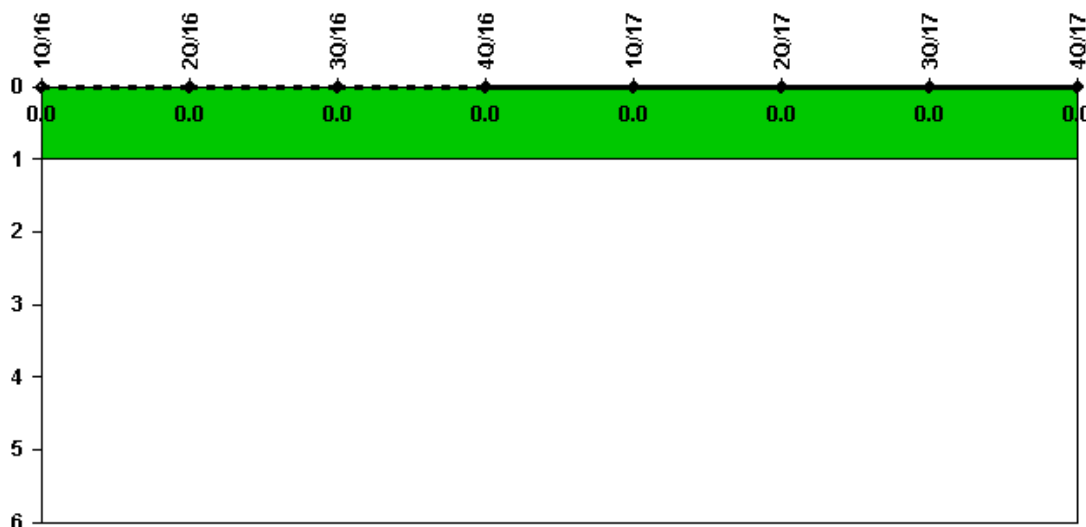
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Licensee Comments:

4Q/17: Unit 4 performed an unplanned power change to repair a steam leak on the SG Feed Pump recirculation line 4-20-147.

2Q/16: Turkey Point Unit 4 performed an unplanned downpower on 5/19/2016 due to a EHC leak on the 4C MSR. Unit 4 returned to full power on 5/20/2016

**Unplanned Scrams with Complications**



Thresholds: White > 1.0

**Notes**

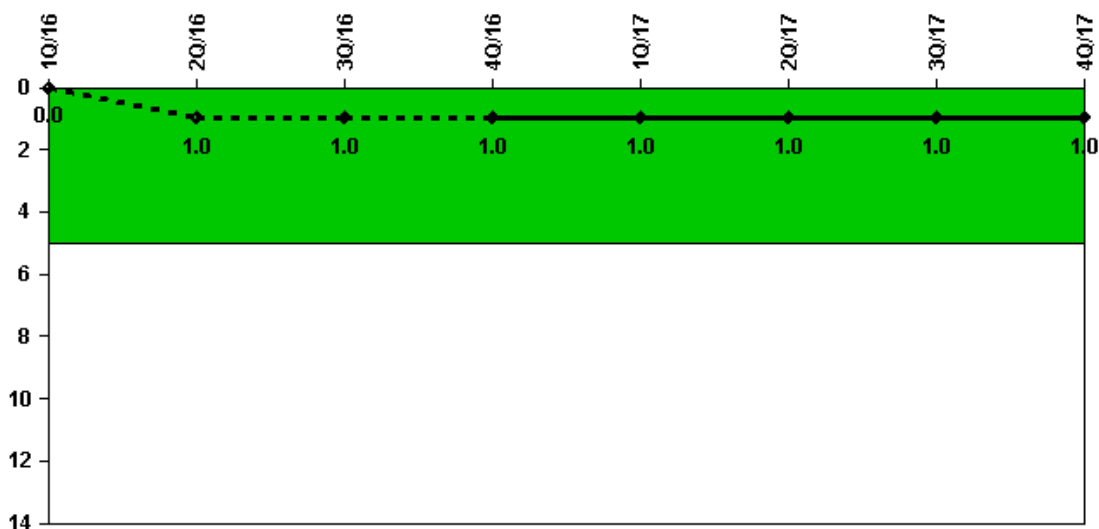
Unplanned Scrams with Complications	1Q/16	2Q/16	3Q/16	4Q/16	1Q/17	2Q/17	3Q/17	4Q/17
Scrams with complications	0	0	0	0	0	0	0	0

<b>Indicator value</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>
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Licensee Comments: none

### Safety System Functional Failures (PWR)



Thresholds: White > 5.0

#### Notes

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

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

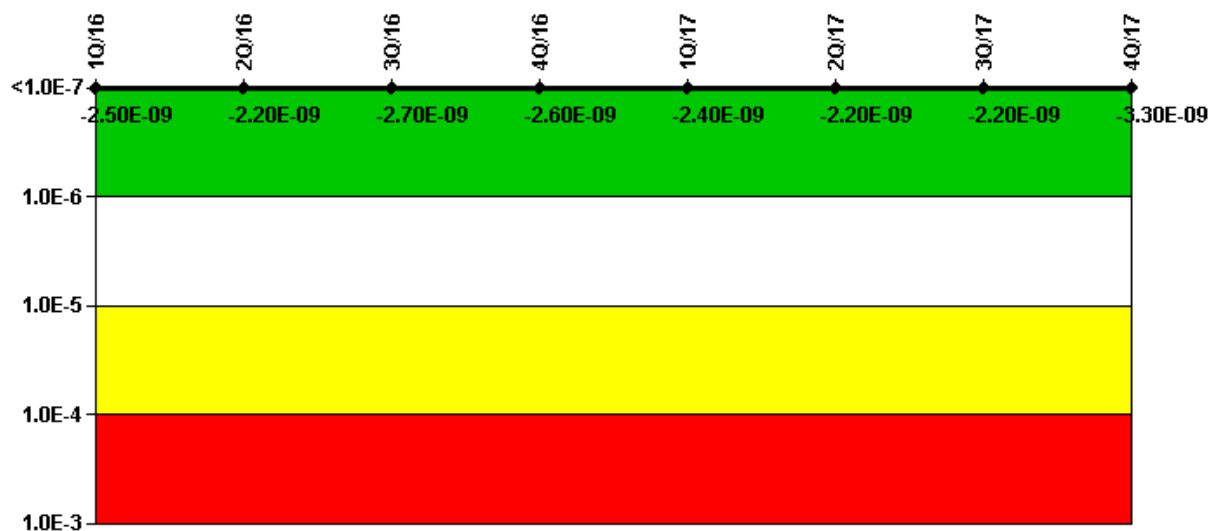
**Indicator value**    0    1    1    1    1    1    1    1

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#### Licensee Comments:

2Q/17: LER 250/2017-001-00, Reactor trip, Auxiliary Feedwater and EDG 3A actuations, loss of Safety Injection Function and complication of TS required shutdown. L-2017-094, issued May 16, 2017. Loss of safety injection function impacted both Units 3 and 4.  
 2Q/16: Licensee Event Report, LER 2016-01-00, reports that Turkey Point Unit 4 during the five day period that the reactor protection system OTDT/OPDT Channel III was inoperable, the single failure criteria was not met, and as such, the specified safety function was lost, when more than one channel was inoperable (for approximately 4 hours).

### Mitigating Systems Performance Index, Emergency AC Power System



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

#### Notes

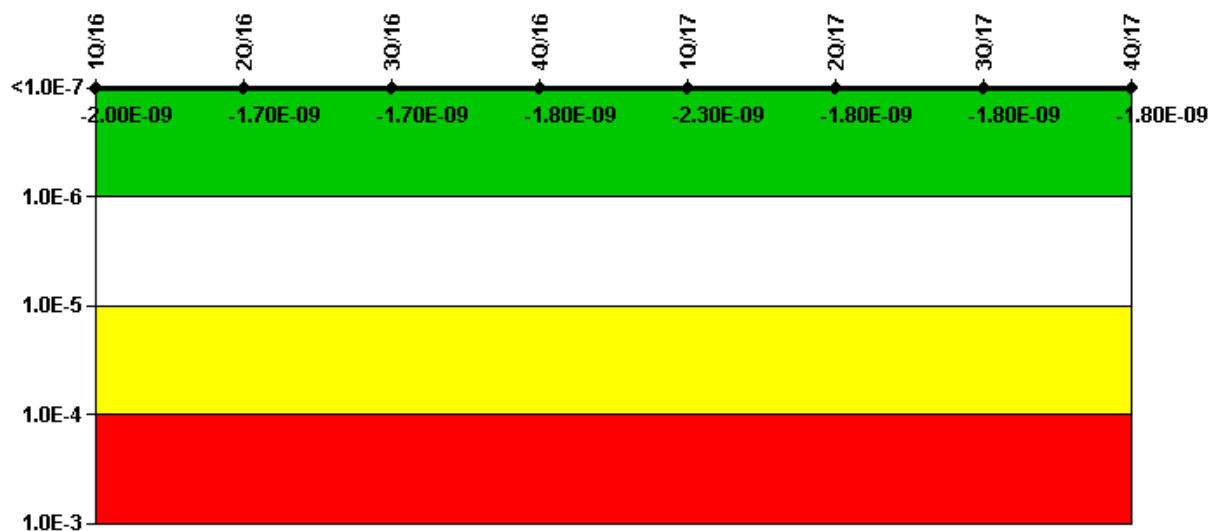
#### Mitigating Systems Performance Index, Emergency AC Power System

	1Q/16	2Q/16	3Q/16	4Q/16	1Q/17	2Q/17	3Q/17	4Q/17
UAI (ΔCDF)	2.08E-09	2.10E-09	1.84E-09	1.95E-09	2.16E-09	2.33E-09	2.34E-09	1.05E-09
URI (ΔCDF)	-4.57E-09	-4.26E-09	-4.56E-09	-4.55E-09	-4.57E-09	-4.55E-09	-4.52E-09	-4.39E-09
PLE	NO	NO	NO	NO	NO	NO	NO	NO
<b>Indicator value</b>	<b>-2.50E-09</b>	<b>-2.20E-09</b>	<b>-2.70E-09</b>	<b>-2.60E-09</b>	<b>-2.40E-09</b>	<b>-2.20E-09</b>	<b>-2.20E-09</b>	<b>-3.30E-09</b>

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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**

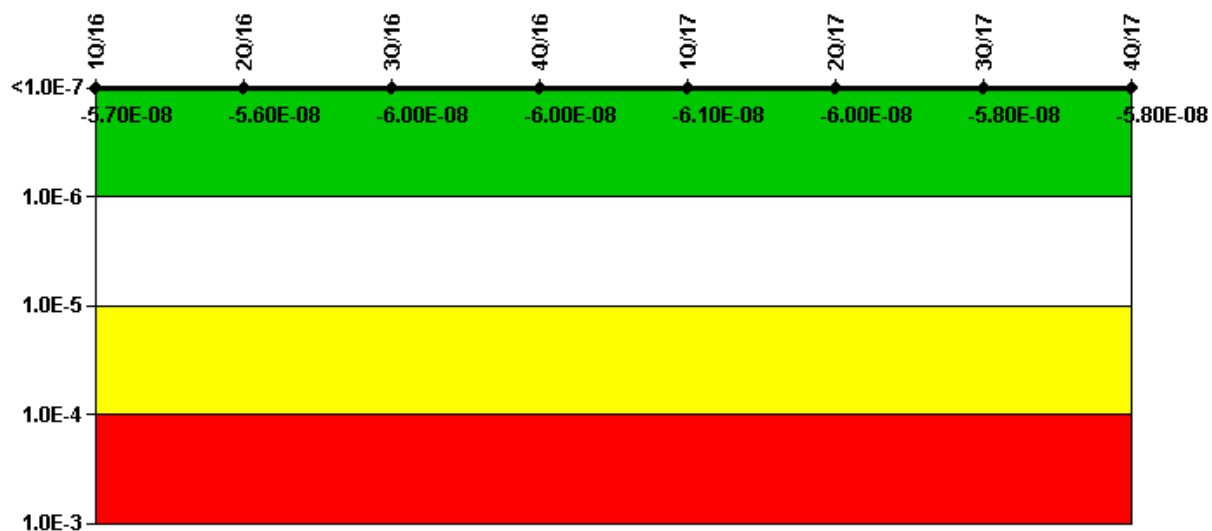
**Mitigating Systems Performance Index, High Pressure Injection System**

	1Q/16	2Q/16	3Q/16	4Q/16	1Q/17	2Q/17	3Q/17	4Q/17
UAI (ΔCDF)	-2.72E-10	3.82E-11	2.02E-11	-5.05E-11	-5.69E-10	-8.48E-11	-9.86E-11	-9.07E-11
URI (ΔCDF)	-1.76E-09	-1.76E-09	-1.76E-09	-1.72E-09	-1.72E-09	-1.72E-09	-1.72E-09	-1.71E-09
PLE	NO	NO	NO	NO	NO	NO	NO	NO
<b>Indicator value</b>	<b>-2.00E-09</b>	<b>-1.70E-09</b>	<b>-1.70E-09</b>	<b>-1.80E-09</b>	<b>-2.30E-09</b>	<b>-1.80E-09</b>	<b>-1.80E-09</b>	<b>-1.80E-09</b>

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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**

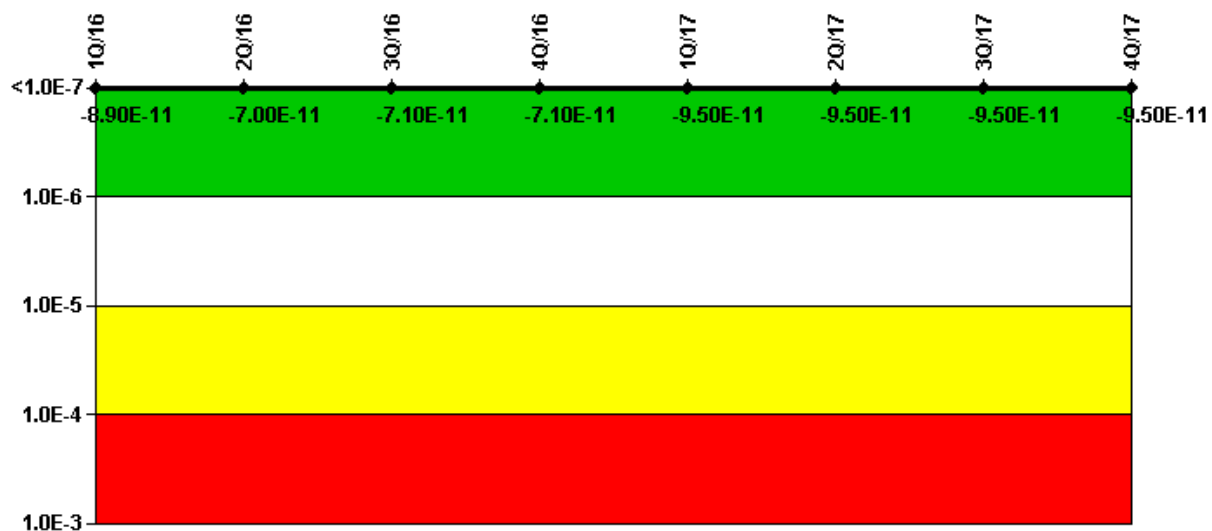
**Mitigating Systems Performance Index, Heat Removal System**

	1Q/16	2Q/16	3Q/16	4Q/16	1Q/17	2Q/17	3Q/17	4Q/17
UAI (ΔCDF)	1.19E-08	1.22E-08	8.26E-09	8.13E-09	7.18E-09	8.35E-09	1.02E-08	1.02E-08
URI (ΔCDF)	-6.85E-08	-6.84E-08	-6.84E-08	-6.84E-08	-6.84E-08	-6.84E-08	-6.85E-08	-6.84E-08
PLE	NO	NO	NO	NO	NO	NO	NO	NO
<b>Indicator value</b>	<b>-5.70E-08</b>	<b>-5.60E-08</b>	<b>-6.00E-08</b>	<b>-6.00E-08</b>	<b>-6.10E-08</b>	<b>-6.00E-08</b>	<b>-5.80E-08</b>	<b>-5.80E-08</b>

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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

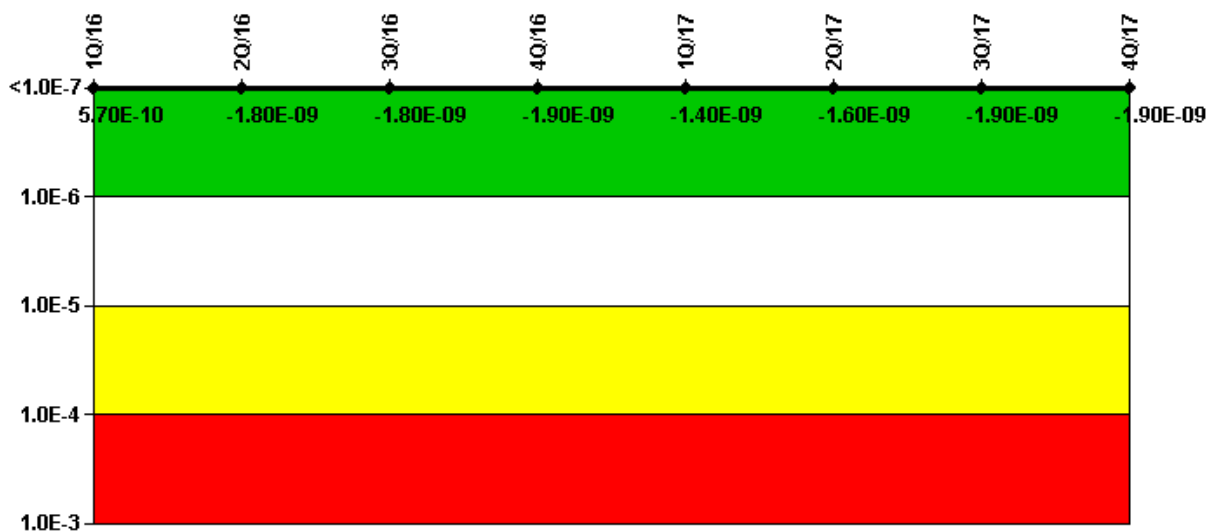
	1Q/16	2Q/16	3Q/16	4Q/16	1Q/17	2Q/17	3Q/17	4Q/17
UAI ( $\Delta$ CDF)	-1.39E-11	4.33E-12	3.55E-12	3.35E-12	-2.06E-11	-2.06E-11	-2.06E-11	-2.06E-11
URI ( $\Delta$ CDF)	-7.47E-11	-7.47E-11	-7.47E-11	-7.47E-11	-7.47E-11	-7.47E-11	-7.47E-11	-7.47E-11
PLE	NO	NO	NO	NO	NO	NO	NO	NO
<b>Indicator value</b>	<b>-8.90E-11</b>	<b>-7.00E-11</b>	<b>-7.10E-11</b>	<b>-7.10E-11</b>	<b>-9.50E-11</b>	<b>-9.50E-11</b>	<b>-9.50E-11</b>	<b>-9.50E-11</b>

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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**

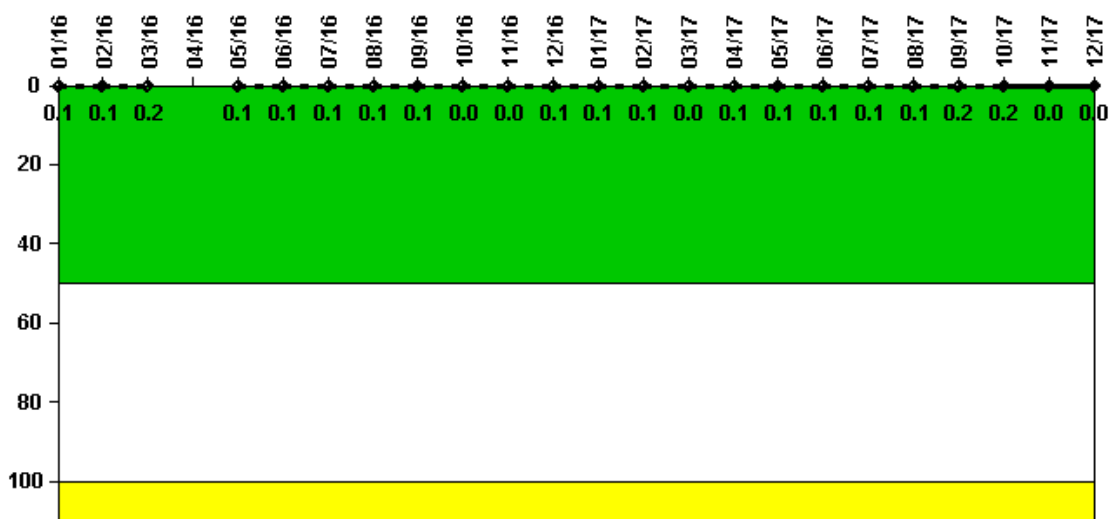
**Mitigating Systems Performance Index, Cooling Water Systems**

	1Q/16	2Q/16	3Q/16	4Q/16	1Q/17	2Q/17	3Q/17	4Q/17
UAI (ΔCDF)	5.09E-09	2.74E-09	2.72E-09	2.67E-09	3.14E-09	2.91E-09	2.58E-09	2.61E-09
URI (ΔCDF)	-4.52E-09	-4.52E-09	-4.52E-09	-4.52E-09	-4.52E-09	-4.52E-09	-4.52E-09	-4.52E-09
PLE	NO	NO	NO	NO	NO	NO	NO	NO
<b>Indicator value</b>	<b>5.70E-10</b>	<b>-1.80E-09</b>	<b>-1.80E-09</b>	<b>-1.90E-09</b>	<b>-1.40E-09</b>	<b>-1.60E-09</b>	<b>-1.90E-09</b>	<b>-1.90E-09</b>

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Licensee Comments: none

### Reactor Coolant System Activity



Thresholds: White > 50.0 Yellow > 100.0

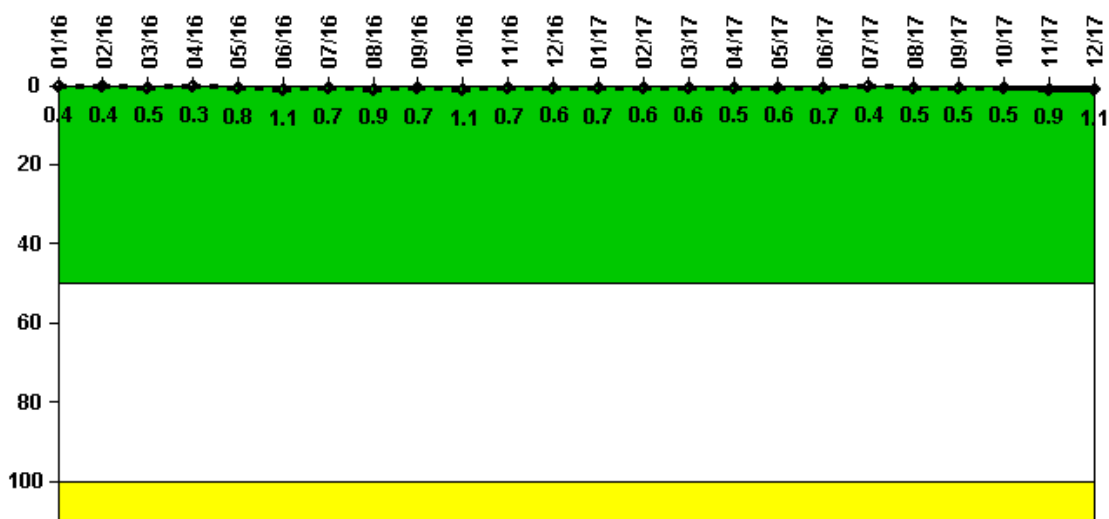
**Notes**

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	0.000180	0.000140	0.000610	N/A	0.000320	0.000130	0.000130	0.000150	0.000150	0.000100	0.000100	0.000190
Technical specification limit	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3
Indicator value	0.1	0.1	0.2	N/A	0.1	0.1	0.1	0.1	0.1	0	0	0.1
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	0.000200	0.000220	0.000120	0.000210	0.000240	0.000240	0.000140	0.000240	0.000610	0.000540	0.000080	0.000090
Technical specification limit	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3
Indicator value	0.1	0.1	0	0.1	0.1	0.1	0.1	0.1	0.2	0.2	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	0.040	0.040	0.050	0.030	0.080	0.110	0.070	0.090	0.070	0.110	0.066	0.061
Technical specification limit	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0

Indicator value	0.4	0.4	0.5	0.3	0.8	1.1	0.7	0.9	0.7	1.1	0.7	0.6
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	0.068	0.063	0.056	0.050	0.060	0.070	0.040	0.050	0.050	0.050	0.090	0.110
Technical specification limit	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0

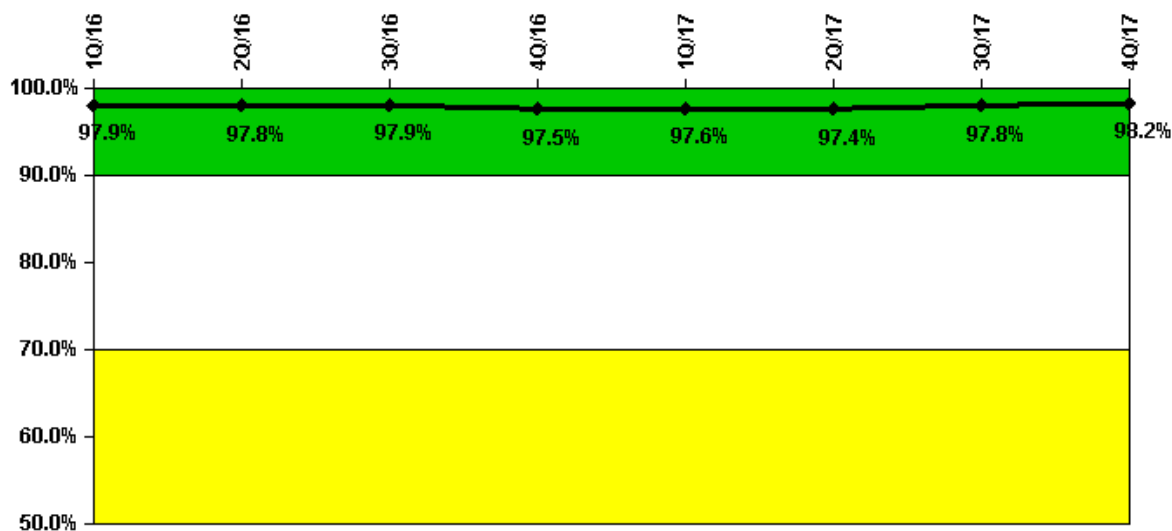
Indicator value	0.7	0.6	0.6	0.5	0.6	0.7	0.4	0.5	0.5	0.5	0.9	1.1
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Licensee Comments:

6/17: Indicator has been corrected to report maximum monthly identified leakage. (Indicator has been revised for July 2016 to June 2017.)

### Drill/Exercise Performance



Thresholds: White < 90.0% Yellow < 70.0%

#### Notes

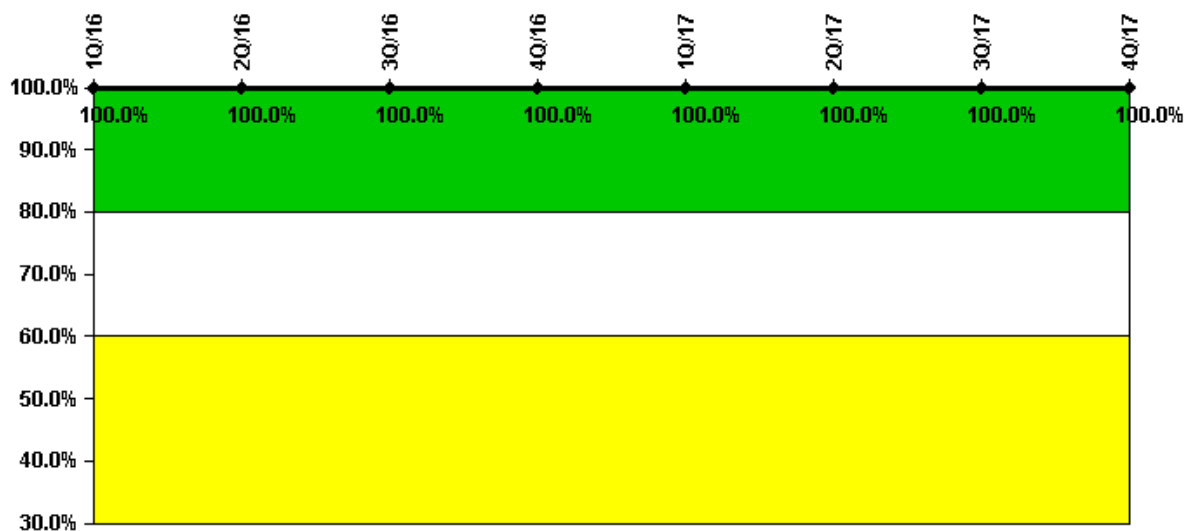
Drill/Exercise Performance	1Q/16	2Q/16	3Q/16	4Q/16	1Q/17	2Q/17	3Q/17	4Q/17
Successful opportunities	48.0	4.0	26.0	40.0	36.0	15.0	37.0	64.0
Total opportunities	49.0	4.0	26.0	41.0	39.0	15.0	37.0	64.0

Indicator value                    97.9% 97.8% 97.9% 97.5% 97.6% 97.4% 97.8% 98.2%

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Licensee Comments: none

### ERO Drill Participation



Thresholds: White < 80.0% Yellow < 60.0%

#### Notes

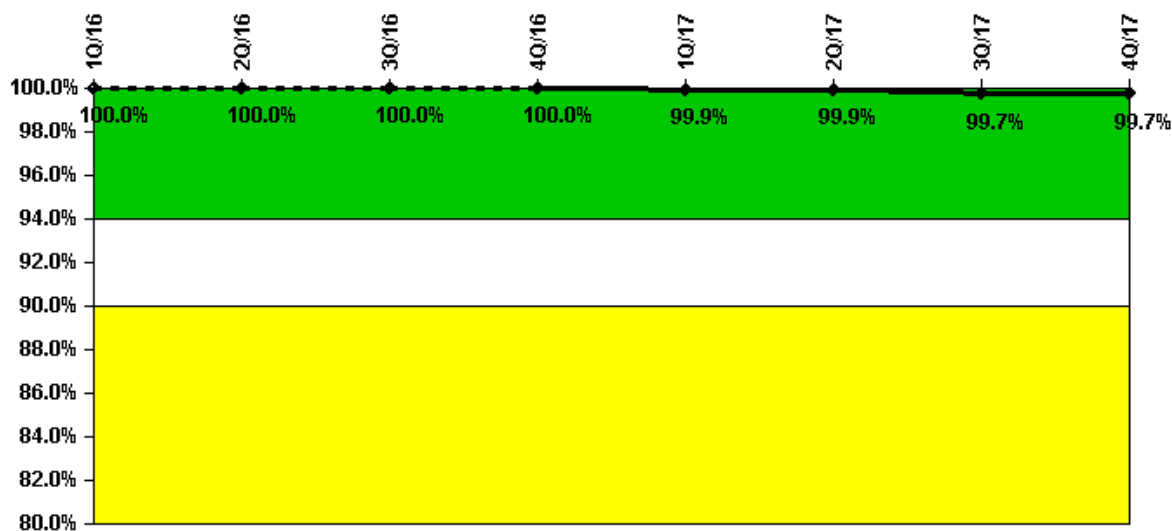
ERO Drill Participation	1Q/16	2Q/16	3Q/16	4Q/16	1Q/17	2Q/17	3Q/17	4Q/17
Participating Key personnel	102.0	100.0	100.0	103.0	102.0	99.0	99.0	107.0
Total Key personnel	102.0	100.0	100.0	103.0	102.0	99.0	99.0	107.0

**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**

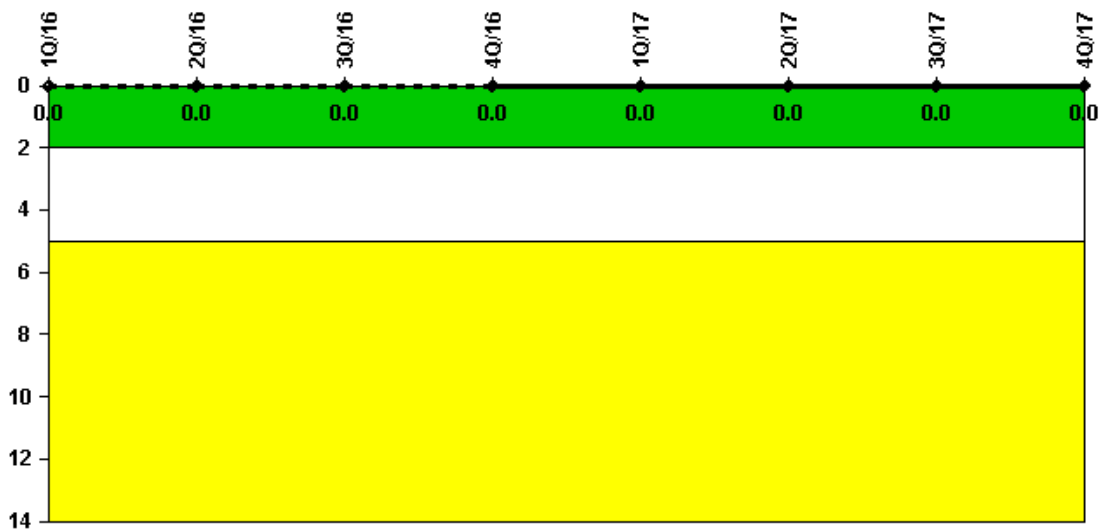
Alert & Notification System	1Q/16	2Q/16	3Q/16	4Q/16	1Q/17	2Q/17	3Q/17	4Q/17
Successful siren-tests	336	384	336	384	335	335	382	333
Total sirens-tests	336	384	336	384	336	336	384	333

**Indicator value**                    **100.0% 100.0% 100.0% 100.0% 99.9% 99.9% 99.7% 99.7%**

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Licensee Comments: none

### Occupational Exposure Control Effectiveness



Thresholds: White > 2.0 Yellow > 5.0

**Notes**

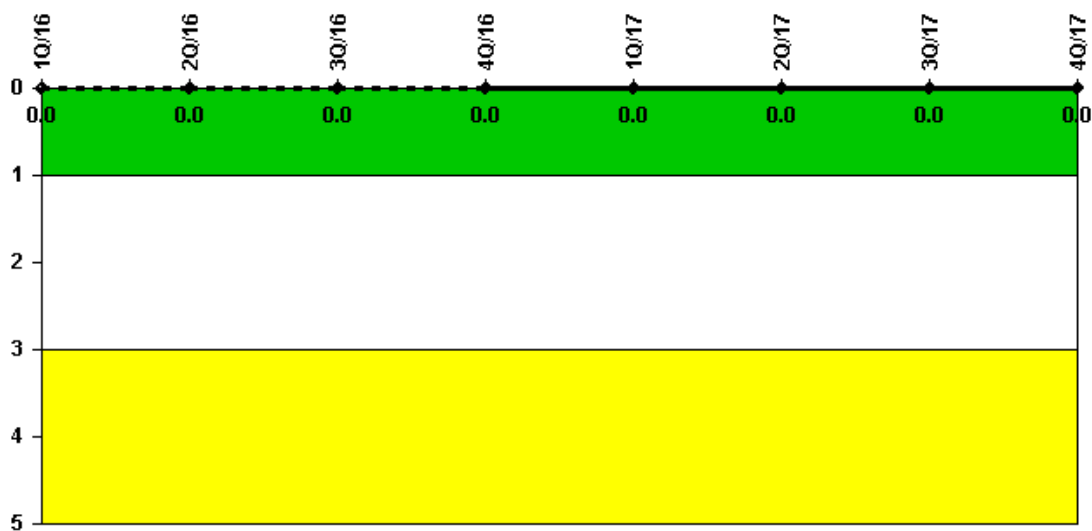
**Occupational Exposure Control Effectiveness** 1Q/16 2Q/16 3Q/16 4Q/16 1Q/17 2Q/17 3Q/17 4Q/17

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
<b>Indicator value</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>

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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