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## North Anna 1 – Quarterly Performance Indicators

### 4Q/2017 Performance Indicators

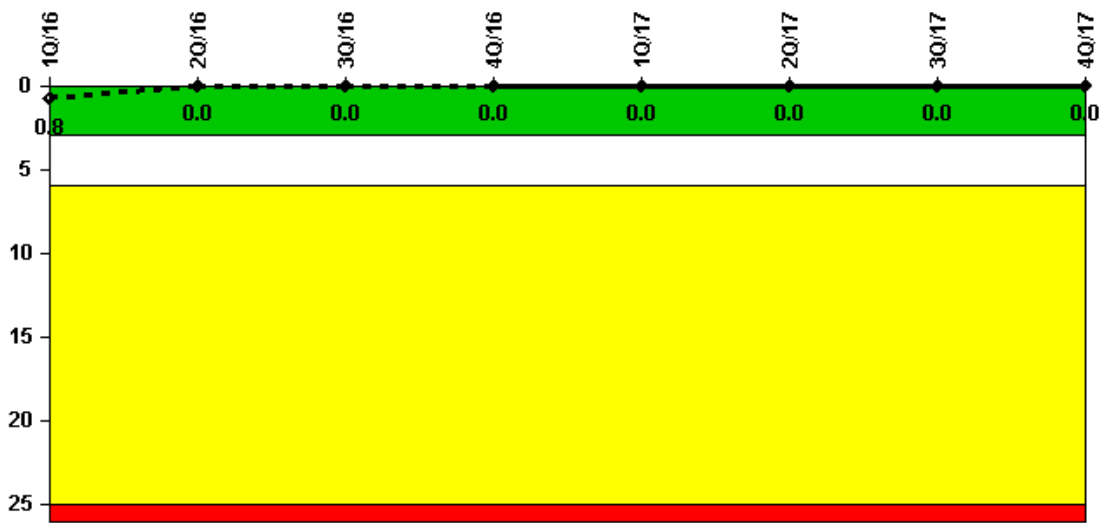
The solid trend line represents the current reporting period.

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

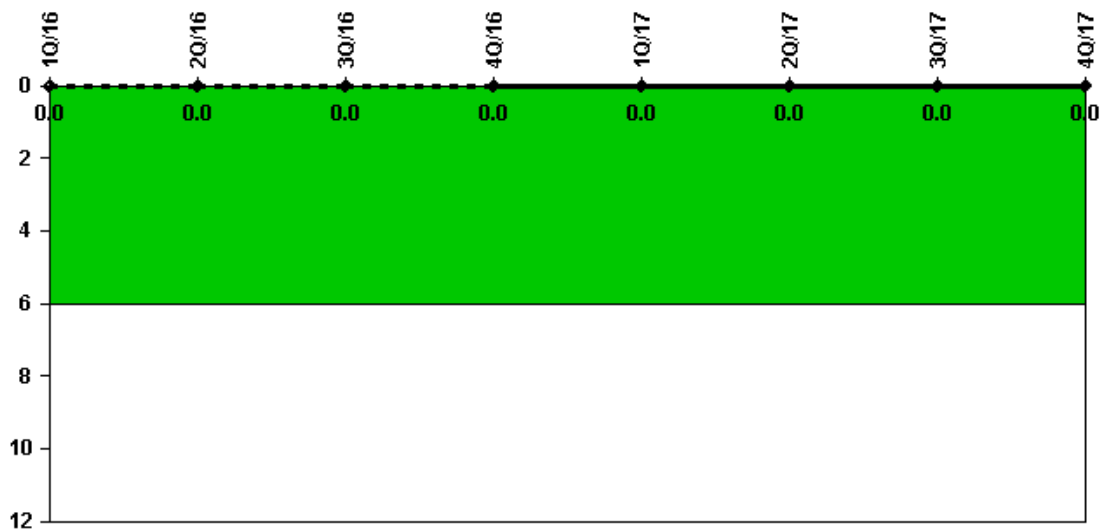
Unplanned Scrams per 7000 Critical Hrs	1Q/16	2Q/16	3Q/16	4Q/16	1Q/17	2Q/17	3Q/17	4Q/17
Unplanned scrams	0	0	0	0	0	0	0	0
Critical hours	2183.0	2184.0	1727.6	1847.5	2159.0	2184.0	2208.0	2209.0

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

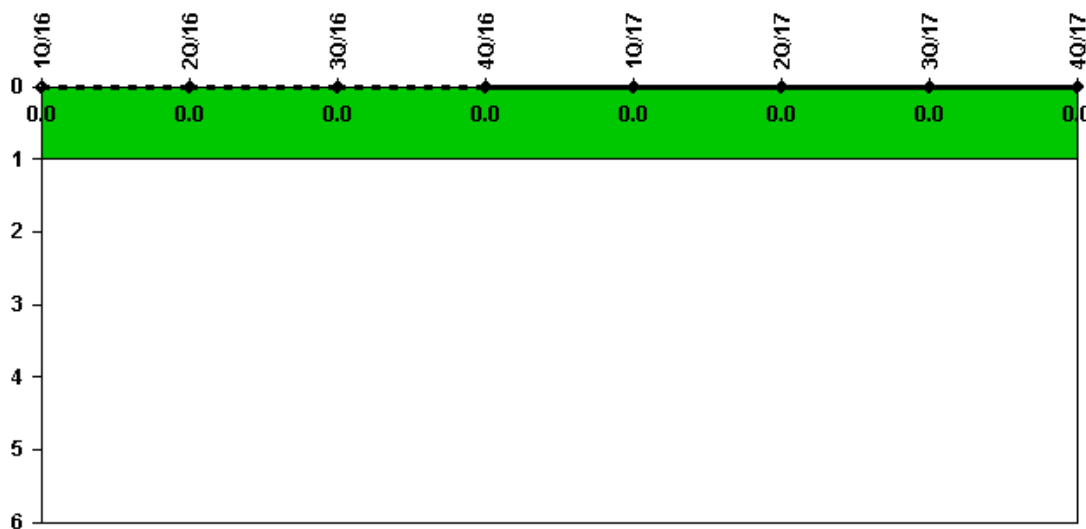
**Notes**

<b>Unplanned Power Changes per 7000 Critical Hrs</b>	<b>1Q/16</b>	<b>2Q/16</b>	<b>3Q/16</b>	<b>4Q/16</b>	<b>1Q/17</b>	<b>2Q/17</b>	<b>3Q/17</b>	<b>4Q/17</b>
Unplanned power changes	0	0	0	0	0	0	0	0
Critical hours	2183.0	2184.0	1727.6	1847.5	2159.0	2184.0	2208.0	2209.0
<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

**Unplanned Scrams with Complications**



Thresholds: White > 1.0

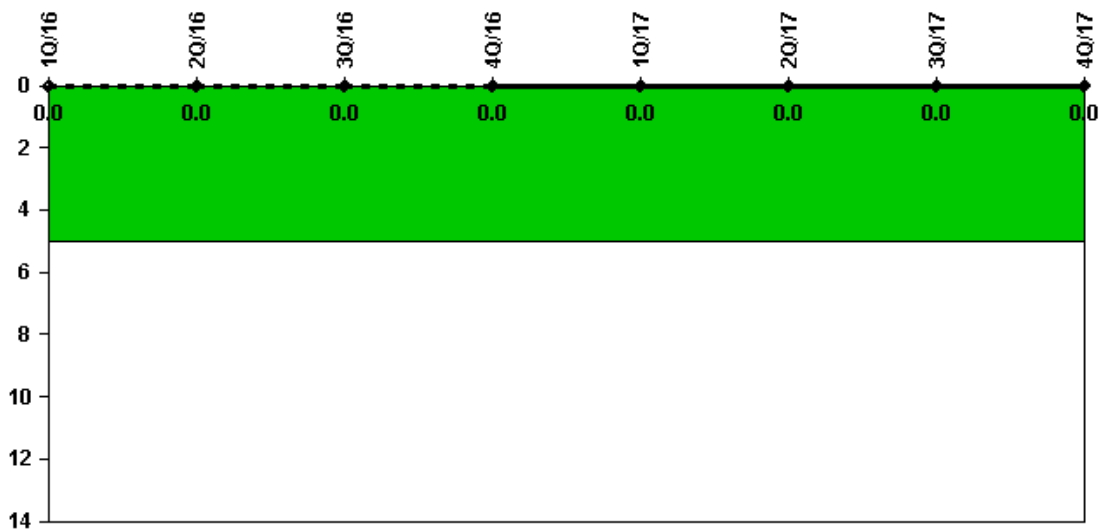
**Notes**

<b>Unplanned Scrams with Complications</b>	<b>1Q/16</b>	<b>2Q/16</b>	<b>3Q/16</b>	<b>4Q/16</b>	<b>1Q/17</b>	<b>2Q/17</b>	<b>3Q/17</b>	<b>4Q/17</b>
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

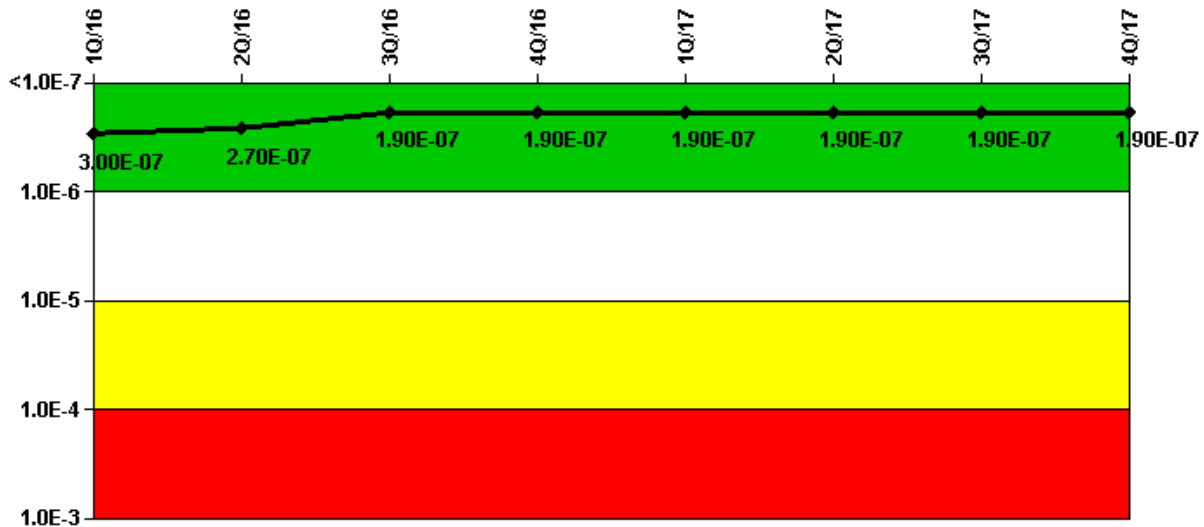
Safety System Functional Failures 0 0 0 0 0 0 0 0

Indicator value 0 0 0 0 0 0 0 0

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Licensee Comments: none

### 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)	-1.43E-08	-2.52E-08	-8.62E-09	-8.62E-09	-8.62E-09	-8.62E-09	-8.62E-09	-8.62E-09
URI (ΔCDF)	3.12E-07	2.98E-07	1.96E-07	1.96E-07	1.96E-07	1.98E-07	1.98E-07	1.98E-07
PLE	NO	NO	NO	NO	NO	NO	NO	NO
<b>Indicator value</b>	<b>3.00E-07</b>	<b>2.70E-07</b>	<b>1.90E-07</b>	<b>1.90E-07</b>	<b>1.90E-07</b>	<b>1.90E-07</b>	<b>1.90E-07</b>	<b>1.90E-07</b>

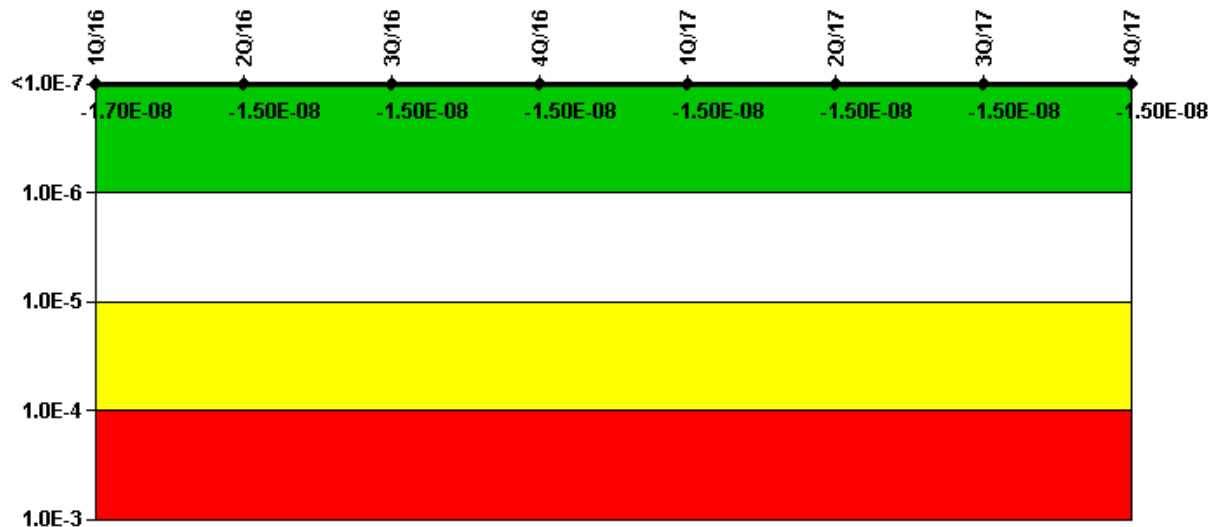
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Licensee Comments:

3Q/16: Changed PRA Parameter(s).

2Q/16: Risk Cap Invoked. Changed PRA Parameter(s).

**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)	-1.41E-09	-1.48E-09	-1.48E-09	-1.48E-09	-1.48E-09	-1.48E-09	-1.48E-09	-1.48E-09
URI (ΔCDF)	-1.59E-08	-1.31E-08	-1.34E-08	-1.37E-08	-1.37E-08	-1.37E-08	-1.37E-08	-1.37E-08
PLE	NO	NO	NO	NO	NO	NO	NO	NO
<b>Indicator value</b>	<b>-1.70E-08</b>	<b>-1.50E-08</b>	<b>-1.50E-08</b>	<b>-1.50E-08</b>	<b>-1.50E-08</b>	<b>-1.50E-08</b>	<b>-1.50E-08</b>	<b>-1.50E-08</b>

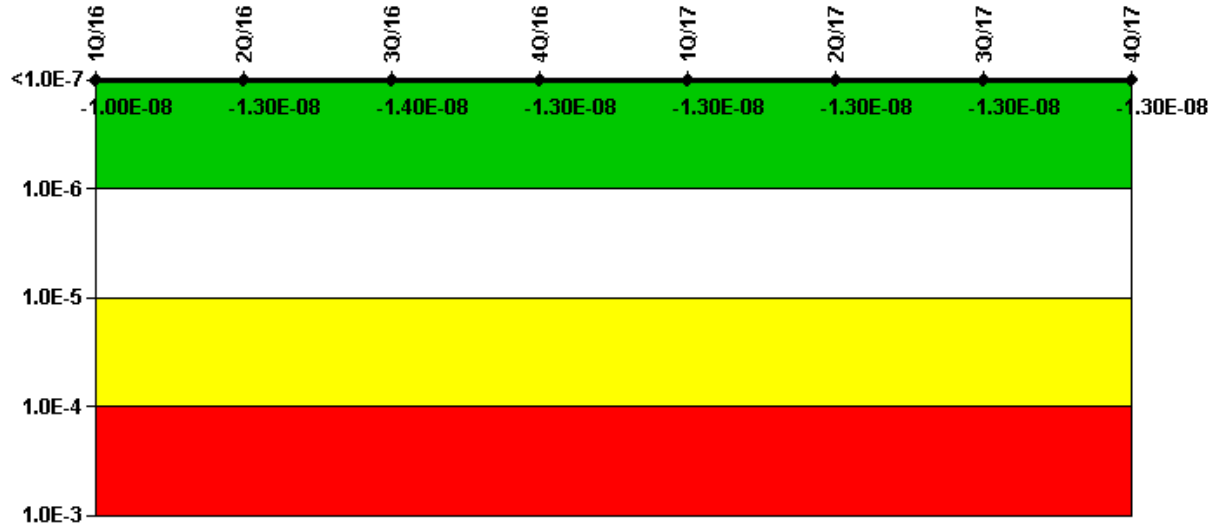
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Licensee Comments:

3Q/16: Changed PRA Parameter(s).

2Q/16: Changed PRA Parameter(s).

### 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)	-3.04E-09	-3.69E-09	-3.93E-09	-3.93E-09	-3.93E-09	-3.93E-09	-3.93E-09	-3.93E-09
URI (ΔCDF)	-7.36E-09	-9.01E-09	-9.67E-09	-9.24E-09	-9.24E-09	-9.24E-09	-9.24E-09	-9.24E-09
PLE	NO	NO	NO	NO	NO	NO	NO	NO
<b>Indicator value</b>	<b>-1.00E-08</b>	<b>-1.30E-08</b>	<b>-1.40E-08</b>	<b>-1.30E-08</b>	<b>-1.30E-08</b>	<b>-1.30E-08</b>	<b>-1.30E-08</b>	<b>-1.30E-08</b>

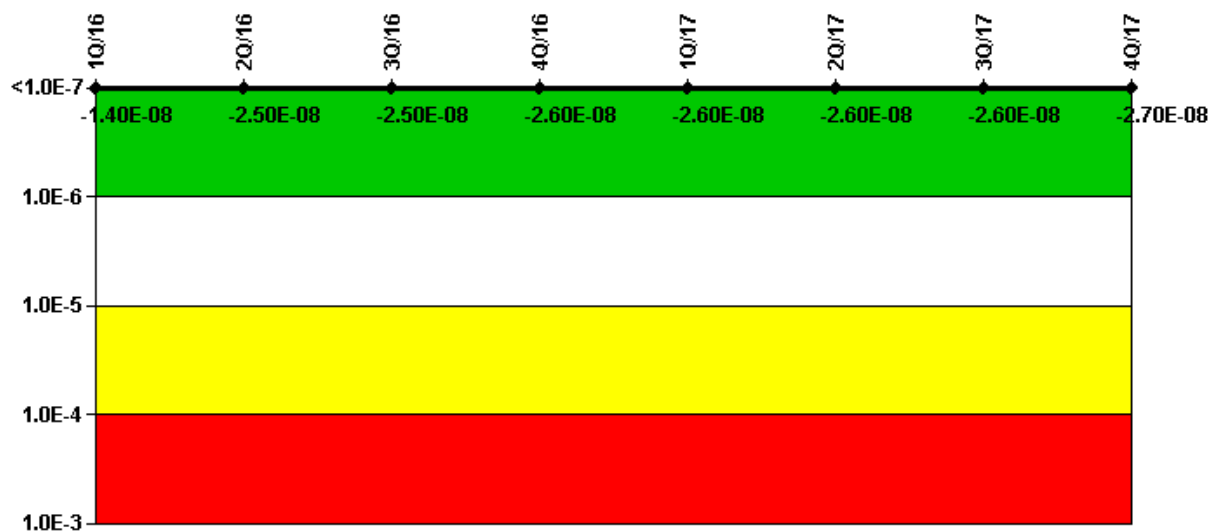
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Licensee Comments:

3Q/16: Changed PRA Parameter(s).

2Q/16: Changed PRA Parameter(s).

### 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)	-3.70E-09	-6.11E-09	-6.12E-09	-7.86E-09	-7.86E-09	-7.86E-09	-7.86E-09	-8.30E-09
URI ( $\Delta$ CDF)	-1.07E-08	-1.88E-08	-1.86E-08	-1.86E-08	-1.86E-08	-1.86E-08	-1.86E-08	-1.88E-08
PLE	NO	NO	NO	NO	NO	NO	NO	NO
<b>Indicator value</b>	<b>-1.40E-08</b>	<b>-2.50E-08</b>	<b>-2.50E-08</b>	<b>-2.60E-08</b>	<b>-2.60E-08</b>	<b>-2.60E-08</b>	<b>-2.60E-08</b>	<b>-2.70E-08</b>

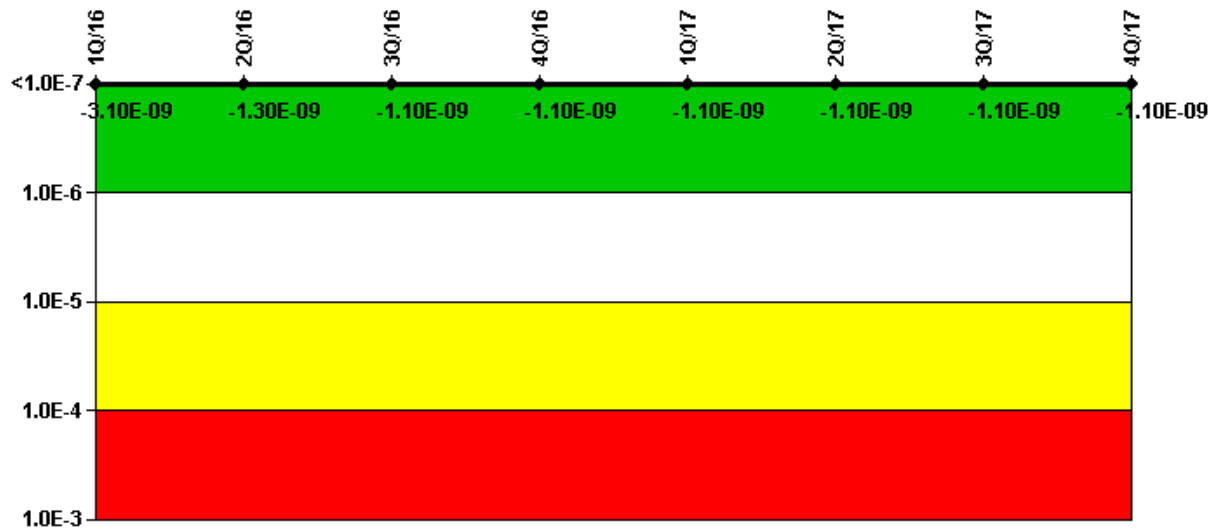
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Licensee Comments:

3Q/16: Changed PRA Parameter(s).

2Q/16: Changed PRA Parameter(s).

### 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 ( $\Delta$ CDF)	-3.74E-10	-7.07E-10	-7.11E-10	-7.11E-10	-7.11E-10	-7.11E-10	-7.11E-10	-7.11E-10
URI ( $\Delta$ CDF)	-2.71E-09	-6.09E-10	-3.79E-10	-3.79E-10	-3.79E-10	-3.78E-10	-3.78E-10	-3.79E-10
PLE	NO	NO	NO	NO	NO	NO	NO	NO
<b>Indicator value</b>	<b>-3.10E-09</b>	<b>-1.30E-09</b>	<b>-1.10E-09</b>	<b>-1.10E-09</b>	<b>-1.10E-09</b>	<b>-1.10E-09</b>	<b>-1.10E-09</b>	<b>-1.10E-09</b>

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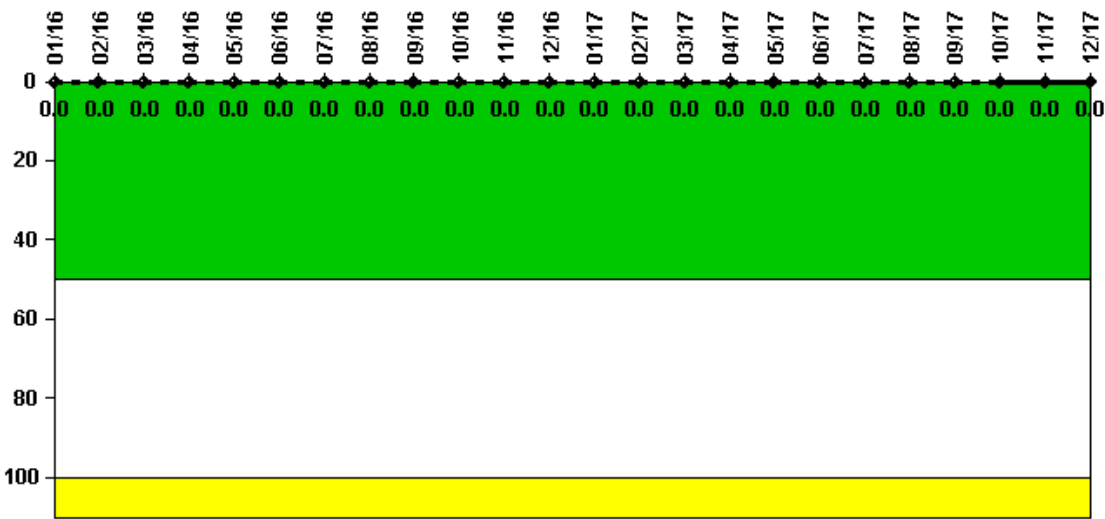
Licensee Comments:

3Q/16: Changed PRA Parameter(s).

2Q/16: Changed PRA Parameter(s).



### Reactor Coolant System Activity



Thresholds: White > 50.0 Yellow > 100.0

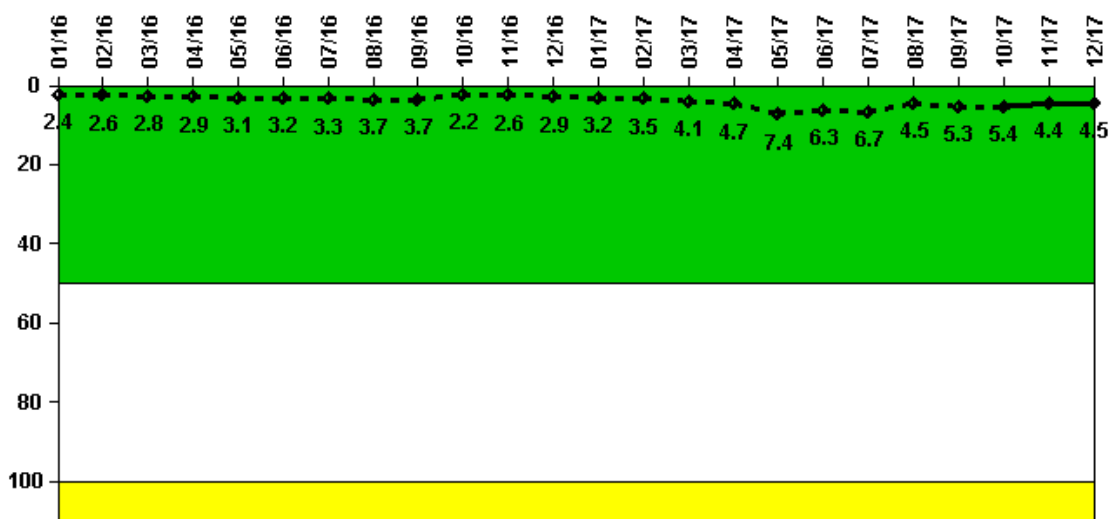
**Notes**

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	0.000214	0.000221	0.000227	0.000229	0.000249	0.000248	0.000476	0.000376	0.000261	0.000119	0.000132	0.000139
Technical specification limit	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
<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>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
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	0.000146	0.000158	0.000168	0.000178	0.000188	0.000187	0.000198	0.000207	0.000211	0.000210	0.000232	0.000229
Technical specification limit	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
<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>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>

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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	0.242	0.258	0.279	0.292	0.308	0.315	0.326	0.369	0.368	0.216	0.263	0.293
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

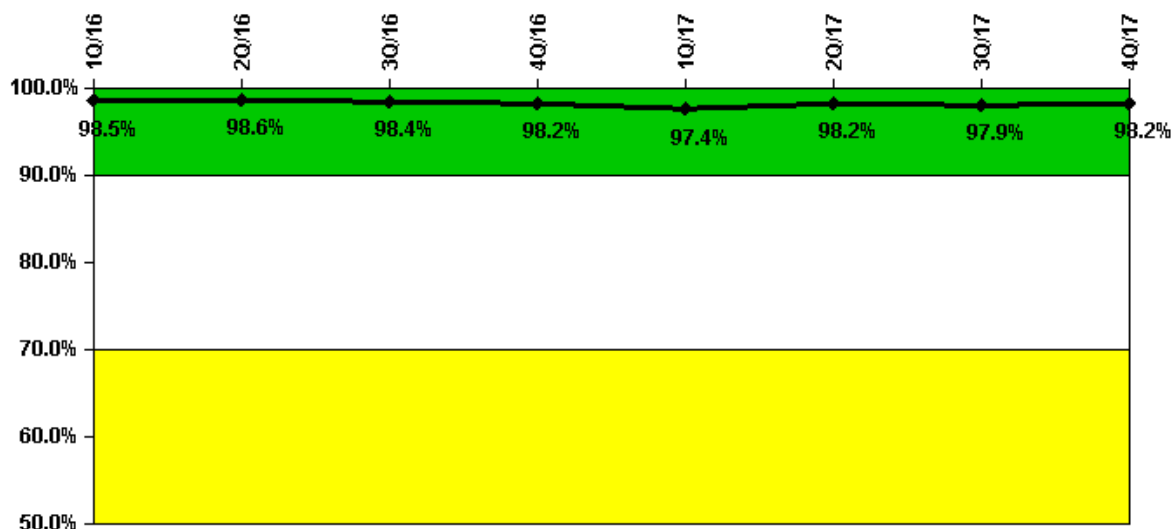
Indicator value	2.4	2.6	2.8	2.9	3.1	3.2	3.3	3.7	3.7	2.2	2.6	2.9
Reactor Coolant System Leakage	1/17	2/17	3/17	4/17	5/17	6/17	7/17	8/17	9/17	10/17	11/17	12/17
Maximum leakage	0.324	0.346	0.410	0.470	0.743	0.634	0.674	0.449	0.534	0.535	0.438	0.454
Technical specification limit	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0

Indicator value	3.2	3.5	4.1	4.7	7.4	6.3	6.7	4.5	5.3	5.4	4.4	4.5
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Licensee Comments: none

### Drill/Exercise Performance



Thresholds: White < 90.0% Yellow < 70.0%

#### Notes

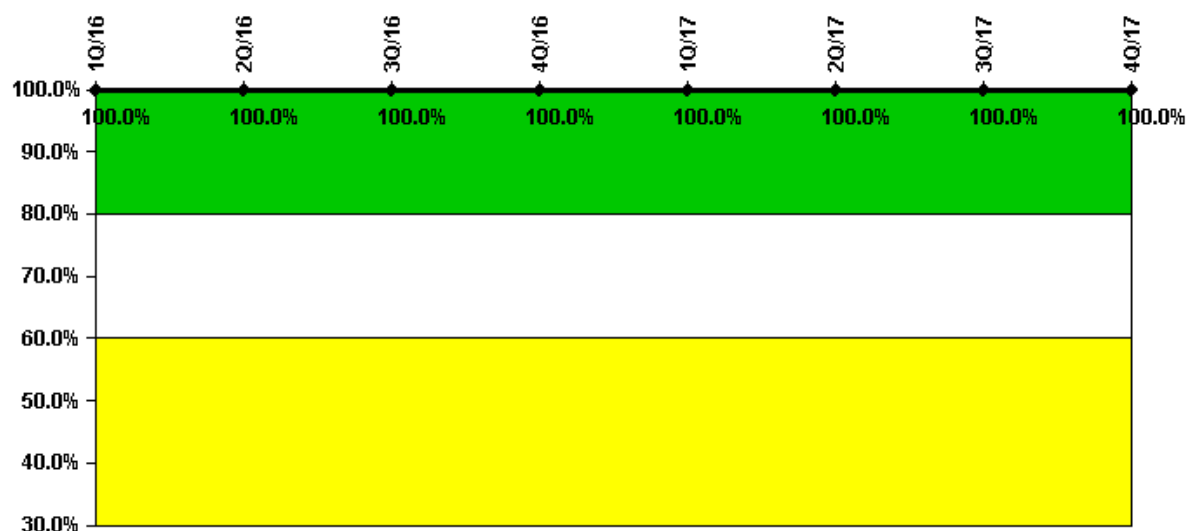
Drill/Exercise Performance	1Q/16	2Q/16	3Q/16	4Q/16	1Q/17	2Q/17	3Q/17	4Q/17
Successful opportunities	28.0	13.0	57.0	49.0	26.0	55.0	32.0	18.0
Total opportunities	28.0	13.0	57.0	50.0	29.0	55.0	32.0	19.0

**Indicator value**                    **98.5% 98.6% 98.4% 98.2% 97.4% 98.2% 97.9% 98.2%**

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Licensee Comments: none

### ERO Drill Participation



Thresholds: White < 80.0% Yellow < 60.0%

**Notes**

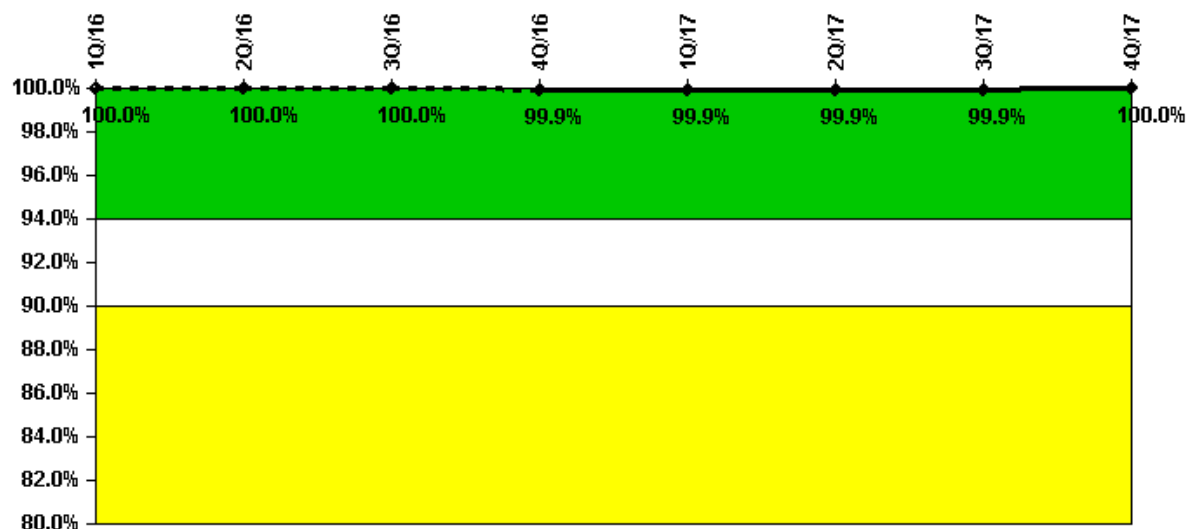
ERO Drill Participation	1Q/16	2Q/16	3Q/16	4Q/16	1Q/17	2Q/17	3Q/17	4Q/17
Participating Key personnel	164.0	161.0	160.0	164.0	168.0	164.0	166.0	164.0
Total Key personnel	164.0	161.0	160.0	164.0	168.0	164.0	166.0	164.0

**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**

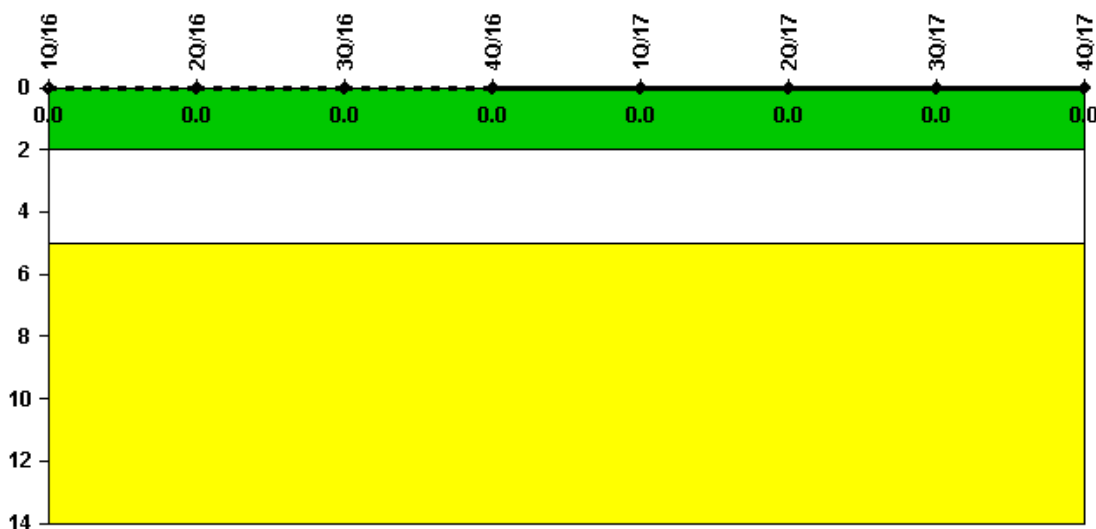
Alert & Notification System	1Q/16	2Q/16	3Q/16	4Q/16	1Q/17	2Q/17	3Q/17	4Q/17
Successful siren-tests	476	476	476	475	476	476	476	476
Total sirens-tests	476	476	476	476	476	476	476	476

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

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Licensee Comments: none

### Occupational Exposure Control Effectiveness



Thresholds: White > 2.0 Yellow > 5.0

**Notes**

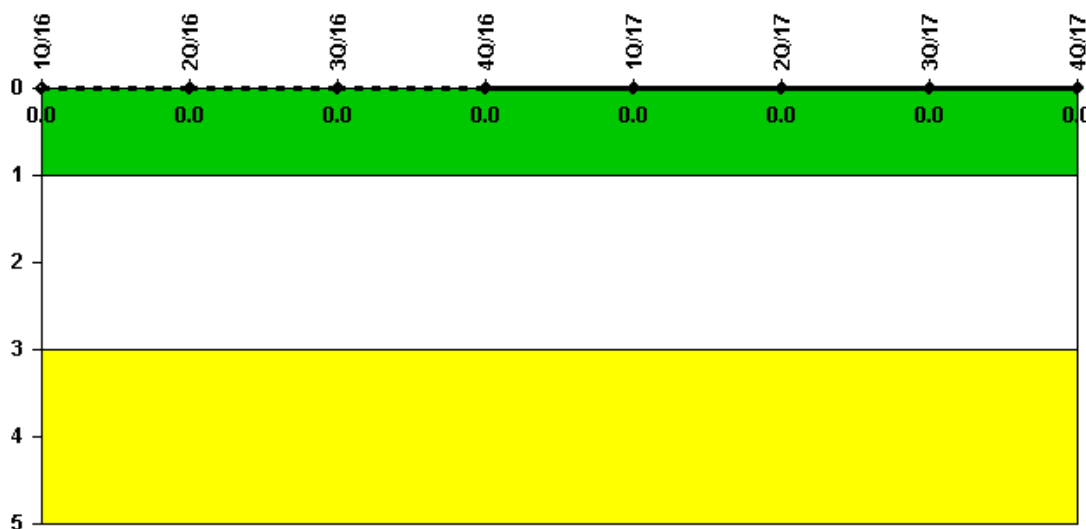
**Occupational Exposure Control Effectiveness** 1Q/16 2Q/16 3Q/16 4Q/16 1Q/17 2Q/17 3Q/17 4Q/17

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
<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*