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## Quad Cities 1 – Quarterly Performance Indicators

### 2Q/2017 Performance Indicators

The solid trend line represents the current reporting period.

Licensee's General Comments: none

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- 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)
- Alert and Notification System Reliability (EP03)
- Occupational Exposure Control Effectiveness (OR01)
- RETS/OCDM Radiological Effluent Occurrence (PR01)
- Protected Area Equipment (PP01)



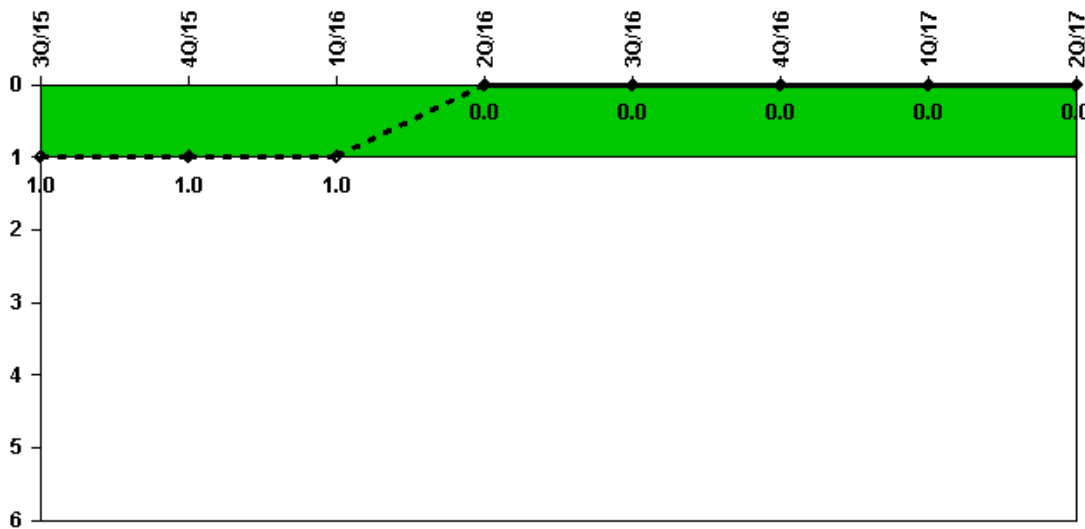
**Notes**

Unplanned Power Changes per 7000 Critical Hrs	3Q/15	4Q/15	1Q/16	2Q/16	3Q/16	4Q/16	1Q/17	2Q/17
Unplanned power changes	0	0	0	0	0	0	0	0
Critical hours	2208.0	2209.0	2183.0	2184.0	2208.0	2209.0	2040.4	1873.4
<b>Indicator value</b>	<b>0.9</b>	<b>0.9</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

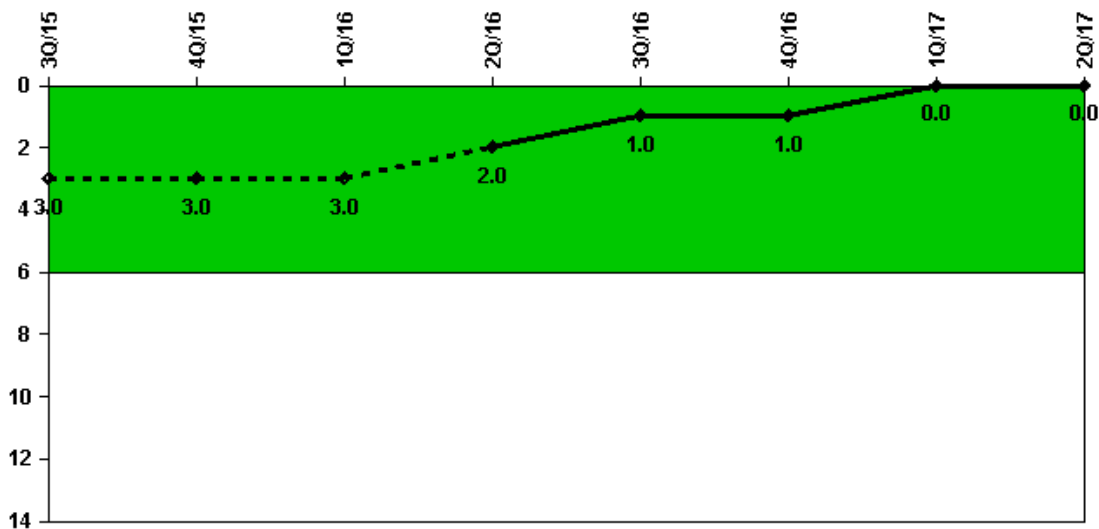
**Notes**

Unplanned Scrams with Complications	3Q/15	4Q/15	1Q/16	2Q/16	3Q/16	4Q/16	1Q/17	2Q/17
Scrams with complications	0	0	0	0	0	0	0	0
<b>Indicator value</b>	<b>1.0</b>	<b>1.0</b>	<b>1.0</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 (BWR)



Thresholds: White > 6.0

#### Notes

Safety System Functional Failures (BWR) 3Q/15 4Q/15 1Q/16 2Q/16 3Q/16 4Q/16 1Q/17 2Q/17

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

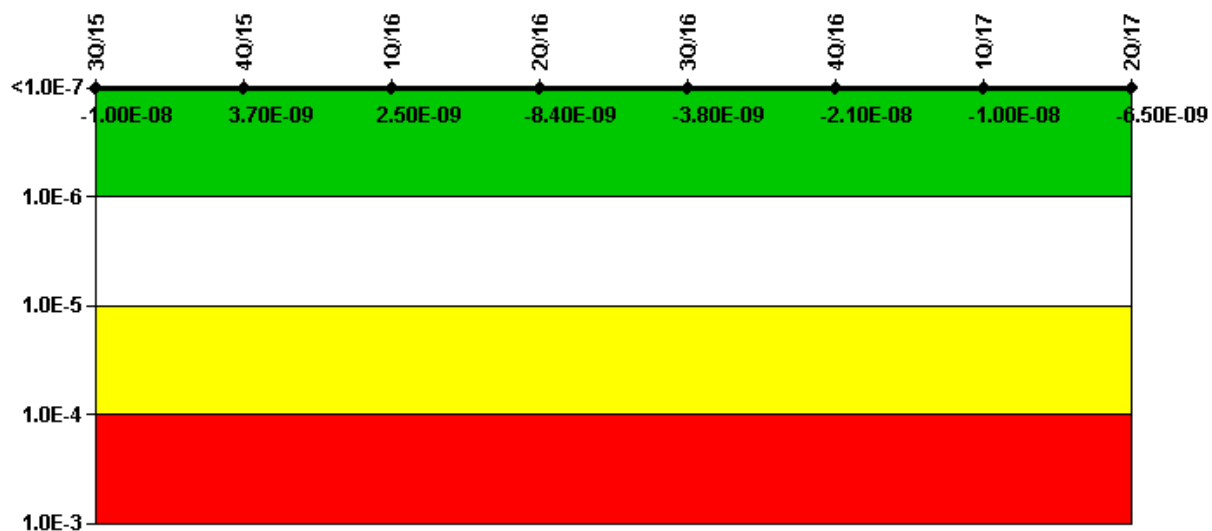
Indicator value 3 3 3 2 1 1 0 0

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Licensee Comments:

1Q/16: LER 254/2015-010-00, Loss of Control Room Emergency Ventilation System Due to Differential Pressure Switch Failure  
 3Q/15: LER 254/2015-009-00, Loss of Control Room Emergency Ventilation System Due to Air Filtration Unit Damper Failure (affects Units 1 and 2)

### 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

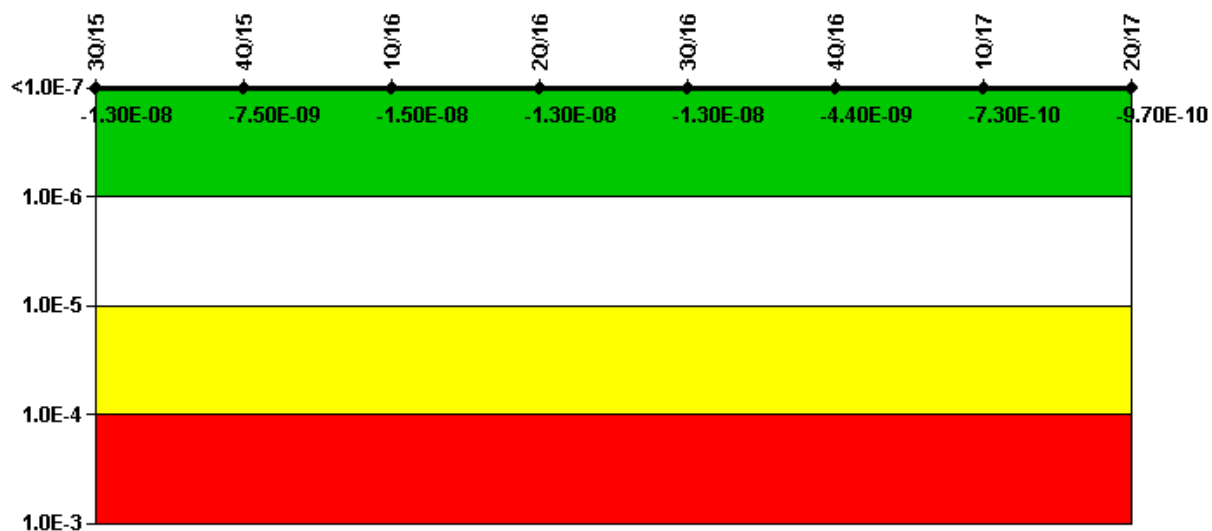
	3Q/15	4Q/15	1Q/16	2Q/16	3Q/16	4Q/16	1Q/17	2Q/17
UAI ( $\Delta$ CDF)	5.97E-08	7.42E-08	6.83E-08	5.76E-08	6.16E-08	4.75E-08	5.82E-08	6.20E-08
URI ( $\Delta$ CDF)	-7.02E-08	-7.05E-08	-6.59E-08	-6.60E-08	-6.54E-08	-6.82E-08	-6.86E-08	-6.85E-08
PLE	NO	NO	NO	NO	NO	NO	NO	NO
Indicator value	-1.00E-08	3.70E-09	2.50E-09	-8.40E-09	-3.80E-09	-2.10E-08	-1.00E-08	-6.50E-09

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Licensee Comments:

4Q/15: November data corrected

### 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

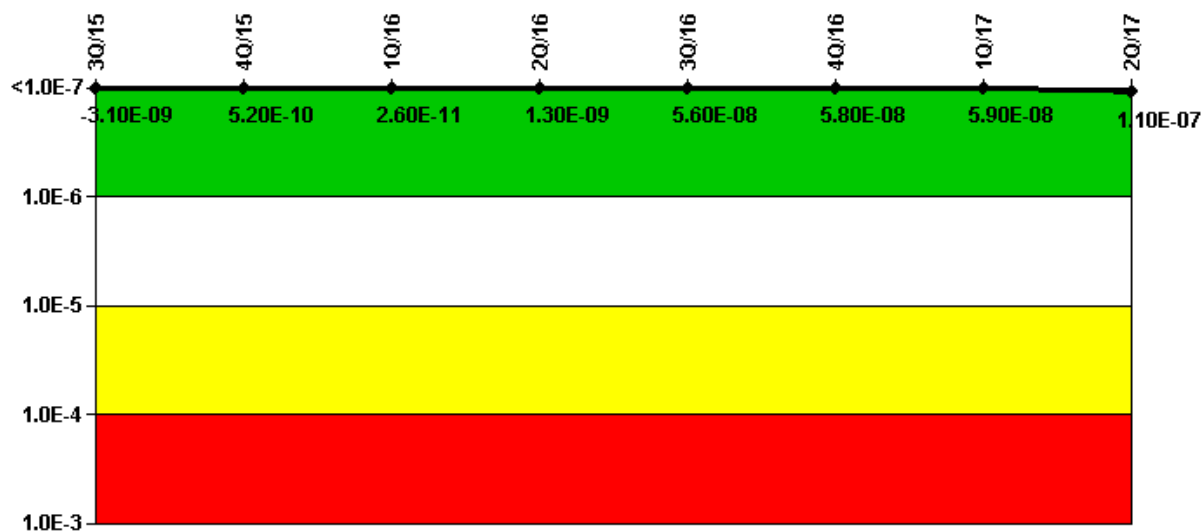
	3Q/15	4Q/15	1Q/16	2Q/16	3Q/16	4Q/16	1Q/17	2Q/17
UAI ( $\Delta$ CDF)	6.63E-09	1.18E-08	5.18E-09	5.17E-09	5.39E-09	1.35E-08	1.72E-08	1.84E-08
URI ( $\Delta$ CDF)	-1.94E-08	-1.94E-08	-2.01E-08	-1.79E-08	-1.79E-08	-1.79E-08	-1.79E-08	-1.94E-08
PLE	NO	NO	NO	NO	NO	NO	NO	NO
<b>Indicator value</b>	<b>-1.30E-08</b>	<b>-7.50E-09</b>	<b>-1.50E-08</b>	<b>-1.30E-08</b>	<b>-1.30E-08</b>	<b>-4.40E-09</b>	<b>-7.30E-10</b>	<b>-9.70E-10</b>

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Licensee Comments:

4Q/15: November data corrected.

### 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

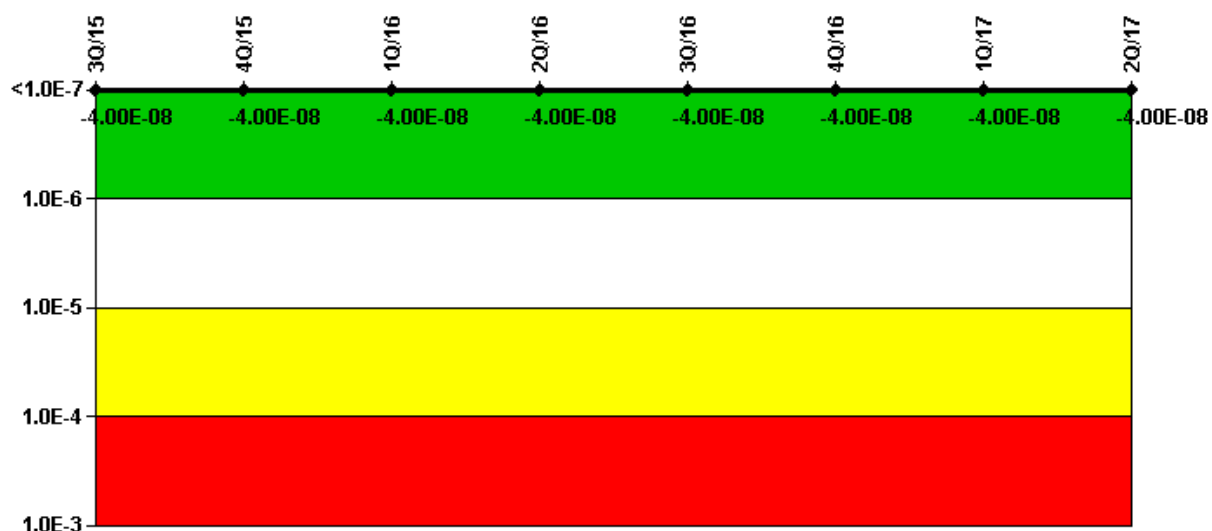
	3Q/15	4Q/15	1Q/16	2Q/16	3Q/16	4Q/16	1Q/17	2Q/17
UAI ( $\Delta$ CDF)	-1.84E-09	1.75E-09	1.25E-09	1.99E-09	3.66E-09	4.77E-09	6.71E-09	1.09E-08
URI ( $\Delta$ CDF)	-1.22E-09	-1.22E-09	-1.22E-09	-7.28E-10	5.28E-08	5.28E-08	5.28E-08	9.96E-08
PLE	NO	NO	NO	NO	NO	NO	NO	NO
<b>Indicator value</b>	<b>-3.10E-09</b>	<b>5.20E-10</b>	<b>2.60E-11</b>	<b>1.30E-09</b>	<b>5.60E-08</b>	<b>5.80E-08</b>	<b>5.90E-08</b>	<b>1.10E-07</b>

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Licensee Comments:

3Q/16: July - Reference IR 02696095 (U-1 RCIC FIC, WO 01941037)

### 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**

	3Q/15	4Q/15	1Q/16	2Q/16	3Q/16	4Q/16	1Q/17	2Q/17
UAI ( $\Delta$ CDF)	-1.35E-08	-1.35E-08	-1.35E-08	-1.35E-08	-1.35E-08	-1.35E-08	-1.35E-08	-1.35E-08
URI ( $\Delta$ CDF)	-2.65E-08	-2.65E-08	-2.65E-08	-2.65E-08	-2.65E-08	-2.65E-08	-2.65E-08	-2.65E-08
PLE	NO	NO	NO	NO	NO	NO	NO	NO
<b>Indicator value</b>	<b>-4.00E-08</b>	<b>-4.00E-08</b>	<b>-4.00E-08</b>	<b>-4.00E-08</b>	<b>-4.00E-08</b>	<b>-4.00E-08</b>	<b>-4.00E-08</b>	<b>-4.00E-08</b>

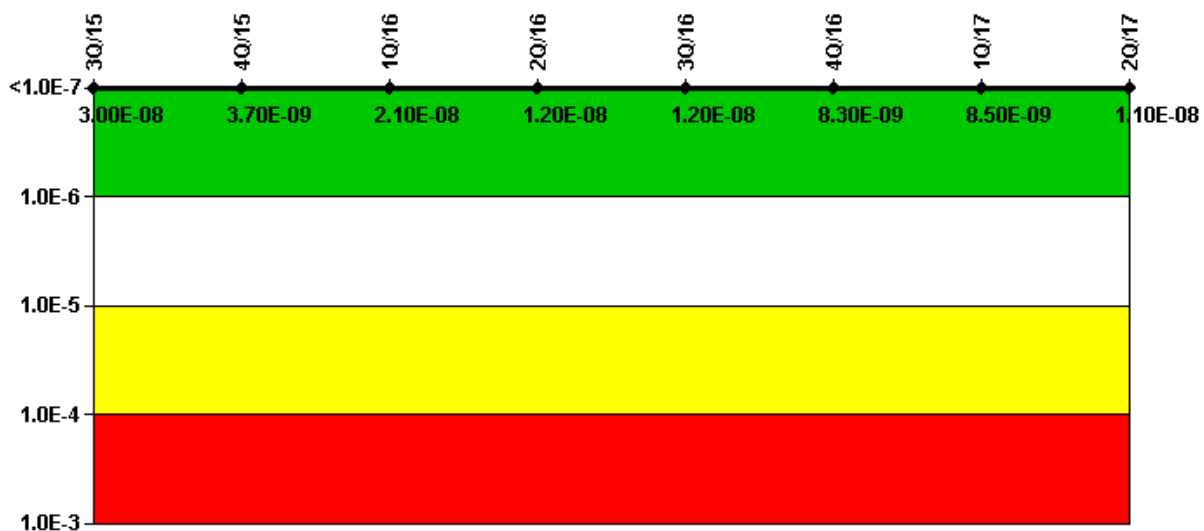
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Licensee Comments:

3Q/16: 1B HRH Seal Cooler 7/27/2016 04:00 - 7/28/2016 20:15



### 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**

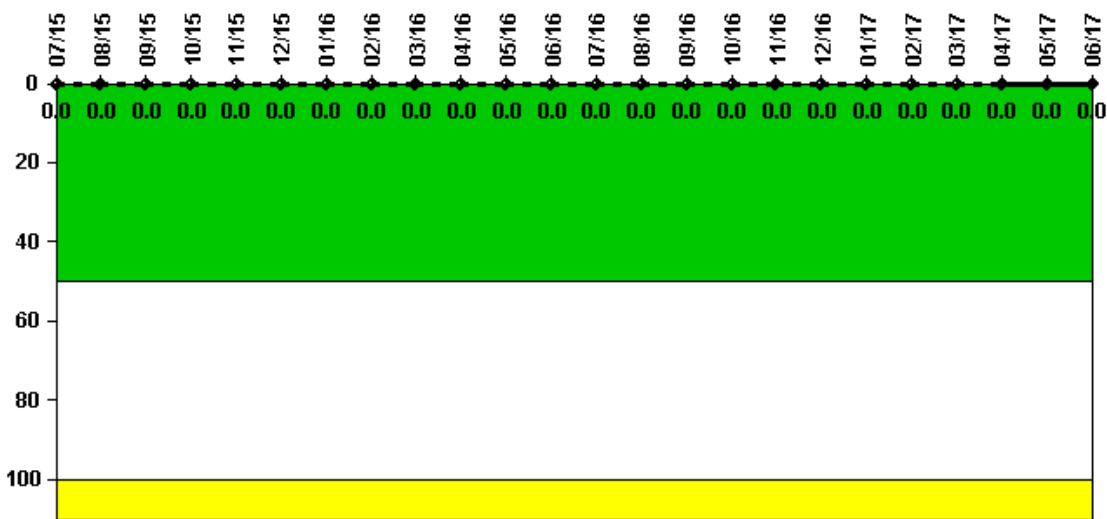
	3Q/15	4Q/15	1Q/16	2Q/16	3Q/16	4Q/16	1Q/17	2Q/17
UAI (ΔCDF)	3.01E-08	3.84E-09	2.13E-08	1.25E-08	1.25E-08	8.45E-09	8.59E-09	1.13E-08
URI (ΔCDF)	-1.39E-10	-1.39E-10	-1.39E-10	-1.39E-10	-1.39E-10	-1.39E-10	-1.39E-10	-1.39E-10
PLE	NO	NO	NO	NO	NO	NO	NO	NO

**Indicator value** 3.00E-08 3.70E-09 2.10E-08 1.20E-08 1.20E-08 8.30E-09 8.50E-09 1.10E-08

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Licensee Comments: none

### Reactor Coolant System Activity



Thresholds: White > 50.0 Yellow > 100.0

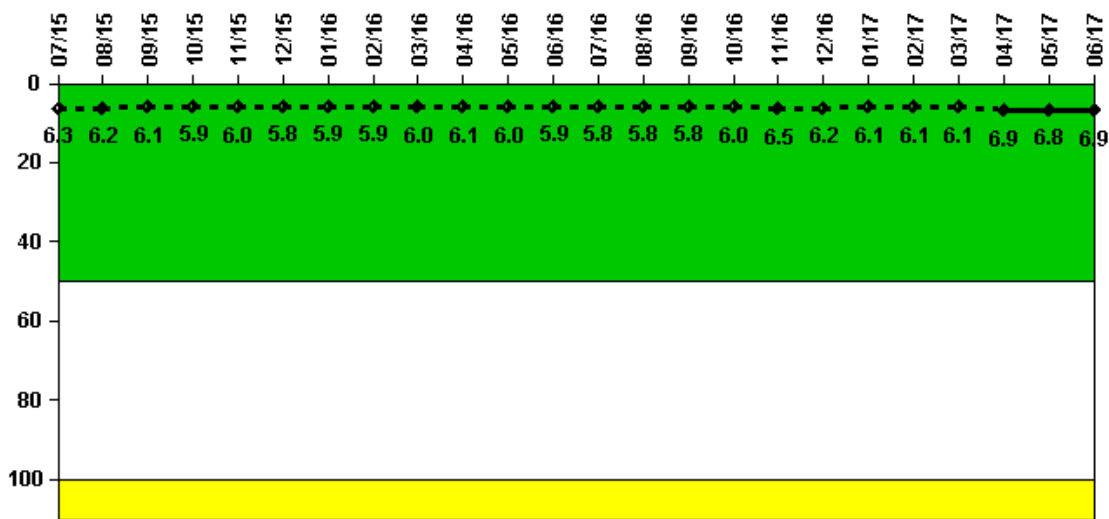
**Notes**

Reactor Coolant System Activity	7/15	8/15	9/15	10/15	11/15	12/15	1/16	2/16	3/16	4/16	5/16	6/16
Maximum activity	0.000032	0.000054	0.000043	0.000036	0.000041	0.000043	0.000046	0.000040	0.000047	0.000049	0.000067	0.000068
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
<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	7/16	8/16	9/16	10/16	11/16	12/16	1/17	2/17	3/17	4/17	5/17	6/17
Maximum activity	0.000040	0.000068	0.000055	0.000052	0.000055	0.000052	0.000054	0.000063	0.000067	0.000016	0.000019	0.000021
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
<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	7/15	8/15	9/15	10/15	11/15	12/15	1/16	2/16	3/16	4/16	5/16	6/16
Maximum leakage	1.585	1.556	1.517	1.476	1.506	1.455	1.465	1.478	1.490	1.521	1.495	1.474
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

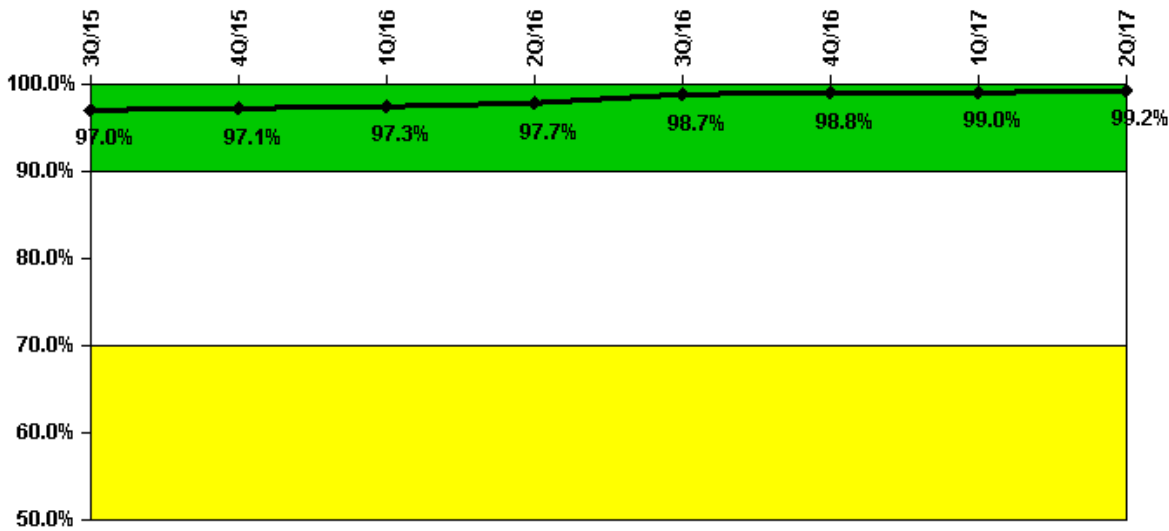
Indicator value	6.3	6.2	6.1	5.9	6.0	5.8	5.9	5.9	6.0	6.1	6.0	5.9
Reactor Coolant System Leakage	7/16	8/16	9/16	10/16	11/16	12/16	1/17	2/17	3/17	4/17	5/17	6/17
Maximum leakage	1.459	1.459	1.452	1.501	1.619	1.542	1.526	1.537	1.516	1.719	1.710	1.722
Technical specification limit	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0

Indicator value	5.8	5.8	5.8	6.0	6.5	6.2	6.1	6.1	6.1	6.9	6.8	6.9
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Licensee Comments: none

### Drill/Exercise Performance



Thresholds: White < 90.0% Yellow < 70.0%

#### Notes

Drill/Exercise Performance	3Q/15	4Q/15	1Q/16	2Q/16	3Q/16	4Q/16	1Q/17	2Q/17
Successful opportunities	25.0	33.0	35.0	70.0	34.0	42.0	92.0	37.0
Total opportunities	26.0	33.0	35.0	70.0	36.0	42.0	92.0	37.0

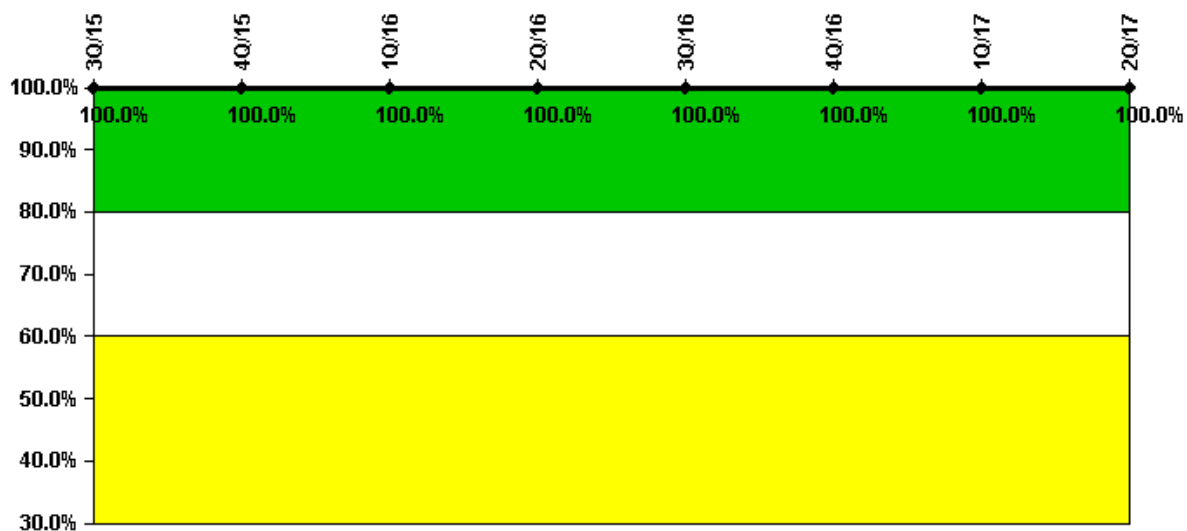
**Indicator value**                    **97.0% 97.1% 97.3% 97.7% 98.7% 98.8% 99.0% 99.2%**

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Licensee Comments:

3Q/15: 2015-09 changed successful drills from 13 to 17 and changed total drills from 14 to 18.

### ERO Drill Participation



Thresholds: White < 80.0% Yellow < 60.0%

**Notes**

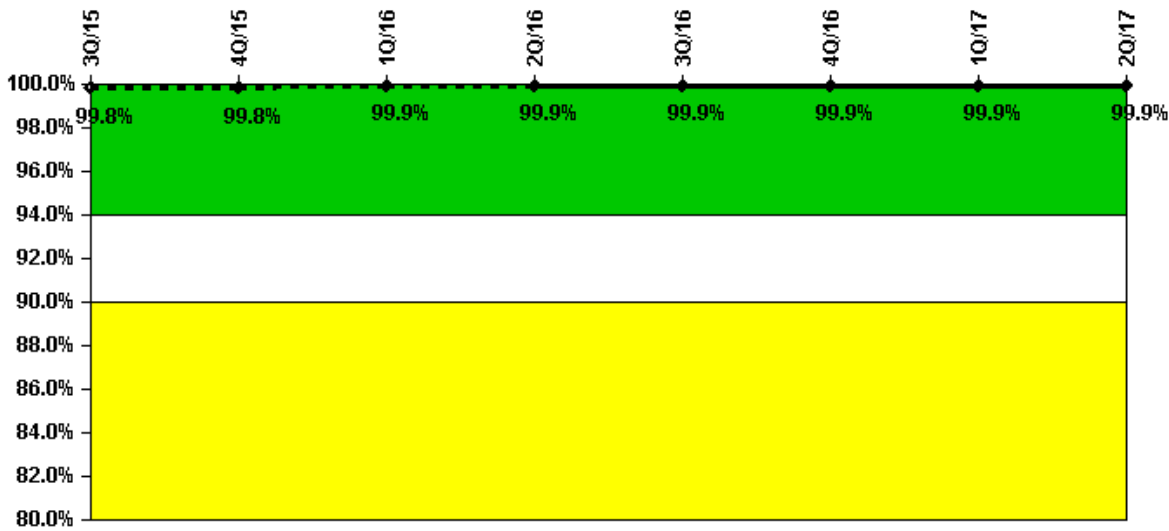
ERO Drill Participation	3Q/15	4Q/15	1Q/16	2Q/16	3Q/16	4Q/16	1Q/17	2Q/17
Participating Key personnel	72.0	73.0	74.0	76.0	85.0	86.0	87.0	85.0
Total Key personnel	72.0	73.0	74.0	76.0	85.0	86.0	87.0	85.0

**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**

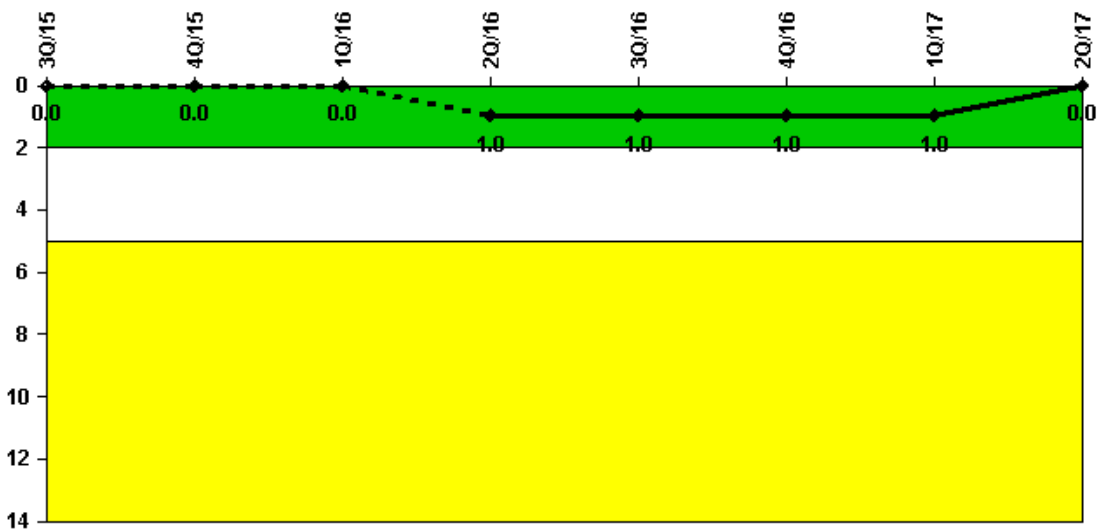
Alert & Notification System	3Q/15	4Q/15	1Q/16	2Q/16	3Q/16	4Q/16	1Q/17	2Q/17
Successful siren-tests	2725	2686	2687	2687	2682	2604	2729	2686
Total sirens-tests	2730	2688	2688	2688	2688	2604	2730	2688

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

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Licensee Comments: none

### Occupational Exposure Control Effectiveness



Thresholds: White > 2.0 Yellow > 5.0

**Notes**

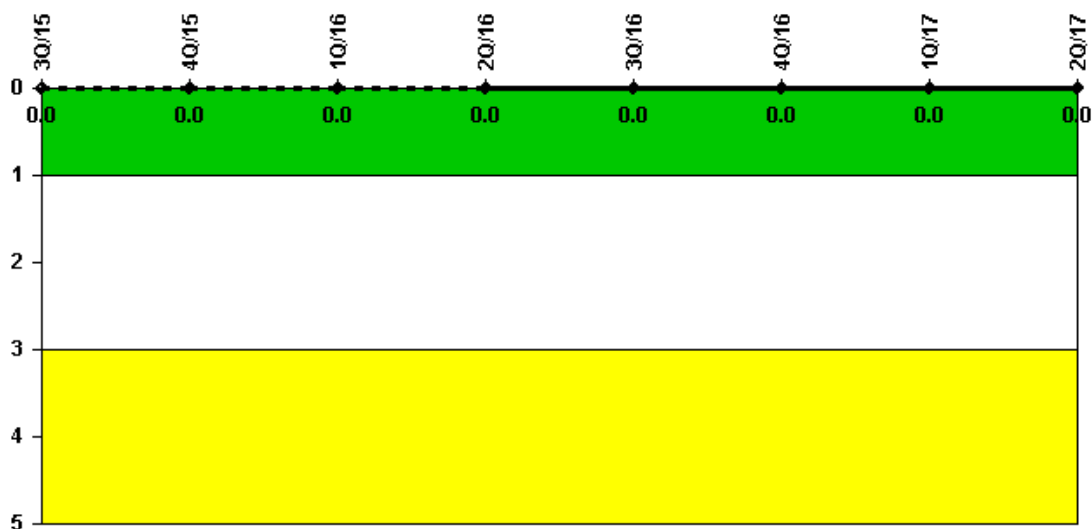
**Occupational Exposure Control Effectiveness** 3Q/15 4Q/15 1Q/16 2Q/16 3Q/16 4Q/16 1Q/17 2Q/17

High radiation area occurrences	0	0	0	1	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>1</b>	<b>1</b>	<b>1</b>	<b>1</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** 3Q/15 4Q/15 1Q/16 2Q/16 3Q/16 4Q/16 1Q/17 2Q/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: July 26, 2017*

*Page Last Reviewed/Updated Wednesday, June 07, 2017*