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## **Quad Cities 2 – Quarterly Performance Indicators**

### **1Q/2017 Performance Indicators**

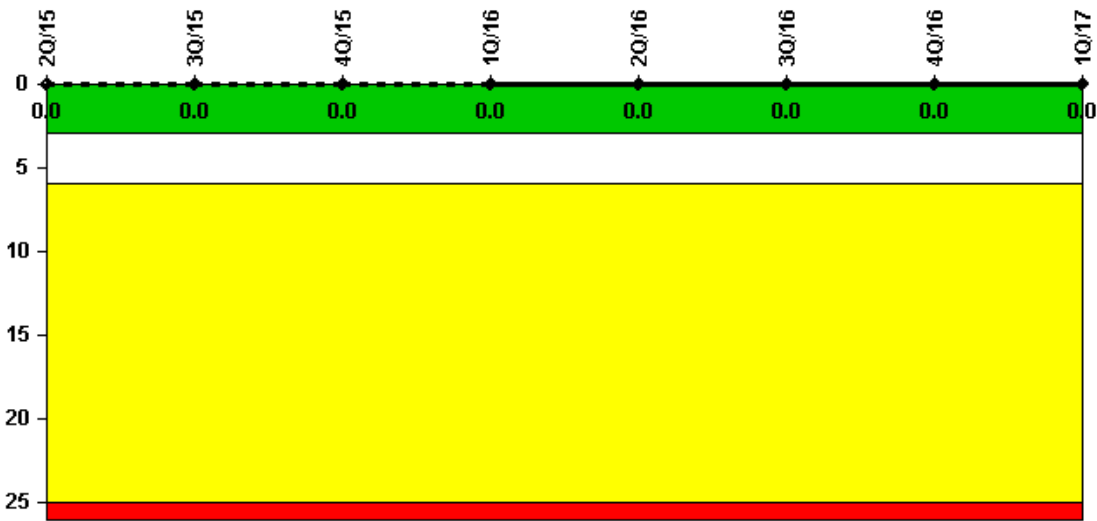
The solid trend line represents the current reporting period.

Licensee's General Comments: none

On this page:

- Unplanned Scrams (IE01)
- Unplanned Power Changes per 7000 Critical Hours (IE03)
- Unplanned Scrams with Complications (IE04)
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- Residual Heat Removal Systems (MS09)
- Cooling Water Systems (MS10)
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- Reactor Coolant System Leakage (BI02)
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- Emergency Response Organization Drill Participation (EP02)
- Alert and Notification System Reliability (EP03)
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- Protected Area Equipment (PP01)

### Unplanned Scrams per 7000 Critical Hrs



Thresholds: White > 3.0 Yellow > 6.0 Red > 25.0

#### Notes

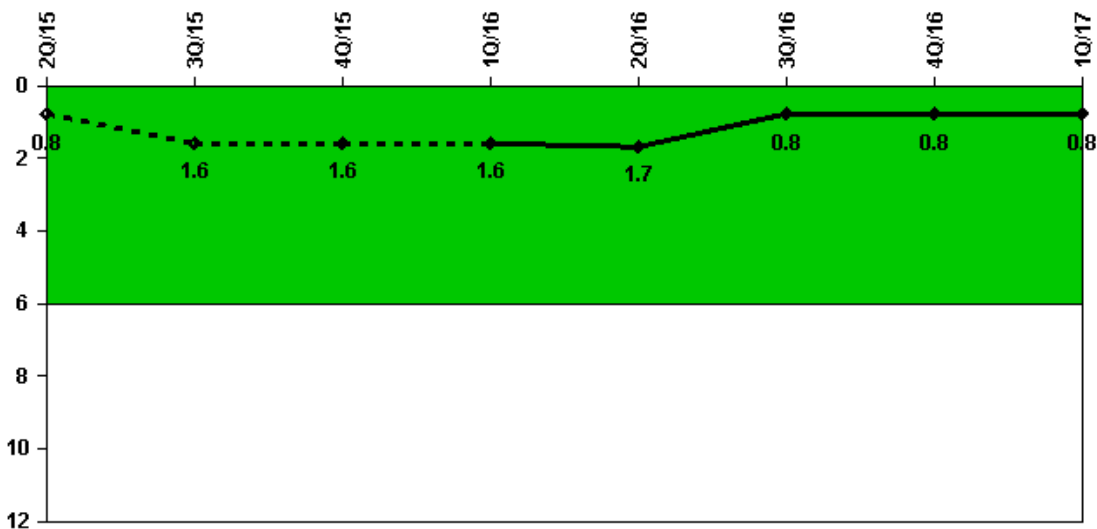
Unplanned Scrams per 7000 Critical Hrs	2Q/15	3Q/15	4Q/15	1Q/16	2Q/16	3Q/16	4Q/16	1Q/17
Unplanned scrams	0	0	0	0	0	0	0	0
Critical hours	2184.0	2208.0	2209.0	1919.9	2032.3	2208.0	2209.0	2159.0

Indicator value	0	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**

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	1.0	1.0	0	0	1.0	0	0	0
Critical hours	2184.0	2208.0	2209.0	1919.9	2032.3	2208.0	2209.0	2159.0

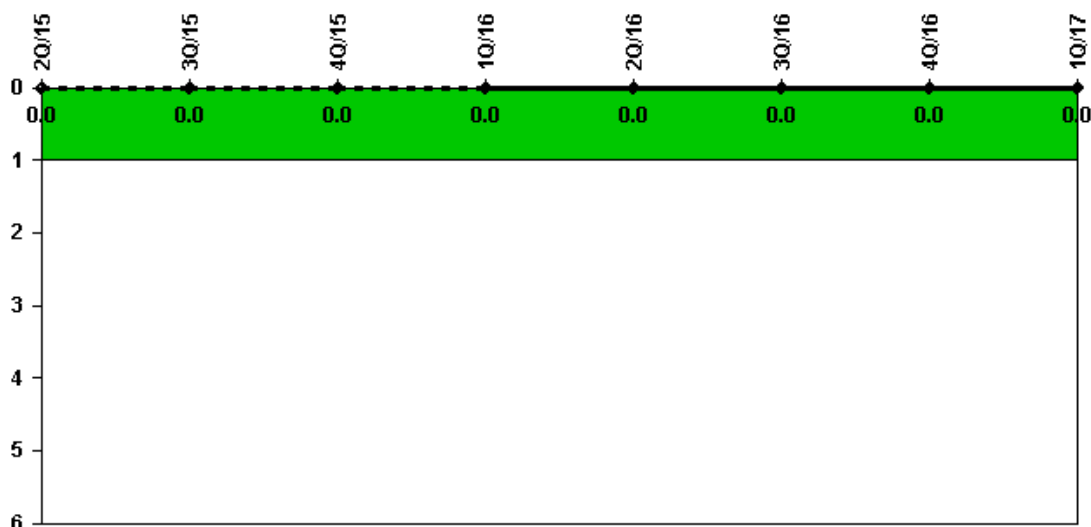
<b>Indicator value</b>	<b>0.8</b>	<b>1.6</b>	<b>1.6</b>	<b>1.6</b>	<b>1.7</b>	<b>0.8</b>	<b>0.8</b>	<b>0.8</b>
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Licensee Comments:

3Q/15: U-2 Recirculation Pump trip greater than 20%

**Unplanned Scrams with Complications**



Thresholds: White > 1.0

**Notes**

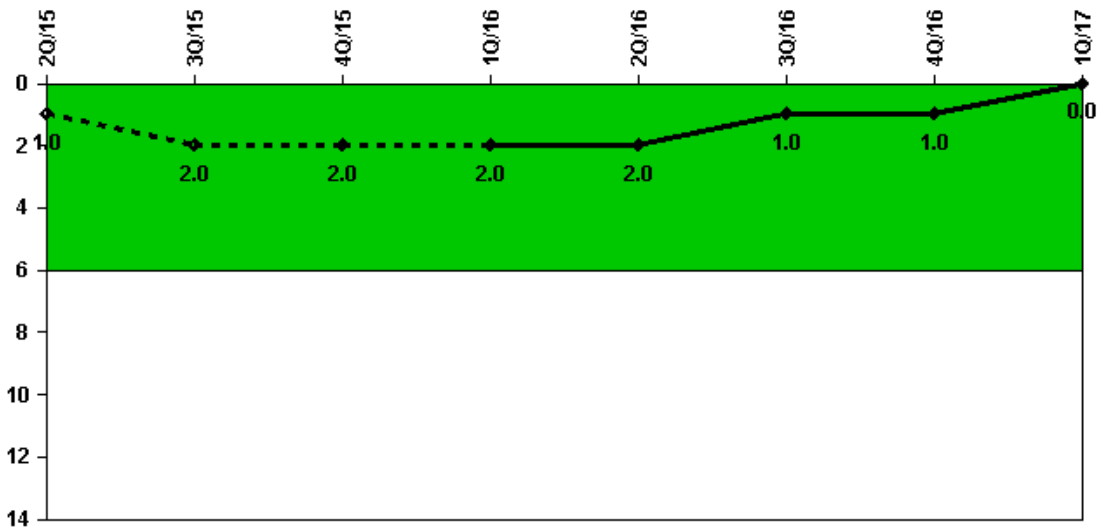
Unplanned Scrams with Complications	2Q/15	3Q/15	4Q/15	1Q/16	2Q/16	3Q/16	4Q/16	1Q/17
Scrams with complications	0	0	0	0	0	0	0	0

<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 (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 0 1 0 1 0 0 0 0

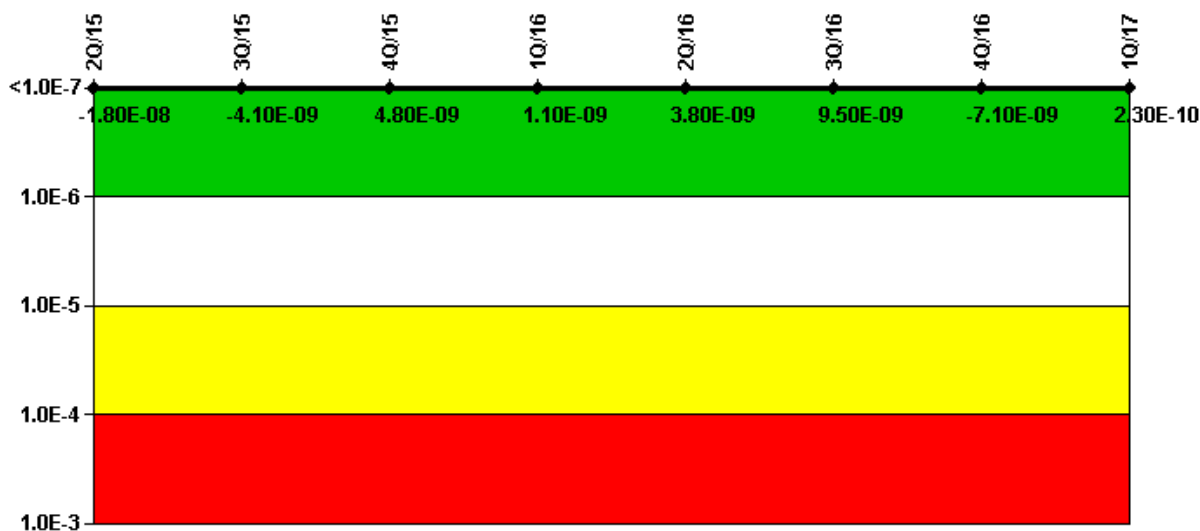
Indicator value 1 2 2 2 2 1 1 0

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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**

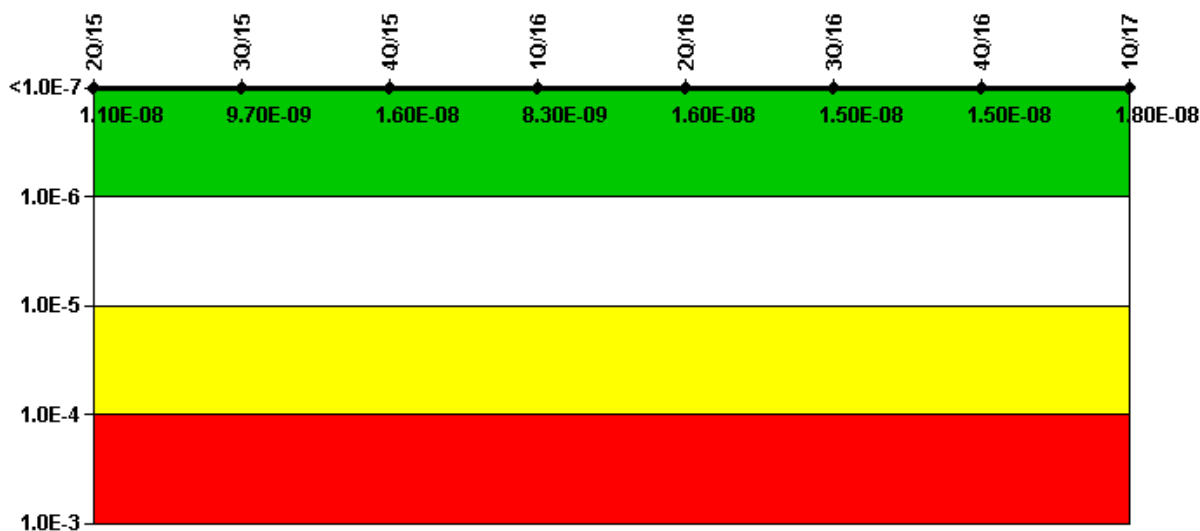
	2Q/15	3Q/15	4Q/15	1Q/16	2Q/16	3Q/16	4Q/16	1Q/17
UAI (ΔCDF)	5.00E-08	6.37E-08	7.35E-08	6.75E-08	7.24E-08	7.76E-08	6.18E-08	6.93E-08
URI (ΔCDF)	-6.81E-08	-6.78E-08	-6.86E-08	-6.64E-08	-6.86E-08	-6.81E-08	-6.89E-08	-6.91E-08
PLE	NO	NO	NO	NO	NO	NO	NO	NO
<b>Indicator value</b>	<b>-1.80E-08</b>	<b>-4.10E-09</b>	<b>4.80E-09</b>	<b>1.10E-09</b>	<b>3.80E-09</b>	<b>9.50E-09</b>	<b>-7.10E-09</b>	<b>2.30E-10</b>

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Licensee Comments:

3Q/16: Planned Unavailable Hours 1/2 -6601 Planned maintenance windows on the Unit 1 and Unit 1/2 EDGs and supporting systems. Speed Switch replacement on Unit 1/2.  
 4Q/15: Error in original submittal.  
 3Q/15: Error in original submittal.  
 2Q/15: Changed PRA Parameter(s).  
 2Q/15: Changed PRA Parameter(s). 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**

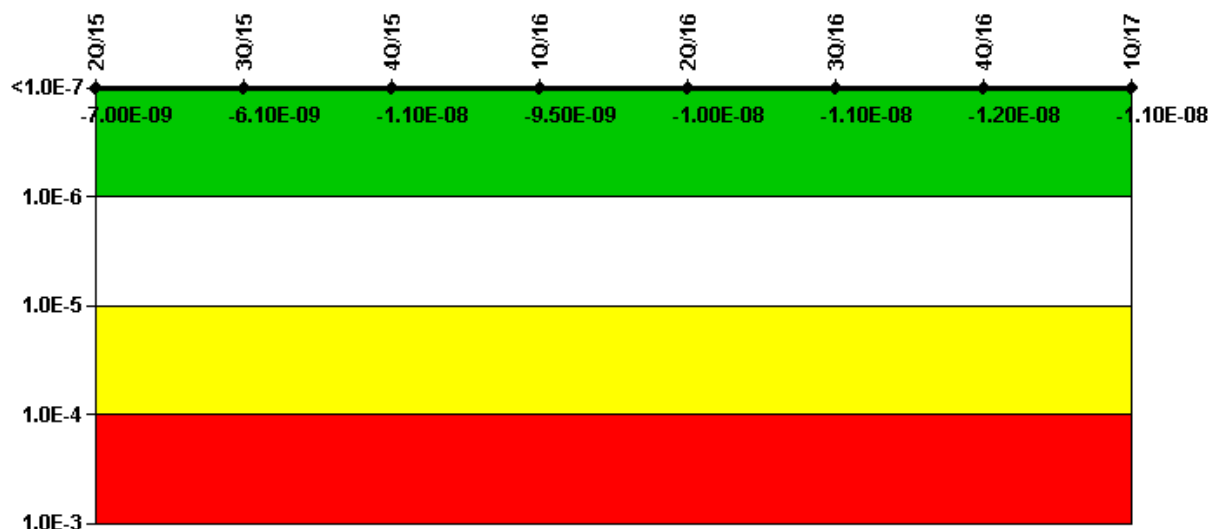
	2Q/15	3Q/15	4Q/15	1Q/16	2Q/16	3Q/16	4Q/16	1Q/17
UAI (ΔCDF)	2.74E-08	2.60E-08	3.28E-08	2.46E-08	3.51E-08	3.34E-08	3.39E-08	3.71E-08
URI (ΔCDF)	-1.63E-08	-1.63E-08	-1.63E-08	-1.63E-08	-1.86E-08	-1.86E-08	-1.86E-08	-1.86E-08
PLE	NO	NO	NO	NO	NO	NO	NO	NO
<b>Indicator value</b>	<b>1.10E-08</b>	<b>9.70E-09</b>	<b>1.60E-08</b>	<b>8.30E-09</b>	<b>1.60E-08</b>	<b>1.50E-08</b>	<b>1.50E-08</b>	<b>1.80E-08</b>

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Licensee Comments:

3Q/16: 2-2302 Planned Unavailable Hours QCIS 0200-86, QCIS 0200-87 and U-2 HPCI Work Window  
 2Q/15: Changed PRA Parameter(s). 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

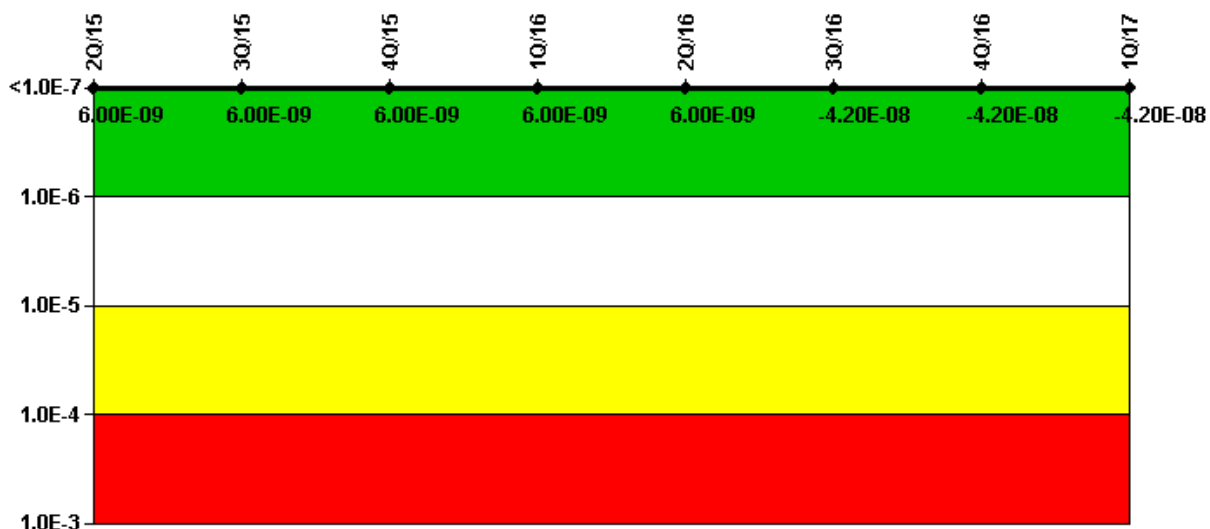
	2Q/15	3Q/15	4Q/15	1Q/16	2Q/16	3Q/16	4Q/16	1Q/17
UAI ( $\Delta$ CDF)	6.44E-09	7.37E-09	2.11E-09	3.51E-09	3.90E-09	2.98E-09	2.14E-09	3.63E-09
URI ( $\Delta$ CDF)	-1.35E-08	-1.35E-08	-1.30E-08	-1.30E-08	-1.44E-08	-1.44E-08	-1.44E-08	-1.44E-08
PLE	NO	NO	NO	NO	NO	NO	NO	NO
Indicator value	-7.00E-09	-6.10E-09	-1.10E-08	-9.50E-09	-1.00E-08	-1.10E-08	-1.20E-08	-1.10E-08

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#### Licensee Comments:

3Q/16: Planned Unavailable Hours 2-1302 QCIS 0200-86, QCIS 0200-87 and U-2 RCIC Work Window.  
 2Q/15: Changed PRA Parameter(s). 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**

	2Q/15	3Q/15	4Q/15	1Q/16	2Q/16	3Q/16	4Q/16	1Q/17
UAI ( $\Delta$ CDF)	-1.01E-08	-1.01E-08	-1.01E-08	-1.01E-08	-1.01E-08	-1.35E-08	-1.35E-08	-1.35E-08
URI ( $\Delta$ CDF)	1.61E-08	1.61E-08	1.61E-08	1.61E-08	1.61E-08	-2.89E-08	-2.89E-08	-2.89E-08
PLE	NO	NO	NO	NO	NO	NO	NO	NO
<b>Indicator value</b>	<b>6.00E-09</b>	<b>6.00E-09</b>	<b>6.00E-09</b>	<b>6.00E-09</b>	<b>6.00E-09</b>	<b>-4.20E-08</b>	<b>-4.20E-08</b>	<b>-4.20E-08</b>

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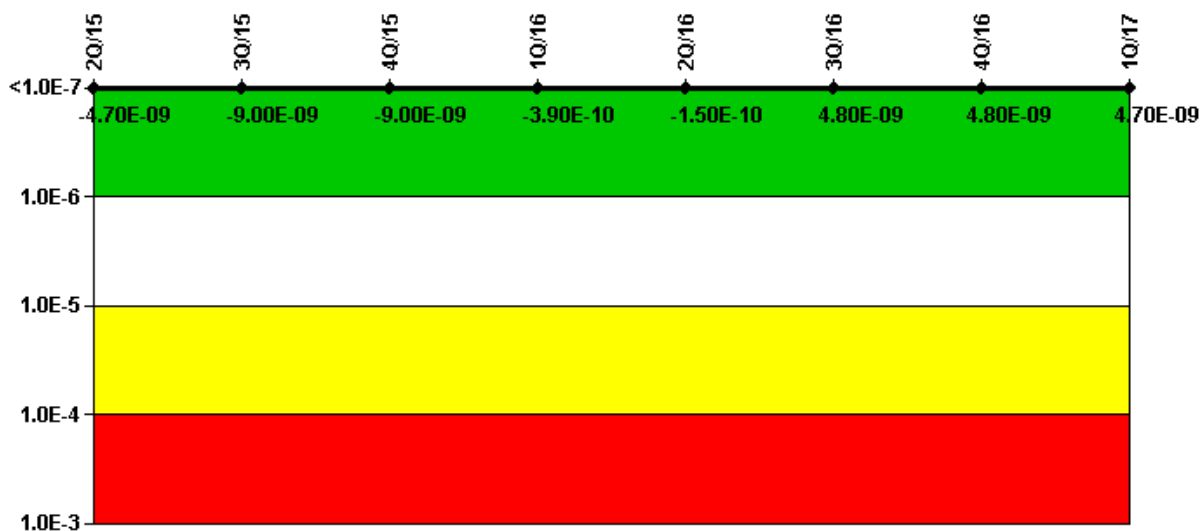
Licensee Comments:

3Q/16: 2B RHR Planned Unavailable Hours 9/20/16 from 8:58 to 19:20 for work on 2-1001-34B. 9/22/16 from 8:25 to 9/23/16 from 3:30 for QCOS 1000-44 B Loop logic test.

2Q/15: Changed PRA Parameter(s). 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**

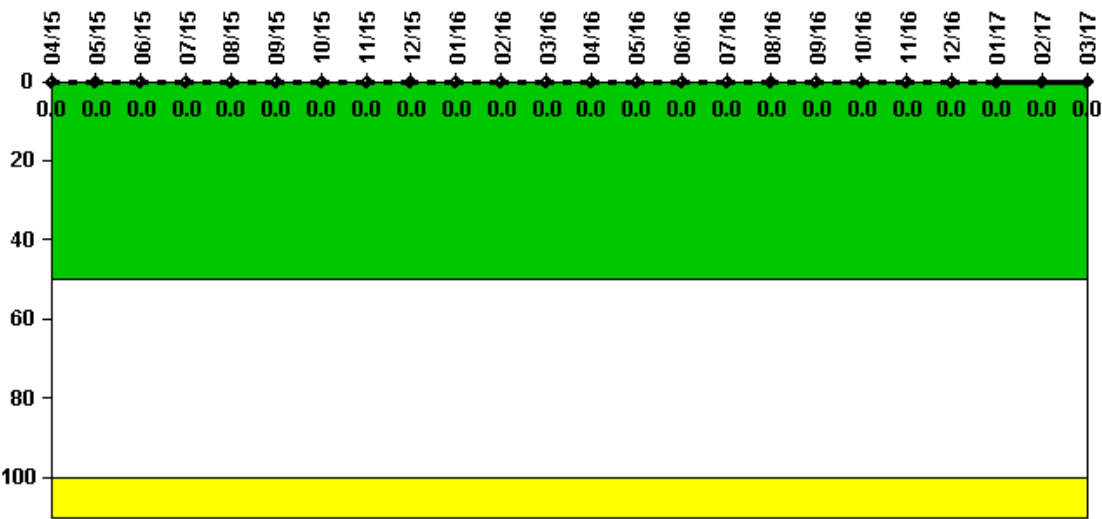
	2Q/15	3Q/15	4Q/15	1Q/16	2Q/16	3Q/16	4Q/16	1Q/17
UAI (ΔCDF)	-4.59E-09	-8.88E-09	-8.88E-09	-2.44E-10	-5.83E-12	4.89E-09	4.89E-09	4.89E-09
URI (ΔCDF)	-1.44E-10	-1.44E-10	-1.44E-10	-1.44E-10	-1.44E-10	-1.44E-10	-1.44E-10	-1.44E-10
PLE	NO	NO	NO	NO	NO	NO	NO	NO
<b>Indicator value</b>	<b>-4.70E-09</b>	<b>-9.00E-09</b>	<b>-9.00E-09</b>	<b>-3.90E-10</b>	<b>-1.50E-10</b>	<b>4.80E-09</b>	<b>4.80E-09</b>	<b>4.70E-09</b>

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Licensee Comments:

3Q/16: 2B RHRSW 9/22/16 from 8:25 to 9/23/16 from 3:30 for QCOS 1000-44 B Loop logic test.  
 2Q/15: Changed PRA Parameter(s). Changed PRA Parameter(s).

### Reactor Coolant System Activity



Thresholds: White > 50.0 Yellow > 100.0

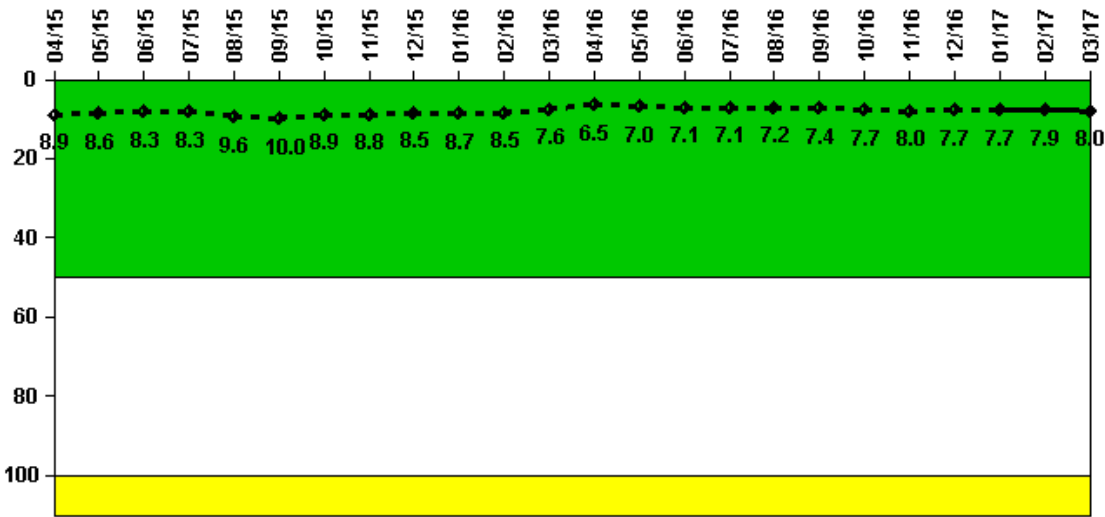
**Notes**

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	0.000010	0.000007	0.000007	0.000007	0.000014	0.000011	0.000012	0.000012	0.000011	0.000010	0.000012	0.000011
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	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	0.000008	0.000007	0.000006	0.000006	0.000018	0.000020	0.000010	0.000010	0.000009	0.000012	0.000010	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
<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	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	2.228	2.159	2.067	2.064	2.403	2.492	2.237	2.210	2.123	2.165	2.119	1.897
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

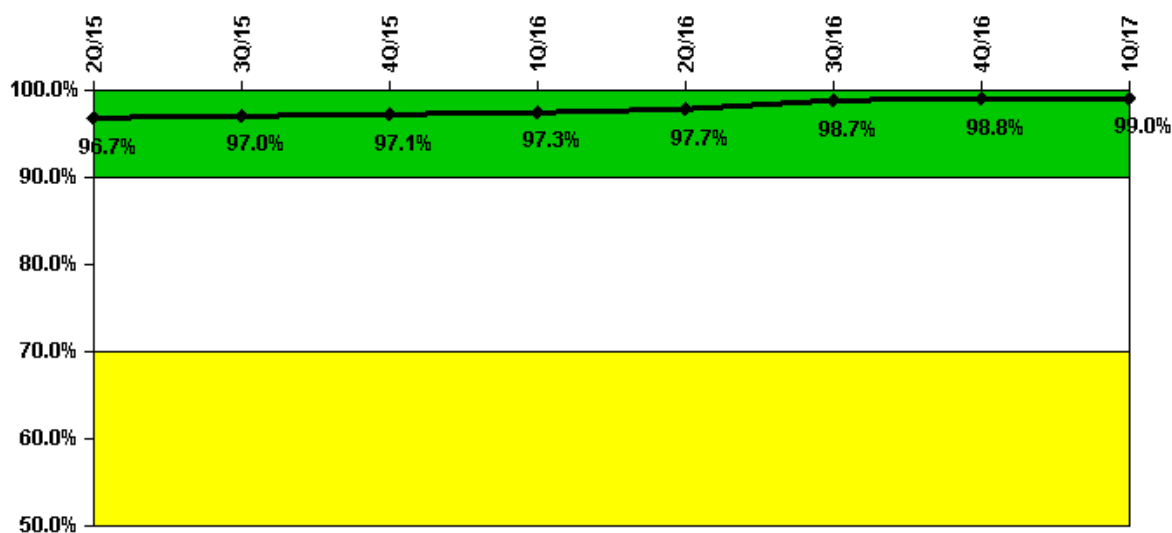
<b>Indicator value</b>	<b>8.9</b>	<b>8.6</b>	<b>8.3</b>	<b>8.3</b>	<b>9.6</b>	<b>10.0</b>	<b>8.9</b>	<b>8.8</b>	<b>8.5</b>	<b>8.7</b>	<b>8.5</b>	<b>7.6</b>
Reactor Coolant System Leakage	4/16	5/16	6/16	7/16	8/16	9/16	10/16	11/16	12/16	1/17	2/17	3/17
Maximum leakage	1.615	1.751	1.765	1.768	1.806	1.851	1.913	1.992	1.913	1.922	1.979	2.001
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

<b>Indicator value</b>	<b>6.5</b>	<b>7.0</b>	<b>7.1</b>	<b>7.1</b>	<b>7.2</b>	<b>7.4</b>	<b>7.7</b>	<b>8.0</b>	<b>7.7</b>	<b>7.7</b>	<b>7.9</b>	<b>8.0</b>
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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	51.0	25.0	33.0	35.0	70.0	34.0	42.0	92.0
Total opportunities	52.0	26.0	33.0	35.0	70.0	36.0	42.0	92.0

Indicator value                    96.7% 97.0% 97.1% 97.3% 97.7% 98.7% 98.8% 99.0%

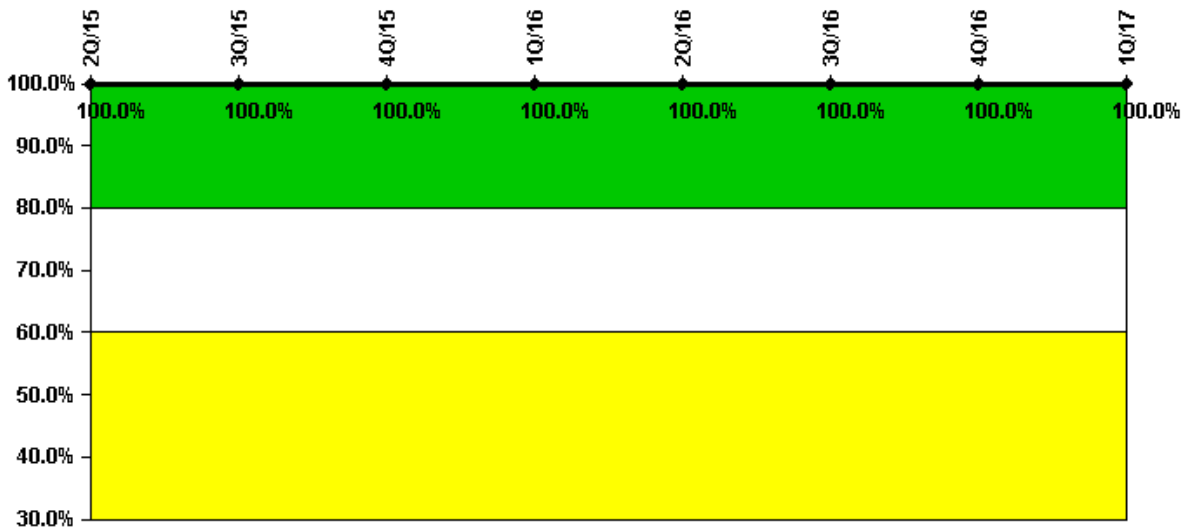
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#### Licensee Comments:

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

2Q/15: 2015-05 changed successful drills from 13 to 16 and total drills from 13 to 16.

### ERO Drill Participation



Thresholds: White < 80.0% Yellow < 60.0%

**Notes**

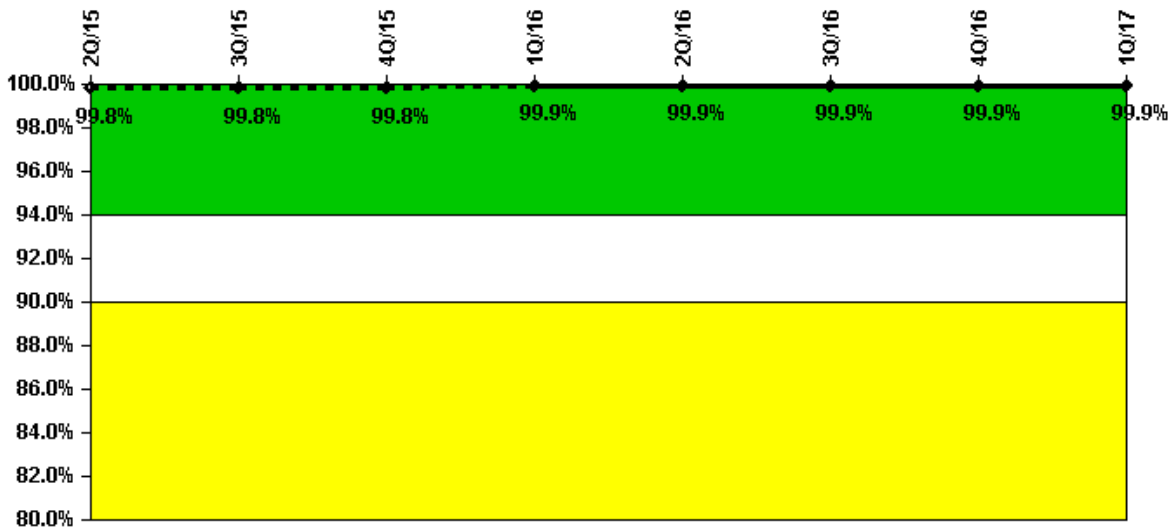
ERO Drill Participation	2Q/15	3Q/15	4Q/15	1Q/16	2Q/16	3Q/16	4Q/16	1Q/17
Participating Key personnel	73.0	72.0	73.0	74.0	76.0	85.0	86.0	87.0
Total Key personnel	73.0	72.0	73.0	74.0	76.0	85.0	86.0	87.0

**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

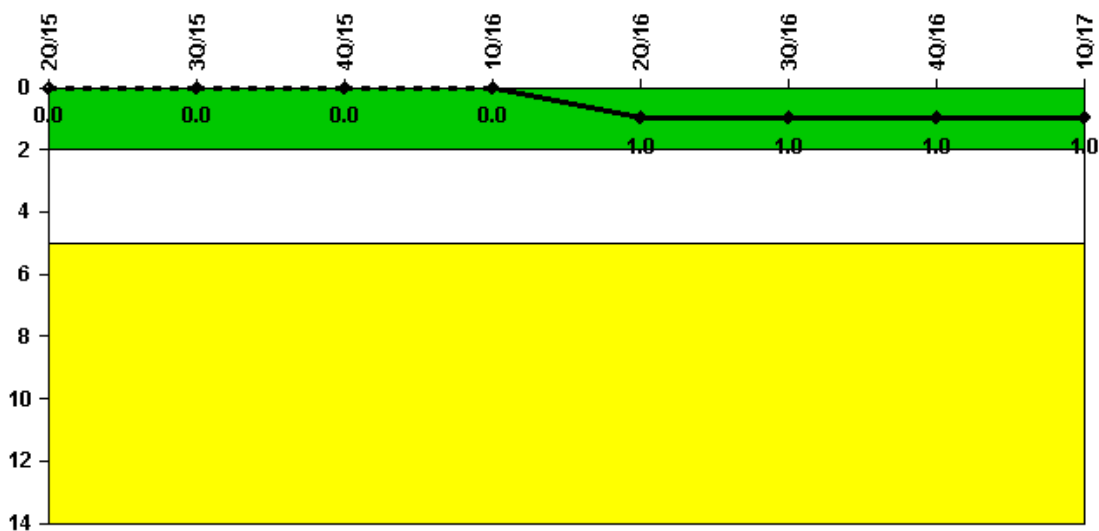
Alert & Notification System	2Q/15	3Q/15	4Q/15	1Q/16	2Q/16	3Q/16	4Q/16	1Q/17
Successful siren-tests	2680	2725	2686	2687	2687	2682	2604	2729
Total sirens-tests	2688	2730	2688	2688	2688	2688	2604	2730

Indicator value                    99.8% 99.8% 99.8% 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**

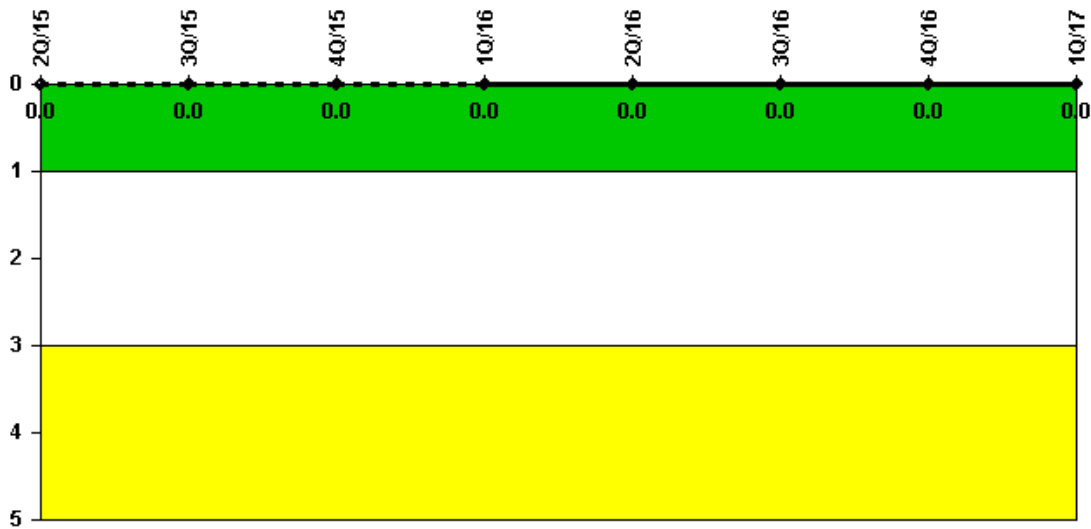
**Occupational Exposure Control Effectiveness** 2Q/15 3Q/15 4Q/15 1Q/16 2Q/16 3Q/16 4Q/16 1Q/17

High radiation area occurrences	0	0	0	0	1	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>1</b>	<b>1</b>	<b>1</b>	<b>1</b>

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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