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## Arkansas Nuclear 2 – Quarterly Performance Indicators

The solid trend line represents the current reporting period.

Licensee's General Comments: none

### 2Q/2017 Performance Indicators

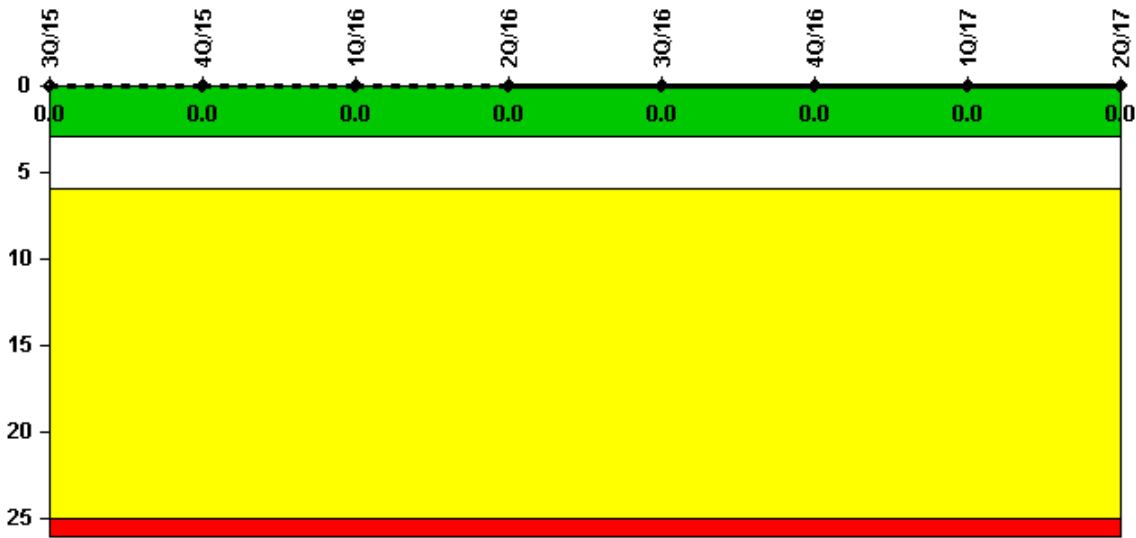
The solid trend line represents the current reporting period.

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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### Unplanned Scrams per 7000 Critical Hrs



Thresholds: White > 3.0 Yellow > 6.0 Red > 25.0

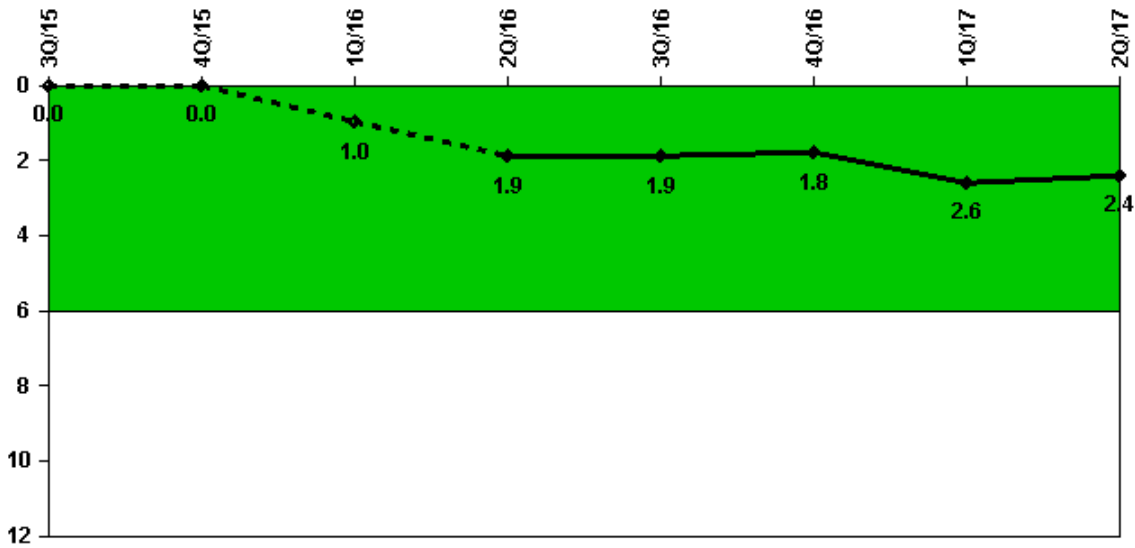
**Notes**

Unplanned Scrams per 7000 Critical Hrs	3Q/15	4Q/15	1Q/16	2Q/16	3Q/16	4Q/16	1Q/17	2Q/17
Unplanned scrams	0	0	0	0	0	0	0	0
Critical hours	1952.9	1154.1	1982.6	2184.0	2145.5	1580.1	2087.9	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 Power Changes per 7000 Critical Hrs



Thresholds: White > 6.0

#### Notes

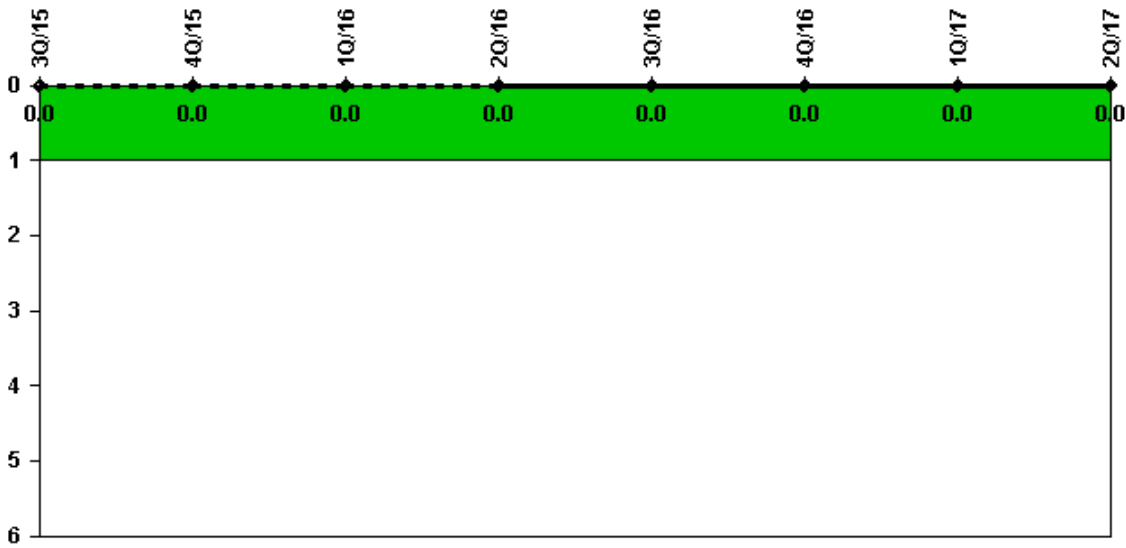
Unplanned Power Changes per 7000 Critical Hrs	3Q/15	4Q/15	1Q/16	2Q/16	3Q/16	4Q/16	1Q/17	2Q/17
Unplanned power changes	0	0	1.0	1.0	0	0	2.0	0
Critical hours	1952.9	1154.1	1982.6	2184.0	2145.5	1580.1	2087.9	0

Indicator value	0	0	1.0	1.9	1.9	1.8	2.6	2.4
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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

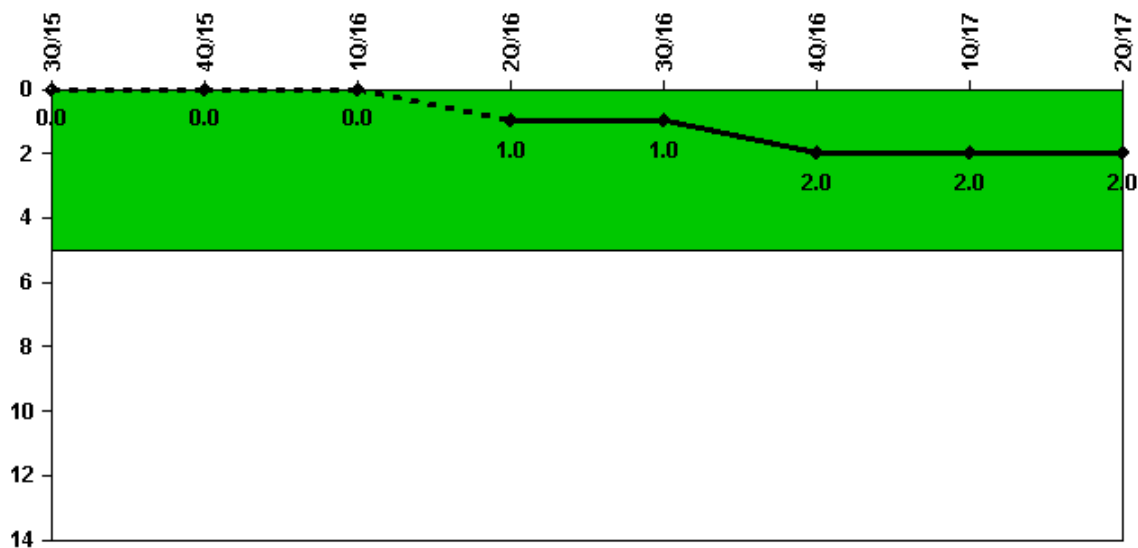
Scrams with complications 0 0 0 0 0 0 0 0

**Indicator value** 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0

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Licensee Comments: none

### Safety System Functional Failures (PWR)



Thresholds: White > 5.0

#### Notes

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

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

Indicator value 0 0 0 1 1 2 2 2

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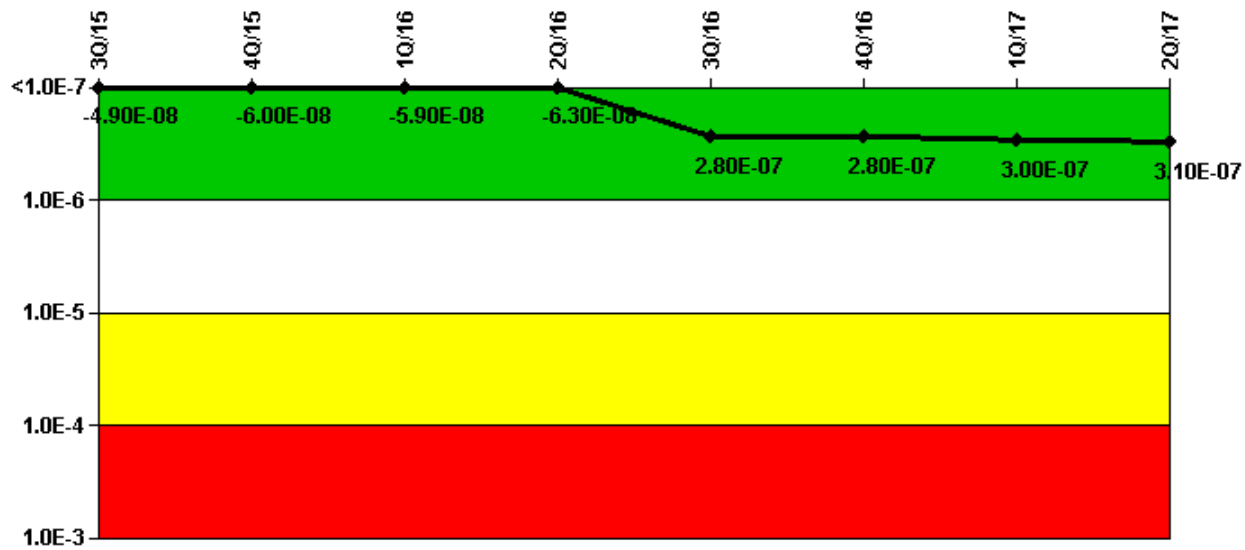
#### Licensee Comments:

2Q/17: May: Licensing Event Report 50-368 2017-001-00 Multiple failures related to Tornado Missile Protection reported as one in accordance with FAQ 16-03 guidance.

4Q/16: November: Licensing Event Report 50-368 2016-001-00

2Q/16: LER 50-313/2016-001-00

### 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**

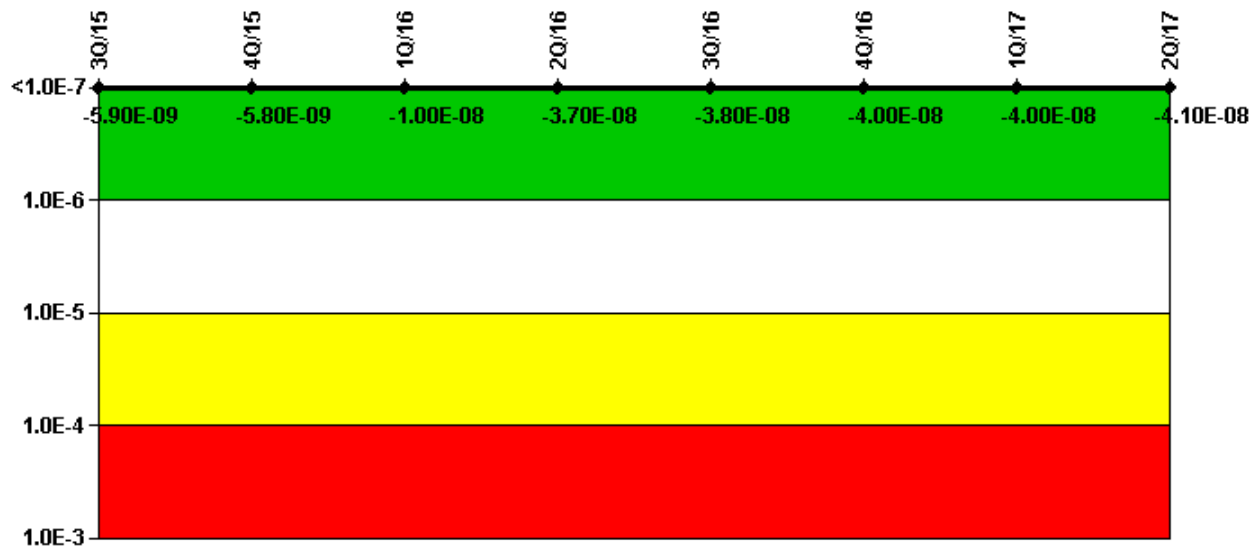
	3Q/15	4Q/15	1Q/16	2Q/16	3Q/16	4Q/16	1Q/17	2Q/17
UAI (ΔCDF)	5.04E-09	-5.77E-09	-5.77E-09	8.38E-09	1.28E-07	1.28E-07	1.26E-07	1.34E-07
URI (ΔCDF)	-5.41E-08	-5.45E-08	-5.27E-08	-7.13E-08	1.55E-07	1.56E-07	1.76E-07	1.79E-07
PLE	NO	NO	NO	NO	NO	NO	NO	NO
<b>Indicator value</b>	<b>-4.90E-08</b>	<b>-6.00E-08</b>	<b>-5.90E-08</b>	<b>-6.30E-08</b>	<b>2.80E-07</b>	<b>2.80E-07</b>	<b>3.00E-07</b>	<b>3.10E-07</b>

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Licensee Comments:

2Q/16: The 2nd Quarter 2016 Emergency AC Power MSPI is being revised to include June Unplanned Unavailable Hours for the "A" Emergency Diesel Generator. This change does not affect the color of the Emergency AC Power MSPI indicator.

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



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

**Notes**

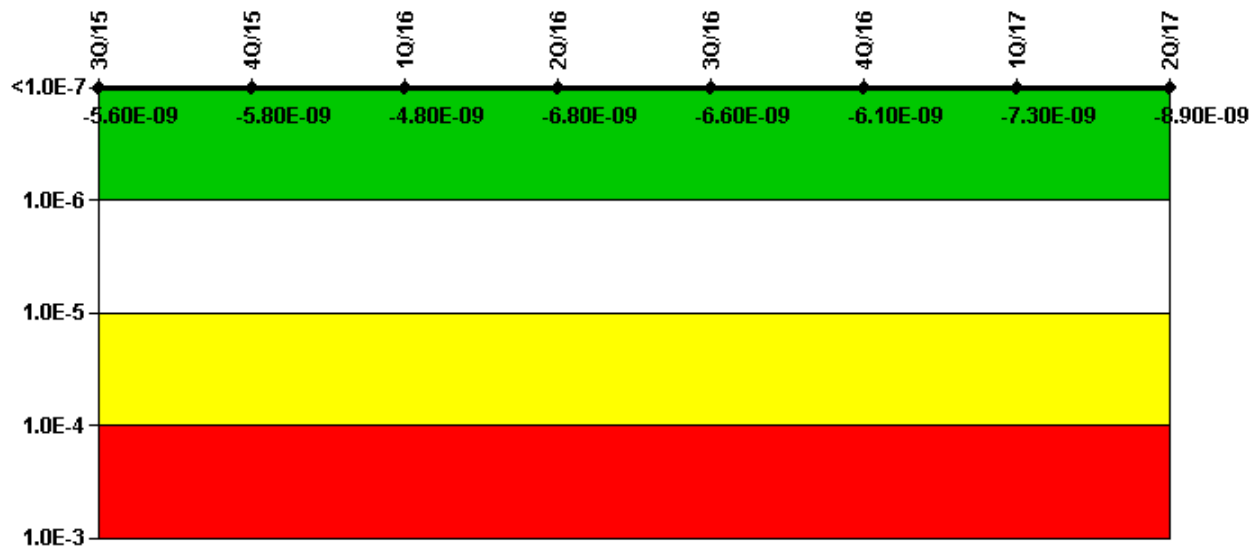
**Mitigating Systems Performance Index, High Pressure Injection System**

	3Q/15	4Q/15	1Q/16	2Q/16	3Q/16	4Q/16	1Q/17	2Q/17
UAI ( $\Delta$ CDF)	-6.91E-10	-4.30E-10	-4.59E-09	-3.30E-11	-3.30E-11	-3.30E-11	-3.30E-11	-3.30E-11
URI ( $\Delta$ CDF)	-5.22E-09	-5.41E-09	-5.46E-09	-3.73E-08	-3.82E-08	-3.98E-08	-4.03E-08	-4.12E-08
PLE	NO	NO	NO	NO	NO	NO	NO	NO
<b>Indicator value</b>	<b>-5.90E-09</b>	<b>-5.80E-09</b>	<b>-1.00E-08</b>	<b>-3.70E-08</b>	<b>-3.80E-08</b>	<b>-4.00E-08</b>	<b>-4.00E-08</b>	<b>-4.10E-08</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**

	3Q/15	4Q/15	1Q/16	2Q/16	3Q/16	4Q/16	1Q/17	2Q/17
UAI (ΔCDF)	-3.69E-10	-2.40E-10	4.10E-10	-1.93E-09	-1.92E-09	-1.90E-09	-1.93E-09	-5.50E-09
URI (ΔCDF)	-5.22E-09	-5.53E-09	-5.21E-09	-4.86E-09	-4.69E-09	-4.25E-09	-5.32E-09	-3.42E-09
PLE	NO	NO	NO	NO	NO	NO	NO	NO
<b>Indicator value</b>	<b>-5.60E-09</b>	<b>-5.80E-09</b>	<b>-4.80E-09</b>	<b>-6.80E-09</b>	<b>-6.60E-09</b>	<b>-6.10E-09</b>	<b>-7.30E-09</b>	<b>-8.90E-09</b>

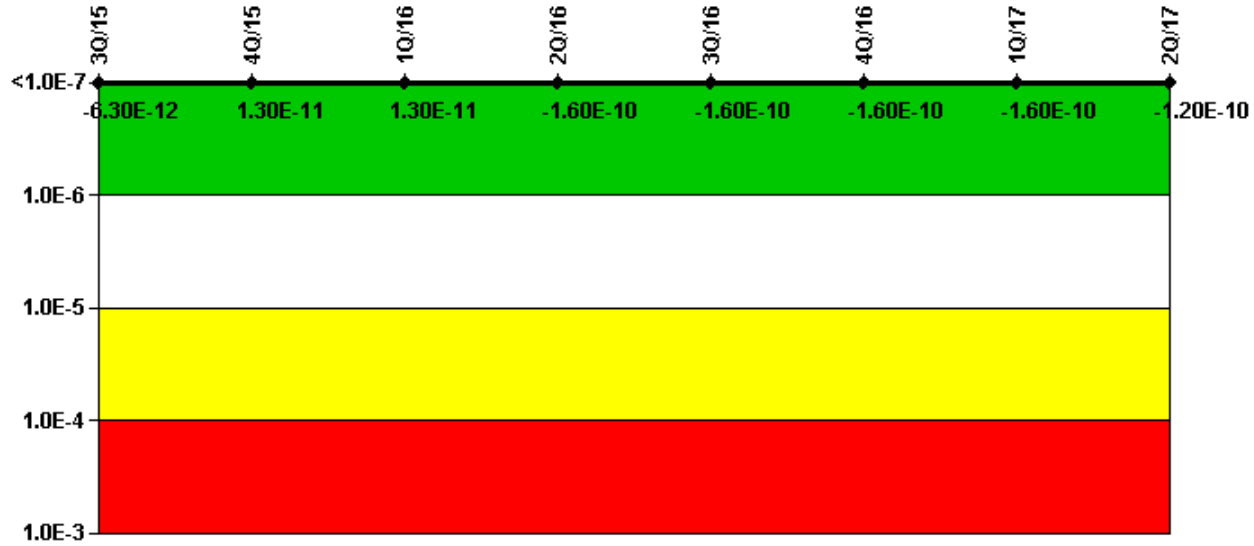
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Licensee Comments:

- 1Q/17: ANO-2 heat removal system reliability for the B Emergency Feed Water pump in January 2015, was revised. Operation non-test demands and run hours were removed. This change does not affect the color of this indicator.
- 4Q/16: ANO-2 heat removal system reliability for the B Emergency Feed Water pump in January 2015, was revised. Operation non-test demands and run hours were removed. This change does not affect the color of this indicator.
- 3Q/16: ANO-2 heat removal system reliability for the B Emergency Feed Water pump in January 2015, was revised. Operation non-test demands and run hours were removed. This change does not affect the color of this indicator.
- 2Q/16: ANO-2 heat removal system reliability for the B Emergency Feed Water pump in January 2015, was revised. Operation non-test demands and run hours were removed. This change does not affect the color of this indicator.
- 1Q/16: ANO-2 heat removal system reliability for the B Emergency Feed Water pump in January 2015, was revised. Operation non-test demands and run hours were removed. This change does not affect the color of this indicator.
- 4Q/15: ANO-2 heat removal system reliability for the B Emergency Feed Water pump in January 2015, was revised. Operation non-test demands and run hours were removed. This change does not affect the color of this indicator.
- 3Q/15: ANO-2 heat removal system reliability for the B Emergency Feed Water pump in January 2015, was revised. Operation non-test demands and run hours were removed. This change does not affect the color of this indicator.



### 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 (ΔCDF)	-4.48E-12	-4.41E-12	-4.34E-12	-1.94E-10	-1.94E-10	-1.93E-10	-1.94E-10	-1.89E-10
URI (ΔCDF)	-1.86E-12	1.76E-11	1.77E-11	3.41E-11	3.41E-11	3.47E-11	3.47E-11	7.17E-11
PLE	NO	NO	NO	NO	NO	NO	NO	NO
<b>Indicator value</b>	<b>-6.30E-12</b>	<b>1.30E-11</b>	<b>1.30E-11</b>	<b>-1.60E-10</b>	<b>-1.60E-10</b>	<b>-1.60E-10</b>	<b>-1.60E-10</b>	<b>-1.20E-10</b>

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Licensee Comments:

1Q/17: ANO-2 residual heat removal system reliability for the A Containment Spray pump in December 2015, and for the B Containment Spray pump in March 2017, was revised. Operation non-test demands and run hours were revised to remove demands related to post-maintenance testing. This change does not affect the color of this indicator.

4Q/16: ANO-2 residual heat removal system reliability for the A Containment Spray pump in December 2015, was revised. Operation non-test demands and run hours were revised to remove a demand related to post-maintenance testing. This change does not affect the color of this indicator.

3Q/16: ANO-2 residual heat removal system reliability for the A Containment Spray pump in December 2015, was revised. Operation non-test demands and run hours were revised to remove a demand related to post-maintenance testing. This change does not affect the color of this indicator.

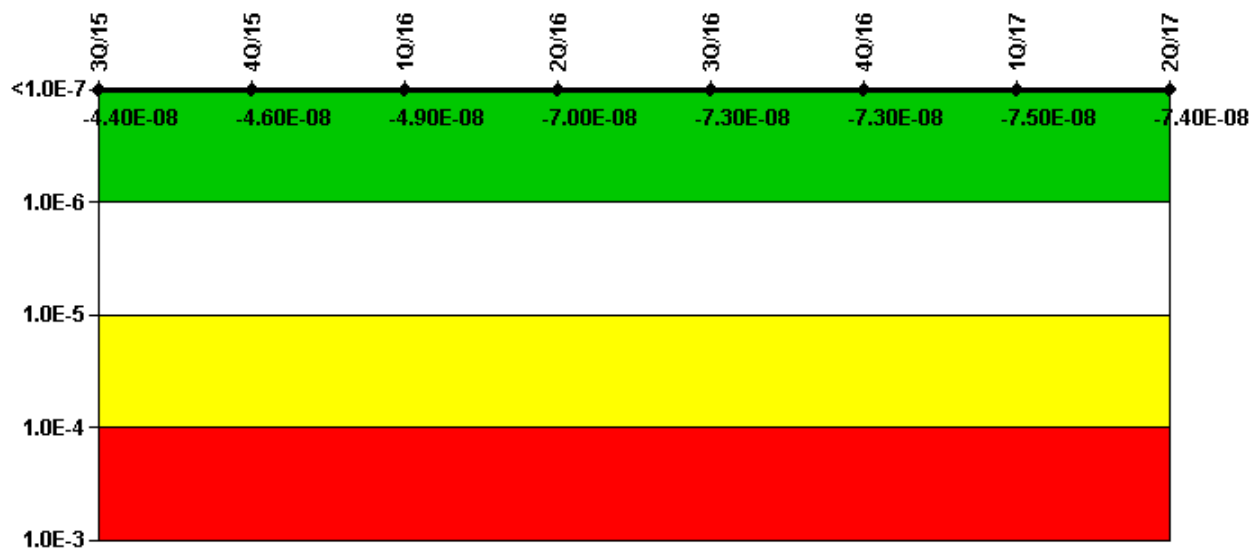
2Q/16: ANO-2 residual heat removal system reliability for the A Containment Spray pump in December 2015, was revised. Operation non-test demands and run hours were revised to remove a demand related to post-maintenance testing. This change does not affect the color of this indicator.

1Q/16: ANO-2 residual heat removal system reliability for the A Containment Spray pump in December 2015, was revised. Operation non-test demands and run hours were revised to remove a demand related to post-maintenance testing. This change does not affect the color of this indicator.

not affect the color of this indicator.

4Q/15: ANO-2 residual heat removal system reliability for the A Containment Spray pump in December 2015, was revised. Operation non-test demands and run hours were revised to remove a demand related to post-maintenance testing. This change does not affect the color 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

	3Q/15	4Q/15	1Q/16	2Q/16	3Q/16	4Q/16	1Q/17	2Q/17
UAI (ΔCDF)	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
URI (ΔCDF)	-4.43E-08	-4.65E-08	-4.86E-08	-6.96E-08	-7.29E-08	-7.29E-08	-7.54E-08	-7.38E-08
PLE	NO	NO	NO	NO	NO	NO	NO	NO
<b>Indicator value</b>	<b>-4.40E-08</b>	<b>-4.60E-08</b>	<b>-4.90E-08</b>	<b>-7.00E-08</b>	<b>-7.30E-08</b>	<b>-7.30E-08</b>	<b>-7.50E-08</b>	<b>-7.40E-08</b>

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#### Licensee Comments:

1Q/17: ANO-2 cooling water system reliability for the A Service Water pump in March 2016, and September 2016, was revised. ANO-2 cooling water system reliability for the B Service Water pump in July 2014, and July 2016, was revised. ANO-2 cooling water system reliability for the C Service Water pump in March 2016, and July 2016, was revised. Test demands and run hours were revised to remove demands related to post-maintenance testing. This change does not affect the color of this indicator.

4Q/16: ANO-2 cooling water system reliability for the A Service Water pump in March 2016, and September 2016, was revised. ANO-2 cooling water system reliability for the B Service Water pump in July 2014, and July 2016, was revised. ANO-2 cooling water system reliability for the C Service Water pump in March 2016, and July 2016, was revised. Test demands and run hours were revised to remove demands related to post-maintenance testing. This change does not affect the color of this indicator.

3Q/16: ANO-2 cooling water system reliability for the A Service Water pump in March 2016, and September 2016, was revised. ANO-2 cooling water system reliability for the B Service Water pump in July 2014, and July 2016, was revised. ANO-2 cooling

water system reliability for the C Service Water pump in March 2016, and July 2016, was revised. Test demands and run hours were revised to remove demands related to post-maintenance testing. This change does not affect the color of this indicator.

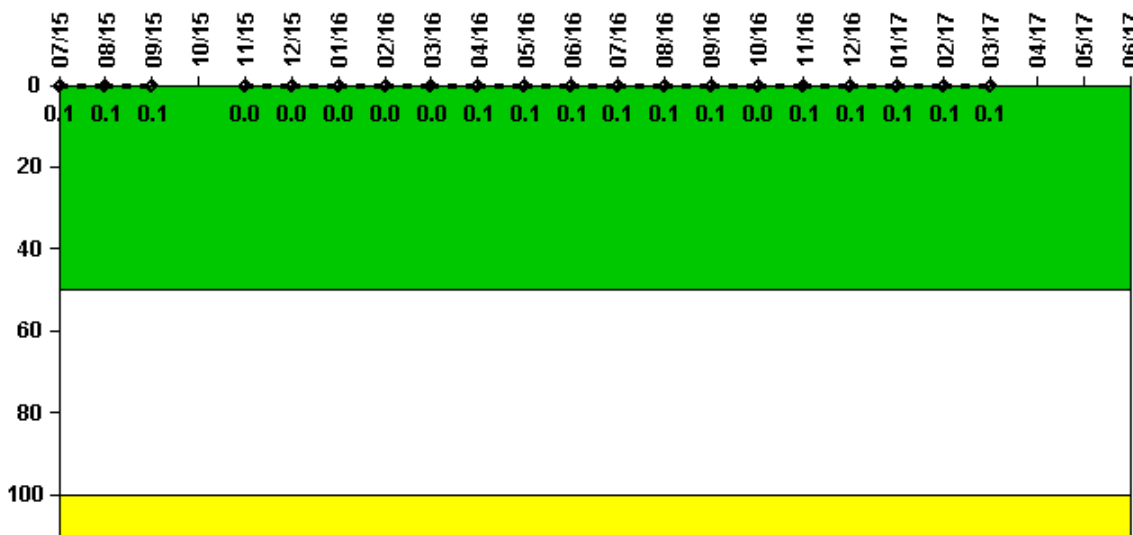
2Q/16: ANO-2 cooling water system reliability for the B Service Water pump in July 2014, and for the A Service Water pump in March 2016, was revised. Test demands and run hours were revised to remove demands related to post-maintenance testing. This change does not affect the color of this indicator.

1Q/16: ANO-2 cooling water system reliability for the B Service Water pump in July 2014, and for the A Service Water pump in March 2016, was revised. Test demands and run hours were revised to remove demands related to post-maintenance testing. This change does not affect the color of this indicator.

4Q/15: ANO-2 cooling water system reliability for the B Service Water pump in July 2014, was revised. Test demands and run hours were revised to remove a demand related to post-maintenance testing. This change does not affect the color of this indicator.

3Q/15: ANO-2 cooling water system reliability for the B Service Water pump in July 2014, was revised. Test demands and run hours were revised to remove a demand related to post-maintenance testing. This change does not affect the color of this indicator.

### Reactor Coolant System Activity



Thresholds: White > 50.0 Yellow > 100.0

#### Notes

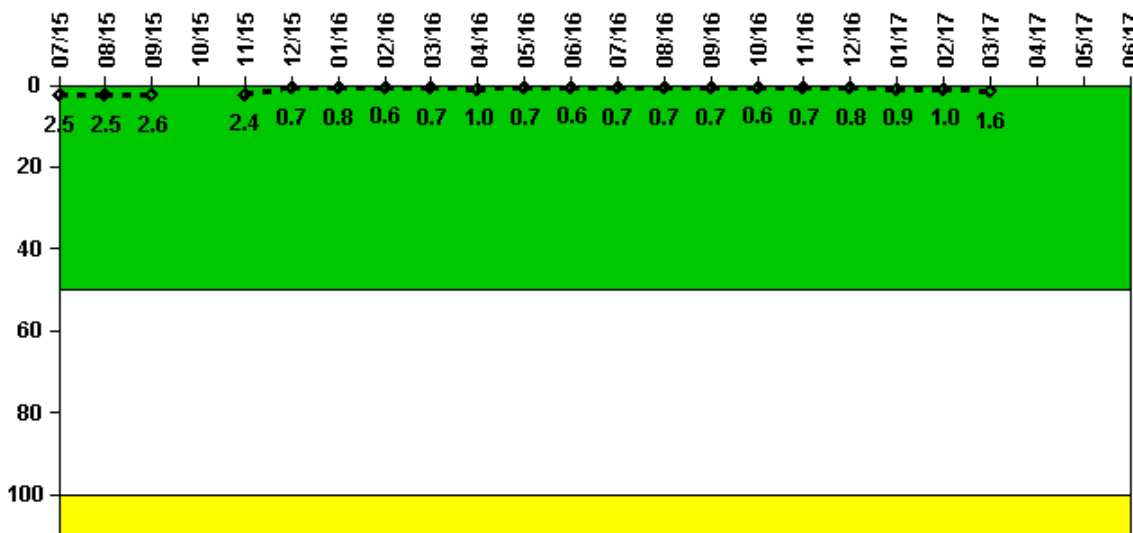
Reactor Coolant System Activity	7/15	8/15	9/15	10/15	11/15	12/15	1/16	2/16	3/16	4/16	5/16	6/16	
Maximum activity	0.000799	0.000841	0.000797	N/A	0.000438	0.000464	0.000476	0.000474	0.000491	0.000583	0.000567	0.000568	
Technical specification limit	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	
Indicator value	0.1	0.1	0.1	N/A	0	0	0	0	0	0.1	0.1	0.1	
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	0.000563	0.000593	0.000616	0.000458	0.000672	0.000702	0.000689	0.000700	0.000528	N/A	N/A	N/A
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>0.1</b>	<b>0.1</b>	<b>0.1</b>	<b>0</b>	<b>0.1</b>	<b>0.1</b>	<b>0.1</b>	<b>0.1</b>	<b>0.1</b>	<b>0.1</b>	N/A	N/A

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Licensee Comments: none

### Reactor Coolant System Leakage



Thresholds: White > 50.0 Yellow > 100.0

#### Notes

<b>Reactor Coolant System Leakage</b>	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	0.246	0.250	0.264	N/A	0.243	0.066	0.080	0.060	0.070	0.095	0.065	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**                      2.5    2.5    2.6    N/A    2.4    0.7    0.8    0.6    0.7    1.0    0.7    0.6

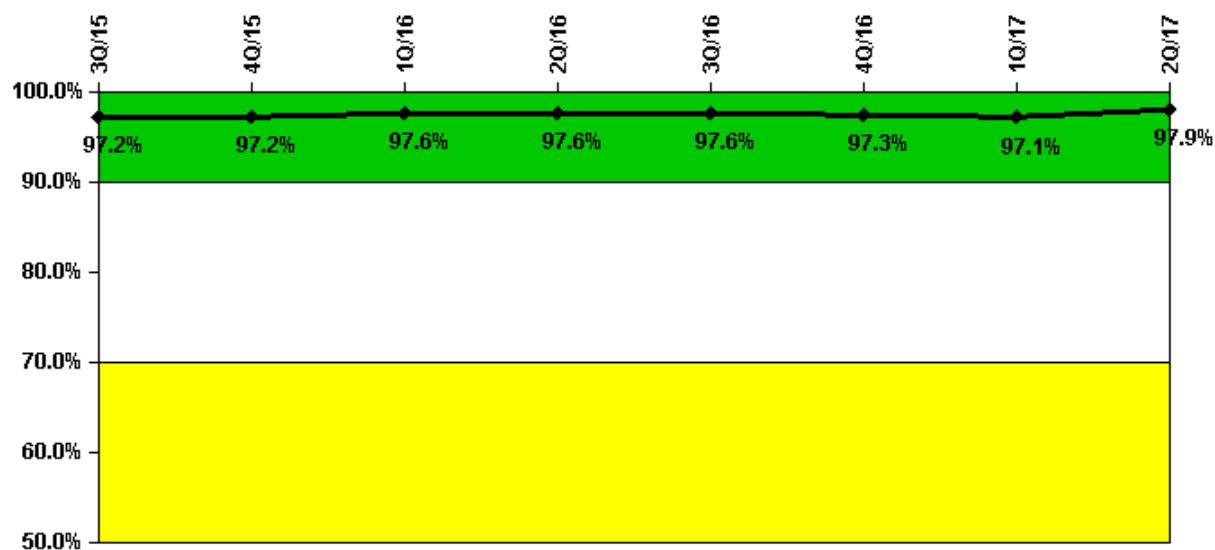
<b>Reactor Coolant System Leakage</b>	7/16	8/16	9/16	10/16	11/16	12/16	1/17	2/17	3/17	4/17	5/17	6/17
Maximum leakage	0.071	0.071	0.065	0.058	0.074	0.084	0.090	0.101	0.158	N/A	N/A	N/A
Technical specification limit	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0

**Indicator value**                      0.7    0.7    0.7    0.6    0.7    0.8    0.9    1.0    1.6    N/A    N/A    N/A

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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	65.0	19.0	31.0	98.0	63.0	5.0	60.0	39.0
Total opportunities	67.0	19.0	32.0	99.0	65.0	5.0	62.0	39.0

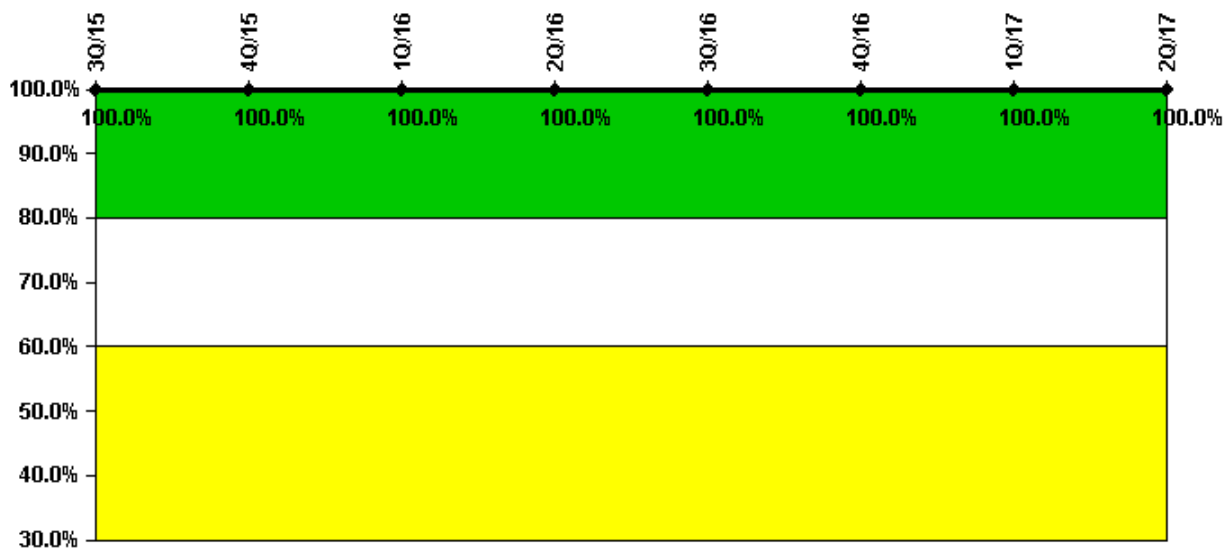
**Indicator value**                      97.2% 97.2% 97.6% 97.6% 97.6% 97.3% 97.1% 97.9%

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#### Licensee Comments:

2Q/16: The 2nd Quarter 2016 June Drill/Exercise Performance is being revised to include five additional opportunities. This change does not affect the color of the Drill/Exercise Performance indicator.

### ERO Drill Participation



Thresholds: White < 80.0% Yellow < 60.0%

#### Notes

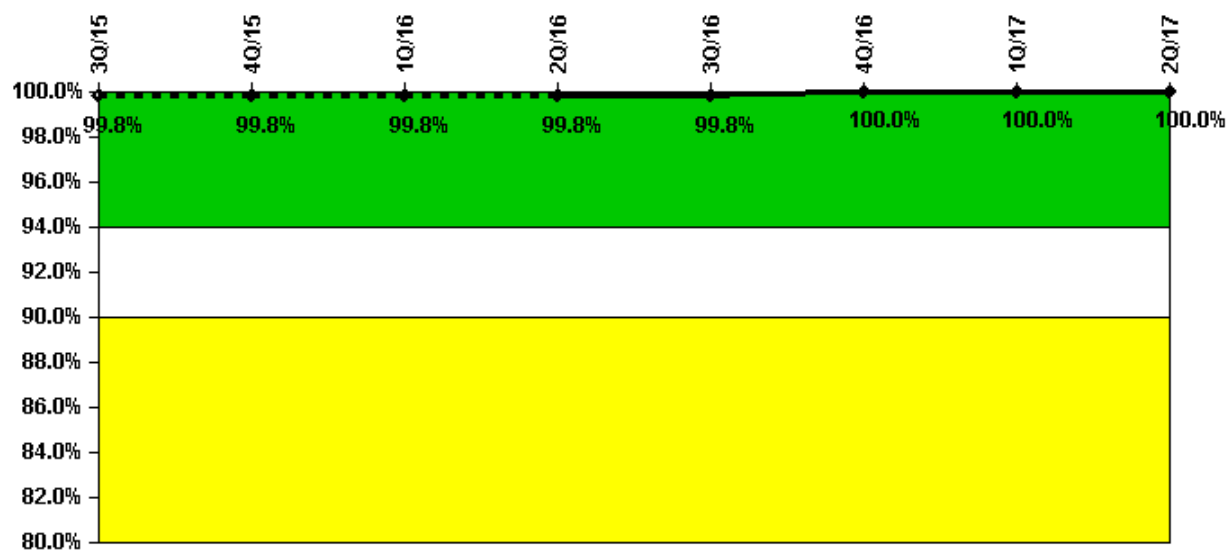
ERO Drill Participation	3Q/15	4Q/15	1Q/16	2Q/16	3Q/16	4Q/16	1Q/17	2Q/17
Participating Key personnel	106.0	103.0	103.0	108.0	107.0	111.0	107.0	109.0
Total Key personnel	106.0	103.0	103.0	108.0	107.0	111.0	107.0	109.0

**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

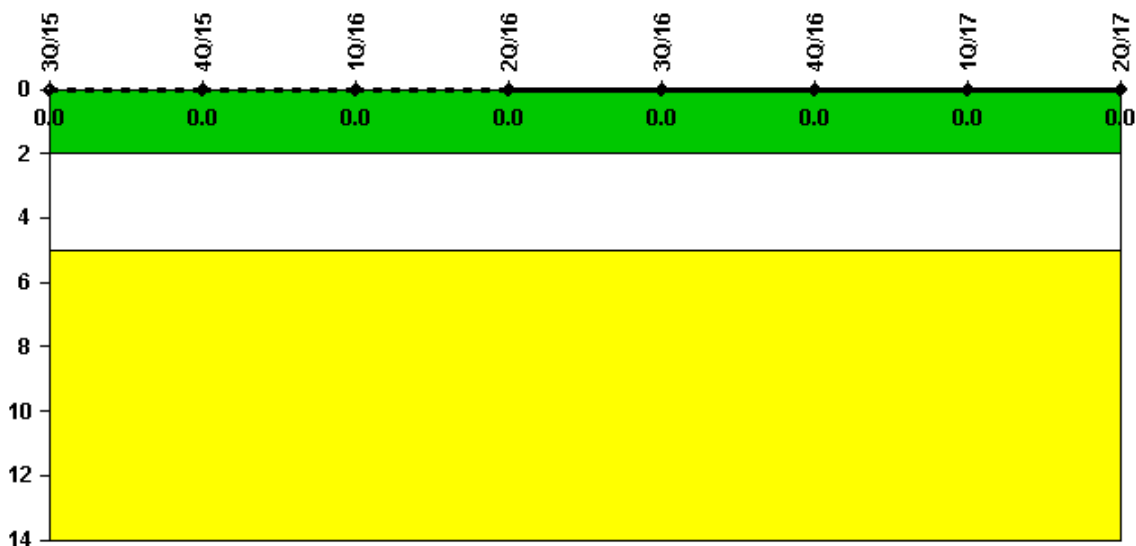
Alert & Notification System	3Q/15	4Q/15	1Q/16	2Q/16	3Q/16	4Q/16	1Q/17	2Q/17
Successful siren-tests	147	146	147	147	147	147	147	147
Total sirens-tests	147	147	147	147	147	147	147	147

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

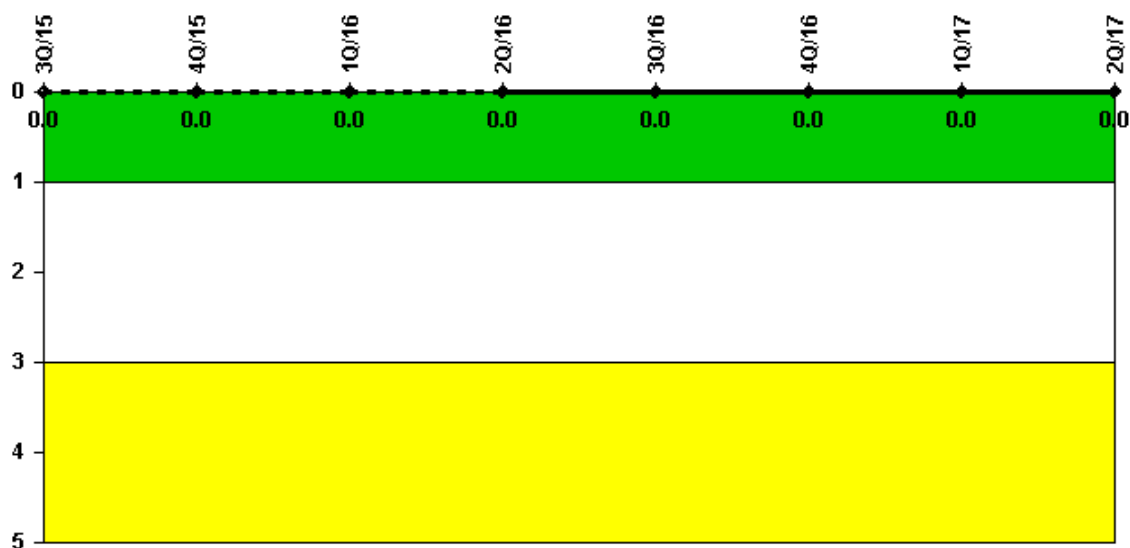
Occupational Exposure Control Effectiveness	3Q/15	4Q/15	1Q/16	2Q/16	3Q/16	4Q/16	1Q/17	2Q/17
High radiation area occurrences	0	0	0	0	0	0	0	0
Very high radiation area occurrences	0	0	0	0	0	0	0	0
Unintended exposure occurrences	0	0	0	0	0	0	0	0
<b>Indicator value</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<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 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