

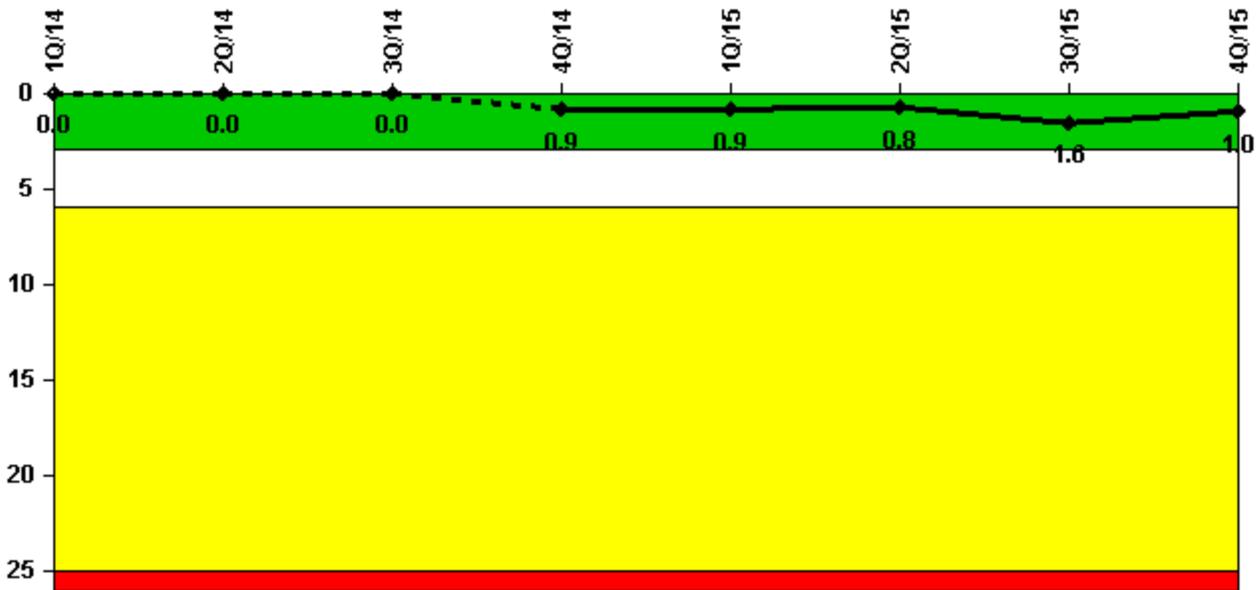
## Surry 2

### 4Q/2015 Performance Indicators

The solid trend line represents the current reporting period.

Licensee's General Comments: none

#### Unplanned Scrams per 7000 Critical Hrs



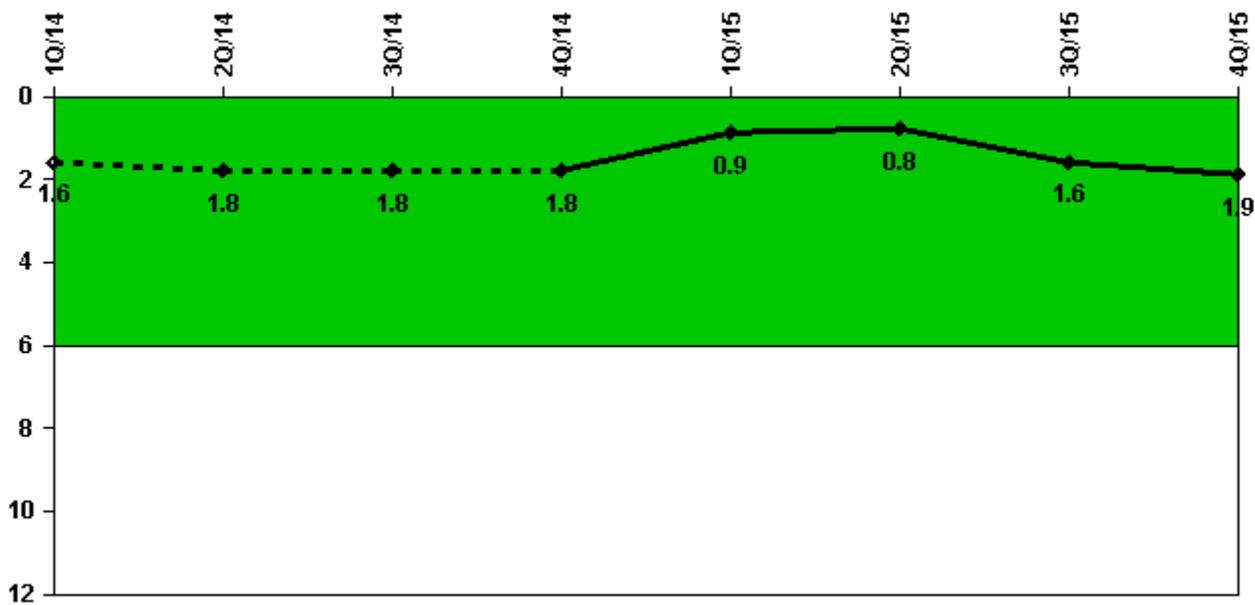
Thresholds: White > 3.0 Yellow > 6.0 Red > 25.0

#### Notes

Unplanned Scrams per 7000 Critical Hrs	1Q/14	2Q/14	3Q/14	4Q/14	1Q/15	2Q/15	3Q/15	4Q/15
Unplanned scrams	0	0	0	1.0	0	0	1.0	0
Critical hours	2107.4	1445.8	2208.0	2155.2	2159.0	2184.0	1991.7	943.8
Indicator value	0	0	0	0.9	0.9	0.8	1.6	1.0

Licensee Comments: none

### Unplanned Power Changes per 7000 Critical Hrs



Thresholds: White > 6.0

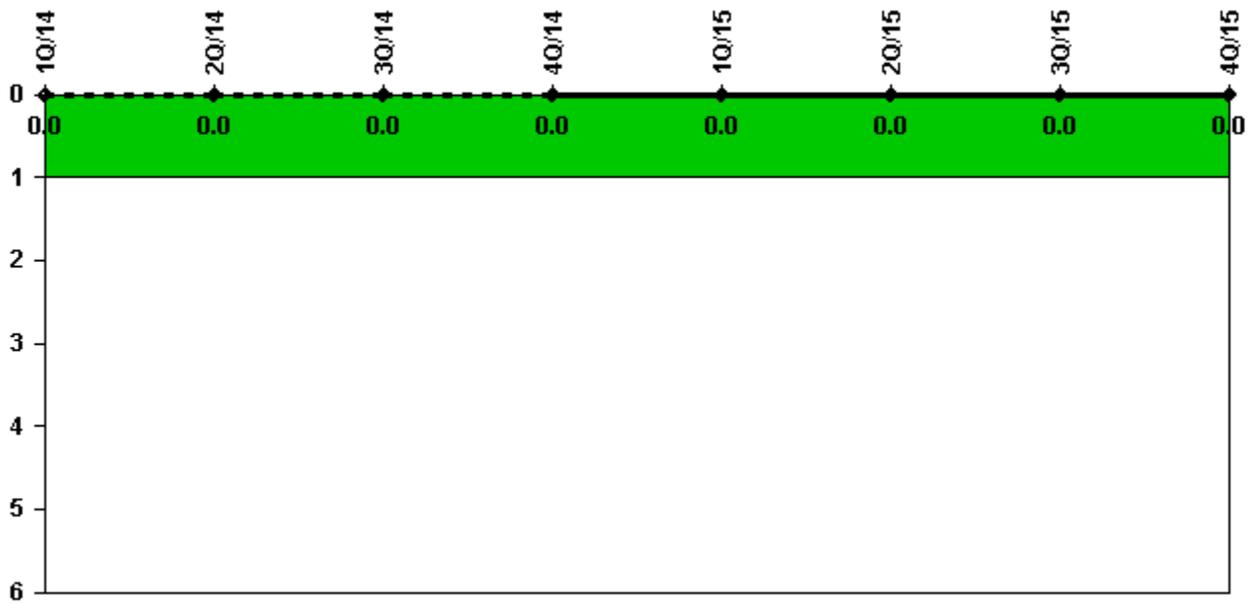
#### Notes

Unplanned Power Changes per 7000 Critical Hrs	1Q/14	2Q/14	3Q/14	4Q/14	1Q/15	2Q/15	3Q/15	4Q/15
Unplanned power changes	2.0	0	0	0	1.0	0	1.0	0
Critical hours	2107.4	1445.8	2208.0	2155.2	2159.0	2184.0	1991.7	943.8
<b>Indicator value</b>	<b>1.6</b>	<b>1.8</b>	<b>1.8</b>	<b>1.8</b>	<b>0.9</b>	<b>0.8</b>	<b>1.6</b>	<b>1.9</b>

Licensee Comments:

3Q/14: A review, prompted by the NRC, determined the March 2014 Unit 2 shutdown to repair a pressurizer spray valve was also an unplanned power change. Historical data was corrected with no change in color.

### Unplanned Scrams with Complications



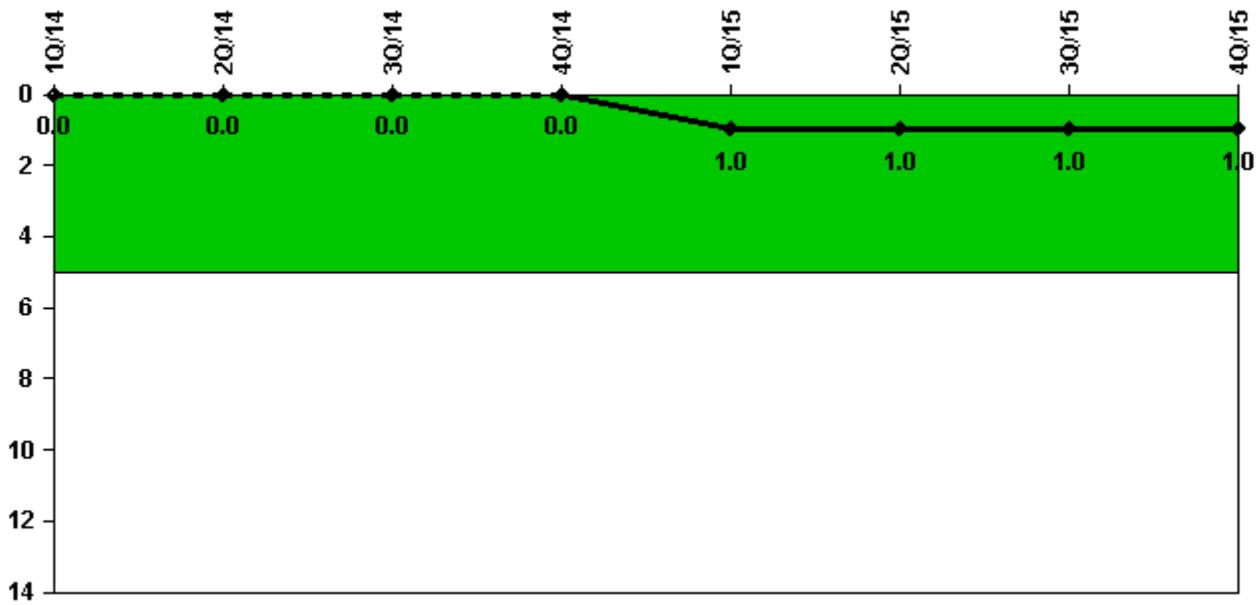
Thresholds: White > 1.0

#### Notes

Unplanned Scrams with Complications	1Q/14	2Q/14	3Q/14	4Q/14	1Q/15	2Q/15	3Q/15	4Q/15
Scrams with complications	0	0	0	0	0	0	0	0
<b>Indicator value</b>	<b>0.0</b>							

Licensee Comments: none

### Safety System Functional Failures (PWR)



Thresholds: White > 5.0

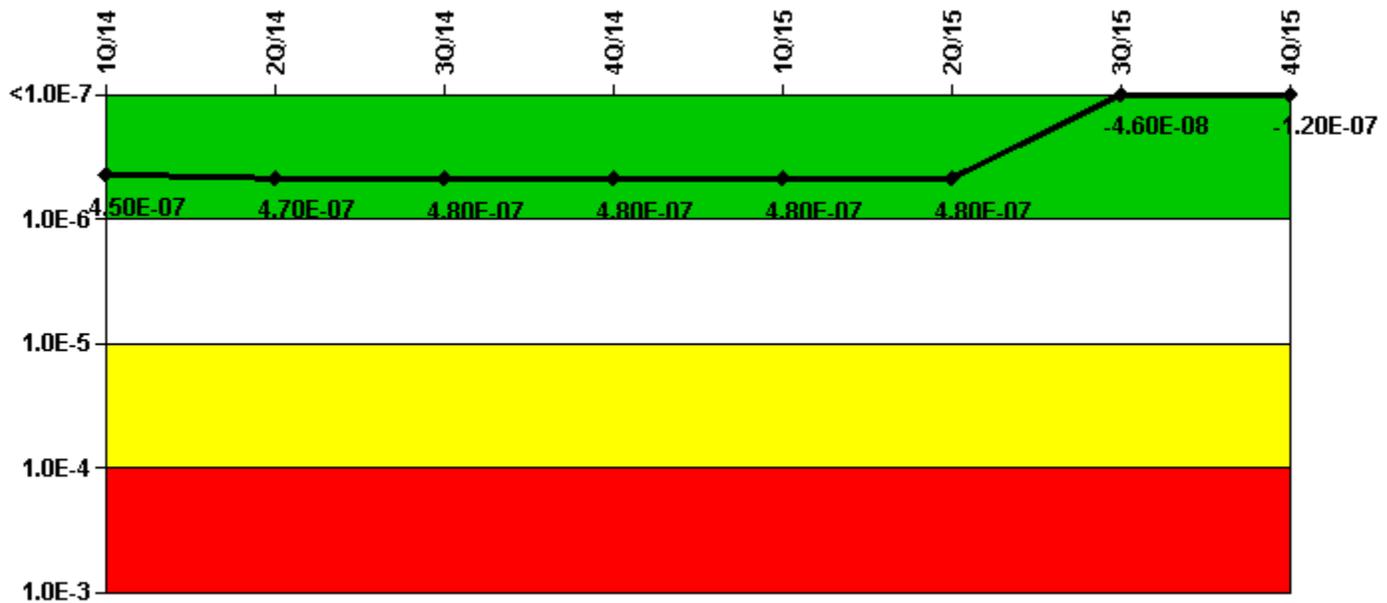
#### Notes

Safety System Functional Failures (PWR)	1Q/14	2Q/14	3Q/14	4Q/14	1Q/15	2Q/15	3Q/15	4Q/15
Safety System Functional Failures	0	0	0	0	1	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>

Licensee Comments:

2Q/15: An assessment revealed a SSFF for March 2015 (see LER 50-280, 50-281/2015-001-00). Historical data was corrected with no change in color.

### 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/14	2Q/14	3Q/14	4Q/14	1Q/15	2Q/15	3Q/15	4Q/15
UAI (ΔCDF)	5.58E-09	8.52E-10	1.06E-09	1.44E-09	2.02E-10	-1.06E-09	-1.33E-08	-1.61E-08
URI (ΔCDF)	4.49E-07	4.72E-07	4.77E-07	4.80E-07	4.80E-07	4.83E-07	-3.22E-08	-1.02E-07
PLE	NO	NO	NO	NO	NO	NO	NO	NO
Indicator value	4.50E-07	4.70E-07	4.80E-07	4.80E-07	4.80E-07	4.80E-07	-4.60E-08	-1.20E-07

#### Licensee Comments:

2Q/15: Risk Cap Invoked.

1Q/15: Risk Cap Invoked.

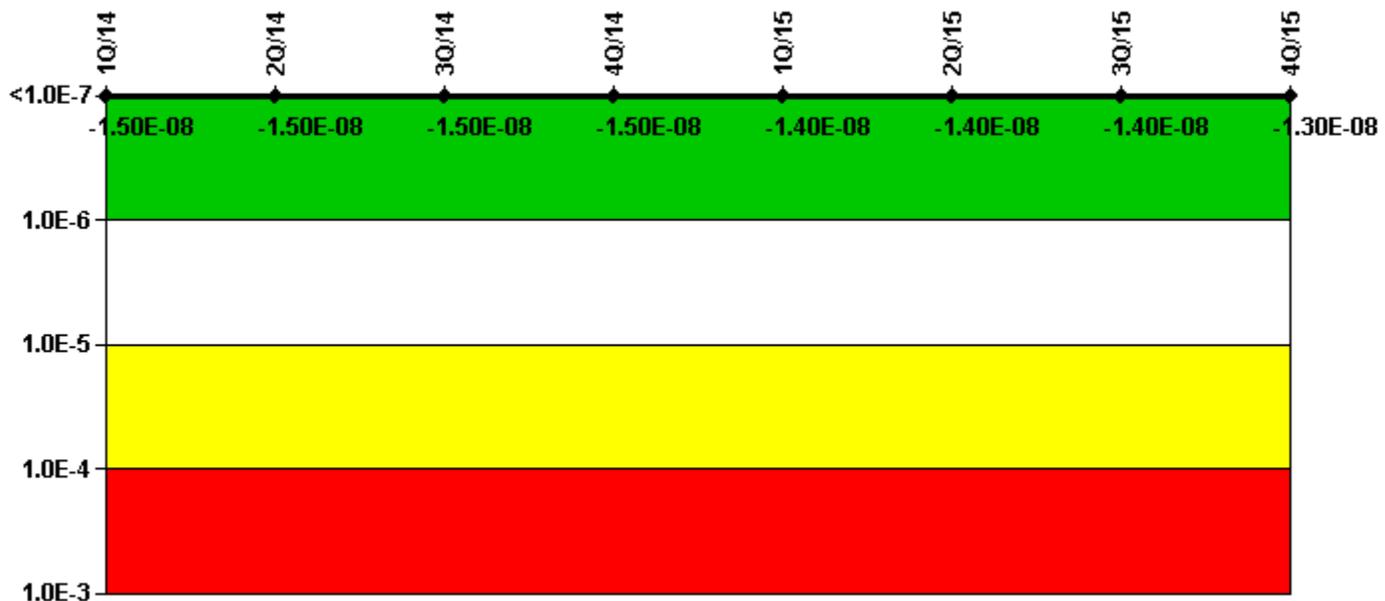
4Q/14: Risk Cap Invoked.

3Q/14: Risk Cap Invoked. A review determined a minor discrepancy of 4 minutes of unavailability for #3 diesel for August 2013. Historical data was changed with no change in color.

2Q/14: Risk Cap Invoked.

1Q/14: Risk Cap Invoked. An assessment determined unavailable hours for December 2012 were not correct. Historical data was corrected with no change in color.

### 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/14	2Q/14	3Q/14	4Q/14	1Q/15	2Q/15	3Q/15	4Q/15
UAI ( $\Delta$ CDF)	-4.15E-10	-4.41E-10	-4.89E-10	-6.00E-10	-6.34E-10	-6.29E-10	-7.17E-10	1.59E-10
URI ( $\Delta$ CDF)	-1.42E-08	-1.45E-08	-1.42E-08	-1.40E-08	-1.36E-08	-1.36E-08	-1.36E-08	-1.34E-08
PLE	NO							
Indicator value	-1.50E-08	-1.50E-08	-1.50E-08	-1.50E-08	-1.40E-08	-1.40E-08	-1.40E-08	-1.30E-08

#### Licensee Comments:

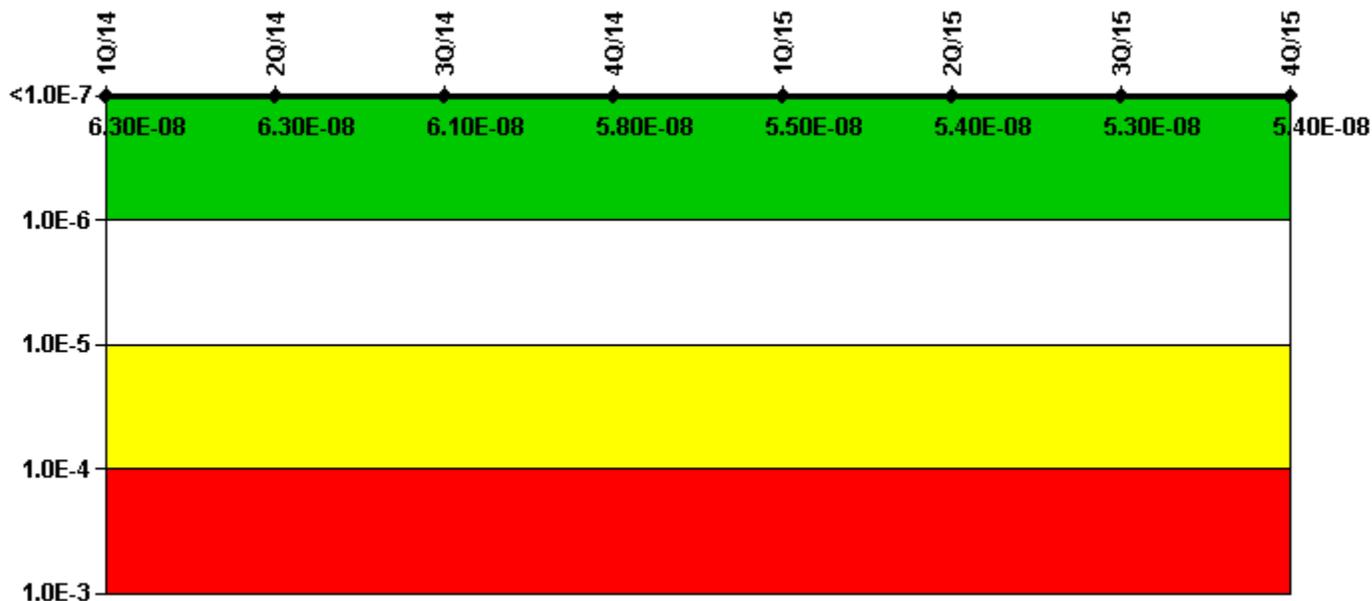
4Q/14: Changed PRA Parameter(s). An MSPI review identified several probabilistic risk analysis coefficients that were incorrect. The MSPI Basis Document and coefficients were corrected with no change in color.

3Q/14: Changed PRA Parameter(s).

2Q/14: Changed PRA Parameter(s).

1Q/14: 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/14	2Q/14	3Q/14	4Q/14	1Q/15	2Q/15	3Q/15	4Q/15
UAI ( $\Delta$ CDF)	-3.23E-09	-3.33E-09	-3.33E-09	-3.25E-09	-3.25E-09	-3.30E-09	-3.30E-09	-3.23E-09
URI ( $\Delta$ CDF)	6.62E-08	6.63E-08	6.47E-08	6.15E-08	5.86E-08	5.72E-08	5.58E-08	5.72E-08
PLE	NO							
Indicator value	6.30E-08	6.30E-08	6.10E-08	5.80E-08	5.50E-08	5.40E-08	5.30E-08	5.40E-08

Licensee Comments:

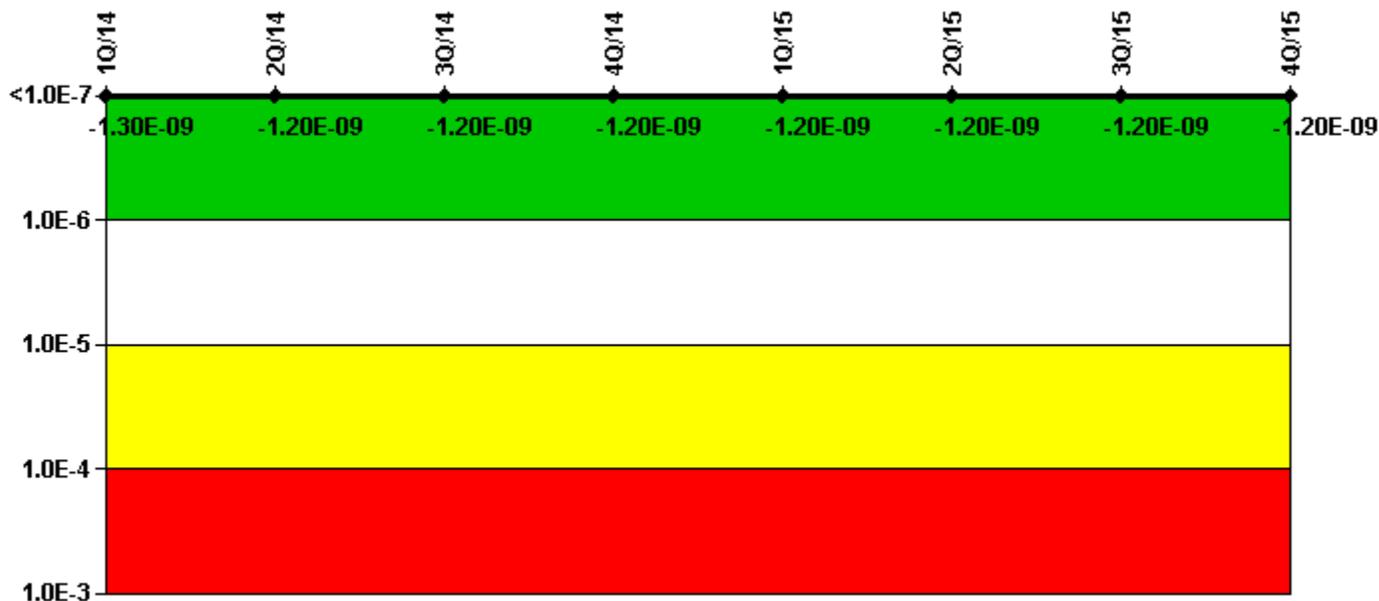
4Q/14: Changed PRA Parameter(s). An MSPI review identified several probabilistic risk analysis coefficients that were incorrect. The MSPI Basis Document and coefficients were corrected with no change in color.

3Q/14: Changed PRA Parameter(s).

2Q/14: Changed PRA Parameter(s).

1Q/14: 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/14	2Q/14	3Q/14	4Q/14	1Q/15	2Q/15	3Q/15	4Q/15
UAI ( $\Delta$ CDF)	-2.25E-10	-2.26E-10	-2.38E-10	-2.42E-10	-2.65E-10	-2.70E-10	-2.70E-10	-2.70E-10
URI ( $\Delta$ CDF)	-1.06E-09	-9.84E-10	-9.75E-10	-9.65E-10	-9.46E-10	-9.46E-10	-9.46E-10	-9.47E-10
PLE	NO							
Indicator value	-1.30E-09	-1.20E-09						

#### Licensee Comments:

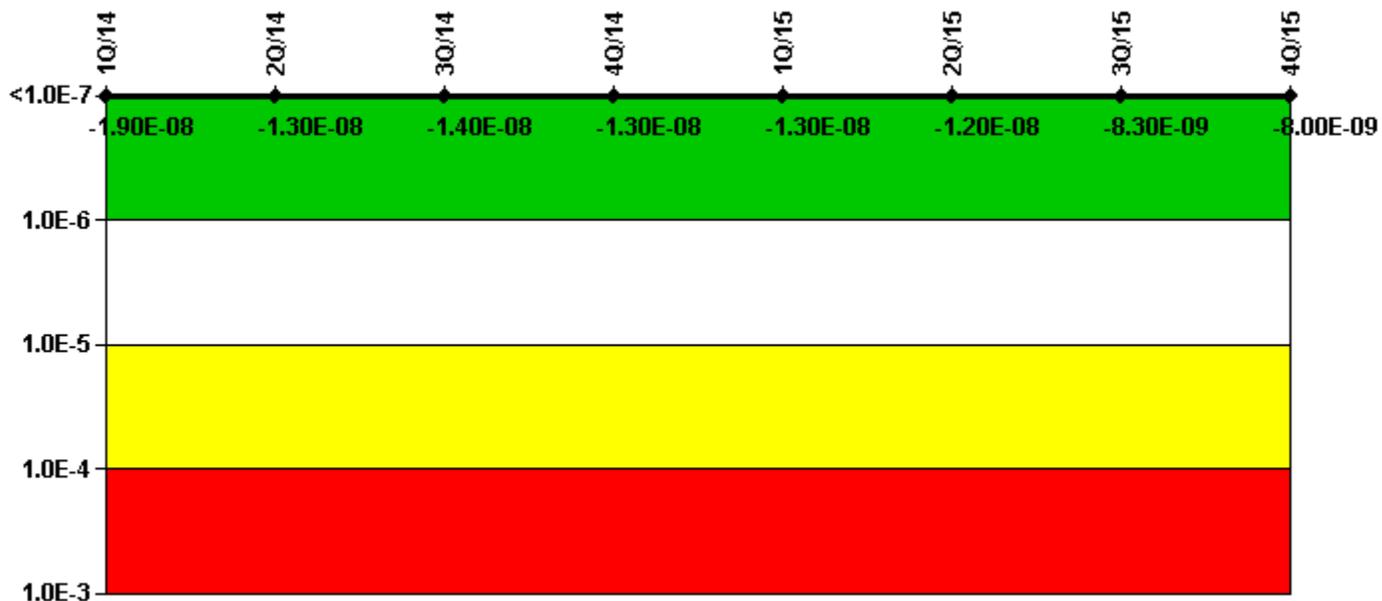
4Q/14: Changed PRA Parameter(s). An MSPI review identified several probabilistic risk analysis coefficients that were incorrect. The MSPI Basis Document and coefficients were corrected with no change in color.

3Q/14: Changed PRA Parameter(s).

2Q/14: Changed PRA Parameter(s).

1Q/14: 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/14	2Q/14	3Q/14	4Q/14	1Q/15	2Q/15	3Q/15	4Q/15
UAI ( $\Delta$ CDF)	-1.51E-09	-1.40E-09	-1.40E-09	-1.27E-09	-1.27E-09	-1.27E-09	-1.25E-09	-1.37E-09
URI ( $\Delta$ CDF)	-1.71E-08	-1.21E-08	-1.22E-08	-1.19E-08	-1.13E-08	-1.09E-08	-7.07E-09	-6.67E-09
PLE	NO							
Indicator value	-1.90E-08	-1.30E-08	-1.40E-08	-1.30E-08	-1.30E-08	-1.20E-08	-8.30E-09	-8.00E-09

#### Licensee Comments:

4Q/14: Changed PRA Parameter(s). An MSPI review identified several probabilistic risk analysis coefficients that were incorrect. The MSPI Basis Document and coefficients were corrected with no change in color.

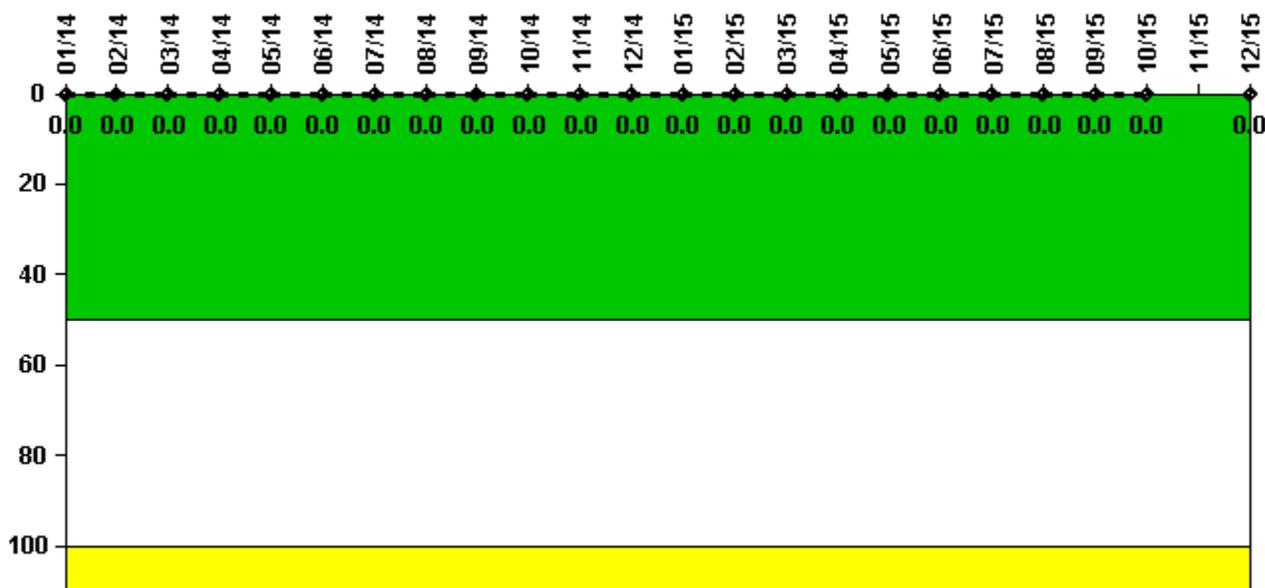
3Q/14: Changed PRA Parameter(s).

2Q/14: Changed PRA Parameter(s).

2Q/14: Failure No. 311011 on March 29 was added which changed the first quarter indicator with no change in color. See LER report No. 50-280/2014-001-00.

1Q/14: Changed PRA Parameter(s).

### Reactor Coolant System Activity



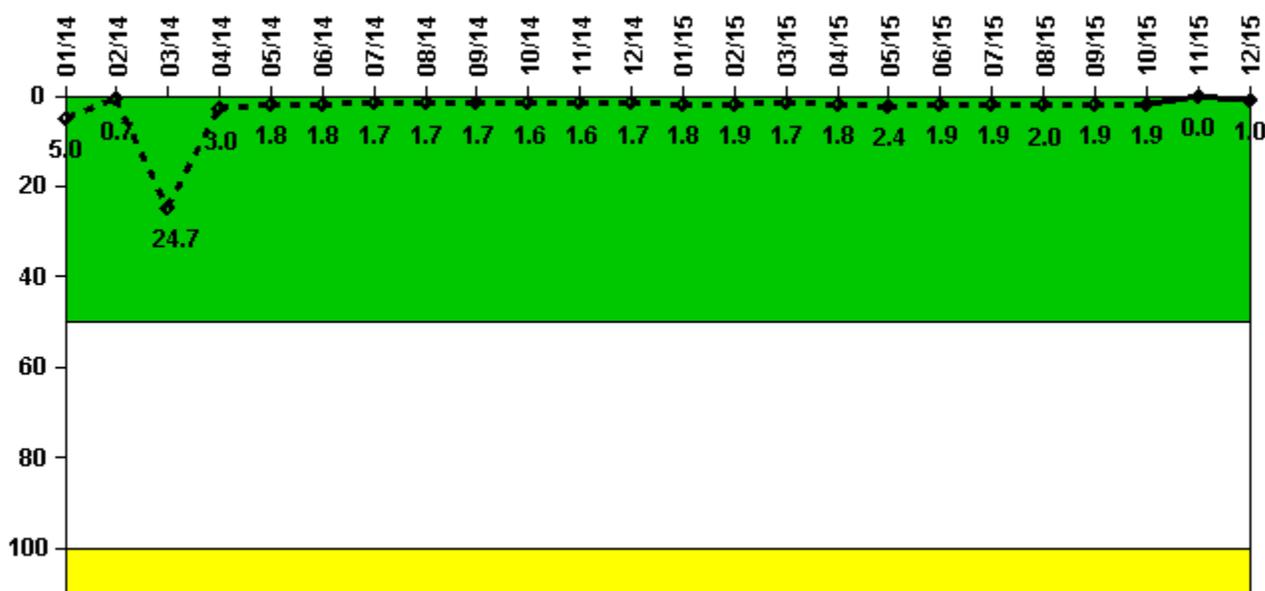
Thresholds: White > 50.0 Yellow > 100.0

### Notes

Reactor Coolant System Activity	1/14	2/14	3/14	4/14	5/14	6/14	7/14	8/14	9/14	10/14	11/14	12/14
Maximum activity	0.000145	0.000145	0.000236	0.000151	0.000439	0.000066	0.000079	0.000077	0.000100	0.000079	0.000085	0.000109
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	0	0	0	0	0	0	0	0	0	0	0
Reactor Coolant System Activity	1/15	2/15	3/15	4/15	5/15	6/15	7/15	8/15	9/15	10/15	11/15	12/15
Maximum activity	0.000095	0.000138	0.000113	0.000103	0.000115	0.000126	0.000116	0.000064	0.000130	0.000182	N/A	0.000187
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	0	0	0	0	0	0	0	0	0	N/A	0

Licensee Comments: none

### Reactor Coolant System Leakage



Thresholds: White > 50.0 Yellow > 100.0

### Notes

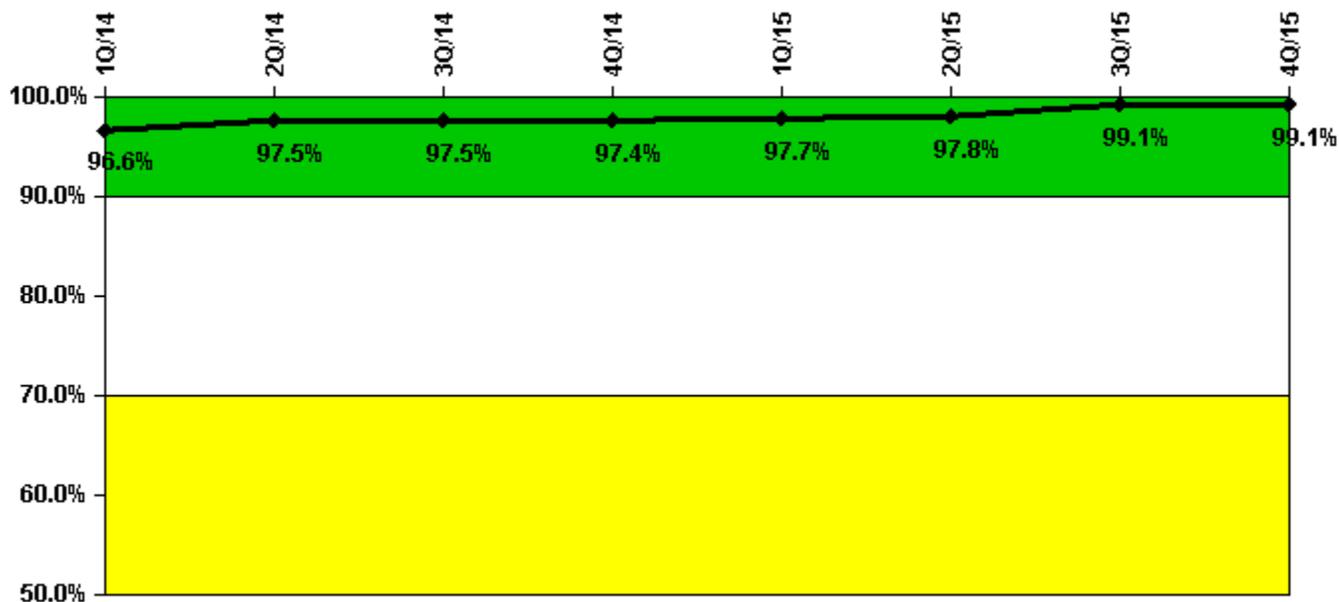
Reactor Coolant System Leakage	1/14	2/14	3/14	4/14	5/14	6/14	7/14	8/14	9/14	10/14	11/14	12/14
Maximum leakage	0.500	0.070	2.470	0.300	0.180	0.180	0.170	0.170	0.170	0.160	0.160	0.170
Technical specification limit	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0
Indicator value	5.0	0.7	24.7	3.0	1.8	1.8	1.7	1.7	1.7	1.6	1.6	1.7

Reactor Coolant System Leakage	1/15	2/15	3/15	4/15	5/15	6/15	7/15	8/15	9/15	10/15	11/15	12/15
Maximum leakage	0.180	0.190	0.170	0.180	0.240	0.190	0.190	0.200	0.190	0.190	0	0.100
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	1.8	1.9	1.7	1.8	2.4	1.9	1.9	2.0	1.9	1.9	0	1.0

Licensee Comments: none

### Drill/Exercise Performance



Thresholds: White < 90.0% Yellow < 70.0%

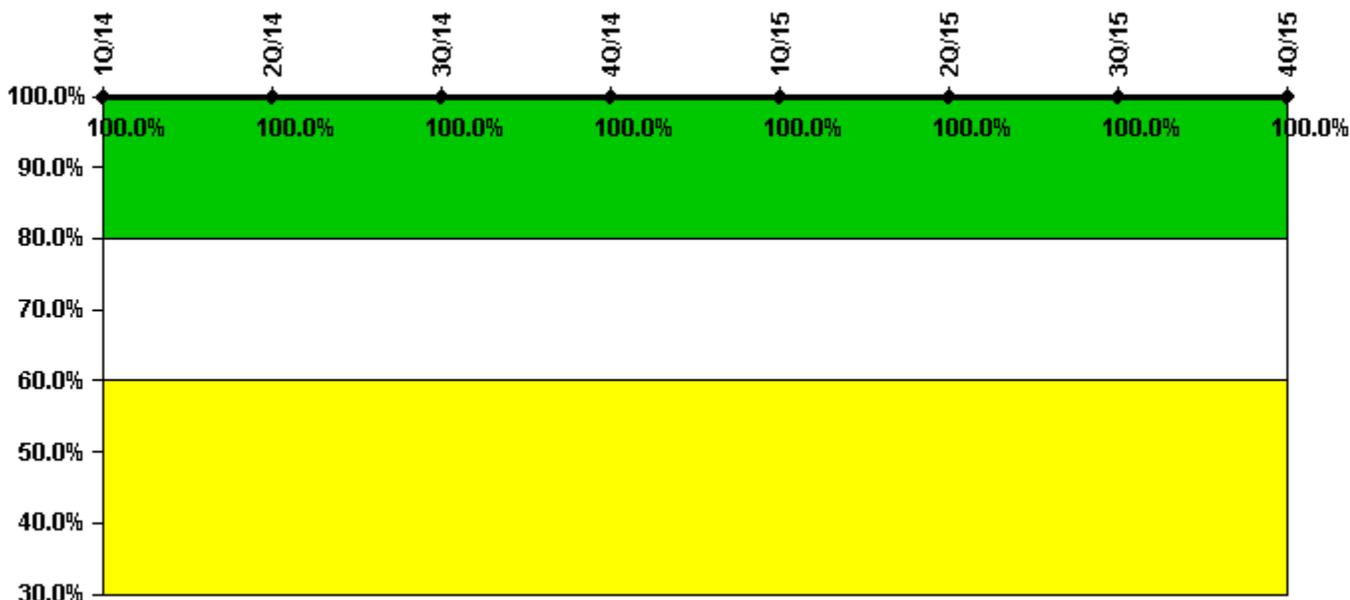
#### Notes

Drill/Exercise Performance	1Q/14	2Q/14	3Q/14	4Q/14	1Q/15	2Q/15	3Q/15	4Q/15
Successful opportunities	36.0	28.0	33.0	19.0	31.0	31.0	35.0	20.0
Total opportunities	38.0	28.0	33.0	19.0	31.0	31.0	35.0	20.0
Indicator value	96.6%	97.5%	97.5%	97.4%	97.7%	97.8%	99.1%	99.1%

Licensee Comments:

3Q/14: Further review of a March 2014 ERO Drill determined an initial successful DEP opportunity was not successful. Historical data was corrected with no change in color.

### ERO Drill Participation



**Thresholds: White < 80.0% Yellow < 60.0%**

**Notes**

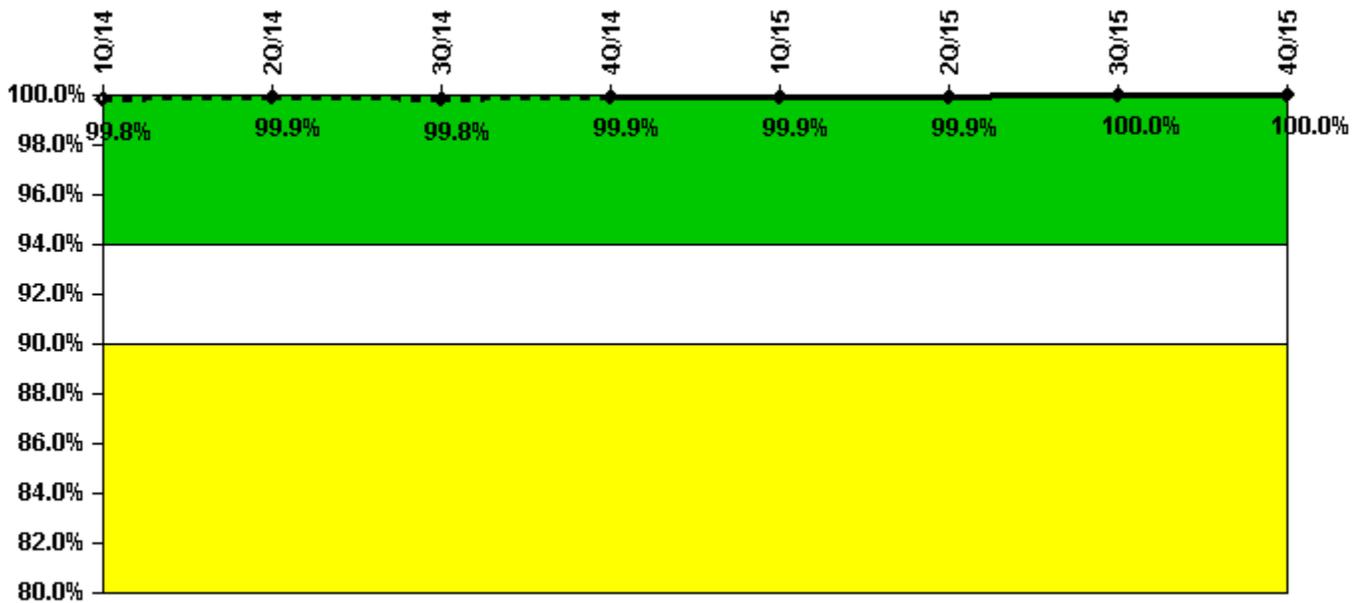
<b>ERO Drill Participation</b>	<b>1Q/14</b>	<b>2Q/14</b>	<b>3Q/14</b>	<b>4Q/14</b>	<b>1Q/15</b>	<b>2Q/15</b>	<b>3Q/15</b>	<b>4Q/15</b>
Participating Key personnel	156.0	152.0	154.0	151.0	141.0	157.0	157.0	165.0
Total Key personnel	156.0	152.0	154.0	151.0	141.0	157.0	157.0	165.0
<b>Indicator value</b>	<b>100.0%</b>							

**Licensee Comments:**

2Q/15: An assessment revealed additional key personnel for March 2015. Historical data was corrected with no change in color.

3Q/14: An assessment determined the total number of personnel in key ERO positions was inaccurate. Historical data was corrected with no change in color.

### Alert & Notification System



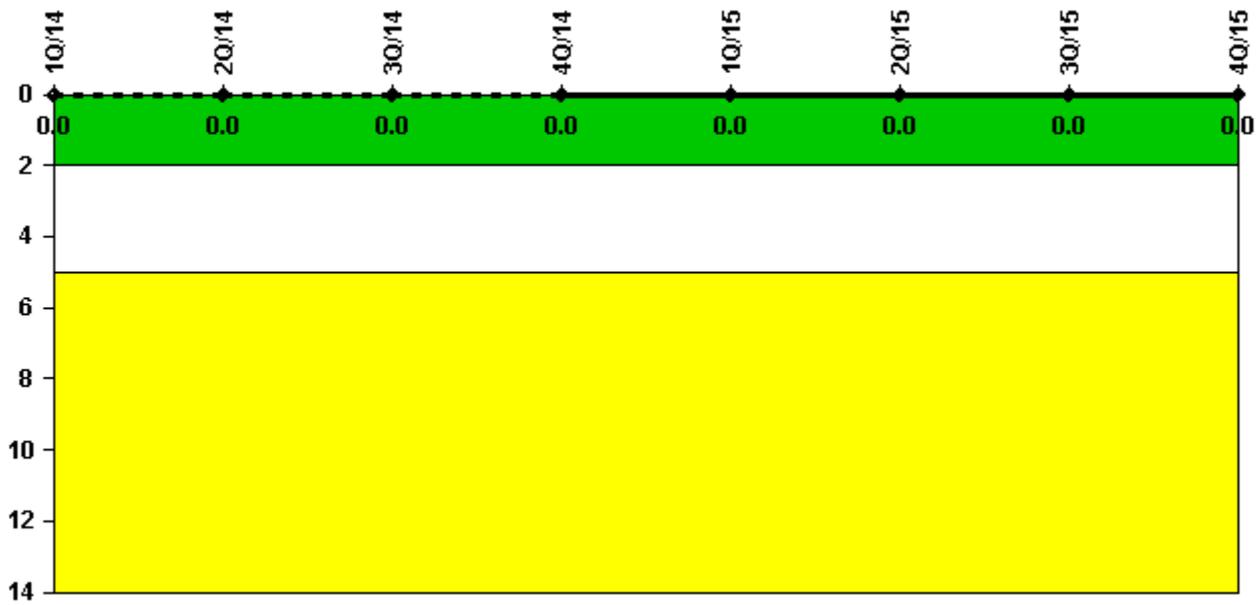
Thresholds: White < 94.0% Yellow < 90.0%

#### Notes

Alert & Notification System	1Q/14	2Q/14	3Q/14	4Q/14	1Q/15	2Q/15	3Q/15	4Q/15
Successful siren-tests	496	568	567	497	567	497	639	497
Total sirens-tests	497	568	568	497	568	497	639	497
Indicator value	99.8%	99.9%	99.8%	99.9%	99.9%	99.9%	100.0%	100.0%

Licensee Comments: none

### Occupational Exposure Control Effectiveness



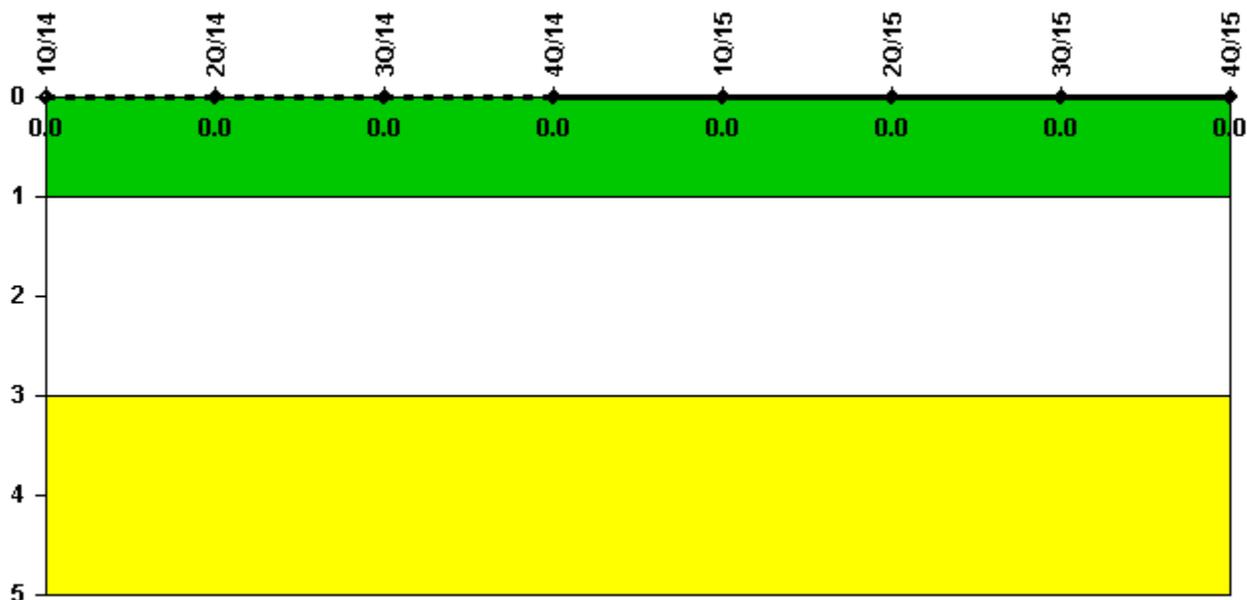
Thresholds: White > 2.0 Yellow > 5.0

#### Notes

Occupational Exposure Control Effectiveness	1Q/14	2Q/14	3Q/14	4Q/14	1Q/15	2Q/15	3Q/15	4Q/15
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>							

Licensee Comments: none

### RETS/ODCM Radiological Effluent



Thresholds: White > 1.0 Yellow > 3.0

#### Notes

RETS/ODCM Radiological Effluent	1Q/14	2Q/14	3Q/14	4Q/14	1Q/15	2Q/15	3Q/15	4Q/15
RETS/ODCM occurrences	0	0	0	0	0	0	0	0
Indicator value	0	0	0	0	0	0	0	0

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.

▲ [Action Matrix Summary](#) | [Inspection Findings Summary](#) | [PI Summary](#) | [Reactor Oversight Process](#)

*Last Modified: March 1, 2016*