

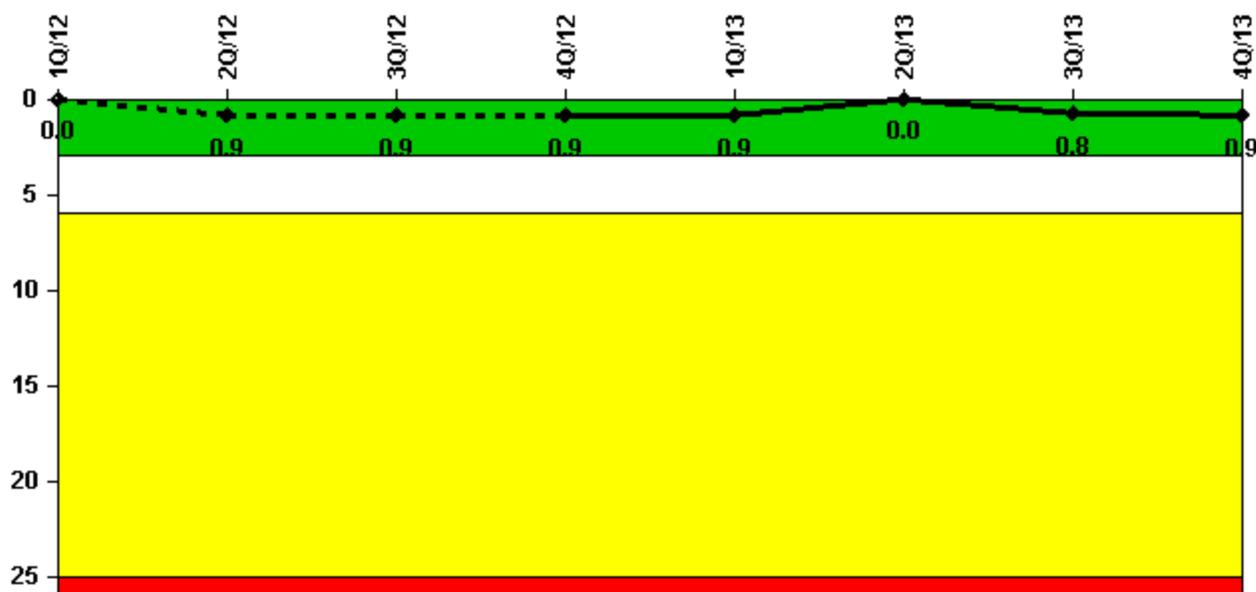
## D.C. Cook 2

### 4Q/2013 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

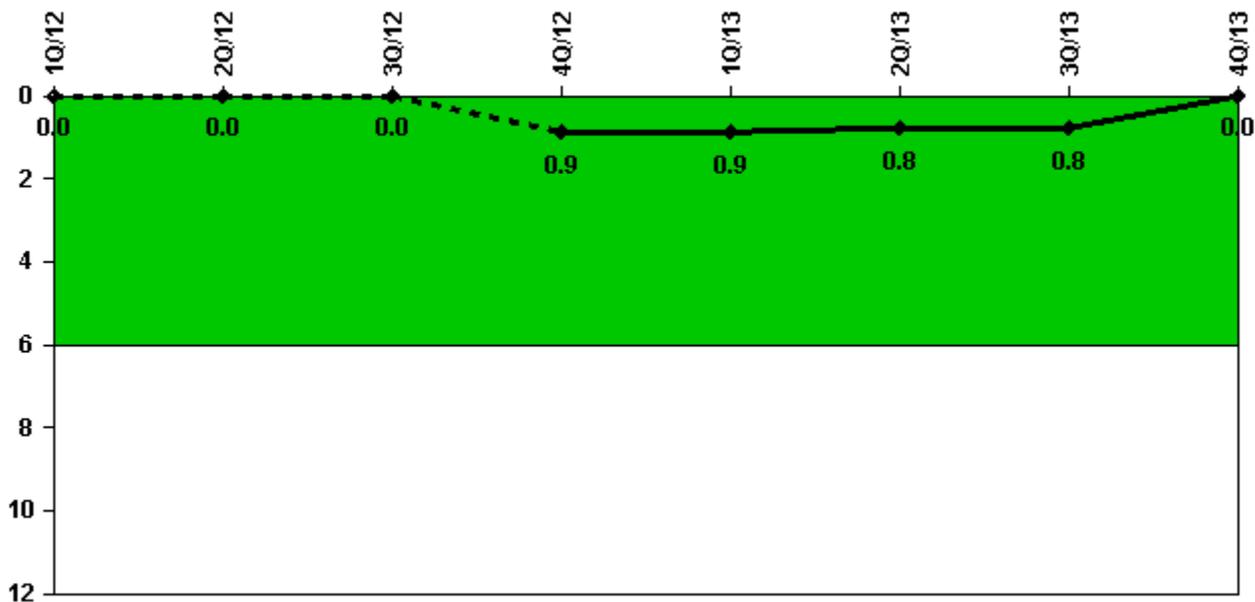
Unplanned Scrams per 7000 Critical Hrs	1Q/12	2Q/12	3Q/12	4Q/12	1Q/13	2Q/13	3Q/13	4Q/13
Unplanned scrams	0	1.0	0	0	0	0	1.0	0
Critical hours	1919.0	1510.6	2208.0	2209.0	2159.0	2184.0	2161.1	1238.6
Indicator value	0	0.9	0.9	0.9	0.9	0	0.8	0.9

Licensee Comments:

3Q/13: A reactor trip due to a turbine generator trip occurred on 7/28/2013 at 1018 due to an incorrect controller setpoint on the Condensate Heater Bypass Control Valve. Subsequently, the reactor was taken critical on 7/30/2013 at 0914.

2Q/12: On April 30, the reactor automatically tripped due to a main generator trip caused by an incorrect protective relay setting.

### Unplanned Power Changes per 7000 Critical Hrs



Thresholds: White > 6.0

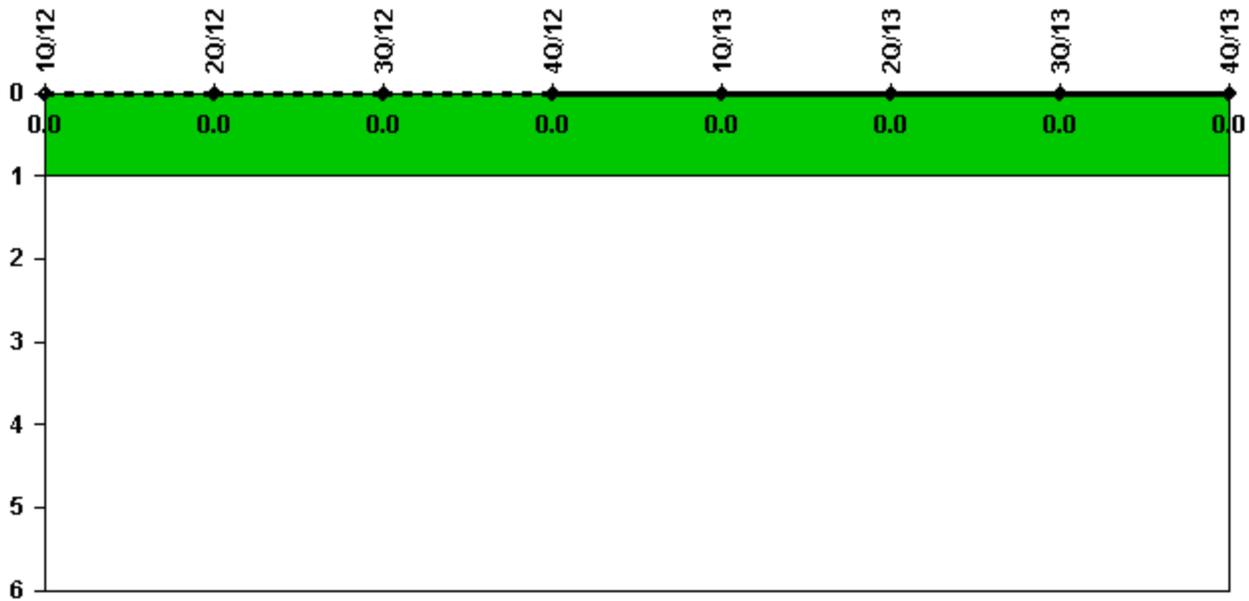
#### Notes

Unplanned Power Changes per 7000 Critical Hrs	1Q/12	2Q/12	3Q/12	4Q/12	1Q/13	2Q/13	3Q/13	4Q/13
Unplanned power changes	0	0	0	1.0	0	0	0	0
Critical hours	1919.0	1510.6	2208.0	2209.0	2159.0	2184.0	2161.1	1238.6
<b>Indicator value</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0.9</b>	<b>0.9</b>	<b>0.8</b>	<b>0.8</b>	<b>0</b>

Licensee Comments:

4Q/12: Downpower to 19% due to 2-BLP-130, Steam Generator Narrow Range Level Transmitter, leak on 11/28/12.

### Unplanned Scrams with Complications



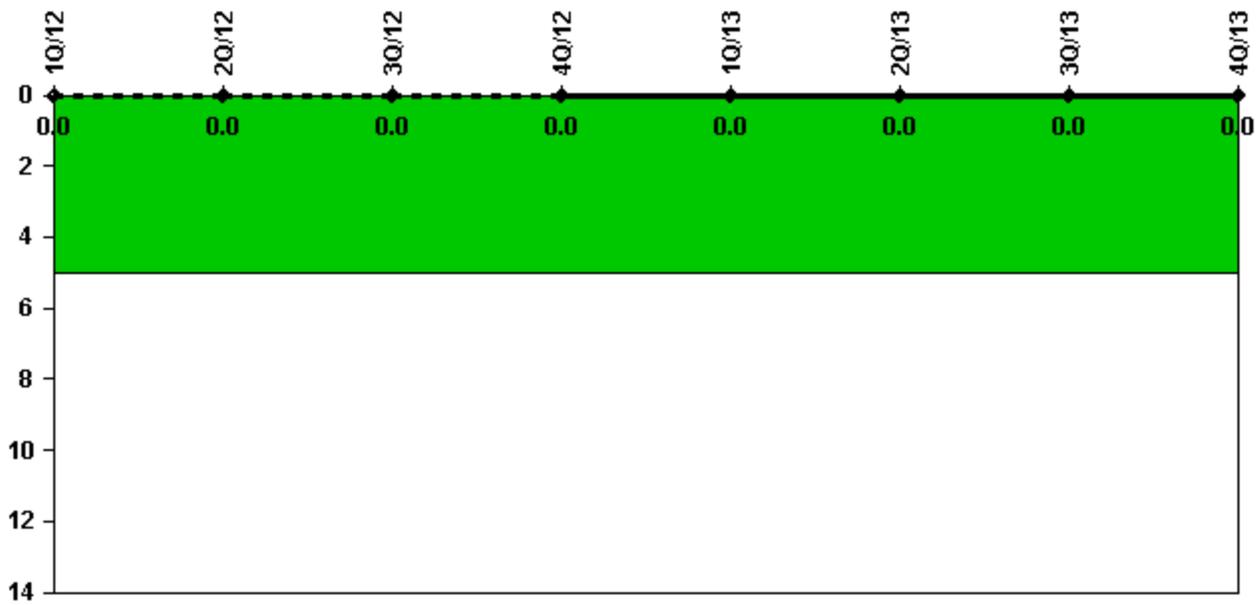
Thresholds: White > 1.0

#### Notes

Unplanned Scrams with Complications	1Q/12	2Q/12	3Q/12	4Q/12	1Q/13	2Q/13	3Q/13	4Q/13
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)



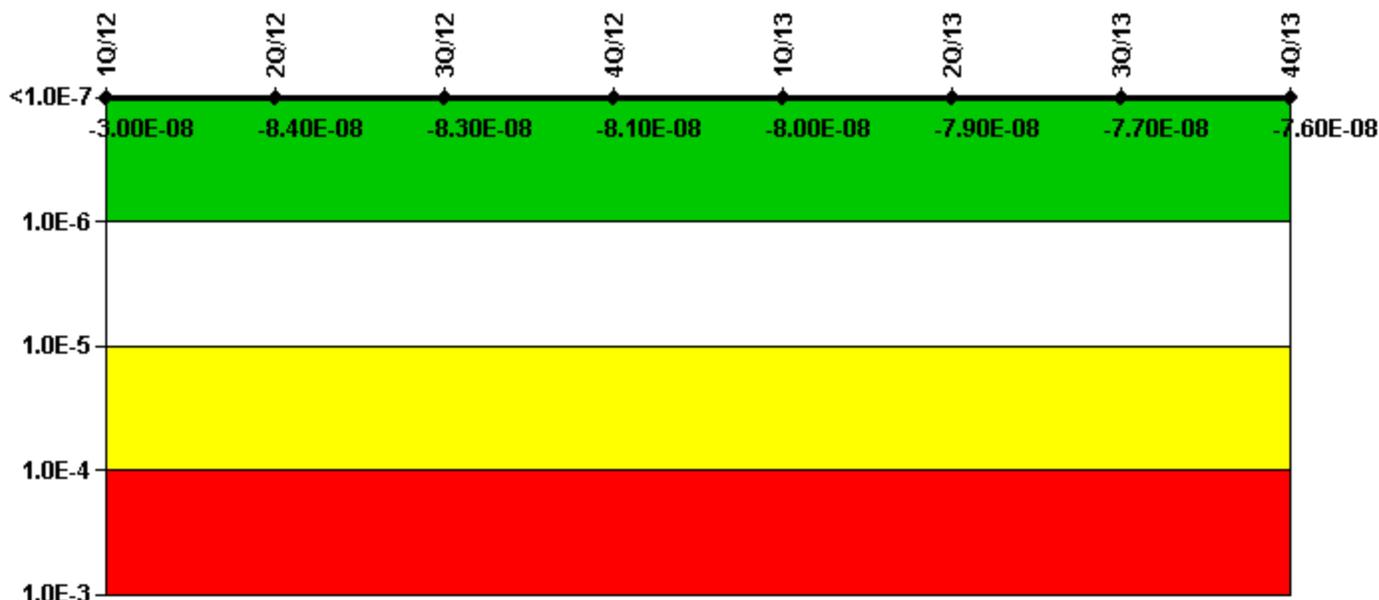
Thresholds: White > 5.0

#### Notes

Safety System Functional Failures (PWR)	1Q/12	2Q/12	3Q/12	4Q/12	1Q/13	2Q/13	3Q/13	4Q/13
Safety System Functional Failures	0	0	0	0	0	0	0	0
<b>Indicator value</b>	<b>0</b>							

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/12	2Q/12	3Q/12	4Q/12	1Q/13	2Q/13	3Q/13	4Q/13
UAI (ΔCDF)	-2.32E-10	2.06E-10	-5.99E-11	-6.18E-11	-4.62E-11	-4.69E-11	-2.43E-10	-2.54E-10
URI (ΔCDF)	-2.99E-08	-8.40E-08	-8.27E-08	-8.14E-08	-8.00E-08	-7.86E-08	-7.71E-08	-7.56E-08
PLE	NO							
Indicator value	-3.00E-08	-8.40E-08	-8.30E-08	-8.10E-08	-8.00E-08	-7.90E-08	-7.70E-08	-7.60E-08

#### Licensee Comments:

4Q/13: Revised MSPI basis document to update Emergency Diesel Generator run hour estimates to exclude the run hours associated with (1) the first hour of run time after breaker closure and (2) unloaded run hours. This change does not affect the "color" of this indicator from 1st Quarter 2012 to present.

3Q/13: Revised MSPI basis document to update Emergency Diesel Generator run hour estimates to exclude the run hours associated with (1) the first hour of run time after breaker closure and (2) unloaded run hours. This change does not affect the "color" of this indicator from 1st Quarter 2012 to present.

2Q/13: Revised MSPI basis document to update Emergency Diesel Generator run hour estimates to exclude the run hours associated with (1) the first hour of run time after breaker closure and (2) unloaded run hours. This change does not affect the "color" of this indicator from 1st Quarter 2012 to present.

1Q/13: Revised MSPI basis document to update Emergency Diesel Generator run hour estimates to exclude the run hours associated with (1) the first hour of run time after breaker closure and (2) unloaded run hours. This

change does not affect the "color" of this indicator from 1st Quarter 2012 to present.

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2Q/12: Revised MSPI basis document to update Emergency Diesel Generator run hour estimates to exclude the run hours associated with (1) the first hour of run time after breaker closure and (2) unloaded run hours. This change does not affect the "color" of this indicator from 1st Quarter 2012 to present.

1Q/12: Revised MSPI basis document to update Emergency Diesel Generator run hour estimates to exclude the run hours associated with (1) the first hour of run time after breaker closure and (2) unloaded run hours. This change does not affect the "color" of this indicator from 1st Quarter 2012 to present.

### 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/12	2Q/12	3Q/12	4Q/12	1Q/13	2Q/13	3Q/13	4Q/13
UAI (ΔCDF)	-2.66E-11							

URI (ΔCDF)	-3.82E-09	-2.54E-08						
PLE	NO							
<b>Indicator value</b>	<b>-3.90E-09</b>	<b>-2.50E-08</b>						

## Licensee Comments:

3Q/13: Revised the MSPI scope of monitored components for High Pressure Safety Injection HPSI to remove two injection pathway boundary valves, which was effective 2nd Quarter 2008. MSPI Basis document excludes these valves from the MSPI scope based on Birnbaum value < 1.0 E-06. The MSPI basis document was revised to make this change in the 1st Quarter 2008. This change does not affect "color" of the indicator from 2nd Quarter 2008 to present.

2Q/13: Revised the MSPI scope of monitored components for High Pressure Safety Injection HPSI to remove two injection pathway boundary valves, which was effective 2nd Quarter 2008. MSPI Basis document excludes these valves from the MSPI scope based on Birnbaum value < 1.0 E-06. The MSPI basis document was revised to make this change in the 1st Quarter 2008. This change does not affect "color" of the indicator from 2nd Quarter 2008 to present.

1Q/13: Revised the MSPI scope of monitored components for High Pressure Safety Injection HPSI to remove two injection pathway boundary valves, which was effective 2nd Quarter 2008. MSPI Basis document excludes these valves from the MSPI scope based on Birnbaum value < 1.0 E-06. The MSPI basis document was revised to make this change in the 1st Quarter 2008. This change does not affect "color" of the indicator from 2nd Quarter 2008 to present.

4Q/12: Revised the MSPI scope of monitored components for High Pressure Safety Injection HPSI to remove two injection pathway boundary valves, which was effective 2nd Quarter 2008. MSPI Basis document excludes these valves from the MSPI scope based on Birnbaum value < 1.0 E-06. The MSPI basis document was revised to make this change in the 1st Quarter 2008. This change does not affect "color" of the indicator from 2nd Quarter 2008 to present.

3Q/12: Revised the MSPI scope of monitored components for High Pressure Safety Injection HPSI to remove two injection pathway boundary valves, which was effective 2nd Quarter 2008. MSPI Basis document excludes these valves from the MSPI scope based on Birnbaum value < 1.0 E-06. The MSPI basis document was revised to make this change in the 1st Quarter 2008. This change does not affect "color" of the indicator from 2nd Quarter 2008 to present.

2Q/12: Revised the MSPI scope of monitored components for High Pressure Safety Injection HPSI to remove two injection pathway boundary valves, which was effective 2nd Quarter 2008. MSPI Basis document excludes these valves from the MSPI scope based on Birnbaum value < 1.0 E-06. The MSPI basis document was revised to make this change in the 1st Quarter 2008. This change does not affect "color" of the indicator from 2nd Quarter 2008 to present.

1Q/12: Revised the MSPI scope of monitored components for High Pressure Safety Injection HPSI to remove two injection pathway boundary valves, which was effective 2nd Quarter 2008. MSPI Basis document excludes these valves from the MSPI scope based on Birnbaum value < 1.0 E-06. The MSPI basis document was revised to make this change in the 1st Quarter 2008. This change does not affect "color" of the indicator from 2nd Quarter 2008 to present.

### Mitigating Systems Performance Index, Heat Removal System



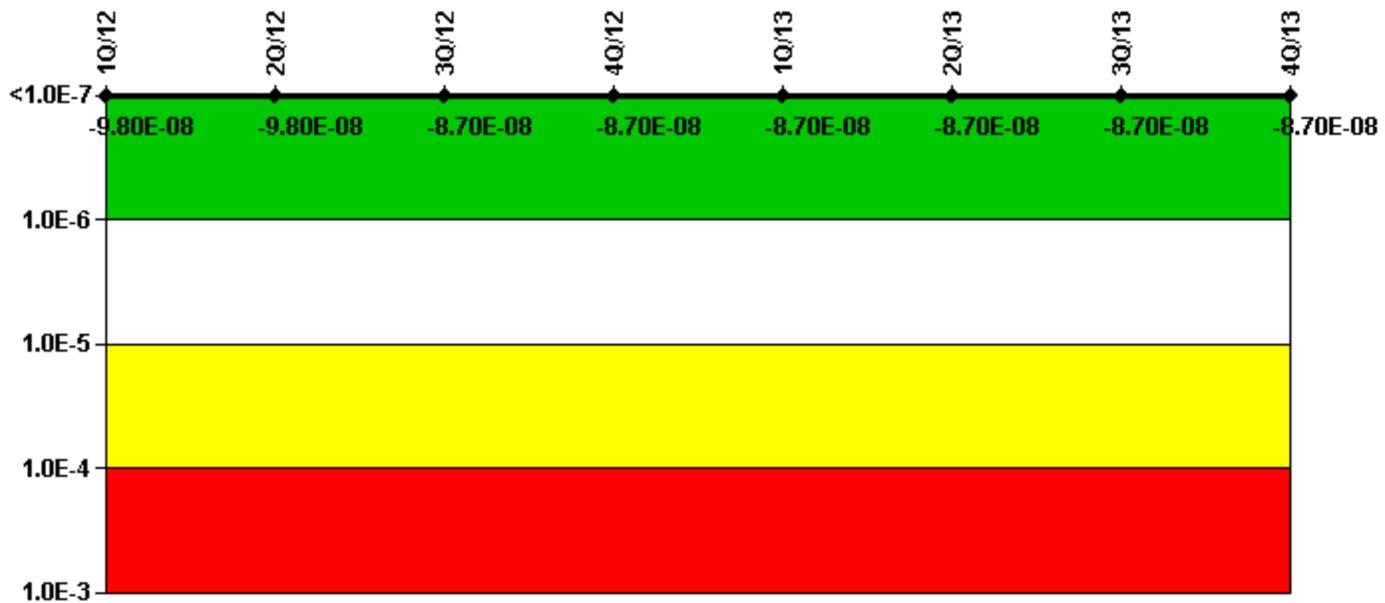
Thresholds: White > 1.00E-6 Yellow > 1.00E-5 Red > 1.00E-4

#### Notes

Mitigating Systems Performance Index, Heat Removal System	1Q/12	2Q/12	3Q/12	4Q/12	1Q/13	2Q/13	3Q/13	4Q/13
UAI ( $\Delta$ CDF)	-2.70E-11	-2.70E-11	-7.22E-12	-7.22E-12	-9.86E-12	-9.86E-12	-1.28E-11	-1.34E-11
URI ( $\Delta$ CDF)	-3.20E-08	-3.20E-08	-3.20E-08	-3.20E-08	-3.20E-08	-3.20E-08	-3.30E-08	-3.23E-08
PLE	NO							
Indicator value	-3.20E-08	-3.20E-08	-3.20E-08	-3.20E-08	-3.20E-08	-3.20E-08	-3.30E-08	-3.20E-08

Licensee Comments: none

### Mitigating Systems Performance Index, Residual Heat Removal System



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

#### Notes

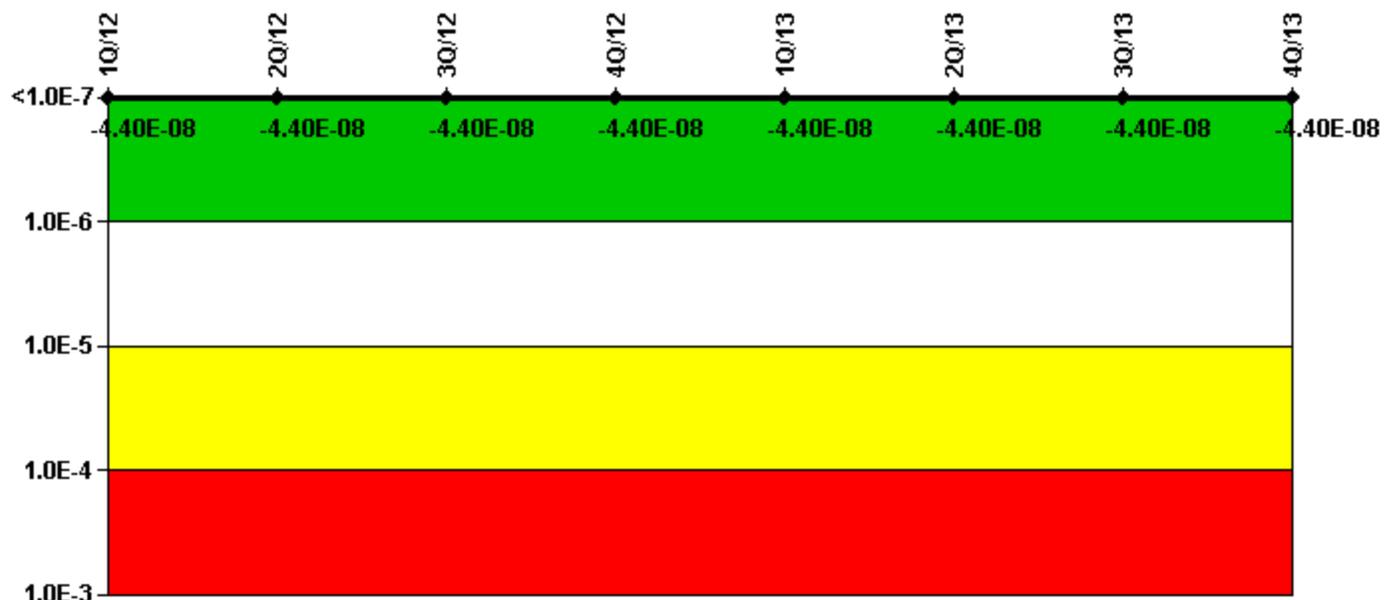
Mitigating Systems Performance Index, Residual Heat Removal System	1Q/12	2Q/12	3Q/12	4Q/12	1Q/13	2Q/13	3Q/13	4Q/13
UAI ( $\Delta$ CDF)	-3.23E-13	-3.23E-13	-1.68E-13	-2.07E-13	-2.07E-13	-3.23E-13	-3.23E-13	-3.23E-13
URI ( $\Delta$ CDF)	-9.83E-08	-9.83E-08	-8.69E-08	-8.69E-08	-8.69E-08	-8.69E-08	-8.69E-08	-8.69E-08
PLE	NO							
Indicator value	-9.80E-08	-9.80E-08	-8.70E-08	-8.70E-08	-8.70E-08	-8.70E-08	-8.70E-08	-8.70E-08

#### Licensee Comments:

2Q/12: The MSPI Basis document was revised to exclude two Unit 2 RHR heat exchanger CCW outlet valves from monitoring based on their Birnbaum importance.

1Q/12: March 31, 2012 test results for valve 2-CMO-429 are currently being evaluated to determine if a failure occurred per MSPI criteria. If it is determined that an MSPI equipment failure occurred, a change report will be submitted.

### Mitigating Systems Performance Index, Cooling Water Systems



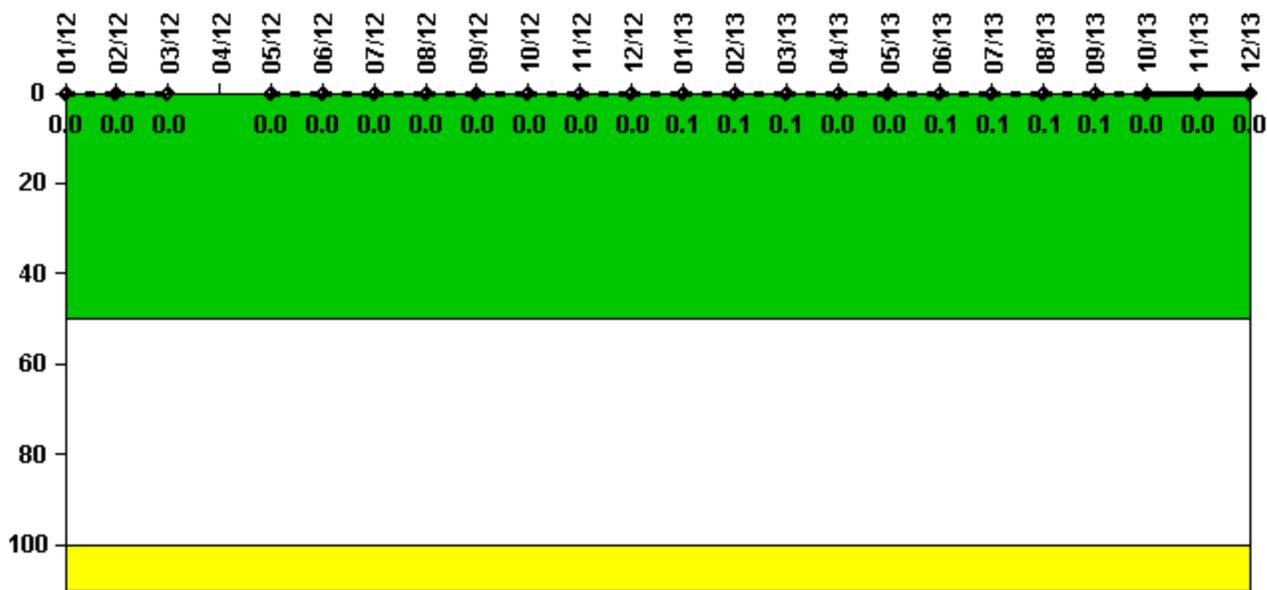
Thresholds: White > 1.00E-6 Yellow > 1.00E-5 Red > 1.00E-4

#### Notes

Mitigating Systems Performance Index, Cooling Water Systems	1Q/12	2Q/12	3Q/12	4Q/12	1Q/13	2Q/13	3Q/13	4Q/13
UAI ( $\Delta$ CDF)	3.37E-11	3.33E-11	6.99E-11	6.99E-11	-2.61E-12	-2.61E-12	-2.33E-12	1.17E-12
URI ( $\Delta$ CDF)	-4.36E-08							
PLE	NO							
Indicator value	-4.40E-08							

Licensee Comments: none

### Reactor Coolant System Activity



Thresholds: White > 50.0 Yellow > 100.0

#### Notes

Reactor Coolant System Activity	1/12	2/12	3/12	4/12	5/12	6/12	7/12	8/12	9/12	10/12	11/12	12/12
Maximum activity	0.000200	0.000211	0.000152	N/A	0.000097	0.000099	0.000104	0.000205	0.000120	0.000123	0.000160	0.000130
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	N/A	0	0	0	0	0	0	0	0

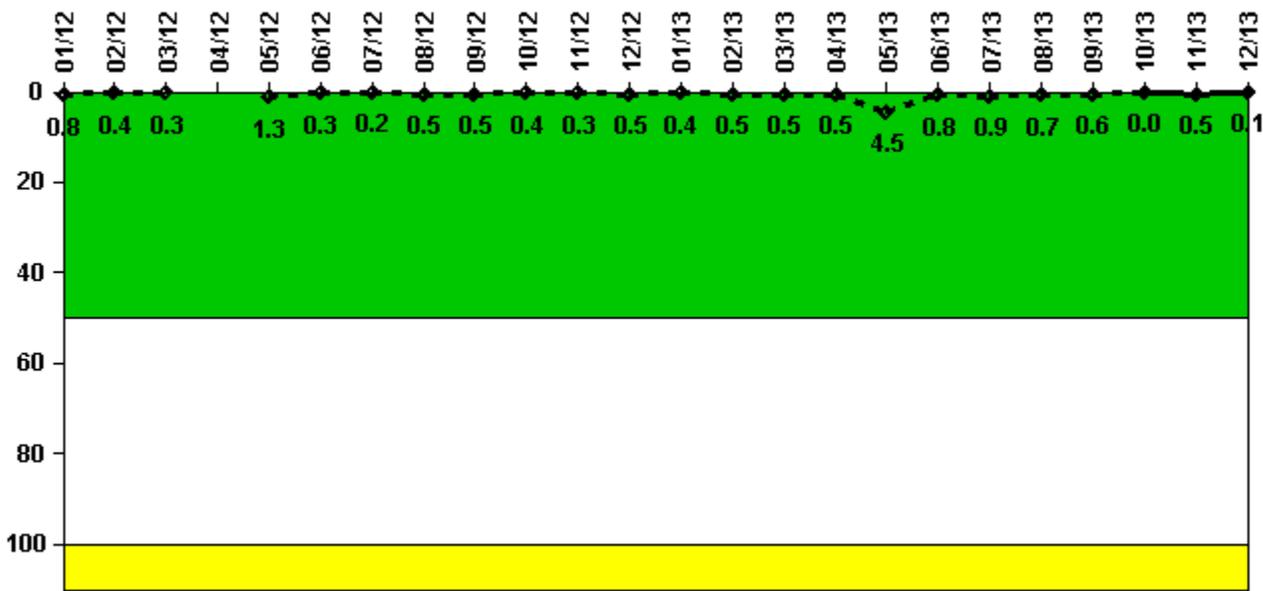
  

Reactor Coolant System Activity	1/13	2/13	3/13	4/13	5/13	6/13	7/13	8/13	9/13	10/13	11/13	12/13
Maximum activity	0.000213	0.000190	0.000176	0.000162	0.000168	0.000175	0.000183	0.000191	0.000382	0.000164	0.000068	0.000090
Technical specification limit	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4
Indicator value	0.1	0.1	0.1	0	0	0.1	0.1	0.1	0.1	0	0	0

Licensee Comments:

6/12: Due to a refueling outage followed by power escalation, no RCS activity data is available for April.

### Reactor Coolant System Leakage



Thresholds: White > 50.0 Yellow > 100.0

**Notes**

Reactor Coolant System Leakage	1/12	2/12	3/12	4/12	5/12	6/12	7/12	8/12	9/12	10/12	11/12	12/12
Maximum leakage	0.085	0.045	0.036	N/A	0.147	0.031	0.023	0.050	0.055	0.040	0.034	0.057
Technical specification limit	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0
<b>Indicator value</b>	<b>0.8</b>	<b>0.4</b>	<b>0.3</b>	<b>N/A</b>	<b>1.3</b>	<b>0.3</b>	<b>0.2</b>	<b>0.5</b>	<b>0.5</b>	<b>0.4</b>	<b>0.3</b>	<b>0.5</b>

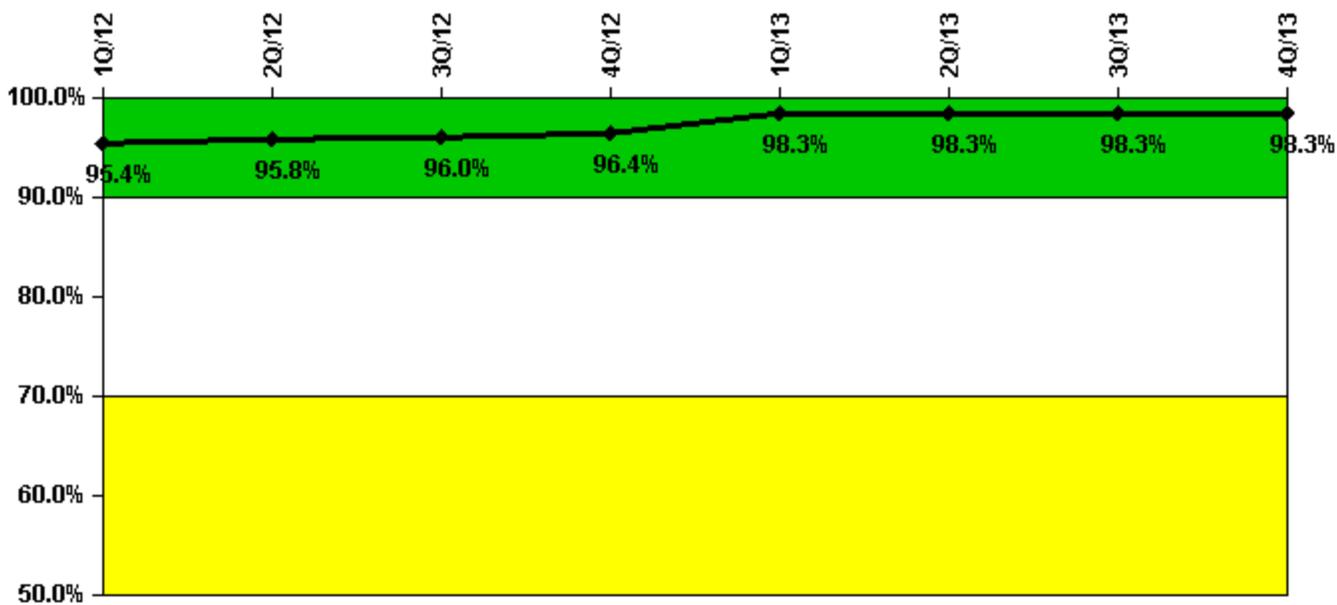
  

Reactor Coolant System Leakage	1/13	2/13	3/13	4/13	5/13	6/13	7/13	8/13	9/13	10/13	11/13	12/13
Maximum leakage	0.039	0.054	0.056	0.050	0.490	0.085	0.096	0.073	0.067	0	0.052	0.010
Technical specification limit	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0
<b>Indicator value</b>	<b>0.4</b>	<b>0.5</b>	<b>0.5</b>	<b>0.5</b>	<b>4.5</b>	<b>0.8</b>	<b>0.9</b>	<b>0.7</b>	<b>0.6</b>	<b>0</b>	<b>0.5</b>	<b>0.1</b>

Licensee Comments:

6/12: Due to a refueling outage followed by power escalation, no RCS leakage data is available for April.

### Drill/Exercise Performance



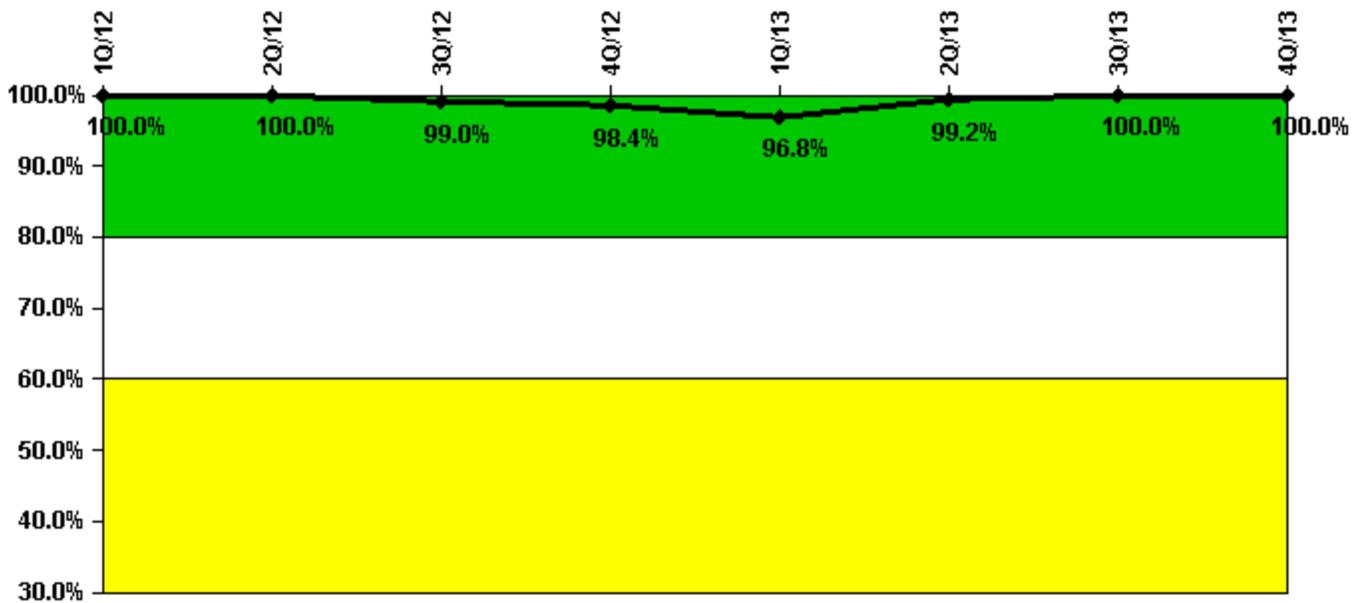
Thresholds: White < 90.0% Yellow < 70.0%

#### Notes

Drill/Exercise Performance	1Q/12	2Q/12	3Q/12	4Q/12	1Q/13	2Q/13	3Q/13	4Q/13
Successful opportunities	34.0	24.0	41.0	66.0	68.0	20.0	44.0	0
Total opportunities	35.0	25.0	41.0	67.0	70.0	20.0	44.0	0
Indicator value	95.4%	95.8%	96.0%	96.4%	98.3%	98.3%	98.3%	98.3%

Licensee Comments: none

### ERO Drill Participation



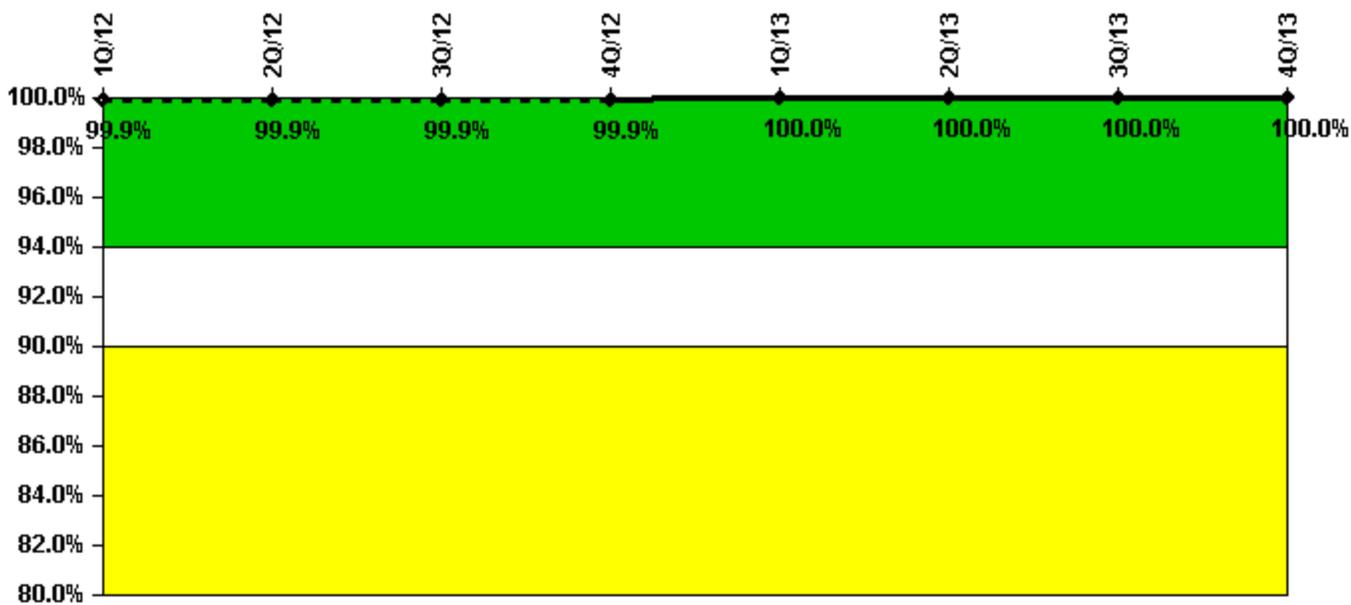
Thresholds: White < 80.0% Yellow < 60.0%

#### Notes

ERO Drill Participation	1Q/12	2Q/12	3Q/12	4Q/12	1Q/13	2Q/13	3Q/13	4Q/13
Participating Key personnel	91.0	89.0	95.0	126.0	120.0	121.0	118.0	118.0
Total Key personnel	91.0	89.0	96.0	128.0	124.0	122.0	118.0	118.0
Indicator value	100.0%	100.0%	99.0%	98.4%	96.8%	99.2%	100.0%	100.0%

Licensee Comments: none

### Alert & Notification System



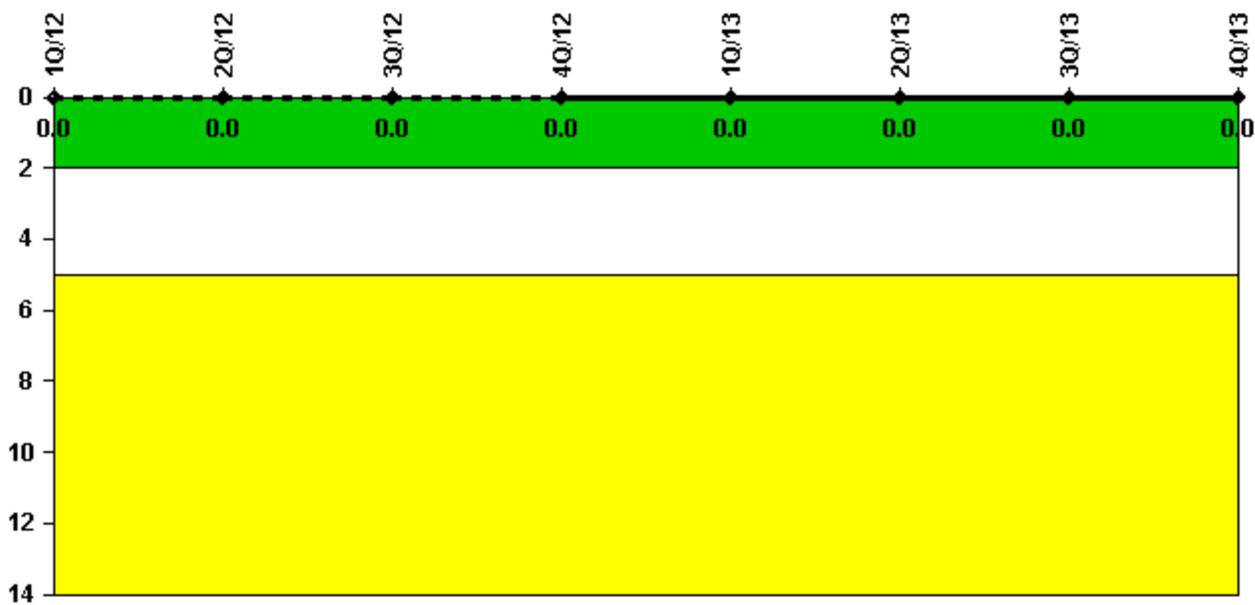
Thresholds: White < 94.0% Yellow < 90.0%

#### Notes

Alert & Notification System	1Q/12	2Q/12	3Q/12	4Q/12	1Q/13	2Q/13	3Q/13	4Q/13
Successful siren-tests	1118	1118	1120	1120	1120	1119	1120	1120
Total sirens-tests	1120	1119	1120	1120	1120	1119	1120	1120
Indicator value	99.9%	99.9%	99.9%	99.9%	100.0%	100.0%	100.0%	100.0%

Licensee Comments: none

### Occupational Exposure Control Effectiveness



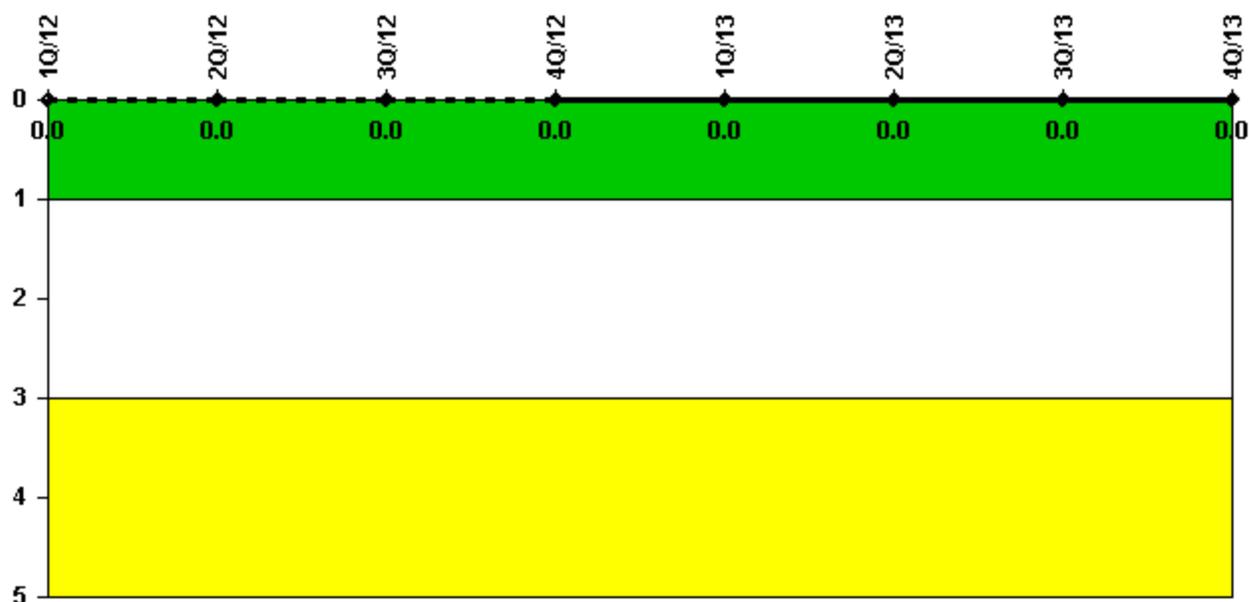
Thresholds: White > 2.0 Yellow > 5.0

#### Notes

Occupational Exposure Control Effectiveness	1Q/12	2Q/12	3Q/12	4Q/12	1Q/13	2Q/13	3Q/13	4Q/13
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/12	2Q/12	3Q/12	4Q/12	1Q/13	2Q/13	3Q/13	4Q/13
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: January 22, 2014*