

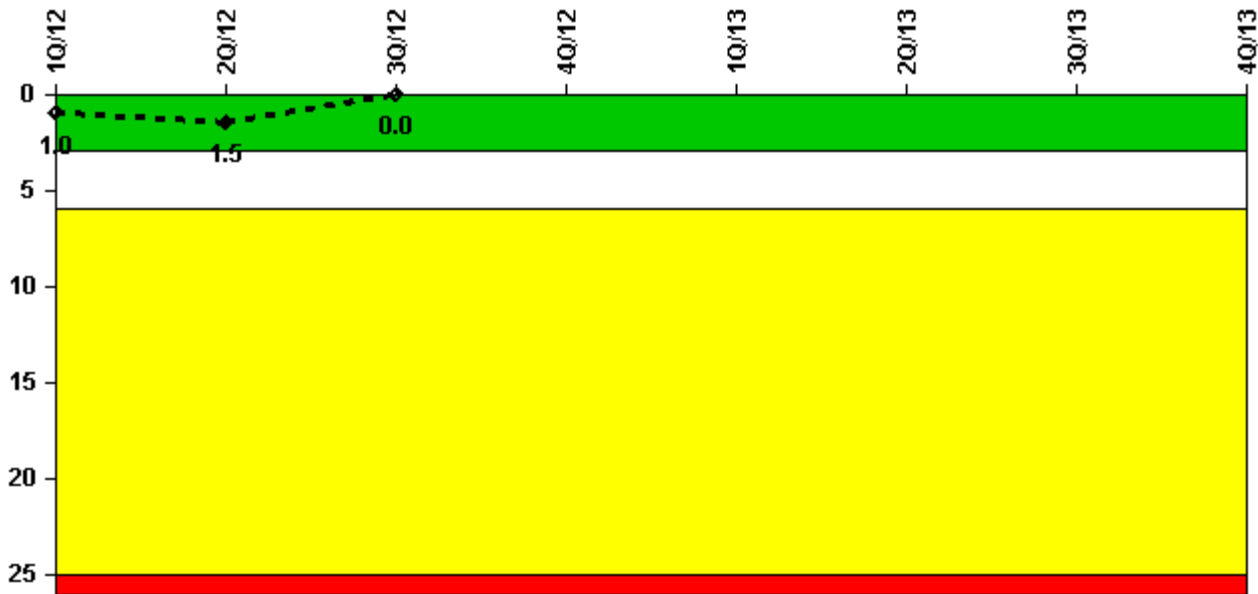
## San Onofre 2

### 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	0	0	0	0	0		
Critical hours	212.7	0	0	0	0	0		
<b>Indicator value</b>	<b>1.0</b>	<b>1.5</b>	<b>0</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>		

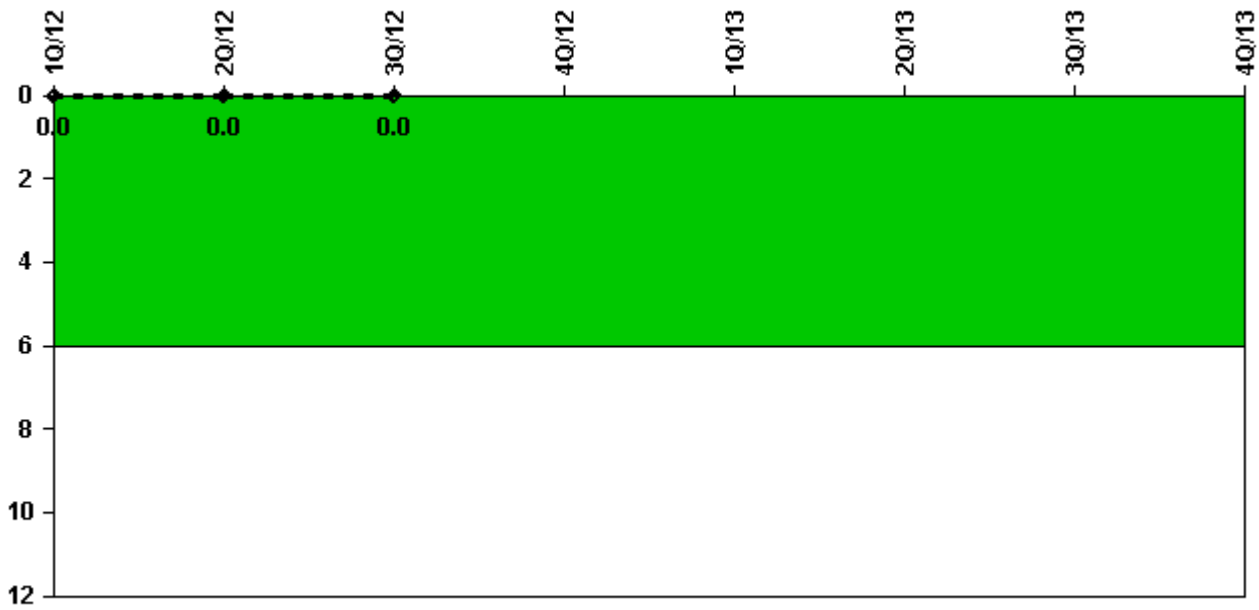
Licensee Comments:

2Q/13: This PI is N/A for 2Q13 due to less than 2400 critical hours in previous 4 quarters.

1Q/13: This PI is N/A for 1Q13 due to less than 2400 critical hours in previous 4 quarters.

4Q/12: This PI is N/A for 4Q12 due to less than 2400 critical hours in previous 4 quarters.

### 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	0	0	0		
Critical hours	212.7	0	0	0	0	0		
<b>Indicator value</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>		

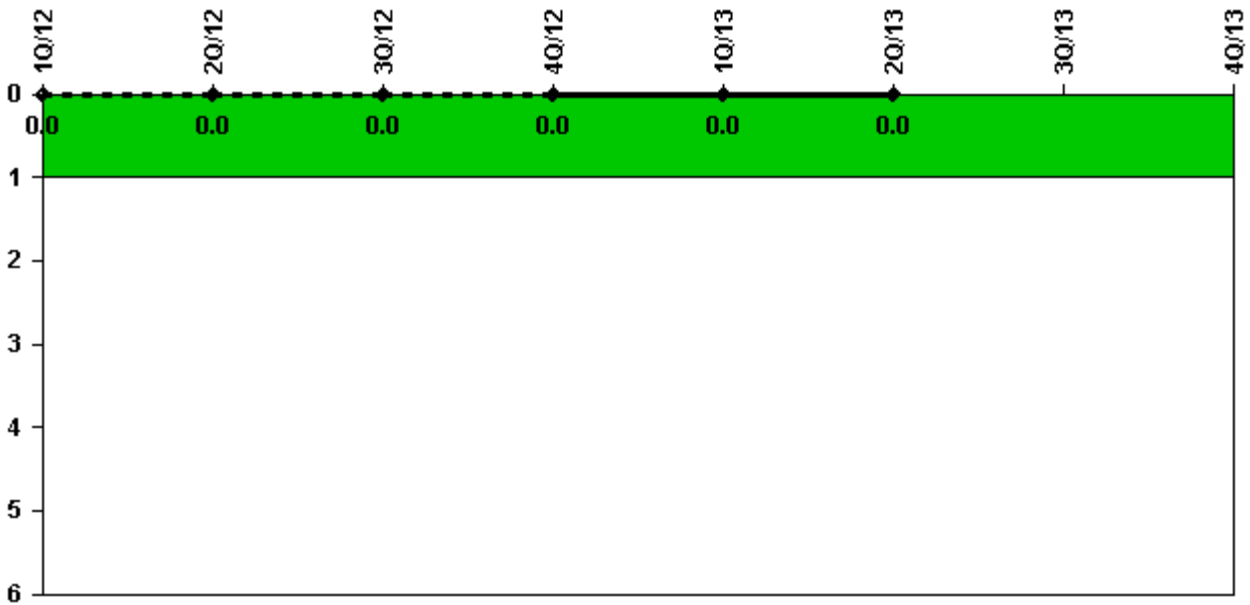
Licensee Comments:

2Q/13: This PI is N/A for 2Q13 due to less than 2400 critical hours in previous 4 quarters.

1Q/13: This PI is N/A for 1Q13 due to less than 2400 critical hours in previous 4 quarters.

4Q/12: This PI is N/A for 4Q12 due to less than 2400 critical hours in previous 4 quarters.

### Unplanned Scrams with Complications



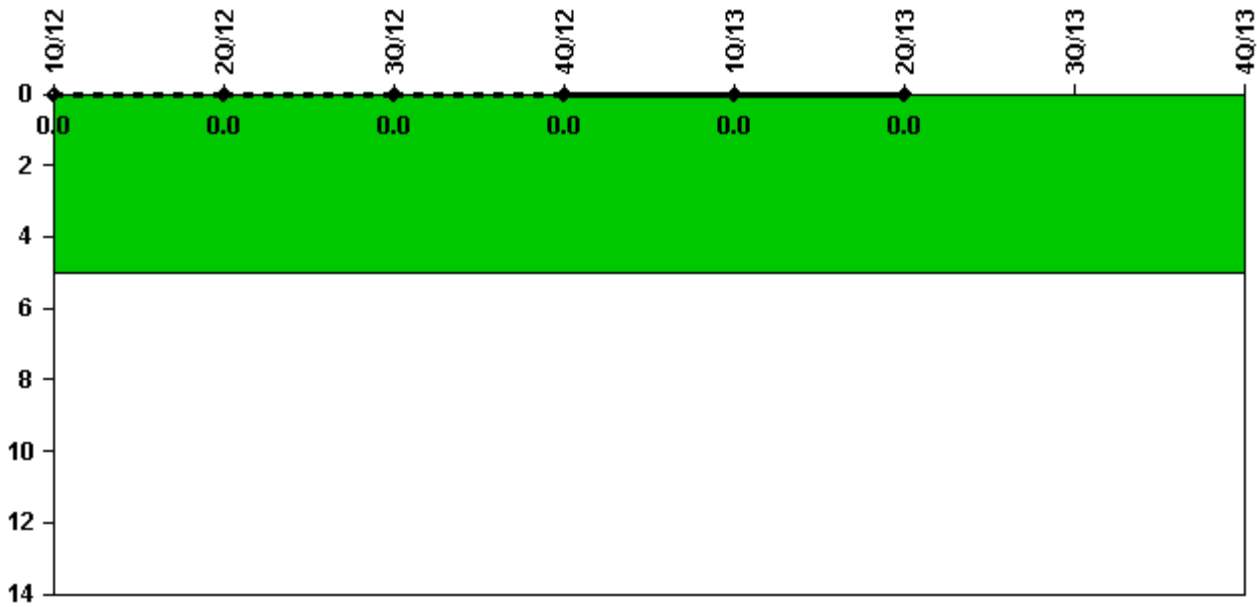
Thresholds: White > 1.0

#### 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		
<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>		

Licensee Comments: none

### Safety System Functional Failures (PWR)



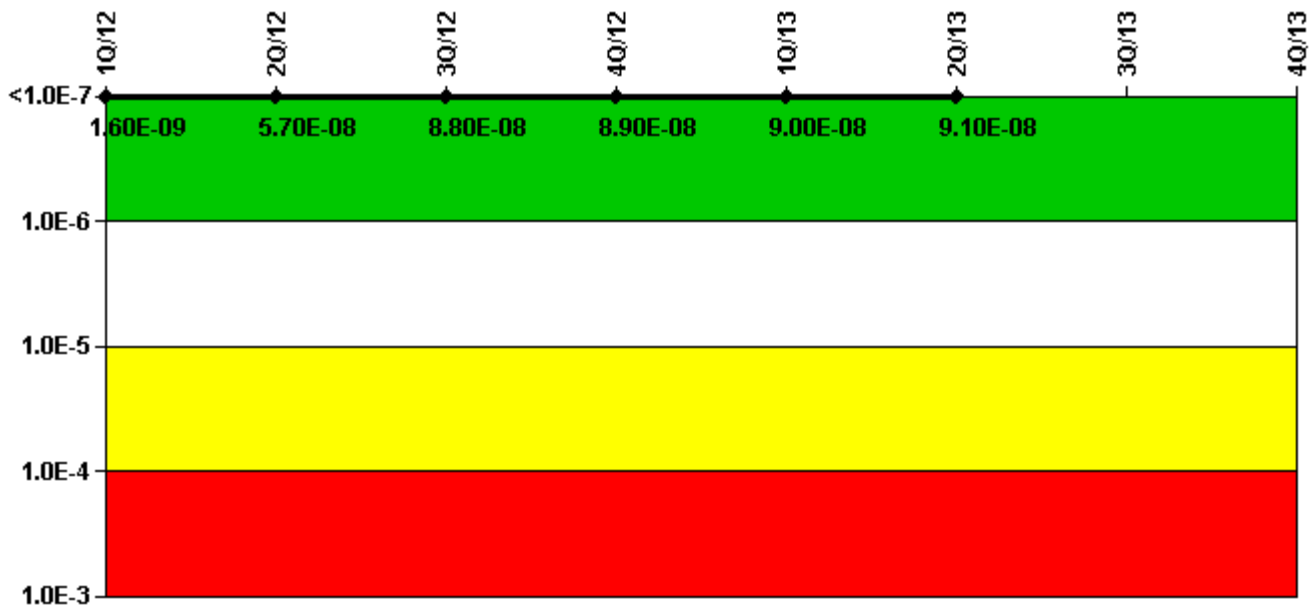
Thresholds: White > 5.0

#### 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		
<b>Indicator value</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</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

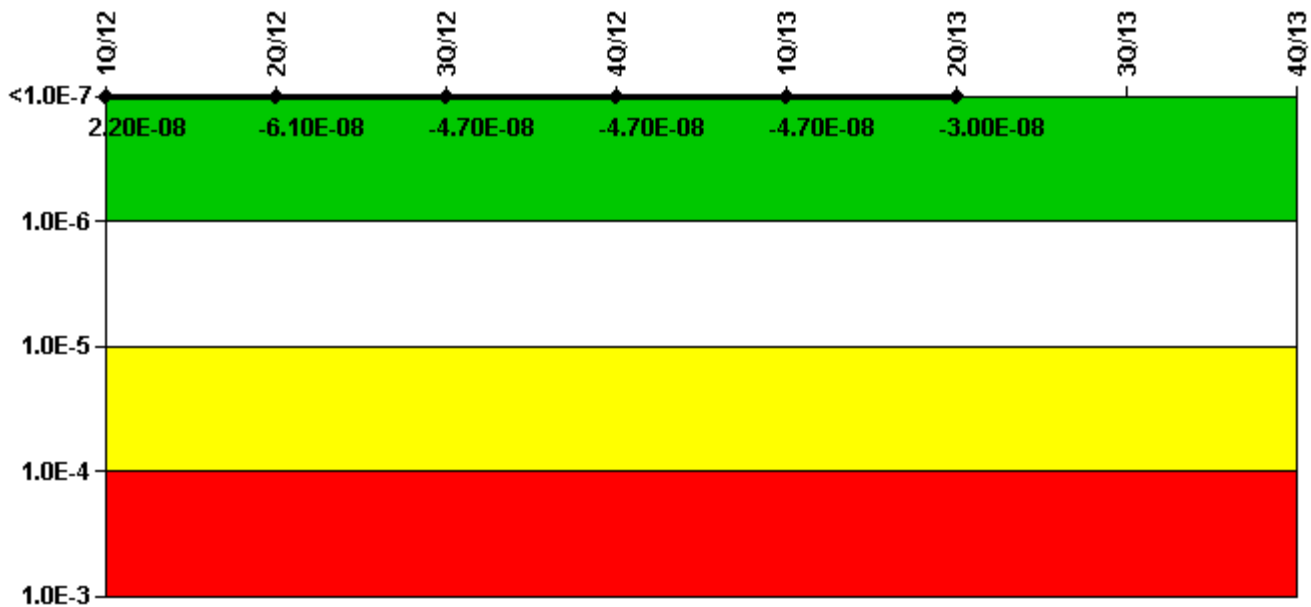
#### Notes

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 ( $\Delta$ CDF)	5.75E-08	7.66E-08	1.05E-07	1.05E-07	1.05E-07	1.04E-07		
URI ( $\Delta$ CDF)	-5.59E-08	-1.93E-08	-1.79E-08	-1.65E-08	-1.50E-08	-1.34E-08		
PLE	NO	NO	NO	NO	NO	NO		
Indicator value	1.60E-09	5.70E-08	8.80E-08	8.90E-08	9.00E-08	9.10E-08		

#### Licensee Comments:

1Q/12: FAQ 11-06, MSPI EDG Run Hour Reporting, requires that the 1st hour of actual EDG run times be excluded when calculating EDG failure rates. Implementing this FAQ in PRA resulted in increased EDG failure to run probabilities and increase in Birnbaum for EDG components unreliability and train unavailability.

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



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

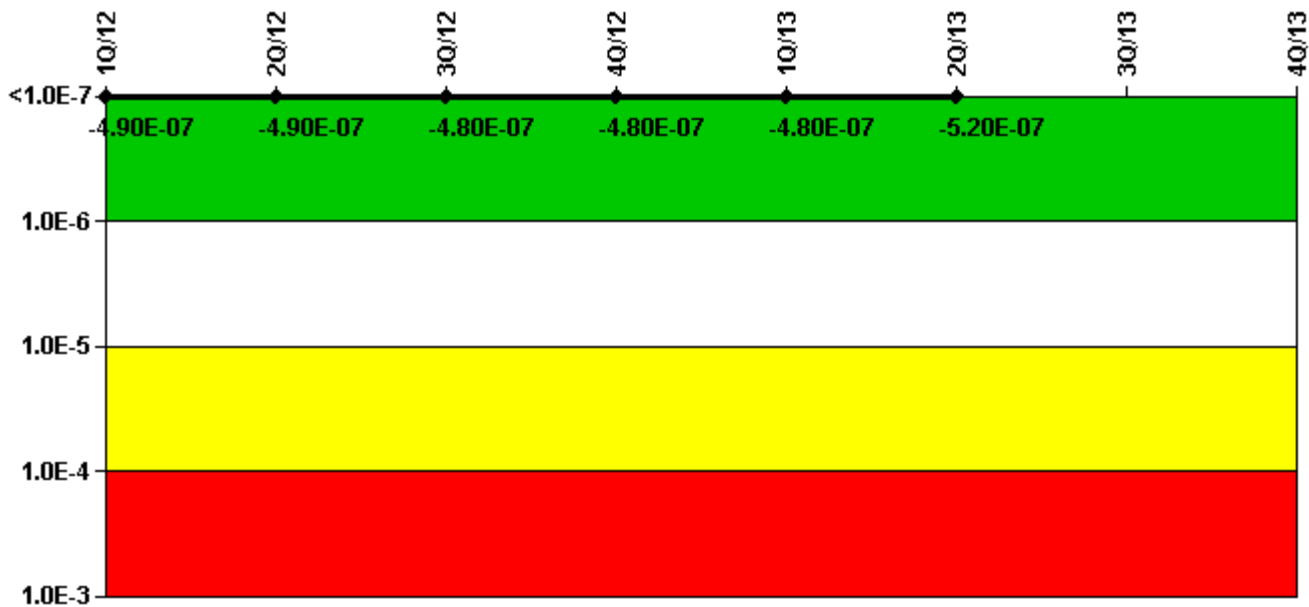
#### Notes

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 ( $\Delta$ CDF)	6.74E-08	-1.58E-08	-1.81E-09	-1.81E-09	-1.81E-09	1.48E-08		
URI ( $\Delta$ CDF)	-4.50E-08	-4.50E-08	-4.50E-08	-4.50E-08	-4.50E-08	-4.46E-08		
PLE	NO	NO	NO	NO	NO	NO		
<b>Indicator value</b>	<b>2.20E-08</b>	<b>-6.10E-08</b>	<b>-4.70E-08</b>	<b>-4.70E-08</b>	<b>-4.70E-08</b>	<b>-3.00E-08</b>		

Licensee Comments:

1Q/12: FAQ 11-06, MSPI EDG Run Hour Reporting, requires that the 1st hour of actual EDG run times be excluded when calculating EDG failure rates. Implementing this FAQ in PRA has negligible impact on HPSI system Birnbaum for component unreliability and train unavailability.

### Mitigating Systems Performance Index, Heat Removal System



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

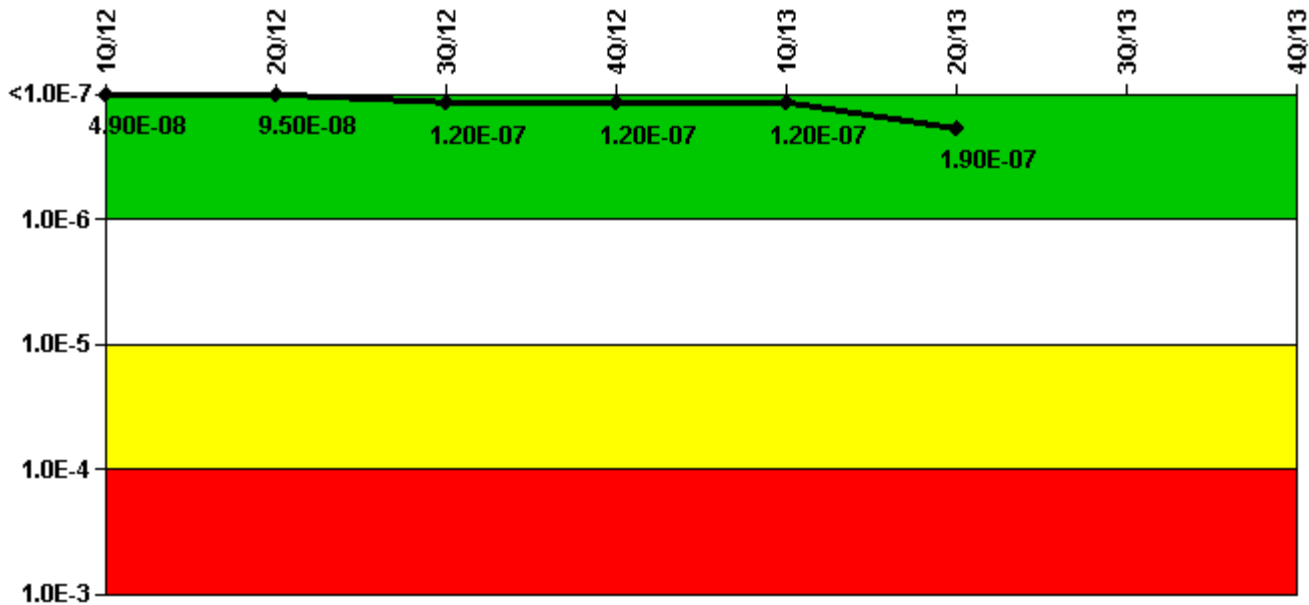
#### Notes

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)	-1.06E-07	-1.02E-07	-9.21E-08	-9.21E-08	-9.21E-08	-1.36E-07		
URI ( $\Delta$ CDF)	-3.82E-07	-3.90E-07	-3.84E-07	-3.84E-07	-3.84E-07	-3.80E-07		
PLE	NO	NO	NO	NO	NO	NO		
Indicator value	-4.90E-07	-4.90E-07	-4.80E-07	-4.80E-07	-4.80E-07	-5.20E-07		

#### Licensee Comments:

1Q/12: FAQ 11-06, MSPI EDG Run Hour Reporting, requires that the 1st hour of actual EDG run times be excluded when calculating EDG failure rates. Implementing this FAQ in PRA resulted in increased EDG failure to run probabilities and slight increase in Birnbaum for Turbine Driven AFW pump train components unreliability and train unavailability.

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



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

#### Notes

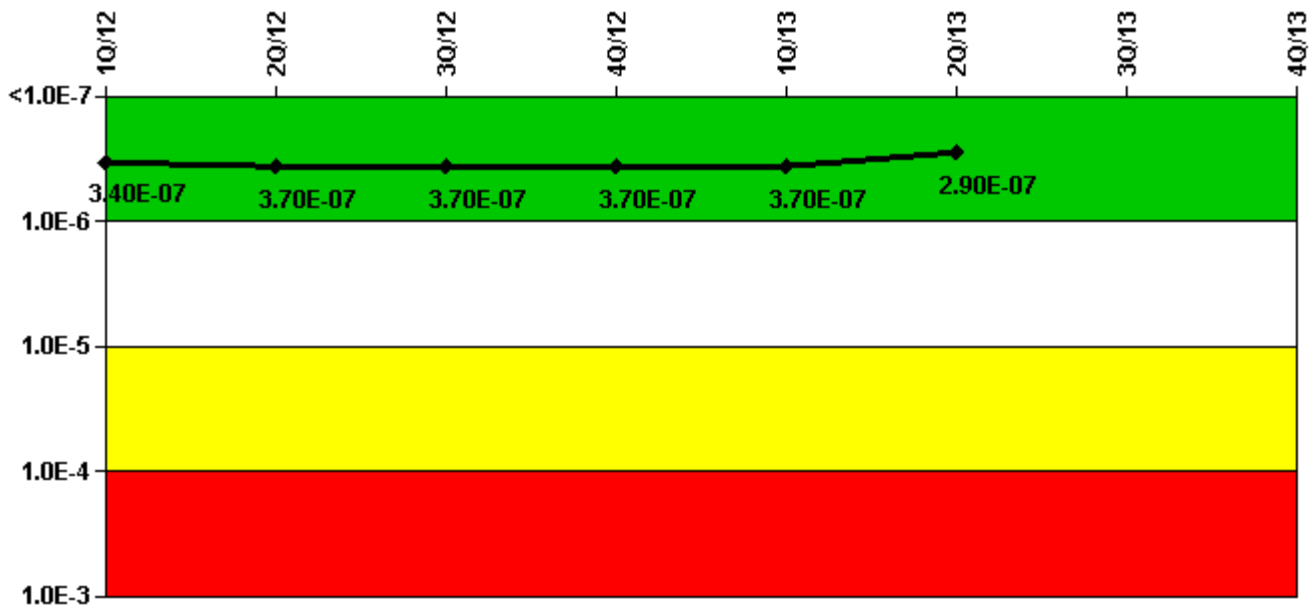
Mitigating Systems Performance Index, Residual Heat Removal System	1Q/12	2Q/12	3Q/12	4Q/12	1Q/13	2Q/13	3Q/13	4Q/13
UAI ( $\Delta$ CDF)	6.94E-08	1.15E-07	1.40E-07	1.40E-07	1.40E-07	2.06E-07		
URI ( $\Delta$ CDF)	-2.06E-08	-2.05E-08	-2.05E-08	-2.05E-08	-2.05E-08	-2.04E-08		
PLE	NO	NO	NO	NO	NO	NO		
<b>Indicator value</b>	<b>4.90E-08</b>	<b>9.50E-08</b>	<b>1.20E-07</b>	<b>1.20E-07</b>	<b>1.20E-07</b>	<b>1.90E-07</b>		

#### Licensee Comments:

1Q/12: FAQ 11-06, MSPI EDG Run Hour Reporting, requires that the 1st hour of actual EDG run times be excluded when calculating EDG failure rates. Implementing this FAQ in PRA has negligible impact on Containment Spray (RHR) system Birnbaum for component unreliability and train unavailability.



### Mitigating Systems Performance Index, Cooling Water Systems



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

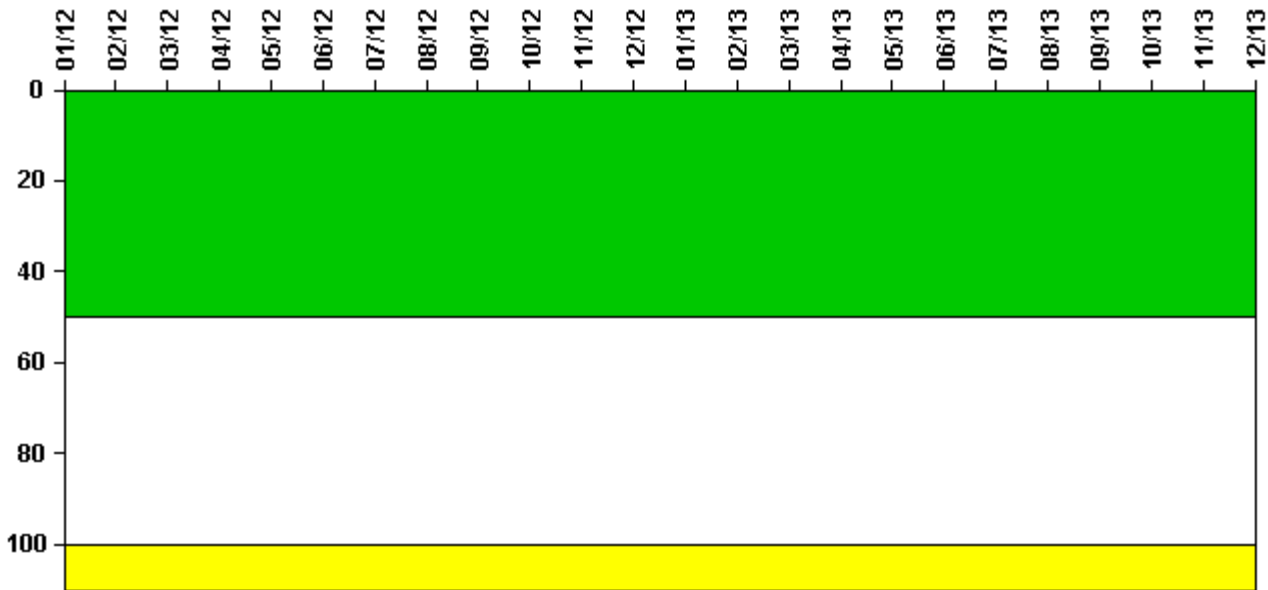
#### Notes

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)	4.15E-07	4.42E-07	4.48E-07	4.48E-07	4.48E-07	3.69E-07		
URI ( $\Delta$ CDF)	-7.50E-08	-7.48E-08	-7.48E-08	-7.48E-08	-7.48E-08	-7.42E-08		
PLE	NO	NO	NO	NO	NO	NO		
Indicator value	3.40E-07	3.70E-07	3.70E-07	3.70E-07	3.70E-07	2.90E-07		

#### Licensee Comments:

1Q/12: FAQ 11-06, MSPI EDG Run Hour Reporting, requires that the 1st hour of actual EDG run times be excluded when calculating EDG failure rates. Implementing this FAQ in PRA has negligible impact on Support System Cooling Birnbaum for component unreliability and train unavailability.

### Reactor Coolant System Activity



**Thresholds: White > 50.0 Yellow > 100.0**

**Notes**

<b>Reactor Coolant System Activity</b>	<b>1/12</b>	<b>2/12</b>	<b>3/12</b>	<b>4/12</b>	<b>5/12</b>	<b>6/12</b>	<b>7/12</b>	<b>8/12</b>	<b>9/12</b>	<b>10/12</b>	<b>11/12</b>	<b>12/12</b>
Maximum activity	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	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>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>
<b>Reactor Coolant System Activity</b>	<b>1/13</b>	<b>2/13</b>	<b>3/13</b>	<b>4/13</b>	<b>5/13</b>	<b>6/13</b>	<b>7/13</b>	<b>8/13</b>	<b>9/13</b>	<b>10/13</b>	<b>11/13</b>	<b>12/13</b>
Maximum activity	N/A	N/A	N/A	N/A	N/A	N/A						
Technical specification limit	1.0	1.0	1.0	1.0	1.0	1.0						
<b>Indicator value</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>						

**Licensee Comments:**

6/13: RCS activity data not required for 2Q13 due to unit shutdown.

3/13: RCS activity data not required for 1Q13 due to unit shutdown.

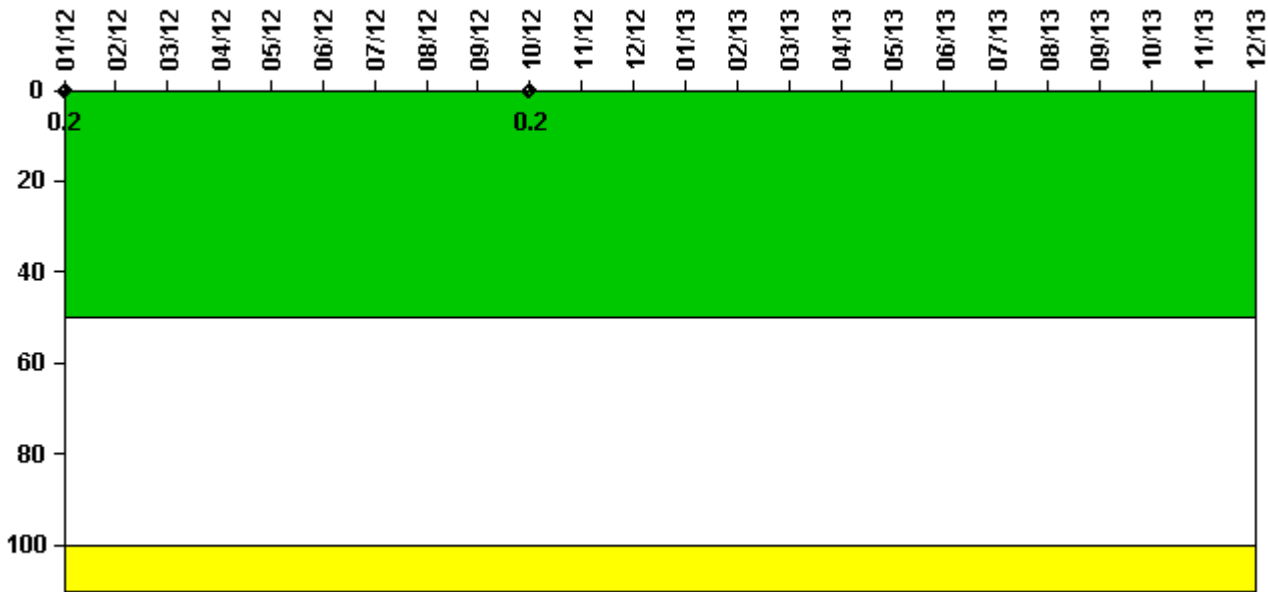
12/12: RCS activity data not required for 4Q12 due to unit shutdown.

9/12: RCS activity data not required for 3Q12 due to both units offline.

6/12: RCS activity data not required for 2Q12 due to both units offline.

3/12: Unit 2 RCS activity data not required for Jan 2012 - Mar 2012

### 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	0.020	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0.020	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
<b>Indicator value</b>	<b>0.2</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>0.2</b>	<b>N/A</b>	<b>N/A</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	N/A	N/A	N/A	N/A	N/A	N/A						
Technical specification limit	10.0	10.0	10.0	10.0	10.0	10.0						
<b>Indicator value</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>						

Licensee Comments:

6/13: RCS leakage data not required for 2Q13 due to unit shutdown.

3/13: RCS leakage data not required for 1Q13 due to unit shutdown.

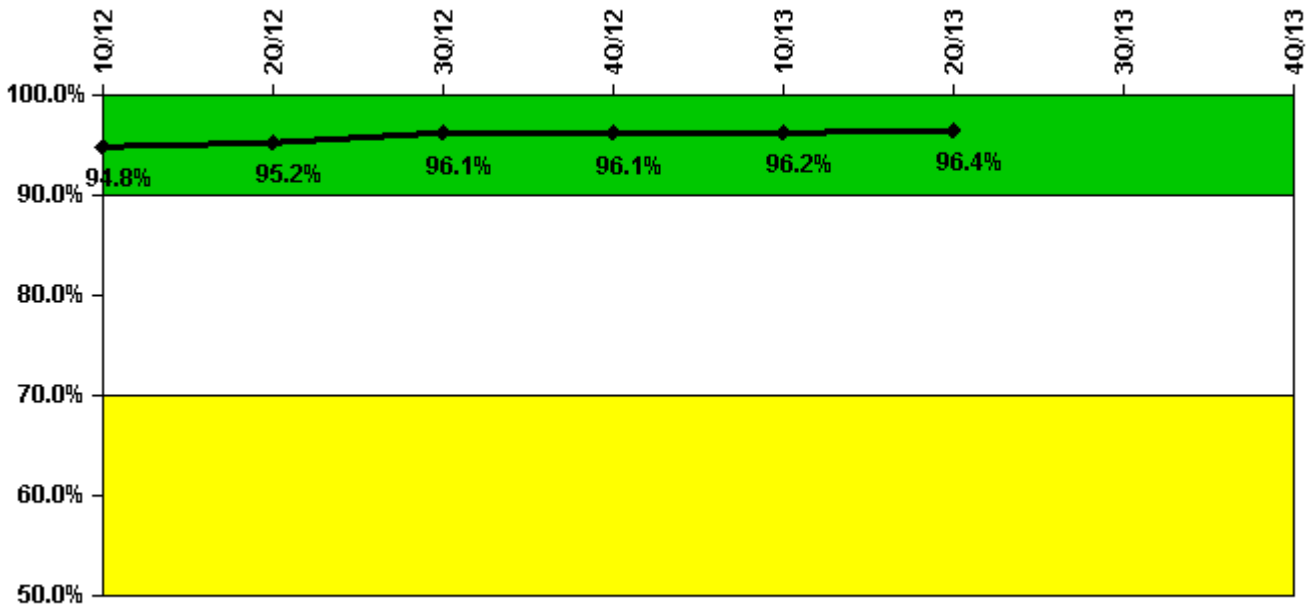
12/12: RCS leakage data not required for November and December 2012 due to unit shutdown. Data required in October during Mode 3/4 operation.

9/12: RCS leakage data not required for 3Q12 due to both units offline.

6/12: RCS leakage data not required for 2Q12 due to both units offline.

3/12: Unit 2 RCS leakage data not required for Feb 2012 - Mar 2012

### Drill/Exercise Performance



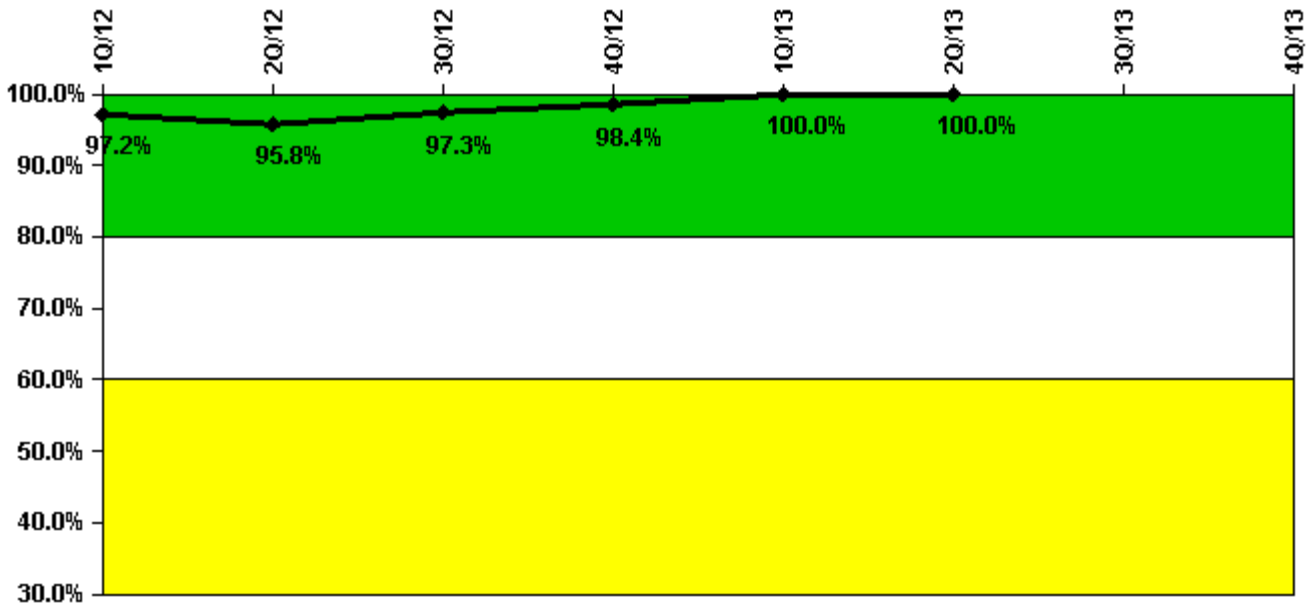
Thresholds: White < 90.0% Yellow < 70.0%

### Notes

Drill/Exercise Performance	1Q/12	2Q/12	3Q/12	4Q/12	1Q/13	2Q/13	3Q/13	4Q/13
Successful opportunities	21.0	150.0	44.0	56.0	12.0	61.0		
Total opportunities	22.0	153.0	44.0	58.0	13.0	61.0		
<b>Indicator value</b>	<b>94.8%</b>	<b>95.2%</b>	<b>96.1%</b>	<b>96.1%</b>	<b>96.2%</b>	<b>96.4%</b>		

Licensee Comments: none

### ERO Drill Participation



Thresholds: White < 80.0% Yellow < 60.0%

#### Notes

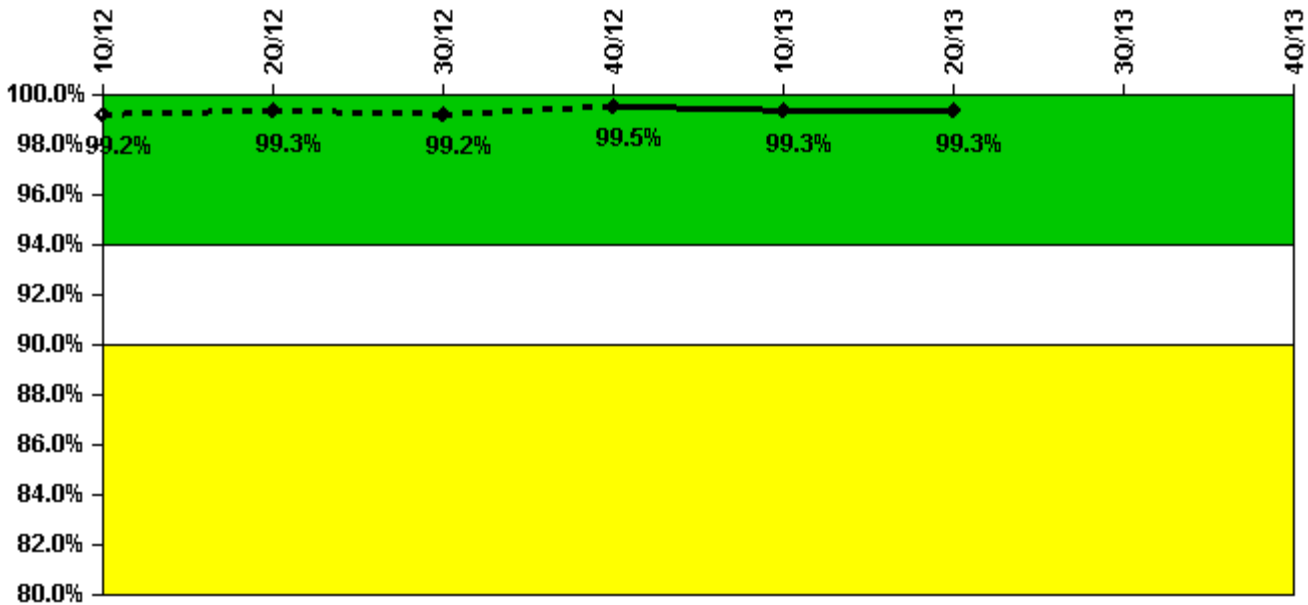
ERO Drill Participation	1Q/12	2Q/12	3Q/12	4Q/12	1Q/13	2Q/13	3Q/13	4Q/13
Participating Key personnel	70.0	69.0	73.0	61.0	64.0	85.0		
Total Key personnel	72.0	72.0	75.0	62.0	64.0	85.0		
<b>Indicator value</b>	<b>97.2%</b>	<b>95.8%</b>	<b>97.3%</b>	<b>98.4%</b>	<b>100.0%</b>	<b>100.0%</b>		

Licensee Comments:

2Q/12: Previous data from 4Q11 and 1Q12 has been corrected.

1Q/12: Data corrected for 1Q12 to reflect reduction of participating key personnel due to insufficient objective evidence (NN 202042541). No change to indicator color (green).

### 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	400	343	398	494	348	349		
Total sirens-tests	400	344	400	500	350	350		
<b>Indicator value</b>	<b>99.2%</b>	<b>99.3%</b>	<b>99.2%</b>	<b>99.5%</b>	<b>99.3%</b>	<b>99.3%</b>		

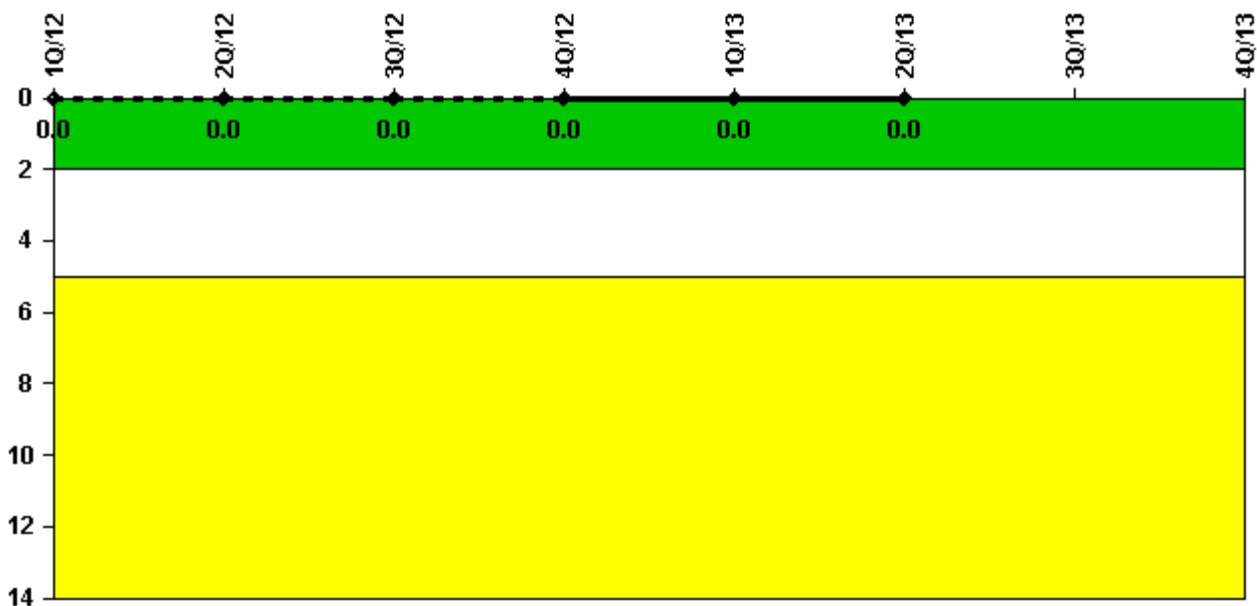
Licensee Comments:

3Q/12: Previous data from June 2012 has been corrected.

2Q/12: Data corrected for June 2012 to reflect one additional siren test failure because the siren had been declared inoperable at the scheduled time of the test (NN 201971744). No change to indicator color (green). Previous data from 4Q11 has been corrected.

2Q/12: Previous data from 4Q11 has been corrected.

### Occupational Exposure Control Effectiveness



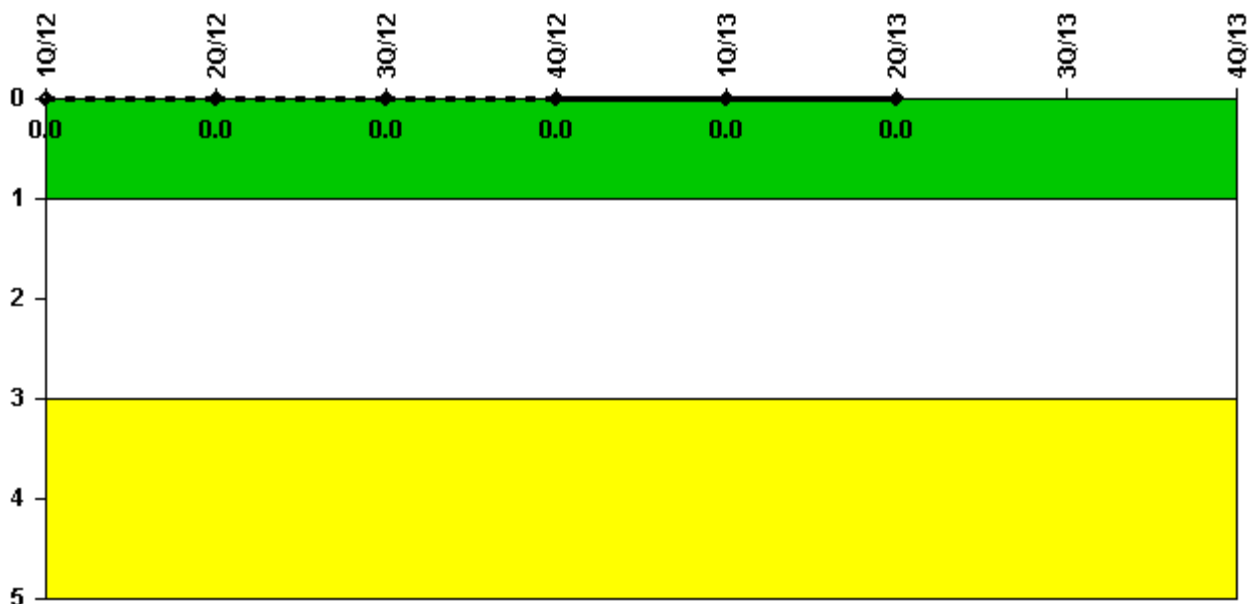
Thresholds: White > 2.0 Yellow > 5.0

#### 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		
Very high radiation area occurrences	0	0	0	0	0	0		
Unintended exposure occurrences	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>		

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		
<b>Indicator value</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>		

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*