

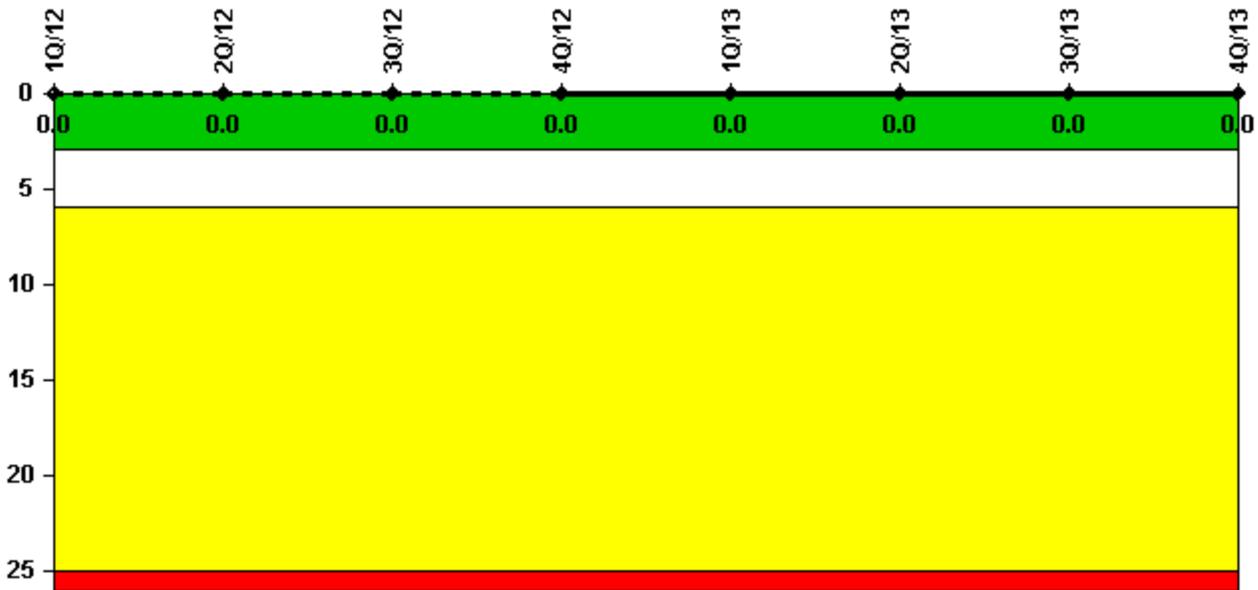
## Braidwood 2

### 4Q/2013 Performance Indicators

The solid trend line represents the current reporting period.

Licensee's General Comments: none

#### Unplanned Scrams per 7000 Critical Hrs



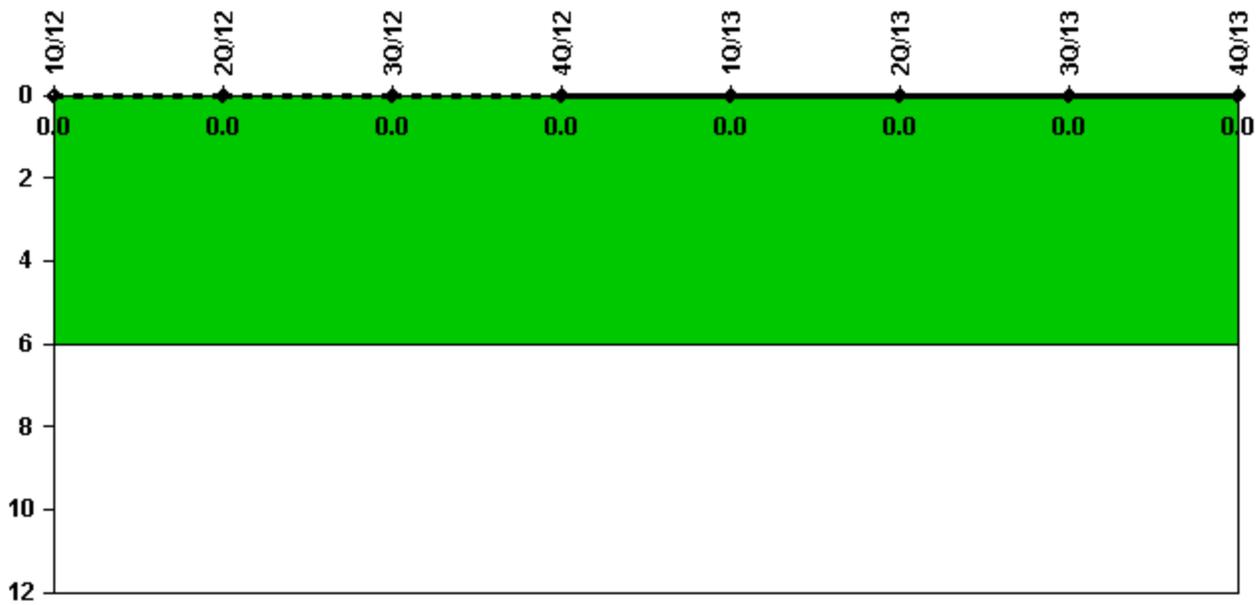
Thresholds: White > 3.0 Yellow > 6.0 Red > 25.0

#### 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	0	0
Critical hours	2183.0	2184.0	2208.0	1625.3	2159.0	2112.0	2116.1	2209.0
Indicator value	0	0	0	0	0	0	0	0

Licensee Comments: none

### Unplanned Power Changes per 7000 Critical Hrs



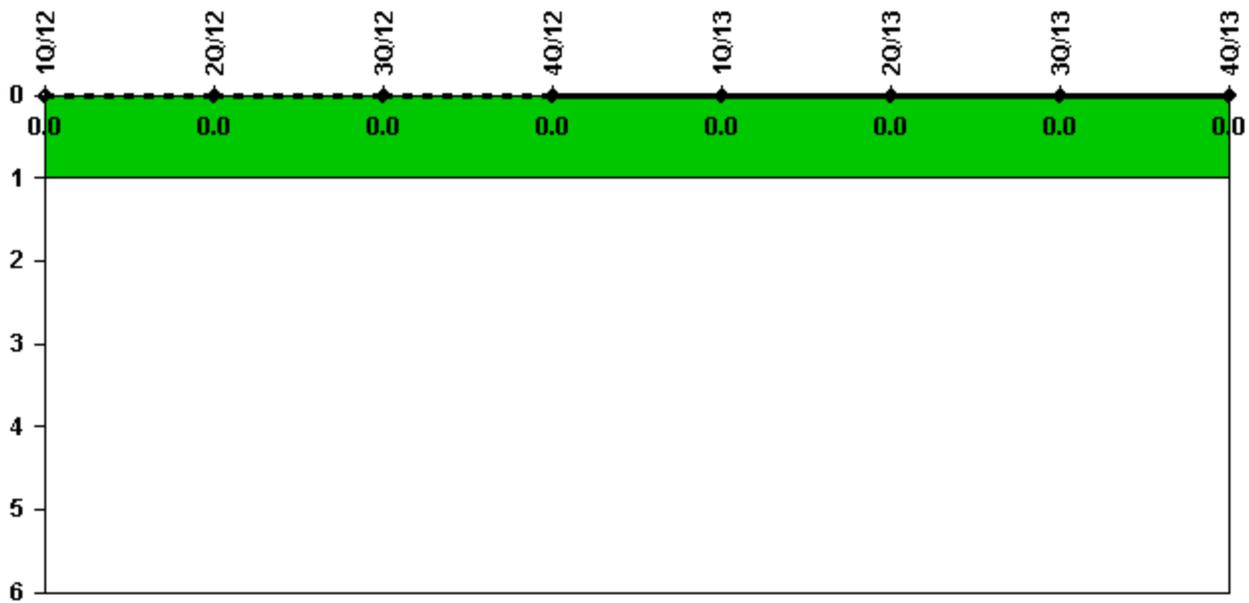
Thresholds: White > 6.0

#### 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	0	0
Critical hours	2183.0	2184.0	2208.0	1625.3	2159.0	2112.0	2116.1	2209.0
<b>Indicator value</b>	<b>0</b>							

Licensee Comments: none

### Unplanned Scrams with Complications



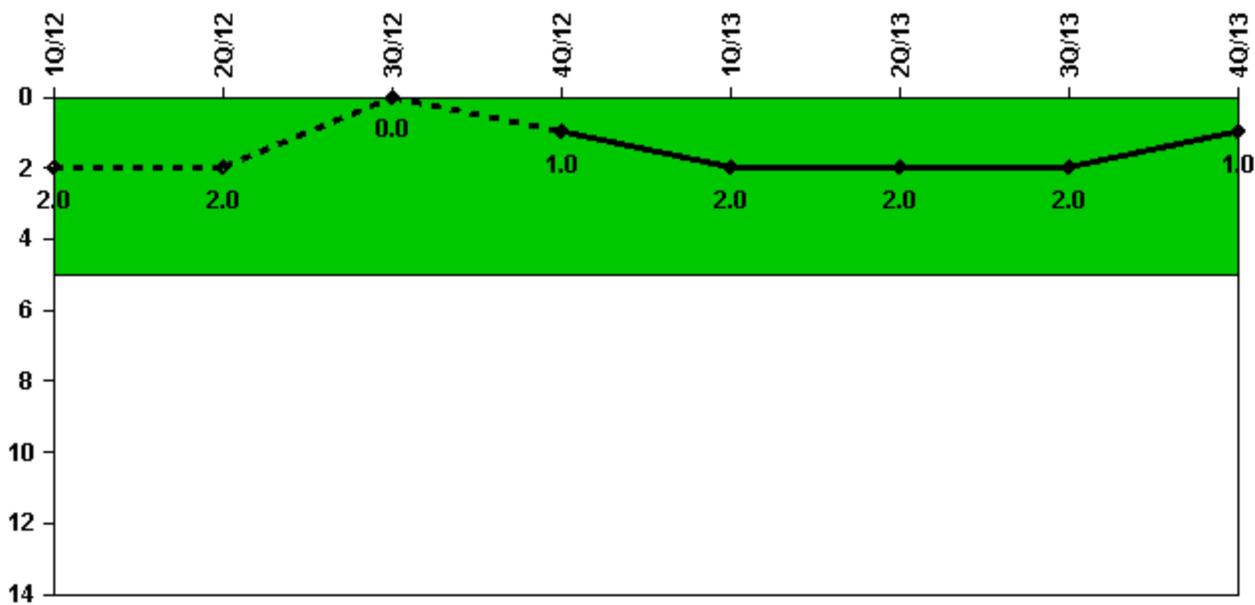
Thresholds: White > 1.0

#### 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	1	1	0	0	0
<b>Indicator value</b>	<b>2</b>	<b>2</b>	<b>0</b>	<b>1</b>	<b>2</b>	<b>2</b>	<b>2</b>	<b>1</b>

Licensee Comments:

1Q/13: LER 2012-003-01, Fuel Handling Incident Area Radiation Monitors Inoperable.

4Q/12: 1 SSFF - Licensee Event Report 2012-004-01 - Notice of Enforcement Discretion Received for Ultimate Heat Sink Temperature Exceeding Technical Specifications Requirements Due to Prolonged Hot Weather

### 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)	1.07E-07	5.26E-08	4.03E-08	4.50E-08	4.33E-08	3.49E-08	5.84E-08	6.82E-08
URI (ΔCDF)	-9.46E-07	-7.78E-07	-7.41E-07	-3.20E-07	-1.75E-07	-1.59E-07	-1.52E-07	-1.36E-07
PLE	NO							
Indicator value	-8.40E-07	-7.30E-07	-7.00E-07	-2.70E-07	-1.30E-07	-1.20E-07	-9.40E-08	-6.80E-08

Licensee Comments:

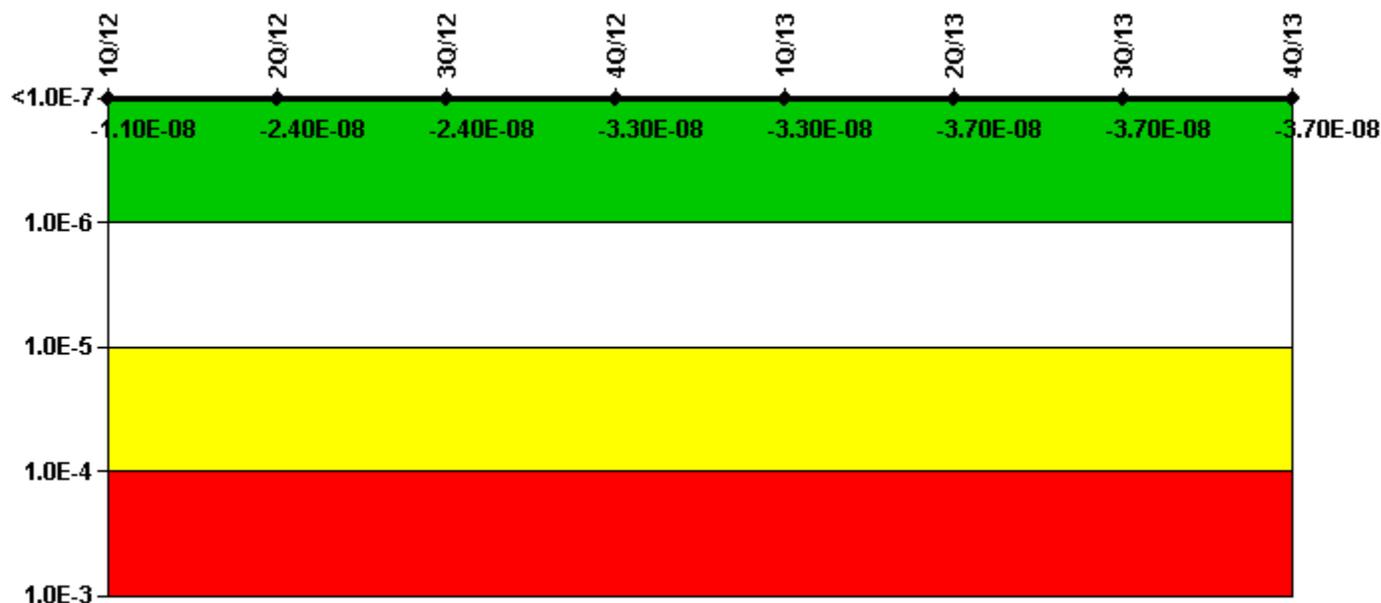
1Q/13: June 2013 - A February 2012 cylinder fuel pump linkage issue was determined to be an MSPI failure.

4Q/12: 1/15/2013 - Braidwood PRA Model Revision No: BB011b approved September 30, 2012, revised Unit 1 and Unit 2 PRA inputs due to eliminating conservative configurations, taking some credit for realigning the 0 CC pump, and the addition of credit for the SX007 valves to be manipulated manually.

2Q/12: Changed PRA Parameter(s). 7/20/12 - 1) Braidwood PRA Model Revision No: BB011a approved March 29, 2012, revised Unit 1 and Unit 2 PRA inputs due to a periodic PRA model update. This included new data analysis, new HRA dependency analysis, and new pre-initiator HRA. This update also removed credit for operator action to crosstie AFW. 2) During an investigation of the why the Unit 2 CWS MSPI became White, it was identified that the model change made for the fourth quarter 2011 reporting period eliminated credit for opposite unit components/trains for the shared Component Cooling Water System. It was not recognized at the time that this required re-scoping of the CWS and EAC indexes. An evaluation of this oversight for the fourth quarter 2011 and 1st quarter 2012 was performed and determined there was no impact on the reported colors for EAC and CWS. CDE inputs to properly reflect this scope change were made for the second quarter 2012.

1Q/12: 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	1Q/12	2Q/12	3Q/12	4Q/12	1Q/13	2Q/13	3Q/13	4Q/13
UAI ( $\Delta$ CDF)	-8.05E-09	-1.58E-08	-1.59E-08	-2.46E-08	-2.46E-08	-2.82E-08	-2.82E-08	-2.82E-08
URI ( $\Delta$ CDF)	-3.13E-09	-8.18E-09	-8.02E-09	-8.84E-09	-8.84E-09	-8.84E-09	-8.85E-09	-8.82E-09
PLE	NO							
Indicator value	-1.10E-08	-2.40E-08	-2.40E-08	-3.30E-08	-3.30E-08	-3.70E-08	-3.70E-08	-3.70E-08

Licensee Comments:

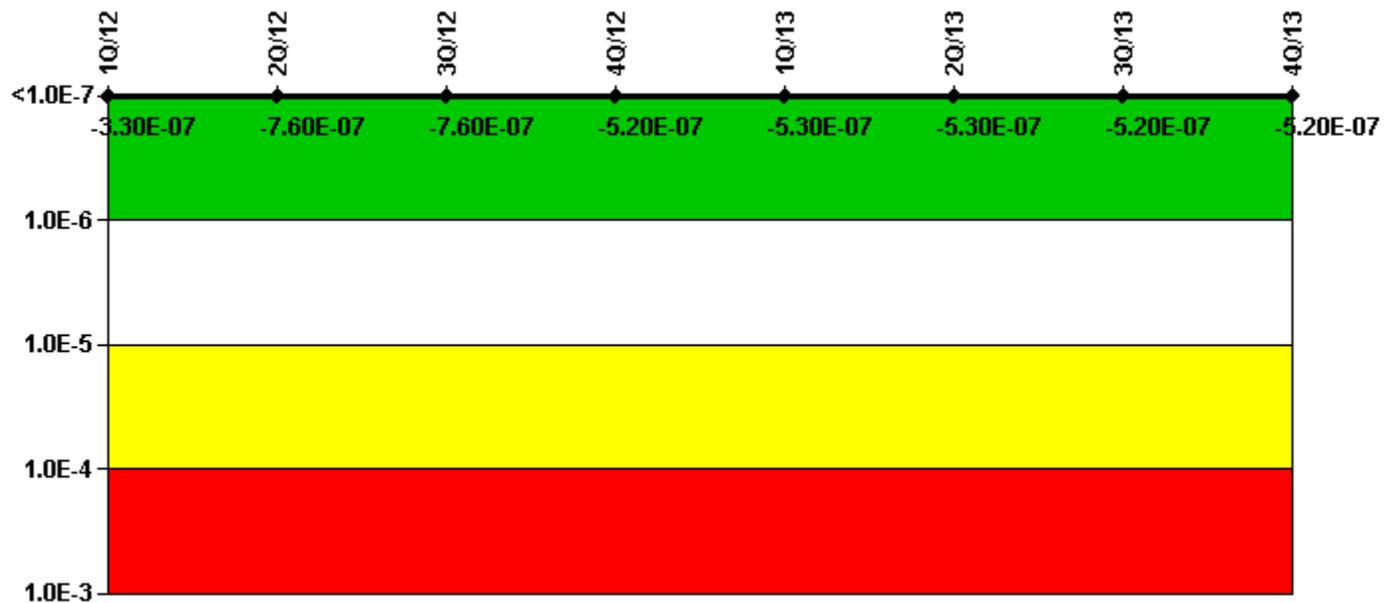
4Q/12: 1/15/2013 - Braidwood PRA Model Revision No: BB011b approved September 30, 2012, revised Unit 1 and Unit 2 PRA inputs due to eliminating conservative configurations, taking some credit for realigning the 0 CC pump, and the addition of credit for the SX007 valves to be manipulated manually.

2Q/12: Changed PRA Parameter(s). 7/20/12 - Braidwood PRA Model Revision No: BB011a approved March 29, 2012, revised Unit 1 and Unit 2 PRA inputs due to a periodic PRA model update. This included new data analysis,

new HRA dependency analysis, and new pre-initiator HRA. This update also removed credit for operator action to crosstie AFW.

1Q/12: 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/12	2Q/12	3Q/12	4Q/12	1Q/13	2Q/13	3Q/13	4Q/13
UAI ( $\Delta$ CDF)	2.11E-07	-3.42E-08	-4.35E-08	-6.60E-08	-6.60E-08	-6.59E-08	-6.60E-08	-6.60E-08
URI ( $\Delta$ CDF)	-5.36E-07	-7.25E-07	-7.17E-07	-4.56E-07	-4.60E-07	-4.60E-07	-4.55E-07	-4.55E-07
PLE	NO							
Indicator value	-3.30E-07	-7.60E-07	-7.60E-07	-5.20E-07	-5.30E-07	-5.30E-07	-5.20E-07	-5.20E-07

Licensee Comments:

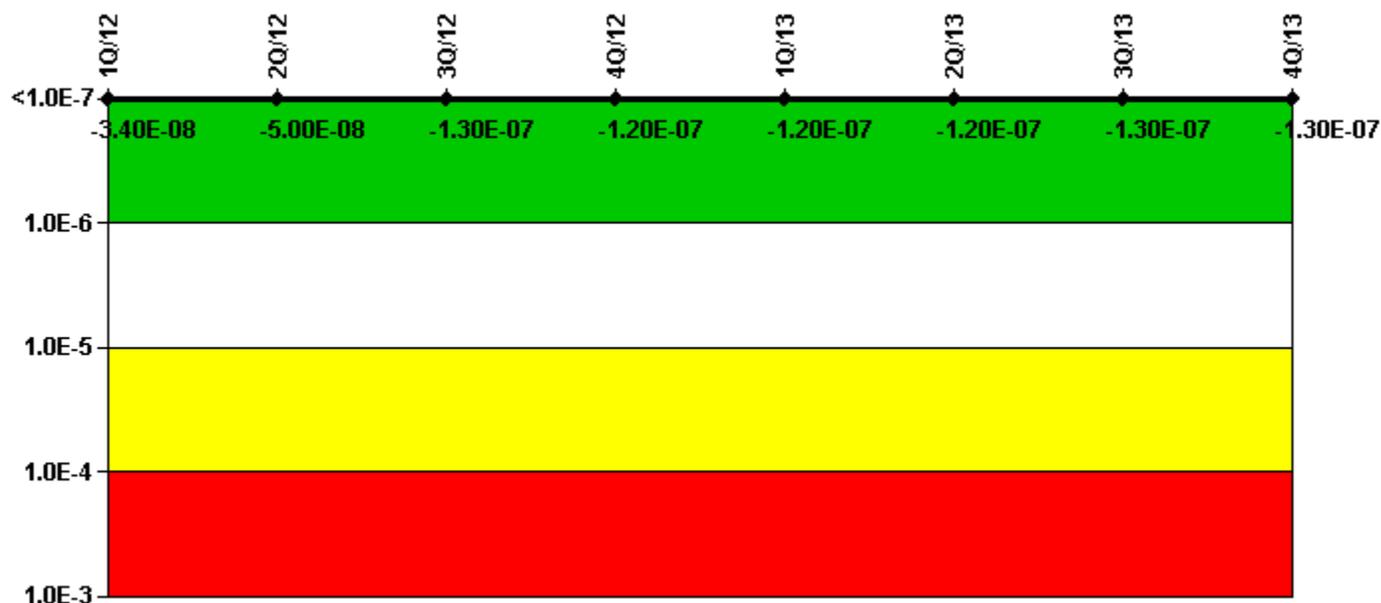
4Q/12: 1/15/2013 - Braidwood PRA Model Revision No: BB011b approved September 30, 2012, revised Unit 1 and Unit 2 PRA inputs due to eliminating conservative configurations, taking some credit for realigning the 0 CC pump, and the addition of credit for the SX007 valves to be manipulated manually.

2Q/12: Changed PRA Parameter(s). 7/20/12 - Braidwood PRA Model Revision No: BB011a approved March 29,

2012, revised Unit 1 and Unit 2 PRA inputs due to a periodic PRA model update. This included new data analysis, new HRA dependency analysis, and new pre-initiator HRA. This update also removed credit for operator action to crosstie AFW.

1Q/12: 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/12	2Q/12	3Q/12	4Q/12	1Q/13	2Q/13	3Q/13	4Q/13
UAI ( $\Delta$ CDF)	1.02E-07	5.19E-08	-2.78E-08	-2.51E-08	-2.51E-08	-2.50E-08	-2.51E-08	-2.51E-08
URI ( $\Delta$ CDF)	-1.37E-07	-1.02E-07	-9.97E-08	-9.48E-08	-9.46E-08	-9.97E-08	-1.04E-07	-1.04E-07
PLE	NO							
Indicator value	-3.40E-08	-5.00E-08	-1.30E-07	-1.20E-07	-1.20E-07	-1.20E-07	-1.30E-07	-1.30E-07

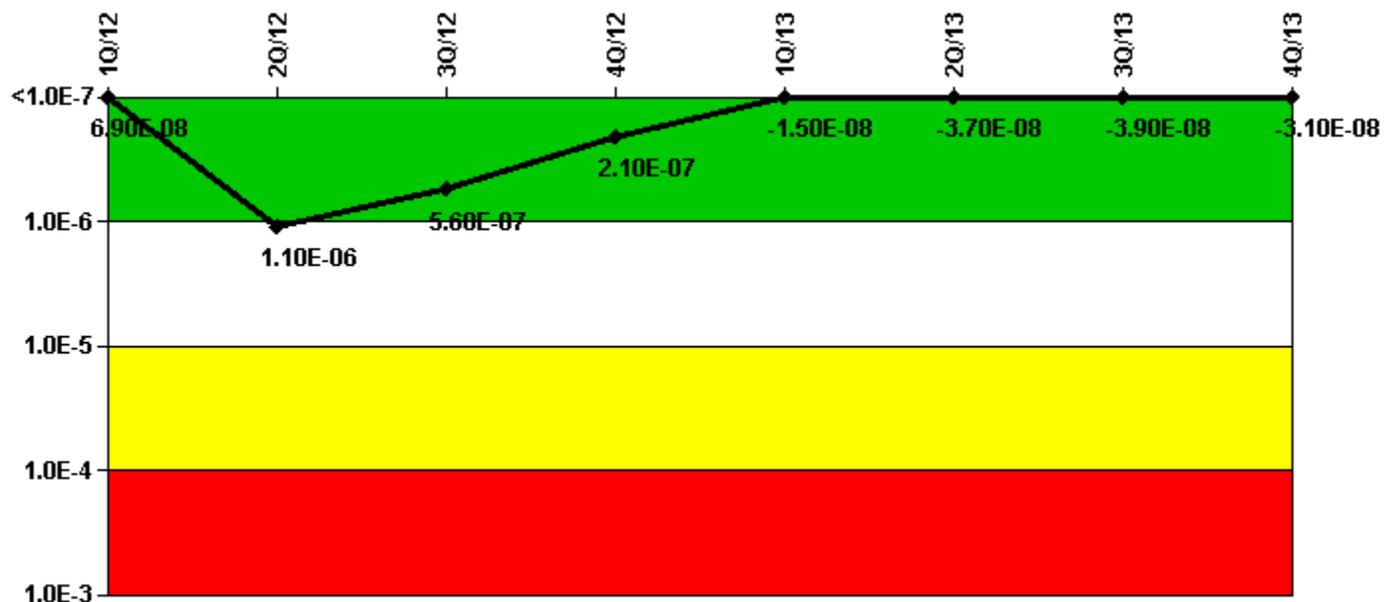
Licensee Comments:

4Q/12: 1/15/2013 - Braidwood PRA Model Revision No: BB011b approved September 30, 2012, revised Unit 1 and Unit 2 PRA inputs due to eliminating conservative configurations, taking some credit for realigning the 0 CC pump, and the addition of credit for the SX007 valves to be manipulated manually.

2Q/12: Changed PRA Parameter(s). 7/20/12 - Braidwood PRA Model Revision No: BB011a approved March 29, 2012, revised Unit 1 and Unit 2 PRA inputs due to a periodic PRA model update. This included new data analysis, new HRA dependency analysis, and new pre-initiator HRA. This update also removed credit for operator action to crosstie AFW.

1Q/12: 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/12	2Q/12	3Q/12	4Q/12	1Q/13	2Q/13	3Q/13	4Q/13
UAI (ΔCDF)	6.00E-07	3.68E-07	3.50E-07	1.76E-07	1.42E-07	1.15E-07	1.08E-07	1.08E-07
URI (ΔCDF)	-5.31E-07	7.64E-07	2.09E-07	3.48E-08	-1.56E-07	-1.52E-07	-1.48E-07	-1.39E-07
PLE	NO	NO	NO	NO	NO	NO	NO	NO
Indicator value	6.90E-08	1.10E-06	5.60E-07	2.10E-07	-1.50E-08	-3.70E-08	-3.90E-08	-3.10E-08

Licensee Comments:

2Q/13: Changed PRA Parameter(s).

4Q/12: 1/15/2013 - Braidwood PRA Model Revision No: BB011b approved September 30, 2012, revised Unit 1 and Unit 2 PRA inputs due to eliminating conservative configurations, taking some credit for realigning the 0 CC pump, and the addition of credit for the SX007 valves to be manipulated manually.

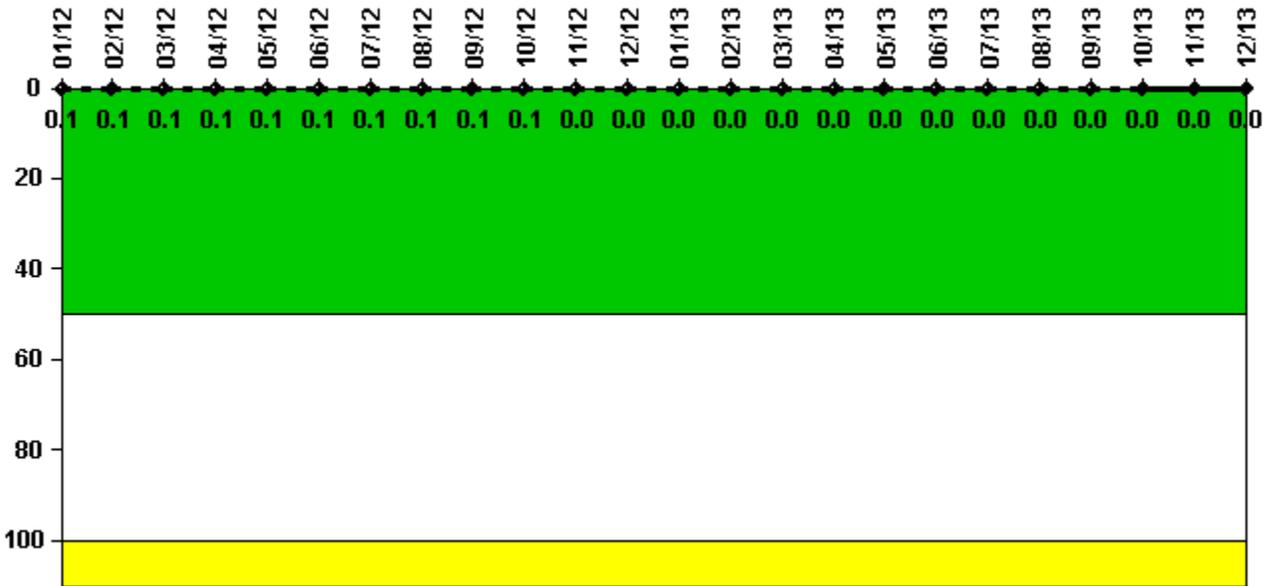
3Q/12: Risk Cap Invoked.

2Q/12: Risk Cap Invoked. Changed PRA Parameter(s). 7/20/12 - 1) Braidwood PRA Model Revision No: BB011a approved March 29, 2012, revised Unit 1 and Unit 2 PRA inputs due to a periodic PRA model update. This included new data analysis, new HRA dependency analysis, and new pre-initiator HRA. This update also removed credit for operator action to crosstie AFW. 2) The Unit 2 Cooling Water System (CWS) MSPI turned White for the second quarter 2012 following a PRA model revision. It should be noted that there was no degradation of system performance during the second quarter. Preliminary evaluation of the White condition identified that the model update inadvertently eliminated credit for starting the swing component cooling water (CC) pump. Elimination of this credit resulted in a significant increase in the risk impact of 2 previous CC pump failures. With proper credit for the swing pump, it is expected that the CWS MSPI would have remained Green. It should also be noted that both of the CC pump failures are due to failure of a low discharge pressure switch which has subsequently been classified as a low risk significant function. As such, failures of the low discharge pressure switch are no longer considered an MSPI failure. Finally, one of the CC pump failures will roll out of the monitoring period during the third quarter 2012 restoring the CWS MSPI to Green. 3) During an investigation of the why the Unit 2 CWS MSPI became White, it was identified that the model change made for the fourth quarter 2011 reporting period eliminated credit for opposite unit components/trains for the shared Component Cooling Water System. It was not recognized at the time that this required re-scoping of the CWS and EAC indexes. An evaluation of this oversight for the fourth quarter 2011 and 1st quarter 2012 was performed and determined there was no impact on the reported colors for EAC and CWS. CDE inputs to properly reflect this scope change were made for the second quarter 2012.

2Q/12: Risk Cap Invoked. Changed PRA Parameter(s). 7/20/12 - 1) Braidwood PRA Model Revision No: BB011a approved March 29, 2012, revised Unit 1 and Unit 2 PRA inputs due to a periodic PRA model update. This included new data analysis, new HRA dependency analysis, and new pre-initiator HRA. This update also removed credit for operator action to crosstie AFW. 2) The Unit 2 Cooling Water System (CWS) MSPI turned White for the second quarter 2012 following a PRA model revision. It should be noted that there was no degradation of system performance during the second quarter. Preliminary evaluation of the White condition identified that the model update inadvertently eliminated credit for starting the swing component cooling water (CC) pump. Elimination of this credit resulted in a significant increase in the risk impact of 2 previous CC pump failures. With proper credit for the swing pump, it is expected that the CWS MSPI would have remained Green. It should also be noted that both of the CC pump failures are due to failure of a low discharge pressure switch which has subsequently been classified as a low risk significant function. As such, failures of the low discharge pressure switch are no longer considered an MSPI failure. Finally, one of the CC pump failures will roll out of the monitoring period during the third quarter 2012 restoring the CWS MSPI to Green. 3) During an investigation of the why the Unit 2 CWS MSPI became White, it was identified that the model change made for the fourth quarter 2011 reporting period eliminated credit for opposite unit components/trains for the shared Component Cooling Water System. It was not recognized at the time that this required re-scoping of the CWS and EAC indexes. An evaluation of this oversight for the fourth quarter 2011 and 1st quarter 2012 was performed and determined there was no impact on the reported colors for EAC and CWS. CDE inputs to properly reflect this scope change were made for the second quarter 2012. 10/18/12: Per MSPI Basis Document Rev. 9 (approved 10/17/12), PRA inputs changed to reflect use of a greater number of significant digits. Resulted in minor decrease in UAI and no change to MSPI PI; MSPI remained White for 2nd QTR 2012.

1Q/12: Changed PRA Parameter(s).

### Reactor Coolant System Activity



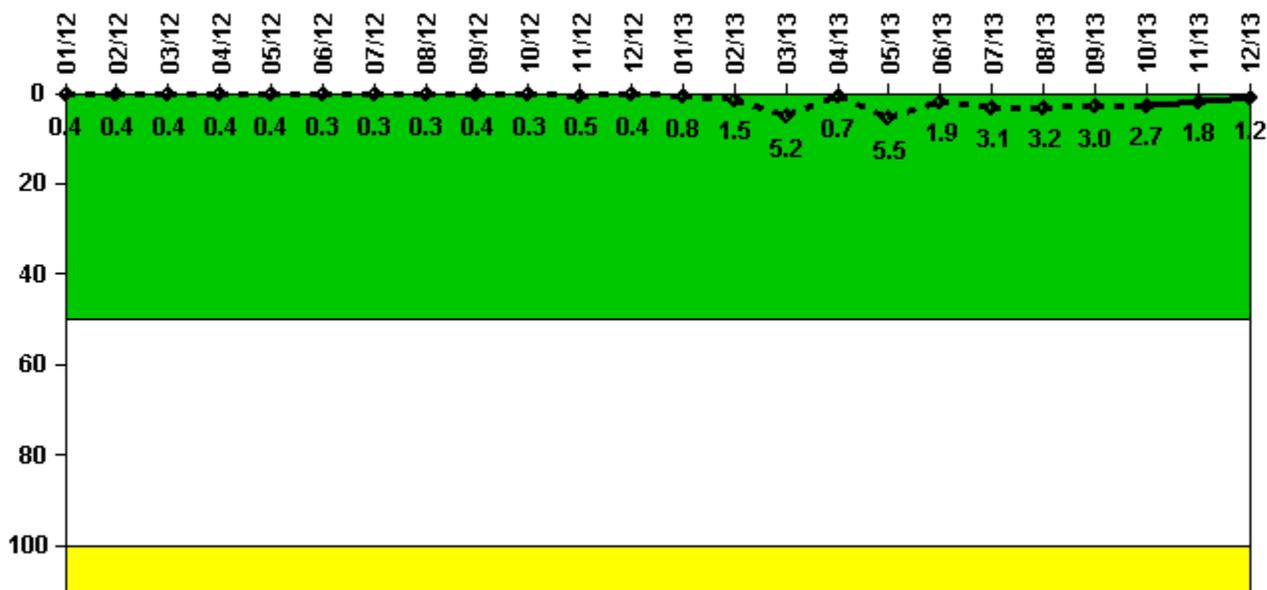
Thresholds: White > 50.0 Yellow > 100.0

### 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	0.000531	0.000503	0.000542	0.000543	0.000545	0.000584	0.000642	0.000625	0.000596	0.000613	0.000178	0.000188
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	0.1	0.1	0.1	0.1	0.1	0.1	0.1	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	0.000233	0.000213	0.000223	0.000226	0.000226	0.000237	0.000264	0.000268	0.000295	0.000302	0.000311	0.000324
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

Licensee Comments: none

### Reactor Coolant System Leakage



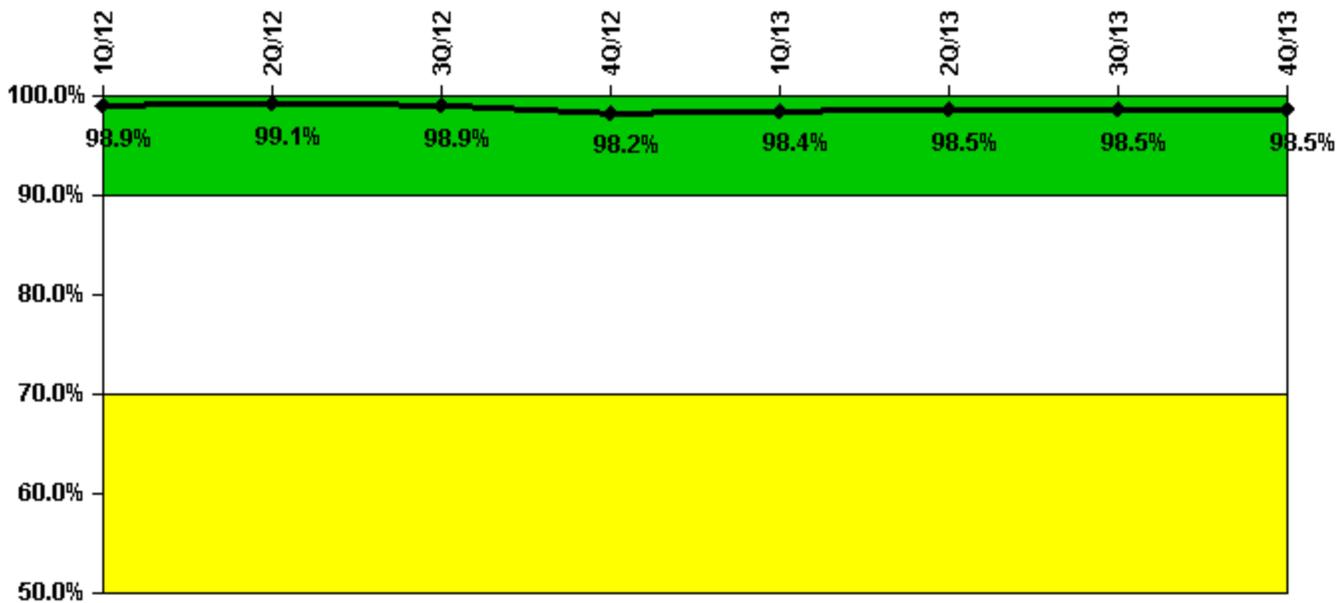
Thresholds: White > 50.0 Yellow > 100.0

#### 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	0.036	0.038	0.039	0.040	0.036	0.032	0.034	0.034	0.035	0.029	0.048	0.037
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	0.4	0.4	0.4	0.4	0.4	0.3	0.3	0.3	0.4	0.3	0.5	0.4
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	0.080	0.150	0.521	0.074	0.547	0.192	0.306	0.324	0.303	0.268	0.184	0.117
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	0.8	1.5	5.2	0.7	5.5	1.9	3.1	3.2	3.0	2.7	1.8	1.2

Licensee Comments: none

### Drill/Exercise Performance



Thresholds: White < 90.0% Yellow < 70.0%

#### Notes

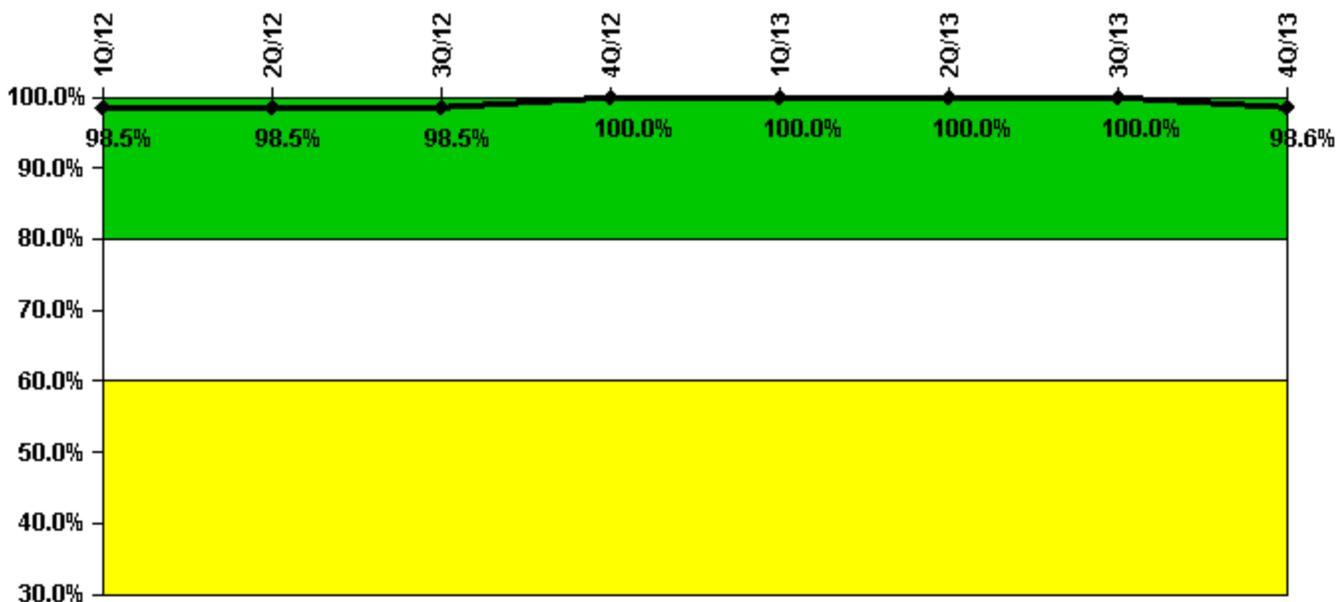
Drill/Exercise Performance	1Q/12	2Q/12	3Q/12	4Q/12	1Q/13	2Q/13	3Q/13	4Q/13
Successful opportunities	67.0	20.0	70.0	31.0	22.0	39.0	58.0	80.0
Total opportunities	69.0	20.0	72.0	33.0	22.0	39.0	58.0	80.0
Indicator value	98.9%	99.1%	98.9%	98.2%	98.4%	98.5%	98.5%	98.5%

#### Licensee Comments:

4Q/12: 6/10/13 - December 2012 data corrected a December 2012 Drill and Exercise Opportunities that per FAQ 12.06 is determined to NOT be a failure. Data changed from 18 successful opportunities to 19 successful opportunities.

2Q/12: 12/2012 - June 2012 data corrected remove two May 2012 DEPs that had already been counted in May, 2012. Data changed from 16 event opportunities to 14 event opportunities.

### ERO Drill Participation



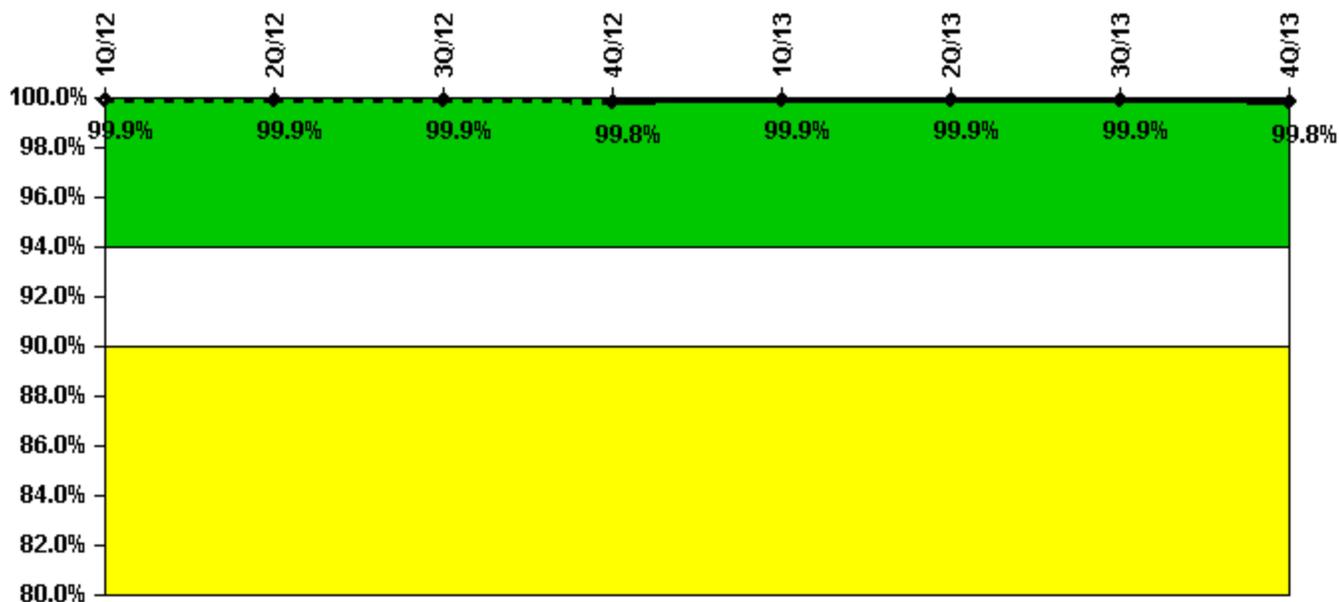
Thresholds: White < 80.0% Yellow < 60.0%

#### Notes

ERO Drill Participation	1Q/12	2Q/12	3Q/12	4Q/12	1Q/13	2Q/13	3Q/13	4Q/13
Participating Key personnel	67.0	66.0	65.0	65.0	62.0	66.0	71.0	70.0
Total Key personnel	68.0	67.0	66.0	65.0	62.0	66.0	71.0	71.0
Indicator value	<b>98.5%</b>	<b>98.5%</b>	<b>98.5%</b>	<b>100.0%</b>	<b>100.0%</b>	<b>100.0%</b>	<b>100.0%</b>	<b>98.6%</b>

Licensee Comments: none

### Alert & Notification System



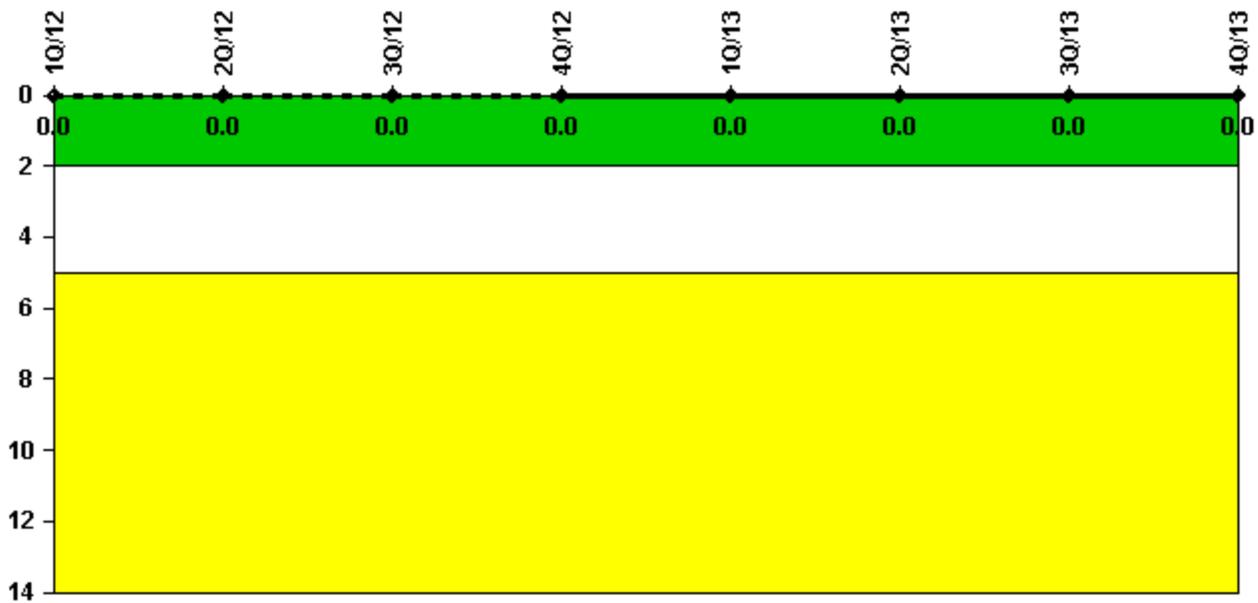
Thresholds: White < 94.0% Yellow < 90.0%

#### Notes

Alert & Notification System	1Q/12	2Q/12	3Q/12	4Q/12	1Q/13	2Q/13	3Q/13	4Q/13
Successful siren-tests	3117	3063	3019	3070	3070	3065	3068	3060
Total sirens-tests	3120	3072	3024	3072	3072	3072	3072	3072
Indicator value	99.9%	99.9%	99.9%	99.8%	99.9%	99.9%	99.9%	99.8%

Licensee Comments: none

### Occupational Exposure Control Effectiveness



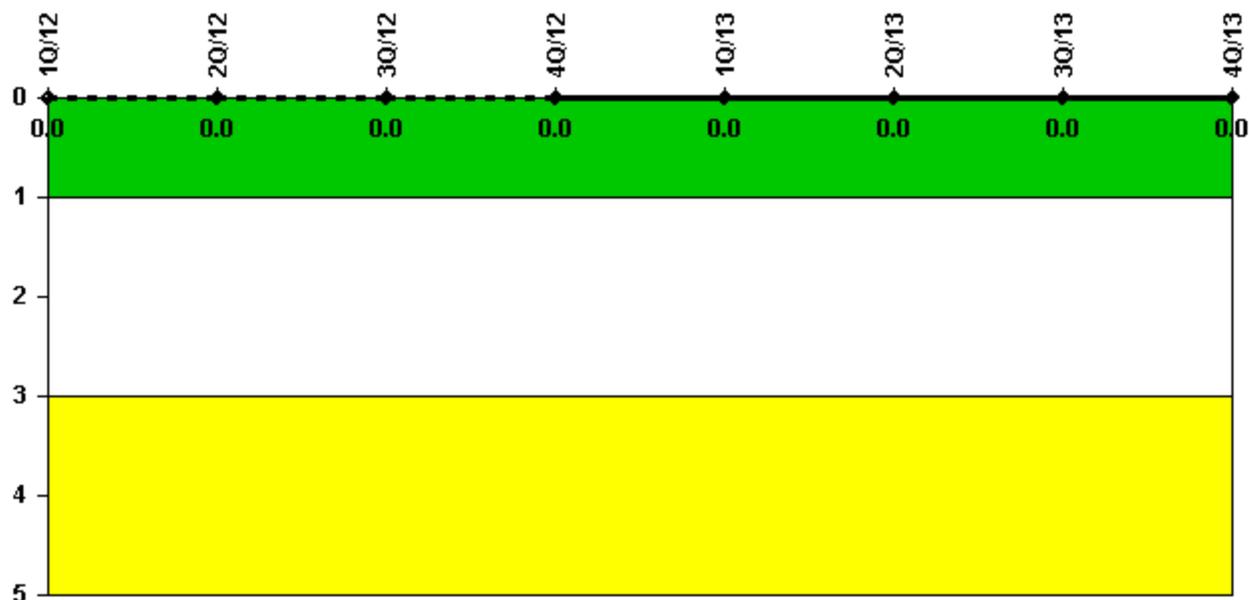
Thresholds: White > 2.0 Yellow > 5.0

#### 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*