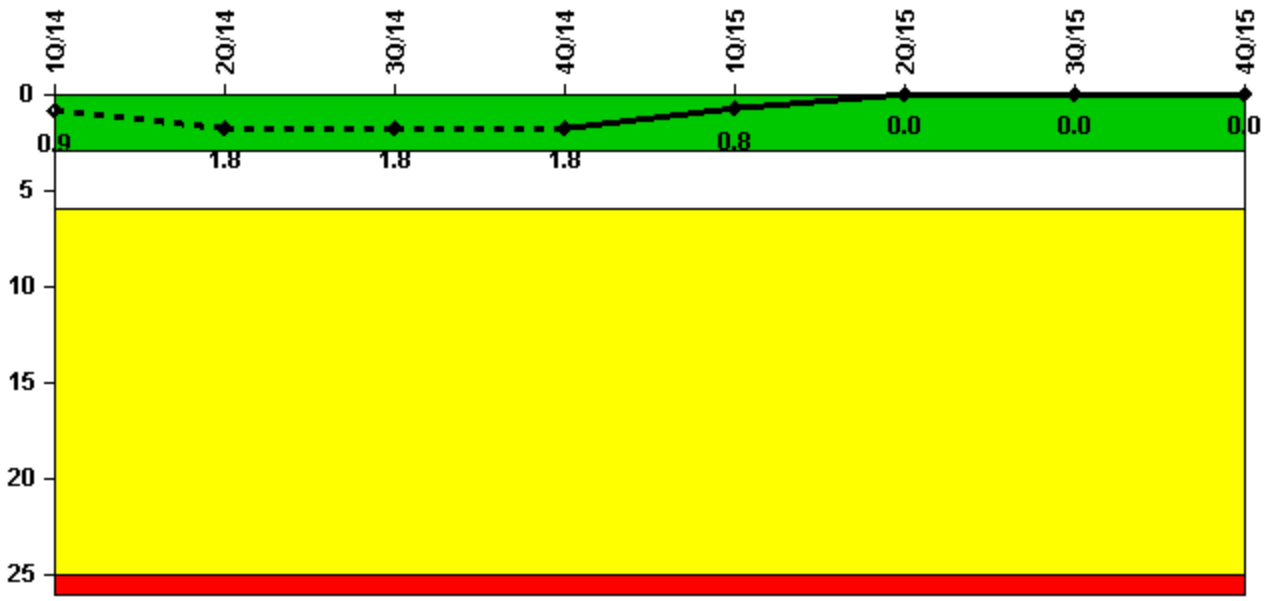
Browns Ferry 3

4Q/2015 Performance Indicators

The solid trend line represents the current reporting period.

Licensee's General Comments: none

Unplanned Scrams per 7000 Critical Hrs



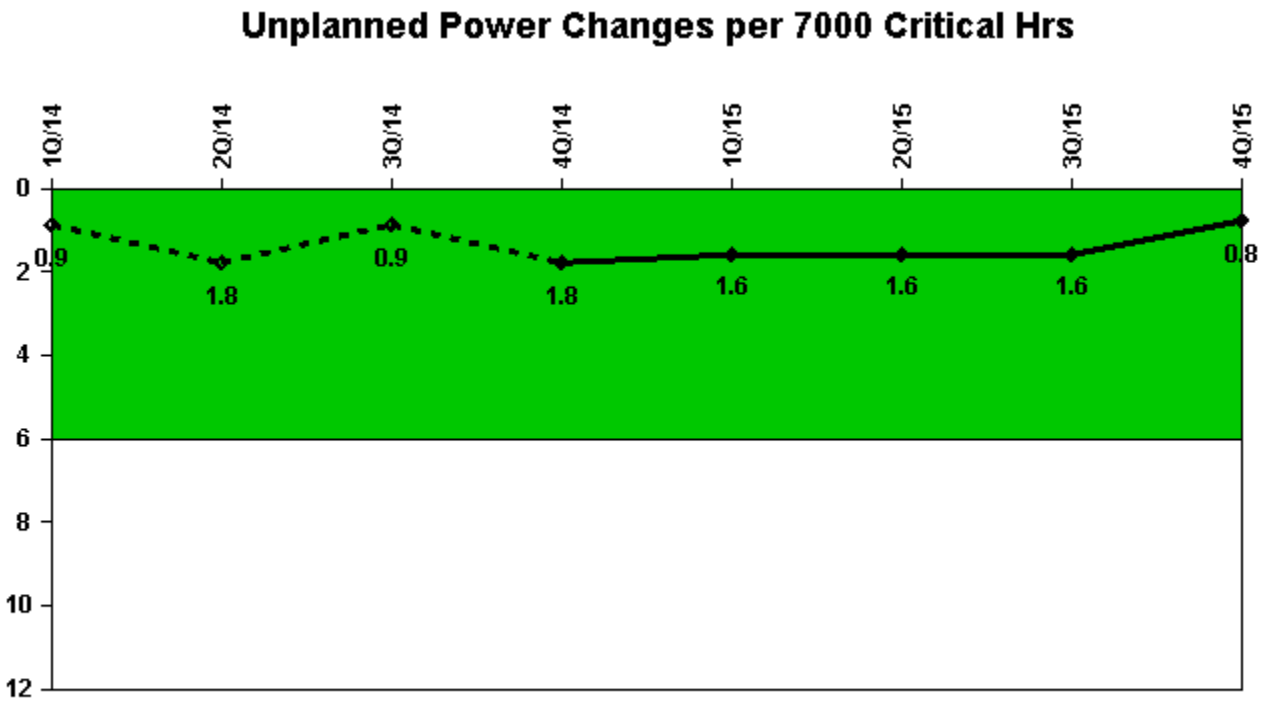
Thresholds: White > 3.0 Yellow > 6.0 Red > 25.0

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	1.0	1.0	0	0	0	0	0	0
Critical hours	1421.6	2130.0	2208.0	2209.0	2159.0	2184.0	2208.0	2209.0
Indicator value	**0.9**	**1.8**	**1.8**	**1.8**	**0.8**	**0**	**0**	**0**

Licensee Comments:

2Q/14: Automatic scram due to ATWS Initiation and loss of recirc pumps on 05/06/2014.



Thresholds: White > 6.0

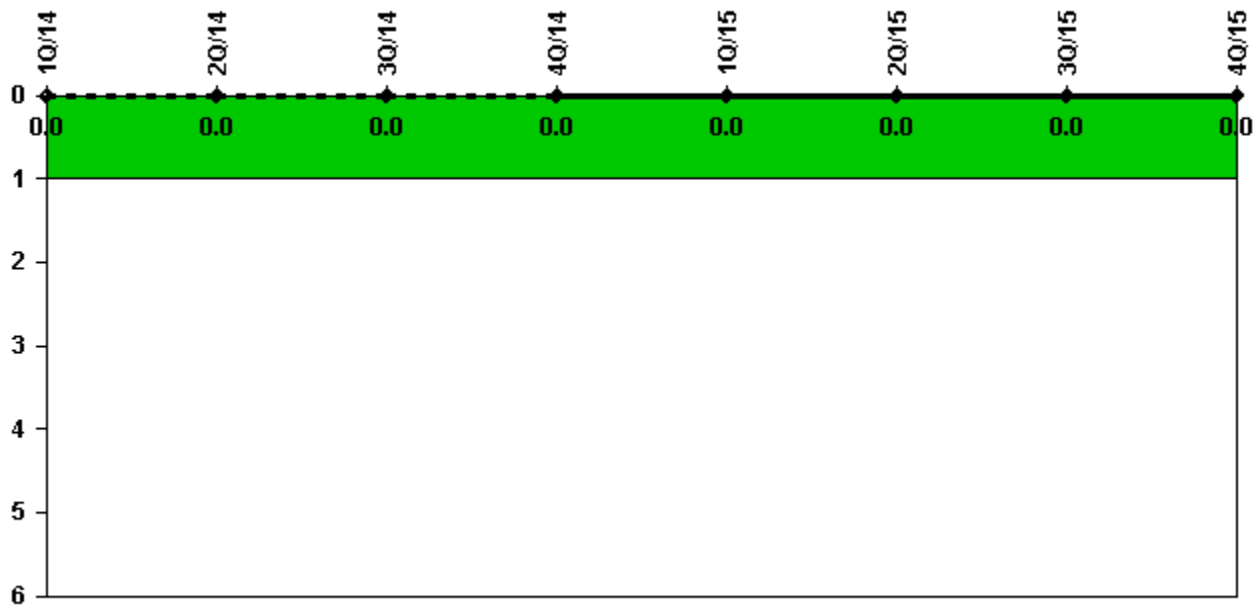
Notes

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	0	1.0	0	1.0	0	1.0	0	0
Critical hours	1421.6	2130.0	2208.0	2209.0	2159.0	2184.0	2208.0	2209.0
Indicator value	**0.9**	**1.8**	**0.9**	**1.8**	**1.6**	**1.6**	**1.6**	**0.8**

Licensee Comments:

2Q/14: Removed 3A Condensate Booster Pump from service on 04/09/2014 due to report of water in oil reservoir.

Unplanned Scrams with Complications



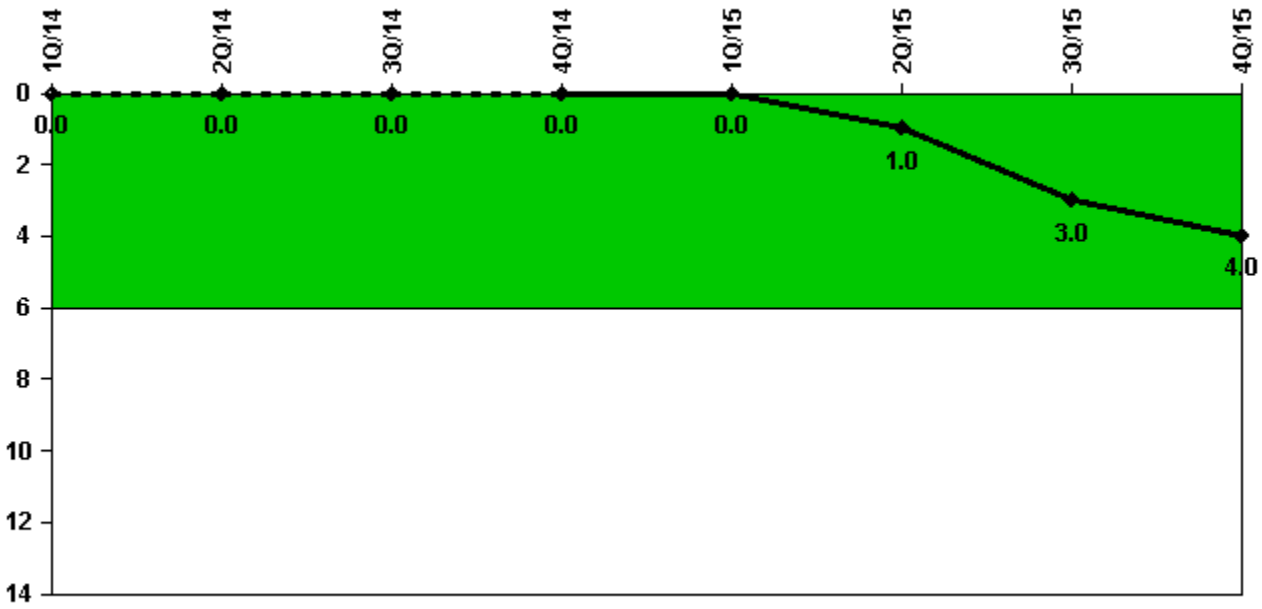
Thresholds: White > 1.0

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

Licensee Comments: none

Safety System Functional Failures (BWR)



Thresholds: White > 6.0

Notes

Safety System Functional Failures (BWR)	1Q/14	2Q/14	3Q/14	4Q/14	1Q/15	2Q/15	3Q/15	4Q/15
Safety System Functional Failures	0	0	0	0	0	1	2	1
Indicator value	**0**	**0**	**0**	**0**	**0**	**1**	**3**	**4**

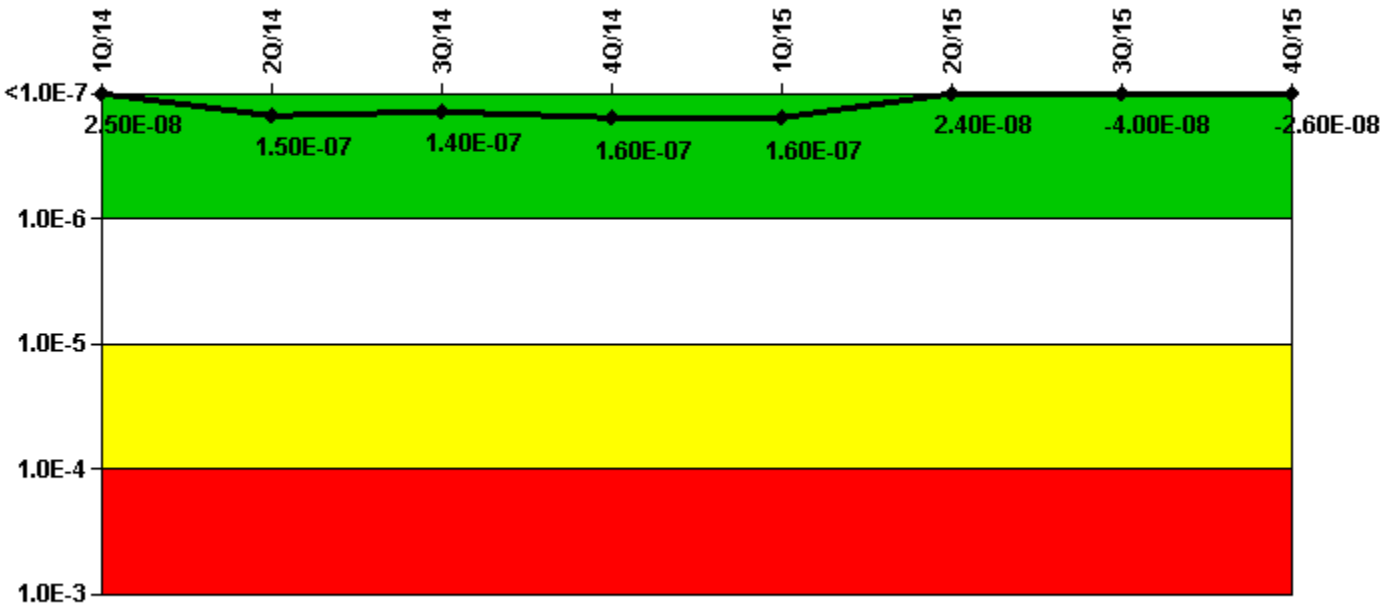
Licensee Comments:

4Q/15: LER 50-259/2015-004-00 - Containment Atmospheric Dilution B Train Supply System Inoperable Longer Than Allowed by Technical Specifications

3Q/15: LER 50-259/2015-003-00, Loss of Cooling to the Unit 1 and Unit 2 Shutdown Board Rooms Due To Fouled Chiller Coils, and LER 50-296/2015-004-00, High Pressure Coolant Injection System Inoperable Due To Failed Pressure Switch

2Q/15: LER 296/2015-001-00 - High Pressure Coolant Injection and Reactor Core Isolation Cooling Inoperable Due to No Suction Source, PER 988444

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)	2.15E-07	2.07E-07	1.58E-07	1.51E-07	1.46E-07	1.03E-07	6.35E-08	7.81E-08
URI (ΔCDF)	-1.90E-07	-5.40E-08	-2.13E-08	1.37E-08	1.37E-08	-7.90E-08	-1.04E-07	-1.04E-07
PLE	NO	NO	NO	NO	NO	NO	NO	NO
Indicator value	**2.50E-08**	**1.50E-07**	**1.40E-07**	**1.60E-07**	**1.60E-07**	**2.40E-08**	**-4.00E-08**	**-2.60E-08**

Licensee Comments:

4Q/15: Risk Cap Invoked. The MSPI Risk Cap is invoked. The contribution from the highest worth single failure (2.34E-6) has been replaced by a value of 5E-7.

3Q/15: Risk Cap Invoked. The MSPI Risk Cap is invoked. The contribution from the highest worth single failure (2.34E-06) has been replaced by a value of 5.00E-07.

2Q/15: Risk Cap Invoked. Changed PRA Parameter(s). The MSPI Risk Cap is invoked. The contribution from the highest worth single failure (2.39E-06) has been replaced by a value of 5.00E-07. Changing PRA parameters did not result in any indicator color changes.

2Q/15: Risk Cap Invoked. The MSPI Risk Cap is invoked. The contribution from the highest worth single failure (2.39E-06) has been replaced by a value of 5.00E-07. Changing PRA parameters did not result in any indicator color changes. The BFN PRA Model Revision 6 was approved on 1/23/15 with a corresponding MSPI Basis Document Revisions approved on 7/17/15. The PRA model revision incorporated the Fire PRA (FPRA) and the Internal Events PRA (IE) into one model to assure the basic structure of both models remains consistent..

Additionally, identified errors, deficiencies, or over conservatisms in the Rev.5 model were corrected. As a result of the PRA model change, there is a slight decrease in CDF and a slight increase in LERF. Emergency AC Specific Change: In order for LOSP to result in core damage, multiple additional systems have to fail. Most important of those are the EDGs. In Rev. 5, failure of multiple EDGs was assumed to occur at the same time at T=0 (beginning of the event). If AC power is not restored in 4 hours core damage is likely to occur. This is an unlikely occurrence. A more likely scenario is that the EDGs will fail at random times over an extended period of time, resulting in a higher probability that offsite power can be restore before all the EDGs fail or before core damage occurs. Convolution adjusts the offsite power recovery probabilities to account for this fact. This reduces the LOSP CDF and LERF contribution and EDG importance. This change was the sole reason for the net CDF decrease between Rev. 5 and Rev. 6. This comment was updated after the quarterly files were created.

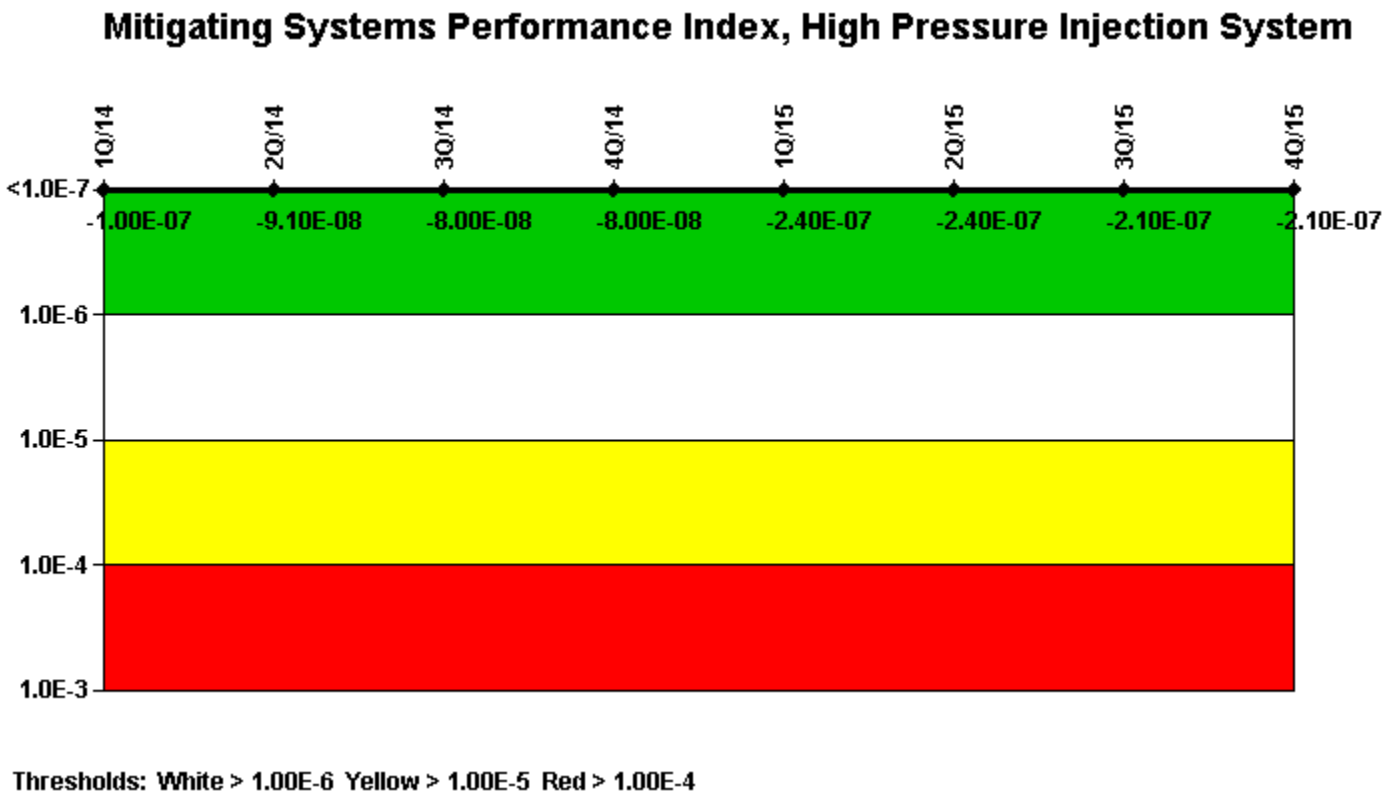
1Q/15: Risk Cap Invoked. The MSPI Risk Cap is invoked. The contribution from the highest worth single failure (2.01E-06) has been replaced by a value of 5.00E-07.

4Q/14: Risk Cap Invoked. The MSPI Risk Cap is invoked. The contribution from the highest worth single failure (2.01E-06) has been replaced by a value of 5.00E-07.

3Q/14: Risk Cap Invoked. The MSPI Risk Cap is invoked. The contribution from the highest worth single failure (1.94E-06) has been replaced by a value of 5.00E-07.

2Q/14: Risk Cap Invoked. The MSPI Risk Cap is invoked. The contribution from the highest worth single failure (1.87E-06) has been replaced by a value of 5.00E-07.

1Q/14: Risk Cap Invoked. The MSPI Risk Cap is invoked. The contribution from the highest worth single failure (1.26E-06) has been replaced by a value of 5.00E-07.



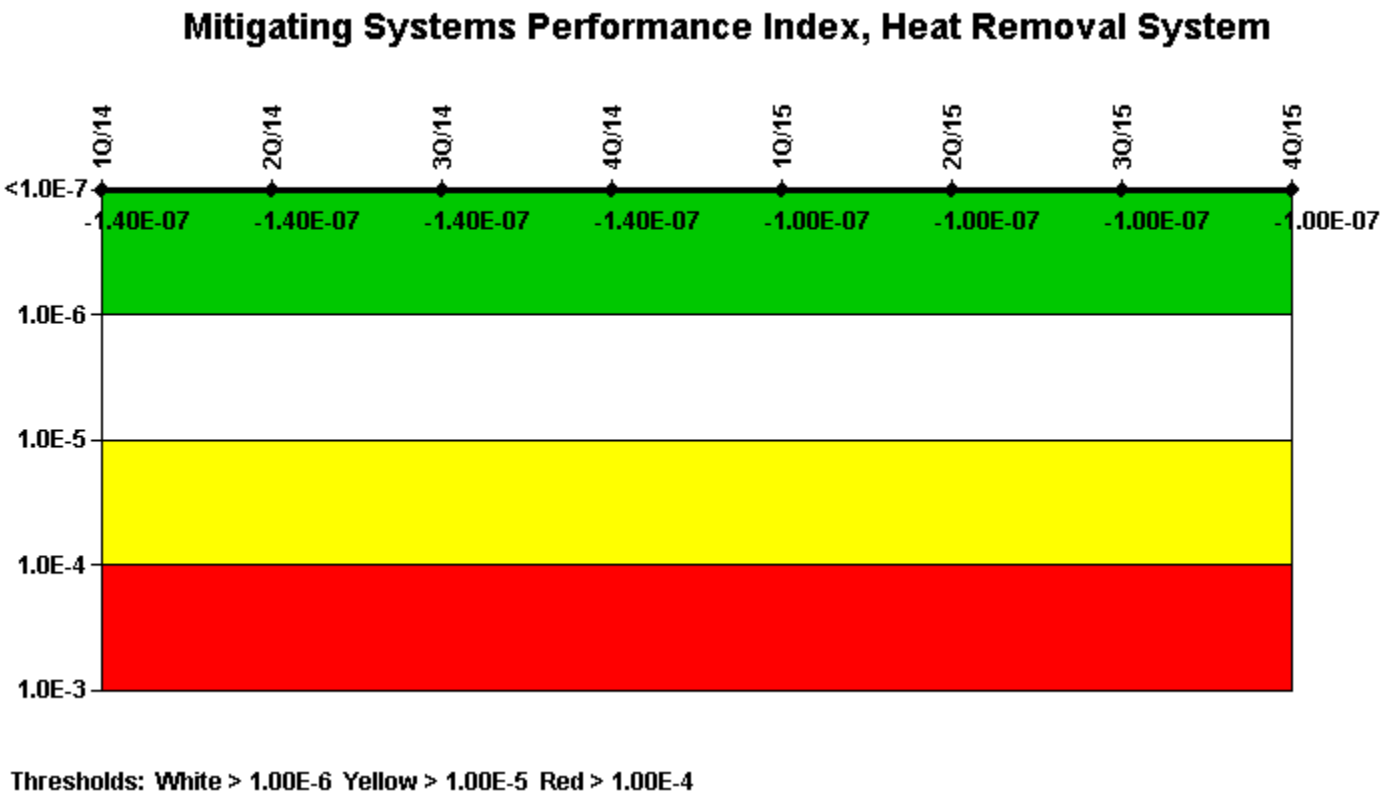
Notes

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 (ΔCDF)	6.97E-08	6.90E-08	8.05E-08	8.04E-08	-7.67E-08	-5.87E-08	-3.59E-08	-3.54E-08
URI (ΔCDF)	-1.75E-07	-1.60E-07	-1.60E-07	-1.60E-07	-1.60E-07	-1.79E-07	-1.79E-07	-1.79E-07
PLE	NO	NO	NO	NO	NO	NO	NO	NO
Indicator value	**-1.00E-07**	**-9.10E-08**	**-8.00E-08**	**-8.00E-08**	**-2.40E-07**	**-2.40E-07**	**-2.10E-07**	**-2.10E-07**

Licensee Comments:

2Q/15: Changing PRA parameters did not result in any indicator color changes. The BFN PRA Model Revision 6 was approved on 1/23/15 with a corresponding MSPI Basis Document Revisions approved on 7/17/15. The PRA model revision incorporated the Fire PRA (FPRA) and the Internal Events PRA (IE) into one model to assure the basic structure of both models remains consistent.. Additionally, identified errors, deficiencies, or over conservatisms in the Rev.5 model were corrected. As a result of the PRA model change, there is a slight decrease in CDF and a slight increase in LERF. This comment was updated after the quarterly files were created.

2Q/15: Changed PRA Parameter(s). Changing PRA parameters did not result in any indicator color changes.



Notes

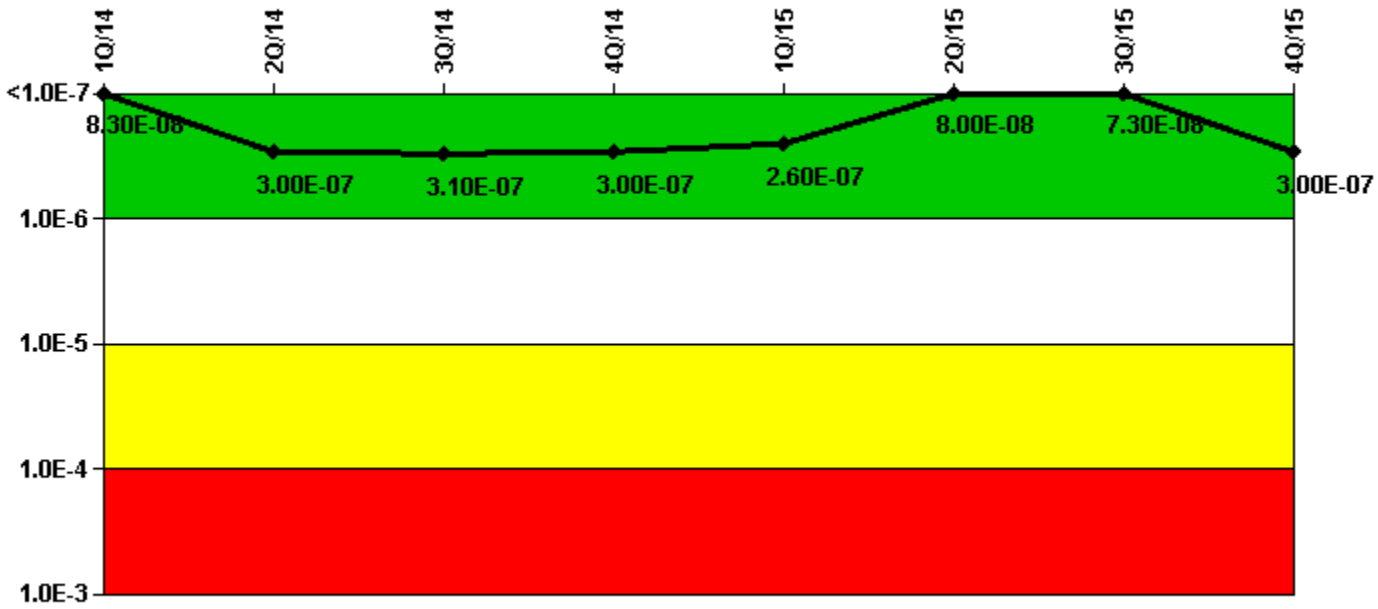
Mitigating Systems Performance Index, Heat Removal System	1Q/14	2Q/14	3Q/14	4Q/14	1Q/15	2Q/15	3Q/15	4Q/15
UAI (ΔCDF)	2.91E-08	2.14E-08	2.14E-08	2.04E-08	6.04E-08	5.76E-08	5.73E-08	5.62E-08
URI (ΔCDF)	-1.73E-07	-1.64E-07	-1.64E-07	-1.64E-07	-1.64E-07	-1.59E-07	-1.59E-07	-1.59E-07
PLE	NO	NO	NO	NO	NO	NO	NO	NO
Indicator value	**-1.40E-07**	**-1.40E-07**	**-1.40E-07**	**-1.40E-07**	**-1.00E-07**	**-1.00E-07**	**-1.00E-07**	**-1.00E-07**

Licensee Comments:

2Q/15: Changing PRA parameters did not result in any indicator color changes. The BFN PRA Model Revision 6 was approved on 1/23/15 with a corresponding MSPI Basis Document Revisions approved on 7/17/15. The PRA model revision incorporated the Fire PRA (FPRA) and the Internal Events PRA (IE) into one model to assure the basic structure of both models remains consistent.. Additionally, identified errors, deficiencies, or over conservatisms in the Rev.5 model were corrected. As a result of the PRA model change, there is a slight decrease in CDF and a slight increase in LERF. This comment was updated after the quarterly files were created.

2Q/15: Changed PRA Parameter(s). Changing PRA parameters did not result in any indicator color changes.

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 (ΔCDF)	7.63E-08	1.25E-07	1.30E-07	1.20E-07	8.41E-08	8.38E-08	7.59E-08	1.11E-07
URI (ΔCDF)	6.51E-09	1.79E-07	1.79E-07	1.79E-07	1.79E-07	-3.35E-09	-3.35E-09	1.89E-07
PLE	NO	NO	NO	NO	NO	NO	NO	NO
Indicator value	**8.30E-08**	**3.00E-07**	**3.10E-07**	**3.00E-07**	**2.60E-07**	**8.00E-08**	**7.30E-08**	**3.00E-07**

Licensee Comments:

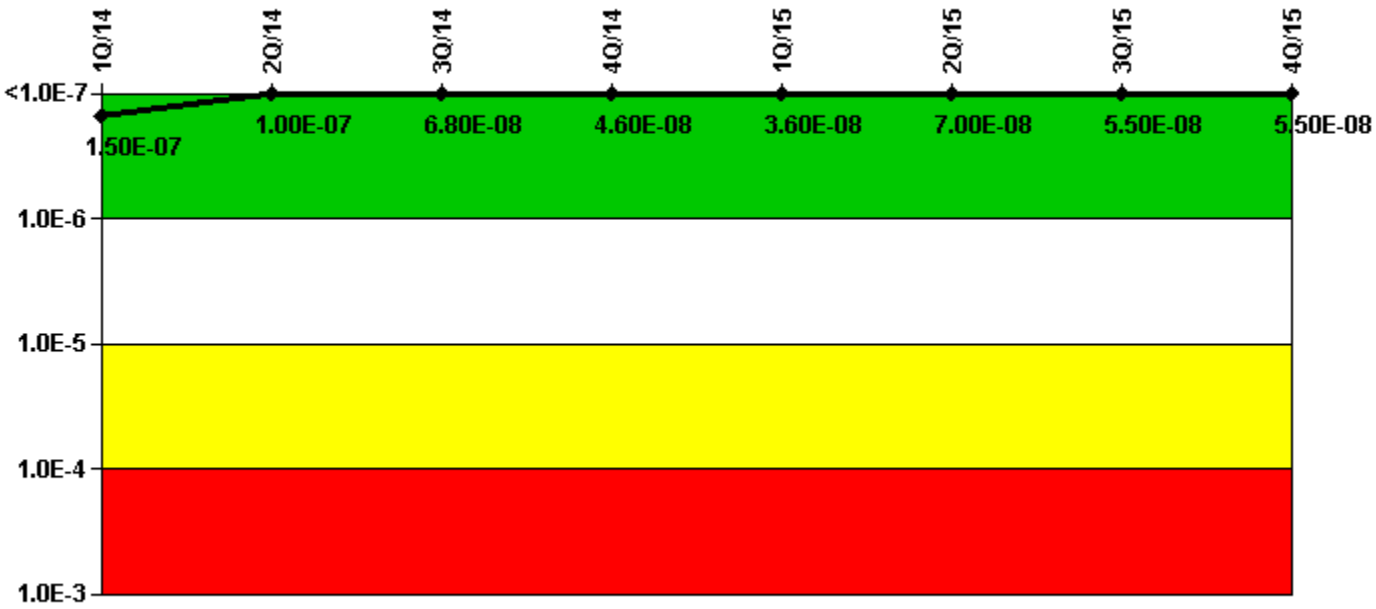
2Q/15: Changed PRA Parameter(s). Changing PRA parameters did not result in any indicator color changes.

2Q/15: Changing PRA parameters did not result in any indicator color changes. The BFN PRA Model Revision 6 was approved on 1/23/15 with a corresponding MSPI Basis Document Revisions approved on 7/17/15. The PRA model revision incorporated the Fire PRA (FPRA) and the Internal Events PRA (IE) into one model to assure the basic structure of both models remains consistent.. Additionally, identified errors, deficiencies, or over conservatisms in the Rev.5 model were corrected. As a result of the PRA model change, there is a slight decrease in CDF and a slight increase in LERF. This comment was updated after the quarterly files were created.

2Q/14: Failure of the main control room handswitch for the 3-FCV-023-0052, 3D RHRSW HX Outlet Valve, discovered on 05/14/2014

1Q/14: Changed PRA Parameter(s). During the first quarter of 2014, the following changes were made to numerical values in the INPO CDE database for the Browns Ferry Nuclear Plant (BFN). 1. Common Cause Factor (CCF) for 3-FCV-023-0034 was changed to the correct value of 2.00. Effective 2011-01 to present. 2. Operational Non-test demands(D) value for 2-FCV-023-0046 was changed to the correct value of 82. Effective 2012-01 to present. 3. Operational Non-test demands(D) value for 3-FCV-023-0040 was changed to the correct value of 88. Effective 2012-01 to present. 4. Operational Non-test run-hours value for 1-PMP-074-0039 was changed to the correct value of 333.54 hours. Effective 2011-01 to present. 5. Test run-hours value for 1-PMP-074-0039 was changed to the correct value of 31.87 hours. Effective 2011-01 to present. These changes result in the BFN Residual Heat Removal System MSPI indicator values for past reporting periods to be different than previously reported, as indicated by the effective dates identified above. No MSPI color changes resulted from these changes to the numerical values. Reference BFN Problem Evaluation Report (PER) 851845.

Mitigating Systems Performance Index, Cooling Water Systems



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

Notes

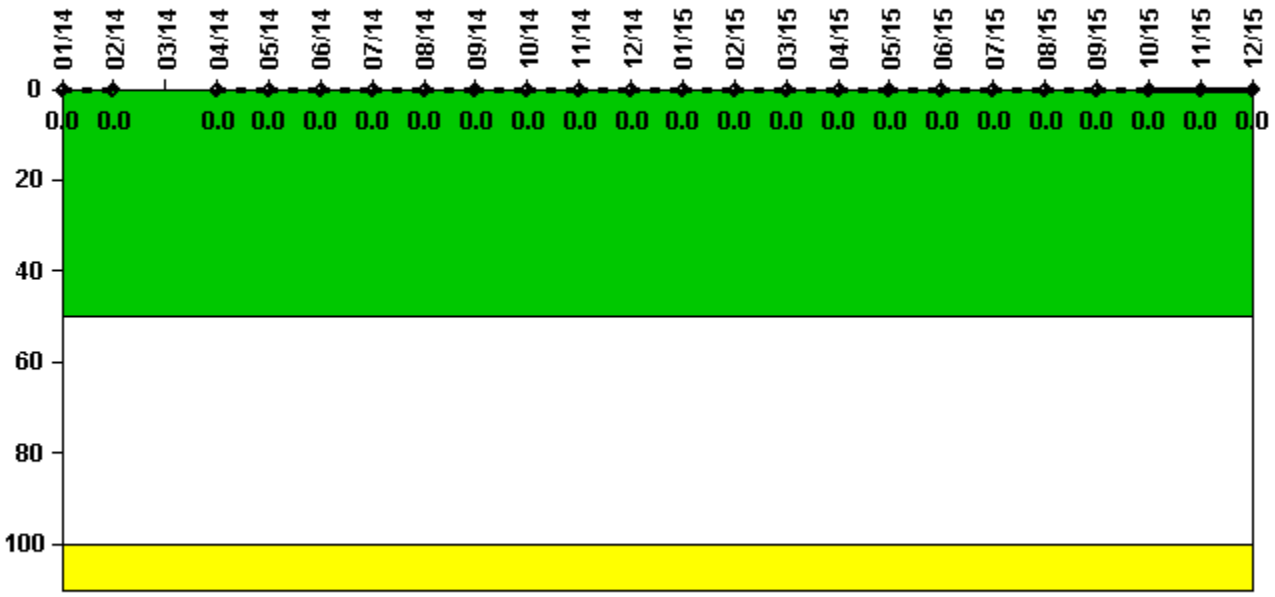
Mitigating Systems Performance Index, Cooling Water Systems	1Q/14	2Q/14	3Q/14	4Q/14	1Q/15	2Q/15	3Q/15	4Q/15
UAI (ΔCDF)	1.75E-07	1.56E-07	1.20E-07	9.82E-08	9.83E-08	1.20E-07	1.06E-07	1.06E-07
URI (ΔCDF)	-2.99E-08	-5.18E-08	-5.18E-08	-5.18E-08	-6.28E-08	-5.02E-08	-5.02E-08	-5.02E-08
PLE	NO	NO	NO	NO	NO	NO	NO	NO
Indicator value	**1.50E-07**	**1.00E-07**	**6.80E-08**	**4.60E-08**	**3.60E-08**	**7.00E-08**	**5.50E-08**	**5.50E-08**

Licensee Comments:

2Q/15: Changing PRA parameters did not result in any indicator color changes. The BFN PRA Model Revision 6 was approved on 1/23/15 with a corresponding MSPI Basis Document Revisions approved on 7/17/15. The PRA model revision incorporated the Fire PRA (FPRA) and the Internal Events PRA (IE) into one model to assure the basic structure of both models remains consistent.. Additionally, identified errors, deficiencies, or over conservatisms in the Rev.5 model were corrected. As a result of the PRA model change, there is a slight decrease in CDF and a slight increase in LERF. This comment was updated after the quarterly files were created.

2Q/15: Changed PRA Parameter(s). Changing PRA parameters did not result in any indicator color changes.

Reactor Coolant System Activity



Thresholds: White > 50.0 Yellow > 100.0

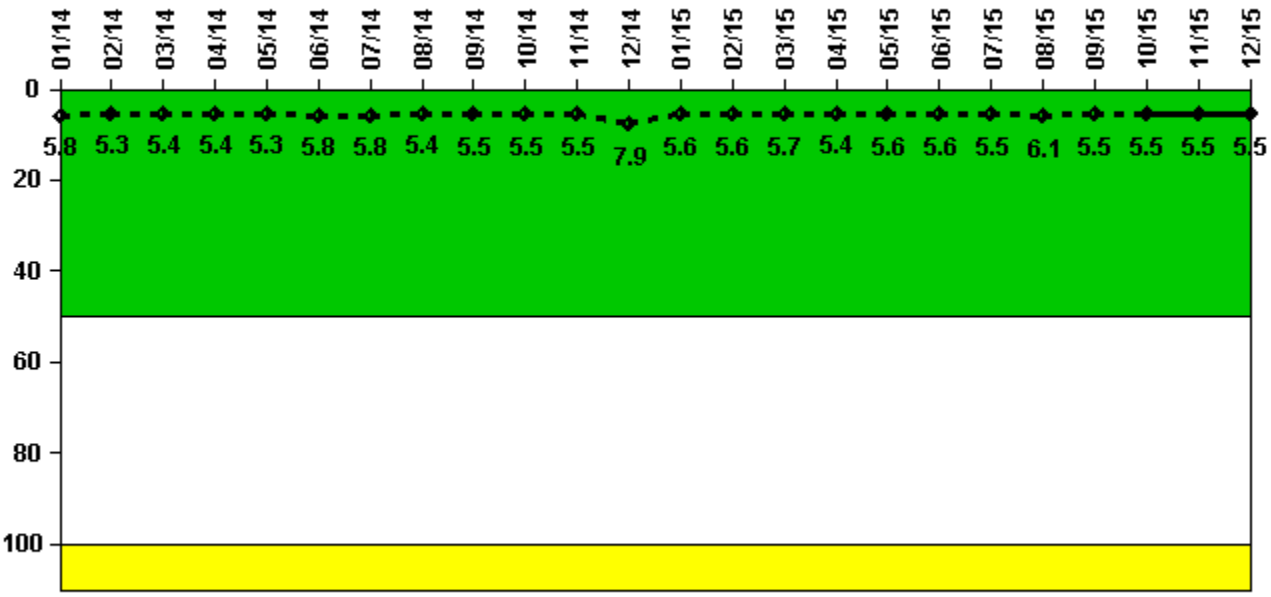
Notes

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	0.000094	0.000088	N/A	0.000080	0.000064	0.000086	0.000134	0.000084	0.000068	0.000099	0.000128	0.000124
Technical specification limit	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2
Indicator value	**0**	**0**	**N/A**	**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	0.000132	0.000081	0.000083	0.000135	0.000053	0.000054	0.000049	0.000060	0.000057	0.000044	0.000216	0.000035
Technical specification limit	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2
Indicator value	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**

Licensee Comments: none

Reactor Coolant System Leakage

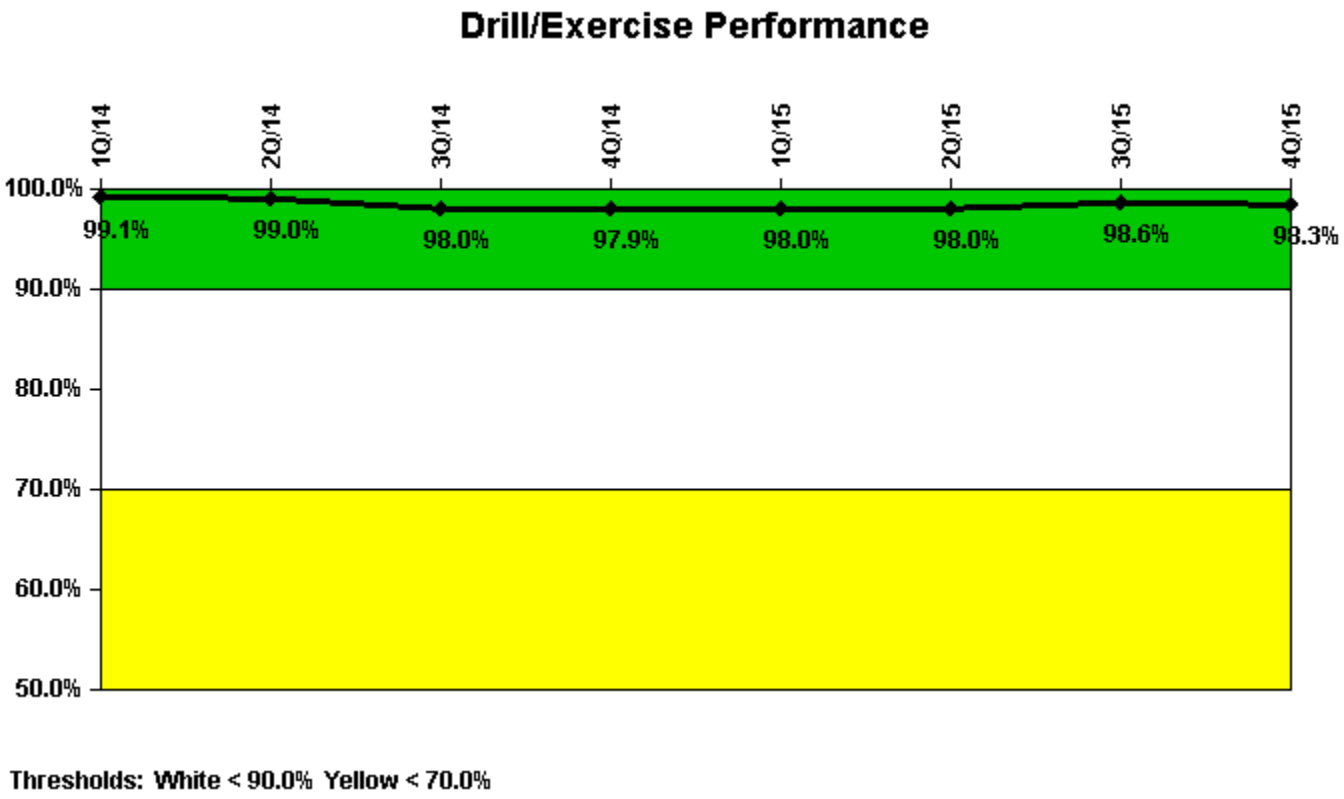


Thresholds: White > 50.0 Yellow > 100.0

Notes

Reactor Coolant System Leakage	1/14	2/14	3/14	4/14	5/14	6/14	7/14	8/14	9/14	10/14	11/14	12/14
Maximum leakage	1.750	1.580	1.610	1.610	1.580	1.750	1.740	1.630	1.650	1.660	1.660	2.370
Technical specification limit	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0
Indicator value	**5.8**	**5.3**	**5.4**	**5.4**	**5.3**	**5.8**	**5.8**	**5.4**	**5.5**	**5.5**	**5.5**	**7.9**
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	1.670	1.690	1.710	1.630	1.670	1.680	1.660	1.840	1.660	1.660	1.640	1.650
Technical specification limit	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0
Indicator value	**5.6**	**5.6**	**5.7**	**5.4**	**5.6**	**5.6**	**5.5**	**6.1**	**5.5**	**5.5**	**5.5**	**5.5**

Licensee Comments: none



Thresholds: White < 90.0% Yellow < 70.0%

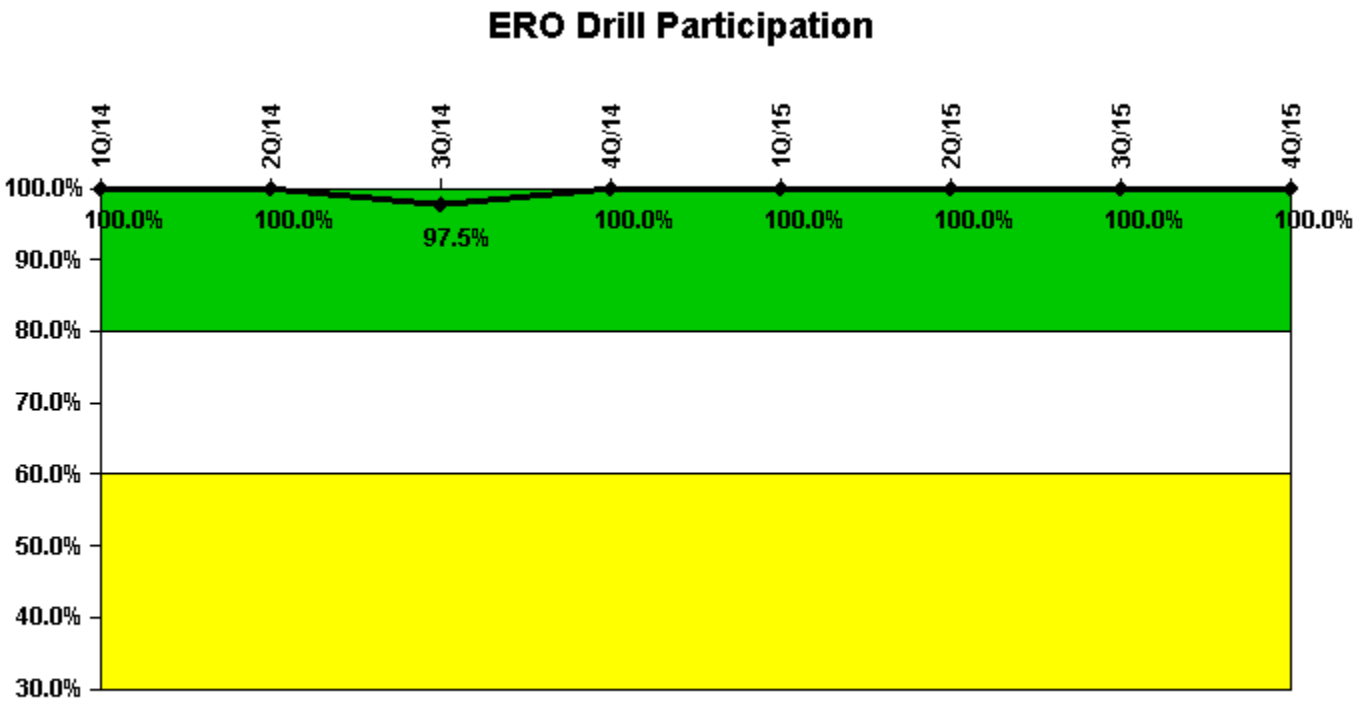
Notes

Drill/Exercise Performance	1Q/14	2Q/14	3Q/14	4Q/14	1Q/15	2Q/15	3Q/15	4Q/15
Successful opportunities	12.0	63.0	86.0	4.0	46.0	16.0	50.0	74.0
Total opportunities	12.0	64.0	90.0	4.0	46.0	16.0	50.0	75.0
Indicator value	**99.1%**	**99.0%**	**98.0%**	**97.9%**	**98.0%**	**98.0%**	**98.6%**	**98.3%**

Licensee Comments:

4Q/15: During the November 2015 Emergency Preparedness Graded Exercise NRC Inspection, the NRC identified an error in the PI Data. Emergency Preparedness(EP) failed to count a classification and notification. EP reported 12/12 Drill and Exercise Performance(DEP) opportunities and the actual count is 14/14. Additionally, when Operations Training submitted their October LOR paper work, it included documentation of two "as founds" from September 2015 that were not previously reported. This brought the total DEP opportunities for September 2015 to 18/18. There is no color change associated with this update.

1Q/14: Revised Successful drill, exer & event opportunities to reflect an additional DEP failure for the September (3rd quarter) 2013 report period. This revision did not result in a color change. PER # 836157

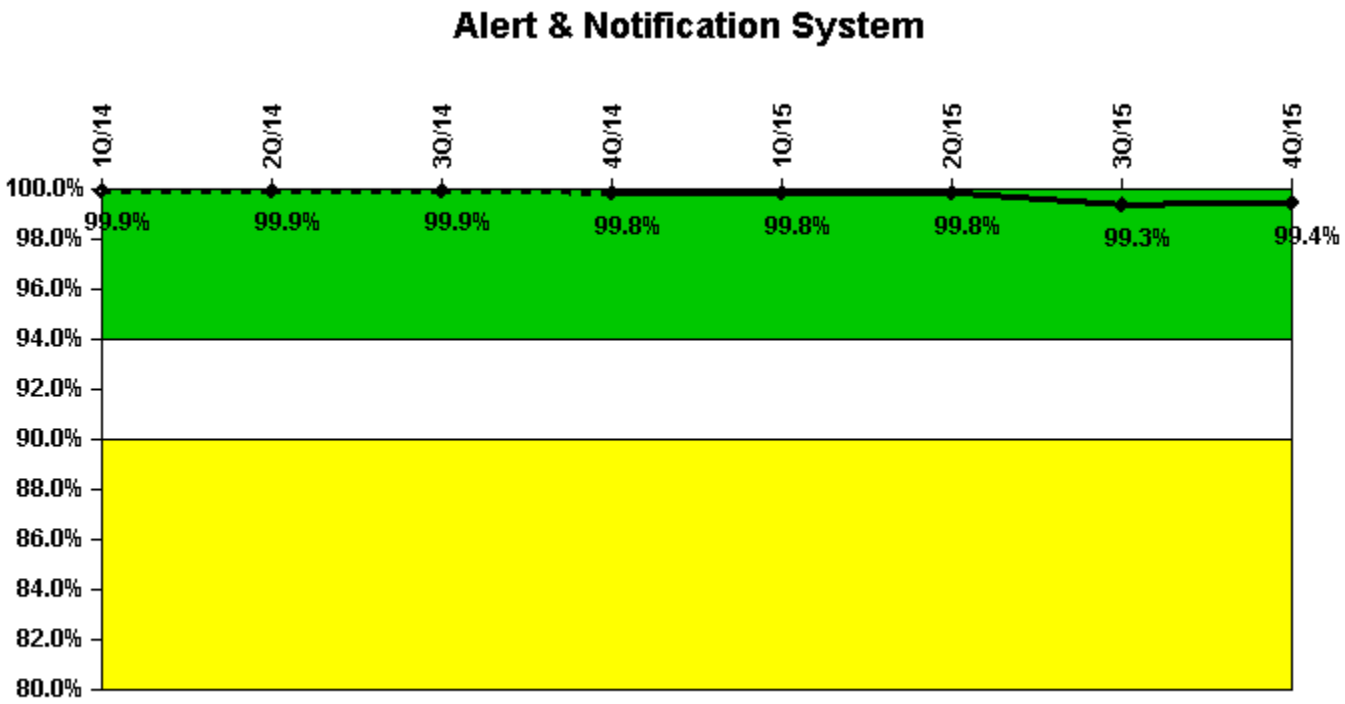


Thresholds: White < 80.0% Yellow < 60.0%

Notes

ERO Drill Participation	1Q/14	2Q/14	3Q/14	4Q/14	1Q/15	2Q/15	3Q/15	4Q/15
Participating Key personnel	76.0	78.0	77.0	76.0	80.0	88.0	85.0	91.0
Total Key personnel	76.0	78.0	79.0	76.0	80.0	88.0	85.0	91.0
Indicator value	**100.0%**	**100.0%**	**97.5%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**

Licensee Comments: none



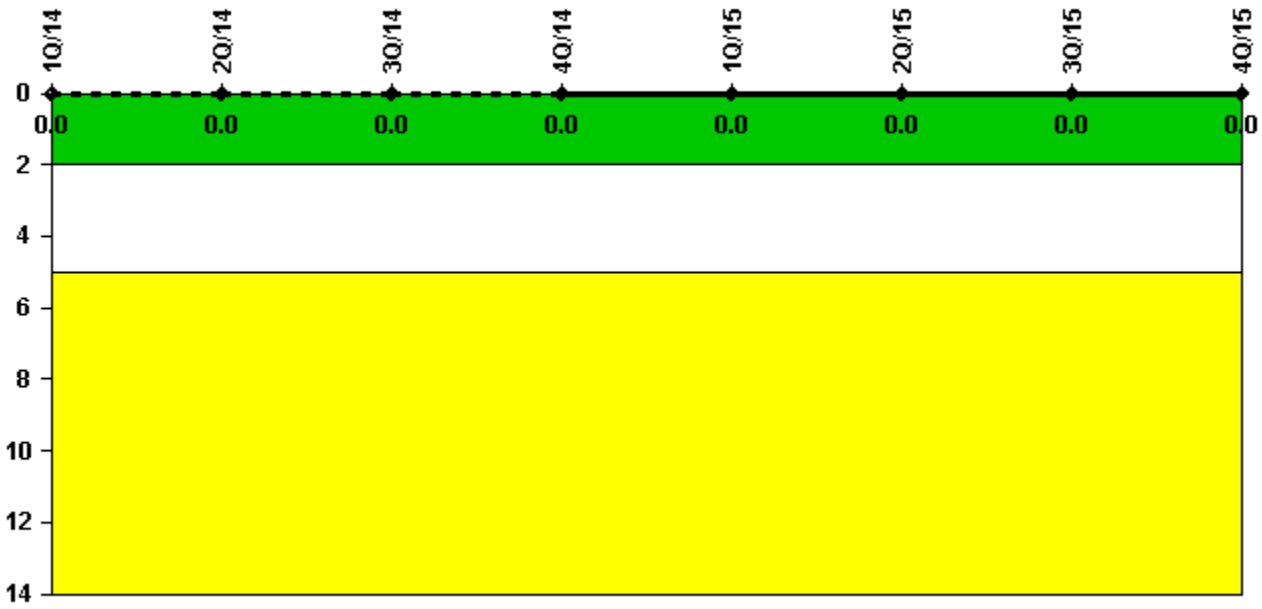
Thresholds: White < 94.0% Yellow < 90.0%

Notes

Alert & Notification System	1Q/14	2Q/14	3Q/14	4Q/14	1Q/15	2Q/15	3Q/15	4Q/15
Successful siren-tests	1040	624	1038	621	1040	624	918	726
Total sirens-tests	1040	624	1040	624	1040	624	936	728
Indicator value	**99.9%**	**99.9%**	**99.9%**	**99.8%**	**99.8%**	**99.8%**	**99.3%**	**99.4%**

Licensee Comments: none

Occupational Exposure Control Effectiveness

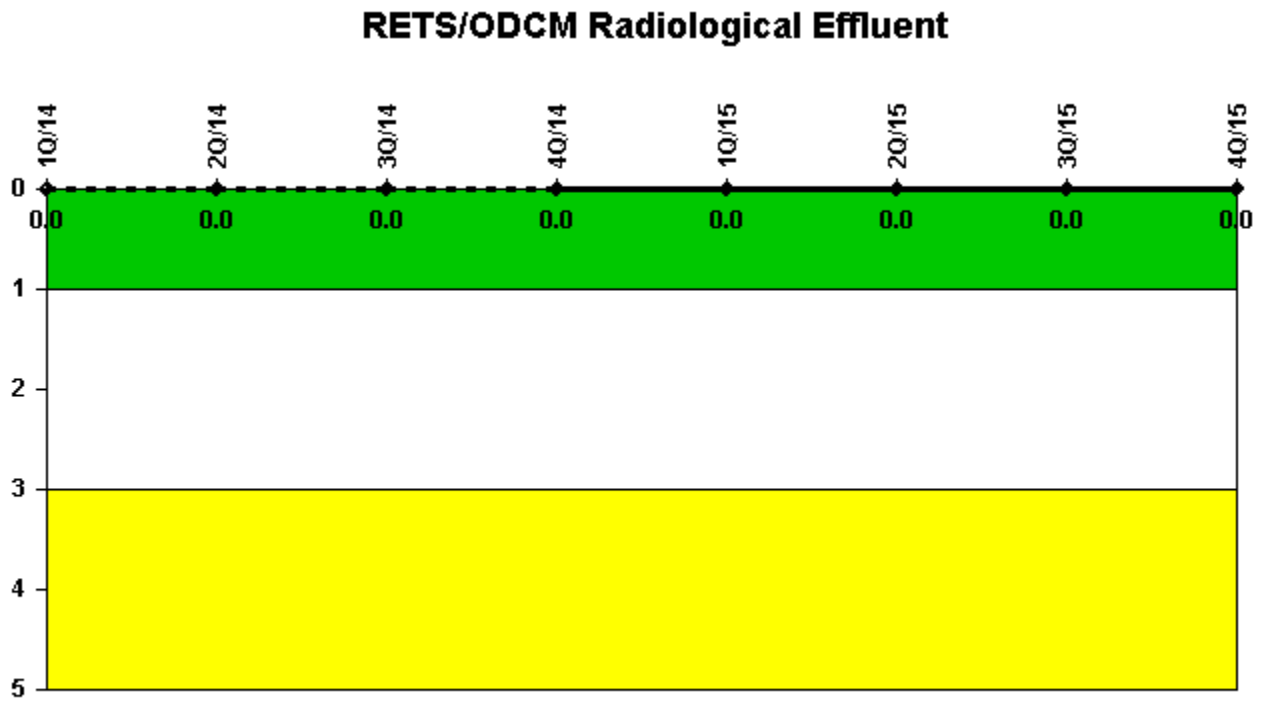


Thresholds: White > 2.0 Yellow > 5.0

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
Indicator value	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**

Licensee Comments: none



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