

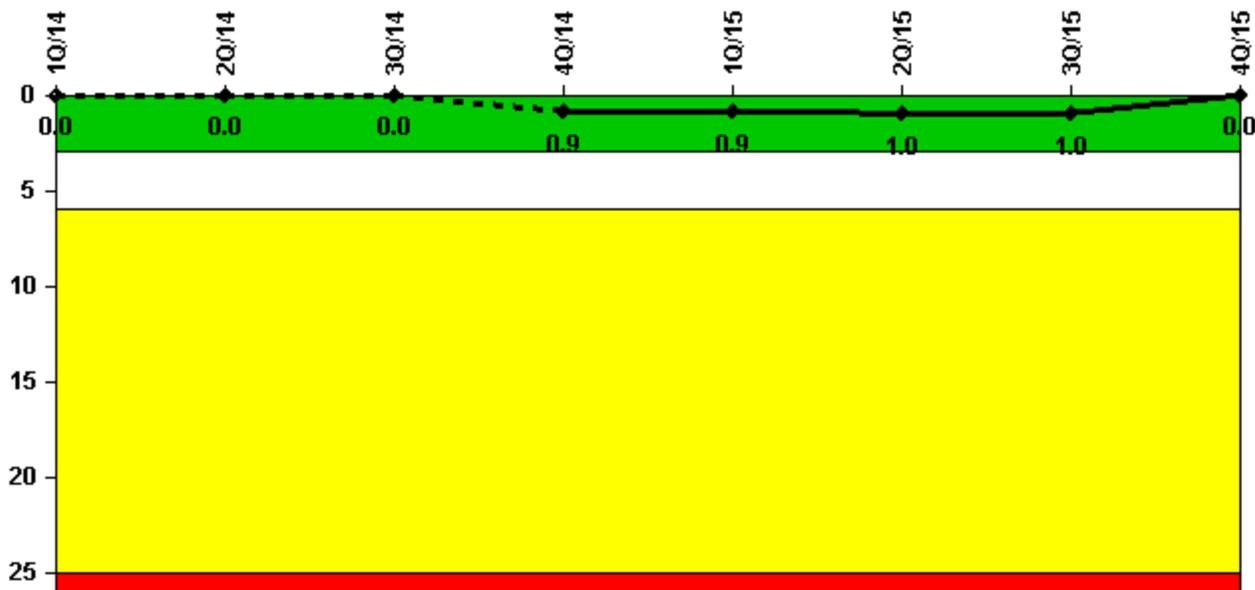
D.C. Cook 1

4Q/2015 Performance Indicators

The solid trend line represents the current reporting period.

Licensee's General Comments: none

Unplanned Scrams per 7000 Critical Hrs



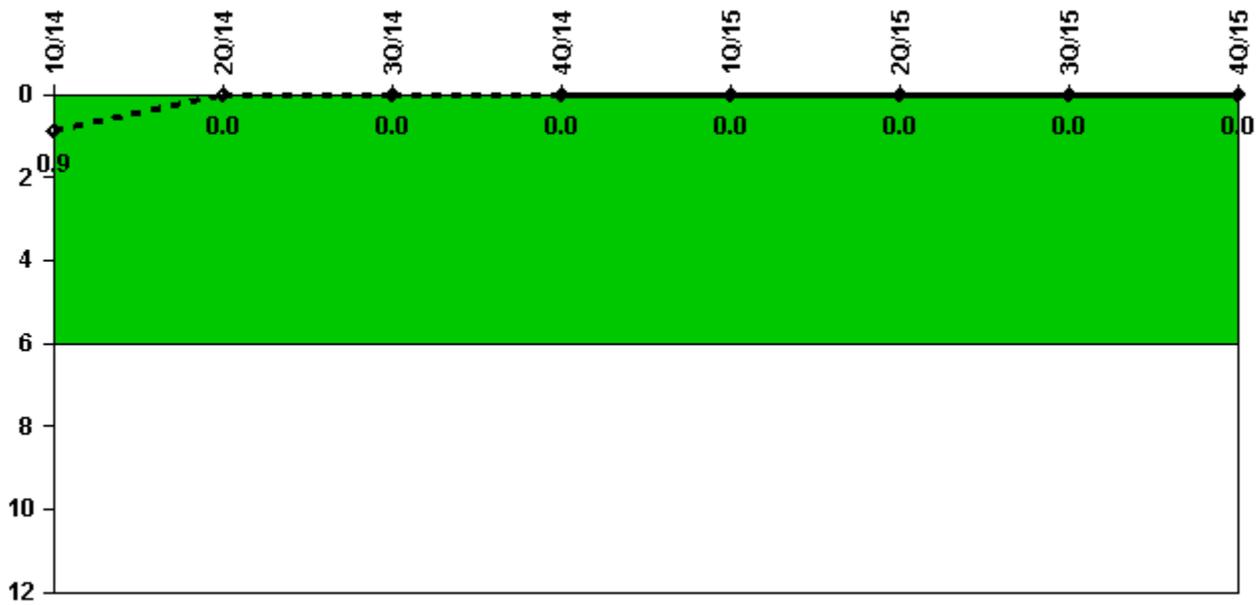
Thresholds: White > 3.0 Yellow > 6.0 Red > 25.0

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	0	0
Critical hours	2159.0	2184.0	2040.0	1612.5	2159.0	1466.5	1525.0	2209.0
Indicator value	0	0	0	0.9	0.9	1.0	1.0	0

Licensee Comments: none

Unplanned Power Changes per 7000 Critical Hrs



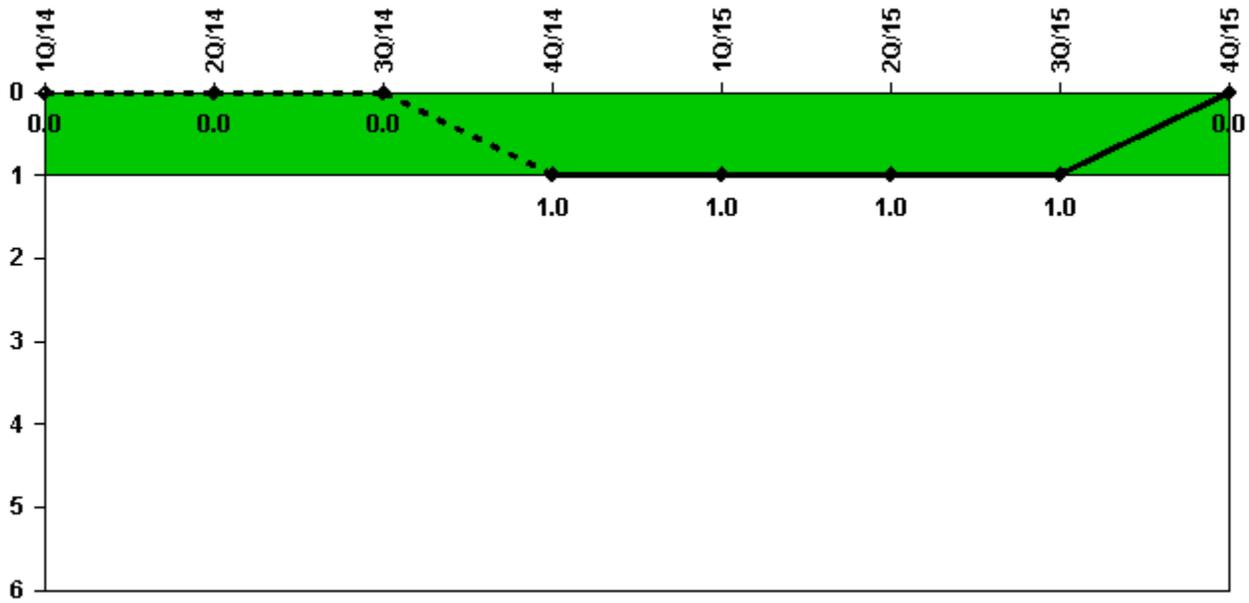
Thresholds: White > 6.0

Notes

Unplanned Power Changes per 7000 Critical Hrs	1Q/14	2Q/14	3Q/14	4Q/14	1Q/15	2Q/15	3Q/15	4Q/15
Unplanned power changes	0	0	0	0	0	0	0	0
Critical hours	2159.0	2184.0	2040.0	1612.5	2159.0	1466.5	1525.0	2209.0
Indicator value	0.9	0						

Licensee Comments: none

Unplanned Scrams with Complications



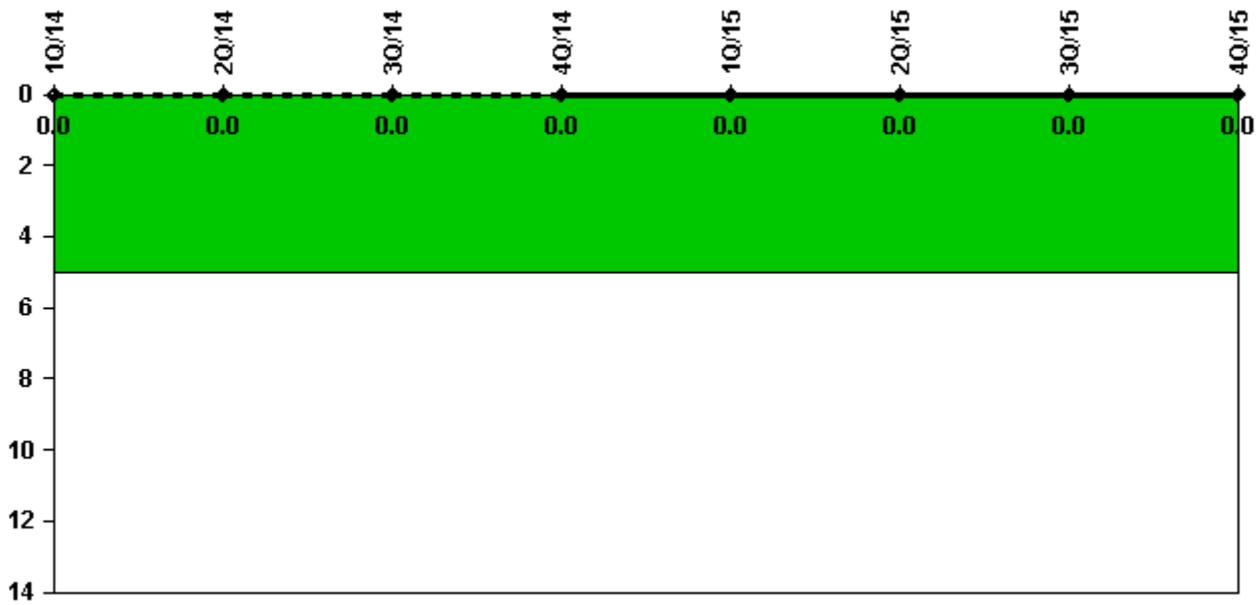
Thresholds: White > 1.0

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	1.0	0	0	0	0
Indicator value	0.0	0.0	0.0	1.0	1.0	1.0	1.0	0.0

Licensee Comments: none

Safety System Functional Failures (PWR)



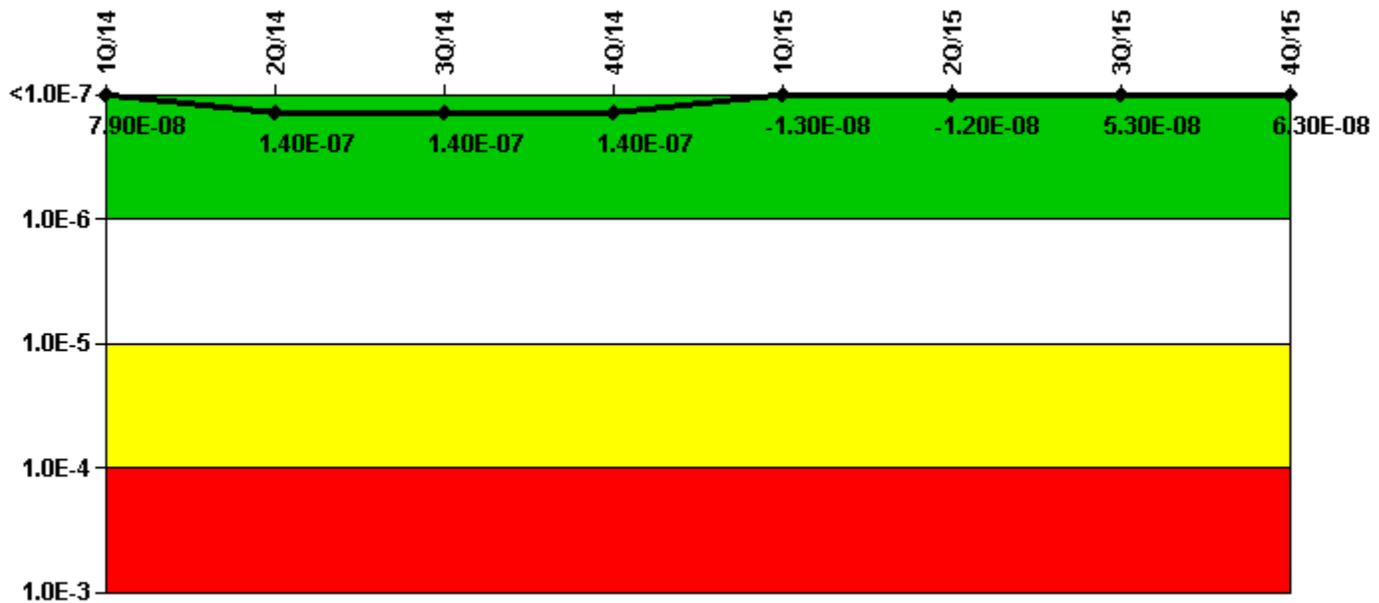
Thresholds: White > 5.0

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	0	0	0	0
Indicator value	0							

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/14	2Q/14	3Q/14	4Q/14	1Q/15	2Q/15	3Q/15	4Q/15
UAI (ΔCDF)	2.29E-10	4.32E-10	2.53E-10	2.50E-10	1.80E-10	1.57E-09	8.60E-08	9.65E-08
URI (ΔCDF)	7.89E-08	1.35E-07	1.39E-07	1.41E-07	-1.32E-08	-1.34E-08	-3.31E-08	-3.34E-08
PLE	NO	NO	NO	NO	NO	NO	NO	NO
Indicator value	7.90E-08	1.40E-07	1.40E-07	1.40E-07	-1.30E-08	-1.20E-08	5.30E-08	6.30E-08

Licensee Comments:

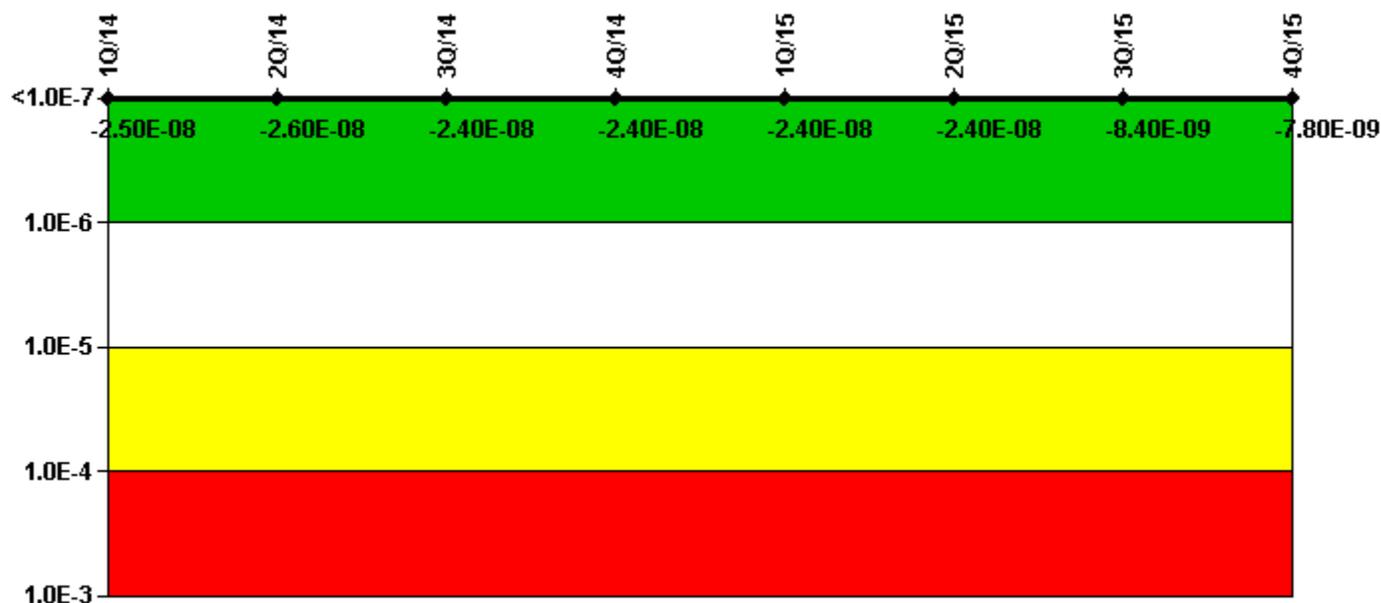
4Q/15: An FAQ has been submitted due to an unresolved issue from the NRC 3rd Quarter Baseline Inspection. The unresolved issue is related to a PRA Modeling error discovered and entered into the Station Corrective Action Program and corrected in the 3rd Quarter 2015 submittal following approval of the PRA Model revision in the 2nd Quarter 2015. The NRC Resident Inspectors questioned why previously submitted MSPI data was not corrected when the error was discovered. The Station's understanding of NEI 99-02 guidance for correcting previously submitted data is that changes based on PRA Model revisions, including error correction, are implemented in the quarter following approval of the revised PRA Model and previously submitted data is not updated.

3Q/15: Changed PRA Parameter(s). The 2015 DC Cook Internal Events PRA Model of Record was approved on 6/30/15 with a corresponding MSPI Basis Document Revision 9 approved on 10/01/15. The PRA model revision was a full-scope periodic update to the model which included a data update and correction of modeling issues identified in the 2009 model. As a result of the PRA model change, the CDF, Fussel-Vesely, and Basic Event Probabilities for all monitored trains and components were revised.

1Q/14: Revised MSPI Basis Document to update Emergency Diesel Generator Load Run Test Demand estimates.

1Q/14: Revised MSPI Basis Document to update Emergency Diesel Generator Load Run Test Demand estimates.

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 (Δ CDF)	2.22E-11	8.47E-12	1.94E-12	1.95E-12	7.93E-12	1.04E-11	8.77E-10	1.45E-09
URI (Δ CDF)	-2.46E-08	-2.55E-08	-2.40E-08	-2.40E-08	-2.40E-08	-2.40E-08	-9.24E-09	-9.24E-09
PLE	NO							
Indicator value	-2.50E-08	-2.60E-08	-2.40E-08	-2.40E-08	-2.40E-08	-2.40E-08	-8.40E-09	-7.80E-09

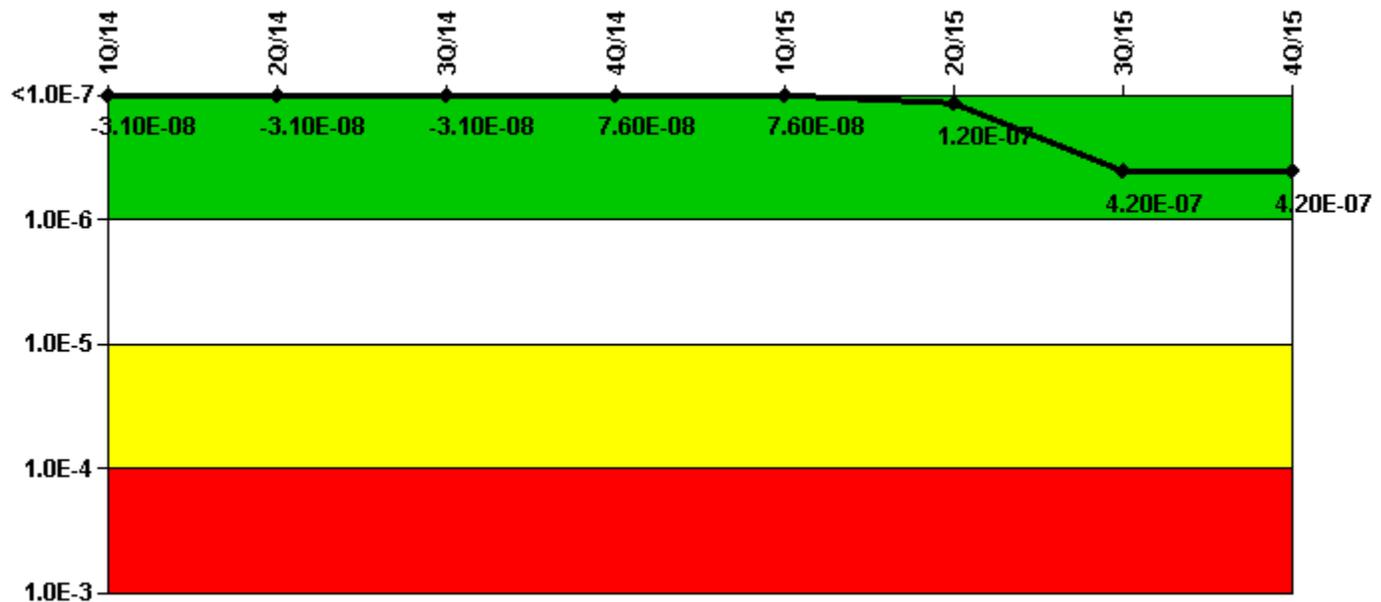
Licensee Comments:

4Q/15: An FAQ has been submitted due to an unresolved issue from the NRC 3rd Quarter Baseline Inspection. The unresolved issue is related to a PRA Modeling error discovered and entered into the Station Corrective Action Program and corrected in the 3rd Quarter 2015 submittal following approval of the PRA Model revision in the 2nd Quarter 2015. The NRC Resident Inspectors questioned why previously submitted MSPI data was not corrected when the error was discovered. The Station's understanding of NEI 99-02 guidance for correcting previously submitted data is that changes based on PRA Model revisions, including error correction, are implemented in the

quarter following approval of the revised PRA Model and previously submitted data is not updated.

3Q/15: Changed PRA Parameter(s). The 2015 DC Cook Internal Events PRA Model of Record was approved on 6/30/15 with a corresponding MSPI Basis Document Revision 9 approved on 10/01/15. The PRA model revision was a full-scope periodic update to the model which included a data update and correction of modeling issues identified in the 2009 model. As a result of the PRA model change, the CDF, Fussel-Vesely, and Basic Event Probabilities for all monitored trains and components were revised.

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 (ΔCDF)	-2.69E-11	-2.84E-11	-2.84E-11	-2.84E-11	-2.84E-11	-2.03E-11	-7.23E-09	-7.23E-09
URI (ΔCDF)	-3.15E-08	-3.15E-08	-3.06E-08	7.62E-08	7.62E-08	1.23E-07	4.31E-07	4.31E-07
PLE	NO							
Indicator value	-3.10E-08	-3.10E-08	-3.10E-08	7.60E-08	7.60E-08	1.20E-07	4.20E-07	4.20E-07

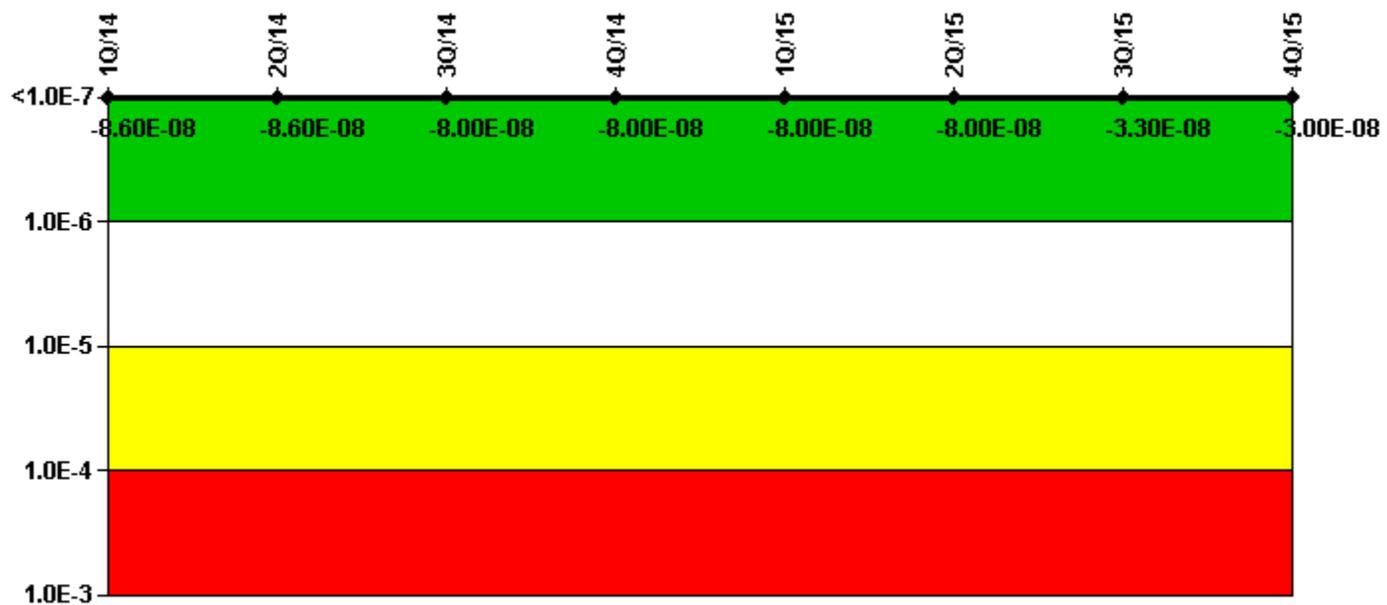
Licensee Comments:

4Q/15: An FAQ has been submitted due to an unresolved issue from the NRC 3rd Quarter Baseline Inspection.

The unresolved issue is related to a PRA Modeling error discovered and entered into the Station Corrective Action Program and corrected in the 3rd Quarter 2015 submittal following approval of the PRA Model revision in the 2nd Quarter 2015. The NRC Resident Inspectors questioned why previously submitted MSPI data was not corrected when the error was discovered. The Station's understanding of NEI 99-02 guidance for correcting previously submitted data is that changes based on PRA Model revisions, including error correction, are implemented in the quarter following approval of the revised PRA Model and previously submitted data is not updated.

3Q/15: Changed PRA Parameter(s). The 2015 DC Cook Internal Events PRA Model of Record was approved on 6/30/15 with a corresponding MSPI Basis Document Revision 9 approved on 10/01/15. The PRA model revision was a full-scope periodic update to the model which included a data update and correction of modeling issues identified in the 2009 model. As a result of the PRA model change, the CDF, Fussel-Vesely, and Basic Event Probabilities for all monitored trains and components were revised.

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)	-3.23E-13	-3.23E-13	-3.23E-13	-3.23E-13	-3.23E-13	-3.23E-13	-1.91E-09	1.74E-09
URI (ΔCDF)	-8.62E-08	-8.62E-08	-8.05E-08	-8.05E-08	-8.05E-08	-8.05E-08	-3.15E-08	-3.19E-08
PLE	NO							
	-8.60E-	-8.60E-	-8.00E-	-8.00E-	-8.00E-	-8.00E-	-3.30E-	-3.00E-

Indicator value	08	08	08	08	08	08	08	08
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Licensee Comments:

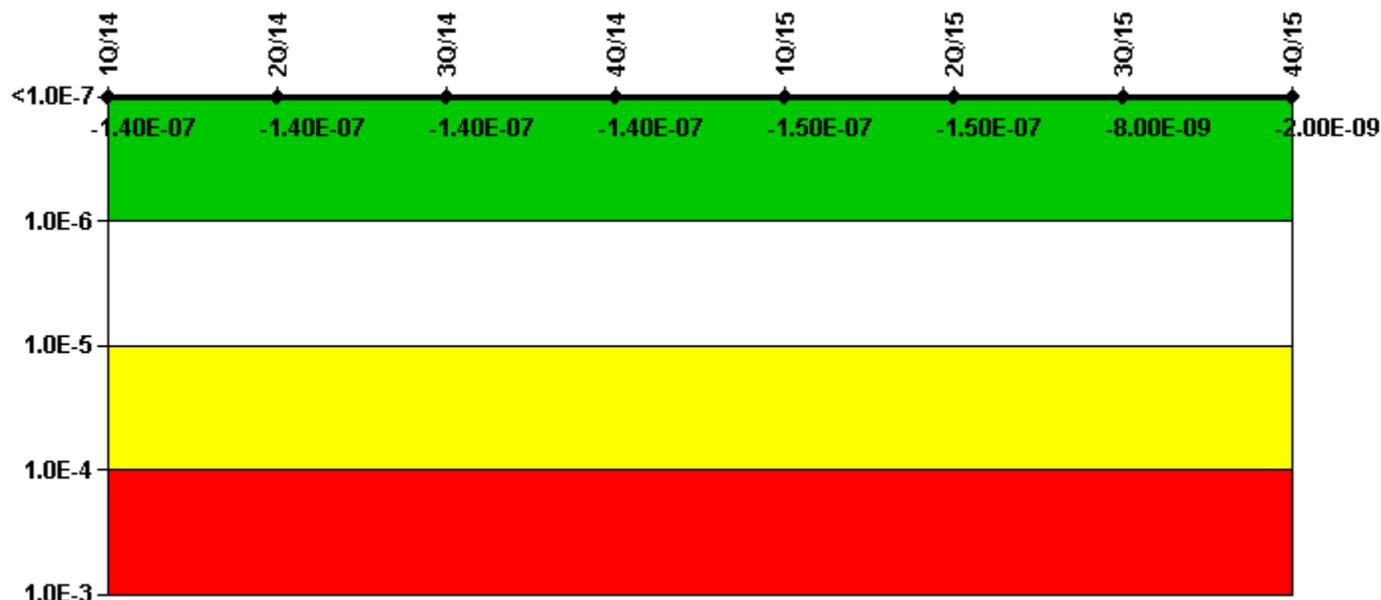
4Q/15: Changed PRA Parameter(s). An FAQ has been submitted due to an unresolved issue from the NRC 3rd Quarter Baseline Inspection. The unresolved issue is related to a PRA Modeling error discovered and entered into the Station Corrective Action Program and corrected in the 3rd Quarter 2015 submittal following approval of the PRA Model revision in the 2nd Quarter 2015. The NRC Resident Inspectors questioned why previously submitted MSPI data was not corrected when the error was discovered. The Station's understanding of NEI 99-02 guidance for correcting previously submitted data is that changes based on PRA Model revisions, including error correction, are implemented in the quarter following approval of the revised PRA Model and previously submitted data is not updated.

3Q/15: Changed PRA Parameter(s). Data entry errors were identified in the third quarter 2015 MSPI Parameter update for Unit 1 Residual Heat Removal following submittal. As a result, the FVURC value for 1-ICM-305 (Unit 1 Recirculation Sump to East RHR/CTS Pumps Suction Containment Isolation Valve) and the FVURC and URPC values for 1-IMO-390 (Unit 1 Refueling Water Storage Tank TK-33 to Residual Heat Removal Pumps Suction Shutoff Valve) were revised for the third quarter 2015. The Unit 1 RHR MSPI color remained green following these changes.

3Q/15: Changed PRA Parameter(s). The 2015 DC Cook Internal Events PRA Model of Record was approved on 6/30/15 with a corresponding MSPI Basis Document Revision 9 approved on 10/01/15. The PRA model revision was a full-scope periodic update to the model which included a data update and correction of modeling issues identified in the 2009 model. As a result of the PRA model change, the CDF, Fussel-Vesely, and Basic Event Probabilities for all monitored trains and components were revised. The RHR scope of monitored components was revised. 1-CMO-419 and 1-CMO-429, RHR Heat Exchanger CCW Outlet Valves, are now included in the scope of monitored components based on their Birnbaum importance. 1-ICM-311 and 1-ICM-321, RHR Pump Discharge MOVs, are removed from the scope of monitored components since they do not have an active safety function modeled in the PRA..

2Q/15: On 6/14/15, Operations identified an oil leak on the Unit 1 East RHR Motor Lower Bearing. An engineering evaluation of the ability of the RHR pump to perform its MSPI function with the identified oil leak has not been completed. Preliminary evaluation of this condition determined that the RHR pump was capable of operating successfully for the 24 hour PRA mission time used for MSPI reporting with the identified oil leak. Based on the preliminary evaluation, a Failure to Run is not being counted for the Unit 1 East RHR Pump.

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)	1.87E-11	5.21E-12	5.03E-12	1.60E-11	5.38E-11	6.17E-11	8.67E-08	9.31E-08
URI (ΔCDF)	-1.43E-07	-1.43E-07	-1.42E-07	-1.42E-07	-1.51E-07	-1.52E-07	-9.47E-08	-9.51E-08
PLE	NO							
Indicator value	-1.40E-07	-1.40E-07	-1.40E-07	-1.40E-07	-1.50E-07	-1.50E-07	-8.00E-09	-2.00E-09

Licensee Comments:

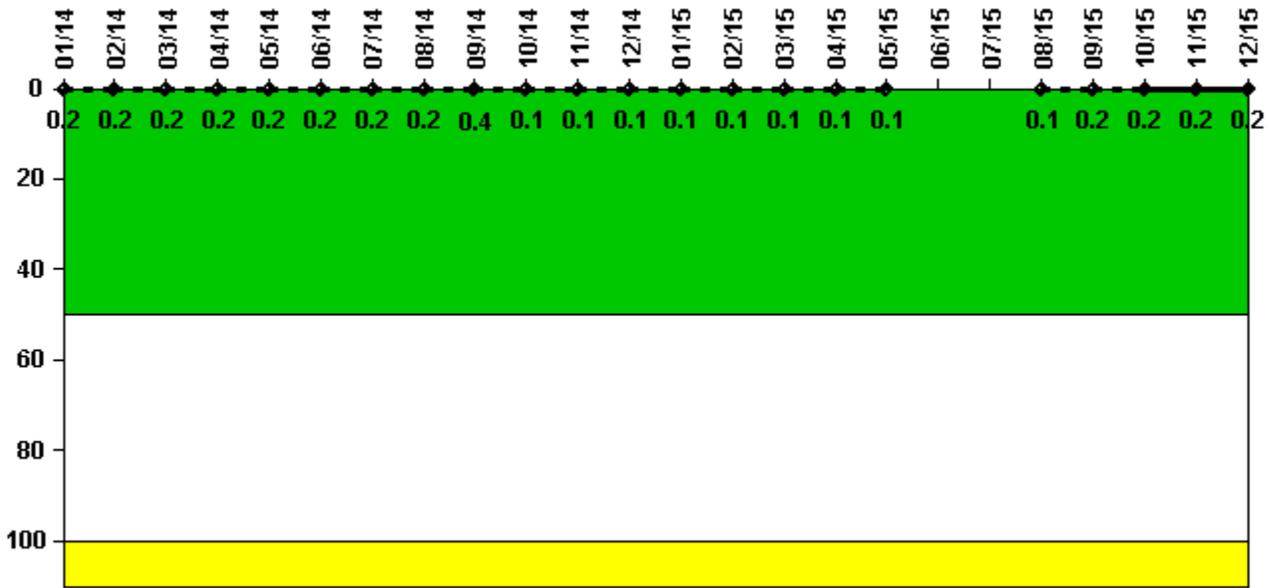
4Q/15: An FAQ has been submitted due to an unresolved issue from the NRC 3rd Quarter Baseline Inspection. The unresolved issue is related to a PRA Modeling error discovered and entered into the Station Corrective Action Program and corrected in the 3rd Quarter 2015 submittal following approval of the PRA Model revision in the 2nd Quarter 2015. The NRC Resident Inspectors questioned why previously submitted MSPI data was not corrected when the error was discovered. The Station's understanding of NEI 99-02 guidance for correcting previously submitted data is that changes based on PRA Model revisions, including error correction, are implemented in the quarter following approval of the revised PRA Model and previously submitted data is not updated.

3Q/15: Changed PRA Parameter(s). The 2015 DC Cook Internal Events PRA Model of Record was approved on 6/30/15 with a corresponding MSPI Basis Document Revision 9 approved on 10/01/15. The PRA model revision was a full-scope periodic update to the model which included a data update and correction of modeling issues identified in the 2009 model. As a result of the PRA model change, the CDF, Fussel-Vesely, and Basic Event Probabilities for all monitored trains and components were revised.

1Q/15: The MSPI Basis Document was updated in the 4th Quarter 2014 to reflect 2009 PRA model of record error

that the PRA model incorrectly removed cutsets associated with failure of the CCW heat exchanger CCW outlet valves (1-CMO-410 & 420) opening from model results. As a result, these valves have been incorporated in the Unit 1 Cooling Water System scope of monitored components.

Reactor Coolant System Activity



Thresholds: White > 50.0 Yellow > 100.0

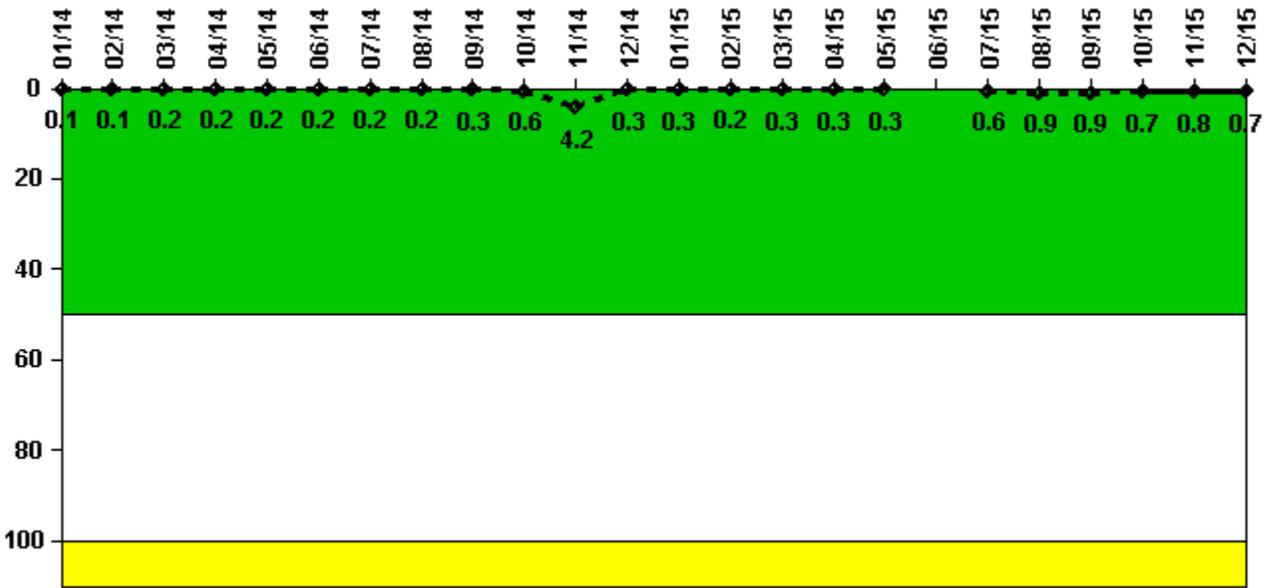
Notes

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	0.000656	0.000685	0.000713	0.000741	0.000764	0.000786	0.000834	0.000837	0.001350	0.000282	0.000490	0.000371
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	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.4	0.1	0.1	0.1
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	0.000370	0.000389	0.000417	0.000446	0.000474	N/A	N/A	0.000508	0.000542	0.000577	0.000609	0.000629
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	0.1	0.1	N/A	N/A	0.1	0.2	0.2	0.2	0.2
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Licensee Comments: none

Reactor Coolant System Leakage



Thresholds: White > 50.0 Yellow > 100.0

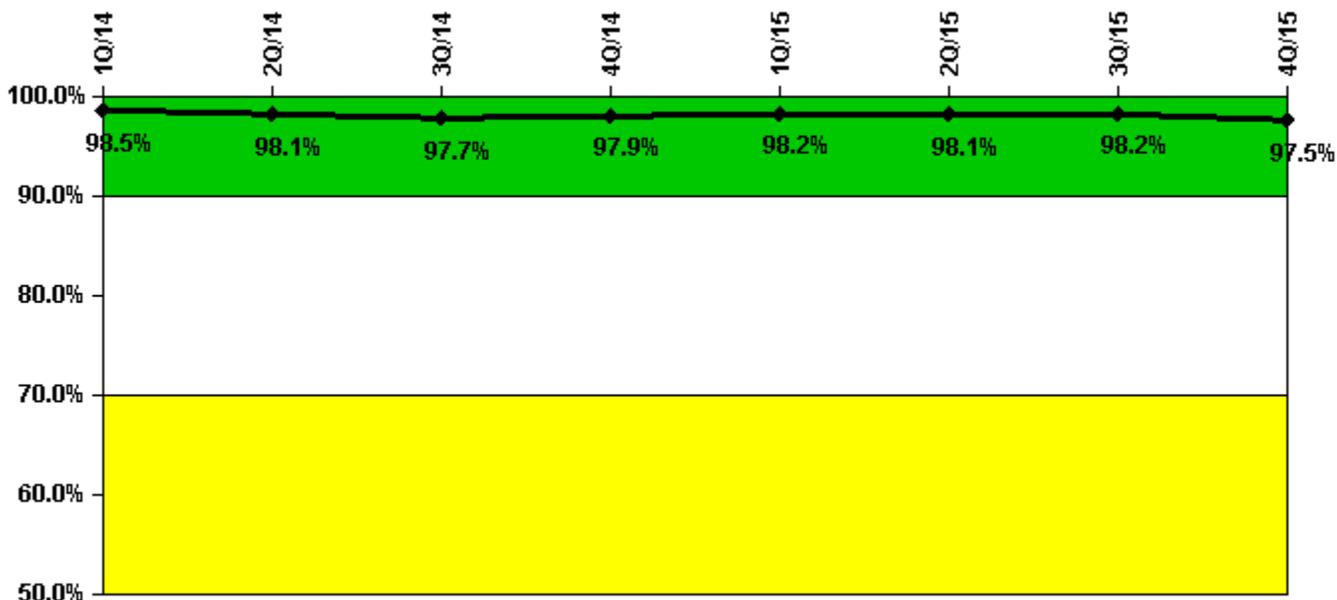
Notes

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	0.015	0.015	0.024	0.019	0.024	0.021	0.022	0.025	0.027	0.070	0.452	0.032
Technical specification limit	10.8	10.8	10.8	10.8	10.8	10.8	10.8	10.8	10.8	10.8	10.8	10.8
Indicator value	0.1	0.1	0.2	0.2	0.2	0.2	0.2	0.2	0.3	0.6	4.2	0.3

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	0.028	0.026	0.029	0.030	0.032	N/A	0.066	0.092	0.092	0.075	0.087	0.072
Technical specification limit	10.8	10.8	10.8	10.8	10.8	10.8	10.8	10.8	10.8	10.8	10.8	10.8
Indicator value	0.3	0.2	0.3	0.3	0.3	N/A	0.6	0.9	0.9	0.7	0.8	0.7

Licensee Comments: none

Drill/Exercise Performance



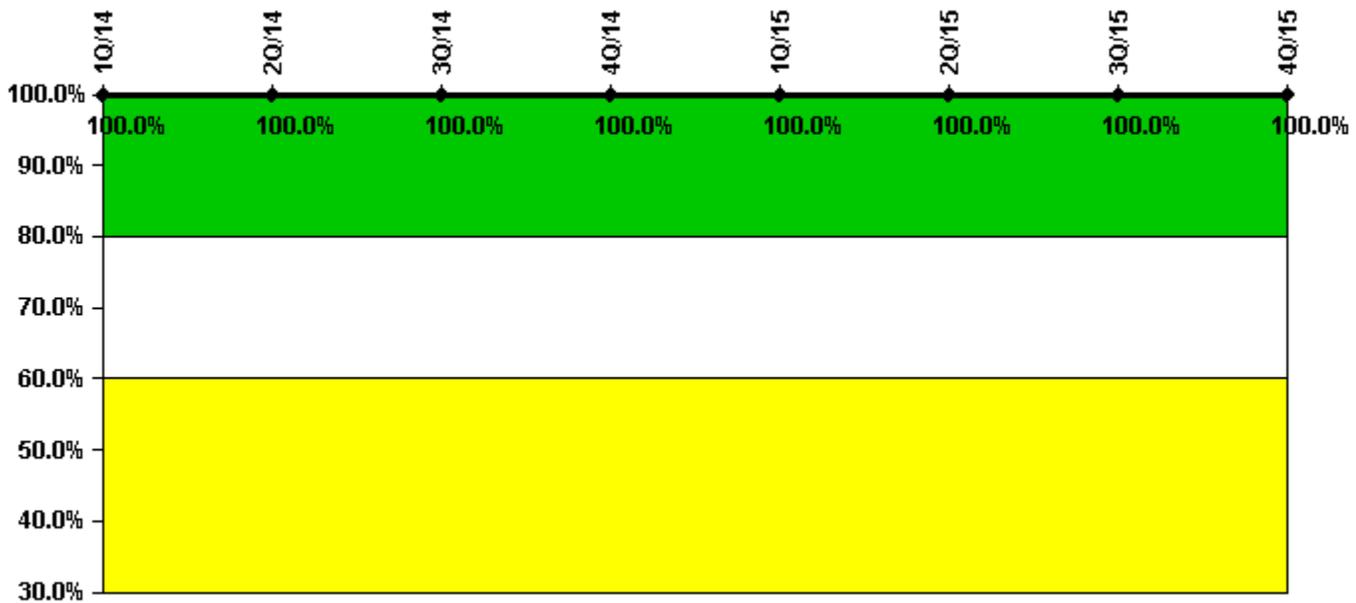
Thresholds: White < 90.0% Yellow < 70.0%

Notes

Drill/Exercise Performance	1Q/14	2Q/14	3Q/14	4Q/14	1Q/15	2Q/15	3Q/15	4Q/15
Successful opportunities	55.0	23.0	59.0	56.0	68.0	12.0	62.0	56.0
Total opportunities	56.0	25.0	61.0	56.0	69.0	12.0	62.0	60.0
Indicator value	98.5%	98.1%	97.7%	97.9%	98.2%	98.1%	98.2%	97.5%

Licensee Comments: none

ERO Drill Participation



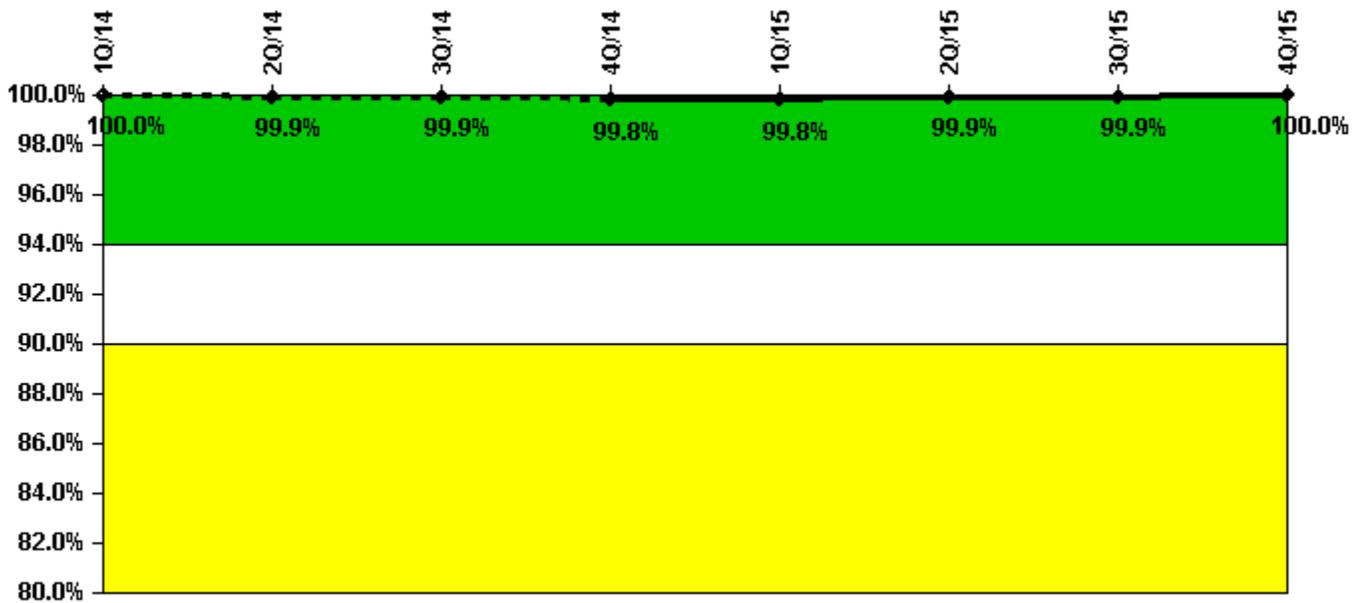
Thresholds: White < 80.0% Yellow < 60.0%

Notes

ERO Drill Participation	1Q/14	2Q/14	3Q/14	4Q/14	1Q/15	2Q/15	3Q/15	4Q/15
Participating Key personnel	120.0	118.0	123.0	128.0	133.0	134.0	132.0	132.0
Total Key personnel	120.0	118.0	123.0	128.0	133.0	134.0	132.0	132.0
Indicator value	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Licensee Comments: none

Alert & Notification System



Thresholds: White < 94.0% Yellow < 90.0%

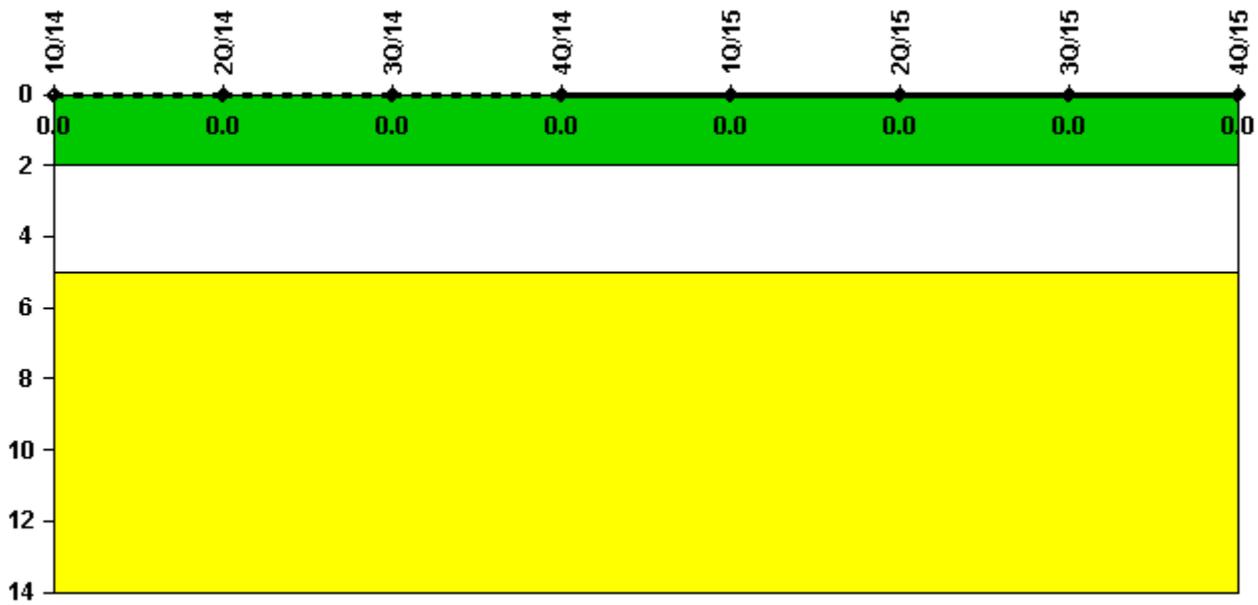
Notes

Alert & Notification System	1Q/14	2Q/14	3Q/14	4Q/14	1Q/15	2Q/15	3Q/15	4Q/15
Successful siren-tests	1119	1115	1119	1187	1050	1119	1190	1120
Total sirens-tests	1120	1119	1120	1190	1050	1119	1190	1120
Indicator value	100.0%	99.9%	99.9%	99.8%	99.8%	99.9%	99.9%	100.0%

Licensee Comments:

2Q/14: Data entry errors were noted for the June entry for the weekly siren test. ANS was reported as 70/70 and should have been 69/70. The ANS Reliability color remains Green following this change.

Occupational Exposure Control Effectiveness



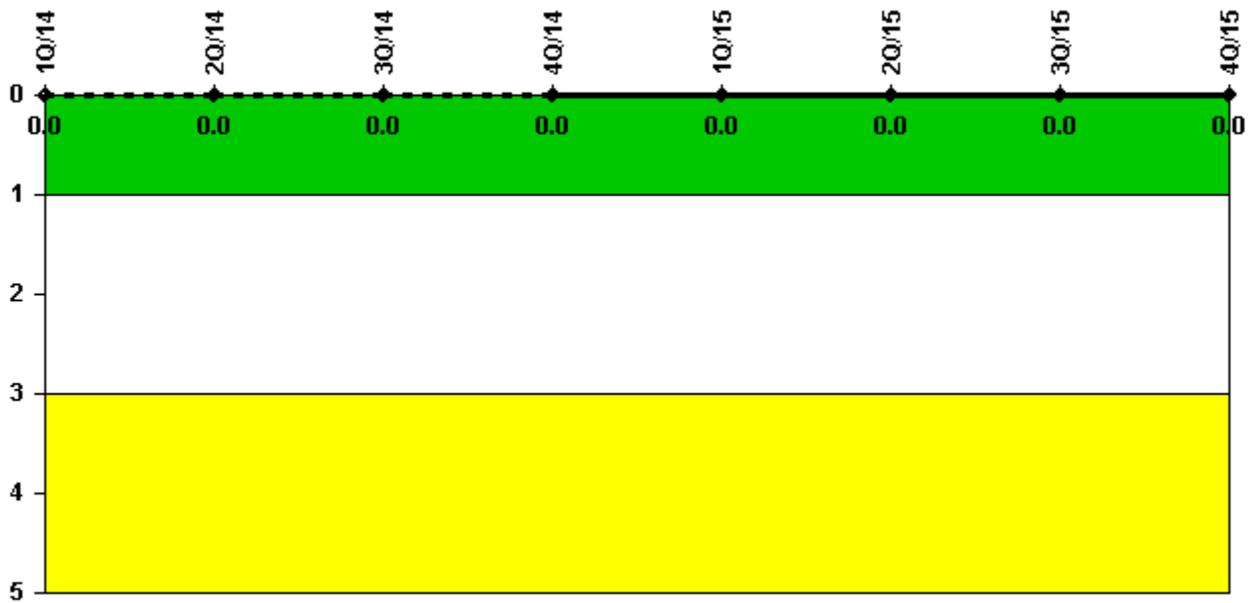
Thresholds: White > 2.0 Yellow > 5.0

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							

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