

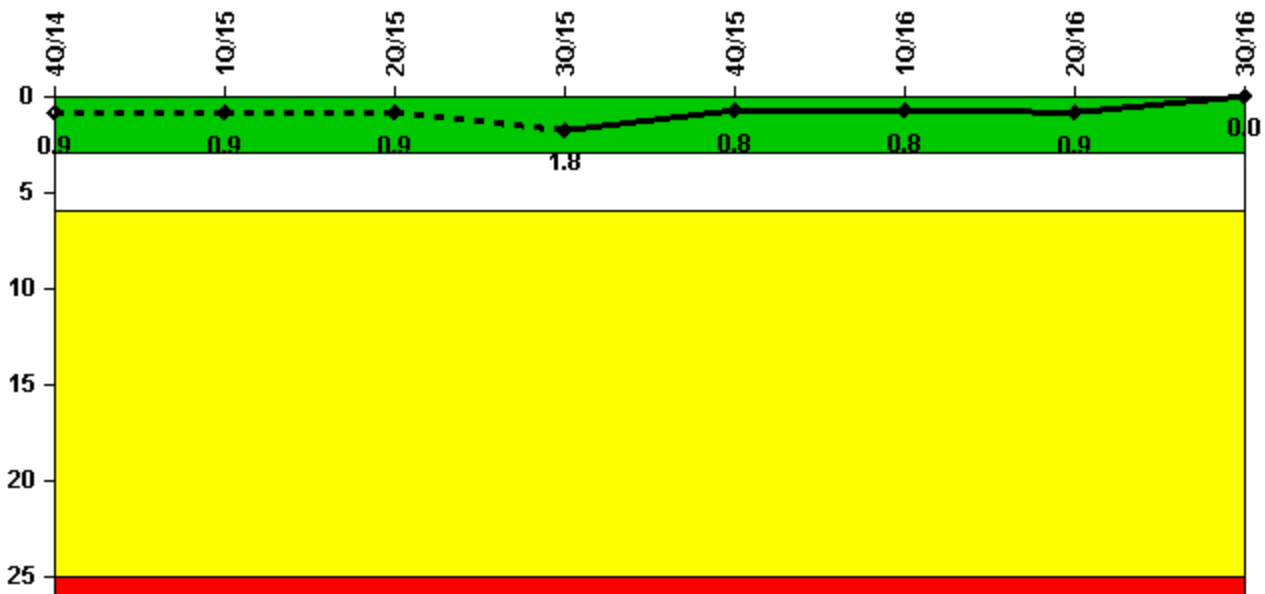
Callaway

3Q/2016 Performance Indicators

The solid trend line represents the current reporting period.

Licensee's General Comments: none

Unplanned Scrams per 7000 Critical Hrs



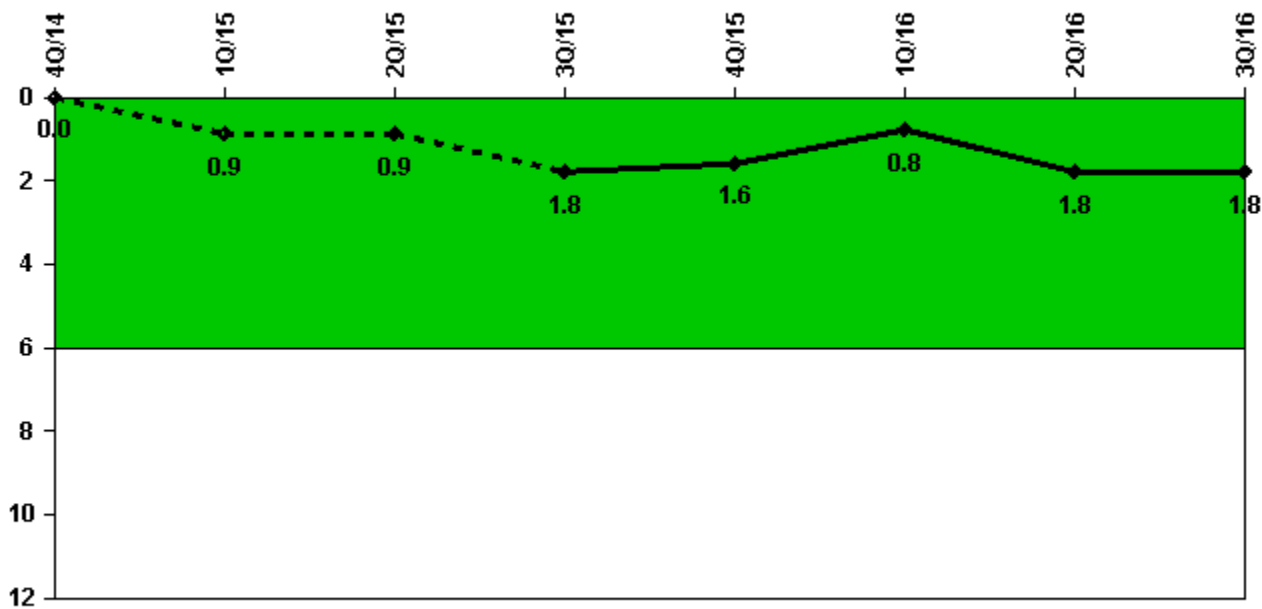
Thresholds: White > 3.0 Yellow > 6.0 Red > 25.0

Notes

Unplanned Scrams per 7000 Critical Hrs	4Q/14	1Q/15	2Q/15	3Q/15	4Q/15	1Q/16	2Q/16	3Q/16
Unplanned scrams	1.0	0	0	1.0	0	0	0	0
Critical hours	1159.6	2159.0	2184.0	2126.8	2209.0	2183.0	1289.1	2208.0
Indicator value	0.9	0.9	0.9	1.8	0.8	0.8	0.9	0

Licensee Comments: none

Unplanned Power Changes per 7000 Critical Hrs



Thresholds: White > 6.0

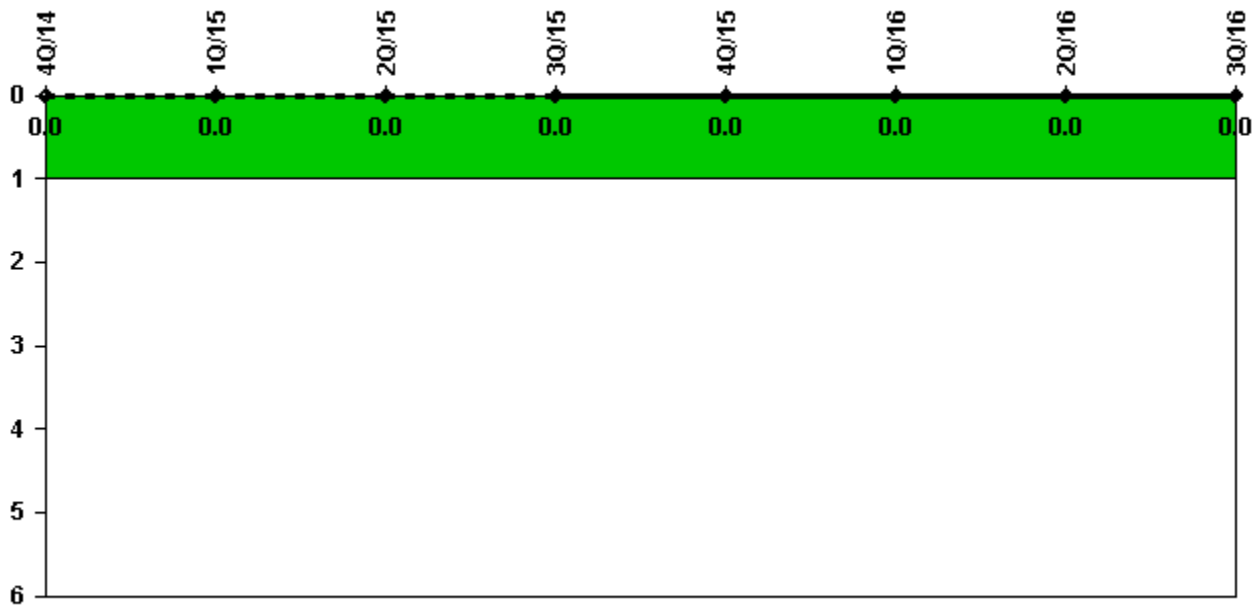
Notes

Unplanned Power Changes per 7000 Critical Hrs	4Q/14	1Q/15	2Q/15	3Q/15	4Q/15	1Q/16	2Q/16	3Q/16
Unplanned power changes	0	1.0	0	1.0	0	0	1.0	1.0
Critical hours	1159.6	2159.0	2184.0	2126.8	2209.0	2183.0	1289.1	2208.0
Indicator value	0	0.9	0.9	1.8	1.6	0.8	1.8	1.8

Licensee Comments:

1Q/15: The unplanned power change was due to an issue with the main turbine digital controls, which caused a load rejection from 99% power to 57% power at 0257 on 01/31/2015. Power was subsequently reduced to 46%, beginning at 1046 on 02/01/2015, for troubleshooting and repairs. Full power was restored at 0310 on 02/06/2015.

Unplanned Scrams with Complications



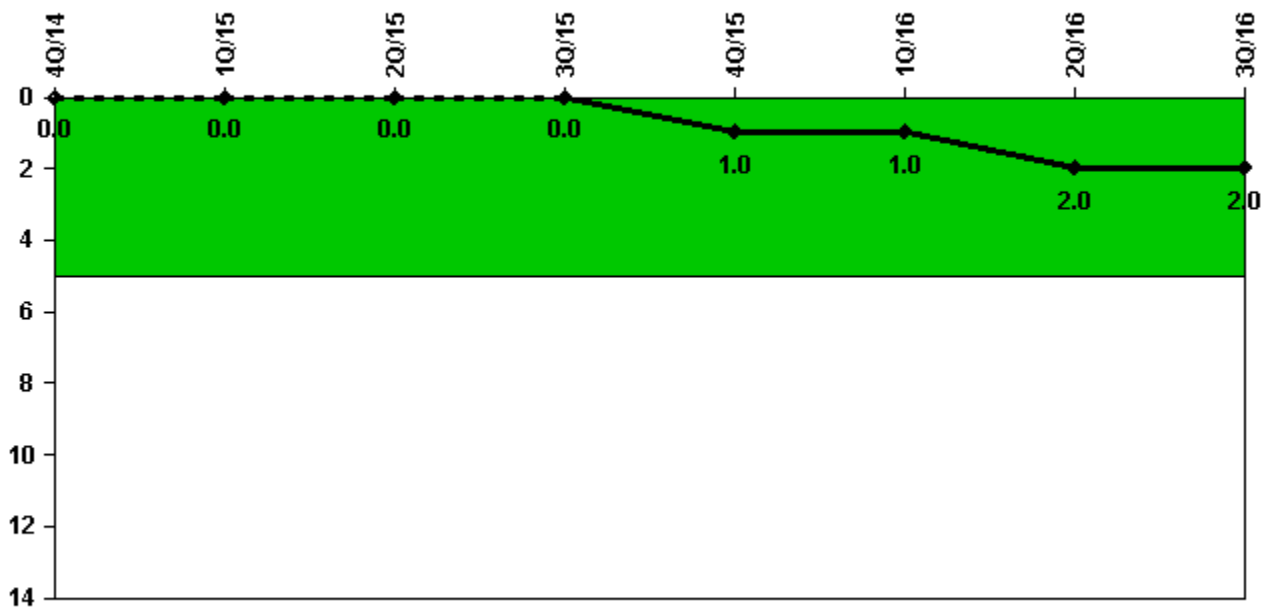
Thresholds: White > 1.0

Notes

Unplanned Scrams with Complications	4Q/14	1Q/15	2Q/15	3Q/15	4Q/15	1Q/16	2Q/16	3Q/16
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 (PWR)



Thresholds: White > 5.0

Notes

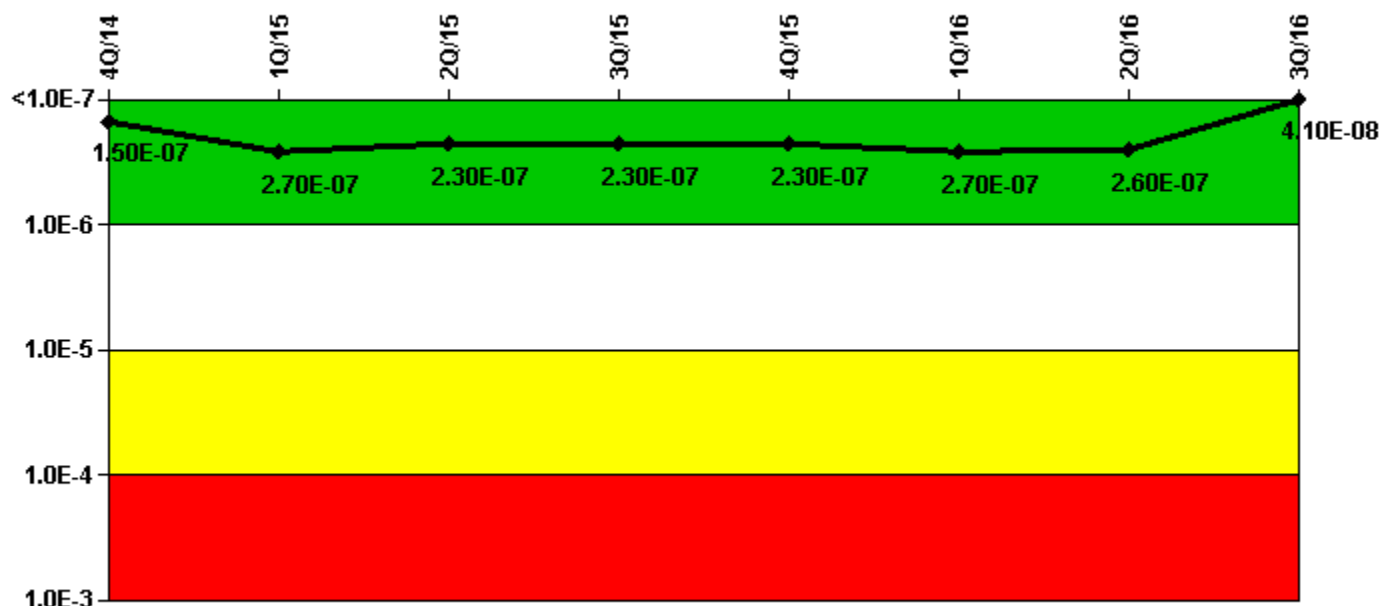
Safety System Functional Failures (PWR)	4Q/14	1Q/15	2Q/15	3Q/15	4Q/15	1Q/16	2Q/16	3Q/16
Safety System Functional Failures	0	0	0	0	1	0	1	0
Indicator value	0	0	0	0	1	1	2	2

Licensee Comments:

2Q/16: LER 2016-001-00 associated with the Control Room Air Conditioning system

4Q/15: One SSFF was reported in LER 2015-004-00 during the 4th quarter of 2015. It is also reported in this PI. An ongoing evaluation of the associated condition is being performed to determine whether it meets the NEI 99-02 section 2.2 criteria for reportability in the SSFF PI or if it may be withdrawn from the PI.

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	4Q/14	1Q/15	2Q/15	3Q/15	4Q/15	1Q/16	2Q/16	3Q/16
UAI (Δ CDF)	-4.55E-08	-3.10E-08	-7.01E-08	-7.01E-08	-7.01E-08	-3.48E-08	-3.53E-08	4.89E-09
URI (Δ CDF)	1.98E-07	3.00E-07	3.00E-07	3.00E-07	3.00E-07	3.00E-07	3.00E-07	3.61E-08
PLE	NO	NO	NO	NO	NO	NO	NO	NO
Indicator value	1.50E-07	2.70E-07	2.30E-07	2.30E-07	2.30E-07	2.70E-07	2.60E-07	4.10E-08

Licensee Comments:

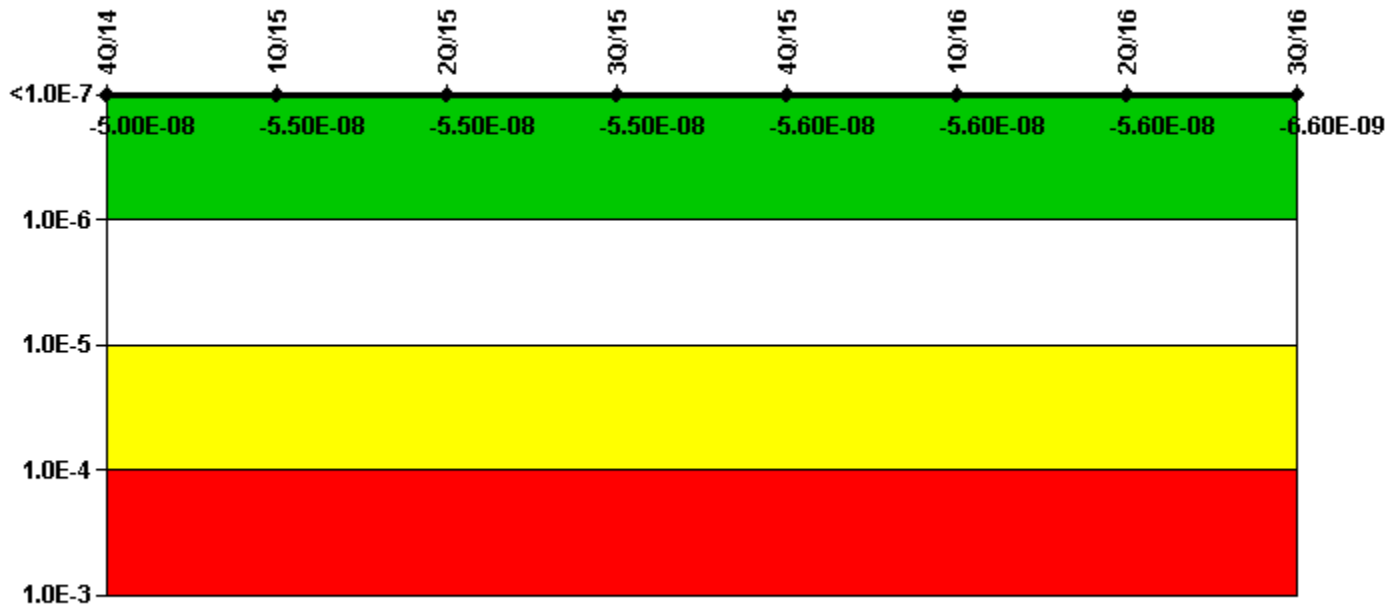
3Q/16: Changed PRA Parameter(s). The PRA model has been updated to incorporate the Generation III RCP Shutdown Seals, incorporate the Hardened Condensate Storage Tank and refine the Anticipated Transient Without Scram (ATWS) modeling. As a result of these changes, all MSPI PRA coefficients were recalculated and the MSPI Basis Document was revised.

1Q/16: An engineering evaluation associated with the "B" emergency diesel generator was pending at the end of the quarter.

1Q/15: Changed PRA Parameter(s). For all Mitigating Systems Performance Index (MSPI) Systems: MSPI Basis document has been updated to reflect changes in Probabilistic Risk Analysis (PRA) data effective 1st Quarter 2015.

4Q/14: Two engineering evaluations of degraded conditions were not completed at the time the 4th quarter 2014 data was submitted. Additionally, an evaluation for one other 4th quarter condition was identified in the 1st quarter of 2015. Evaluations were completed prior to submitting the 1st quarter 2015 data.

Mitigating Systems Performance Index, High Pressure Injection System



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

Notes

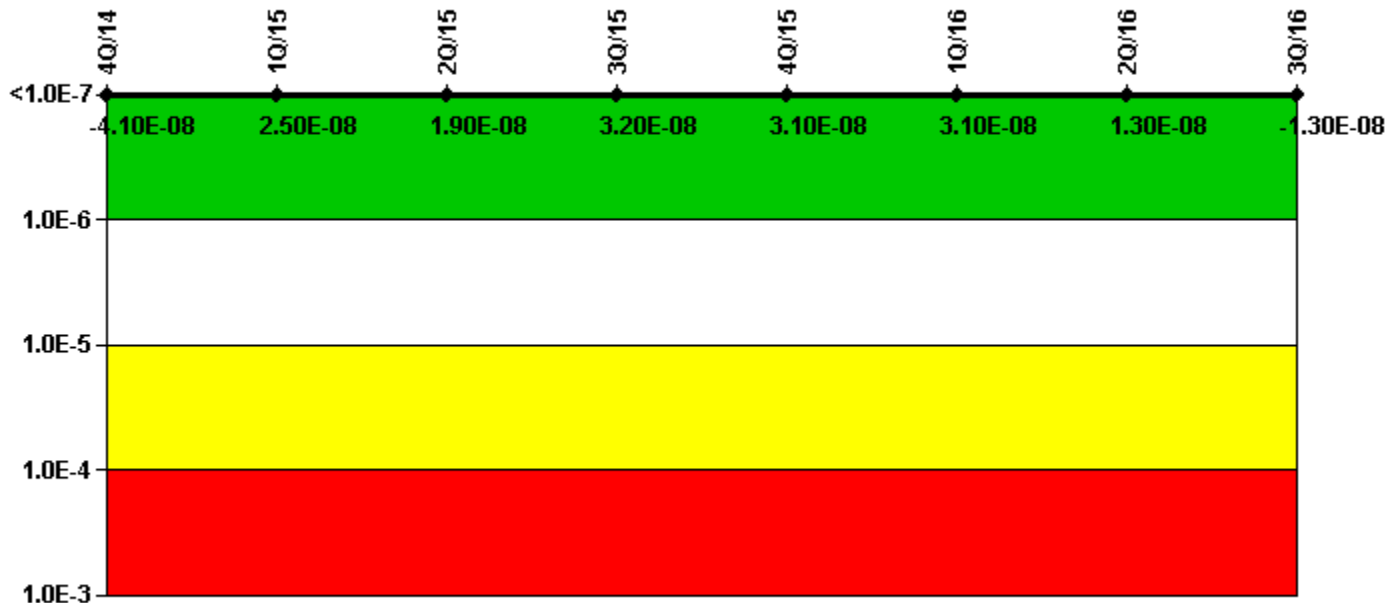
Mitigating Systems Performance Index, High Pressure Injection System	4Q/14	1Q/15	2Q/15	3Q/15	4Q/15	1Q/16	2Q/16	3Q/16
UAI (Δ CDF)	-1.27E-08	-1.34E-08	-1.34E-08	-1.34E-08	-1.44E-08	-1.44E-08	-1.44E-08	-1.98E-09
URI (Δ CDF)	-3.71E-08	-4.14E-08	-4.14E-08	-4.14E-08	-4.14E-08	-4.14E-08	-4.14E-08	-4.60E-09
PLE	NO	NO	NO	NO	NO	NO	NO	NO
Indicator value	-5.00E-08	-5.50E-08	-5.50E-08	-5.50E-08	-5.60E-08	-5.60E-08	-5.60E-08	-6.60E-09

Licensee Comments:

3Q/16: Changed PRA Parameter(s). The PRA model has been updated to incorporate the Generation III RCP Shutdown Seals, incorporate the Hardened Condensate Storage Tank and refine the Anticipated Transient Without Scram (ATWS) modeling. As a result of these changes, all MSPI PRA coefficients were recalculated and the MSPI Basis Document was revised.

1Q/15: Changed PRA Parameter(s). For all Mitigating Systems Performance Index (MSPI) Systems: MSPI Basis document has been updated to reflect changes in Probabilistic Risk Analysis (PRA) data effective 1st Quarter 2015.

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	4Q/14	1Q/15	2Q/15	3Q/15	4Q/15	1Q/16	2Q/16	3Q/16
UAI (Δ CDF)	7.78E-08	8.69E-08	8.12E-08	8.06E-08	7.98E-08	7.94E-08	6.15E-08	5.32E-08
URI (Δ CDF)	-1.19E-07	-6.24E-08	-6.24E-08	-4.85E-08	-4.85E-08	-4.85E-08	-4.85E-08	-6.65E-08
PLE	NO	NO	NO	NO	NO	NO	NO	NO
Indicator value	-4.10E-08	2.50E-08	1.90E-08	3.20E-08	3.10E-08	3.10E-08	1.30E-08	-1.30E-08

Licensee Comments:

3Q/16: Changed PRA Parameter(s). The PRA model has been updated to incorporate the Generation III RCP Shutdown Seals, incorporate the Hardened Condensate Storage Tank and refine the Anticipated Transient Without Scram (ATWS) modeling. As a result of these changes, all MSPI PRA coefficients were recalculated and the MSPI Basis Document was revised.

3Q/15: An engineering evaluation associated with a degraded condition for an Auxiliary Feedwater valve's Modutronics Card was not completed when data for the third quarter 2015 was submitted. 4th quarter 2014 availability data revised for valve ALHV0005.

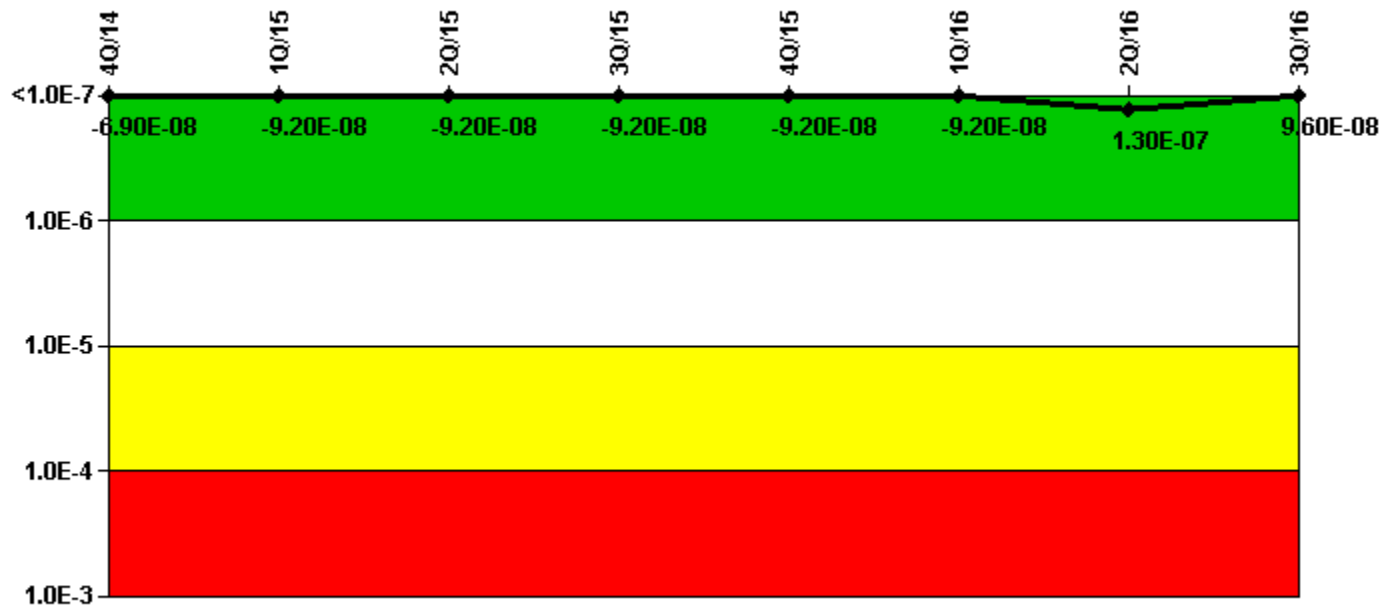
1Q/15: For all Mitigating Systems Performance Index (MSPI) Systems: MSPI Basis document has been updated

to reflect changes in Probabilistic Risk Analysis (PRA) data effective 1st Quarter 2015.

1Q/15: Changed PRA Parameter(s). For all Mitigating Systems Performance Index (MSPI) Systems: MSPI Basis document has been updated to reflect changes in Probabilistic Risk Analysis (PRA) data effective 1st Quarter 2015.

4Q/14: One engineering evaluation was identified in the 1st quarter of 2015 for a degraded condition identified in the 4th quarter 2014. Revised with 3rd quarter 2015 data submittal to reflect additional time that valve ALHV0005 was inoperable in November and December 2014.

Mitigating Systems Performance Index, Residual Heat Removal System



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

Notes

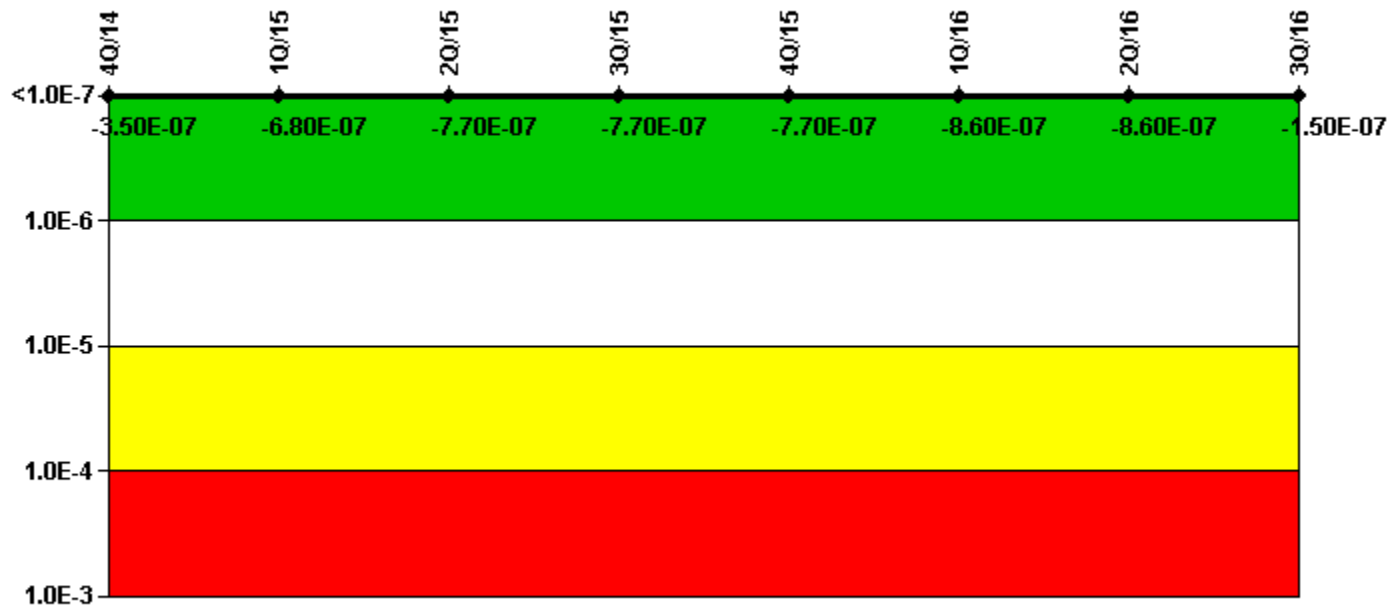
Mitigating Systems Performance Index, Residual Heat Removal System	4Q/14	1Q/15	2Q/15	3Q/15	4Q/15	1Q/16	2Q/16	3Q/16
UAI (ΔCDF)	-4.31E-09	-1.11E-08	-1.11E-08	-1.11E-08	-1.11E-08	-1.11E-08	-1.11E-08	-1.02E-08
URI (ΔCDF)	-6.48E-08	-8.09E-08	-8.09E-08	-8.09E-08	-8.09E-08	-8.09E-08	1.40E-07	1.07E-07
PLE	NO	NO	NO	NO	NO	NO	NO	NO
Indicator value	-6.90E-08	-9.20E-08	-9.20E-08	-9.20E-08	-9.20E-08	-9.20E-08	1.30E-07	9.60E-08

Licensee Comments:

3Q/16: Changed PRA Parameter(s). The PRA model has been updated to incorporate the Generation III RCP Shutdown Seals, incorporate the Hardened Condensate Storage Tank and refine the Anticipated Transient Without Scram (ATWS) modeling. As a result of these changes, all MSPI PRA coefficients were recalculated and the MSPI Basis Document was revised.

1Q/15: Changed PRA Parameter(s). For all Mitigating Systems Performance Index (MSPI) Systems: MSPI Basis document has been updated to reflect changes in Probabilistic Risk Analysis (PRA) data effective 1st Quarter 2015.

Mitigating Systems Performance Index, Cooling Water Systems



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

Notes

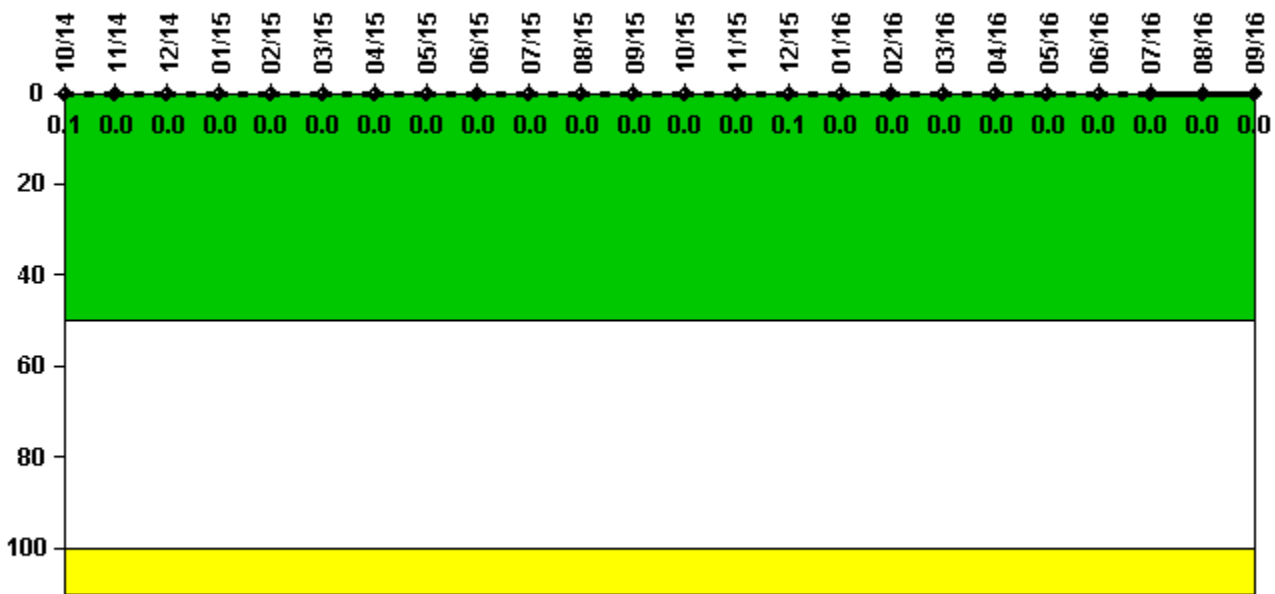
Mitigating Systems Performance Index, Cooling Water Systems	4Q/14	1Q/15	2Q/15	3Q/15	4Q/15	1Q/16	2Q/16	3Q/16
UAI (ΔCDF)	1.51E-07	4.35E-08	-4.11E-08	-4.03E-08	-4.39E-08	-1.27E-07	-1.30E-07	-3.51E-08
URI (ΔCDF)	-4.98E-07	-7.28E-07	-7.29E-07	-7.30E-07	-7.30E-07	-7.30E-07	-7.30E-07	-1.15E-07
PLE	NO	NO	NO	NO	NO	NO	NO	NO
Indicator value	-3.50E-07	-6.80E-07	-7.70E-07	-7.70E-07	-7.70E-07	-8.60E-07	-8.60E-07	-1.50E-07

Licensee Comments:

3Q/16: Changed PRA Parameter(s). The PRA model has been updated to incorporate the Generation III RCP Shutdown Seals, incorporate the Hardened Condensate Storage Tank and refine the Anticipated Transient Without Scram (ATWS) modeling. As a result of these changes, all MSPI PRA coefficients were recalculated and the MSPI Basis Document was revised.

1Q/15: Changed PRA Parameter(s). For all Mitigating Systems Performance Index (MSPI) Systems: MSPI Basis document has been updated to reflect changes in Probabilistic Risk Analysis (PRA) data effective 1st Quarter 2015.

Reactor Coolant System Activity



Thresholds: White > 50.0 Yellow > 100.0

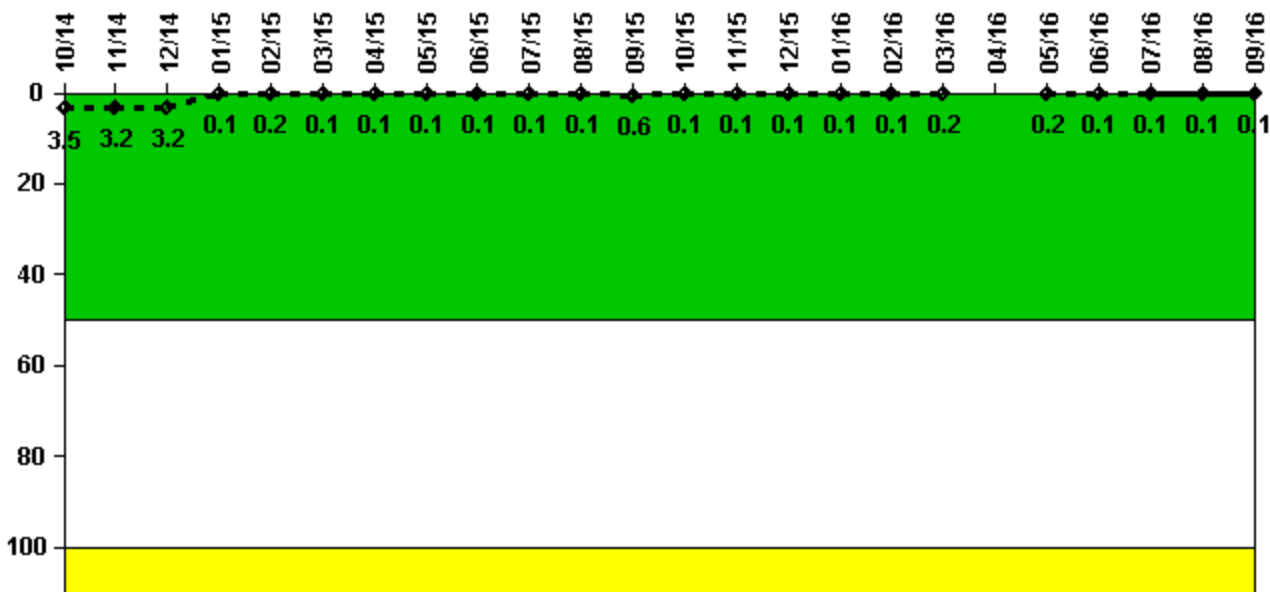
Notes

Reactor Coolant System Activity	10/14	11/14	12/14	1/15	2/15	3/15	4/15	5/15	6/15	7/15	8/15	9/15
Maximum activity	0.000746	0.000171	0.000339	0.000246	0.000343	0.000376	0.000305	0.000351	0.000225	0.000307	0.000364	0.000462
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	0	0	0	0	0	0	0	0	0	0

Reactor Coolant System Activity	10/15	11/15	12/15	1/16	2/16	3/16	4/16	5/16	6/16	7/16	8/16	9/16
Maximum activity	0.000353	0.000422	0.001480	0.000499	0.000469	0.000448	0.000314	0.000255	0.000187	0.000261	0.000240	0.000257
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	0.1	0	0	0	0	0	0	0	0	0

Licensee Comments: none

Reactor Coolant System Leakage



Thresholds: White > 50.0 Yellow > 100.0

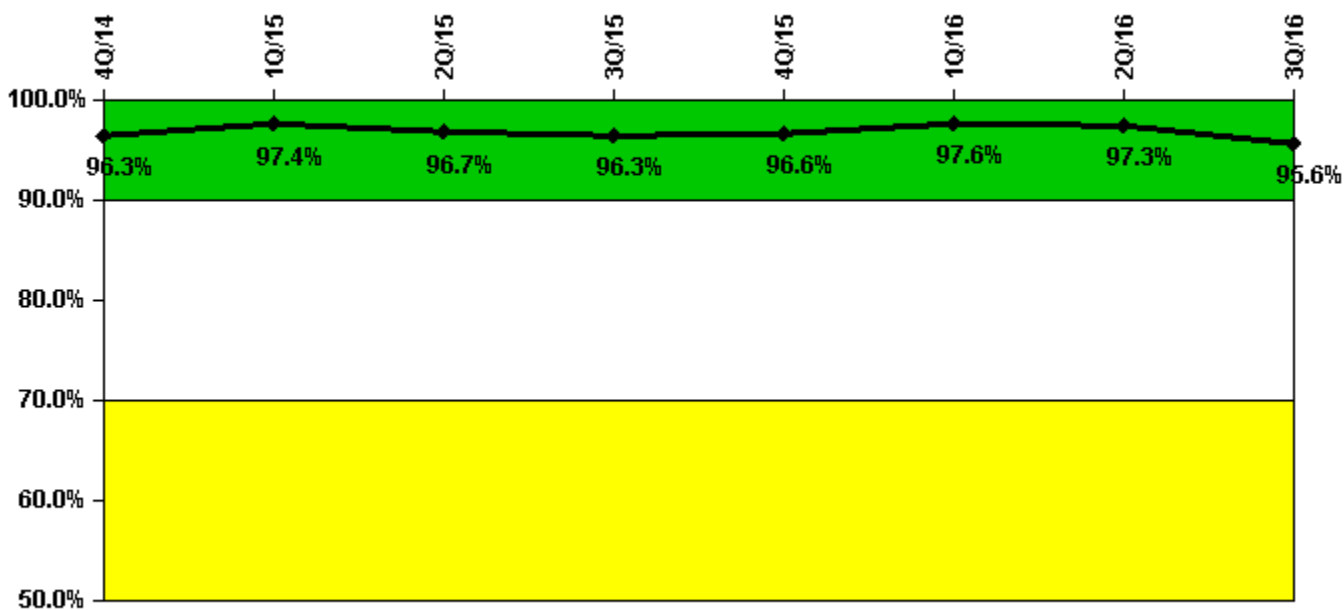
Notes

Reactor Coolant System Leakage	10/14	11/14	12/14	1/15	2/15	3/15	4/15	5/15	6/15	7/15	8/15	9/15
Maximum leakage	0.346	0.321	0.317	0.006	0.017	0.007	0.012	0.008	0.009	0.006	0.013	0.061
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	3.5	3.2	3.2	0.1	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.6
Reactor Coolant System Leakage	10/15	11/15	12/15	1/16	2/16	3/16	4/16	5/16	6/16	7/16	8/16	9/16

Maximum leakage	0.007	0.012	0.012	0.010	0.009	0.016	N/A	0.016	0.005	0.009	0.008	0.006
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	0.1	0.1	0.1	0.1	0.1	0.2	N/A	0.2	0.1	0.1	0.1	0.1

Licensee Comments: none

Drill/Exercise Performance



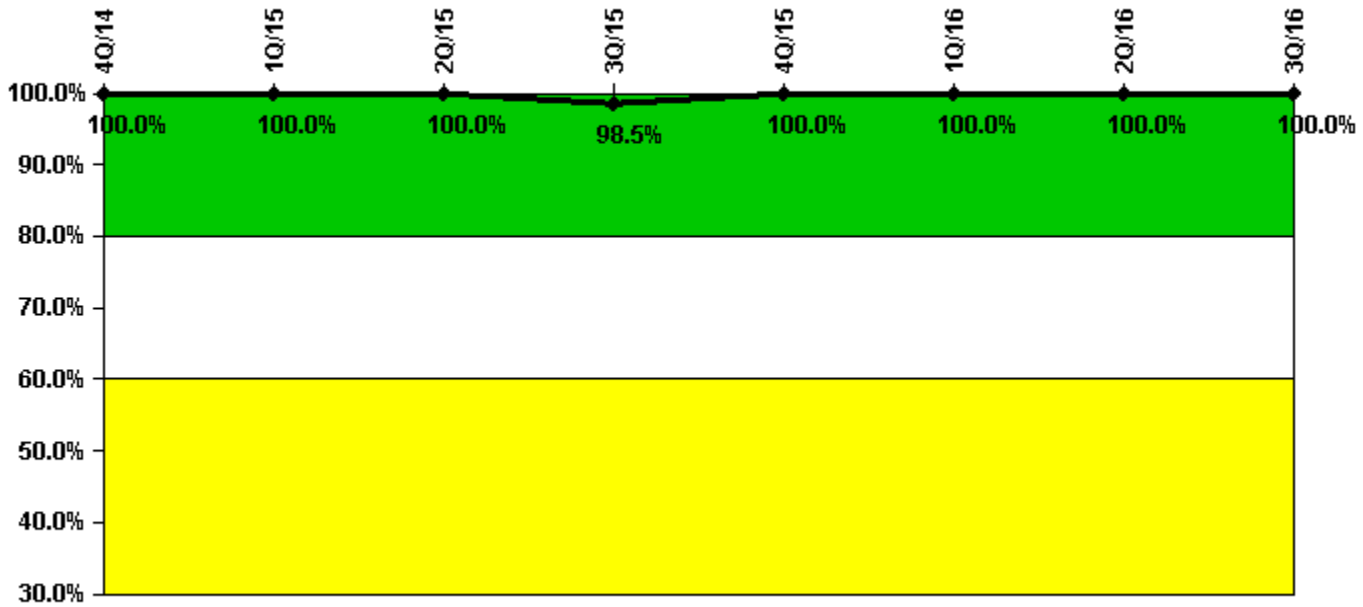
Thresholds: White < 90.0% Yellow < 70.0%

Notes

Drill/Exercise Performance	4Q/14	1Q/15	2Q/15	3Q/15	4Q/15	1Q/16	2Q/16	3Q/16
Successful opportunities	0	61.0	6.0	21.0	50.0	34.0	15.0	76.0
Total opportunities	0	61.0	8.0	23.0	52.0	34.0	16.0	81.0
Indicator value	96.3%	97.4%	96.7%	96.3%	96.6%	97.6%	97.3%	95.6%

Licensee Comments: none

ERO Drill Participation



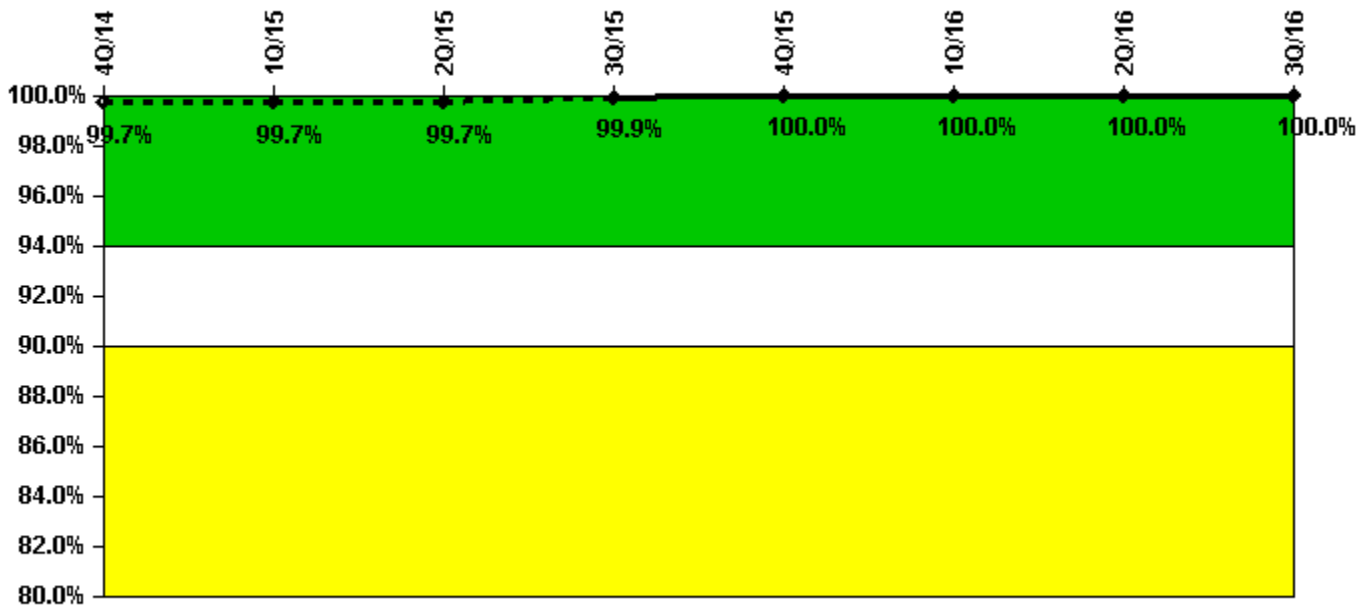
Thresholds: White < 80.0% Yellow < 60.0%

Notes

ERO Drill Participation	4Q/14	1Q/15	2Q/15	3Q/15	4Q/15	1Q/16	2Q/16	3Q/16
Participating Key personnel	107.0	105.0	97.0	67.0	70.0	68.0	63.0	62.0
Total Key personnel	107.0	105.0	97.0	68.0	70.0	68.0	63.0	62.0
Indicator value	100.0%	100.0%	100.0%	98.5%	100.0%	100.0%	100.0%	100.0%

Licensee Comments: none

Alert & Notification System



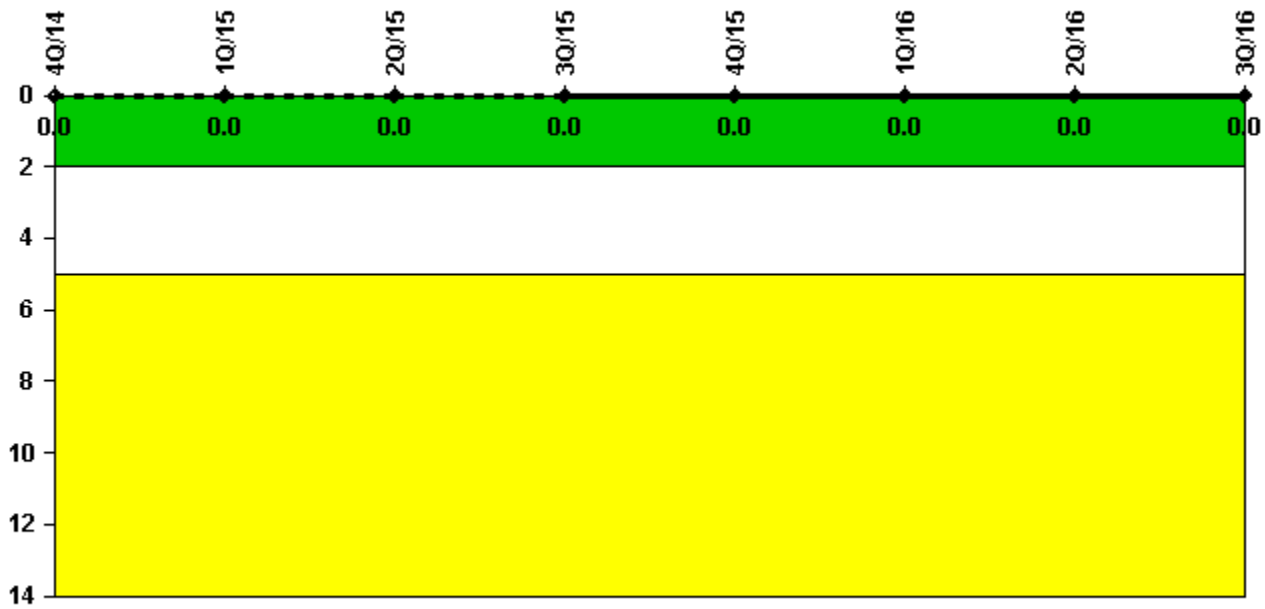
Thresholds: White < 94.0% Yellow < 90.0%

Notes

Alert & Notification System	4Q/14	1Q/15	2Q/15	3Q/15	4Q/15	1Q/16	2Q/16	3Q/16
Successful siren-tests	375	377	377	377	377	377	377	377
Total sirens-tests	377	377	377	377	377	377	377	377
Indicator value	99.7%	99.7%	99.7%	99.9%	100.0%	100.0%	100.0%	100.0%

Licensee Comments: none

Occupational Exposure Control Effectiveness



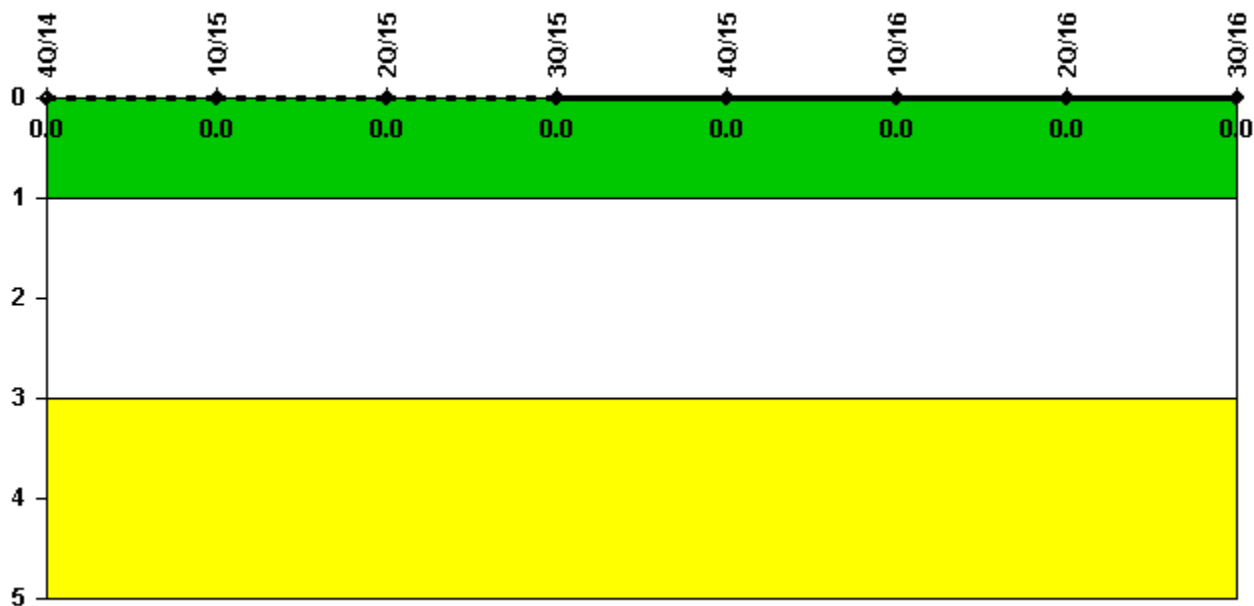
Thresholds: White > 2.0 Yellow > 5.0

Notes

Occupational Exposure Control Effectiveness	4Q/14	1Q/15	2Q/15	3Q/15	4Q/15	1Q/16	2Q/16	3Q/16
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

RETS/ODCM Radiological Effluent



Thresholds: White > 1.0 Yellow > 3.0

Notes

RETS/ODCM Radiological Effluent	4Q/14	1Q/15	2Q/15	3Q/15	4Q/15	1Q/16	2Q/16	3Q/16
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: October 23, 2016