

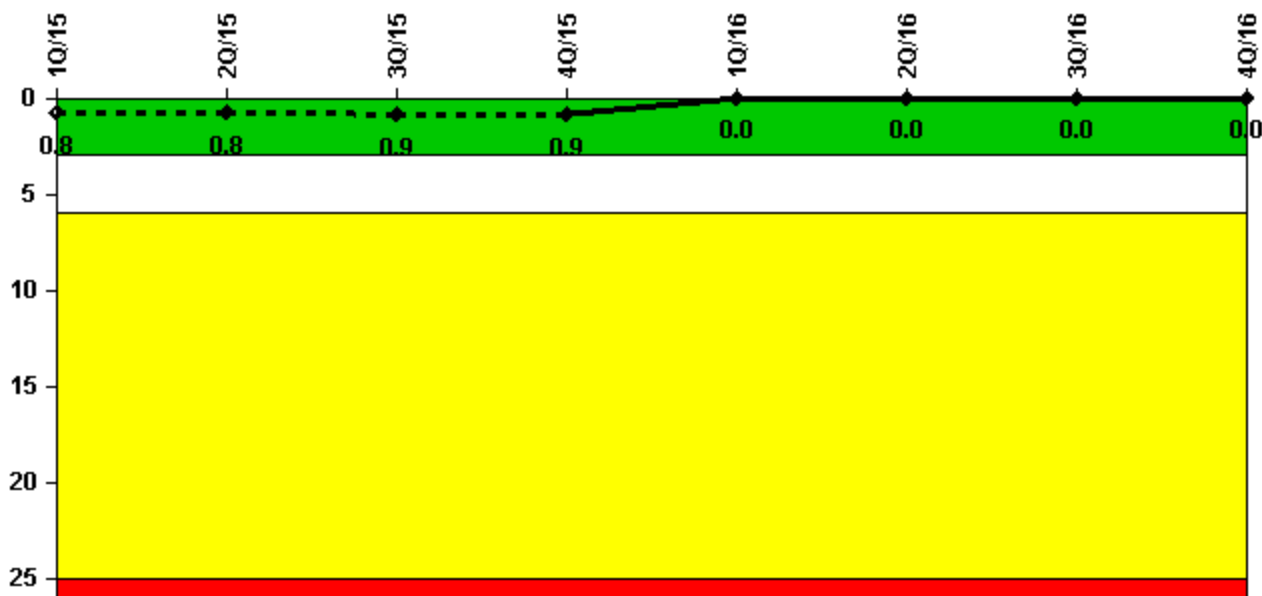
Byron 1

4Q/2016 Performance Indicators

The solid trend line represents the current reporting period.

Licensee's General Comments: Byron Station 4Q2016 Data Unit 1

Unplanned Scrams per 7000 Critical Hrs



Thresholds: White > 3.0 Yellow > 6.0 Red > 25.0

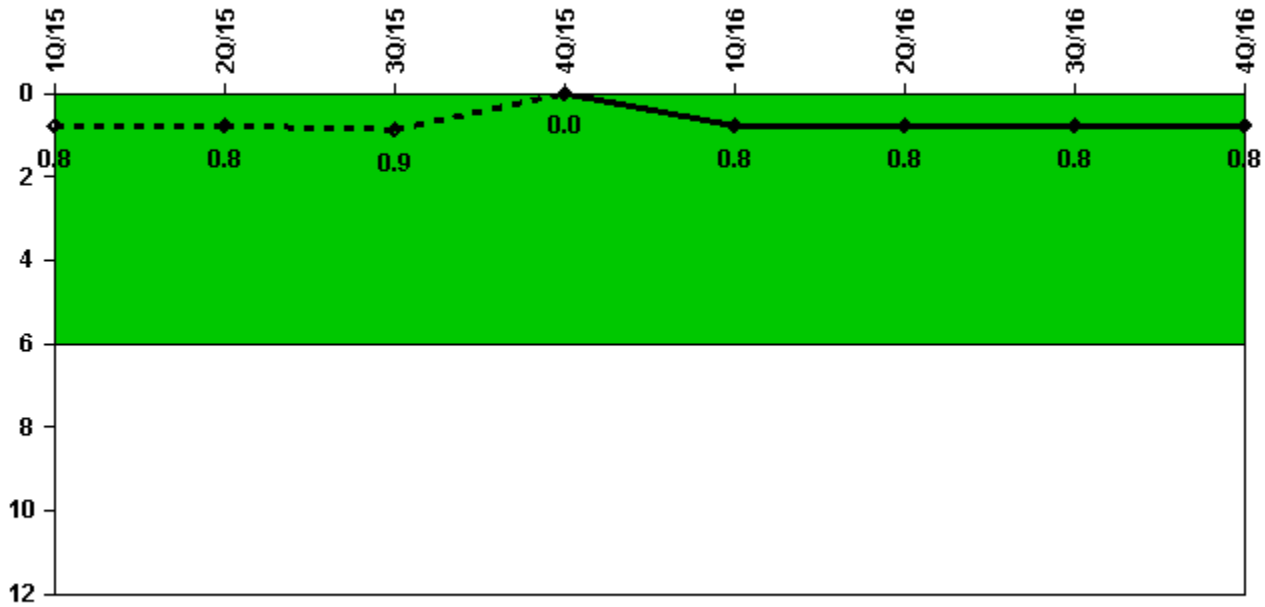
Notes

Unplanned Scrams per 7000 Critical Hrs	1Q/15	2Q/15	3Q/15	4Q/15	1Q/16	2Q/16	3Q/16	4Q/16
Unplanned scrams	1.0	0	0	0	0	0	0	0
Critical hours	2026.0	2184.0	1800.0	2184.2	2183.0	2184.0	2208.0	2209.0
Indicator value	0.8	0.8	0.9	0.9	0	0	0	0

Licensee Comments:

1Q/15: UNIT 1 AUTOMATICALLY TRIPPED AS A RESULT OF A WEATHER-RELATED EVENT THAT RESULTED IN A LOSS OF BUS 4. TRANSFORMERS AND BUSHINGS WERE INSPECTED AND REPAIRED.

Unplanned Power Changes per 7000 Critical Hrs



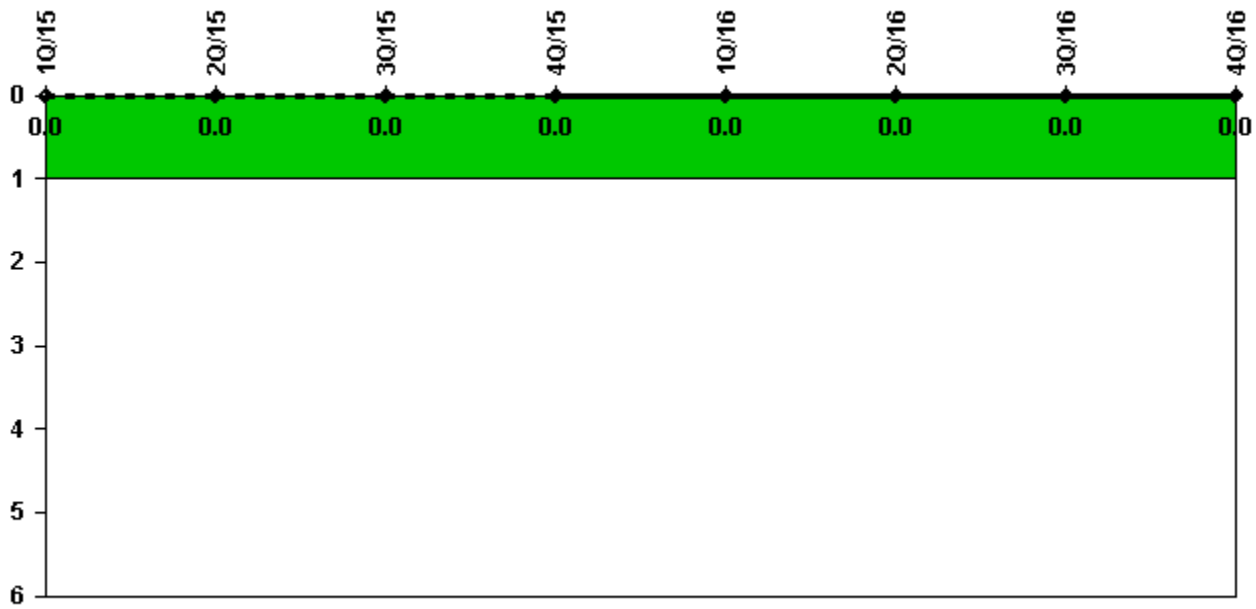
Thresholds: White > 6.0

Notes

Unplanned Power Changes per 7000 Critical Hrs	1Q/15	2Q/15	3Q/15	4Q/15	1Q/16	2Q/16	3Q/16	4Q/16
Unplanned power changes	0	0	0	0	1.0	0	0	0
Critical hours	2026.0	2184.0	1800.0	2184.2	2183.0	2184.0	2208.0	2209.0
Indicator value	0.8	0.8	0.9	0	0.8	0.8	0.8	0.8

Licensee Comments: none

Unplanned Scrams with Complications



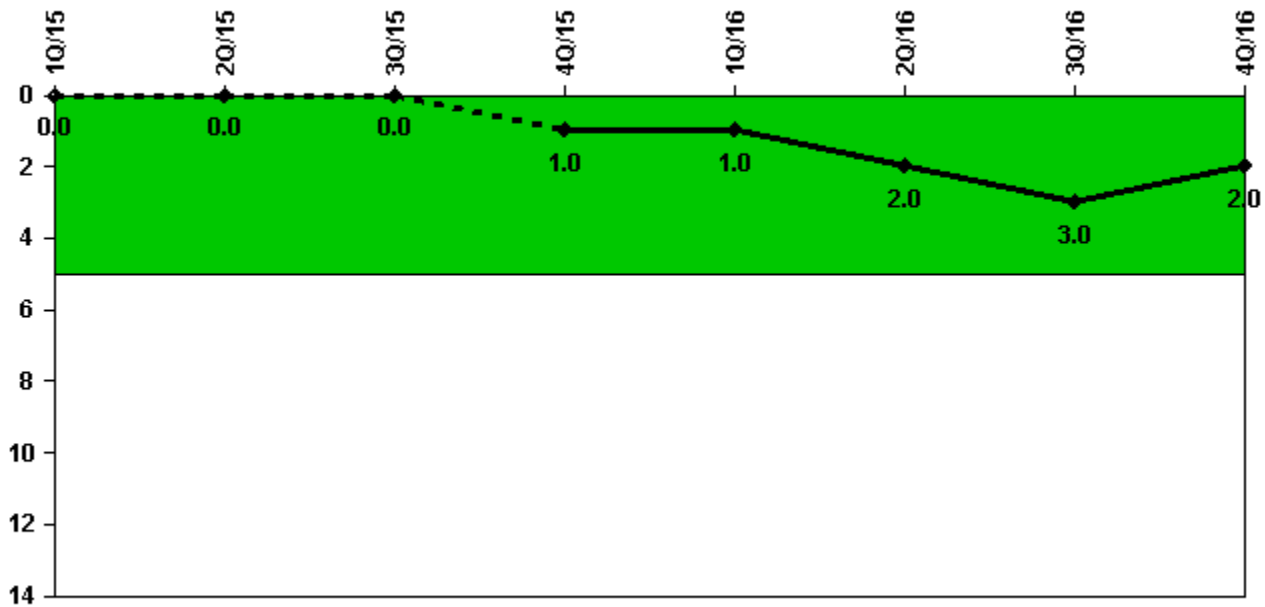
Thresholds: White > 1.0

Notes

Unplanned Scrams with Complications	1Q/15	2Q/15	3Q/15	4Q/15	1Q/16	2Q/16	3Q/16	4Q/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)	1Q/15	2Q/15	3Q/15	4Q/15	1Q/16	2Q/16	3Q/16	4Q/16
Safety System Functional Failures	0	0	0	1	0	1	1	0
Indicator value	0	0	0	1	1	2	3	2

Licensee Comments:

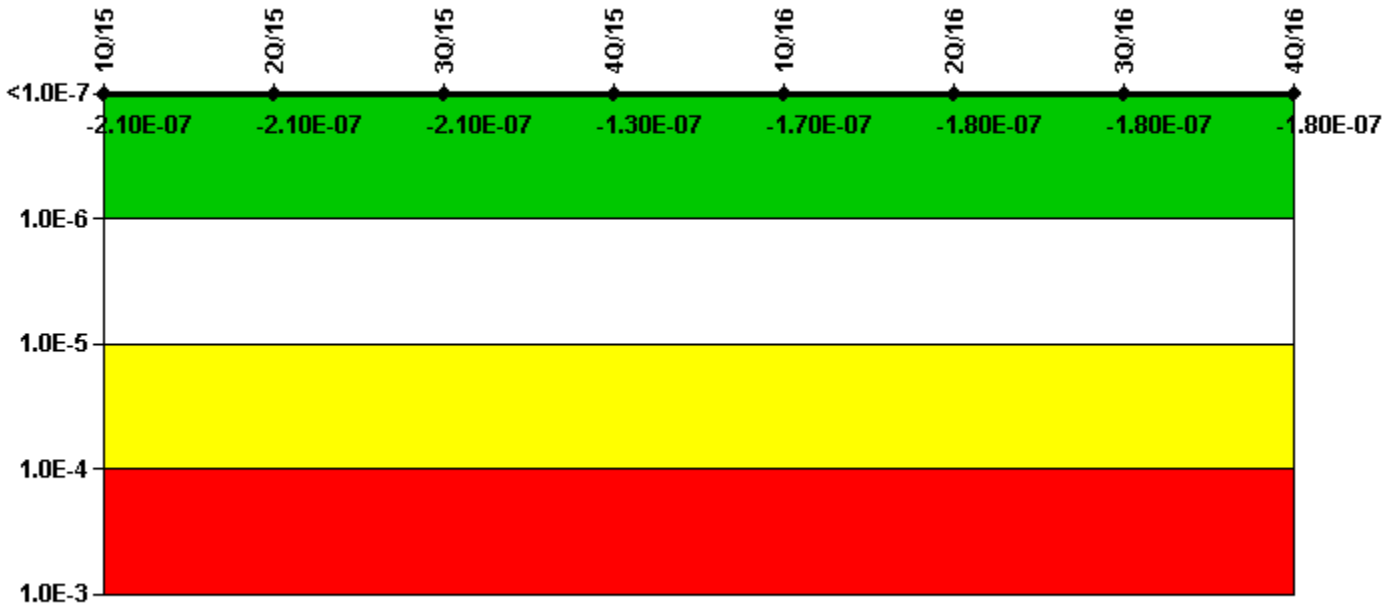
3Q/16: LER 2016-001-00, May 2016 AF Diesel Intake Design Deficiency Due to High Energy Line Break (HELB) Concerns. LER 2016-002-00 was issued 7/21/16, for Inadequate protection from Tornado Missiles Due to Non-conforming Design Conditions. 4Q15: Unit 1 CDF and MSPI result were updated using the application specific model BB011b4, which takes credit for the Generation III Westinghouse RCP Shutdown Seals. The corresponding BY-MPSI-001 Rev 17 was approved in January 2016.

2Q/16: LER 2015-006-00 was issued on 11/30/15 for Mode 3 entered with Turbine Trip safety Function disabled due to Safety Related Relay Leads lifted. May 2016 - LER 2016-001-00 IR2636112 ICES#322087

1Q/16: LER 2015-006-00 was issued on 11/30/15 for Mode 3 entered with Turbine Trip safety Function disabled due to Safety Related Relay Leads lifted.

4Q/15: LER 2015-006-00 was issued on 11/30/15 for Mode 3 entered with Turbine Trip safety Function disabled due to Safety Related Relay Leads lifted.

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/15	2Q/15	3Q/15	4Q/15	1Q/16	2Q/16	3Q/16	4Q/16
UAI (Δ CDF)	6.26E-08	6.26E-08	6.20E-08	5.03E-08	1.15E-08	8.38E-09	7.31E-09	6.00E-10
URI (Δ CDF)	-2.71E-07	-2.71E-07	-2.71E-07	-1.84E-07	-1.84E-07	-1.84E-07	-1.84E-07	-1.84E-07
PLE	NO	NO	NO	NO	NO	NO	NO	NO
Indicator value	-2.10E-07	-2.10E-07	-2.10E-07	-1.30E-07	-1.70E-07	-1.80E-07	-1.80E-07	-1.80E-07

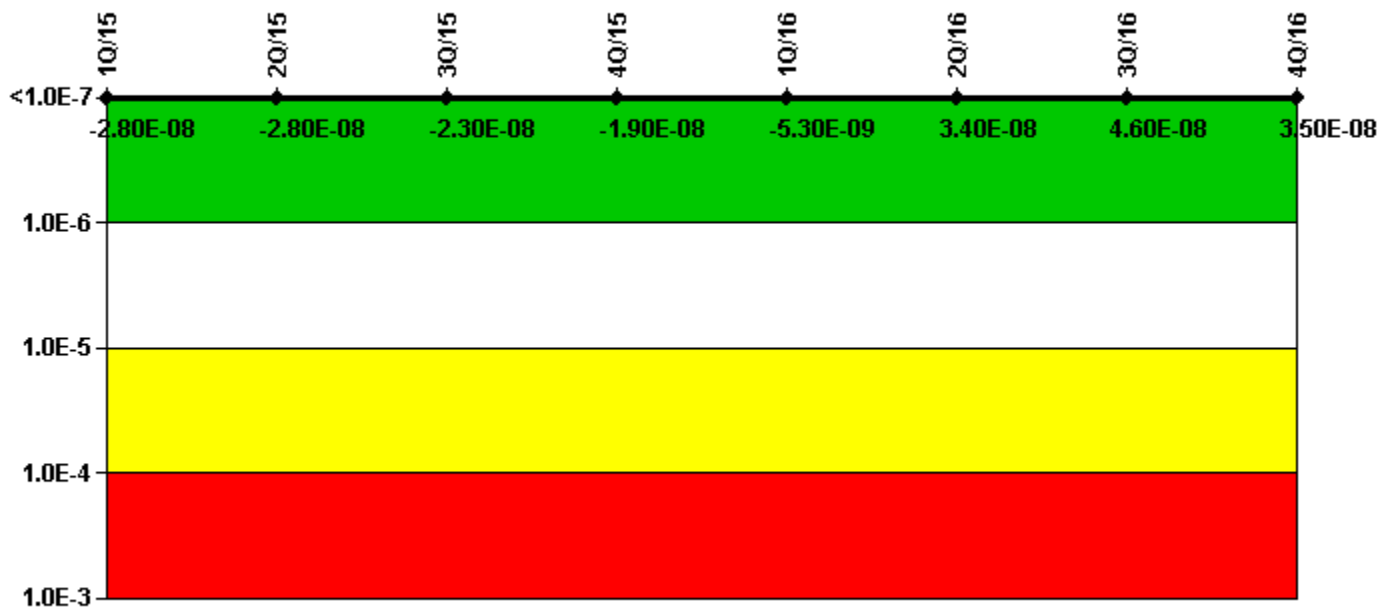
Licensee Comments:

3Q/16: 4Q15: Unit 1 CDF and MSPI result were updated using the application specific model BB011b4, which takes credit for the Generation III Westinghouse RCP Shutdown Seals. The corresponding BY-MPSI-001 Rev 17 was approved in January 2016.

4Q/15: 4Q15: Unit 1 CDF and MSPI result were updated using the application specific model BB011b4, which takes credit for the Generation III Westinghouse RCP Shutdown Seals. The corresponding BY-MPSI-001 Rev 17 was approved in January 2016.

4Q/15: 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/15	2Q/15	3Q/15	4Q/15	1Q/16	2Q/16	3Q/16	4Q/16
UAI (Δ CDF)	-1.89E-08	-1.89E-08	-1.41E-08	-1.25E-08	1.10E-09	4.03E-08	5.24E-08	4.18E-08
URI (Δ CDF)	-9.21E-09	-9.21E-09	-9.21E-09	-6.37E-09	-6.37E-09	-6.37E-09	-6.37E-09	-6.37E-09
PLE	NO	NO	NO	NO	NO	NO	NO	NO
Indicator value	-2.80E-08	-2.80E-08	-2.30E-08	-1.90E-08	-5.30E-09	3.40E-08	4.60E-08	3.50E-08

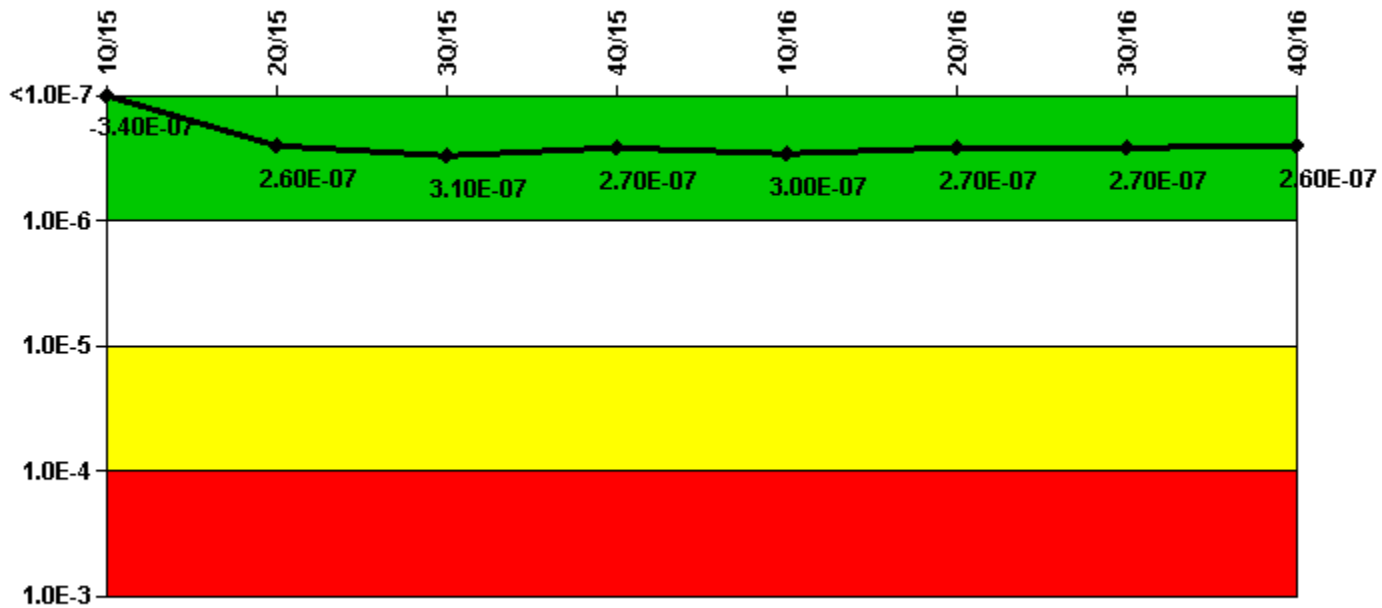
Licensee Comments:

3Q/16: 4Q15: Unit 1 CDF and MSPI result were updated using the application specific model BB011b4, which takes credit for the Generation III Westinghouse RCP Shutdown Seals. The corresponding BY-MPSI-001 Rev 17 was approved in January 2016.

4Q/15: 4Q15: Unit 1 CDF and MSPI result were updated using the application specific model BB011b4, which takes credit for the Generation III Westinghouse RCP Shutdown Seals. The corresponding BY-MPSI-001 Rev 17 was approved in January 2016.

4Q/15: 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/15	2Q/15	3Q/15	4Q/15	1Q/16	2Q/16	3Q/16	4Q/16
UAI (Δ CDF)	3.66E-08	1.49E-07	2.24E-07	1.75E-07	2.18E-07	1.88E-07	1.85E-07	1.70E-07
URI (Δ CDF)	-3.74E-07	1.07E-07	8.13E-08	9.22E-08	8.68E-08	8.69E-08	8.67E-08	8.84E-08
PLE	NO	NO	NO	NO	NO	NO	NO	NO
Indicator value	-3.40E-07	2.60E-07	3.10E-07	2.70E-07	3.00E-07	2.70E-07	2.70E-07	2.60E-07

Licensee Comments:

4Q/16: Risk Cap Invoked. 3Q16: U2 CDF and MSPI result were updated using the application specific model BB011b4, which takes credit for the Generation III Westinghouse RCP Shutdown Seals. The corresponding BY-MSPI-001 Rev 18 was approved in June 2016

3Q/16: Risk Cap Invoked. 4Q15: Unit 1 CDF and MSPI result were updated using the application specific model BB011b4, which takes credit for the Generation III Westinghouse RCP Shutdown Seals. The corresponding BY-MPSI-001 Rev 17 was approved in January 2016.

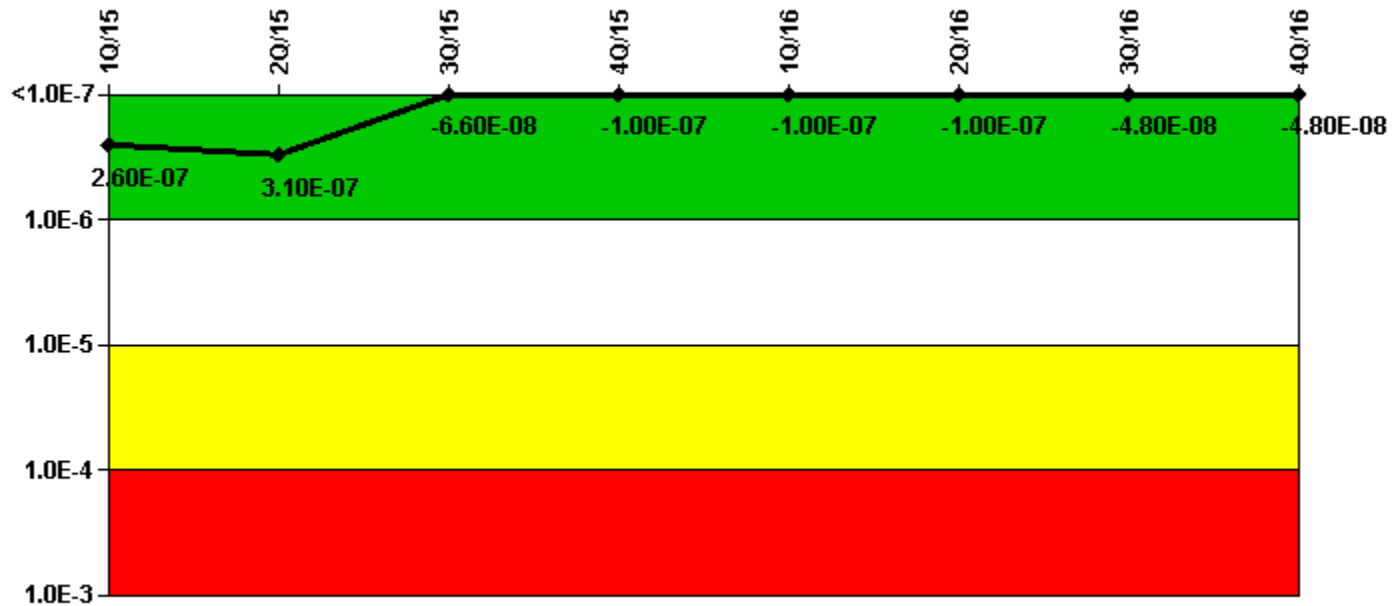
2Q/16: Risk Cap Invoked.

1Q/16: Risk Cap Invoked.

4Q/15: Risk Cap Invoked. 4Q15: Unit 1 CDF and MSPI result were updated using the application specific model BB011b4, which takes credit for the Generation III Westinghouse RCP Shutdown Seals. The corresponding BY-MPSI-001 Rev 17 was approved in January 2016.

4Q/15: Risk Cap Invoked. 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/15	2Q/15	3Q/15	4Q/15	1Q/16	2Q/16	3Q/16	4Q/16
UAI (ΔCDF)	-1.11E-08	4.34E-08	4.18E-08	-2.39E-08	-2.39E-08	-2.39E-08	2.87E-08	2.87E-08
URI (ΔCDF)	2.69E-07	2.69E-07	-1.08E-07	-7.64E-08	-7.64E-08	-7.64E-08	-7.64E-08	-7.64E-08
PLE	NO	NO	NO	NO	NO	NO	NO	NO
Indicator value	2.60E-07	3.10E-07	-6.60E-08	-1.00E-07	-1.00E-07	-1.00E-07	-4.80E-08	-4.80E-08

Licensee Comments:

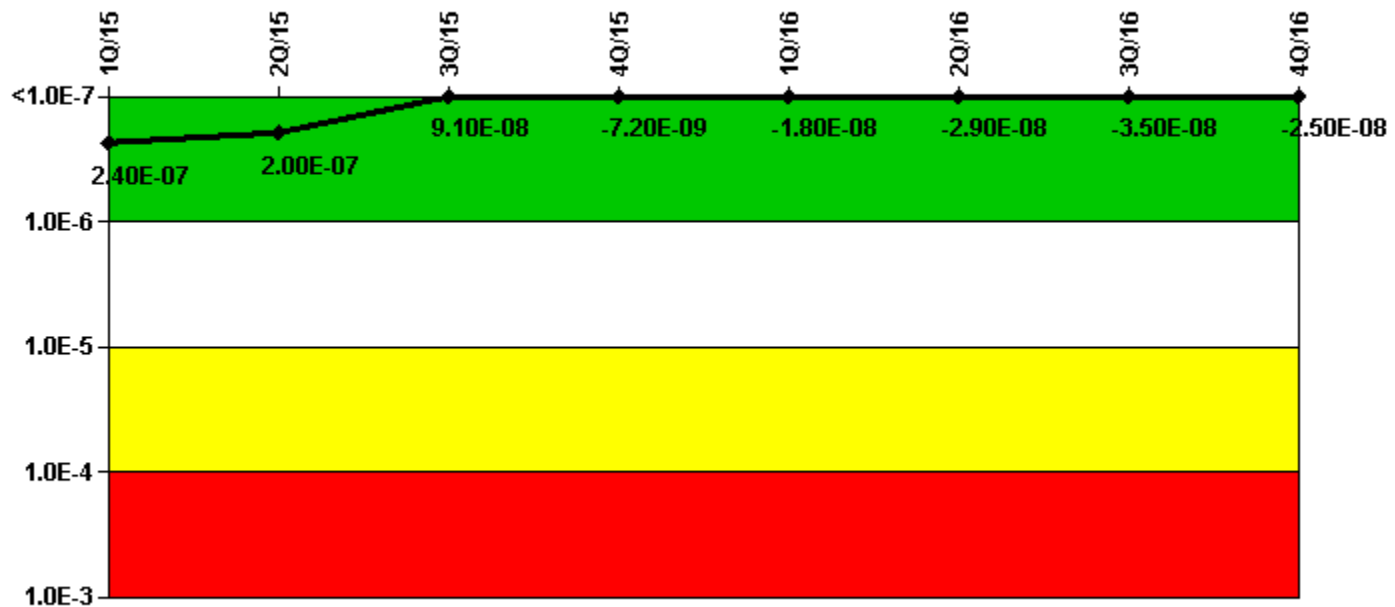
4Q/16: U1-U2 Train A crosstie considered unavailable starting 10/28/11 when standing order 11-057 and 1/2BFRH.1 procedure revisions were issued to remove procedural guidance on use of crosstie modification pending NRC approval. Reference IR 1257908

3Q/16: 4Q15: Unit 1 CDF and MSPI result were updated using the application specific model BB011b4, which takes credit for the Generation III Westinghouse RCP Shutdown Seals. The corresponding BY-MPSI-001 Rev 17 was approved in January 2016.

4Q/15: 4Q15: Unit 1 CDF and MSPI result were updated using the application specific model BB011b4, which takes credit for the Generation III Westinghouse RCP Shutdown Seals. The corresponding BY-MPSI-001 Rev 17 was approved in January 2016.

4Q/15: 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/15	2Q/15	3Q/15	4Q/15	1Q/16	2Q/16	3Q/16	4Q/16
UAI (ΔCDF)	2.27E-07	1.86E-07	1.85E-07	4.78E-08	3.74E-08	2.63E-08	1.99E-08	3.02E-08
URI (ΔCDF)	1.69E-08	1.69E-08	-9.41E-08	-5.50E-08	-5.50E-08	-5.50E-08	-5.50E-08	-5.50E-08
PLE	NO	NO	NO	NO	NO	NO	NO	NO
Indicator value	2.40E-07	2.00E-07	9.10E-08	-7.20E-09	-1.80E-08	-2.90E-08	-3.50E-08	-2.50E-08

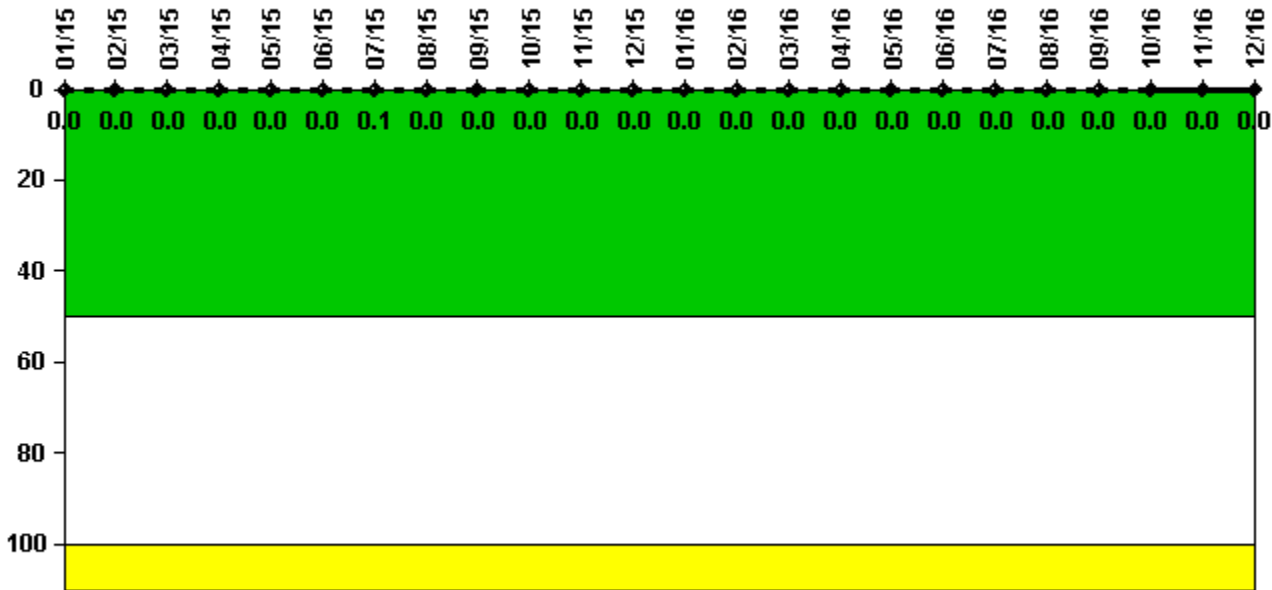
Licensee Comments:

3Q/16: Changed PRA Parameter(s). 4Q15: Unit 1 CDF and MSPI result were updated using the application specific model BB011b4, which takes credit for the Generation III Westinghouse RCP Shutdown Seals. The corresponding BY-MPSI-001 Rev 17 was approved in January 2016.

4Q/15: 4Q15: Unit 1 CDF and MSPI result were updated using the application specific model BB011b4, which takes credit for the Generation III Westinghouse RCP Shutdown Seals. The corresponding BY-MPSI-001 Rev 17 was approved in January 2016.

4Q/15: Changed PRA Parameter(s).

Reactor Coolant System Activity



Thresholds: White > 50.0 Yellow > 100.0

Notes

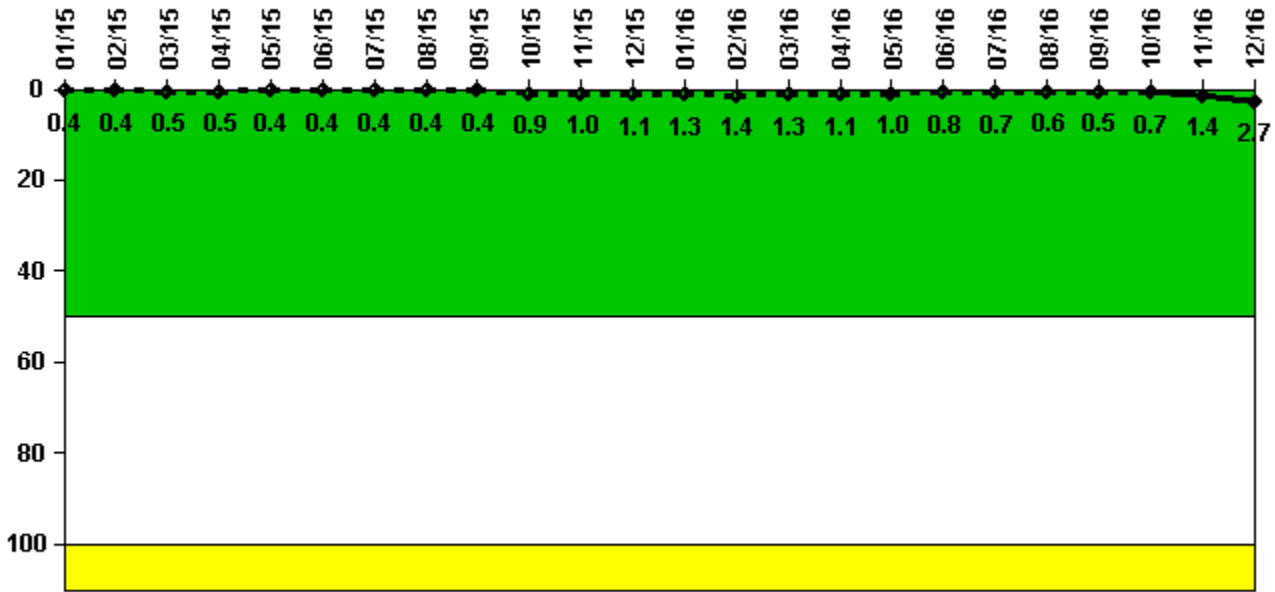
Reactor Coolant System Activity	1/15	2/15	3/15	4/15	5/15	6/15	7/15	8/15	9/15	10/15	11/15	12/15
Maximum activity	0.000296	0.000305	0.000308	0.000333	0.000343	0.000369	0.000500	0.000389	0.000383	0.000154	0.000156	0.000168
Technical specification limit	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Indicator												

value	0	0	0	0	0	0	0.1	0	0	0	0	0
Reactor Coolant System Activity	1/16	2/16	3/16	4/16	5/16	6/16	7/16	8/16	9/16	10/16	11/16	12/16
Maximum activity	0.000173	0.000267	0.000191	0.000204	0.000214	0.000220	0.000234	0.000250	0.000249	0.000256	0.000280	0.000294
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:

9/16: 4Q15: Unit 1 CDF and MSPI result were updated using the application specific model BB011b4, which takes credit for the Generation III Westinghouse RCP Shutdown Seals. The corresponding BY-MPSI-001 Rev 17 was approved in January 2016. PI

Reactor Coolant System Leakage



Thresholds: White > 50.0 Yellow > 100.0

Notes

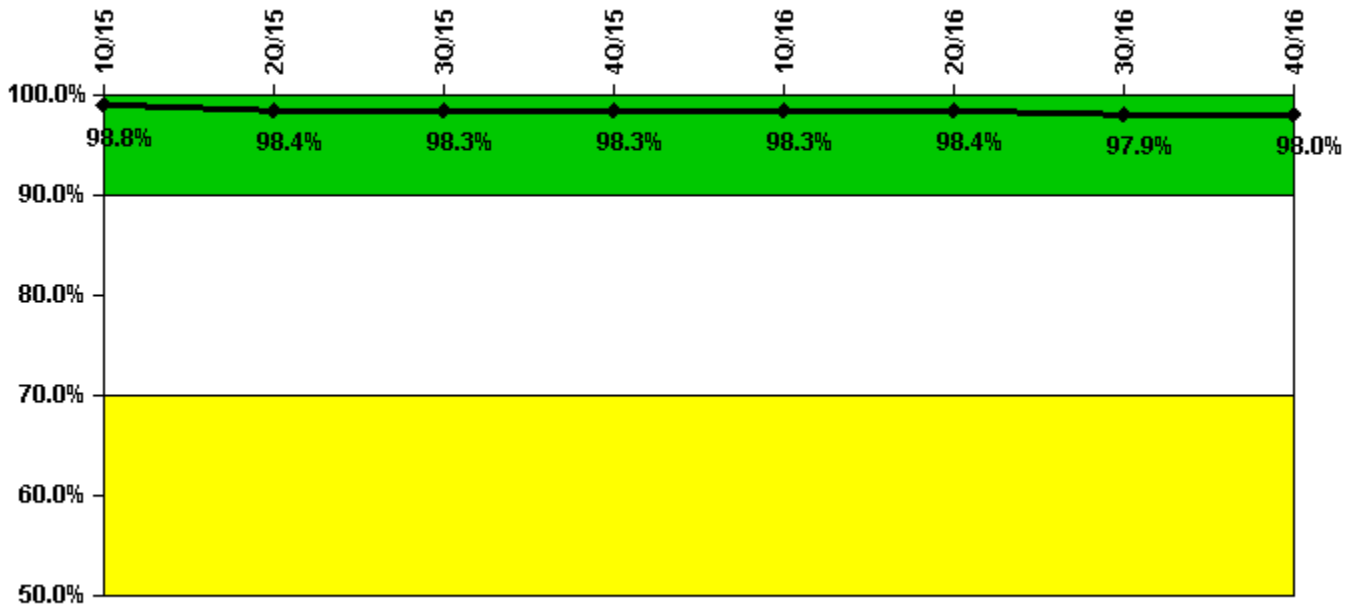
Reactor Coolant System Leakage	1/15	2/15	3/15	4/15	5/15	6/15	7/15	8/15	9/15	10/15	11/15	12/15
Maximum leakage	0.040	0.040	0.050	0.047	0.040	0.040	0.040	0.040	0.040	0.090	0.100	0.110

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	0.5	0.5	0.4	0.4	0.4	0.4	0.4	0.9	1.0	1.1
Reactor Coolant System Leakage	1/16	2/16	3/16	4/16	5/16	6/16	7/16	8/16	9/16	10/16	11/16	12/16
Maximum leakage	0.130	0.140	0.130	0.110	0.100	0.080	0.070	0.060	0.050	0.070	0.140	0.270
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	1.3	1.4	1.3	1.1	1.0	0.8	0.7	0.6	0.5	0.7	1.4	2.7

Licensee Comments:

9/16: 4Q15: Unit 1 CDF and MSPI result were updated using the application specific model BB011b4, which takes credit for the Generation III Westinghouse RCP Shutdown Seals. The corresponding BY-MPSI-001 Rev 17 was approved in January 2016. PI

Drill/Exercise Performance



Thresholds: White < 90.0% Yellow < 70.0%

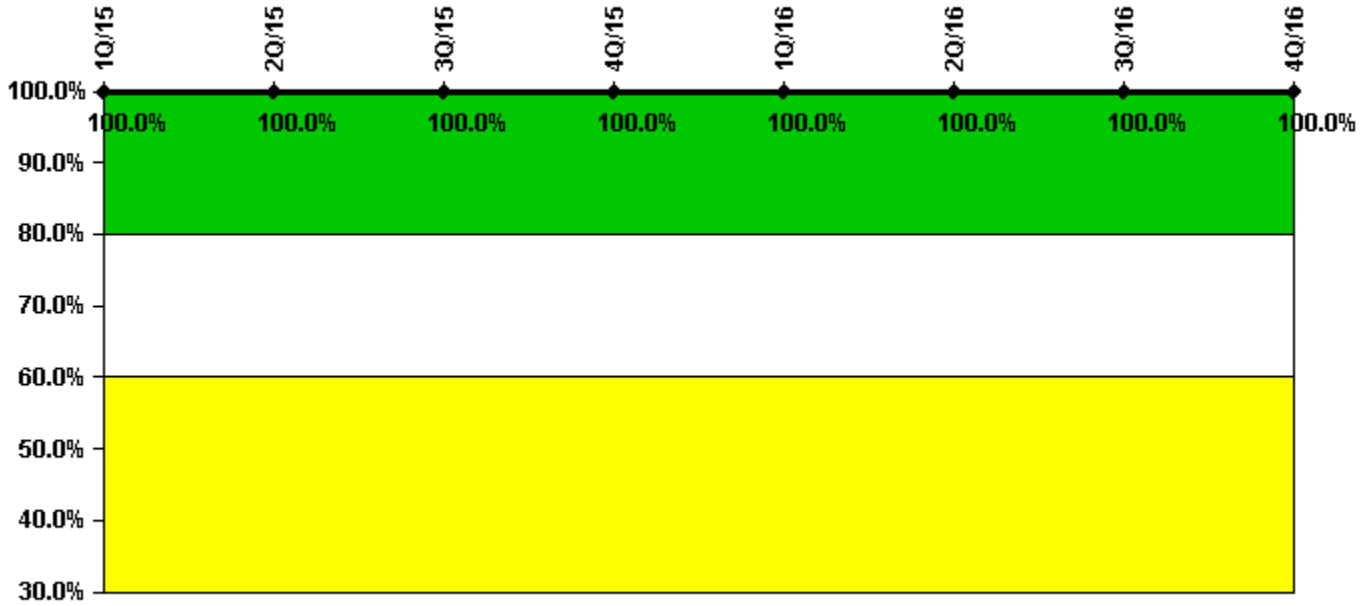
Notes

Drill/Exercise Performance	1Q/15	2Q/15	3Q/15	4Q/15	1Q/16	2Q/16	3Q/16	4Q/16
Successful opportunities	74.0	41.0	27.0	32.0	106.0	44.0	29.0	34.0
Total opportunities	74.0	43.0	27.0	32.0	109.0	44.0	32.0	34.0

Indicator value	98.8%	98.4%	98.3%	98.3%	98.3%	98.4%	97.9%	98.0%
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Licensee Comments: none

ERO Drill Participation



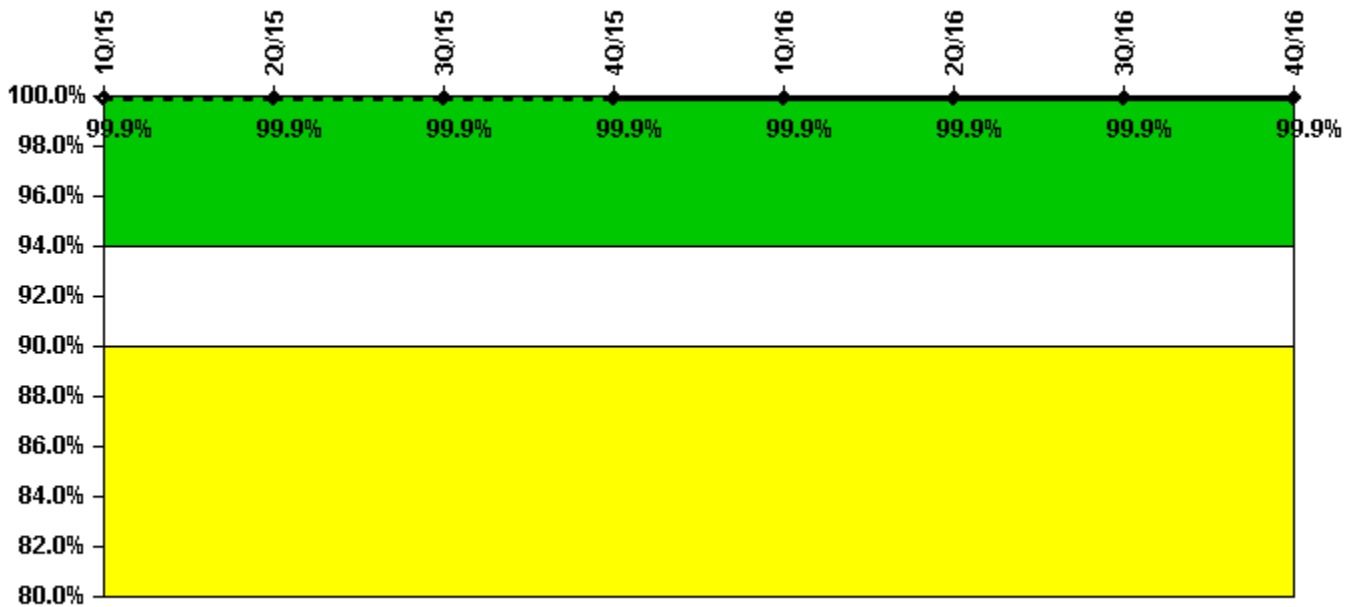
Thresholds: White < 80.0% Yellow < 60.0%

Notes

ERO Drill Participation	1Q/15	2Q/15	3Q/15	4Q/15	1Q/16	2Q/16	3Q/16	4Q/16
Participating Key personnel	74.0	74.0	72.0	75.0	76.0	78.0	77.0	77.0
Total Key personnel	74.0	74.0	72.0	75.0	76.0	78.0	77.0	77.0
Indicator value	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Licensee Comments: none

Alert & Notification System



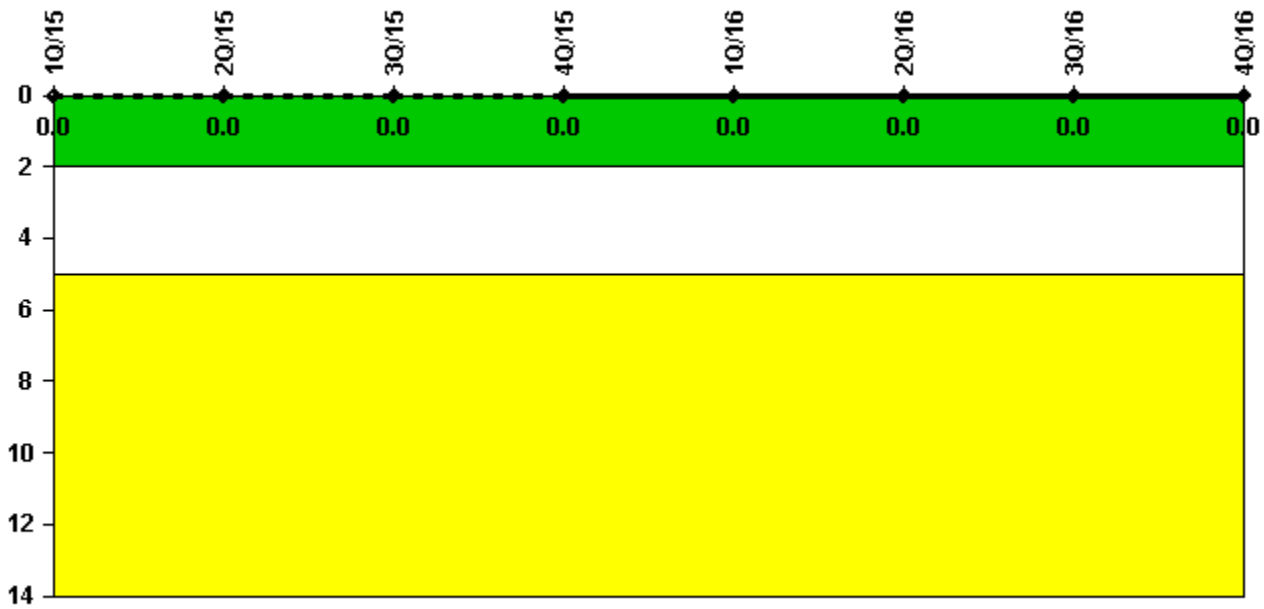
Thresholds: White < 94.0% Yellow < 90.0%

Notes

Alert & Notification System	1Q/15	2Q/15	3Q/15	4Q/15	1Q/16	2Q/16	3Q/16	4Q/16
Successful siren-tests	3834	3902	3962	3903	3897	3902	3900	3780
Total sirens-tests	3840	3904	3965	3904	3904	3904	3904	3782
Indicator value	99.9%	99.9%	99.9%	99.9%	99.9%	99.9%	99.9%	99.9%

Licensee Comments: none

Occupational Exposure Control Effectiveness



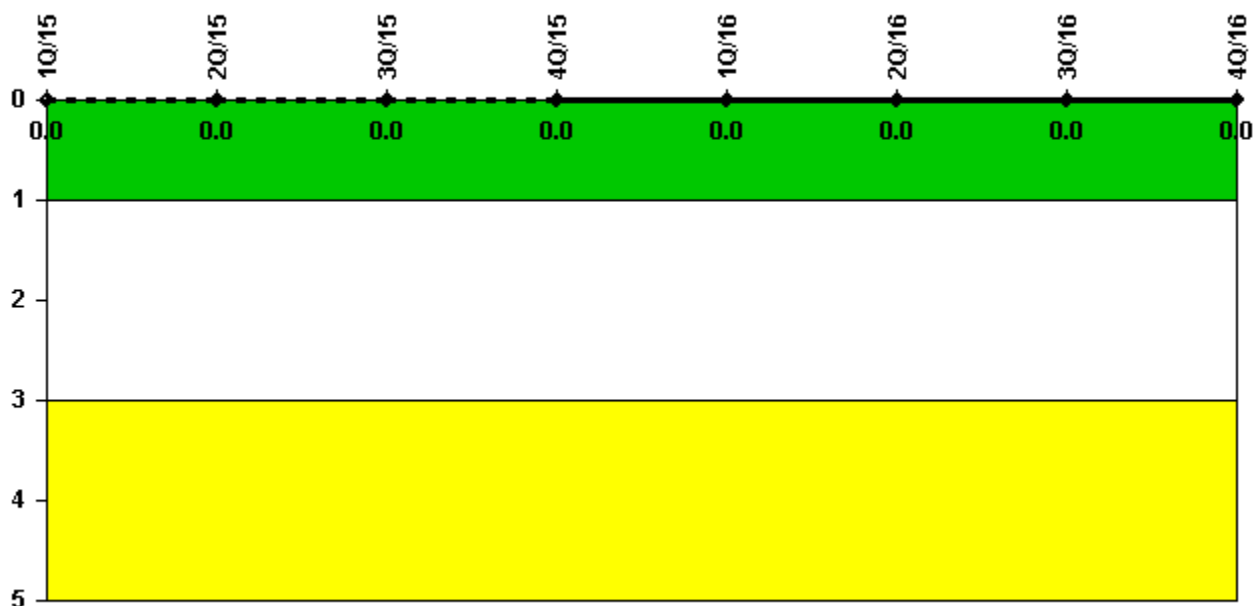
Thresholds: White > 2.0 Yellow > 5.0

Notes

Occupational Exposure Control Effectiveness	1Q/15	2Q/15	3Q/15	4Q/15	1Q/16	2Q/16	3Q/16	4Q/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	1Q/15	2Q/15	3Q/15	4Q/15	1Q/16	2Q/16	3Q/16	4Q/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: January 24, 2017