U.S.NRC
United States Nuclear Regulatory Commission
Protecting People and the Environment

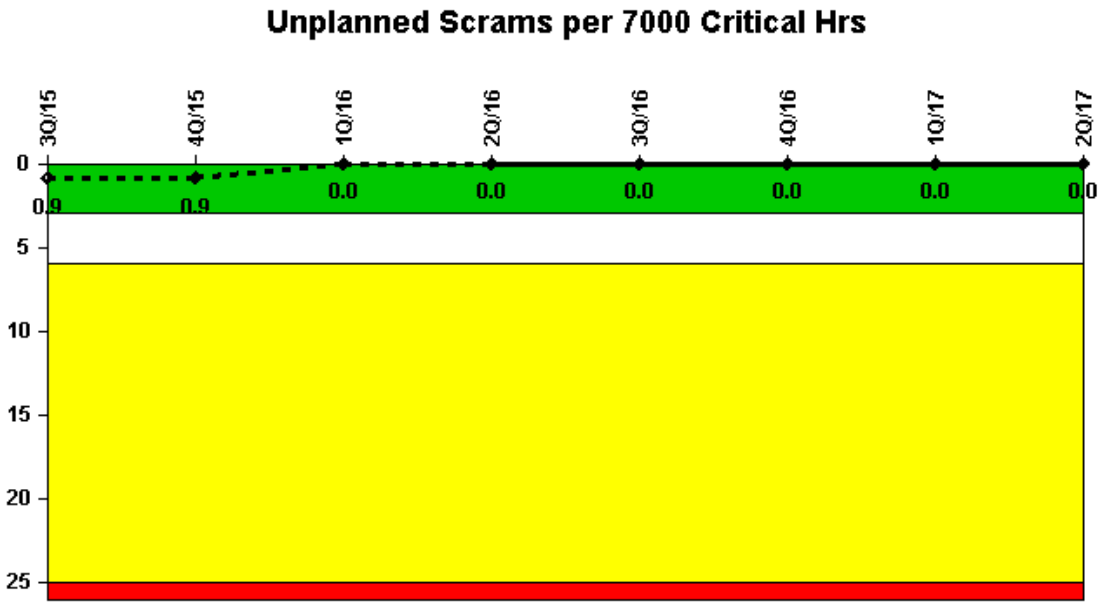
Byron 1 – Quarterly Performance Indicators

2Q/2017 Performance Indicators

The solid trend line represents the current reporting period.

Licensee's General Comments: Byron Station 2Q2017 Unit 1

On this page:



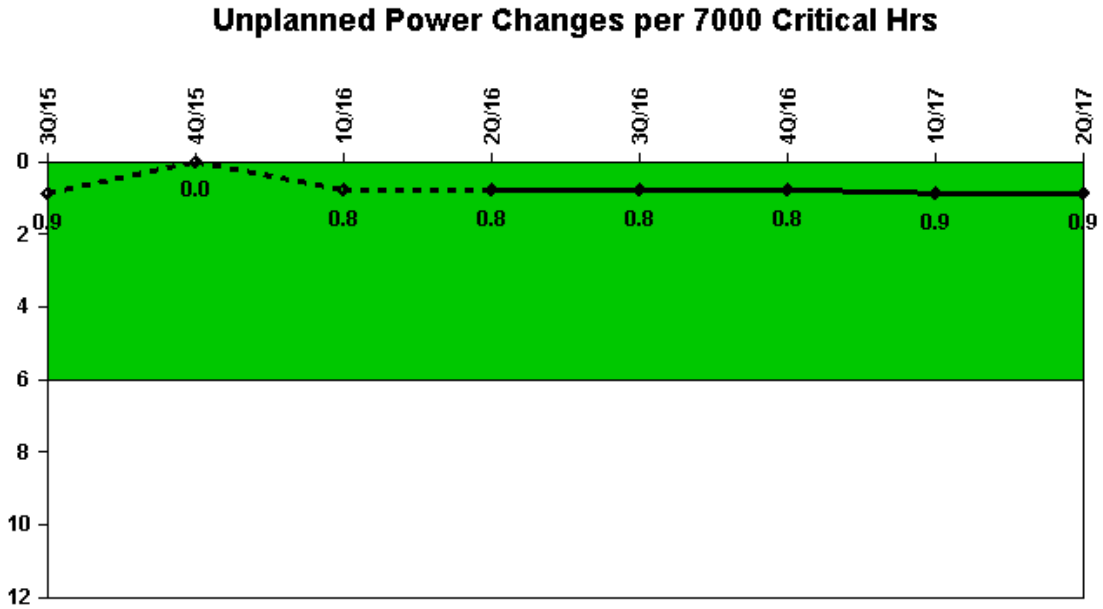
Thresholds: White > 3.0 Yellow > 6.0 Red > 25.0

Notes

Unplanned Scrams per 7000 Critical Hrs	3Q/15	4Q/15	1Q/16	2Q/16	3Q/16	4Q/16	1Q/17	2Q/17
Unplanned scrams	0	0	0	0	0	0	0	0
Critical hours	1800.0	2184.2	2183.0	2184.0	2208.0	2209.0	1509.1	2184.0
Indicator value	**0.9**	**0.9**	**0**	**0**	**0**	**0**	**0**	**0**

TOP

Licensee Comments: none



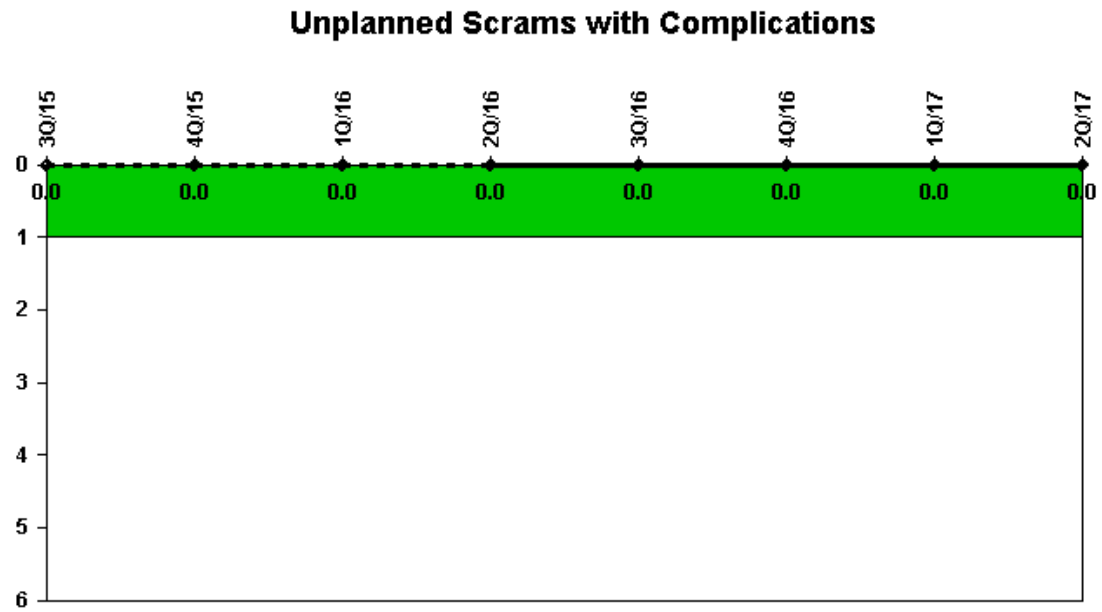
Thresholds: White > 6.0

Notes

Unplanned Power Changes per 7000 Critical Hrs	3Q/15	4Q/15	1Q/16	2Q/16	3Q/16	4Q/16	1Q/17	2Q/17
Unplanned power changes	0	0	1.0	0	0	0	1.0	0
Critical hours	1800.0	2184.2	2183.0	2184.0	2208.0	2209.0	1509.1	2184.0
Indicator value	**0.9**	**0**	**0.8**	**0.8**	**0.8**	**0.8**	**0.9**	**0.9**

TOP

Licensee Comments: none



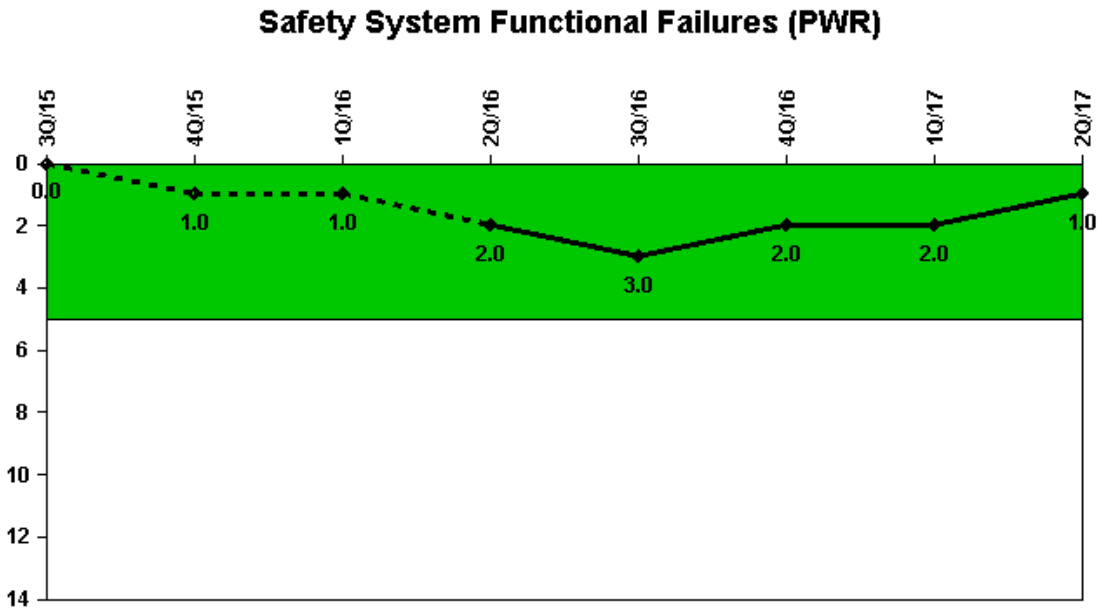
Thresholds: White > 1.0

Notes

Unplanned Scrams with Complications	3Q/15	4Q/15	1Q/16	2Q/16	3Q/16	4Q/16	1Q/17	2Q/17
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**

TOP

Licensee Comments: none



Thresholds: White > 5.0

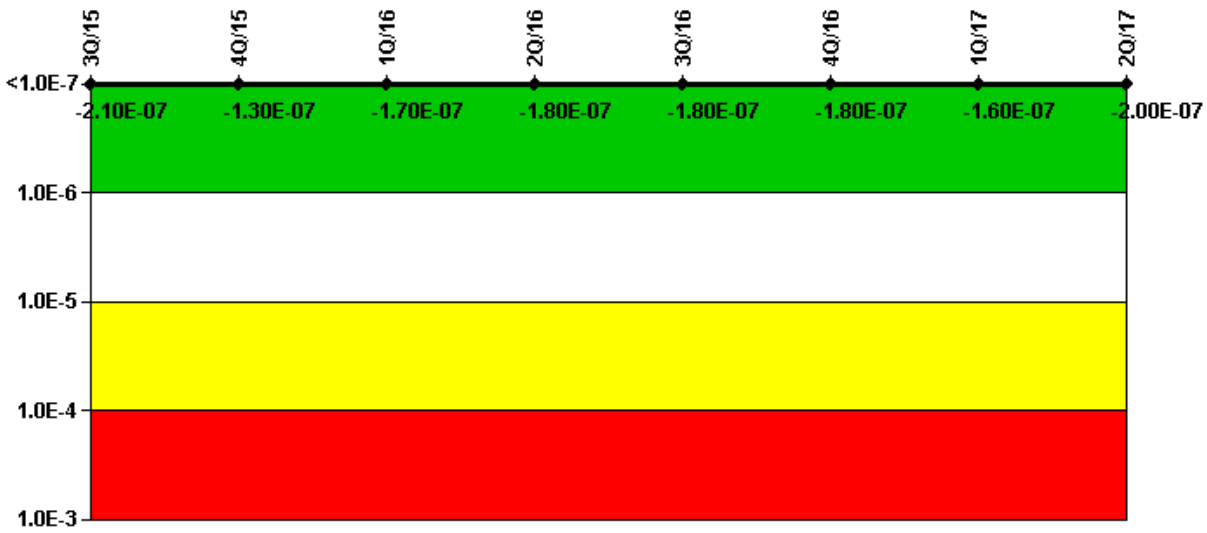
Notes

Safety System Functional Failures (PWR)	3Q/15	4Q/15	1Q/16	2Q/16	3Q/16	4Q/16	1Q/17	2Q/17
Safety System Functional Failures	0	1	0	1	1	0	0	0
Indicator value	**0**	**1**	**1**	**2**	**3**	**2**	**2**	**1**

TOP

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

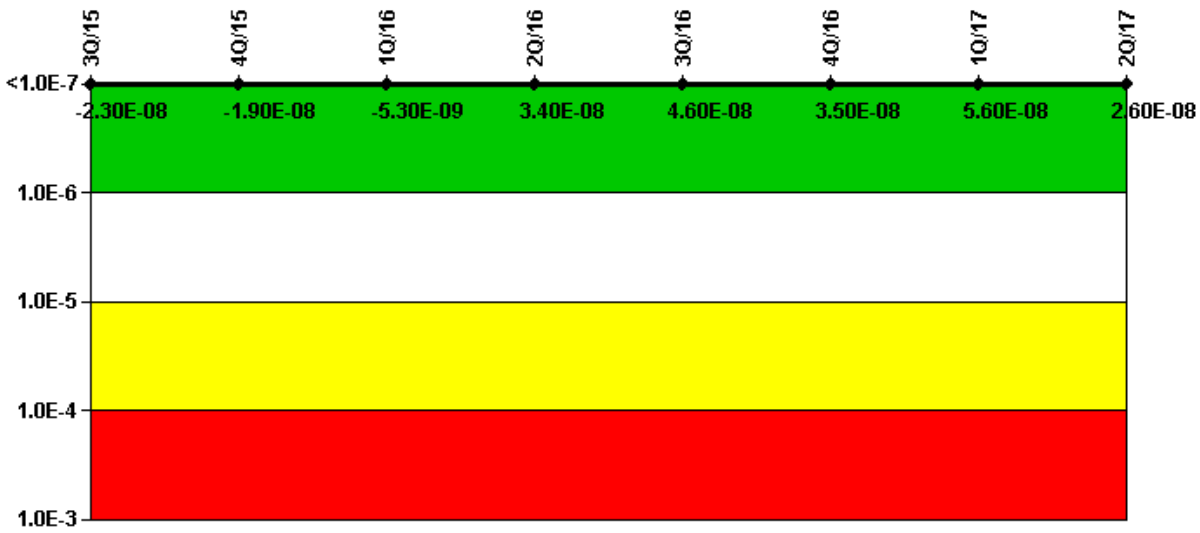
Notes

Mitigating Systems Performance Index, Emergency AC Power System	3Q/15	4Q/15	1Q/16	2Q/16	3Q/16	4Q/16	1Q/17	2Q/17
UAI (ΔCDF)	6.20E-08	5.03E-08	1.15E-08	8.38E-09	7.31E-09	6.00E-10	2.38E-08	5.72E-08
URI (ΔCDF)	-2.71E-07	-1.84E-07	-1.84E-07	-1.84E-07	-1.84E-07	-1.84E-07	-1.82E-07	-2.56E-07
PLE	NO	NO	NO	NO	NO	NO	NO	NO
Indicator value	**-2.10E-07**	**-1.30E-07**	**-1.70E-07**	**-1.80E-07**	**-1.80E-07**	**-1.80E-07**	**-1.60E-07**	**-2.00E-07**

TOP

Licensee Comments:
2Q/17: Changed PRA Parameter(s). Changed PRA Parameter(s).
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

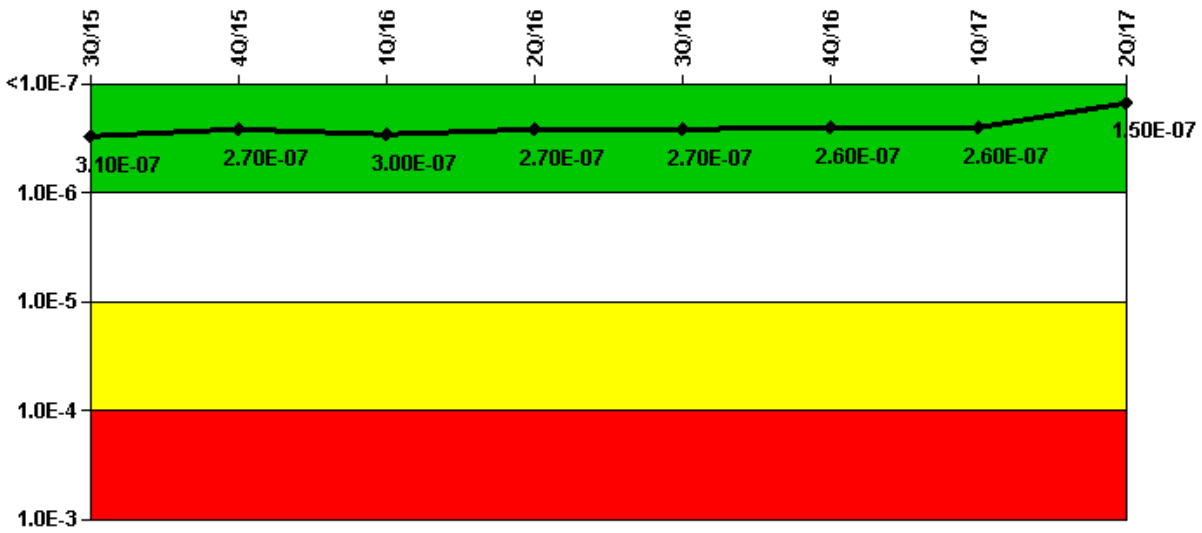
Notes

Mitigating Systems Performance Index, High Pressure Injection System	3Q/15	4Q/15	1Q/16	2Q/16	3Q/16	4Q/16	1Q/17	2Q/17
UAI (ΔCDF)	-1.41E-08	-1.25E-08	1.10E-09	4.03E-08	5.24E-08	4.18E-08	6.19E-08	3.29E-08
URI (ΔCDF)	-9.21E-09	-6.37E-09	-6.37E-09	-6.37E-09	-6.37E-09	-6.37E-09	-6.37E-09	-6.49E-09
PLE	NO	NO	NO	NO	NO	NO	NO	NO
Indicator value	**-2.30E-08**	**-1.90E-08**	**-5.30E-09**	**3.40E-08**	**4.60E-08**	**3.50E-08**	**5.60E-08**	**2.60E-08**

TOP

Licensee Comments:
2Q/17: Changed PRA Parameter(s). Changed PRA Parameter(s).
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

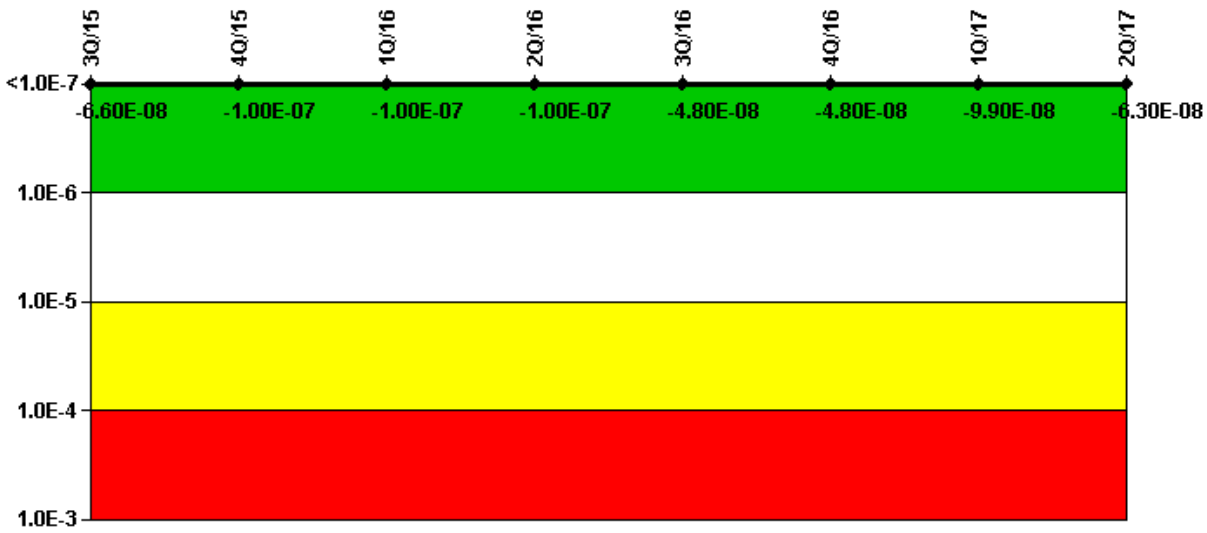
Notes

Mitigating Systems Performance Index, Heat Removal System	3Q/15	4Q/15	1Q/16	2Q/16	3Q/16	4Q/16	1Q/17	2Q/17
UAI (ΔCDF)	2.24E-07	1.75E-07	2.18E-07	1.88E-07	1.85E-07	1.70E-07	1.72E-07	1.15E-07
URI (ΔCDF)	8.13E-08	9.22E-08	8.68E-08	8.69E-08	8.67E-08	8.84E-08	9.25E-08	3.96E-08
PLE	NO	NO	NO	NO	NO	NO	NO	NO
Indicator value	**3.10E-07**	**2.70E-07**	**3.00E-07**	**2.70E-07**	**2.70E-07**	**2.60E-07**	**2.60E-07**	**1.50E-07**

TOP

Licensee Comments:
2Q/17: Changed PRA Parameter(s). Changed PRA Parameter(s).
1Q/17: Risk Cap Invoked.
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

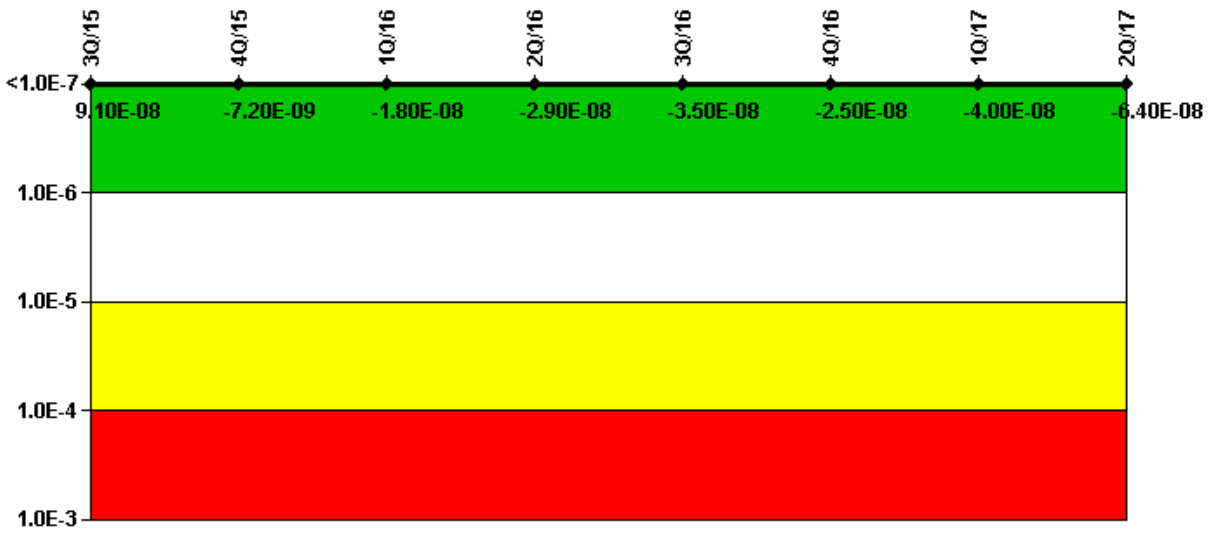
Notes

Mitigating Systems Performance Index, Residual Heat Removal System	3Q/15	4Q/15	1Q/16	2Q/16	3Q/16	4Q/16	1Q/17	2Q/17
UAI (ΔCDF)	4.18E-08	-2.39E-08	-2.39E-08	-2.39E-08	2.87E-08	2.87E-08	-2.30E-08	-1.42E-08
URI (ΔCDF)	-1.08E-07	-7.64E-08	-7.64E-08	-7.64E-08	-7.64E-08	-7.64E-08	-7.64E-08	-4.91E-08
PLE	NO	NO	NO	NO	NO	NO	NO	NO
Indicator value	**-6.60E-08**	**-1.00E-07**	**-1.00E-07**	**-1.00E-07**	**-4.80E-08**	**-4.80E-08**	**-9.90E-08**	**-6.30E-08**

TOP

Licensee Comments:
2Q/17: Changed PRA Parameter(s). Changed PRA Parameter(s).
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



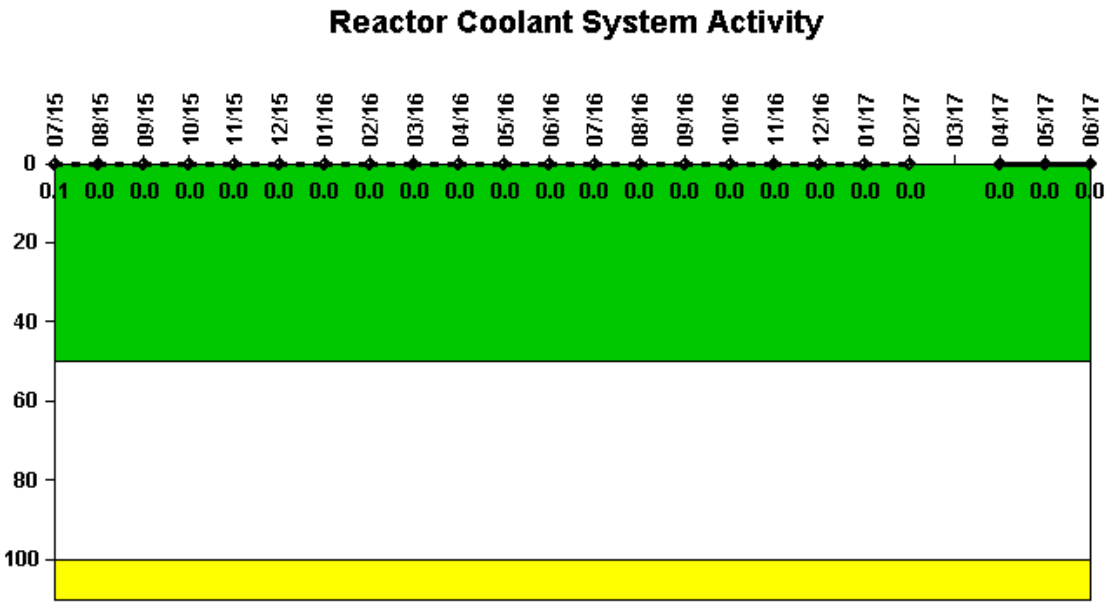
Thresholds: White > 1.00E-6 Yellow > 1.00E-5 Red > 1.00E-4

Notes

Mitigating Systems Performance Index, Cooling Water Systems	3Q/15	4Q/15	1Q/16	2Q/16	3Q/16	4Q/16	1Q/17	2Q/17
UAI (ΔCDF)	1.85E-07	4.78E-08	3.74E-08	2.63E-08	1.99E-08	3.02E-08	1.49E-08	2.99E-08
URI (ΔCDF)	-9.41E-08	-5.50E-08	-5.50E-08	-5.50E-08	-5.50E-08	-5.50E-08	-5.50E-08	-9.36E-08
PLE	NO	NO	NO	NO	NO	NO	NO	NO
Indicator value	**9.10E-08**	**-7.20E-09**	**-1.80E-08**	**-2.90E-08**	**-3.50E-08**	**-2.50E-08**	**-4.00E-08**	**-6.40E-08**

TOP

Licensee Comments:
2Q/17: Changed PRA Parameter(s). Changed PRA Parameter(s).
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).



Thresholds: White > 50.0 Yellow > 100.0

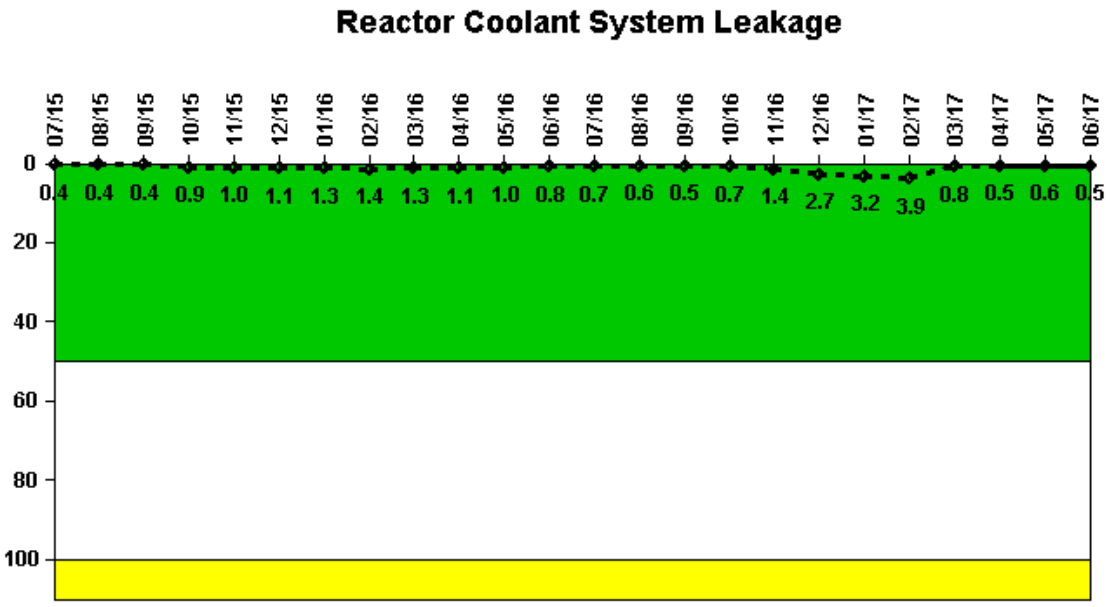
Notes

Reactor Coolant System Activity	**7/15**	**8/15**	**9/15**	**10/15**	**11/15**	**12/15**	**1/16**	**2/16**	**3/16**	**4/16**	**5/16**	**6/16**
Maximum activity	0.000500	0.000389	0.000383	0.000154	0.000156	0.000168	0.000173	0.000267	0.000191	0.000204	0.000214	0.000220
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	**7/16**	**8/16**	**9/16**	**10/16**	**11/16**	**12/16**	**1/17**	**2/17**	**3/17**	**4/17**	**5/17**	**6/17**
Maximum activity	0.000234	0.000250	0.000249	0.000256	0.000280	0.000294	0.000294	0.000315	N/A	0.000117	0.000118	0.000130
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**	**N/A**	**0**	**0**	**0**

TOP

Licensee Comments:
3/17: No steady state data was measured this period due to refueling outage B1R21
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



Thresholds: White > 50.0 Yellow > 100.0

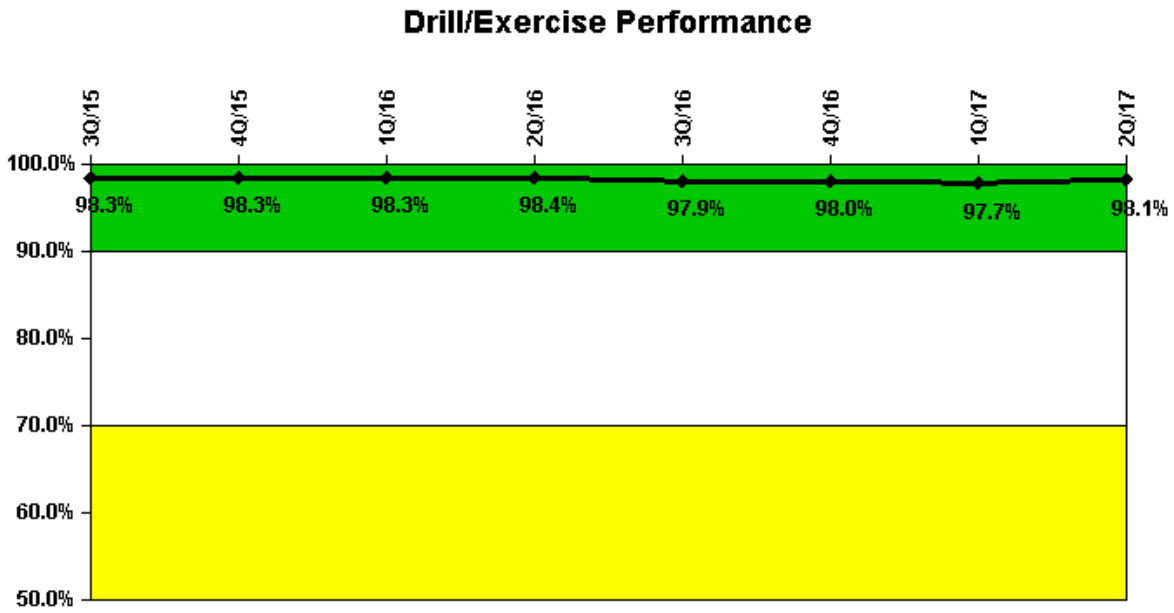
Notes

Reactor Coolant System Leakage	7/15	8/15	9/15	10/15	11/15	12/15	1/16	2/16	3/16	4/16	5/16	6/16
Maximum leakage	0.040	0.040	0.040	0.090	0.100	0.110	0.130	0.140	0.130	0.110	0.100	0.080
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**	**0.9**	**1.0**	**1.1**	**1.3**	**1.4**	**1.3**	**1.1**	**1.0**	**0.8**

Reactor Coolant System Leakage	7/16	8/16	9/16	10/16	11/16	12/16	1/17	2/17	3/17	4/17	5/17	6/17
Maximum leakage	0.070	0.060	0.050	0.070	0.140	0.270	0.320	0.390	0.080	0.050	0.060	0.050
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	**0.7**	**0.6**	**0.5**	**0.7**	**1.4**	**2.7**	**3.2**	**3.9**	**0.8**	**0.5**	**0.6**	**0.5**

TOP

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



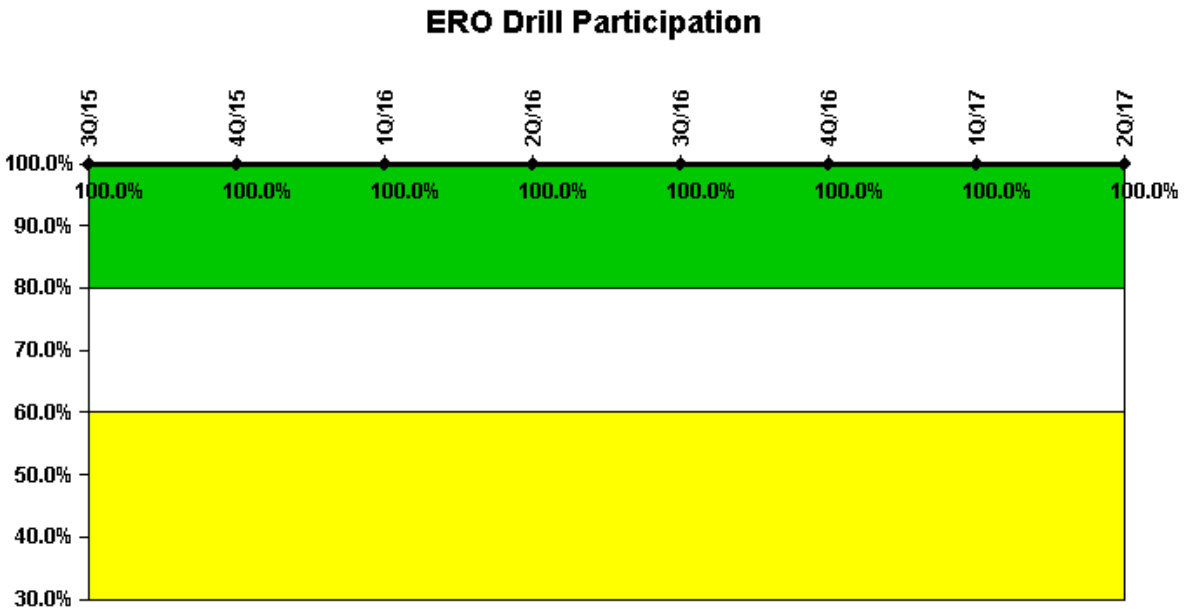
Thresholds: White < 90.0% Yellow < 70.0%

Notes

Drill/Exercise Performance	3Q/15	4Q/15	1Q/16	2Q/16	3Q/16	4Q/16	1Q/17	2Q/17
Successful opportunities	27.0	32.0	106.0	44.0	29.0	34.0	28.0	55.0
Total opportunities	27.0	32.0	109.0	44.0	32.0	34.0	28.0	56.0
Indicator value	**98.3%**	**98.3%**	**98.3%**	**98.4%**	**97.9%**	**98.0%**	**97.7%**	**98.1%**

TOP

Licensee Comments: none



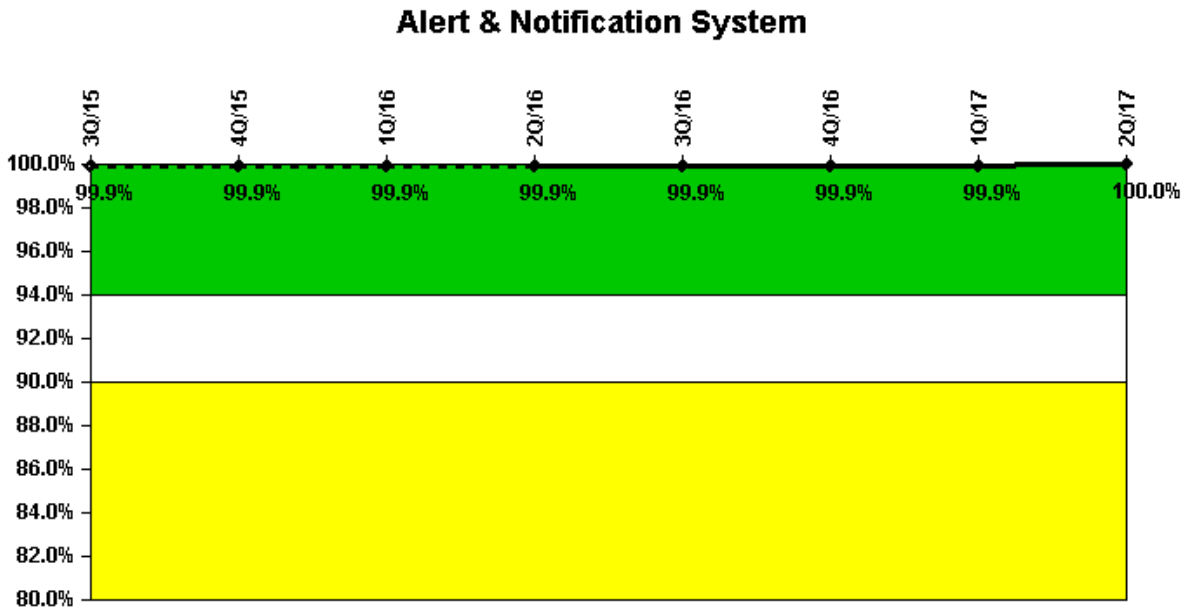
Thresholds: White < 80.0% Yellow < 60.0%

Notes

ERO Drill Participation	3Q/15	4Q/15	1Q/16	2Q/16	3Q/16	4Q/16	1Q/17	2Q/17
Participating Key personnel	72.0	75.0	76.0	78.0	77.0	77.0	78.0	66.0
Total Key personnel	72.0	75.0	76.0	78.0	77.0	77.0	78.0	66.0
Indicator value	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**

TOP

Licensee Comments: none



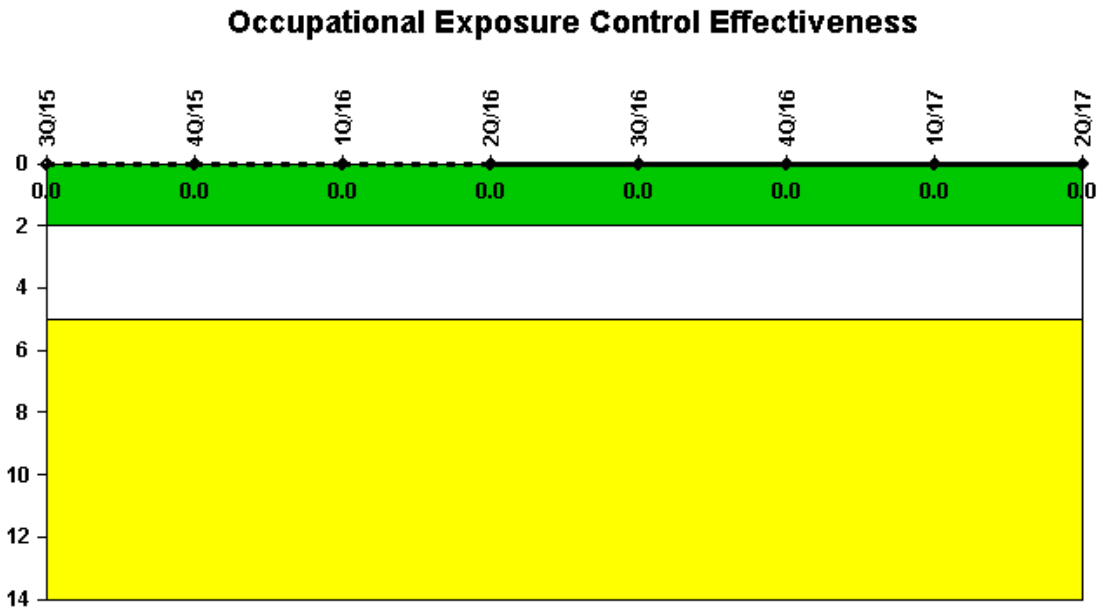
Thresholds: White < 94.0% Yellow < 90.0%

Notes

Alert & Notification System	3Q/15	4Q/15	1Q/16	2Q/16	3Q/16	4Q/16	1Q/17	2Q/17
Successful siren-tests	3962	3903	3897	3902	3900	3780	3964	3904
Total sirens-tests	3965	3904	3904	3904	3904	3782	3965	3904
Indicator value	**99.9%**	**99.9%**	**99.9%**	**99.9%**	**99.9%**	**99.9%**	**99.9%**	**100.0%**

TOP

Licensee Comments: none



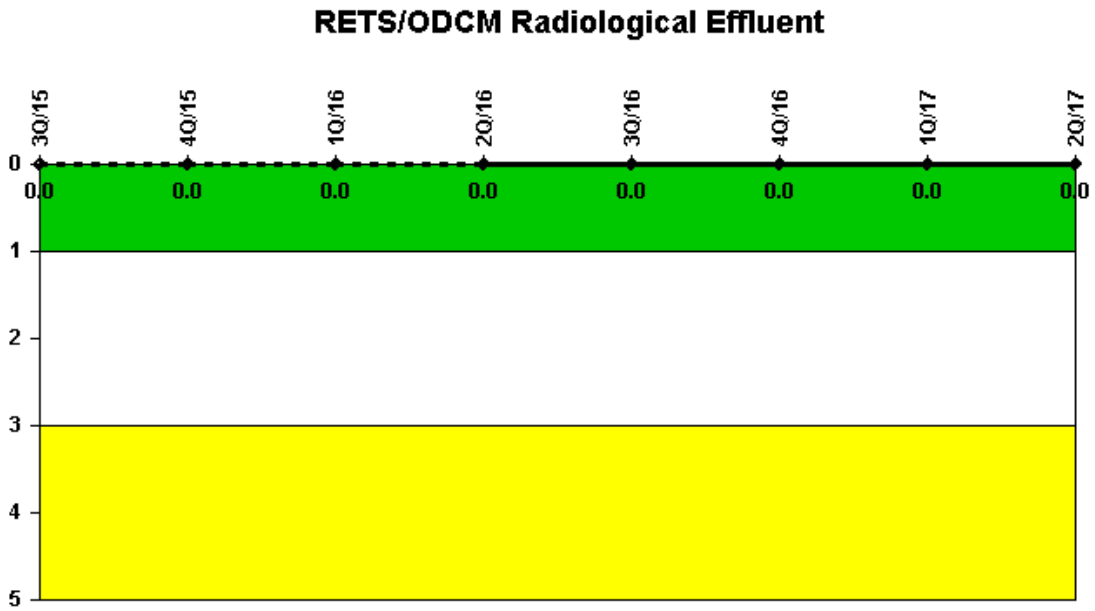
Thresholds: White > 2.0 Yellow > 5.0

Notes

Occupational Exposure Control Effectiveness	**3Q/15**	**4Q/15**	**1Q/16**	**2Q/16**	**3Q/16**	**4Q/16**	**1Q/17**	**2Q/17**
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**

TOP

Licensee Comments: none



Thresholds: White > 1.0 Yellow > 3.0

Notes

RETS/ODCM Radiological Effluent	3Q/15	4Q/15	1Q/16	2Q/16	3Q/16	4Q/16	1Q/17	2Q/17
RETS/ODCM occurrences	0	0	0	0	0	0	0	0
Indicator value	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**

TOP

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.

Current data as of: July 26, 2017

Page Last Reviewed/Updated Wednesday, June 07, 2017