

Byron 2

1Q/2012 Performance Indicators

Licensee's General Comments: Byron Station ROP Change Files created April 23, 2012

Unplanned Scrams per 7000 Critical Hrs



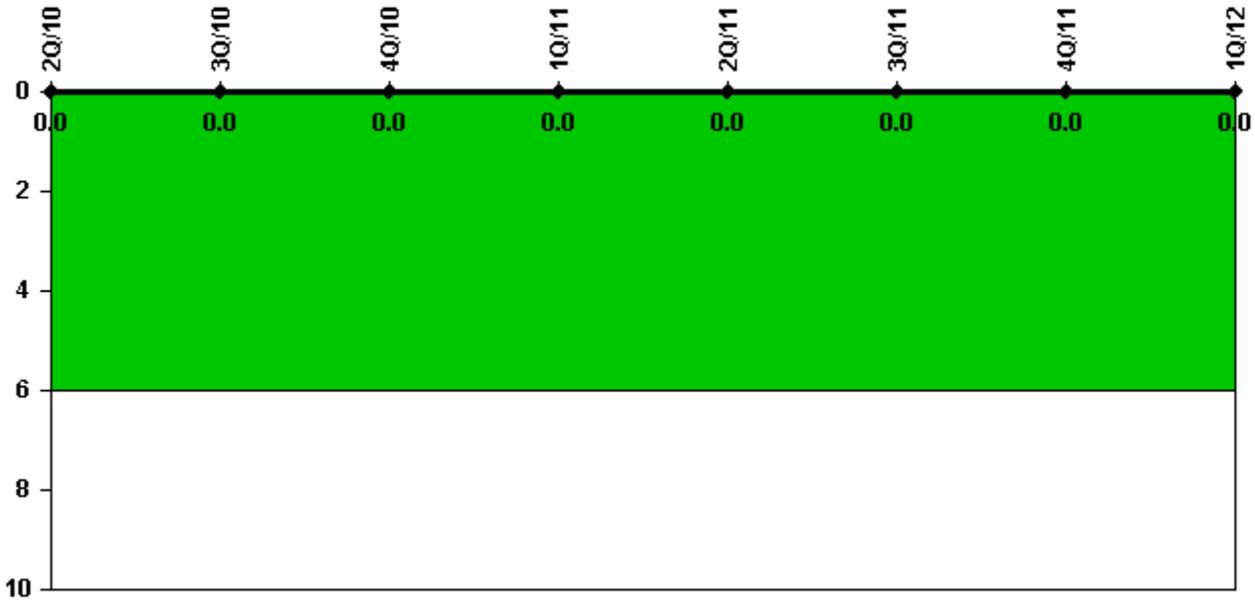
Thresholds: White > 3.0 Yellow > 6.0 Red > 25.0

Notes

Unplanned Scrams per 7000 Critical Hrs	2Q/10	3Q/10	4Q/10	1Q/11	2Q/11	3Q/11	4Q/11	1Q/12
Unplanned scrams	0	0	0	0	0	0	0	2.0
Critical hours	1735.2	2208.0	2209.0	2159.0	2071.5	1919.0	2004.4	2004.4
Indicator value	0	0	0	0	0	0	0	1.8

Licensee Comments: none

Unplanned Power Changes per 7000 Critical Hrs



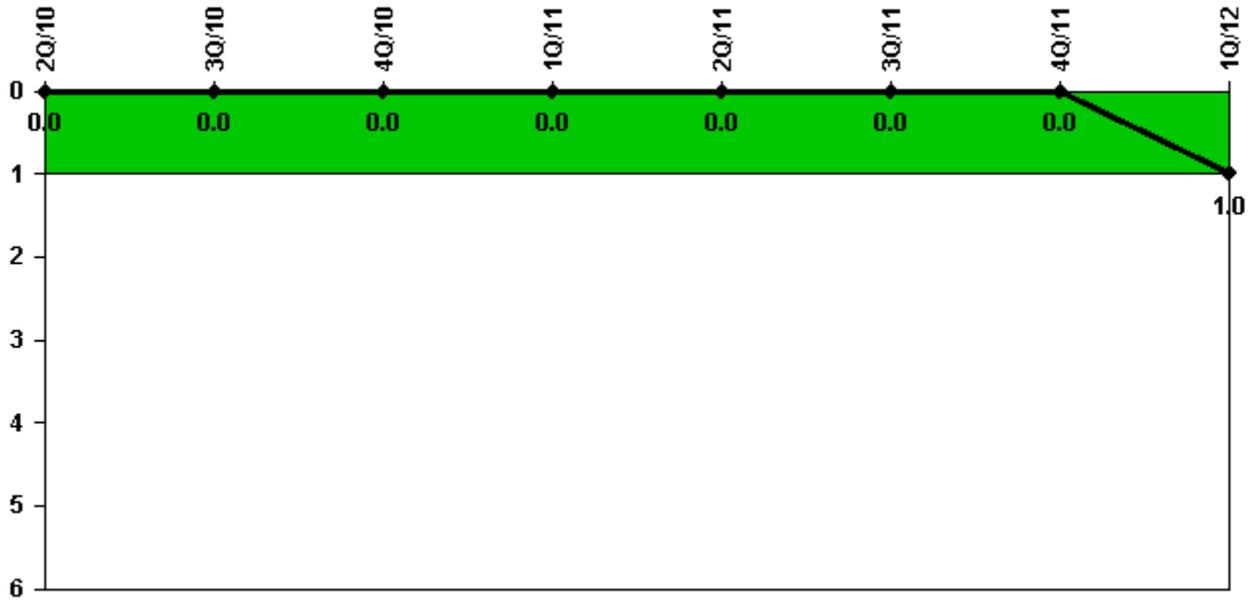
Thresholds: White > 6.0

Notes

Unplanned Power Changes per 7000 Critical Hrs	2Q/10	3Q/10	4Q/10	1Q/11	2Q/11	3Q/11	4Q/11	1Q/12
Unplanned power changes	0	0	0	0	0	0	0	0
Critical hours	1735.2	2208.0	2209.0	2159.0	2071.5	1919.0	2004.4	2004.4
Indicator value	0	0	0	0	0	0	0	0

Licensee Comments: none

Unplanned Scrams with Complications



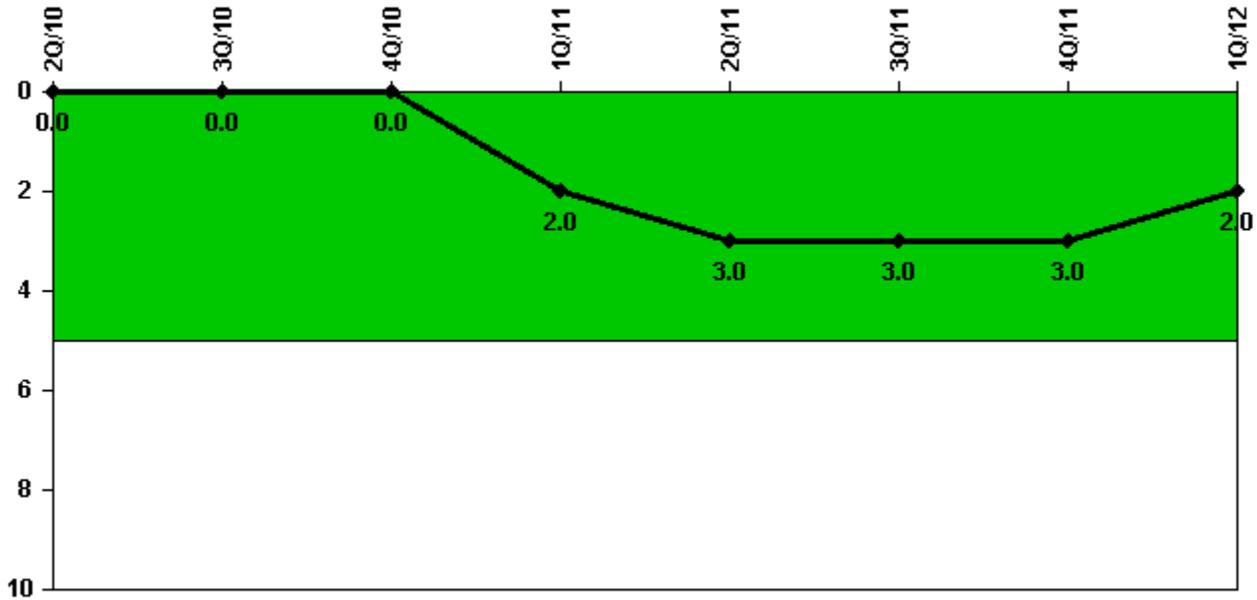
Thresholds: White > 1.0

Notes

Unplanned Scrams with Complications	2Q/10	3Q/10	4Q/10	1Q/11	2Q/11	3Q/11	4Q/11	1Q/12
Scrams with complications	0	0	0	0	0	0	0	1.0
Indicator value	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0

Licensee Comments: none

Safety System Functional Failures (PWR)



Thresholds: White > 5.0

Notes

Safety System Functional Failures (PWR)	2Q/10	3Q/10	4Q/10	1Q/11	2Q/11	3Q/11	4Q/11	1Q/12
Safety System Functional Failures	0	0	0	2	1	0	0	1
Indicator value	0	0	0	2	3	3	3	2

Licensee Comments:

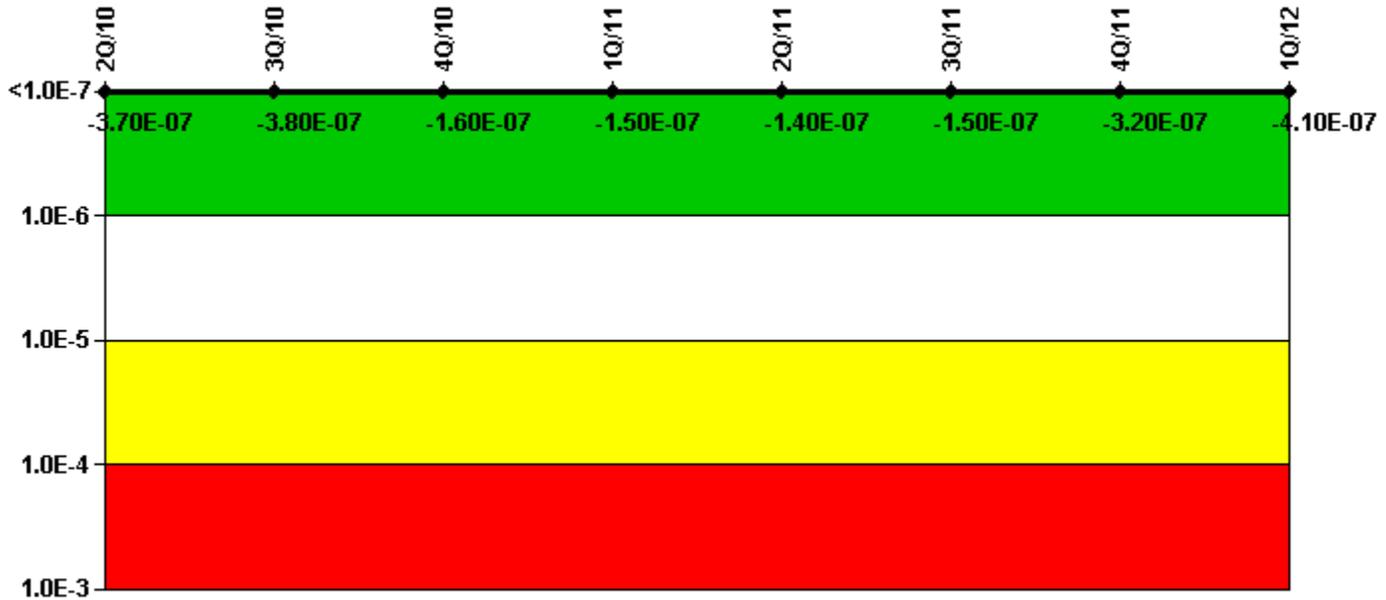
1Q/12: Licensee Event Report 2012-001-00, "Unit 2 Loss of Normal Offsite Power and Reactor Trip and Unit 1 Loss of Normal Offsite Power Due to Failure of System Auxiliary Transformer Inverted Insulators" The LER identifies the U2 LOOP as an SSFF.

4Q/11: LER 2011-002-00, "Containment Pressure Not Within Limits Longer than Allowed by Technical Specifications Due to Personnel Error"

2Q/11: May LER 454-2011-003-00: Drained Sections of Piping in AF Suction Lines Result on Sys Inop Due to Inadequate Tech Eval LER retracted, SSFF removed June Supplemental LER 455-2011 -001 -01 "Unit 2 Emergency Diesel Generator Inoperable for Longer than Allowed by Technical Specifications Due to Inadequate Work" confirms SSFF previously reported.

3Q/10: LER 454-2010-001-00 UG Cable Vaults not vital - No SSFF. LER 455-2010-002-00 "Failed T.S. Ventilation Surv Rqmts During Surv Rqmt 3.0.3 Delay Period". The potential safety significance of the condition is still being evaluated and the results will be updated with the supplement to this LER.

Mitigating Systems Performance Index, Emergency AC Power System



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

Notes

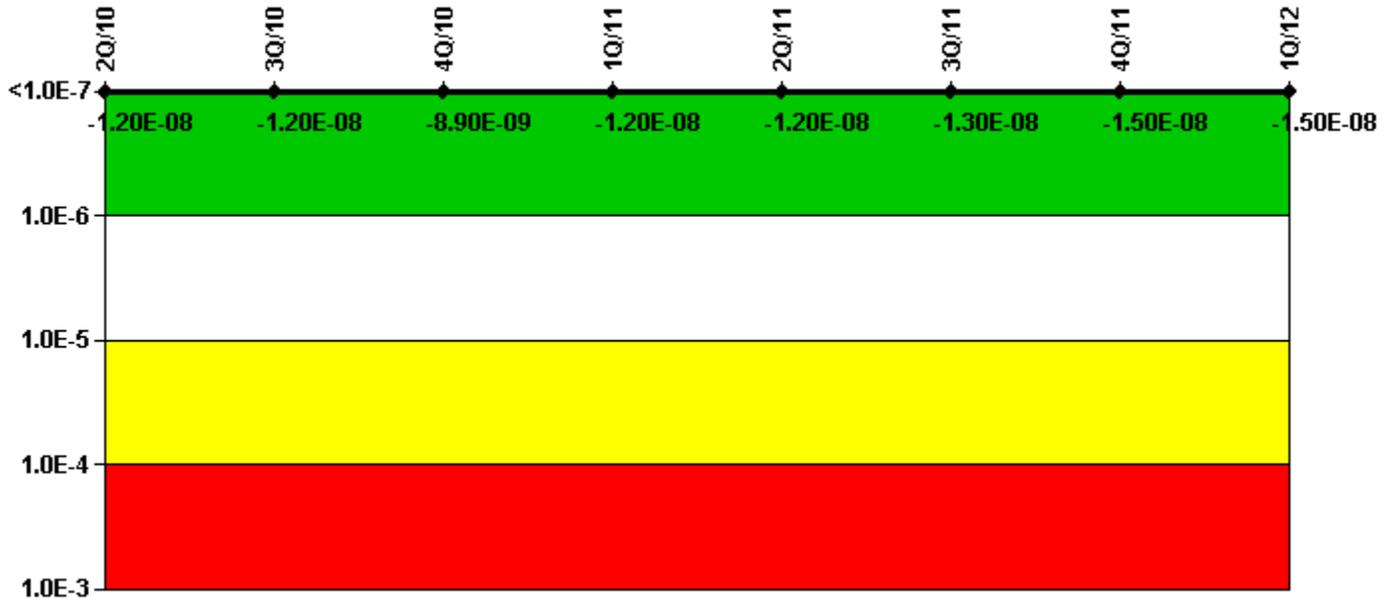
Mitigating Systems Performance Index, Emergency AC Power System	2Q/10	3Q/10	4Q/10	1Q/11	2Q/11	3Q/11	4Q/11	1Q/12
UAI (Δ CDF)	3.31E-08	2.93E-08	7.83E-08	9.92E-08	9.47E-08	9.49E-08	1.15E-07	5.69E-08
URI (Δ CDF)	-4.08E-07	-4.07E-07	-2.41E-07	-2.45E-07	-2.30E-07	-2.40E-07	-4.36E-07	-4.65E-07
PLE	NO							
Indicator value	-3.70E-07	-3.80E-07	-1.60E-07	-1.50E-07	-1.40E-07	-1.50E-07	-3.20E-07	-4.10E-07

Licensee Comments:

4Q/11: Changed PRA Parameter(s). Byron PRA Model Revision No: 6F approved September 29, 2011, revised Unit 1 and Unit 2 PRA inputs due to a change in the plant operations which calls for preemptively splitting CC trains Post-LOCA and the addition of a revised internal flooding study.

1Q/11: Due to typo on paperwork, UA for 1A DG was listed for 1B. This has been corrected.

Mitigating Systems Performance Index, High Pressure Injection System



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

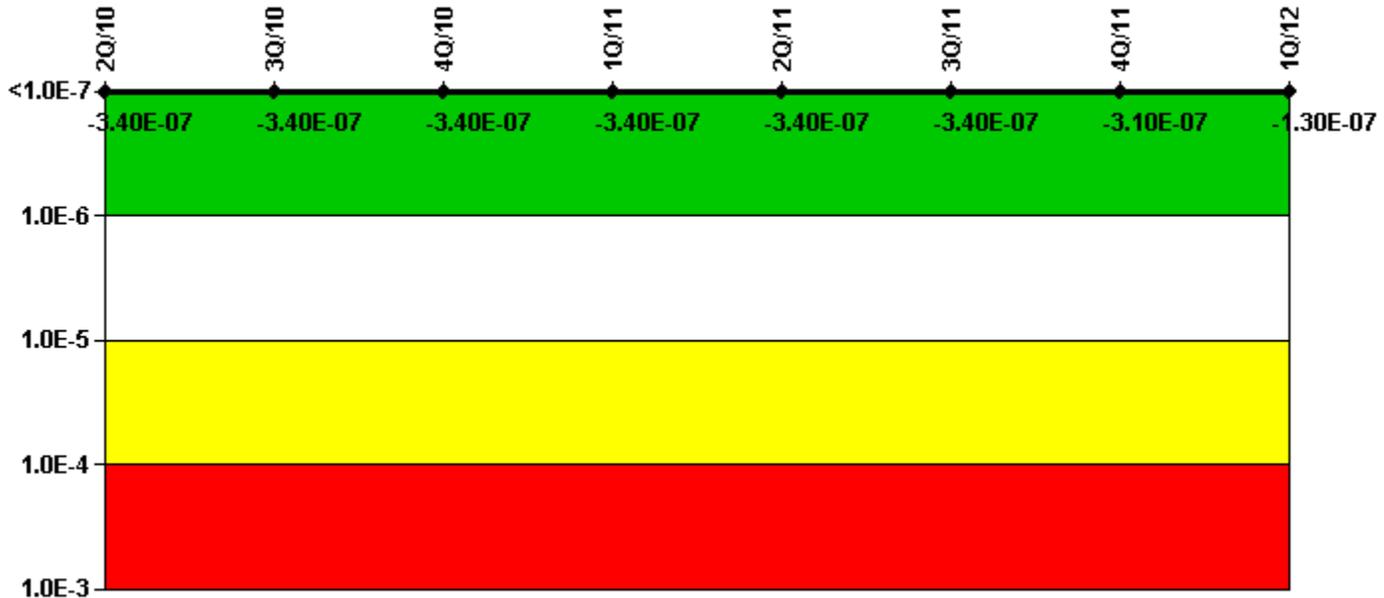
Notes

Mitigating Systems Performance Index, High Pressure Injection System	2Q/10	3Q/10	4Q/10	1Q/11	2Q/11	3Q/11	4Q/11	1Q/12
UAI (Δ CDF)	-9.41E-09	-9.41E-09	-6.51E-09	-1.00E-08	-9.86E-09	-1.09E-08	-1.30E-08	-1.30E-08
URI (Δ CDF)	-2.39E-09	-2.41E-09	-2.40E-09	-2.40E-09	-2.41E-09	-2.42E-09	-1.94E-09	-1.96E-09
PLE	NO							
Indicator value	-1.20E-08	-1.20E-08	-8.90E-09	-1.20E-08	-1.20E-08	-1.30E-08	-1.50E-08	-1.50E-08

Licensee Comments:

4Q/11: Changed PRA Parameter(s). Byron PRA Model Revision No: 6F approved September 29, 2011, revised Unit 1 and Unit 2 PRA inputs due to a change in the plant operations which calls for preemptively splitting CC trains Post-LOCA and the addition of a revised internal flooding study.

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	2Q/10	3Q/10	4Q/10	1Q/11	2Q/11	3Q/11	4Q/11	1Q/12
UAI (Δ CDF)	-9.66E-08	-9.66E-08	-9.66E-08	-9.66E-08	-9.66E-08	-9.65E-08	1.11E-09	1.33E-07
URI (Δ CDF)	-2.47E-07	-2.48E-07	-2.45E-07	-2.43E-07	-2.43E-07	-2.46E-07	-3.14E-07	-2.60E-07
PLE	NO							
Indicator value	-3.40E-07	-3.40E-07	-3.40E-07	-3.40E-07	-3.40E-07	-3.40E-07	-3.10E-07	-1.30E-07

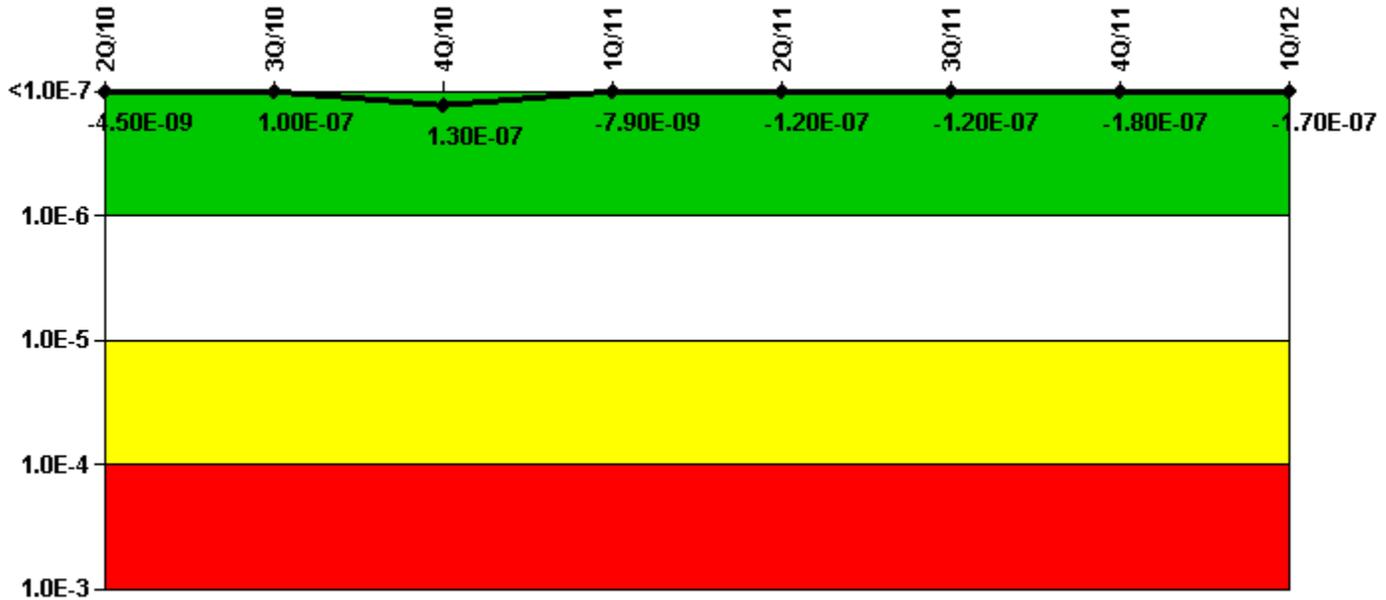
Licensee Comments:

1Q/12: Prior to this quarter, planned and unplanned unavailability was counted against an AF train whenever the safety-related suction source was unavailable. After discussions with Braidwood and the corporate PRA SME, it was determined that the unavailability should not be counted if the non-safety-related suction source is available. This issue was documented in IR #1334924. Corrections to historical data for the last three years have been made and are reflected in this quarter's reporting.

4Q/11: Byron PRA Model Revision No: 6F approved September 29, 2011, revised Unit 1 and Unit 2 PRA inputs due to a change in the plant operations which calls for preemptively splitting CC trains Post-LOCA and the addition of a revised internal flooding study.

4Q/11: Changed PRA Parameter(s). Byron PRA Model Revision No: 6F approved September 29, 2011, revised Unit 1 and Unit 2 PRA inputs due to a change in the plant operations which calls for preemptively splitting CC trains Post-LOCA and the addition of a revised internal flooding study.

Mitigating Systems Performance Index, Residual Heat Removal System



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

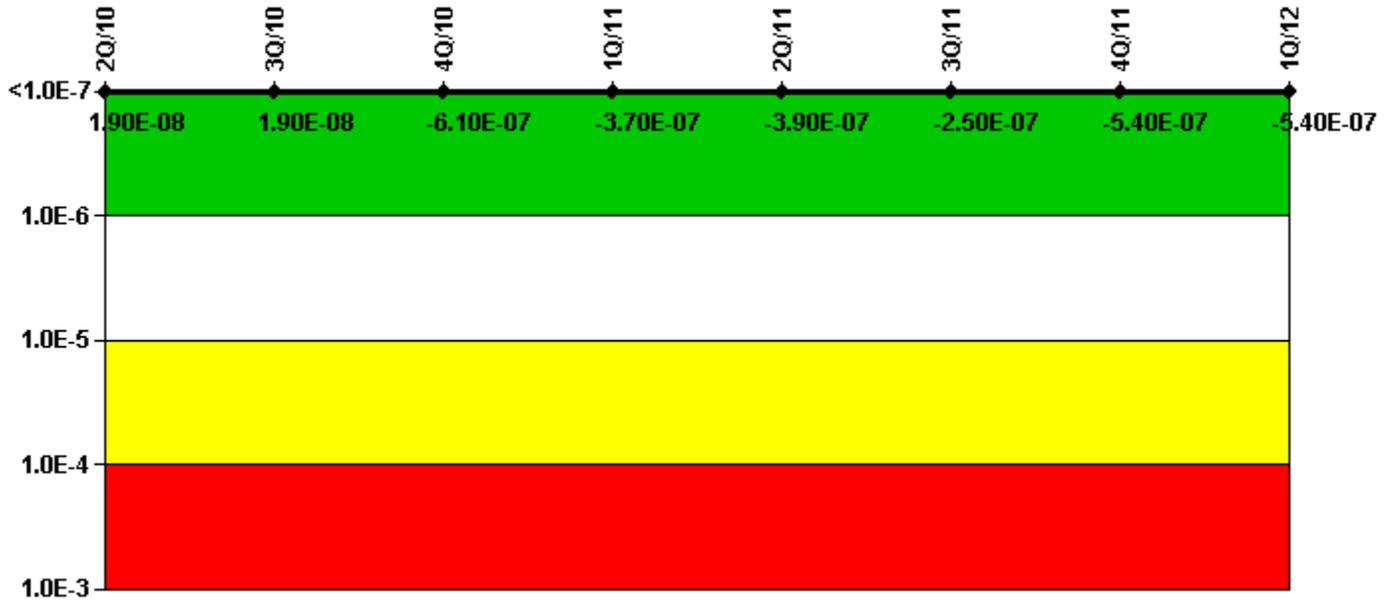
Notes

Mitigating Systems Performance Index, Residual Heat Removal System	2Q/10	3Q/10	4Q/10	1Q/11	2Q/11	3Q/11	4Q/11	1Q/12
UAI (Δ CDF)	7.92E-08	1.88E-07	2.16E-07	7.97E-08	-2.87E-08	-2.87E-08	-3.45E-08	-3.45E-08
URI (Δ CDF)	-8.36E-08	-8.63E-08	-8.41E-08	-8.77E-08	-9.02E-08	-9.28E-08	-1.43E-07	-1.40E-07
PLE	NO							
Indicator value	-4.50E-09	1.00E-07	1.30E-07	-7.90E-09	-1.20E-07	-1.20E-07	-1.80E-07	-1.70E-07

Licensee Comments:

4Q/11: Changed PRA Parameter(s). Byron PRA Model Revision No: 6F approved September 29, 2011, revised Unit 1 and Unit 2 PRA inputs due to a change in the plant operations which calls for preemptively splitting CC trains Post-LOCA and the addition of a revised internal flooding study. 1/2RH8716A/B were removed from MSPI scoping due to Birnbaum value less than 1.0E-06.

Mitigating Systems Performance Index, Cooling Water Systems



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

Notes

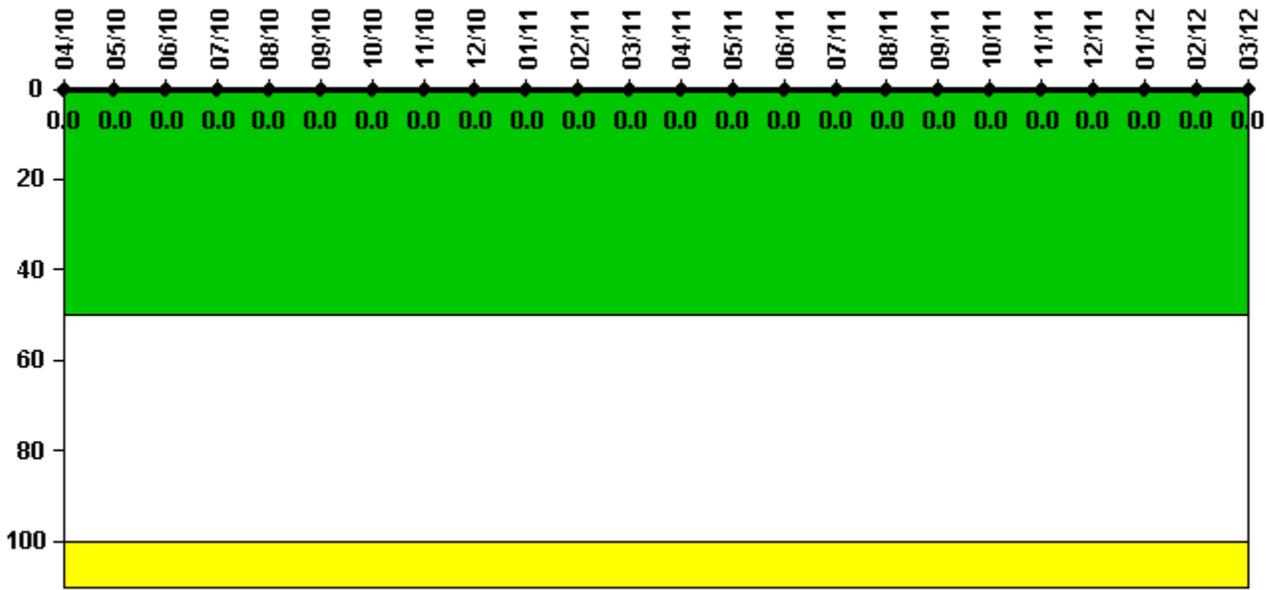
Mitigating Systems Performance Index, Cooling Water Systems	2Q/10	3Q/10	4Q/10	1Q/11	2Q/11	3Q/11	4Q/11	1Q/12
UAI (Δ CDF)	1.27E-07	1.28E-07	2.84E-07	5.12E-07	4.93E-07	6.38E-07	3.97E-07	3.95E-07
URI (Δ CDF)	-1.08E-07	-1.09E-07	-8.89E-07	-8.85E-07	-8.87E-07	-8.92E-07	-9.35E-07	-9.37E-07
PLE	NO							
Indicator value	1.90E-08	1.90E-08	-6.10E-07	-3.70E-07	-3.90E-07	-2.50E-07	-5.40E-07	-5.40E-07

Licensee Comments:

4Q/11: Changed PRA Parameter(s). Byron PRA Model Revision No: 6F approved September 29, 2011, revised Unit 1 and Unit 2 PRA inputs due to a change in the plant operations which calls for preemptively splitting CC trains Post-LOCA and the addition of a revised internal flooding study. 1/2RH8716A/B were removed from MSPI scoping due to Birnbaum value less than 1.0E-06.

4Q/10: Changed PRA Parameter(s).

Reactor Coolant System Activity



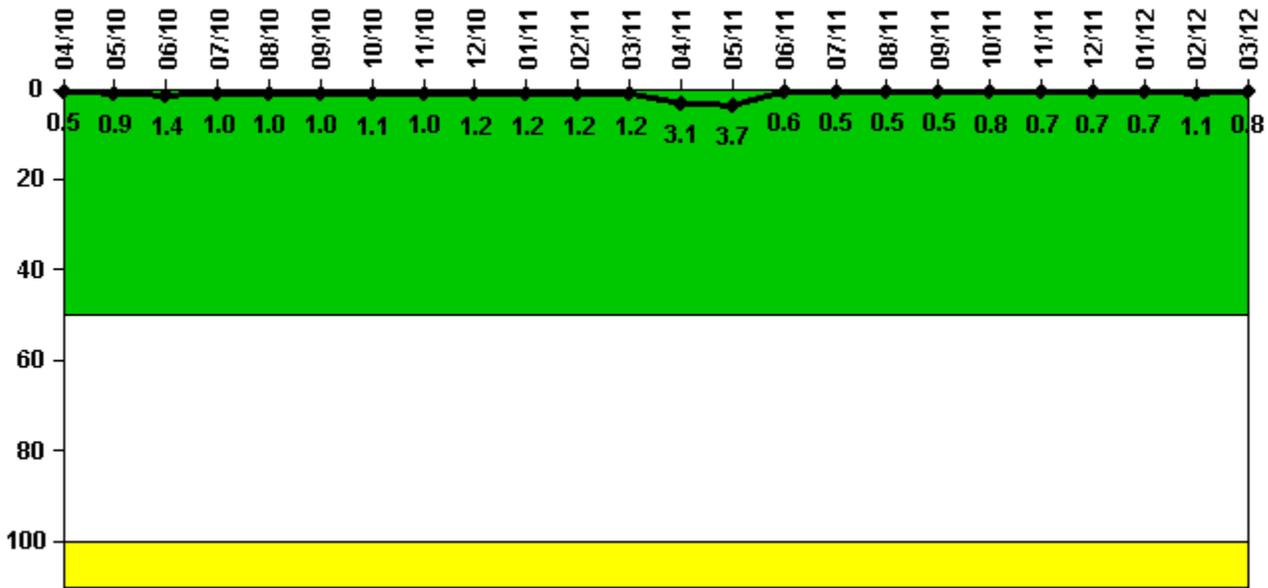
Thresholds: White > 50.0 Yellow > 100.0

Notes

Reactor Coolant System Activity	4/10	5/10	6/10	7/10	8/10	9/10	10/10	11/10	12/10	1/11	2/11	3/11
Maximum activity	0.000272	0.000096	0.000096	0.000099	0.000103	0.000106	0.000118	0.000120	0.000124	0.000142	0.000136	0.000140
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
Reactor Coolant System Activity	4/11	5/11	6/11	7/11	8/11	9/11	10/11	11/11	12/11	1/12	2/12	3/12
Maximum activity	0.000161	0.000324	0.000477	0.000222	0.000153	0.000224	0.000055	0.000064	0.000065	0.000071	0.000069	0.000081
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: none

Reactor Coolant System Leakage



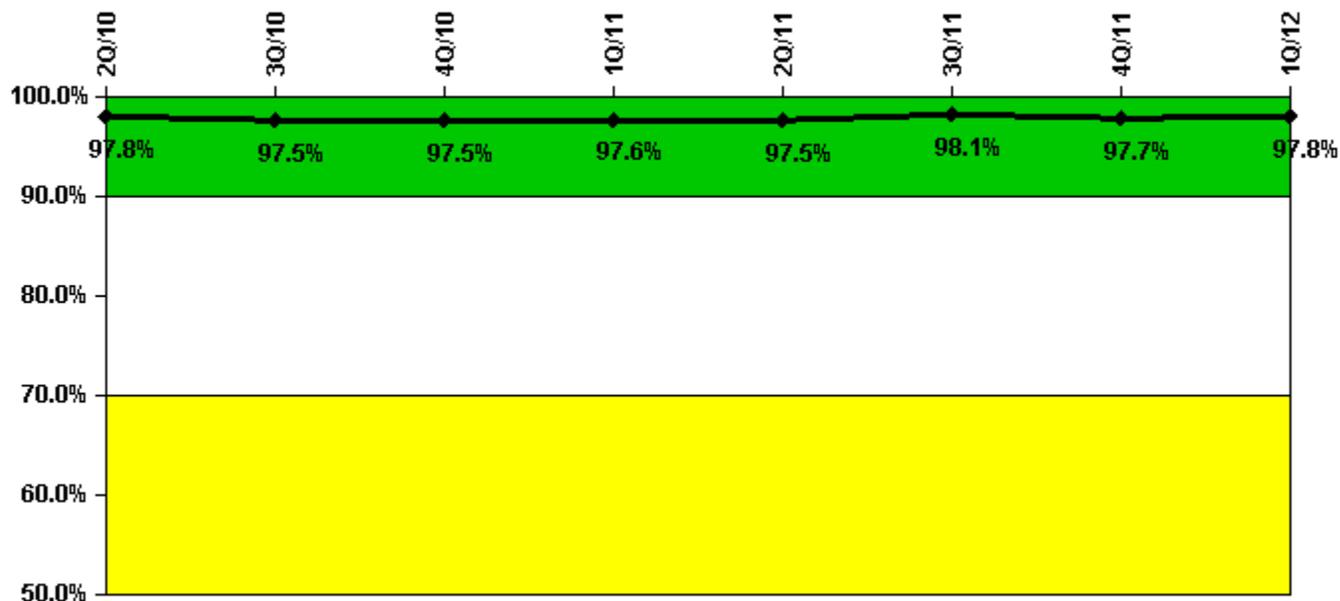
Thresholds: White > 50.0 Yellow > 100.0

Notes

Reactor Coolant System Leakage	4/10	5/10	6/10	7/10	8/10	9/10	10/10	11/10	12/10	1/11	2/11	3/11
Maximum leakage	0.050	0.090	0.140	0.100	0.100	0.100	0.110	0.100	0.120	0.120	0.120	0.120
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	0.5	0.9	1.4	1.0	1.0	1.0	1.1	1.0	1.2	1.2	1.2	1.2
Reactor Coolant System Leakage	4/11	5/11	6/11	7/11	8/11	9/11	10/11	11/11	12/11	1/12	2/12	3/12
Maximum leakage	0.310	0.370	0.060	0.050	0.050	0.050	0.080	0.070	0.070	0.070	0.110	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	3.1	3.7	0.6	0.5	0.5	0.5	0.8	0.7	0.7	0.7	1.1	0.8

Licensee Comments: none

Drill/Exercise Performance



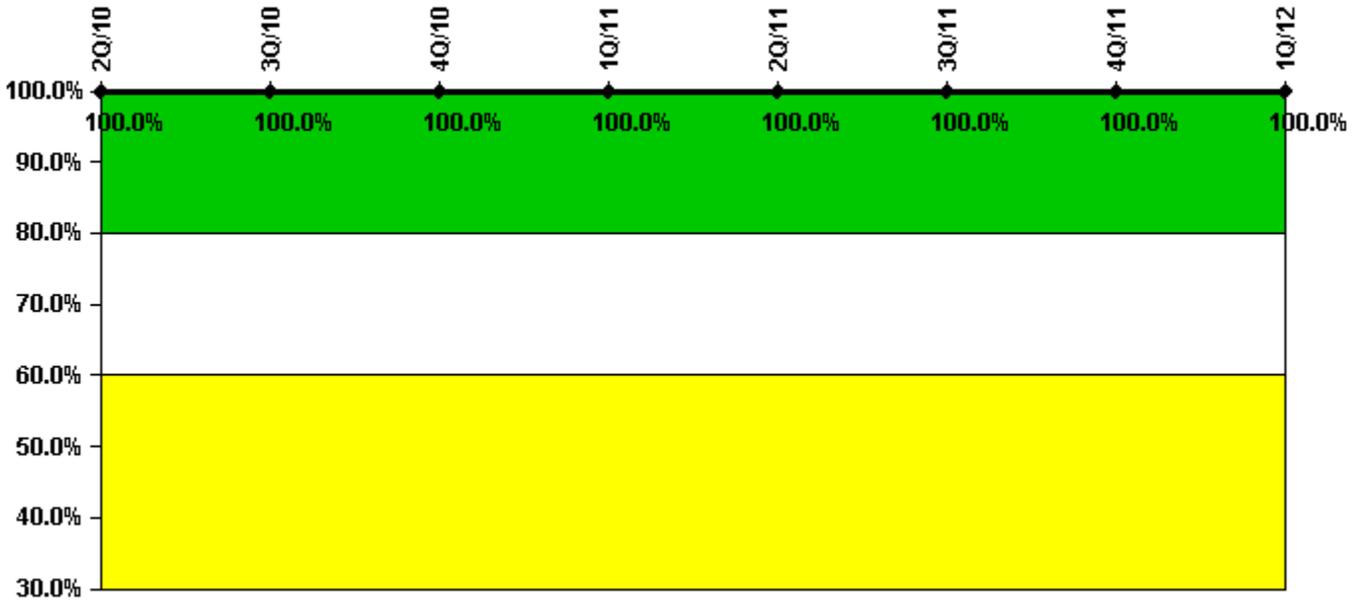
Thresholds: White < 90.0% Yellow < 70.0%

Notes

Drill/Exercise Performance	2Q/10	3Q/10	4Q/10	1Q/11	2Q/11	3Q/11	4Q/11	1Q/12
Successful opportunities	9.0	58.0	12.0	51.0	77.0	62.0	35.0	96.0
Total opportunities	10.0	61.0	13.0	51.0	78.0	62.0	37.0	97.0
Indicator value	97.8%	97.5%	97.5%	97.6%	97.5%	98.1%	97.7%	97.8%

Licensee Comments: none

ERO Drill Participation



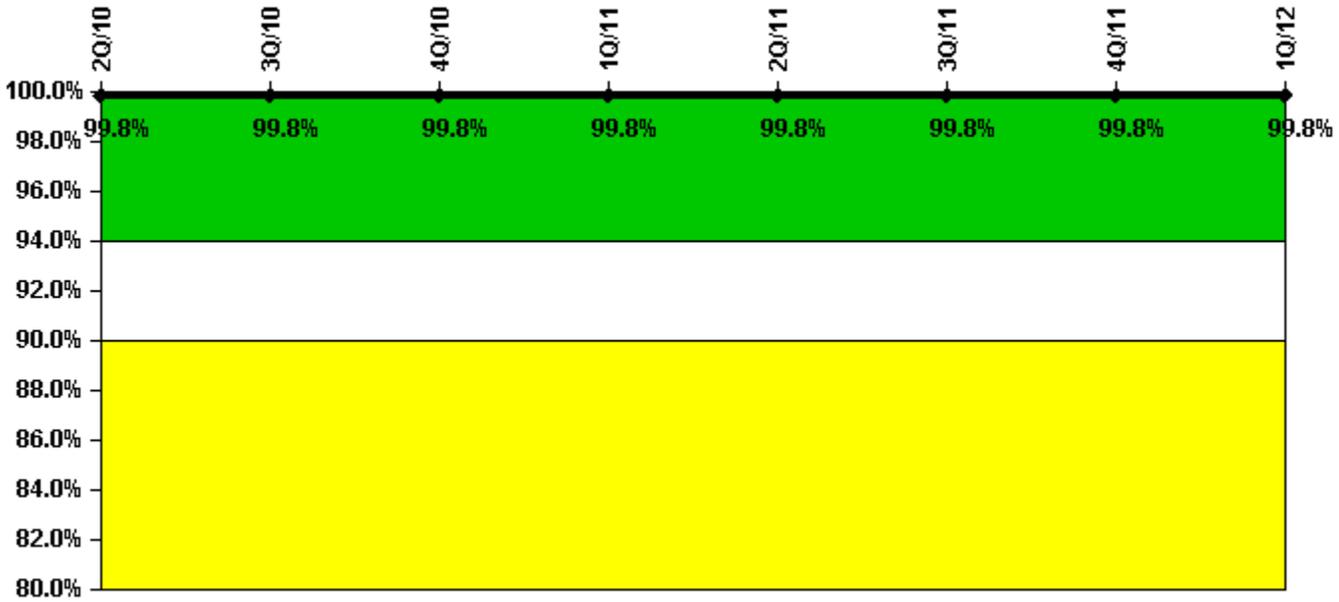
Thresholds: White < 80.0% Yellow < 60.0%

Notes

ERO Drill Participation	2Q/10	3Q/10	4Q/10	1Q/11	2Q/11	3Q/11	4Q/11	1Q/12
Participating Key personnel	74.0	72.0	74.0	76.0	74.0	75.0	74.0	74.0
Total Key personnel	74.0	72.0	74.0	76.0	74.0	75.0	74.0	74.0
Indicator value	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Licensee Comments: none

Alert & Notification System



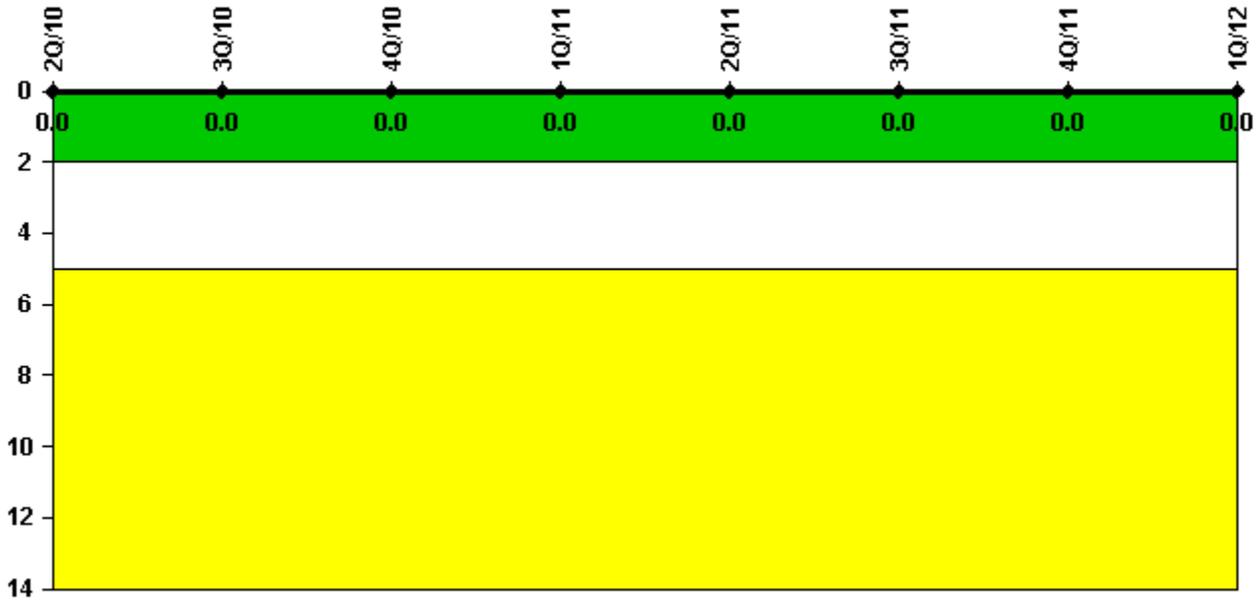
Thresholds: White < 94.0% Yellow < 90.0%

Notes

Alert & Notification System	2Q/10	3Q/10	4Q/10	1Q/11	2Q/11	3Q/11	4Q/11	1Q/12
Successful siren-tests	3890	3959	3956	3902	3893	3893	3903	3962
Total sirens-tests	3904	3965	3965	3904	3904	3904	3904	3965
Indicator value	99.8%	99.8%	99.8%	99.8%	99.8%	99.8%	99.8%	99.8%

Licensee Comments: none

Occupational Exposure Control Effectiveness



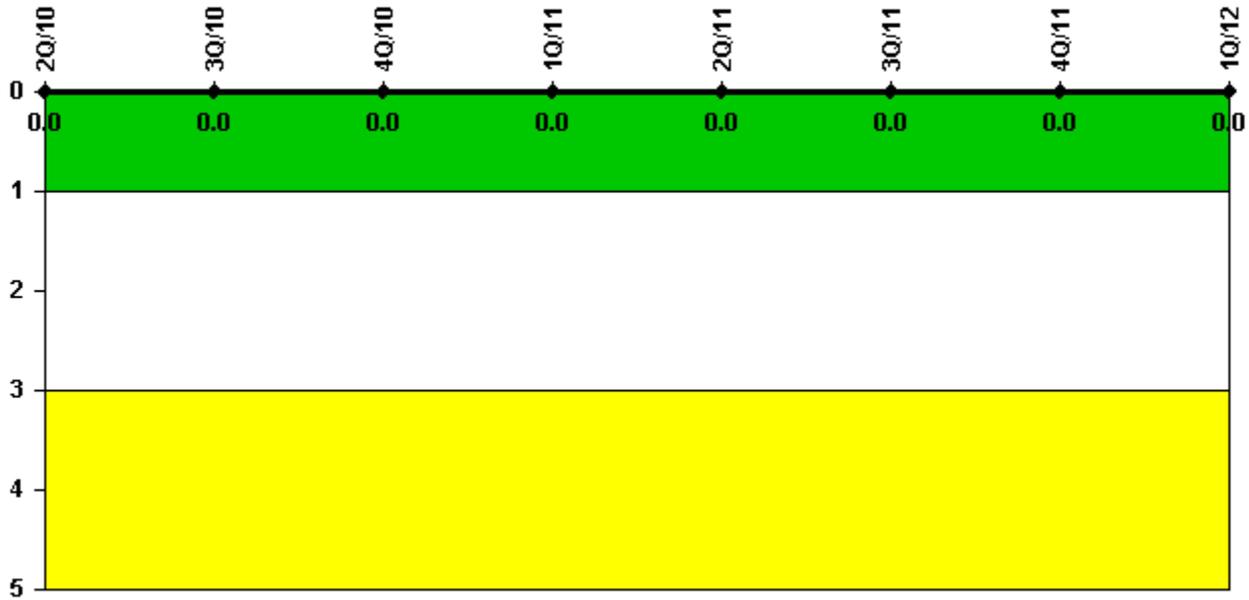
Thresholds: White > 2.0 Yellow > 5.0

Notes

Occupational Exposure Control Effectiveness	2Q/10	3Q/10	4Q/10	1Q/11	2Q/11	3Q/11	4Q/11	1Q/12
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	2Q/10	3Q/10	4Q/10	1Q/11	2Q/11	3Q/11	4Q/11	1Q/12
RETS/ODCM occurrences	0	0	0	0	0	0	0	0
Indicator value	0	0	0	0	0	0	0	0

Licensee Comments: none

[Security](#) information not publicly available.