

# Crystal River 3

## 1Q/2012 Performance Indicators

Crystal River 3 has been shutdown since September 2009. Because the Unplanned Scrams with Complications (USwC) and Mitigating Systems Performance Index (MSPI) performance indicators (PIs) are heavily influenced by the operational status of the reactor, NRC staff has evaluated the validity of these PIs. The NRC also discussed the question of PI validity with NEI and other external stakeholders during the July 13, 2011, ROP working group meeting. Because the reactor has not been critical for two years, there have been no opportunities for a scram that would count in the USwC indicator. Similarly, the MSPI values are skewed because of the very low number of critical hours in three years. For these reasons, the staff has determined that these PIs no longer provide valid indications of performance.

Licensee's General Comments: none

### Unplanned Scrams per 7000 Critical Hrs



Thresholds: White > 3.0 Yellow > 6.0 Red > 25.0

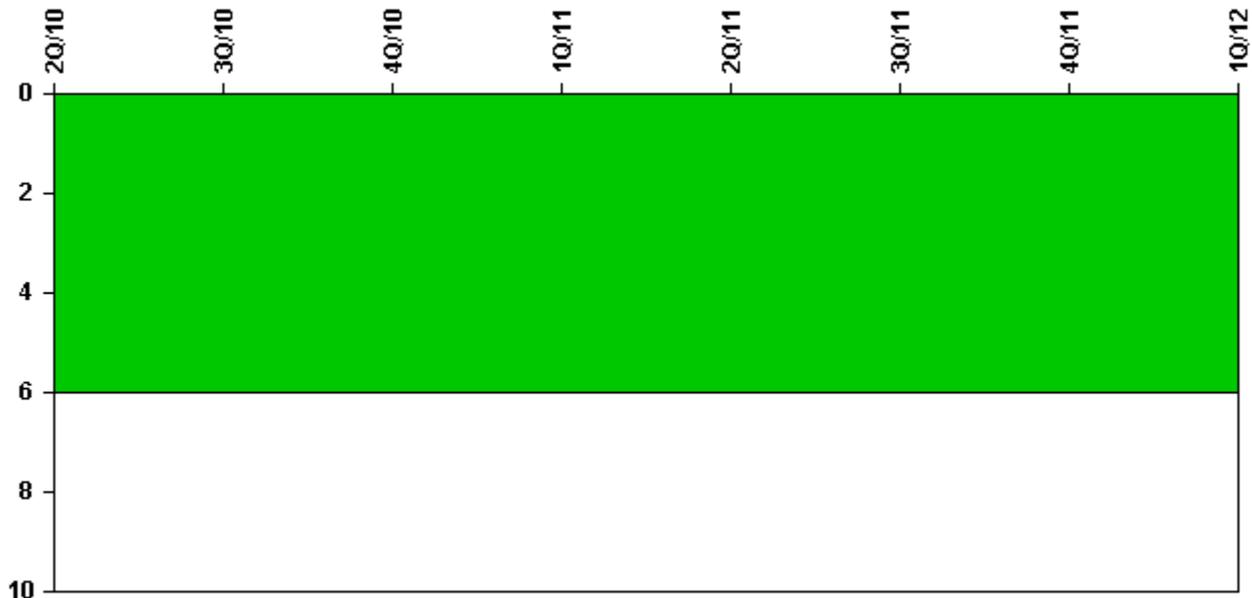
### Notes

Unplanned Scrams per 7000 Critical Hrs	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	0
Critical hours	0	0	0	0	0	0	0	0
Indicator value	N/A							

Licensee Comments:

2Q/10: CR-3 went below 2,400 critical hours due to an extended outage caused by delamination of the Reactor Building during Steam Generator Replacement activities

## Unplanned Power Changes per 7000 Critical Hrs



Thresholds: White > 6.0

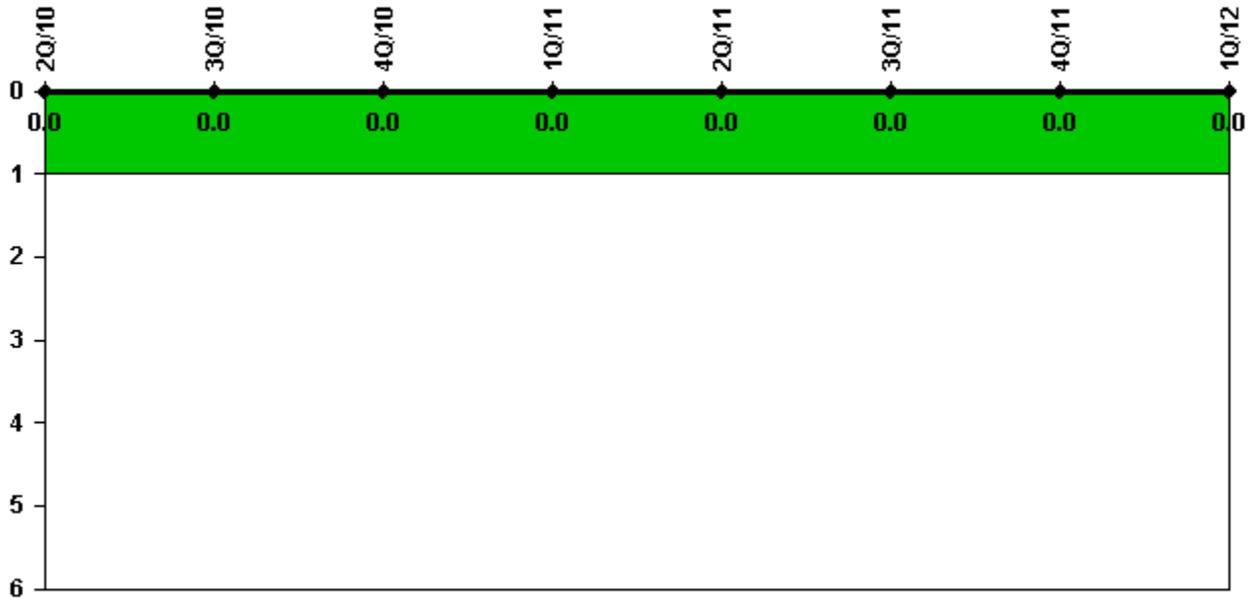
### Notes

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	0	0	0	0	0	0	0	0
Indicator value	N/A							

Licensee Comments:

2Q/10: CR-3 went below 2,400 critical hours due to an extended outage caused by delamination of the Reactor Building during Steam Generator Replacement activities

## Unplanned Scrams with Complications



Thresholds: White > 1.0

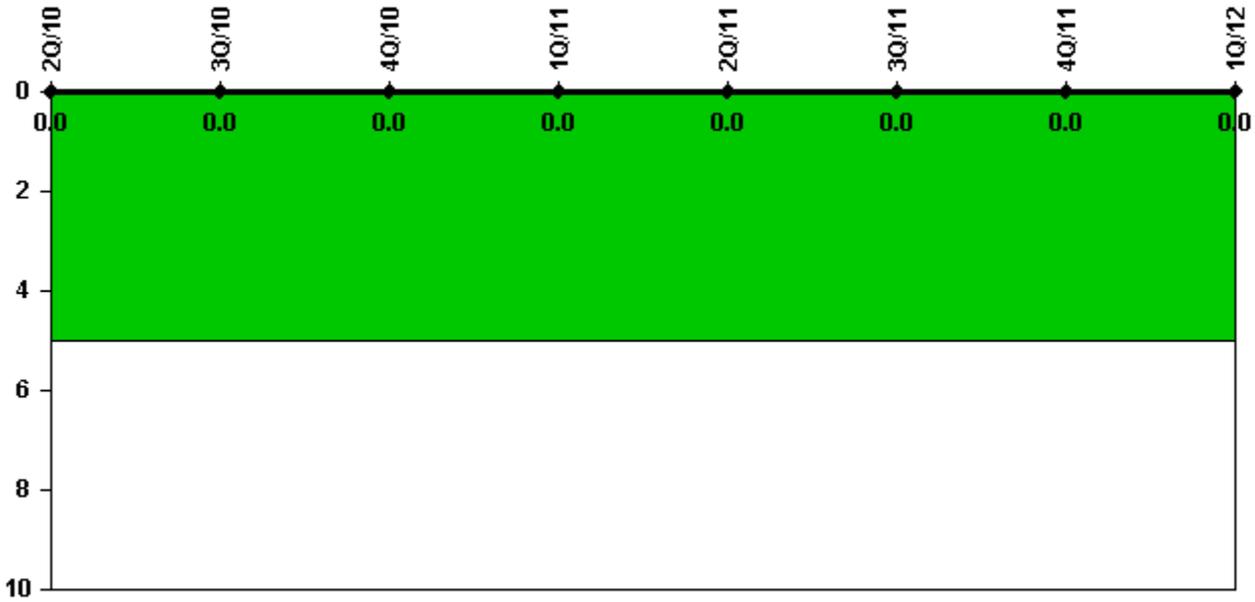
### Notes

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	0
Indicator value	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Licensee Comments:

2Q/11: Proposed FAQ 11-09 has been submitted to consider adding guidance to NEI 99-02 to address the CR-3 extended shutdown condition.

## Safety System Functional Failures (PWR)



Thresholds: White > 5.0

### Notes

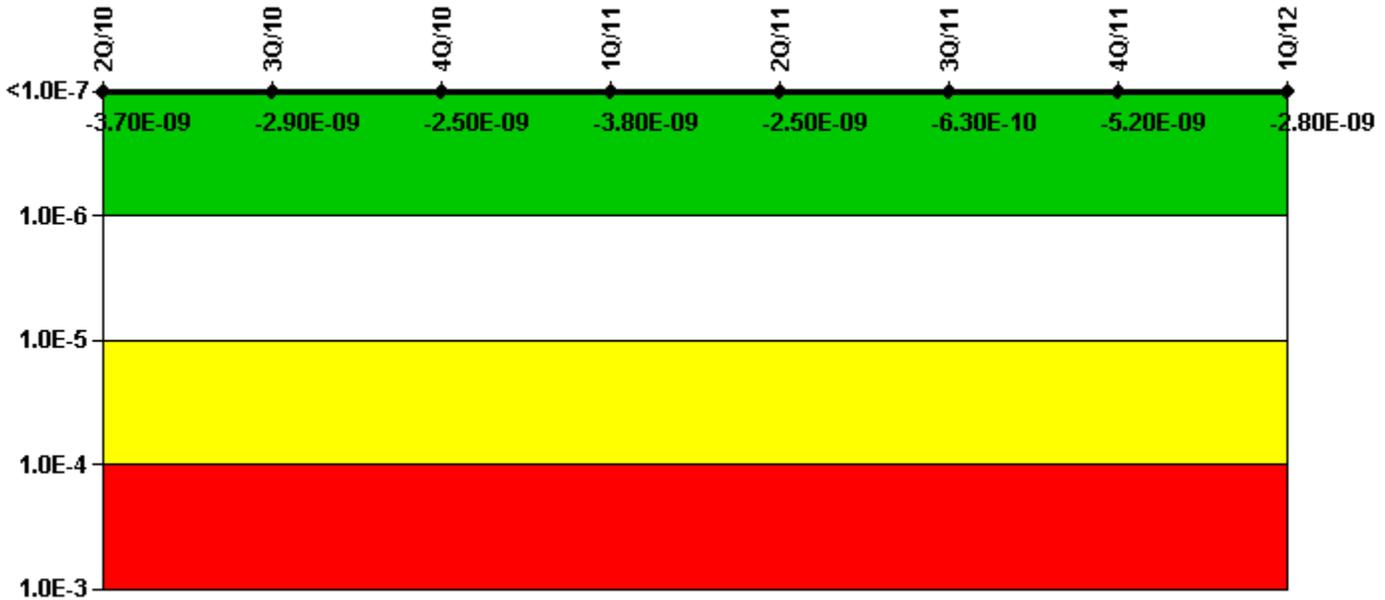
Safety System Functional Failures (PWR)	2Q/10	3Q/10	4Q/10	1Q/11	2Q/11	3Q/11	4Q/11	1Q/12
Safety System Functional Failures	0	0	0	0	0	0	0	0
Indicator value	0	0	0	0	0	0	0	0

Licensee Comments:

4Q/10: LER 50-302/2010-001-00, As-Found Cycle 16 Pressurizer Code Safety Valve Setpoints Outside Improved Technical Specification Limit, dated 12/08/10 (ML103470132). UPDATE 04/07/2011: This SSFF was rescinded by LER 50-302/2010-001-002 (Accession Number ML110810067) based on a vendor evaluation of significance. This change has no affect on PI color.

4Q/10: LER 50-302/2010-001-00, As-Found Cycle 16 Pressurizer Code Safety Valve Setpoints Outside Improved Technical Specification Limit, dated 12/08/10 (ML103470132).

# 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 ( $\Delta$ CDF)	-2.38E-09	-1.55E-09	-8.71E-10	-2.14E-09	-8.44E-10	1.04E-09	-3.56E-09	-1.13E-09
URI ( $\Delta$ CDF)	-1.31E-09	-1.31E-09	-1.68E-09	-1.68E-09	-1.68E-09	-1.68E-09	-1.68E-09	-1.68E-09
PLE	NO							
Indicator value	-3.70E-09	-2.90E-09	-2.50E-09	-3.80E-09	-2.50E-09	-6.30E-10	-5.20E-09	-2.80E-09

Licensee Comments:

2Q/11: Proposed FAQ 11-09 has been submitted to consider adding guidance to NEI 99-02 to address the CR-3 extended shutdown condition and recovery after startup.

# Mitigating Systems Performance Index, High Pressure Injection System



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

## Notes

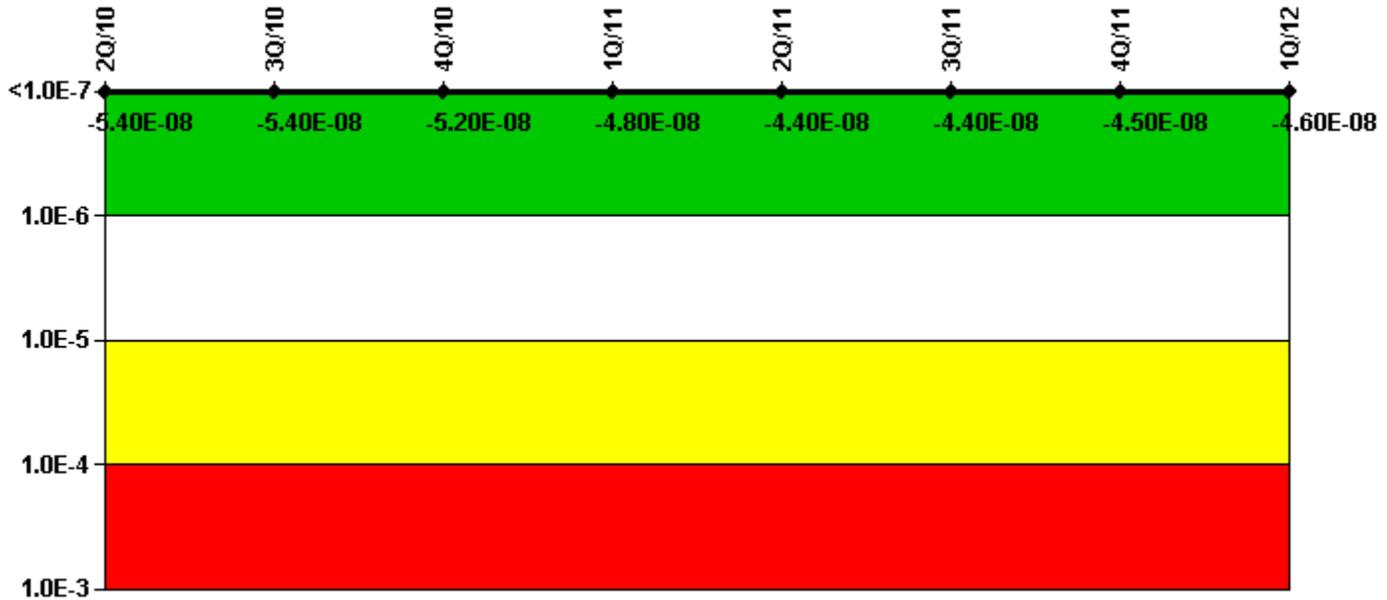
Mitigating Systems Performance Index, High Pressure Injection System	2Q/10	3Q/10	4Q/10	1Q/11	2Q/11	3Q/11	4Q/11	1Q/12
UAI ( $\Delta$ CDF)	9.98E-09	1.41E-08	1.74E-08	-4.88E-09	-1.86E-09	5.00E-09	2.48E-08	6.32E-08
URI ( $\Delta$ CDF)	-1.01E-08	-1.00E-08	-1.00E-08	-9.96E-09	-9.91E-09	-9.87E-09	-9.83E-09	-9.78E-09
PLE	NO							
Indicator value	-7.00E-11	4.00E-09	7.40E-09	-1.50E-08	-1.20E-08	-4.90E-09	1.50E-08	5.30E-08

Licensee Comments:

2Q/11: Proposed FAQ 11-09 has been submitted to consider adding guidance to NEI 99-02 to address the CR-3 extended shutdown condition and recovery after startup.

3Q/10: Changes were made to the CR-3 Basis Document to account for the extended refueling outage due to the Reactor Building delamination issue. INPO CDE was updated.

# Mitigating Systems Performance Index, Heat Removal System



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

## Notes

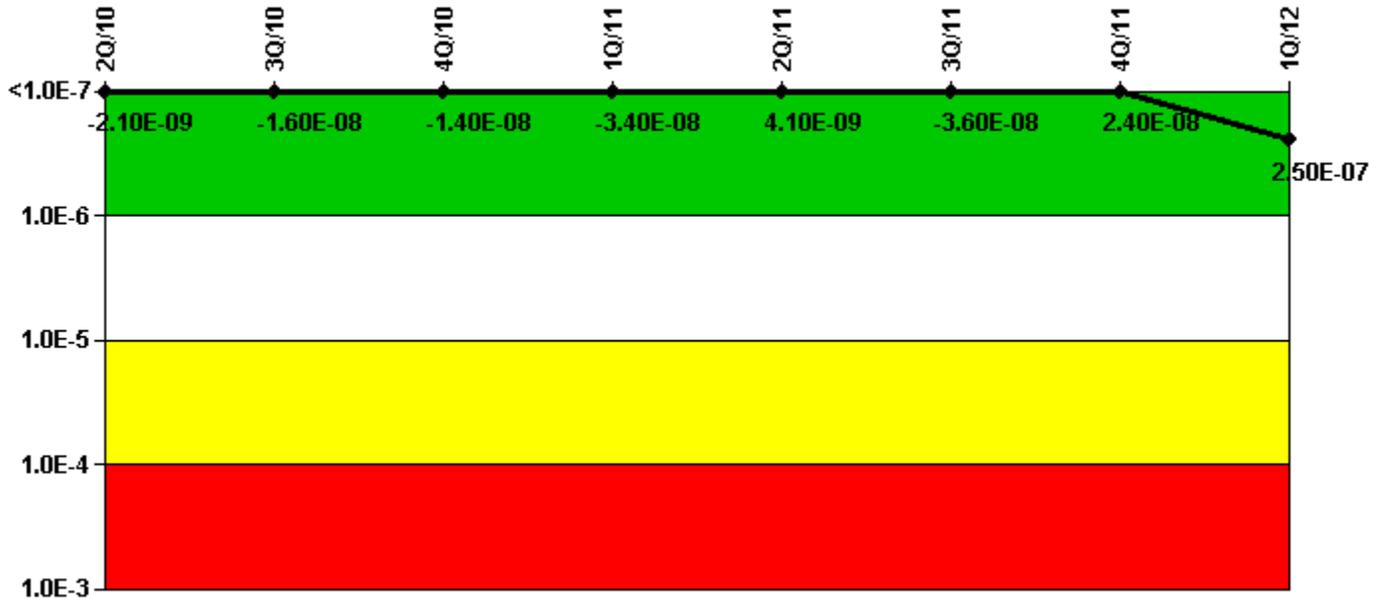
Mitigating Systems Performance Index, Heat Removal System	2Q/10	3Q/10	4Q/10	1Q/11	2Q/11	3Q/11	4Q/11	1Q/12
UAI ( $\Delta$ CDF)	-6.54E-09	-6.54E-09	-6.28E-09	-4.90E-09	-2.37E-09	-3.52E-09	-5.87E-09	-9.19E-09
URI ( $\Delta$ CDF)	-4.76E-08	-4.72E-08	-4.59E-08	-4.30E-08	-4.17E-08	-4.02E-08	-3.88E-08	-3.73E-08
PLE	NO							
Indicator value	-5.40E-08	-5.40E-08	-5.20E-08	-4.80E-08	-4.40E-08	-4.40E-08	-4.50E-08	-4.60E-08

Licensee Comments:

2Q/11: Proposed FAQ 11-09 has been submitted to consider adding guidance to NEI 99-02 to address the CR-3 extended shutdown condition and recovery after startup.

3Q/10: Changes were made to the CR-3 Basis Document to account for the extended refueling outage due to the Reactor Building delamination issue. INPO CDE was updated.

# Mitigating Systems Performance Index, Residual Heat Removal System



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

## Notes

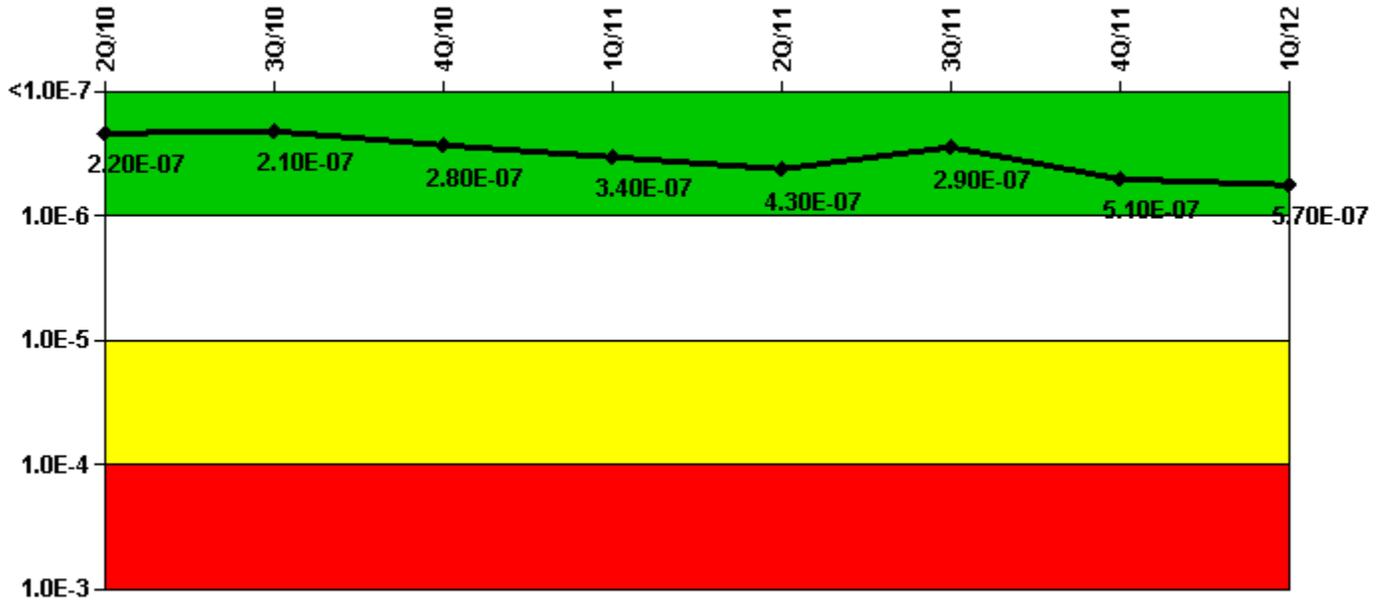
Mitigating Systems Performance Index, Residual Heat Removal System	2Q/10	3Q/10	4Q/10	1Q/11	2Q/11	3Q/11	4Q/11	1Q/12
UAI ( $\Delta$ CDF)	2.75E-08	1.36E-08	1.73E-08	-6.36E-10	3.87E-08	-5.17E-10	6.19E-08	2.87E-07
URI ( $\Delta$ CDF)	-2.95E-08	-3.01E-08	-3.16E-08	-3.31E-08	-3.45E-08	-3.60E-08	-3.74E-08	-3.88E-08
PLE	NO							
Indicator value	-2.10E-09	-1.60E-08	-1.40E-08	-3.40E-08	4.10E-09	-3.60E-08	2.40E-08	2.50E-07

Licensee Comments:

2Q/11: Proposed FAQ 11-09 has been submitted to consider adding guidance to NEI 99-02 to address the CR-3 extended shutdown condition and recovery after startup.

3Q/10: Changes were made to the CR-3 Basis Document to account for the extended refueling outage due to the Reactor Building delamination issue. INPO CDE was updated.

# Mitigating Systems Performance Index, Cooling Water Systems



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

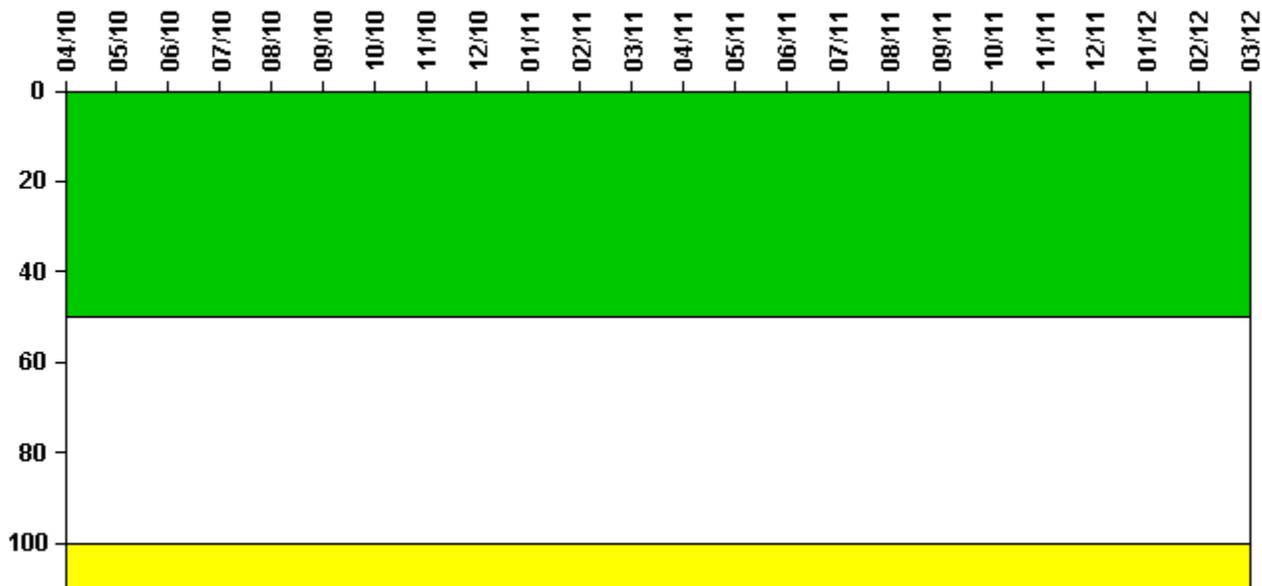
## Notes

Mitigating Systems Performance Index, Cooling Water Systems	2Q/10	3Q/10	4Q/10	1Q/11	2Q/11	3Q/11	4Q/11	1Q/12
UAI ( $\Delta$ CDF)	2.33E-07	2.21E-07	2.80E-07	3.34E-07	4.24E-07	2.81E-07	4.98E-07	5.51E-07
URI ( $\Delta$ CDF)	-1.34E-08	-1.09E-08	4.49E-09	7.23E-09	1.01E-08	1.31E-08	1.62E-08	1.95E-08
PLE	NO	NO	NO	NO	NO	NO	NO	NO
Indicator value	2.20E-07	2.10E-07	2.80E-07	3.40E-07	4.30E-07	2.90E-07	5.10E-07	5.70E-07

Licensee Comments:

2Q/11: Proposed FAQ 11-09 has been submitted to consider adding guidance to NEI 99-02 to address the CR-3 extended shutdown condition and recovery after startup.

# Reactor Coolant System Activity



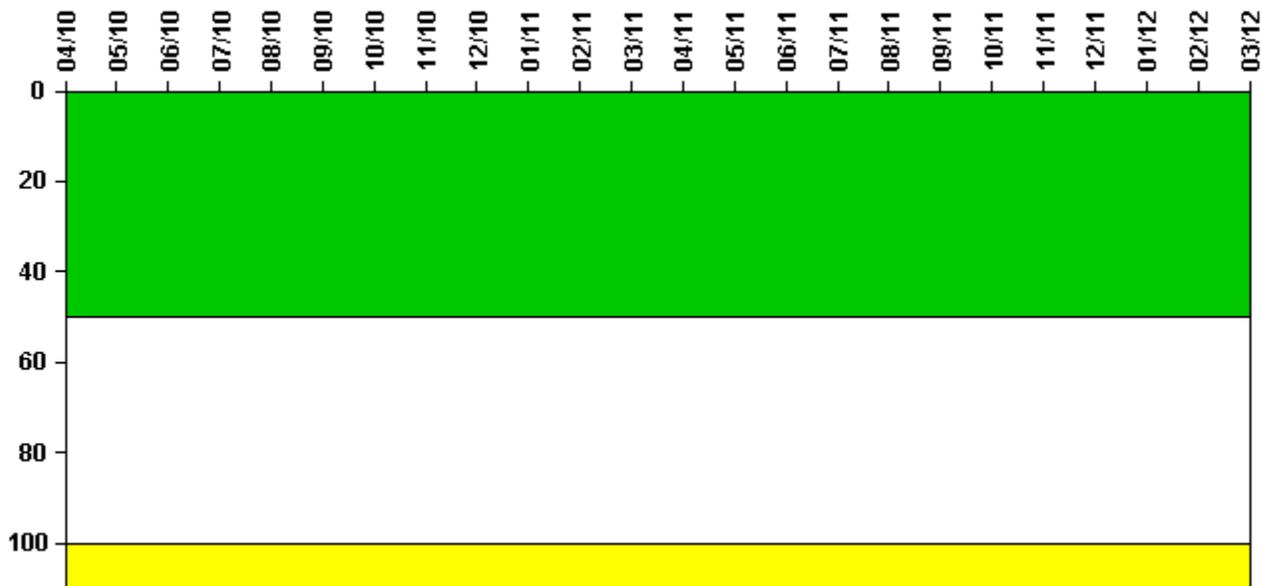
Thresholds: White > 50.0 Yellow > 100.0

## 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	N/A	N/A	N/A	N/A	N/A	N/A						
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	N/A	N/A	N/A	N/A	N/A	N/A						
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	N/A	N/A	N/A	N/A	N/A	N/A						
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	N/A	N/A	N/A	N/A	N/A	N/A						

Licensee Comments: none

# Reactor Coolant System Leakage



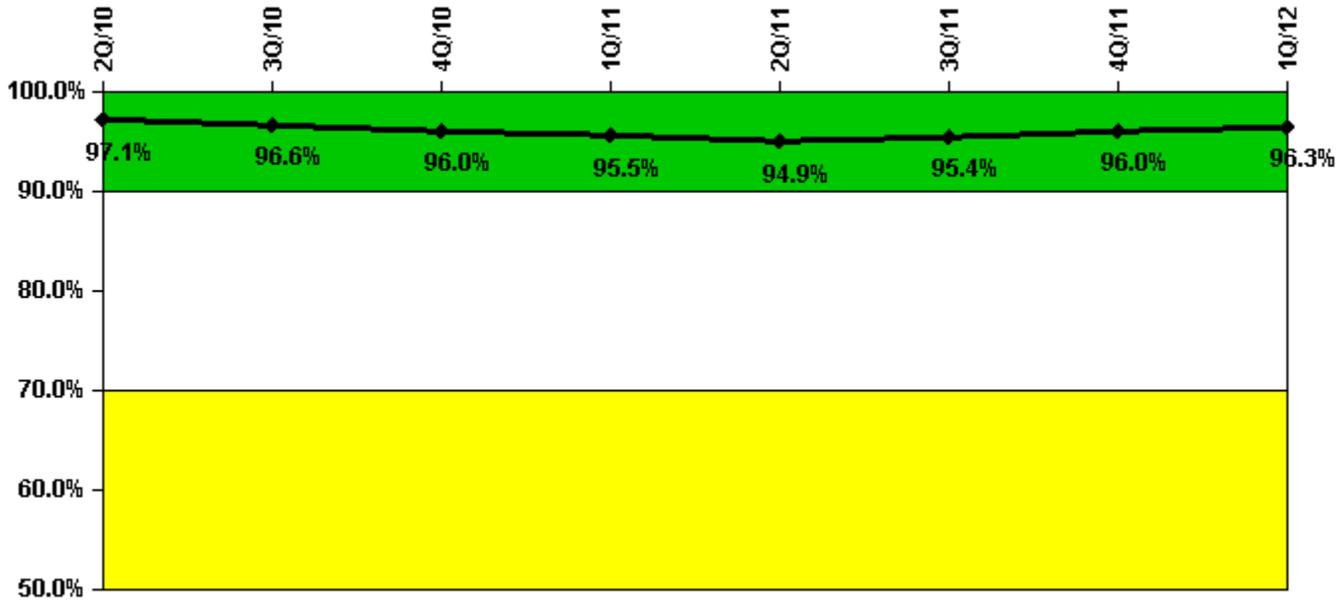
Thresholds: White > 50.0 Yellow > 100.0

## 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	N/A	N/A	N/A	N/A	N/A	N/A						
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	N/A	N/A	N/A	N/A	N/A	N/A						
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	N/A	N/A	N/A	N/A	N/A	N/A						
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	N/A	N/A	N/A	N/A	N/A	N/A						

Licensee Comments: none

## Drill/Exercise Performance



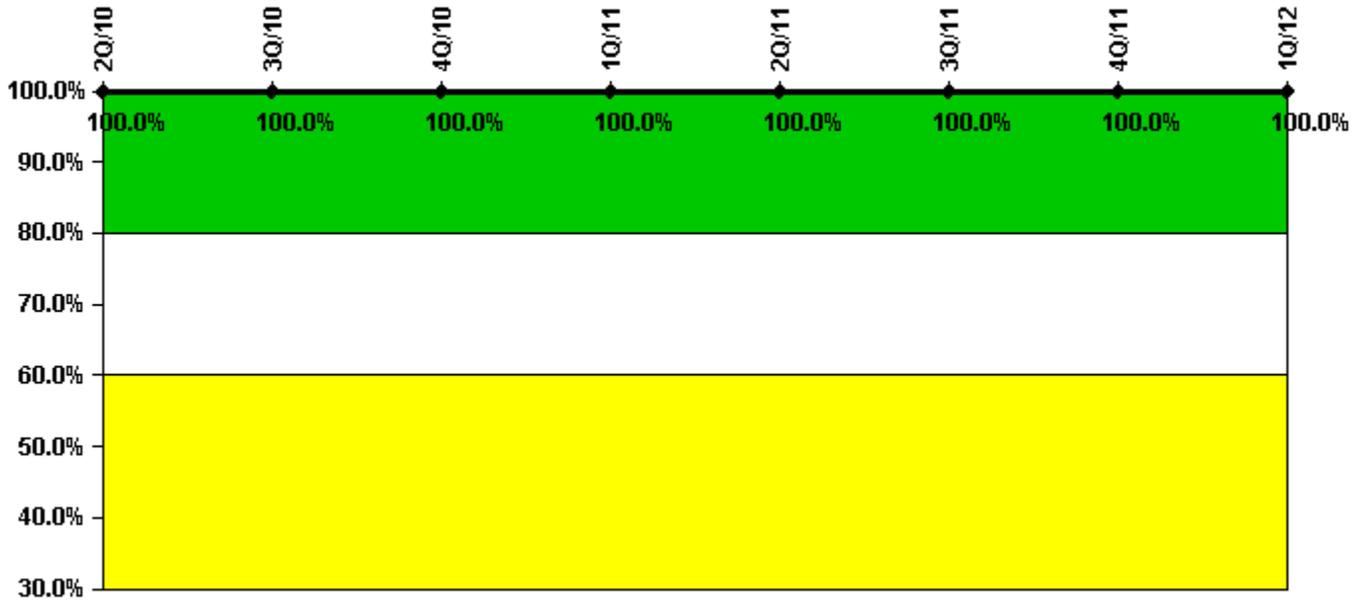
Thresholds: White < 90.0% Yellow < 70.0%

### Notes

Drill/Exercise Performance	2Q/10	3Q/10	4Q/10	1Q/11	2Q/11	3Q/11	4Q/11	1Q/12
Successful opportunities	50.0	32.0	32.0	28.0	11.0	24.0	30.0	29.0
Total opportunities	52.0	33.0	34.0	30.0	12.0	24.0	30.0	30.0
Indicator value	97.1%	96.6%	96.0%	95.5%	94.9%	95.4%	96.0%	96.3%

Licensee Comments: none

## ERO Drill Participation



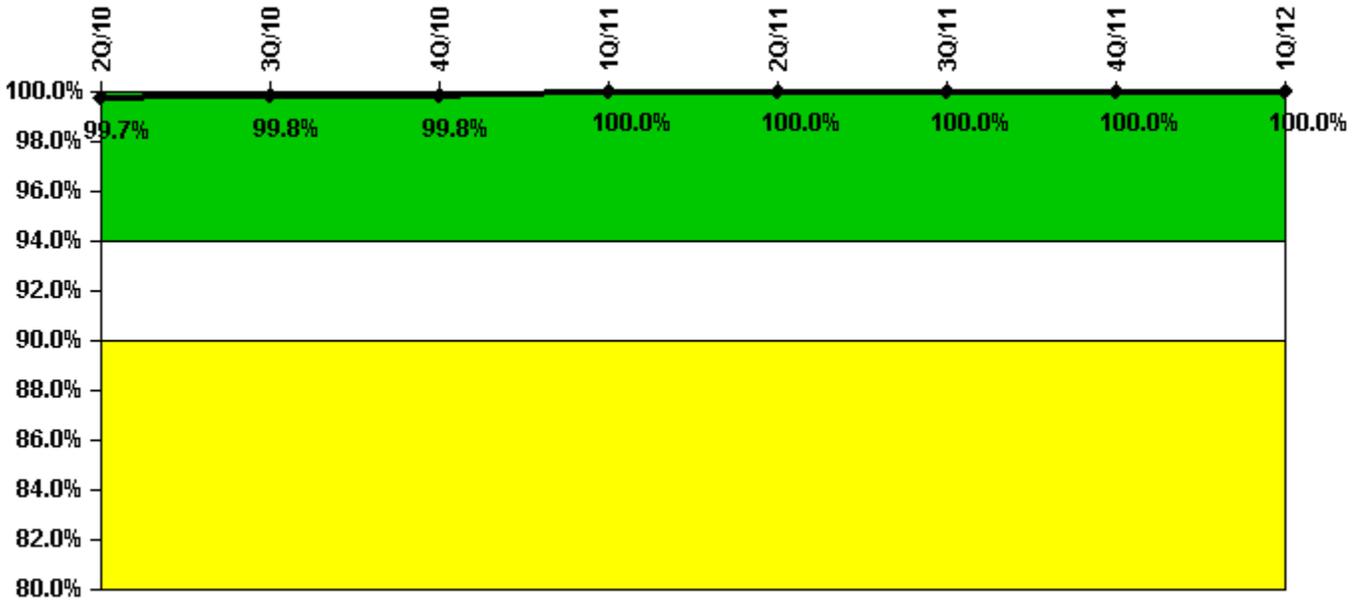
Thresholds: White < 80.0% Yellow < 60.0%

### Notes

ERO Drill Participation	2Q/10	3Q/10	4Q/10	1Q/11	2Q/11	3Q/11	4Q/11	1Q/12
Participating Key personnel	76.0	75.0	69.0	71.0	69.0	69.0	70.0	68.0
Total Key personnel	76.0	75.0	69.0	71.0	69.0	69.0	70.0	68.0
Indicator value	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Licensee Comments: none

# Alert & Notification System



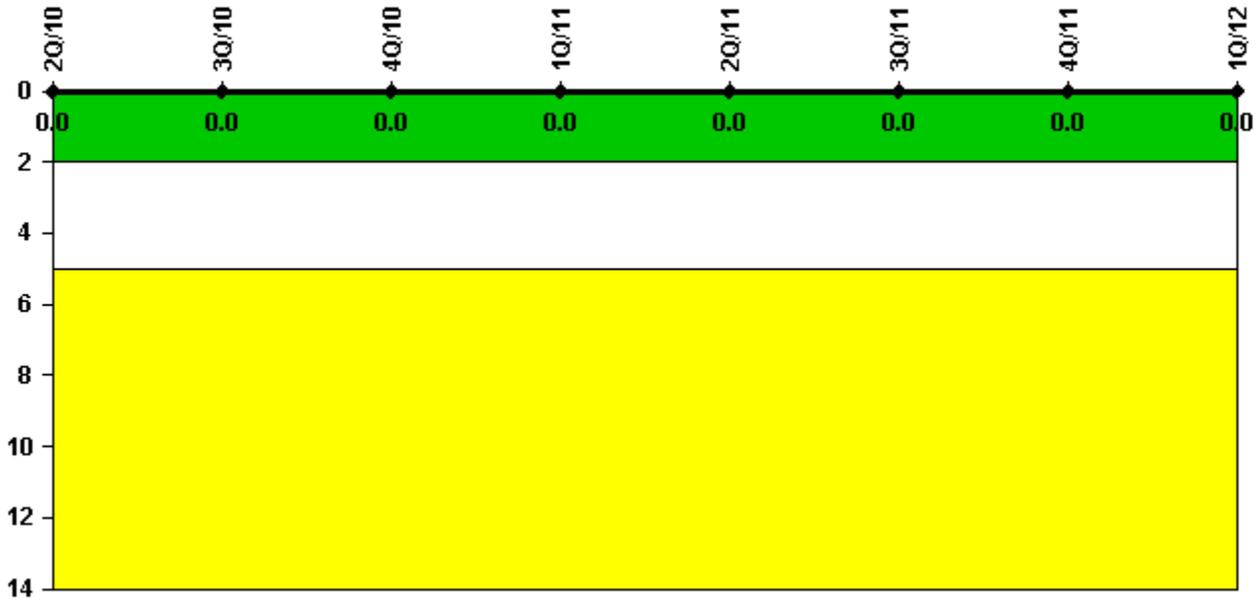
Thresholds: White < 94.0% Yellow < 90.0%

## Notes

Alert & Notification System	2Q/10	3Q/10	4Q/10	1Q/11	2Q/11	3Q/11	4Q/11	1Q/12
Successful siren-tests	1040	1040	1080	1000	1039	1080	1028	1040
Total sirens-tests	1040	1040	1080	1000	1040	1080	1028	1040
Indicator value	99.7%	99.8%	99.8%	100.0%	100.0%	100.0%	100.0%	100.0%

Licensee Comments: none

# Occupational Exposure Control Effectiveness



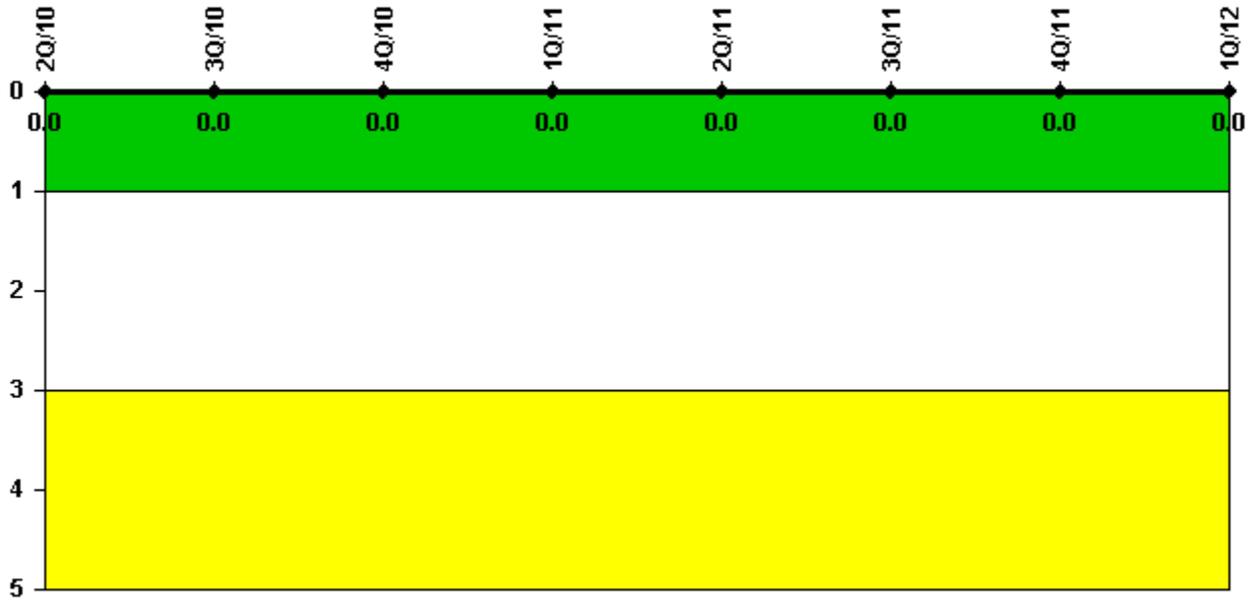
Thresholds: White > 2.0 Yellow > 5.0

## Notes

Occupational Exposure Control Effectiveness	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
<b>Indicator value</b>	<b>0</b>							

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.