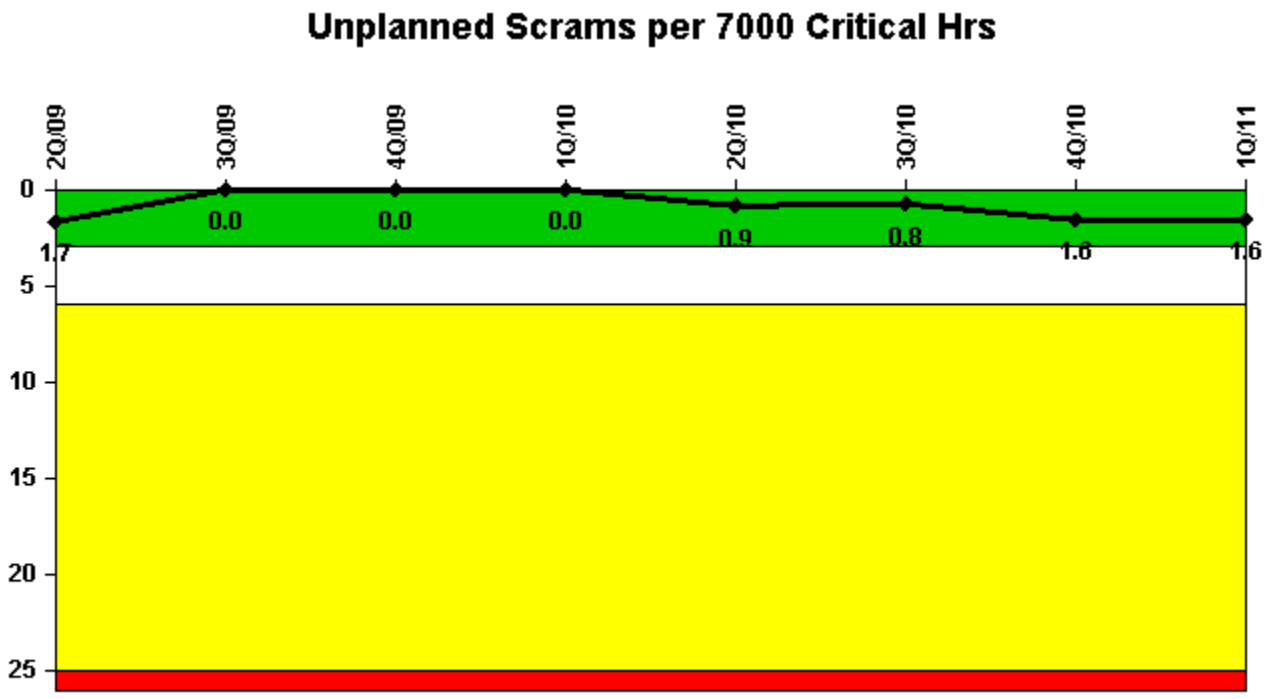
# Watts Bar 1

## 1Q/2011 Performance Indicators

Licensee's General Comments: During the 4Q2011 Watts Bar issued a CAFTA PRA model. This resulted in a revision of MSPI Basis Document (R1) in accordance with NEI-99-02. The revision changed the PRA values for the MSPI Core Damage Frequency and the unavailability and unreliability values. This change is effective 1Q2011. Details are available in the Watts Bar Basis Document.



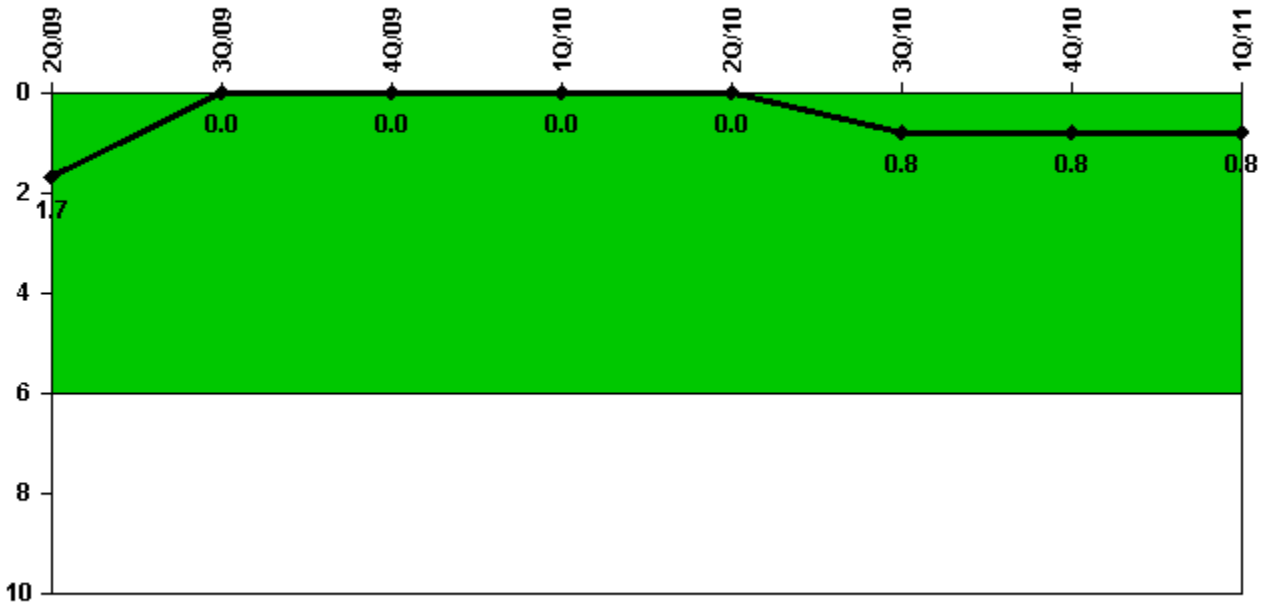

**Thresholds: White > 3.0 Yellow > 6.0 Red > 25.0**

### Notes

| Unplanned Scrams per 7000 Critical Hrs | 2Q/09 | 3Q/09 | 4Q/09 | 1Q/10 | 2Q/10 | 3Q/10 | 4Q/10 | 1Q/11 |
|---|---|---|---|---|---|---|---|---|
| Unplanned scrams | 0 | 0 | 0 | 0 | 1.0 | 0 | 1.0 | 0 |
| Critical hours | 2184.0 | 1968.0 | 1753.9 | 2159.0 | 2119.7 | 2208.0 | 2126.2 | 2159.0 |
| | | | | | | | | |
| **Indicator value** | **1.7** | **0** | **0** | **0** | **0.9** | **0.8** | **1.6** | **1.6** |

Licensee Comments: none

## Unplanned Power Changes per 7000 Critical Hrs



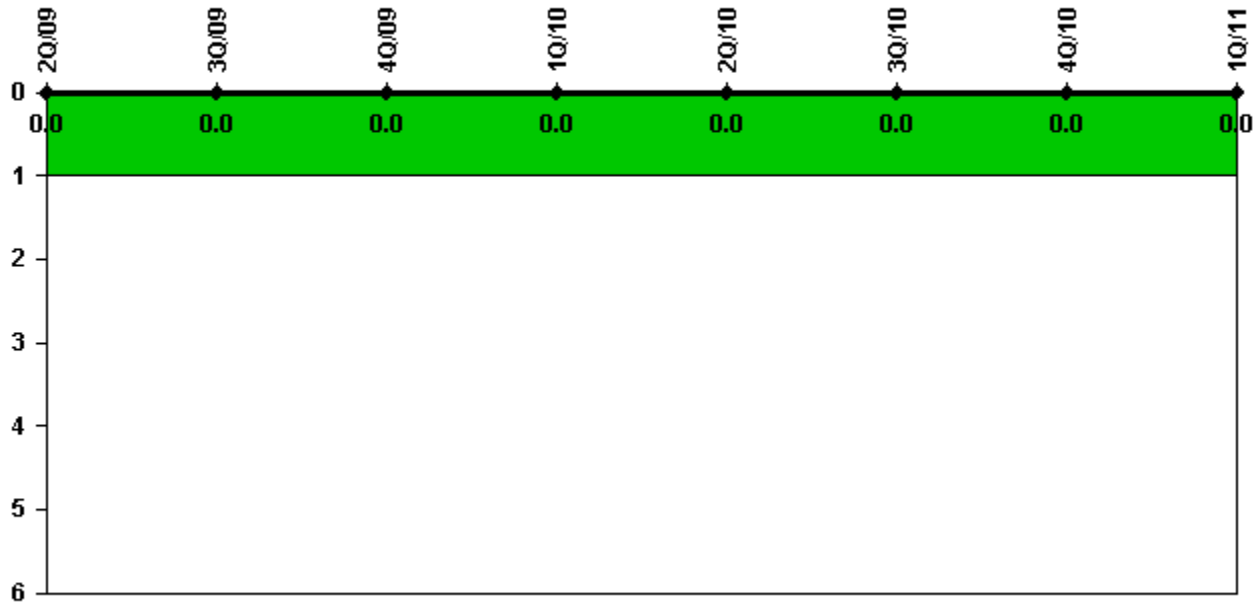

**Thresholds: White > 6.0**

## Notes

| Unplanned Power Changes per 7000 Critical Hrs | 2Q/09 | 3Q/09 | 4Q/09 | 1Q/10 | 2Q/10 | 3Q/10 | 4Q/10 | 1Q/11 |
|---|---|---|---|---|---|---|---|---|
| Unplanned power changes | 0 | 0 | 0 | 0 | 0 | 1.0 | 0 | 0 |
| Critical hours | 2184.0 | 1968.0 | 1753.9 | 2159.0 | 2119.7 | 2208.0 | 2126.2 | 2159.0 |
| | | | | | | | | |
| **Indicator value** | **1.7** | **0** | **0** | **0** | **0** | **0.8** | **0.8** | **0.8** |

Licensee Comments: none

## Unplanned Scrams with Complications



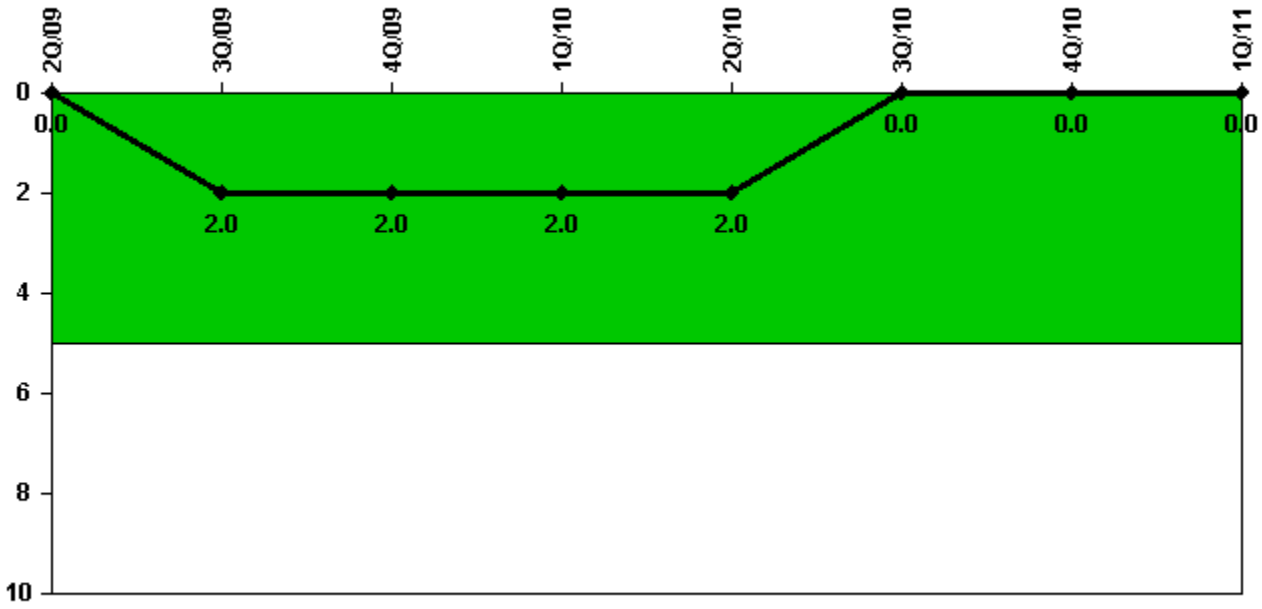

**Thresholds: White > 1.0**

### Notes

| Unplanned Scrams with Complications | 2Q/09 | 3Q/09 | 4Q/09 | 1Q/10 | 2Q/10 | 3Q/10 | 4Q/10 | 1Q/11 |
|---|---|---|---|---|---|---|---|---|
| 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)



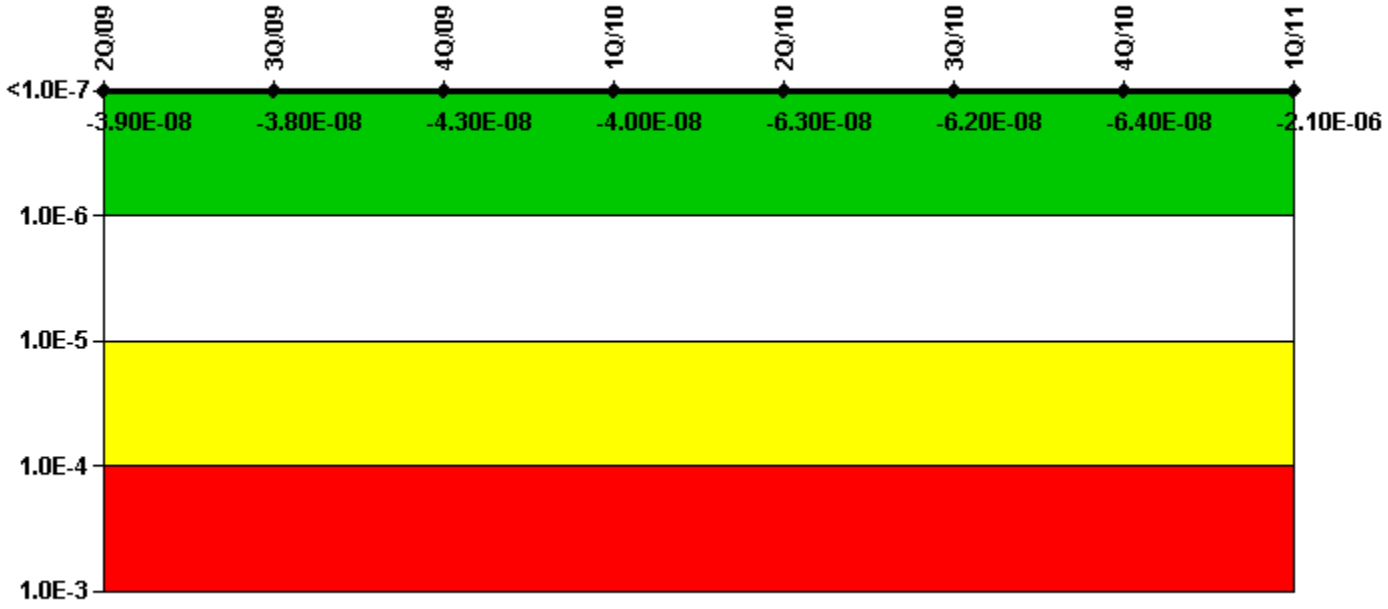

**Thresholds: White > 5.0**

### Notes

| Safety System Functional Failures (PWR) | 2Q/09 | 3Q/09 | 4Q/09 | 1Q/10 | 2Q/10 | 3Q/10 | 4Q/10 | 1Q/11 |
|---|---|---|---|---|---|---|---|---|
| Safety System Functional Failures | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 |
| | | | | | | | | |
| **Indicator value** | **0** | **2** | **2** | **2** | **2** | **0** | **0** | **0** |

Licensee Comments: none

## Mitigating Systems Performance Index, Emergency AC Power System




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

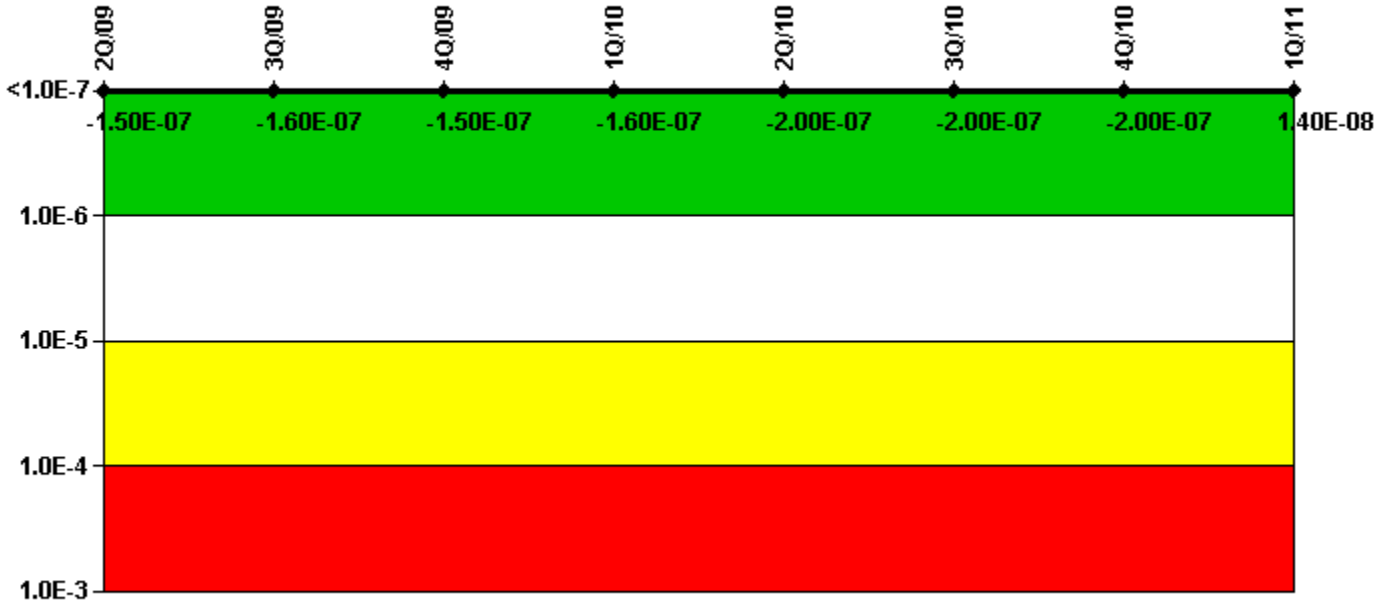
### Notes

| Mitigating Systems Performance Index, Emergency AC Power System | 2Q/09 | 3Q/09 | 4Q/09 | 1Q/10 | 2Q/10 | 3Q/10 | 4Q/10 | 1Q/11 |
|---|---|---|---|---|---|---|---|---|
| UAI (ΔCDF) | 5.40E-08 | 5.70E-08 | 5.20E-08 | 5.57E-08 | 3.25E-08 | 3.31E-08 | 3.12E-08 | 4.69E-07 |
| URI (ΔCDF) | -9.30E-08 | -9.50E-08 | -9.50E-08 | -9.54E-08 | -9.54E-08 | -9.54E-08 | -9.54E-08 | -2.58E-06 |
| PLE | NO | NO | NO | NO | NO | NO | NO | NO |
| | | | | | | | | |
| **Indicator value** | **-3.90E-08** | **-3.80E-08** | **-4.30E-08** | **-4.00E-08** | **-6.30E-08** | **-6.20E-08** | **-6.40E-08** | **-2.10E-06** |

Licensee Comments:

1Q/11: Risk Cap Invoked. During the 4Q2010 Watts Bar issued a CAFTA PRA model. The revision changed the PRA values for the MSPI Core Damage Frequency and the unavailability and unreliability values. This change is effective 1Q2011. The details are available in the Watts Bar Basis Document.

## 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/09 | 3Q/09 | 4Q/09 | 1Q/10 | 2Q/10 | 3Q/10 | 4Q/10 | 1Q/11 |
|---|---|---|---|---|---|---|---|---|
| UAI (ΔCDF) | -6.00E-09 | -7.29E-09 | -5.49E-09 | -1.10E-08 | -1.41E-08 | -1.52E-08 | -1.54E-08 | -2.90E-08 |
| URI (ΔCDF) | -1.48E-07 | -1.48E-07 | -1.48E-07 | -1.48E-07 | -1.89E-07 | -1.89E-07 | -1.89E-07 | 4.34E-08 |
| PLE | NO | NO | NO | NO | NO | NO | NO | NO |
| | | | | | | | | |
| **Indicator value** | **-1.50E-07** | **-1.60E-07** | **-1.50E-07** | **-1.60E-07** | **-2.00E-07** | **-2.00E-07** | **-2.00E-07** | **1.40E-08** |

Licensee Comments:

1Q/11: During Fourth quarter of 2010 Watts Bar issued a CAFTA PRA model. The revision changed the PRA values for the MSPI Core Damage Frequency, and the unavailability and unreliability values. This change is effective first quarter 2011. The details are available in Watts Bar Basis Document.

4Q/10: Changed PRA Parameter(s). During PRA update for 1Q2011 data that was initially entered caused change in this quarter which was not intended. The data was corrected (returned to previous) and record was reapproved. No change in MSPI resulted for this quarter.

3Q/10: Changed PRA Parameter(s). During PRA update for 1Q2011 data that was initially entered caused change in this quarter which was not intended. The data was corrected (retunred to previous) and record was reapproved. No change in MSPI resulted for this quarter.

2Q/10: Changed PRA Parameter(s). During PRA update for 1QR2011 data that was initially entered caused change in this quarter which was not intended. The data was corrected (returned to previous) and record was reapproved. No change in MSPI for this quarter.

1Q/10: Changed PRA Parameter(s). During PRA update for 1Q2011 data that was initially entered caused change in this quarter which was not intended. The data was corrected (returned to previous) and record was reapproved. No change in MSPI resulted for this quarter.

4Q/09: Changed PRA Parameter(s). During PRA update for 1Q2011 data that was initally entered caused change

in this quarter whcih was not intended. The data was corrected (returned to previous) and record was reapproved. No change in MSPI resulted for this quarter.

3Q/09: Changed PRA Parameter(s). During PRA update for 1Q2011 data that was initially entered caused change in this quarter which was not intended. The data was corrected (returned to previous) and record was reapproved. No change in MSPI resulted for this quarter.

2Q/09: Changed PRA Parameter(s). During PRA update for 1Q2011 data that was initially entered caused change in this quarter which was not intended. The data was corrected (returned to previous) and record was reapproved. No change in MSPI resulted for this quarter.

1Q/09: Changed PRA Parameter(s). During PRA update for 1Q2011 data that was initally entered caused change in this quarter which was not intended. The data was corrected (returned to previous) and record was reapproved. No change in MSPI resulted for this quarter.

4Q/08: Changed PRA Parameter(s). During PRA update for 1Q2011 data that was initally entered caused change in this quarter which was not intended. The data was corrected (returned to previous) and record was reapproved. No change in MSPI resulted for this quarter.

3Q/08: Changed PRA Parameter(s). During PRA update for 1Q2011 data that was initially entered caused change in this quarter which was not intended. The data was corrected (returned to previous) and record was reapproved. No change in MSPI resulted for this quarter.

2Q/08: Changed PRA Parameter(s). During PRA update for 1Q2011 data that was initially entered caused change in this quarter which was not intended. The data was corrected (returned to previous) and record was reapproved. No change in MSPI resulted for this quarter.

1Q/08: Changed PRA Parameter(s). 1Q2008 - Corrected iaw PER 152229 - Failure Report 495 on CCP 1B failure to start during blackout testing was marked 'no' instead of 'yes' for MSPI failure. (1Q2008 - Change to the MSPI High Pressure Injection System performance indicator for the month of March 2008. During a review of previous data, it was determined that the CCP 1B fail-to-start during blackout testing in RFO8 had not been entered. This change does not affect the color of the indicator. During PRA update for 1Q2011 data that was initially entered caused change in this quarter which was not intended. The data was corrected (return to previous) and record was reapproved. No change in MSPI resulted for this quarter.

4Q/07: Changed PRA Parameter(s). Duiring PRA update for 1Q2011 data that was initially entered caused change in this quarter which was not intended. The data was corrected (return to previous) and record was reapproved. No change in MSPI resulted for this quarter.

3Q/07: Changed PRA Parameter(s). During PRA update for 1Q2011 data that was initially entered caused change in this quarter which was not intended. The data was corrected (returned to previous) and record was reapproved. No changein MSPI resulted for this quarter.

2Q/07: Changed PRA Parameter(s). During PRA update for 1Q2011 data that was initially entered caused change in this quarter which was not intended. The data was corrected (returned to previous) and record was reapproved. No change in MSPI resulted for this quarter.

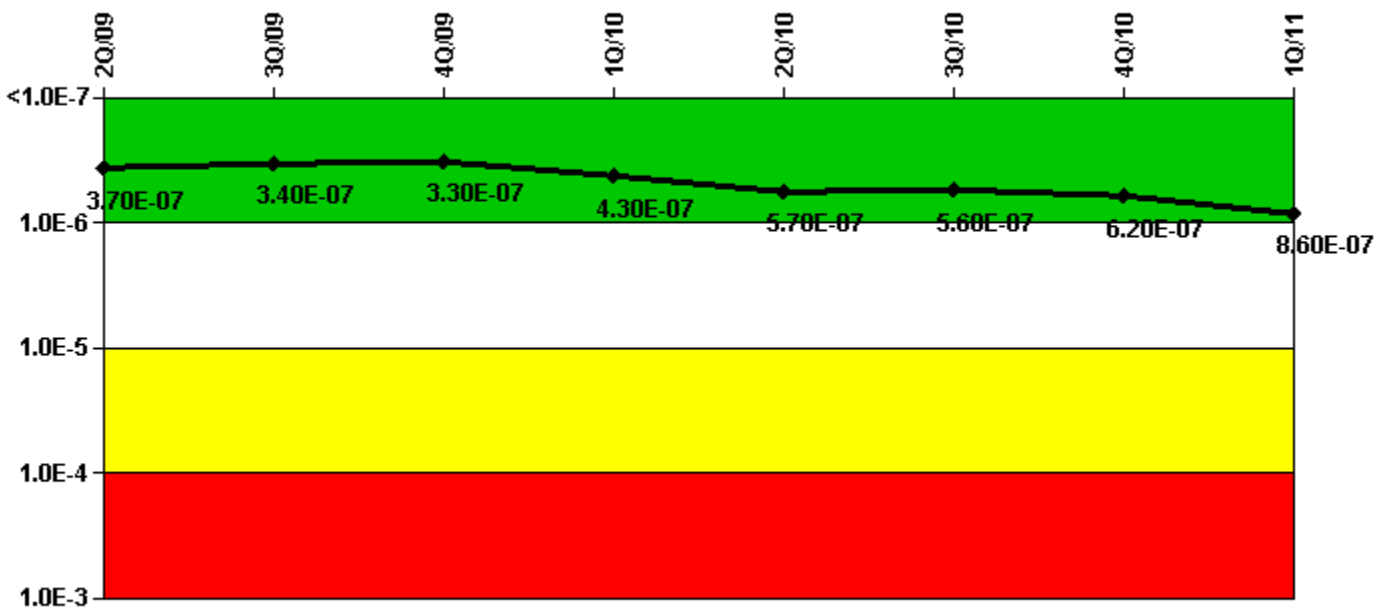
1Q/07: Changed PRA Parameter(s). During PRA update for 1Q2011 data that was initially entered caused change in this quarter which was not intended. The data was corrected (returned to previous) and record was reapproved. No change in MSPI resulted for this quarter.

4Q/06: Changed PRA Parameter(s). During PRA update for 1Q2011 data that was initially entered caused change in this quarter which was not intended. The data was corrected (returned to previous) and record was reapproved. No Change in MSPI resulted for this quarter.

3Q/06: Changed PRA Parameter(s). During PRA update for 1Q2011 data that was initially entered caused change in this quarter which was not intended. The data was corrected (return to previous) and record was reapproved. No change in MSPI resulted for this quareter.

2Q/06: Changed PRA Parameter(s). During PRA update for 1Q2011 data that was intially entered caused change in this quarter which was not intended. The data was corrected (return to previous) and record was reapproved. No change in MSPI resulted for this quarter.

## Mitigating Systems Performance Index, Heat Removal System




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

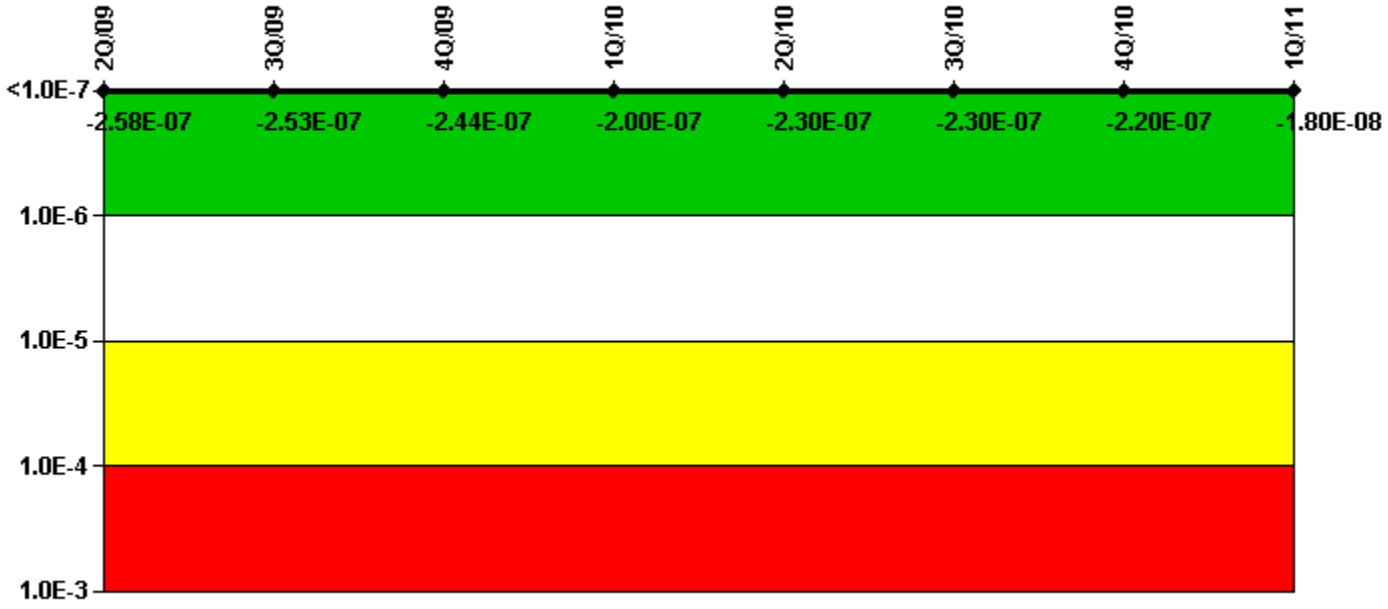
### Notes

| Mitigating Systems Performance Index, Heat Removal System | 2Q/09 | 3Q/09 | 4Q/09 | 1Q/10 | 2Q/10 | 3Q/10 | 4Q/10 | 1Q/11 |
|---|---|---|---|---|---|---|---|---|
| UAI (ΔCDF) | 1.98E-07 | 1.61E-07 | 1.48E-07 | 2.55E-07 | 3.13E-07 | 3.14E-07 | 3.71E-07 | 7.39E-07 |
| URI (ΔCDF) | 1.74E-07 | 1.78E-07 | 1.78E-07 | 1.78E-07 | 2.55E-07 | 2.49E-07 | 2.49E-07 | 1.22E-07 |
| PLE | NO | NO | NO | NO | NO | NO | NO | NO |
| | | | | | | | | |
| **Indicator value** | **3.70E-07** | **3.40E-07** | **3.30E-07** | **4.30E-07** | **5.70E-07** | **5.60E-07** | **6.20E-07** | **8.60E-07** |

Licensee Comments:

1Q/11: Risk Cap Invoked. PRA recalculated their models and made AFW much more risk significant. Hours lost after remodeling on MDAFW Trains A and C and TDAFW Train C caused the drop close to White.

## Mitigating Systems Performance Index, Residual Heat Removal System




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

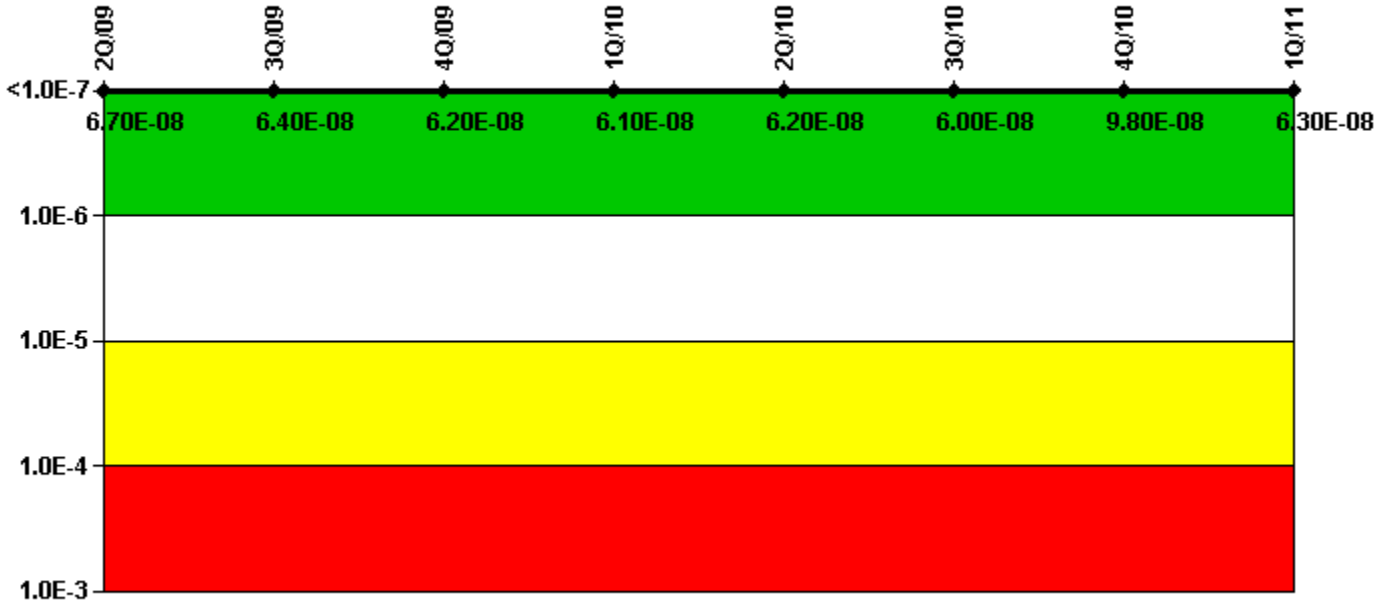
### Notes

| Mitigating Systems Performance Index, Residual Heat Removal System | 2Q/09 | 3Q/09 | 4Q/09 | 1Q/10 | 2Q/10 | 3Q/10 | 4Q/10 | 1Q/11 |
|---|---|---|---|---|---|---|---|---|
| UAI (ΔCDF) | -8.20E-09 | -3.00E-09 | 5.60E-09 | 5.05E-08 | 1.95E-08 | 2.83E-08 | 3.71E-08 | 2.27E-08 |
| URI (ΔCDF) | -2.50E-07 | -2.50E-07 | -2.50E-07 | -2.54E-07 | -2.54E-07 | -2.54E-07 | -2.54E-07 | -4.08E-08 |
| PLE | NO | NO | NO | NO | NO | NO | NO | NO |
| | | | | | | | | |
| **Indicator value** | **-2.58E-07** | **-2.53E-07** | **-2.44E-07** | **-2.00E-07** | **-2.30E-07** | **-2.30E-07** | **-2.20E-07** | **-1.80E-08** |

Licensee Comments:

1Q/11: During Fourth quarter of 2010 Watts Bar issued a CAFTA PRA model. The revision changed the PRA values for the MSPI Core Damage Frequency, and the unavailability and unreliability values. This change is effective first quarter 2011. The details are available in Watts Bar Basis Document.

## Mitigating Systems Performance Index, Cooling Water Systems




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

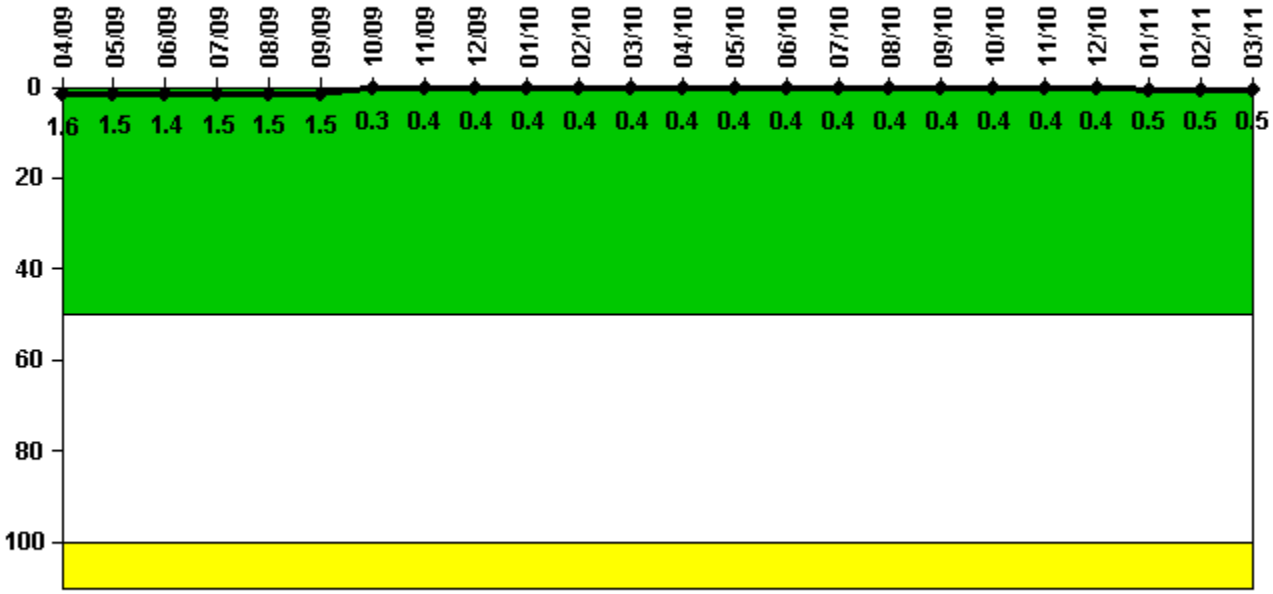
### Notes

| Mitigating Systems Performance Index, Cooling Water Systems | 2Q/09 | 3Q/09 | 4Q/09 | 1Q/10 | 2Q/10 | 3Q/10 | 4Q/10 | 1Q/11 |
|---|---|---|---|---|---|---|---|---|
| UAI (ΔCDF) | 5.50E-08 | 5.20E-08 | 5.00E-08 | 4.83E-08 | 4.92E-08 | 4.80E-08 | 7.28E-08 | 4.97E-08 |
| URI (ΔCDF) | 1.20E-08 | 1.20E-08 | 1.20E-08 | 1.23E-08 | 1.23E-08 | 1.23E-08 | 2.49E-08 | 1.29E-08 |
| PLE | NO | NO | NO | NO | NO | NO | NO | NO |
| | | | | | | | | |
| **Indicator value** | **6.70E-08** | **6.40E-08** | **6.20E-08** | **6.10E-08** | **6.20E-08** | **6.00E-08** | **9.80E-08** | **6.30E-08** |

Licensee Comments:

1Q/11: During Fourth quarter of 2010 Watts Bar issued a CAFTA PRA model. The revision changed the PRA values for the MSPI Core Damage Frequency, and the unavailability and unreliability values. This change is effective first quarter 2011. The details are available in Watts Bar Basis Document.

## Reactor Coolant System Activity



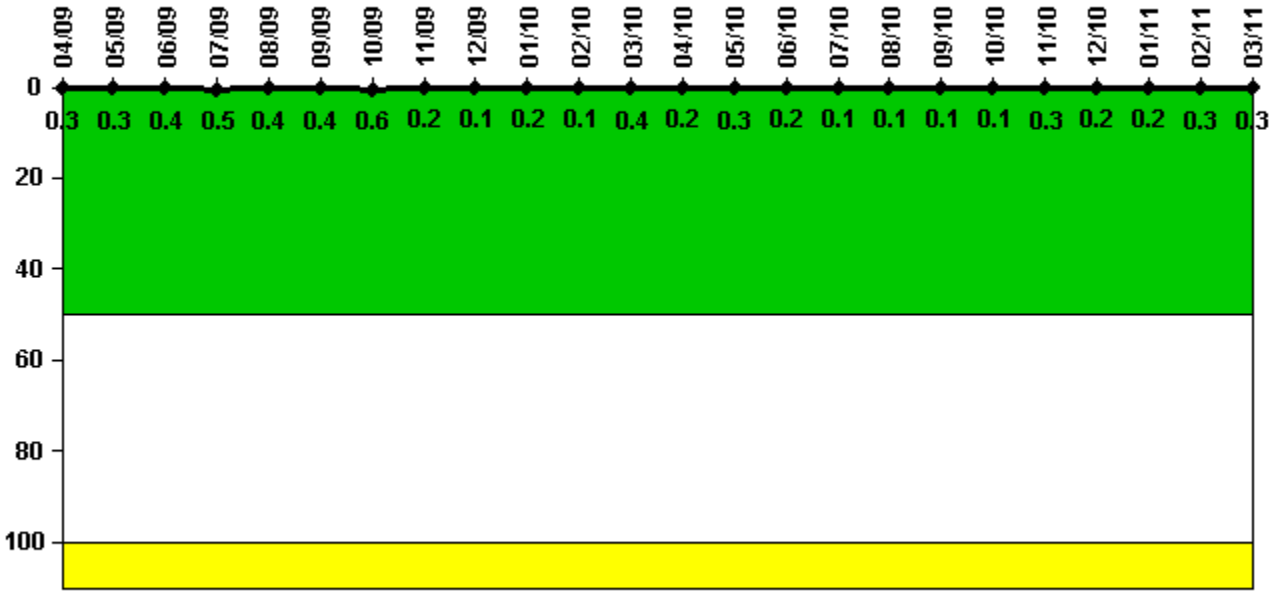

**Thresholds: White > 50.0 Yellow > 100.0**

### Notes

| **Reactor Coolant System Activity** | **4 / 09** | **5 / 09** | **6 / 09** | **7 / 09** | **8 / 09** | **9 / 09** | **10 / 09** | **11 / 09** | **12 / 09** | **1 / 10** | **2 / 10** | **3 / 10** |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Maximum activity | 0.004110 | 0.003844 | 0.003790 | 0.003882 | 0.004091 | 0.004052 | 0.000819 | 0.001042 | 0.000935 | 0.000936 | 0.000957 | 0.000947 |
| Technical specification limit | 0.3 | 0.3 | 0.3 | 0.3 | 0.3 | 0.3 | 0.3 | 0.3 | 0.3 | 0.3 | 0.3 | 0.3 |
| | | | | | | | | | | | | |
| **Indicator value** | **1.6** | **1.5** | **1.4** | **1.5** | **1.5** | **1.5** | **0.3** | **0.4** | **0.4** | **0.4** | **0.4** | **0.4** |
| **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 | 0.001016 | 0.001053 | 0.001160 | 0.001062 | 0.001066 | 0.001108 | 0.001161 | 0.001191 | 0.001186 | 0.001240 | 0.001306 | 0.001271 |
| Technical specification limit | 0.3 | 0.3 | 0.3 | 0.3 | 0.3 | 0.3 | 0.3 | 0.3 | 0.3 | 0.3 | 0.3 | 0.3 |
| | | | | | | | | | | | | |
| **Indicator value** | **0.4** | **0.4** | **0.4** | **0.4** | **0.4** | **0.4** | **0.4** | **0.4** | **0.4** | **0.5** | **0.5** | **0.5** |

Licensee Comments: none

## Reactor Coolant System Leakage



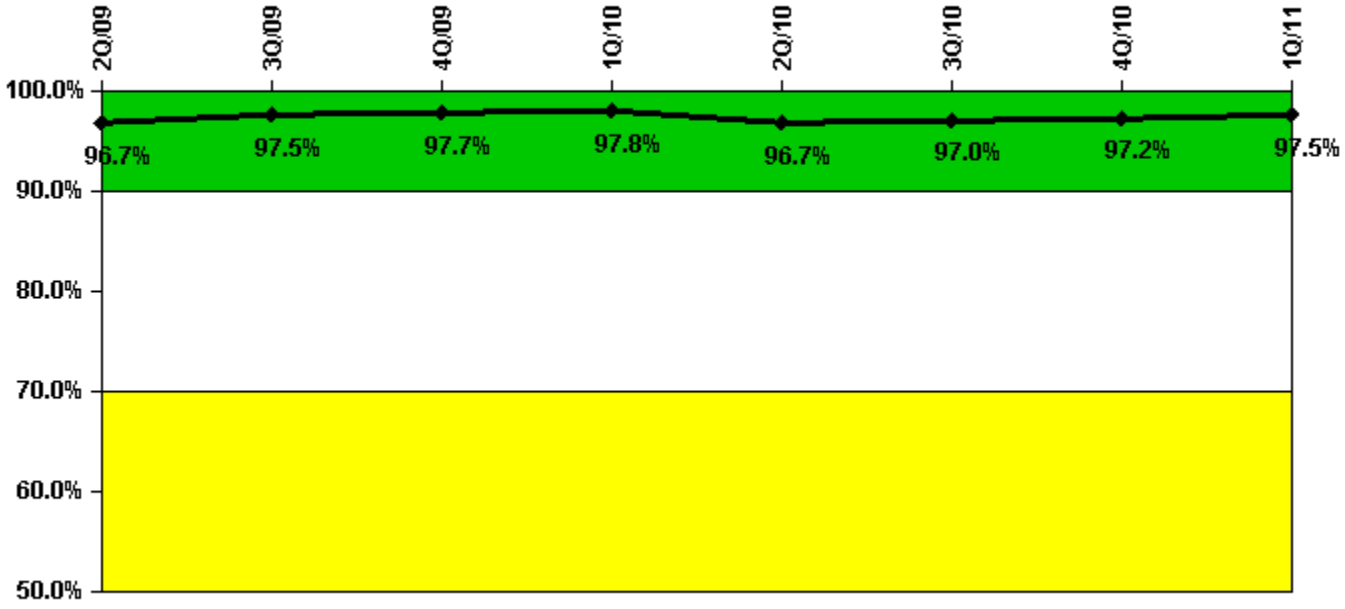

**Thresholds: White > 50.0 Yellow > 100.0**

### Notes

| Reactor Coolant System Leakage | 4/09 | 5/09 | 6/09 | 7/09 | 8/09 | 9/09 | 10/09 | 11/09 | 12/09 | 1/10 | 2/10 | 3/10 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Maximum leakage | 0.030 | 0.030 | 0.040 | 0.050 | 0.040 | 0.040 | 0.060 | 0.020 | 0.010 | 0.020 | 0.010 | 0.040 |
| 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** | **0.3** | **0.3** | **0.4** | **0.5** | **0.4** | **0.4** | **0.6** | **0.2** | **0.1** | **0.2** | **0.1** | **0.4** |
| **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 | 0.020 | 0.030 | 0.020 | 0.010 | 0.010 | 0.010 | 0.010 | 0.030 | 0.020 | 0.020 | 0.030 | 0.030 |
| 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** | **0.2** | **0.3** | **0.2** | **0.1** | **0.1** | **0.1** | **0.1** | **0.3** | **0.2** | **0.2** | **0.3** | **0.3** |

Licensee Comments: none

## Drill/Exercise Performance



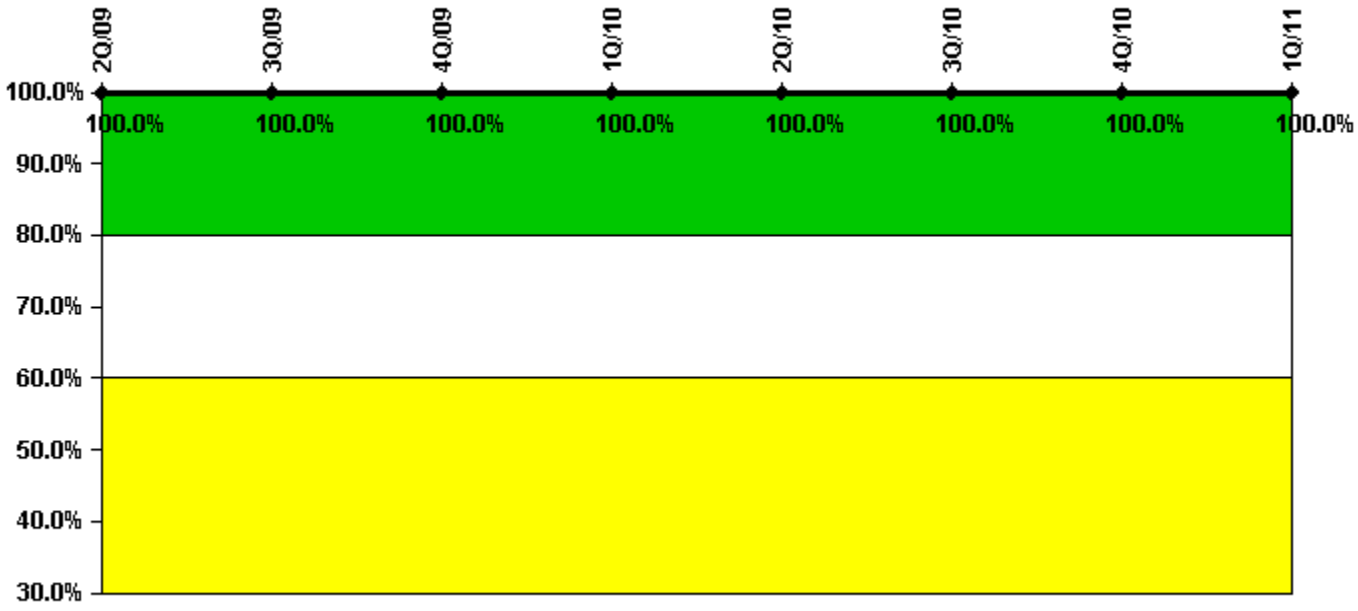

**Thresholds: White < 90.0% Yellow < 70.0%**

### Notes

| Drill/Exercise Performance | 2Q/09 | 3Q/09 | 4Q/09 | 1Q/10 | 2Q/10 | 3Q/10 | 4Q/10 | 1Q/11 |
|---|---|---|---|---|---|---|---|---|
| Successful opportunities | 108.0 | 46.0 | 18.0 | 65.0 | 29.0 | 62.0 | 64.0 | 32.0 |
| Total opportunities | 110.0 | 46.0 | 18.0 | 68.0 | 34.0 | 62.0 | 65.0 | 32.0 |
| | | | | | | | | |
| **Indicator value** | **96.7%** | **97.5%** | **97.7%** | **97.8%** | **96.7%** | **97.0%** | **97.2%** | **97.5%** |

Licensee Comments: none

## ERO Drill Participation



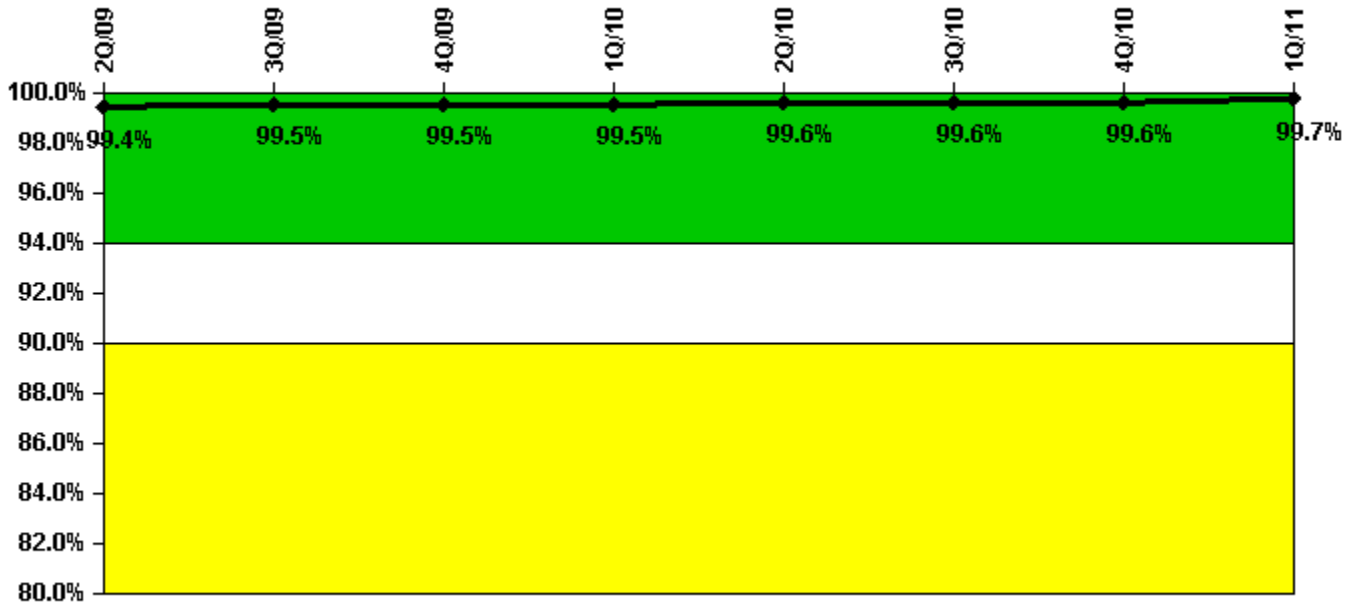

**Thresholds: White < 80.0% Yellow < 60.0%**

### Notes

| ERO Drill Participation | 2Q/09 | 3Q/09 | 4Q/09 | 1Q/10 | 2Q/10 | 3Q/10 | 4Q/10 | 1Q/11 |
|---|---|---|---|---|---|---|---|---|
| Participating Key personnel | 72.0 | 65.0 | 68.0 | 69.0 | 72.0 | 79.0 | 78.0 | 78.0 |
| Total Key personnel | 72.0 | 65.0 | 68.0 | 69.0 | 72.0 | 79.0 | 78.0 | 78.0 |
| | | | | | | | | |
| **Indicator value** | **100.0%** | **100.0%** | **100.0%** | **100.0%** | **100.0%** | **100.0%** | **100.0%** | **100.0%** |

Licensee Comments: none

## Alert & Notification System



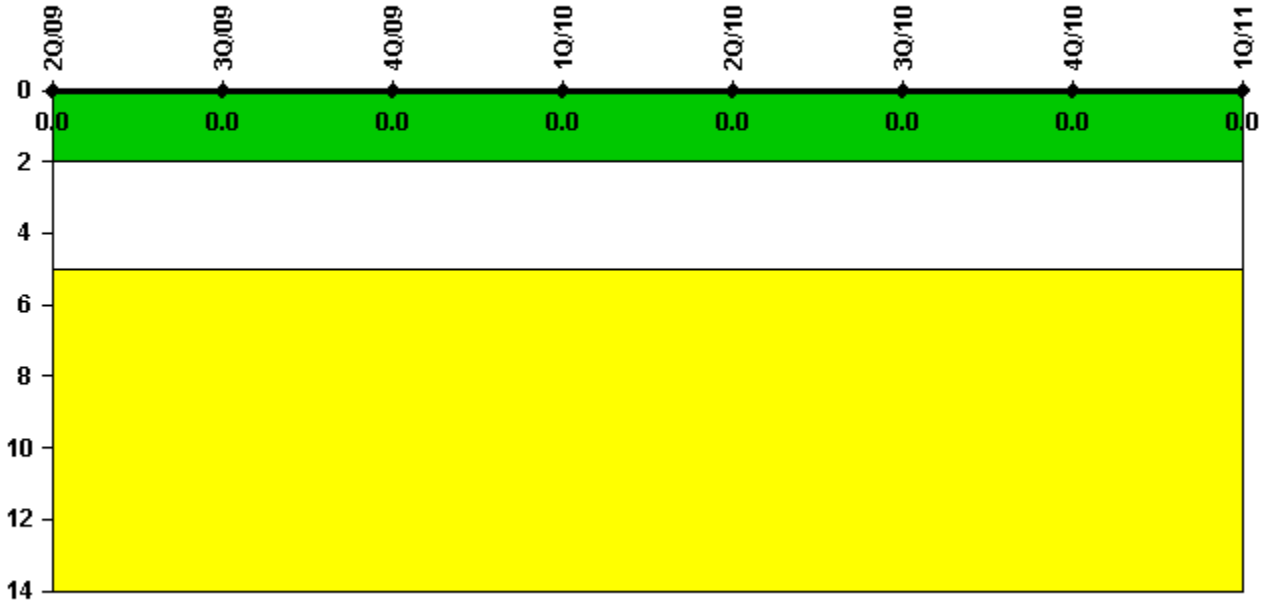

**Thresholds: White < 94.0% Yellow < 90.0%**

### Notes

| Alert & Notification System | 2Q/09 | 3Q/09 | 4Q/09 | 1Q/10 | 2Q/10 | 3Q/10 | 4Q/10 | 1Q/11 |
|---|---|---|---|---|---|---|---|---|
| Successful siren-tests | 887 | 788 | 886 | 691 | 888 | 690 | 887 | 692 |
| Total sirens-tests | 891 | 792 | 891 | 693 | 891 | 693 | 891 | 693 |
| | | | | | | | | |
| **Indicator value** | **99.4%** | **99.5%** | **99.5%** | **99.5%** | **99.6%** | **99.6%** | **99.6%** | **99.7%** |

Licensee Comments: none

## Occupational Exposure Control Effectiveness



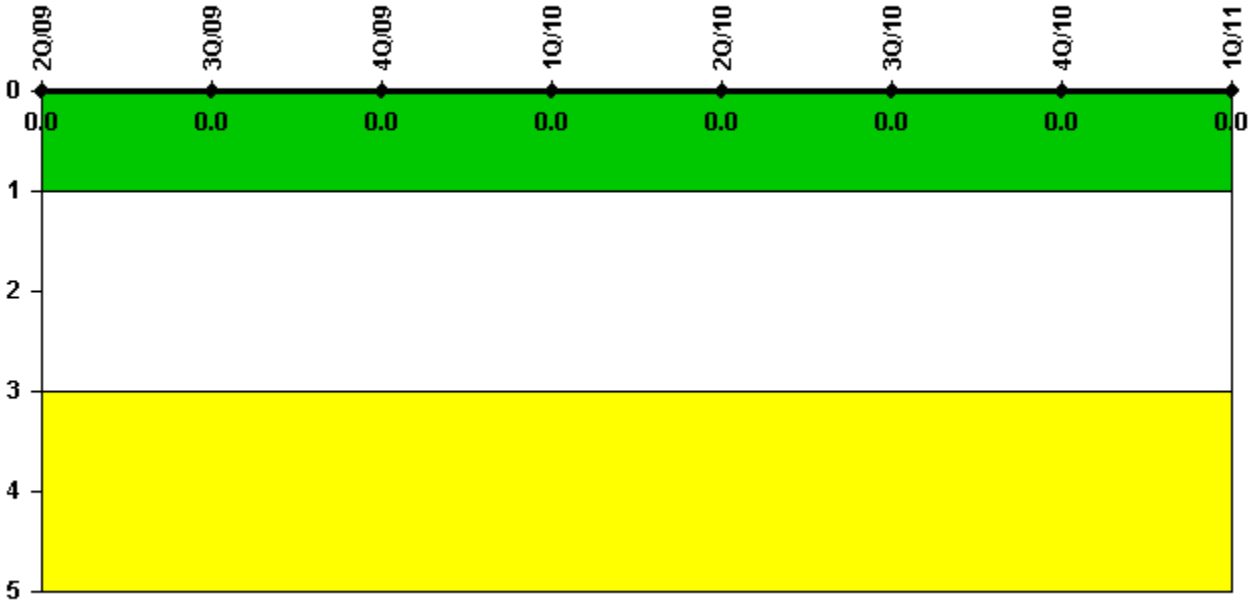

**Thresholds: White > 2.0 Yellow > 5.0**

### Notes

| Occupational Exposure Control Effectiveness | 2Q/09 | 3Q/09 | 4Q/09 | 1Q/10 | 2Q/10 | 3Q/10 | 4Q/10 | 1Q/11 |
|---|---|---|---|---|---|---|---|---|
| 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 | 2Q/09 | 3Q/09 | 4Q/09 | 1Q/10 | 2Q/10 | 3Q/10 | 4Q/10 | 1Q/11 |
|---|---|---|---|---|---|---|---|---|
| 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.

---

Action Matrix Summary | Inspection Findings Summary | PI Summary | Reactor Oversight Process

*Last Modified: May 4, 2011*