

# San Onofre 3

## 3Q/2011 Performance Indicators

Licensee's General Comments: none

### Unplanned Scrams per 7000 Critical Hrs



Thresholds: White > 3.0 Yellow > 6.0 Red > 25.0

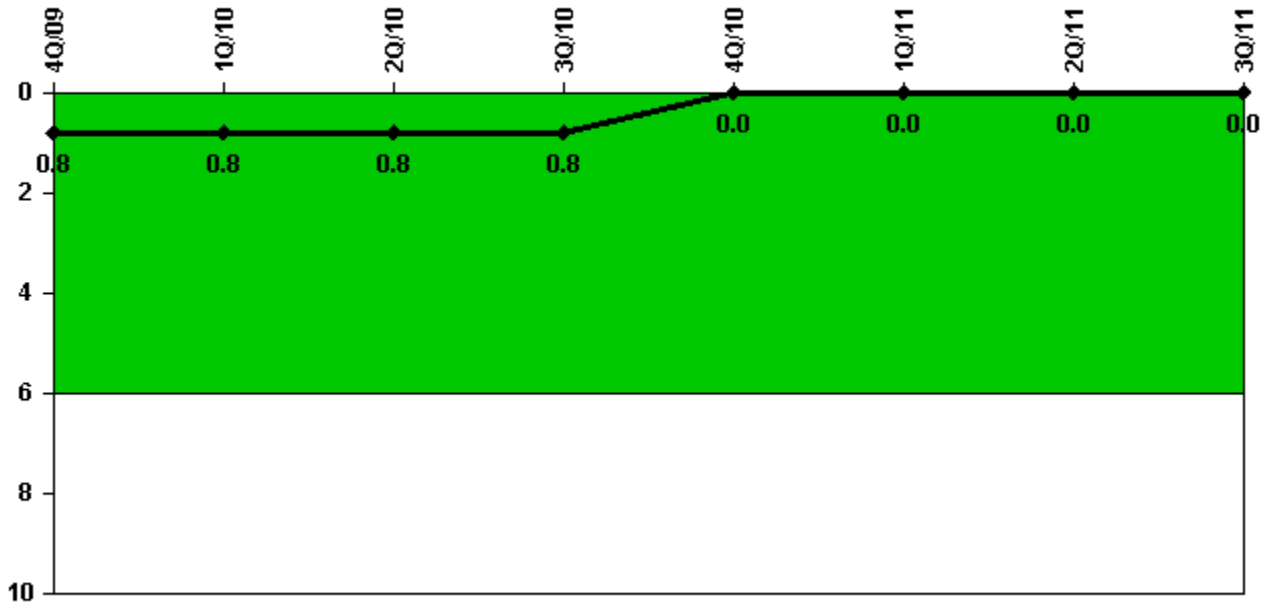
### Notes

| Unplanned Scrams per 7000 Critical Hrs | 4Q/09  | 1Q/10  | 2Q/10  | 3Q/10  | 4Q/10 | 1Q/11  | 2Q/11  | 3Q/11  |
|--|--------|--------|--------|--------|-------|--------|--------|--------|
| Unplanned scrams                       | 0      | 0      | 0      | 0      | 0     | 0      | 0      | 1.0    |
| Critical hours                         | 2209.0 | 2159.0 | 2184.0 | 2208.0 | 217.4 | 1058.2 | 2184.0 | 2128.9 |
| Indicator value                        | 0      | 0      | 0      | 0      | 0     | 0      | 0      | 1.3    |

Licensee Comments: none

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## Unplanned Power Changes per 7000 Critical Hrs



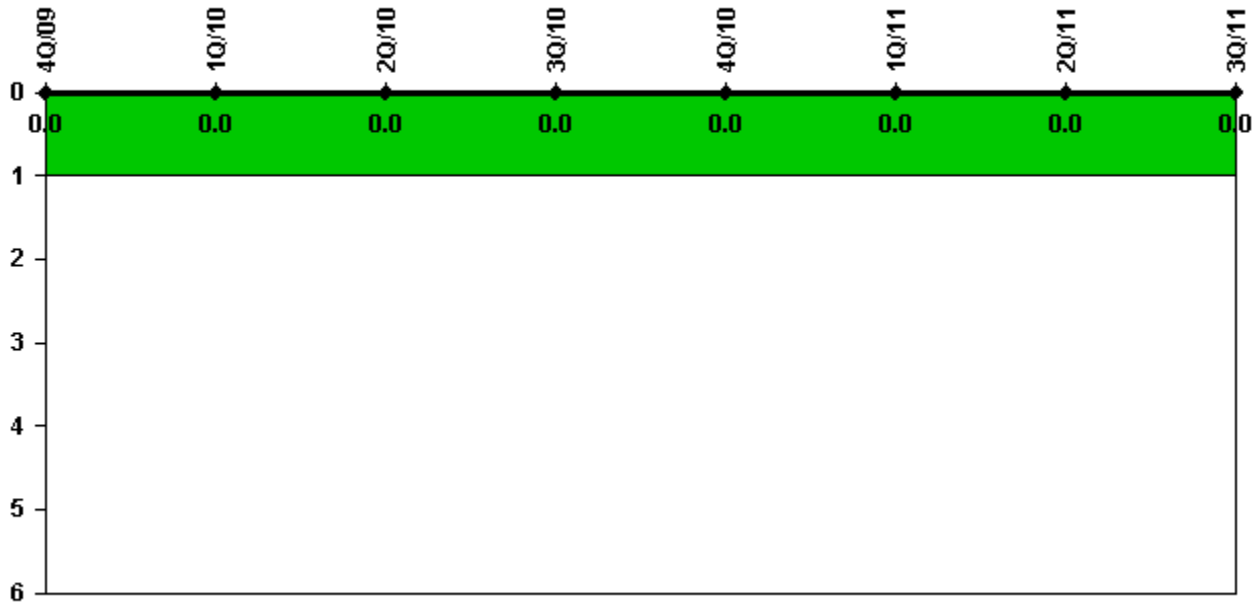
Thresholds: White > 6.0

### Notes

| Unplanned Power Changes per 7000 Critical Hrs | 4Q/09  | 1Q/10  | 2Q/10  | 3Q/10  | 4Q/10 | 1Q/11  | 2Q/11  | 3Q/11  |
|---|--------|--------|--------|--------|-------|--------|--------|--------|
| Unplanned power changes                       | 1.0    | 0      | 0      | 0      | 0     | 0      | 0      | 0      |
| Critical hours                                | 2209.0 | 2159.0 | 2184.0 | 2208.0 | 217.4 | 1058.2 | 2184.0 | 2128.9 |
| Indicator value                               | 0.8    | 0.8    | 0.8    | 0.8    | 0     | 0      | 0      | 0      |

Licensee Comments: none

# Unplanned Scrams with Complications



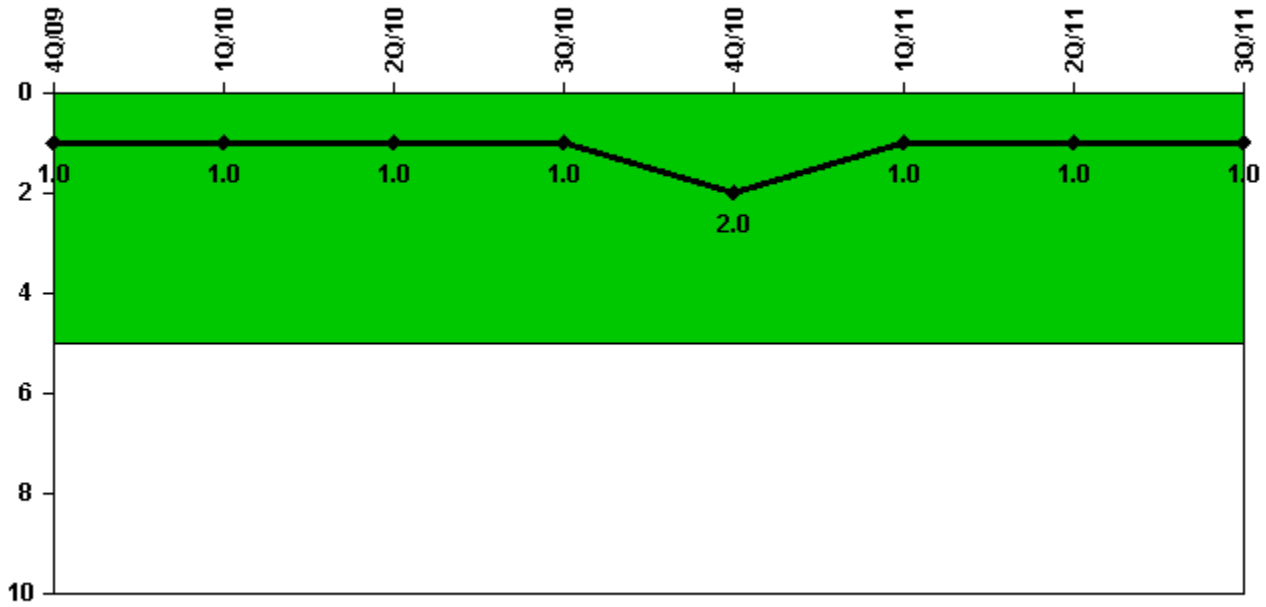
Thresholds: White > 1.0

## Notes

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



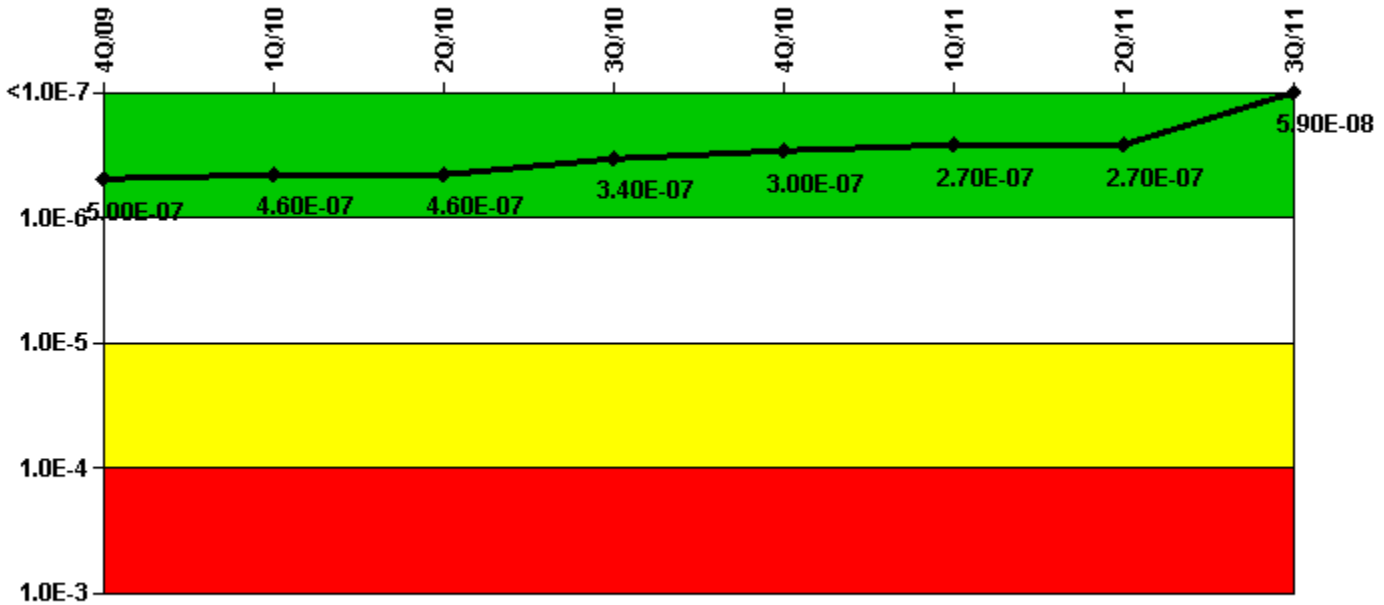
Thresholds: White > 5.0

### Notes

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

Licensee Comments: none

# Mitigating Systems Performance Index, Emergency AC Power System



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

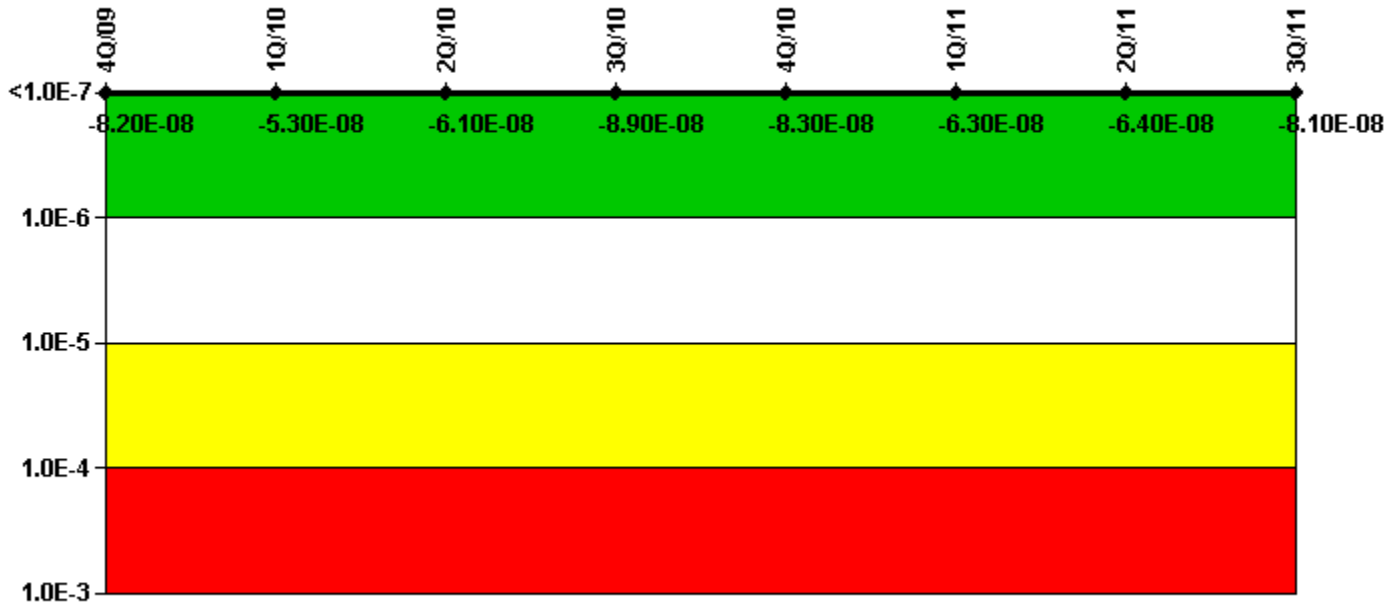
## Notes

| Mitigating Systems Performance Index, Emergency AC Power System | 4Q/09    | 1Q/10    | 2Q/10    | 3Q/10    | 4Q/10    | 1Q/11    | 2Q/11    | 3Q/11    |
|---|----------|----------|----------|----------|----------|----------|----------|----------|
| UAI (ΔCDF)  | 1.10E-07 | 1.12E-07 | 1.12E-07 | 8.70E-08 | 7.09E-08 | 6.99E-08 | 6.64E-08 | 4.00E-08 |
| URI (ΔCDF)  | 3.90E-07 | 3.52E-07 | 3.52E-07 | 2.53E-07 | 2.26E-07 | 1.99E-07 | 1.99E-07 | 1.89E-08 |
| PLE   | NO       | NO       | NO       | NO       | NO       | NO       | NO       | NO       |
| Indicator value   | 5.00E-07 | 4.60E-07 | 4.60E-07 | 3.40E-07 | 3.00E-07 | 2.70E-07 | 2.70E-07 | 5.90E-08 |

## Licensee Comments:

3Q/11: PRACP-11-0004 models the removal of credit for transferring RCPs power to the other unit on loss of offsite power. This would increase the failure probability of normal Pressurizer Spray, which is provided by the RCPs. Hence, the Auxiliary Spray becomes more important. The suction valve for the Auxiliary Spray is a Train B valve, which makes Train B EDG more important. The Birnbaum values for Train B EDG components increased up to 46%. The Birnbaum value for train unavailability increased 10%.

# Mitigating Systems Performance Index, High Pressure Injection System



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

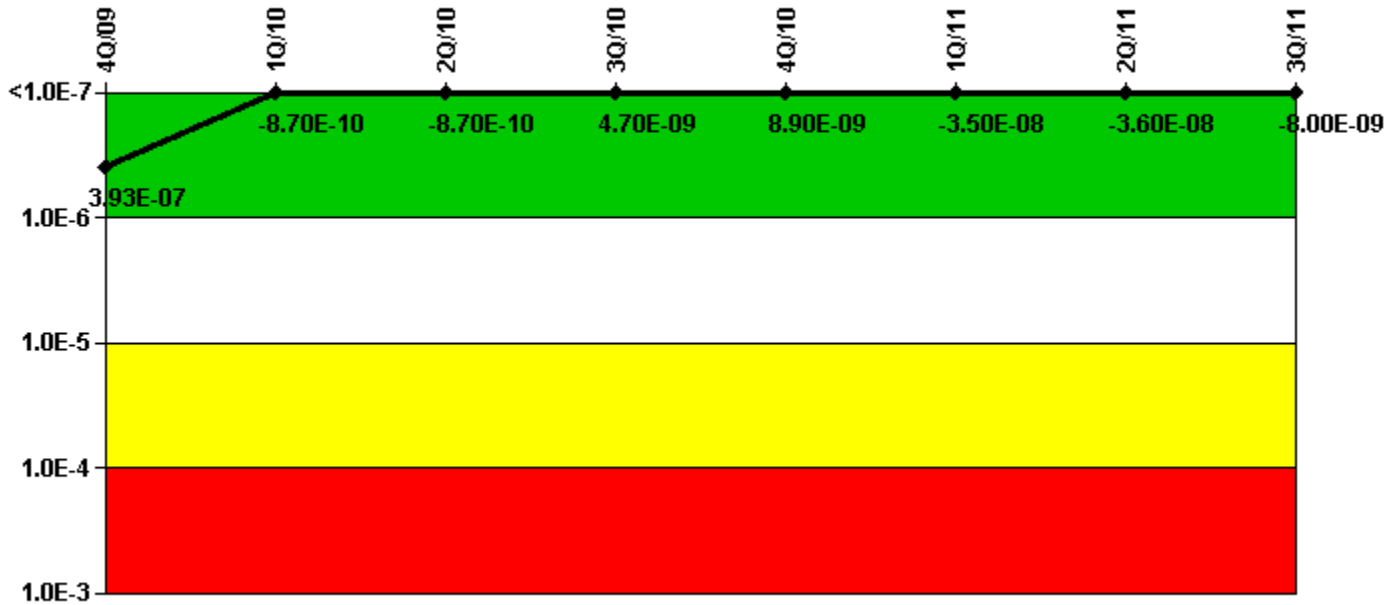
## Notes

| Mitigating Systems Performance Index, High Pressure Injection System | 4Q/09     | 1Q/10     | 2Q/10     | 3Q/10     | 4Q/10     | 1Q/11     | 2Q/11     | 3Q/11     |
|--|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
| UAI ( $\Delta$ CDF)  | -3.20E-08 | -4.30E-09 | -8.77E-09 | -3.70E-08 | -3.10E-08 | -1.10E-08 | -1.18E-08 | -2.88E-08 |
| URI ( $\Delta$ CDF)  | -5.00E-08 | -4.89E-08 | -5.25E-08 | -5.23E-08 | -5.23E-08 | -5.23E-08 | -5.23E-08 | -5.23E-08 |
| PLE  | NO        | NO        | NO        | NO        | NO        | NO        | NO        | NO        |
| Indicator value  | -8.20E-08 | -5.30E-08 | -6.10E-08 | -8.90E-08 | -8.30E-08 | -6.30E-08 | -6.40E-08 | -8.10E-08 |

Licensee Comments:

3Q/11: For HPSI system, all Birnbaum values are within 1% change compared to last quarters Birnbaum values.

# Mitigating Systems Performance Index, Heat Removal System



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

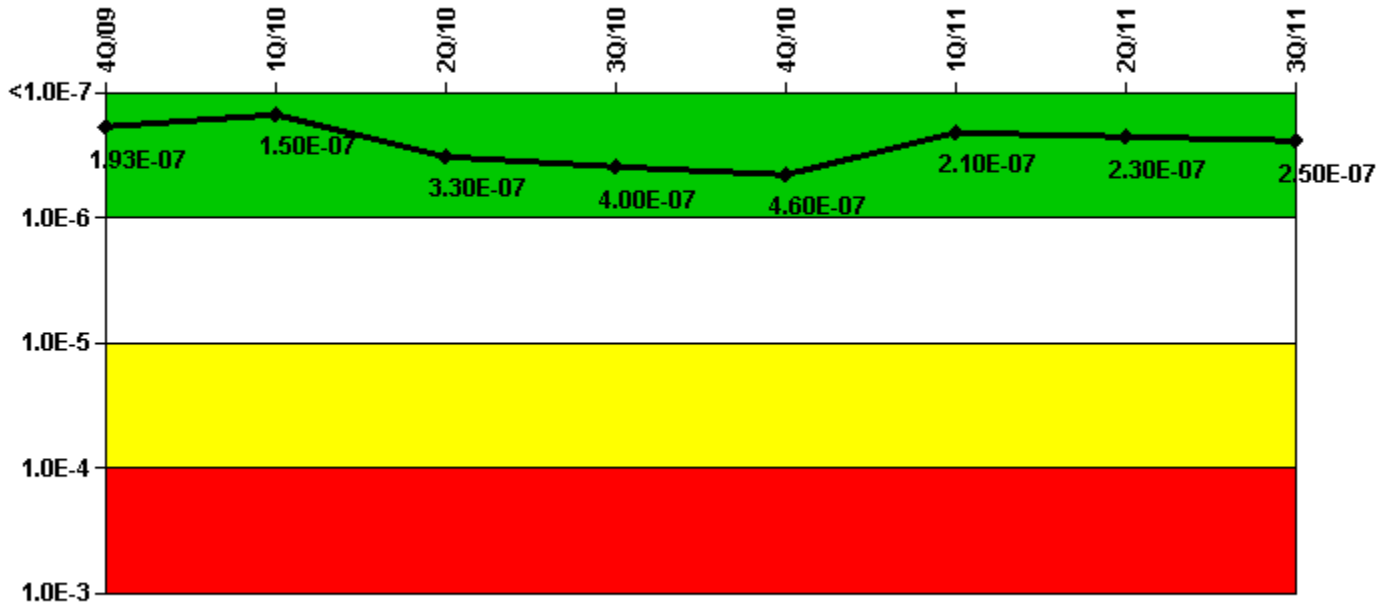
## Notes

| Mitigating Systems Performance Index, Heat Removal System | 4Q/09     | 1Q/10     | 2Q/10     | 3Q/10     | 4Q/10     | 1Q/11     | 2Q/11     | 3Q/11     |
|---|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
| UAI ( $\Delta$ CDF)                                       | -6.70E-08 | -4.92E-08 | -4.92E-08 | -1.05E-07 | -1.01E-07 | -1.45E-07 | -1.46E-07 | -1.11E-07 |
| URI ( $\Delta$ CDF)                                       | 4.60E-07  | 4.83E-08  | 4.83E-08  | 1.10E-07  | 1.10E-07  | 1.10E-07  | 1.10E-07  | 1.03E-07  |
| PLE   | NO        | NO        | NO        | NO        | NO        | NO        | NO        | NO        |
| Indicator value   | 3.93E-07  | -8.70E-10 | -8.70E-10 | 4.70E-09  | 8.90E-09  | -3.50E-08 | -3.60E-08 | -8.00E-09 |

Licensee Comments:

3Q/11: Risk Cap Invoked. For AFW system, all Birnbaum values are within 1% change compared to last quarters Birnbaum values.

# Mitigating Systems Performance Index, Residual Heat Removal System



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

## Notes

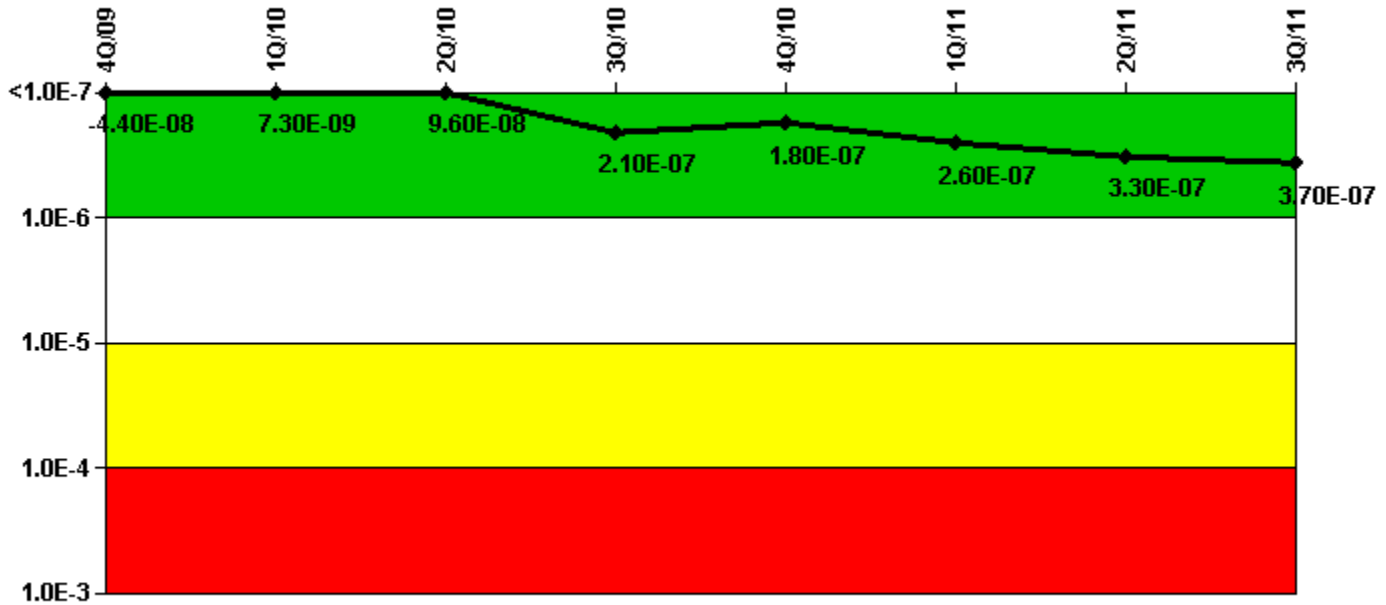
| Mitigating Systems Performance Index, Residual Heat Removal System | 4Q/09     | 1Q/10     | 2Q/10     | 3Q/10     | 4Q/10     | 1Q/11     | 2Q/11     | 3Q/11     |
|--|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
| UAI ( $\Delta$ CDF)  | 2.20E-07  | 1.74E-07  | 3.56E-07  | 4.23E-07  | 4.83E-07  | 2.35E-07  | 2.55E-07  | 2.75E-07  |
| URI ( $\Delta$ CDF)  | -2.70E-08 | -2.62E-08 | -2.62E-08 | -2.62E-08 | -2.62E-08 | -2.62E-08 | -2.62E-08 | -2.62E-08 |
| PLE  | NO        | NO        | NO        | NO        | NO        | NO        | NO        | NO        |
| Indicator value  | 1.93E-07  | 1.50E-07  | 3.30E-07  | 4.00E-07  | 4.60E-07  | 2.10E-07  | 2.30E-07  | 2.50E-07  |

Licensee Comments:

3Q/11: For RHR system, all Birnbaum values are within 1% change compared to last quarters Birnbaum values.



# Mitigating Systems Performance Index, Cooling Water Systems



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

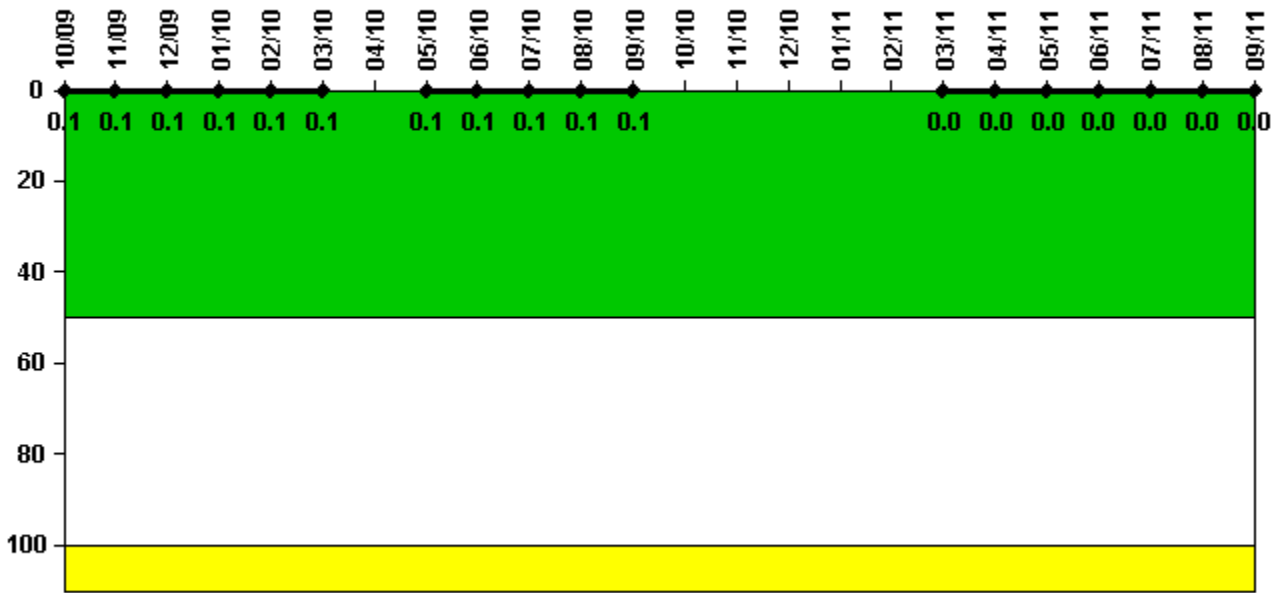
## Notes

| Mitigating Systems Performance Index, Cooling Water Systems | 4Q/09     | 1Q/10     | 2Q/10     | 3Q/10     | 4Q/10     | 1Q/11     | 2Q/11     | 3Q/11     |
|---|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
| UAI ( $\Delta$ CDF)   | 6.60E-08  | 1.21E-07  | 2.11E-07  | 3.27E-07  | 2.98E-07  | 3.71E-07  | 4.44E-07  | 4.89E-07  |
| URI ( $\Delta$ CDF)   | -1.10E-07 | -1.14E-07 | -1.14E-07 | -1.14E-07 | -1.14E-07 | -1.14E-07 | -1.14E-07 | -1.14E-07 |
| PLE   | NO        | NO        | NO        | NO        | NO        | NO        | NO        | NO        |
| Indicator value   | -4.40E-08 | 7.30E-09  | 9.60E-08  | 2.10E-07  | 1.80E-07  | 2.60E-07  | 3.30E-07  | 3.70E-07  |

Licensee Comments:

3Q/11: For Supporting System Cooling system, all Birnbaum values are within 1% change compared to last quarters Birnbaum values.

# Reactor Coolant System Activity



Thresholds: White > 50.0 Yellow > 100.0

## Notes

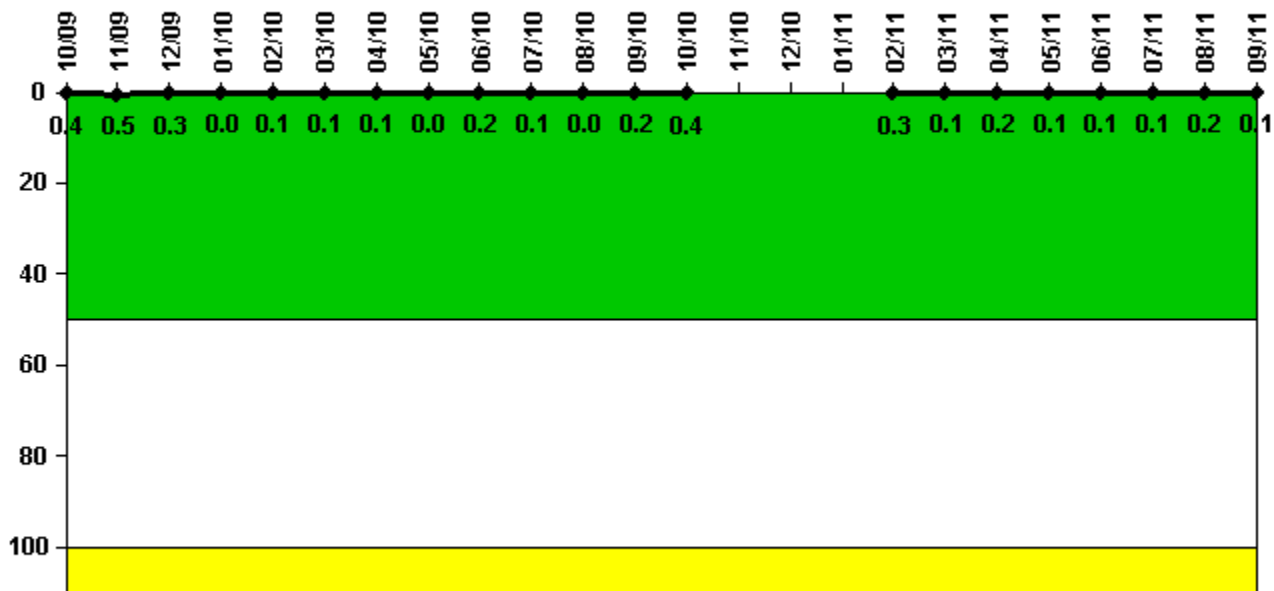
| Reactor Coolant System Activity | 10/09    | 11/09    | 12/09    | 1/10     | 2/10     | 3/10     | 4/10 | 5/10     | 6/10     | 7/10     | 8/10     | 9/10     |
|---------------------------------|----------|----------|----------|----------|----------|----------|------|----------|----------|----------|----------|----------|
| Maximum activity                | 0.000652 | 0.000721 | 0.000689 | 0.000679 | 0.000718 | 0.000667 | N/A  | 0.001080 | 0.001030 | 0.000986 | 0.001340 | 0.001440 |
| 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      | 0.1      | 0.1      | 0.1      | 0.1      | 0.1      | N/A  | 0.1      | 0.1      | 0.1      | 0.1      | 0.1      |

| Reactor Coolant System Activity | 10/10 | 11/10 | 12/10 | 1/11 | 2/11 | 3/11     | 4/11     | 5/11     | 6/11     | 7/11     | 8/11     | 9/11     |
|---------------------------------|-------|-------|-------|------|------|----------|----------|----------|----------|----------|----------|----------|
| Maximum activity                | N/A   | N/A   | N/A   | N/A  | N/A  | 0.000193 | 0.000303 | 0.000318 | 0.000421 | 0.000288 | 0.000419 | 0.000403 |
| 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  | 0        | 0        | 0        | 0        | 0        | 0        | 0        |

Licensee Comments: none

## Reactor Coolant System Leakage



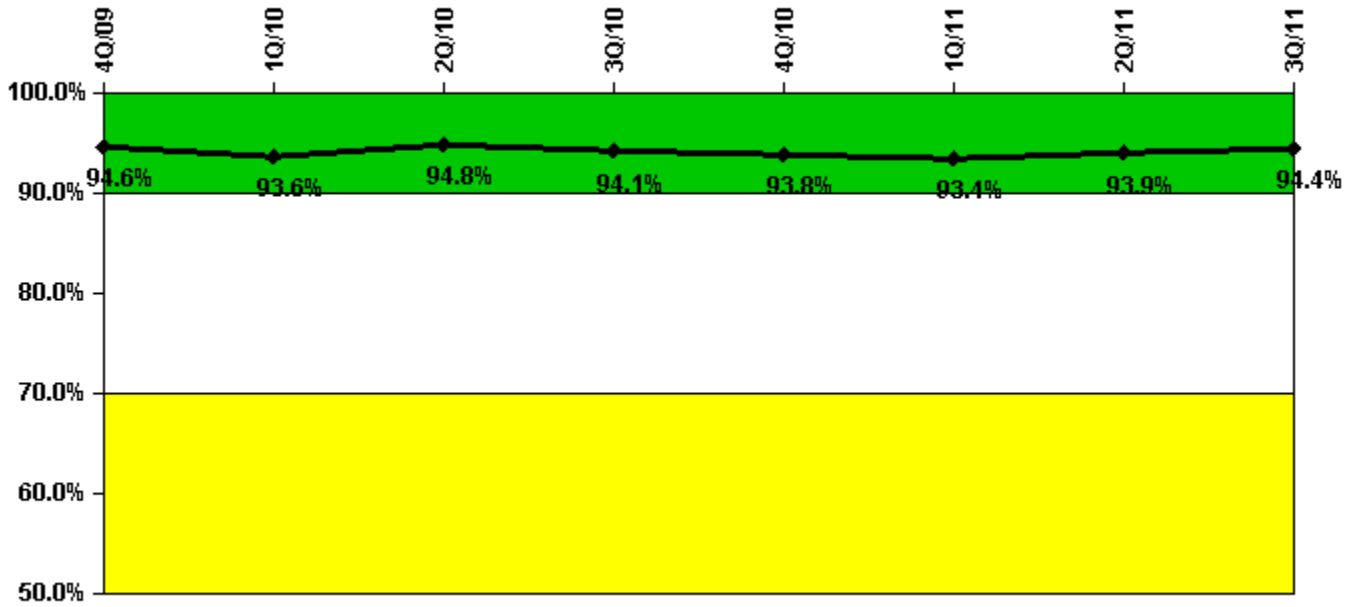
Thresholds: White > 50.0 Yellow > 100.0

### Notes

| Reactor Coolant System Leakage | 10/09 | 11/09 | 12/09 | 1/10 | 2/10  | 3/10  | 4/10  | 5/10  | 6/10  | 7/10  | 8/10  | 9/10  |
|--------------------------------|-------|-------|-------|------|-------|-------|-------|-------|-------|-------|-------|-------|
| Maximum leakage                | 0.040 | 0.050 | 0.030 | 0    | 0.010 | 0.010 | 0.010 | 0     | 0.020 | 0.010 | 0     | 0.020 |
| 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   | 0.5   | 0.3   | 0    | 0.1   | 0.1   | 0.1   | 0     | 0.2   | 0.1   | 0     | 0.2   |
| Reactor Coolant System Leakage | 10/10 | 11/10 | 12/10 | 1/11 | 2/11  | 3/11  | 4/11  | 5/11  | 6/11  | 7/11  | 8/11  | 9/11  |
| Maximum leakage                | 0.040 | N/A   | N/A   | N/A  | 0.030 | 0.010 | 0.020 | 0.010 | 0.010 | 0.010 | 0.020 | 0.010 |
| 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   | N/A   | N/A   | N/A  | 0.3   | 0.1   | 0.2   | 0.1   | 0.1   | 0.1   | 0.2   | 0.1   |

Licensee Comments: none

## Drill/Exercise Performance



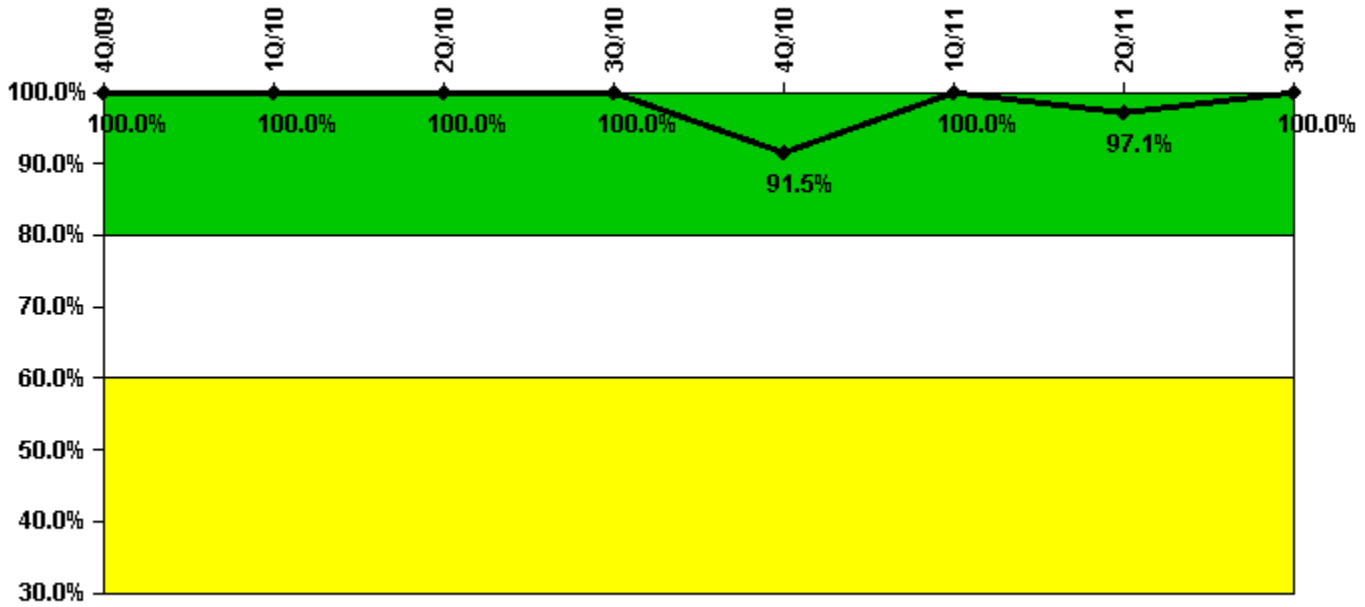
Thresholds: White < 90.0% Yellow < 70.0%

### Notes

| Drill/Exercise Performance | 4Q/09 | 1Q/10 | 2Q/10 | 3Q/10 | 4Q/10 | 1Q/11 | 2Q/11 | 3Q/11 |
|----------------------------|-------|-------|-------|-------|-------|-------|-------|-------|
| Successful opportunities   | 24.0  | 11.0  | 52.0  | 50.0  | 0     | 25.0  | 65.0  | 60.0  |
| Total opportunities        | 24.0  | 15.0  | 52.0  | 55.0  | 0     | 27.0  | 66.0  | 65.0  |
|                            |       |       |       |       |       |       |       |       |
| Indicator value            | 94.6% | 93.6% | 94.8% | 94.1% | 93.8% | 93.4% | 93.9% | 94.4% |

Licensee Comments: none

# ERO Drill Participation



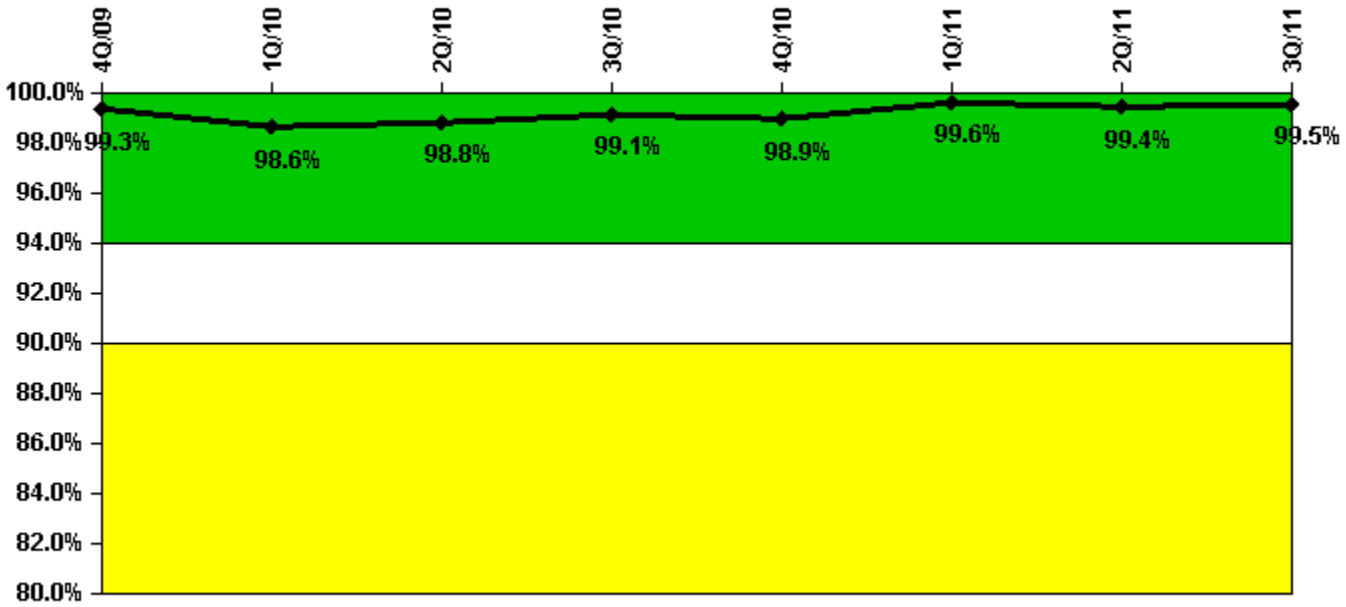
Thresholds: White < 80.0% Yellow < 60.0%

## Notes

| ERO Drill Participation     | 4Q/09  | 1Q/10  | 2Q/10  | 3Q/10  | 4Q/10 | 1Q/11  | 2Q/11 | 3Q/11  |
|-----------------------------|--------|--------|--------|--------|-------|--------|-------|--------|
| Participating Key personnel | 79.0   | 72.0   | 74.0   | 65.0   | 65.0  | 68.0   | 66.0  | 72.0   |
| Total Key personnel         | 79.0   | 72.0   | 74.0   | 65.0   | 71.0  | 68.0   | 68.0  | 72.0   |
| Indicator value             | 100.0% | 100.0% | 100.0% | 100.0% | 91.5% | 100.0% | 97.1% | 100.0% |

Licensee Comments: none

# Alert & Notification System



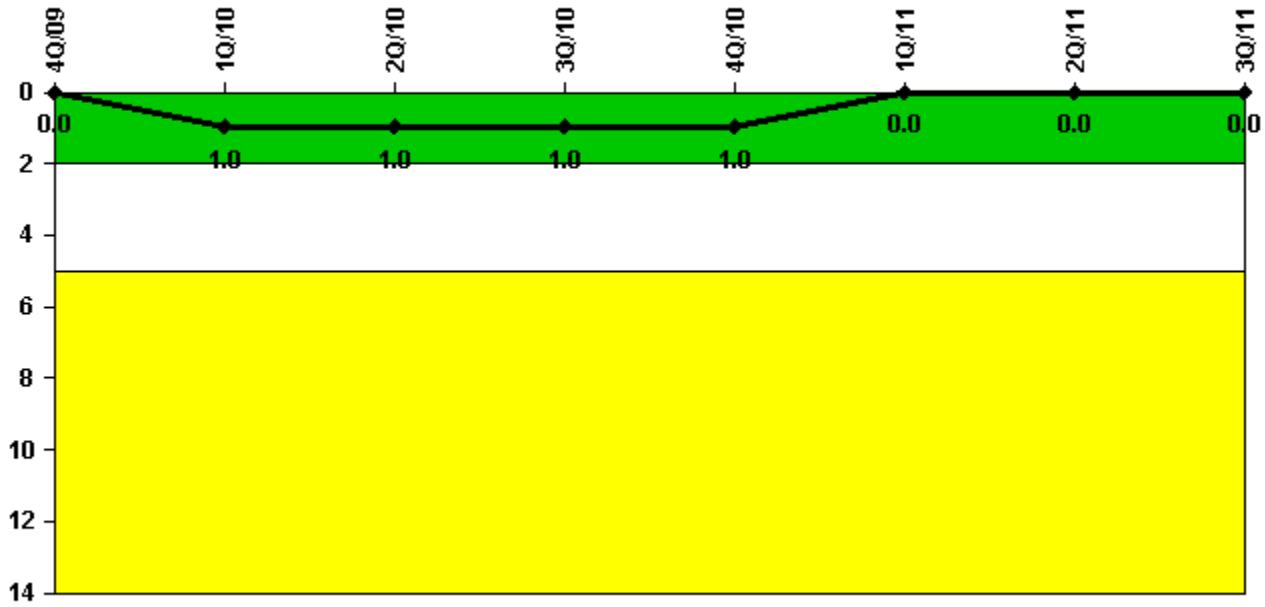
Thresholds: White < 94.0% Yellow < 90.0%

## Notes

| Alert & Notification System | 4Q/09 | 1Q/10 | 2Q/10 | 3Q/10 | 4Q/10 | 1Q/11 | 2Q/11 | 3Q/11 |
|-----------------------------|-------|-------|-------|-------|-------|-------|-------|-------|
| Successful siren-tests      | 519   | 350   | 405   | 399   | 447   | 394   | 347   | 399   |
| Total sirens-tests          | 520   | 362   | 406   | 400   | 450   | 396   | 350   | 399   |
|                             |       |       |       |       |       |       |       |       |
| Indicator value             | 99.3% | 98.6% | 98.8% | 99.1% | 98.9% | 99.6% | 99.4% | 99.5% |

Licensee Comments: none

## Occupational Exposure Control Effectiveness



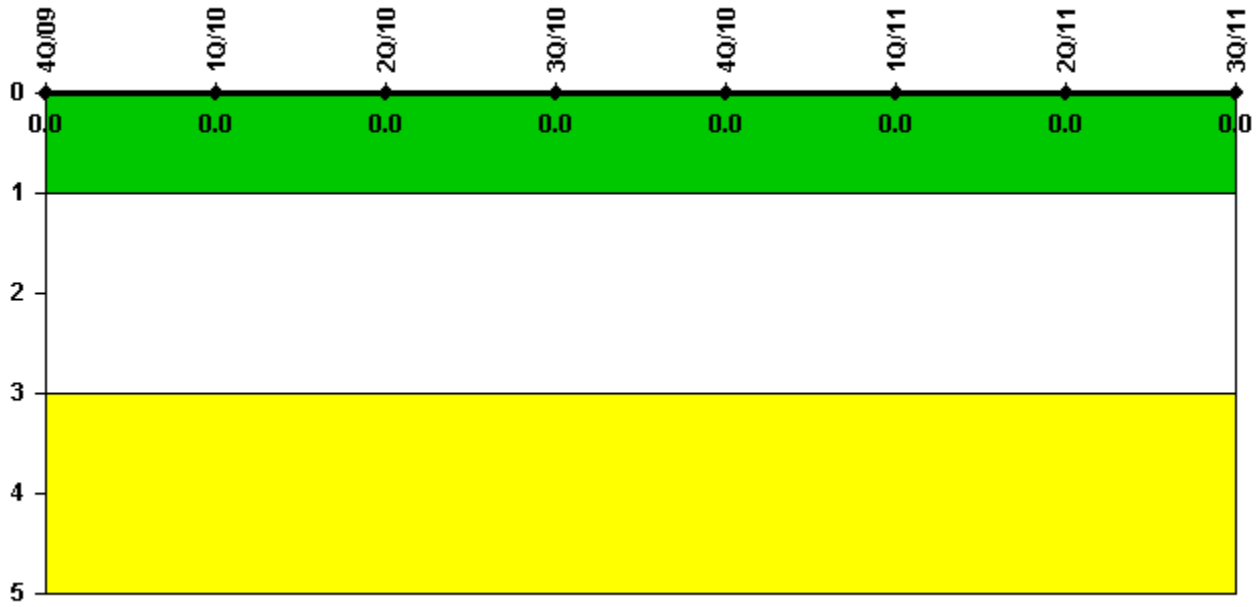
Thresholds: White > 2.0 Yellow > 5.0

### Notes

| Occupational Exposure Control Effectiveness | 4Q/09    | 1Q/10    | 2Q/10    | 3Q/10    | 4Q/10    | 1Q/11    | 2Q/11    | 3Q/11    |
|---|----------|----------|----------|----------|----------|----------|----------|----------|
| High radiation area occurrences             | 0        | 1        | 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> | <b>1</b> | <b>1</b> | <b>1</b> | <b>1</b> | <b>0</b> | <b>0</b> | <b>0</b> |

Licensee Comments: none

# RETS/ODCM Radiological Effluent



Thresholds: White > 1.0 Yellow > 3.0

## Notes

| RETS/ODCM Radiological Effluent | 4Q/09 | 1Q/10 | 2Q/10 | 3Q/10 | 4Q/10 | 1Q/11 | 2Q/11 | 3Q/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.