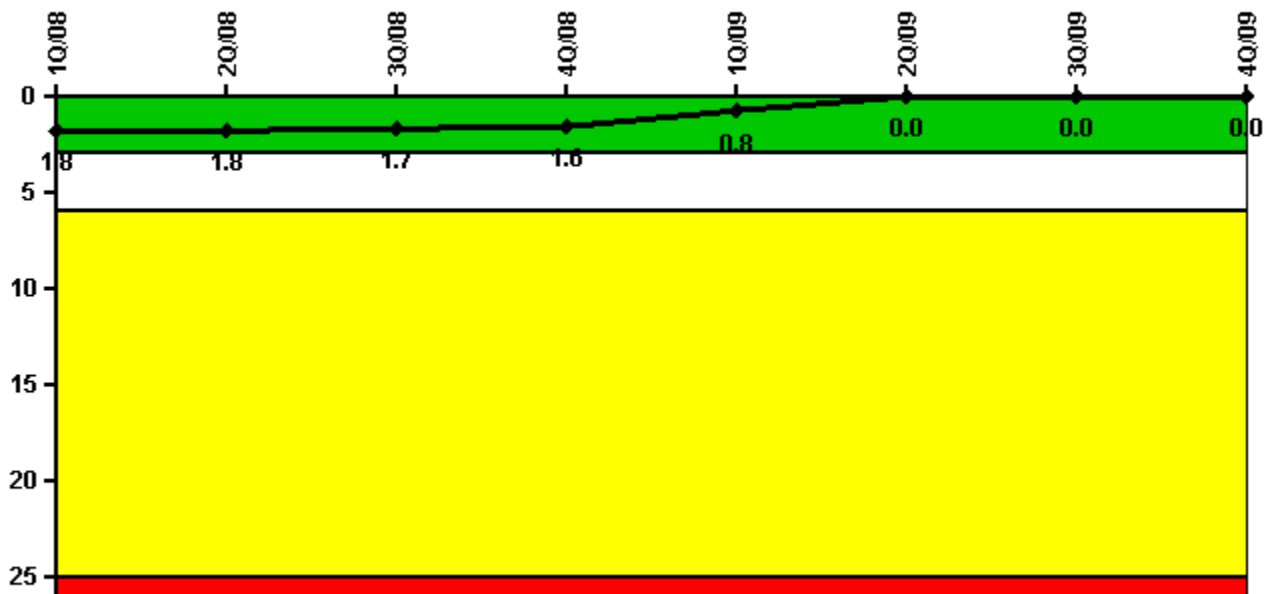


# Palisades

## 4Q/2009 Performance Indicators

Licensee's General Comments: none

### Unplanned Scrams per 7000 Critical Hrs



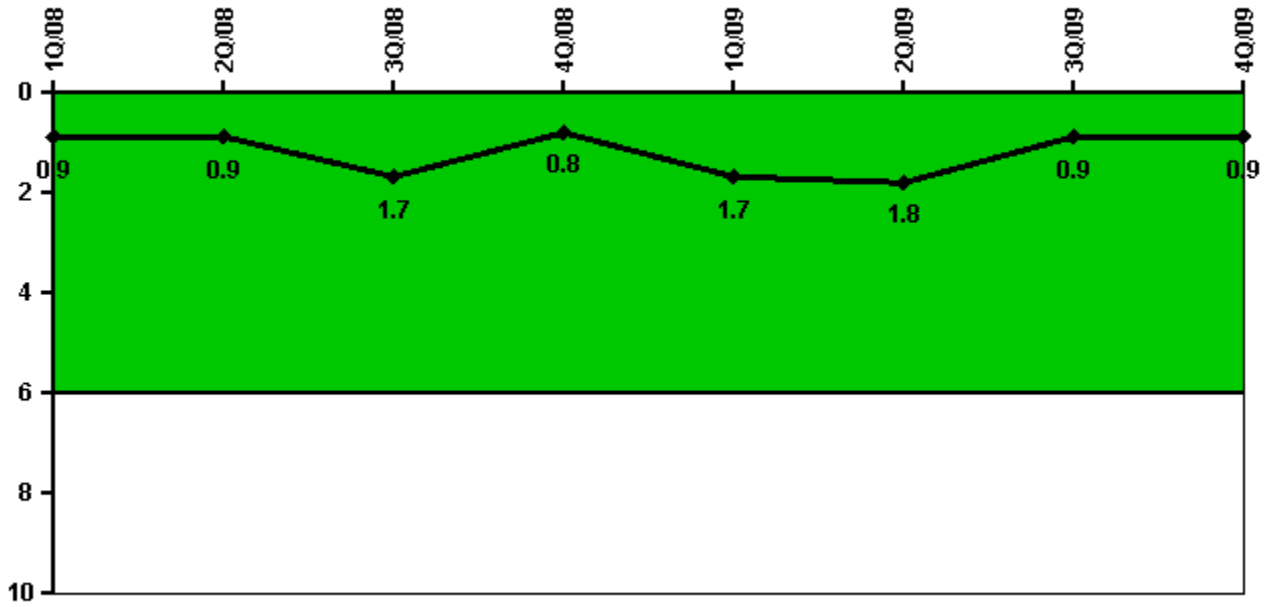
Thresholds: White > 3.0 Yellow > 6.0 Red > 25.0

### Notes

| Unplanned Scrams per 7000 Critical Hrs | 1Q/08  | 2Q/08  | 3Q/08  | 4Q/08  | 1Q/09  | 2Q/09  | 3Q/09  | 4Q/09  |
|--|--------|--------|--------|--------|--------|--------|--------|--------|
| Unplanned scrams                       | 1.0    | 1.0    | 0      | 0      | 0      | 0      | 0      | 0      |
| Critical hours                         | 2148.2 | 2158.1 | 2113.1 | 2209.0 | 1853.5 | 1522.5 | 2208.0 | 2209.0 |
| Indicator value                        | 1.8    | 1.8    | 1.7    | 1.6    | 0.8    | 0      | 0      | 0      |

Licensee Comments: none

## Unplanned Power Changes per 7000 Critical Hrs



Thresholds: White > 6.0

### Notes

| Unplanned Power Changes per 7000 Critical Hrs | 1Q/08  | 2Q/08  | 3Q/08  | 4Q/08  | 1Q/09  | 2Q/09  | 3Q/09  | 4Q/09  |
|---|--------|--------|--------|--------|--------|--------|--------|--------|
| Unplanned power changes                       | 0      | 0      | 1.0    | 0      | 1.0    | 0      | 0      | 0      |
| Critical hours                                | 2148.2 | 2158.1 | 2113.1 | 2209.0 | 1853.5 | 1522.5 | 2208.0 | 2209.0 |
| Indicator value                               | 0.9    | 0.9    | 1.7    | 0.8    | 1.7    | 1.8    | 0.9    | 0.9    |

Licensee Comments: none

## Unplanned Scrams with Complications



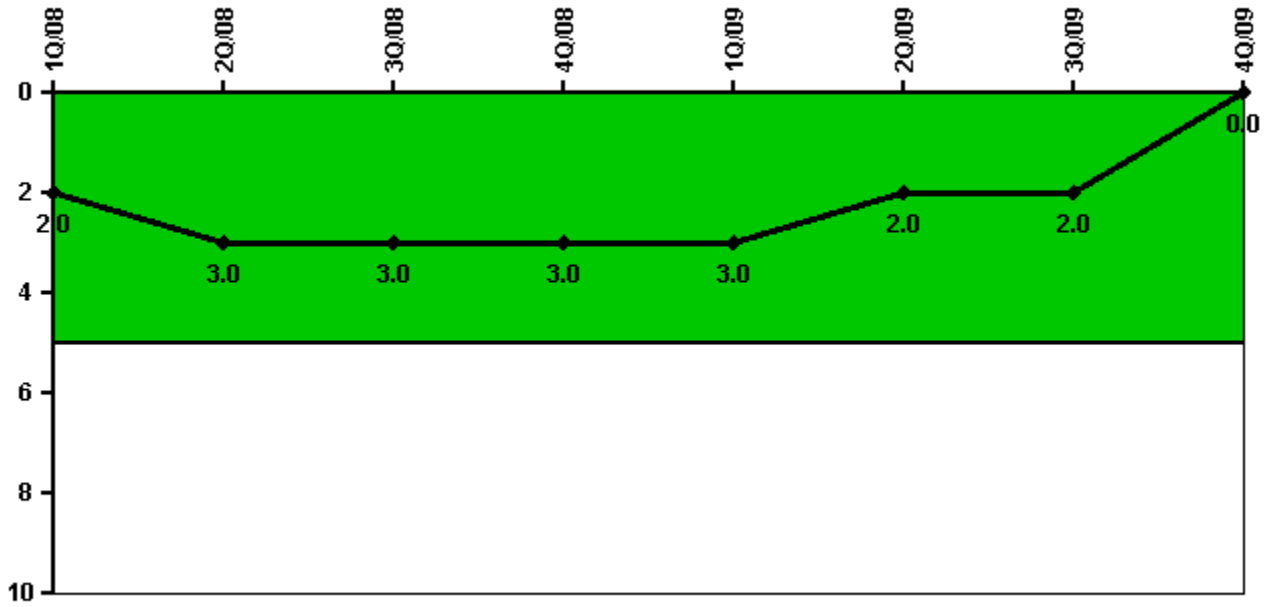
Thresholds: White > 1.0

### Notes

| Unplanned Scrams with Complications | 1Q/08 | 2Q/08 | 3Q/08 | 4Q/08 | 1Q/09 | 2Q/09 | 3Q/09 | 4Q/09 |
|-------------------------------------|-------|-------|-------|-------|-------|-------|-------|-------|
| 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

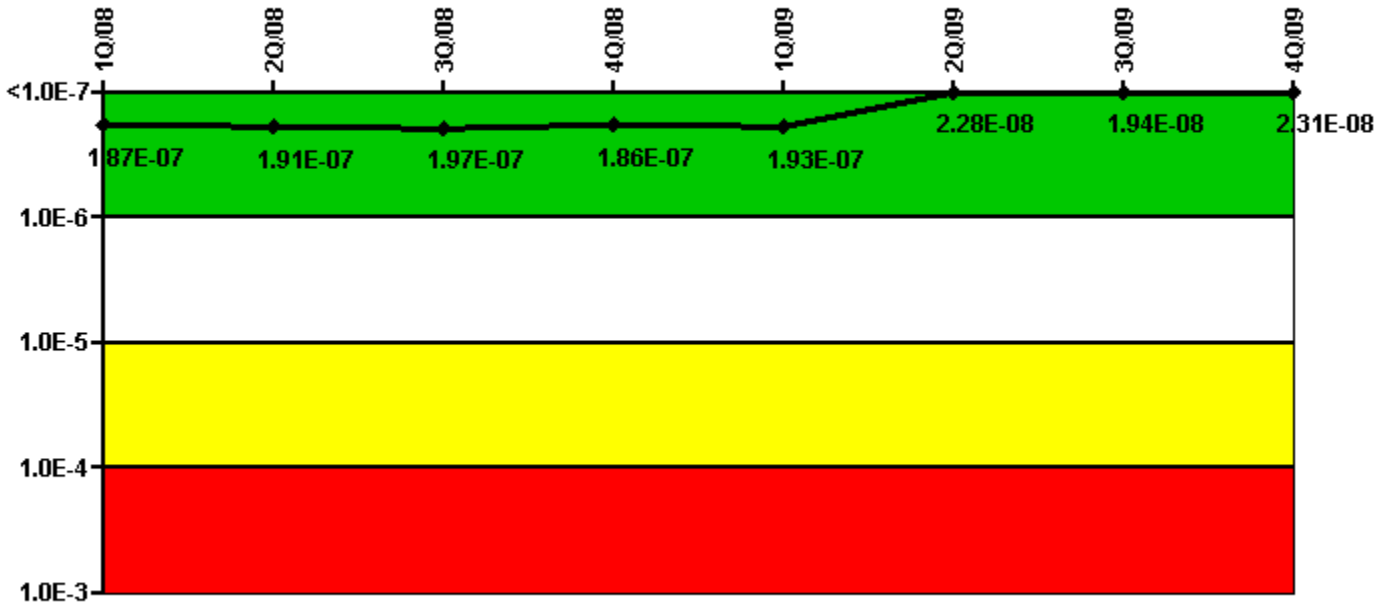
### Notes

| Safety System Functional Failures (PWR) | 1Q/08 | 2Q/08 | 3Q/08 | 4Q/08 | 1Q/09 | 2Q/09 | 3Q/09 | 4Q/09 |
|---|-------|-------|-------|-------|-------|-------|-------|-------|
| Safety System Functional Failures       | 0     | 1     | 0     | 2     | 0     | 0     | 0     | 0     |
| Indicator value                         | 2     | 3     | 3     | 3     | 3     | 2     | 2     | 0     |

Licensee Comments:

4Q/09: The Dec 2009 Safety System Functional Failure (SSFF) Performance Indicator value is at zero (0).

# Mitigating Systems Performance Index, Emergency AC Power System



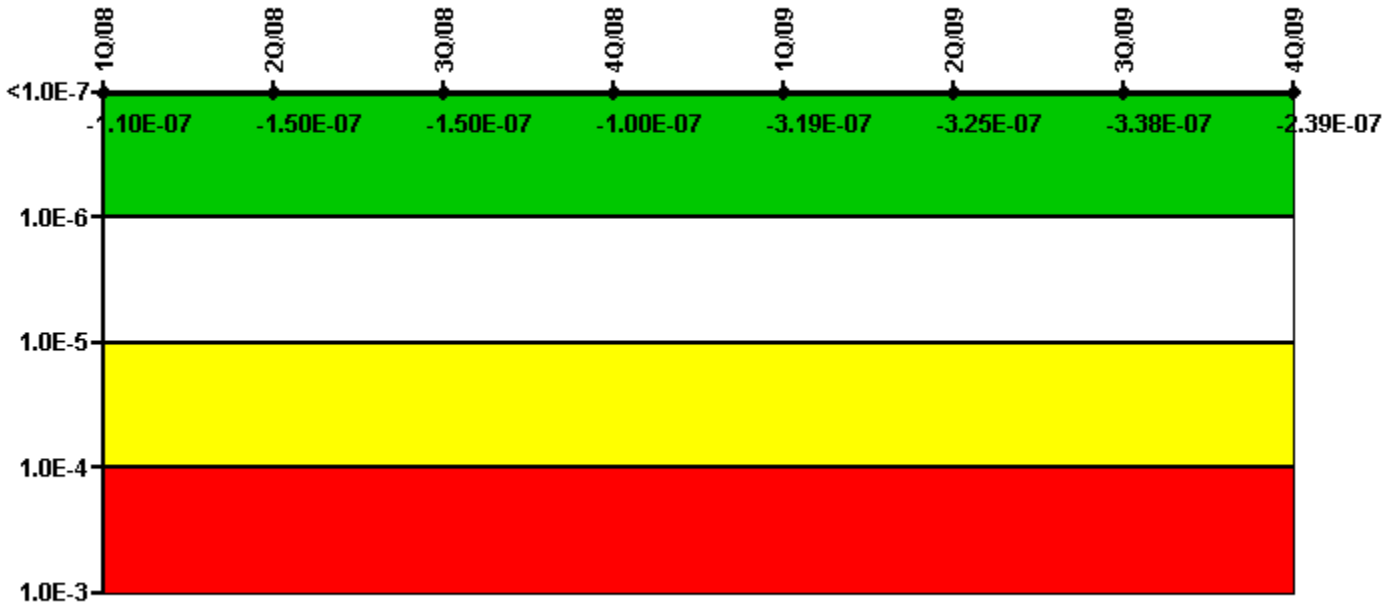
Thresholds: White > 1.00E-6 Yellow > 1.00E-5 Red > 1.00E-4

## Notes

| Mitigating Systems Performance Index, Emergency AC Power System | 1Q/08    | 2Q/08    | 3Q/08    | 4Q/08    | 1Q/09    | 2Q/09     | 3Q/09     | 4Q/09     |
|---|----------|----------|----------|----------|----------|-----------|-----------|-----------|
| UAI ( $\Delta$ CDF)   | 3.70E-08 | 4.10E-08 | 4.70E-08 | 3.60E-08 | 4.30E-08 | 3.00E-08  | 2.60E-08  | 2.90E-08  |
| URI ( $\Delta$ CDF)   | 1.50E-07 | 1.50E-07 | 1.50E-07 | 1.50E-07 | 1.50E-07 | -7.20E-09 | -6.60E-09 | -5.90E-09 |
| PLE   | NO       | NO       | NO       | NO       | NO       | NO        | NO        | NO        |
| Indicator value   | 1.87E-07 | 1.91E-07 | 1.97E-07 | 1.86E-07 | 1.93E-07 | 2.28E-08  | 1.94E-08  | 2.31E-08  |

Licensee Comments: none

# Mitigating Systems Performance Index, High Pressure Injection System



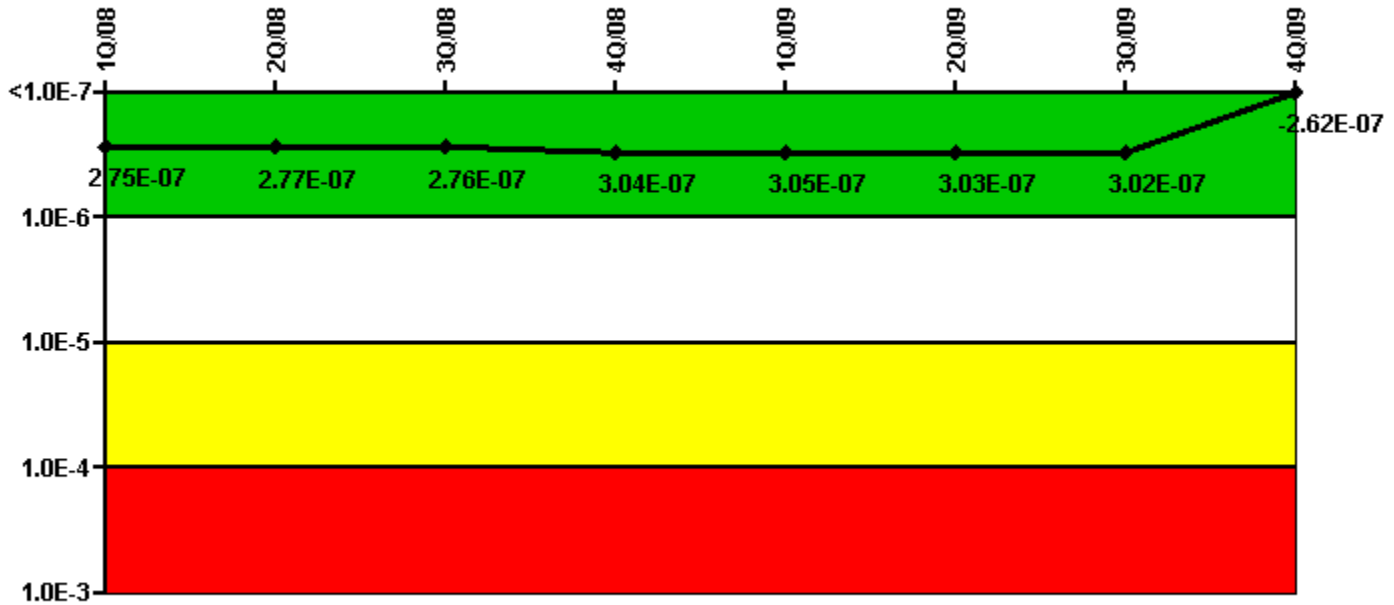
Thresholds: White > 1.00E-6 Yellow > 1.00E-5 Red > 1.00E-4

## Notes

| Mitigating Systems Performance Index, High Pressure Injection System | 1Q/08     | 2Q/08     | 3Q/08     | 4Q/08     | 1Q/09     | 2Q/09     | 3Q/09     | 4Q/09     |
|--|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
| UAI ( $\Delta$ CDF)  | 1.60E-07  | 1.20E-07  | 1.20E-07  | 1.70E-07  | -4.90E-08 | -5.50E-08 | -6.80E-08 | 3.10E-08  |
| URI ( $\Delta$ CDF)  | -2.70E-07 | -2.70E-07 | -2.70E-07 | -2.70E-07 | -2.70E-07 | -2.70E-07 | -2.70E-07 | -2.70E-07 |
| PLE  | NO        | NO        | NO        | NO        | NO        | NO        | NO        | NO        |
| Indicator value  | -1.10E-07 | -1.50E-07 | -1.50E-07 | -1.00E-07 | -3.19E-07 | -3.25E-07 | -3.38E-07 | -2.39E-07 |

Licensee Comments: none

# Mitigating Systems Performance Index, Heat Removal System



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

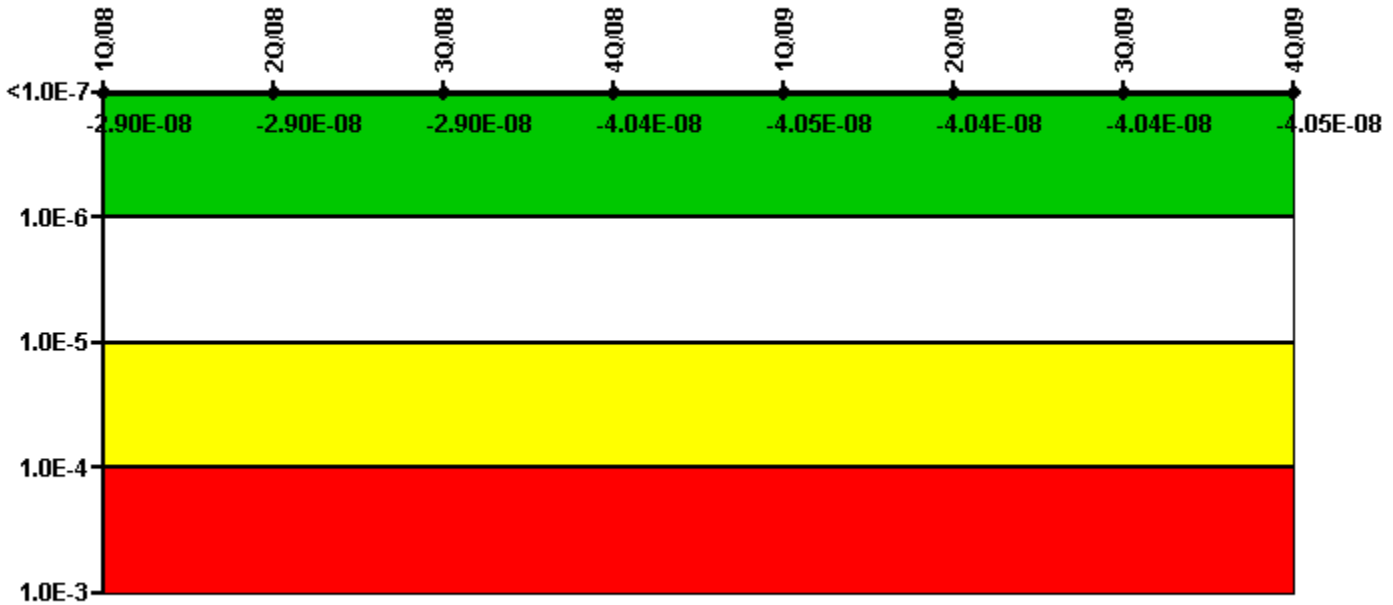
## Notes

| Mitigating Systems Performance Index, Heat Removal System | 1Q/08     | 2Q/08     | 3Q/08     | 4Q/08    | 1Q/09    | 2Q/09    | 3Q/09    | 4Q/09     |
|---|-----------|-----------|-----------|----------|----------|----------|----------|-----------|
| UAI ( $\Delta$ CDF)                                       | -5.40E-09 | -3.30E-09 | -3.60E-09 | 2.40E-08 | 2.50E-08 | 2.30E-08 | 2.20E-08 | 1.80E-08  |
| URI ( $\Delta$ CDF)                                       | 2.80E-07  | 2.80E-07  | 2.80E-07  | 2.80E-07 | 2.80E-07 | 2.80E-07 | 2.80E-07 | -2.80E-07 |
| PLE   | NO        | NO        | NO        | NO       | NO       | NO       | NO       | NO        |
| Indicator value   | 2.75E-07  | 2.77E-07  | 2.76E-07  | 3.04E-07 | 3.05E-07 | 3.03E-07 | 3.02E-07 | -2.62E-07 |

Licensee Comments:

4Q/09: Heat Removal System results improved due to November 2006 failures rolling off of 36-month calculation.

# Mitigating Systems Performance Index, Residual Heat Removal System



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

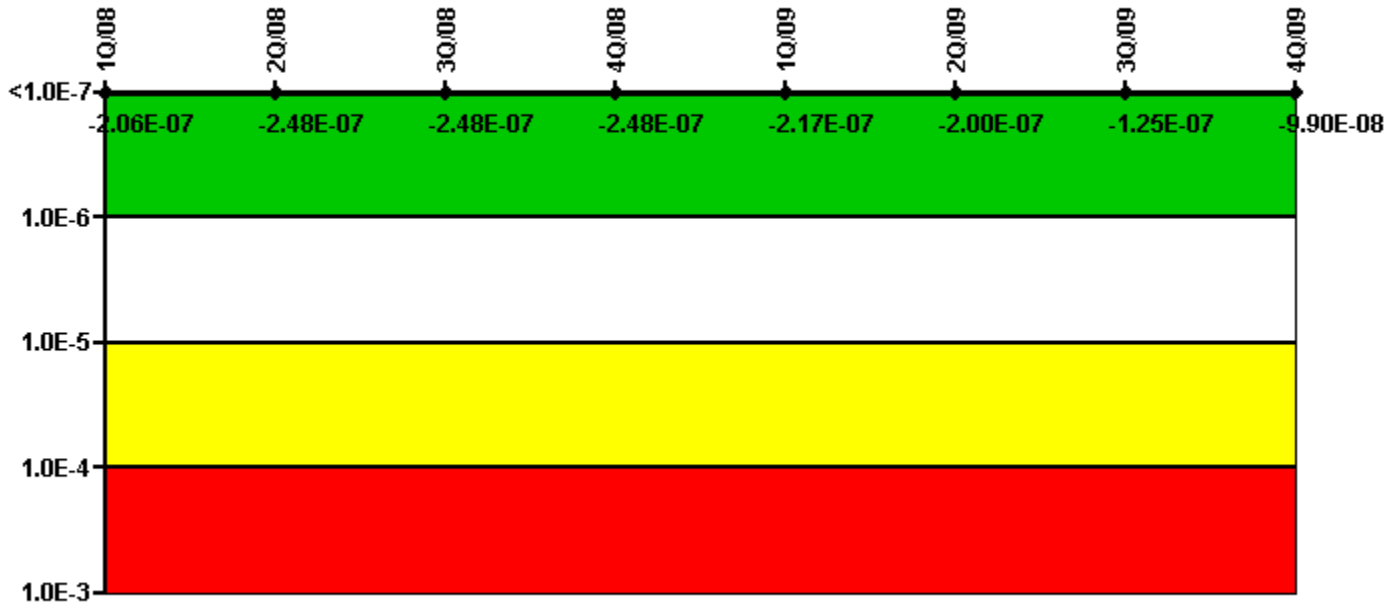
## Notes

| Mitigating Systems Performance Index, Residual Heat Removal System | 1Q/08     | 2Q/08     | 3Q/08     | 4Q/08     | 1Q/09     | 2Q/09     | 3Q/09     | 4Q/09     |
|--|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
| UAI ( $\Delta$ CDF)  | 1.10E-08  | 1.10E-08  | 1.10E-08  | -3.90E-10 | -4.80E-10 | -3.60E-10 | -4.10E-10 | -4.80E-10 |
| URI ( $\Delta$ CDF)  | -4.00E-08 | -4.00E-08 | -4.00E-08 | -4.00E-08 | -4.00E-08 | -4.00E-08 | -4.00E-08 | -4.00E-08 |
| PLE  | NO        | NO        | NO        | NO        | NO        | NO        | NO        | NO        |
| Indicator value  | -2.90E-08 | -2.90E-08 | -2.90E-08 | -4.04E-08 | -4.05E-08 | -4.04E-08 | -4.04E-08 | -4.05E-08 |

Licensee Comments: none



# Mitigating Systems Performance Index, Cooling Water Systems



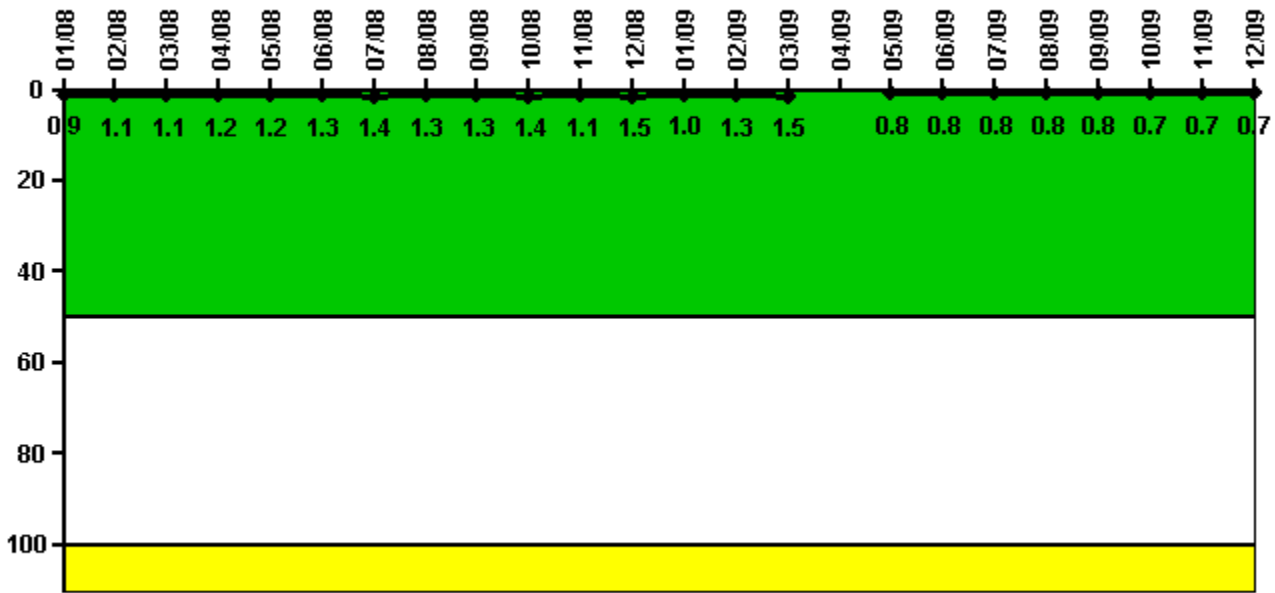
Thresholds: White > 1.00E-6 Yellow > 1.00E-5 Red > 1.00E-4

## Notes

| Mitigating Systems Performance Index, Cooling Water Systems | 1Q/08     | 2Q/08     | 3Q/08     | 4Q/08     | 1Q/09     | 2Q/09     | 3Q/09     | 4Q/09     |
|---|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
| UAI ( $\Delta$ CDF)   | 1.40E-08  | -2.80E-08 | -2.80E-08 | -2.80E-08 | 1.30E-08  | 3.00E-08  | 5.50E-08  | 8.10E-08  |
| URI ( $\Delta$ CDF)   | -2.20E-07 | -2.20E-07 | -2.20E-07 | -2.20E-07 | -2.30E-07 | -2.30E-07 | -1.80E-07 | -1.80E-07 |
| PLE   | NO        | NO        | NO        | NO        | NO        | NO        | NO        | NO        |
| Indicator value   | -2.06E-07 | -2.48E-07 | -2.48E-07 | -2.48E-07 | -2.17E-07 | -2.00E-07 | -1.25E-07 | -9.90E-08 |

Licensee Comments: none

# Reactor Coolant System Activity



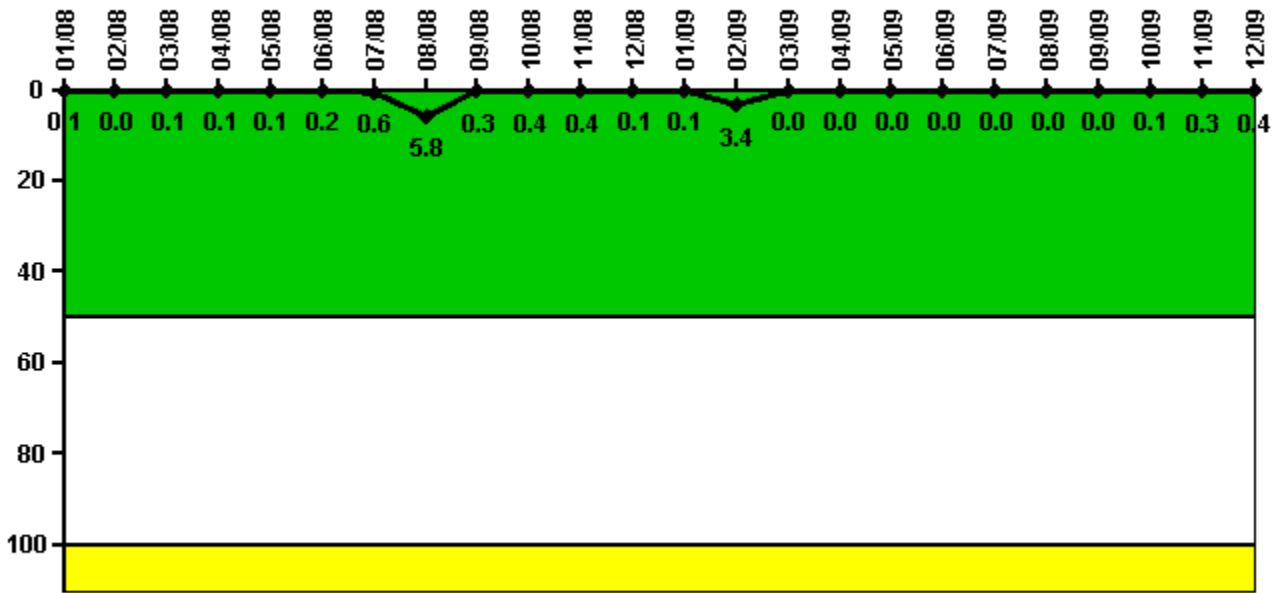
Thresholds: White > 50.0 Yellow > 100.0

## Notes

| Reactor Coolant System Activity | 1/08     | 2/08     | 3/08     | 4/08     | 5/08     | 6/08     | 7/08     | 8/08     | 9/08     | 10/08    | 11/08    | 12/08    |
|---------------------------------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| Maximum activity                | 0.009320 | 0.010600 | 0.011200 | 0.011500 | 0.012200 | 0.012900 | 0.014000 | 0.013200 | 0.013200 | 0.013700 | 0.010800 | 0.014600 |
| 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                 | 0.9      | 1.1      | 1.1      | 1.2      | 1.2      | 1.3      | 1.4      | 1.3      | 1.3      | 1.4      | 1.1      | 1.5      |
| Reactor Coolant System Activity | 1/09     | 2/09     | 3/09     | 4/09     | 5/09     | 6/09     | 7/09     | 8/09     | 9/09     | 10/09    | 11/09    | 12/09    |
| Maximum activity                | 0.010400 | 0.013200 | 0.014800 | N/A      | 0.007570 | 0.007680 | 0.008310 | 0.008260 | 0.008190 | 0.007360 | 0.007120 | 0.007170 |
| 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                 | 1.0      | 1.3      | 1.5      | N/A      | 0.8      | 0.8      | 0.8      | 0.8      | 0.8      | 0.7      | 0.7      | 0.7      |

Licensee Comments: none

## Reactor Coolant System Leakage



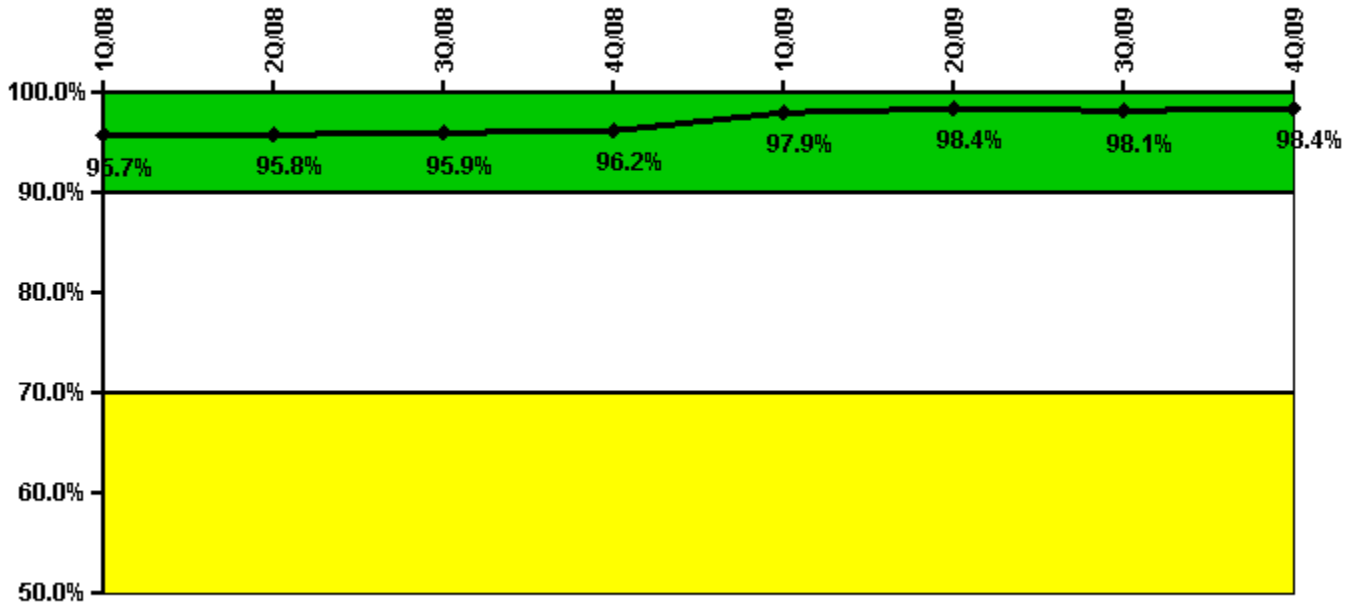
Thresholds: White > 50.0 Yellow > 100.0

### Notes

|                                |       |       |       |       |       |       |       |       |       |       |       |       |
|--------------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Reactor Coolant System Leakage | 1/08  | 2/08  | 3/08  | 4/08  | 5/08  | 6/08  | 7/08  | 8/08  | 9/08  | 10/08 | 11/08 | 12/08 |
| Maximum leakage                | 0.005 | 0.004 | 0.007 | 0.007 | 0.008 | 0.017 | 0.055 | 0.576 | 0.029 | 0.040 | 0.040 | 0.007 |
| 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                | 0.1   | 0     | 0.1   | 0.1   | 0.1   | 0.2   | 0.6   | 5.8   | 0.3   | 0.4   | 0.4   | 0.1   |
| Reactor Coolant System Leakage | 1/09  | 2/09  | 3/09  | 4/09  | 5/09  | 6/09  | 7/09  | 8/09  | 9/09  | 10/09 | 11/09 | 12/09 |
| Maximum leakage                | 0.013 | 0.341 | 0.001 | 0     | 0.003 | 0.003 | 0.003 | 0.004 | 0.003 | 0.013 | 0.026 | 0.037 |
| 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                | 0.1   | 3.4   | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0.1   | 0.3   | 0.4   |

Licensee Comments: none

## Drill/Exercise Performance



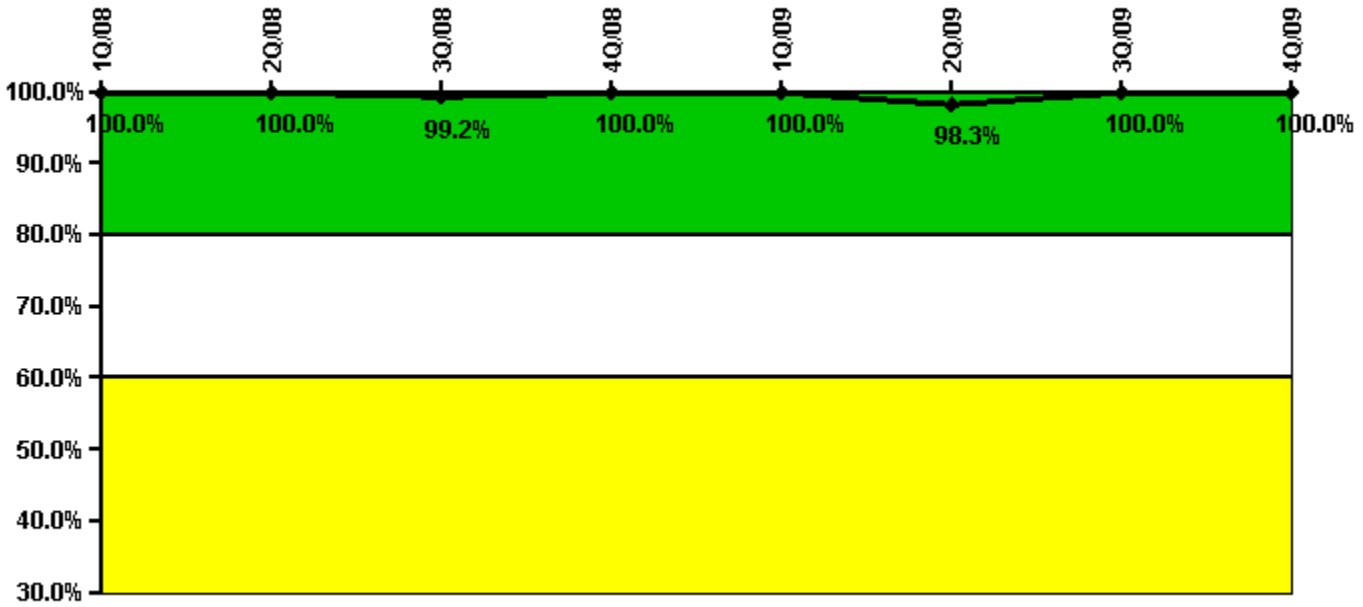
Thresholds: White < 90.0% Yellow < 70.0%

### Notes

| Drill/Exercise Performance | 1Q/08 | 2Q/08 | 3Q/08 | 4Q/08 | 1Q/09 | 2Q/09 | 3Q/09 | 4Q/09 |
|----------------------------|-------|-------|-------|-------|-------|-------|-------|-------|
| Successful opportunities   | 58.0  | 42.0  | 44.0  | 45.0  | 65.0  | 12.0  | 23.0  | 22.0  |
| Total opportunities        | 60.0  | 42.0  | 44.0  | 46.0  | 66.0  | 12.0  | 24.0  | 22.0  |
|                            |       |       |       |       |       |       |       |       |
| Indicator value            | 95.7% | 95.8% | 95.9% | 96.2% | 97.9% | 98.4% | 98.1% | 98.4% |

Licensee Comments: none

# ERO Drill Participation



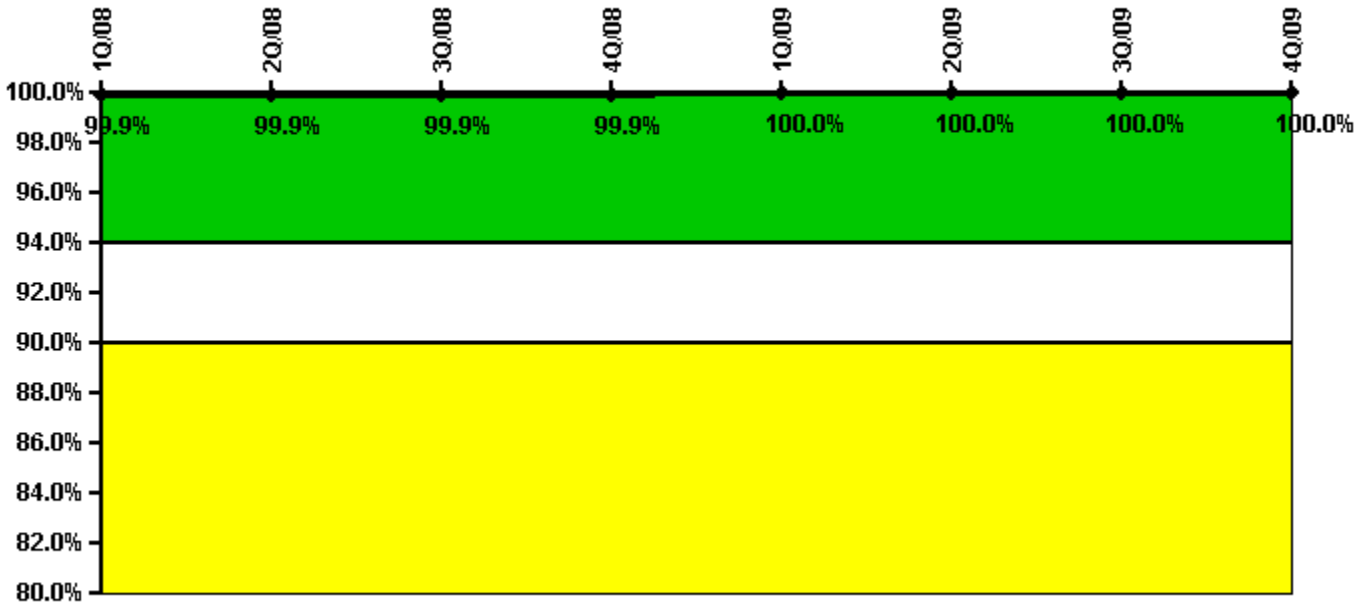
Thresholds: White < 80.0% Yellow < 60.0%

## Notes

| ERO Drill Participation     | 1Q/08  | 2Q/08  | 3Q/08 | 4Q/08  | 1Q/09  | 2Q/09 | 3Q/09  | 4Q/09  |
|-----------------------------|--------|--------|-------|--------|--------|-------|--------|--------|
| Participating Key personnel | 117.0  | 112.0  | 119.0 | 118.0  | 120.0  | 113.0 | 122.0  | 123.0  |
| Total Key personnel         | 117.0  | 112.0  | 120.0 | 118.0  | 120.0  | 115.0 | 122.0  | 123.0  |
|                             |        |        |       |        |        |       |        |        |
| Indicator value             | 100.0% | 100.0% | 99.2% | 100.0% | 100.0% | 98.3% | 100.0% | 100.0% |

Licensee Comments: none

# Alert & Notification System



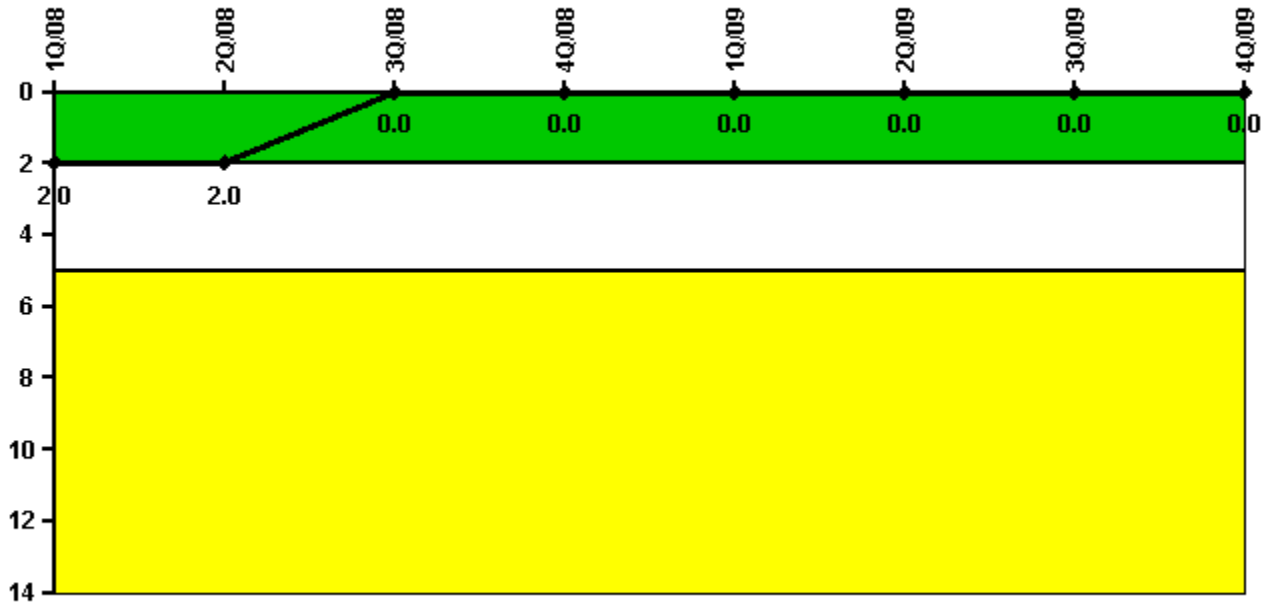
Thresholds: White < 94.0% Yellow < 90.0%

## Notes

| Alert & Notification System | 1Q/08 | 2Q/08 | 3Q/08 | 4Q/08 | 1Q/09  | 2Q/09  | 3Q/09  | 4Q/09  |
|-----------------------------|-------|-------|-------|-------|--------|--------|--------|--------|
| Successful siren-tests      | 182   | 183   | 183   | 183   | 183    | 183    | 183    | 183    |
| Total sirens-tests          | 183   | 183   | 183   | 183   | 183    | 183    | 183    | 183    |
|                             |       |       |       |       |        |        |        |        |
| Indicator value             | 99.9% | 99.9% | 99.9% | 99.9% | 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 | 1Q/08    | 2Q/08    | 3Q/08    | 4Q/08    | 1Q/09    | 2Q/09    | 3Q/09    | 4Q/09    |
|---|----------|----------|----------|----------|----------|----------|----------|----------|
| 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>2</b> | <b>2</b> | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b> |

Licensee Comments: none

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## RETS/ODCM Radiological Effluent



Thresholds: White > 1.0 Yellow > 3.0

### Notes

| RETS/ODCM Radiological Effluent | 1Q/08 | 2Q/08 | 3Q/08 | 4Q/08 | 1Q/09 | 2Q/09 | 3Q/09 | 4Q/09 |
|---------------------------------|-------|-------|-------|-------|-------|-------|-------|-------|
| 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.