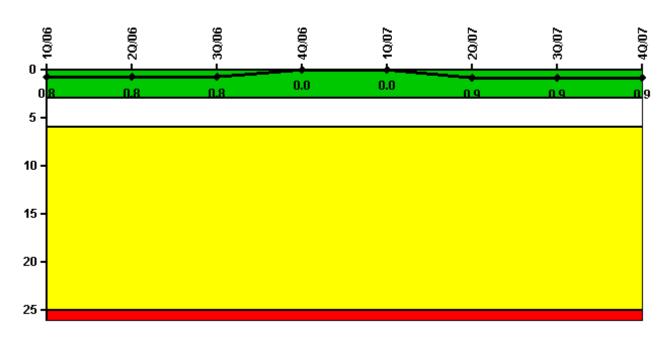
# Limerick 2

## **4Q/2007 Performance Indicators**

Licensee's General Comments: none

# Unplanned Scrams per 7000 Critical Hrs

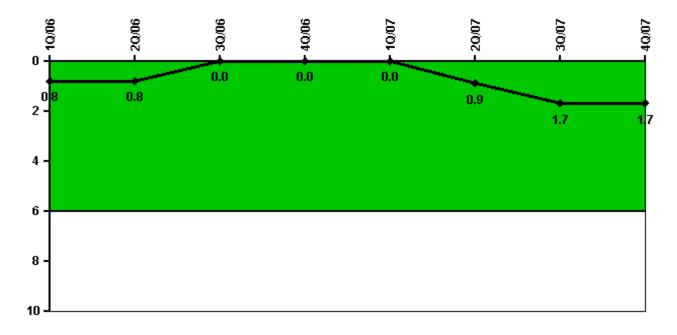


Thresholds: White > 3.0 Yellow > 6.0 Red > 25.0

### Notes

| Unplanned Scrams per 7000 Critical Hrs | 1Q/06  | 2Q/06  | 3Q/06  | 4Q/06  | 10/07  | 2Q/07  | 3Q/07  | 40/07  |
|--|--------|--------|--------|--------|--------|--------|--------|--------|
| Unplanned scrams                       | 0      | 0      | 0      | 0      | 0      | 1.0    | 0      | 0      |
| Critical hours                         | 2123.5 | 2183.0 | 2208.0 | 2209.0 | 1661.0 | 2044.8 | 2208.0 | 2209.0 |
|  |        |        |        |        |        |        |        |        |
| Indicator value                        | 0.8    | 0.8    | 0.8    | О      | О      | 0.9    | 0.9    | 0.9    |

# Unplanned Power Changes per 7000 Critical Hrs

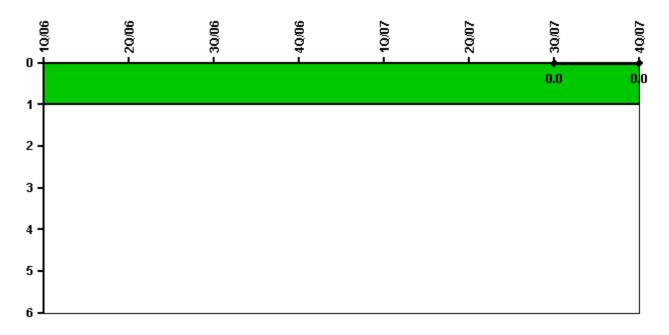


Thresholds: White > 6.0

### Notes

| Unplanned Power Changes per 7000 Critical Hrs | 1Q/06  | 2Q/06  | 3Q/06  | 4Q/06  | 10/07  | 20/07  | 3Q/07  | 4Q/07  |
|---|--------|--------|--------|--------|--------|--------|--------|--------|
| Unplanned power changes                       | 0      | 0      | 0      | 0      | 0      | 1.0    | 1.0    | 0      |
| Critical hours                                | 2123.5 | 2183.0 | 2208.0 | 2209.0 | 1661.0 | 2044.8 | 2208.0 | 2209.0 |
|   |        |        |        |        |        |        |        |        |
| Indicator value                               | 0.8    | 0.8    | О      | О      | О      | 0.9    | 1.7    | 1.7    |

# **Unplanned Scrams with Complications**

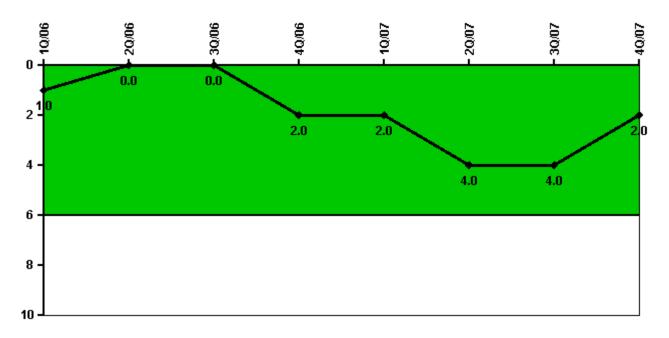


Thresholds: White > 1.0

### Notes

| Unplanned Scrams with Complications | 1Q/06 | 2Q/06 | 3Q/06 | 4Q/06 | 10/07 | 20/07 | 3Q/07 | 4Q/07 |
|-------------------------------------|-------|-------|-------|-------|-------|-------|-------|-------|
| Scrams with complications           |       |       |       | 0     | 0     | 0     | 0     | 0     |
|                                     |       |       |       |       |       |       |       |       |
|                                     |       |       |       |       |       |       |       |       |
| Indicator value                     |       |       |       |       |       |       | 0.0   | 0.0   |

# Safety System Functional Failures (BWR)



Thresholds: White > 6.0

### Notes

| Safety System Functional Failures (BWR) | 1Q/06 | 2Q/06 | 3Q/06 | 4Q/06 | 10/07 | 2Q/07 | 3Q/07 | 4Q/07 |
|---|-------|-------|-------|-------|-------|-------|-------|-------|
| Safety System Functional Failures       | 0     | 0     | 0     | 2     | 0     | 2     | 0     | 0     |
|   |       |       |       |       |       |       |       |       |
| Indicator value                         | 1     | 0     | 0     | 2     | 2     | 4     | 4     | 2     |

# Mitigating Systems Performance Index, Emergency AC Power System

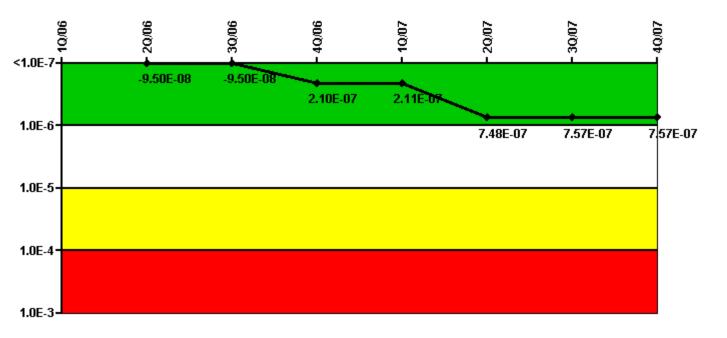


Thresholds: White > 1.00E-6 Yellow > 1.00E-5 Red > 1.00E-4

### Notes

| Mitigating Systems Performance Index, Emergency AC Power System | 1Q/06 | 20/06         | 3Q/06         | 4Q/06         | 10/07         | 20/07         | 3Q/07         | 4Q/07         |
|---|-------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|
| UAI (ΔCDF)  |       | 8.30E-09      | 8.20E-09      | 5.00E-09      | 4.80E-09      | -3.40E-09     | 3.10E-09      | 3.10E-09      |
| URI (ΔCDF)  |       | -3.00E-07     | -3.00E-07     | -3.00E-07     | -3.00E-07     | -3.00E-07     | -2.60E-07     | -2.60E-07     |
| PLE   |       | NO            |
|   |       |               |               |               |               |               |               |               |
| Indicator value   |       | -2.92E-<br>07 | -2.92E-<br>07 | -2.95E-<br>07 | -2.95E-<br>07 | -3.03E-<br>07 | -2.57E-<br>07 | -2.57E-<br>07 |

# Mitigating Systems Performance Index, High Pressure Injection System



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

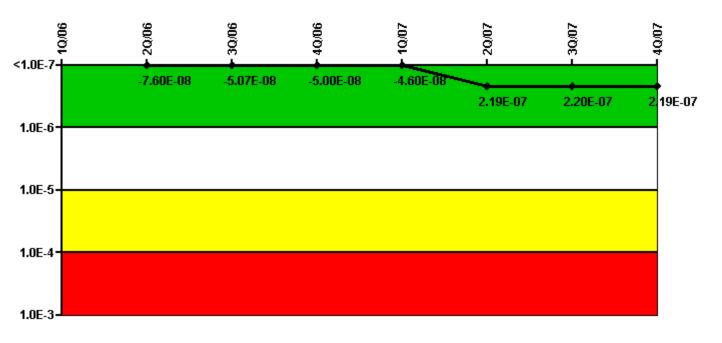
#### Notes

| Mitigating Systems Performance Index, High Pressure Injection System | 1Q/06 | 2Q/06         | 3Q/06         | 4Q/06         | 1Q/07         | 2Q/07        | 3Q/07        | 4Q/07        |
|--|-------|---------------|---------------|---------------|---------------|--------------|--------------|--------------|
| UAI (ΔCDF)   |       | -4.30E-08     | -4.30E-08     | -1.00E-<br>08 | -9.40E-<br>09 | 7.90E-09     | 1.70E-08     | 1.70E-08     |
| URI (ΔCDF)   |       | -5.20E-08     | -5.20E-08     | 2.20E-07      | 2.20E-07      | 7.40E-07     | 7.40E-07     | 7.40E-07     |
| PLE  |       | NO            | NO            | NO            | NO            | NO           | NO           | NO           |
|  |       |               |               |               |               |              |              |              |
| Indicator value  |       | -9.50E-<br>08 | -9.50E-<br>08 | 2.10E-<br>07  | 2.11E-<br>07  | 7.48E-<br>07 | 7.57E-<br>07 | 7.57E-<br>07 |

### Licensee Comments:

2Q/06: 1-22-08- April 2007 data correction- HV-055-2F001 ESF Demands changed from "2" to "1" ESF demand HV-056-2F059 ESF Demands from "2" to "1 . No significant change in URI and no color change occurred.

## Mitigating Systems Performance Index, Heat Removal System



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

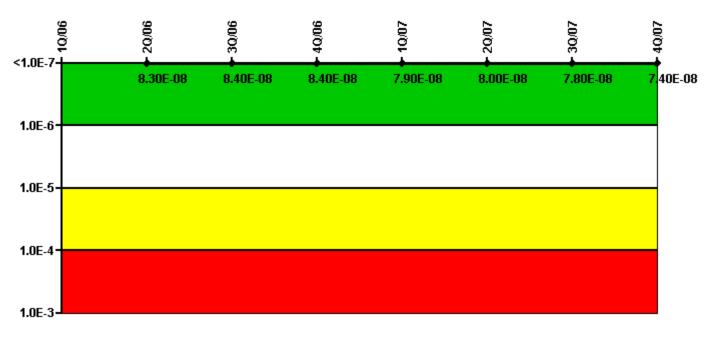
#### Notes

| Mitigating Systems Performance Index, Heat Removal System | 1Q/06 | 20/06         | 3Q/06         | 4Q/06         | 10/07         | 20/07        | 3Q/07        | 4Q/07        |
|---|-------|---------------|---------------|---------------|---------------|--------------|--------------|--------------|
| UAI (ΔCDF)  |       | -2.90E-08     | -3.70E-09     | -3.00E-09     | 1.00E-09      | 1.90E-08     | 2.00E-08     | 1.90E-08     |
| URI (ΔCDF)  |       | -4.70E-08     | -4.70E-08     | -4.70E-08     | -4.70E-08     | 2.00E-07     | 2.00E-07     | 2.00E-07     |
| PLE   |       | NO            | NO            | NO            | NO            | NO           | NO           | NO           |
|   |       |               |               |               |               |              |              |              |
| Indicator value   |       | -7.60E-<br>08 | -5.07E-<br>08 | -5.00E-<br>08 | -4.60E-<br>08 | 2.19E-<br>07 | 2.20E-<br>07 | 2.19E-<br>07 |

### Licensee Comments:

2Q/06: 1.22.08- April 2007 data correction- Unit 2 RCIC System- HV-049-2F013 ESF Demands changed from "2" to "1"; HV-050-2F045 ESF Demands changed from "2" to "1"; HV-050-2F046 ESF Demands changed from "2" to "1". No significant change in URI and no color occurred.

## 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/06 | 2Q/06        | 3Q/06        | 40/06        | 10/07        | 20/07        | 3Q/07        | 40/07        |
|--|-------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|
| UAI (ΔCDF)   |       | 1.30E-08     | 1.30E-08     | 1.40E-08     | 1.40E-08     | 1.80E-08     | 2.00E-08     | 1.90E-08     |
| URI (ΔCDF)   |       | 7.00E-08     | 7.10E-08     | 7.00E-08     | 6.50E-08     | 6.20E-08     | 5.80E-08     | 5.50E-08     |
| PLE  |       | NO           |
|  |       |              |              |              |              |              |              |              |
| Indicator value  |       | 8.30E-<br>08 | 8.40E-<br>08 | 8.40E-<br>08 | 7.90E-<br>08 | 8.00E-<br>08 | 7.80E-<br>08 | 7.40E-<br>08 |

#### Licensee Comments:

4Q/07: 1/22/08- Error Corrections-Baseline RHR unplanned unavailability for 2B Heat Exchanger, 2C Pump, and 2D Pump incorrectly entered in CDE as 4.0E-3 and was changed to 4.0E-4

3Q/07: Changed PRA Parameter(s). 1/22/08- Error Corrections-Baseline RHR unplanned unavailability for 2B Heat Exchanger, 2C Pump, and 2D Pump incorrectly entered in CDE as 4.0E-3 and was changed to 4.0E-4

2Q/07: Changed PRA Parameter(s). 1/22/08- Error Corrections-Baseline RHR unplanned unavailability for 2B Heat Exchanger, 2C Pump, and 2D Pump incorrectly entered in CDE as 4.0E-3 and was changed to 4.0E-4

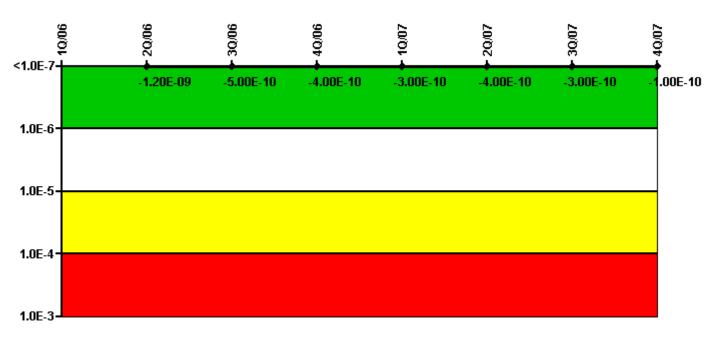
1Q/07: Changed PRA Parameter(s). Demand and Run hours were changed to address corrections and clarifications discovered during the NRC TI inspection and internal data reviews during the 4Q06. No PRA FV-factors or CDF values, color change, or significant change to MSPI UAI or URI resulted from this correction. Discussions of the issue with the Limerick SRI and NRC Region 1 personnel resulted in no FAQ required and that the data should remain as submitted with no further action. 1/22/08- Error Corrections-Baseline RHR unplanned unavailability for 2B Heat Exchanger, 2C Pump, and 2D Pump incorrectly entered in CDE as 4.0E-3 and was changed to 4.0E-4.

4Q/06: Changed PRA Parameter(s). Demand and Run hours were changed to address corrections and clarifications discovered during the NRC TI inspection and internal data reviews during the 4Q06. No PRA FV-factors or CDF values, color change, or significant change to MSPI UAI or URI resulted from this correction. An FAQ will be submitted during 2Q07 to describe the details of this change....1/22/08- October 2006 2A RHR unavailability was incorrectly captured as a 2B RHR unavailability- These values were corrected with no color change, or significant change to MSPI UAI for RHR1/22/08- Error Corrections-Baseline RHR unplanned unavailability for 2B Heat Exchanger, 2C Pump, and 2D Pump incorrectly entered in CDE as 4.0E-3 and was changed to 4.0E-4

3Q/06: Changed PRA Parameter(s). Demand and Run hours were changed to address corrections and clarifications discovered during the NRC TI inspection and internal data reviews during the 4Q06. No PRA FV-factors or CDF values, color change, or significant change to MSPI UAI or URI resulted from this correction. An FAQ will be submitted during 2Q07 to describe the details of this change....1/22/08- Error Corrections-Baseline RHR unplanned unavailability for 2B Heat Exchanger, 2C Pump, and 2D Pump incorrectly entered in CDE as 4.0E-3 and was changed to 4.0E-4.

2Q/06: Changed PRA Parameter(s). Demand and Run hours were changed to address corrections and clarifications discovered during the NRC TI inspection and internal data reviews during the 4Q06. No PRA FV-factors or CDF values, color change, or significant change to MSPI UAI or URI resulted from this correction. An FAQ will be submitted during 2Q07 to describe the details of this change;...1/22/08- Error Corrections-Baseline RHR unplanned unavailability for 2B Heat Exchanger, 2C Pump, and 2D Pump incorrectly entered in CDE as 4.0E-3 and was changed to 4.0E-4. ...1/22/08-May 2007- corrected 2A RHR 26 hours of unavailability which was incorrectly recorded as 2 hours of unavailability

### Mitigating Systems Performance Index, Cooling Water Systems



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

#### Notes

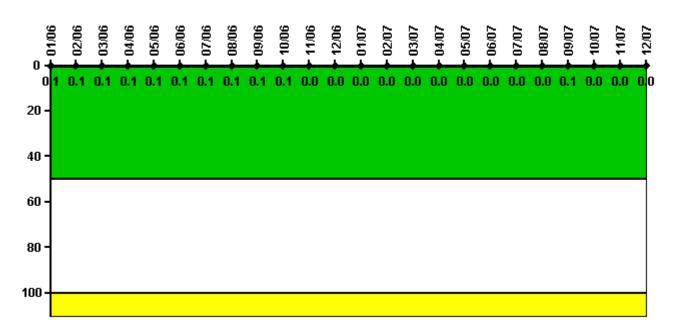
| Mitigating Systems Performance Index, Cooling Water Systems | 1Q/06 | 20/06         | 3Q/06         | 4Q/06         | 10/07         | 20/07         | 3Q/07         | 40/07         |
|---|-------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|
| UAI (ΔCDF)  |       | 2.00E-09      | 2.80E-09      | 2.80E-09      | 2.90E-09      | 2.70E-09      | 2.80E-09      | 3.00E-09      |
| URI (ΔCDF)  |       | -3.20E-09     | -3.30E-09     | -3.20E-09     | -3.20E-09     | -3.10E-09     | -3.10E-09     | -3.10E-09     |
| PLE   |       | NO            |
|   |       |               |               |               |               |               |               |               |
| Indicator value   |       | -1.20E-<br>09 | -5.00E-<br>10 | -4.00E-<br>10 | -3.00E-<br>10 | -4.00E-<br>10 | -3.00E-<br>10 | -1.00E-<br>10 |

Licensee Comments:

2Q/06: Demand and Run hours were changed to address corrections and clarifications discovered during the NRC TI

inspection and internal data reviews during the 4Q06. No PRA FV-factors or CDF values, color change, or significant change to MSPI UAI or URI resulted from this correction. An FAQ will be submitted during 2Q07 to describe the details of this change...1/22/08- June 2007 ESW data corrected "B" ESW pump unavailability hours changed from 3.6 hours to 20 hours of unavailability. No significant change in UAI and no color change occurred.

### **Reactor Coolant System Activity**

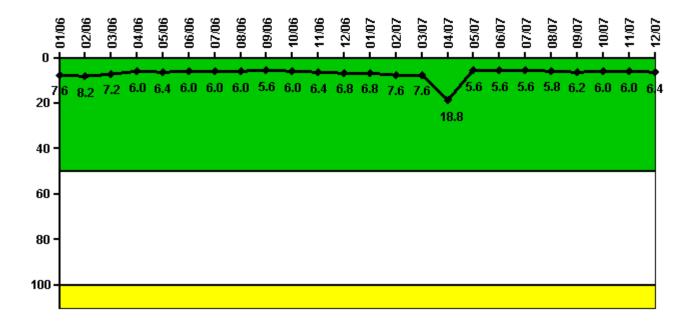


Thresholds: White > 50.0 Yellow > 100.0

#### Notes

| Reactor Coolant<br>System Activity | 1/06     | 2/06     | 3/06     | 4/06     | 5/06     | 6/06     | 7/06     | 8/06     | 9/06     | 10/06    | 11/06    | 12/06    |
|------------------------------------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| Maximum activity                   | 0.000105 | 0.000108 | 0.000132 | 0.000140 | 0.000200 | 0.000187 | 0.000128 | 0.000140 | 0.000123 | 0.000123 | 0.000081 | 0.000076 |
| Technical specification limit      | 0.2      | 0.2      | 0.2      | 0.2      | 0.2      | 0.2      | 0.2      | 0.2      | 0.2      | 0.2      | 0.2      | 0.2      |
| Indicator value                    | 0.1      | 0.1      | 0.1      | 0.1      | 0.1      | 0.1      | 0.1      | 0.1      | 0.1      | 0.1      | 0        | 0        |
| Reactor Coolant<br>System Activity | 1/07     | 2/07     | 3/07     | 4/07     | 5/07     | 6/07     | 7/07     | 8/07     | 9/07     | 10/07    | 11/07    | 12/07    |
| Maximum activity                   | 0.000073 | 0.000081 | 0.000069 | 0.000035 | 0.000039 | 0.000032 | 0.000031 | 0.000029 | 0.000165 | 0.000032 | 0.000025 | 0.000022 |
| Technical specification limit      | 0.2      | 0.2      | 0.2      | 0.2      | 0.2      | 0.2      | 0.2      | 0.2      | 0.2      | 0.2      | 0.2      | 0.2      |
| Indicator value                    | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0.1      | 0        | 0        | 0        |

# Reactor Coolant System Leakage

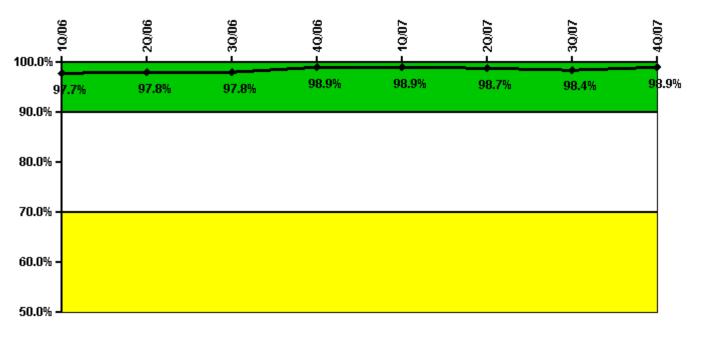


Thresholds: White > 50.0 Yellow > 100.0

### Notes

| Reactor Coolant System Leakage | 1/06  | 2/06  | 3/06  | 4/06  | 5/06  | 6/06  | 7/06  | 8/06  | 9/06  | 10/06 | 11/06 | 12/06 |
|--------------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Maximum leakage                | 1.900 | 2.050 | 1.800 | 1.500 | 1.600 | 1.500 | 1.500 | 1.500 | 1.400 | 1.500 | 1.600 | 1.700 |
| Technical specification limit  | 25.0  | 25.0  | 25.0  | 25.0  | 25.0  | 25.0  | 25.0  | 25.0  | 25.0  | 25.0  | 25.0  | 25.0  |
|                                |       |       |       |       |       |       |       |       |       |       |       |       |
| Indicator value                | 7.6   | 8.2   | 7.2   | 6.0   | 6.4   | 6.0   | 6.0   | 6.0   | 5.6   | 6.0   | 6.4   | 6.8   |
| Reactor Coolant System Leakage | 1/07  | 2/07  | 3/07  | 4/07  | 5/07  | 6/07  | 7/07  | 8/07  | 9/07  | 10/07 | 11/07 | 12/07 |
| Maximum leakage                | 1.700 | 1.900 | 1.900 | 4.700 | 1.400 | 1.400 | 1.400 | 1.450 | 1.550 | 1.500 | 1.500 | 1.600 |
| Technical specification limit  | 25.0  | 25.0  | 25.0  | 25.0  | 25.0  | 25.0  | 25.0  | 25.0  | 25.0  | 25.0  | 25.0  | 25.0  |
|                                |       |       |       |       |       |       |       |       |       |       |       |       |
| Indicator value                | 6.8   | 7.6   | 7.6   | 18.8  | 5.6   | 5.6   | 5.6   | 5.8   | 6.2   | 6.0   | 6.0   | 6.4   |

## **Drill/Exercise Performance**

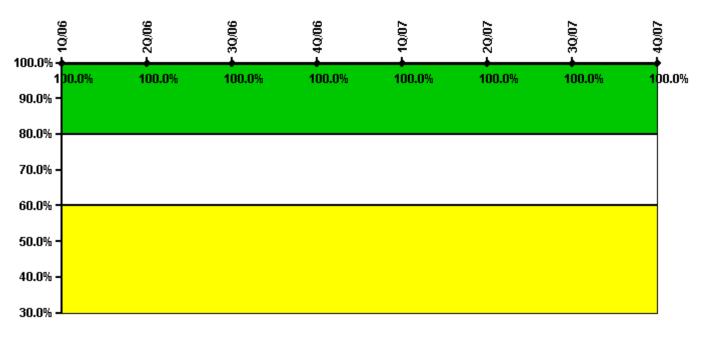


Thresholds: White < 90.0% Yellow < 70.0%

### Notes

| Drill/Exercise Performance | 1Q/06 | 2Q/06 | 3Q/06 | 4Q/06 | 1Q/07 | 2Q/07 | 3Q/07 | 4Q/07 |
|----------------------------|-------|-------|-------|-------|-------|-------|-------|-------|
| Successful opportunities   | 16.0  | 54.0  | 36.0  | 58.0  | 10.0  | 71.0  | 37.0  | 0     |
| Total opportunities        | 16.0  | 55.0  | 36.0  | 58.0  | 10.0  | 72.0  | 38.0  | 0     |
|                            |       |       |       |       |       |       |       |       |
| Indicator value            | 97.7% | 97.8% | 97.8% | 98.9% | 98.9% | 98.7% | 98.4% | 98.9% |

# **ERO Drill Participation**

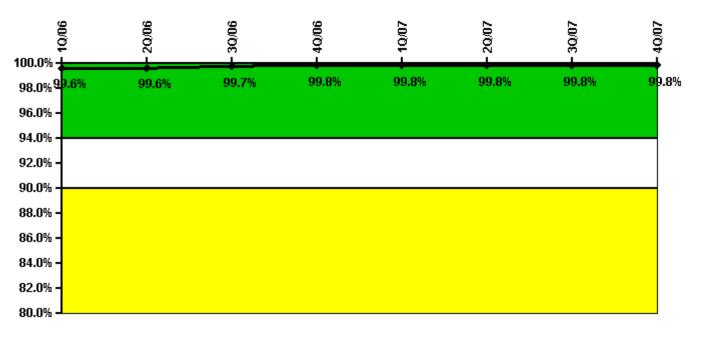


Thresholds: White < 80.0% Yellow < 60.0%

### Notes

| ERO Drill Participation     | 1Q/06  | 2Q/06  | 3Q/06  | 4Q/06  | 10/07  | 20/07  | 3Q/07  | 4Q/07  |
|-----------------------------|--------|--------|--------|--------|--------|--------|--------|--------|
| Participating Key personnel | 67.0   | 69.0   | 69.0   | 69.0   | 72.0   | 69.0   | 68.0   | 69.0   |
| Total Key personnel         | 67.0   | 69.0   | 69.0   | 69.0   | 72.0   | 69.0   | 68.0   | 69.0   |
|                             |        |        |        |        |        |        |        |        |
| Indicator value             | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% |

# **Alert & Notification System**

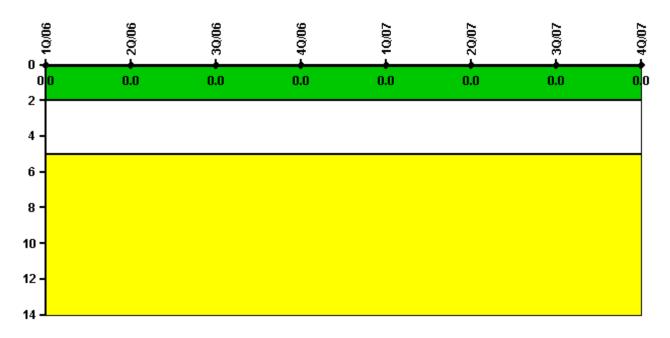


Thresholds: White < 94.0% Yellow < 90.0%

### Notes

| Alert & Notification System | 1Q/06 | 2Q/06 | 3Q/06 | 4Q/06 | 10/07 | 2Q/07 | 3Q/07 | 4Q/07 |
|-----------------------------|-------|-------|-------|-------|-------|-------|-------|-------|
| Successful siren-tests      | 2138  | 2138  | 2140  | 2143  | 2140  | 2139  | 2143  | 2305  |
| Total sirens-tests          | 2145  | 2145  | 2145  | 2145  | 2145  | 2145  | 2145  | 2310  |
|                             |       |       |       |       |       |       |       |       |
| Indicator value             | 99.6% | 99.6% | 99.7% | 99.8% | 99.8% | 99.8% | 99.8% | 99.8% |

# Occupational Exposure Control Effectiveness

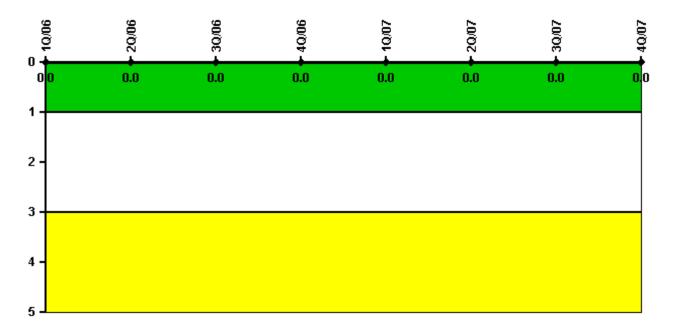


Thresholds: White > 2.0 Yellow > 5.0

### Notes

| Occupational Exposure Control Effectiveness | 1Q/06 | 2Q/06 | 3Q/06 | 4Q/06 | 10/07 | 20/07 | 3Q/07 | 4Q/07 |
|---|-------|-------|-------|-------|-------|-------|-------|-------|
| 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     |

# **RETS/ODCM Radiological Effluent**



Thresholds: White > 1.0 Yellow > 3.0

#### Notes

| RETS/ODCM Radiological Effluent | 1Q/06 | 2Q/06 | 3Q/06 | 4Q/06 | 10/07 | 2Q/07 | 3Q/07 | 4Q/07 |
|---------------------------------|-------|-------|-------|-------|-------|-------|-------|-------|
| RETS/ODCM occurrences           | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     |
|                                 |       |       |       |       |       |       |       |       |
| Indicator value                 | О     | О     | О     | О     | О     | О     | О     | 0     |

Licensee Comments: none

Physical Protection information not publicly available.

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

Last Modified: February 4, 2008