

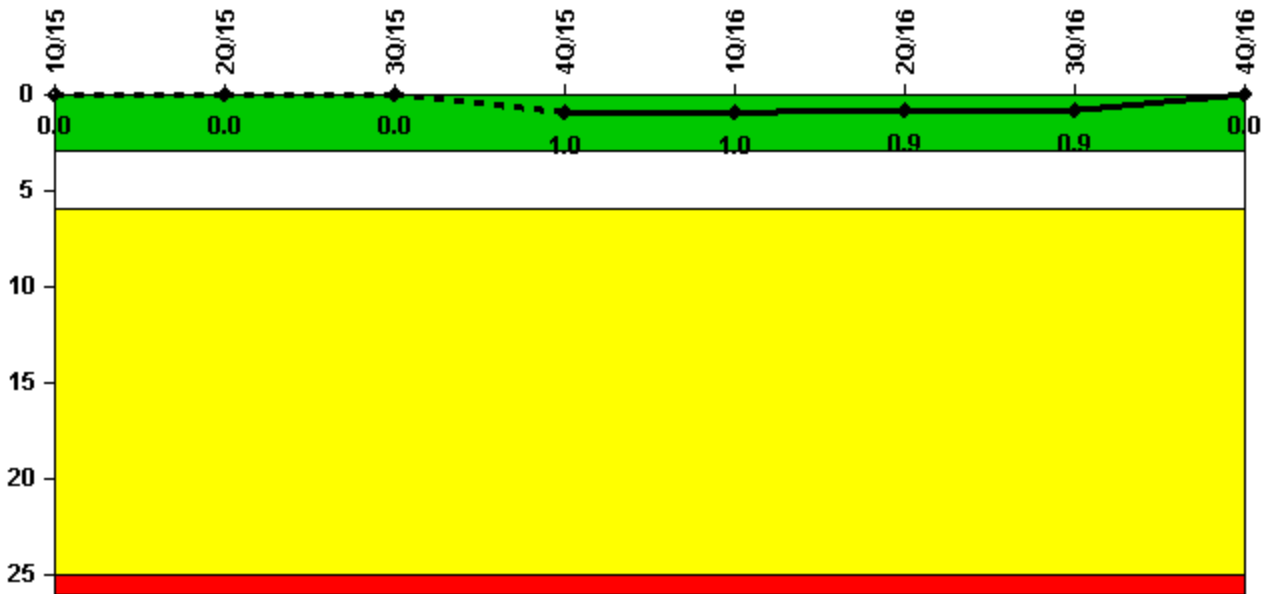
Surry 1

4Q/2016 Performance Indicators

The solid trend line represents the current reporting period.

Licensee's General Comments: none

Unplanned Scrams per 7000 Critical Hrs



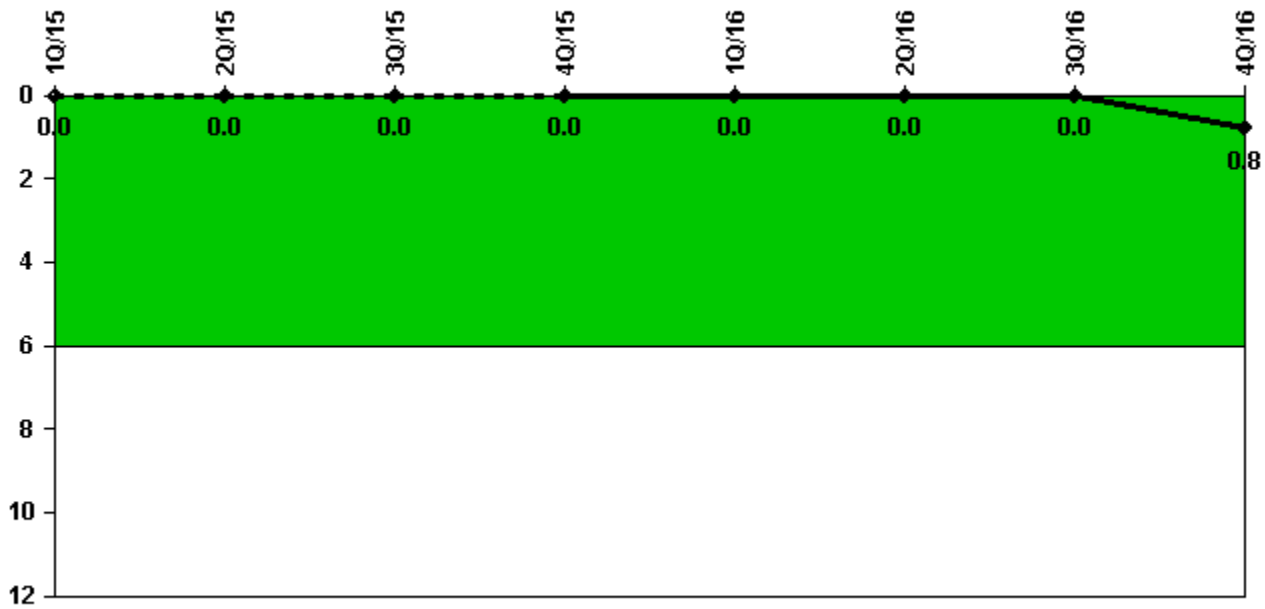
Thresholds: White > 3.0 Yellow > 6.0 Red > 25.0

Notes

| Unplanned Scrams per 7000 Critical Hrs | 1Q/15 | 2Q/15 | 3Q/15 | 4Q/15 | 1Q/16 | 2Q/16 | 3Q/16 | 4Q/16 |
|--|--------|--------|--------|--------|--------|--------|--------|--------|
| Unplanned scrams | 0 | 0 | 0 | 1.0 | 0 | 0 | 0 | 0 |
| Critical hours | 2159.0 | 1272.0 | 1952.3 | 1363.6 | 2183.0 | 2184.0 | 2208.0 | 1736.7 |
| Indicator value | 0 | 0 | 0 | 1.0 | 1.0 | 0.9 | 0.9 | 0 |

Licensee Comments: none

Unplanned Power Changes per 7000 Critical Hrs



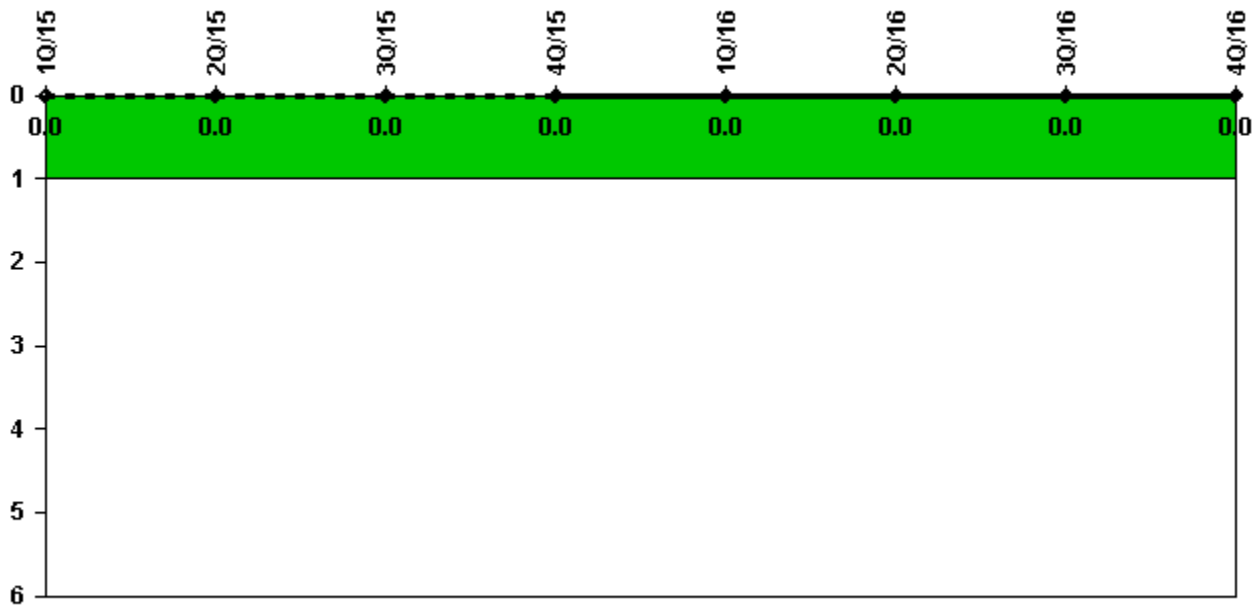
Thresholds: White > 6.0

Notes

| Unplanned Power Changes per 7000 Critical Hrs | 1Q/15 | 2Q/15 | 3Q/15 | 4Q/15 | 1Q/16 | 2Q/16 | 3Q/16 | 4Q/16 |
|---|----------|----------|----------|----------|----------|----------|----------|------------|
| Unplanned power changes | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1.0 |
| Critical hours | 2159.0 | 1272.0 | 1952.3 | 1363.6 | 2183.0 | 2184.0 | 2208.0 | 1736.7 |
| Indicator value | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.8 |

Licensee Comments: none

Unplanned Scrams with Complications



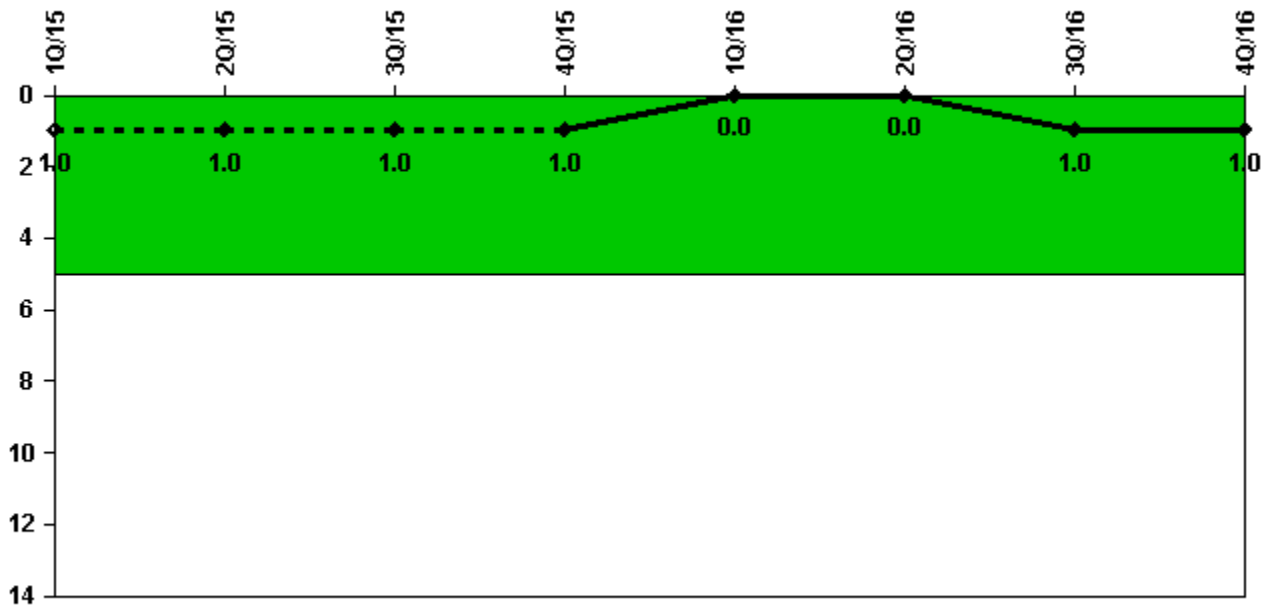
Thresholds: White > 1.0

Notes

| Unplanned Scrams with Complications | 1Q/15 | 2Q/15 | 3Q/15 | 4Q/15 | 1Q/16 | 2Q/16 | 3Q/16 | 4Q/16 |
|-------------------------------------|------------|------------|------------|------------|------------|------------|------------|------------|
| 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

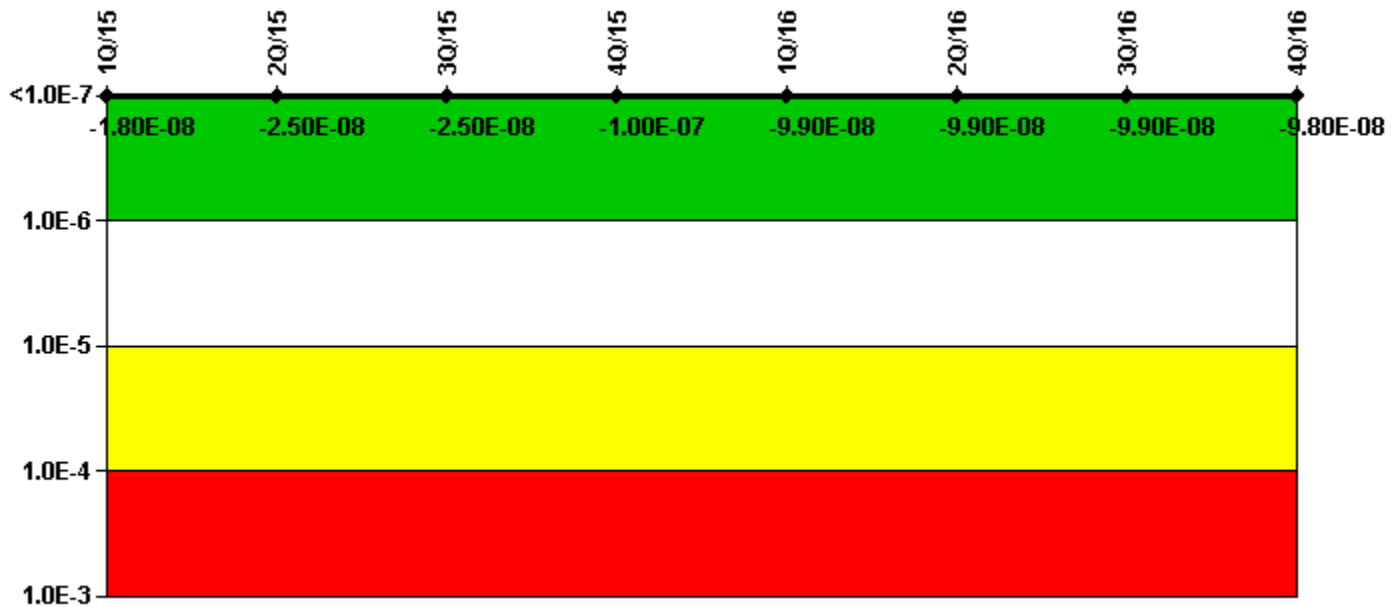
Notes

| Safety System Functional Failures (PWR) | 1Q/15 | 2Q/15 | 3Q/15 | 4Q/15 | 1Q/16 | 2Q/16 | 3Q/16 | 4Q/16 |
|---|----------|----------|----------|----------|----------|----------|----------|----------|
| Safety System Functional Failures | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 0 |
| Indicator value | 1 | 1 | 1 | 1 | 0 | 0 | 1 | 1 |

Licensee Comments:

2Q/15: An assessment revealed a SSFF for March 2015 (see LER 50-280, 50-281/2015-001-00). Historical data was corrected with no change in color.

Mitigating Systems Performance Index, Emergency AC Power System



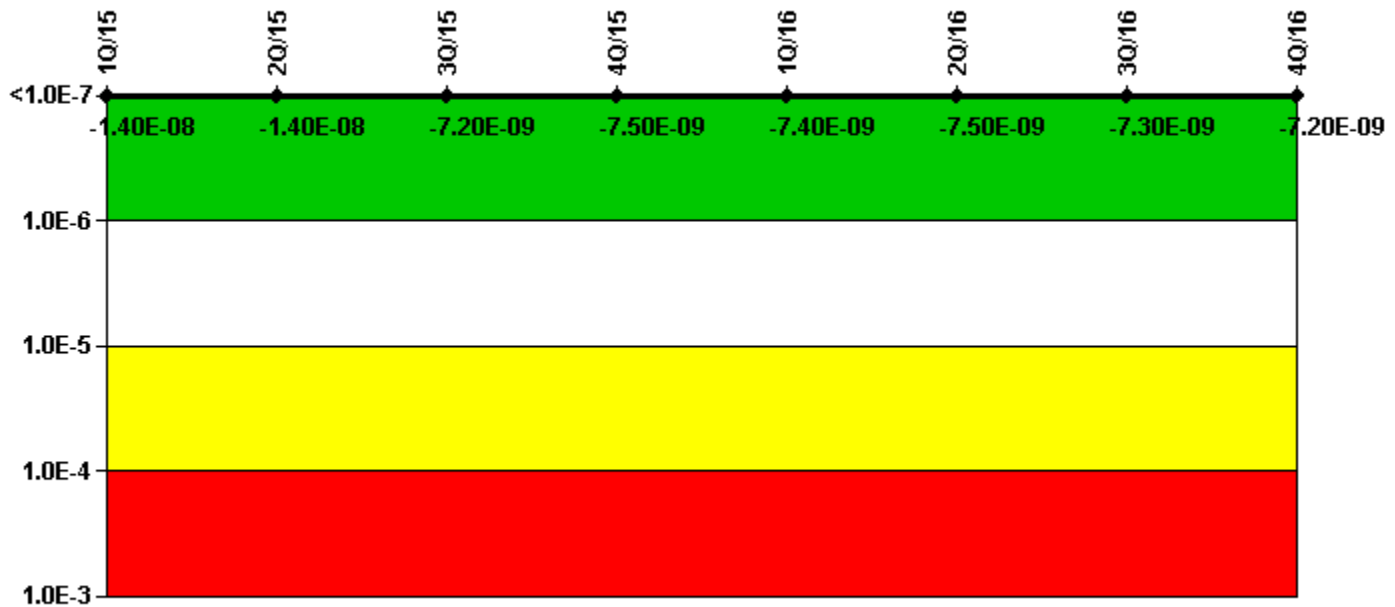
Thresholds: White > 1.00E-6 Yellow > 1.00E-5 Red > 1.00E-4

Notes

| Mitigating Systems Performance Index, Emergency AC Power System | 1Q/15 | 2Q/15 | 3Q/15 | 4Q/15 | 1Q/16 | 2Q/16 | 3Q/16 | 4Q/16 |
|---|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
| UAI (Δ CDF) | -2.74E-09 | -2.64E-09 | -2.49E-09 | -4.87E-09 | -4.88E-09 | -4.55E-09 | -4.55E-09 | -4.70E-09 |
| URI (Δ CDF) | -1.50E-08 | -2.24E-08 | -2.27E-08 | -9.54E-08 | -9.42E-08 | -9.46E-08 | -9.43E-08 | -9.33E-08 |
| PLE | NO | NO | NO | NO | NO | NO | NO | NO |
| Indicator value | -1.80E-08 | -2.50E-08 | -2.50E-08 | -1.00E-07 | -9.90E-08 | -9.90E-08 | -9.90E-08 | -9.80E-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/15 | 2Q/15 | 3Q/15 | 4Q/15 | 1Q/16 | 2Q/16 | 3Q/16 | 4Q/16 |
|--|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
| UAI (Δ CDF) | -9.98E-10 | -9.95E-10 | -9.71E-10 | -9.82E-10 | -1.06E-09 | -1.06E-09 | -1.06E-09 | -1.06E-09 |
| URI (Δ CDF) | -1.32E-08 | -1.27E-08 | -6.25E-09 | -6.55E-09 | -6.37E-09 | -6.40E-09 | -6.27E-09 | -6.16E-09 |
| PLE | NO | NO | NO | NO | NO | NO | NO | NO |
| Indicator value | -1.40E-08 | -1.40E-08 | -7.20E-09 | -7.50E-09 | -7.40E-09 | -7.50E-09 | -7.30E-09 | -7.20E-09 |

Licensee Comments: none

Mitigating Systems Performance Index, Heat Removal System



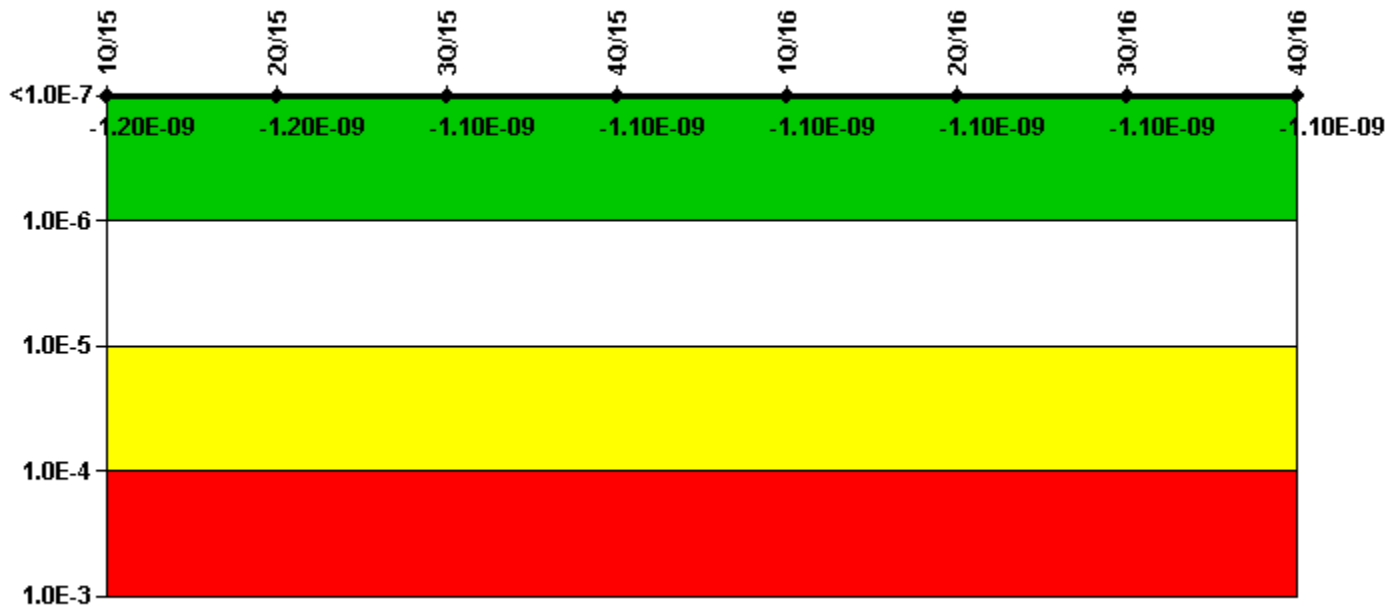
Thresholds: White > 1.00E-6 Yellow > 1.00E-5 Red > 1.00E-4

Notes

| Mitigating Systems Performance Index, Heat Removal System | 1Q/15 | 2Q/15 | 3Q/15 | 4Q/15 | 1Q/16 | 2Q/16 | 3Q/16 | 4Q/16 |
|---|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
| UAI (Δ CDF) | -2.02E-09 | -2.62E-09 | -2.31E-09 | -2.61E-09 | -2.60E-09 | -2.80E-09 | -3.01E-09 | -3.83E-09 |
| URI (Δ CDF) | -1.79E-08 | -1.79E-08 | -1.85E-08 | -1.95E-08 | -2.00E-08 | -2.05E-08 | -2.05E-08 | -2.00E-08 |
| PLE | NO | NO | NO | NO | NO | NO | NO | NO |
| Indicator value | -2.00E-08 | -2.10E-08 | -2.10E-08 | -2.20E-08 | -2.30E-08 | -2.30E-08 | -2.30E-08 | -2.40E-08 |

Licensee Comments: none

Mitigating Systems Performance Index, Residual Heat Removal System



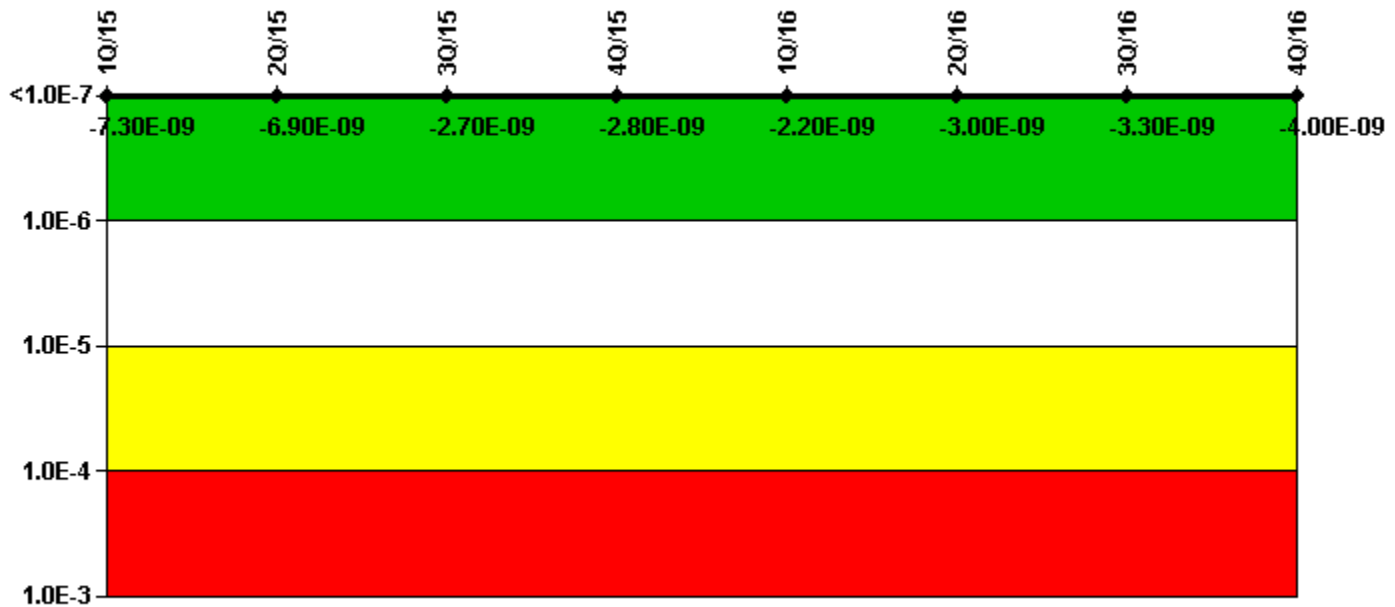
Thresholds: White > 1.00E-6 Yellow > 1.00E-5 Red > 1.00E-4

Notes

| Mitigating Systems Performance Index, Residual Heat Removal System | 1Q/15 | 2Q/15 | 3Q/15 | 4Q/15 | 1Q/16 | 2Q/16 | 3Q/16 | 4Q/16 |
|--|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
| UAI (Δ CDF) | -2.70E-10 | -2.70E-10 | -1.41E-10 | -1.36E-10 | -1.36E-10 | -1.36E-10 | -1.36E-10 | -1.38E-10 |
| URI (Δ CDF) | -9.03E-10 | -9.27E-10 | -9.46E-10 | -9.46E-10 | -9.55E-10 | -9.36E-10 | -9.46E-10 | -9.67E-10 |
| PLE | NO | NO | NO | NO | NO | NO | NO | NO |
| Indicator value | -1.20E-09 | -1.20E-09 | -1.10E-09 | -1.10E-09 | -1.10E-09 | -1.10E-09 | -1.10E-09 | -1.10E-09 |

Licensee Comments: none

Mitigating Systems Performance Index, Cooling Water Systems



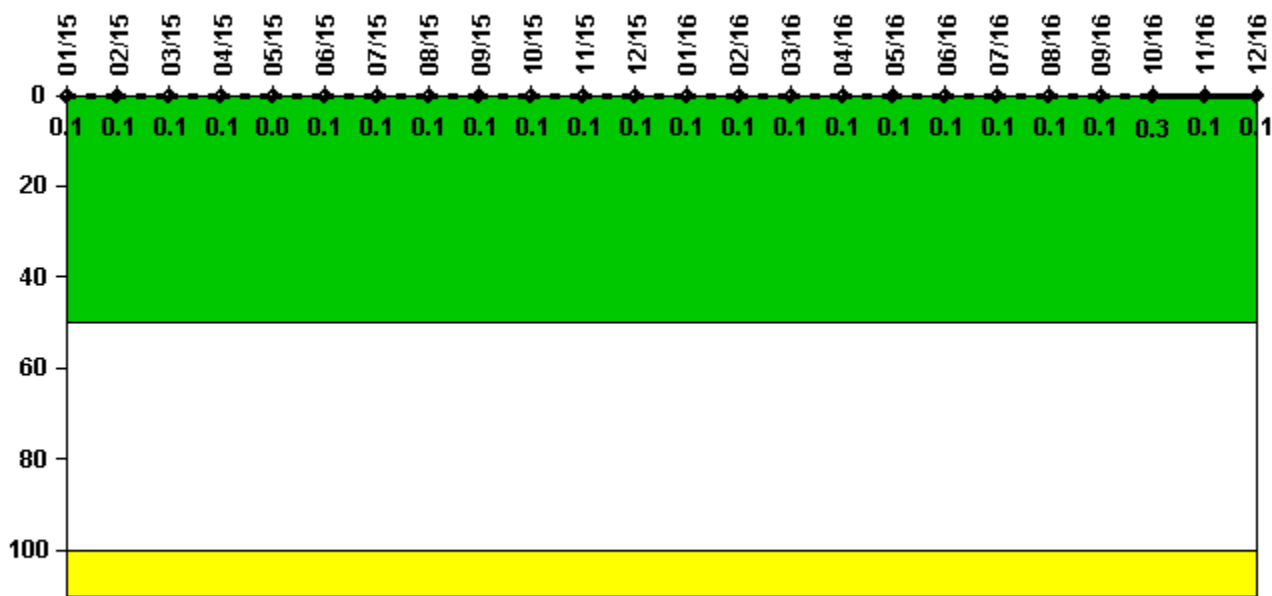
Thresholds: White > 1.00E-6 Yellow > 1.00E-5 Red > 1.00E-4

Notes

| Mitigating Systems Performance Index, Cooling Water Systems | 1Q/15 | 2Q/15 | 3Q/15 | 4Q/15 | 1Q/16 | 2Q/16 | 3Q/16 | 4Q/16 |
|---|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
| UAI (Δ CDF) | 3.15E-09 | 3.13E-09 | 3.12E-09 | 2.98E-09 | 3.01E-09 | 3.03E-09 | 2.98E-09 | 2.96E-09 |
| URI (Δ CDF) | -1.05E-08 | -1.00E-08 | -5.83E-09 | -5.76E-09 | -5.24E-09 | -6.03E-09 | -6.27E-09 | -6.97E-09 |
| PLE | NO | NO | NO | NO | NO | NO | NO | NO |
| Indicator value | -7.30E-09 | -6.90E-09 | -2.70E-09 | -2.80E-09 | -2.20E-09 | -3.00E-09 | -3.30E-09 | -4.00E-09 |

Licensee Comments: none

Reactor Coolant System Activity



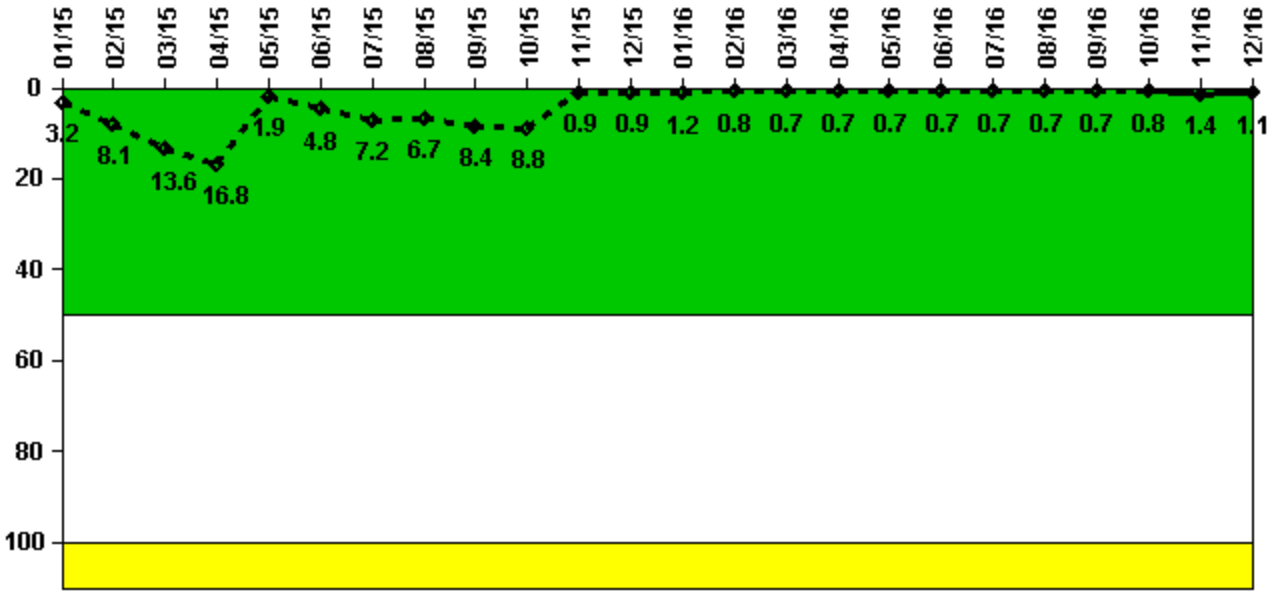
Thresholds: White > 50.0 Yellow > 100.0

Notes

| Reactor Coolant System Activity | 1/15 | 2/15 | 3/15 | 4/15 | 5/15 | 6/15 | 7/15 | 8/15 | 9/15 | 10/15 | 11/15 | 12/15 |
|---------------------------------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| Maximum activity | 0.001140 | 0.001110 | 0.001280 | 0.001190 | 0.000171 | 0.000544 | 0.000573 | 0.000576 | 0.000710 | 0.000620 | 0.000813 | 0.000903 |
| 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 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 |
| Reactor Coolant System Activity | 1/16 | 2/16 | 3/16 | 4/16 | 5/16 | 6/16 | 7/16 | 8/16 | 9/16 | 10/16 | 11/16 | 12/16 |
| Maximum activity | 0.000789 | 0.000840 | 0.000893 | 0.000943 | 0.000895 | 0.001120 | 0.001110 | 0.001090 | 0.001070 | 0.002690 | 0.000775 | 0.000652 |
| 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 | 0.1 | 0.1 | 0.1 | 0.3 | 0.1 | 0.1 |

Licensee Comments: none

Reactor Coolant System Leakage



Thresholds: White > 50.0 Yellow > 100.0

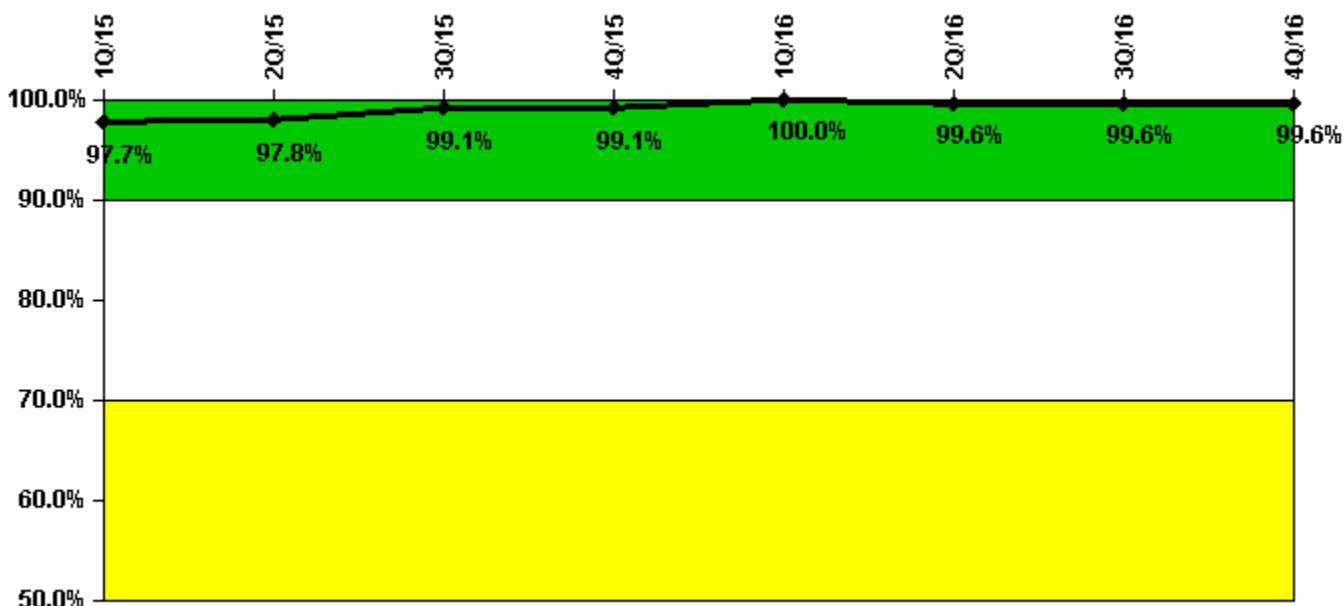
Notes

| Reactor Coolant System Leakage | 1/15 | 2/15 | 3/15 | 4/15 | 5/15 | 6/15 | 7/15 | 8/15 | 9/15 | 10/15 | 11/15 | 12/15 |
|--------------------------------|------------|------------|-------------|-------------|------------|------------|------------|------------|------------|------------|------------|------------|
| Maximum leakage | 0.320 | 0.810 | 1.360 | 1.680 | 0.190 | 0.480 | 0.720 | 0.670 | 0.840 | 0.880 | 0.090 | 0.090 |
| 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 | 3.2 | 8.1 | 13.6 | 16.8 | 1.9 | 4.8 | 7.2 | 6.7 | 8.4 | 8.8 | 0.9 | 0.9 |

| Reactor Coolant System Leakage | 1/16 | 2/16 | 3/16 | 4/16 | 5/16 | 6/16 | 7/16 | 8/16 | 9/16 | 10/16 | 11/16 | 12/16 |
|--------------------------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|
| Maximum leakage | 0.120 | 0.080 | 0.070 | 0.070 | 0.070 | 0.070 | 0.070 | 0.070 | 0.070 | 0.080 | 0.140 | 0.110 |
| 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 | 1.2 | 0.8 | 0.7 | 0.7 | 0.7 | 0.7 | 0.7 | 0.7 | 0.7 | 0.8 | 1.4 | 1.1 |

Licensee Comments: none

Drill/Exercise Performance



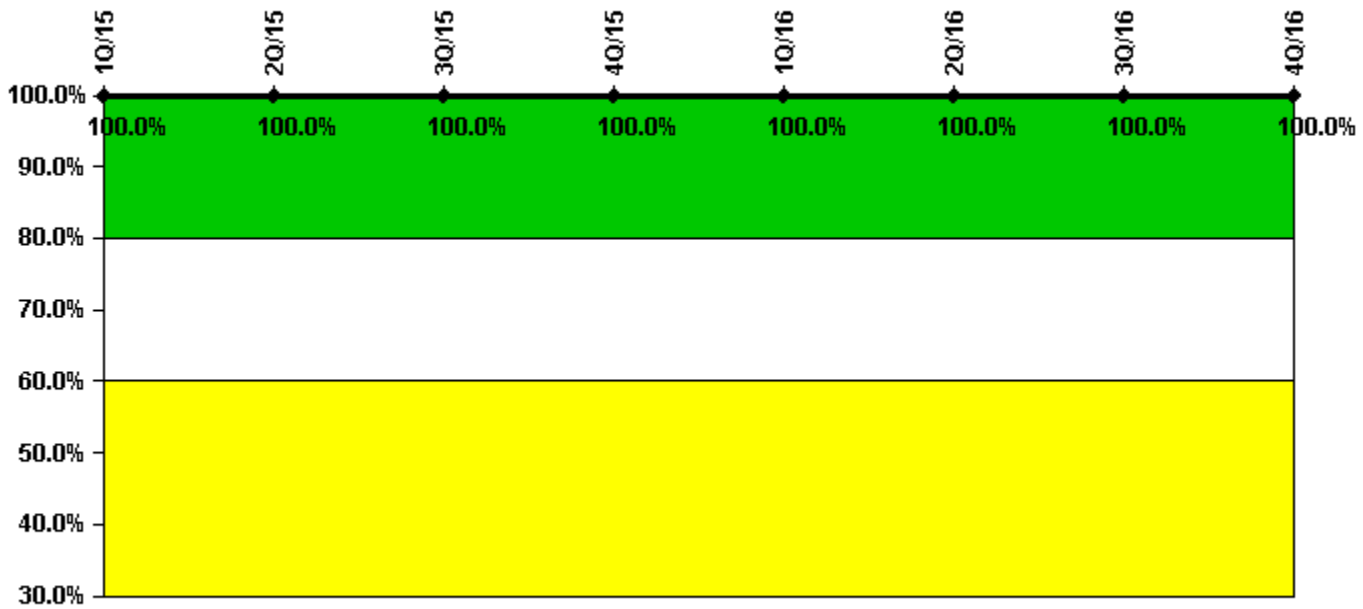
Thresholds: White < 90.0% Yellow < 70.0%

Notes

| Drill/Exercise Performance | 1Q/15 | 2Q/15 | 3Q/15 | 4Q/15 | 1Q/16 | 2Q/16 | 3Q/16 | 4Q/16 |
|----------------------------|-------|-------|-------|-------|--------|-------|-------|-------|
| Successful opportunities | 31.0 | 31.0 | 35.0 | 20.0 | 39.0 | 45.0 | 21.0 | 24.0 |
| Total opportunities | 31.0 | 31.0 | 35.0 | 20.0 | 39.0 | 46.0 | 21.0 | 24.0 |
| Indicator value | 97.7% | 97.8% | 99.1% | 99.1% | 100.0% | 99.6% | 99.6% | 99.6% |

Licensee Comments: none

ERO Drill Participation



Thresholds: White < 80.0% Yellow < 60.0%

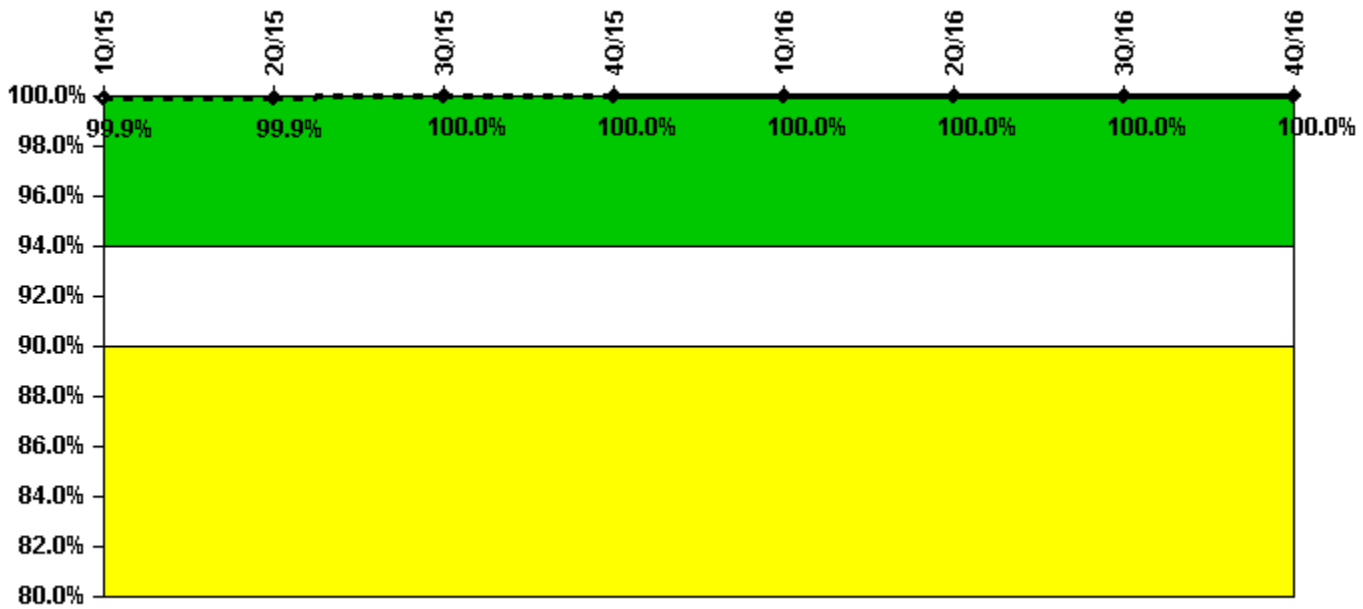
Notes

| ERO Drill Participation | 1Q/15 | 2Q/15 | 3Q/15 | 4Q/15 | 1Q/16 | 2Q/16 | 3Q/16 | 4Q/16 |
|-----------------------------|--------|--------|--------|--------|--------|--------|--------|--------|
| Participating Key personnel | 141.0 | 157.0 | 157.0 | 165.0 | 175.0 | 176.0 | 183.0 | 168.0 |
| Total Key personnel | 141.0 | 157.0 | 157.0 | 165.0 | 175.0 | 176.0 | 183.0 | 168.0 |
| Indicator value | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% |

Licensee Comments:

2Q/15: An assessment revealed additional key personnel for March 2015. Historical data was corrected with no change in color.

Alert & Notification System



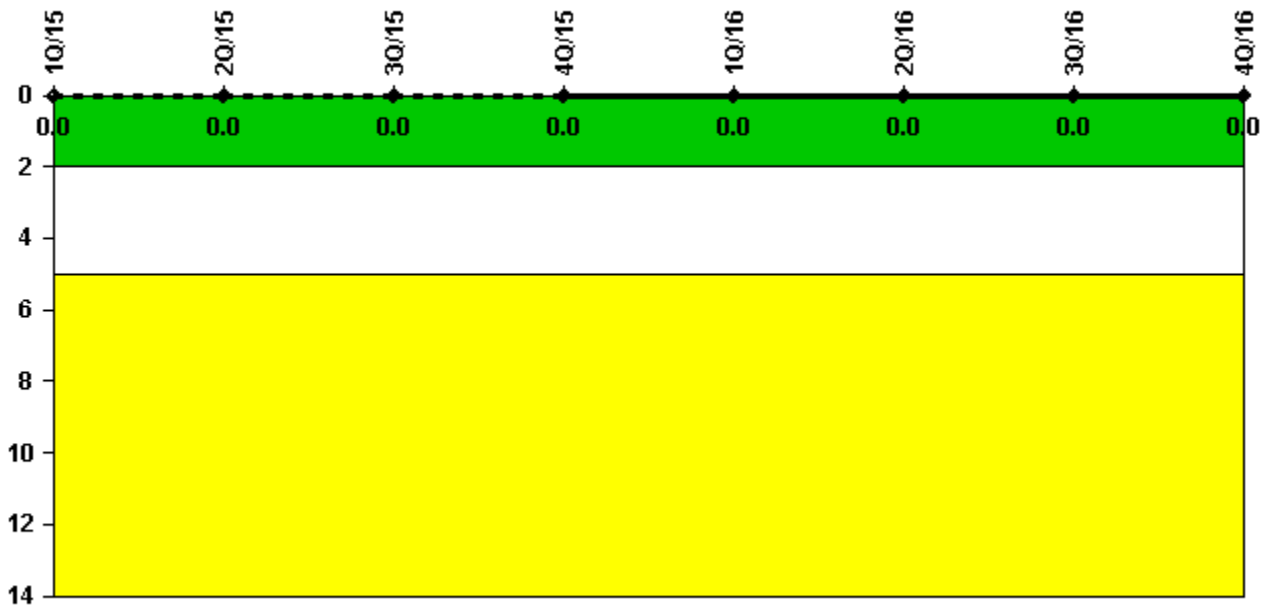
Thresholds: White < 94.0% Yellow < 90.0%

Notes

| Alert & Notification System | 1Q/15 | 2Q/15 | 3Q/15 | 4Q/15 | 1Q/16 | 2Q/16 | 3Q/16 | 4Q/16 |
|-----------------------------|-------|-------|--------|--------|--------|--------|--------|--------|
| Successful siren-tests | 567 | 497 | 568 | 497 | 568 | 497 | 568 | 426 |
| Total sirens-tests | 568 | 497 | 568 | 497 | 568 | 497 | 568 | 426 |
| Indicator value | 99.9% | 99.9% | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% |

Licensee Comments: none

Occupational Exposure Control Effectiveness



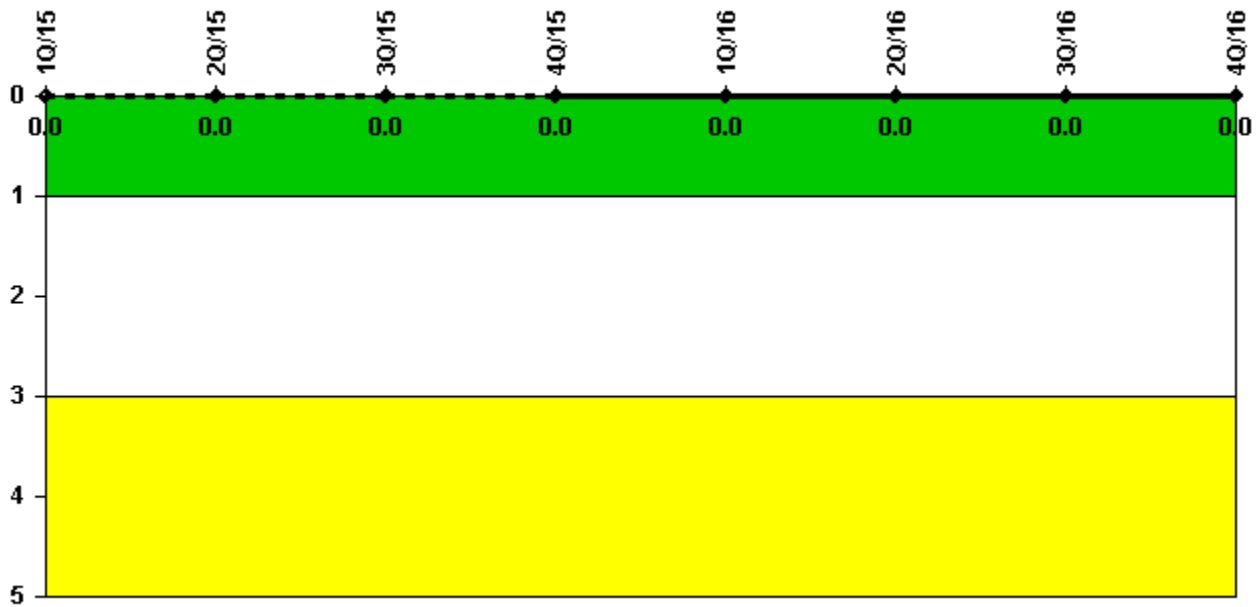
Thresholds: White > 2.0 Yellow > 5.0

Notes

| Occupational Exposure Control Effectiveness | 1Q/15 | 2Q/15 | 3Q/15 | 4Q/15 | 1Q/16 | 2Q/16 | 3Q/16 | 4Q/16 |
|---|----------|----------|----------|----------|----------|----------|----------|----------|
| 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 | 1Q/15 | 2Q/15 | 3Q/15 | 4Q/15 | 1Q/16 | 2Q/16 | 3Q/16 | 4Q/16 |
|---------------------------------|-------|-------|-------|-------|-------|-------|-------|-------|
| RETS/ODCM occurrences | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Indicator value | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

Licensee Comments: none

Although the Security Cornerstone is included in the Reactor Oversight Process assessment program, the Commission has decided that specific information related to findings and performance indicators pertaining to the Security Cornerstone will not be publicly available to ensure that security information is not provided to a possible adversary. Other than the fact that a finding or performance indicator is Green or Greater-Than-Green, security related information will not be displayed on the public web page.

▲ [Action Matrix Summary](#) | [Inspection Findings Summary](#) | [PI Summary](#) | [Reactor Oversight Process](#)

Last Modified: January 24, 2017