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Millstone 3 – Quarterly Performance Indicators

4Q/2017 Performance Indicators

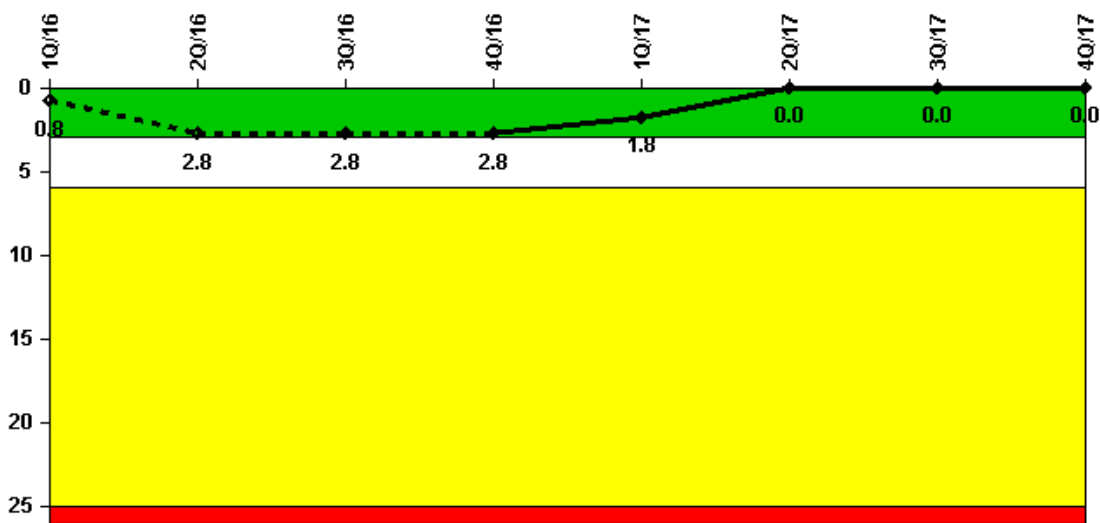
The solid trend line represents the current reporting period.

Licensee's General Comments: none

On this page:

- Unplanned Scrams (IE01)
- Unplanned Power Changes per 7000 Critical Hours (IE03)
- Unplanned Scrams with Complications (IE04)
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- High Pressure Injection Systems (MS07)
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- Residual Heat Removal Systems (MS09)
- Cooling Water Systems (MS10)
- Reactor Coolant System Activity (BI01)
- Reactor Coolant System Leakage (BI02)
- Drill/Exercise Performance (EP01)
- Emergency Response Organization Drill Participation (EP02)
- Alert and Notification System Reliability (EP03)
- Occupational Exposure Control Effectiveness (OR01)
- RETS/OCDM Radiological Effluent Occurrence (PR01)
- Protected Area Equipment (PP01)

Unplanned Scrams per 7000 Critical Hrs



Thresholds: White > 3.0 Yellow > 6.0 Red > 25.0

Notes

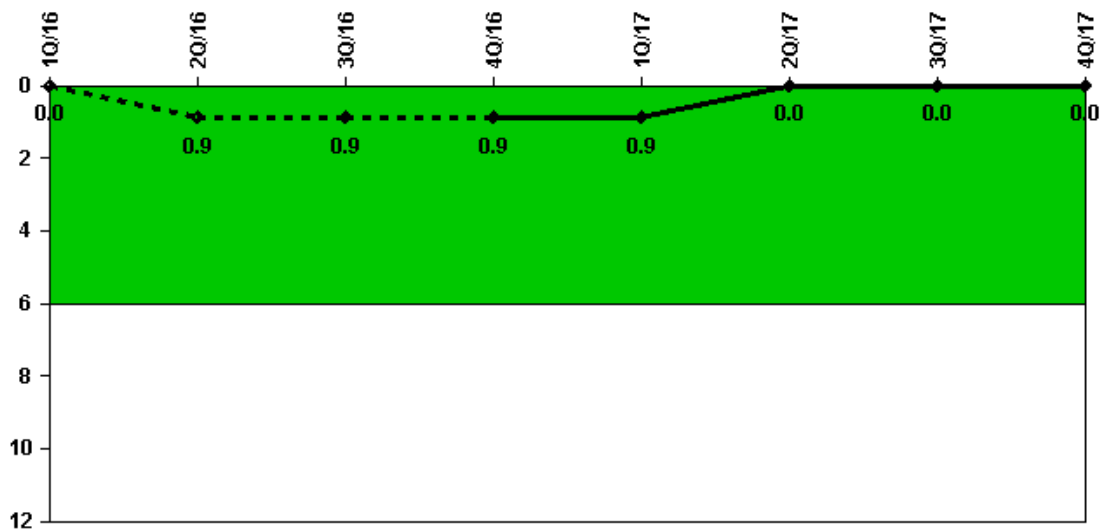
| Unplanned Scrams per 7000 Critical Hrs | 1Q/16 | 2Q/16 | 3Q/16 | 4Q/16 | 1Q/17 | 2Q/17 | 3Q/17 | 4Q/17 |
|--|--------|--------|--------|--------|--------|--------|--------|--------|
| Unplanned scrams | 1.0 | 2.0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Critical hours | 2097.9 | 1103.8 | 2208.0 | 2209.0 | 2159.0 | 2184.0 | 2208.0 | 1457.2 |

| Indicator value | 0.8 | 2.8 | 2.8 | 2.8 | 1.8 | 0 | 0 | 0 |
|-----------------|-----|-----|-----|-----|-----|---|---|---|
|-----------------|-----|-----|-----|-----|-----|---|---|---|

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Licensee Comments: none

Unplanned Power Changes per 7000 Critical Hrs



Thresholds: White > 6.0

Notes

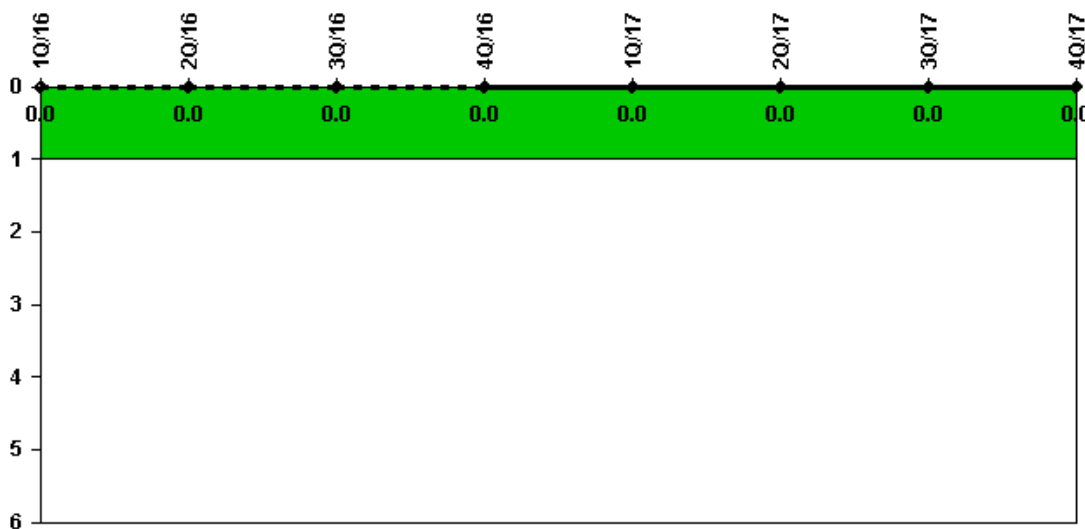
| Unplanned Power Changes per 7000 Critical Hrs | 1Q/16 | 2Q/16 | 3Q/16 | 4Q/16 | 1Q/17 | 2Q/17 | 3Q/17 | 4Q/17 |
|---|--------|--------|--------|--------|--------|--------|--------|--------|
| Unplanned power changes | 0 | 1.0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Critical hours | 2097.9 | 1103.8 | 2208.0 | 2209.0 | 2159.0 | 2184.0 | 2208.0 | 1457.2 |

| | | | | | | | | |
|------------------------|----------|------------|------------|------------|------------|----------|----------|----------|
| Indicator value | 0 | 0.9 | 0.9 | 0.9 | 0.9 | 0 | 0 | 0 |
|------------------------|----------|------------|------------|------------|------------|----------|----------|----------|

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Licensee Comments: none

Unplanned Scrams with Complications



Thresholds: White > 1.0

Notes

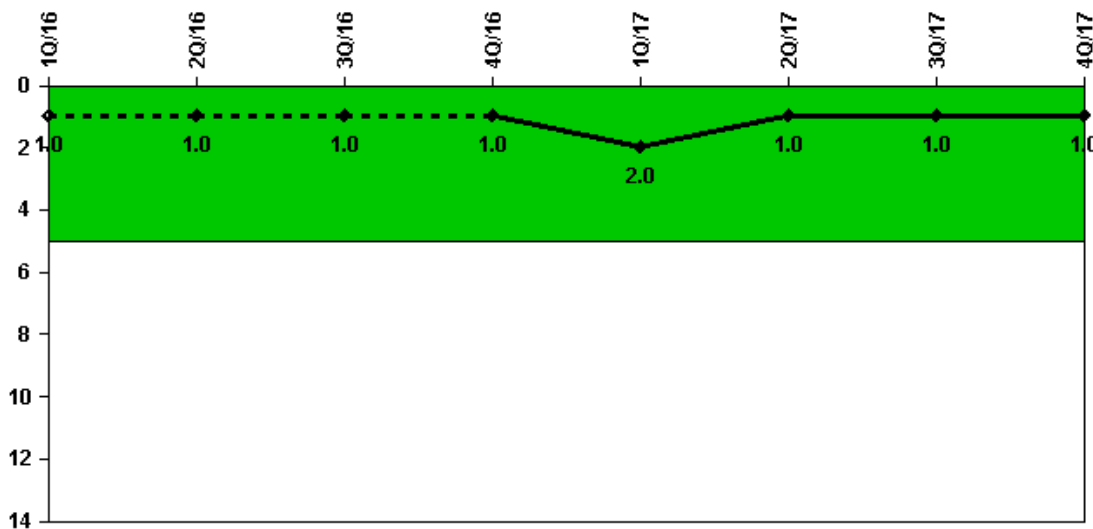
| Unplanned Scrams with Complications | 1Q/16 | 2Q/16 | 3Q/16 | 4Q/16 | 1Q/17 | 2Q/17 | 3Q/17 | 4Q/17 |
|-------------------------------------|-------|-------|-------|-------|-------|-------|-------|-------|
| Scrams with complications | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

| | | | | | | | | |
|------------------------|------------|------------|------------|------------|------------|------------|------------|------------|
| Indicator value | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
|------------------------|------------|------------|------------|------------|------------|------------|------------|------------|

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Licensee Comments: none

Safety System Functional Failures (PWR)



Thresholds: White > 5.0

Notes

Safety System Functional Failures (PWR) 1Q/16 2Q/16 3Q/16 4Q/16 1Q/17 2Q/17 3Q/17 4Q/17

Safety System Functional Failures 0 1 0 0 1 0 0 0

Indicator value 1 1 1 1 2 1 1 1

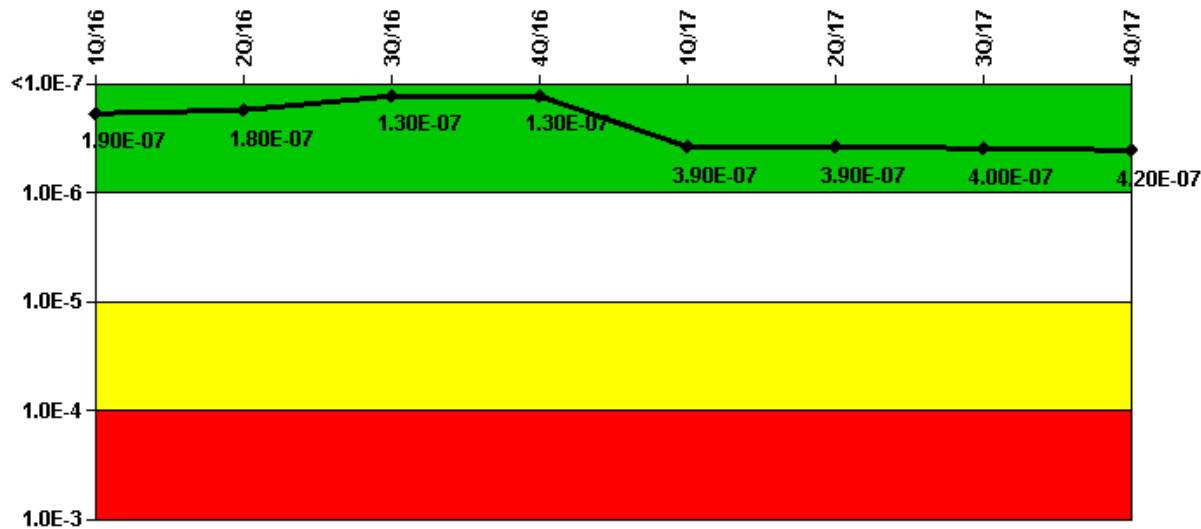
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Licensee Comments:

1Q/17: LER 2017-001-00, Loss of Safety Function - Secondary Containment. NRC event # EN52501.

2Q/16: LER 216-003-00, Loss of Safety Function - Supplementary Leak Collection and Release System

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/16 | 2Q/16 | 3Q/16 | 4Q/16 | 1Q/17 | 2Q/17 | 3Q/17 | 4Q/17 |
|------------------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| UAI (ΔCDF) | 4.84E-08 | 4.93E-08 | 4.19E-08 | 4.19E-08 | 5.57E-08 | 5.51E-08 | 5.51E-08 | 8.45E-08 |
| URI (ΔCDF) | 1.46E-07 | 1.33E-07 | 8.55E-08 | 8.75E-08 | 3.35E-07 | 3.40E-07 | 3.46E-07 | 3.31E-07 |
| PLE | NO | NO | NO | NO | NO | NO | NO | NO |
| Indicator value | 1.90E-07 | 1.80E-07 | 1.30E-07 | 1.30E-07 | 3.90E-07 | 3.90E-07 | 4.00E-07 | 4.20E-07 |

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Licensee Comments:

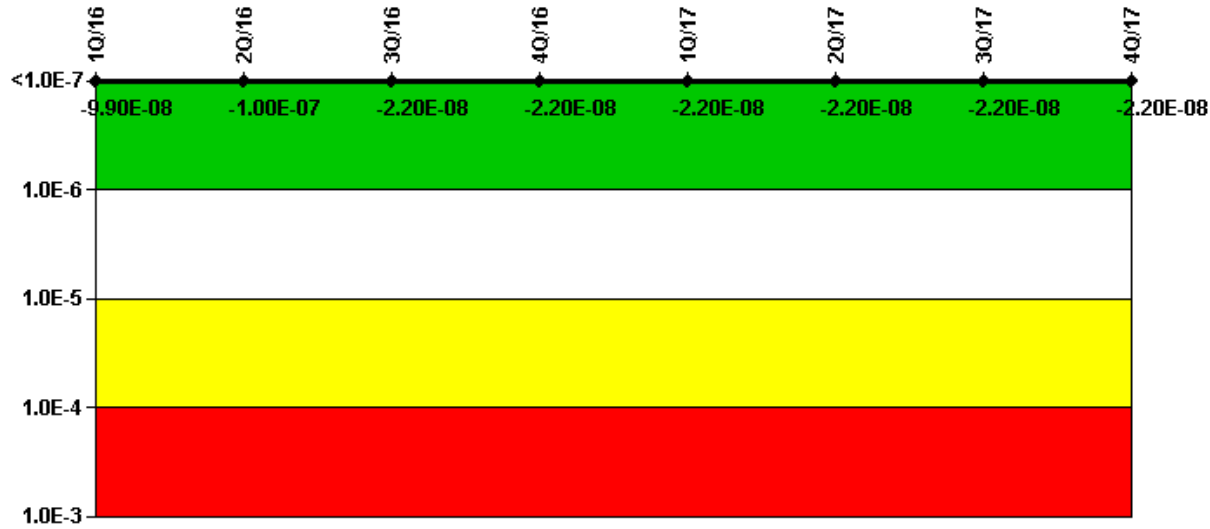
2Q/17: A condition report was written on a jacket water leak on the emergency diesel in May 2017. The evaluation for this issue has not been completed. If the event is determined to be a failure the 2nd quarter values will be updated in the 3rd quarter. The failure determination will not impact the color of the indicator. The open issue for the cooling water leak on the emergency diesel in January 2017 was determined to be a run failure.

1Q/17: A condition report was written on a cooling water leak on the emergency diesel in January 2017. The evaluation for this issue has not been completed. If the event is determined to be a failure the 1st quarter values will be updated in the 2nd quarter. The failure determination will not impact the color of the indicator.

1Q/17: A condition report was written on a cooling water leak on the emergency diesel in January 2017. The evaluation for this issue has not been completed. If the event is determined to be a failure the 1st quarter values will be updated in the 2nd quarter. The failure determination will not impact the color of the indicator.

3Q/16: Changed PRA Parameter(s). A modification was completed in May 2016 which implemented low leakage Reactor Coolant Pump seals. A supplemental PRA evaluation determined that this plant modification resulted in a factor of three change in the corrected Birnbaum value of monitored MSPI components. The MSPI Basis document Revision 6 was approved 9/29/16 which includes the recalculated PRA values. A supplemental evaluation is being used until the PRA model of record is updated. The revised values were incorporated into CDE effective the third quarter 2016. The MSPI Basis document also included a decrease to the diesel baseline unavailability based on changes to maintenance strategies. These revised values were incorporated into CDE effective the fourth quarter 2016.

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

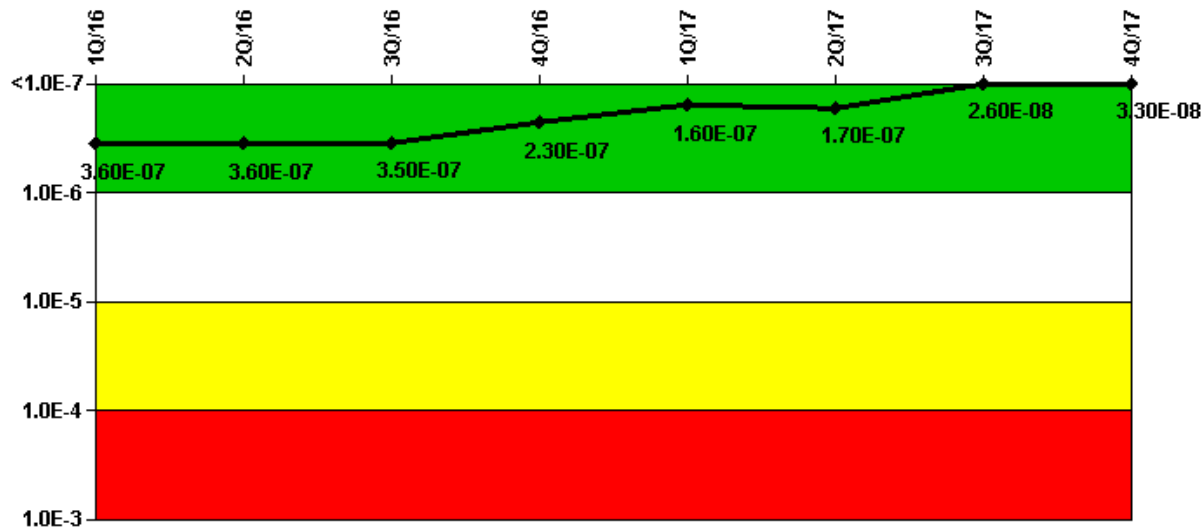
| | 1Q/16 | 2Q/16 | 3Q/16 | 4Q/16 | 1Q/17 | 2Q/17 | 3Q/17 | 4Q/17 |
|------------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|
| UAI (ΔCDF) | 1.14E-08 | 9.86E-09 | -3.03E-12 | -9.62E-11 | -1.74E-10 | -2.20E-10 | -3.05E-10 | -3.27E-10 |
| URI (ΔCDF) | -1.10E-07 | -1.10E-07 | -2.20E-08 | -2.20E-08 | -2.20E-08 | -2.20E-08 | -2.20E-08 | -2.20E-08 |
| PLE | NO | NO | NO | NO | NO | NO | NO | NO |
| Indicator value | -9.90E-08 | -1.00E-07 | -2.20E-08 | -2.20E-08 | -2.20E-08 | -2.20E-08 | -2.20E-08 | -2.20E-08 |

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Licensee Comments:

3Q/16: Changed PRA Parameter(s). A modification was completed in May 2016 which implemented low leakage Reactor Coolant Pump seals. A supplemental PRA evaluation determined that this plant modification resulted in a factor of three change in the corrected Birnbaum value of monitored MSPI components. The MSPI Basis document Revision 6 was approved 9/29/16 which includes the recalculated PRA values. A supplemental evaluation is being used until the PRA model of record is updated. The revised values were incorporated into CDE effective the third quarter 2016.

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

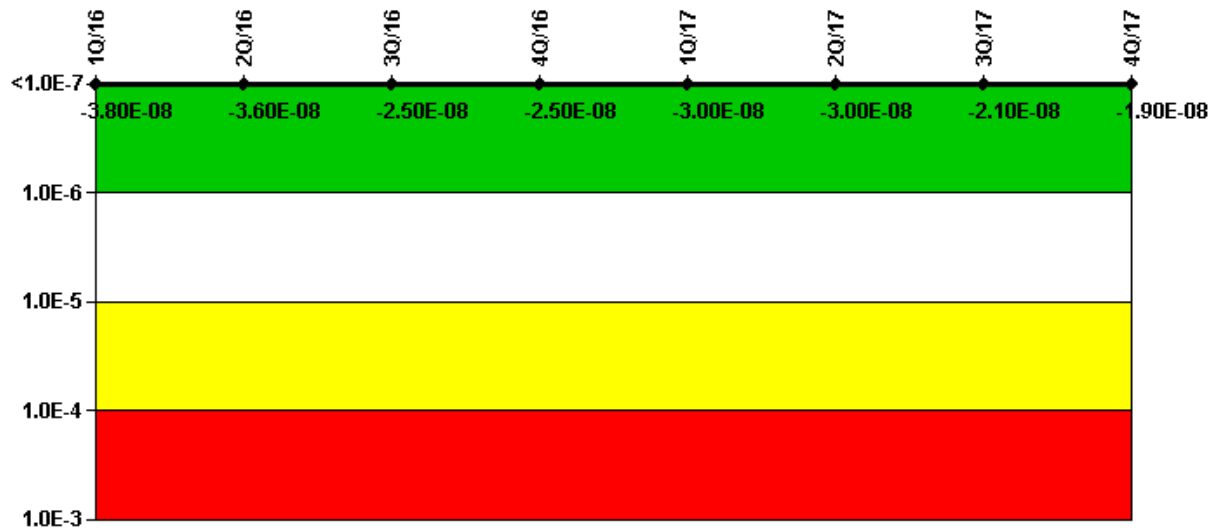
| | 1Q/16 | 2Q/16 | 3Q/16 | 4Q/16 | 1Q/17 | 2Q/17 | 3Q/17 | 4Q/17 |
|------------------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| UAI (ΔCDF) | 8.26E-08 | 8.40E-08 | 7.34E-08 | 4.72E-08 | 1.49E-08 | 1.31E-08 | -5.35E-09 | -5.39E-09 |
| URI (ΔCDF) | 2.78E-07 | 2.75E-07 | 2.73E-07 | 1.85E-07 | 1.49E-07 | 1.56E-07 | 3.13E-08 | 3.82E-08 |
| PLE | NO | NO | NO | NO | NO | NO | NO | NO |
| Indicator value | 3.60E-07 | 3.60E-07 | 3.50E-07 | 2.30E-07 | 1.60E-07 | 1.70E-07 | 2.60E-08 | 3.30E-08 |

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Licensee Comments:

3Q/16: Changed PRA Parameter(s). A modification was completed in May 2016 which implemented low leakage Reactor Coolant Pump seals. A supplemental PRA evaluation determined that this plant modification resulted in a factor of three change in the corrected Birnbaum value of monitored MSPI components. The MSPI Basis document Revision 6 was approved 9/29/16 which includes the recalculated PRA values. A supplemental evaluation is being used until the PRA model of record is updated. The revised values were incorporated into CDE effective the third quarter 2016.

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

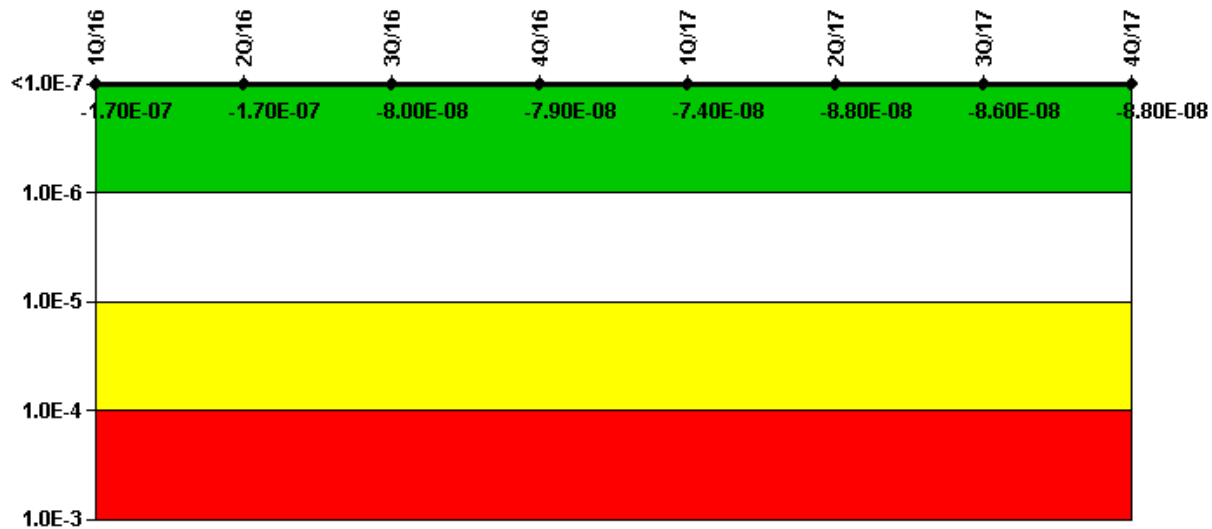
| | 1Q/16 | 2Q/16 | 3Q/16 | 4Q/16 | 1Q/17 | 2Q/17 | 3Q/17 | 4Q/17 |
|------------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|
| UAI (ΔCDF) | -6.64E-09 | -6.32E-09 | -5.31E-09 | -5.16E-09 | -1.10E-08 | -1.09E-08 | -2.38E-09 | -2.59E-09 |
| URI (ΔCDF) | -3.16E-08 | -3.00E-08 | -1.99E-08 | -1.95E-08 | -1.92E-08 | -1.87E-08 | -1.83E-08 | -1.60E-08 |
| PLE | NO | NO | NO | NO | NO | NO | NO | NO |
| Indicator value | -3.80E-08 | -3.60E-08 | -2.50E-08 | -2.50E-08 | -3.00E-08 | -3.00E-08 | -2.10E-08 | -1.90E-08 |

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Licensee Comments:

3Q/16: Changed PRA Parameter(s). A modification was completed in May 2016 which implemented low leakage Reactor Coolant Pump seals. A supplemental PRA evaluation determined that this plant modification resulted in a factor of three change in the corrected Birnbaum value of monitored MSPI components. The MSPI Basis document Revision 6 was approved 9/29/16 which includes the recalculated PRA values. A supplemental evaluation is being used until the PRA model of record is updated. The revised values were incorporated into CDE effective the third quarter 2016.

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

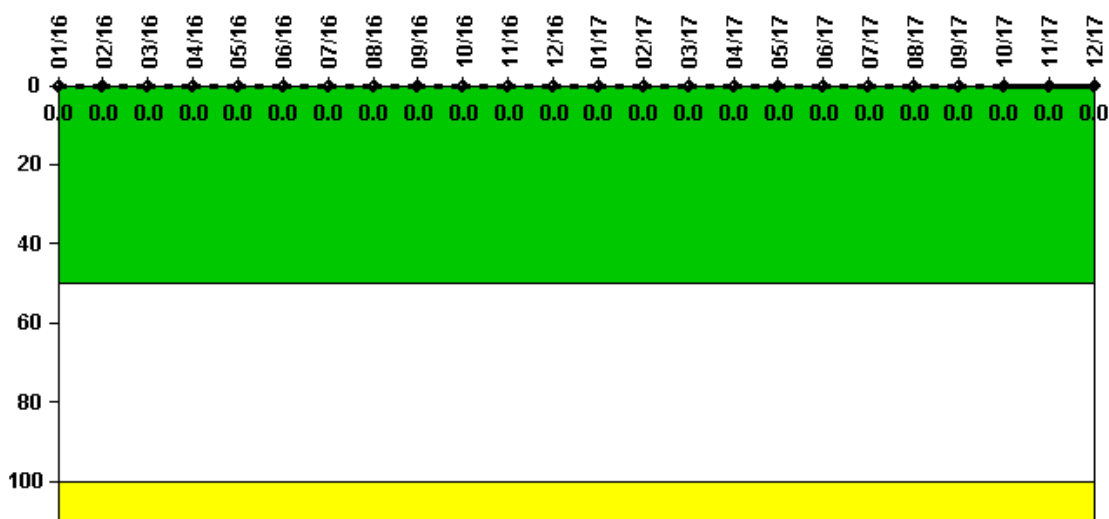
| | 1Q/16 | 2Q/16 | 3Q/16 | 4Q/16 | 1Q/17 | 2Q/17 | 3Q/17 | 4Q/17 |
|------------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|
| UAI (ΔCDF) | -1.45E-07 | -1.43E-07 | -4.35E-08 | -4.33E-08 | -3.76E-08 | -5.22E-08 | -5.00E-08 | -5.25E-08 |
| URI (ΔCDF) | -3.01E-08 | -3.01E-08 | -3.61E-08 | -3.61E-08 | -3.61E-08 | -3.59E-08 | -3.59E-08 | -3.59E-08 |
| PLE | NO | NO | NO | NO | NO | NO | NO | NO |
| Indicator value | -1.70E-07 | -1.70E-07 | -8.00E-08 | -7.90E-08 | -7.40E-08 | -8.80E-08 | -8.60E-08 | -8.80E-08 |

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Licensee Comments:

3Q/16: Changed PRA Parameter(s). A modification was completed in May 2016 which implemented low leakage Reactor Coolant Pump seals. A supplemental PRA evaluation determined that this plant modification resulted in a factor of three change in the corrected Birnbaum value of monitored MSPI components. The MSPI Basis document Revision 6 was approved 9/29/16 which includes the recalculated PRA values. A supplemental evaluation is being used until the PRA model of record is updated. The revised values were incorporated into CDE effective the third quarter 2016.

Reactor Coolant System Activity



Thresholds: White > 50.0 Yellow > 100.0

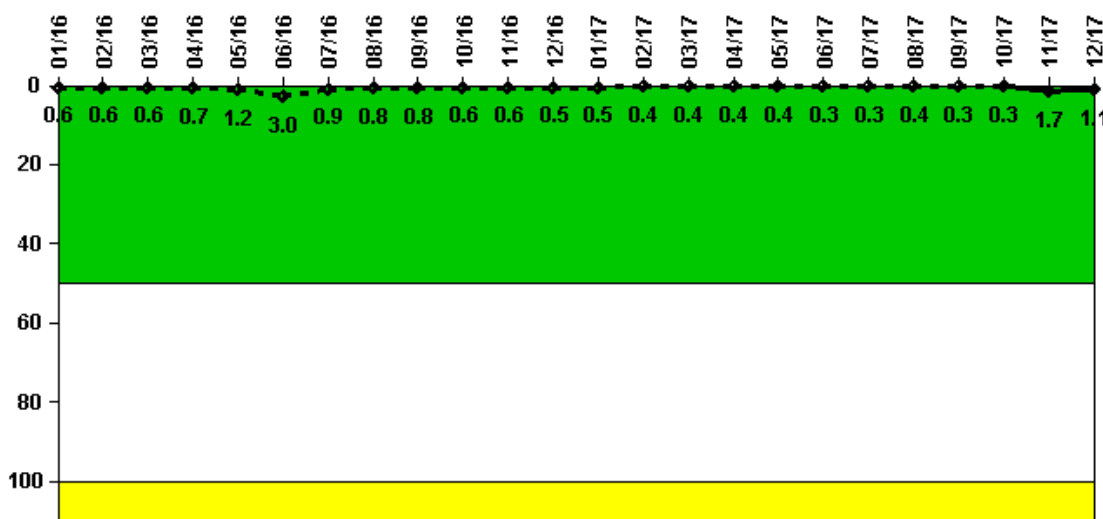
Notes

| 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 | 0.000124 | 0.000128 | 0.000134 | 0.000223 | 0.000034 | 0.000039 | 0.000070 | 0.000042 | 0.000044 | 0.000047 | 0.000077 | 0.000092 |
| 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 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Reactor Coolant System Activity | 1/17 | 2/17 | 3/17 | 4/17 | 5/17 | 6/17 | 7/17 | 8/17 | 9/17 | 10/17 | 11/17 | 12/17 |
| Maximum activity | 0.000091 | 0.000118 | 0.000107 | 0.000103 | 0.000110 | 0.000105 | 0.000098 | 0.000109 | 0.000133 | 0.000093 | 0.000061 | 0.000038 |
| 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 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

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Licensee Comments: none

Reactor Coolant System Leakage



Thresholds: White > 50.0 Yellow > 100.0

Notes

| 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 | 0.059 | 0.058 | 0.059 | 0.071 | 0.120 | 0.297 | 0.092 | 0.080 | 0.084 | 0.057 | 0.059 | 0.046 |
| 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 |

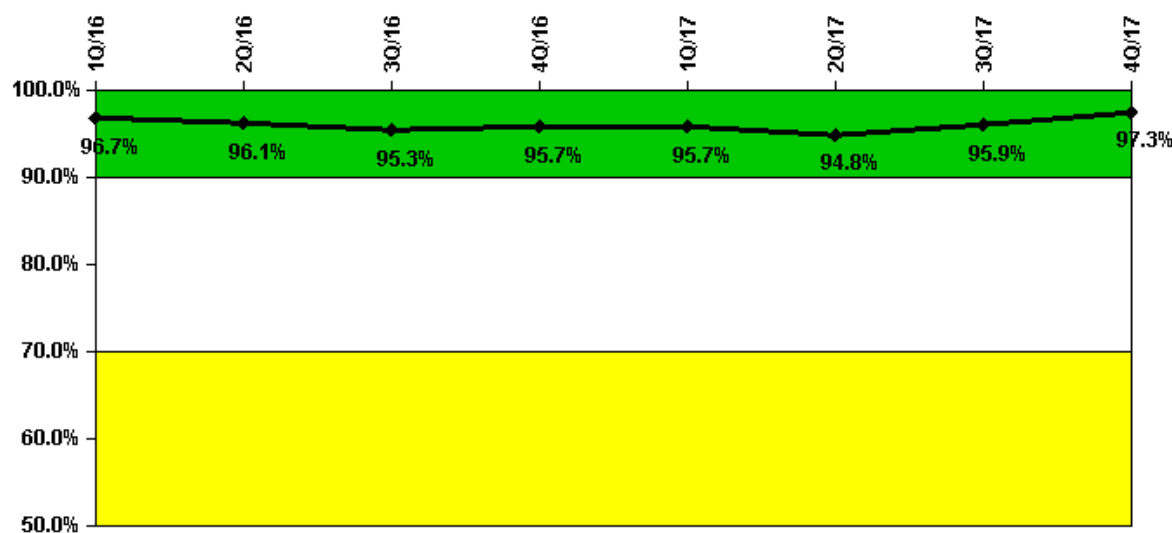
| Indicator value | 0.6 | 0.6 | 0.6 | 0.7 | 1.2 | 3.0 | 0.9 | 0.8 | 0.8 | 0.6 | 0.6 | 0.5 |
|--------------------------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|
| Reactor Coolant System Leakage | 1/17 | 2/17 | 3/17 | 4/17 | 5/17 | 6/17 | 7/17 | 8/17 | 9/17 | 10/17 | 11/17 | 12/17 |
| Maximum leakage | 0.046 | 0.044 | 0.035 | 0.039 | 0.035 | 0.030 | 0.030 | 0.042 | 0.028 | 0.028 | 0.167 | 0.108 |
| 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 | 0.5 | 0.4 | 0.4 | 0.4 | 0.4 | 0.3 | 0.3 | 0.4 | 0.3 | 0.3 | 1.7 | 1.1 |
|------------------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|

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Licensee Comments: none

Drill/Exercise Performance



Thresholds: White < 90.0% Yellow < 70.0%

Notes

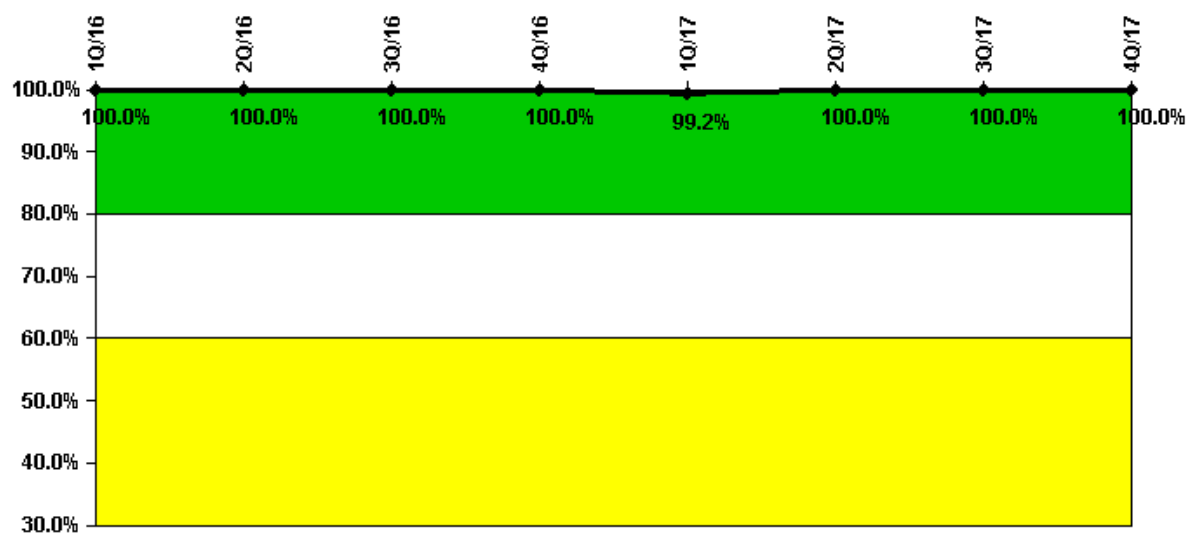
| Drill/Exercise Performance | 1Q/16 | 2Q/16 | 3Q/16 | 4Q/16 | 1Q/17 | 2Q/17 | 3Q/17 | 4Q/17 |
|----------------------------|-------|-------|-------|-------|-------|-------|-------|-------|
| Successful opportunities | 36.0 | 16.0 | 31.0 | 25.0 | 22.0 | 16.0 | 40.0 | 32.0 |
| Total opportunities | 37.0 | 17.0 | 33.0 | 25.0 | 22.0 | 17.0 | 40.0 | 33.0 |

Indicator value 96.7% 96.1% 95.3% 95.7% 95.7% 94.8% 95.9% 97.3%

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Licensee Comments: none

ERO Drill Participation



Thresholds: White < 80.0% Yellow < 60.0%

Notes

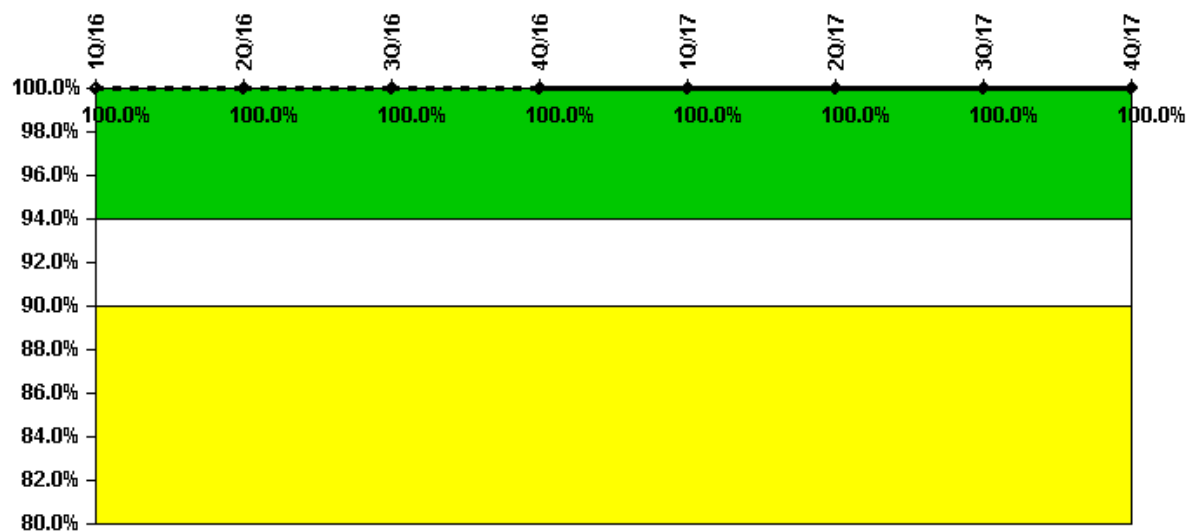
| ERO Drill Participation | 1Q/16 | 2Q/16 | 3Q/16 | 4Q/16 | 1Q/17 | 2Q/17 | 3Q/17 | 4Q/17 |
|-----------------------------|-------|-------|-------|-------|-------|-------|-------|-------|
| Participating Key personnel | 120.0 | 114.0 | 118.0 | 118.0 | 118.0 | 120.0 | 120.0 | 119.0 |
| Total Key personnel | 120.0 | 114.0 | 118.0 | 118.0 | 119.0 | 120.0 | 120.0 | 119.0 |

Indicator value **100.0% 100.0% 100.0% 100.0% 99.2% 100.0% 100.0% 100.0%**

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Licensee Comments: none

Alert & Notification System



Thresholds: White < 94.0% Yellow < 90.0%

Notes

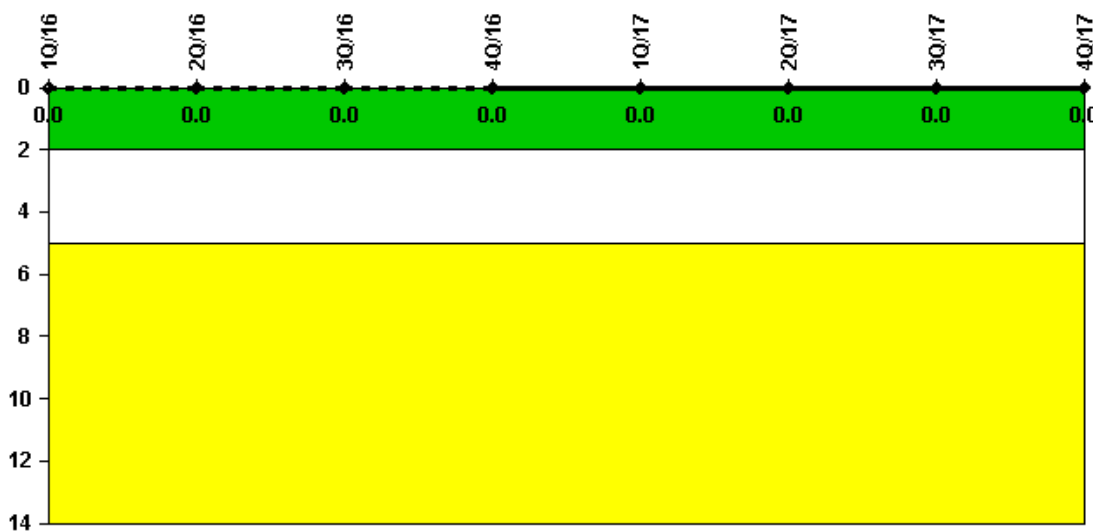
| Alert & Notification System | 1Q/16 | 2Q/16 | 3Q/16 | 4Q/16 | 1Q/17 | 2Q/17 | 3Q/17 | 4Q/17 |
|-----------------------------|-------|-------|-------|-------|-------|-------|-------|-------|
| Successful siren-tests | 553 | 474 | 553 | 474 | 553 | 474 | 553 | 474 |
| Total sirens-tests | 553 | 474 | 553 | 474 | 553 | 474 | 553 | 474 |

Indicator value **100.0% 100.0% 100.0% 100.0% 100.0% 100.0% 100.0% 100.0%**

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Licensee Comments: none

Occupational Exposure Control Effectiveness



Thresholds: White > 2.0 Yellow > 5.0

Notes

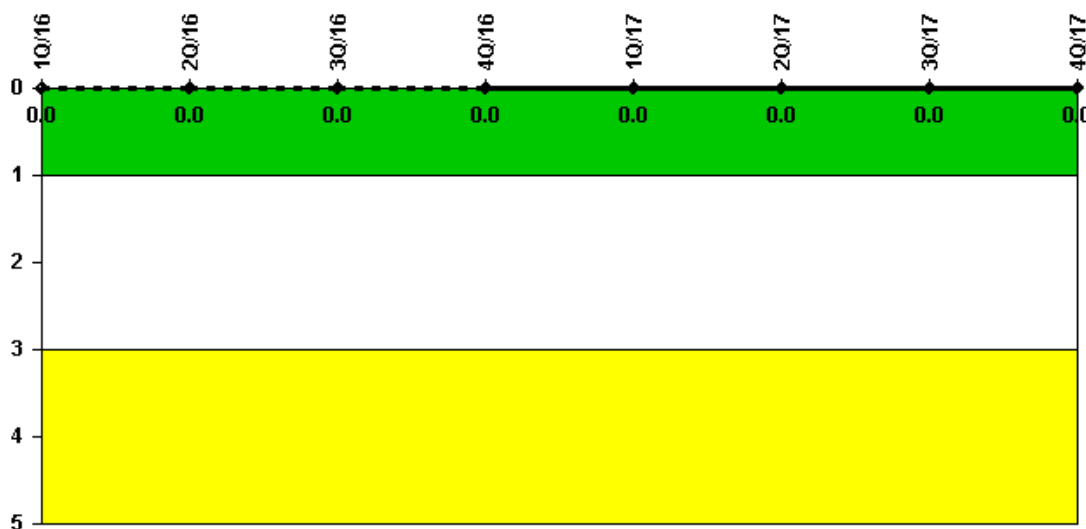
Occupational Exposure Control Effectiveness 1Q/16 2Q/16 3Q/16 4Q/16 1Q/17 2Q/17 3Q/17 4Q/17

| | | | | | | | | |
|--------------------------------------|----------|----------|----------|----------|----------|----------|----------|----------|
| 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 |

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Licensee Comments: none

RETS/ODCM Radiological Effluent



Thresholds: White > 1.0 Yellow > 3.0

Notes

RETS/ODCM Radiological Effluent 1Q/16 2Q/16 3Q/16 4Q/16 1Q/17 2Q/17 3Q/17 4Q/17

RETS/ODCM occurrences 0 0 0 0 0 0 0 0

Indicator value 0 0 0 0 0 0 0 0

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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.

Current data as of: February 1, 2018

Page Last Reviewed/Updated Monday, November 06, 2017