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Hatch 1 – Quarterly Performance Indicators

4Q/2017 Performance Indicators

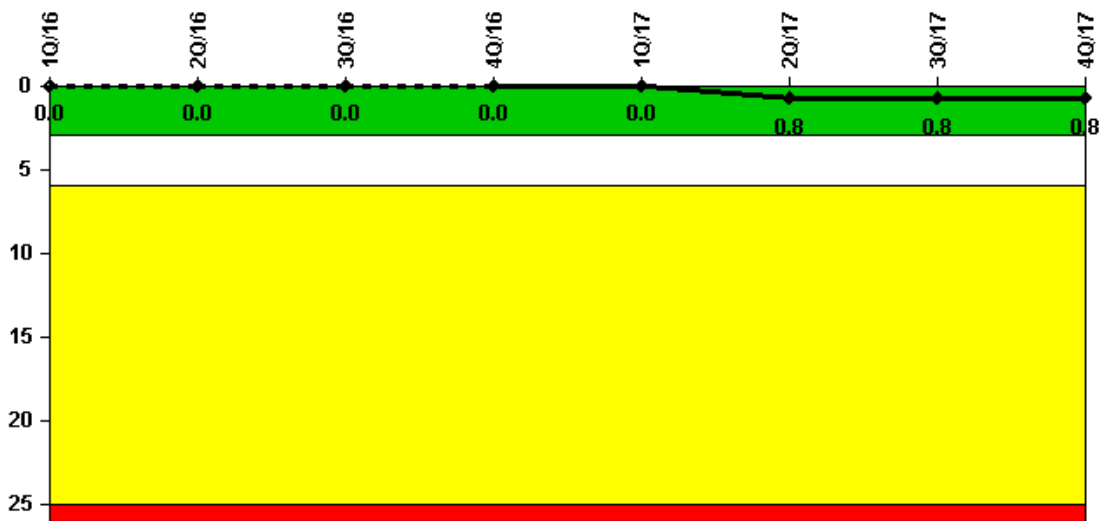
The solid trend line represents the current reporting period.

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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- Emergency AC Power Systems (MS06)
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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

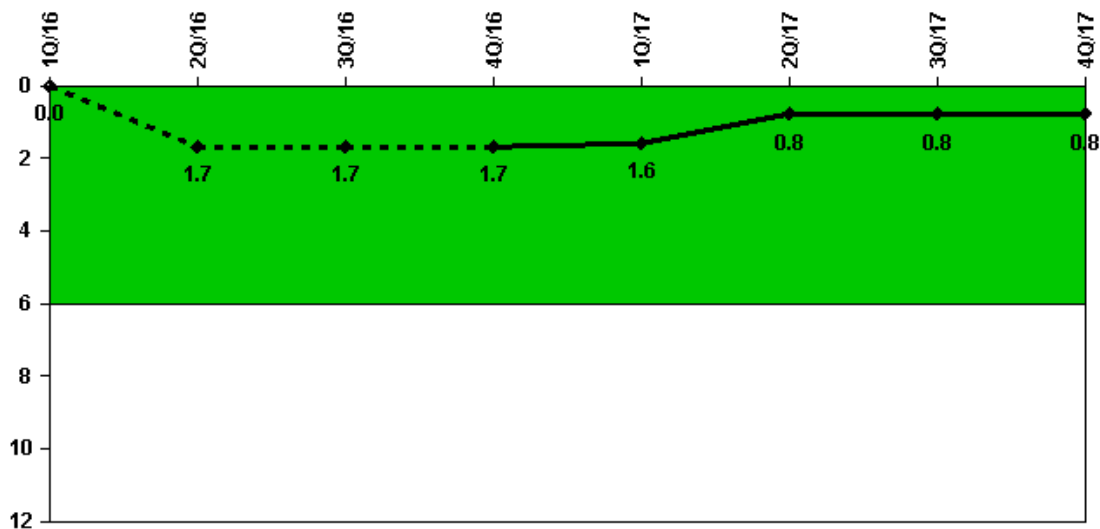
Unplanned Scrams per 7000 Critical Hrs	1Q/16	2Q/16	3Q/16	4Q/16	1Q/17	2Q/17	3Q/17	4Q/17
Unplanned scrams	0	0	0	0	0	1.0	0	0
Critical hours	1586.3	2145.6	2208.0	2209.0	2120.5	1947.3	2208.0	2209.0

Indicator value	0	0	0	0	0	0.8	0.8	0.8
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Licensee Comments: none

Unplanned Power Changes per 7000 Critical Hrs



Thresholds: White > 6.0

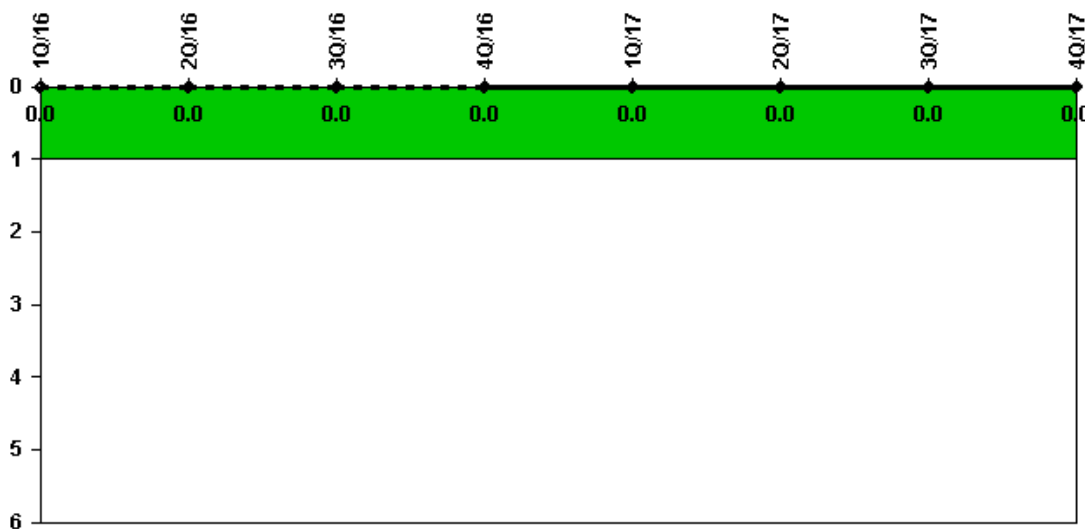
Notes

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	2.0	0	0	0	1.0	0	0
Critical hours	1586.3	2145.6	2208.0	2209.0	2120.5	1947.3	2208.0	2209.0
Indicator value	0	1.7	1.7	1.7	1.6	0.8	0.8	0.8

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Licensee Comments: none

Unplanned Scrams with Complications



Thresholds: White > 1.0

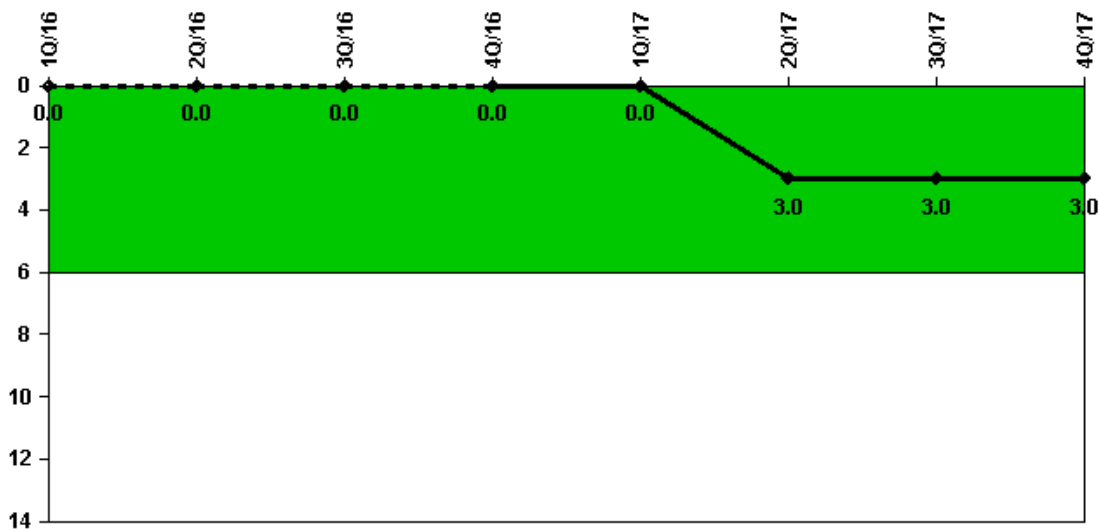
Notes

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 (BWR)



Thresholds: White > 6.0

Notes

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

Safety System Functional Failures 0 0 0 0 0 3 0 0

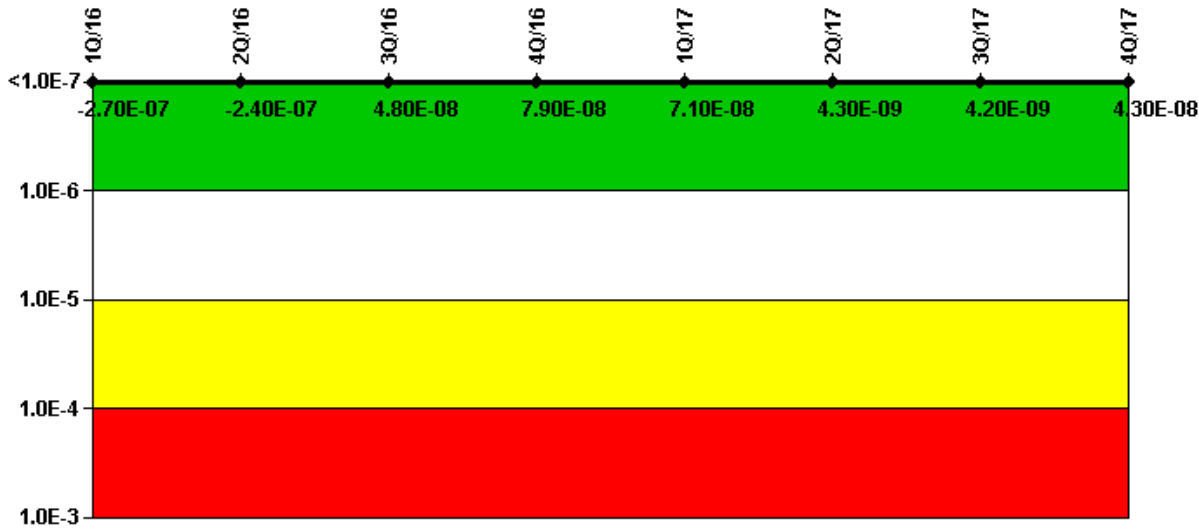
Indicator value 0 0 0 0 0 3 3 3

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Licensee Comments:

2Q/17: LER's 1-2017-002, 1-2017-003, 1-2017-004

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

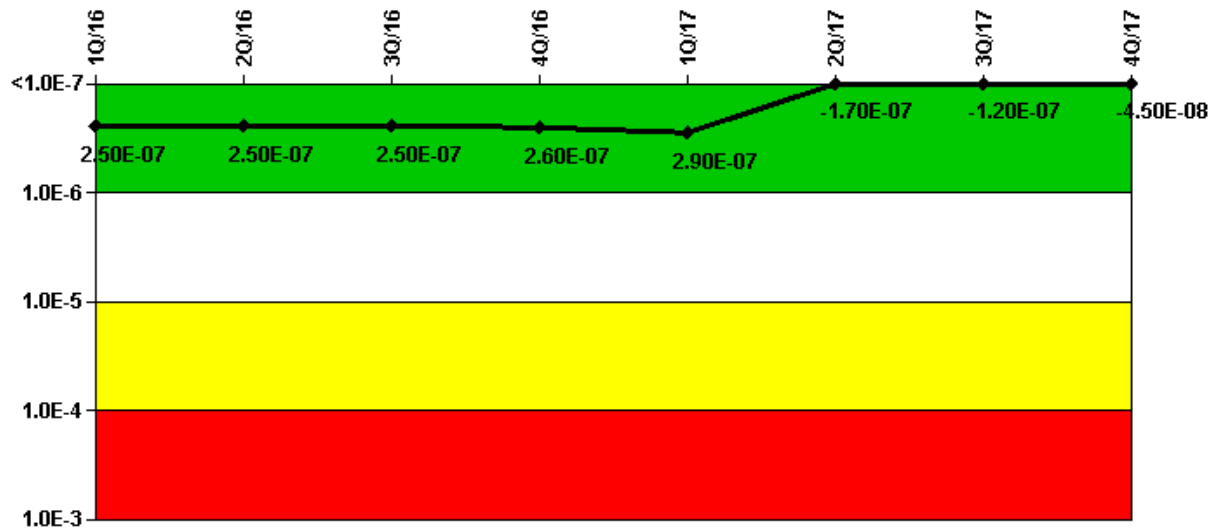
	1Q/16	2Q/16	3Q/16	4Q/16	1Q/17	2Q/17	3Q/17	4Q/17
UAI (ΔCDF)	5.05E-08	7.56E-08	1.05E-07	1.30E-07	1.15E-07	5.03E-08	5.02E-08	7.28E-08
URI (ΔCDF)	-3.22E-07	-3.14E-07	-5.72E-08	-5.12E-08	-4.38E-08	-4.60E-08	-4.60E-08	-2.98E-08
PLE	NO	NO	NO	NO	NO	NO	NO	NO
Indicator value	-2.70E-07	-2.40E-07	4.80E-08	7.90E-08	7.10E-08	4.30E-09	4.20E-09	4.30E-08

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Licensee Comments:

4Q/17: Changed PRA Parameter(s). All PRA inputs were revised to reflect the U1R5 and U2R5v2 models per calculations H-RIE-IEIF-U01 and H-RIE-IEIF-U02, rev 2.0. Revised the HPCI and RCIC mission time discussion based on the addition of RCIC 24-hour mission time logic. Attachment 1 no longer needed, MAAP parameters updated per PRA-BC-H-15-018. H-RIE-MSPI-U00 is the associated calculation for this version of the MSPI document. During Engineering review corrected several entries where body of document did not match Appendix A or Appendix B. Tables 1.4-3i and 1.4-3j had been inadvertently deleted, added back to document. Corrected table 1.5-2a where PSW segments 1-2 and 2-1 were reversed. Corrections were made to the Planned Unavailability Baseline (UABLP) values that were inadvertently omitted during the 2014Q1 update. The error did not impact the indicator colors.

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)	-7.45E-08	-7.45E-08	-7.45E-08	-7.45E-08	-7.03E-08	-7.30E-08	-1.22E-08	-4.31E-09
URI (ΔCDF)	3.25E-07	3.25E-07	3.25E-07	3.38E-07	3.65E-07	-1.02E-07	-1.07E-07	-4.11E-08
PLE	NO	NO	NO	NO	NO	NO	NO	NO
Indicator value	2.50E-07	2.50E-07	2.50E-07	2.60E-07	2.90E-07	-1.70E-07	-1.20E-07	-4.50E-08

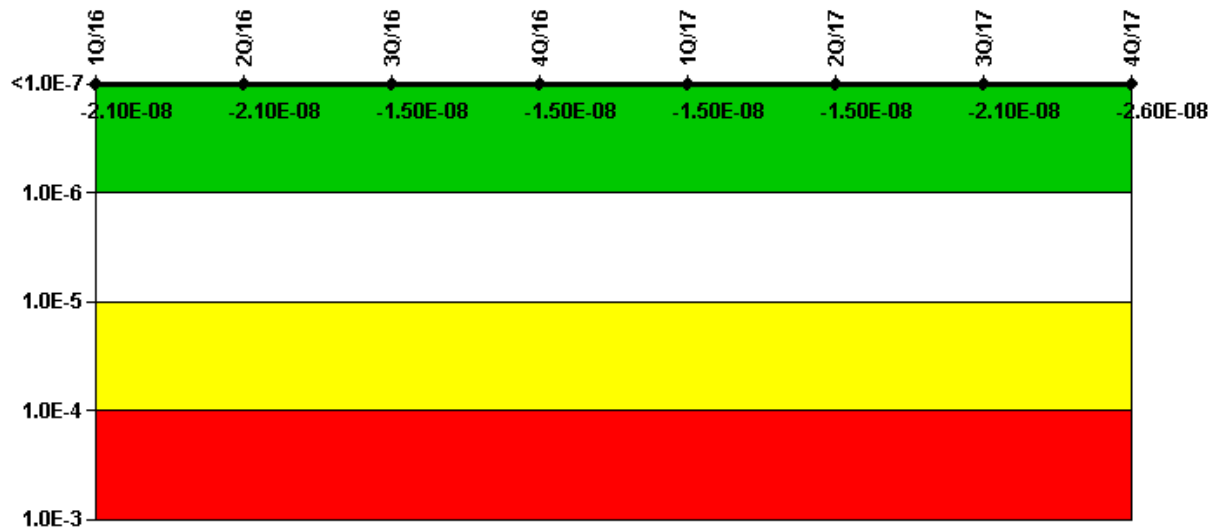
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Licensee Comments:

4Q/17: Changed PRA Parameter(s). All PRA inputs were revised to reflect the U1R5 and U2R5v2 models per calculations H-RIE-IEIF-U01 and H-RIE-IEIF-U02, rev 2.0. Revised the HPCI and RCIC mission time discussion based on the addition of RCIC 24-hour mission time logic. Attachment 1 no longer needed, MAAP parameters updated per PRA-BC-H-15-018. H-RIE-MSPI-U00 is the associated calculation for this version of the MSPI document. During Engineering review corrected several entries where body of document did not match Appendix A or Appendix B. Tables 1.4-3i and 1.4-3j had been inadvertently deleted, added back to document. Corrected table 1.5-2a where PSW segments 1-2 and 2-1 were reversed. Corrections were made to the Planned Unavailability Baseline (UABLP) values that were inadvertently omitted during the 2014Q1 update. The error did not impact the indicator colors.

1Q/17: One event related to an inverter power supply failure is under evaluation.

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

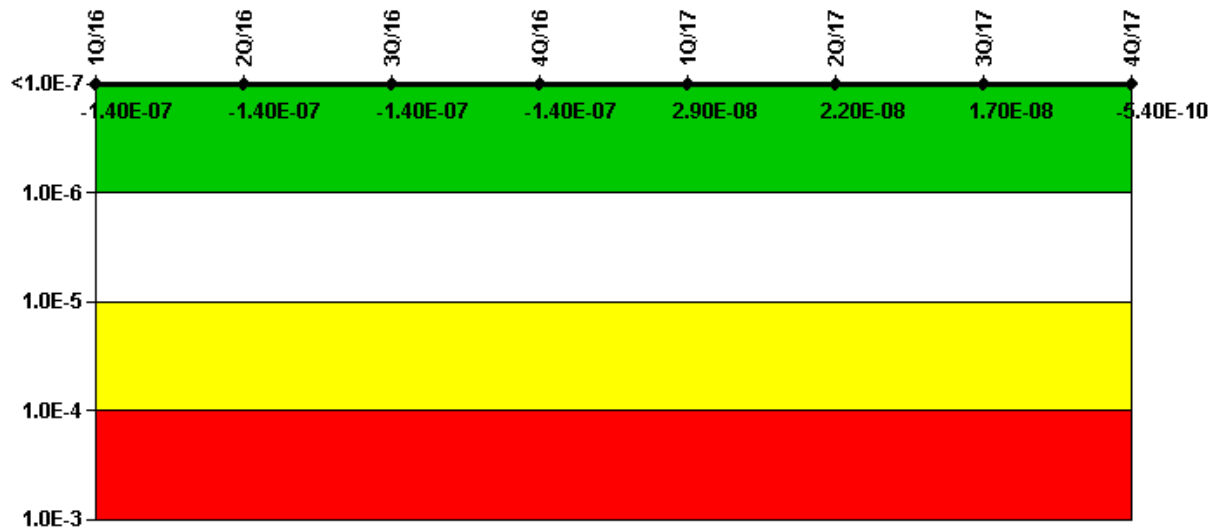
	1Q/16	2Q/16	3Q/16	4Q/16	1Q/17	2Q/17	3Q/17	4Q/17
UAI (ΔCDF)	-7.00E-09	-7.00E-09	6.28E-11	-1.29E-11	-6.50E-10	-4.01E-10	-7.00E-09	-8.17E-09
URI (ΔCDF)	-1.44E-08	-1.44E-08	-1.51E-08	-1.51E-08	-1.44E-08	-1.43E-08	-1.37E-08	-1.82E-08
PLE	NO	NO	NO	NO	NO	NO	NO	NO
Indicator value	-2.10E-08	-2.10E-08	-1.50E-08	-1.50E-08	-1.50E-08	-1.50E-08	-2.10E-08	-2.60E-08

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Licensee Comments:

4Q/17: Changed PRA Parameter(s). All PRA inputs were revised to reflect the U1R5 and U2R5v2 models per calculations H-RIE-IEIF-U01 and H-RIE-IEIF-U02, rev 2.0. Revised the HPCI and RCIC mission time discussion based on the addition of RCIC 24-hour mission time logic. Attachment 1 no longer needed, MAAP parameters updated per PRA-BC-H-15-018. H-RIE-MSPI-U00 is the associated calculation for this version of the MSPI document. During Engineering review corrected several entries where body of document did not match Appendix A or Appendix B. Tables 1.4-3i and 1.4-3j had been inadvertently deleted, added back to document. Corrected table 1.5-2a where PSW segments 1-2 and 2-1 were reversed. Corrections were made to the Planned Unavailability Baseline (UABLP) values that were inadvertently omitted during the 2014Q1 update. The error did not impact the indicator colors.

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)	-1.20E-08	-1.20E-08	-1.20E-08	-1.20E-08	-9.60E-09	-9.58E-09	-9.58E-09	1.06E-09
URI (ΔCDF)	-1.25E-07	-1.27E-07	-1.26E-07	-1.24E-07	3.84E-08	3.19E-08	2.64E-08	-1.61E-09
PLE	NO	NO	NO	NO	NO	NO	NO	NO
Indicator value	-1.40E-07	-1.40E-07	-1.40E-07	-1.40E-07	2.90E-08	2.20E-08	1.70E-08	-5.40E-10

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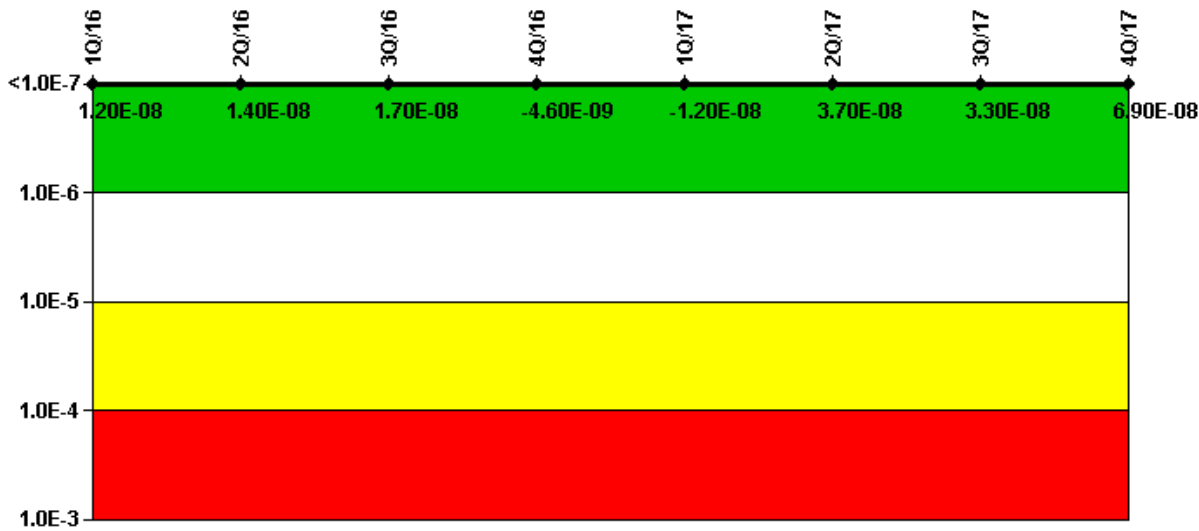
Licensee Comments:

4Q/17: Changed PRA Parameter(s). All PRA inputs were revised to reflect the U1R5 and U2R5v2 models per calculations H-RIE-IEIF-U01 and H-RIE-IEIF-U02, rev 2.0. Revised the HPCI and RCIC mission time discussion based on the addition of RCIC 24-hour mission time logic. Attachment 1 no longer needed, MAAP parameters updated per PRA-BC-H-15-018. H-RIE-MSPI-U00 is the associated calculation for this version of the MSPI document. During Engineering review corrected several entries where body of document did not match Appendix A or Appendix B. Tables 1.4-3i and 1.4-3j had been inadvertently deleted, added back to document. Corrected table 1.5-2a where PSW segments 1-2 and 2-1 were reversed. Corrections were made to the Planned Unavailability Baseline (UABLP) values that were inadvertently omitted during the 2014Q1 update. The error did not impact the indicator colors.

1Q/17: Engineering evaluation determined one valve demand failure for March 2017 but no additional failures.

1Q/17: Subsequent failures of the minimum flow valve are under evaluation as potential additional failures.

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)	9.93E-08	1.01E-07	1.06E-07	8.29E-08	7.97E-08	1.27E-07	1.22E-07	1.01E-07
URI (ΔCDF)	-8.68E-08	-8.77E-08	-8.92E-08	-8.75E-08	-9.14E-08	-8.98E-08	-8.90E-08	-3.17E-08
PLE	NO	NO	NO	NO	NO	NO	NO	NO

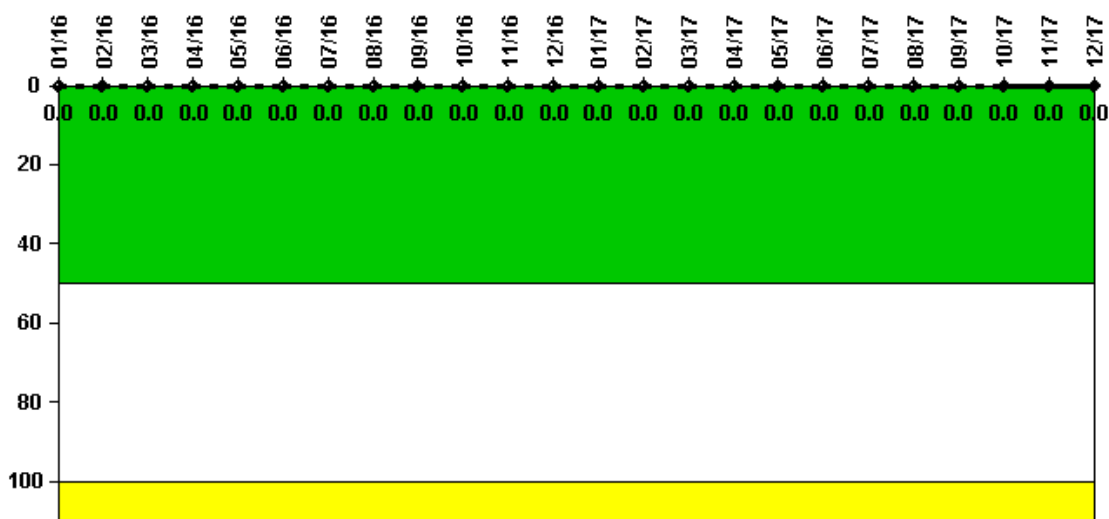
Indicator value	1.20E-08	1.40E-08	1.70E-08	-4.60E-09	-1.20E-08	3.70E-08	3.30E-08	6.90E-08
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Licensee Comments:

4Q/17: Changed PRA Parameter(s). All PRA inputs were revised to reflect the U1R5 and U2R5v2 models per calculations H-RIE-IEIF-U01 and H-RIE-IEIF-U02, rev 2.0. Revised the HPCI and RCIC mission time discussion based on the addition of RCIC 24-hour mission time logic. Attachment 1 no longer needed, MAAP parameters updated per PRA-BC-H-15-018. H-RIE-MSPI-U00 is the associated calculation for this version of the MSPI document. During Engineering review corrected several entries where body of document did not match Appendix A or Appendix B. Tables 1.4-3i and 1.4-3j had been inadvertently deleted, added back to document. Corrected table 1.5-2a where PSW segments 1-2 and 2-1 were reversed. Corrections were made to the Planned Unavailability Baseline (UABLP) values that were inadvertently omitted during the 2014Q1 update. The error did not impact the indicator colors.

Reactor Coolant System Activity



Thresholds: White > 50.0 Yellow > 100.0

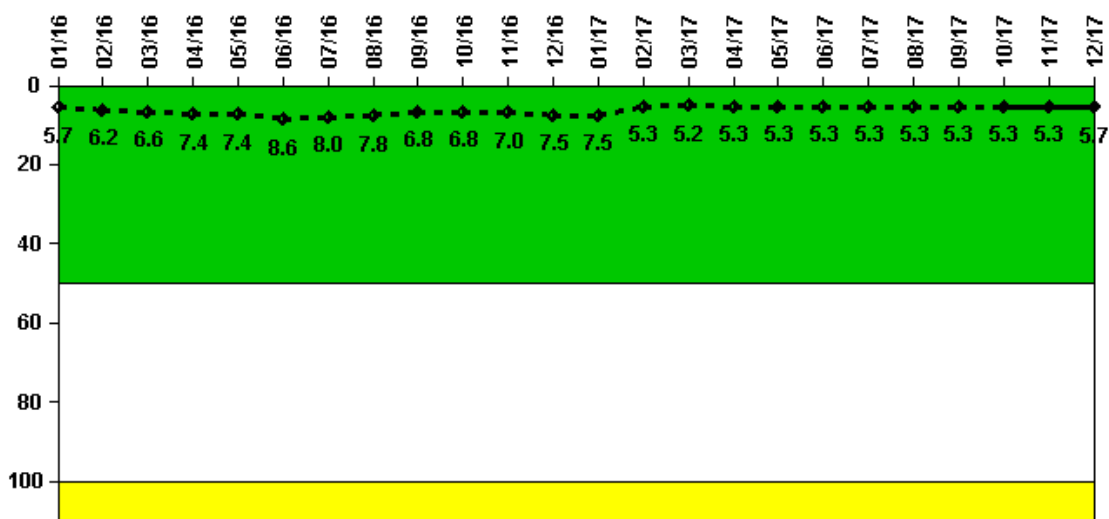
Notes

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	0.000005	0.000003	0.000002	0.000004	0.000004	0.000003	0.000003	0.000006	0.000005	0.000004	0.000005	0.000007
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	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	0.000004	0.000003	0.000003	0.000004	0.000008	0.000007	0.000012	0.000005	0.000006	0.000005	0.000005	0.000004
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	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	1.720	1.850	1.990	2.220	2.230	2.580	2.400	2.350	2.050	2.050	2.100	2.260
Technical specification limit	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0

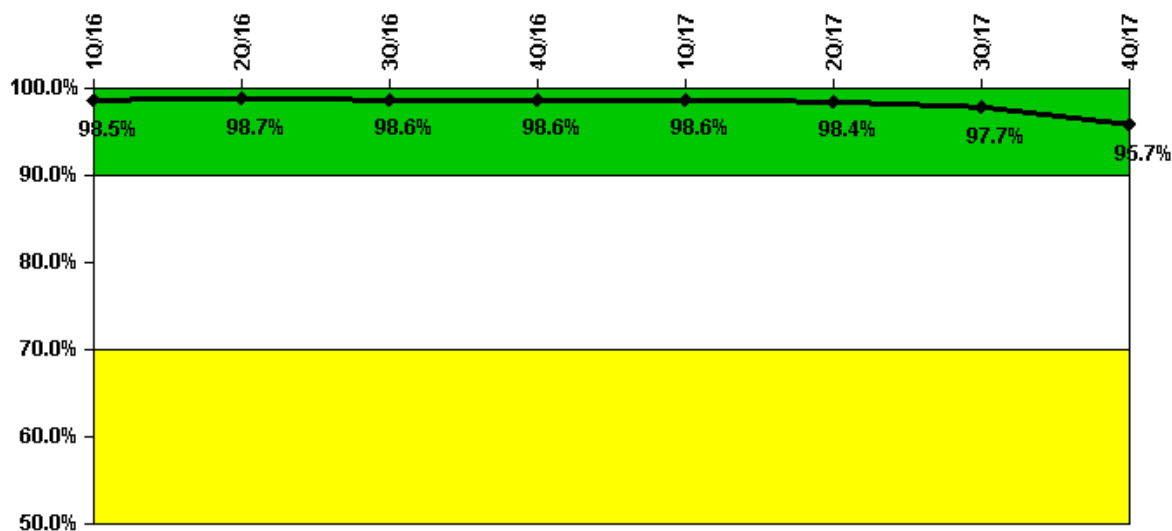
Indicator value	5.7	6.2	6.6	7.4	7.4	8.6	8.0	7.8	6.8	6.8	7.0	7.5
Reactor Coolant System Leakage	1/17	2/17	3/17	4/17	5/17	6/17	7/17	8/17	9/17	10/17	11/17	12/17
Maximum leakage	2.260	1.580	1.550	1.580	1.580	1.590	1.590	1.590	1.590	1.590	1.600	1.720
Technical specification limit	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0

Indicator value	7.5	5.3	5.2	5.3	5.3	5.3	5.3	5.3	5.3	5.3	5.3	5.7
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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	22.0	55.0	53.0	36.0	24.0	27.0	41.0	8.0
Total opportunities	24.0	55.0	53.0	36.0	24.0	29.0	43.0	14.0

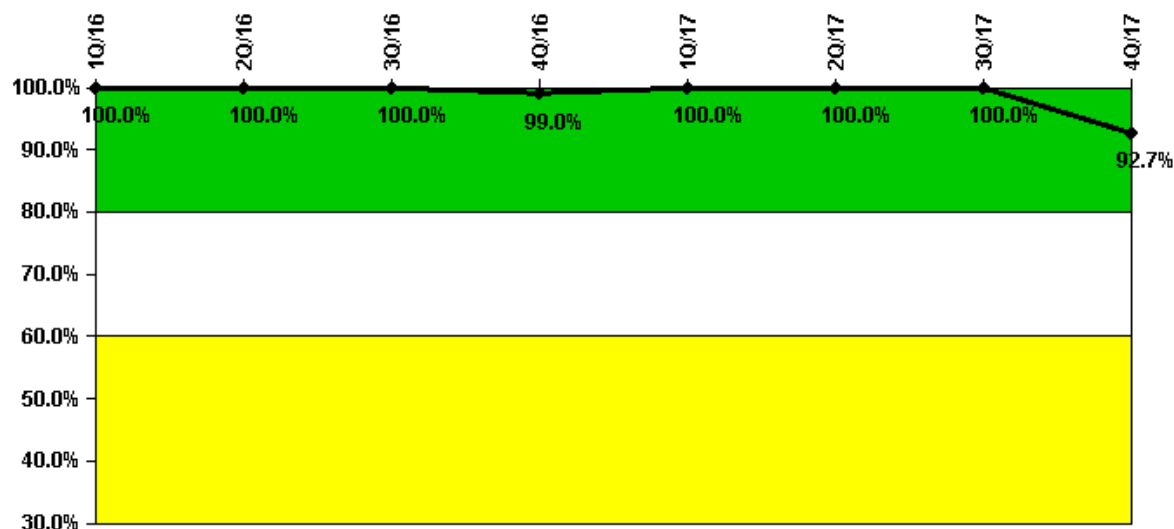
Indicator value **98.5% 98.7% 98.6% 98.6% 98.6% 98.4% 97.7% 95.7%**

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Licensee Comments:

1Q/17: The values for March 2017 were changed to correct previously reported data to include an additional 10 opportunities. The change did not affect the color of the indicator.

ERO Drill Participation



Thresholds: White < 80.0% Yellow < 60.0%

Notes

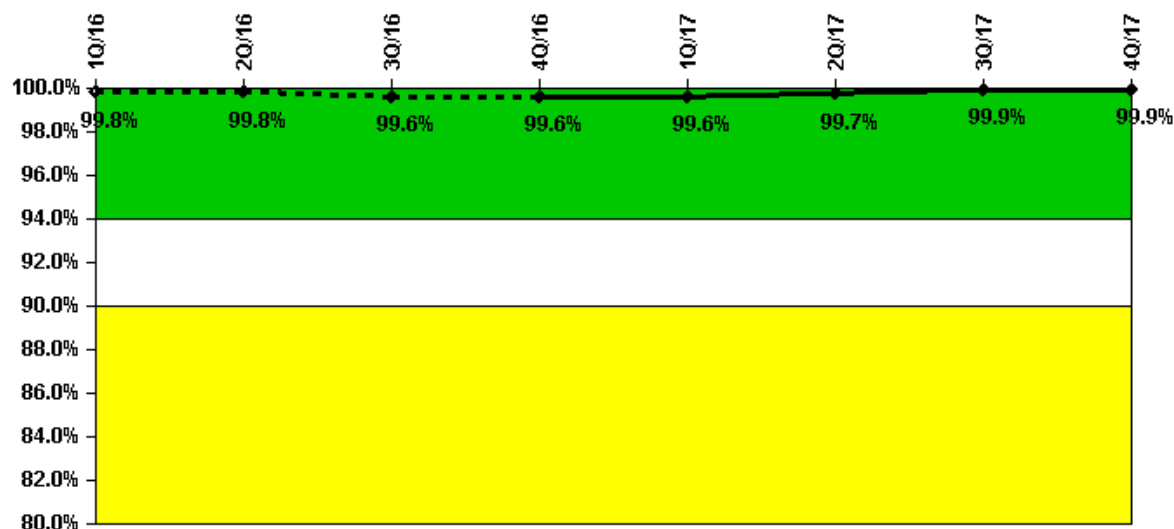
ERO Drill Participation	1Q/16	2Q/16	3Q/16	4Q/16	1Q/17	2Q/17	3Q/17	4Q/17
Participating Key personnel	99.0	85.0	85.0	95.0	97.0	86.0	88.0	89.0
Total Key personnel	99.0	85.0	85.0	96.0	97.0	86.0	88.0	96.0

Indicator value **100.0% 100.0% 100.0% 99.0% 100.0% 100.0% 100.0% 92.7%**

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Licensee Comments: none

Alert & Notification System



Thresholds: White < 94.0% Yellow < 90.0%

Notes

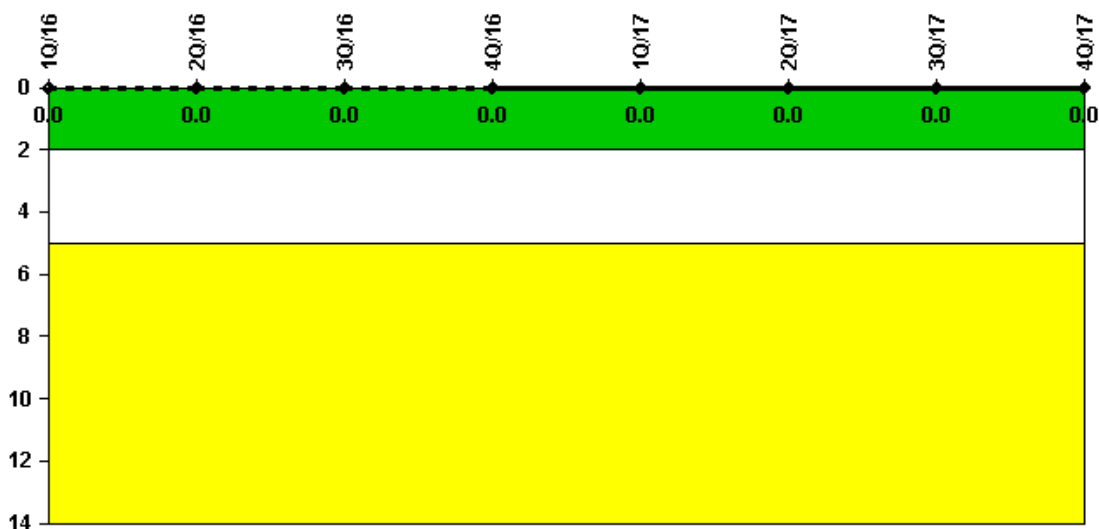
Alert & Notification System	1Q/16	2Q/16	3Q/16	4Q/16	1Q/17	2Q/17	3Q/17	4Q/17
Successful siren-tests	1038	1036	1032	1117	1039	1039	1039	1199
Total sirens-tests	1040	1040	1040	1120	1040	1040	1040	1200

Indicator value **99.8%** **99.8%** **99.6%** **99.6%** **99.6%** **99.7%** **99.9%** **99.9%**

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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

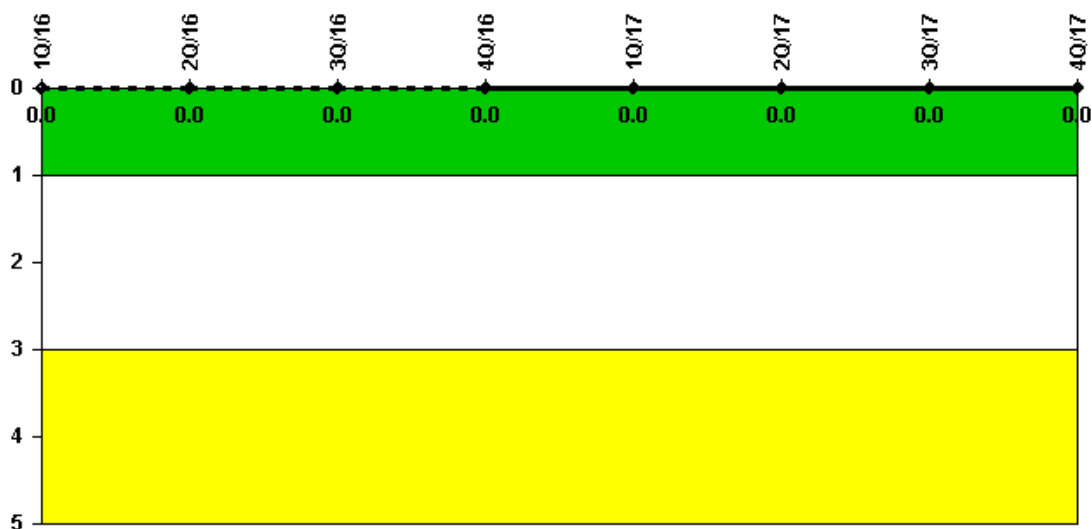
TOP

Licensee Comments:

3Q/16: The number of high radiation area occurrences was changed value from 0 to 1 for the month of September 2016 to include a previously omitted occurrence. The change does not affect the color of the indicator. Update 09/20/2017, changed value from 1 to 0. Dose rate was < 1 rem/hr. Change does not affect color.

3Q/16: The number of high radiation area occurrences was changed value from 0 to 1 for the month of September 2016 to include a previously omitted occurrence. The change does not affect the color of the indicator.

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