U.S.NRC
United States Nuclear Regulatory Commission
Protecting People and the Environment

Brunswick 2 – Quarterly Performance Indicators

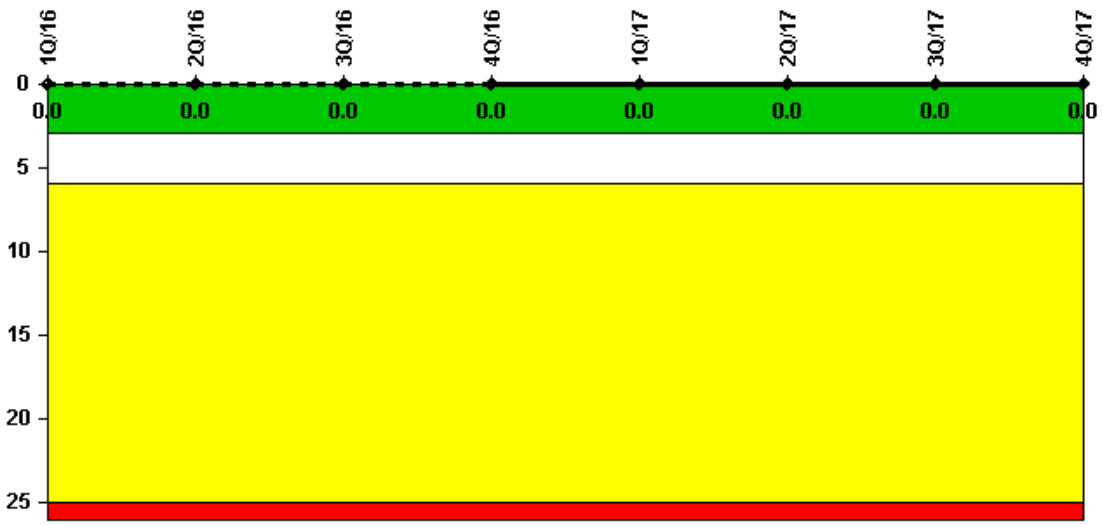
4Q/2017 Performance Indicators

The solid trend line represents the current reporting period.

Licensee's General Comments: The September 2017 (3Q 2017) ERO Key Personnel Participation indicator was revised based on an arithmetic error when calculating the final value. The indicator color was unaffected by this change and remains Green.

On this page:

Unplanned Scrams per 7000 Critical Hrs



Thresholds: White > 3.0 Yellow > 6.0 Red > 25.0

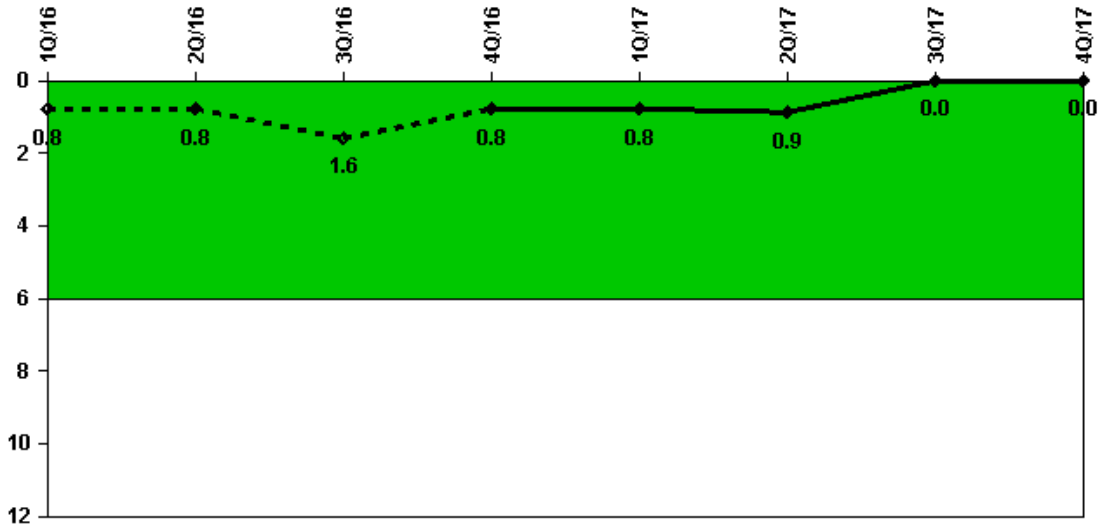
Notes

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	0	0	0
Critical hours	2183.0	2184.0	2208.0	2209.0	1822.9	1870.2	2208.0	2209.0
Indicator value	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**

TOP

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	0	1.0	0	0	0	0	0
Critical hours	2183.0	2184.0	2208.0	2209.0	1822.9	1870.2	2208.0	2209.0
Indicator value	**0.8**	**0.8**	**1.6**	**0.8**	**0.8**	**0.9**	**0**	**0**

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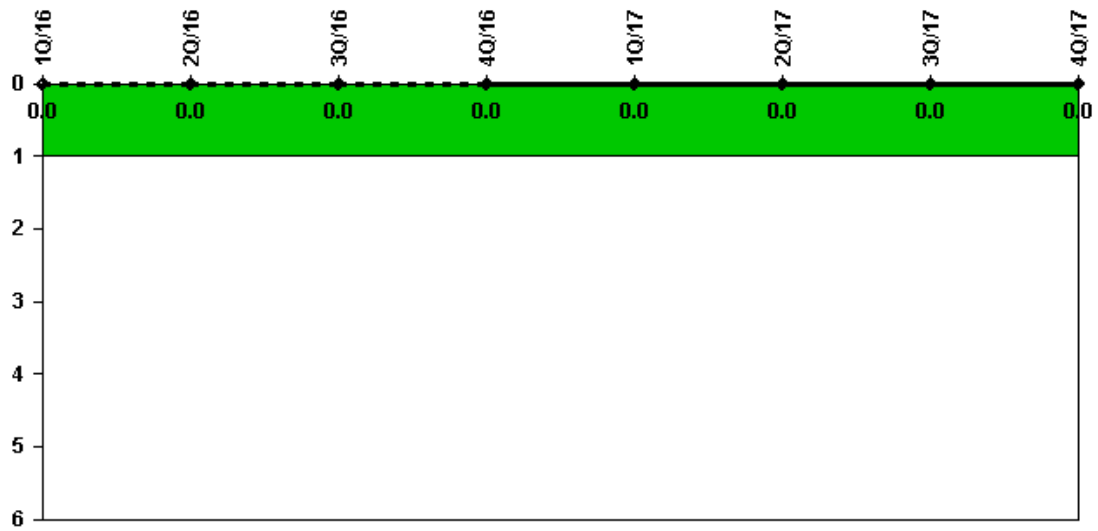
Licensee Comments:
4Q/17: On November 26, 2017, the NRC issued license amendments for both BSEP Units 1 and 2 for a one-time extension of the Emergency Diesel Generator completion times from 14 days to 30 days based on an emergency license amendment request. The granting of the emergency license amendment allowed BSEP Units 1 and 2 to stay at full power operation and avoid an unplanned power change of greater than 20-percent of full power.
1Q/16: On March 4, 2016, the NRC approved a Notice of Enforcement Discretion (NOED) associated with the entry into LCO 3.0.3 as directed by Technical Specification (TS) 3.8.1, AC Sources - Operating, for the Brunswick Nuclear Plant, Unit 2. This LCO would have required Unit 2 to initiate actions within 1 hour to place the Unit in Mode 2 within 7 hours. The NOED extended this required action for up to 17 hours, allowing enough time to troubleshoot, repair, and declare Emergency Diesel Generator #3 operable. EDG3 was declared operable within this timeframe, and Unit 2 remained at full power for the entire duration. If the NOED had not been granted, it may have resulted in an unplanned power change of greater than 20% for Unit 2.

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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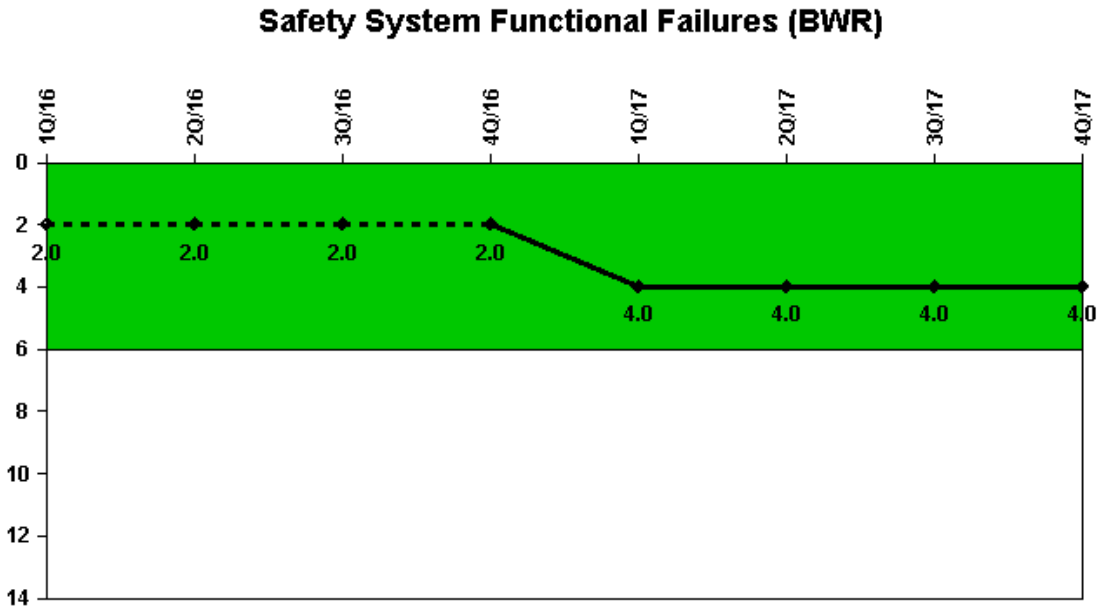
Licensee Comments: none



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	1	1	0	2	1	1	0
Indicator value	**2**	**2**	**2**	**2**	**4**	**4**	**4**	**4**

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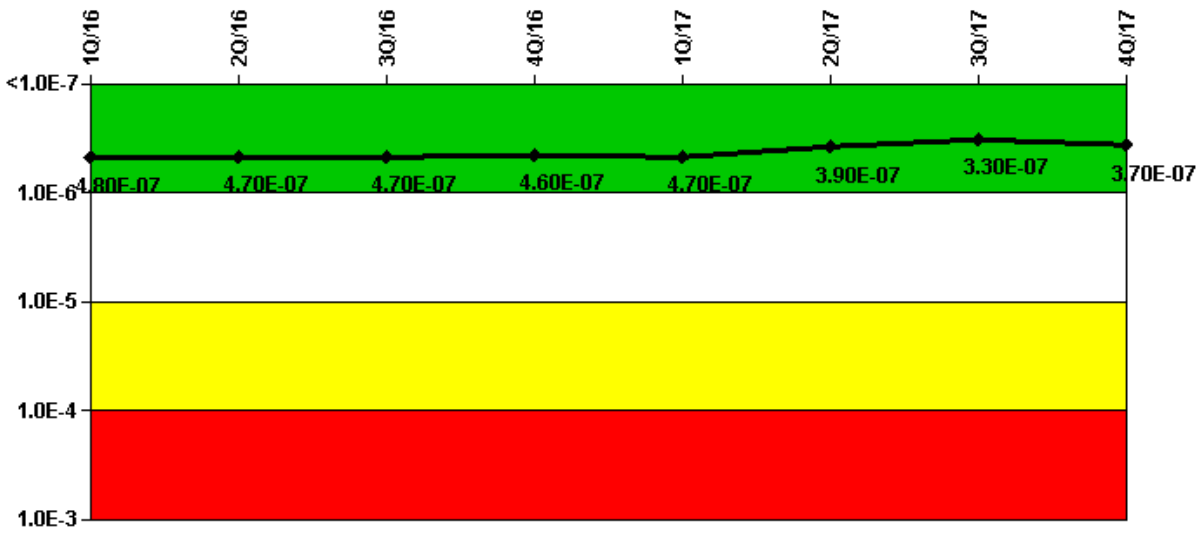
Licensee Comments:
3Q/17: LER 1-2017-003 documented a SSFF of the Control Room AC and Control Room Emergency Ventilation (CREV) system when it was rendered inoperable. LER 1-2017-003 was submitted on Aug. 2, 2017. Because of the shared nature of the Control Rooms at Brunswick, the loss of safety function affects both Unit 1 and Unit 2.
2Q/17: LER 2-2017-002, submitted on 6/9/17, reports a safety system functional failure associated with primary containment.
1Q/17: LER 1-2017-001, submitted on March 22, 2017, reports a safety system functional failure (SSFF) of the on-site Emergency AC System. EDG 1 was inoperable coincident with other EDGs at various times. Since it was not known that EDG 1 was inoperable, only one SSFF is counted, consistent with NEI 99-02 guidance. Due to the shared electrical distribution system, this affects Units 1 and 2.
LER 1-2016-006, submitted on Feb. 13, 2017, reports a safety system functional failure (SSFF) of the Control Room Air Conditioning System. Due to the shared control room configuration, this affects Units 1 and 2.
3Q/16: LER 2-2016-002, submitted on 08/29/2016, reported the High Pressure Coolant Injection System becoming inoperable due to a failed relay coil, which resulted in a safety system functional failure.
2Q/16: LER 1-2016-002, dated 5/2/16, reported one event where EDG 3 failed to start and was considered inoperable. Therefore, this event was counted as a SSFF. This was applicable to both Unit 1 and 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/16	2Q/16	3Q/16	4Q/16	1Q/17	2Q/17	3Q/17	4Q/17
UAI (ΔCDF)	2.76E-07	2.60E-07	2.58E-07	2.56E-07	1.27E-07	1.11E-07	1.11E-07	2.18E-07
URI (ΔCDF)	2.06E-07	2.07E-07	2.07E-07	2.07E-07	3.45E-07	2.79E-07	2.16E-07	1.51E-07
PLE	NO	NO	NO	NO	NO	NO	NO	NO
Indicator value	**4.80E-07**	**4.70E-07**	**4.70E-07**	**4.60E-07**	**4.70E-07**	**3.90E-07**	**3.30E-07**	**3.70E-07**

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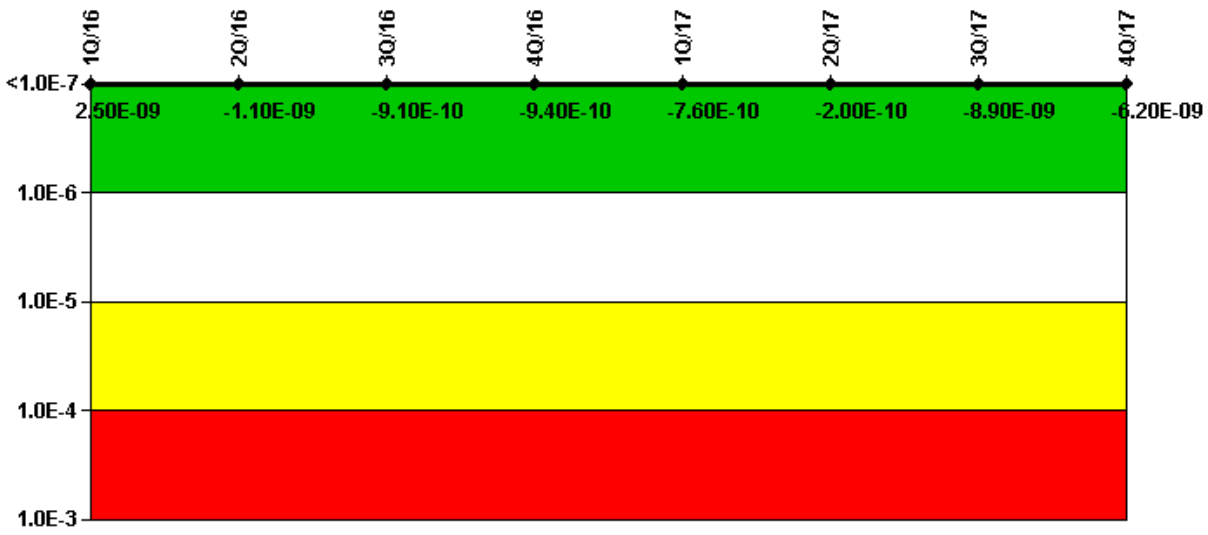
Licensee Comments: none

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/16	2Q/16	3Q/16	4Q/16	1Q/17	2Q/17	3Q/17	4Q/17
UAI (ΔCDF)	8.60E-09	5.00E-09	5.20E-09	5.17E-09	5.35E-09	5.91E-09	-2.75E-09	-1.24E-10
URI (ΔCDF)	-6.11E-09	-6.11E-09	-6.11E-09	-6.11E-09	-6.11E-09	-6.11E-09	-6.11E-09	-6.11E-09
PLE	NO	NO	NO	NO	NO	NO	NO	NO
Indicator value	**2.50E-09**	**-1.10E-09**	**-9.10E-10**	**-9.40E-10**	**-7.60E-10**	**-2.00E-10**	**-8.90E-09**	**-6.20E-09**

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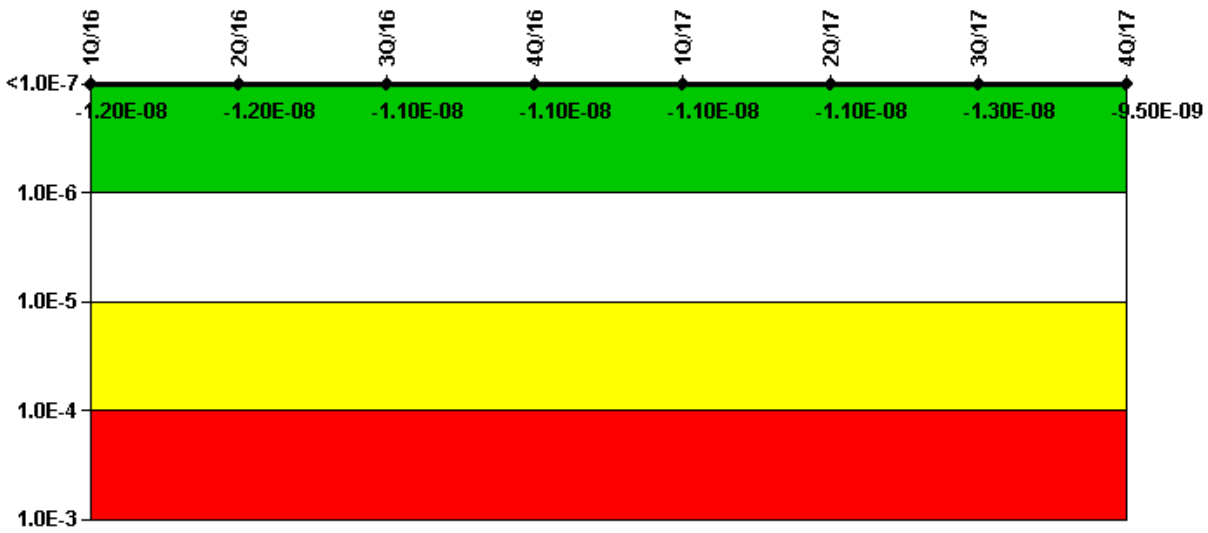
Licensee Comments: none

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/16	2Q/16	3Q/16	4Q/16	1Q/17	2Q/17	3Q/17	4Q/17
UAI (ΔCDF)	-1.05E-09	-1.08E-09	-3.07E-10	-1.41E-10	4.66E-11	3.52E-10	-1.96E-09	1.51E-09
URI (ΔCDF)	-1.10E-08	-1.10E-08	-1.10E-08	-1.10E-08	-1.10E-08	-1.10E-08	-1.10E-08	-1.10E-08
PLE	NO	NO	NO	NO	NO	NO	NO	NO
Indicator value	**-1.20E-08**	**-1.20E-08**	**-1.10E-08**	**-1.10E-08**	**-1.10E-08**	**-1.10E-08**	**-1.30E-08**	**-9.50E-09**

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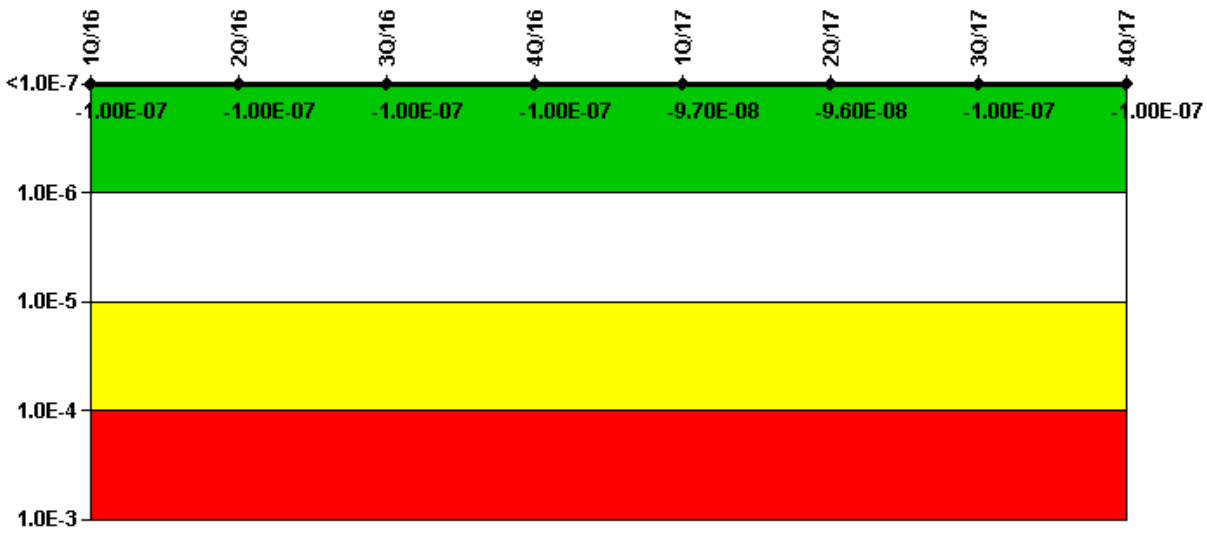
Licensee Comments: none

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/16	2Q/16	3Q/16	4Q/16	1Q/17	2Q/17	3Q/17	4Q/17
UAI (ΔCDF)	-3.38E-08	-3.38E-08	-3.38E-08	-3.38E-08	-2.87E-08	-2.81E-08	-3.38E-08	-3.38E-08
URI (ΔCDF)	-6.81E-08	-6.81E-08	-6.81E-08	-6.81E-08	-6.81E-08	-6.81E-08	-6.81E-08	-6.81E-08
PLE	NO	NO	NO	NO	NO	NO	NO	NO
Indicator value	**-1.00E-07**	**-1.00E-07**	**-1.00E-07**	**-1.00E-07**	**-9.70E-08**	**-9.60E-08**	**-1.00E-07**	**-1.00E-07**

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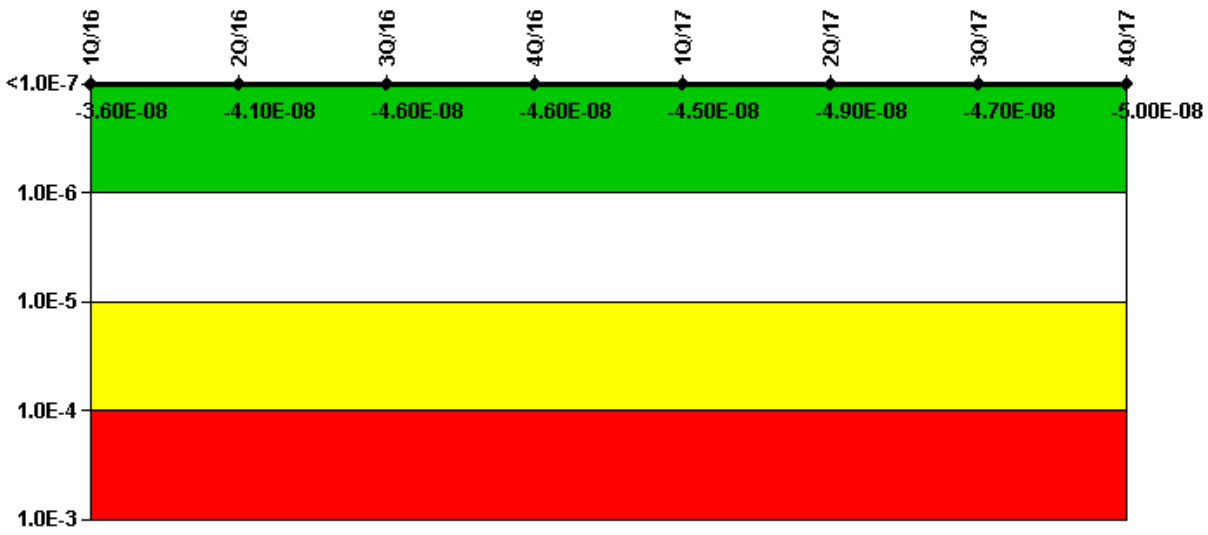
Licensee Comments: none

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/16	2Q/16	3Q/16	4Q/16	1Q/17	2Q/17	3Q/17	4Q/17
UAI (ΔCDF)	-2.12E-08	-2.25E-08	-2.95E-08	-2.95E-08	-2.88E-08	-3.29E-08	-2.86E-08	-3.17E-08
URI (ΔCDF)	-1.45E-08	-1.83E-08	-1.61E-08	-1.61E-08	-1.61E-08	-1.61E-08	-1.83E-08	-1.83E-08
PLE	NO	NO	NO	NO	NO	NO	NO	NO
Indicator value	**-3.60E-08**	**-4.10E-08**	**-4.60E-08**	**-4.60E-08**	**-4.50E-08**	**-4.90E-08**	**-4.70E-08**	**-5.00E-08**

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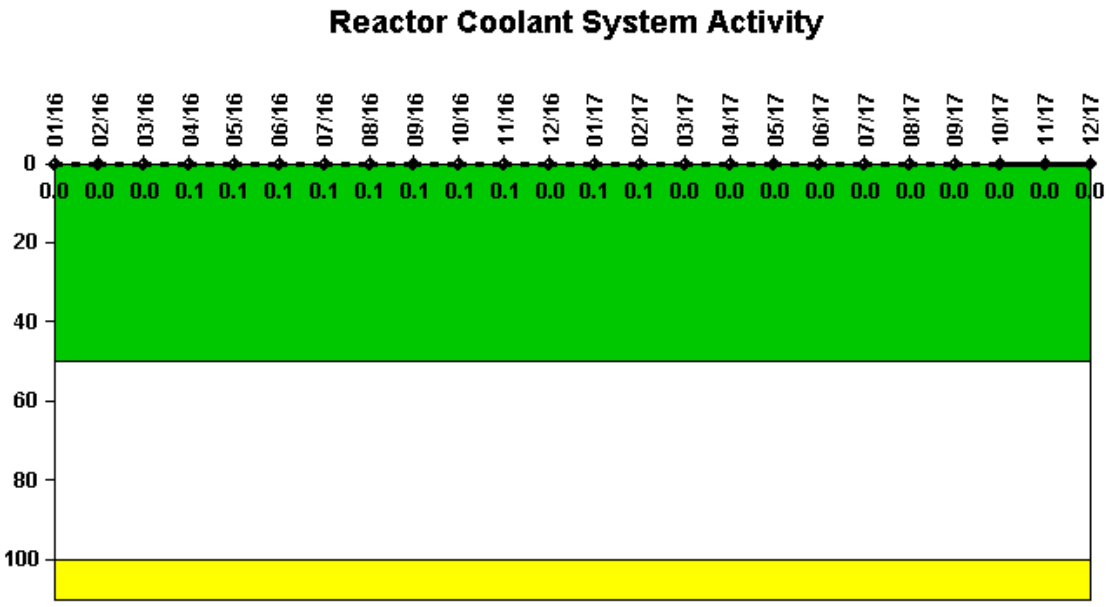
Licensee Comments: none



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	0.000079	0.000082	0.000089	0.000105	0.000102	0.000109	0.000110	0.000119	0.000119	0.000100	0.000104	0.000097
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**	**0.1**	**0.1**	**0.1**	**0.1**	**0.1**	**0.1**	**0.1**	**0.1**	**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	0.000116	0.000116	0.000098	0.000074	0.000071	0.000077	0.000088	0.000085	0.000087	0.000072	0.000053	0.000046
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**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**

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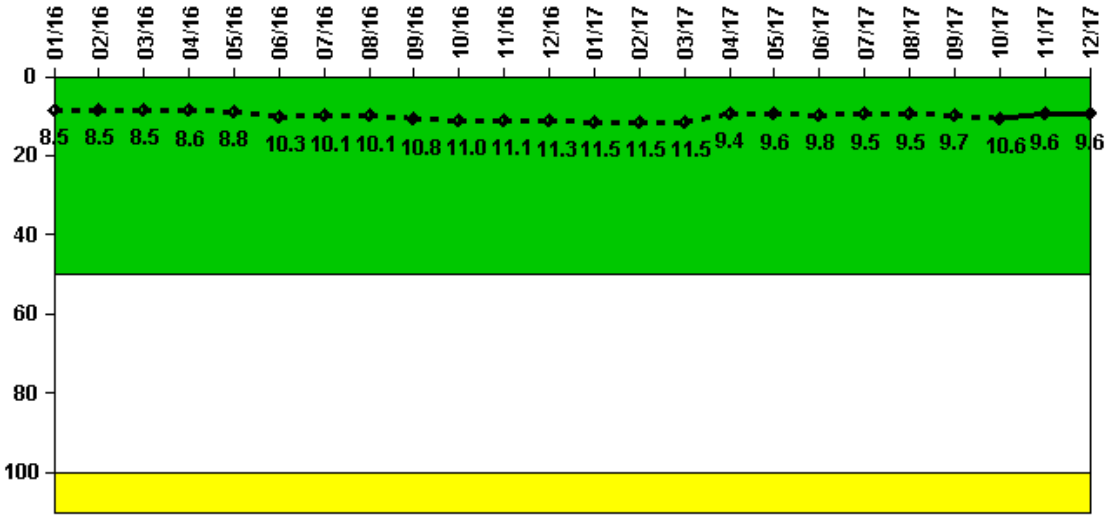
Licensee Comments: none

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	2.120	2.120	2.130	2.140	2.190	2.570	2.530	2.530	2.690	2.750	2.780	2.820
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	**8.5**	**8.5**	**8.5**	**8.6**	**8.8**	**10.3**	**10.1**	**10.1**	**10.8**	**11.0**	**11.1**	**11.3**

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	2.880	2.870	2.870	2.340	2.390	2.440	2.380	2.380	2.430	2.640	2.400	2.390
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	**11.5**	**11.5**	**11.5**	**9.4**	**9.6**	**9.8**	**9.5**	**9.5**	**9.7**	**10.6**	**9.6**	**9.6**

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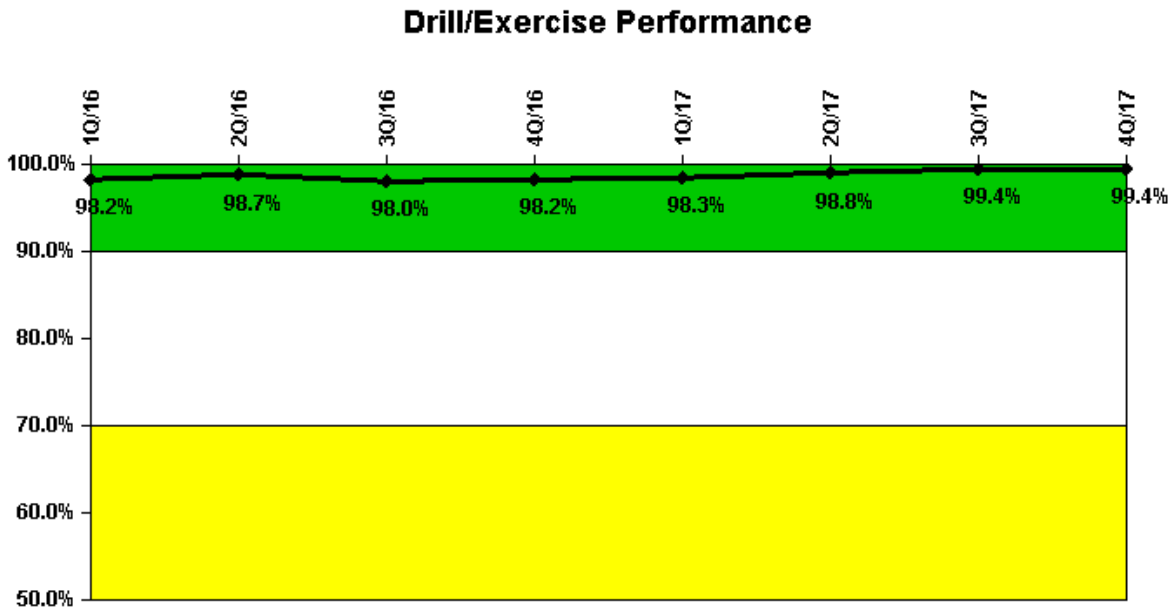
Licensee Comments: none



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	8.0	9.0	29.0	35.0	23.0	8.0	25.0	17.0
Total opportunities	8.0	9.0	30.0	35.0	23.0	8.0	25.0	17.0
Indicator value	**98.2%**	**98.7%**	**98.0%**	**98.2%**	**98.3%**	**98.8%**	**99.4%**	**99.4%**

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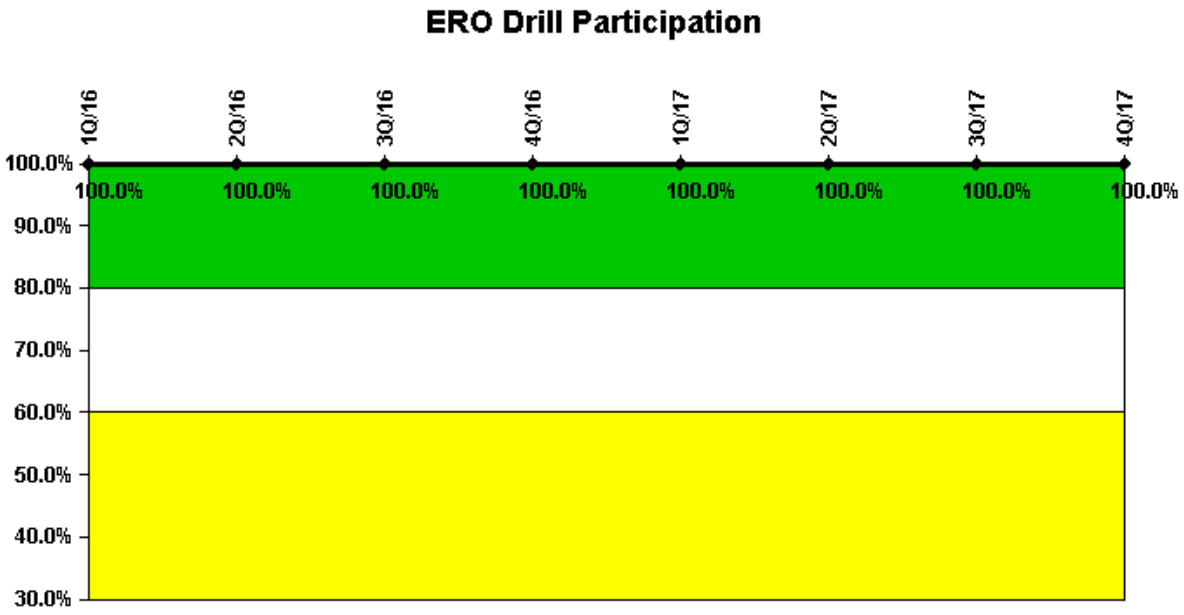
Licensee Comments: none



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	108.0	102.0	109.0	112.0	102.0	97.0	151.0	156.0
Total Key personnel	108.0	102.0	109.0	112.0	102.0	97.0	151.0	156.0
Indicator value	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**

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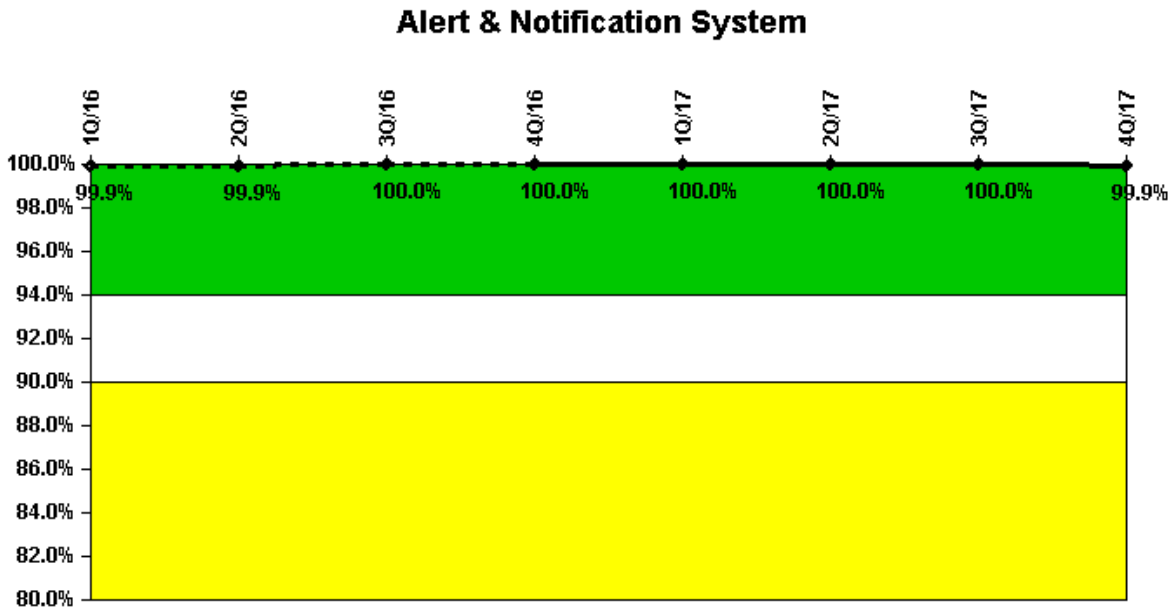
Licensee Comments: none



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	532	532	532	532	532	532	532	530
Total sirens-tests	532	532	532	532	532	532	532	532
Indicator value	**99.9%**	**99.9%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**99.9%**

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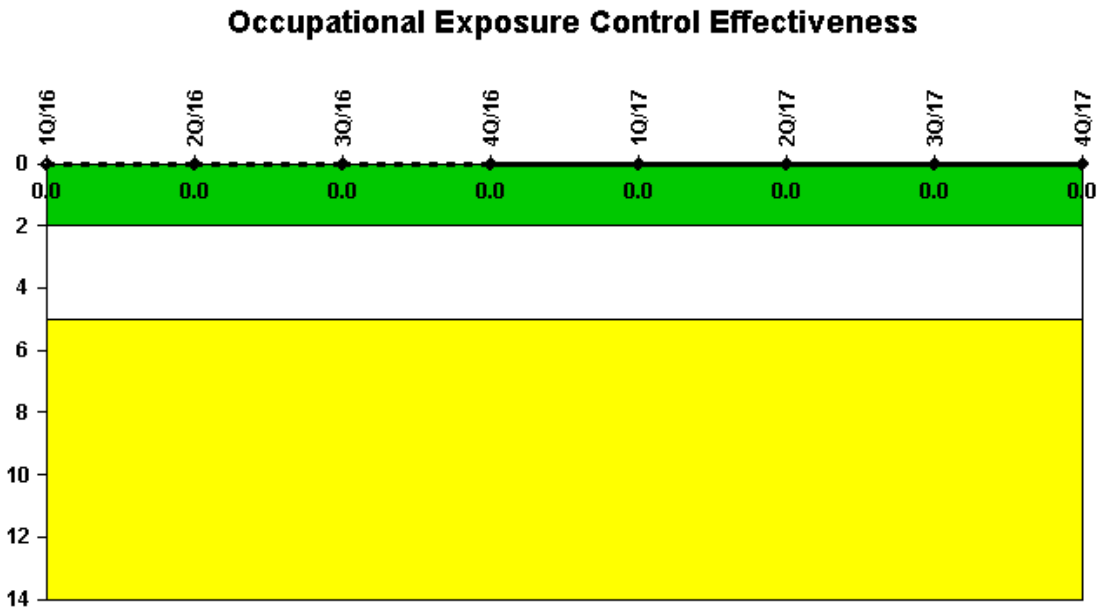
Licensee Comments: none



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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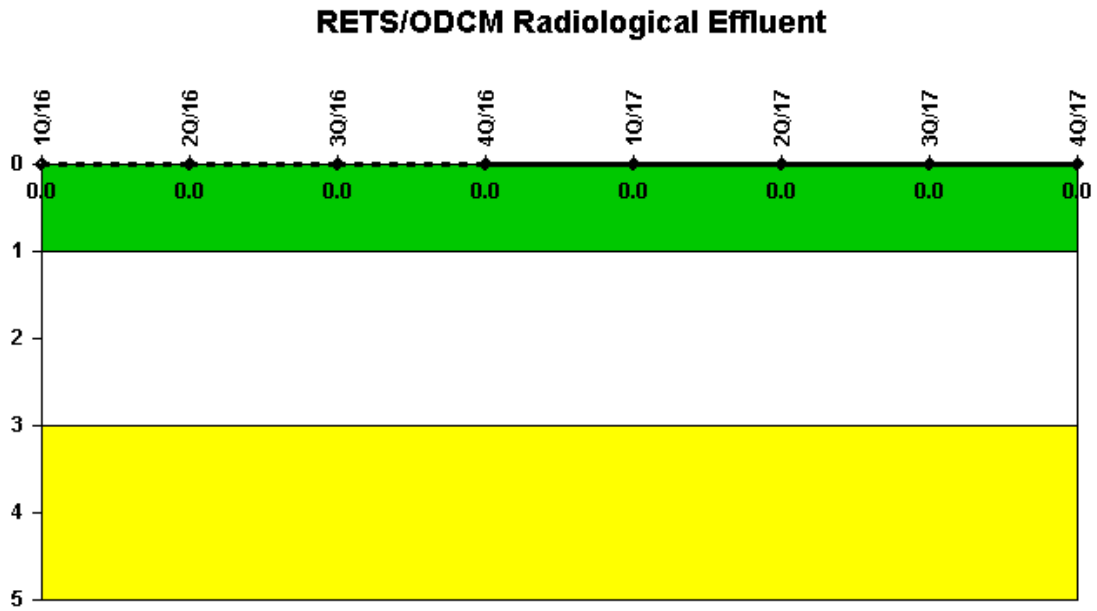
Licensee Comments: none



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