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Waterford 3 – Quarterly Performance Indicators

4Q/2017 Performance Indicators

The solid trend line represents the current reporting period.

Licensee's General Comments: Waterford 3 4th Quarter 2017 ROP Submittal

On this page:

- Unplanned Scrams (IE01)
- Unplanned Power Changes per 7000 Critical Hours (IE03)
- Unplanned Scrams with Complications (IE04)
- Safety System Functional Failures (MS05)
- Emergency AC Power Systems (MS06)
- High Pressure Injection Systems (MS07)
- Heat Removal Systems (MS08)
- 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)

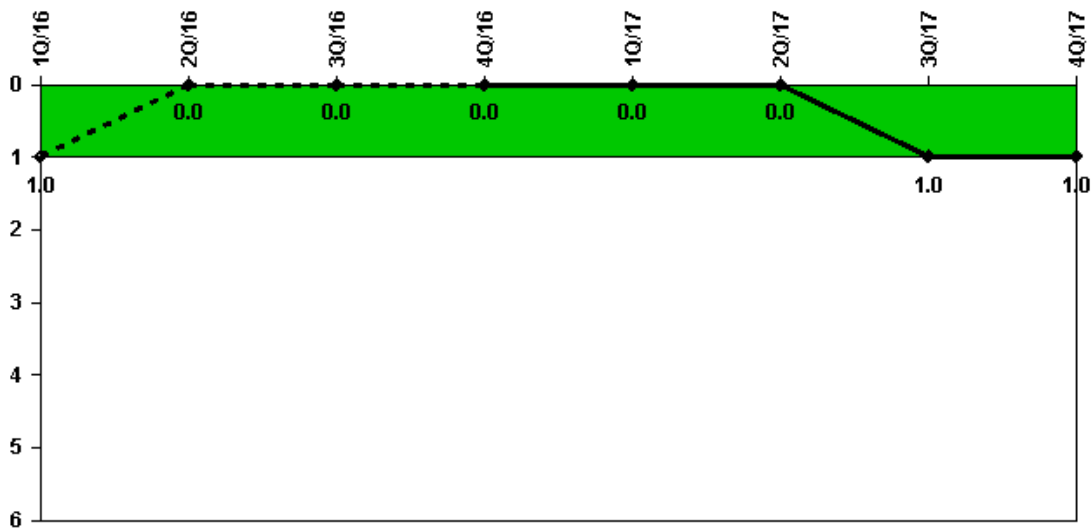
Notes

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	0	0	0	0	0	0
Critical hours	2183.0	2184.0	2208.0	2067.3	2159.0	1046.0	1922.6	2209.0
Indicator value	1.9	0	0	0	0	0	0	0

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Licensee Comments: none

Unplanned Scrams with Complications



Thresholds: White > 1.0

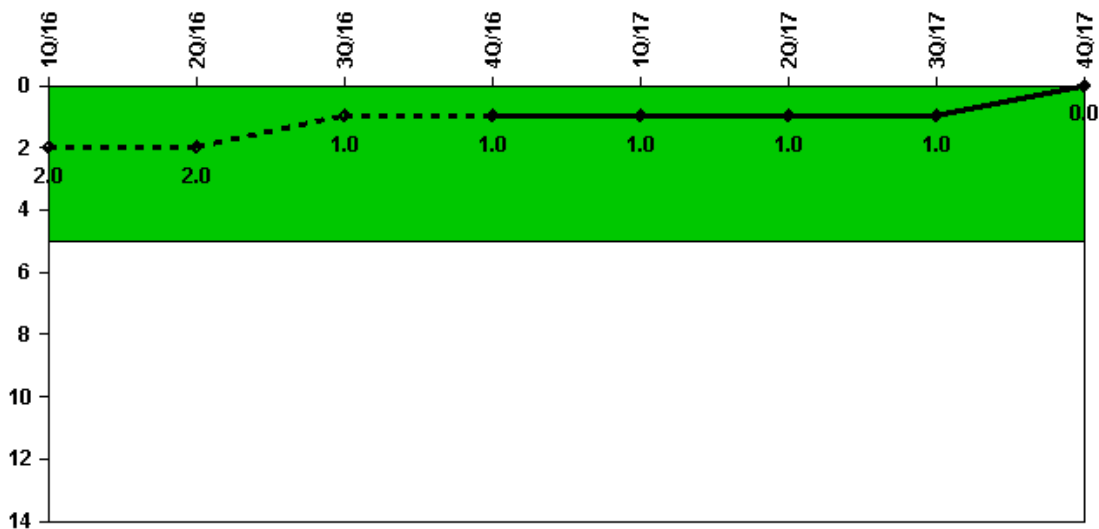
Notes

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	1.0	0
Indicator value	1.0	0.0	0.0	0.0	0.0	0.0	1.0	1.0

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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 0 0 1 0 0 0 0

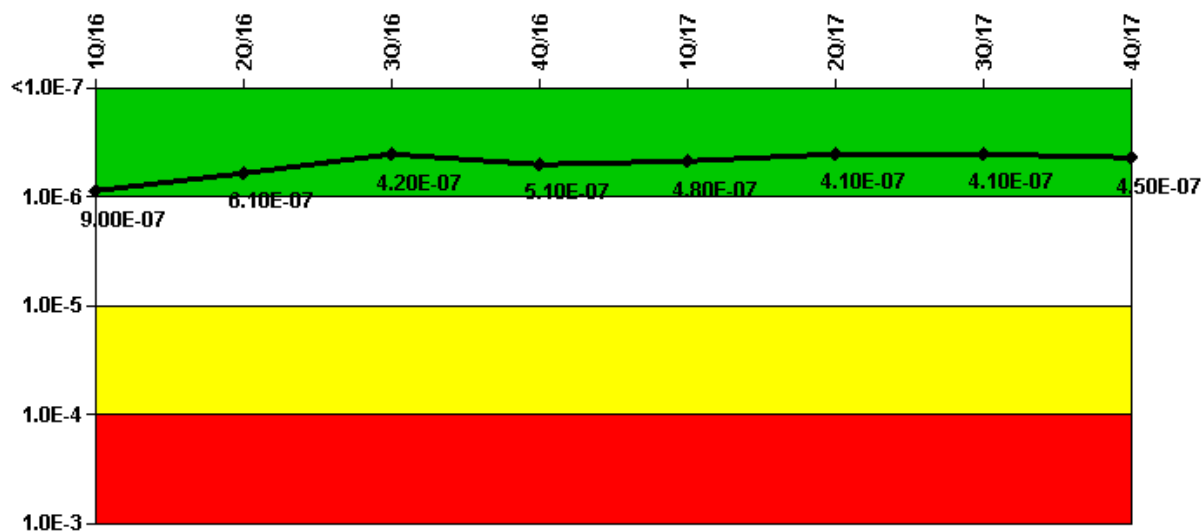
Indicator value 2 2 1 1 1 1 1 0

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Licensee Comments:

4Q/16: LER 2016-002-00 reported 10/11/2016 - Incident occurred August 12th 2016.

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

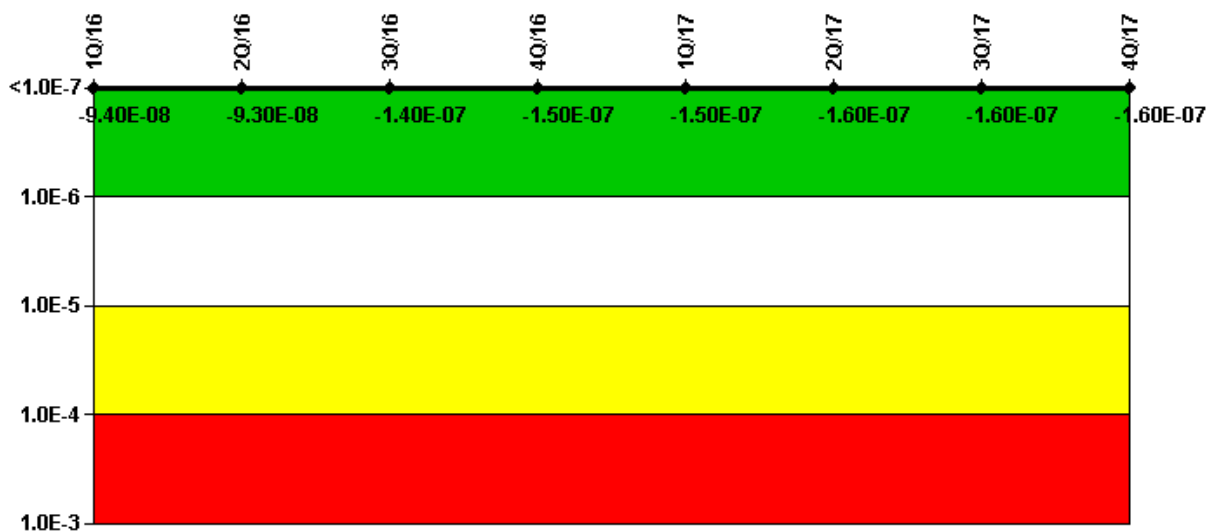
	1Q/16	2Q/16	3Q/16	4Q/16	1Q/17	2Q/17	3Q/17	4Q/17
UAI (ΔCDF)	5.55E-07	7.02E-07	1.61E-07	2.37E-07	1.56E-07	7.42E-08	7.74E-08	1.14E-07
URI (ΔCDF)	3.49E-07	-9.46E-08	2.54E-07	2.78E-07	3.28E-07	3.38E-07	3.35E-07	3.32E-07
PLE	NO	NO	NO	NO	NO	NO	NO	NO
Indicator value	9.00E-07	6.10E-07	4.20E-07	5.10E-07	4.80E-07	4.10E-07	4.10E-07	4.50E-07

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Licensee Comments:

4Q/17: Risk Cap Invoked.
 3Q/17: Risk Cap Invoked.
 2Q/17: Risk Cap Invoked.
 1Q/17: Risk Cap Invoked.
 4Q/16: Risk Cap Invoked. Changed PRA Parameter(s).
 4Q/16: Risk Cap Invoked.
 3Q/16: Risk Cap Invoked. Changed PRA Parameter(s).
 3Q/16: Risk Cap Invoked. Changed PRA Parameter(s).
 2Q/16: Risk Cap Invoked.
 1Q/16: Risk Cap Invoked. The Generic Common Cause Failure (CCF) Factors applied to the Emergency Diesel Generator (EDG) runtime failure Birnbaum were not correct. The incorrect value of 1.0 should be changed to 1.25 per the guidance in NEI 99-02 Rev. 7. Ref. EC-63198.

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

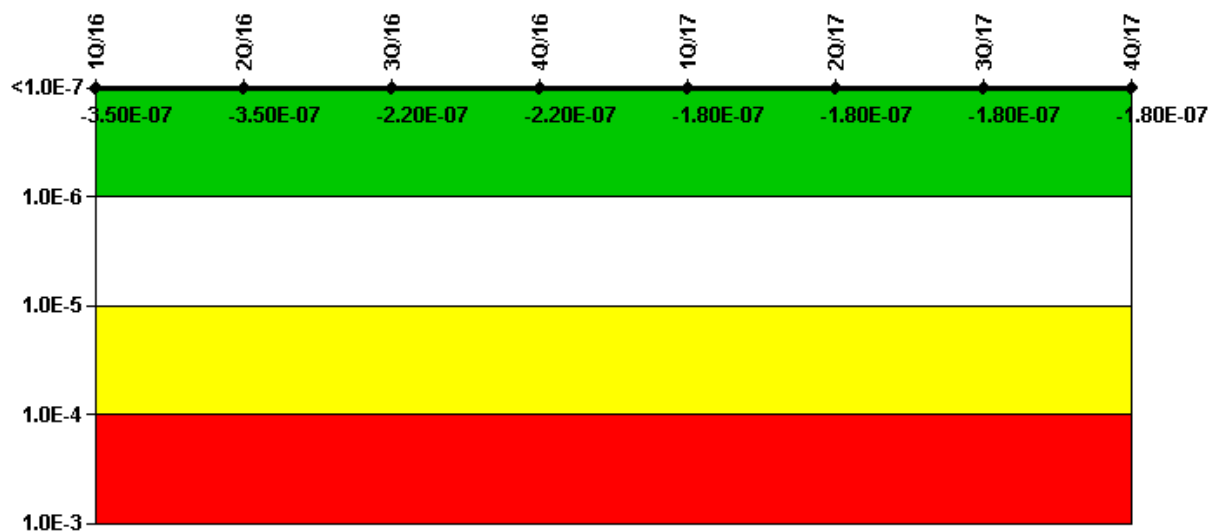
	1Q/16	2Q/16	3Q/16	4Q/16	1Q/17	2Q/17	3Q/17	4Q/17
UAI (Δ CDF)	-5.11E-09	-4.45E-09	-3.01E-09	-9.75E-09	-1.16E-08	-1.16E-08	-1.16E-08	-1.16E-08
URI (Δ CDF)	-8.93E-08	-8.88E-08	-1.41E-07	-1.41E-07	-1.39E-07	-1.45E-07	-1.45E-07	-1.45E-07
PLE	NO	NO	NO	NO	NO	NO	NO	NO
Indicator value	-9.40E-08	-9.30E-08	-1.40E-07	-1.50E-07	-1.50E-07	-1.60E-07	-1.60E-07	-1.60E-07

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Licensee Comments:

3Q/16: Changed PRA Parameter(s).

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

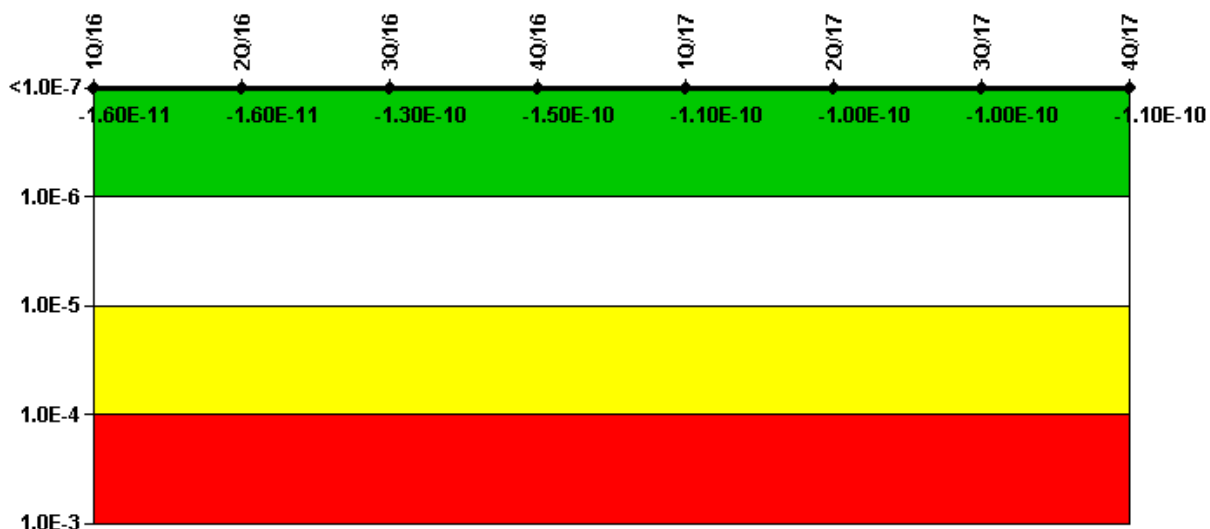
	1Q/16	2Q/16	3Q/16	4Q/16	1Q/17	2Q/17	3Q/17	4Q/17
UAI (Δ CDF)	-4.01E-08	-4.03E-08	-6.13E-08	-6.20E-08	-4.70E-08	-4.70E-08	-4.70E-08	-4.70E-08
URI (Δ CDF)	-3.13E-07	-3.13E-07	-1.63E-07	-1.60E-07	-1.30E-07	-1.32E-07	-1.34E-07	-1.33E-07
PLE	NO	NO	NO	NO	NO	NO	NO	NO
Indicator value	-3.50E-07	-3.50E-07	-2.20E-07	-2.20E-07	-1.80E-07	-1.80E-07	-1.80E-07	-1.80E-07

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Licensee Comments:

3Q/16: Changed PRA Parameter(s).

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

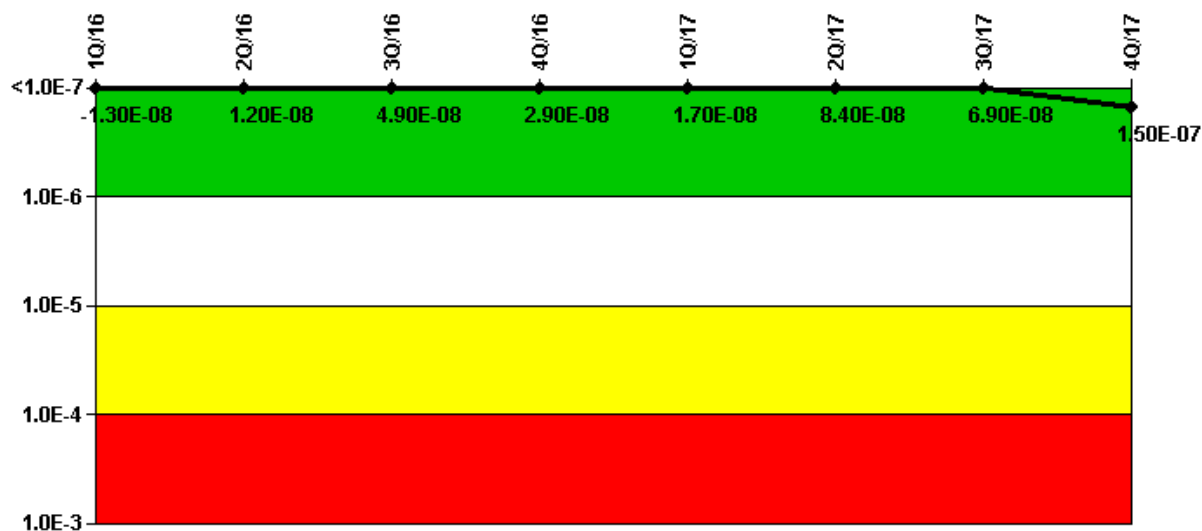
	1Q/16	2Q/16	3Q/16	4Q/16	1Q/17	2Q/17	3Q/17	4Q/17
UAI (Δ CDF)	-3.88E-12	-3.47E-12	2.58E-11	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
URI (Δ CDF)	-1.20E-11	-1.22E-11	-1.57E-10	-1.54E-10	-1.10E-10	-1.01E-10	-1.04E-10	-1.06E-10
PLE	NO	NO	NO	NO	NO	NO	NO	NO
Indicator value	-1.60E-11	-1.60E-11	-1.30E-10	-1.50E-10	-1.10E-10	-1.00E-10	-1.00E-10	-1.10E-10

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Licensee Comments:

3Q/16: Changed PRA Parameter(s).

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 (Δ CDF)	3.52E-08	5.42E-08	2.61E-07	2.42E-07	2.03E-07	2.74E-07	2.63E-07	3.40E-07
URI (Δ CDF)	-4.81E-08	-4.20E-08	-2.12E-07	-2.13E-07	-1.86E-07	-1.89E-07	-1.93E-07	-1.94E-07
PLE	NO	NO	NO	NO	NO	NO	NO	NO

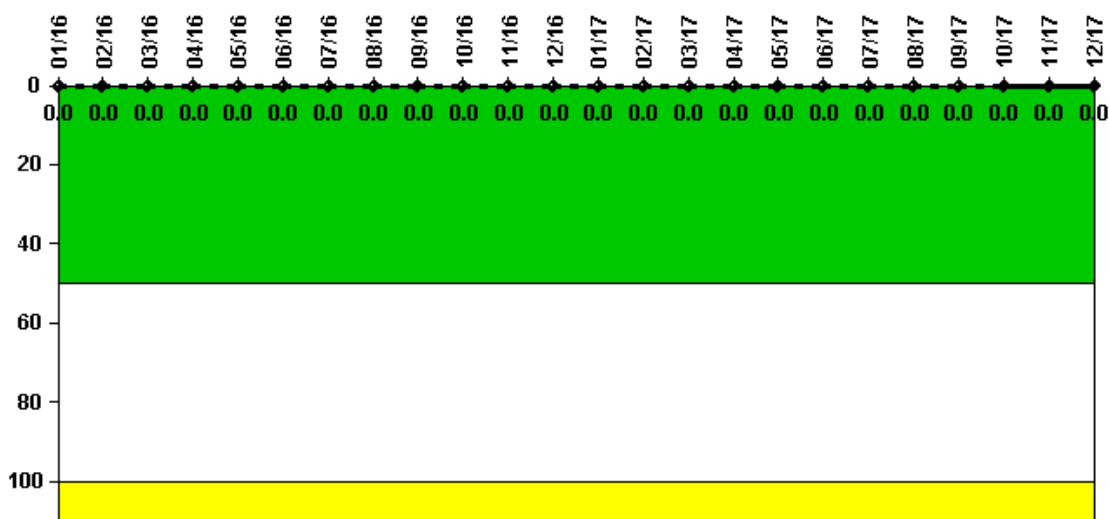
Indicator value **-1.30E-08 1.20E-08 4.90E-08 2.90E-08 1.70E-08 8.40E-08 6.90E-08 1.50E-07**

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Licensee Comments:

3Q/16: Changed PRA Parameter(s).

Reactor Coolant System Activity



Thresholds: White > 50.0 Yellow > 100.0

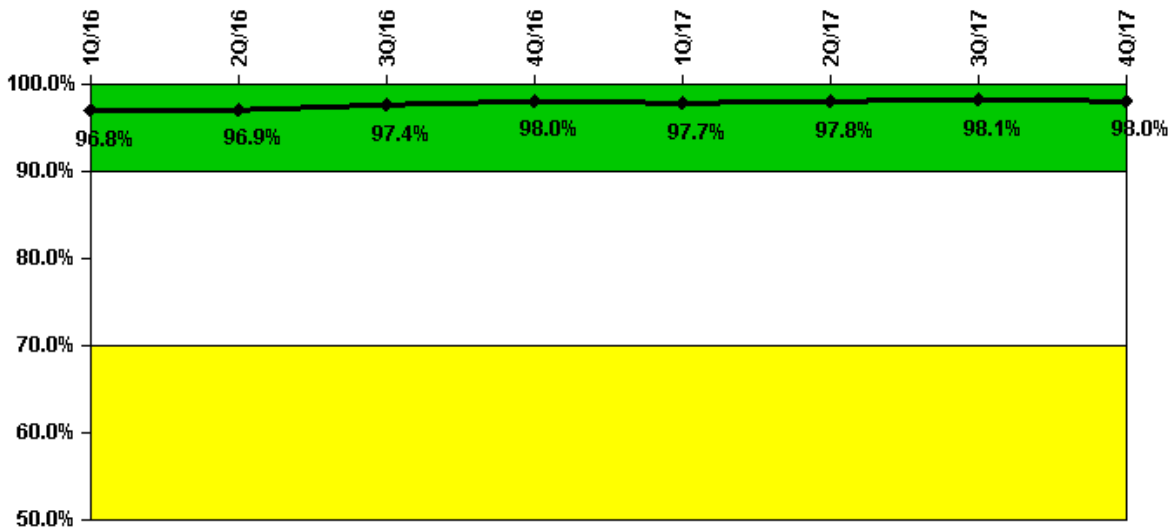
Notes

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	0.000106	0.000183	0.000185	0.000200	0.000216	0.000200	0.000208	0.000214	0.000220	0.000216	0.000247	0.000245
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	0.000245	0.000247	0.000250	0.000160	0	0.000088	0.000153	0.000119	0.000110	0.000113	0.000108	0.000111
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

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	60.0	148.0	28.0	4.0	109.0	38.0	65.0	45.0
Total opportunities	62.0	151.0	28.0	4.0	112.0	38.0	66.0	46.0

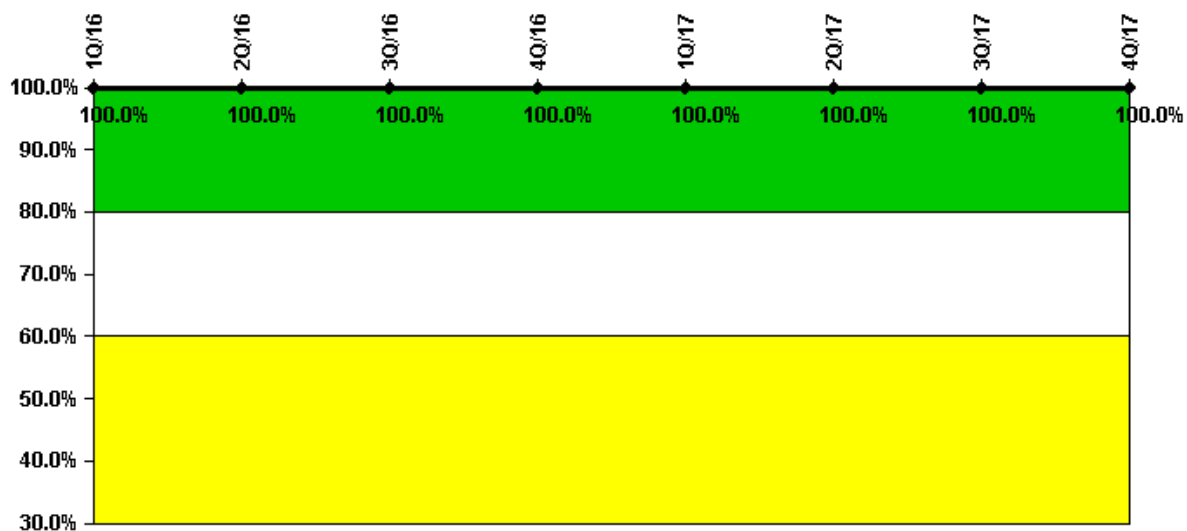
Indicator value **96.8% 96.9% 97.4% 98.0% 97.7% 97.8% 98.1% 98.0%**

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Licensee Comments:

3Q/16: Individual performed DEP (Drill Exercise Performance) session 3rd quarter 2016 not placed into ERO until 4th quarter 2016. Value chg. from 19 to 20.

ERO Drill Participation



Thresholds: White < 80.0% Yellow < 60.0%

Notes

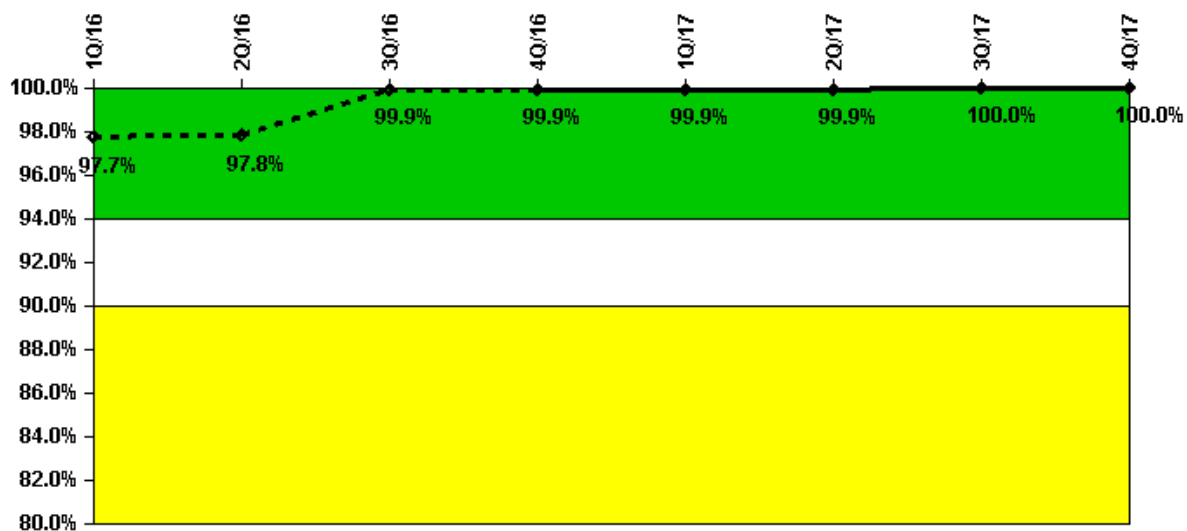
ERO Drill Participation	1Q/16	2Q/16	3Q/16	4Q/16	1Q/17	2Q/17	3Q/17	4Q/17
Participating Key personnel	98.0	99.0	102.0	99.0	97.0	94.0	92.0	95.0
Total Key personnel	98.0	99.0	102.0	99.0	97.0	94.0	92.0	95.0

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

Alert & Notification System



Thresholds: White < 94.0% Yellow < 90.0%

Notes

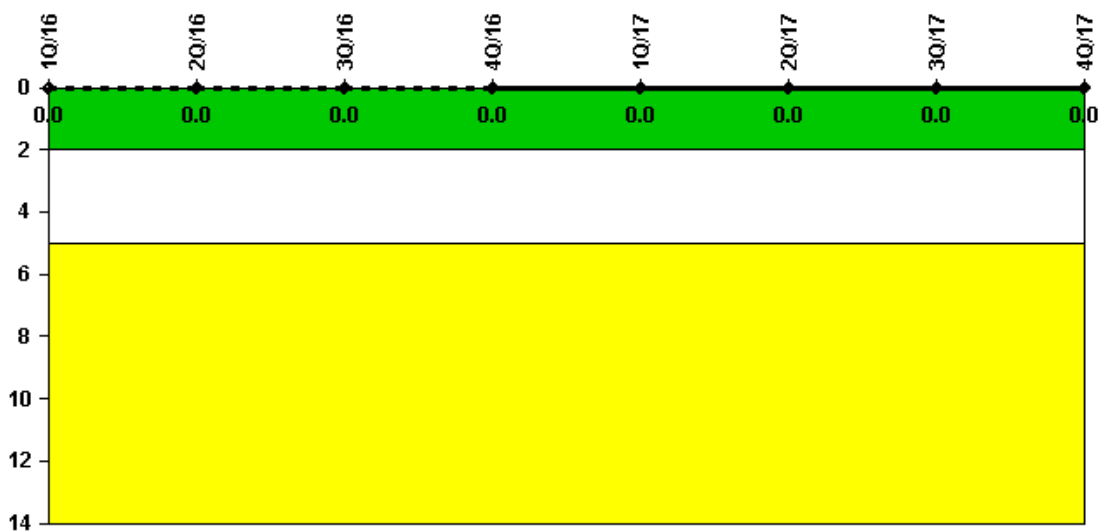
Alert & Notification System	1Q/16	2Q/16	3Q/16	4Q/16	1Q/17	2Q/17	3Q/17	4Q/17
Successful siren-tests	437	438	437	438	438	438	438	438
Total sirens-tests	438	438	438	438	438	438	438	438

Indicator value 97.7% 97.8% 99.9% 99.9% 99.9% 99.9% 100.0% 100.0%

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Licensee Comments: none

Occupational Exposure Control Effectiveness



Thresholds: White > 2.0 Yellow > 5.0

Notes

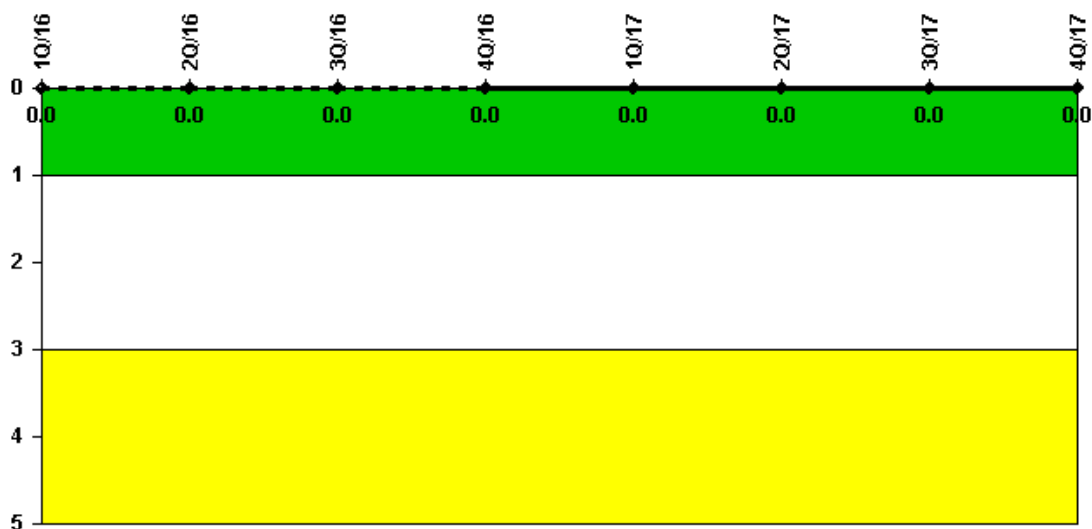
Occupational Exposure Control Effectiveness 1Q/16 2Q/16 3Q/16 4Q/16 1Q/17 2Q/17 3Q/17 4Q/17

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