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Brunswick 2 – Quarterly Performance Indicators

2Q/2017 Performance Indicators

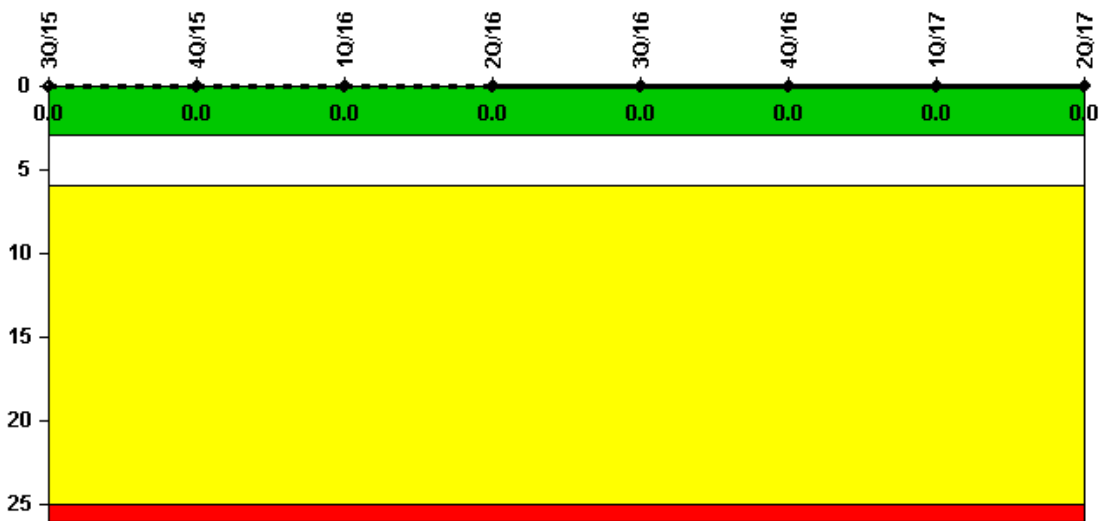
The solid trend line represents the current reporting period.

Licensee's General Comments: The unavailability for EAC was revised for the months of February and March of 2016 based on oscillation issues observed on EDG1. This change did not affect the color status of the indicator. The CCTV Normalization Factor was revised for March 2017 based on a change to the number CCTV cameras as part of the IDS Project. This change did not affect the color status of the indicator.

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Unplanned Scrams per 7000 Critical Hrs



Thresholds: White > 3.0 Yellow > 6.0 Red > 25.0

Notes

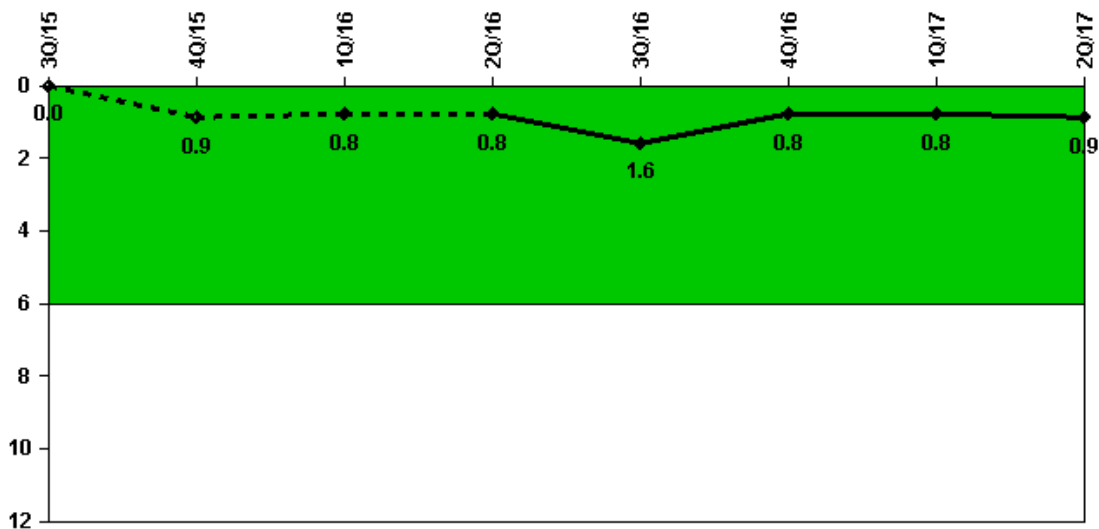
Unplanned Scrams per 7000 Critical Hrs	3Q/15	4Q/15	1Q/16	2Q/16	3Q/16	4Q/16	1Q/17	2Q/17
Unplanned scrams	0	0	0	0	0	0	0	0
Critical hours	2208.0	2209.0	2183.0	2184.0	2208.0	2209.0	1822.9	1870.2

Indicator value	3Q/15	4Q/15	1Q/16	2Q/16	3Q/16	4Q/16	1Q/17	2Q/17
	0	0	0	0	0	0	0	0

TOP

Licensee Comments: none

Unplanned Power Changes per 7000 Critical Hrs



Thresholds: White > 6.0

Notes

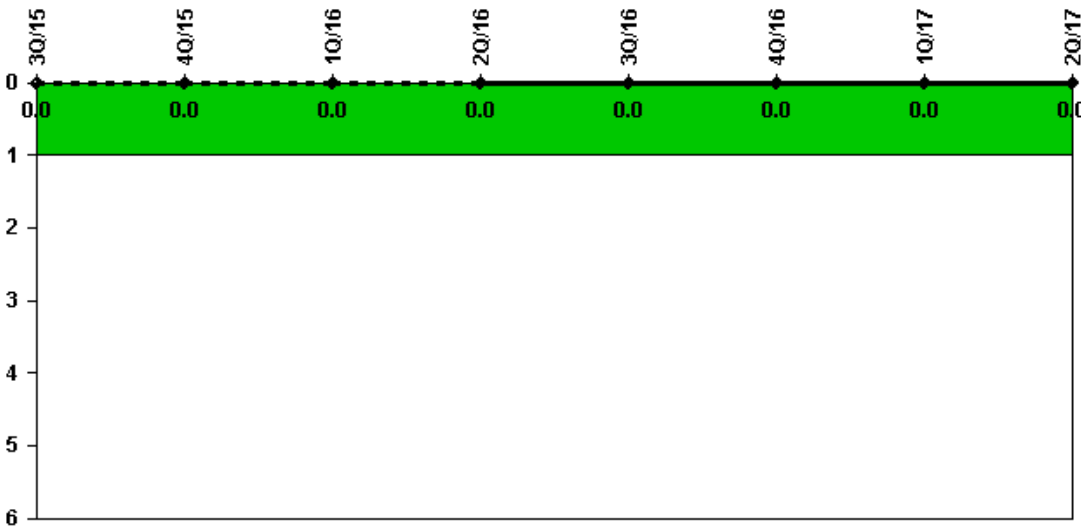
Unplanned Power Changes per 7000 Critical Hrs	3Q/15	4Q/15	1Q/16	2Q/16	3Q/16	4Q/16	1Q/17	2Q/17
Unplanned power changes	0	1.0	0	0	1.0	0	0	0
Critical hours	2208.0	2209.0	2183.0	2184.0	2208.0	2209.0	1822.9	1870.2
Indicator value	0	0.9	0.8	0.8	1.6	0.8	0.8	0.9

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Licensee Comments:

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

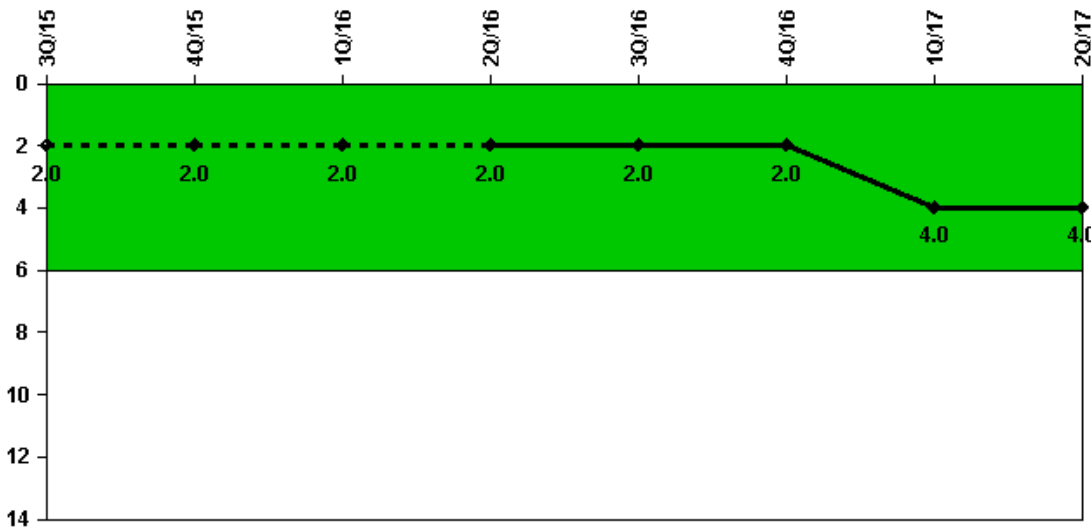
Notes

Unplanned Scrams with Complications	3Q/15	4Q/15	1Q/16	2Q/16	3Q/16	4Q/16	1Q/17	2Q/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) 3Q/15 4Q/15 1Q/16 2Q/16 3Q/16 4Q/16 1Q/17 2Q/17

Safety System Functional Failures	1	0	0	1	1	0	2	1
Indicator value	2	2	2	2	2	2	4	4

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Licensee Comments:

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.

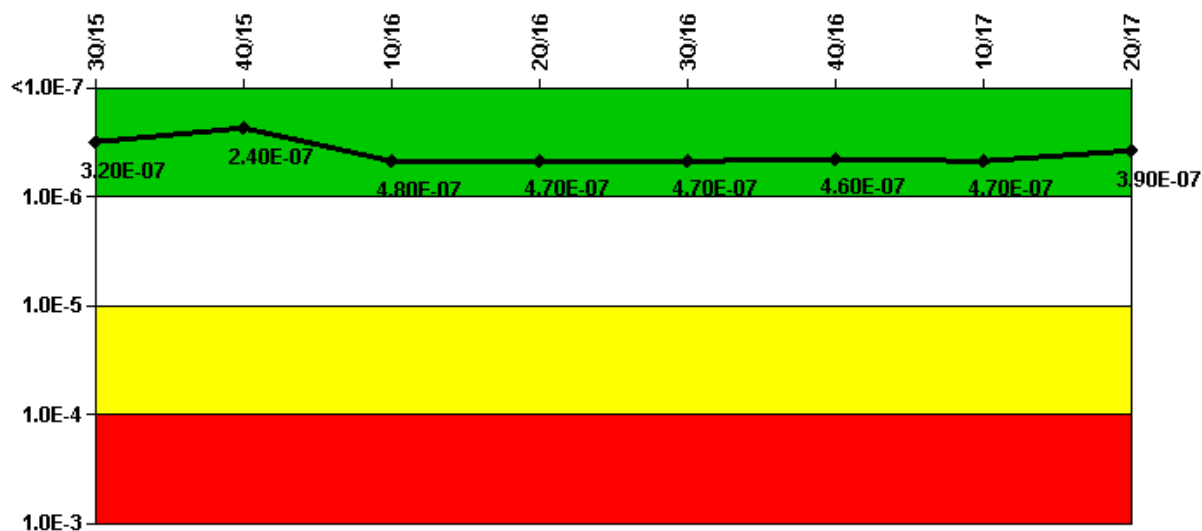
LER 1-2016-006, submitted on Feb. 13, 2017, reports a safety system functional failure (SSFF) of the Control Room Air Conditioning System. Due to the shared control room configuration, this affects Units 1 and 2.

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.

3Q/15: LER 2-2015-003, Revision 1, dated 8/5/15 reported a loss of safety function on the RHRSW system due to an oil leak that rendered an RHRSW system pump inoperable.

Mitigating Systems Performance Index, Emergency AC Power System



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

Notes

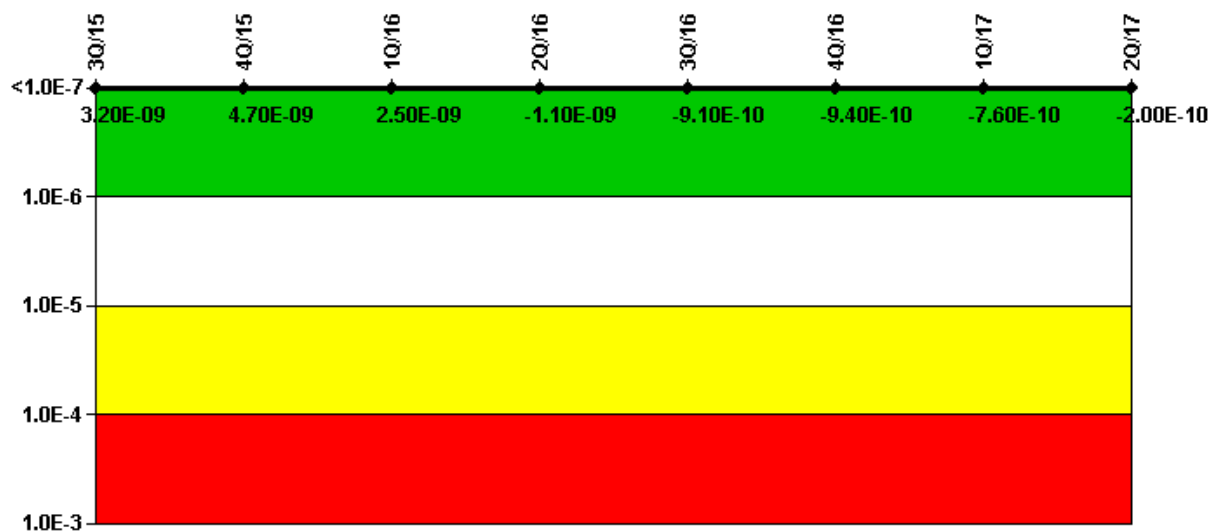
Mitigating Systems Performance Index, Emergency AC Power System

	3Q/15	4Q/15	1Q/16	2Q/16	3Q/16	4Q/16	1Q/17	2Q/17
UAI (ΔCDF)	1.75E-07	1.72E-07	2.76E-07	2.60E-07	2.58E-07	2.56E-07	1.27E-07	1.11E-07
URI (ΔCDF)	1.43E-07	7.26E-08	2.06E-07	2.07E-07	2.07E-07	2.07E-07	3.45E-07	2.79E-07
PLE	NO	NO	NO	NO	NO	NO	NO	NO
Indicator value	3.20E-07	2.40E-07	4.80E-07	4.70E-07	4.70E-07	4.60E-07	4.70E-07	3.90E-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

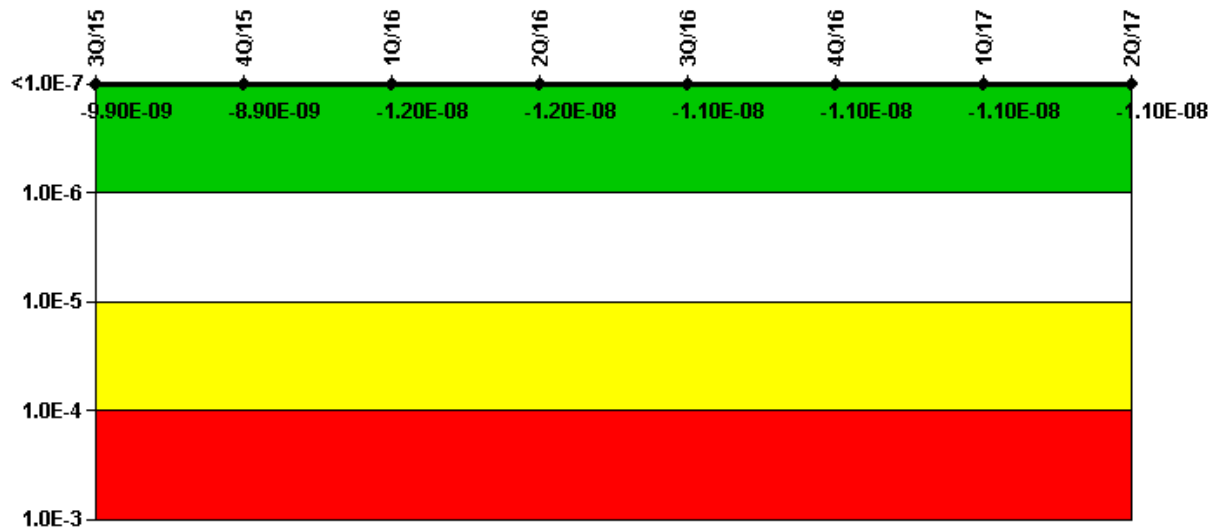
Mitigating Systems Performance Index, High Pressure Injection System

	3Q/15	4Q/15	1Q/16	2Q/16	3Q/16	4Q/16	1Q/17	2Q/17
UAI (ΔCDF)	9.27E-09	1.08E-08	8.60E-09	5.00E-09	5.20E-09	5.17E-09	5.35E-09	5.91E-09
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	3.20E-09	4.70E-09	2.50E-09	-1.10E-09	-9.10E-10	-9.40E-10	-7.60E-10	-2.00E-10

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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

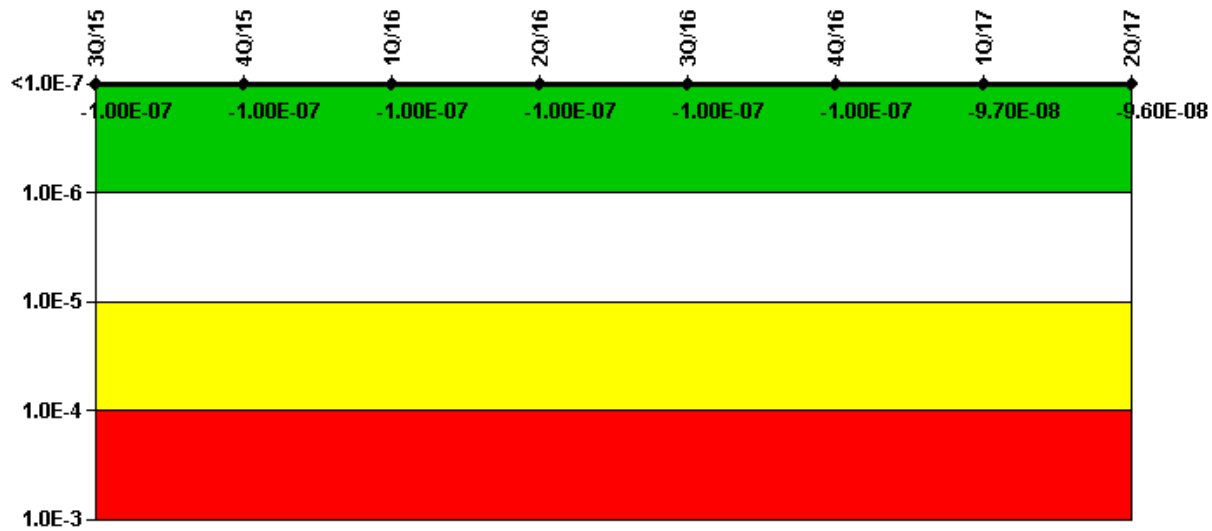
Mitigating Systems Performance Index, Heat Removal System

	3Q/15	4Q/15	1Q/16	2Q/16	3Q/16	4Q/16	1Q/17	2Q/17
UAI (Δ CDF)	1.12E-09	2.11E-09	-1.05E-09	-1.08E-09	-3.07E-10	-1.41E-10	4.66E-11	3.52E-10
URI (Δ CDF)	-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	-9.90E-09	-8.90E-09	-1.20E-08	-1.20E-08	-1.10E-08	-1.10E-08	-1.10E-08	-1.10E-08

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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

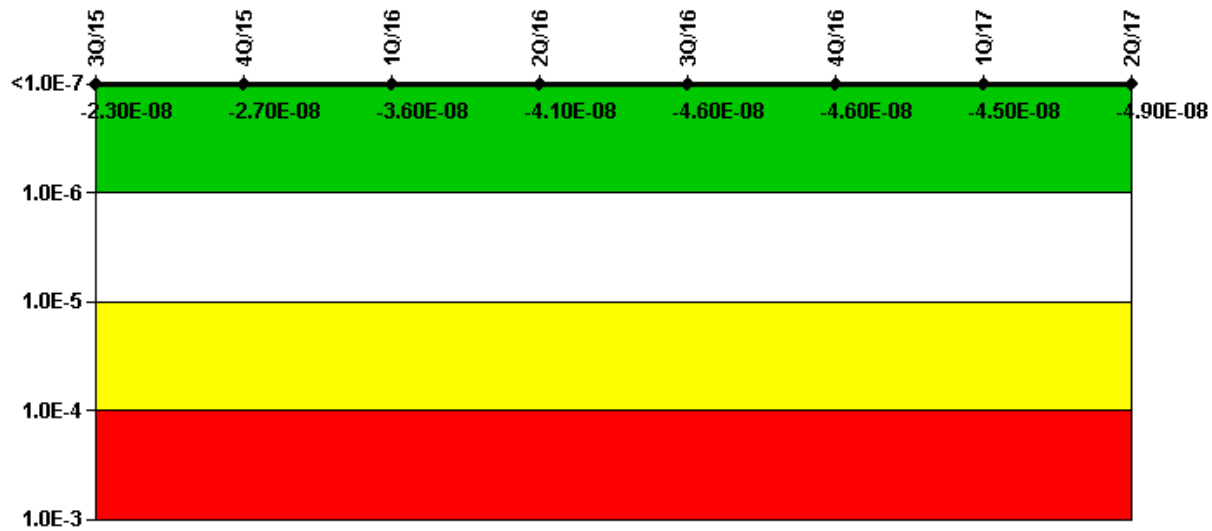
Mitigating Systems Performance Index, Residual Heat Removal System

	3Q/15	4Q/15	1Q/16	2Q/16	3Q/16	4Q/16	1Q/17	2Q/17
UAI (Δ CDF)	-3.38E-08	-3.38E-08	-3.38E-08	-3.38E-08	-3.38E-08	-3.38E-08	-2.87E-08	-2.81E-08
URI (Δ CDF)	-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	-1.00E-07	-1.00E-07	-9.70E-08	-9.60E-08

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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

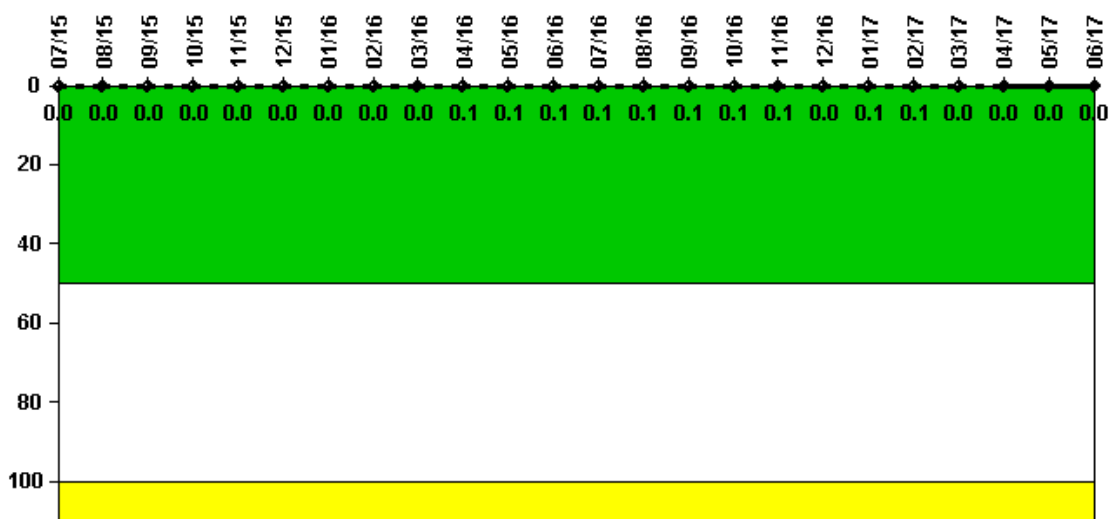
	3Q/15	4Q/15	1Q/16	2Q/16	3Q/16	4Q/16	1Q/17	2Q/17
UAI (Δ CDF)	-8.13E-09	-1.23E-08	-2.12E-08	-2.25E-08	-2.95E-08	-2.95E-08	-2.88E-08	-3.29E-08
URI (Δ CDF)	-1.45E-08	-1.45E-08	-1.45E-08	-1.83E-08	-1.61E-08	-1.61E-08	-1.61E-08	-1.61E-08
PLE	NO	NO	NO	NO	NO	NO	NO	NO
Indicator value	-2.30E-08	-2.70E-08	-3.60E-08	-4.10E-08	-4.60E-08	-4.60E-08	-4.50E-08	-4.90E-08

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Licensee Comments:

3Q/15: Changed PRA Parameter(s). The MSPI Basis document (BNP-PSA-069), Revision 13, was approved on 3/24/14 that corrected data for the Service Water (Cooling Water) pump alignments and various valves. This data was not updated within CDE until 8/24/15 due to lack of communication of the change to the MSPI Basis Document. CDE values for Cooling Water were updated back to the approval date of the MSPI Basis Document. No thresholds were crossed due to this change and the greatest delta in calculated unavailability margin due to this change was only 3%.

Reactor Coolant System Activity



Thresholds: White > 50.0 Yellow > 100.0

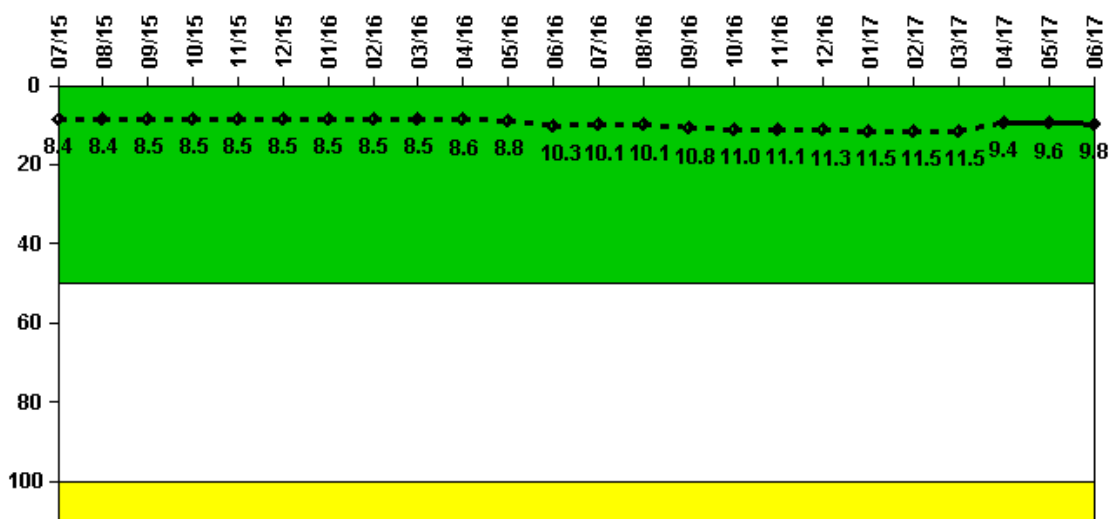
Notes

Reactor Coolant System Activity	7/15	8/15	9/15	10/15	11/15	12/15	1/16	2/16	3/16	4/16	5/16	6/16
Maximum activity	0.000070	0.000070	0.000061	0.000073	0.000070	0.000078	0.000079	0.000082	0.000089	0.000105	0.000102	0.000109
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	0.1	0.1	0.1
Reactor Coolant System Activity	7/16	8/16	9/16	10/16	11/16	12/16	1/17	2/17	3/17	4/17	5/17	6/17
Maximum activity	0.000110	0.000119	0.000119	0.000100	0.000104	0.000097	0.000116	0.000116	0.000098	0.000074	0.000071	0.000077
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	0.1	0.1	0.1	0	0.1	0.1	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	7/15	8/15	9/15	10/15	11/15	12/15	1/16	2/16	3/16	4/16	5/16	6/16
Maximum leakage	2.090	2.110	2.130	2.130	2.120	2.120	2.120	2.120	2.130	2.140	2.190	2.570
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

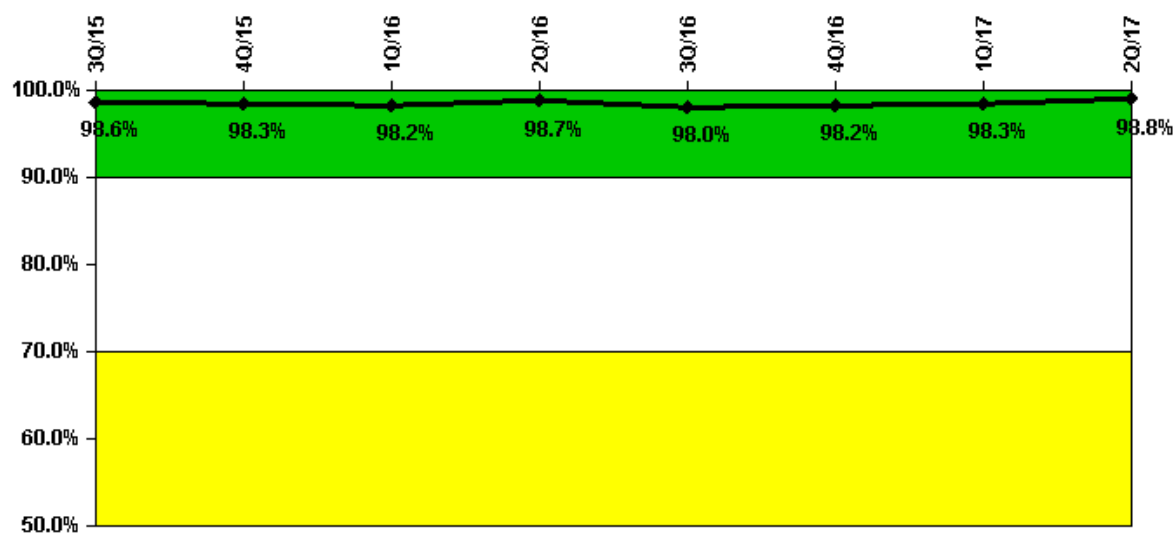
Indicator value	8.4	8.4	8.5	8.5	8.5	8.5	8.5	8.5	8.5	8.6	8.8	10.3
Reactor Coolant System Leakage	7/16	8/16	9/16	10/16	11/16	12/16	1/17	2/17	3/17	4/17	5/17	6/17
Maximum leakage	2.530	2.530	2.690	2.750	2.780	2.820	2.880	2.870	2.870	2.340	2.390	2.440
Technical specification limit	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0

Indicator value	10.1	10.1	10.8	11.0	11.1	11.3	11.5	11.5	11.5	9.4	9.6	9.8
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Licensee Comments: none

Drill/Exercise Performance



Thresholds: White < 90.0% Yellow < 70.0%

Notes

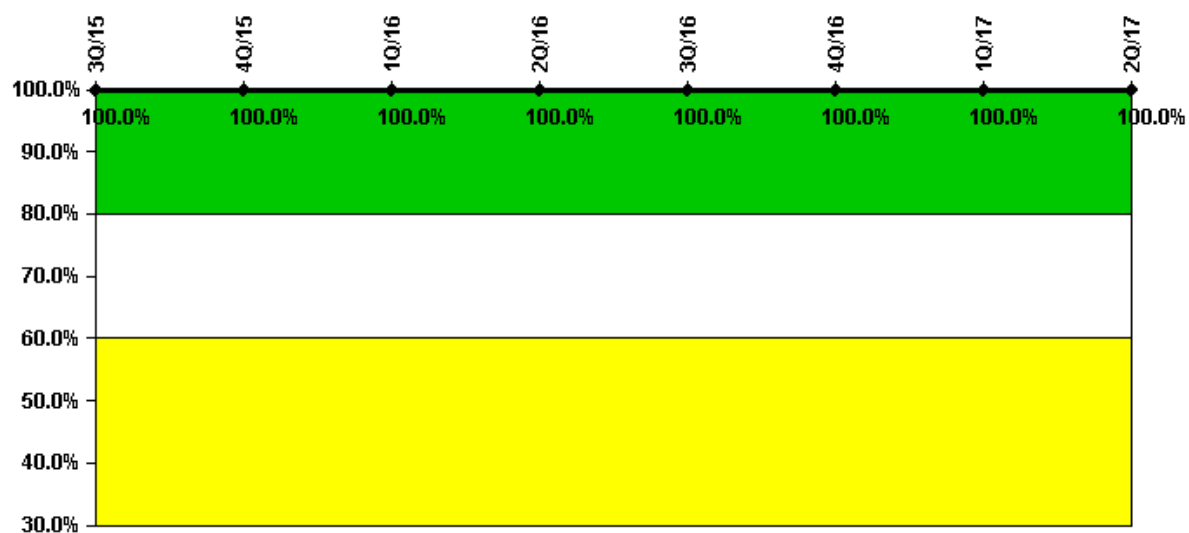
Drill/Exercise Performance	3Q/15	4Q/15	1Q/16	2Q/16	3Q/16	4Q/16	1Q/17	2Q/17
Successful opportunities	30.0	22.0	8.0	9.0	29.0	35.0	23.0	8.0
Total opportunities	31.0	22.0	8.0	9.0	30.0	35.0	23.0	8.0

Indicator value **98.6% 98.3% 98.2% 98.7% 98.0% 98.2% 98.3% 98.8%**

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Licensee Comments: none

ERO Drill Participation



Thresholds: White < 80.0% Yellow < 60.0%

Notes

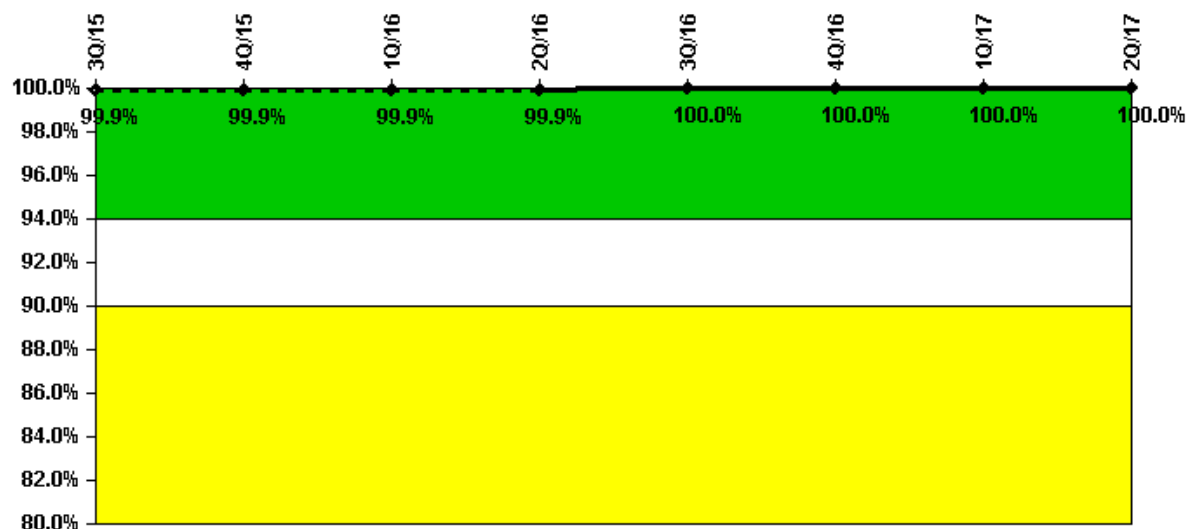
ERO Drill Participation	3Q/15	4Q/15	1Q/16	2Q/16	3Q/16	4Q/16	1Q/17	2Q/17
Participating Key personnel	106.0	112.0	108.0	102.0	109.0	112.0	102.0	97.0
Total Key personnel	106.0	112.0	108.0	102.0	109.0	112.0	102.0	97.0

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

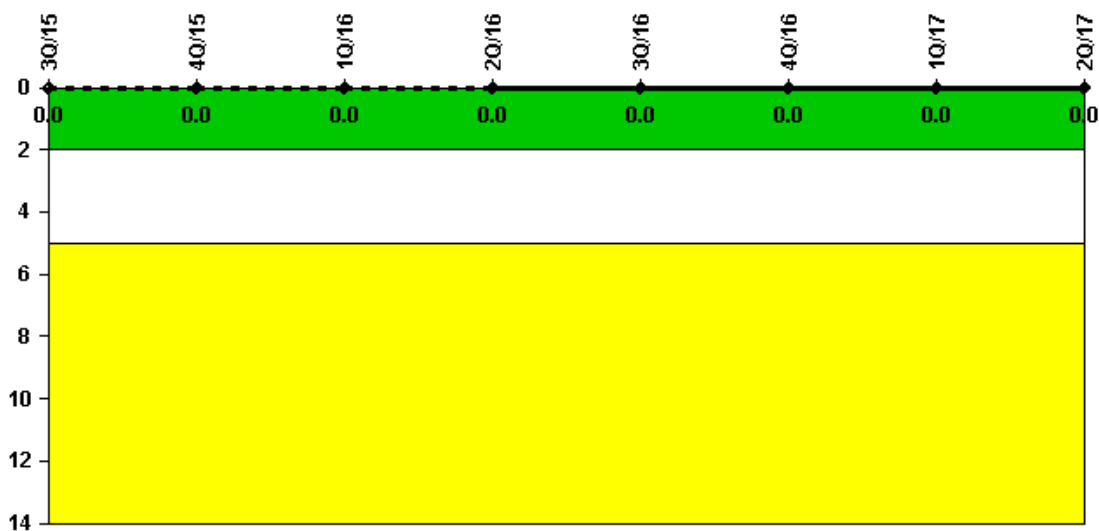
Alert & Notification System	3Q/15	4Q/15	1Q/16	2Q/16	3Q/16	4Q/16	1Q/17	2Q/17
Successful siren-tests	530	570	532	532	532	532	532	532
Total sirens-tests	532	570	532	532	532	532	532	532

Indicator value **99.9%** **99.9%** **99.9%** **99.9%** **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

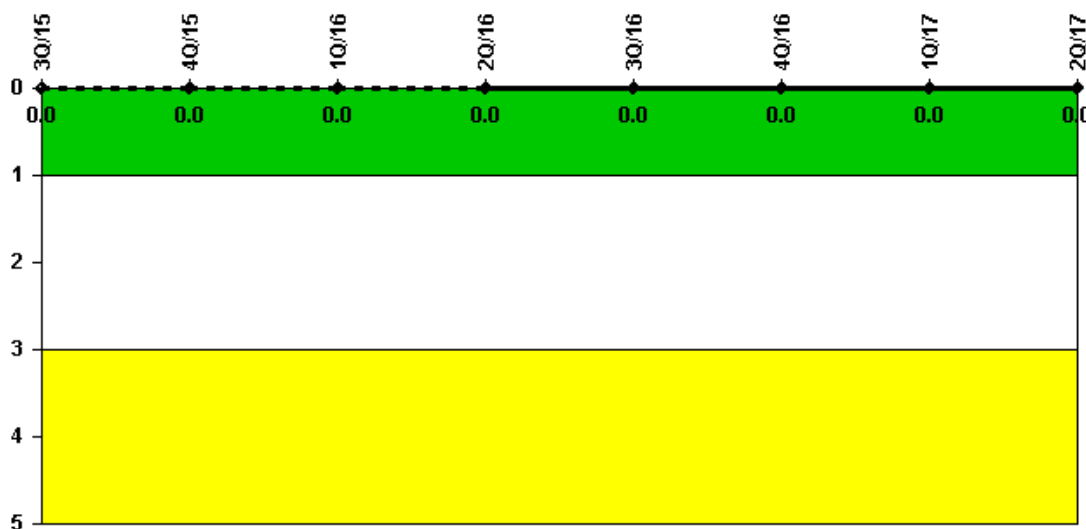
Occupational Exposure Control Effectiveness 3Q/15 4Q/15 1Q/16 2Q/16 3Q/16 4Q/16 1Q/17 2Q/17

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: none

RETS/ODCM Radiological Effluent



Thresholds: White > 1.0 Yellow > 3.0

Notes

RETS/ODCM Radiological Effluent 3Q/15 4Q/15 1Q/16 2Q/16 3Q/16 4Q/16 1Q/17 2Q/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: July 26, 2017

Page Last Reviewed/Updated Wednesday, June 07, 2017