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Callaway – Quarterly Performance Indicators

2Q/2017 Performance Indicators

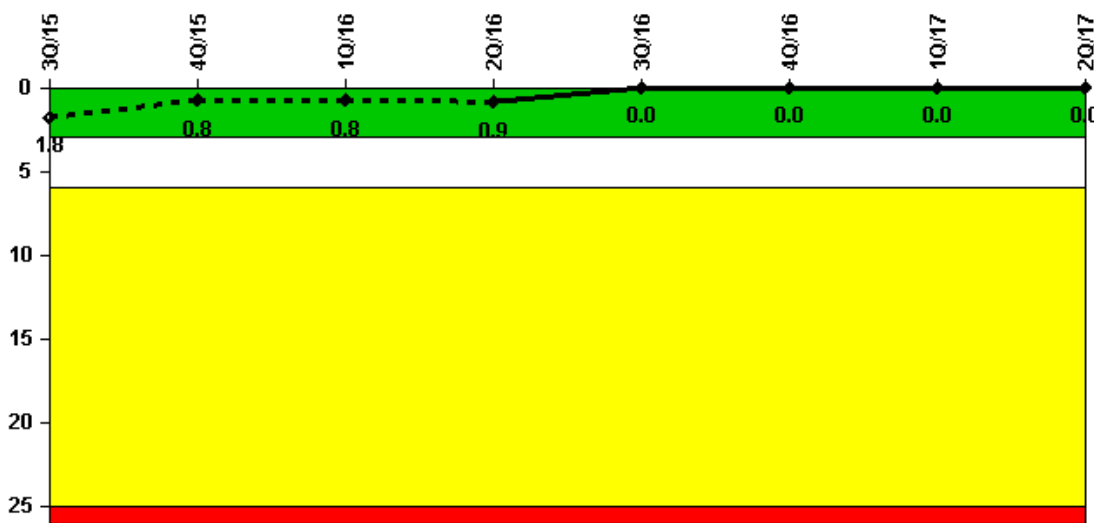
The solid trend line represents the current reporting period.

Licensee's General Comments: none

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- 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)
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- Drill/Exercise Performance (EP01)
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- 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

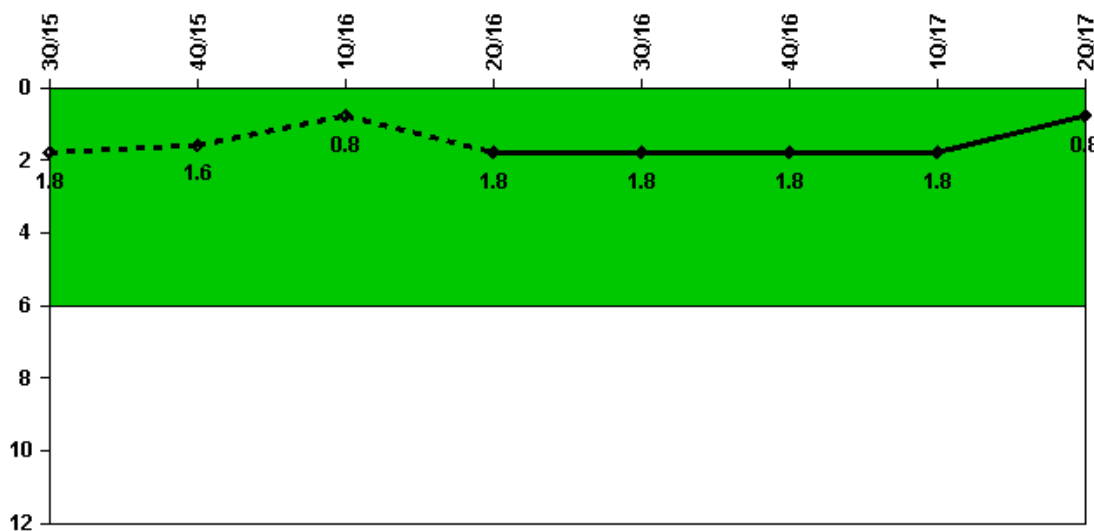
Unplanned Scrams per 7000 Critical Hrs	3Q/15	4Q/15	1Q/16	2Q/16	3Q/16	4Q/16	1Q/17	2Q/17
Unplanned scrams	1.0	0	0	0	0	0	0	0
Critical hours	2126.8	2209.0	2183.0	1289.1	2208.0	2209.0	2159.0	2184.0

Indicator value	1.8	0.8	0.8	0.9	0	0	0	0
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Licensee Comments: none

Unplanned Power Changes per 7000 Critical Hrs



Thresholds: White > 6.0

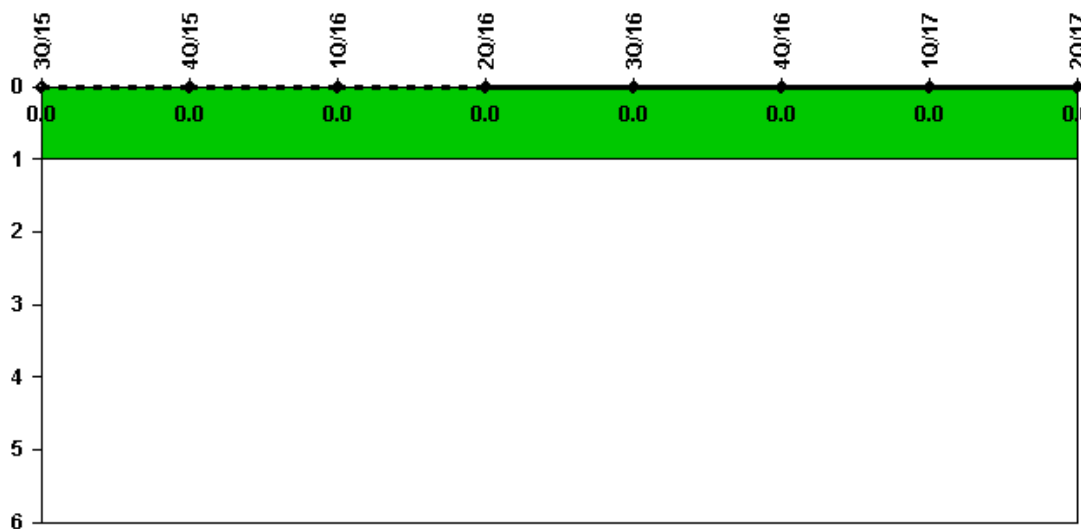
Notes

Unplanned Power Changes per 7000 Critical Hrs	3Q/15	4Q/15	1Q/16	2Q/16	3Q/16	4Q/16	1Q/17	2Q/17
Unplanned power changes	1.0	0	0	1.0	1.0	0	0	0
Critical hours	2126.8	2209.0	2183.0	1289.1	2208.0	2209.0	2159.0	2184.0
Indicator value	1.8	1.6	0.8	1.8	1.8	1.8	1.8	0.8

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Licensee Comments: none

Unplanned Scrams with Complications



Thresholds: White > 1.0

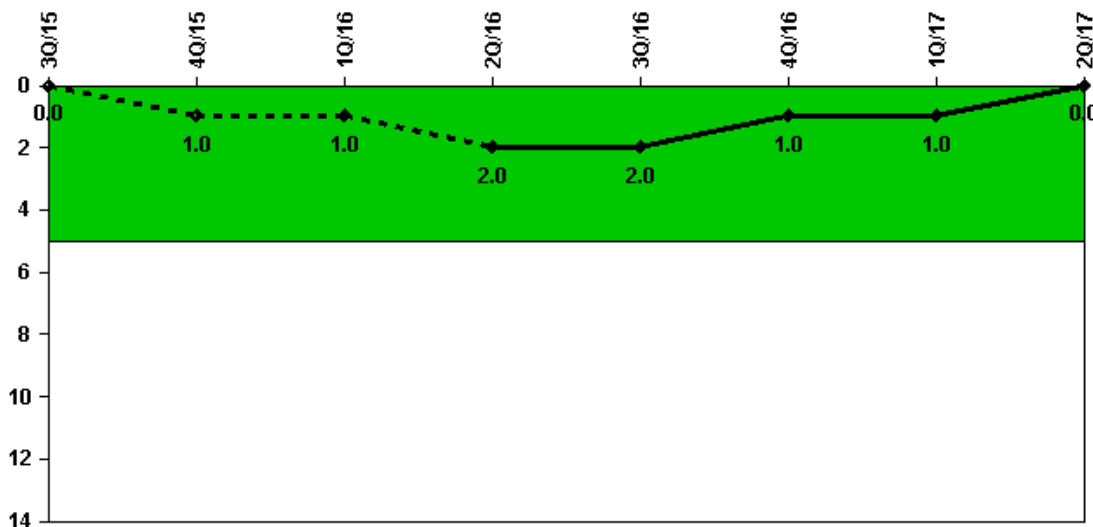
Notes

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 (PWR)



Thresholds: White > 5.0

Notes

Safety System Functional Failures (PWR) 3Q/15 4Q/15 1Q/16 2Q/16 3Q/16 4Q/16 1Q/17 2Q/17

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

Indicator value 0 1 1 2 2 1 1 0

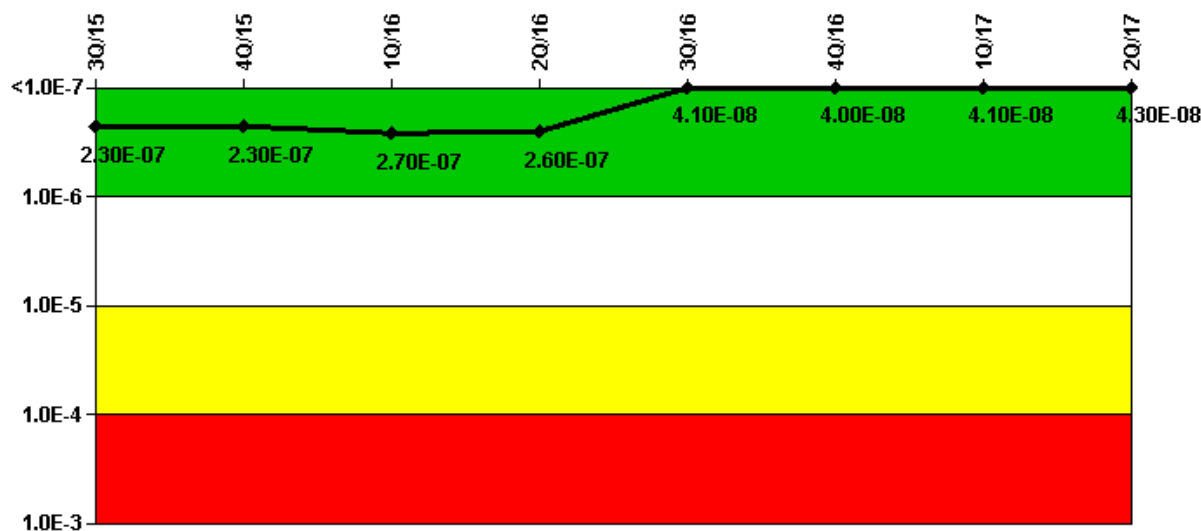
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Licensee Comments:

2Q/16: LER 2016-001-00 associated with the Control Room Air Conditioning system

4Q/15: One SSFF was reported in LER 2015-004-00 during the 4th quarter of 2015. It is also reported in this PI. An ongoing evaluation of the associated condition is being performed to determine whether it meets the NEI 99-02 section 2.2 criteria for reportability in the SSFF PI or if it may be withdrawn from the PI.

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)	-7.01E-08	-7.01E-08	-3.48E-08	-3.53E-08	4.89E-09	3.75E-09	4.72E-09	6.92E-09
URI (ΔCDF)	3.00E-07	3.00E-07	3.00E-07	3.00E-07	3.61E-08	3.61E-08	3.61E-08	3.61E-08
PLE	NO	NO	NO	NO	NO	NO	NO	NO
Indicator value	2.30E-07	2.30E-07	2.70E-07	2.60E-07	4.10E-08	4.00E-08	4.10E-08	4.30E-08

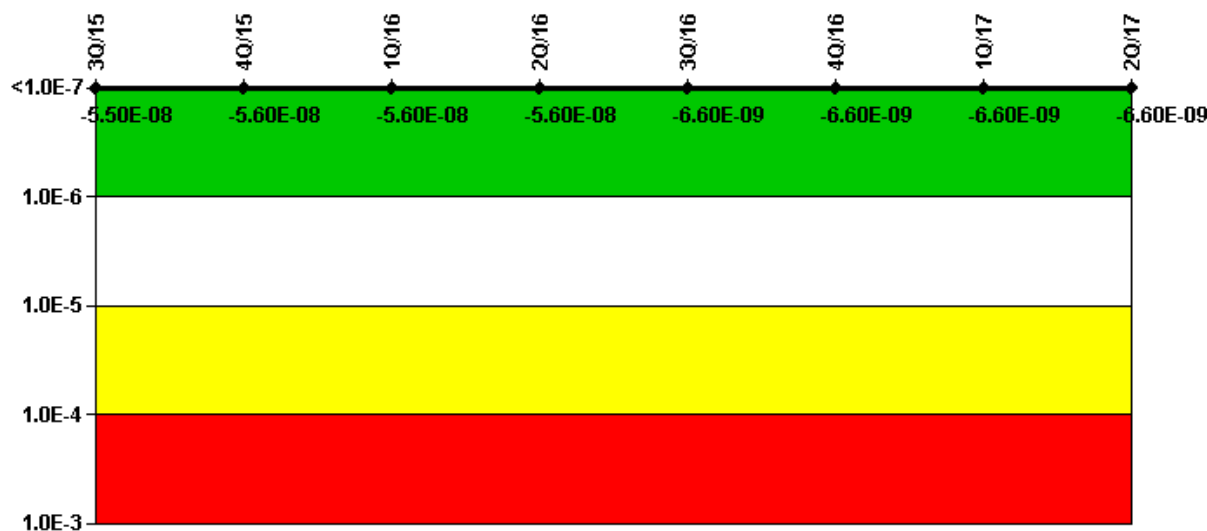
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Licensee Comments:

3Q/16: Changed PRA Parameter(s). The PRA model has been updated to incorporate the Generation III RCP Shutdown Seals, incorporate the Hardened Condensate Storage Tank and refine the Anticipated Transient Without Scram (ATWS) modeling. As a result of these changes, all MSPI PRA coefficients were recalculated and the MSPI Basis Document was revised.

1Q/16: An engineering evaluation associated with the "B" emergency diesel generator was pending at the end of the quarter.

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

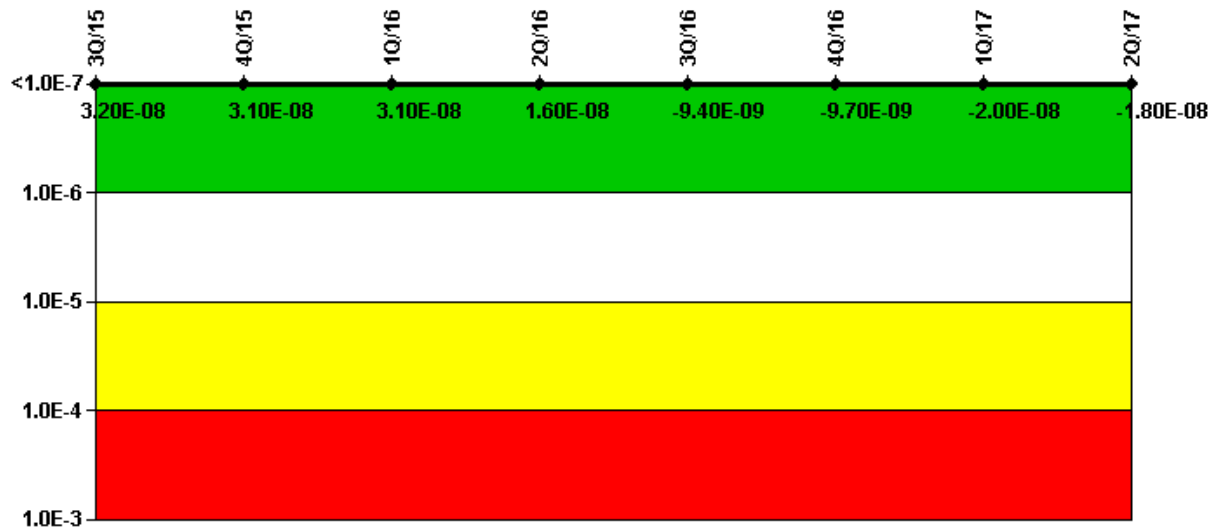
	3Q/15	4Q/15	1Q/16	2Q/16	3Q/16	4Q/16	1Q/17	2Q/17
UAI (Δ CDF)	-1.34E-08	-1.44E-08	-1.44E-08	-1.44E-08	-1.98E-09	-1.98E-09	-1.98E-09	-1.98E-09
URI (Δ CDF)	-4.14E-08	-4.14E-08	-4.14E-08	-4.14E-08	-4.60E-09	-4.60E-09	-4.60E-09	-4.60E-09
PLE	NO	NO	NO	NO	NO	NO	NO	NO
Indicator value	-5.50E-08	-5.60E-08	-5.60E-08	-5.60E-08	-6.60E-09	-6.60E-09	-6.60E-09	-6.60E-09

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Licensee Comments:

3Q/16: Changed PRA Parameter(s). The PRA model has been updated to incorporate the Generation III RCP Shutdown Seals, incorporate the Hardened Condensate Storage Tank and refine the Anticipated Transient Without Scram (ATWS) modeling. As a result of these changes, all MSPI PRA coefficients were recalculated and the MSPI Basis Document was revised.

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 (ΔCDF)	8.06E-08	7.98E-08	7.94E-08	6.48E-08	5.71E-08	5.68E-08	4.66E-08	4.82E-08
URI (ΔCDF)	-4.85E-08	-4.85E-08	-4.85E-08	-4.85E-08	-6.65E-08	-6.65E-08	-6.65E-08	-6.65E-08
PLE	NO	NO	NO	NO	NO	NO	NO	NO
Indicator value	3.20E-08	3.10E-08	3.10E-08	1.60E-08	-9.40E-09	-9.70E-09	-2.00E-08	-1.80E-08

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Licensee Comments:

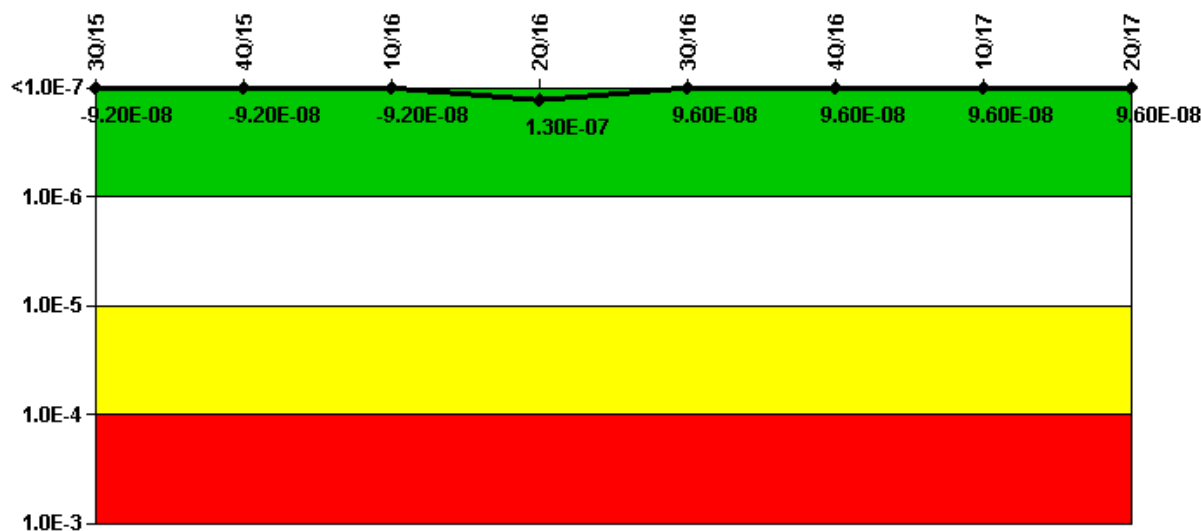
3Q/16: Changed PRA Parameter(s). The PRA model has been updated to incorporate the Generation III RCP Shutdown Seals, incorporate the Hardened Condensate Storage Tank and refine the Anticipated Transient Without Scram (ATWS) modeling. As a result of these changes, all MSPI PRA coefficients were recalculated and the MSPI Basis Document was revised.

3Q/16: The PRA model has been updated to incorporate the Generation III RCP Shutdown Seals, incorporate the Hardened Condensate Storage Tank and refine the Anticipated Transient Without Scram (ATWS) modeling. As a result of these changes, all MSPI PRA coefficients were recalculated and the MSPI Basis Document was revised.

2Q/16: Planned unavailability (9.2 hr) was taken when a TDAFP drain line boot seal was replaced. Originally not reported due to exclusion in NEI 99-02. Per discussion with ROPTF, hours should be counted. Added these 9.2 hours in May 2017.

3Q/15: An engineering evaluation associated with a degraded condition for an Auxiliary Feedwater valve's Modutronics Card was not completed when data for the third quarter 2015 was submitted. 4th quarter 2014 availability data revised for valve ALHV0005.

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

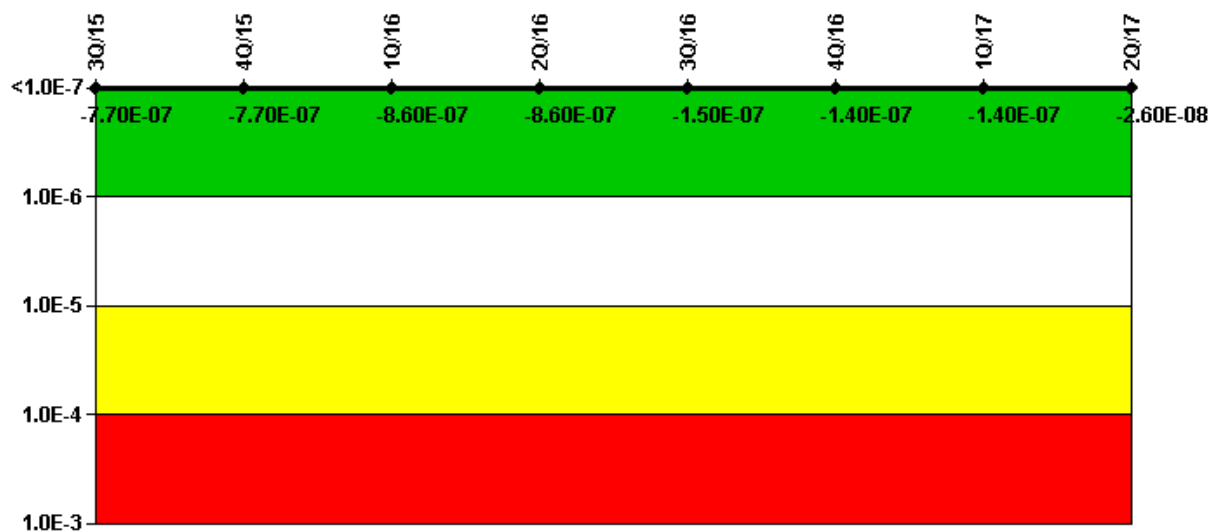
	3Q/15	4Q/15	1Q/16	2Q/16	3Q/16	4Q/16	1Q/17	2Q/17
UAI (Δ CDF)	-1.11E-08	-1.11E-08	-1.11E-08	-1.11E-08	-1.02E-08	-1.02E-08	-1.02E-08	-1.02E-08
URI (Δ CDF)	-8.09E-08	-8.09E-08	-8.09E-08	1.40E-07	1.07E-07	1.07E-07	1.07E-07	1.07E-07
PLE	NO	NO	NO	NO	NO	NO	NO	NO
Indicator value	-9.20E-08	-9.20E-08	-9.20E-08	1.30E-07	9.60E-08	9.60E-08	9.60E-08	9.60E-08

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Licensee Comments:

3Q/16: Changed PRA Parameter(s). The PRA model has been updated to incorporate the Generation III RCP Shutdown Seals, incorporate the Hardened Condensate Storage Tank and refine the Anticipated Transient Without Scram (ATWS) modeling. As a result of these changes, all MSPI PRA coefficients were recalculated and the MSPI Basis Document was revised.

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

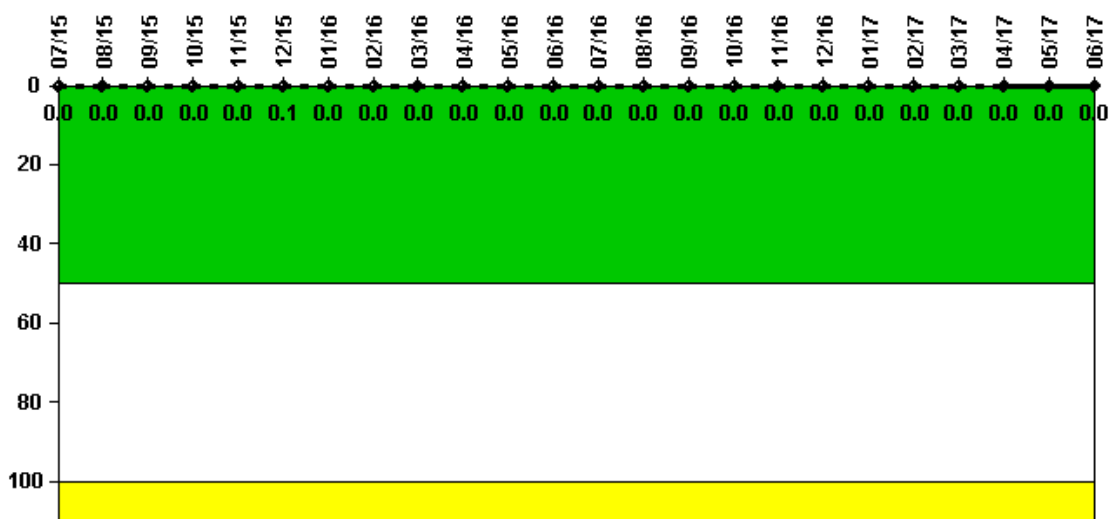
	3Q/15	4Q/15	1Q/16	2Q/16	3Q/16	4Q/16	1Q/17	2Q/17
UAI (ΔCDF)	-4.03E-08	-4.39E-08	-1.27E-07	-1.30E-07	-3.51E-08	-2.94E-08	-2.94E-08	-1.13E-08
URI (ΔCDF)	-7.30E-07	-7.30E-07	-7.30E-07	-7.30E-07	-1.15E-07	-1.15E-07	-1.15E-07	-1.51E-08
PLE	NO	NO	NO	NO	NO	NO	NO	NO
Indicator value	-7.70E-07	-7.70E-07	-8.60E-07	-8.60E-07	-1.50E-07	-1.40E-07	-1.40E-07	-2.60E-08

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Licensee Comments:

3Q/16: Changed PRA Parameter(s). The PRA model has been updated to incorporate the Generation III RCP Shutdown Seals, incorporate the Hardened Condensate Storage Tank and refine the Anticipated Transient Without Scram (ATWS) modeling. As a result of these changes, all MSPI PRA coefficients were recalculated and the MSPI Basis Document was revised.

Reactor Coolant System Activity



Thresholds: White > 50.0 Yellow > 100.0

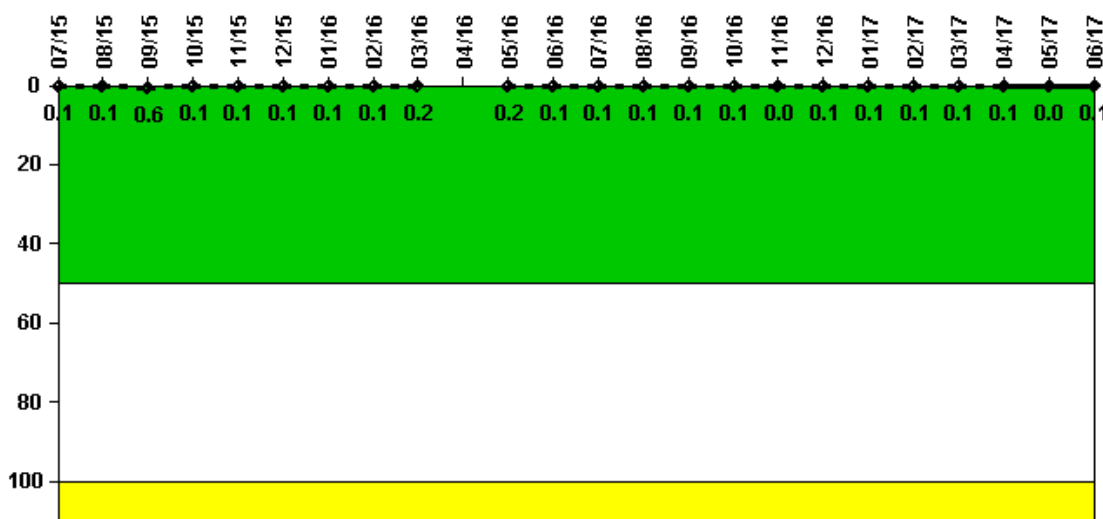
Notes

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	0.000307	0.000364	0.000462	0.000353	0.000422	0.001480	0.000499	0.000469	0.000448	0.000314	0.000255	0.000187
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	0.1	0	0	0	0	0	0
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	0.000261	0.000240	0.000257	0.000363	0.000260	0.000346	0.000267	0.000366	0.000269	0.000259	0.000319	0.000358
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

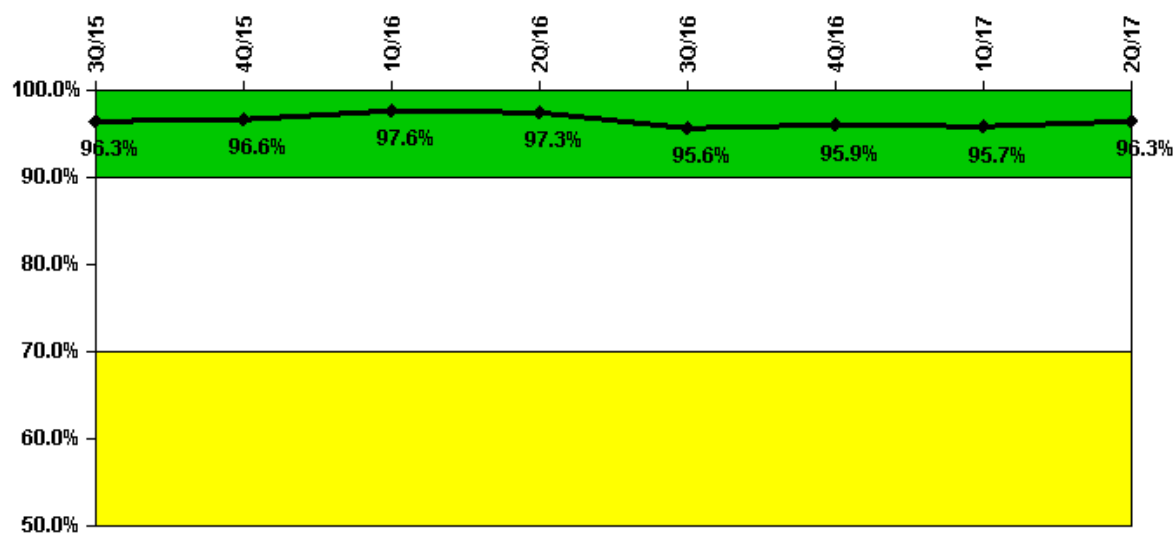
Reactor Coolant System Leakage	7/15	8/15	9/15	10/15	11/15	12/15	1/16	2/16	3/16	4/16	5/16	6/16
Maximum leakage	0.006	0.013	0.061	0.007	0.012	0.012	0.010	0.009	0.016	N/A	0.016	0.005
Technical specification limit	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0

Indicator value	0.1	0.1	0.6	0.1	0.1	0.1	0.1	0.1	0.2	N/A	0.2	0.1
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	0.009	0.008	0.006	0.005	0.004	0.007	0.009	0.007	0.008	0.011	0.003	0.006
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	0.1	0.1	0.1	0.1	0	0.1	0.1	0.1	0.1	0.1	0	0.1

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Licensee Comments: none

Drill/Exercise Performance



Thresholds: White < 90.0% Yellow < 70.0%

Notes

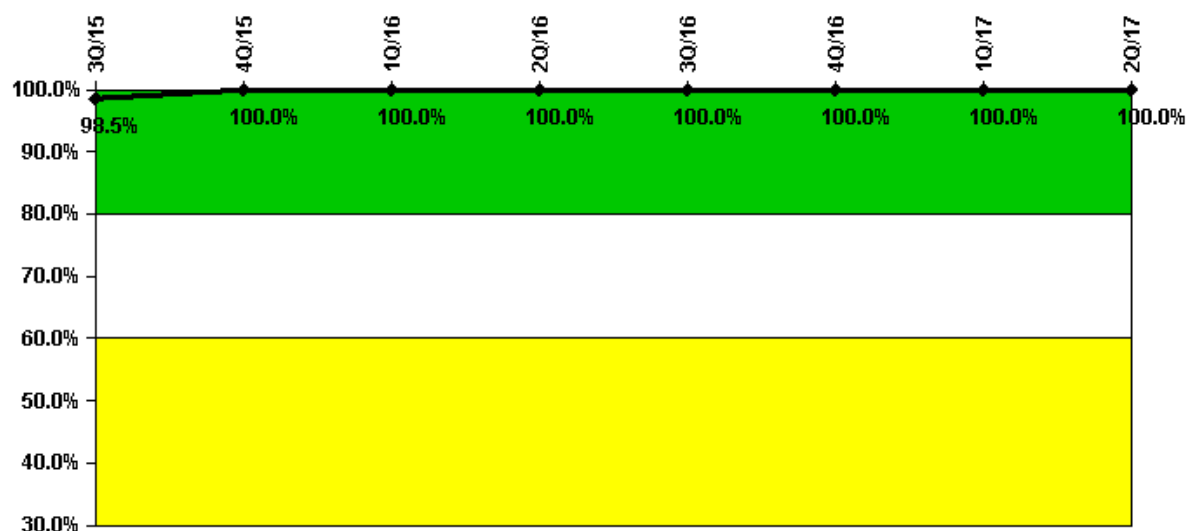
Drill/Exercise Performance	3Q/15	4Q/15	1Q/16	2Q/16	3Q/16	4Q/16	1Q/17	2Q/17
Successful opportunities	21.0	50.0	34.0	15.0	76.0	67.0	63.0	66.0
Total opportunities	23.0	52.0	34.0	16.0	81.0	69.0	64.0	68.0

Indicator value **96.3% 96.6% 97.6% 97.3% 95.6% 95.9% 95.7% 96.3%**

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Licensee Comments: none

ERO Drill Participation



Thresholds: White < 80.0% Yellow < 60.0%

Notes

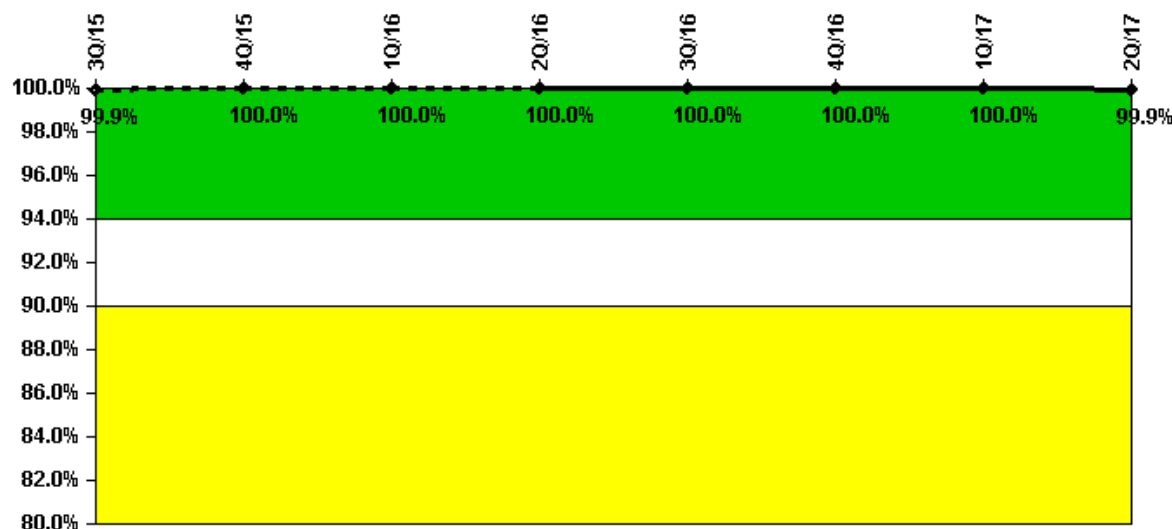
ERO Drill Participation	3Q/15	4Q/15	1Q/16	2Q/16	3Q/16	4Q/16	1Q/17	2Q/17
Participating Key personnel	67.0	70.0	68.0	63.0	62.0	63.0	62.0	58.0
Total Key personnel	68.0	70.0	68.0	63.0	62.0	63.0	62.0	58.0

Indicator value **98.5% 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

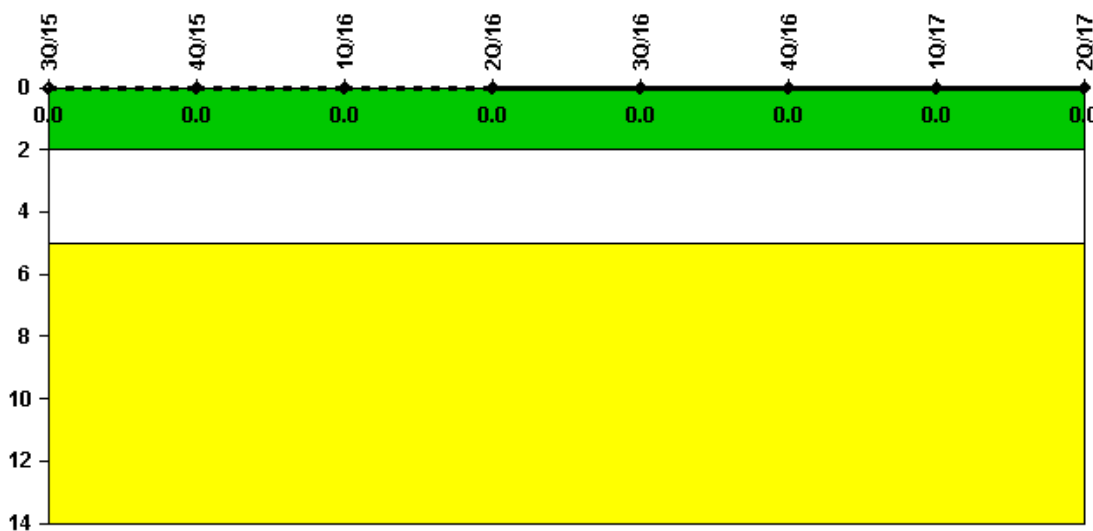
Alert & Notification System	3Q/15	4Q/15	1Q/16	2Q/16	3Q/16	4Q/16	1Q/17	2Q/17
Successful siren-tests	377	377	377	377	377	377	377	376
Total sirens-tests	377	377	377	377	377	377	377	377

Indicator value **99.9% 100.0% 100.0% 100.0% 100.0% 100.0% 100.0% 99.9%**

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Licensee Comments: none

Occupational Exposure Control Effectiveness



Thresholds: White > 2.0 Yellow > 5.0

Notes

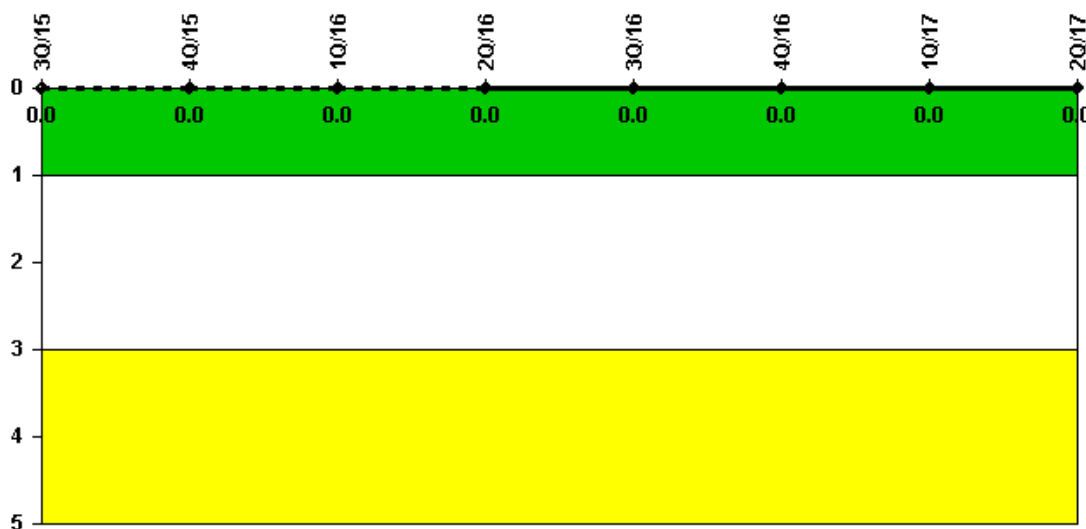
Occupational Exposure Control Effectiveness 3Q/15 4Q/15 1Q/16 2Q/16 3Q/16 4Q/16 1Q/17 2Q/17

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