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Arkansas Nuclear 1 – Quarterly Performance Indicators

2Q/2017 Performance Indicators

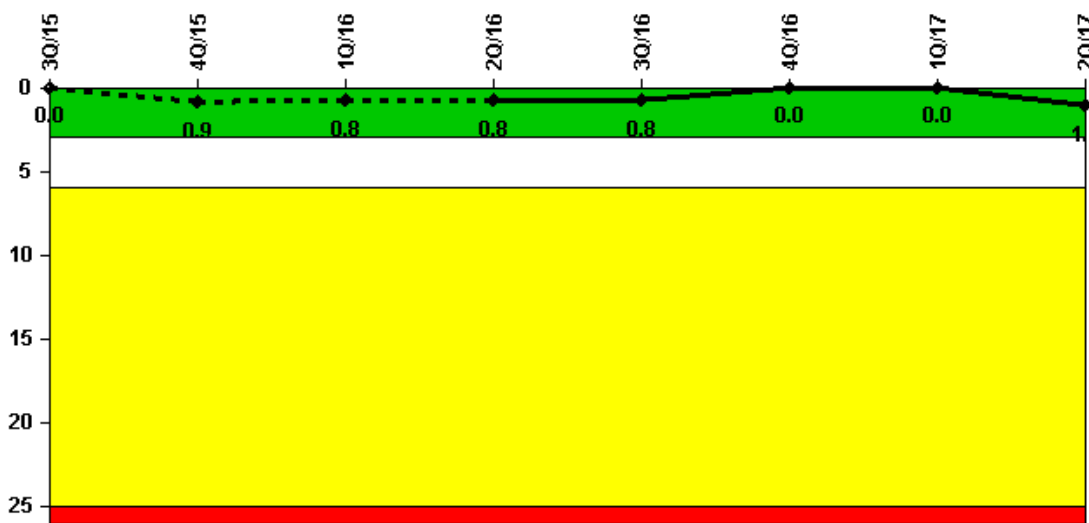
The solid trend line represents the current reporting period.

Licensee's General Comments: none

On this page:

- Unplanned Scrams (IE01)
- Unplanned Power Changes per 7000 Critical Hours (IE03)
- Unplanned Scrams with Complications (IE04)
- 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)

Unplanned Scrams per 7000 Critical Hrs



Thresholds: White > 3.0 Yellow > 6.0 Red > 25.0

Notes

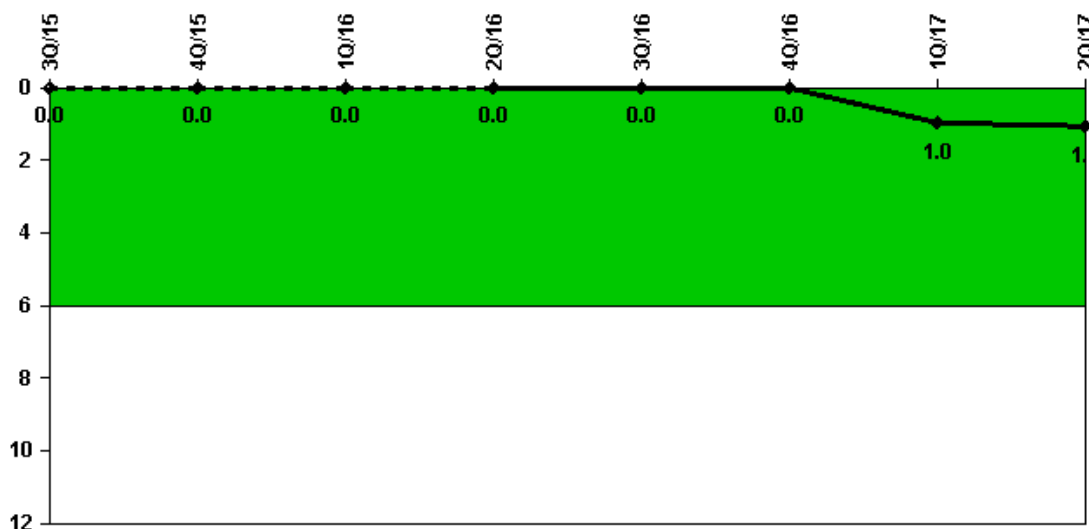
Unplanned Scrams per 7000 Critical Hrs	3Q/15	4Q/15	1Q/16	2Q/16	3Q/16	4Q/16	1Q/17	2Q/17
Unplanned scrams	0	1.0	0	0	0	0	0	1.0
Critical hours	2208.0	2141.3	2183.0	2184.0	2040.1	464.1	2159.0	1677.8

Indicator value	0	0.9	0.8	0.8	0.8	0	0	1.1
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Licensee Comments: none

Unplanned Power Changes per 7000 Critical Hrs



Thresholds: White > 6.0

Notes

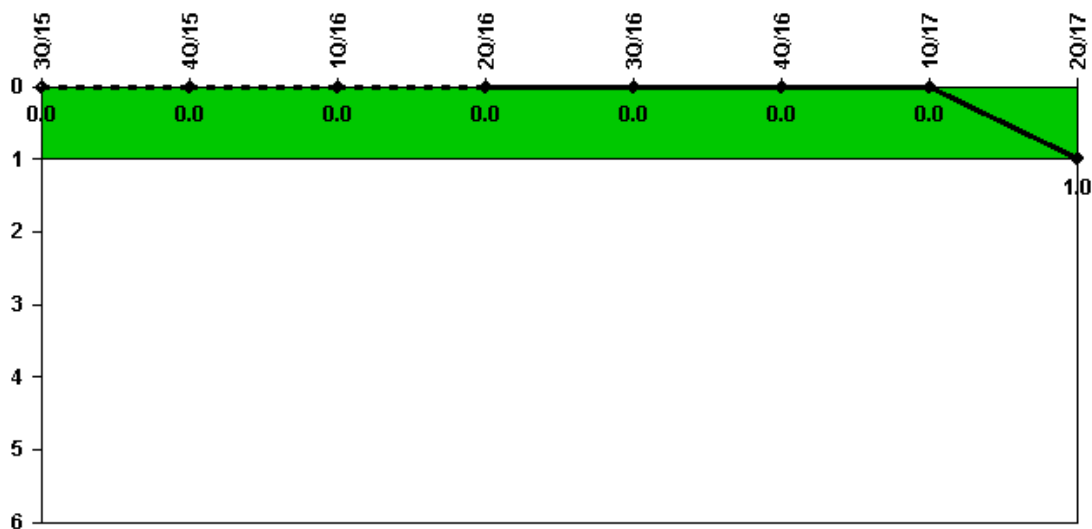
Unplanned Power Changes per 7000 Critical Hrs	3Q/15	4Q/15	1Q/16	2Q/16	3Q/16	4Q/16	1Q/17	2Q/17
Unplanned power changes	0	0	0	0	0	0	1.0	0
Critical hours	2208.0	2141.3	2183.0	2184.0	2040.1	464.1	2159.0	1677.8

Indicator value	0	0	0	0	0	0	1.0	1.1
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Licensee Comments: none

Unplanned Scrams with Complications



Thresholds: White > 1.0

Notes

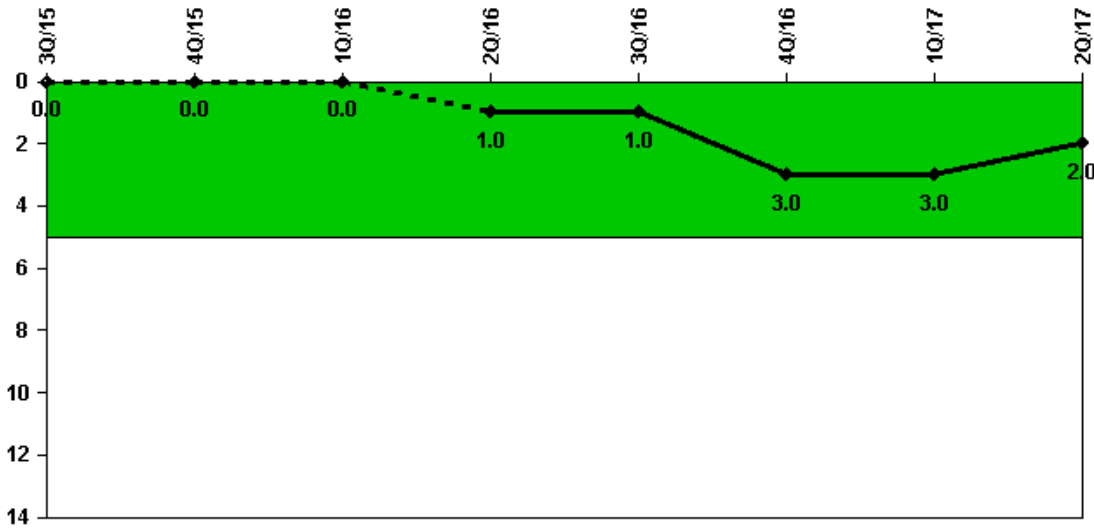
Unplanned Scrams with Complications	3Q/15	4Q/15	1Q/16	2Q/16	3Q/16	4Q/16	1Q/17	2Q/17
Scrams with complications	0	0	0	0	0	0	0	1.0

Indicator value	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0
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Licensee Comments: none

Safety System Functional Failures (PWR)



Thresholds: White > 5.0

Notes

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

Safety System Functional Failures 0 0 0 1 0 2 0 0

Indicator value 0 0 0 1 1 3 3 2

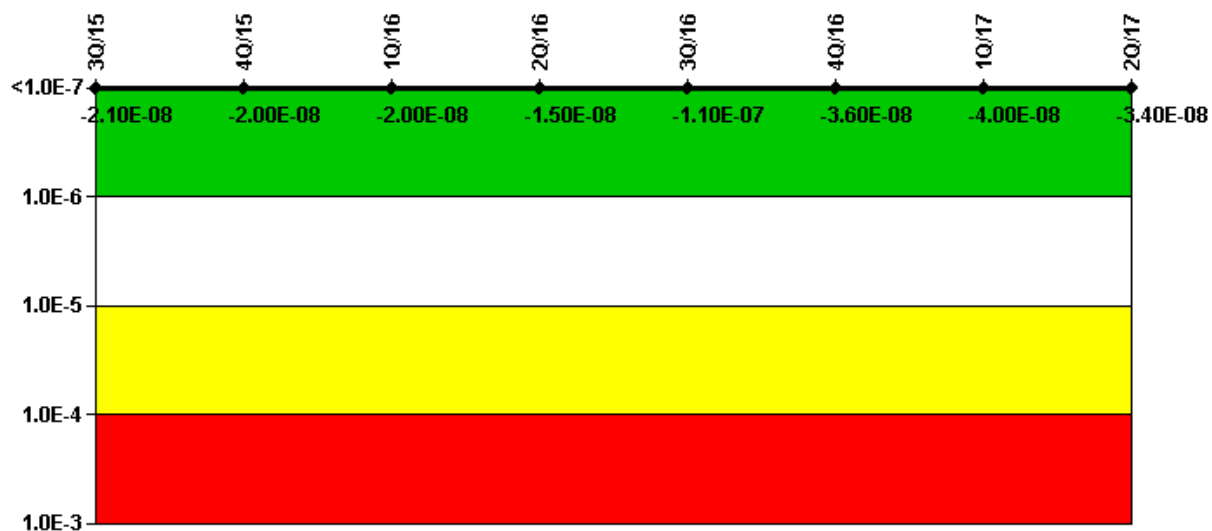
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Licensee Comments:

4Q/16: October: Licensing Event Report 50-313 2016-003-00, November: Licensing Event Report 50-313 2016-004-00

2Q/16: LER 50-313/2016-001-00

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

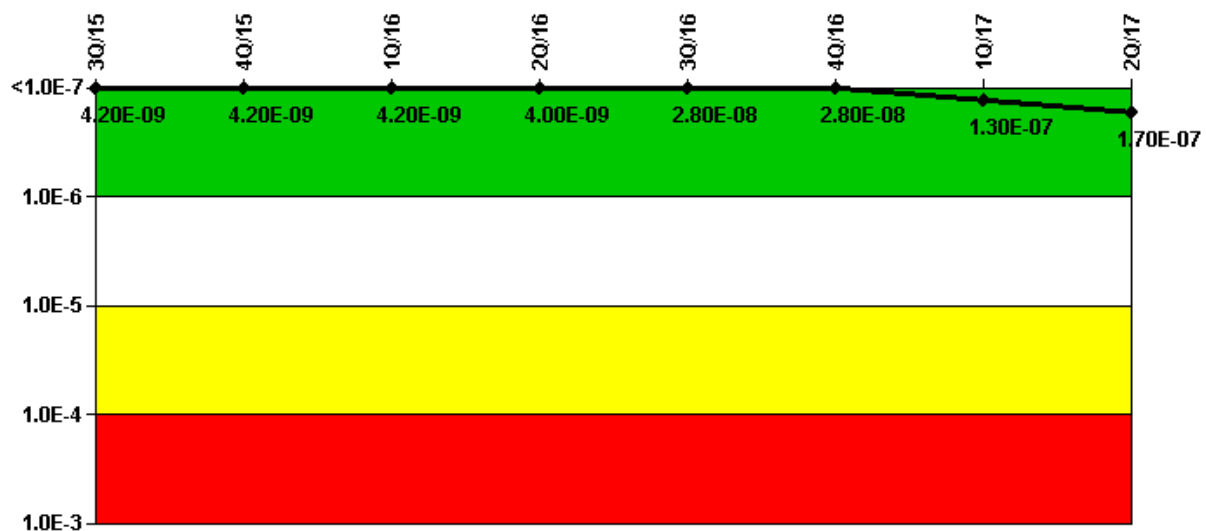
	3Q/15	4Q/15	1Q/16	2Q/16	3Q/16	4Q/16	1Q/17	2Q/17
UAI (Δ CDF)	-7.00E-10	5.40E-10	5.36E-10	-4.95E-10	-6.70E-09	5.62E-09	-4.77E-09	-4.51E-09
URI (Δ CDF)	-2.04E-08	-2.05E-08	-2.02E-08	-1.46E-08	-1.01E-07	-4.20E-08	-3.50E-08	-2.91E-08
PLE	NO	NO	NO	NO	NO	NO	NO	NO
Indicator value	-2.10E-08	-2.00E-08	-2.00E-08	-1.50E-08	-1.10E-07	-3.60E-08	-4.00E-08	-3.40E-08

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Licensee Comments:

3Q/16: Changed PRA Parameter(s). Revision to Unit CDF, Unavailability FV/UA values and Unreliability FV/UA values.

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)	-8.24E-12	-8.23E-12	-8.26E-12	-8.49E-12	-3.43E-12	-3.34E-12	1.53E-12	1.76E-12
URI (ΔCDF)	4.21E-09	4.19E-09	4.16E-09	4.05E-09	2.80E-08	2.77E-08	1.30E-07	1.65E-07
PLE	NO	NO	NO	NO	NO	NO	NO	NO
Indicator value	4.20E-09	4.20E-09	4.20E-09	4.00E-09	2.80E-08	2.80E-08	1.30E-07	1.70E-07

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Licensee Comments:

1Q/17: ANO-1 high pressure injection (HPI) system reliability for the A HPI pump in December 2014, and January 2016, was revised. ANO-1 HPI system reliability for the B HPI pump in July 2014, November 2014, March 2015, and August 2016, was revised. ANO-1 HPI system reliability for the C HPI pump in August 2014, and March 2016, was revised. Test demands and run hours were revised to remove demands related to post-maintenance testing. This change does not affect the color of this indicator.

4Q/16: ANO-1 high pressure injection (HPI) system reliability for the A HPI pump in December 2014, and January 2016, was revised. ANO-1 HPI system reliability for the B HPI pump in July 2014, November 2014, March 2015, and August 2016, was revised. ANO-1 HPI system reliability for the C HPI pump in August 2014, and March 2016, was revised. Test demands and run hours were revised to remove demands related to post-maintenance testing. This change does not affect the color of this indicator.

3Q/16: Revision to Unit Core Damage Frequency, Unavailability FV/UA values, Unreliability FV/UA values and Estimated Reliability values. ANO-1 high pressure injection (HPI) system reliability for the A HPI pump in December 2014, and January 2016, was revised. ANO-1 HPI system reliability for the B HPI pump in July 2014, November 2014, March 2015, and August 2016, was revised. ANO-1 HPI system reliability for the C HPI pump in August 2014, and March 2016, was revised. Test demands and run hours were revised to remove demands related to post-maintenance testing. This change does not affect the color of this indicator.

3Q/16: Changed PRA Parameter(s). Revision to Unit CDF, Unavailability FV/UA values, Unreliability FV/UA values and Estimated Reliability values.

2Q/16: ANO-1 high pressure injection (HPI) system reliability for the A HPI pump in December 2014, and January 2016, was revised. ANO-1 HPI system reliability for the B HPI pump in July 2014, November 2014, and March 2015, was revised. ANO-1 HPI system reliability for the C HPI pump in August 2014, and March 2016, was revised. Test demands and run hours were revised to remove

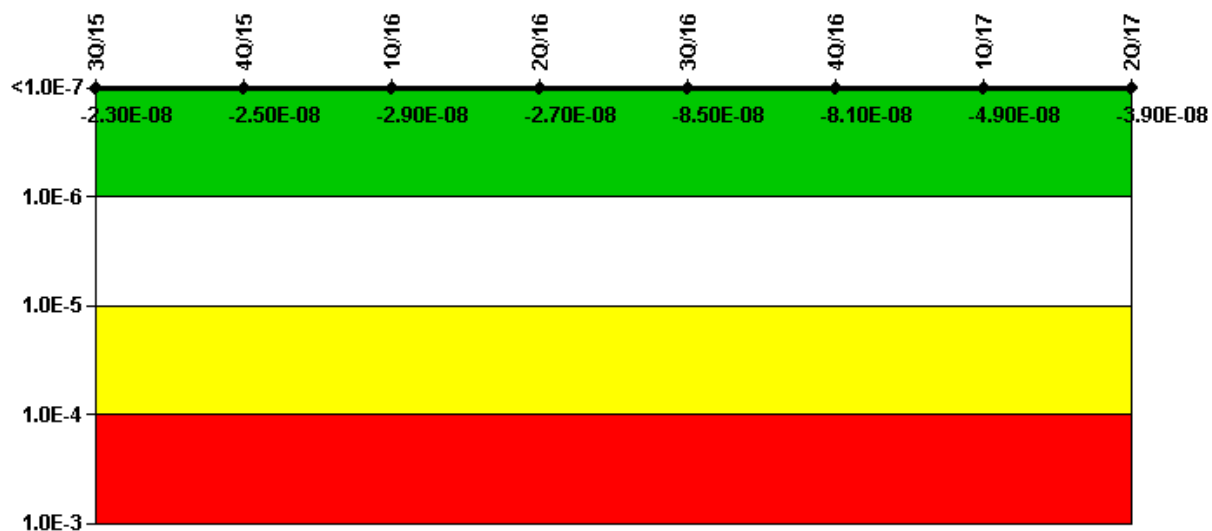
demands related to post-maintenance testing. This change does not affect the color of this indicator.

1Q/16: ANO-1 high pressure injection (HPI) system reliability for the A HPI pump in December 2014, and January 2016, was revised. ANO-1 HPI system reliability for the B HPI pump in July 2014, November 2014, and March 2015, was revised. ANO-1 HPI system reliability for the C HPI pump in August 2014, and March 2016, was revised. Test demands and run hours were revised to remove demands related to post-maintenance testing. This change does not affect the color of this indicator.

4Q/15: ANO-1 high pressure injection (HPI) system reliability for the A HPI pump in December 2014, was revised. ANO-1 HPI system reliability for the B HPI pump in July 2014, November 2014, and March 2015, was revised. ANO-1 HPI system reliability for the C HPI pump in August 2014, was revised. Test demands and run hours were revised to remove demands related to post-maintenance testing. This change does not affect the color of this indicator.

3Q/15: ANO-1 high pressure injection (HPI) system reliability for the A HPI pump in December 2014, was revised. ANO-1 HPI system reliability for the B HPI pump in July 2014, November 2014, and March 2015, was revised. ANO-1 HPI system reliability for the C HPI pump in August 2014, was revised. Test demands and run hours were revised to remove demands related to post-maintenance testing. This change does not affect the color of this indicator.

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

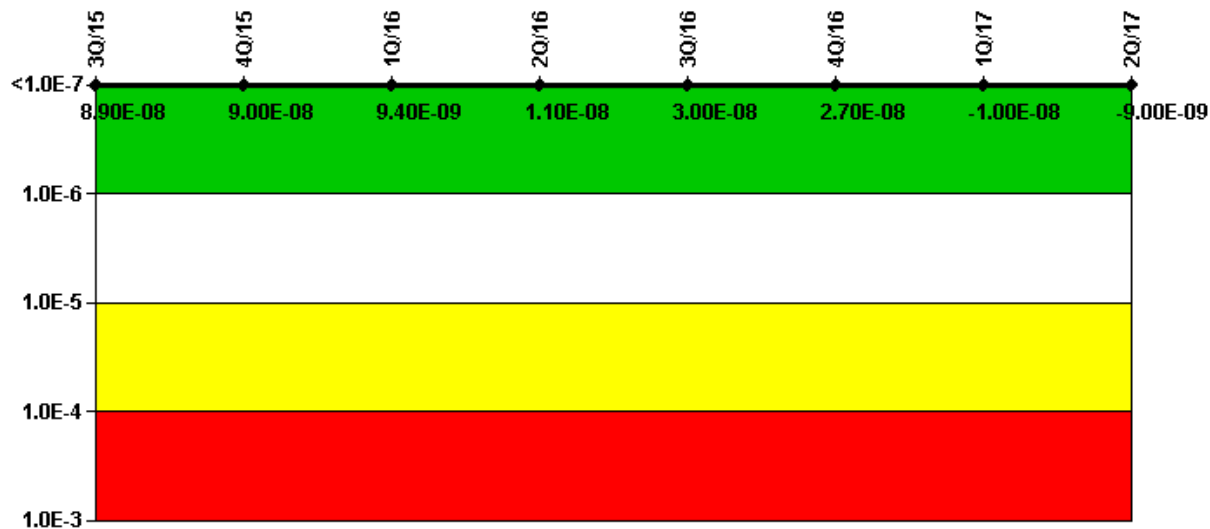
	3Q/15	4Q/15	1Q/16	2Q/16	3Q/16	4Q/16	1Q/17	2Q/17
UAI (ΔCDF)	-1.14E-09	-3.57E-09	-6.33E-09	-3.95E-09	-3.64E-08	-2.69E-08	5.27E-09	1.72E-08
URI (ΔCDF)	-2.14E-08	-2.19E-08	-2.22E-08	-2.29E-08	-4.88E-08	-5.41E-08	-5.45E-08	-5.58E-08
PLE	NO	NO	NO	NO	NO	NO	NO	NO
Indicator value	-2.30E-08	-2.50E-08	-2.90E-08	-2.70E-08	-8.50E-08	-8.10E-08	-4.90E-08	-3.90E-08

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Licensee Comments:

3Q/16: Changed PRA Parameter(s). Revision to Unit CDF, Unavailability FV/UA values, Unreliability FV/UA values, and Devices in-scope.

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

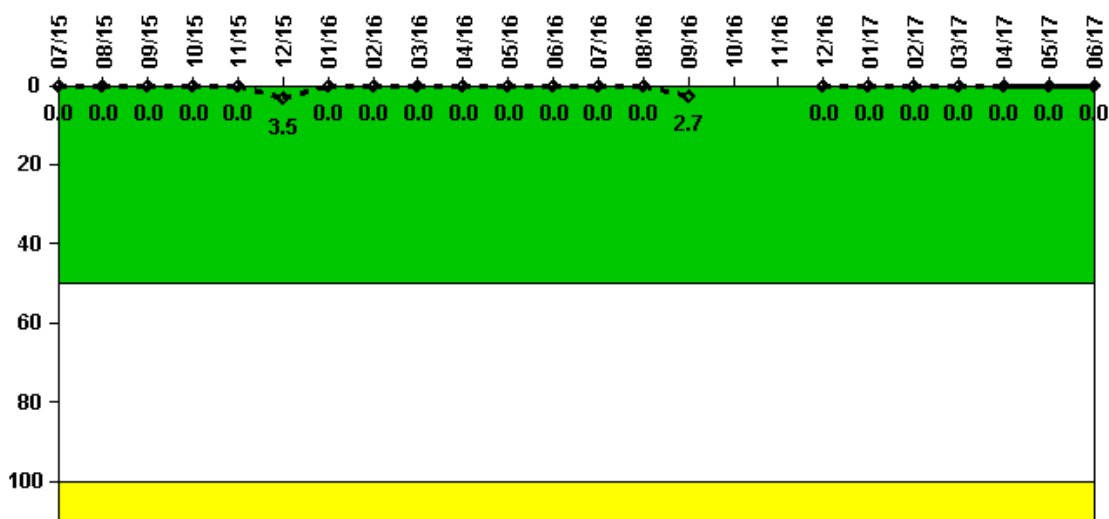
	3Q/15	4Q/15	1Q/16	2Q/16	3Q/16	4Q/16	1Q/17	2Q/17
UAI (ΔCDF)	5.06E-08	4.80E-08	5.48E-08	4.88E-08	6.14E-08	6.73E-08	3.06E-08	3.56E-08
URI (ΔCDF)	3.86E-08	4.25E-08	-4.54E-08	-3.77E-08	-3.16E-08	-4.08E-08	-4.09E-08	-4.47E-08
PLE	NO	NO	NO	NO	NO	NO	NO	NO
Indicator value	8.90E-08	9.00E-08	9.40E-09	1.10E-08	3.00E-08	2.70E-08	-1.00E-08	-9.00E-09

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Licensee Comments:

3Q/16: Changed PRA Parameter(s). Revision to Unit CDF, Unavailability FV/UA values, Unreliability FV/UA values, Common Cause Failure values and Devices in-scope.

Reactor Coolant System Activity



Thresholds: White > 50.0 Yellow > 100.0

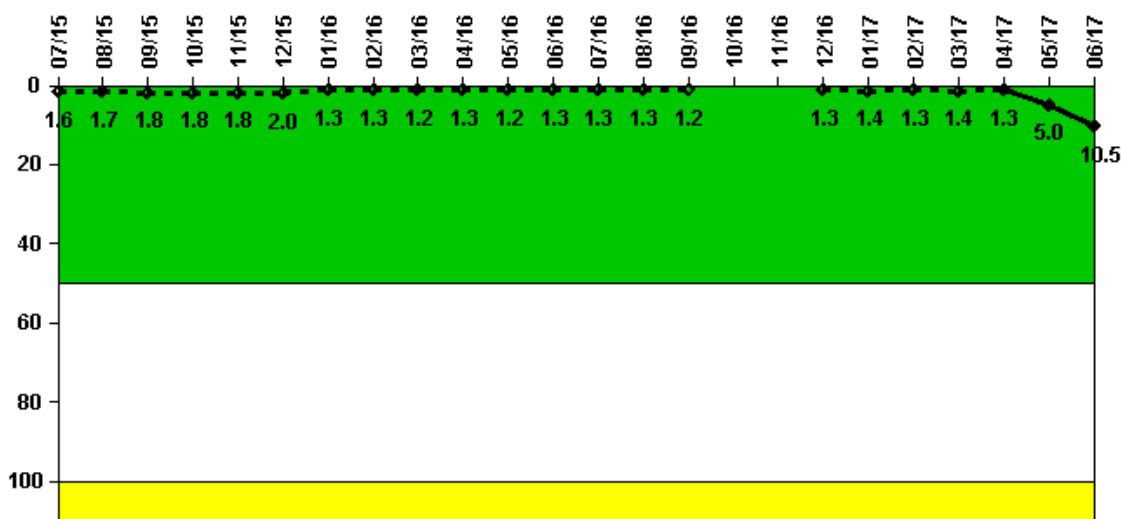
Notes

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	0.000220	0.000208	0.000143	0.000140	0.000194	0.034700	0.000122	0.000153	0.000173	0.000166	0.000214	0.000207
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	3.5	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	0.000222	0.000290	0.026800	N/A	N/A	0.000049	0.000052	0.000057	0.000059	0.000061	0.000069	0.000066
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	2.7	N/A	N/A	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	0.163	0.168	0.177	0.175	0.182	0.198	0.132	0.128	0.116	0.125	0.121	0.125
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

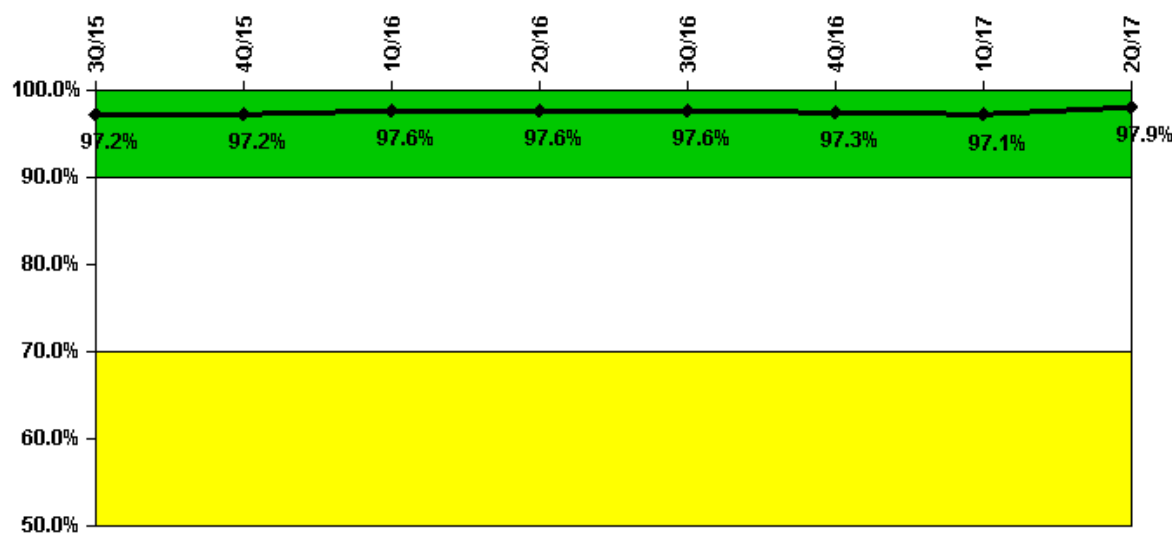
Indicator value	1.6	1.7	1.8	1.8	1.8	2.0	1.3	1.3	1.2	1.3	1.2	1.3
Reactor Coolant System Leakage	7/16	8/16	9/16	10/16	11/16	12/16	1/17	2/17	3/17	4/17	5/17	6/17
Maximum leakage	0.134	0.131	0.117	N/A	N/A	0.132	0.135	0.131	0.135	0.134	0.495	1.050
Technical specification limit	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0

Indicator value	1.3	1.3	1.2	N/A	N/A	1.3	1.4	1.3	1.4	1.3	5.0	10.5
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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	65.0	19.0	31.0	98.0	63.0	5.0	60.0	39.0
Total opportunities	67.0	19.0	32.0	99.0	65.0	5.0	62.0	39.0

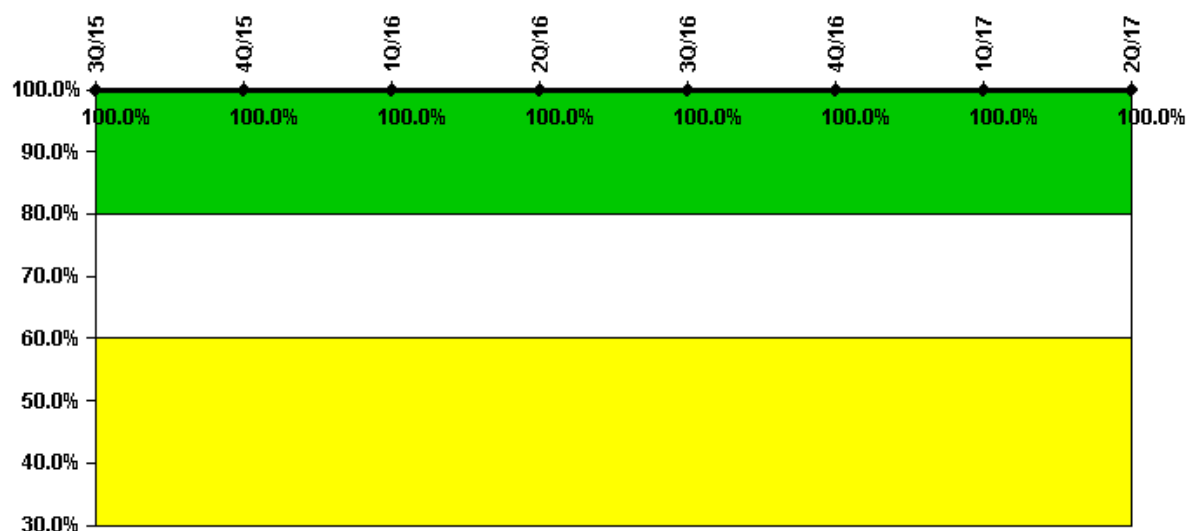
Indicator value 97.2% 97.2% 97.6% 97.6% 97.6% 97.3% 97.1% 97.9%

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Licensee Comments:

2Q/16: The 2nd Quarter 2016 June Drill/Exercise Performance is being revised to include five additional opportunities. This change does not affect the color of the Drill/Exercise Performance indicator.

ERO Drill Participation



Thresholds: White < 80.0% Yellow < 60.0%

Notes

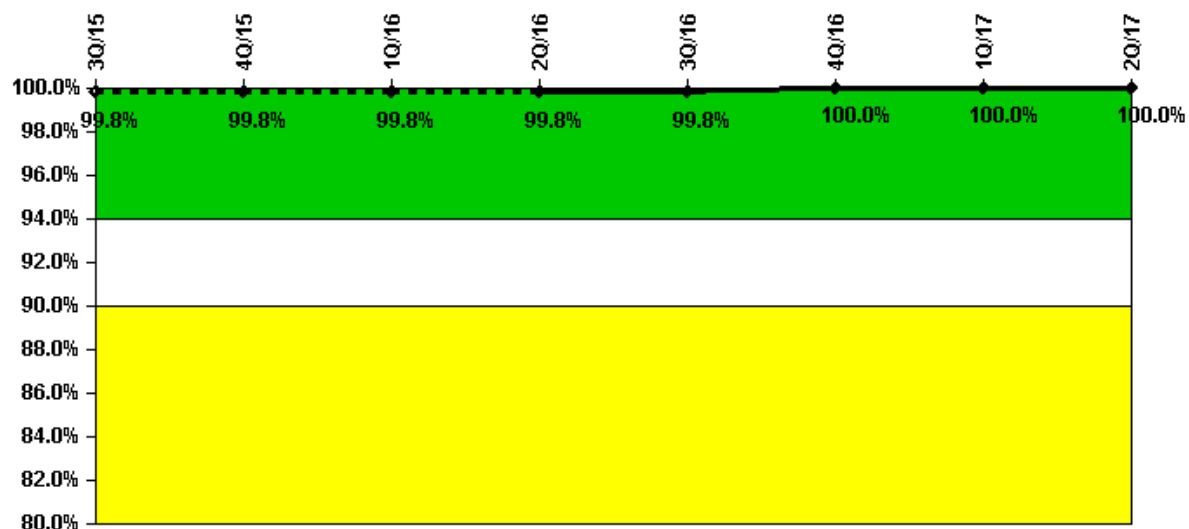
ERO Drill Participation	3Q/15	4Q/15	1Q/16	2Q/16	3Q/16	4Q/16	1Q/17	2Q/17
Participating Key personnel	106.0	103.0	103.0	108.0	107.0	111.0	107.0	109.0
Total Key personnel	106.0	103.0	103.0	108.0	107.0	111.0	107.0	109.0

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

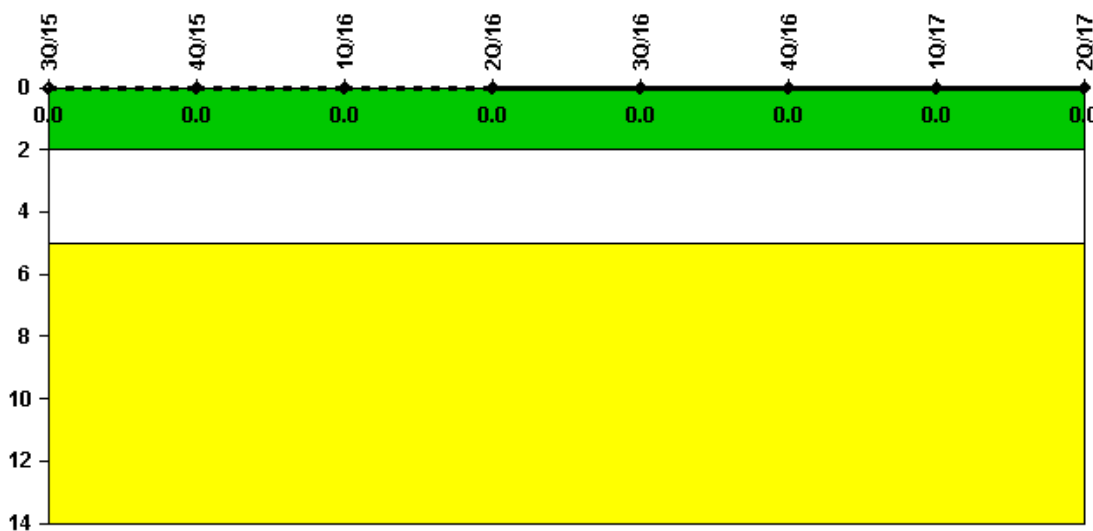
Alert & Notification System	3Q/15	4Q/15	1Q/16	2Q/16	3Q/16	4Q/16	1Q/17	2Q/17
Successful siren-tests	147	146	147	147	147	147	147	147
Total sirens-tests	147	147	147	147	147	147	147	147

Indicator value **99.8% 99.8% 99.8% 99.8% 99.8% 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

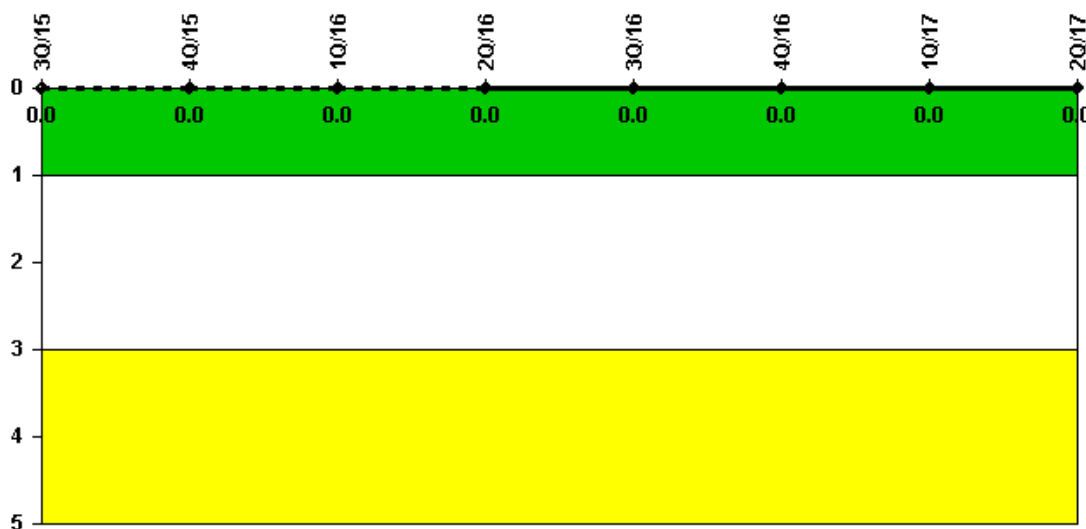
Occupational Exposure Control Effectiveness 3Q/15 4Q/15 1Q/16 2Q/16 3Q/16 4Q/16 1Q/17 2Q/17

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

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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