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Palo Verde 3 – Quarterly Performance Indicators

1Q/2017 Performance Indicators

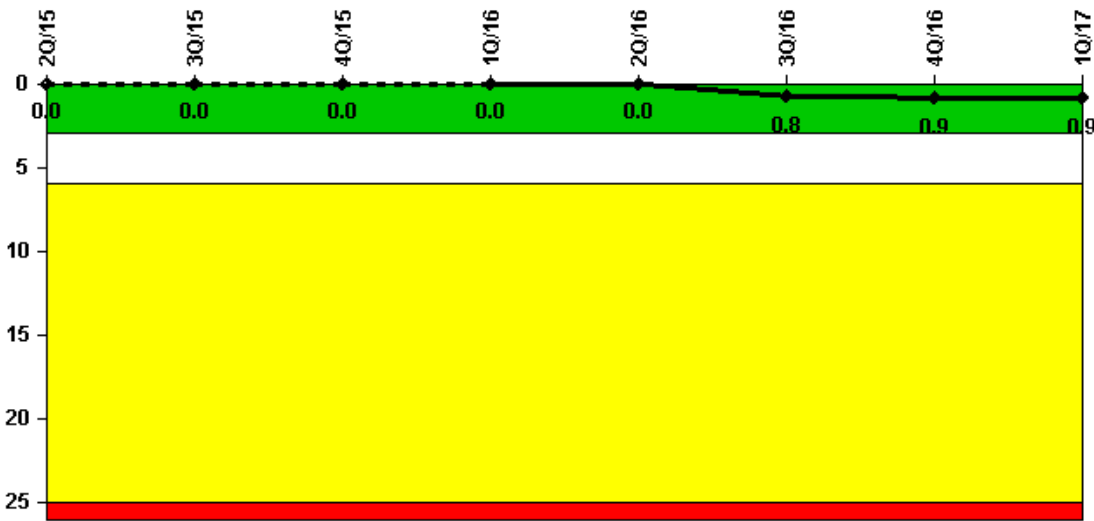
The solid trend line represents the current reporting period.

Licensee's General Comments: none

On this page:

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

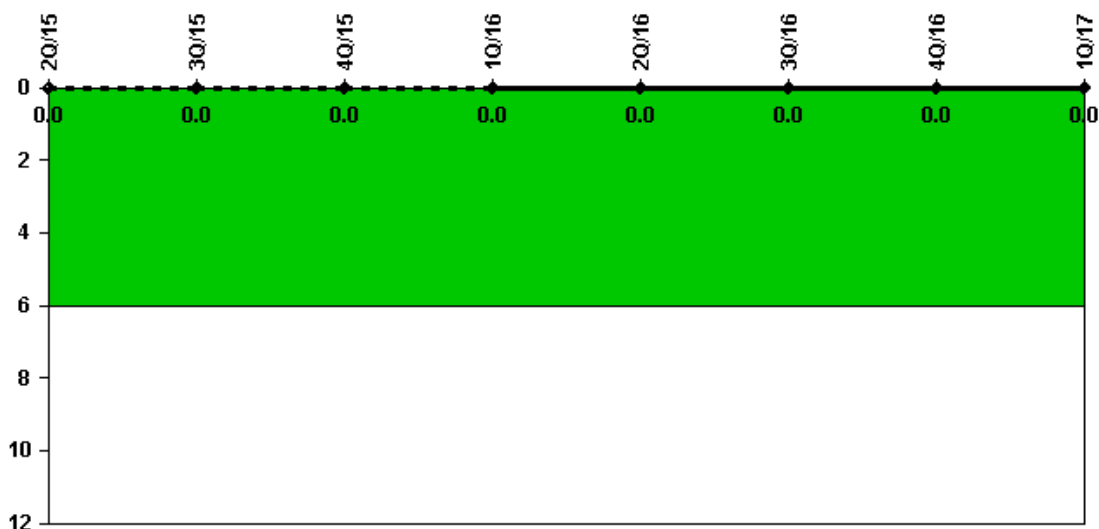
Unplanned Scrams per 7000 Critical Hrs	2Q/15	3Q/15	4Q/15	1Q/16	2Q/16	3Q/16	4Q/16	1Q/17
Unplanned scrams	0	0	0	0	0	1.0	0	0
Critical hours	1485.8	2208.0	2208.0	2184.0	2184.0	2142.0	1538.5	2160.0
Indicator value	0	0	0	0	0	0.8	0.9	0.9

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Licensee Comments:

1Q/17: License Amendment No. 200 was approved on January 4, 2017 on a one-time basis to revise Technical Specification Limiting Condition for Operation 3.8.1.B.4 to allow a Completion Time of 62 days related to the Unit 3 Train B Diesel Generator failure that occurred on December 15, 2016 (ENS 52435).

Unplanned Power Changes per 7000 Critical Hrs



Thresholds: White > 6.0

Notes

Unplanned Power Changes per 7000 Critical Hrs	2Q/15	3Q/15	4Q/15	1Q/16	2Q/16	3Q/16	4Q/16	1Q/17
Unplanned power changes	0	0	0	0	0	0	0	0
Critical hours	1485.8	2208.0	2208.0	2184.0	2184.0	2142.0	1538.5	2160.0
Indicator value	0	0	0	0	0	0	0	0

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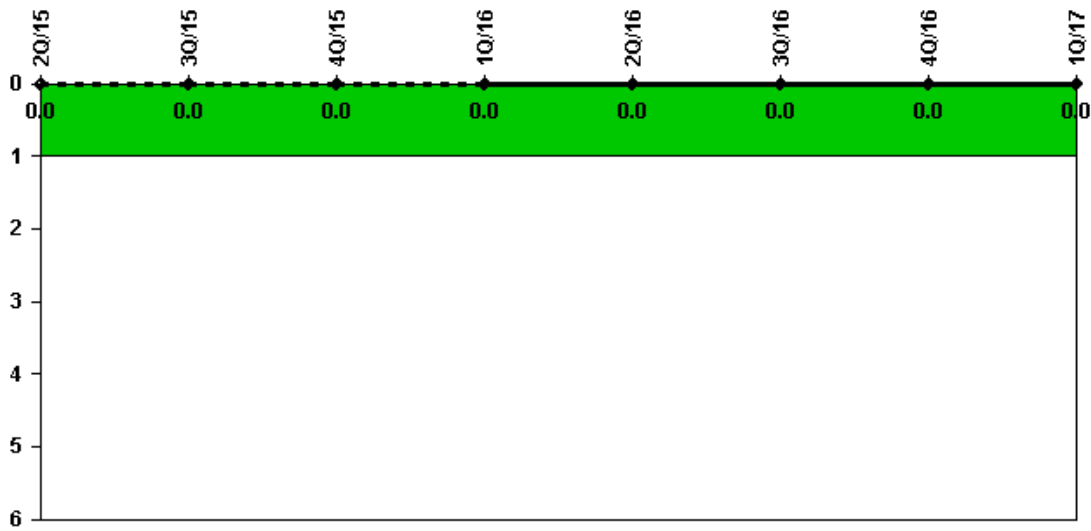
Licensee Comments:

1Q/17: FAQ 17-02 submitted on March 23, 2017 to address an event that occurred on September 19, 2016 that is currently being counted only as an unplanned scram.

4Q/16: License Amendment No. 199 was approved on December 23, 2016 on a one-time basis to revise Technical Specification Limiting Condition for Operation 3.8.1.B.4 to allow a Completion Time of 21 days related to the Unit 3 Train B Diesel Generator failure that occurred on December 15, 2016 (ENS 52435).

2Q/15: The NRC granted a 24 hour Notification of Enforcement Discretion on May 29, 2015, for inoperable High Pressure Safety Injection Pump A to preclude a shutdown required by Technical Specification 3.5.3. Reference ADAMS Accession number ML15155B798.

Unplanned Scrams with Complications



Thresholds: White > 1.0

Notes

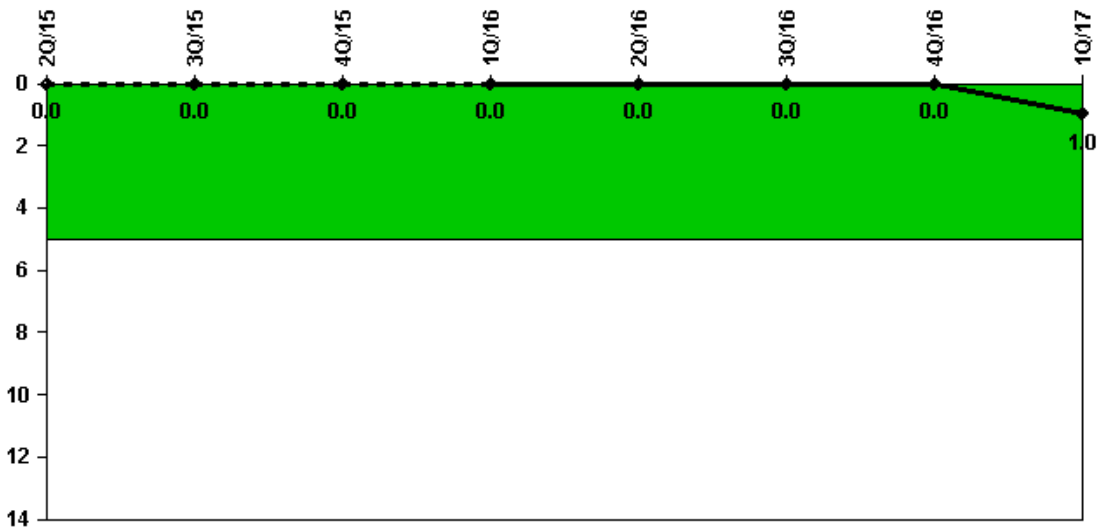
Unplanned Scrams with Complications	2Q/15	3Q/15	4Q/15	1Q/16	2Q/16	3Q/16	4Q/16	1Q/17
Scrams with complications	0	0	0	0	0	0	0	0

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) 2Q/15 3Q/15 4Q/15 1Q/16 2Q/16 3Q/16 4Q/16 1Q/17

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

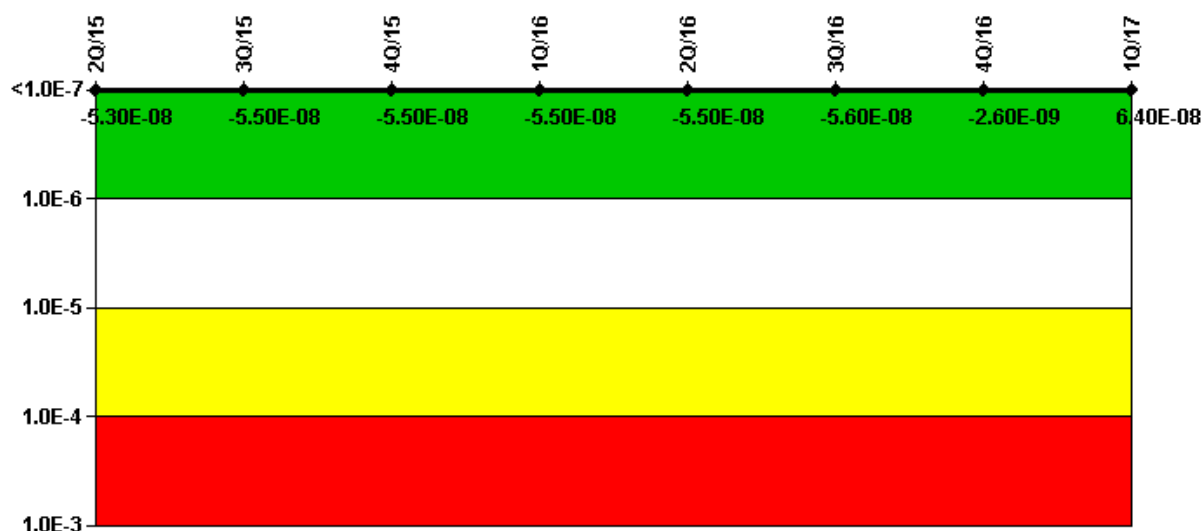
Indicator value 0 0 0 0 0 0 0 0 1

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Licensee Comments:

1Q/17: LER 2016-002-00 for the failure of Unit 3 train B emergency diesel generator was reported on February 10, 2017.

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

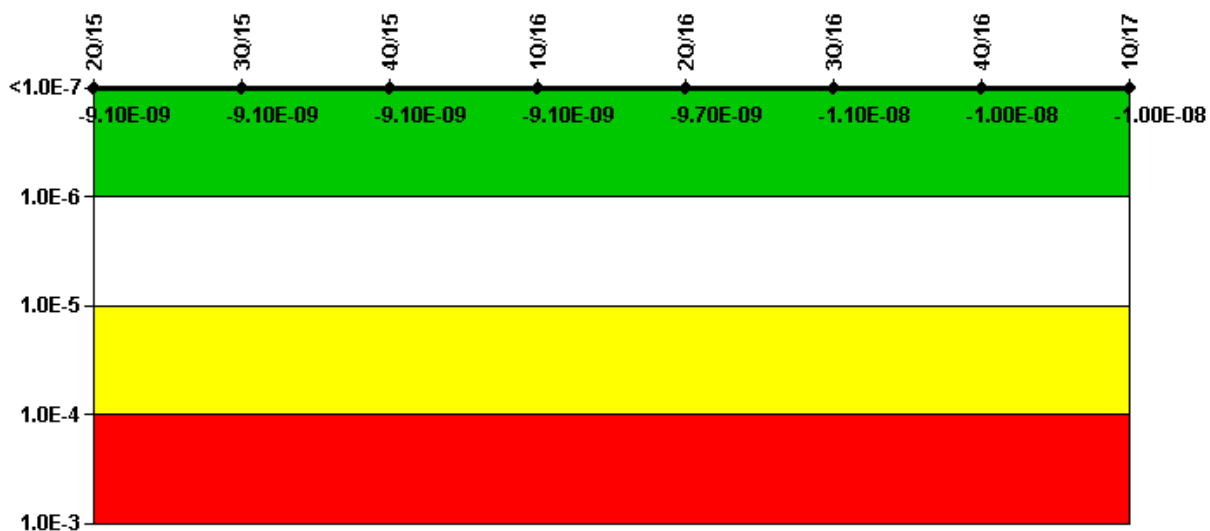
	2Q/15	3Q/15	4Q/15	1Q/16	2Q/16	3Q/16	4Q/16	1Q/17
UAI (Δ CDF)	-2.41E-09	-3.85E-09	-4.29E-09	-4.31E-09	-4.31E-09	-5.49E-09	1.95E-08	8.56E-08
URI (Δ CDF)	-5.09E-08	-5.09E-08	-5.09E-08	-5.09E-08	-5.09E-08	-5.09E-08	-2.20E-08	-2.20E-08
PLE	NO	NO	NO	NO	NO	NO	NO	NO
Indicator value	-5.30E-08	-5.50E-08	-5.50E-08	-5.50E-08	-5.50E-08	-5.60E-08	-2.60E-09	6.40E-08

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Licensee Comments:

2Q/15: In May 2015, planned unavailability hours from August and September 2013, February 2014 were adjusted resulting in a net decrease of 10.37 planned unavailability hours for the 3 year period ending in June 2015. The adjustments were made to account for hours unavailable vs. hours inoperable, previously recorded and not have resulted in a color change.

Mitigating Systems Performance Index, High Pressure Injection System



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

Notes

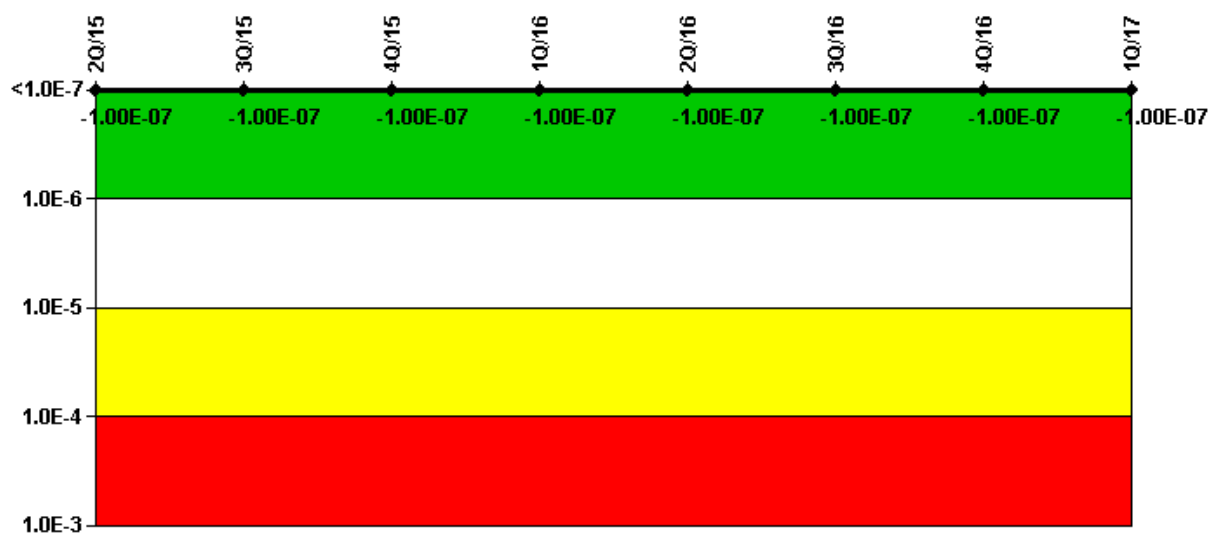
Mitigating Systems Performance Index, High Pressure Injection System

	2Q/15	3Q/15	4Q/15	1Q/16	2Q/16	3Q/16	4Q/16	1Q/17
UAI (Δ CDF)	1.20E-09	1.20E-09	1.11E-09	1.10E-09	5.69E-10	-3.12E-10	1.28E-10	2.97E-10
URI (Δ CDF)	-1.03E-08	-1.03E-08	-1.03E-08	-1.03E-08	-1.03E-08	-1.03E-08	-1.03E-08	-1.03E-08
PLE	NO	NO	NO	NO	NO	NO	NO	NO
Indicator value	-9.10E-09	-9.10E-09	-9.10E-09	-9.10E-09	-9.70E-09	-1.10E-08	-1.00E-08	-1.00E-08

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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

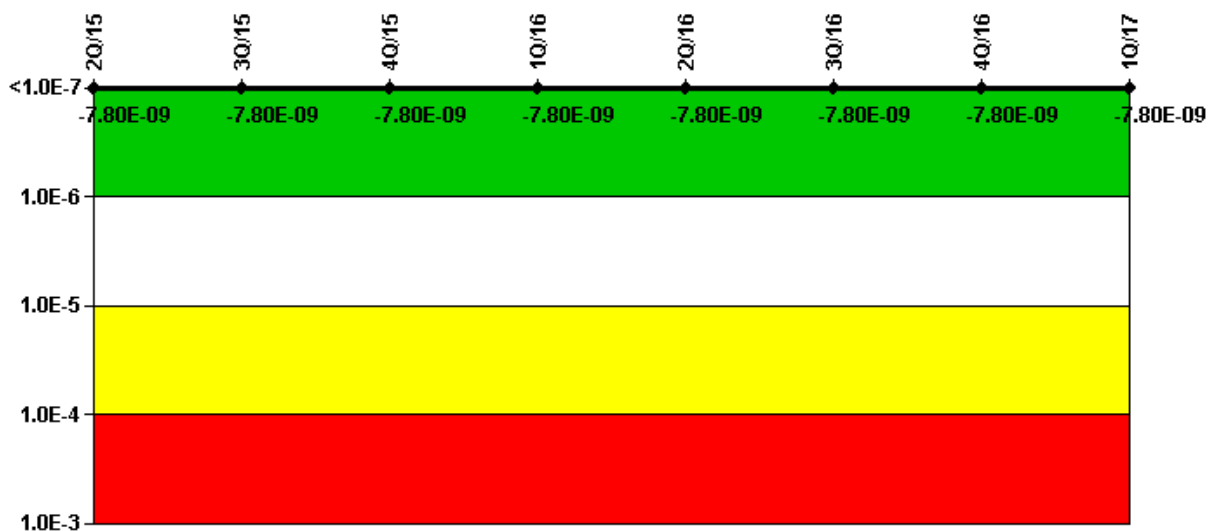
Mitigating Systems Performance Index, Heat Removal System

	2Q/15	3Q/15	4Q/15	1Q/16	2Q/16	3Q/16	4Q/16	1Q/17
UAI (Δ CDF)	-4.84E-08	-4.84E-08	-4.84E-08	-4.84E-08	-4.84E-08	-4.84E-08	-4.84E-08	-4.84E-08
URI (Δ CDF)	-5.15E-08	-5.15E-08	-5.15E-08	-5.15E-08	-5.15E-08	-5.15E-08	-5.15E-08	-5.15E-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	-1.00E-07	-1.00E-07

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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

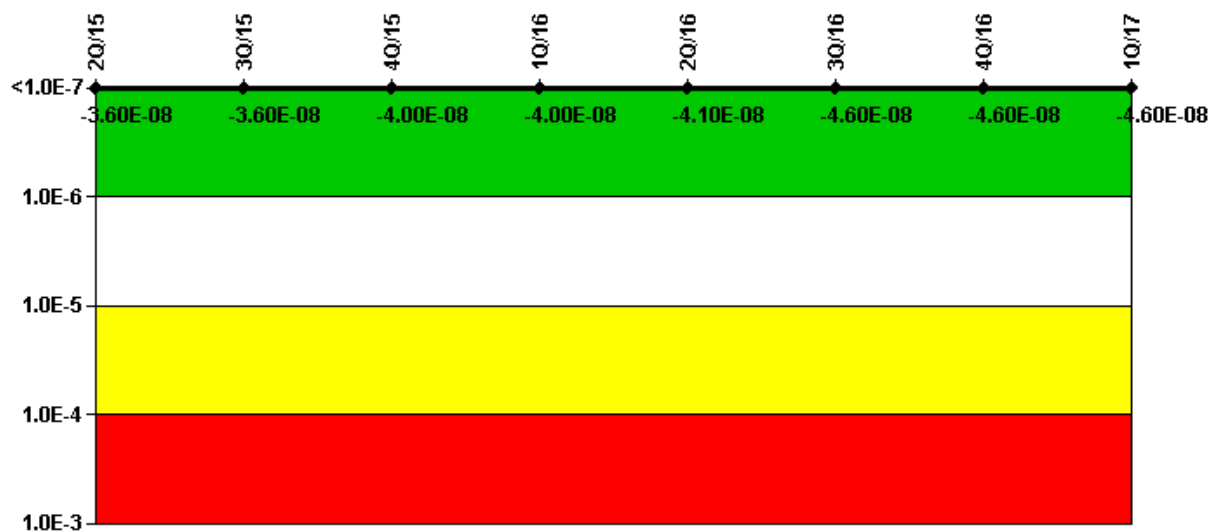
Mitigating Systems Performance Index, Residual Heat Removal System

	2Q/15	3Q/15	4Q/15	1Q/16	2Q/16	3Q/16	4Q/16	1Q/17
UAI (Δ CDF)	-1.46E-09	-1.46E-09	-1.46E-09	-1.46E-09	-1.46E-09	-1.46E-09	-1.46E-09	-1.46E-09
URI (Δ CDF)	-6.37E-09	-6.37E-09	-6.37E-09	-6.37E-09	-6.37E-09	-6.37E-09	-6.37E-09	-6.37E-09
PLE	NO	NO	NO	NO	NO	NO	NO	NO
Indicator value	-7.80E-09	-7.80E-09	-7.80E-09	-7.80E-09	-7.80E-09	-7.80E-09	-7.80E-09	-7.80E-09

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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

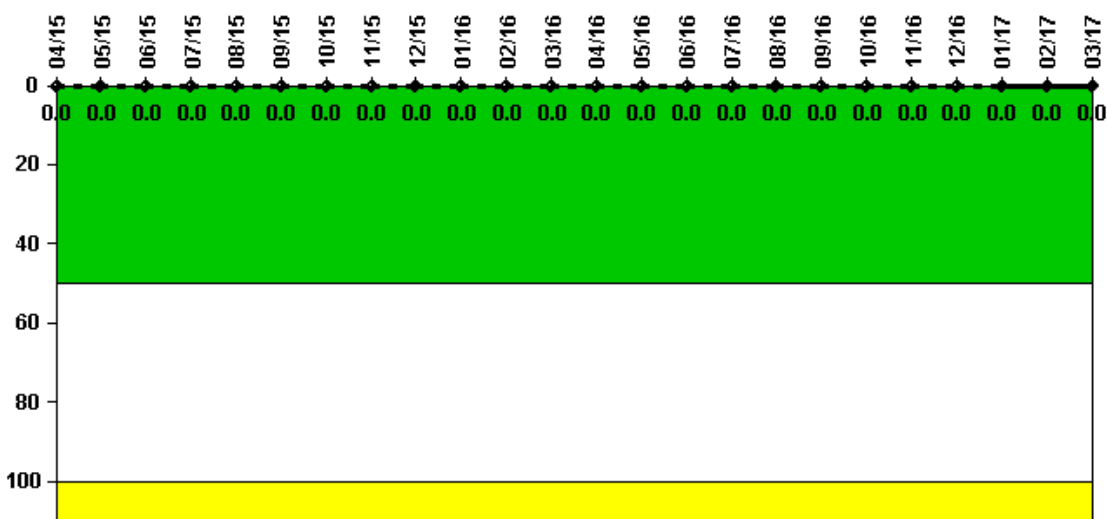
Mitigating Systems Performance Index, Cooling Water Systems

	2Q/15	3Q/15	4Q/15	1Q/16	2Q/16	3Q/16	4Q/16	1Q/17
UAI (Δ CDF)	9.95E-09	9.85E-09	5.29E-09	5.22E-09	5.17E-09	0.00E+00	0.00E+00	9.69E-11
URI (Δ CDF)	-4.57E-08	-4.57E-08	-4.57E-08	-4.57E-08	-4.57E-08	-4.57E-08	-4.57E-08	-4.57E-08
PLE	NO	NO	NO	NO	NO	NO	NO	NO
Indicator value	-3.60E-08	-3.60E-08	-4.00E-08	-4.00E-08	-4.10E-08	-4.60E-08	-4.60E-08	-4.60E-08

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Licensee Comments: none

Reactor Coolant System Activity



Thresholds: White > 50.0 Yellow > 100.0

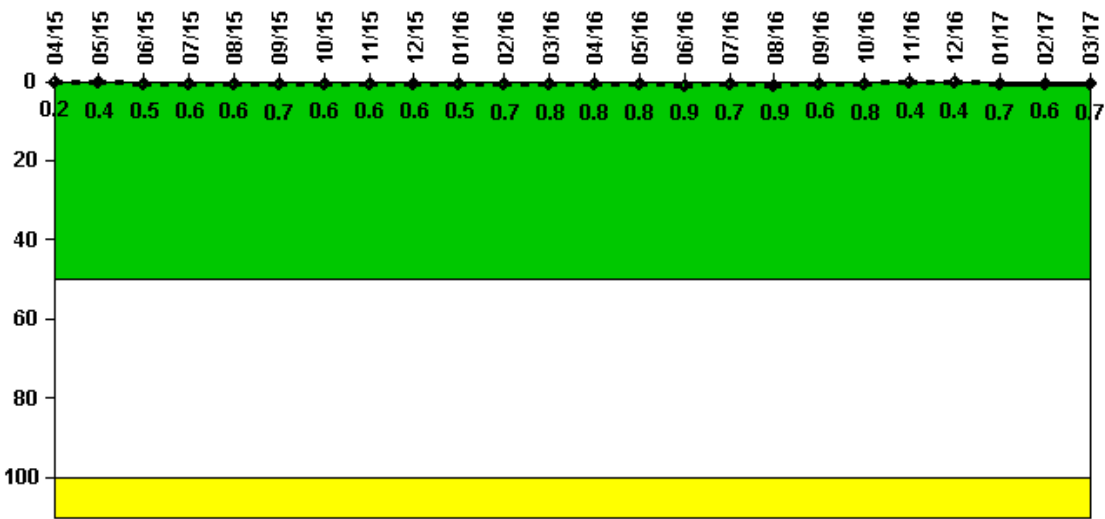
Notes

Reactor Coolant System Activity	4/15	5/15	6/15	7/15	8/15	9/15	10/15	11/15	12/15	1/16	2/16	3/16
Maximum activity	0.000171	0.000137	0.000157	0.000134	0.000144	0.000225	0.000180	0.000181	0.000183	0.000189	0.000186	0.000203
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	4/16	5/16	6/16	7/16	8/16	9/16	10/16	11/16	12/16	1/17	2/17	3/17
Maximum activity	0.000192	0.000192	0.000194	0.000194	0.000193	0.000200	0.000200	0.000245	0.000175	0.000182	0.000182	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	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	4/15	5/15	6/15	7/15	8/15	9/15	10/15	11/15	12/15	1/16	2/16	3/16
Maximum leakage	0.016	0.040	0.049	0.060	0.058	0.073	0.057	0.058	0.059	0.054	0.067	0.076
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

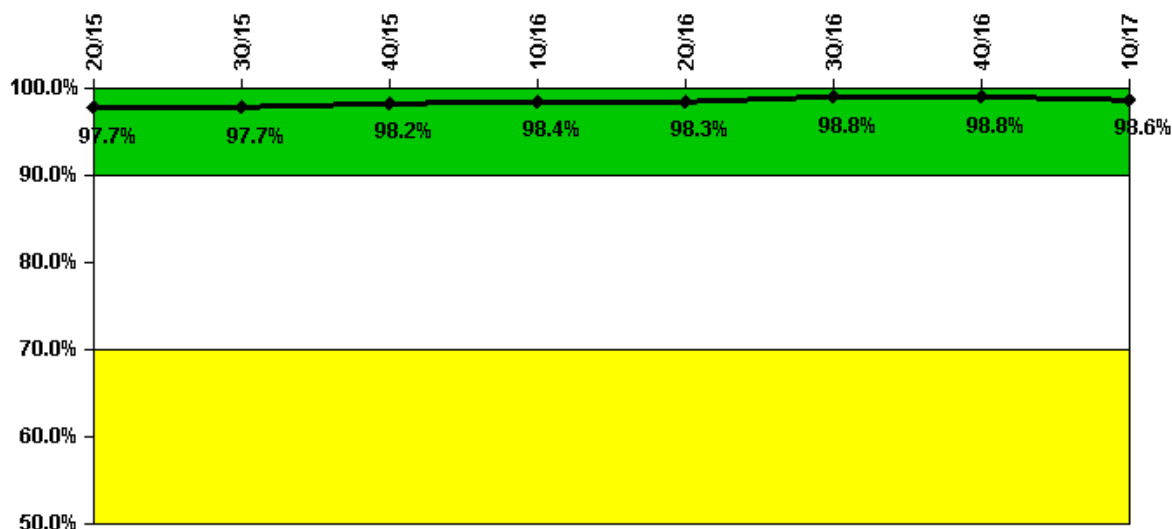
Indicator value	0.2	0.4	0.5	0.6	0.6	0.7	0.6	0.6	0.6	0.5	0.7	0.8
Reactor Coolant System Leakage	4/16	5/16	6/16	7/16	8/16	9/16	10/16	11/16	12/16	1/17	2/17	3/17
Maximum leakage	0.081	0.079	0.086	0.066	0.093	0.062	0.076	0.044	0.043	0.070	0.064	0.065
Technical specification limit	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0

Indicator value	0.8	0.8	0.9	0.7	0.9	0.6	0.8	0.4	0.4	0.7	0.6	0.7
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Licensee Comments: none

Drill/Exercise Performance



Thresholds: White < 90.0% Yellow < 70.0%

Notes

Drill/Exercise Performance	2Q/15	3Q/15	4Q/15	1Q/16	2Q/16	3Q/16	4Q/16	1Q/17
Successful opportunities	38.0	50.0	163.0	203.0	3.0	46.0	51.0	80.0
Total opportunities	38.0	50.0	164.0	206.0	3.0	48.0	52.0	82.0

Indicator value **97.7% 97.7% 98.2% 98.4% 98.3% 98.8% 98.8% 98.6%**

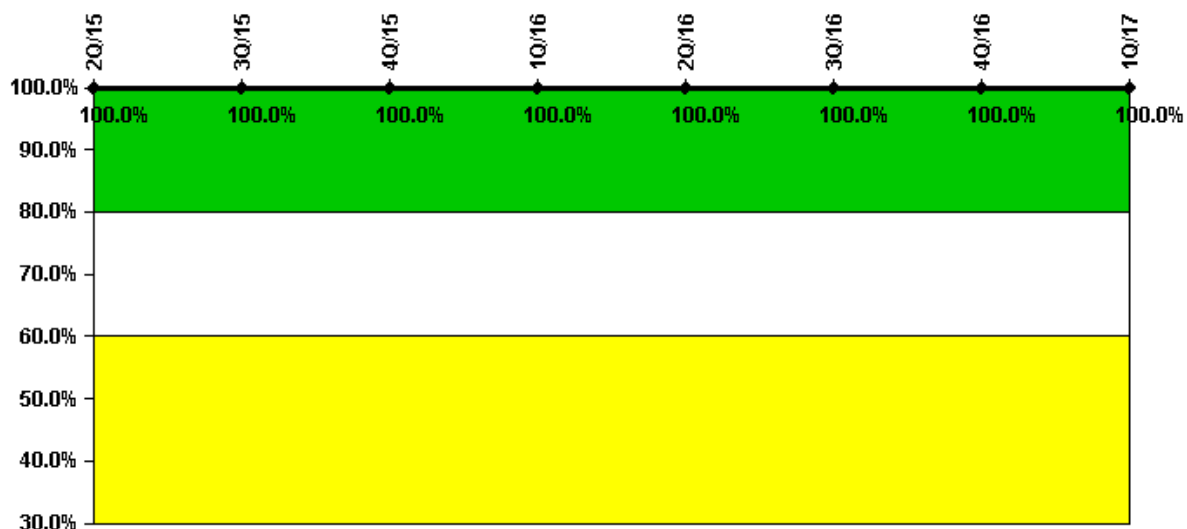
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Licensee Comments:

1Q/16: On March 29, 2016, a new shift manager became qualified in two key ERO positions and completed two opportunities and successes which were not included in the previously submitted data. No color change.

4Q/15: The total number of drill / exercise opportunities and successes was revised from 87 to 86 each (no additional failures). No color change resulted.

ERO Drill Participation



Thresholds: White < 80.0% Yellow < 60.0%

Notes

ERO Drill Participation	2Q/15	3Q/15	4Q/15	1Q/16	2Q/16	3Q/16	4Q/16	1Q/17
Participating Key personnel	91.0	95.0	91.0	91.0	95.0	93.0	94.0	91.0
Total Key personnel	91.0	95.0	91.0	91.0	95.0	93.0	94.0	91.0

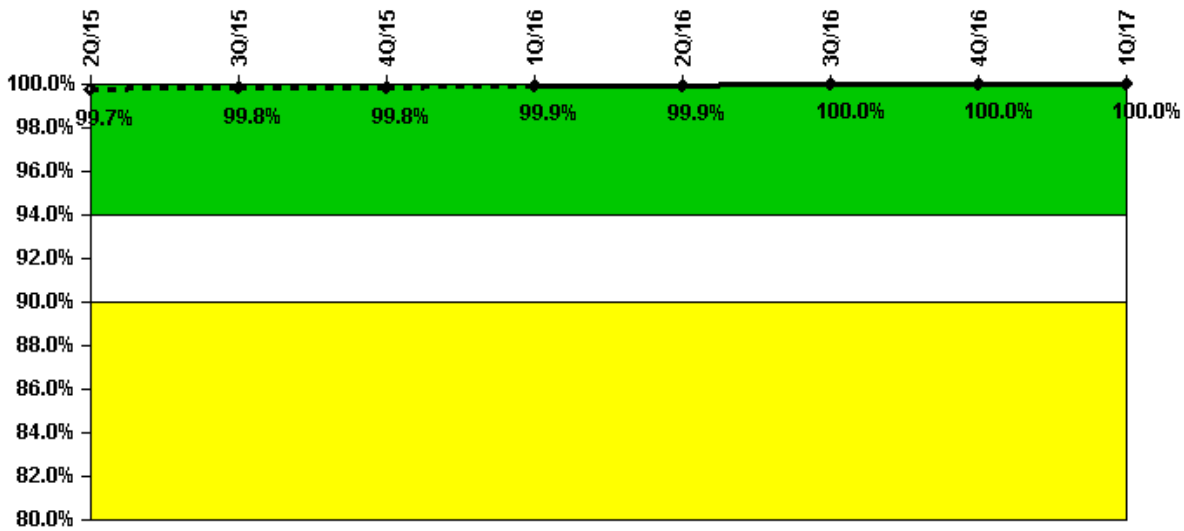
Indicator value **100.0% 100.0% 100.0% 100.0% 100.0% 100.0% 100.0% 100.0%**

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Licensee Comments:

1Q/16: On March 29, 2016, a new shift manager became qualified in two key ERO positions which were not included in the previously submitted data. No color change.

Alert & Notification System



Thresholds: White < 94.0% Yellow < 90.0%

Notes

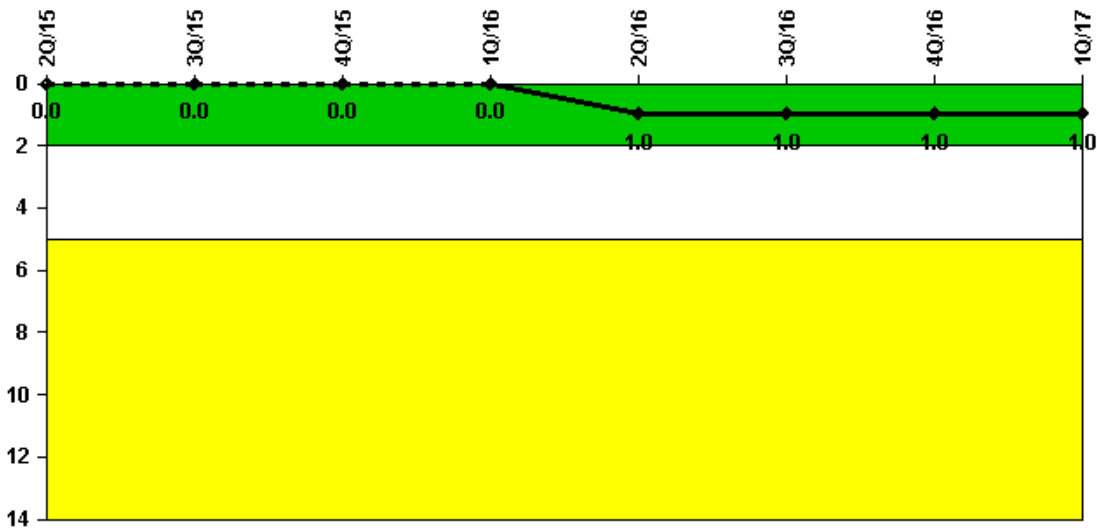
Alert & Notification System	2Q/15	3Q/15	4Q/15	1Q/16	2Q/16	3Q/16	4Q/16	1Q/17
Successful siren-tests	912	909	1008	1102	1044	1102	1218	1102
Total sirens-tests	912	912	1008	1102	1044	1102	1218	1102

Indicator value 99.7% 99.8% 99.8% 99.9% 99.9% 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

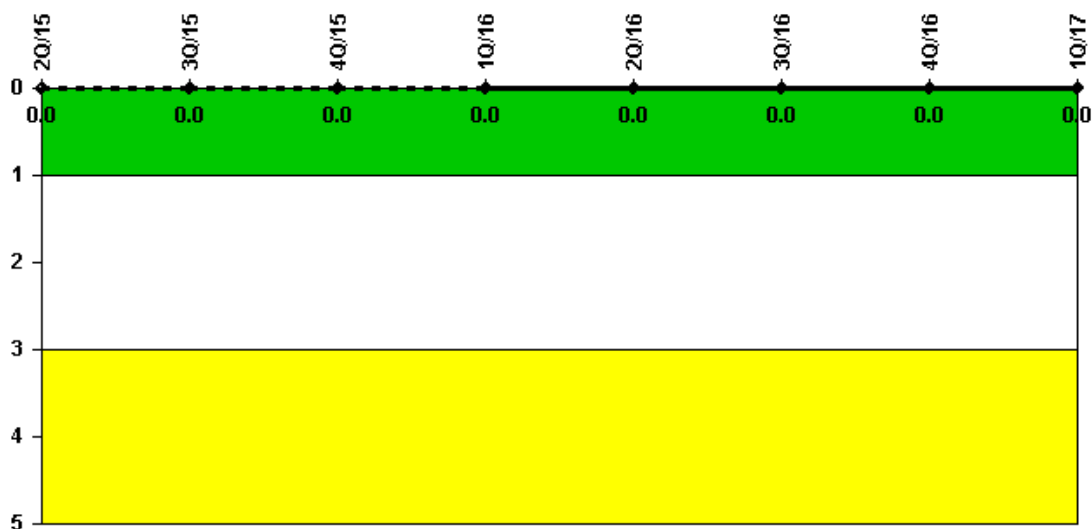
Occupational Exposure Control Effectiveness 2Q/15 3Q/15 4Q/15 1Q/16 2Q/16 3Q/16 4Q/16 1Q/17

High radiation area occurrences	0	0	0	0	1	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	1	1	1	1

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Licensee Comments: none

RETS/ODCM Radiological Effluent



Thresholds: White > 1.0 Yellow > 3.0

Notes

RETS/ODCM Radiological Effluent 2Q/15 3Q/15 4Q/15 1Q/16 2Q/16 3Q/16 4Q/16 1Q/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: May 5, 2017

Page Last Reviewed/Updated Wednesday, June 07, 2017