



Home > Nuclear Reactors > Operating Reactors > Reactor Oversight Process > Plant Summaries > Prairie Island 2 > Quarterly Performance Indicators

Prairie Island 2 – Quarterly Performance Indicators

1Q/2017 Performance Indicators

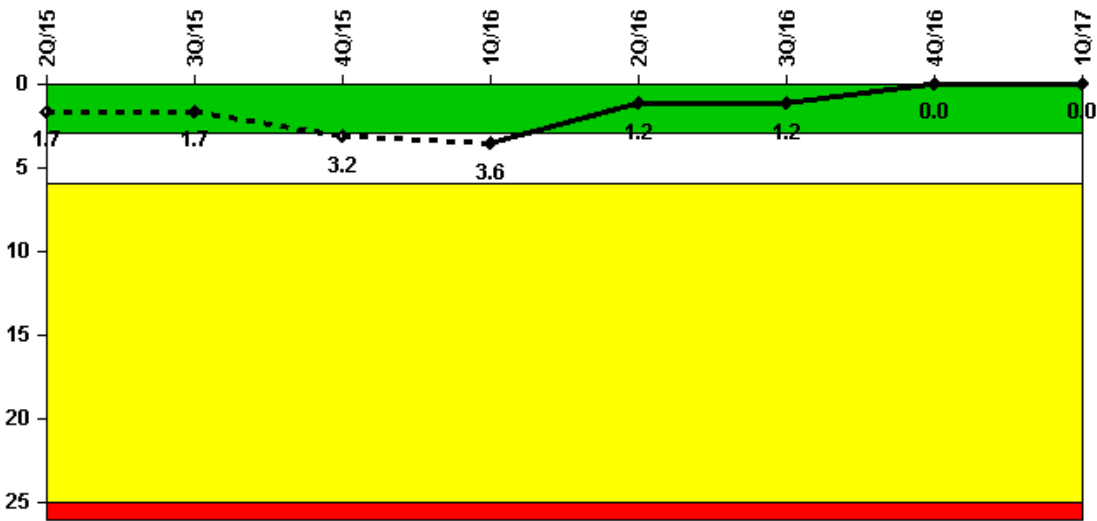
The solid trend line represents the current reporting period.

Licensee's General Comments: Alert Notification System corrected for total of sirens tested for June 2016. Drill / Exercise Performance corrected for September 2016. Changes do not affect the color of the indicators.

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

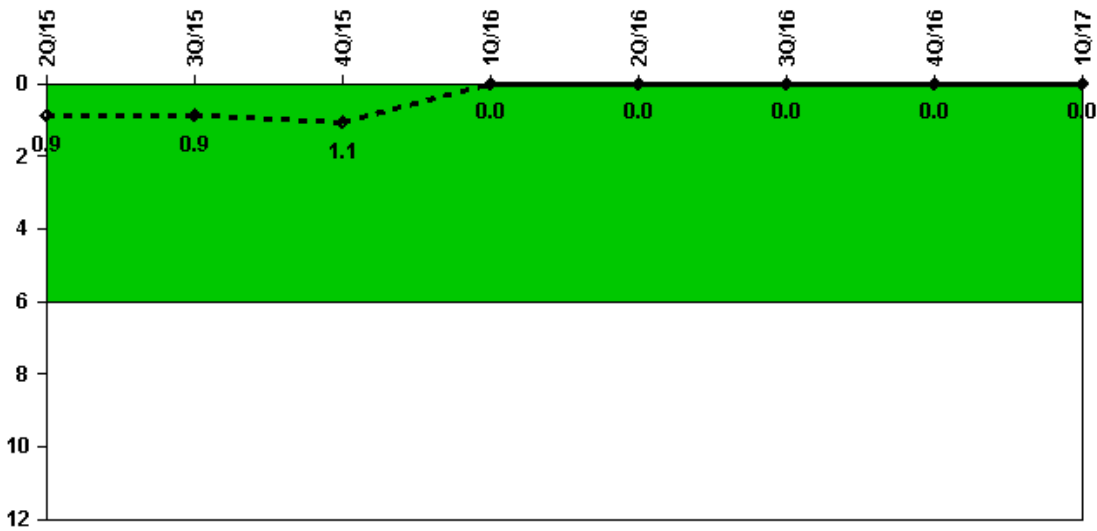
Unplanned Scrams per 7000 Critical Hrs	2Q/15	3Q/15	4Q/15	1Q/16	2Q/16	3Q/16	4Q/16	1Q/17
Unplanned scrams	2.0	0	1.0	0	0	0	0	0
Critical hours	2035.8	2208.0	718.8	921.2	2184.0	2208.0	2209.0	2159.0
Indicator value	1.7	1.7	3.2	3.6	1.2	1.2	0	0

▲ TOP

Licensee Comments:

4Q/15: The Green-White threshold has been exceeded for this indicator due to three unplanned scrams in 2015 (April, June & December).

Unplanned Power Changes per 7000 Critical Hrs



Thresholds: White > 6.0

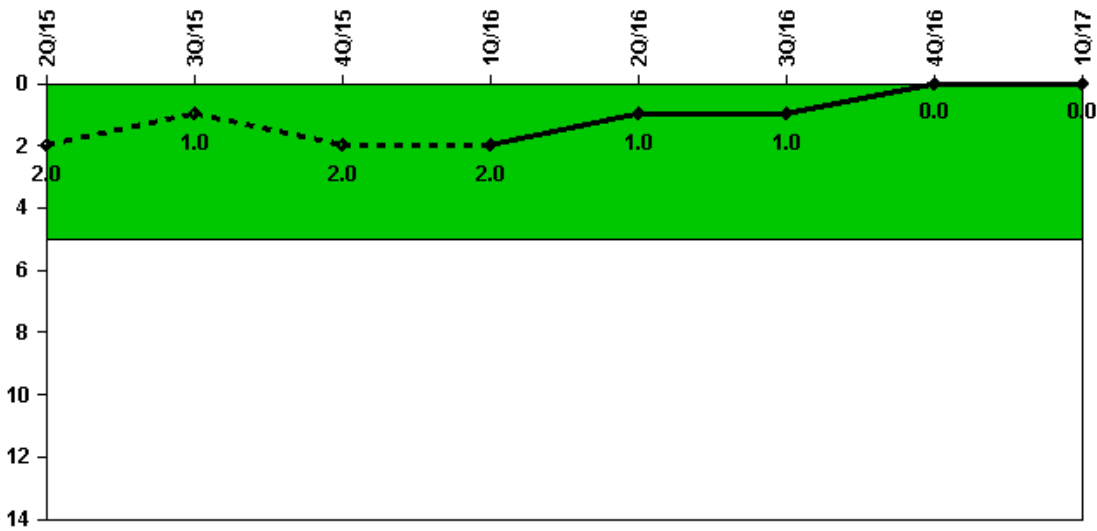
Notes

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	2035.8	2208.0	718.8	921.2	2184.0	2208.0	2209.0	2159.0
Indicator value	0.9	0.9	1.1	0	0	0	0	0

TOP

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 1 0 1 0 0 0 0 0

Indicator value 2 1 2 2 1 1 0 0

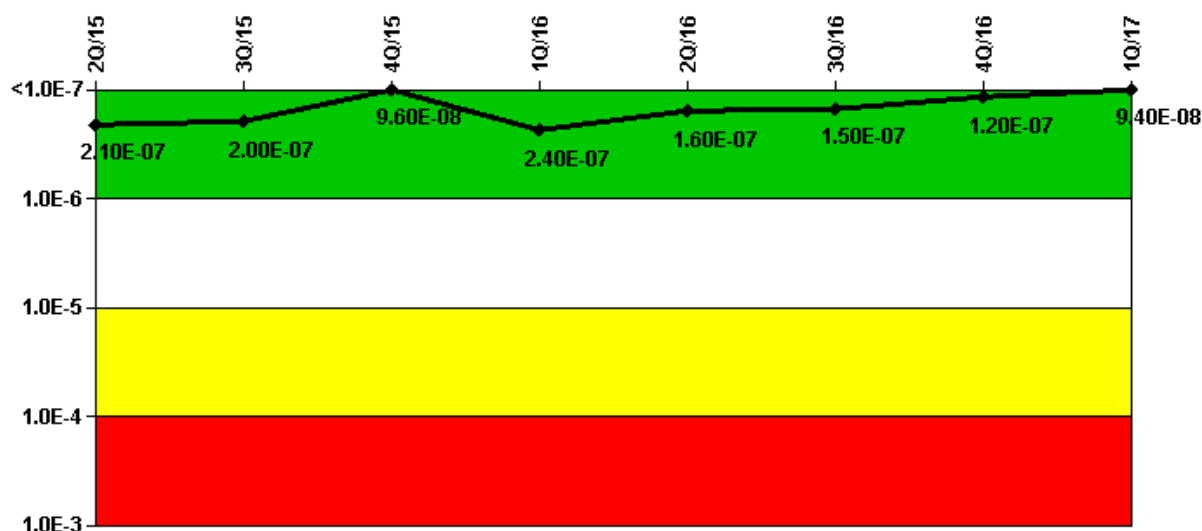
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Licensee Comments:

4Q/15: LER 50-282/2015-006-00, reported on 10/5/15 for Quarterly Containment Spray Pump Surveillance Test Methodology

2Q/15: LER 50-306/2015-001-00, 5/4/2015, 21 Fan Coil Unit Leak - Containment Declared 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

	2Q/15	3Q/15	4Q/15	1Q/16	2Q/16	3Q/16	4Q/16	1Q/17
UAI (ΔCDF)	6.17E-08	4.98E-08	1.03E-07	2.20E-07	1.47E-07	1.33E-07	1.04E-07	7.95E-08
URI (ΔCDF)	1.52E-07	1.53E-07	-6.87E-09	1.53E-08	1.53E-08	1.53E-08	1.53E-08	1.46E-08
PLE	NO	NO	NO	NO	NO	NO	NO	NO
Indicator value	2.10E-07	2.00E-07	9.60E-08	2.40E-07	1.60E-07	1.50E-07	1.20E-07	9.40E-08

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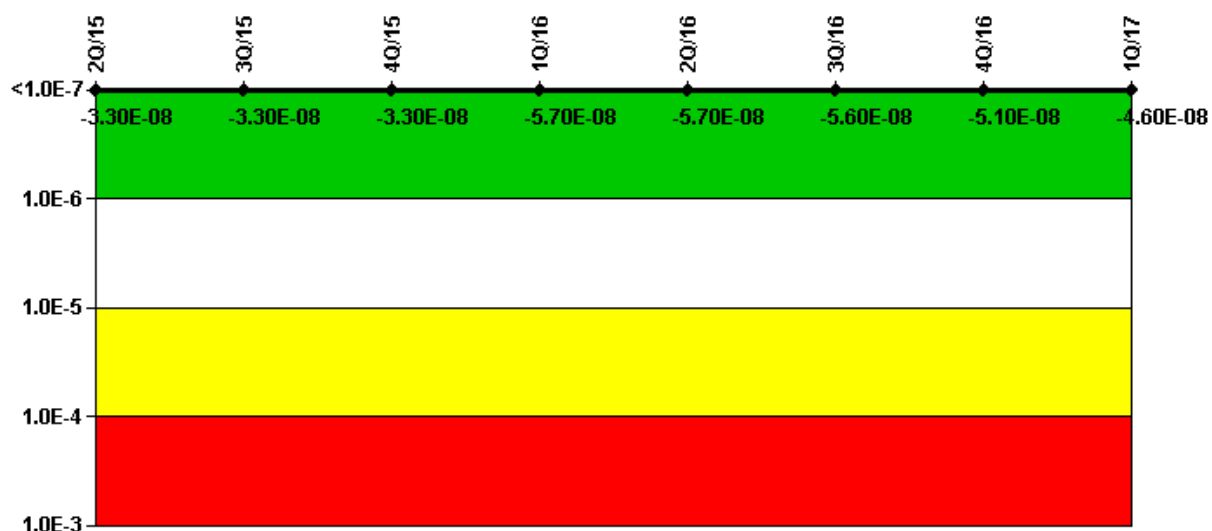
Licensee Comments:

1Q/17: Changed PRA Parameter(s).

1Q/16: Changed PRA Parameter(s). The PINGP PRA Model Revision 5.2 was approved on 11/30/2015 with corresponding MSPI Basis Document Revision 20 approved 3/18/2016. This incorporates FAQ 14-01, data analysis update and plant installed Mayer Groove RCP seals.

3Q/15: PINGP PRA Model Revision 5.1 was approved on 4/20/2014 with a corresponding MSPI Basis Document Revision 18 approved on 6/10/2015 and Coefficients effective 7/1/2015. The PRA model revision was to incorporate Mayer Groove RCP seals installed on Unit 1 and minor updates identified in the PRA Change Database Process.

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 (ΔCDF)	-8.51E-09	-8.25E-09	-7.89E-09	-1.68E-08	-1.68E-08	-1.59E-08	-1.63E-08	-1.38E-08
URI (ΔCDF)	-2.47E-08	-2.48E-08	-2.48E-08	-4.03E-08	-4.03E-08	-4.03E-08	-3.50E-08	-3.19E-08
PLE	NO	NO	NO	NO	NO	NO	NO	NO
Indicator value	-3.30E-08	-3.30E-08	-3.30E-08	-5.70E-08	-5.70E-08	-5.60E-08	-5.10E-08	-4.60E-08

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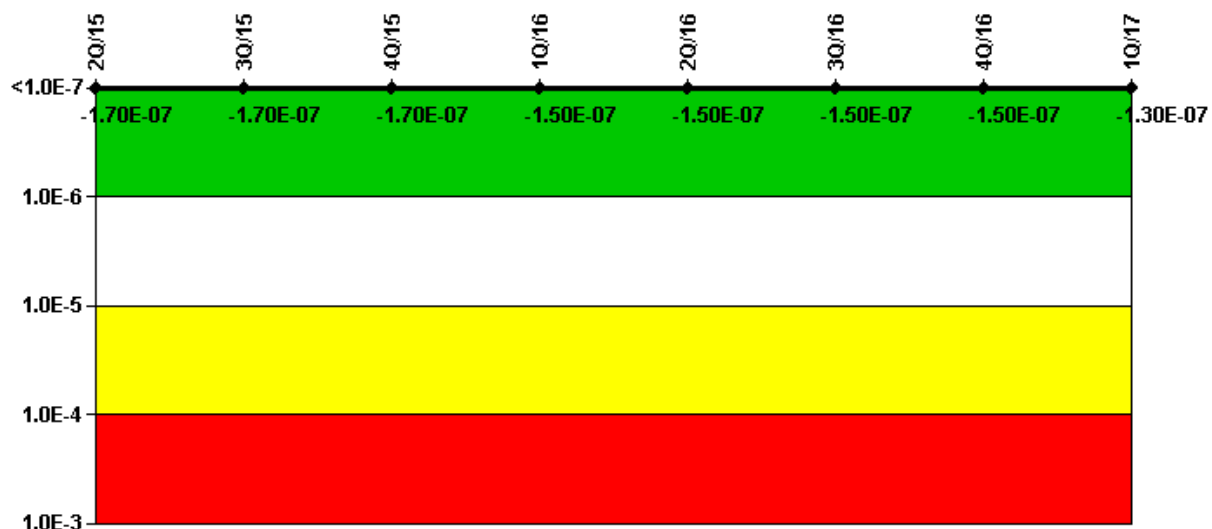
Licensee Comments:

1Q/17: Changed PRA Parameter(s).

1Q/16: Changed PRA Parameter(s). The PINGP PRA Model Revision 5.2 was approved on 11/30/2015 with corresponding MSPI Basis Document Revision 20 approved 3/18/2016. This incorporates FAQ 14-01, data analysis update and plant installed Mayer Groove RCP seals.

3Q/15: PINGP PRA Model Revision 5.1 was approved on 4/20/2014 with a corresponding MSPI Basis Document Revision 18 approved on 6/10/2015 and Coefficients effective 7/1/2015. The PRA model revision was to incorporate Mayer Groove RCP seals installed on Unit 1 and minor updates identified in the PRA Change Database Process.

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)	-2.68E-08	-2.69E-08	-2.69E-08	-3.02E-08	-3.02E-08	-3.02E-08	-3.02E-08	-2.42E-08
URI (Δ CDF)	-1.44E-07	-1.44E-07	-1.45E-07	-1.18E-07	-1.18E-07	-1.18E-07	-1.16E-07	-1.01E-07
PLE	NO	NO	NO	NO	NO	NO	NO	NO
Indicator value	-1.70E-07	-1.70E-07	-1.70E-07	-1.50E-07	-1.50E-07	-1.50E-07	-1.50E-07	-1.30E-07

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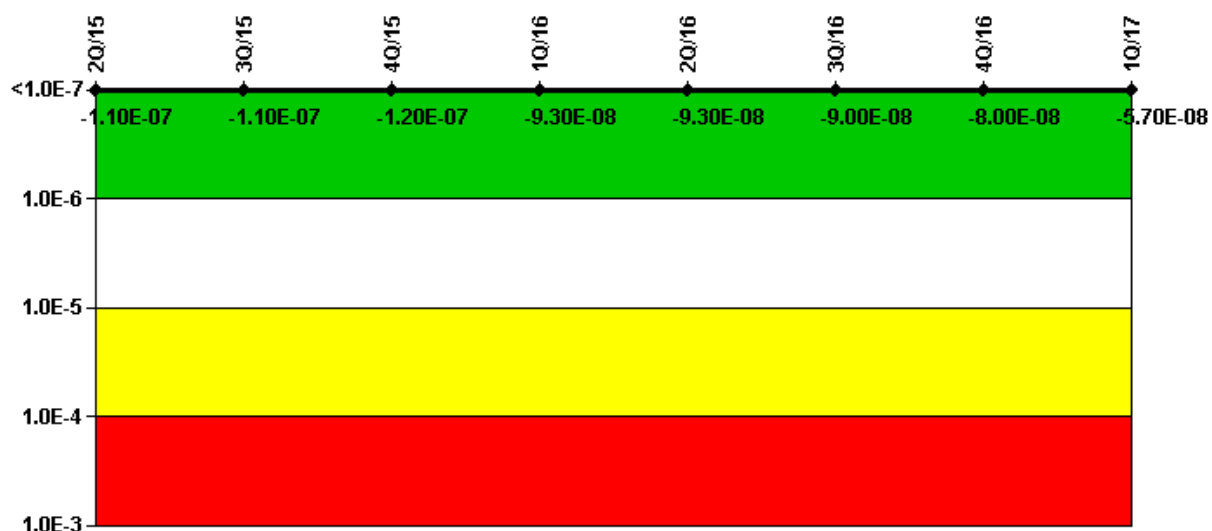
Licensee Comments:

1Q/17: Changed PRA Parameter(s).

1Q/16: Changed PRA Parameter(s). The PINGP PRA Model Revision 5.2 was approved on 11/30/2015 with corresponding MSPI Basis Document Revision 20 approved 3/18/2016. This incorporates FAQ 14-01, data analysis update and plant installed Mayer Groove RCP seals.

3Q/15: PINGP PRA Model Revision 5.1 was approved on 4/20/2014 with a corresponding MSPI Basis Document Revision 18 approved on 6/10/2015 and Coefficients effective 7/1/2015. The PRA model revision was to incorporate Mayer Groove RCP seals installed on Unit 1 and minor updates identified in the PRA Change Database Process.

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 (ΔCDF)	-1.73E-08	-1.73E-08	-1.73E-08	-1.46E-08	-1.46E-08	-1.46E-08	-1.46E-08	-1.25E-08
URI (ΔCDF)	-8.81E-08	-8.83E-08	-1.06E-07	-7.83E-08	-7.83E-08	-7.56E-08	-6.57E-08	-4.49E-08
PLE	NO	NO	NO	NO	NO	NO	NO	NO
Indicator value	-1.10E-07	-1.10E-07	-1.20E-07	-9.30E-08	-9.30E-08	-9.00E-08	-8.00E-08	-5.70E-08

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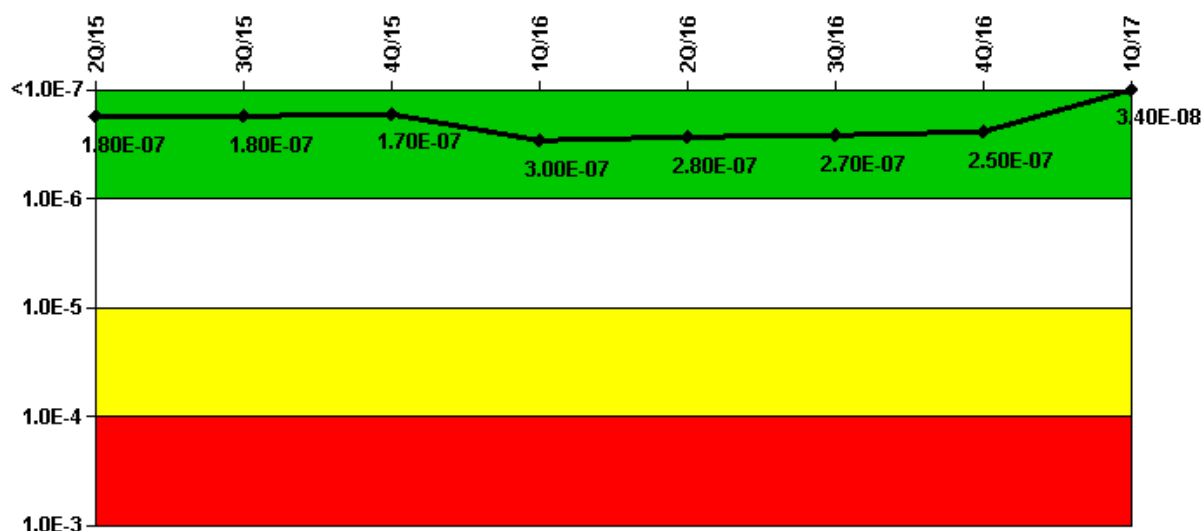
Licensee Comments:

1Q/17: Changed PRA Parameter(s).

1Q/16: Changed PRA Parameter(s). The PINGP PRA Model Revision 5.2 was approved on 11/30/2015 with corresponding MSPI Basis Document Revision 20 approved 3/18/2016. This incorporates FAQ 14-01, data analysis update and plant installed Mayer Groove RCP seals.

3Q/15: PINGP PRA Model Revision 5.1 was approved on 4/20/2014 with a corresponding MSPI Basis Document Revision 18 approved on 6/10/2015 and Coefficients effective 7/1/2015. The PRA model revision was to incorporate Mayer Groove RCP seals installed on Unit 1 and minor updates identified in the PRA Change Database Process.

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 (ΔCDF)	2.19E-07	2.15E-07	2.09E-07	2.90E-07	2.78E-07	2.60E-07	2.41E-07	1.25E-07
URI (ΔCDF)	-4.20E-08	-3.78E-08	-3.75E-08	6.92E-09	6.89E-09	6.91E-09	8.59E-09	-9.10E-08
PLE	NO	NO	NO	NO	NO	NO	NO	NO
Indicator value	1.80E-07	1.80E-07	1.70E-07	3.00E-07	2.80E-07	2.70E-07	2.50E-07	3.40E-08

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Licensee Comments:

1Q/17: Changed PRA Parameter(s).

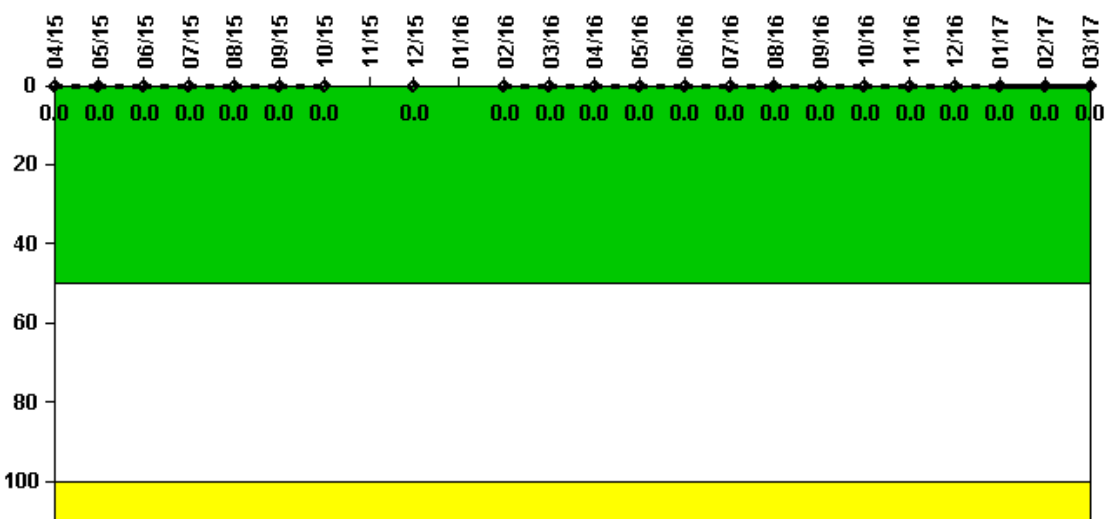
1Q/16: Changed PRA Parameter(s). The PINGP PRA Model Revision 5.2 was approved on 11/30/2015 with corresponding MSPI Basis Document Revision 20 approved 3/18/2016. This incorporates FAQ 14-01, data analysis update and plant installed Mayer Groove RCP seals.

4Q/15: The pending evaluation for loss of bearing water pressure on 121 motor driven cooling water pump in a previous quarter was not an MSPI failure. Bearing water flow was observed, although indicated pressure was zero. Pump was not failed and would not fail prior to meeting mission time.

3Q/15: PINGP PRA Model Revision 5.1 was approved on 4/20/2014 with a corresponding MSPI Basis Document Revision 18 approved on 6/10/2015 and Coefficients effective 7/1/2015. The PRA model revision was to incorporate Mayer Groove RCP seals installed on Unit 1 and minor updates identified in the PRA Change Database Process. A failure evaluation for Sept 26, 2015, loss of bearing water pressure on 121 motor driven cooling water pump while the pump was running is pending. Preliminary determination is that this condition is not an MSPI failure.

2Q/15: MSPI Cooling Water corrections to include unavailability of pump while supply breaker is unavailable and characterize loss of bearing water pressure as unplanned pump unavailability.

Reactor Coolant System Activity



Thresholds: White > 50.0 Yellow > 100.0

Notes

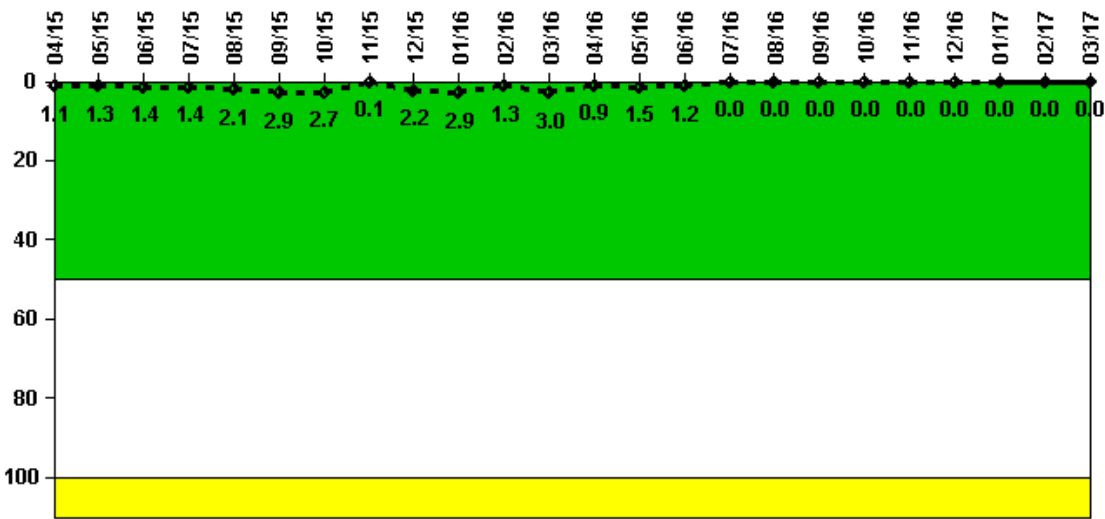
Reactor Coolant System Activity	4/15	5/15	6/15	7/15	8/15	9/15	10/15	11/15	12/15	1/16	2/16	3/16
Maximum activity	0.000055	0.000059	0.000061	0.000061	0.000063	0.000068	0.000065	N/A	0.000015	N/A	0.000042	0.000037
Technical specification limit	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Indicator value	0	0	0	0	0	0	0	N/A	0	N/A	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	0.000042	0.000048	0.000044	0.000044	0.000047	0.000047	0.000053	0.000050	0.000053	0.000051	0.000053	0.000054
Technical specification limit	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Indicator value	0	0	0	0	0	0	0	0	0	0	0	0

TOP

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	0.110	0.128	0.136	0.143	0.206	0.288	0.267	0.006	0.221	0.292	0.131	0.304
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

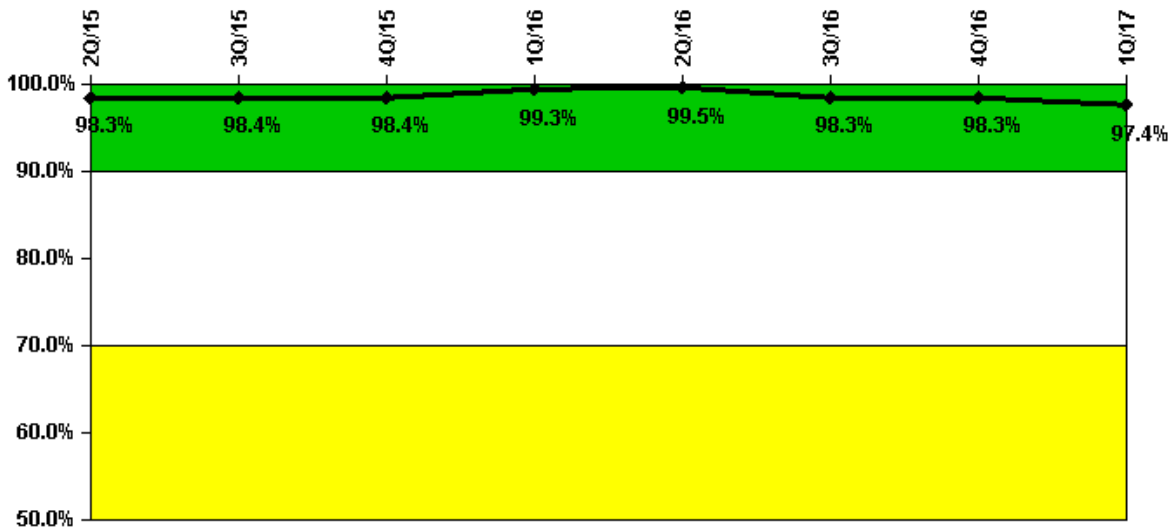
Indicator value	1.1	1.3	1.4	1.4	2.1	2.9	2.7	0.1	2.2	2.9	1.3	3.0
Reactor Coolant System Leakage	4/16	5/16	6/16	7/16	8/16	9/16	10/16	11/16	12/16	1/17	2/17	3/17
Maximum leakage	0.087	0.147	0.120	0	0	0	0	0	0	0	0	0
Technical specification limit	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0

Indicator value	0.9	1.5	1.2	0	0	0	0	0	0	0	0	0
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TOP

Licensee Comments: none

Drill/Exercise Performance



Thresholds: White < 90.0% Yellow < 70.0%

Notes

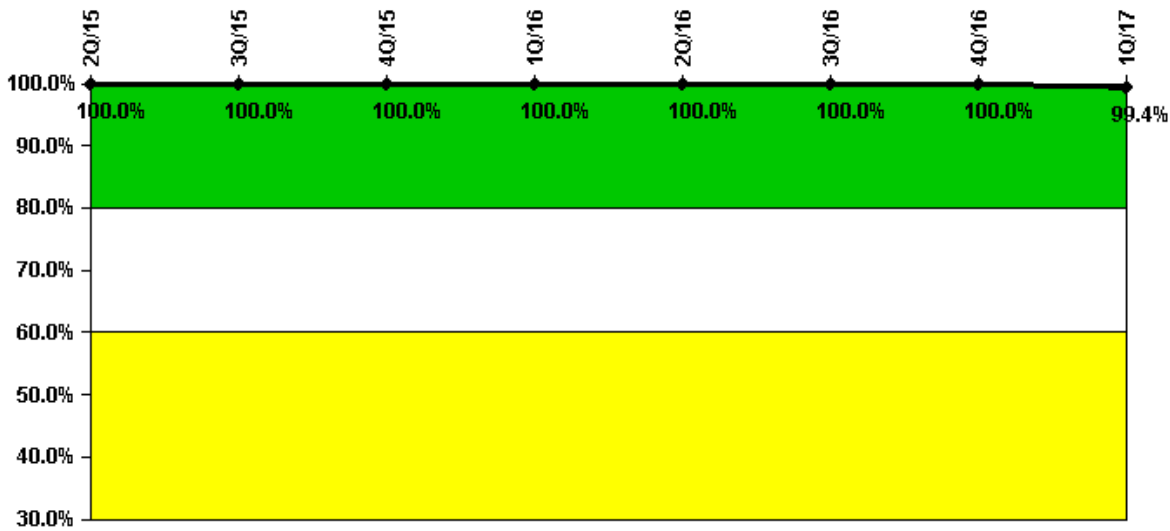
Drill/Exercise Performance	2Q/15	3Q/15	4Q/15	1Q/16	2Q/16	3Q/16	4Q/16	1Q/17
Successful opportunities	28.0	2.0	4.0	40.0	33.0	22.0	10.0	13.0
Total opportunities	28.0	2.0	4.0	40.0	34.0	24.0	10.0	14.0

Indicator value 98.3% 98.4% 98.4% 99.3% 99.5% 98.3% 98.3% 97.4%

▲ TOP

Licensee Comments: none

ERO Drill Participation



Thresholds: White < 80.0% Yellow < 60.0%

Notes

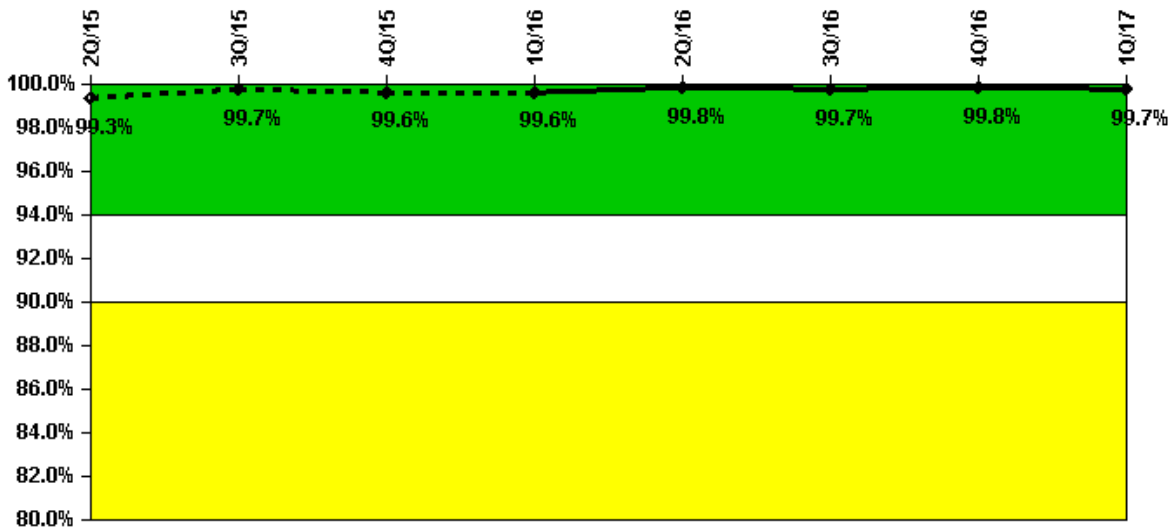
ERO Drill Participation	2Q/15	3Q/15	4Q/15	1Q/16	2Q/16	3Q/16	4Q/16	1Q/17
Participating Key personnel	148.0	142.0	136.0	132.0	126.0	163.0	156.0	159.0
Total Key personnel	148.0	142.0	136.0	132.0	126.0	163.0	156.0	160.0

Indicator value **100.0% 100.0% 100.0% 100.0% 100.0% 100.0% 100.0% 100.0% 99.4%**

▲ TOP

Licensee Comments: none

Alert & Notification System



Thresholds: White < 94.0% Yellow < 90.0%

Notes

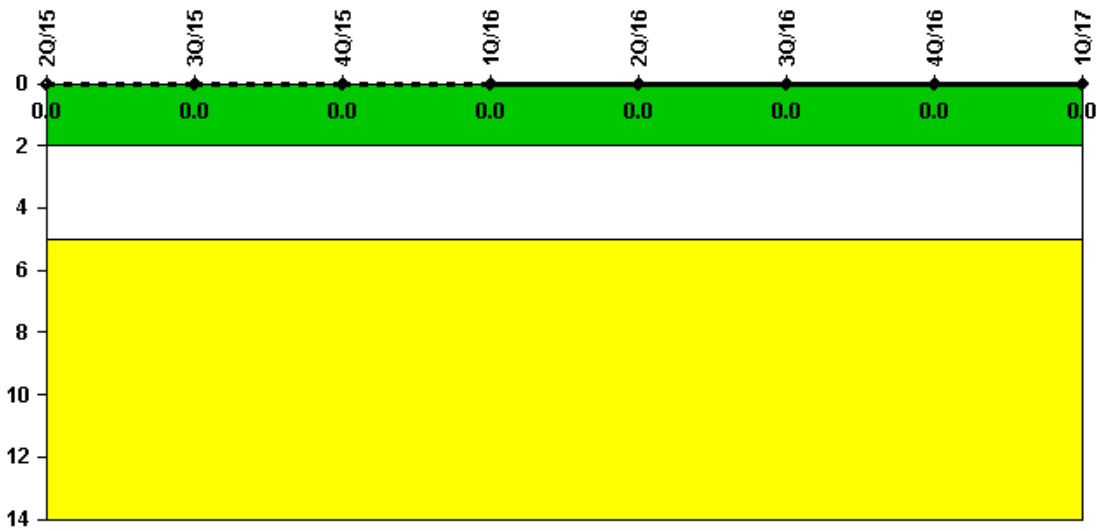
Alert & Notification System	2Q/15	3Q/15	4Q/15	1Q/16	2Q/16	3Q/16	4Q/16	1Q/17
Successful siren-tests	1587	1722	1591	1596	1594	1595	1597	1594
Total sirens-tests	1599	1722	1599	1599	1599	1599	1599	1599

Indicator value **99.3% 99.7% 99.6% 99.6% 99.8% 99.7% 99.8% 99.7%**

▲ TOP

Licensee Comments: none

Occupational Exposure Control Effectiveness



Thresholds: White > 2.0 Yellow > 5.0

Notes

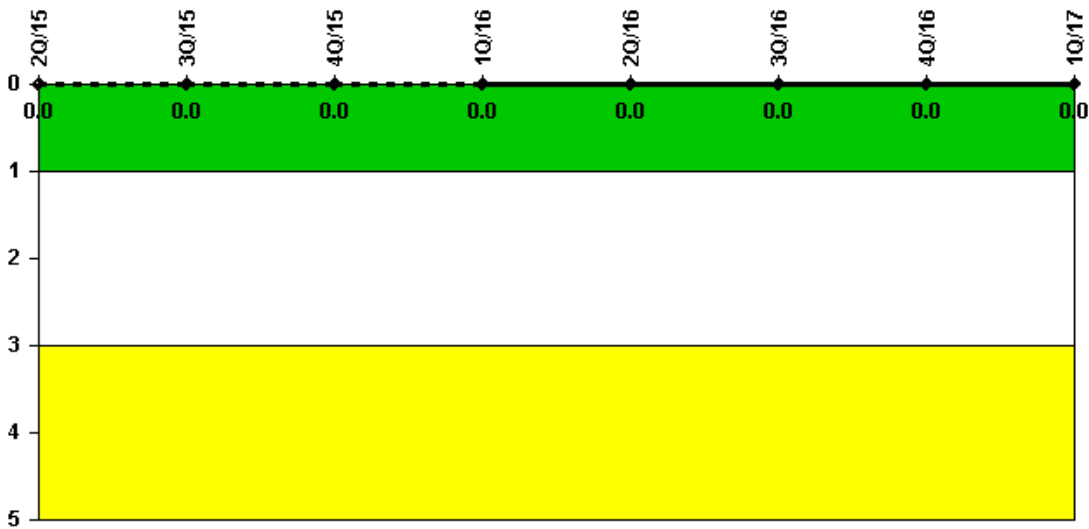
Occupational Exposure Control Effectiveness 2Q/15 3Q/15 4Q/15 1Q/16 2Q/16 3Q/16 4Q/16 1Q/17

High radiation area occurrences	0	0	0	0	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 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

[TOP](#)

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