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## **Prairie Island 1 – Quarterly Performance Indicators**

### **1Q/2017 Performance Indicators**

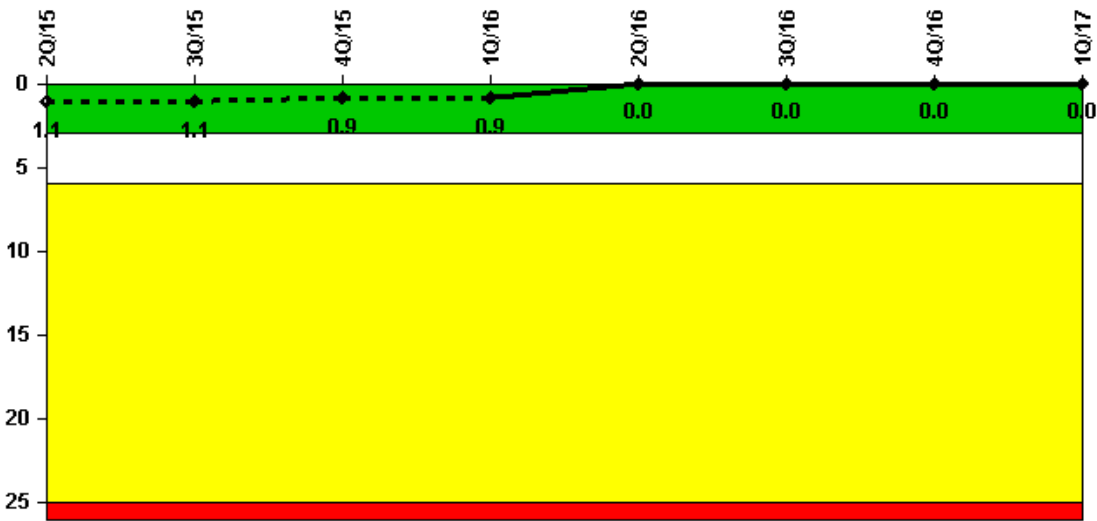
The solid trend line represents the current reporting period.

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**

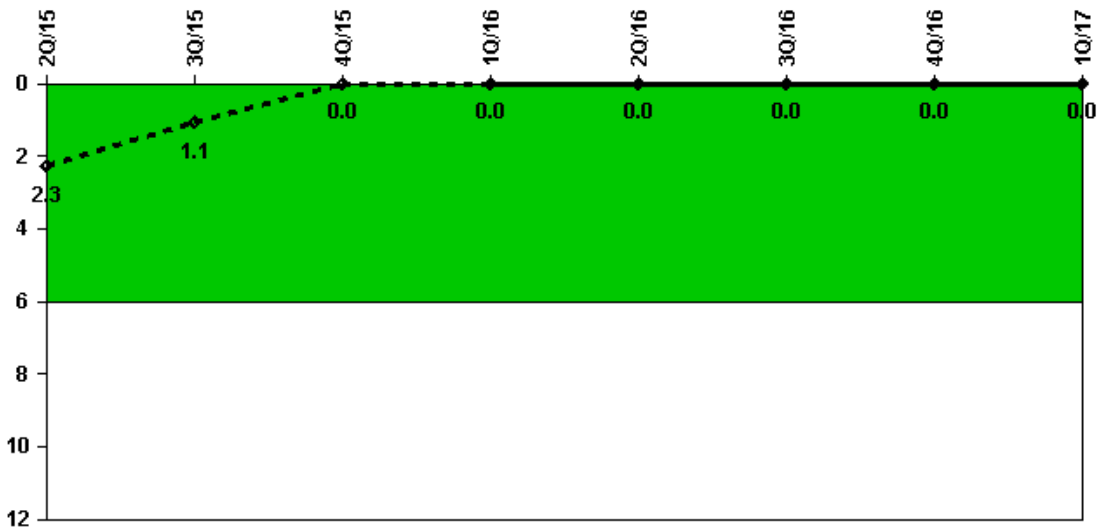
Unplanned Scrams per 7000 Critical Hrs	2Q/15	3Q/15	4Q/15	1Q/16	2Q/16	3Q/16	4Q/16	1Q/17
Unplanned scrams	1.0	0	0	0	0	0	0	0
Critical hours	1378.2	2208.0	2209.0	2183.0	2184.0	2208.0	1349.3	2159.0

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

### Unplanned Power Changes per 7000 Critical Hrs



Thresholds: White > 6.0

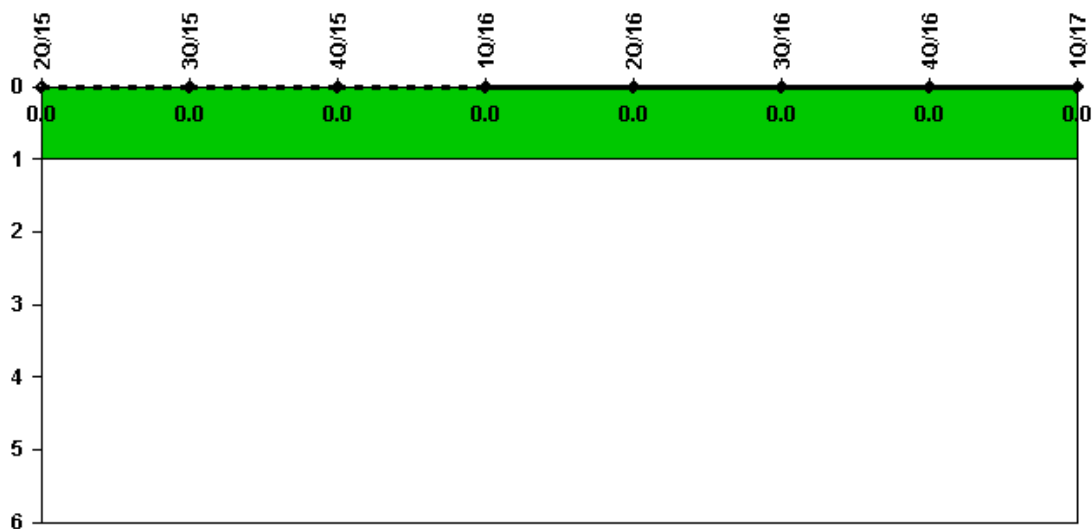
**Notes**

Unplanned Power Changes per 7000 Critical Hrs	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	1378.2	2208.0	2209.0	2183.0	2184.0	2208.0	1349.3	2159.0
<b>Indicator value</b>	<b>2.3</b>	<b>1.1</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>

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Licensee Comments: none

**Unplanned Scrams with Complications**



Thresholds: White > 1.0

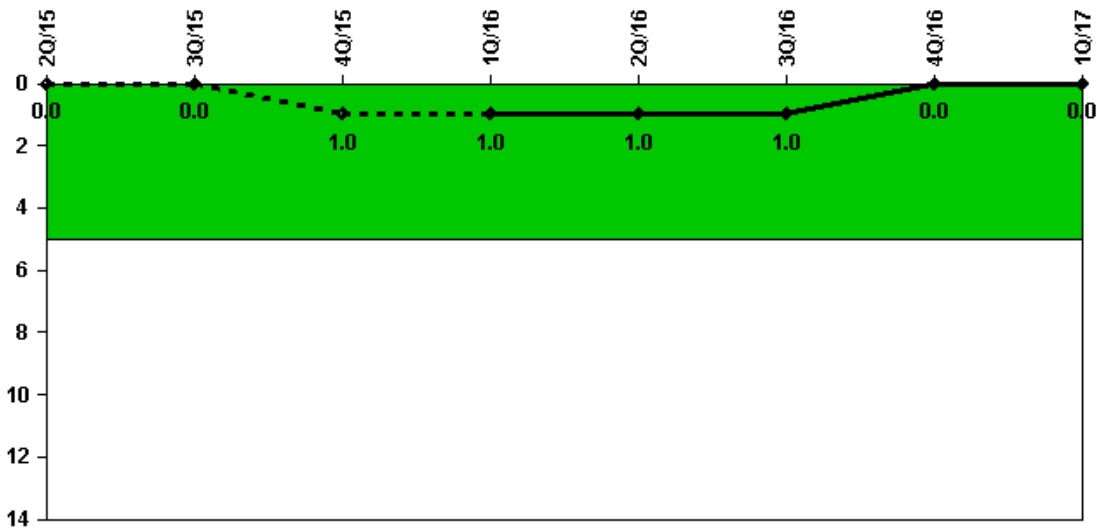
**Notes**

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
<b>Indicator value</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>

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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   1   0   0   0   0   0

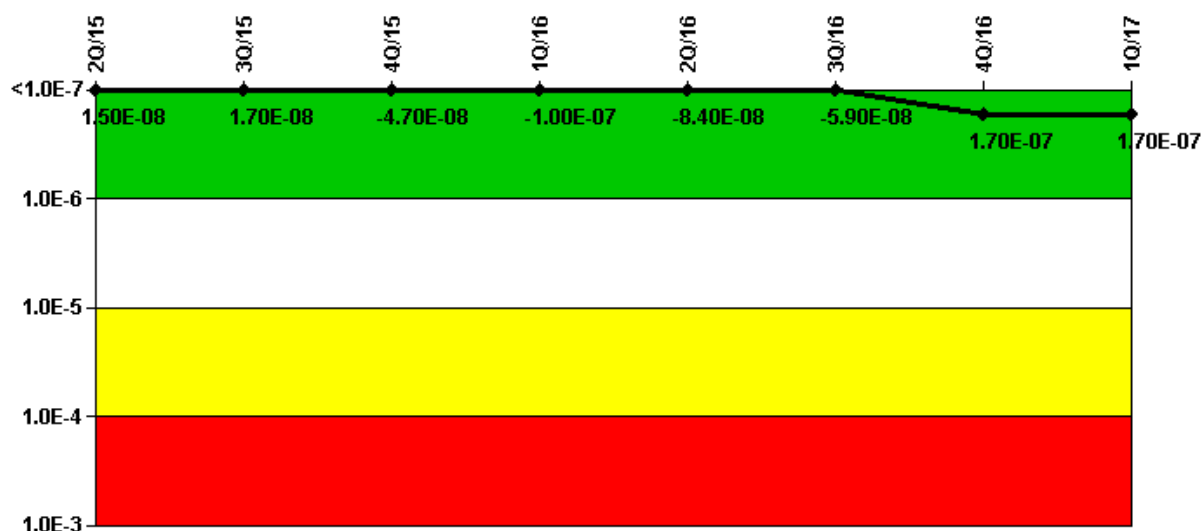
**Indicator value**    0   0   1   1   1   1   0   0

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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 50-282/2015-002-00, 14 Fan Coil Unit Leak (lower head) reported on 4/10/2015 has been cancelled. Based on engineering's analysis, containment leakage was less than the available leakage margin. The safety function to control the release of radioactive material was not lost.  
 2Q/15: LER 50-282/2015-002-00, 4/10/2015, 14 Fan Coil Unit Leak (lower head)

### 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)	2.96E-08	3.08E-08	2.23E-08	2.39E-09	1.95E-08	4.46E-08	1.56E-07	1.61E-07
URI (ΔCDF)	-1.47E-08	-1.39E-08	-6.89E-08	-1.04E-07	-1.04E-07	-1.04E-07	1.07E-08	6.66E-09
PLE	NO	NO	NO	NO	NO	NO	NO	NO
<b>Indicator value</b>	<b>1.50E-08</b>	<b>1.70E-08</b>	<b>4.70E-08</b>	<b>1.00E-07</b>	<b>8.40E-08</b>	<b>5.90E-08</b>	<b>1.70E-07</b>	<b>1.70E-07</b>

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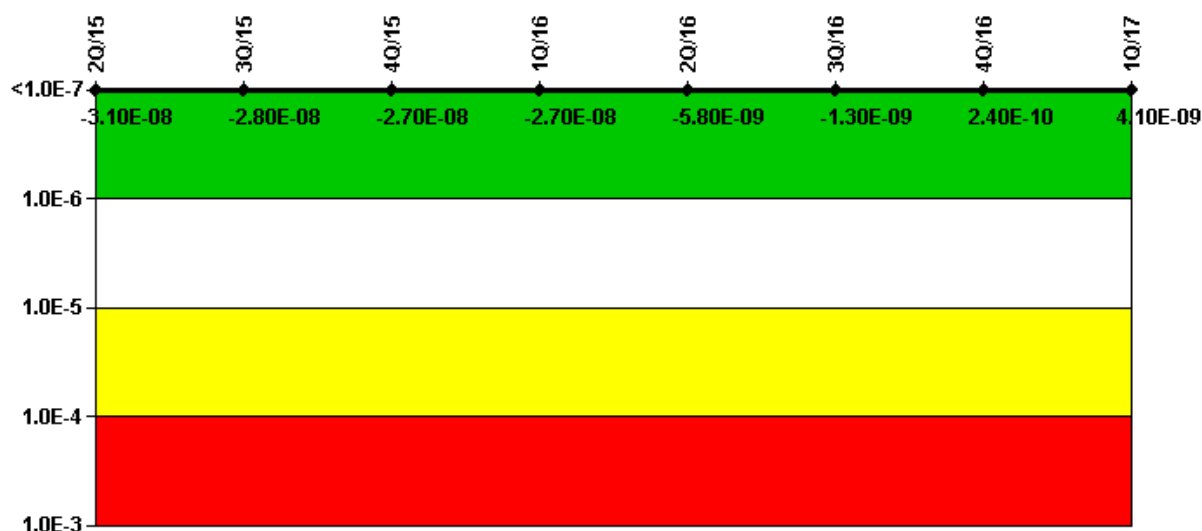
Licensee Comments:

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 ( $\Delta$ CDF)	-8.16E-09	-5.44E-09	-6.11E-09	-2.86E-09	1.85E-08	2.29E-08	2.46E-08	2.92E-08
URI ( $\Delta$ CDF)	-2.32E-08	-2.28E-08	-2.07E-08	-2.42E-08	-2.42E-08	-2.42E-08	-2.44E-08	-2.51E-08
PLE	NO	NO	NO	NO	NO	NO	NO	NO
<b>Indicator value</b>	<b>-3.10E-08</b>	<b>-2.80E-08</b>	<b>-2.70E-08</b>	<b>-2.70E-08</b>	<b>-5.80E-09</b>	<b>-1.30E-09</b>	<b>2.40E-10</b>	<b>4.10E-09</b>

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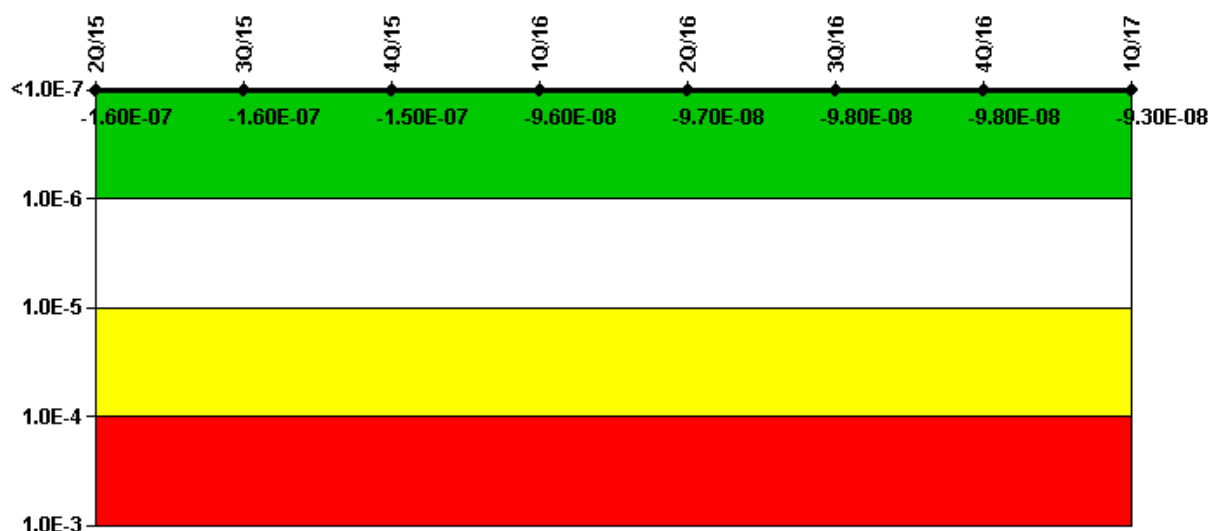
Licensee Comments:

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 (ΔCDF)	-2.40E-08	-2.38E-08	-2.38E-08	-2.10E-08	-2.10E-08	-2.10E-08	-2.01E-08	-1.89E-08
URI (ΔCDF)	-1.35E-07	-1.32E-07	-1.27E-07	-7.47E-08	-7.57E-08	-7.67E-08	-7.76E-08	-7.38E-08
PLE	NO	NO	NO	NO	NO	NO	NO	NO
<b>Indicator value</b>	<b>-1.60E-07</b>	<b>-1.60E-07</b>	<b>-1.50E-07</b>	<b>-9.60E-08</b>	<b>-9.70E-08</b>	<b>-9.80E-08</b>	<b>-9.80E-08</b>	<b>-9.30E-08</b>

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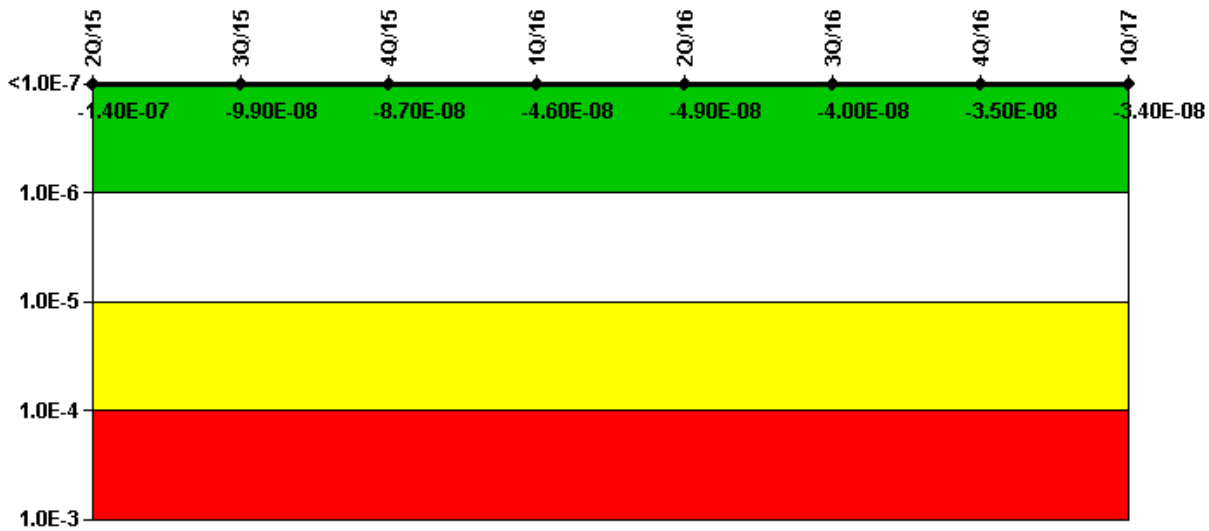
Licensee Comments:

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)	-1.71E-08	2.55E-08	1.75E-08	1.16E-08	9.76E-09	1.87E-08	3.02E-08	3.11E-08
URI (ΔCDF)	-1.23E-07	-1.24E-07	-1.05E-07	-5.80E-08	-5.84E-08	-5.86E-08	-6.56E-08	-6.52E-08
PLE	NO	NO	NO	NO	NO	NO	NO	NO
<b>Indicator value</b>	<b>-1.40E-07</b>	<b>-9.90E-08</b>	<b>-8.70E-08</b>	<b>-4.60E-08</b>	<b>-4.90E-08</b>	<b>-4.00E-08</b>	<b>-3.50E-08</b>	<b>-3.40E-08</b>

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Licensee Comments:

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

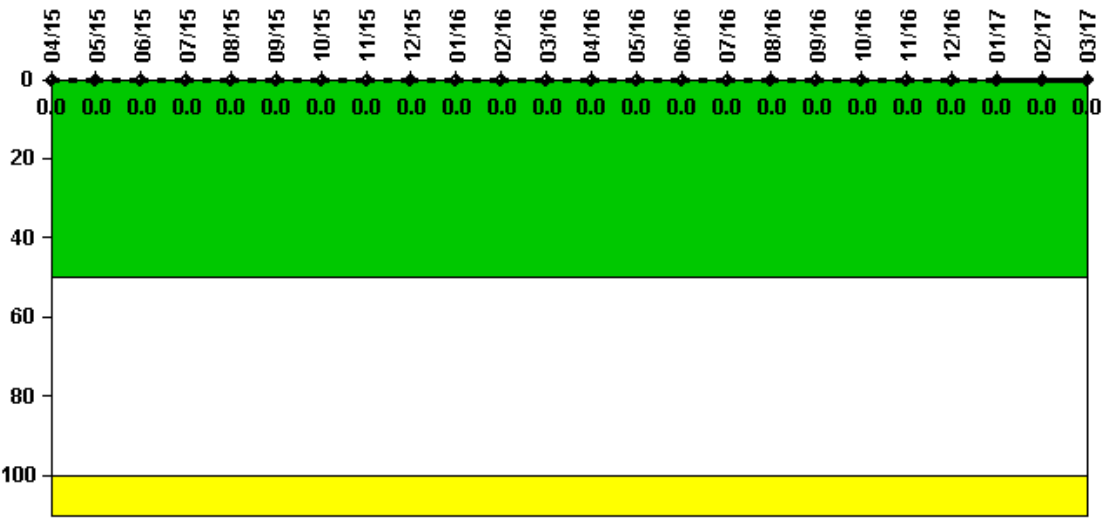
1Q/16: Changed PRA Parameter(s). The PINGP PRA Model Revision 5.2 was approved on 11/30/2015 with corresponding MSPI Basis Document Revision 20 approved 3/18/2016. This incorporates FAQ 14-01, data analysis update and plant installed Mayer Groove RCP seals.

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.





### Reactor Coolant System Activity



Thresholds: White > 50.0 Yellow > 100.0

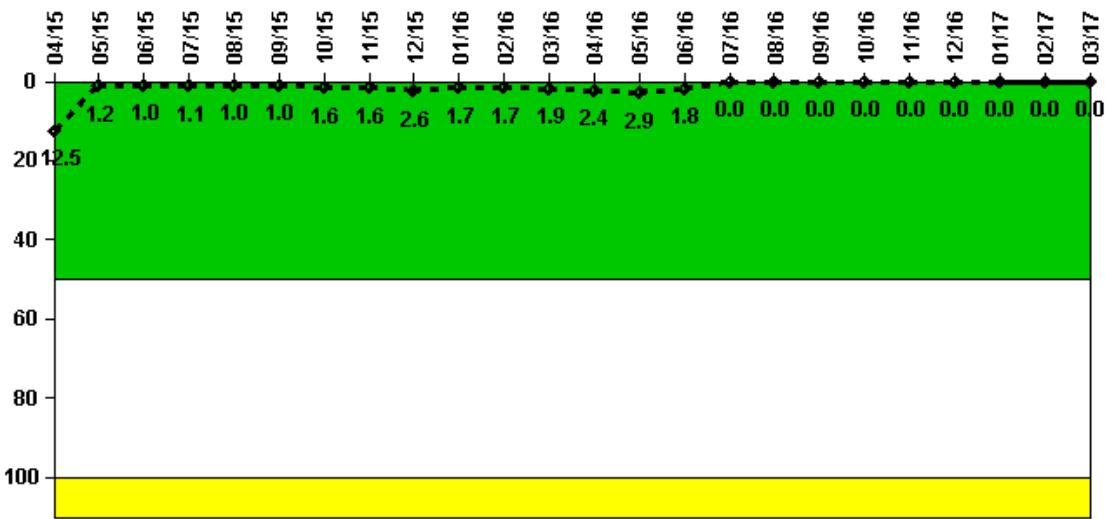
**Notes**

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	0.000034	0.000040	0.000035	0.000042	0.000040	0.000039	0.000040	0.000041	0.000042	0.000043	0.000044	0.000049
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
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	0.000047	0.000054	0.000052	0.000052	0.000129	0.000057	0.000050	0.000028	0.000038	0.000031	0.000036	0.000047
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

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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	1.247	0.115	0.101	0.112	0.096	0.096	0.156	0.163	0.260	0.165	0.172	0.188
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

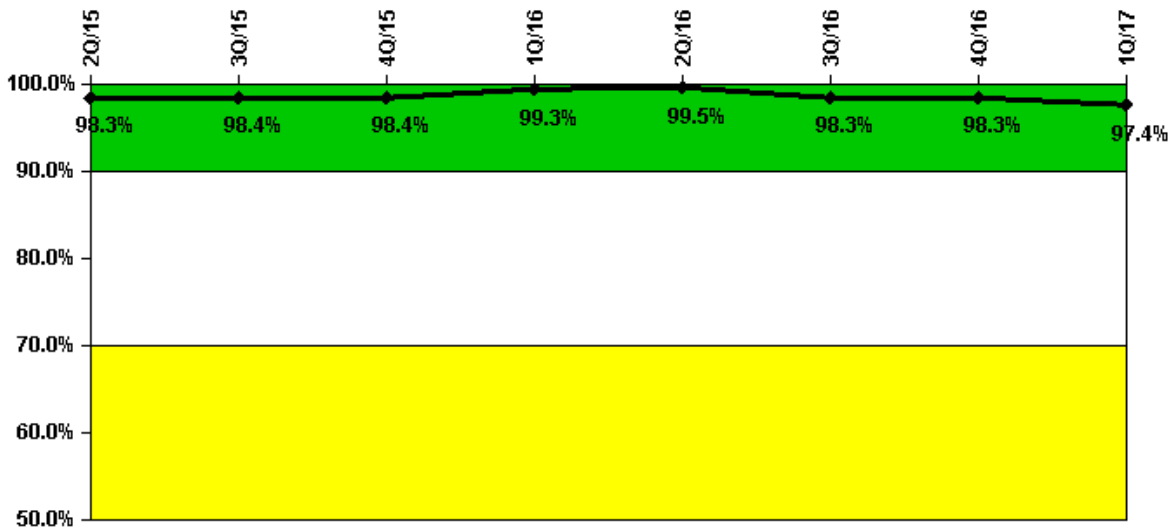
Indicator value	12.5	1.2	1.0	1.1	1.0	1.0	1.6	1.6	2.6	1.7	1.7	1.9
Reactor Coolant System Leakage	4/16	5/16	6/16	7/16	8/16	9/16	10/16	11/16	12/16	1/17	2/17	3/17
Maximum leakage	0.237	0.291	0.178	0	0	0	0	0	0	0	0	0
Technical specification limit	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0

Indicator value	2.4	2.9	1.8	0	0	0	0	0	0	0	0	0
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Licensee Comments: none

**Drill/Exercise Performance**



Thresholds: White < 90.0% Yellow < 70.0%

**Notes**

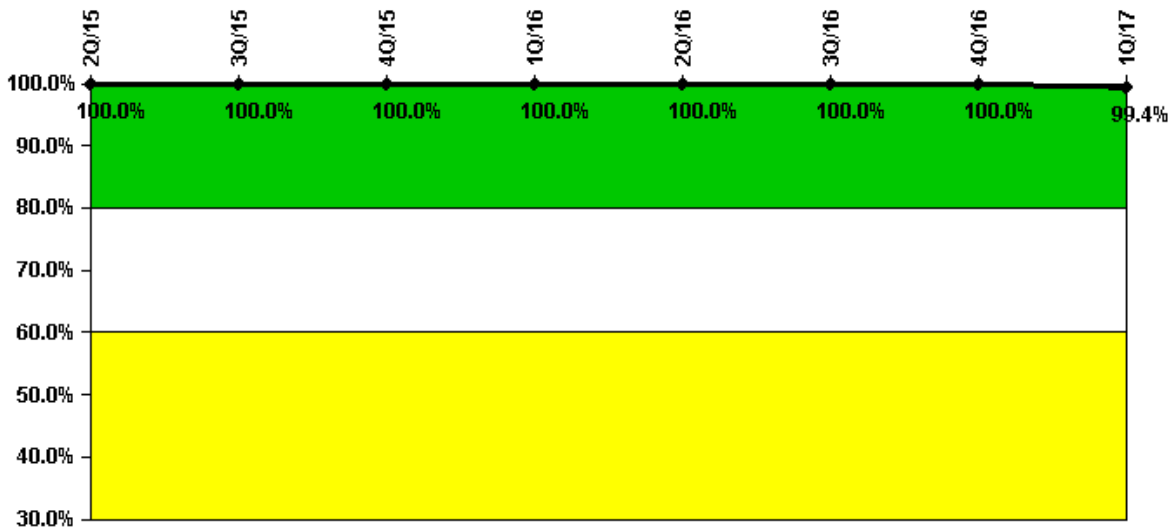
Drill/Exercise Performance	2Q/15	3Q/15	4Q/15	1Q/16	2Q/16	3Q/16	4Q/16	1Q/17
Successful opportunities	28.0	2.0	4.0	40.0	33.0	22.0	10.0	13.0
Total opportunities	28.0	2.0	4.0	40.0	34.0	24.0	10.0	14.0

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

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Licensee Comments: none

**ERO Drill Participation**



Thresholds: White < 80.0% Yellow < 60.0%

**Notes**

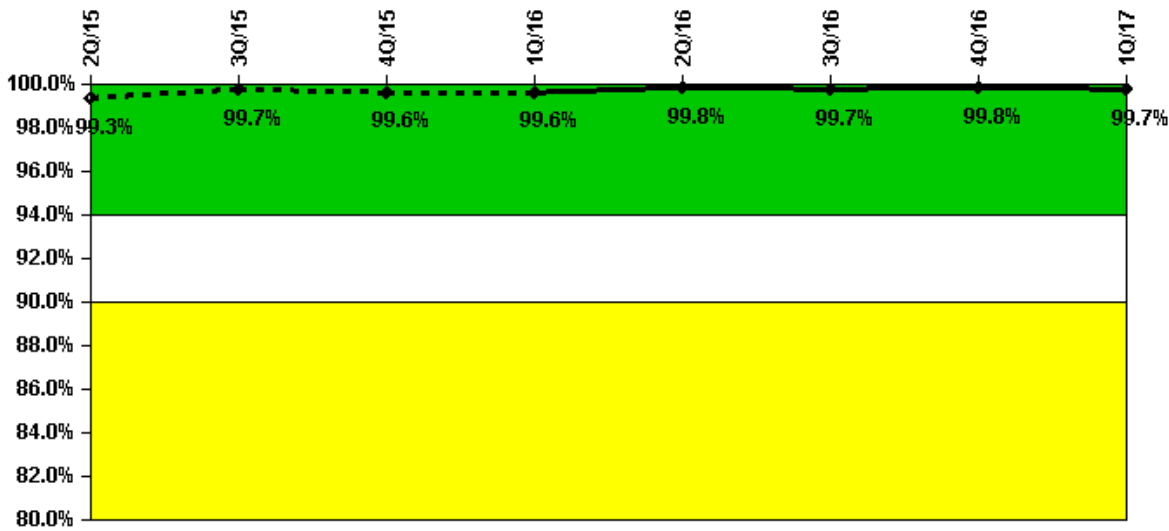
ERO Drill Participation	2Q/15	3Q/15	4Q/15	1Q/16	2Q/16	3Q/16	4Q/16	1Q/17
Participating Key personnel	148.0	142.0	136.0	132.0	126.0	163.0	156.0	159.0
Total Key personnel	148.0	142.0	136.0	132.0	126.0	163.0	156.0	160.0

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

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Licensee Comments: none

### Alert & Notification System



Thresholds: White < 94.0% Yellow < 90.0%

#### Notes

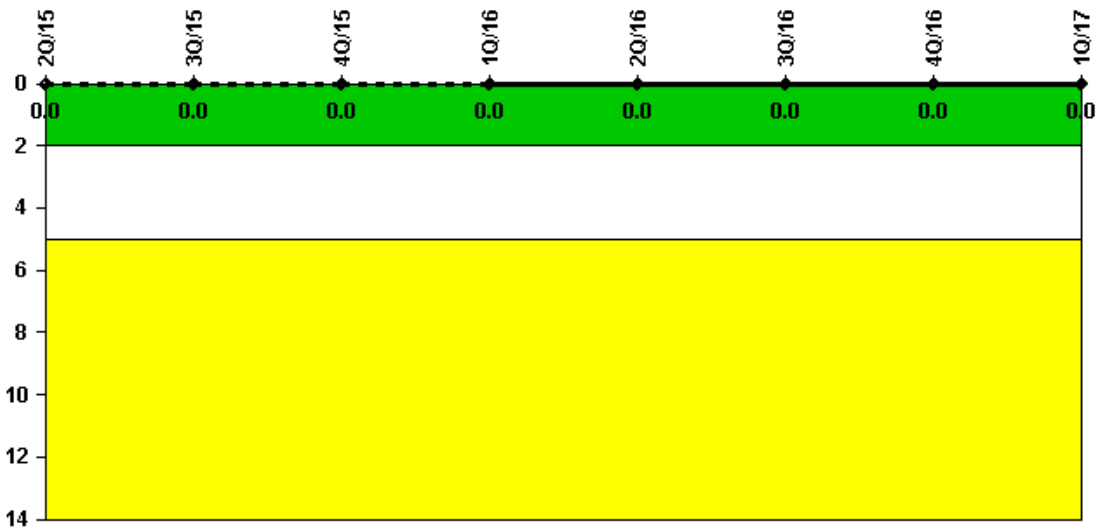
Alert & Notification System	2Q/15	3Q/15	4Q/15	1Q/16	2Q/16	3Q/16	4Q/16	1Q/17
Successful siren-tests	1587	1722	1591	1596	1594	1595	1597	1594
Total sirens-tests	1599	1722	1599	1599	1599	1599	1599	1599

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

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Licensee Comments: none

### Occupational Exposure Control Effectiveness



Thresholds: White > 2.0 Yellow > 5.0

**Notes**

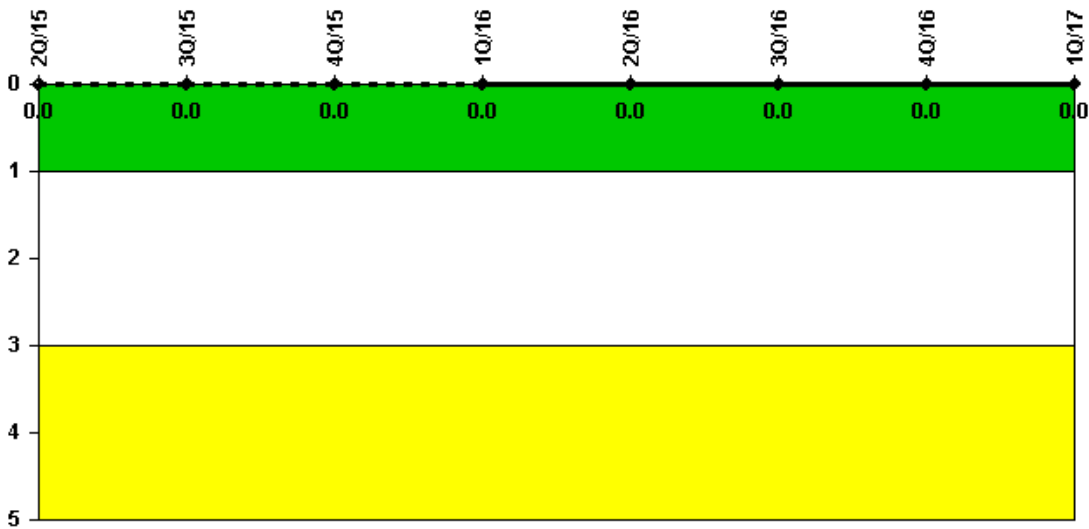
**Occupational Exposure Control Effectiveness** 2Q/15 3Q/15 4Q/15 1Q/16 2Q/16 3Q/16 4Q/16 1Q/17

High radiation area occurrences	0	0	0	0	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
<b>Indicator value</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>

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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