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## Prairie Island 1 – Quarterly Performance Indicators

### 4Q/2017 Performance Indicators

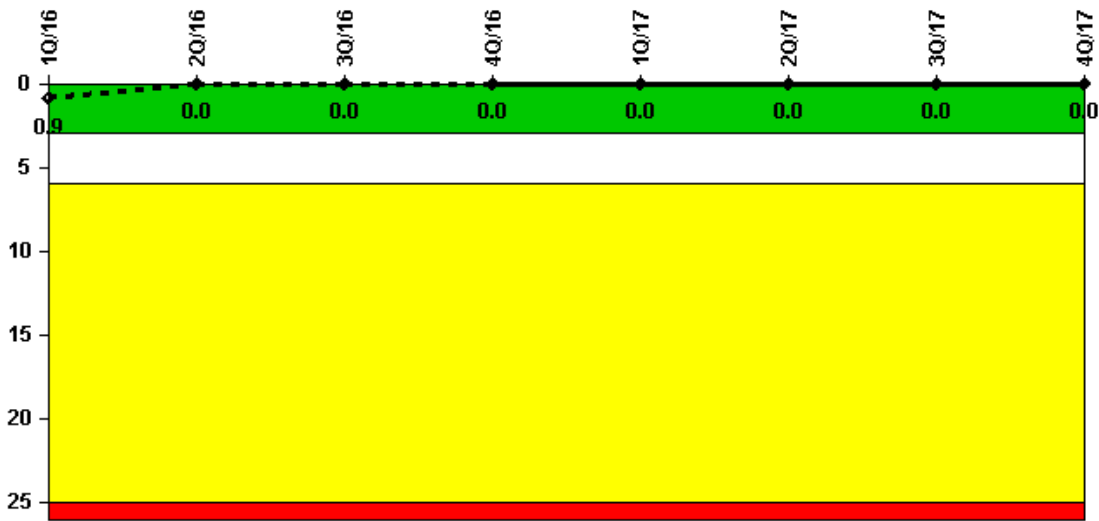
The solid trend line represents the current reporting period.

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)
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- Alert and Notification System Reliability (EP03)
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- Protected Area Equipment (PP01)

### Unplanned Scrams per 7000 Critical Hrs



Thresholds: White > 3.0 Yellow > 6.0 Red > 25.0

#### Notes

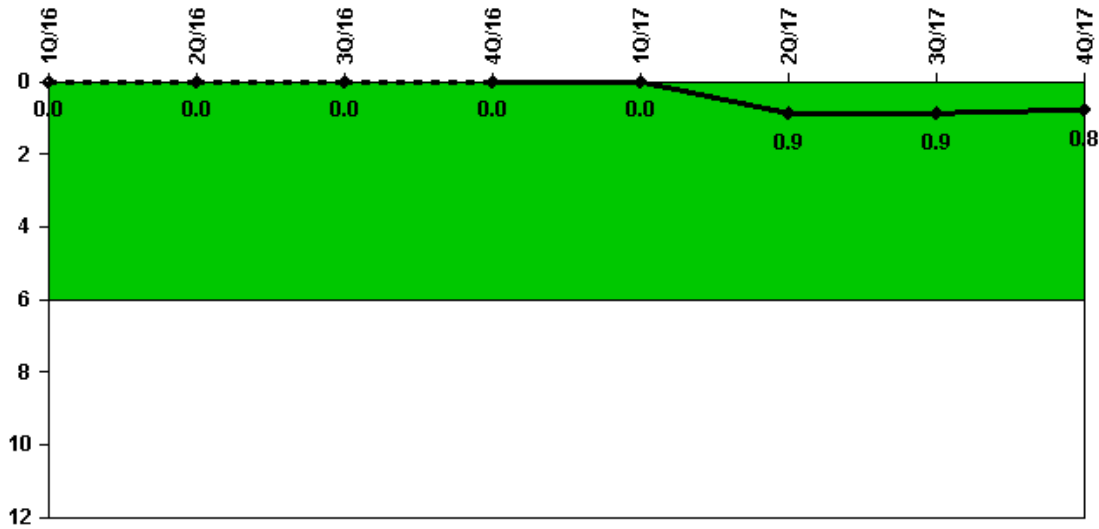
Unplanned Scrams per 7000 Critical Hrs	1Q/16	2Q/16	3Q/16	4Q/16	1Q/17	2Q/17	3Q/17	4Q/17
Unplanned scrams	0	0	0	0	0	0	0	0
Critical hours	2183.0	2184.0	2208.0	1349.3	2159.0	2184.0	2208.0	2209.0

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

### Unplanned Power Changes per 7000 Critical Hrs



Thresholds: White > 6.0

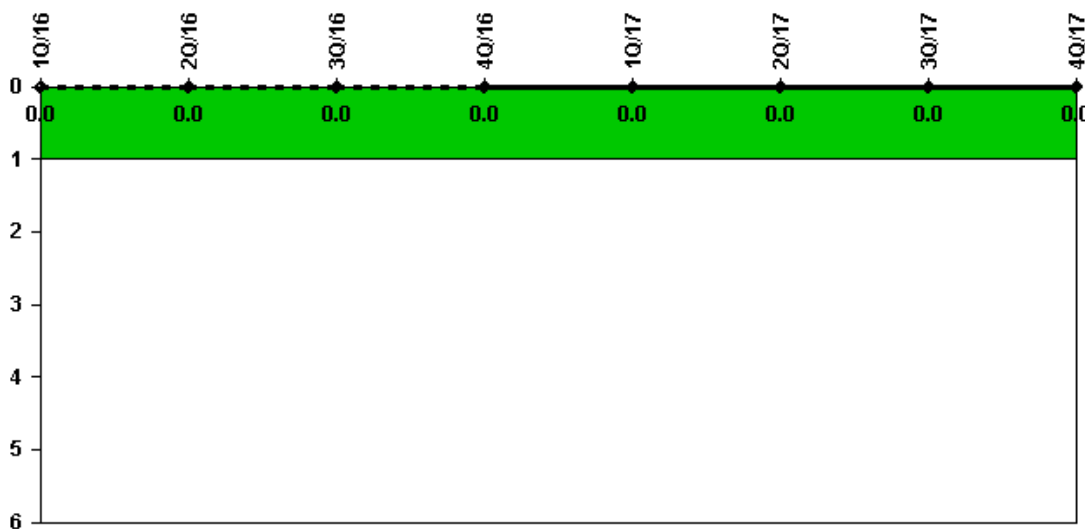
**Notes**

Unplanned Power Changes per 7000 Critical Hrs	1Q/16	2Q/16	3Q/16	4Q/16	1Q/17	2Q/17	3Q/17	4Q/17
Unplanned power changes	0	0	0	0	0	1.0	0	0
Critical hours	2183.0	2184.0	2208.0	1349.3	2159.0	2184.0	2208.0	2209.0
<b>Indicator value</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0.9</b>	<b>0.9</b>	<b>0.8</b>

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Licensee Comments: none

**Unplanned Scrams with Complications**



Thresholds: White > 1.0

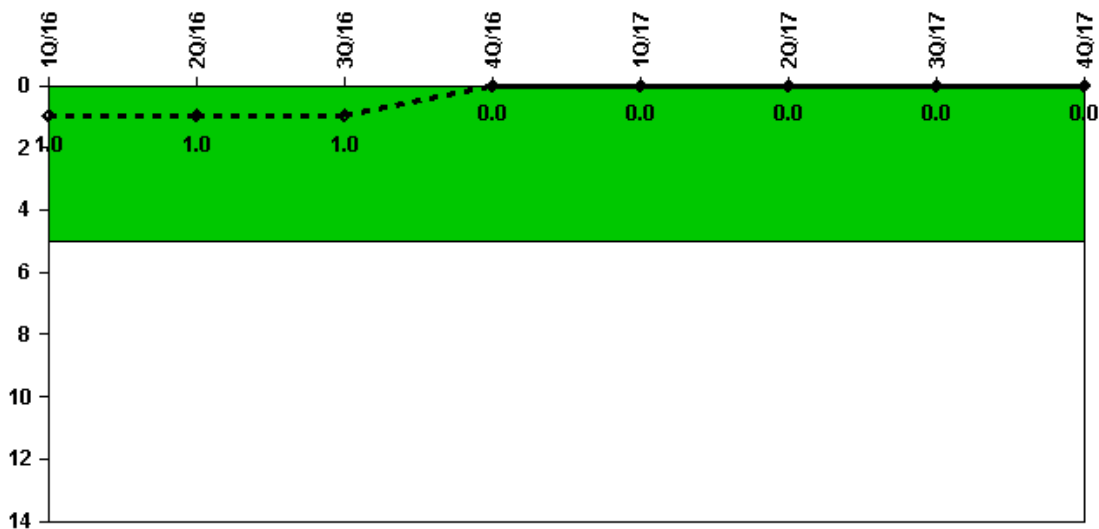
**Notes**

Unplanned Scrams with Complications	1Q/16	2Q/16	3Q/16	4Q/16	1Q/17	2Q/17	3Q/17	4Q/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) 1Q/16 2Q/16 3Q/16 4Q/16 1Q/17 2Q/17 3Q/17 4Q/17

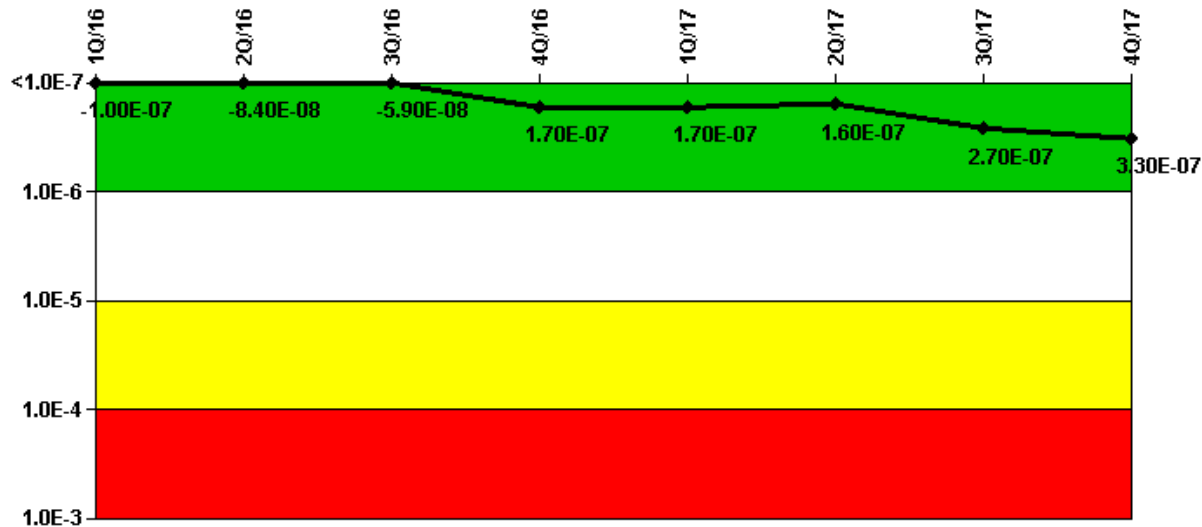
Safety System Functional Failures 0 0 0 0 0 0 0 0

Indicator value 1 1 1 0 0 0 0 0

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Licensee Comments: none

### 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**

	1Q/16	2Q/16	3Q/16	4Q/16	1Q/17	2Q/17	3Q/17	4Q/17
UAI (ΔCDF)	2.39E-09	1.95E-08	4.46E-08	1.56E-07	1.61E-07	1.55E-07	1.51E-07	2.05E-07
URI (ΔCDF)	-1.04E-07	-1.04E-07	-1.04E-07	1.07E-08	6.66E-09	9.00E-09	1.20E-07	1.22E-07
PLE	NO	NO	NO	NO	NO	NO	NO	NO
<b>Indicator value</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>	<b>1.60E-07</b>	<b>2.70E-07</b>	<b>3.30E-07</b>

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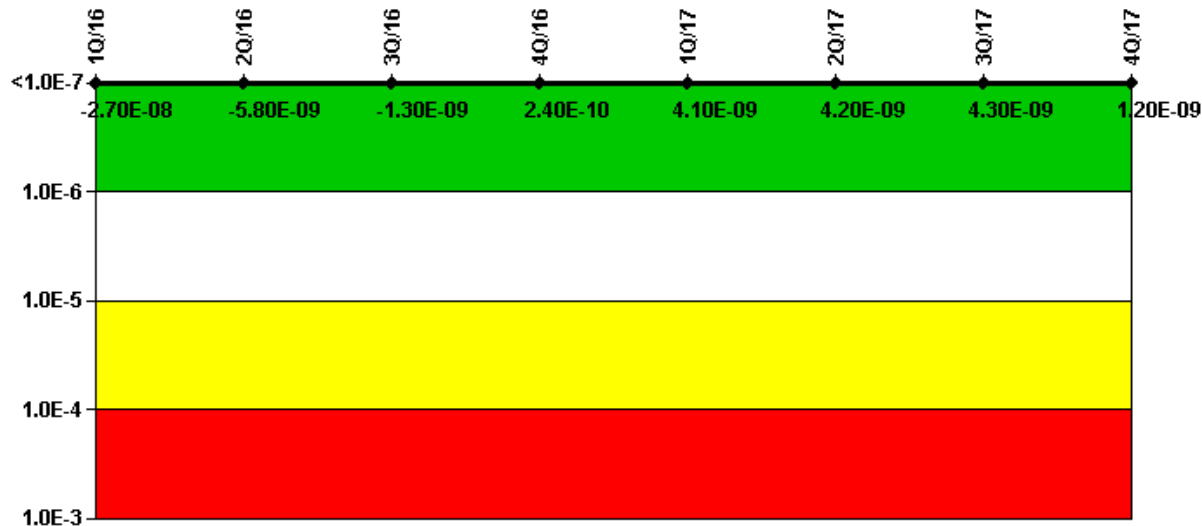
Licensee Comments:

3Q/17: Engineering evaluation of Unit 1 EAC failure on September 24, 2017 is pending. The failure event is preliminarily submitted as a failure to load/run.

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.

**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**

	1Q/16	2Q/16	3Q/16	4Q/16	1Q/17	2Q/17	3Q/17	4Q/17
UAI (ΔCDF)	-2.86E-09	1.85E-08	2.29E-08	2.46E-08	2.92E-08	2.93E-08	2.94E-08	2.63E-08
URI (ΔCDF)	-2.42E-08	-2.42E-08	-2.42E-08	-2.44E-08	-2.51E-08	-2.51E-08	-2.51E-08	-2.51E-08

PLE	NO	NO	NO	NO	NO	NO	NO	NO	NO
<b>Indicator value</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>	<b>4.20E-09</b>	<b>4.30E-09</b>	<b>1.20E-09</b>	

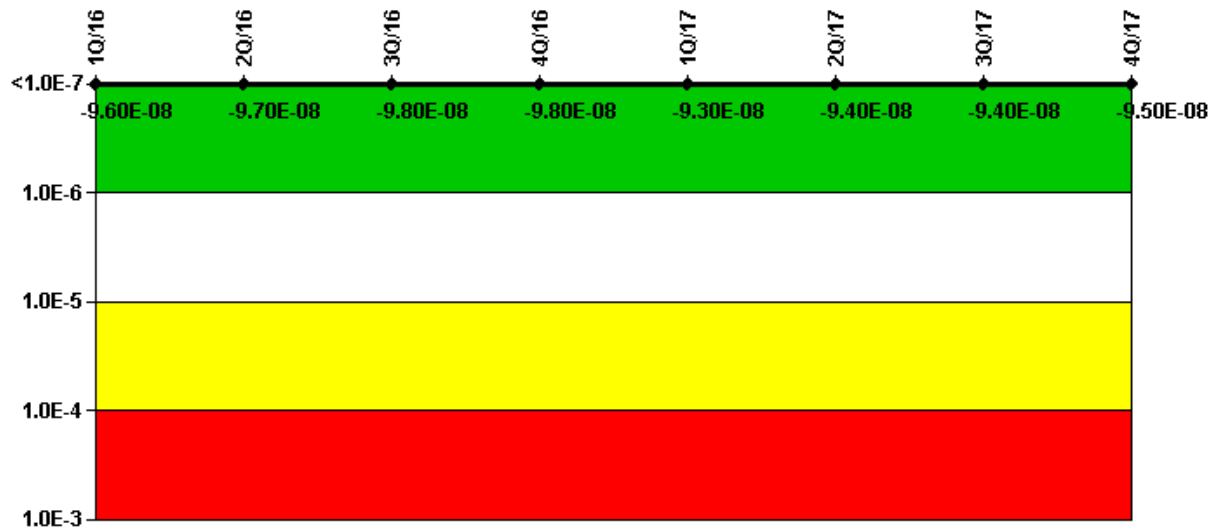
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Licensee Comments:

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.

### 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

	1Q/16	2Q/16	3Q/16	4Q/16	1Q/17	2Q/17	3Q/17	4Q/17
UAI (ΔCDF)	-2.10E-08	-2.10E-08	-2.10E-08	-2.01E-08	-1.89E-08	-1.89E-08	-1.89E-08	-1.89E-08
URI (ΔCDF)	-7.47E-08	-7.57E-08	-7.67E-08	-7.76E-08	-7.38E-08	-7.47E-08	-7.55E-08	-7.63E-08
PLE	NO	NO	NO	NO	NO	NO	NO	NO
<b>Indicator value</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>	<b>-9.40E-08</b>	<b>-9.40E-08</b>	<b>-9.50E-08</b>

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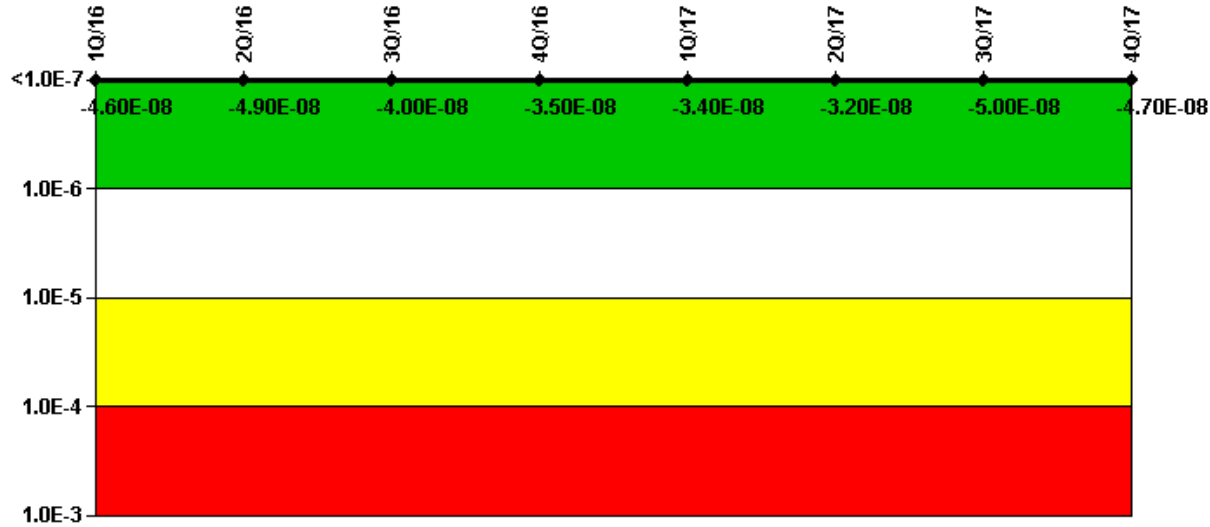
Licensee Comments:

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.

### 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**

	1Q/16	2Q/16	3Q/16	4Q/16	1Q/17	2Q/17	3Q/17	4Q/17
UAI (ΔCDF)	1.16E-08	9.76E-09	1.87E-08	3.02E-08	3.11E-08	3.32E-08	1.56E-08	8.15E-09
URI (ΔCDF)	-5.80E-08	-5.84E-08	-5.86E-08	-6.56E-08	-6.52E-08	-6.54E-08	-6.56E-08	-5.53E-08
PLE	NO	NO	NO	NO	NO	NO	NO	NO
<b>Indicator value</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>	<b>-3.20E-08</b>	<b>-5.00E-08</b>	<b>-4.70E-08</b>

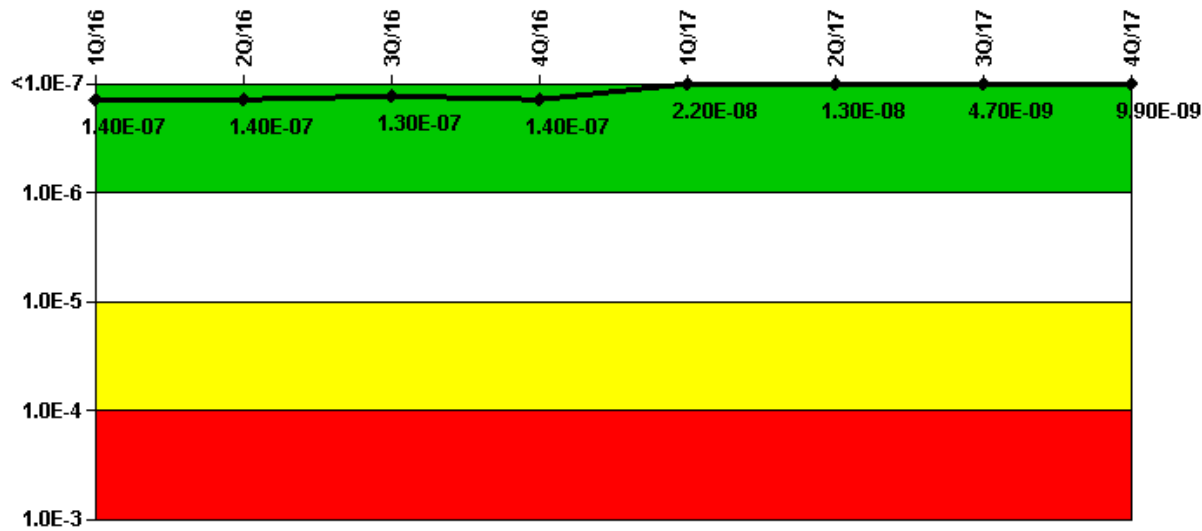
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Licensee Comments:

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.

### 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**

	1Q/16	2Q/16	3Q/16	4Q/16	1Q/17	2Q/17	3Q/17	4Q/17
UAI (ΔCDF)	1.64E-07	1.64E-07	1.53E-07	1.58E-07	8.87E-08	7.96E-08	7.09E-08	7.58E-08
URI (ΔCDF)	-2.05E-08	-2.07E-08	-2.11E-08	-2.10E-08	-6.69E-08	-6.69E-08	-6.62E-08	-6.59E-08
PLE	NO	NO	NO	NO	NO	NO	NO	NO
<b>Indicator value</b>	<b>1.40E-07</b>	<b>1.40E-07</b>	<b>1.30E-07</b>	<b>1.40E-07</b>	<b>2.20E-08</b>	<b>1.30E-08</b>	<b>4.70E-09</b>	<b>9.90E-09</b>

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Licensee Comments:

2Q/17: Corrected device type for motor valves which became MSPI monitored components effective 1/1/2016.

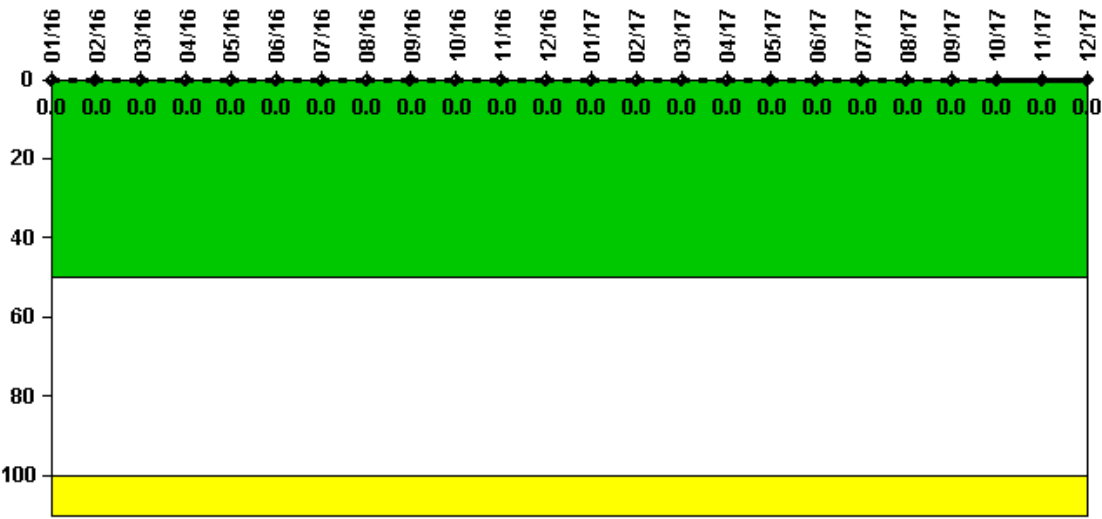
1Q/17: Changed PRA Parameter(s).

1Q/16: 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.

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.



### Reactor Coolant System Activity



Thresholds: White > 50.0 Yellow > 100.0

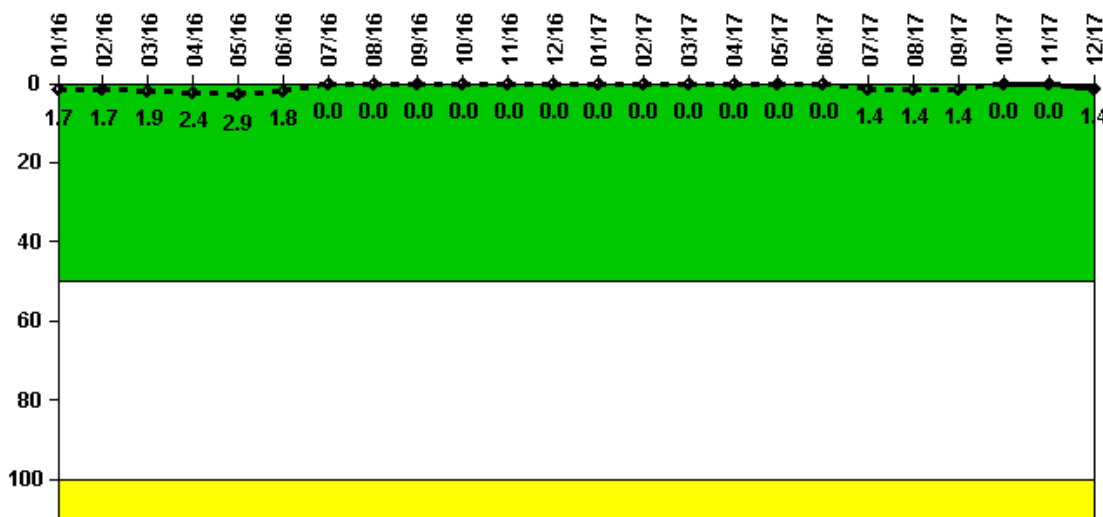
**Notes**

Reactor Coolant System Activity	1/16	2/16	3/16	4/16	5/16	6/16	7/16	8/16	9/16	10/16	11/16	12/16
Maximum activity	0.000043	0.000044	0.000049	0.000047	0.000054	0.000052	0.000052	0.000129	0.000057	0.000050	0.000028	0.000038
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
<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>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
Reactor Coolant System Activity	1/17	2/17	3/17	4/17	5/17	6/17	7/17	8/17	9/17	10/17	11/17	12/17
Maximum activity	0.000031	0.000036	0.000047	0.000034	0.000036	0.000036	0.000039	0.000042	0.000041	0.000042	0.000049	0.000048
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
<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>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>

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Licensee Comments: none

### Reactor Coolant System Leakage



Thresholds: White > 50.0 Yellow > 100.0

**Notes**

Reactor Coolant System Leakage	1/16	2/16	3/16	4/16	5/16	6/16	7/16	8/16	9/16	10/16	11/16	12/16
Maximum leakage	0.165	0.172	0.188	0.237	0.291	0.178	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

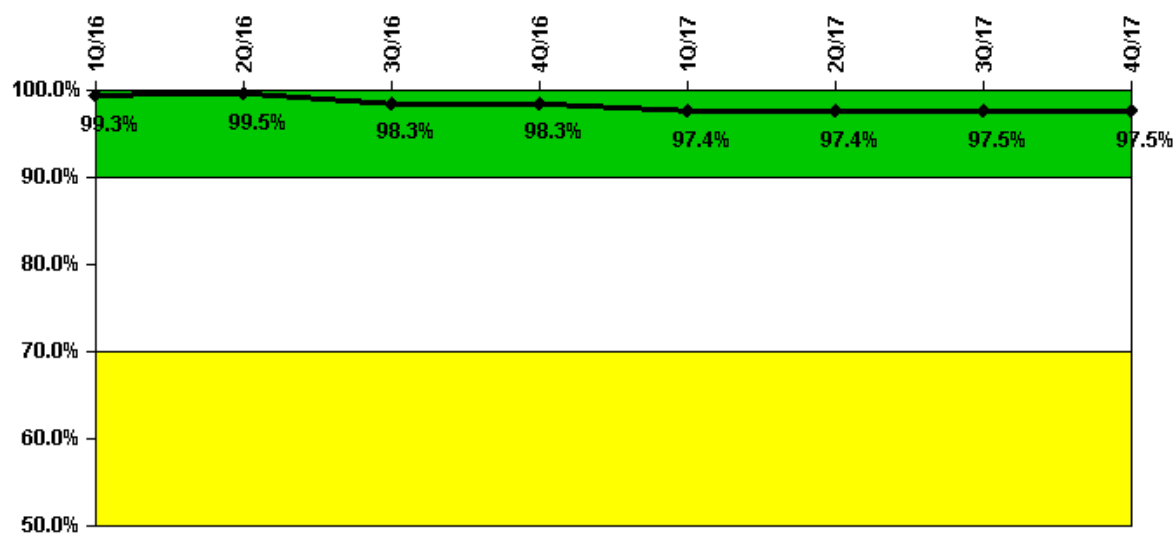
Indicator value	1/17	2/17	3/17	4/17	5/17	6/17	7/17	8/17	9/17	10/17	11/17	12/17
Reactor Coolant System Leakage	1.7	1.7	1.9	2.4	2.9	1.8	0	0	0	0	0	0
Maximum leakage	0	0	0	0	0	0	0.142	0.142	0.142	0	0	0.142
Technical specification limit	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0

Indicator value	0	0	0	0	0	0	1.4	1.4	1.4	0	0	1.4
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Licensee Comments: none

### Drill/Exercise Performance



Thresholds: White < 90.0% Yellow < 70.0%

#### Notes

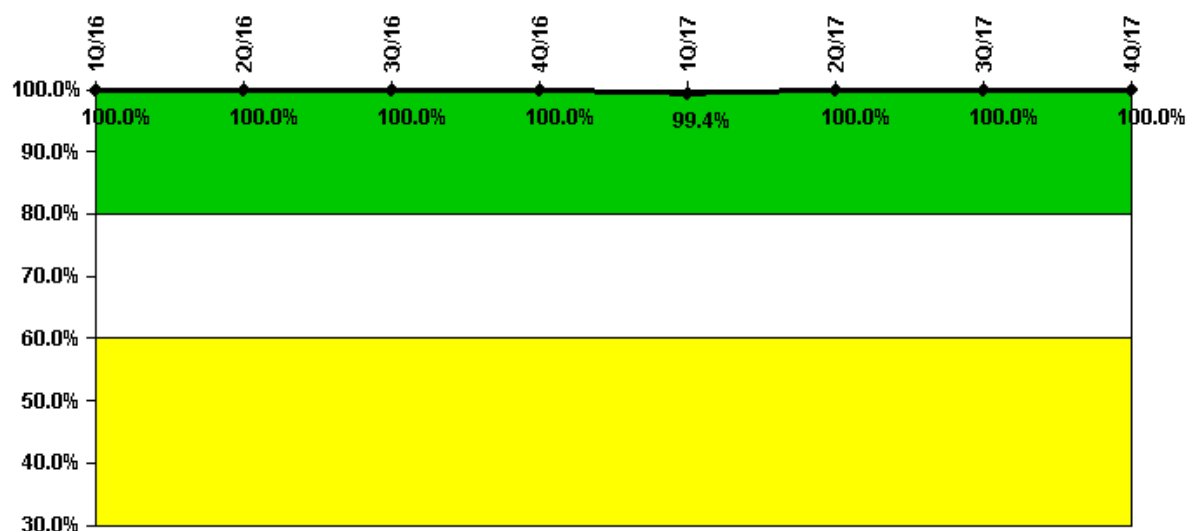
Drill/Exercise Performance	1Q/16	2Q/16	3Q/16	4Q/16	1Q/17	2Q/17	3Q/17	4Q/17
Successful opportunities	40.0	33.0	22.0	10.0	13.0	26.0	6.0	6.0
Total opportunities	40.0	34.0	24.0	10.0	14.0	26.0	6.0	6.0

Indicator value                    99.3% 99.5% 98.3% 98.3% 97.4% 97.4% 97.5% 97.5%

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Licensee Comments: none

### ERO Drill Participation



Thresholds: White < 80.0% Yellow < 60.0%

#### Notes

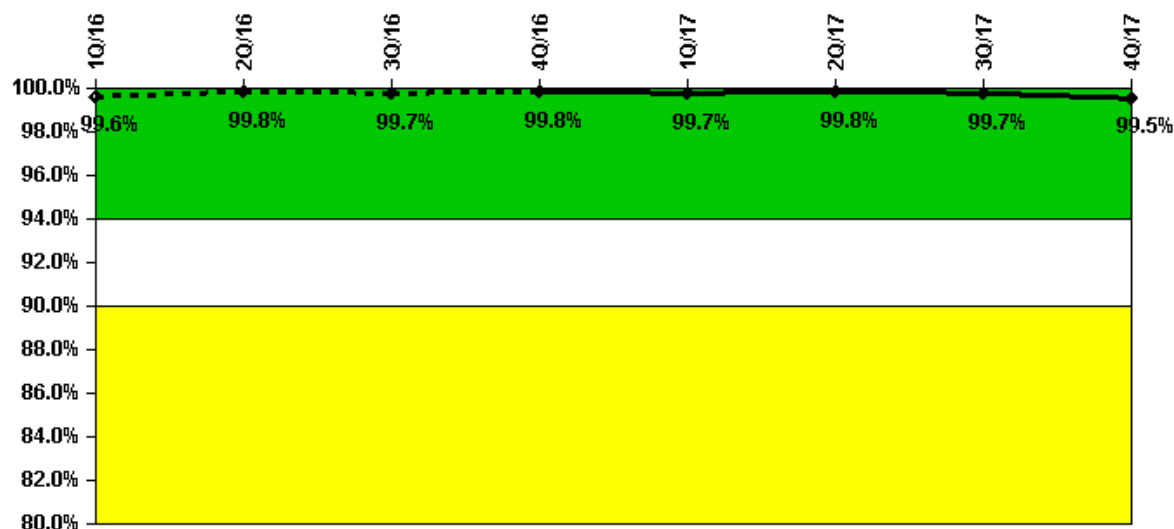
ERO Drill Participation	1Q/16	2Q/16	3Q/16	4Q/16	1Q/17	2Q/17	3Q/17	4Q/17
Participating Key personnel	132.0	126.0	163.0	156.0	159.0	158.0	153.0	144.0
Total Key personnel	132.0	126.0	163.0	156.0	160.0	158.0	153.0	144.0

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

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Licensee Comments: none

### Alert & Notification System



Thresholds: White < 94.0% Yellow < 90.0%

#### Notes

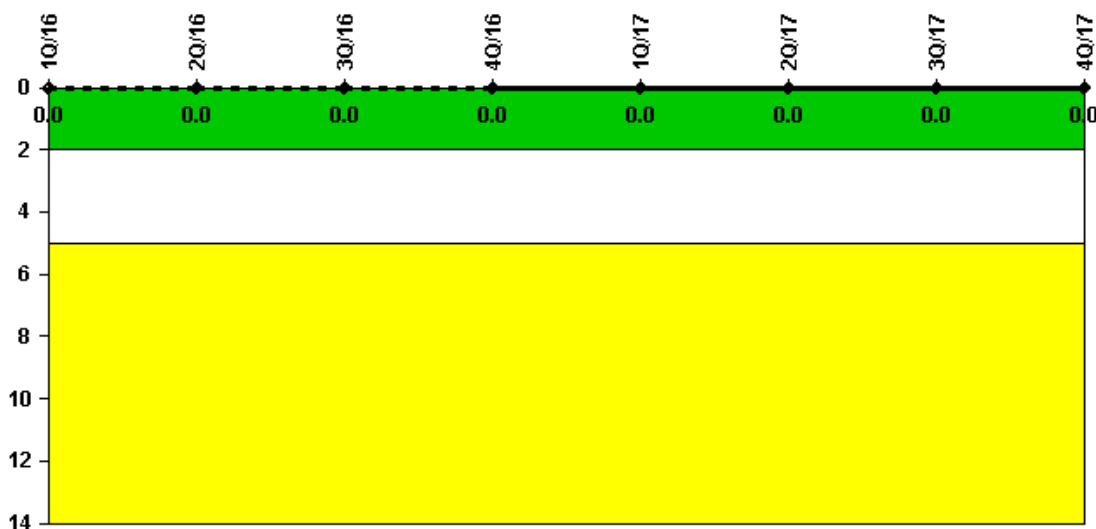
Alert & Notification System	1Q/16	2Q/16	3Q/16	4Q/16	1Q/17	2Q/17	3Q/17	4Q/17
Successful siren-tests	1596	1594	1595	1597	1594	1597	1592	1583
Total sirens-tests	1599	1599	1599	1599	1599	1599	1599	1599

**Indicator value**                    **99.6%** **99.8%** **99.7%** **99.8%** **99.7%** **99.8%** **99.7%** **99.5%**

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Licensee Comments: none

### Occupational Exposure Control Effectiveness



Thresholds: White > 2.0 Yellow > 5.0

**Notes**

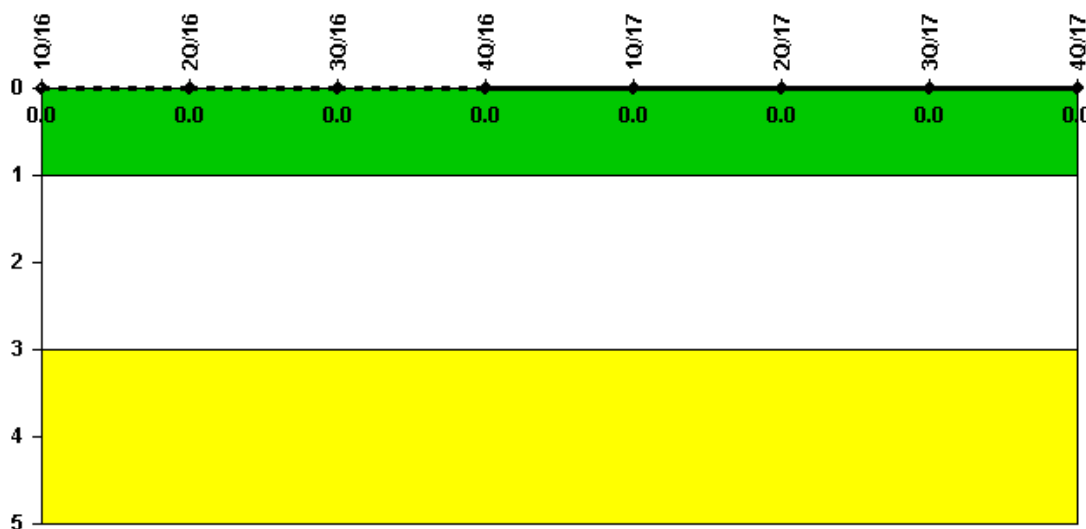
**Occupational Exposure Control Effectiveness** 1Q/16 2Q/16 3Q/16 4Q/16 1Q/17 2Q/17 3Q/17 4Q/17

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** 1Q/16 2Q/16 3Q/16 4Q/16 1Q/17 2Q/17 3Q/17 4Q/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: February 1, 2018*

*Page Last Reviewed/Updated Monday, November 06, 2017*