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Prairie Island 2 – Quarterly Performance Indicators

4Q/2017 Performance Indicators

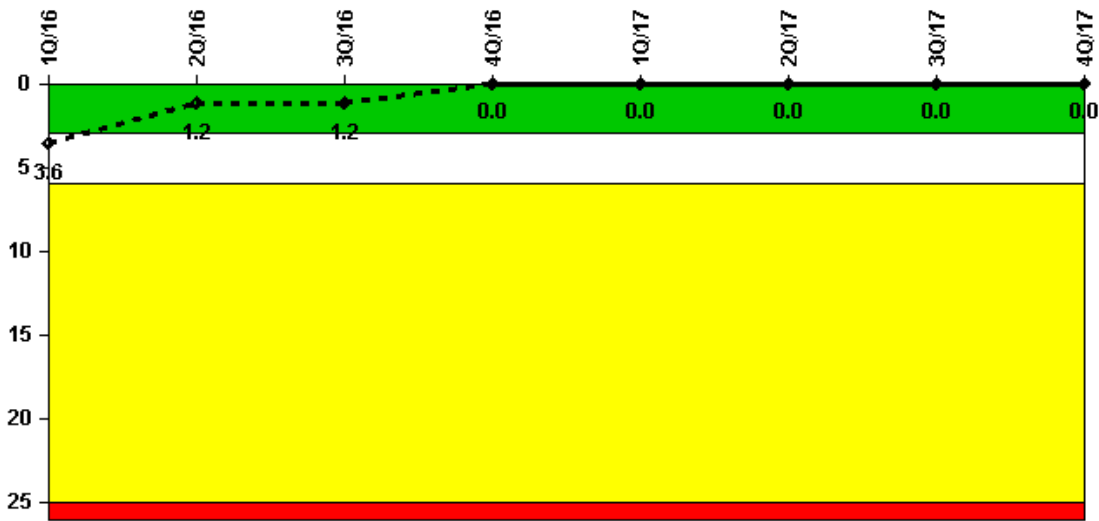
The solid trend line represents the current reporting period.

Licensee's General Comments: Unplanned Power Changes per 7000 critical hours (IE03) update to Unit 2 Sept 2017; change does not affect the color of the indicator.

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

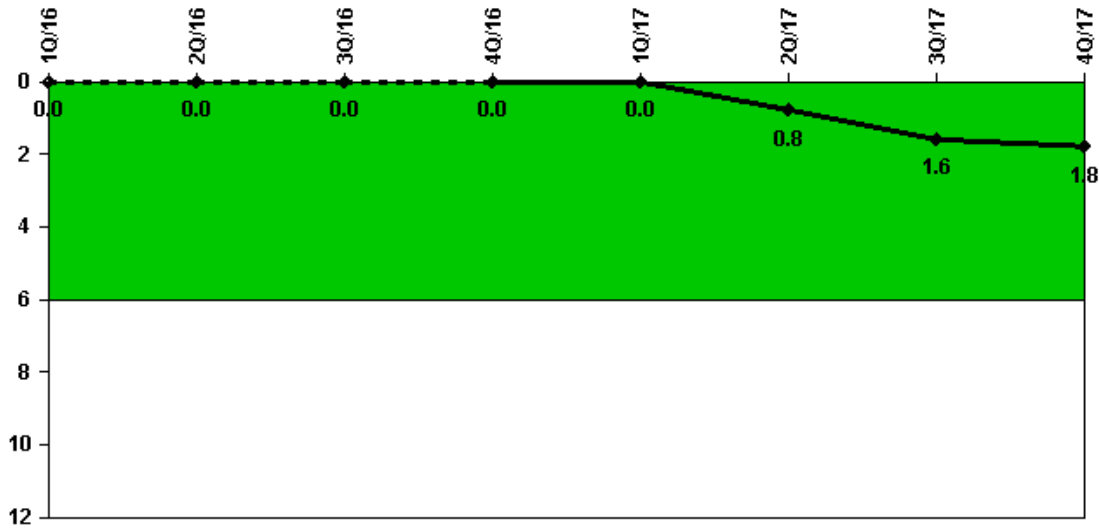
| Unplanned Scrams per 7000 Critical Hrs | 1Q/16 | 2Q/16 | 3Q/16 | 4Q/16 | 1Q/17 | 2Q/17 | 3Q/17 | 4Q/17 |
|--|-------|--------|--------|--------|--------|--------|--------|--------|
| Unplanned scrams | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Critical hours | 921.2 | 2184.0 | 2208.0 | 2209.0 | 2159.0 | 2184.0 | 2208.0 | 1327.2 |

| Indicator value | 3.6 | 1.2 | 1.2 | 0 | 0 | 0 | 0 | 0 |
|-----------------|-----|-----|-----|---|---|---|---|---|
|-----------------|-----|-----|-----|---|---|---|---|---|

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Licensee Comments: none

Unplanned Power Changes per 7000 Critical Hrs



Thresholds: White > 6.0

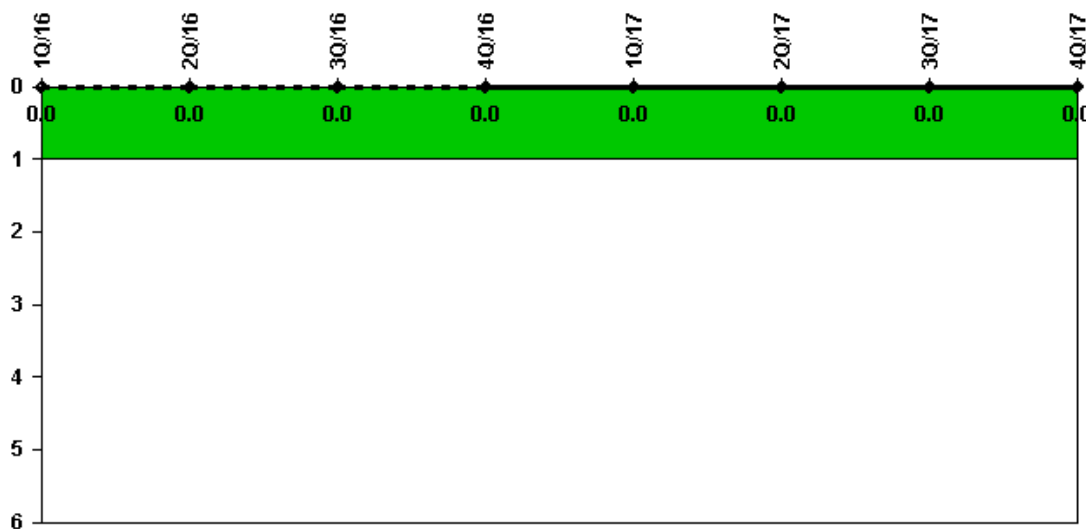
Notes

| 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 | 1.0 | 0 |
| Critical hours | 921.2 | 2184.0 | 2208.0 | 2209.0 | 2159.0 | 2184.0 | 2208.0 | 1327.2 |
| Indicator value | 0 | 0 | 0 | 0 | 0 | 0.8 | 1.6 | 1.8 |

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Licensee Comments: none

Unplanned Scrams with Complications



Thresholds: White > 1.0

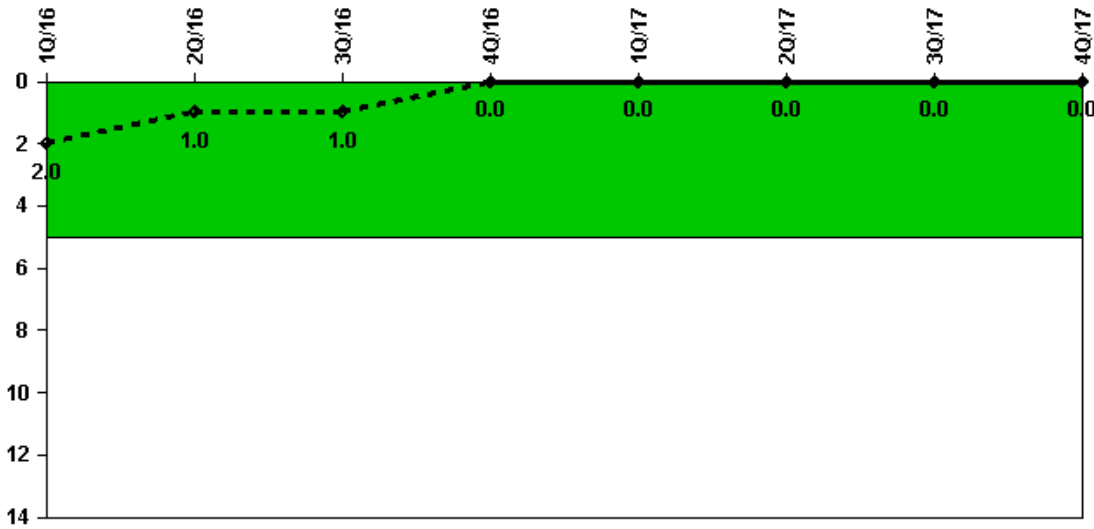
Notes

| 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 |
| 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

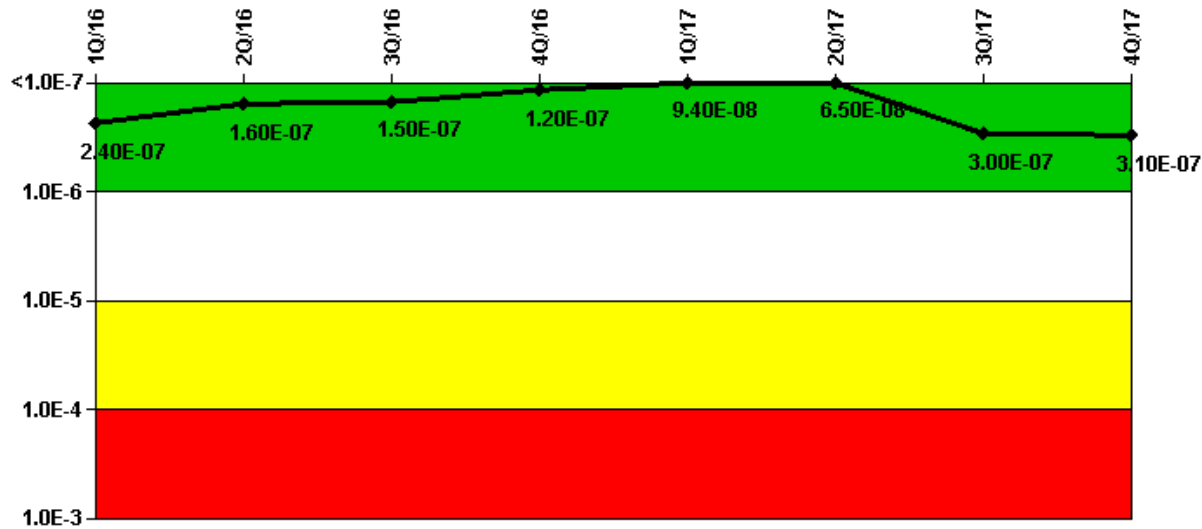
Safety System Functional Failures (PWR) 1Q/16 2Q/16 3Q/16 4Q/16 1Q/17 2Q/17 3Q/17 4Q/17
 Safety System Functional Failures 0 0 0 0 0 0 0 0

Indicator value 2 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) | 2.20E-07 | 1.47E-07 | 1.33E-07 | 1.04E-07 | 7.95E-08 | 4.98E-08 | 1.67E-07 | 1.79E-07 |
| URI (ΔCDF) | 1.53E-08 | 1.53E-08 | 1.53E-08 | 1.53E-08 | 1.46E-08 | 1.52E-08 | 1.29E-07 | 1.31E-07 |
| PLE | NO | NO | NO | NO | NO | NO | NO | NO |
| Indicator value | 2.40E-07 | 1.60E-07 | 1.50E-07 | 1.20E-07 | 9.40E-08 | 6.50E-08 | 3.00E-07 | 3.10E-07 |

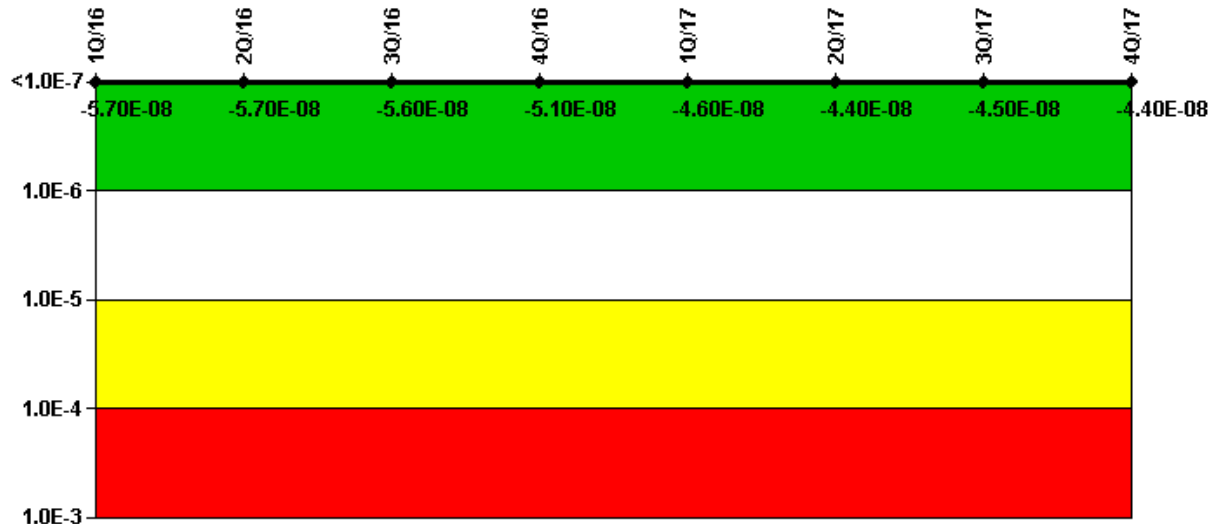
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Licensee Comments:

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.

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) | -1.68E-08 | -1.68E-08 | -1.59E-08 | -1.63E-08 | -1.38E-08 | -1.26E-08 | -1.28E-08 | -1.22E-08 |
| URI (ΔCDF) | -4.03E-08 | -4.03E-08 | -4.03E-08 | -3.50E-08 | -3.19E-08 | -3.19E-08 | -3.19E-08 | -3.22E-08 |
| PLE | NO | NO | NO | NO | NO | NO | NO | NO |

Indicator value

-5.70E-08 -5.70E-08 -5.60E-08 -5.10E-08 -4.60E-08 -4.40E-08 -4.50E-08 -4.40E-08

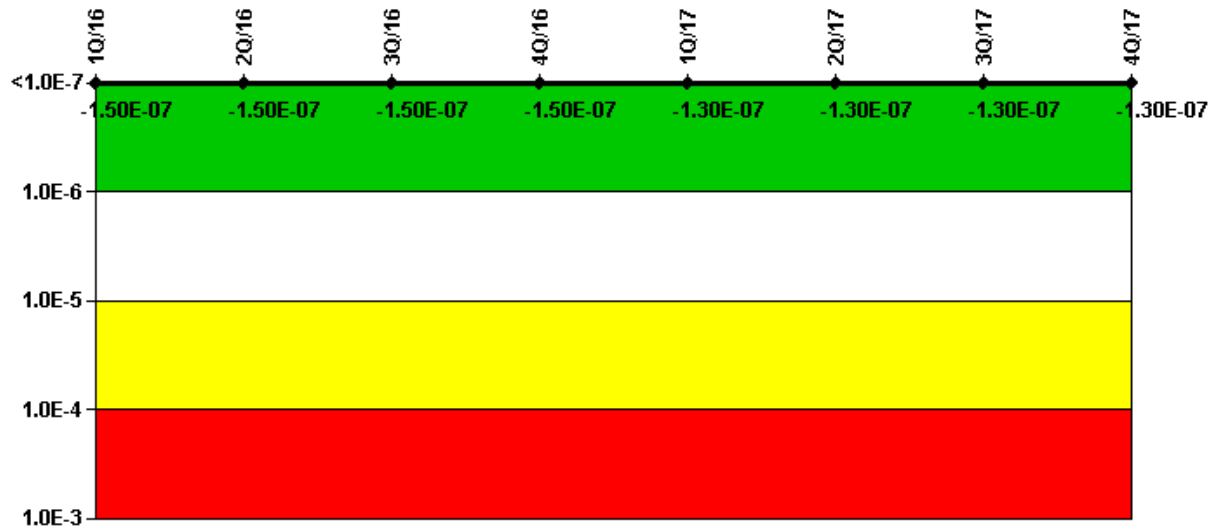
TOP

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) | -3.02E-08 | -3.02E-08 | -3.02E-08 | -3.02E-08 | -2.42E-08 | -2.41E-08 | -2.42E-08 | -2.42E-08 |
| URI (ΔCDF) | -1.18E-07 | -1.18E-07 | -1.18E-07 | -1.16E-07 | -1.01E-07 | -1.02E-07 | -1.02E-07 | -1.03E-07 |
| PLE | NO | NO | NO | NO | NO | NO | NO | NO |
| Indicator value | -1.50E-07 | -1.50E-07 | -1.50E-07 | -1.50E-07 | -1.30E-07 | -1.30E-07 | -1.30E-07 | -1.30E-07 |

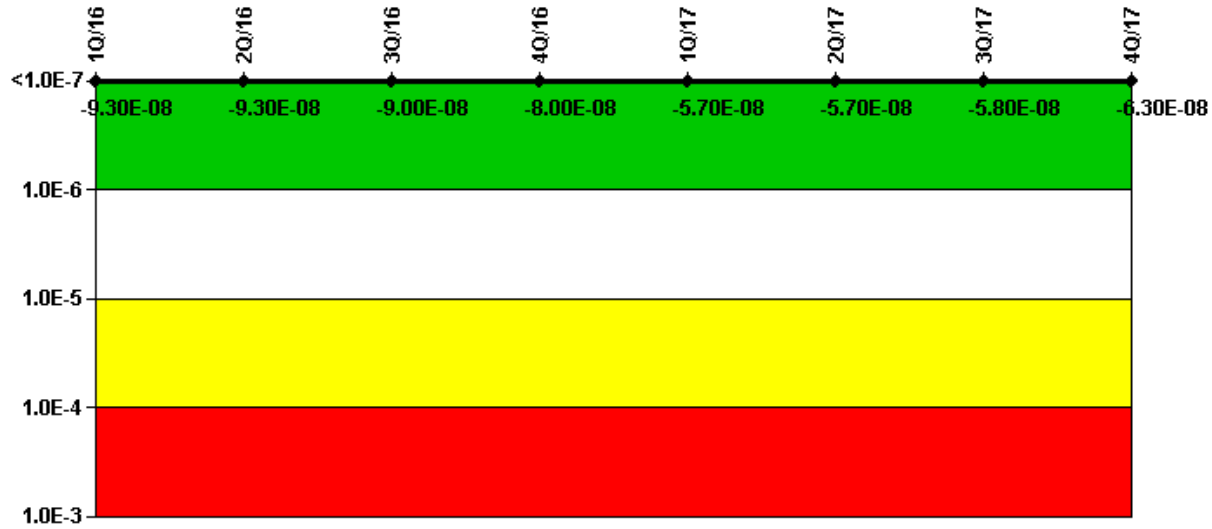
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Licensee Comments:

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.

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) | -1.46E-08 | -1.46E-08 | -1.46E-08 | -1.46E-08 | -1.25E-08 | -1.25E-08 | -1.25E-08 | -1.25E-08 |
| URI (ΔCDF) | -7.83E-08 | -7.83E-08 | -7.56E-08 | -6.57E-08 | -4.49E-08 | -4.49E-08 | -4.51E-08 | -5.02E-08 |
| PLE | NO | NO | NO | NO | NO | NO | NO | NO |
| Indicator value | -9.30E-08 | -9.30E-08 | -9.00E-08 | -8.00E-08 | -5.70E-08 | -5.70E-08 | -5.80E-08 | -6.30E-08 |

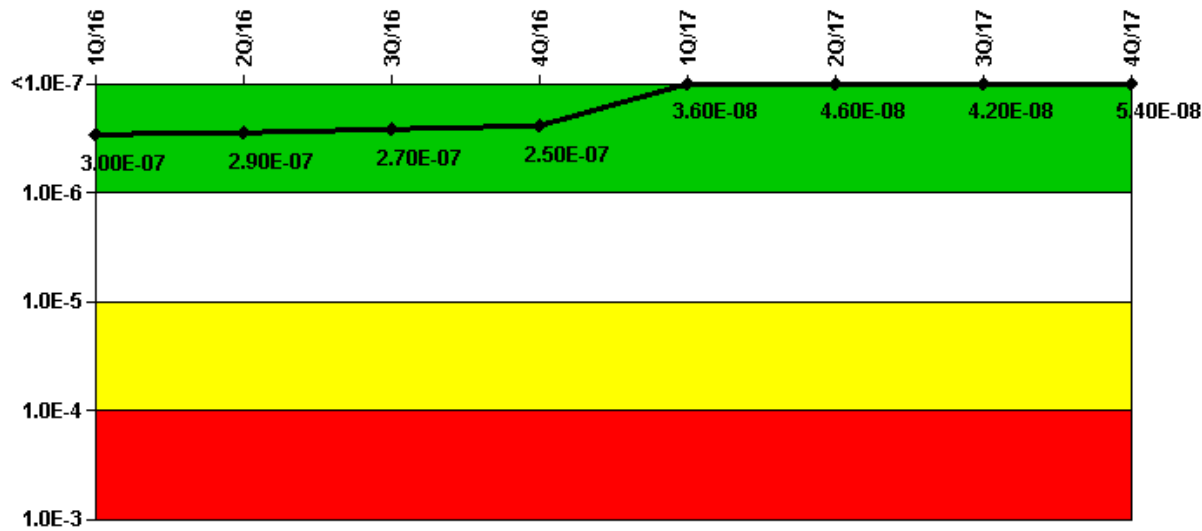
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Licensee Comments:

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.

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) | 2.90E-07 | 2.78E-07 | 2.60E-07 | 2.41E-07 | 1.25E-07 | 1.35E-07 | 1.31E-07 | 1.43E-07 |
| URI (ΔCDF) | 7.65E-09 | 7.78E-09 | 7.98E-09 | 9.82E-09 | -8.93E-08 | -8.91E-08 | -8.89E-08 | -8.86E-08 |
| PLE | NO | NO | NO | NO | NO | NO | NO | NO |
| Indicator value | 3.00E-07 | 2.90E-07 | 2.70E-07 | 2.50E-07 | 3.60E-08 | 4.60E-08 | 4.20E-08 | 5.40E-08 |

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Licensee Comments:

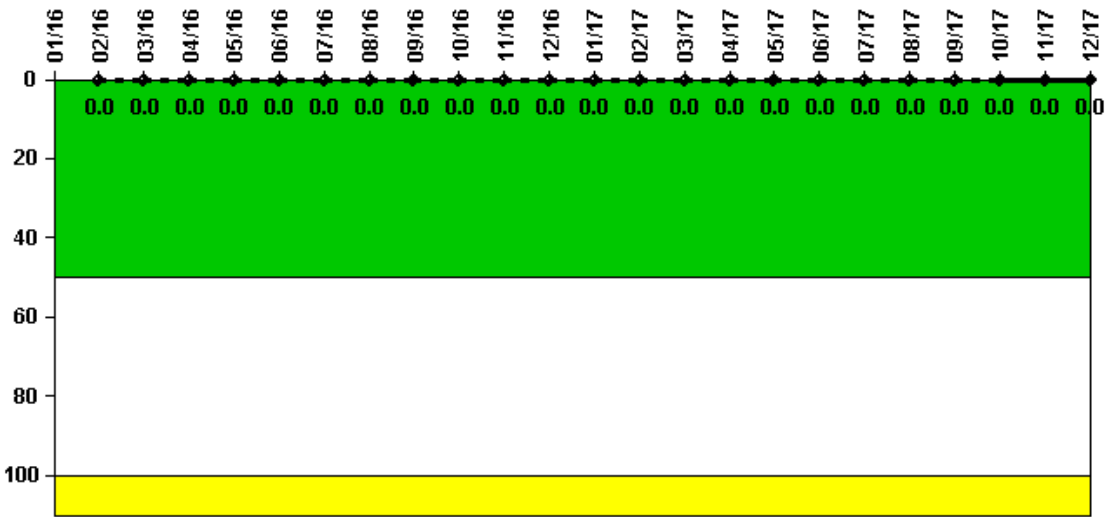
2Q/17: Corrected device type for motor valves which became MSPI monitored components effective 1/1/2016.

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

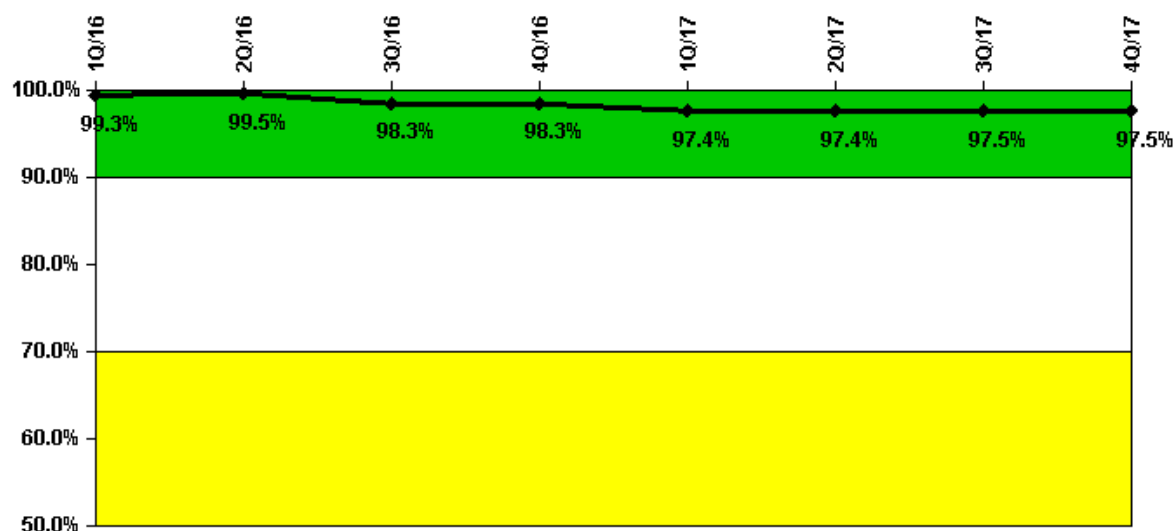
Notes

| 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 | N/A | 0.000042 | 0.000037 | 0.000042 | 0.000048 | 0.000044 | 0.000044 | 0.000047 | 0.000047 | 0.000053 | 0.000050 | 0.000053 |
| 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 | N/A | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 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 | 0.000051 | 0.000053 | 0.000054 | 0.000052 | 0.000056 | 0.000063 | 0.000057 | 0.000061 | 0.000059 | 0.000060 | 0.000038 | 0.000050 |
| 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

Drill/Exercise Performance



Thresholds: White < 90.0% Yellow < 70.0%

Notes

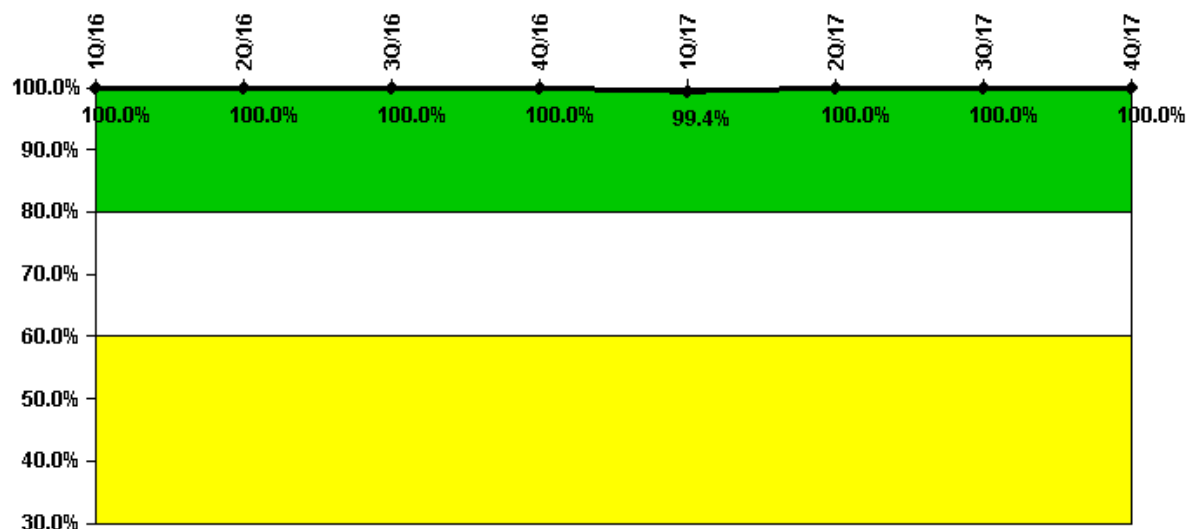
| Drill/Exercise Performance | 1Q/16 | 2Q/16 | 3Q/16 | 4Q/16 | 1Q/17 | 2Q/17 | 3Q/17 | 4Q/17 |
|----------------------------|-------|-------|-------|-------|-------|-------|-------|-------|
| Successful opportunities | 40.0 | 33.0 | 22.0 | 10.0 | 13.0 | 26.0 | 6.0 | 6.0 |
| Total opportunities | 40.0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

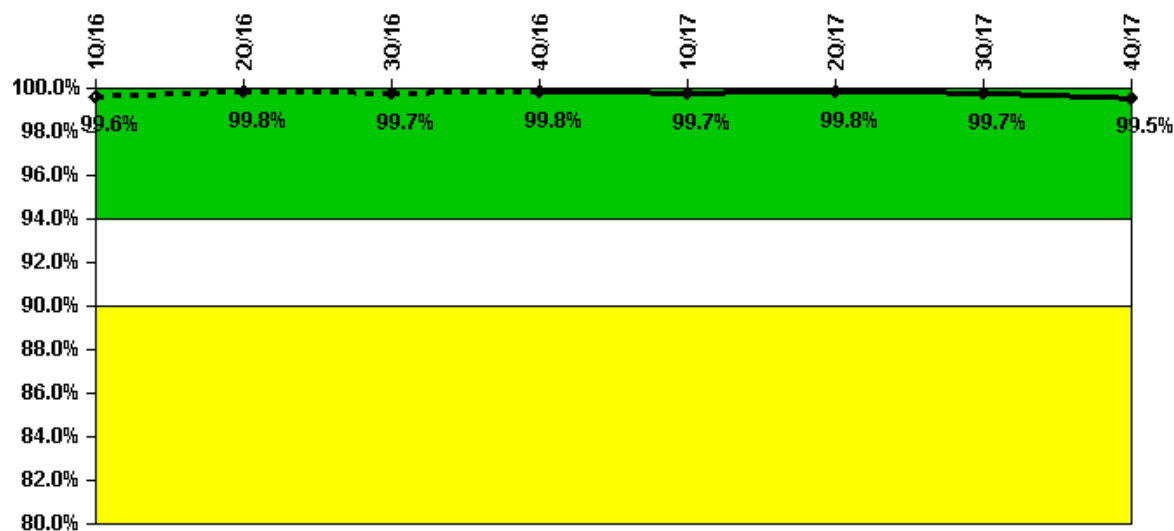
| ERO Drill Participation | 1Q/16 | 2Q/16 | 3Q/16 | 4Q/16 | 1Q/17 | 2Q/17 | 3Q/17 | 4Q/17 |
|-----------------------------|-------|-------|-------|-------|-------|-------|-------|-------|
| Participating Key personnel | 132.0 | 126.0 | 163.0 | 156.0 | 159.0 | 158.0 | 153.0 | 144.0 |
| Total Key personnel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

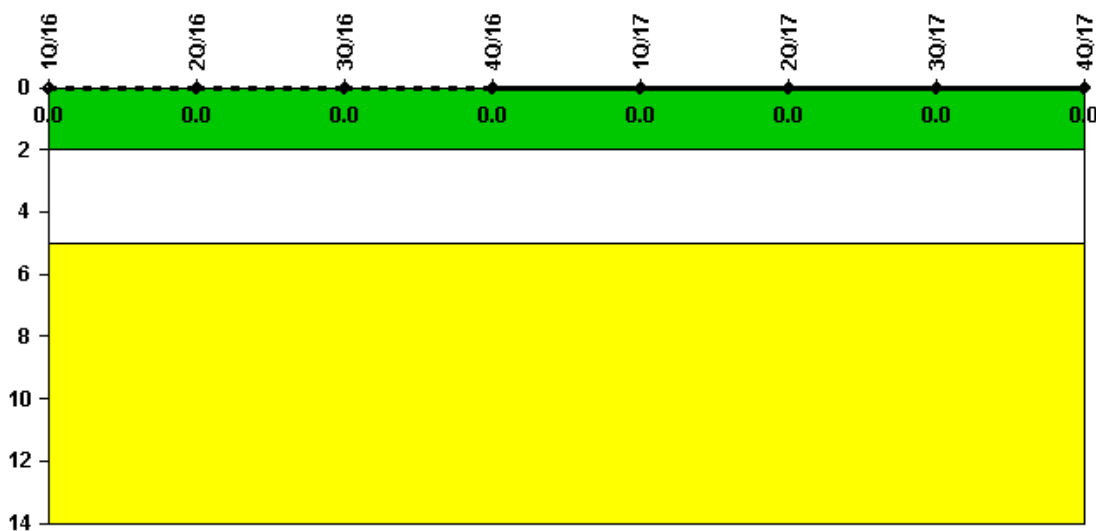
| Alert & Notification System | 1Q/16 | 2Q/16 | 3Q/16 | 4Q/16 | 1Q/17 | 2Q/17 | 3Q/17 | 4Q/17 |
|-----------------------------|-------|-------|-------|-------|-------|-------|-------|-------|
| Successful siren-tests | 1596 | 1594 | 1595 | 1597 | 1594 | 1597 | 1592 | 1583 |
| Total sirens-tests | 1599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

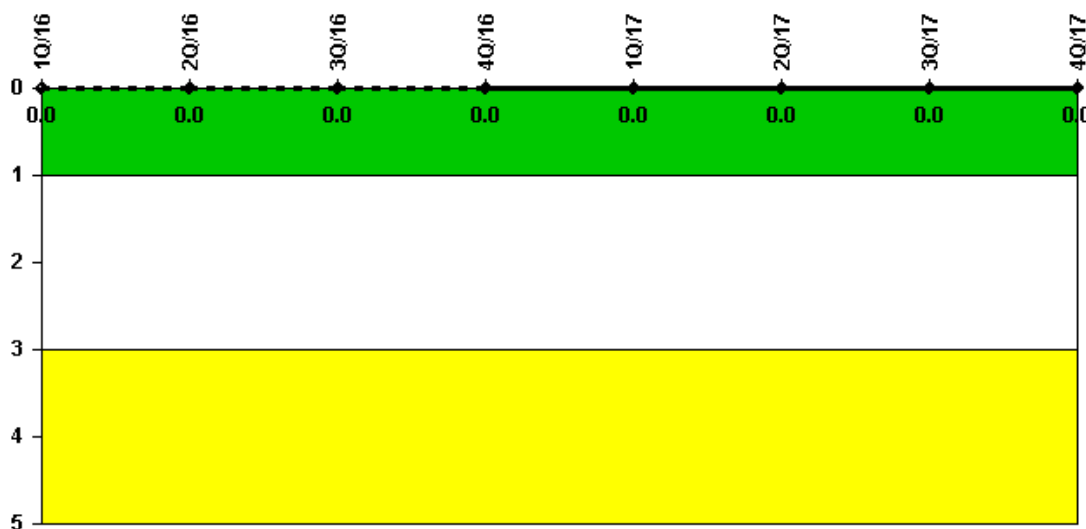
Occupational Exposure Control Effectiveness 1Q/16 2Q/16 3Q/16 4Q/16 1Q/17 2Q/17 3Q/17 4Q/17

| | | | | | | | | |
|--------------------------------------|----------|----------|----------|----------|----------|----------|----------|----------|
| 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 |
| 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 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