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Oconee 3 – Quarterly Performance Indicators

1Q/2017 Performance Indicators

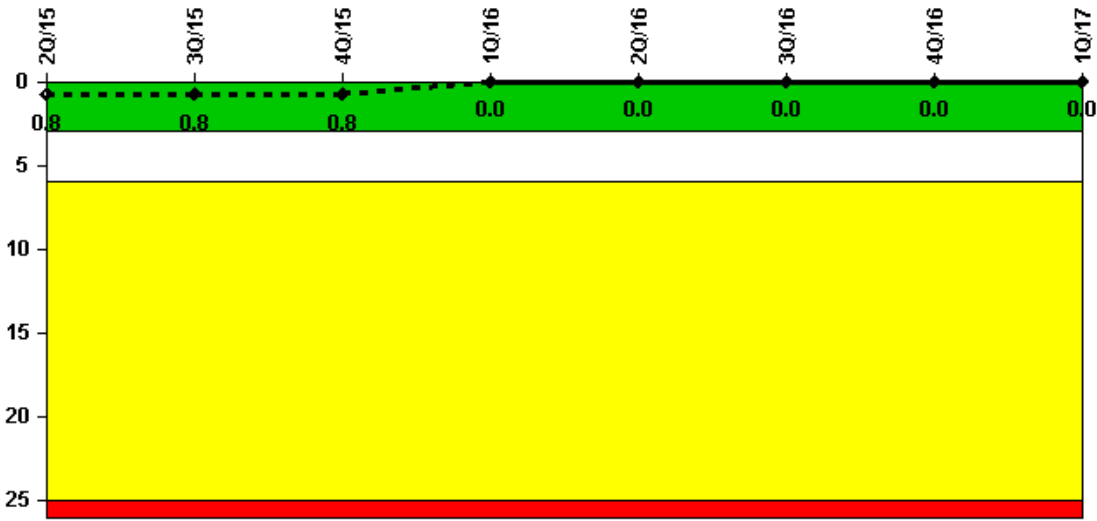
The solid trend line represents the current reporting period.

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)
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- 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

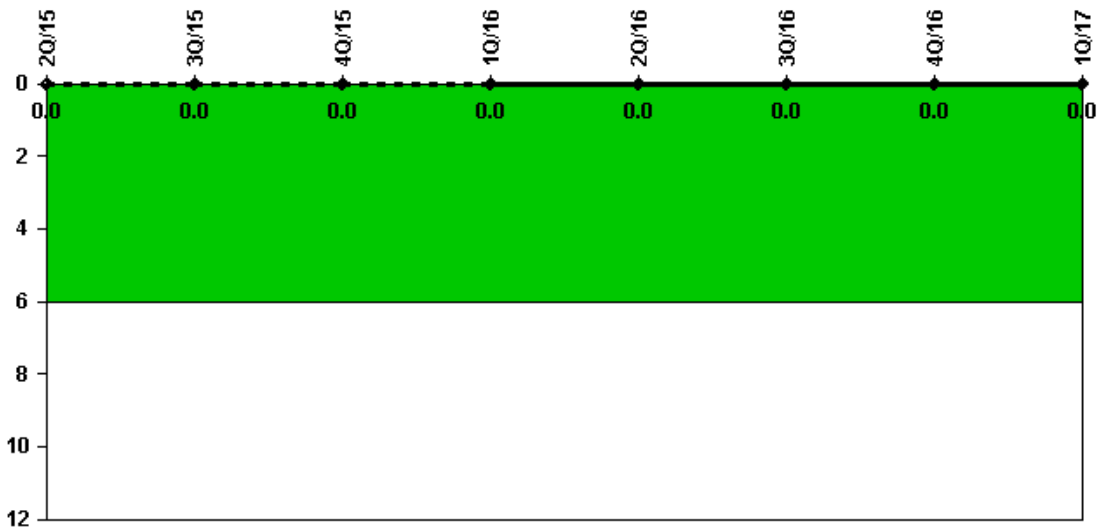
Notes

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	0	0	0
Critical hours	2184.0	2208.0	2209.0	2183.0	1639.3	2208.0	2209.0	2159.0
Indicator value	0.8	0.8	0.8	0	0	0	0	0

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Licensee Comments: none

Unplanned Power Changes per 7000 Critical Hrs



Thresholds: White > 6.0

Notes

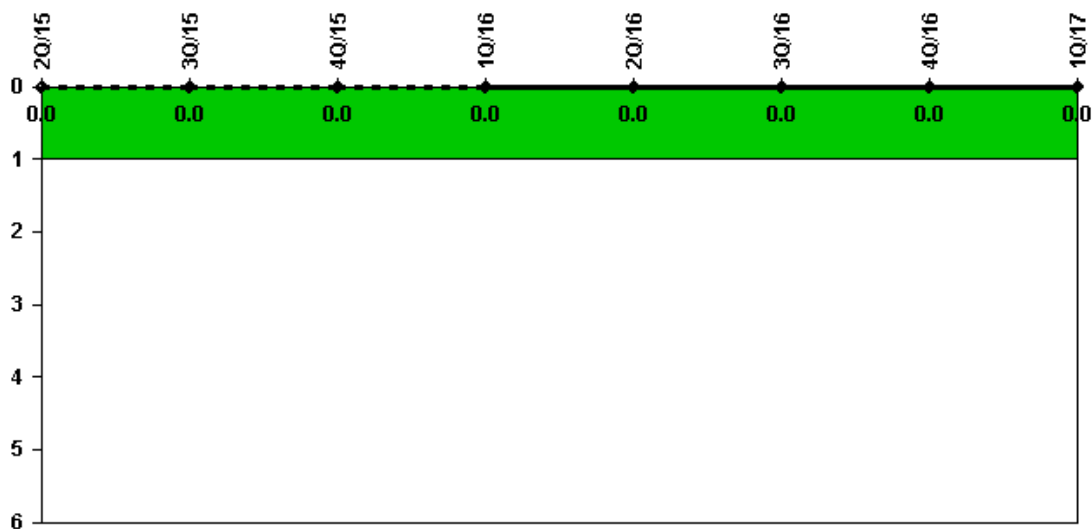
Unplanned Power Changes per 7000 Critical Hrs	2Q/15	3Q/15	4Q/15	1Q/16	2Q/16	3Q/16	4Q/16	1Q/17
Unplanned power changes	0	0	0	0	0	0	0	0
Critical hours	2184.0	2208.0	2209.0	2183.0	1639.3	2208.0	2209.0	2159.0

Indicator value 0 0 0 0 0 0 0 0 0

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Licensee Comments: none

Unplanned Scrams with Complications



Thresholds: White > 1.0

Notes

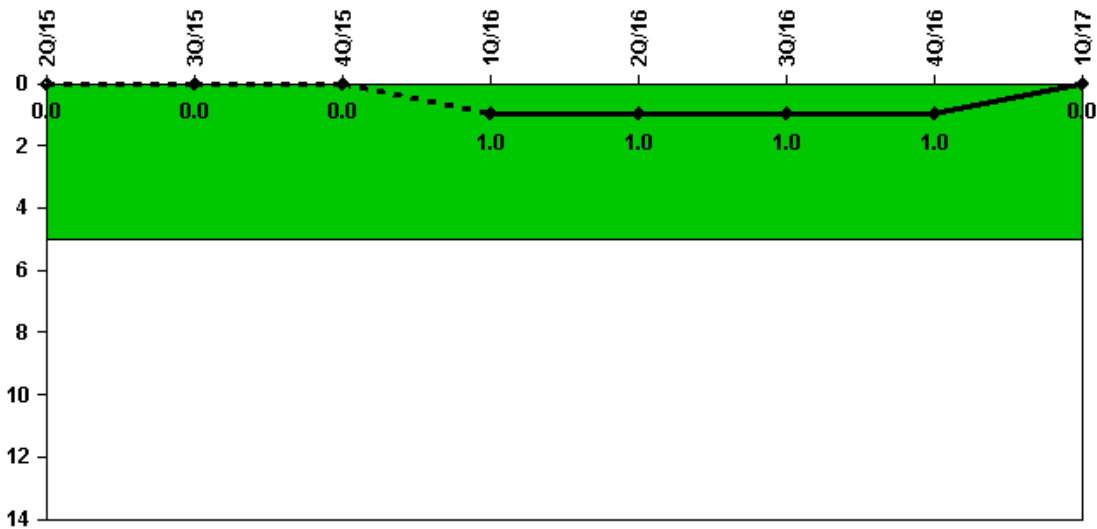
Unplanned Scrams with Complications	2Q/15	3Q/15	4Q/15	1Q/16	2Q/16	3Q/16	4Q/16	1Q/17
Scrams with complications	0	0	0	0	0	0	0	0

Indicator value 0.0 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

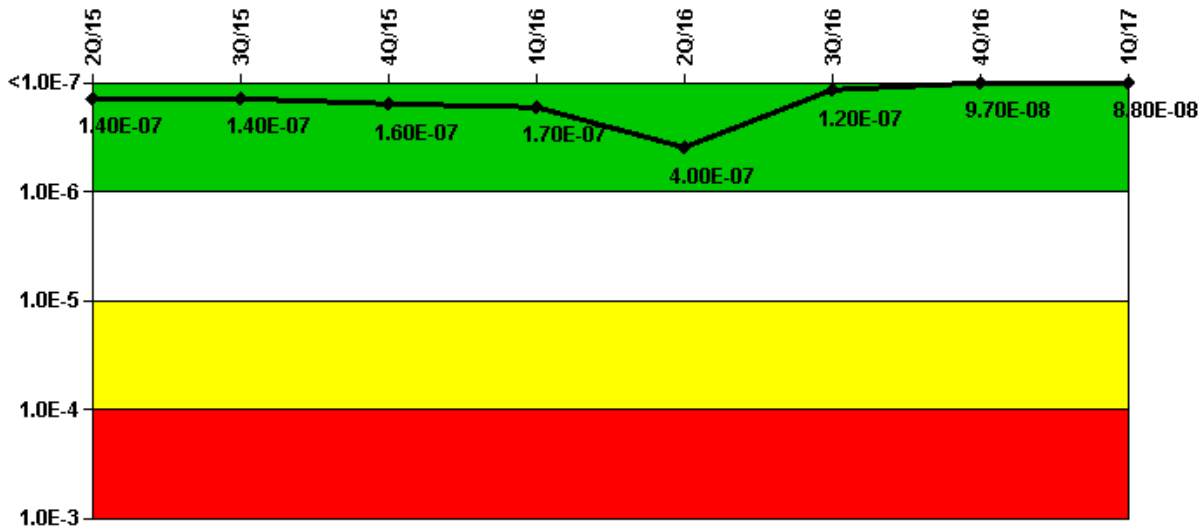
Safety System Functional Failures (PWR) 2Q/15 3Q/15 4Q/15 1Q/16 2Q/16 3Q/16 4Q/16 1Q/17
 Safety System Functional Failures 0 0 0 1 0 0 0 0

Indicator value 0 0 0 1 1 1 1 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

	2Q/15	3Q/15	4Q/15	1Q/16	2Q/16	3Q/16	4Q/16	1Q/17
UAI (ΔCDF)	1.86E-07	1.85E-07	1.99E-07	2.17E-07	2.20E-07	9.12E-08	1.26E-07	1.17E-07
URI (ΔCDF)	-4.30E-08	-4.30E-08	-4.30E-08	-4.30E-08	1.75E-07	2.84E-08	-2.88E-08	-2.88E-08
PLE	NO	NO	NO	NO	NO	NO	NO	NO
Indicator value	1.40E-07	1.40E-07	1.60E-07	1.70E-07	4.00E-07	1.20E-07	9.70E-08	8.80E-08

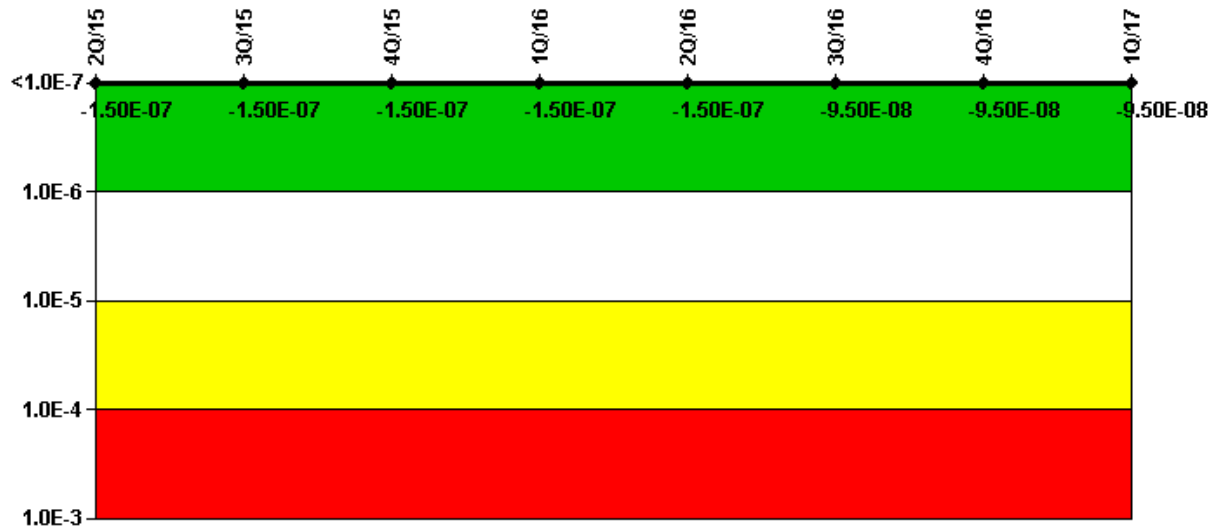
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Licensee Comments:

4Q/16: Changed PRA Parameter(s). The following comments should have been included with the Oconee third quarter submittal. The Oconee Units 1, 2, and 3 PRA Model, Revision 7, was approved on 4/1/16, and a corresponding MSPI Basis Document Revision 18 was approved on 10/6/16. As a result of the PRA model change, the CDF, Fussel-Vesely, and Basic Event Probabilities for all monitored trains and components were revised. The changes were entered into CDE on 10/6/16, and the changes are effective for third quarter 2016.

3Q/16: Changed PRA Parameter(s). Planned UA Baseline was updated to be applied to 4th quarter 2016 per revised MSPI Basis Document.

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)	-4.22E-10	-4.22E-10	-6.23E-10	-5.22E-10	-7.67E-10	-4.53E-10	-4.53E-10	-2.79E-10
URI (ΔCDF)	-1.51E-07	-1.51E-07	-1.51E-07	-1.51E-07	-1.51E-07	-9.48E-08	-9.48E-08	-9.48E-08

PLE	NO	NO	NO	NO	NO	NO	NO	NO
Indicator value	-1.50E-07	-1.50E-07	-1.50E-07	-1.50E-07	-1.50E-07	-9.50E-08	-9.50E-08	-9.50E-08

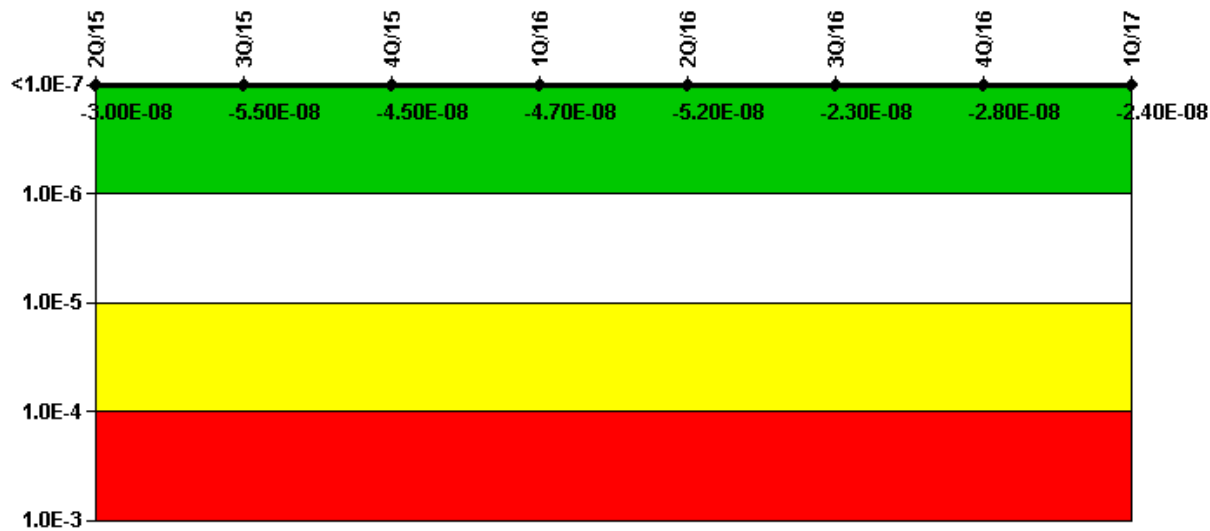
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Licensee Comments:

4Q/16: Changed PRA Parameter(s). The following comments should have been included with the Oconee third quarter submittal. The Oconee Units 1, 2, and 3 PRA Model, Revision 7, was approved on 4/1/16, and a corresponding MSPI Basis Document Revision 18 was approved on 10/6/16. As a result of the PRA model change, the CDF, Fussel-Vesely, and Basic Event Probabilities for all monitored trains and components were revised. The changes were entered into CDE on 10/6/16, and the changes are effective for third quarter 2016. The planned unavailability baseline for the high pressure injection (HPI) system was revised and the baseline changes were incorporated into the PRA model and the MSPI Basis Document Revision 18. The changes were entered into CDE on 10/6/16 and will be effective in the first quarter of 2017. Also, consistent with the PRA model changes, the B HPI pumps for all Oconee units were added as MSPI monitored components. The MSPI Basis Document revision 19 was approved on 10/18/16 to incorporate these changes, and the corresponding changes were entered into CDE on October 18-19, 2016. The changes are effective for the third quarter 2016.

3Q/16: Changed PRA Parameter(s).

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

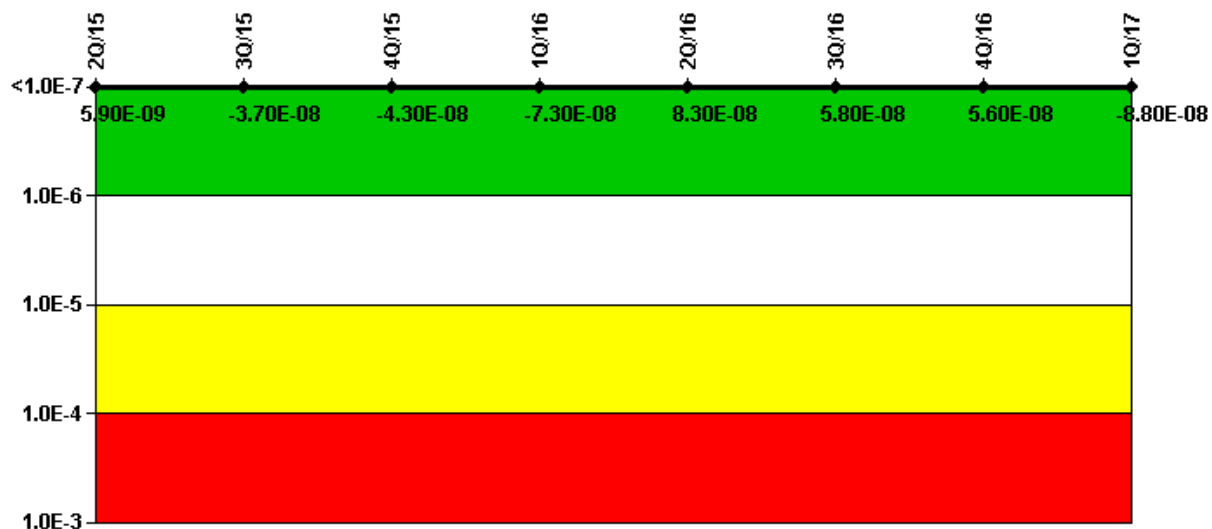
	2Q/15	3Q/15	4Q/15	1Q/16	2Q/16	3Q/16	4Q/16	1Q/17
UAI (ΔCDF)	5.10E-08	2.62E-08	3.61E-08	3.36E-08	2.89E-08	1.36E-08	8.28E-09	1.25E-08
URI (ΔCDF)	-8.07E-08	-8.07E-08	-8.07E-08	-8.07E-08	-8.07E-08	-3.63E-08	-3.63E-08	-3.63E-08
PLE	NO	NO	NO	NO	NO	NO	NO	NO
Indicator value	-3.00E-08	-5.50E-08	-4.50E-08	-4.70E-08	-5.20E-08	-2.30E-08	-2.80E-08	-2.40E-08

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Licensee Comments:

4Q/16: Changed PRA Parameter(s). The following comments should have been included with the Oconee third quarter submittal. The Oconee Units 1, 2, and 3 PRA Model, Revision 7, was approved on 4/1/16, and a corresponding MSPI Basis Document Revision 18 was approved on 10/6/16. As a result of the PRA model change, the CDF, Fussel-Vesely, and Basic Event Probabilities for all monitored trains and components were revised. The changes were entered into CDE on 10/6/16, and the changes are effective for third quarter 2016.
 3Q/16: Changed PRA Parameter(s).

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

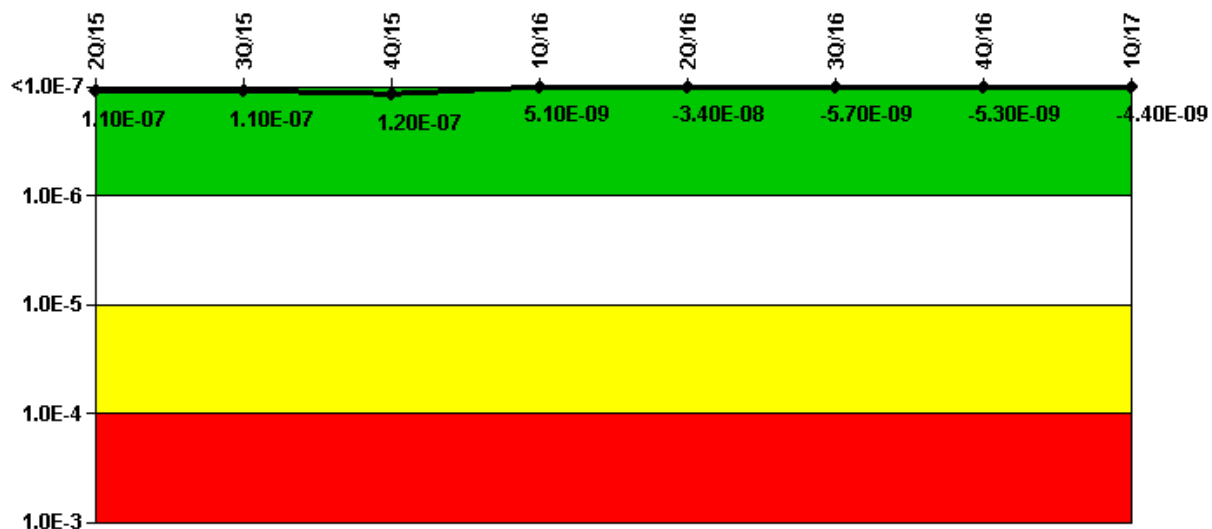
	2Q/15	3Q/15	4Q/15	1Q/16	2Q/16	3Q/16	4Q/16	1Q/17
UAI (ΔCDF)	1.18E-07	7.52E-08	6.84E-08	3.88E-08	1.95E-07	1.22E-07	1.21E-07	-2.33E-08
URI (ΔCDF)	-1.12E-07	-1.12E-07	-1.12E-07	-1.12E-07	-1.12E-07	-6.47E-08	-6.47E-08	-6.47E-08
PLE	NO	NO	NO	NO	NO	NO	NO	NO
Indicator value	5.90E-09	-3.70E-08	-4.30E-08	-7.30E-08	8.30E-08	5.80E-08	5.60E-08	-8.80E-08

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Licensee Comments:

4Q/16: Changed PRA Parameter(s). The following comments should have been included with the Oconee third quarter submittal. The Oconee Units 1, 2, and 3 PRA Model, Revision 7, was approved on 4/1/16, and a corresponding MSPI Basis Document Revision 18 was approved on 10/6/16. As a result of the PRA model change, the CDF, Fussel-Vesely, and Basic Event Probabilities for all monitored trains and components were revised. The changes were entered into CDE on 10/6/16, and the changes are effective for third quarter 2016. The planned unavailability baseline for the residual heat removal (RHR) system was revised and the baseline changes were incorporated into the PRA model and the MSPI Basis Document Revision 18. The changes were entered into CDE on 10/6/16 and will be effective in the first quarter of 2017.
 3Q/16: Changed PRA Parameter(s).

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)	3.25E-08	3.26E-08	4.14E-08	2.50E-08	-1.44E-08	-1.03E-09	-6.11E-10	2.35E-10
URI (ΔCDF)	7.52E-08	7.52E-08	7.52E-08	-1.99E-08	-1.99E-08	-4.68E-09	-4.68E-09	-4.68E-09
PLE	NO	NO	NO	NO	NO	NO	NO	NO
Indicator value	1.10E-07	1.10E-07	1.20E-07	5.10E-09	-3.40E-08	-5.70E-09	-5.30E-09	-4.40E-09

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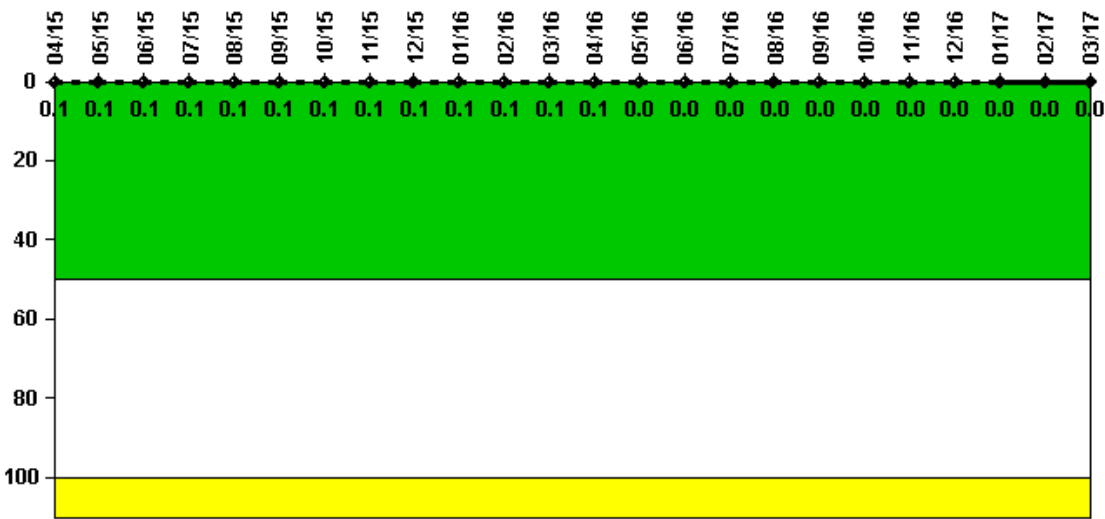
Licensee Comments:

4Q/16: Changed PRA Parameter(s). In October, 2016, an error was discovered in the PRA reliability values for the 3B Low Pressure Service Water (LPSW) pump. On 12/6/16, the MSPI Basis Document, Revision 21 was approved to correct the error, and the changes were entered into INPO CDE on 12/12/16. The changes are effective for the third quarter 2016. The following comments should have been included with the Oconee third quarter submittal. The Oconee Units 1, 2, and 3 PRA Model, Revision 7, was approved on 4/1/16, and a corresponding MSPI Basis Document Revision 18 was approved on 10/6/16. As a result of the PRA model change, the CDF, Fussel-Vesely, and Basic Event Probabilities for all monitored trains and components were revised. The changes were entered into CDE on 10/6/16, and the changes are effective for third quarter 2016. On 10/19/16, risk metrics for the Cooling Water System were recalculated using the method described for making corrections to FV/UA and FV/UR ratios for fault trees using modeling method 2 as described in NEI 99-02. The MSPI Basis Document revision 20 was approved on 10/19/16, and the corresponding changes were entered into CDE on 10/19/16. The changes are effective for the third quarter 2016.

3Q/16: Changed PRA Parameter(s).

3Q/16: Changed PRA Parameter(s).

Reactor Coolant System Activity



Thresholds: White > 50.0 Yellow > 100.0

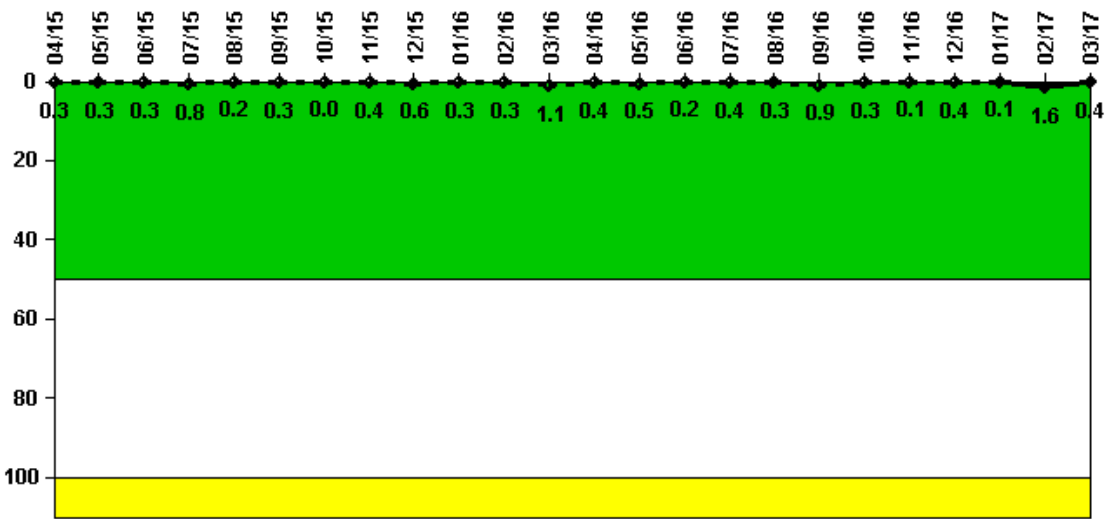
Notes

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	0.000577	0.000569	0.000505	0.000732	0.000669	0.000698	0.001006	0.000802	0.000806	0.000712	0.000777	0.000984
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	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
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	0.000778	0.000225	0.000278	0.000363	0.000340	0.000414	0.000402	0.000495	0.000416	0.000389	0.000419	0.000452
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	0.1	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	0.029	0.031	0.028	0.081	0.023	0.028	0.004	0.036	0.063	0.034	0.026	0.111
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

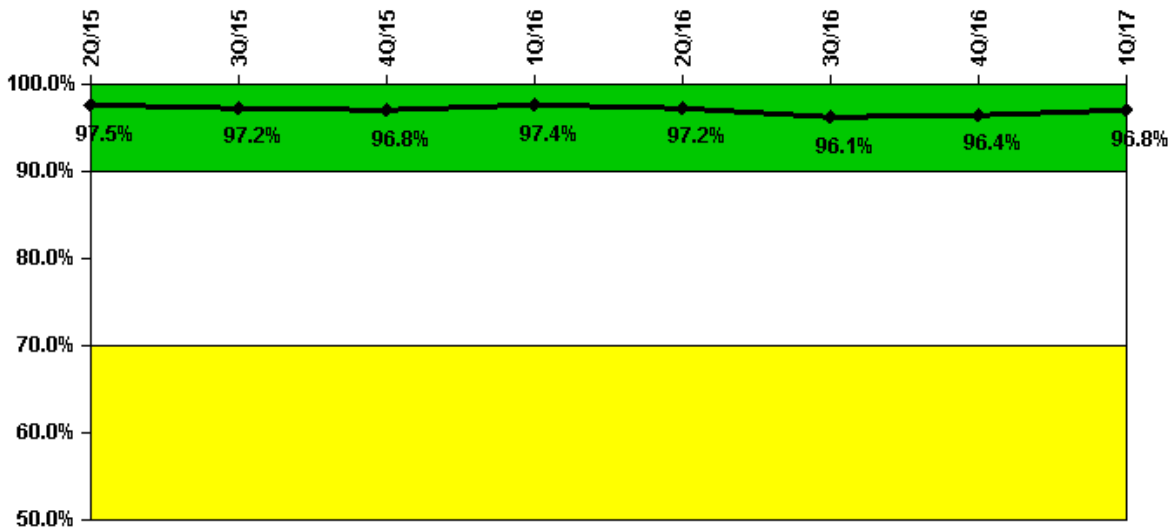
Indicator value	0.3	0.3	0.3	0.8	0.2	0.3	0	0.4	0.6	0.3	0.3	1.1
Reactor Coolant System Leakage	4/16	5/16	6/16	7/16	8/16	9/16	10/16	11/16	12/16	1/17	2/17	3/17
Maximum leakage	0.037	0.049	0.019	0.036	0.031	0.092	0.034	0.011	0.041	0.010	0.162	0.036
Technical specification limit	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0

Indicator value	0.4	0.5	0.2	0.4	0.3	0.9	0.3	0.1	0.4	0.1	1.6	0.4
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Licensee Comments: none

Drill/Exercise Performance



Thresholds: White < 90.0% Yellow < 70.0%

Notes

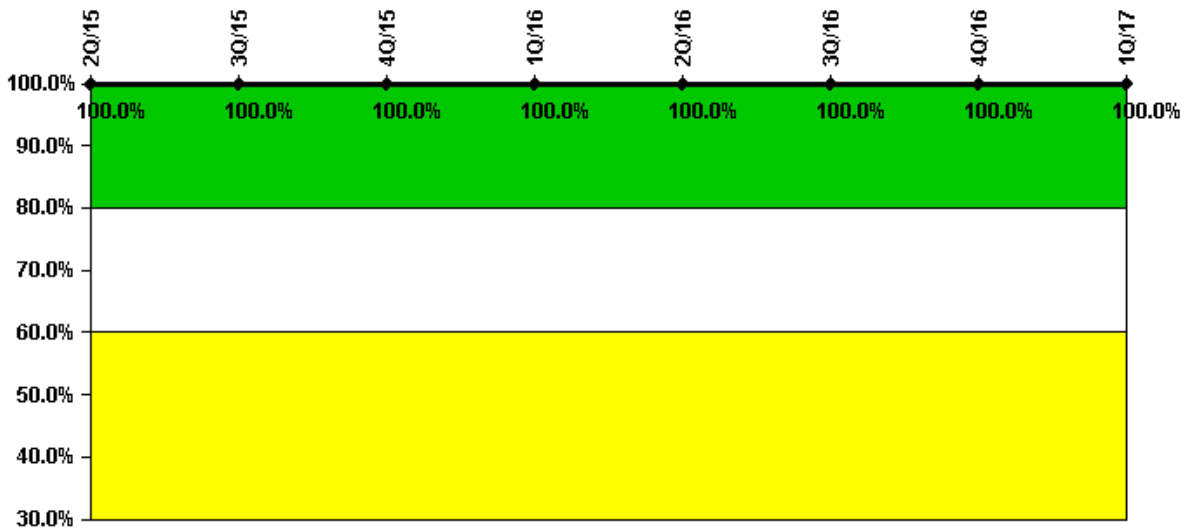
Drill/Exercise Performance	2Q/15	3Q/15	4Q/15	1Q/16	2Q/16	3Q/16	4Q/16	1Q/17
Successful opportunities	28.0	42.0	52.0	63.0	25.0	39.0	10.0	11.0
Total opportunities	28.0	44.0	54.0	63.0	26.0	43.0	10.0	11.0

Indicator value 97.5% 97.2% 96.8% 97.4% 97.2% 96.1% 96.4% 96.8%

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Licensee Comments: none

ERO Drill Participation



Thresholds: White < 80.0% Yellow < 60.0%

Notes

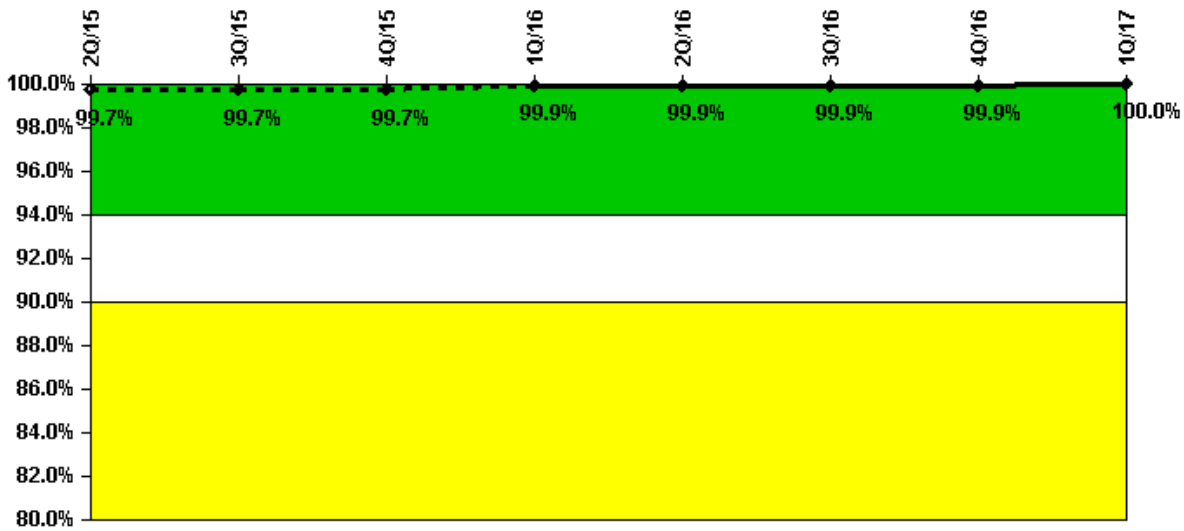
ERO Drill Participation	2Q/15	3Q/15	4Q/15	1Q/16	2Q/16	3Q/16	4Q/16	1Q/17
Participating Key personnel	132.0	131.0	129.0	124.0	129.0	130.0	129.0	129.0
Total Key personnel	132.0	131.0	129.0	124.0	129.0	130.0	129.0	129.0

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

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Licensee Comments: none

Alert & Notification System



Thresholds: White < 94.0% Yellow < 90.0%

Notes

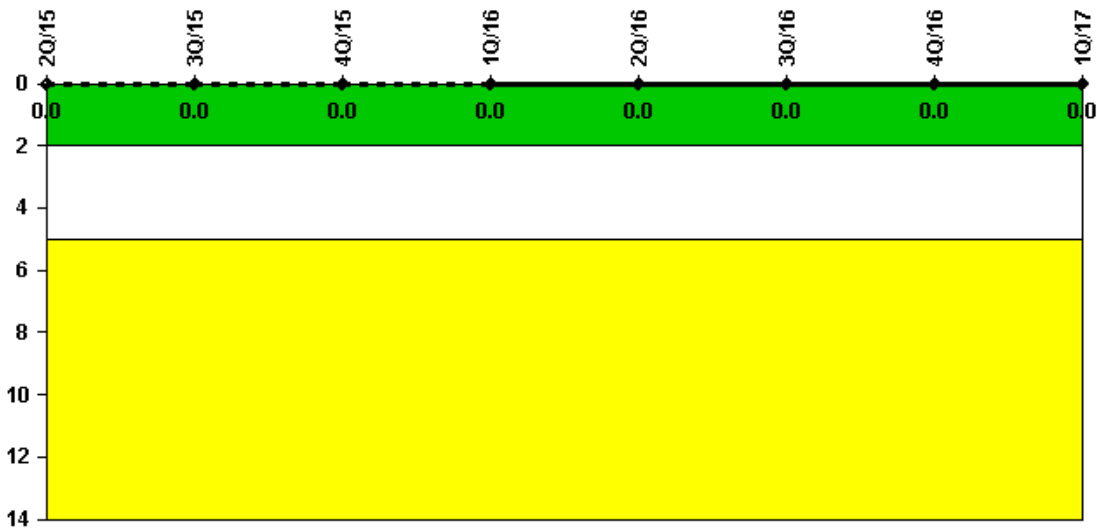
Alert & Notification System	2Q/15	3Q/15	4Q/15	1Q/16	2Q/16	3Q/16	4Q/16	1Q/17
Successful siren-tests	1754	1753	1817	1752	1754	1754	1727	1754
Total sirens-tests	1755	1755	1820	1755	1755	1755	1727	1755

Indicator value 99.7% 99.7% 99.7% 99.9% 99.9% 99.9% 99.9% 100.0%

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Licensee Comments: none

Occupational Exposure Control Effectiveness



Thresholds: White > 2.0 Yellow > 5.0

Notes

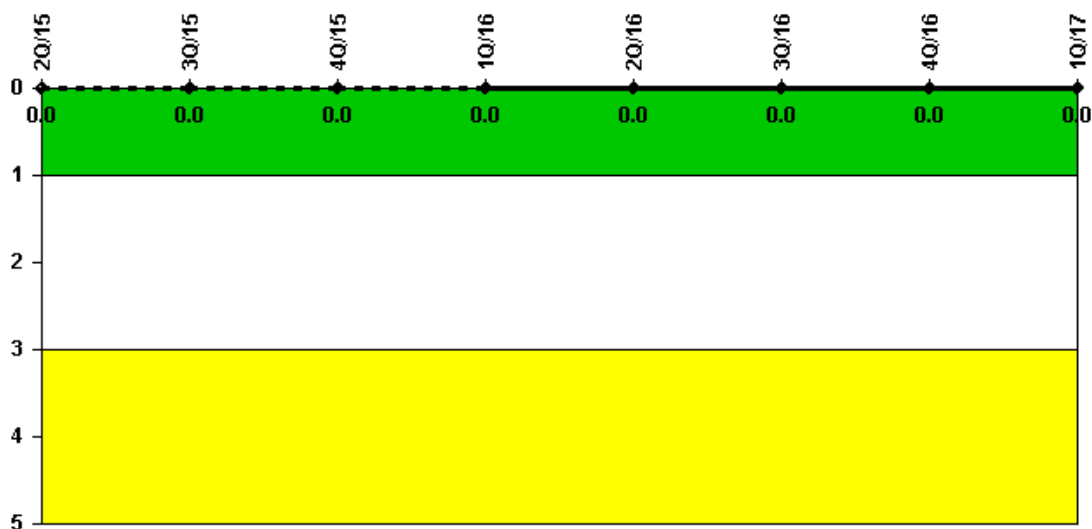
Occupational Exposure Control Effectiveness 2Q/15 3Q/15 4Q/15 1Q/16 2Q/16 3Q/16 4Q/16 1Q/17

High radiation area occurrences	0	0	0	0	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 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