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Davis-Besse – Quarterly Performance Indicators

3Q/2017 Performance Indicators

The solid trend line represents the current reporting period.

Licensee's General Comments: none

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- 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)

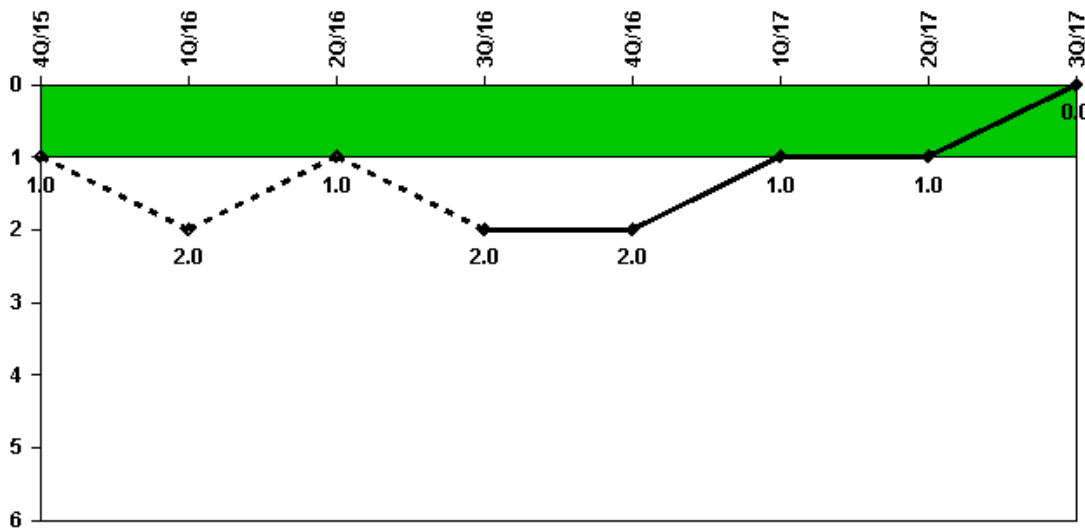
Notes

Unplanned Power Changes per 7000 Critical Hrs	4Q/15	1Q/16	2Q/16	3Q/16	4Q/16	1Q/17	2Q/17	3Q/17
Unplanned power changes	0	0	0	0	0	0	1.0	0
Critical hours	2209.0	1993.2	1277.4	1958.8	2209.0	2159.0	2184.0	2208.0
Indicator value	0	0	0	0	0	0	0.8	0.8

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Licensee Comments: none

Unplanned Scrams with Complications



Thresholds: White > 1.0

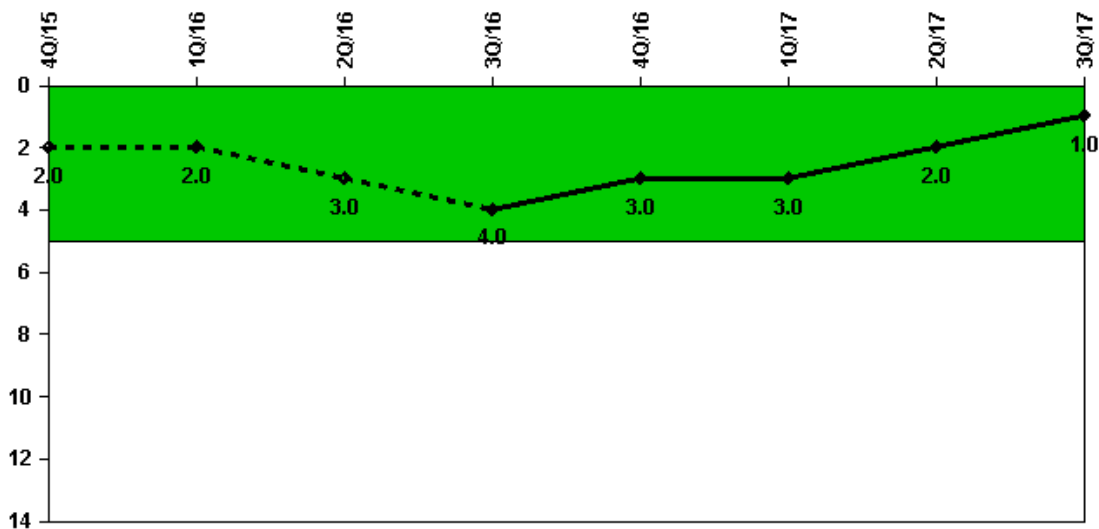
Notes

Unplanned Scrams with Complications	4Q/15	1Q/16	2Q/16	3Q/16	4Q/16	1Q/17	2Q/17	3Q/17
Scrams with complications	0	1.0	0	1.0	0	0	0	0
Indicator value	1.0	2.0	1.0	2.0	2.0	1.0	1.0	0.0

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Licensee Comments: none

Safety System Functional Failures (PWR)



Thresholds: White > 5.0

Notes

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

Safety System Functional Failures 1 0 1 2 0 0 0 1

Indicator value 2 2 3 4 3 3 2 1

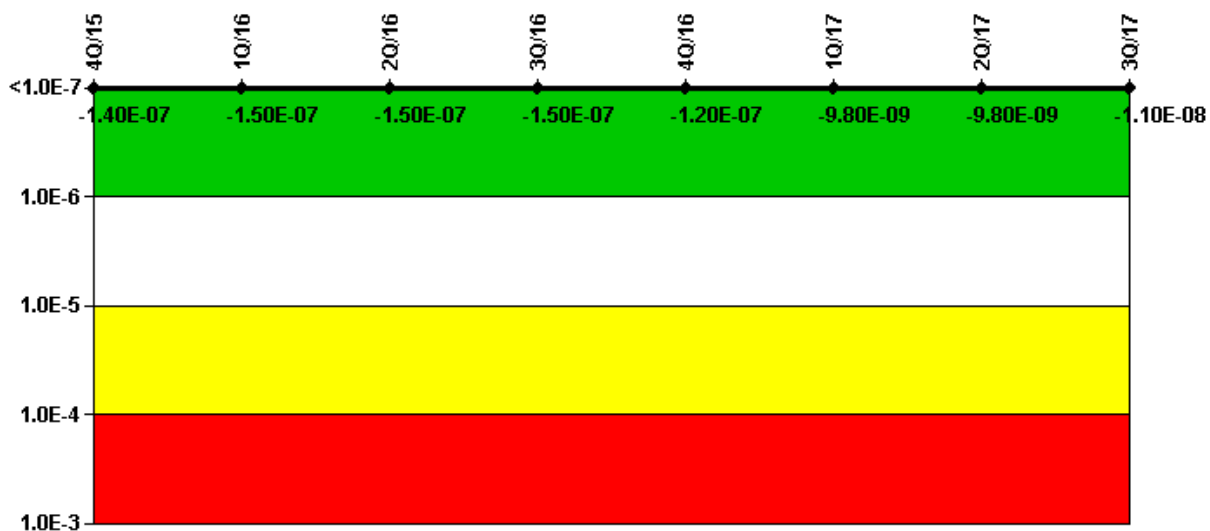
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Licensee Comments:

3Q/16: LER 2016-006 and LER 2016-007

4Q/15: LER 2015-001 Revision 01, "Borated Water Storage Tank (BWST) Rendered Inoperable due to Use of Non-Seismic Purification System," dated 11/2/15

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

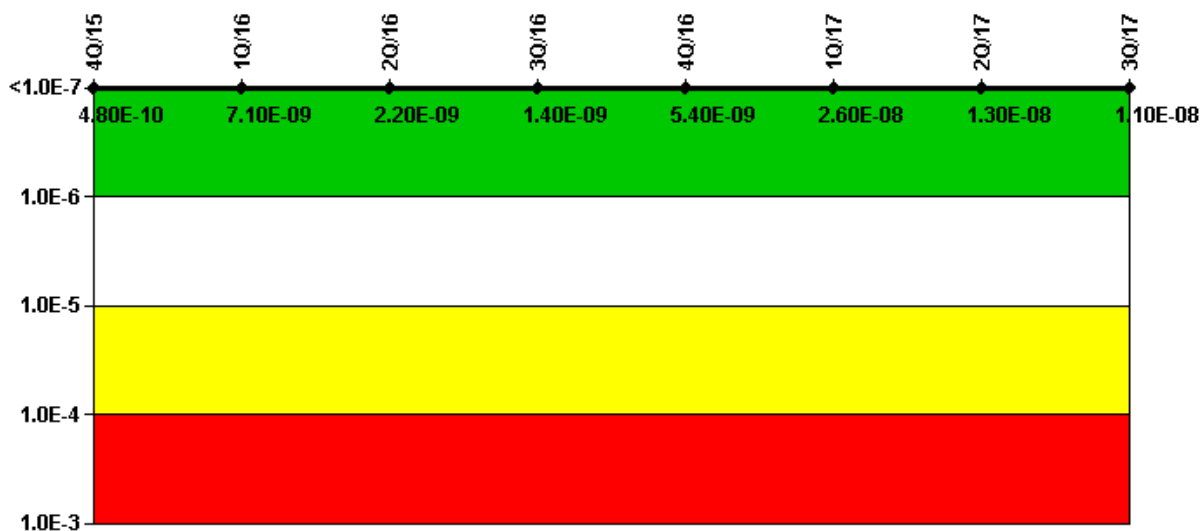
	4Q/15	1Q/16	2Q/16	3Q/16	4Q/16	1Q/17	2Q/17	3Q/17
UAI (ΔCDF)	-1.49E-08	-2.84E-08	-2.35E-08	-2.18E-08	9.99E-09	-7.58E-11	-1.63E-10	-1.16E-09
URI (ΔCDF)	-1.22E-07	-1.21E-07	-1.29E-07	-1.30E-07	-1.31E-07	-9.70E-09	-9.64E-09	-9.58E-09
PLE	NO	NO	NO	NO	NO	NO	NO	NO
Indicator value	-1.40E-07	-1.50E-07	-1.50E-07	-1.50E-07	-1.20E-07	-9.80E-09	-9.80E-09	-1.10E-08

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Licensee Comments:

1Q/17: Changed PRA Parameter(s). The Davis-Besse PRA Model Revision 5 was approved on 10/31/16 with a corresponding MSPI Basis Document Revision 5 approved on 4/21/17. The PRA model revision was a periodic update to the model which included a data update, revision of the internal flooding model, and incorporation of the recently installed Emergency Feedwater System and FLEX equipment. As a result of the PRA model change, the CDF, Fussel-Vesely, and Basic Event Probabilities for all monitored trains and components were revised.

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

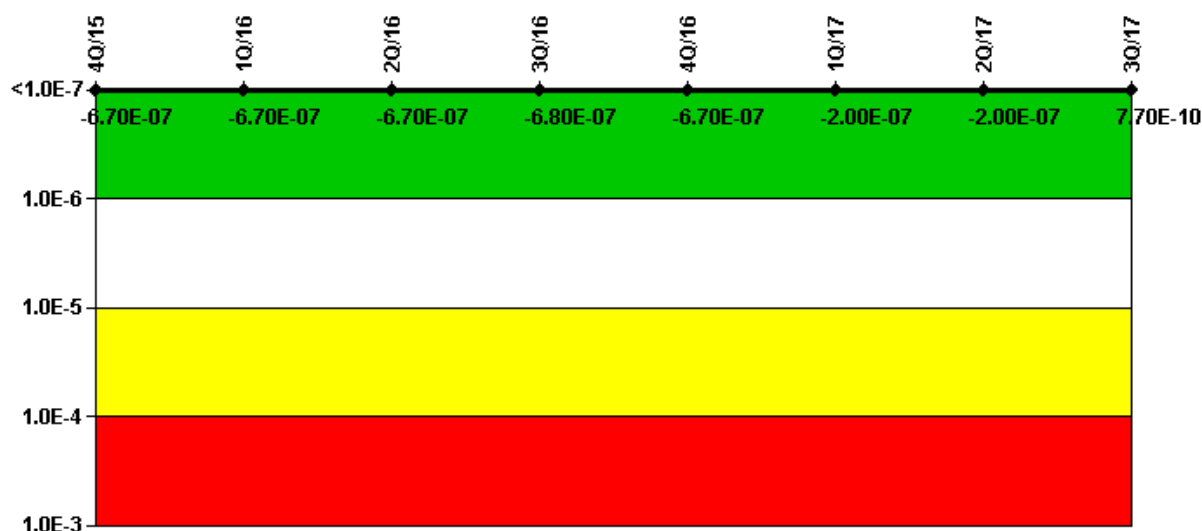
	4Q/15	1Q/16	2Q/16	3Q/16	4Q/16	1Q/17	2Q/17	3Q/17
UAI (Δ CDF)	3.26E-09	9.83E-09	5.42E-09	4.50E-09	8.55E-09	3.86E-08	2.39E-08	2.23E-08
URI (Δ CDF)	-2.78E-09	-2.71E-09	-3.20E-09	-3.15E-09	-3.13E-09	-1.24E-08	-1.14E-08	-1.15E-08
PLE	NO	NO	NO	NO	NO	NO	NO	NO
Indicator value	4.80E-10	7.10E-09	2.20E-09	1.40E-09	5.40E-09	2.60E-08	1.30E-08	1.10E-08

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Licensee Comments:

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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

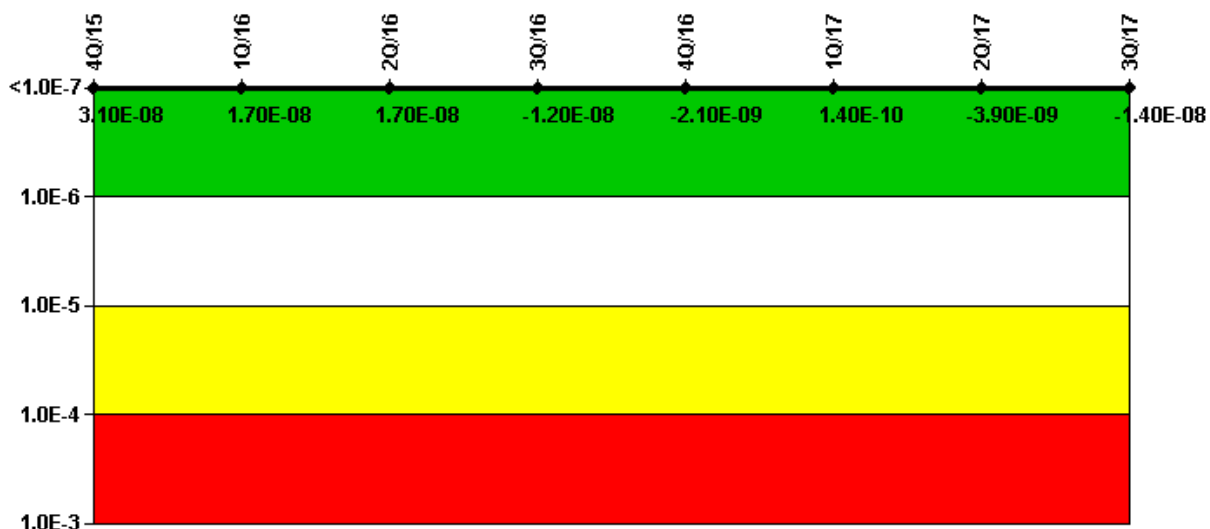
	4Q/15	1Q/16	2Q/16	3Q/16	4Q/16	1Q/17	2Q/17	3Q/17
UAI (Δ CDF)	-1.87E-08	-1.81E-08	-1.71E-08	-2.37E-08	-1.31E-08	7.79E-09	4.28E-11	1.86E-08
URI (Δ CDF)	-6.53E-07	-6.55E-07	-6.53E-07	-6.55E-07	-6.59E-07	-2.08E-07	-2.02E-07	-1.79E-08
PLE	NO	NO	NO	NO	NO	NO	NO	NO
Indicator value	-6.70E-07	-6.70E-07	-6.70E-07	-6.80E-07	-6.70E-07	-2.00E-07	-2.00E-07	7.70E-10

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Licensee Comments:

1Q/17: Changed PRA Parameter(s). The Davis-Besse PRA Model Revision 5 was approved on 10/31/16 with a corresponding MSPI Basis Document Revision 5 approved on 4/21/17. The PRA model revision was a periodic update to the model which included a data update, revision of the internal flooding model, and incorporation of the recently installed Emergency Feedwater System and FLEX equipment. As a result of the PRA model change, the CDF, Fussel-Vesely, and Basic Event Probabilities for all monitored trains and components were revised.

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

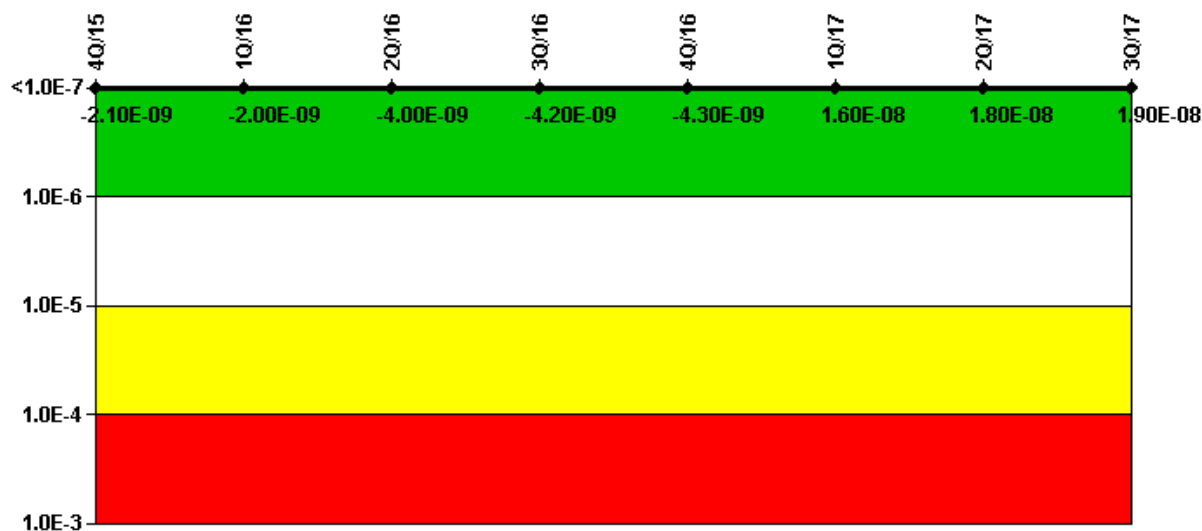
	4Q/15	1Q/16	2Q/16	3Q/16	4Q/16	1Q/17	2Q/17	3Q/17
UAI (Δ CDF)	1.71E-08	3.81E-09	8.76E-09	1.04E-08	2.06E-08	6.32E-08	5.19E-08	4.08E-08
URI (Δ CDF)	1.36E-08	1.35E-08	8.12E-09	-2.26E-08	-2.28E-08	-6.30E-08	-5.58E-08	-5.48E-08
PLE	NO	NO	NO	NO	NO	NO	NO	NO
Indicator value	3.10E-08	1.70E-08	1.70E-08	-1.20E-08	-2.10E-09	1.40E-10	-3.90E-09	-1.40E-08

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Licensee Comments:

1Q/17: Changed PRA Parameter(s). The Davis-Besse PRA Model Revision 5 was approved on 10/31/16 with a corresponding MSPI Basis Document Revision 5 approved on 4/21/17. The PRA model revision was a periodic update to the model which included a data update, revision of the internal flooding model, and incorporation of the recently installed Emergency Feedwater System and FLEX equipment. As a result of the PRA model change, the CDF, Fussel-Vesely, and Basic Event Probabilities for all monitored trains and components were revised.

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

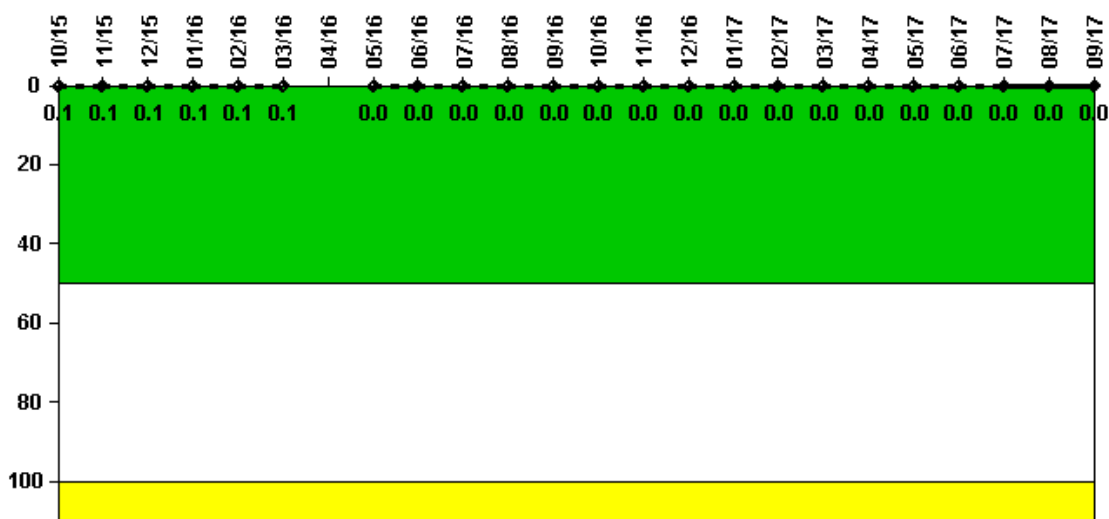
	4Q/15	1Q/16	2Q/16	3Q/16	4Q/16	1Q/17	2Q/17	3Q/17
UAI (Δ CDF)	-3.55E-11	-3.55E-11	-3.55E-11	-3.55E-11	-3.55E-11	4.78E-10	4.14E-10	4.14E-10
URI (Δ CDF)	-2.06E-09	-1.96E-09	-3.99E-09	-4.19E-09	-4.26E-09	1.55E-08	1.80E-08	1.87E-08
PLE	NO	NO	NO	NO	NO	NO	NO	NO
Indicator value	-2.10E-09	-2.00E-09	-4.00E-09	-4.20E-09	-4.30E-09	1.60E-08	1.80E-08	1.90E-08

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Licensee Comments:

1Q/17: Changed PRA Parameter(s). The Davis-Besse PRA Model Revision 5 was approved on 10/31/16 with a corresponding MSPI Basis Document Revision 5 approved on 4/21/17. The PRA model revision was a periodic update to the model which included a data update, revision of the internal flooding model, and incorporation of the recently installed Emergency Feedwater System and FLEX equipment. As a result of the PRA model change, the CDF, Fussel-Vesely, and Basic Event Probabilities for all monitored trains and components were revised.

Reactor Coolant System Activity



Thresholds: White > 50.0 Yellow > 100.0

Notes

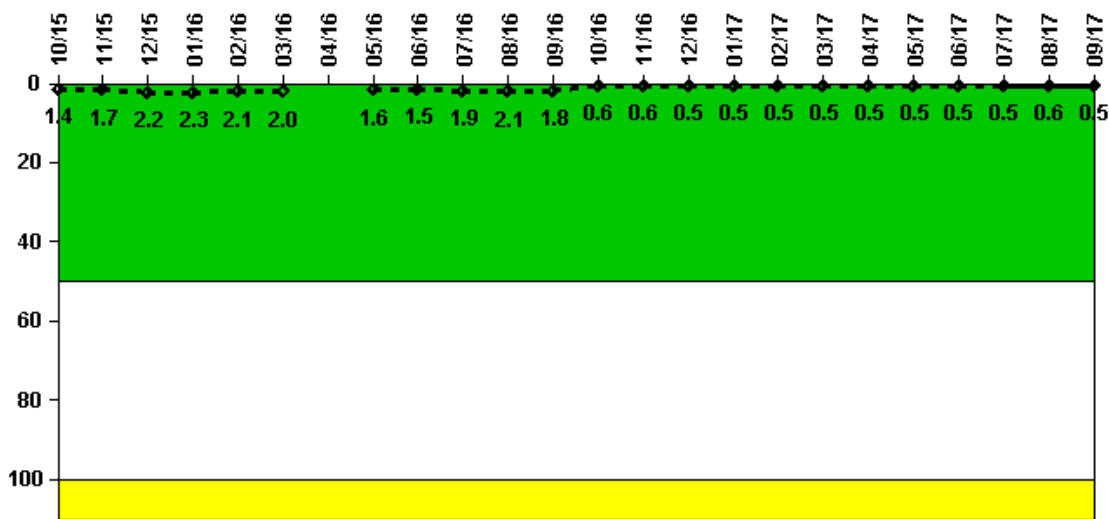
Reactor Coolant System Activity	10/15	11/15	12/15	1/16	2/16	3/16	4/16	5/16	6/16	7/16	8/16	9/16
Maximum activity	0.000540	0.000560	0.000610	0.000560	0.000590	0.000510	N/A	0.000150	0.000160	0.000180	0.000180	0.000180
Technical specification limit	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Indicator value	0.1	0.1	0.1	0.1	0.1	0.1	N/A	0	0	0	0	0
Reactor Coolant System Activity	10/16	11/16	12/16	1/17	2/17	3/17	4/17	5/17	6/17	7/17	8/17	9/17
Maximum activity	0.000190	0.000180	0.000180	0.000190	0.000180	0.000180	0.000190	0.000220	0.000230	0.000210	0.000200	0.000240
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	0	0	0	0	0	0	0	0	0	0	0

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Licensee Comments:

3/16: Minor data discrepancy corrected for February 2016, change did not affect indicator color.

Reactor Coolant System Leakage



Thresholds: White > 50.0 Yellow > 100.0

Notes

Reactor Coolant System Leakage	10/15	11/15	12/15	1/16	2/16	3/16	4/16	5/16	6/16	7/16	8/16	9/16
Maximum leakage	0.144	0.167	0.218	0.226	0.213	0.204	N/A	0.161	0.152	0.187	0.212	0.178
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

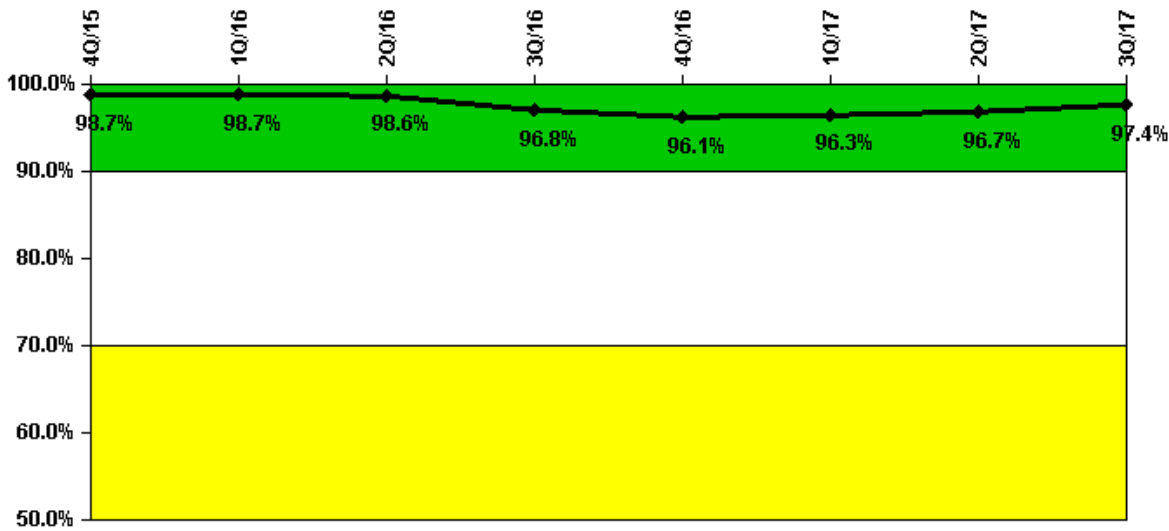
Indicator value	1.4	1.7	2.2	2.3	2.1	2.0	N/A	1.6	1.5	1.9	2.1	1.8
Reactor Coolant System Leakage	10/16	11/16	12/16	1/17	2/17	3/17	4/17	5/17	6/17	7/17	8/17	9/17
Maximum leakage	0.056	0.058	0.052	0.051	0.050	0.050	0.048	0.048	0.049	0.049	0.055	0.053
Technical specification limit	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0

Indicator value	0.6	0.6	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.6	0.5
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Licensee Comments: none

Drill/Exercise Performance



Thresholds: White < 90.0% Yellow < 70.0%

Notes

Drill/Exercise Performance	4Q/15	1Q/16	2Q/16	3Q/16	4Q/16	1Q/17	2Q/17	3Q/17
Successful opportunities	47.0	0	6.0	39.0	59.0	47.0	19.0	42.0
Total opportunities	47.0	0	6.0	44.0	60.0	47.0	20.0	42.0

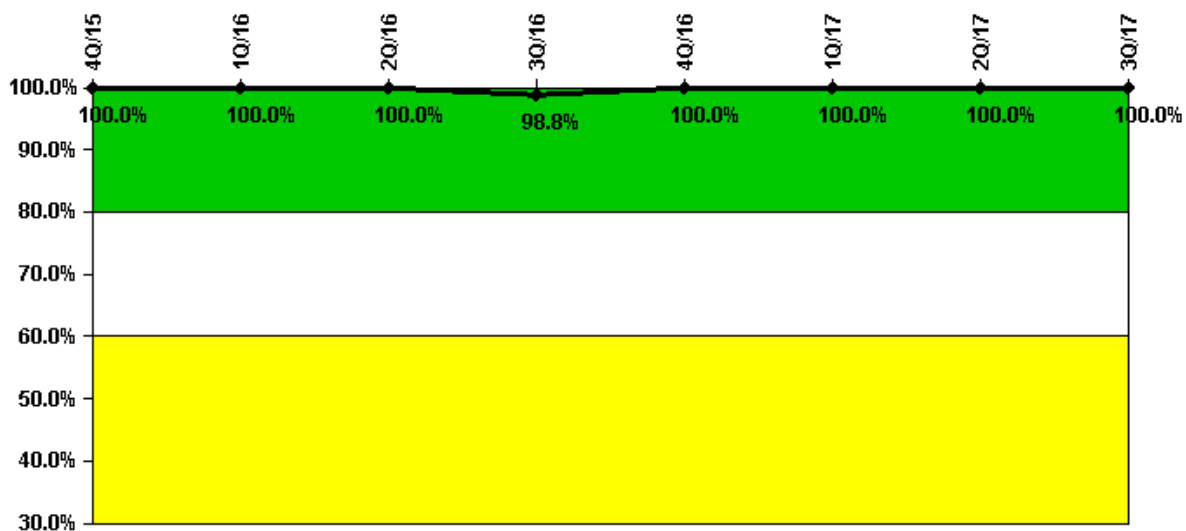
Indicator value **98.7% 98.7% 98.6% 96.8% 96.1% 96.3% 96.7% 97.4%**

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Licensee Comments:

3Q/16: Previous data for 2015-2016 revised to include Emergency Assistant Plant Managers that were not previously counted due to having inactive licenses. These successful drill opportunities did not affect the indicator color.

ERO Drill Participation



Thresholds: White < 80.0% Yellow < 60.0%

Notes

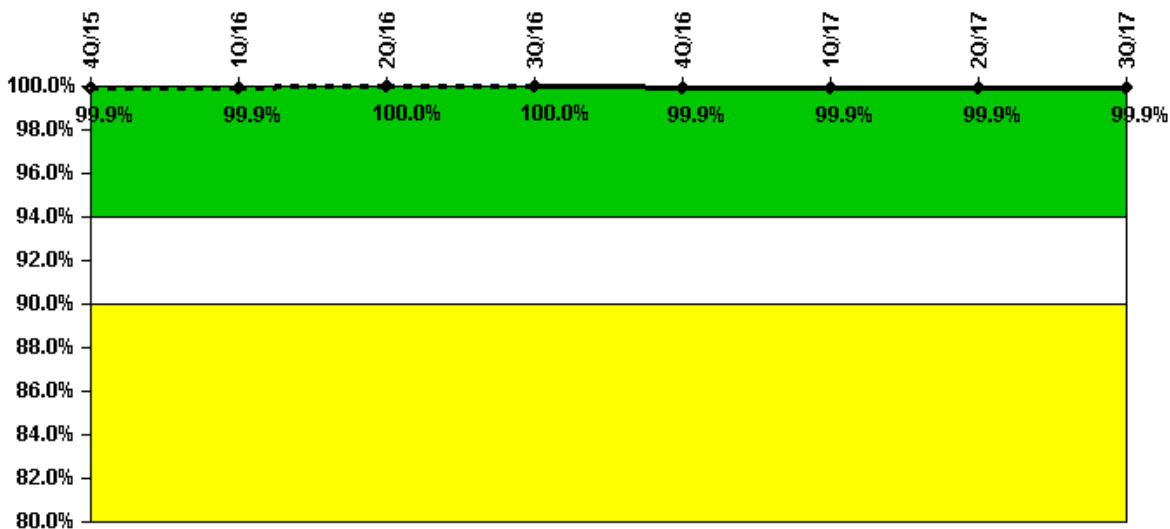
ERO Drill Participation	4Q/15	1Q/16	2Q/16	3Q/16	4Q/16	1Q/17	2Q/17	3Q/17
Participating Key personnel	91.0	90.0	88.0	84.0	87.0	92.0	94.0	94.0
Total Key personnel	91.0	90.0	88.0	85.0	87.0	92.0	94.0	94.0

Indicator value **100.0% 100.0% 100.0% 98.8% 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

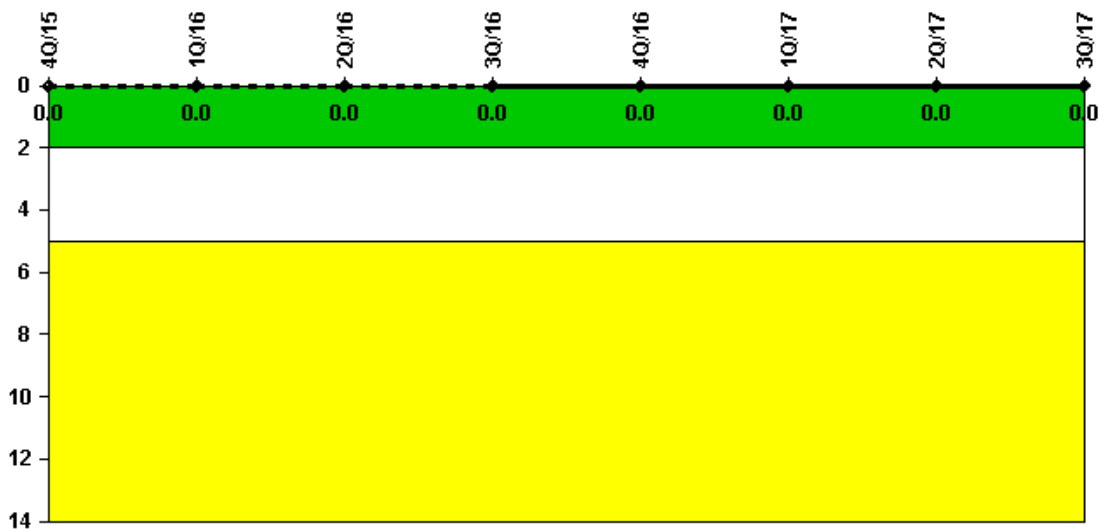
Alert & Notification System	4Q/15	1Q/16	2Q/16	3Q/16	4Q/16	1Q/17	2Q/17	3Q/17
Successful siren-tests	701	702	702	756	700	701	702	702
Total sirens-tests	702	702	702	756	702	702	702	702

Indicator value **99.9% 99.9% 100.0% 100.0% 99.9% 99.9% 99.9% 99.9%**

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Licensee Comments: none

Occupational Exposure Control Effectiveness



Thresholds: White > 2.0 Yellow > 5.0

Notes

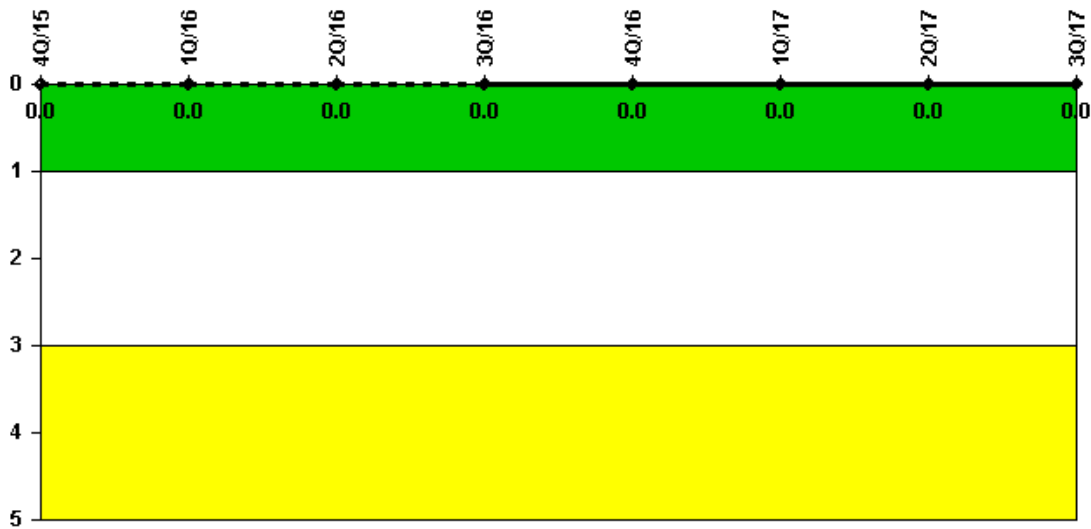
Occupational Exposure Control Effectiveness 4Q/15 1Q/16 2Q/16 3Q/16 4Q/16 1Q/17 2Q/17 3Q/17

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 4Q/15 1Q/16 2Q/16 3Q/16 4Q/16 1Q/17 2Q/17 3Q/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: October 31, 2017

Page Last Reviewed/Updated Monday, November 06, 2017