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## Davis-Besse – Quarterly Performance Indicators

### 2Q/2017 Performance Indicators

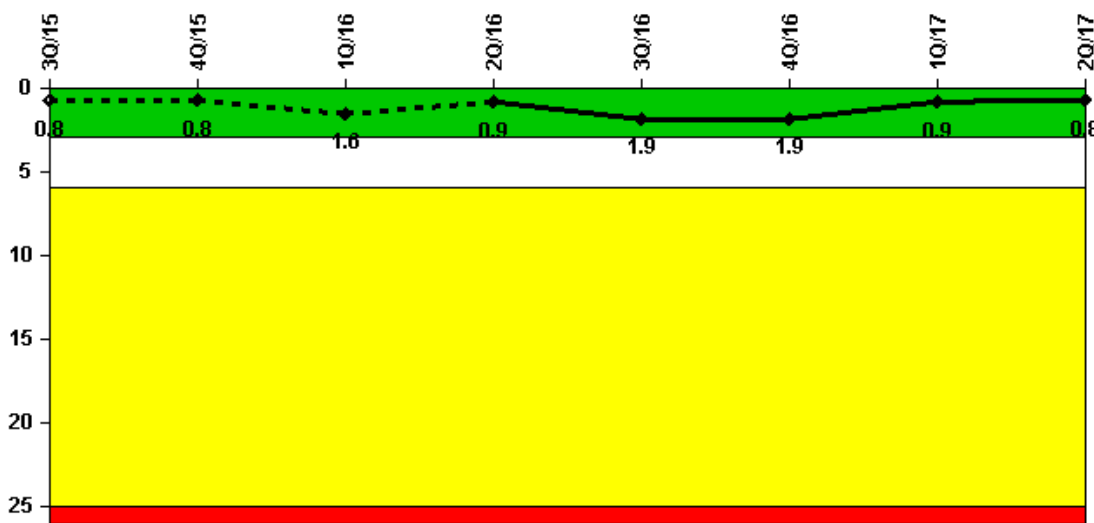
The solid trend line represents the current reporting period.

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)
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- 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

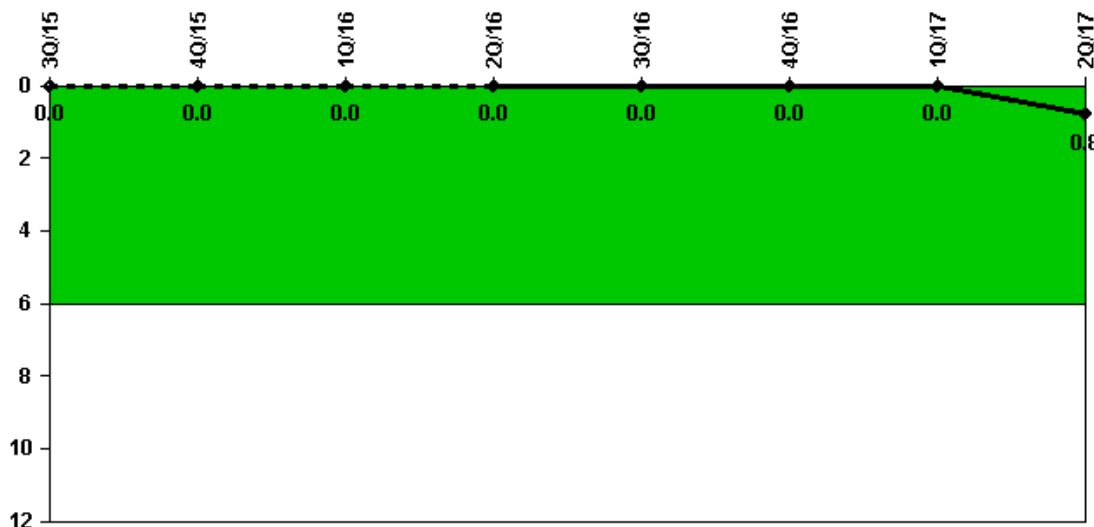
Unplanned Scrams per 7000 Critical Hrs	3Q/15	4Q/15	1Q/16	2Q/16	3Q/16	4Q/16	1Q/17	2Q/17
Unplanned scrams	0	0	1.0	0	1.0	0	0	0
Critical hours	2208.0	2209.0	1993.2	1277.4	1958.8	2209.0	2159.0	2184.0

Indicator value: 0.8 0.8 1.6 0.9 1.9 1.9 0.9 0.8

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Licensee Comments: none

### Unplanned Power Changes per 7000 Critical Hrs



Thresholds: White > 6.0

**Notes**

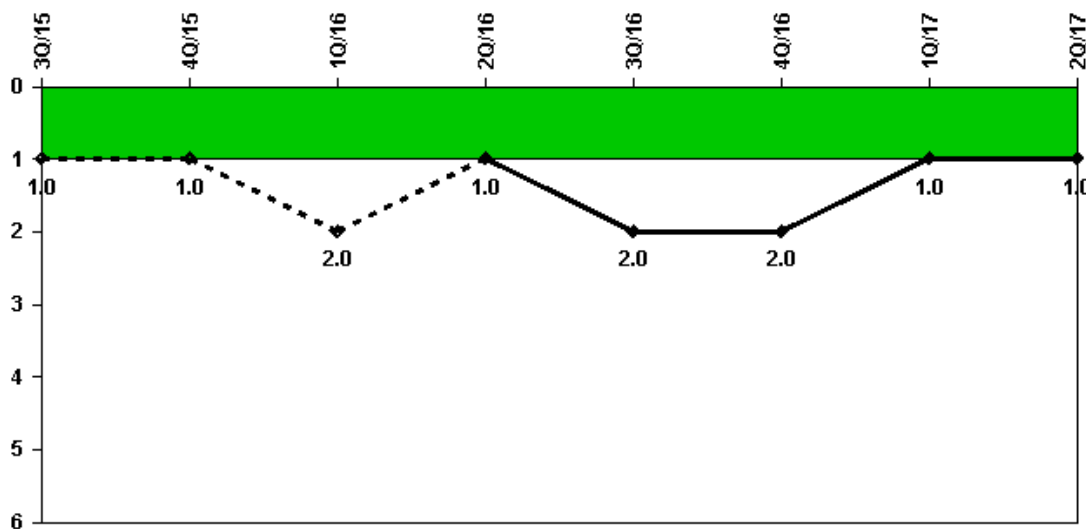
Unplanned Power Changes per 7000 Critical Hrs	3Q/15	4Q/15	1Q/16	2Q/16	3Q/16	4Q/16	1Q/17	2Q/17
Unplanned power changes	0	0	0	0	0	0	0	1.0
Critical hours	2208.0	2209.0	1993.2	1277.4	1958.8	2209.0	2159.0	2184.0

**Indicator value** 0 0 0 0 0 0 0 0.8

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Licensee Comments: none

**Unplanned Scrams with Complications**



Thresholds: White > 1.0

**Notes**

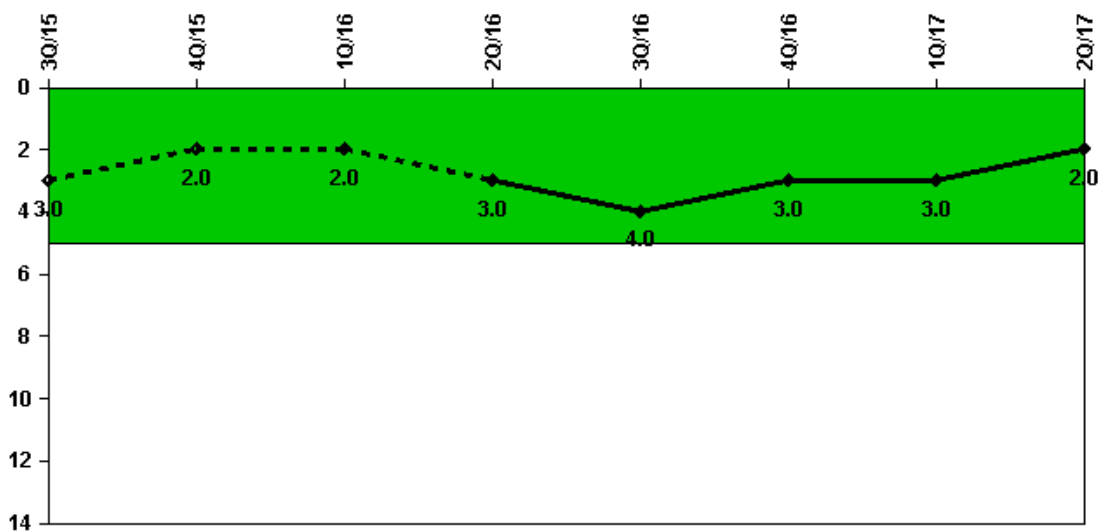
Unplanned Scrams with Complications	3Q/15	4Q/15	1Q/16	2Q/16	3Q/16	4Q/16	1Q/17	2Q/17
Scrams with complications	0	0	1.0	0	1.0	0	0	0

**Indicator value** 1.0 1.0 2.0 1.0 2.0 2.0 1.0 1.0

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Licensee Comments: none

### Safety System Functional Failures (PWR)



Thresholds: White > 5.0

#### Notes

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

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

Indicator value 3 2 2 3 4 3 3 2

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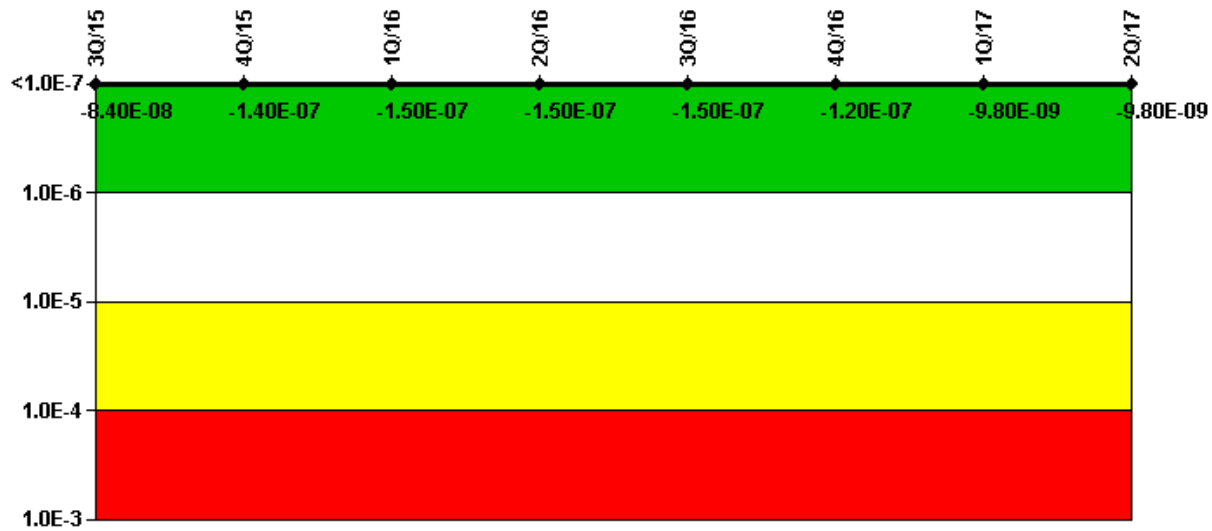
Licensee Comments:

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

3Q/15: LER 2015-003-00, Inadvertent Breaker Operation Renders Control Room Emergency Air Temperature Control System Inoperable

### 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**

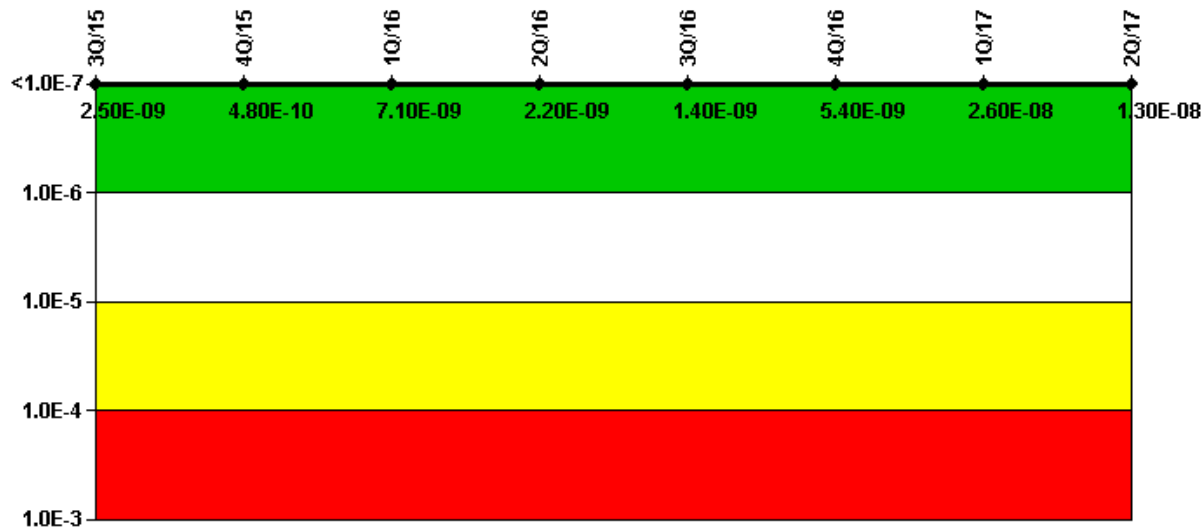
	3Q/15	4Q/15	1Q/16	2Q/16	3Q/16	4Q/16	1Q/17	2Q/17
UAI ( $\Delta$ CDF)	3.73E-08	-1.49E-08	-2.84E-08	-2.35E-08	-2.18E-08	9.99E-09	-7.58E-11	-1.63E-10
URI ( $\Delta$ CDF)	-1.21E-07	-1.22E-07	-1.21E-07	-1.29E-07	-1.30E-07	-1.31E-07	-9.70E-09	-9.64E-09
PLE	NO	NO	NO	NO	NO	NO	NO	NO
<b>Indicator value</b>	<b>-8.40E-08</b>	<b>-1.40E-07</b>	<b>-1.50E-07</b>	<b>-1.50E-07</b>	<b>-1.50E-07</b>	<b>-1.20E-07</b>	<b>-9.80E-09</b>	<b>-9.80E-09</b>

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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**

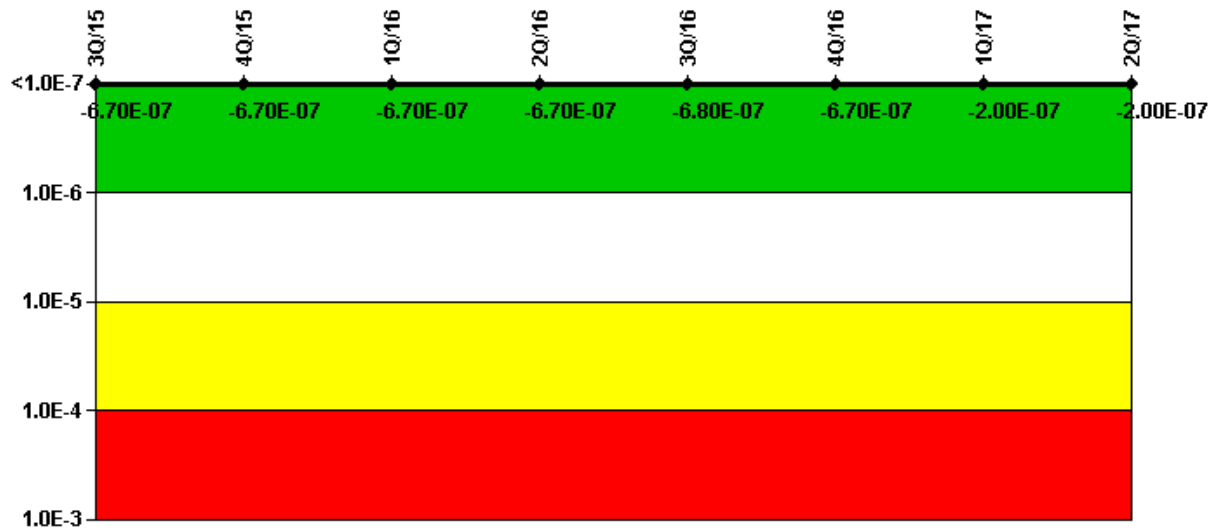
	3Q/15	4Q/15	1Q/16	2Q/16	3Q/16	4Q/16	1Q/17	2Q/17
UAI (ΔCDF)	5.14E-09	3.26E-09	9.83E-09	5.42E-09	4.50E-09	8.55E-09	3.86E-08	2.39E-08
URI (ΔCDF)	-2.68E-09	-2.78E-09	-2.71E-09	-3.20E-09	-3.15E-09	-3.13E-09	-1.24E-08	-1.14E-08
PLE	NO	NO	NO	NO	NO	NO	NO	NO
<b>Indicator value</b>	<b>2.50E-09</b>	<b>4.80E-10</b>	<b>7.10E-09</b>	<b>2.20E-09</b>	<b>1.40E-09</b>	<b>5.40E-09</b>	<b>2.60E-08</b>	<b>1.30E-08</b>

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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, Heat Removal System



Thresholds: White > 1.00E-6 Yellow > 1.00E-5 Red > 1.00E-4

**Notes**

**Mitigating Systems Performance Index, Heat Removal System**

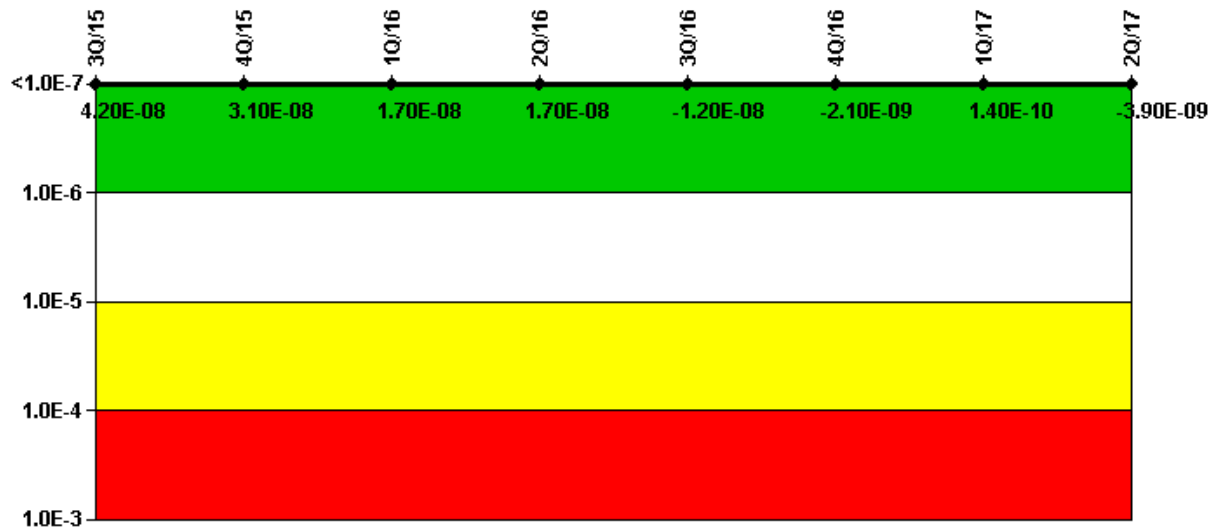
	3Q/15	4Q/15	1Q/16	2Q/16	3Q/16	4Q/16	1Q/17	2Q/17
UAI (ΔCDF)	-6.60E-09	-1.87E-08	-1.81E-08	-1.71E-08	-2.37E-08	-1.31E-08	7.79E-09	4.28E-11
URI (ΔCDF)	-6.59E-07	-6.53E-07	-6.55E-07	-6.53E-07	-6.55E-07	-6.59E-07	-2.08E-07	-2.02E-07
PLE	NO	NO	NO	NO	NO	NO	NO	NO
<b>Indicator value</b>	<b>-6.70E-07</b>	<b>-6.70E-07</b>	<b>-6.70E-07</b>	<b>-6.70E-07</b>	<b>-6.80E-07</b>	<b>-6.70E-07</b>	<b>-2.00E-07</b>	<b>-2.00E-07</b>

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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**

	3Q/15	4Q/15	1Q/16	2Q/16	3Q/16	4Q/16	1Q/17	2Q/17
UAI (ΔCDF)	2.87E-08	1.71E-08	3.81E-09	8.76E-09	1.04E-08	2.06E-08	6.32E-08	5.19E-08
URI (ΔCDF)	1.33E-08	1.36E-08	1.35E-08	8.12E-09	-2.26E-08	-2.28E-08	-6.30E-08	-5.58E-08
PLE	NO	NO	NO	NO	NO	NO	NO	NO
<b>Indicator value</b>	<b>4.20E-08</b>	<b>3.10E-08</b>	<b>1.70E-08</b>	<b>1.70E-08</b>	<b>-1.20E-08</b>	<b>-2.10E-09</b>	<b>1.40E-10</b>	<b>-3.90E-09</b>

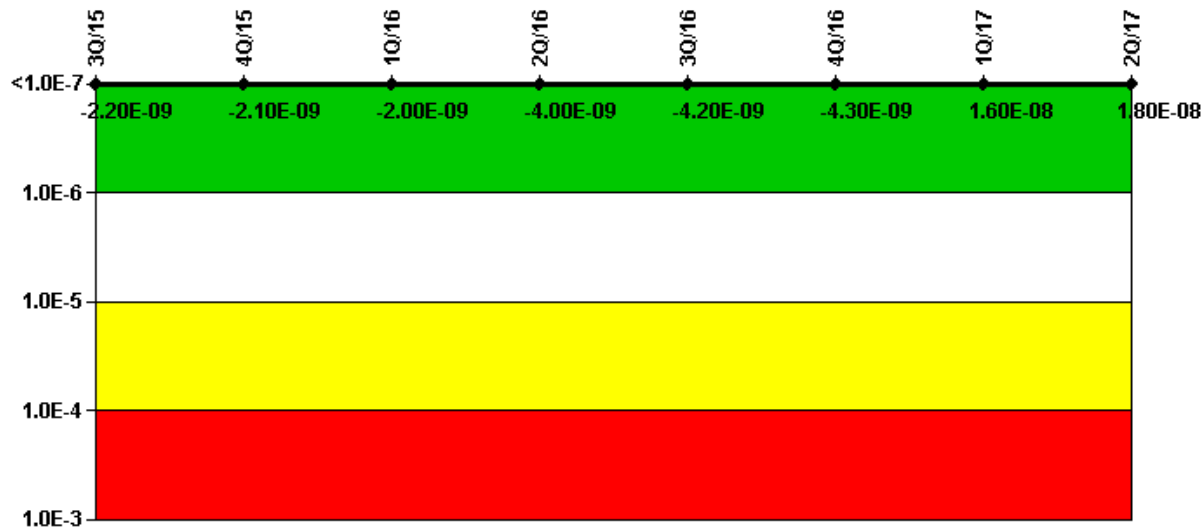
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Licensee Comments:

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**

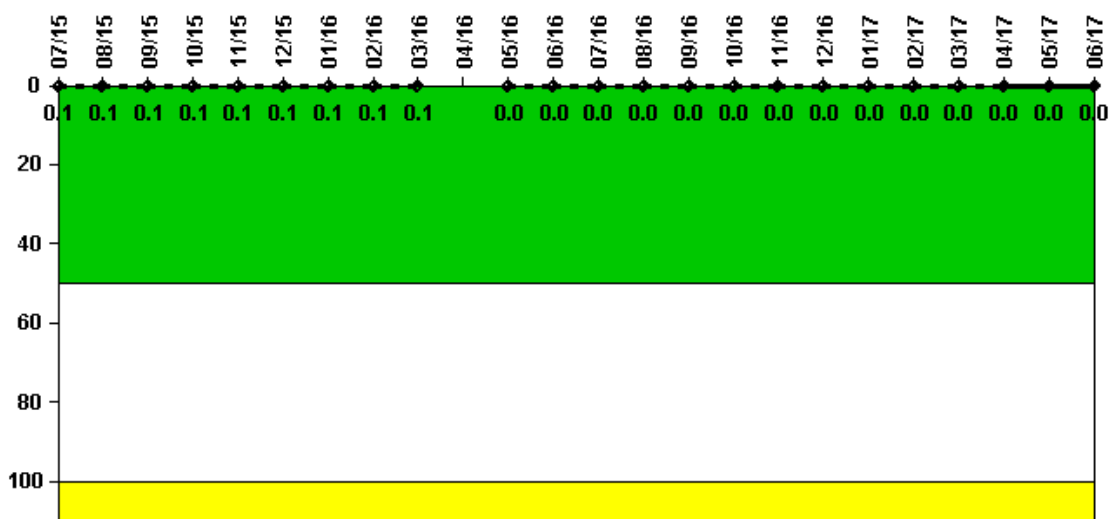
	3Q/15	4Q/15	1Q/16	2Q/16	3Q/16	4Q/16	1Q/17	2Q/17
UAI (ΔCDF)	-3.55E-11	-3.55E-11	-3.55E-11	-3.55E-11	-3.55E-11	-3.55E-11	4.78E-10	4.14E-10
URI (ΔCDF)	-2.15E-09	-2.06E-09	-1.96E-09	-3.99E-09	-4.19E-09	-4.26E-09	1.55E-08	1.80E-08
PLE	NO	NO	NO	NO	NO	NO	NO	NO
<b>Indicator value</b>	<b>-2.20E-09</b>	<b>-2.10E-09</b>	<b>-2.00E-09</b>	<b>-4.00E-09</b>	<b>-4.20E-09</b>	<b>-4.30E-09</b>	<b>1.60E-08</b>	<b>1.80E-08</b>

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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**

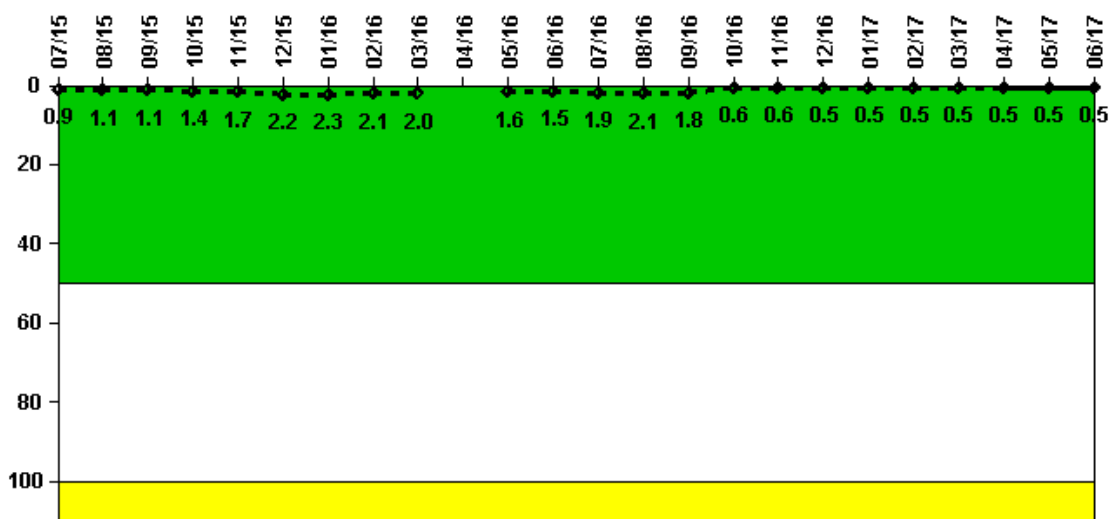
Reactor Coolant System Activity	7/15	8/15	9/15	10/15	11/15	12/15	1/16	2/16	3/16	4/16	5/16	6/16
Maximum activity	0.000620	0.000530	0.000540	0.000540	0.000560	0.000610	0.000560	0.000590	0.000510	N/A	0.000150	0.000160
Technical specification limit	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Indicator value	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	N/A	0	0
Reactor Coolant System Activity	7/16	8/16	9/16	10/16	11/16	12/16	1/17	2/17	3/17	4/17	5/17	6/17
Maximum activity	0.000180	0.000180	0.000180	0.000190	0.000180	0.000180	0.000190	0.000180	0.000180	0.000190	0.000220	0.000230
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	7/15	8/15	9/15	10/15	11/15	12/15	1/16	2/16	3/16	4/16	5/16	6/16
Maximum leakage	0.089	0.108	0.110	0.144	0.167	0.218	0.226	0.213	0.204	N/A	0.161	0.152
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

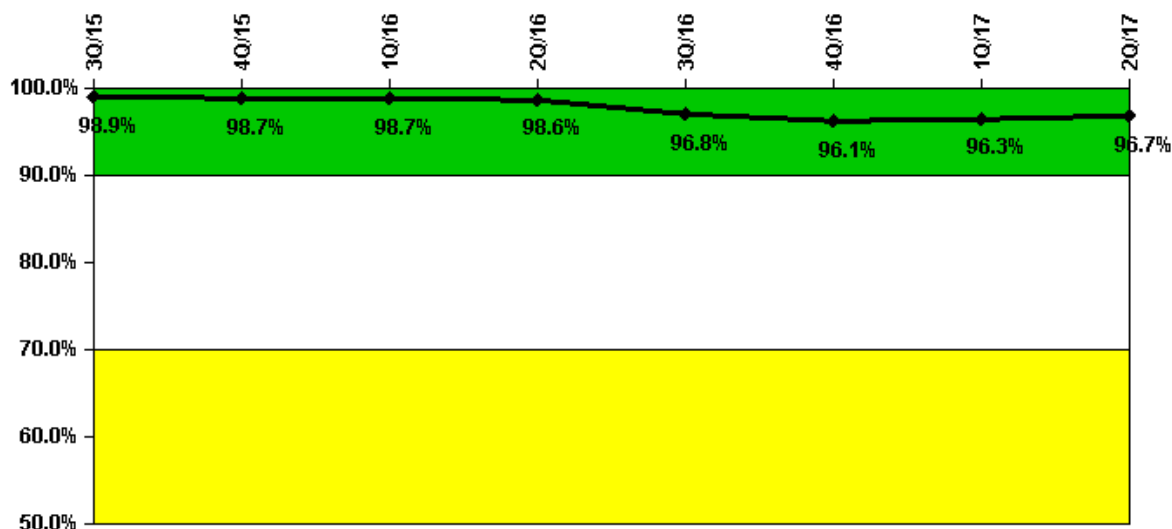
Indicator value	0.9	1.1	1.1	1.4	1.7	2.2	2.3	2.1	2.0	N/A	1.6	1.5
Reactor Coolant System Leakage	7/16	8/16	9/16	10/16	11/16	12/16	1/17	2/17	3/17	4/17	5/17	6/17
Maximum leakage	0.187	0.212	0.178	0.056	0.058	0.052	0.051	0.050	0.050	0.048	0.048	0.049
Technical specification limit	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0

Indicator value	1.9	2.1	1.8	0.6	0.6	0.5	0.5	0.5	0.5	0.5	0.5	0.5
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Licensee Comments: none

### Drill/Exercise Performance



Thresholds: White < 90.0% Yellow < 70.0%

#### Notes

Drill/Exercise Performance	3Q/15	4Q/15	1Q/16	2Q/16	3Q/16	4Q/16	1Q/17	2Q/17
Successful opportunities	21.0	47.0	0	6.0	39.0	59.0	47.0	19.0
Total opportunities	22.0	47.0	0	6.0	44.0	60.0	47.0	20.0

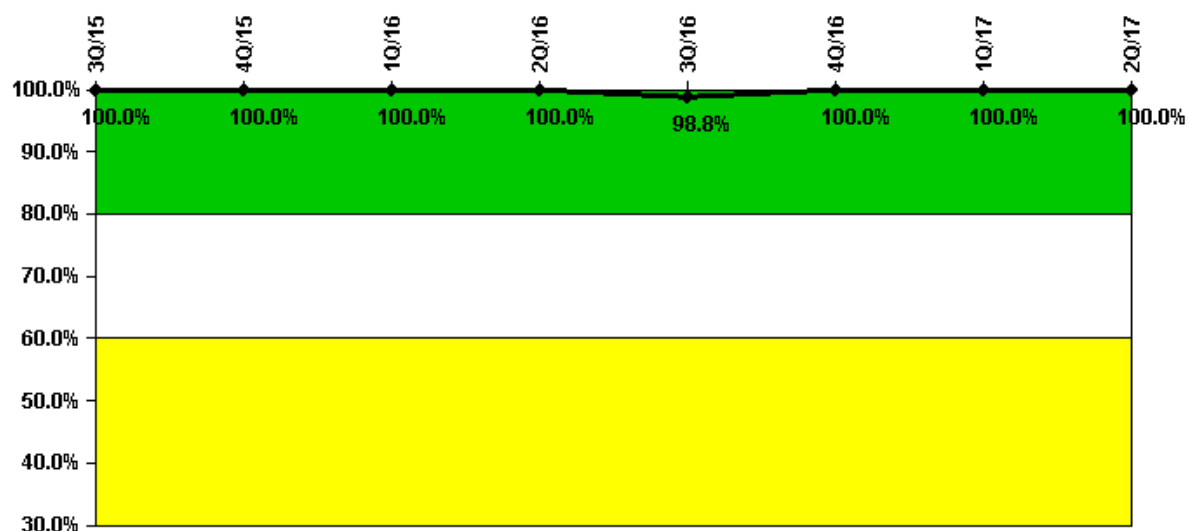
**Indicator value**                    **98.9% 98.7% 98.7% 98.6% 96.8% 96.1% 96.3% 96.7%**

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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

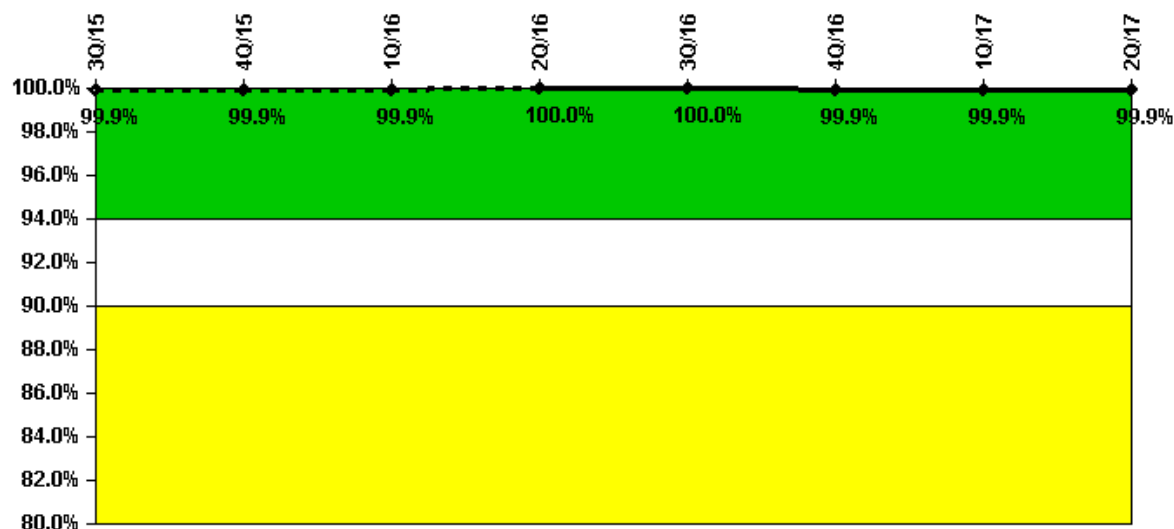
ERO Drill Participation	3Q/15	4Q/15	1Q/16	2Q/16	3Q/16	4Q/16	1Q/17	2Q/17
Participating Key personnel	86.0	91.0	90.0	88.0	84.0	87.0	92.0	94.0
Total Key personnel	86.0	91.0	90.0	88.0	85.0	87.0	92.0	94.0

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

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Licensee Comments: none

### Alert & Notification System



Thresholds: White < 94.0% Yellow < 90.0%

**Notes**

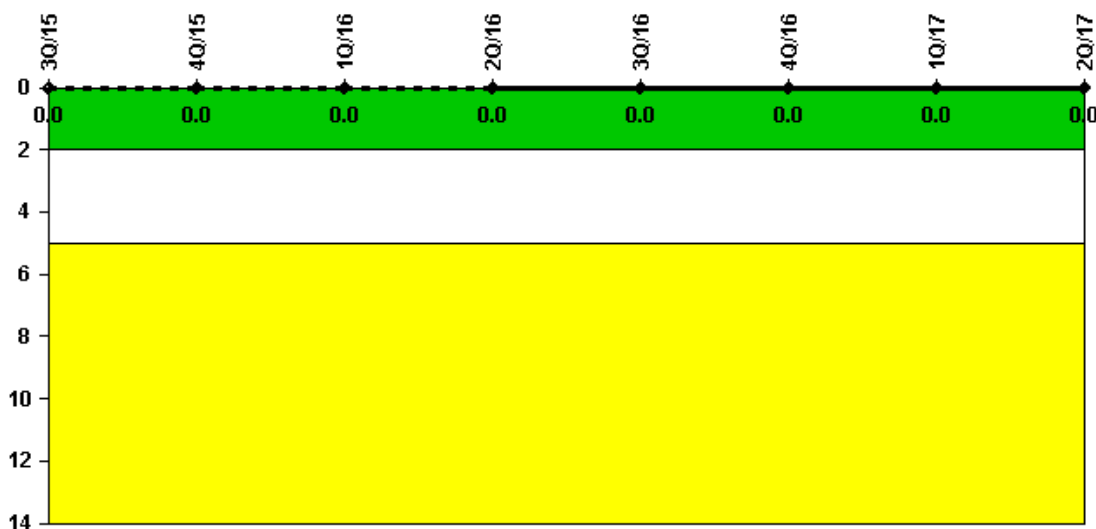
Alert & Notification System	3Q/15	4Q/15	1Q/16	2Q/16	3Q/16	4Q/16	1Q/17	2Q/17
Successful siren-tests	702	701	702	702	756	700	701	702
Total sirens-tests	702	702	702	702	756	702	702	702

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

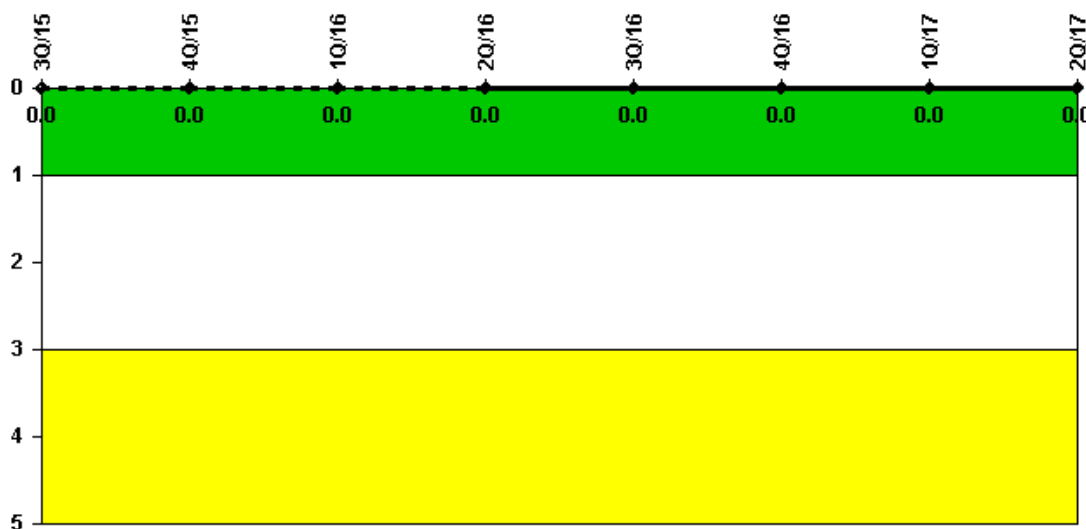
**Occupational Exposure Control Effectiveness** 3Q/15 4Q/15 1Q/16 2Q/16 3Q/16 4Q/16 1Q/17 2Q/17

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** 3Q/15 4Q/15 1Q/16 2Q/16 3Q/16 4Q/16 1Q/17 2Q/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: July 26, 2017

Page Last Reviewed/Updated Wednesday, June 07, 2017