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## Catawba 2 – Quarterly Performance Indicators

### 4Q/2017 Performance Indicators

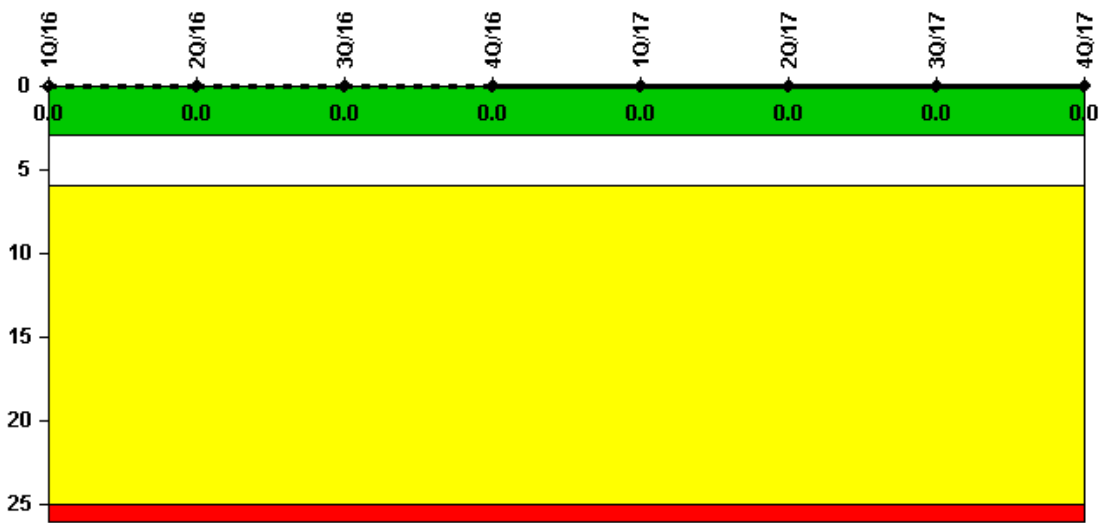
The solid trend line represents the current reporting period.

Licensee's General Comments: none

On this page:

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- Unplanned Power Changes per 7000 Critical Hours (IE03)
- Unplanned Scrams with Complications (IE04)
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- Residual Heat Removal Systems (MS09)
- Cooling Water Systems (MS10)
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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**

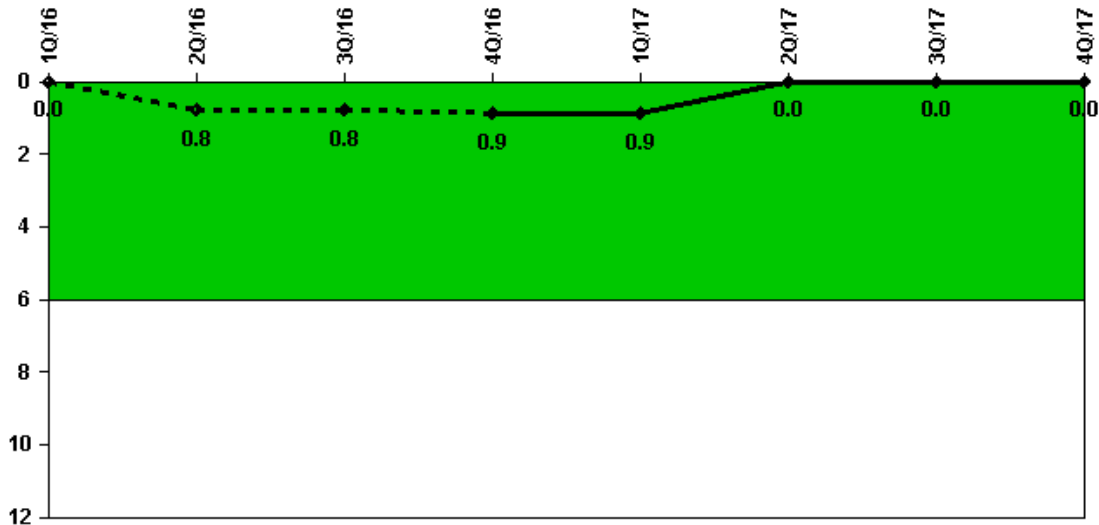
Unplanned Scrams per 7000 Critical Hrs	1Q/16	2Q/16	3Q/16	4Q/16	1Q/17	2Q/17	3Q/17	4Q/17
Unplanned scrams	0	0	0	0	0	0	0	0
Critical hours	2183.0	2184.0	1708.2	2029.5	2159.0	2184.0	2208.0	2209.0

Indicator value	0	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**

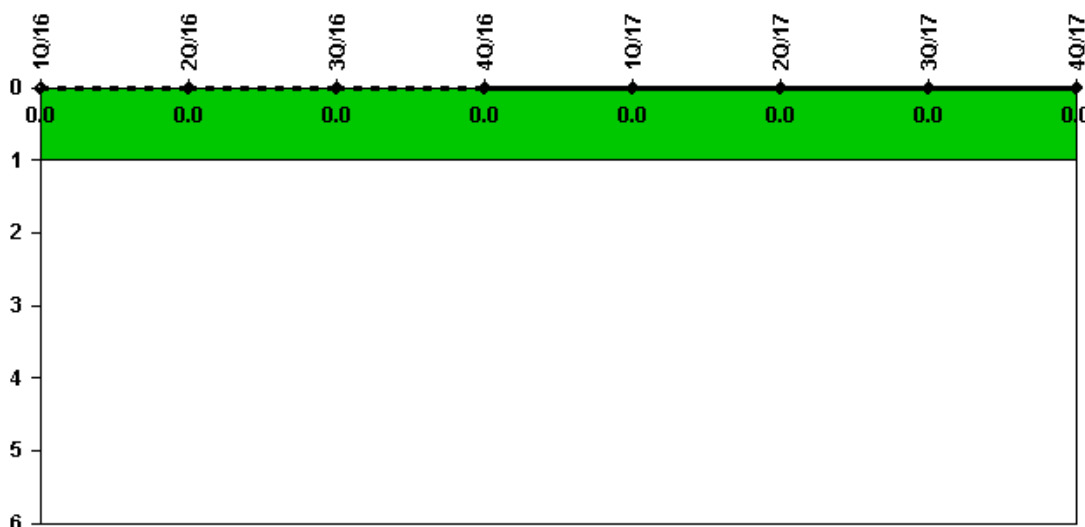
<b>Unplanned Power Changes per 7000 Critical Hrs</b>	<b>1Q/16</b>	<b>2Q/16</b>	<b>3Q/16</b>	<b>4Q/16</b>	<b>1Q/17</b>	<b>2Q/17</b>	<b>3Q/17</b>	<b>4Q/17</b>
Unplanned power changes	0	1.0	0	0	0	0	0	0
Critical hours	2183.0	2184.0	1708.2	2029.5	2159.0	2184.0	2208.0	2209.0
<b>Indicator value</b>	<b>0</b>	<b>0.8</b>	<b>0.8</b>	<b>0.9</b>	<b>0.9</b>	<b>0</b>	<b>0</b>	<b>0</b>

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Licensee Comments:

2Q/16: Turbine/Reactor Runback initiated by trip of 2A Main Feedwater Pump due to 2/3 Electrical Solenoids tripped

**Unplanned Scrams with Complications**



Thresholds: White > 1.0

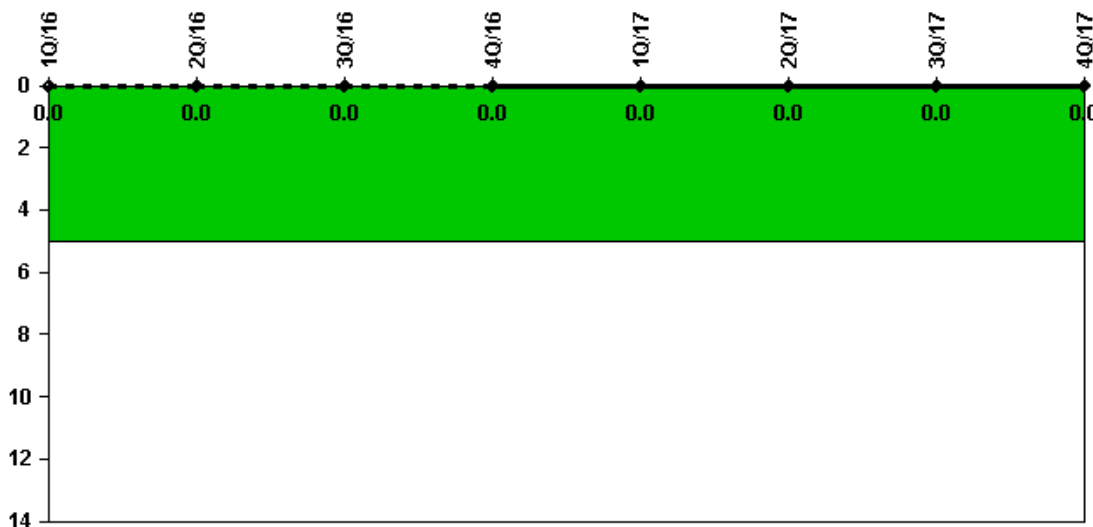
**Notes**

<b>Unplanned Scrams with Complications</b>	<b>1Q/16</b>	<b>2Q/16</b>	<b>3Q/16</b>	<b>4Q/16</b>	<b>1Q/17</b>	<b>2Q/17</b>	<b>3Q/17</b>	<b>4Q/17</b>
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

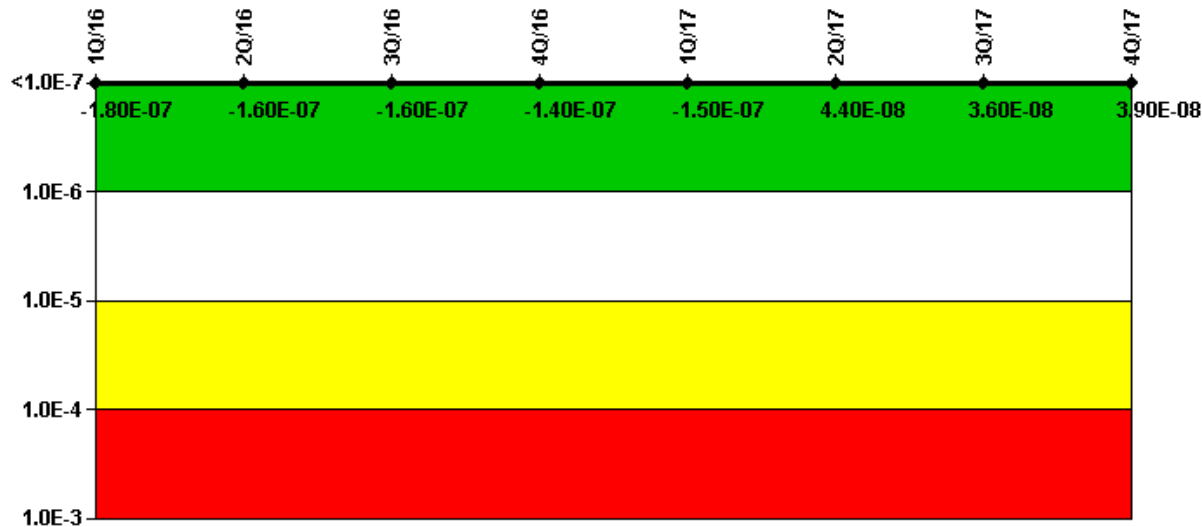
Safety System Functional Failures 0 0 0 0 0 0 0 0

Indicator value 0 0 0 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**

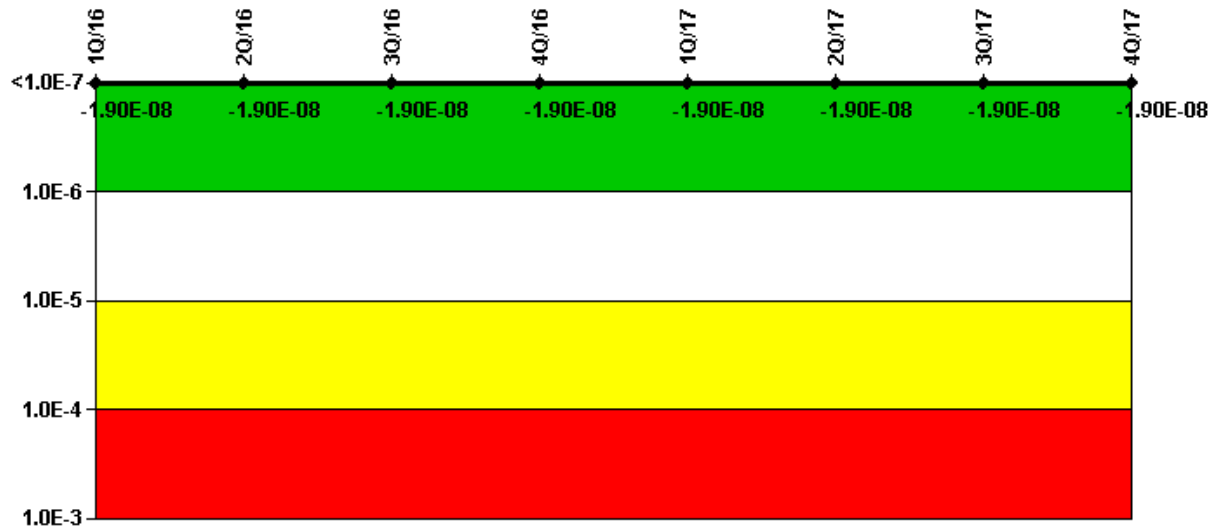
**AC Power System**

	1Q/16	2Q/16	3Q/16	4Q/16	1Q/17	2Q/17	3Q/17	4Q/17
UAI (ΔCDF)	1.30E-09	2.60E-08	2.48E-08	4.09E-08	3.51E-08	7.70E-08	6.92E-08	7.16E-08
URI (ΔCDF)	-1.83E-07	-1.83E-07	-1.83E-07	-1.83E-07	-1.83E-07	-3.29E-08	-3.29E-08	-3.29E-08
PLE	NO	NO	NO	NO	NO	NO	NO	NO
<b>Indicator value</b>	<b>-1.80E-07</b>	<b>-1.60E-07</b>	<b>-1.60E-07</b>	<b>-1.40E-07</b>	<b>-1.50E-07</b>	<b>4.40E-08</b>	<b>3.60E-08</b>	<b>3.90E-08</b>

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Licensee Comments: none

**Mitigating Systems Performance Index, High Pressure Injection System**



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

**Notes**

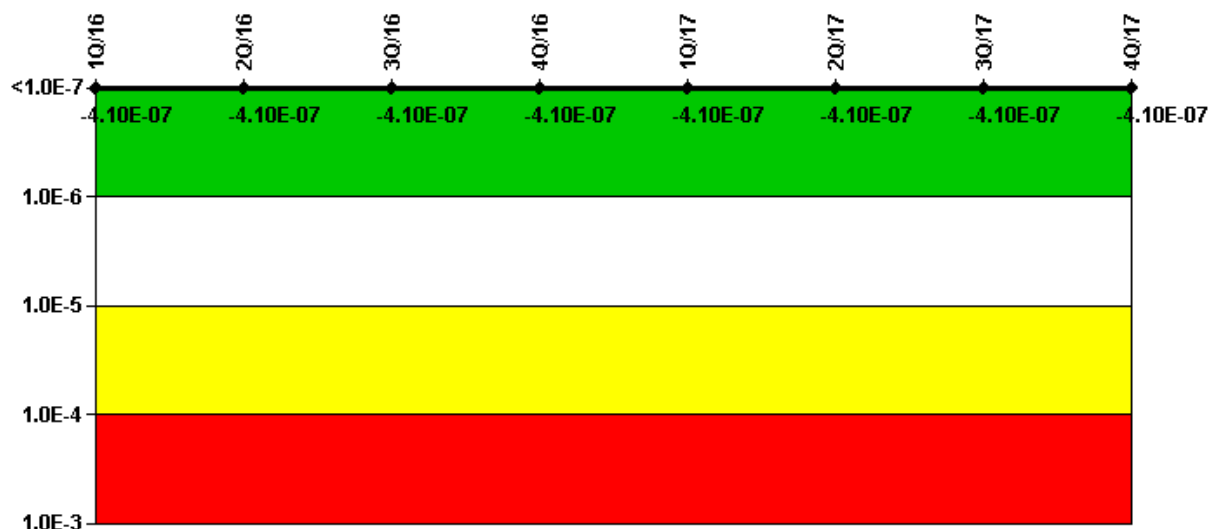
**Mitigating Systems Performance Index, High Pressure Injection System**

	1Q/16	2Q/16	3Q/16	4Q/16	1Q/17	2Q/17	3Q/17	4Q/17
UAI (ΔCDF)	-7.78E-09	-7.78E-09	-7.78E-09	-7.78E-09	-7.75E-09	-7.75E-09	-7.78E-09	-7.78E-09
URI (ΔCDF)	-1.17E-08	-1.17E-08	-1.17E-08	-1.17E-08	-1.17E-08	-1.17E-08	-1.17E-08	-1.17E-08
PLE	NO	NO	NO	NO	NO	NO	NO	NO
<b>Indicator value</b>	<b>-1.90E-08</b>	<b>-1.90E-08</b>	<b>-1.90E-08</b>	<b>-1.90E-08</b>	<b>-1.90E-08</b>	<b>-1.90E-08</b>	<b>-1.90E-08</b>	<b>-1.90E-08</b>

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Licensee Comments: none

### Mitigating Systems Performance Index, Heat Removal System



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

**Notes**

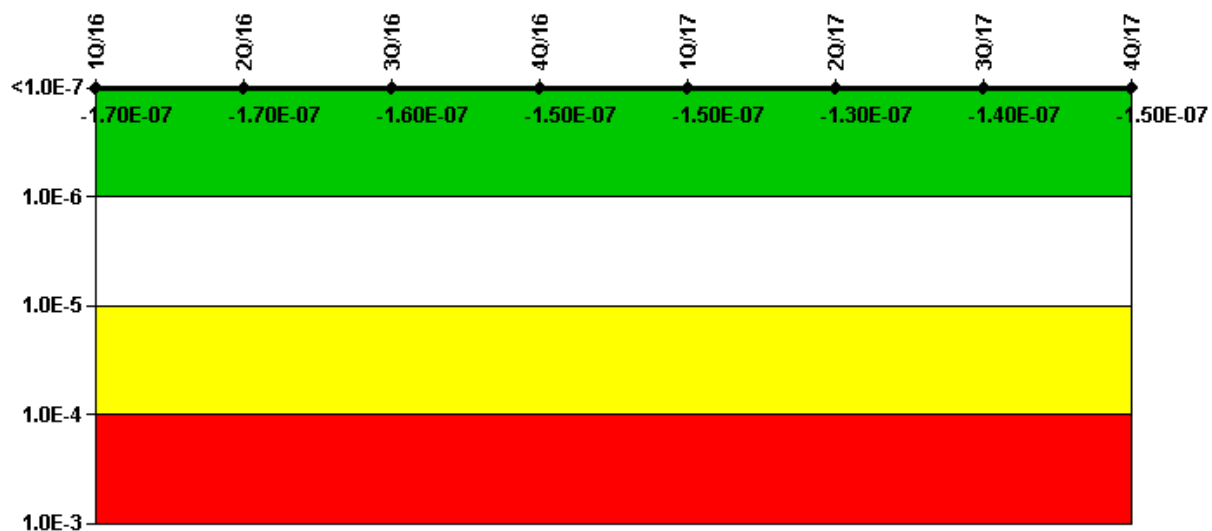
**Mitigating Systems Performance Index, Heat Removal System**

	1Q/16	2Q/16	3Q/16	4Q/16	1Q/17	2Q/17	3Q/17	4Q/17
UAI (ΔCDF)	-5.89E-08	-5.89E-08	-5.89E-08	-5.89E-08	-5.89E-08	-5.89E-08	-5.89E-08	-5.89E-08
URI (ΔCDF)	-3.52E-07	-3.52E-07	-3.52E-07	-3.52E-07	-3.52E-07	-3.52E-07	-3.52E-07	-3.52E-07
PLE	NO	NO	NO	NO	NO	NO	NO	NO
<b>Indicator value</b>	<b>-4.10E-07</b>	<b>-4.10E-07</b>	<b>-4.10E-07</b>	<b>-4.10E-07</b>	<b>-4.10E-07</b>	<b>-4.10E-07</b>	<b>-4.10E-07</b>	<b>-4.10E-07</b>

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Licensee Comments: none

### Mitigating Systems Performance Index, Residual Heat Removal System



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

**Notes**

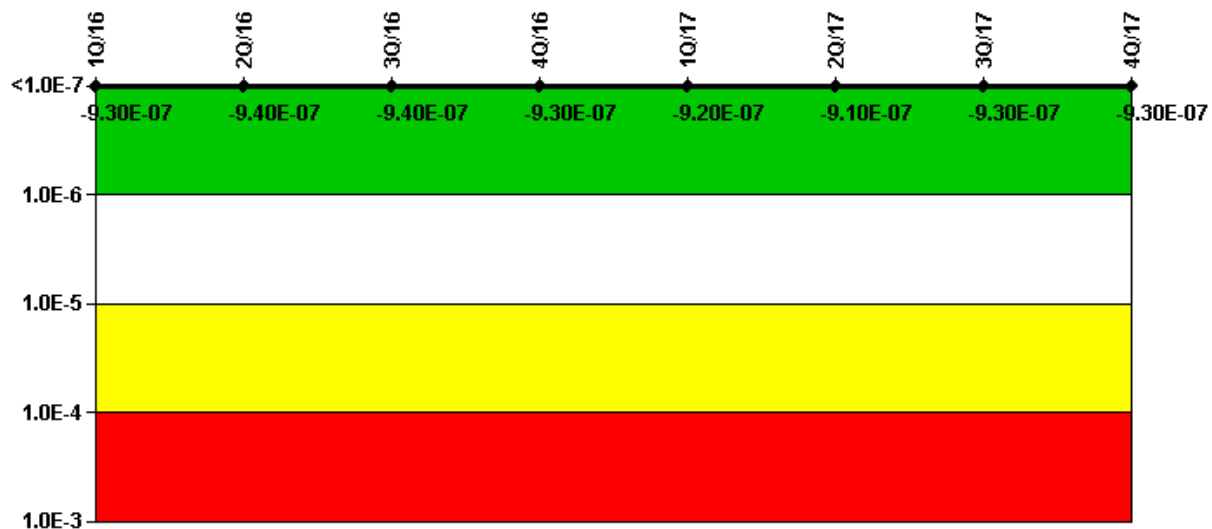
**Mitigating Systems Performance Index, Residual Heat Removal System**

	1Q/16	2Q/16	3Q/16	4Q/16	1Q/17	2Q/17	3Q/17	4Q/17
UAI ( $\Delta$ CDF)	-1.43E-08	-1.01E-08	-2.28E-09	2.25E-09	4.58E-09	2.66E-08	1.79E-08	8.77E-09
URI ( $\Delta$ CDF)	-1.57E-07	-1.57E-07	-1.57E-07	-1.57E-07	-1.57E-07	-1.57E-07	-1.57E-07	-1.57E-07
PLE	NO	NO	NO	NO	NO	NO	NO	NO
<b>Indicator value</b>	<b>-1.70E-07</b>	<b>-1.70E-07</b>	<b>-1.60E-07</b>	<b>-1.50E-07</b>	<b>-1.50E-07</b>	<b>-1.30E-07</b>	<b>-1.40E-07</b>	<b>-1.50E-07</b>

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Licensee Comments: none

### 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**

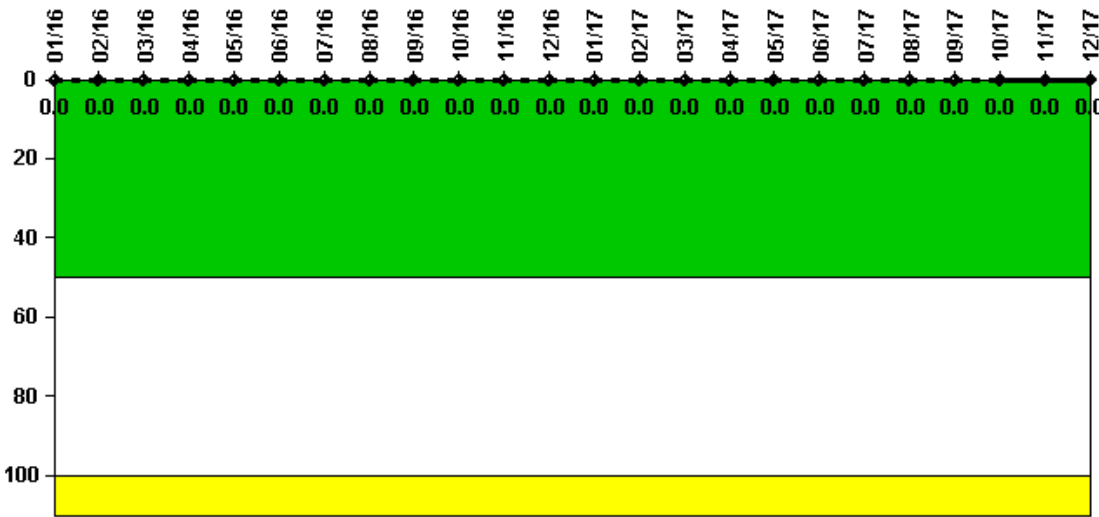
	1Q/16	2Q/16	3Q/16	4Q/16	1Q/17	2Q/17	3Q/17	4Q/17
UAI ( $\Delta$ CDF)	-4.88E-07	-4.94E-07	-4.94E-07	-4.83E-07	-4.76E-07	-4.59E-07	-4.79E-07	-4.79E-07
URI ( $\Delta$ CDF)	-4.47E-07	-4.47E-07	-4.47E-07	-4.47E-07	-4.47E-07	-4.47E-07	-4.47E-07	-4.47E-07
PLE	NO	NO	NO	NO	NO	NO	NO	NO
<b>Indicator value</b>	<b>-9.30E-07</b>	<b>-9.40E-07</b>	<b>-9.40E-07</b>	<b>-9.30E-07</b>	<b>-9.20E-07</b>	<b>-9.10E-07</b>	<b>-9.30E-07</b>	<b>-9.30E-07</b>

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Licensee Comments: none



### Reactor Coolant System Activity



Thresholds: White > 50.0 Yellow > 100.0

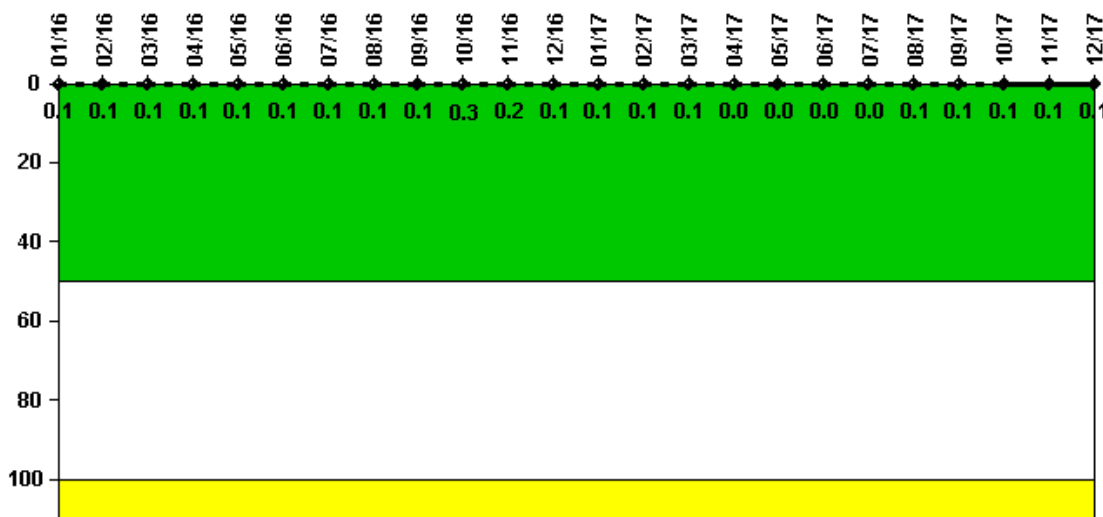
**Notes**

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	0.000076	0.000075	0.000043	0.000126	0.000050	0.000045	0.000046	0.000049	0.000031	0.000019	0.000029	0.000047
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	0.000090	0.000057	0.000058	0.000137	0.000059	0.000066	0.000065	0.000070	0.000072	0.000070	0.000061	0.000077
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	0.012	0.013	0.012	0.013	0.014	0.012	0.012	0.009	0.008	0.034	0.024	0.005
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

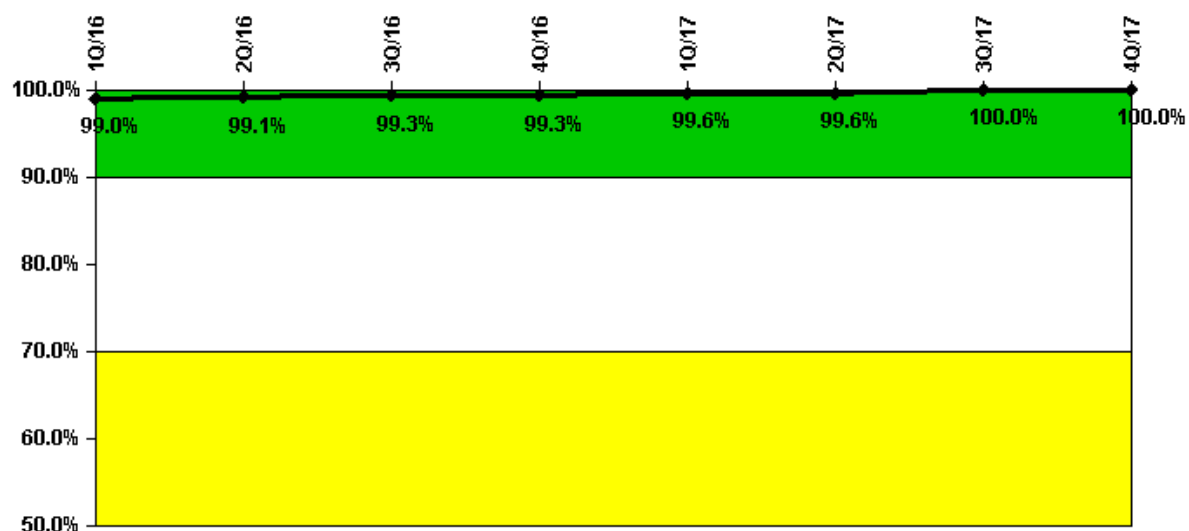
<b>Indicator value</b>	<b>0.1</b>	<b>0.1</b>	<b>0.1</b>	<b>0.1</b>	<b>0.1</b>	<b>0.1</b>	<b>0.1</b>	<b>0.1</b>	<b>0.1</b>	<b>0.3</b>	<b>0.2</b>	<b>0.1</b>
Reactor Coolant System Leakage	1/17	2/17	3/17	4/17	5/17	6/17	7/17	8/17	9/17	10/17	11/17	12/17
Maximum leakage	0.010	0.005	0.007	0.004	0.004	0.004	0.004	0.005	0.005	0.006	0.006	0.006
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

<b>Indicator value</b>	<b>0.1</b>	<b>0.1</b>	<b>0.1</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0.1</b>	<b>0.1</b>	<b>0.1</b>	<b>0.1</b>	<b>0.1</b>
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Licensee Comments: none

### Drill/Exercise Performance



Thresholds: White < 90.0% Yellow < 70.0%

#### Notes

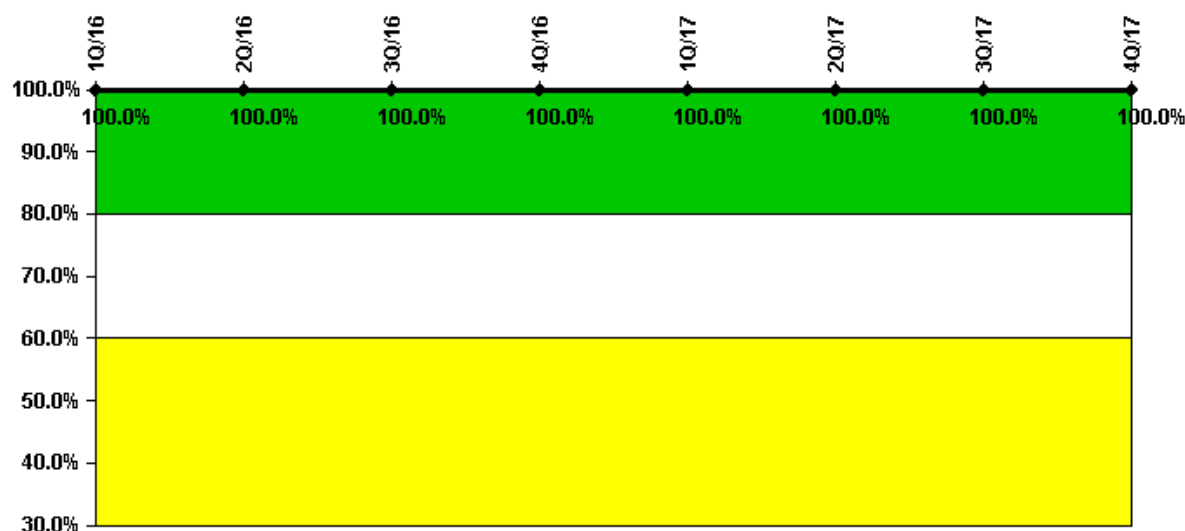
Drill/Exercise Performance	1Q/16	2Q/16	3Q/16	4Q/16	1Q/17	2Q/17	3Q/17	4Q/17
Successful opportunities	38.0	24.0	61.0	19.0	7.0	0	22.0	31.0
Total opportunities	38.0	24.0	61.0	19.0	7.0	0	22.0	31.0

Indicator value            99.0% 99.1% 99.3% 99.3% 99.6% 99.6% 100.0% 100.0%

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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	131.0	130.0	131.0	133.0	146.0	145.0	139.0	138.0
Total Key personnel	131.0	130.0	131.0	133.0	146.0	145.0	139.0	138.0

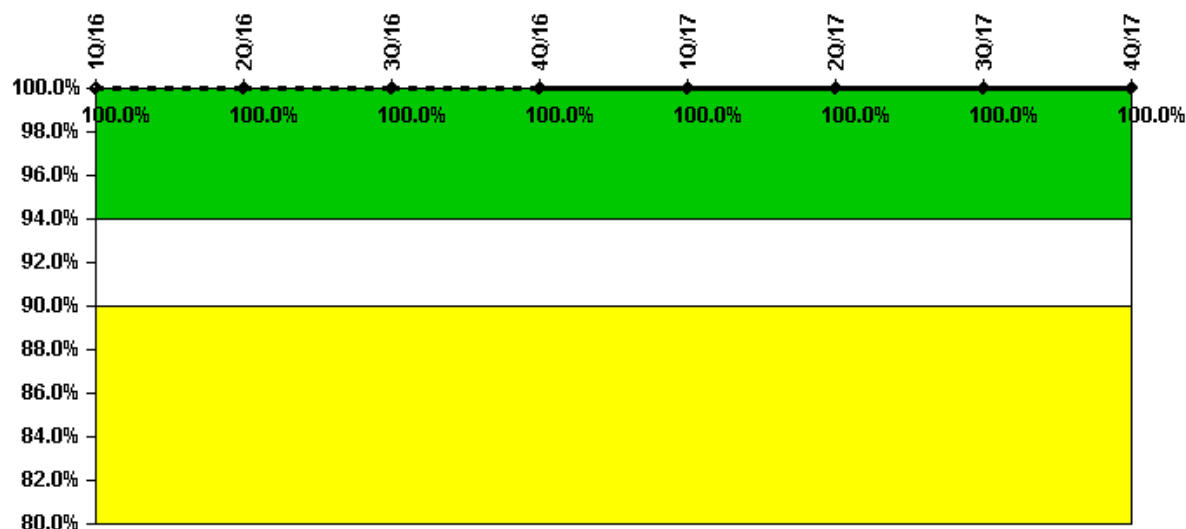
**Indicator value**                    **100.0% 100.0% 100.0% 100.0% 100.0% 100.0% 100.0% 100.0%**

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Licensee Comments:

1Q/16: Revised to add an active shift manager that was not counted for participation. The shift manager holds 2 positions, Emergency Coordinator & off-site communicator. Nuclear Condition Report 02043466 written. This does not affect the overall percentage.

### Alert & Notification System



Thresholds: White < 94.0% Yellow < 90.0%

#### Notes

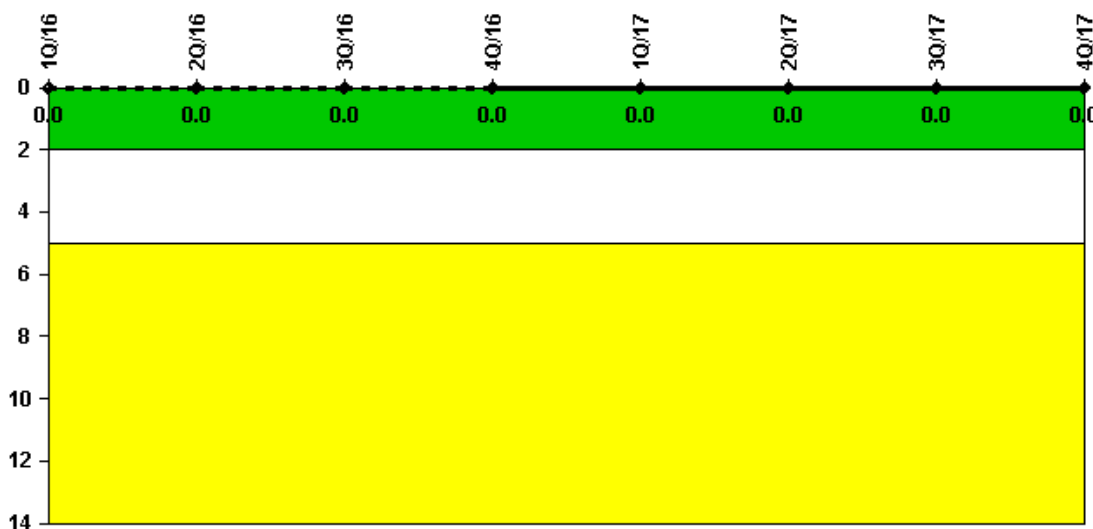
Alert & Notification System	1Q/16	2Q/16	3Q/16	4Q/16	1Q/17	2Q/17	3Q/17	4Q/17
Successful siren-tests	2402	2403	2402	2399	2402	2401	2403	2402
Total sirens-tests	2402	2403	2402	2401	2402	2403	2403	2402

**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

### Occupational Exposure Control Effectiveness



Thresholds: White > 2.0 Yellow > 5.0

**Notes**

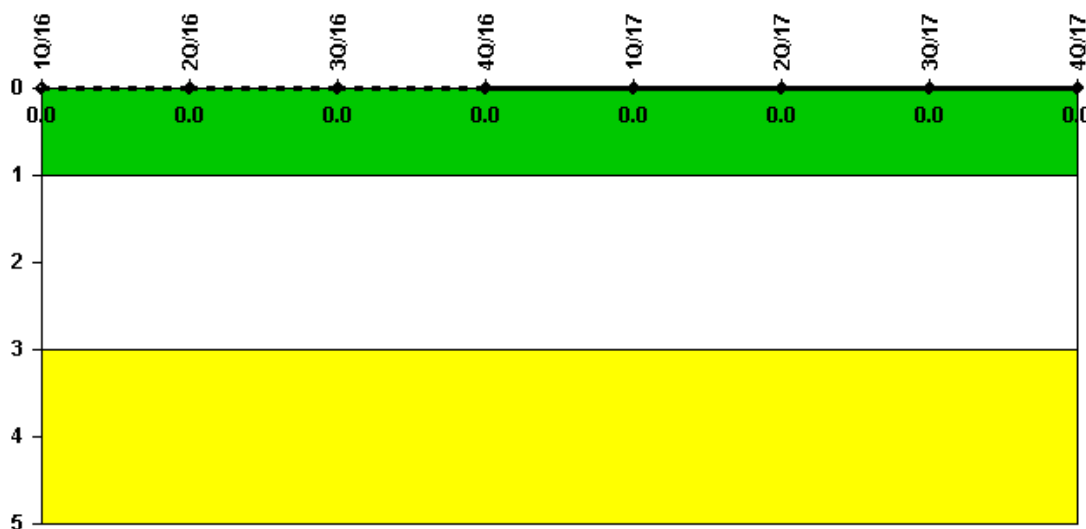
**Occupational Exposure Control Effectiveness 1Q/16 2Q/16 3Q/16 4Q/16 1Q/17 2Q/17 3Q/17 4Q/17**

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*