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## Catawba 1 – Quarterly Performance Indicators

### 3Q/2017 Performance Indicators

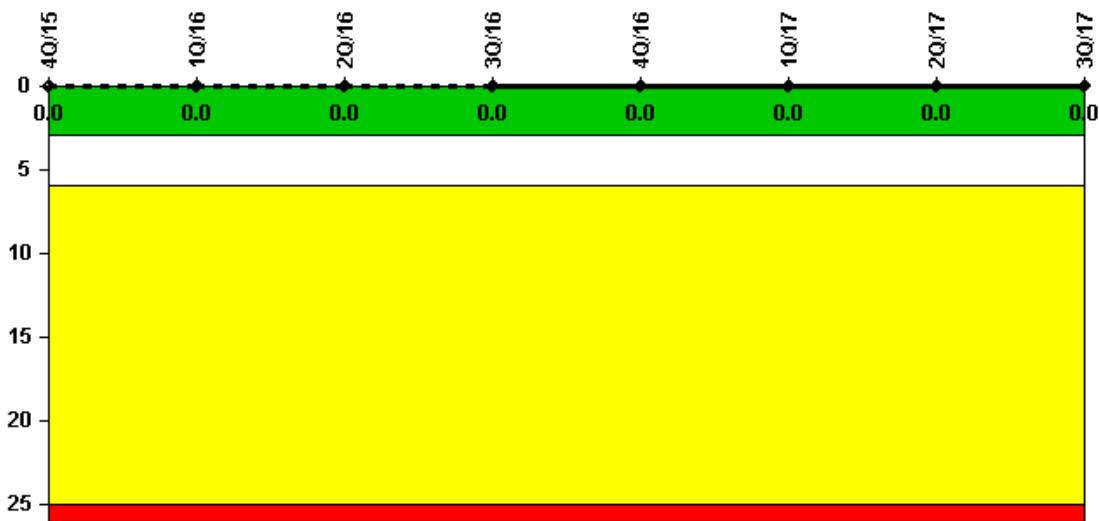
The solid trend line represents the current reporting period.

Licensee's General Comments: none

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- Unplanned Power Changes per 7000 Critical Hours (IE03)
- Unplanned Scrams with Complications (IE04)
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- Emergency Response Organization Drill Participation (EP02)
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### Unplanned Scrams per 7000 Critical Hrs



Thresholds: White > 3.0 Yellow > 6.0 Red > 25.0

#### Notes

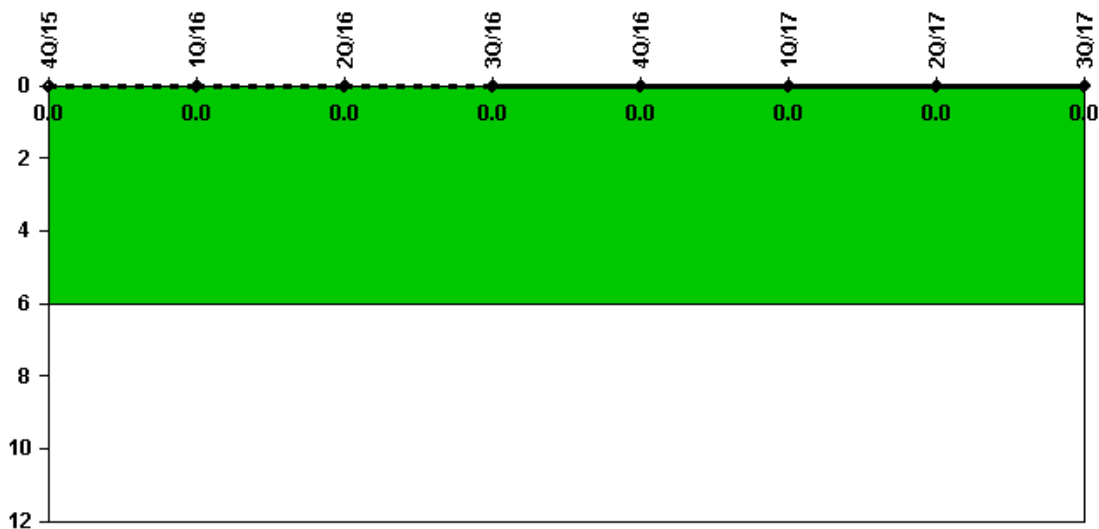
| Unplanned Scrams per 7000 Critical Hrs | 4Q/15  | 1Q/16  | 2Q/16  | 3Q/16  | 4Q/16  | 1Q/17  | 2Q/17  | 3Q/17  |
|--|--------|--------|--------|--------|--------|--------|--------|--------|
| Unplanned scrams                       | 0      | 0      | 0      | 0      | 0      | 0      | 0      | 0      |
| Critical hours                         | 1600.2 | 2183.0 | 2184.0 | 2208.0 | 2209.0 | 2159.0 | 1630.6 | 2208.0 |

Indicator value: 0 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

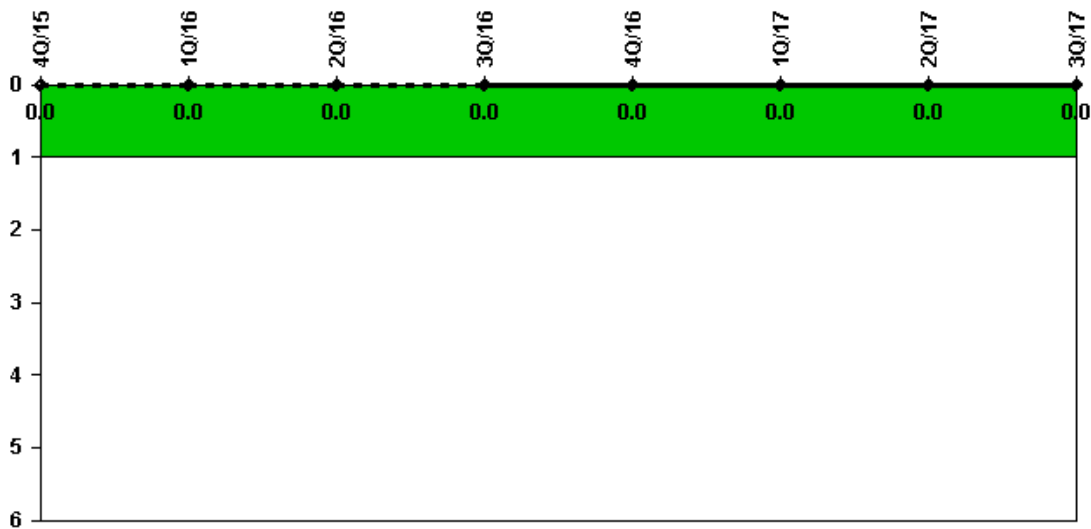
**Notes**

| <b>Unplanned Power Changes per 7000 Critical Hrs</b> | <b>4Q/15</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> |
|--|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|
| Unplanned power changes                              | 0            | 0            | 0            | 0            | 0            | 0            | 0            | 0            |
| Critical hours                                       | 1600.2       | 2183.0       | 2184.0       | 2208.0       | 2209.0       | 2159.0       | 1630.6       | 2208.0       |
| <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

**Unplanned Scrams with Complications**



Thresholds: White > 1.0

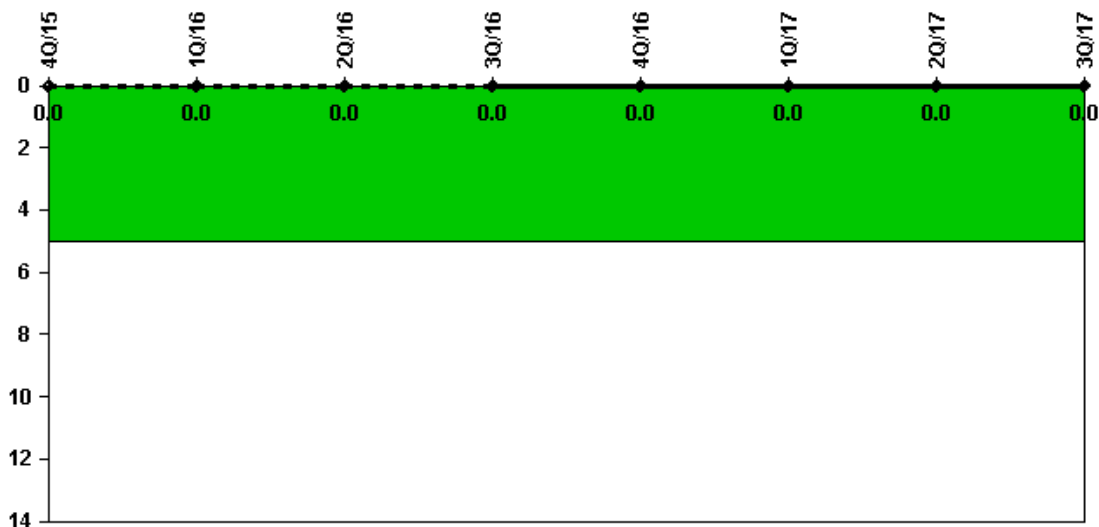
**Notes**

| <b>Unplanned Scrams with Complications</b> | <b>4Q/15</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> |
|--|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|
| 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) 4Q/15 1Q/16 2Q/16 3Q/16 4Q/16 1Q/17 2Q/17 3Q/17

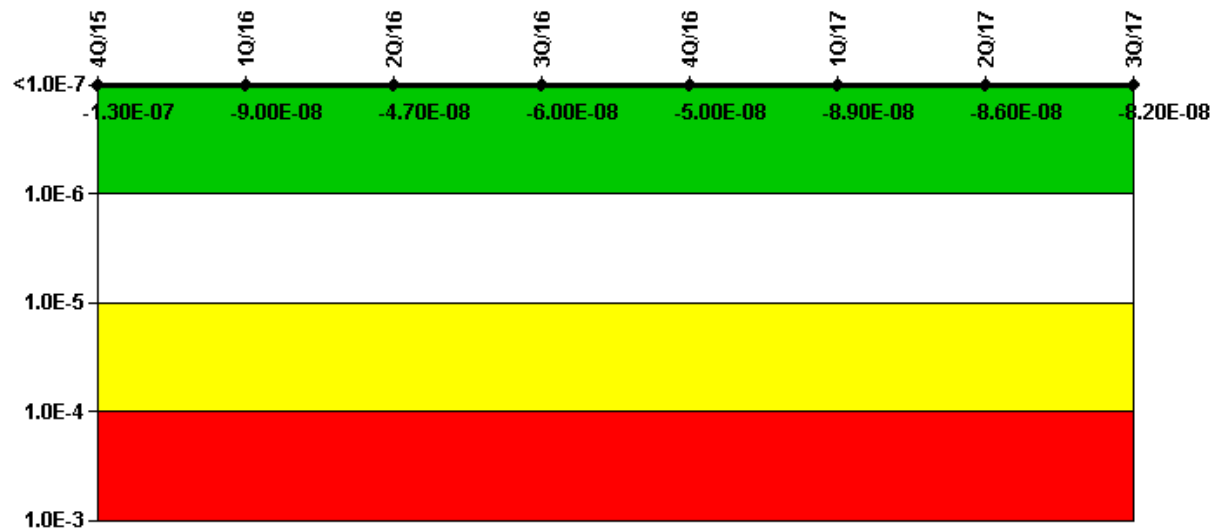
Safety System Functional Failures 0 0 0 0 0 0 0 0

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**

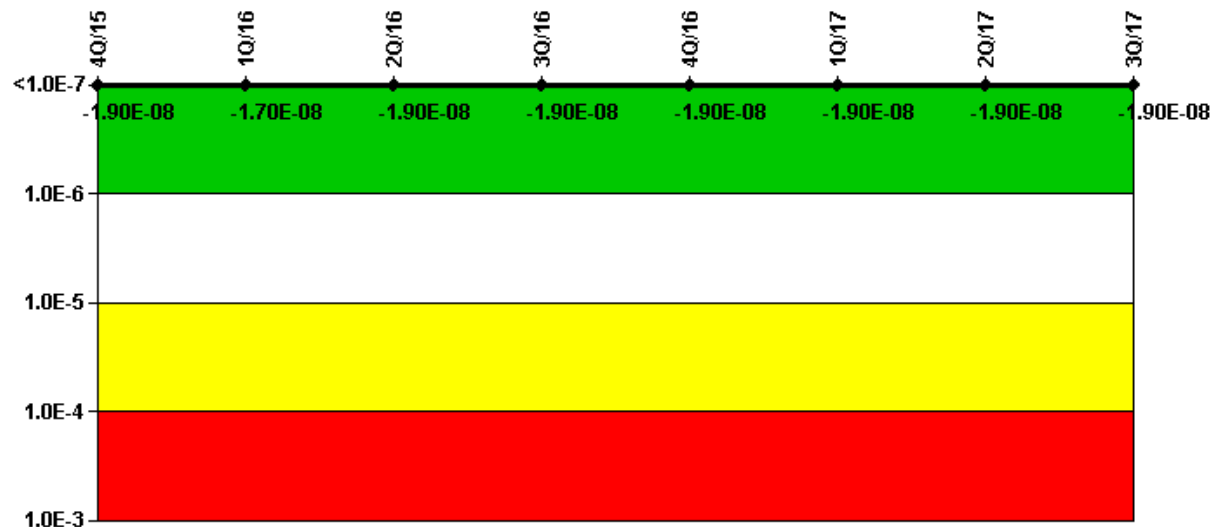
**AC Power System**

|                        | 4Q/15            | 1Q/16            | 2Q/16            | 3Q/16            | 4Q/16            | 1Q/17            | 2Q/17            | 3Q/17            |
|------------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|
| UAI (ΔCDF)             | 5.71E-08         | 9.25E-08         | 1.36E-07         | 1.23E-07         | 1.33E-07         | 9.35E-08         | 9.70E-08         | 1.01E-07         |
| URI (ΔCDF)             | -1.83E-07        | -1.83E-07        | -1.83E-07        | -1.83E-07        | -1.83E-07        | -1.83E-07        | -1.83E-07        | -1.83E-07        |
| PLE                    | NO               | NO               | NO               | NO               | NO               | NO               | NO               | NO               |
| <b>Indicator value</b> | <b>-1.30E-07</b> | <b>-9.00E-08</b> | <b>-4.70E-08</b> | <b>-6.00E-08</b> | <b>-5.00E-08</b> | <b>-8.90E-08</b> | <b>-8.60E-08</b> | <b>-8.20E-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**

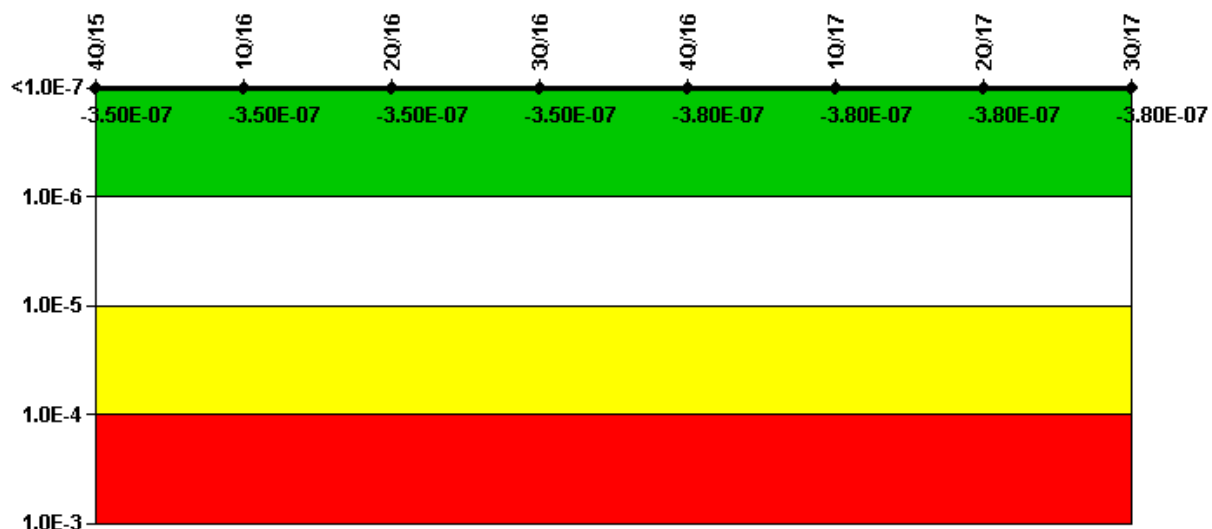
**Mitigating Systems Performance Index, High Pressure Injection System**

|                        | 4Q/15            | 1Q/16            | 2Q/16            | 3Q/16            | 4Q/16            | 1Q/17            | 2Q/17            | 3Q/17            |
|------------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|
| UAI (ΔCDF)             | -7.67E-09        | -5.31E-09        | -7.67E-09        | -7.67E-09        | -7.76E-09        | -7.78E-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>-1.70E-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

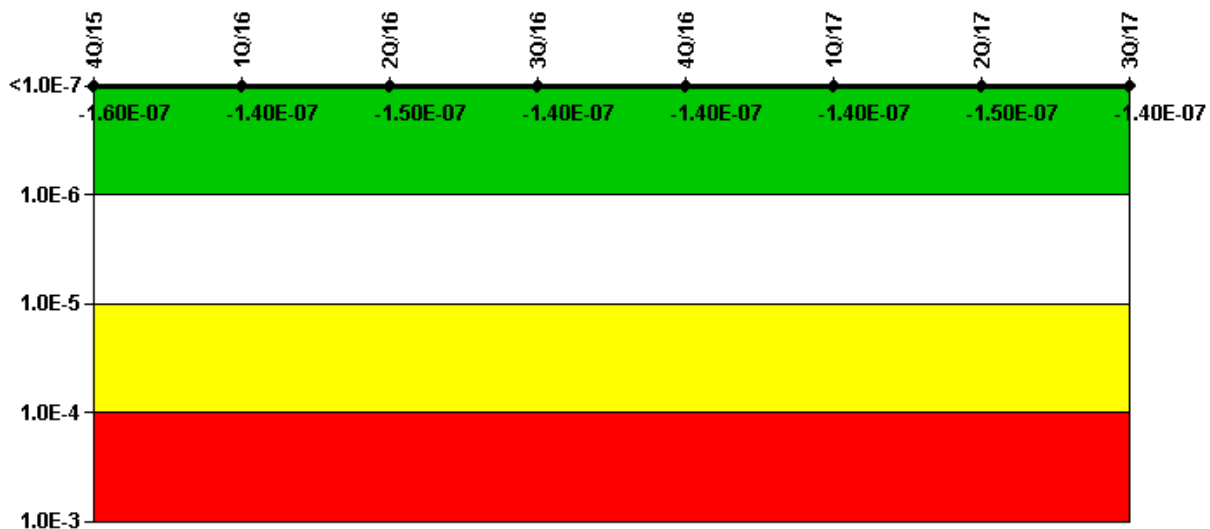
#### Mitigating Systems Performance Index, Heat Removal System

|                     | 4Q/15     | 1Q/16     | 2Q/16     | 3Q/16     | 4Q/16     | 1Q/17     | 2Q/17     | 3Q/17     |
|---------------------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
| UAI ( $\Delta$ CDF) | -1.24E-09 | -2.13E-09 | -1.13E-09 | -1.13E-09 | -2.55E-08 | -2.55E-08 | -2.40E-08 | -2.63E-08 |
| URI ( $\Delta$ CDF) | -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        |
| Indicator value     | -3.50E-07 | -3.50E-07 | -3.50E-07 | -3.50E-07 | -3.80E-07 | -3.80E-07 | -3.80E-07 | -3.80E-07 |

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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**

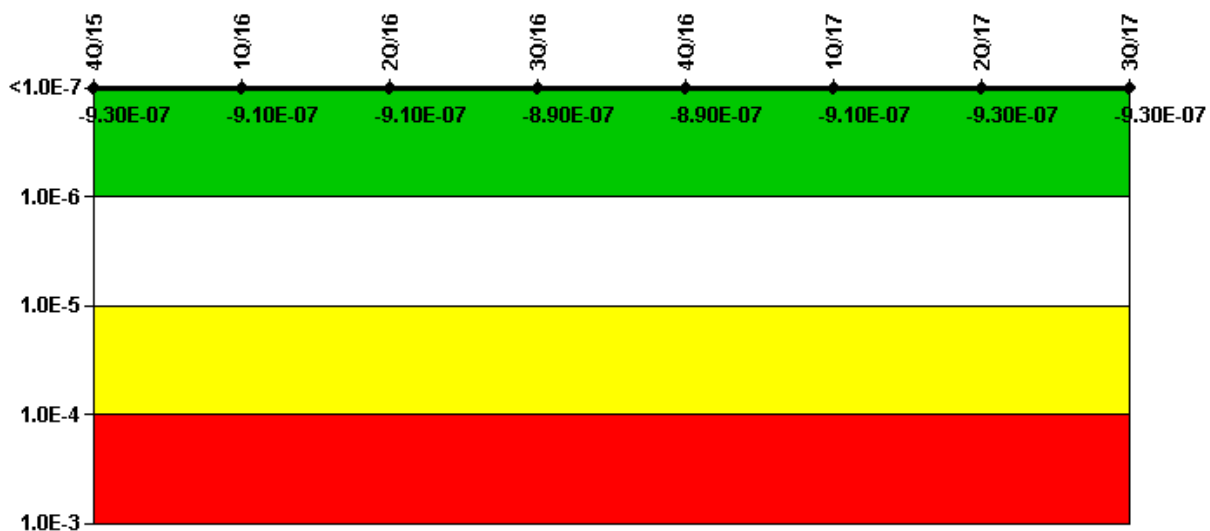
**Mitigating Systems Performance Index, Residual Heat Removal System**

|                        | 4Q/15            | 1Q/16            | 2Q/16            | 3Q/16            | 4Q/16            | 1Q/17            | 2Q/17            | 3Q/17            |
|------------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|
| UAI ( $\Delta$ CDF)    | -1.40E-08        | 1.31E-10         | -3.44E-09        | -2.63E-10        | 8.36E-09         | -1.84E-10        | -9.53E-09        | 8.35E-10         |
| URI ( $\Delta$ CDF)    | -1.44E-07        | -1.44E-07        | -1.44E-07        | -1.44E-07        | -1.44E-07        | -1.44E-07        | -1.44E-07        | -1.44E-07        |
| PLE                    | NO               | NO               | NO               | NO               | NO               | NO               | NO               | NO               |
| <b>Indicator value</b> | <b>-1.60E-07</b> | <b>-1.40E-07</b> | <b>-1.50E-07</b> | <b>-1.40E-07</b> | <b>-1.40E-07</b> | <b>-1.40E-07</b> | <b>-1.50E-07</b> | <b>-1.40E-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**

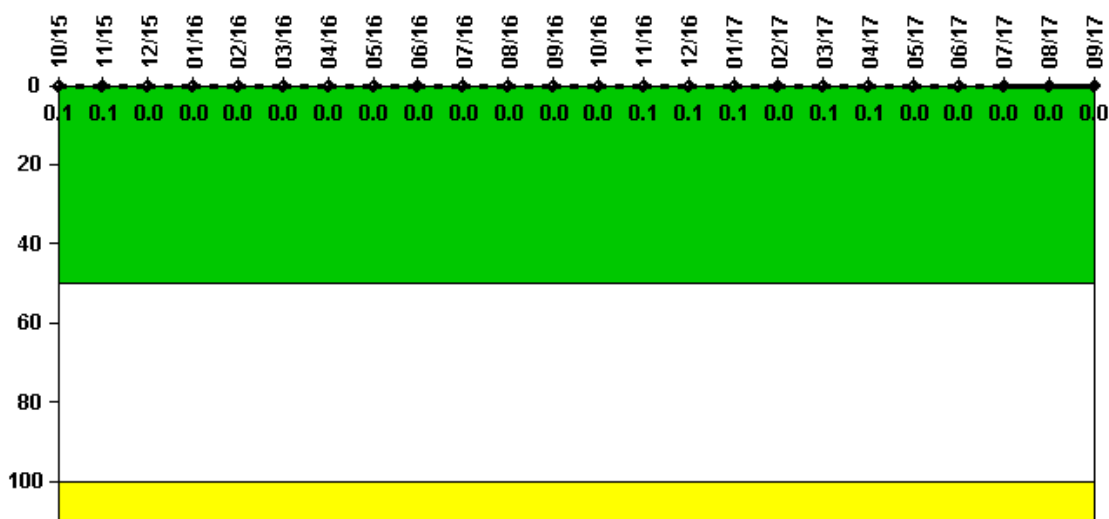
|                        | 4Q/15            | 1Q/16            | 2Q/16            | 3Q/16            | 4Q/16            | 1Q/17            | 2Q/17            | 3Q/17            |
|------------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|
| UAI (ΔCDF)             | -4.82E-07        | -4.67E-07        | -4.67E-07        | -4.47E-07        | -4.47E-07        | -4.62E-07        | -4.84E-07        | -4.84E-07        |
| URI (ΔCDF)             | -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>-9.10E-07</b> | <b>-9.10E-07</b> | <b>-8.90E-07</b> | <b>-8.90E-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

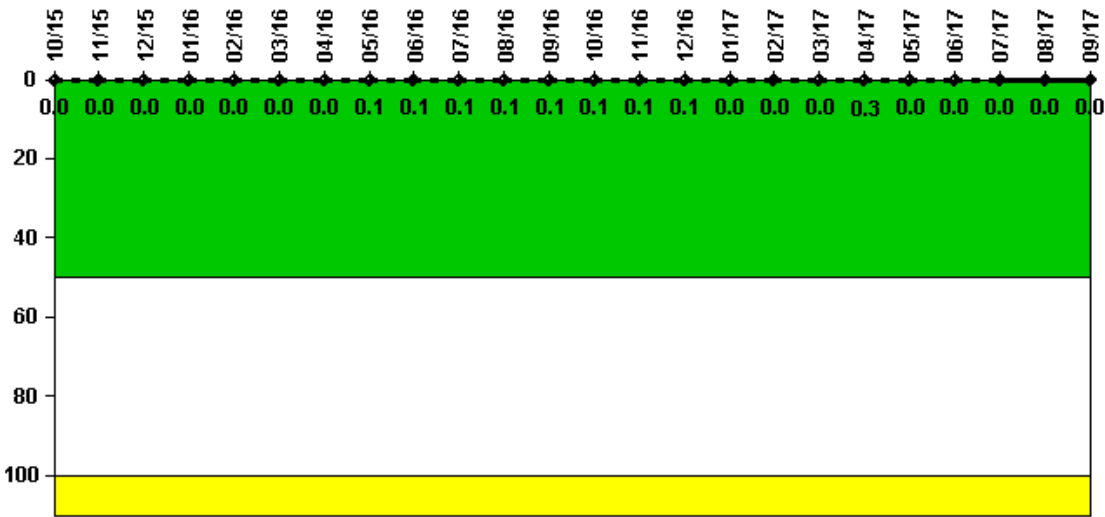
**Notes**

| Reactor Coolant System Activity | 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                | 0.000552   | 0.000650   | 0.000122   | 0.000079   | 0.000073 | 0.000079   | 0.000085   | 0.000098 | 0.000123 | 0.000126 | 0.000136 | 0.000142 |
| 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>0.1</b> | <b>0.1</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 | 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                | 0.000146   | 0.000246   | 0.000251   | 0.000271   | 0.000180 | 0.000289   | 0.000301   | 0.000057 | 0.000063 | 0.000070 | 0.000068 | 0.000075 |
| 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>0.1</b> | <b>0.1</b> | <b>0.1</b> | <b>0</b> | <b>0.1</b> | <b>0.1</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 | 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                | 0.004 | 0.004 | 0.004 | 0.002 | 0.003 | 0.004 | 0.004 | 0.006 | 0.008 | 0.006 | 0.008 | 0.007 |
| 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  |

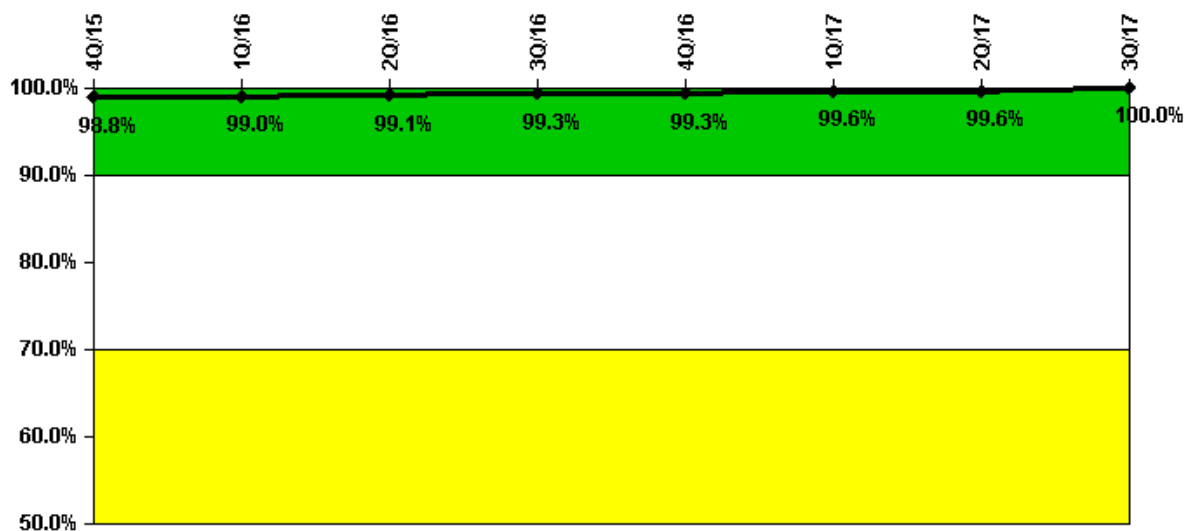
| <b>Indicator value</b>         | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b> | <b>0.1</b> | <b>0.1</b> | <b>0.1</b> | <b>0.1</b> | <b>0.1</b> |
|--------------------------------|----------|----------|----------|----------|----------|----------|----------|------------|------------|------------|------------|------------|
| 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                | 0.006    | 0.005    | 0.005    | 0.003    | 0.004    | 0.004    | 0.032    | 0.003      | 0.002      | 0.002      | 0.004      | 0.004      |
| 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>0.3</b> | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b> |
|------------------------|------------|------------|------------|----------|----------|----------|------------|----------|----------|----------|----------|----------|

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Licensee Comments: none

### Drill/Exercise Performance



Thresholds: White < 90.0% Yellow < 70.0%

#### Notes

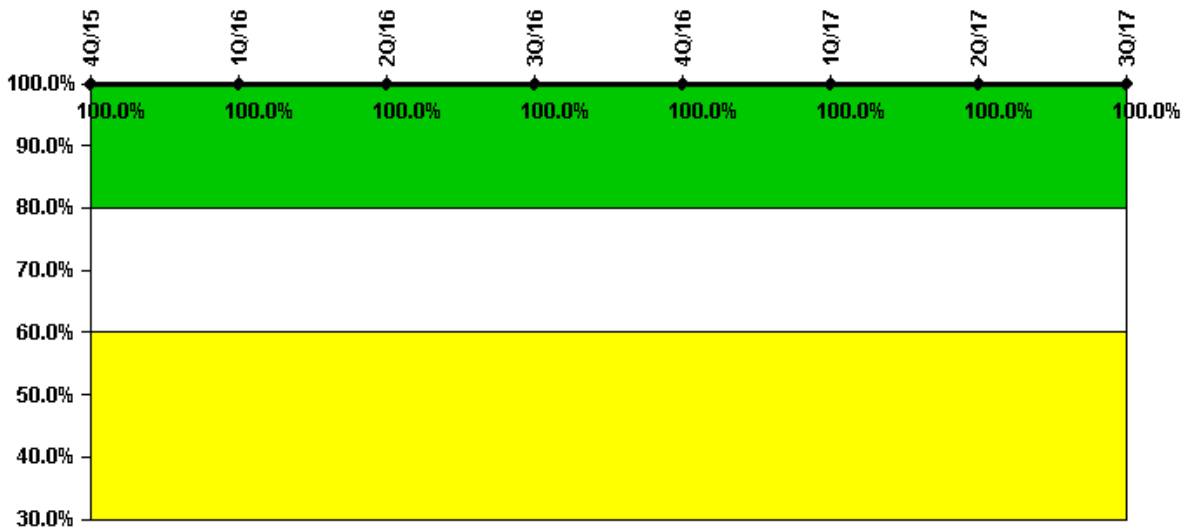
| Drill/Exercise Performance | 4Q/15 | 1Q/16 | 2Q/16 | 3Q/16 | 4Q/16 | 1Q/17 | 2Q/17 | 3Q/17 |
|----------------------------|-------|-------|-------|-------|-------|-------|-------|-------|
| Successful opportunities   | 46.0  | 38.0  | 24.0  | 61.0  | 19.0  | 7.0   | 0     | 22.0  |
| Total opportunities        | 46.0  | 38.0  | 24.0  | 61.0  | 19.0  | 7.0   | 0     | 22.0  |

**Indicator value**                    **98.8% 99.0% 99.1% 99.3% 99.3% 99.6% 99.6% 100.0%**

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Licensee Comments: none

### 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 | 130.0 | 131.0 | 130.0 | 131.0 | 133.0 | 146.0 | 145.0 | 139.0 |
| Total Key personnel         | 130.0 | 131.0 | 130.0 | 131.0 | 133.0 | 146.0 | 145.0 | 139.0 |

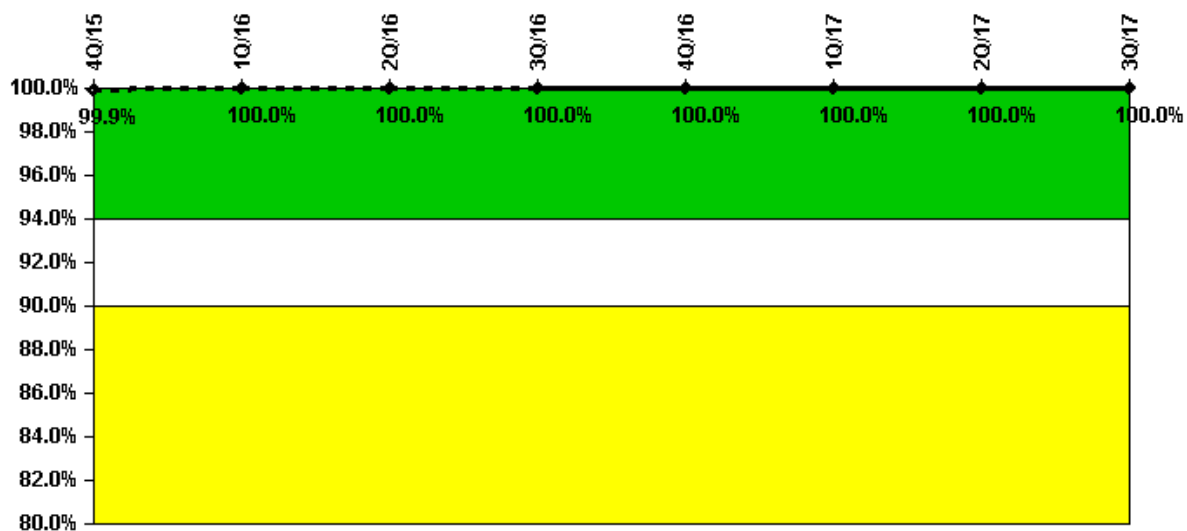
**Indicator value**                    **100.0% 100.0% 100.0% 100.0% 100.0% 100.0% 100.0% 100.0%**

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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

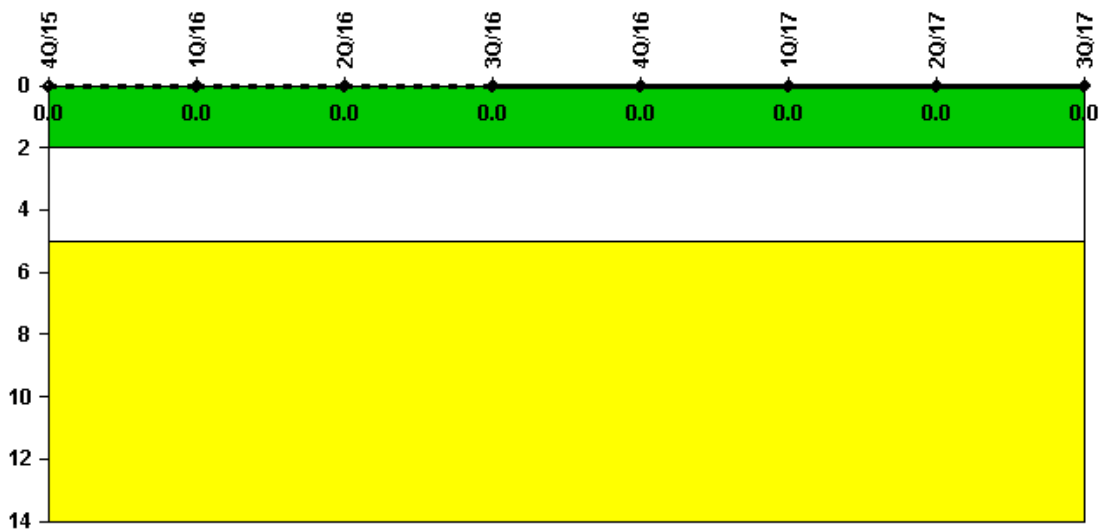
| Alert & Notification System | 4Q/15 | 1Q/16 | 2Q/16 | 3Q/16 | 4Q/16 | 1Q/17 | 2Q/17 | 3Q/17 |
|-----------------------------|-------|-------|-------|-------|-------|-------|-------|-------|
| Successful siren-tests      | 2492  | 2402  | 2403  | 2402  | 2399  | 2402  | 2401  | 2403  |
| Total sirens-tests          | 2492  | 2402  | 2403  | 2402  | 2401  | 2402  | 2403  | 2403  |

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

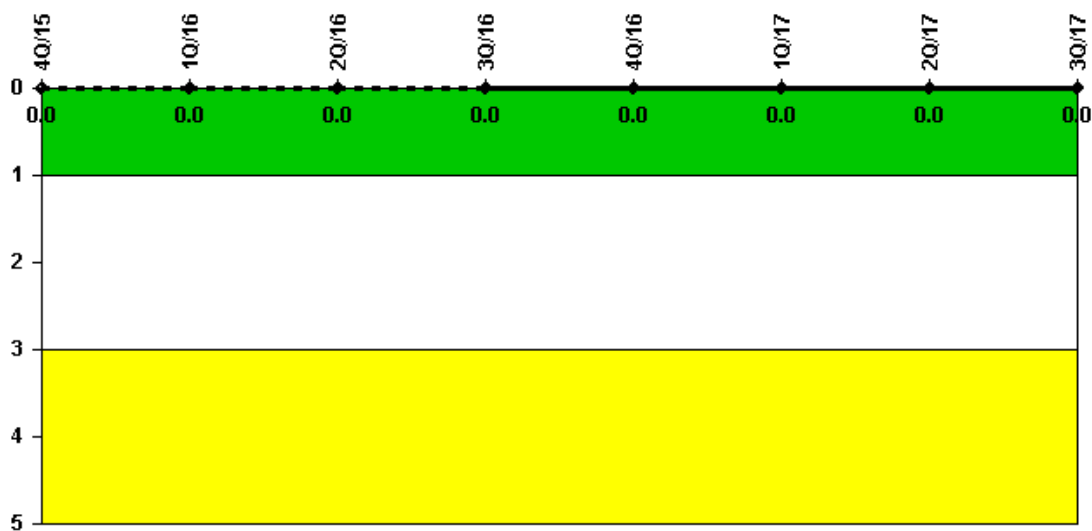
**Occupational Exposure Control Effectiveness** 4Q/15 1Q/16 2Q/16 3Q/16 4Q/16 1Q/17 2Q/17 3Q/17

|                                      |          |          |          |          |          |          |          |          |
|--------------------------------------|----------|----------|----------|----------|----------|----------|----------|----------|
| 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        |
| <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 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