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Diablo Canyon 2 – Quarterly Performance Indicators

The solid trend line represents the current reporting period.

Licensee's General Comments: none

4Q/2017 Performance Indicators

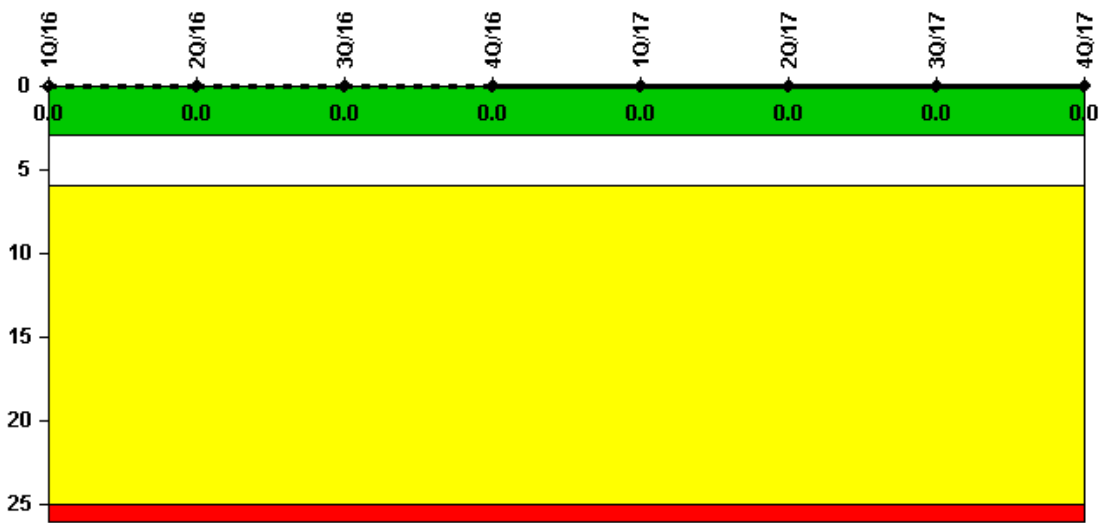
The solid trend line represents the current reporting period.

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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- Protected Area Equipment (PP01)

Unplanned Scrams per 7000 Critical Hrs



Thresholds: White > 3.0 Yellow > 6.0 Red > 25.0

Notes

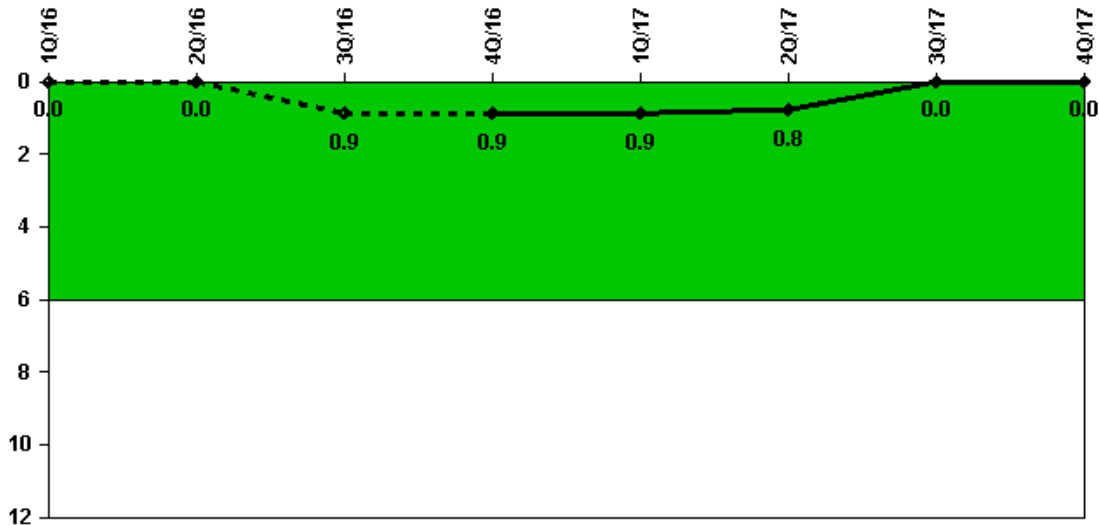
| Unplanned Scrams per 7000 Critical Hrs | 1Q/16 | 2Q/16 | 3Q/16 | 4Q/16 | 1Q/17 | 2Q/17 | 3Q/17 | 4Q/17 |
|--|--------|--------|--------|--------|--------|--------|--------|--------|
| Unplanned scrams | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Critical hours | 2183.0 | 1436.5 | 2208.0 | 2209.0 | 2159.0 | 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

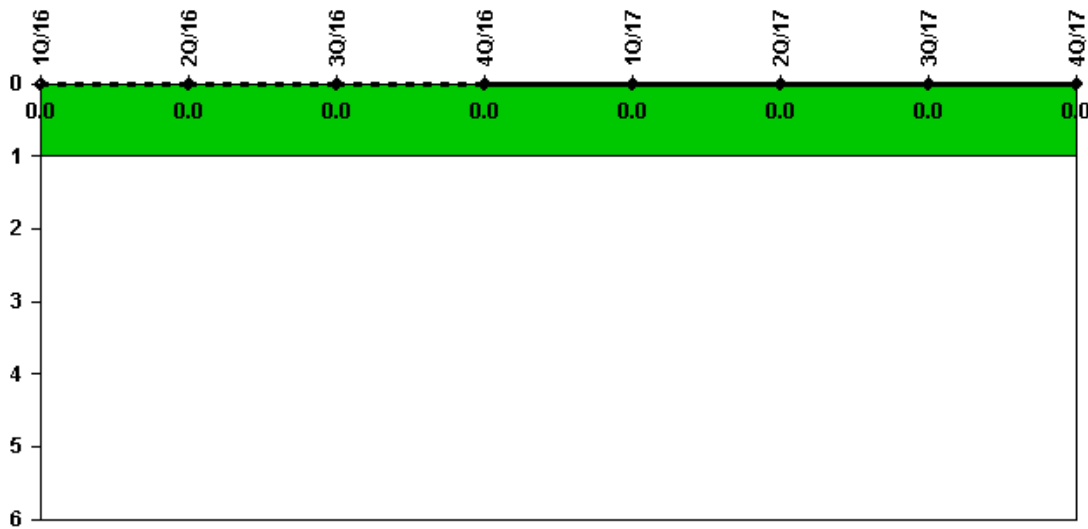
| Unplanned Power Changes per 7000 Critical Hrs | 1Q/16 | 2Q/16 | 3Q/16 | 4Q/16 | 1Q/17 | 2Q/17 | 3Q/17 | 4Q/17 |
|--|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|
| Unplanned power changes | 0 | 0 | 1.0 | 0 | 0 | 0 | 0 | 0 |
| Critical hours | 2183.0 | 1436.5 | 2208.0 | 2209.0 | 2159.0 | 2184.0 | 2208.0 | 2209.0 |
| Indicator value | 0 | 0 | 0.9 | 0.9 | 0.9 | 0.8 | 0 | 0 |

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Licensee Comments:

2Q/16: Diablo Canyon Unit 2 began planned refueling outage 2R19 on May 1, 2016. 2R19 was completed on June 2, 2016.

Unplanned Scrams with Complications



Thresholds: White > 1.0

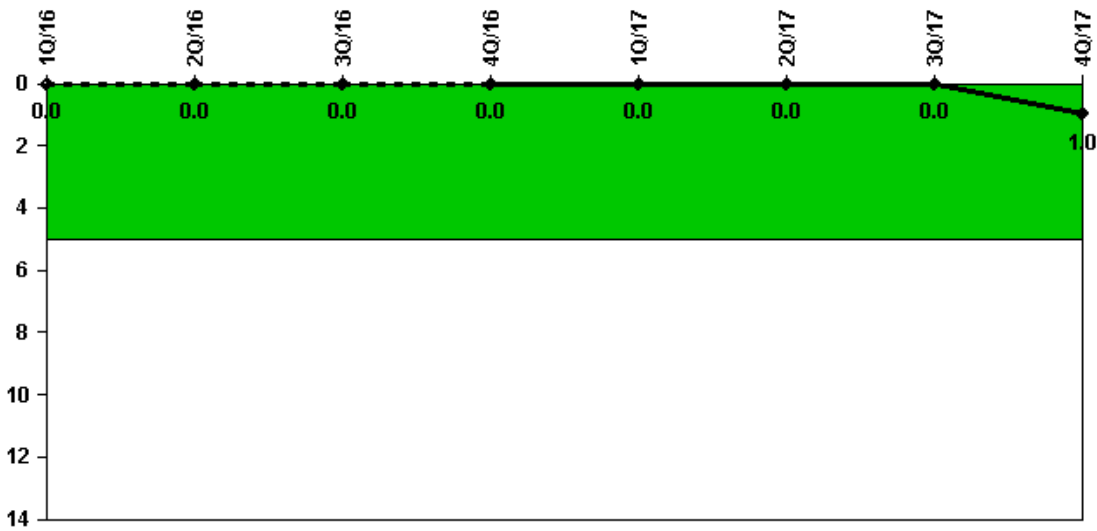
Notes

| Unplanned Scrams with Complications | 1Q/16 | 2Q/16 | 3Q/16 | 4Q/16 | 1Q/17 | 2Q/17 | 3Q/17 | 4Q/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 |

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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 1

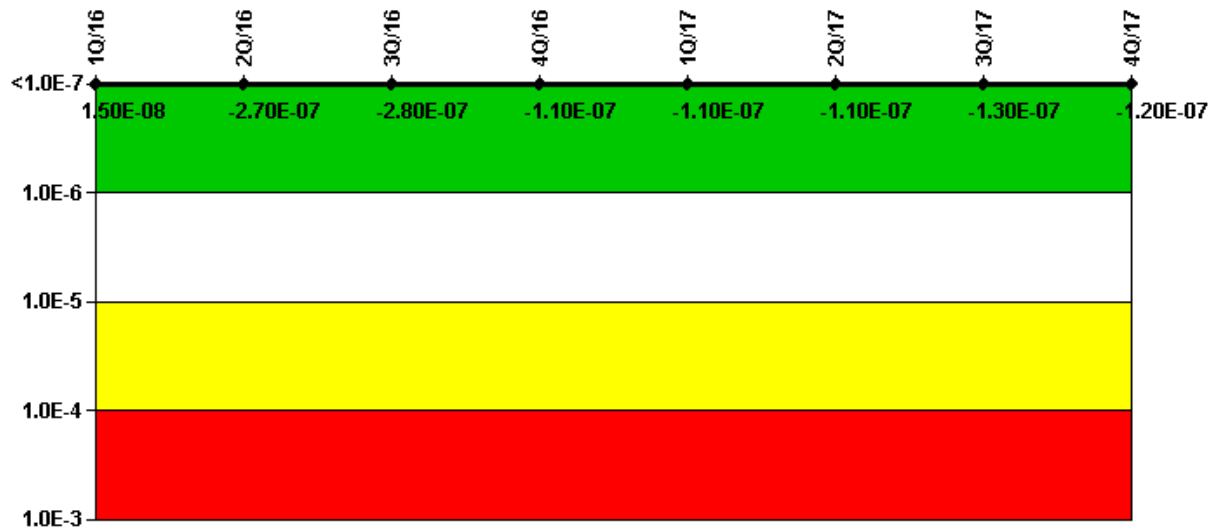
Indicator value 0 0 0 0 0 0 0 1

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Licensee Comments:

4Q/17: LER 2-2017-001-00 was submitted to the NRC via PG&E Letter DCL-17-085 dated October 3, 2017.

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

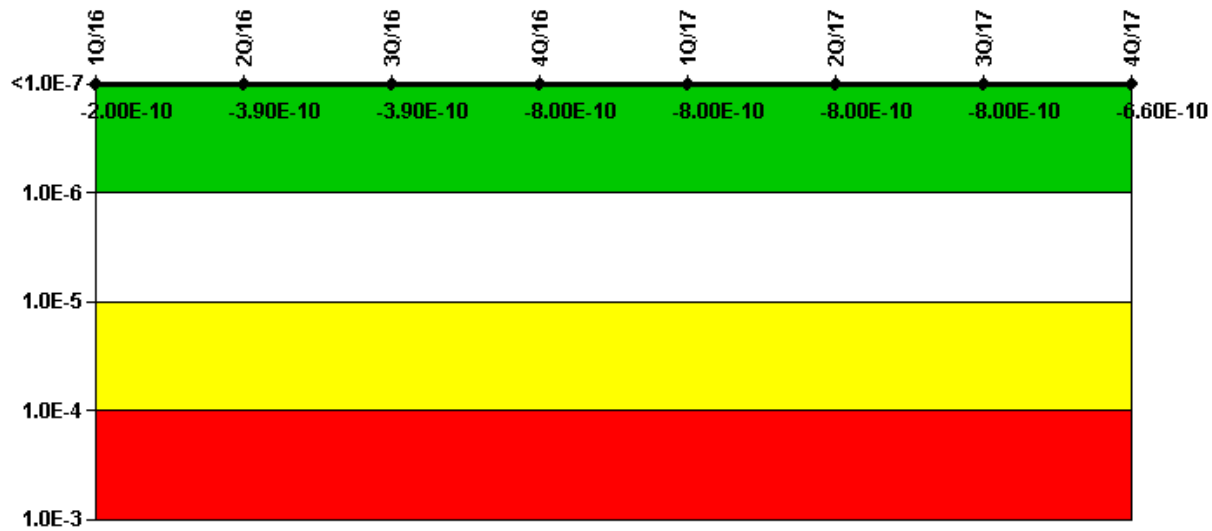
| | 1Q/16 | 2Q/16 | 3Q/16 | 4Q/16 | 1Q/17 | 2Q/17 | 3Q/17 | 4Q/17 |
|------------------------|-----------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|
| UAI (ΔCDF) | 4.13E-08 | 4.54E-08 | 3.66E-08 | 3.19E-08 | 3.14E-08 | 3.10E-08 | 6.88E-09 | 2.15E-08 |
| URI (ΔCDF) | -2.68E-08 | -3.19E-07 | -3.18E-07 | -1.39E-07 | -1.39E-07 | -1.39E-07 | -1.39E-07 | -1.39E-07 |
| PLE | NO | NO | NO | NO | NO | NO | NO | NO |
| Indicator value | 1.50E-08 | -2.70E-07 | -2.80E-07 | -1.10E-07 | -1.10E-07 | -1.10E-07 | -1.30E-07 | -1.20E-07 |

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Licensee Comments:

4Q/16: Changed PRA Parameter(s). Diablo Canyon Probabilistic Risk Assessment (PRA) model revision DC03A was approved on 9/30/2016. The Mitigating System Performance Index (MSPI) basis document revision 10 was approved on 10/6/2016 and contains the updated PRA parameters. The DC03A model revision is an update that incorporates the new Reactor Coolant Pump (RCP) shutdown seals and other minor system updates. As a result of this update, the Core Damage Frequency and Fussel-Vessely importance 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

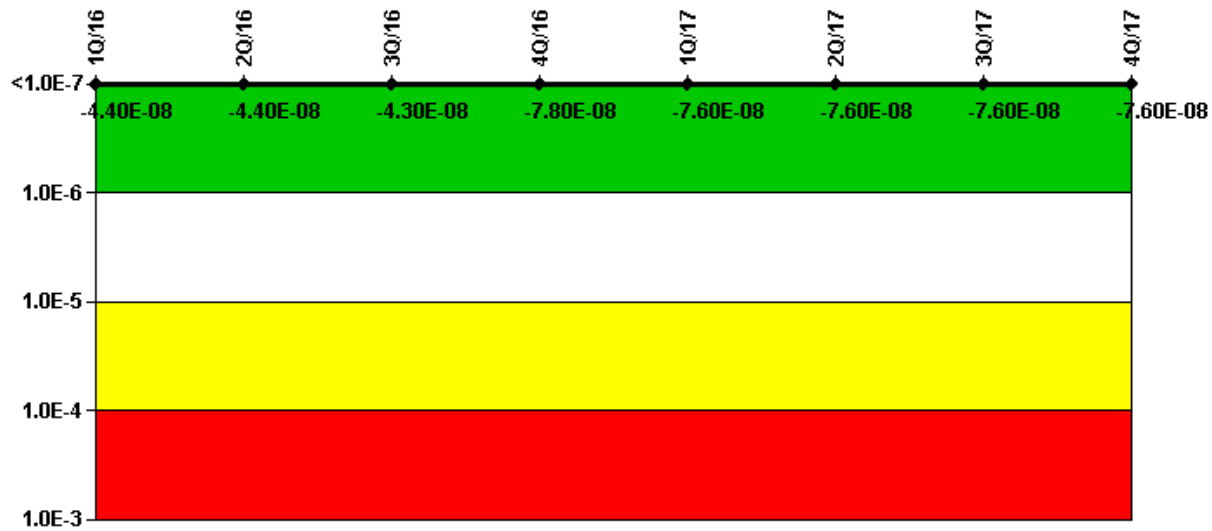
| | 1Q/16 | 2Q/16 | 3Q/16 | 4Q/16 | 1Q/17 | 2Q/17 | 3Q/17 | 4Q/17 |
|------------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|
| UAI (ΔCDF) | 6.96E-11 | -1.21E-10 | -1.21E-10 | -1.13E-10 | -1.13E-10 | -1.13E-10 | -1.13E-10 | -7.52E-11 |
| URI (ΔCDF) | -2.68E-10 | -2.68E-10 | -2.68E-10 | -6.88E-10 | -6.88E-10 | -6.88E-10 | -6.88E-10 | -5.89E-10 |
| PLE | NO | NO | NO | NO | NO | NO | NO | NO |
| Indicator value | -2.00E-10 | -3.90E-10 | -3.90E-10 | -8.00E-10 | -8.00E-10 | -8.00E-10 | -8.00E-10 | -6.60E-10 |

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Licensee Comments:

4Q/16: Changed PRA Parameter(s). Diablo Canyon Probabilistic Risk Assessment (PRA) model revision DC03A was approved on 9/30/2016. The Mitigating System Performance Index (MSPI) basis document revision 10 was approved on 10/6/2016 and contains the updated PRA parameters. The DC03A model revision is an update that incorporates the new Reactor Coolant Pump (RCP) shutdown seals and other minor system updates. As a result of this update, the Core Damage Frequency and Fussel-Vessely importance 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

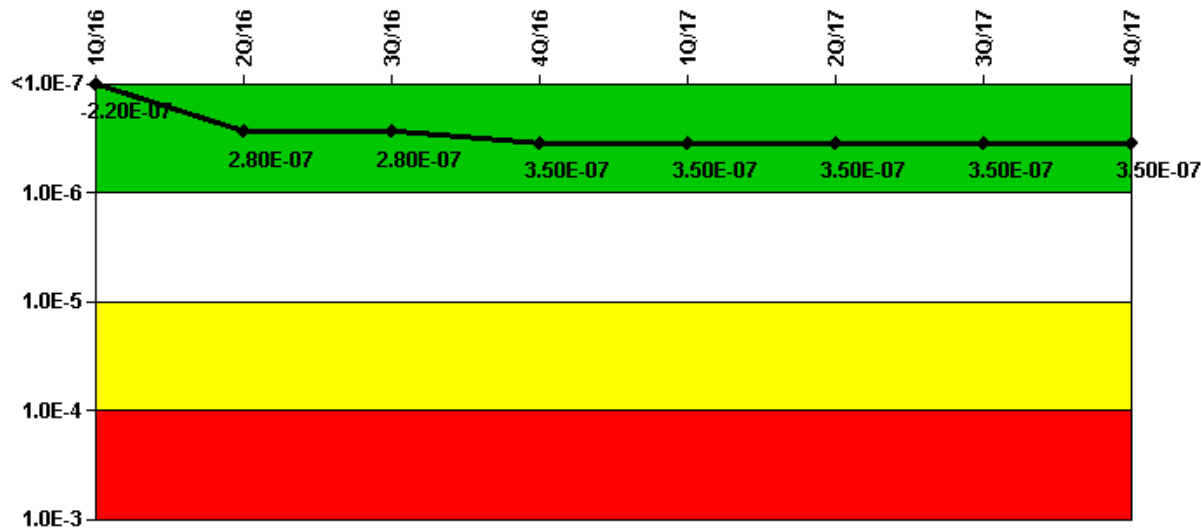
| | 1Q/16 | 2Q/16 | 3Q/16 | 4Q/16 | 1Q/17 | 2Q/17 | 3Q/17 | 4Q/17 |
|------------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|
| UAI (Δ CDF) | -1.78E-08 | -1.78E-08 | -1.78E-08 | -1.85E-08 | -1.85E-08 | -1.85E-08 | -1.85E-08 | -1.85E-08 |
| URI (Δ CDF) | -2.62E-08 | -2.62E-08 | -2.55E-08 | -5.92E-08 | -5.74E-08 | -5.74E-08 | -5.74E-08 | -5.74E-08 |
| PLE | NO | NO | NO | NO | NO | NO | NO | NO |
| Indicator value | -4.40E-08 | -4.40E-08 | -4.30E-08 | -7.80E-08 | -7.60E-08 | -7.60E-08 | -7.60E-08 | -7.60E-08 |

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Licensee Comments:

4Q/16: Changed PRA Parameter(s). Diablo Canyon Probabilistic Risk Assessment (PRA) model revision DC03A was approved on 9/30/2016. The Mitigating System Performance Index (MSPI) basis document revision 10 was approved on 10/6/2016 and contains the updated PRA parameters. The DC03A model revision is an update that incorporates the new Reactor Coolant Pump (RCP) shutdown seals and other minor system updates. As a result of this update, the Core Damage Frequency and Fussel-Vessely importance 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

| | 1Q/16 | 2Q/16 | 3Q/16 | 4Q/16 | 1Q/17 | 2Q/17 | 3Q/17 | 4Q/17 |
|------------------------|------------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| UAI (ΔCDF) | -3.18E-08 | -2.97E-08 | -3.00E-08 | -1.91E-08 | -1.91E-08 | -1.91E-08 | -1.91E-08 | -1.91E-08 |
| URI (ΔCDF) | -1.90E-07 | 3.10E-07 | 3.10E-07 | 3.74E-07 | 3.74E-07 | 3.74E-07 | 3.74E-07 | 3.74E-07 |
| PLE | NO | NO | NO | NO | NO | NO | NO | NO |
| Indicator value | -2.20E-07 | 2.80E-07 | 2.80E-07 | 3.50E-07 | 3.50E-07 | 3.50E-07 | 3.50E-07 | 3.50E-07 |

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Licensee Comments:

4Q/17: Risk Cap Invoked.

3Q/17: Risk Cap Invoked.

2Q/17: Risk Cap Invoked.

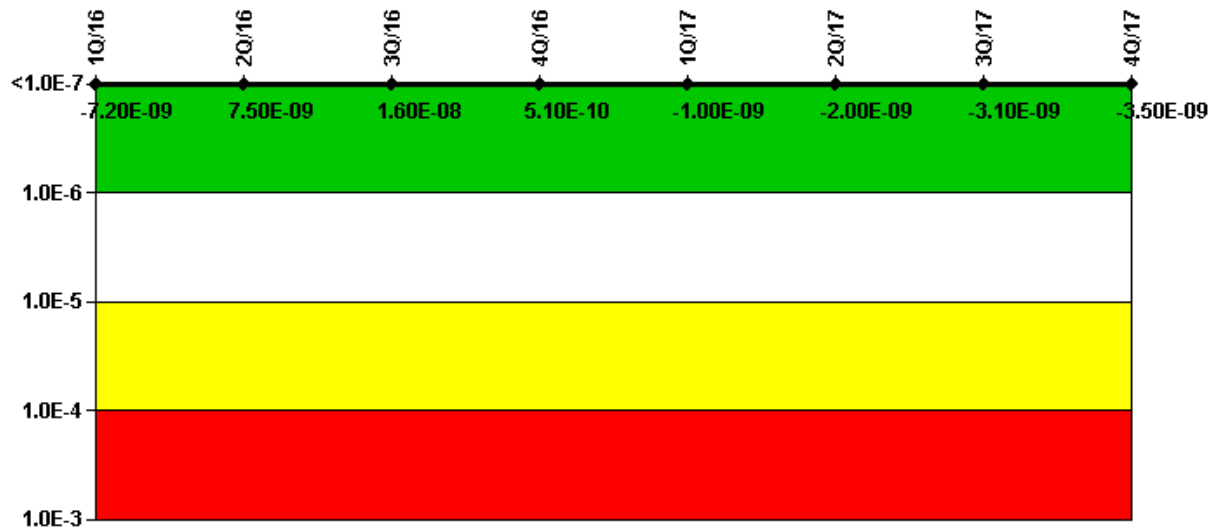
1Q/17: Risk Cap Invoked.

4Q/16: Risk Cap Invoked. Changed PRA Parameter(s). Diablo Canyon Probabilistic Risk Assessment (PRA) model revision DC03A was approved on 9/30/2016. The Mitigating System Performance Index (MSPI) basis document revision 10 was approved on 10/6/2016 and contains the updated PRA parameters. The DC03A model revision is an update that incorporates the new Reactor Coolant Pump (RCP) shutdown seals and other minor system updates. As a result of this update, the Core Damage Frequency and Fussel-Vessely importance for all monitored trains and components were revised.

3Q/16: Risk Cap Invoked.

2Q/16: Risk Cap Invoked.

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

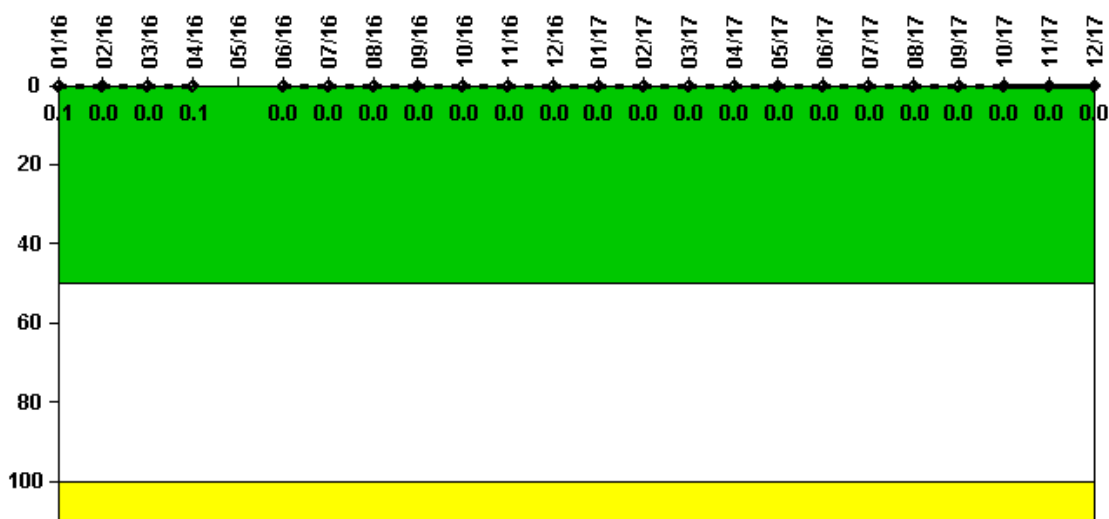
| | 1Q/16 | 2Q/16 | 3Q/16 | 4Q/16 | 1Q/17 | 2Q/17 | 3Q/17 | 4Q/17 |
|---------------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
| UAI (Δ CDF) | $9.90E-09$ | $2.46E-08$ | $3.32E-08$ | $4.98E-09$ | $3.42E-09$ | $2.44E-09$ | $1.33E-09$ | $9.14E-10$ |
| URI (Δ CDF) | $-1.71E-08$ | $-1.71E-08$ | $-1.71E-08$ | $-4.47E-09$ | $-4.46E-09$ | $-4.46E-09$ | $-4.46E-09$ | $-4.46E-09$ |
| PLE | NO | NO | NO | NO | NO | NO | NO | NO |
| Indicator value | $-7.20E-09$ | $7.50E-09$ | $1.60E-08$ | $5.10E-10$ | $-1.00E-09$ | $-2.00E-09$ | $-3.10E-09$ | $-3.50E-09$ |

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Licensee Comments:

4Q/16: Changed PRA Parameter(s). Diablo Canyon Probabilistic Risk Assessment (PRA) model revision DC03A was approved on 9/30/2016. The Mitigating System Performance Index (MSPI) basis document revision 10 was approved on 10/6/2016 and contains the updated PRA parameters. The DC03A model revision is an update that incorporates the new Reactor Coolant Pump (RCP) shutdown seals and other minor system updates. As a result of this update, the Core Damage Frequency and Fussler-Vessely importance for all monitored trains and components were revised.

Reactor Coolant System Activity



Thresholds: White > 50.0 Yellow > 100.0

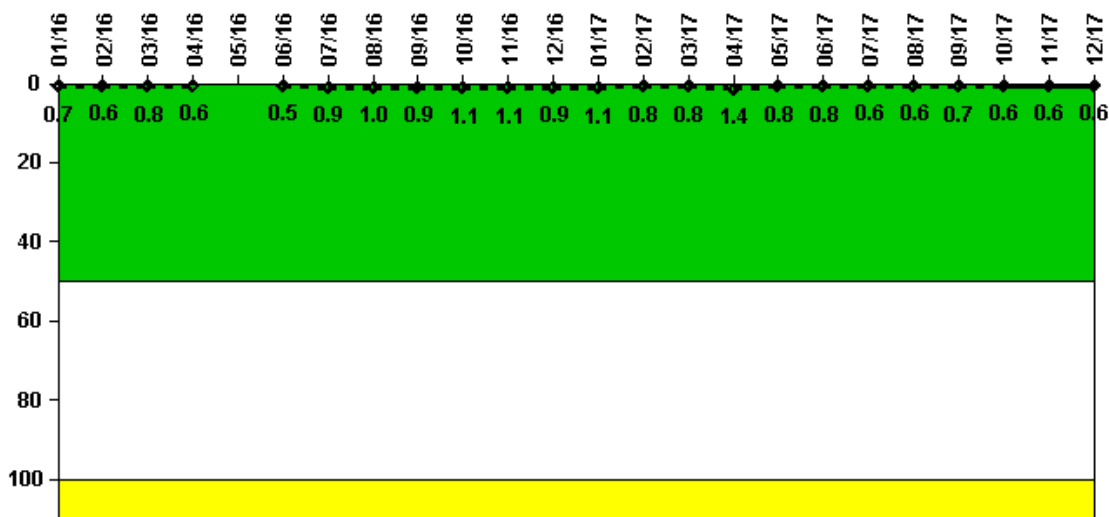
Notes

| 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 | 0.000611 | 0.000352 | 0.000352 | 0.000530 | N/A | 0.000146 | 0.000143 | 0.000149 | 0.000157 | 0.000168 | 0.000161 | 0.000167 |
| 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 | 0.1 | N/A | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 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 | 0.000172 | 0.000176 | 0.000186 | 0.000184 | 0.000195 | 0.000195 | 0.000200 | 0.000294 | 0.000287 | 0.000312 | 0.000227 | 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 | 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 | 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 | 0.073 | 0.064 | 0.080 | 0.064 | N/A | 0.052 | 0.092 | 0.101 | 0.085 | 0.105 | 0.108 | 0.088 |
| 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 |

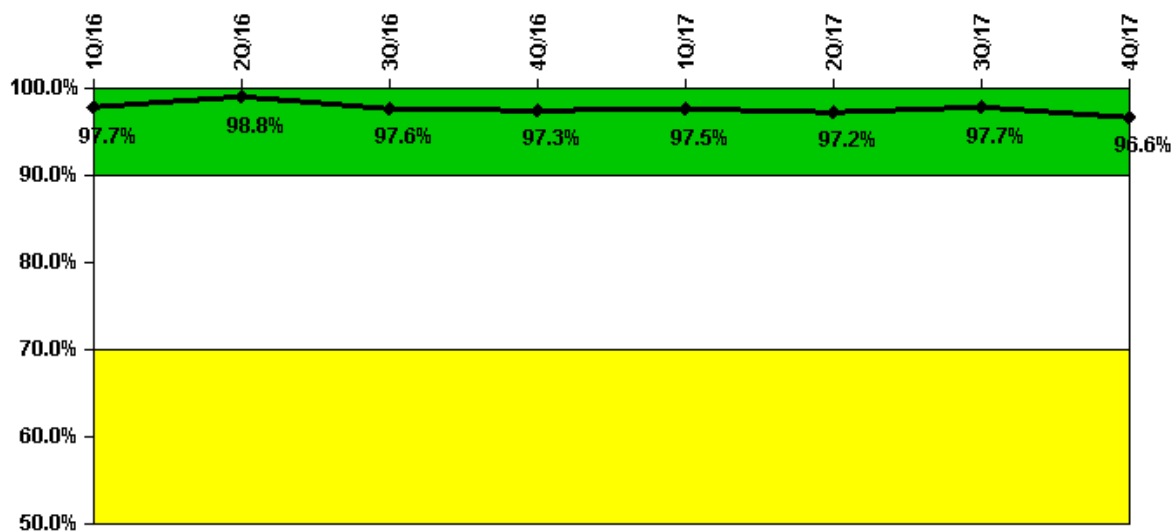
| Indicator value | 0.7 | 0.6 | 0.8 | 0.6 | N/A | 0.5 | 0.9 | 1.0 | 0.9 | 1.1 | 1.1 | 0.9 |
|--------------------------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|
| Reactor Coolant 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 | 0.113 | 0.083 | 0.076 | 0.137 | 0.083 | 0.079 | 0.060 | 0.064 | 0.073 | 0.058 | 0.055 | 0.060 |
| 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 | 1.1 | 0.8 | 0.8 | 1.4 | 0.8 | 0.8 | 0.6 | 0.6 | 0.7 | 0.6 | 0.6 | 0.6 |
|------------------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|

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Licensee Comments: none

Drill/Exercise Performance



Thresholds: White < 90.0% Yellow < 70.0%

Notes

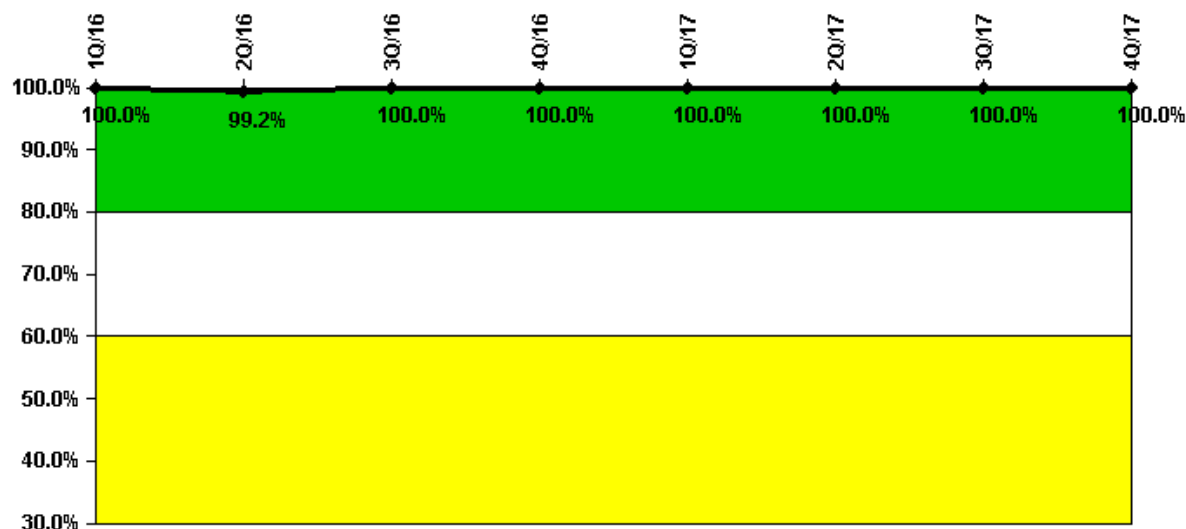
| Drill/Exercise Performance | 1Q/16 | 2Q/16 | 3Q/16 | 4Q/16 | 1Q/17 | 2Q/17 | 3Q/17 | 4Q/17 |
|----------------------------|-------|-------|-------|-------|-------|-------|-------|-------|
| Successful opportunities | 37.0 | 48.0 | 33.0 | 37.0 | 44.0 | 16.0 | 39.0 | 34.0 |
| Total opportunities | 38.0 | 48.0 | 36.0 | 38.0 | 44.0 | 17.0 | 39.0 | 38.0 |

Indicator value 97.7% 98.8% 97.6% 97.3% 97.5% 97.2% 97.7% 96.6%

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Licensee Comments: none

ERO Drill Participation



Thresholds: White < 80.0% Yellow < 60.0%

Notes

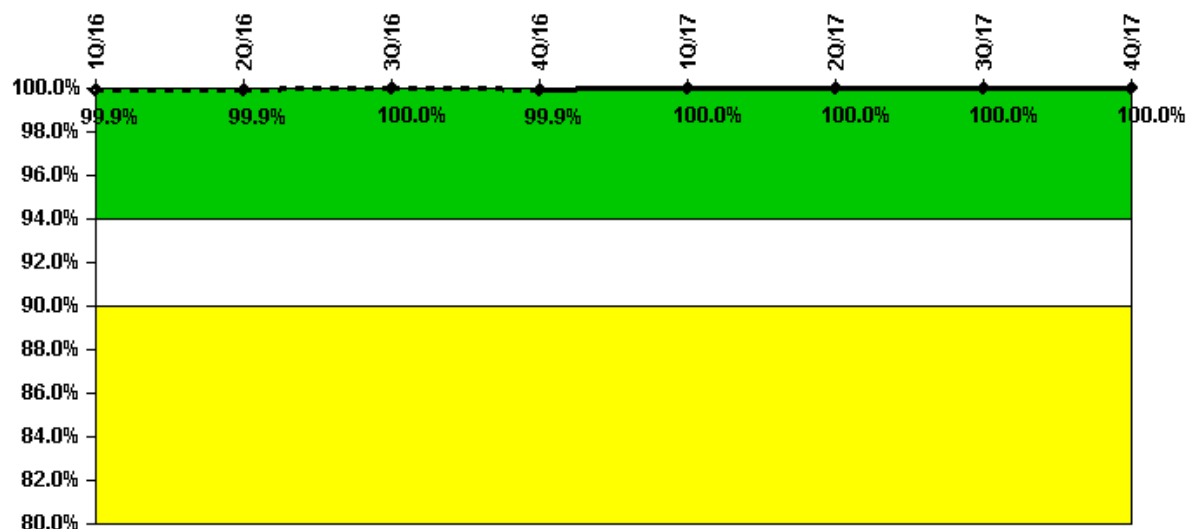
| ERO Drill Participation | 1Q/16 | 2Q/16 | 3Q/16 | 4Q/16 | 1Q/17 | 2Q/17 | 3Q/17 | 4Q/17 |
|-----------------------------|-------|-------|-------|-------|-------|-------|-------|-------|
| Participating Key personnel | 121.0 | 122.0 | 127.0 | 124.0 | 132.0 | 131.0 | 129.0 | 128.0 |
| Total Key personnel | 121.0 | 123.0 | 127.0 | 124.0 | 132.0 | 131.0 | 129.0 | 128.0 |

Indicator value **100.0% 99.2% 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

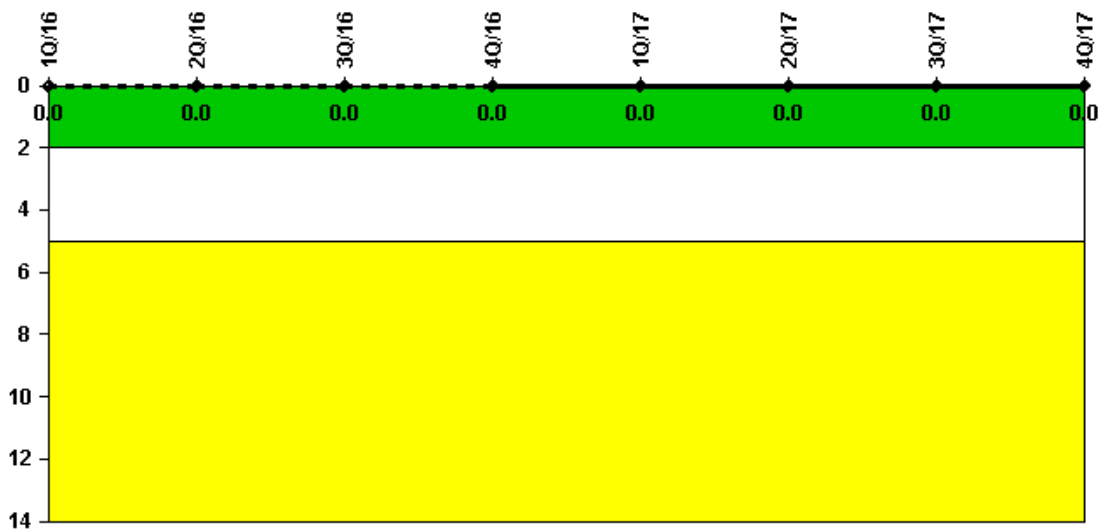
| Alert & Notification System | 1Q/16 | 2Q/16 | 3Q/16 | 4Q/16 | 1Q/17 | 2Q/17 | 3Q/17 | 4Q/17 |
|-----------------------------|-------|-------|-------|-------|-------|-------|-------|-------|
| Successful siren-tests | 916 | 1047 | 1179 | 1047 | 917 | 1048 | 1179 | 1048 |
| Total sirens-tests | 917 | 1048 | 1179 | 1048 | 917 | 1048 | 1179 | 1048 |

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

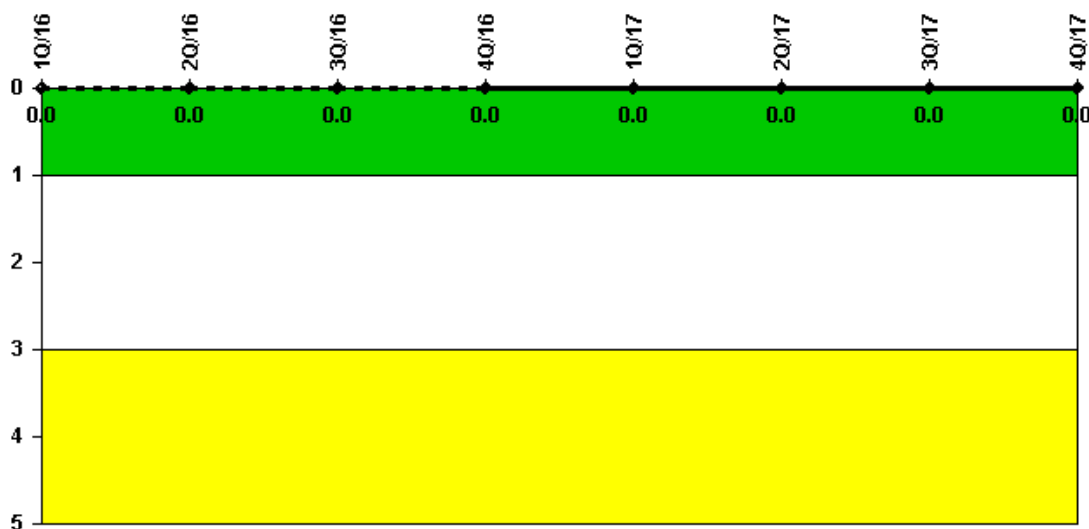
Occupational Exposure Control Effectiveness 1Q/16 2Q/16 3Q/16 4Q/16 1Q/17 2Q/17 3Q/17 4Q/17

| | | | | | | | | |
|--------------------------------------|----------|----------|----------|----------|----------|----------|----------|----------|
| 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 |
| 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 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