



Home > Nuclear Reactors > Operating Reactors > Reactor Oversight Process > Plant Summaries > Diablo Canyon 2 > Quarterly Performance Indicators

Diablo Canyon 2 – Quarterly Performance Indicators

The solid trend line represents the current reporting period.

Licensee's General Comments: none

2Q/2017 Performance Indicators

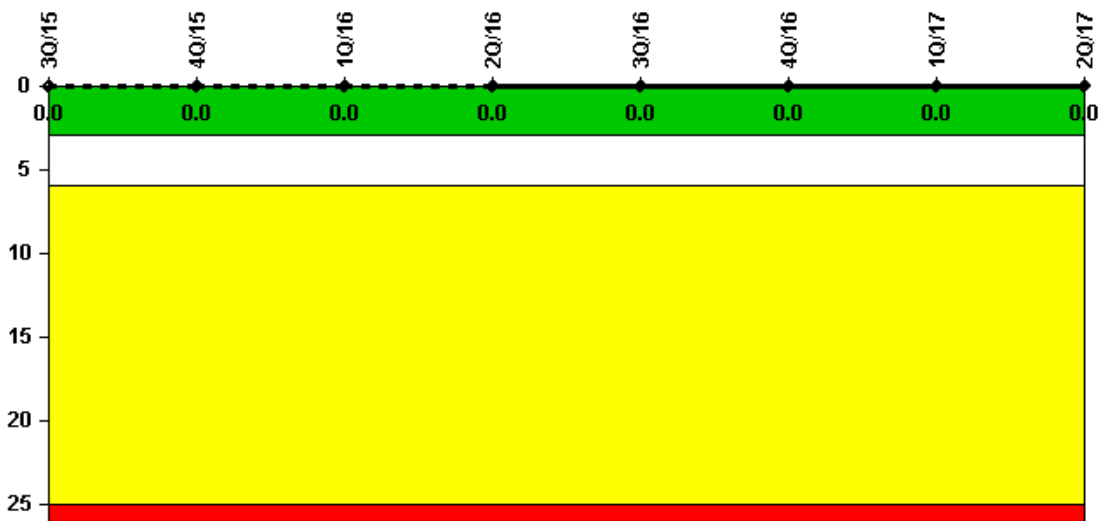
The solid trend line represents the current reporting period.

Licensee's General Comments: Indicator PP01 is revised from December 2016 to May 2017 to include compensatory hours for security equipment upgrade modifications that were previously excluded. The color of the indicator is not affected by this change.

On this page:

- 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)

Unplanned Scrams per 7000 Critical Hrs



Thresholds: White > 3.0 Yellow > 6.0 Red > 25.0

Notes

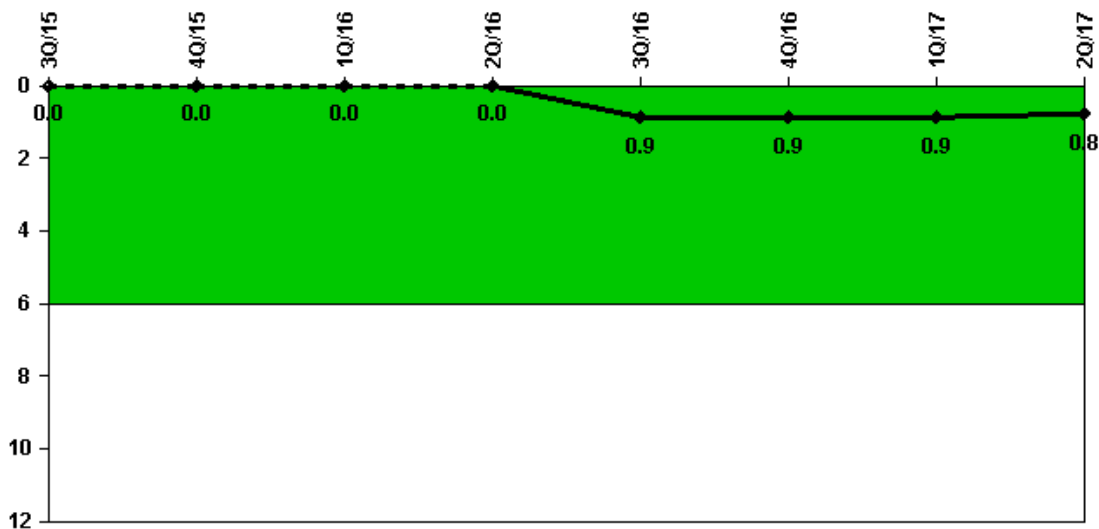
Unplanned Scrams per 7000 Critical Hrs	3Q/15	4Q/15	1Q/16	2Q/16	3Q/16	4Q/16	1Q/17	2Q/17
Unplanned scrams	0	0	0	0	0	0	0	0
Critical hours	2208.0	2209.0	2183.0	1436.5	2208.0	2209.0	2159.0	2184.0

Indicator value: 0 0 0 0 0 0 0 0

TOP

Licensee Comments: none

Unplanned Power Changes per 7000 Critical Hrs



Thresholds: White > 6.0

Notes

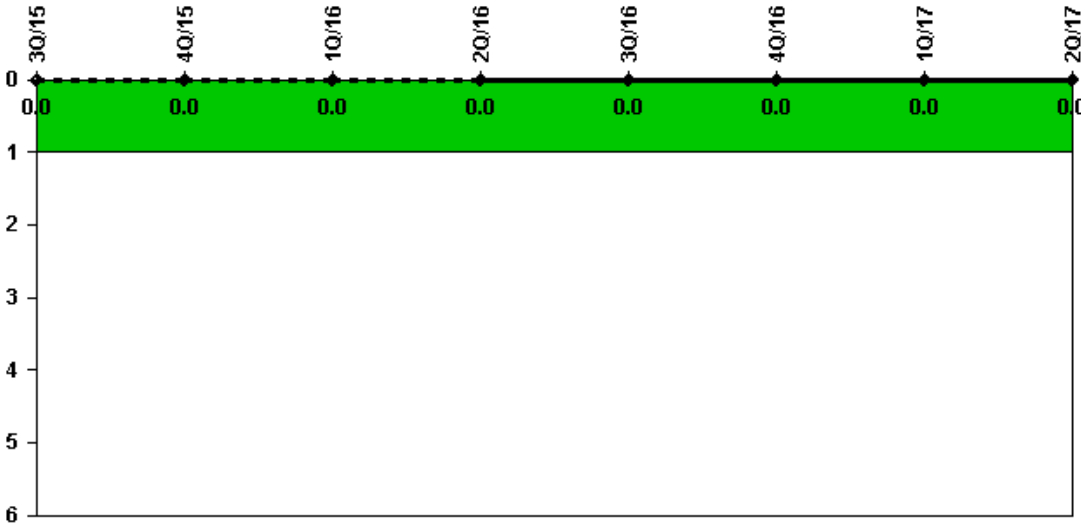
Unplanned Power Changes per 7000 Critical Hrs	3Q/15	4Q/15	1Q/16	2Q/16	3Q/16	4Q/16	1Q/17	2Q/17
Unplanned power changes	0	0	0	0	1.0	0	0	0
Critical hours	2208.0	2209.0	2183.0	1436.5	2208.0	2209.0	2159.0	2184.0
Indicator value	0	0	0	0	0.9	0.9	0.9	0.8

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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.
 4Q/15: On December 11, 2015, Diablo Canyon Unit 2 was ramped to approximately 25 percent power due to ocean storm swells and biofouling of the condenser. The power change was made proactively in order to prevent a plant trip consistent with NEI 99-02, Revision 7, Appendix D FAQs for Diablo Canyon, and is therefore classified as unplanned, excluded per NEI 99-02. Reference SAPN 50828812.

Unplanned Scrams with Complications



Thresholds: White > 1.0

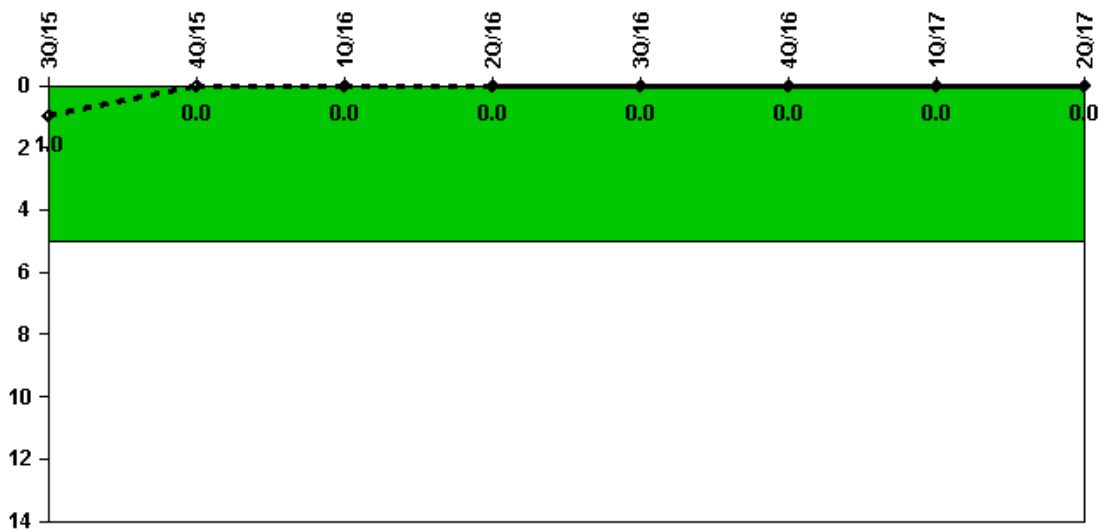
Notes

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	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) 3Q/15 4Q/15 1Q/16 2Q/16 3Q/16 4Q/16 1Q/17 2Q/17

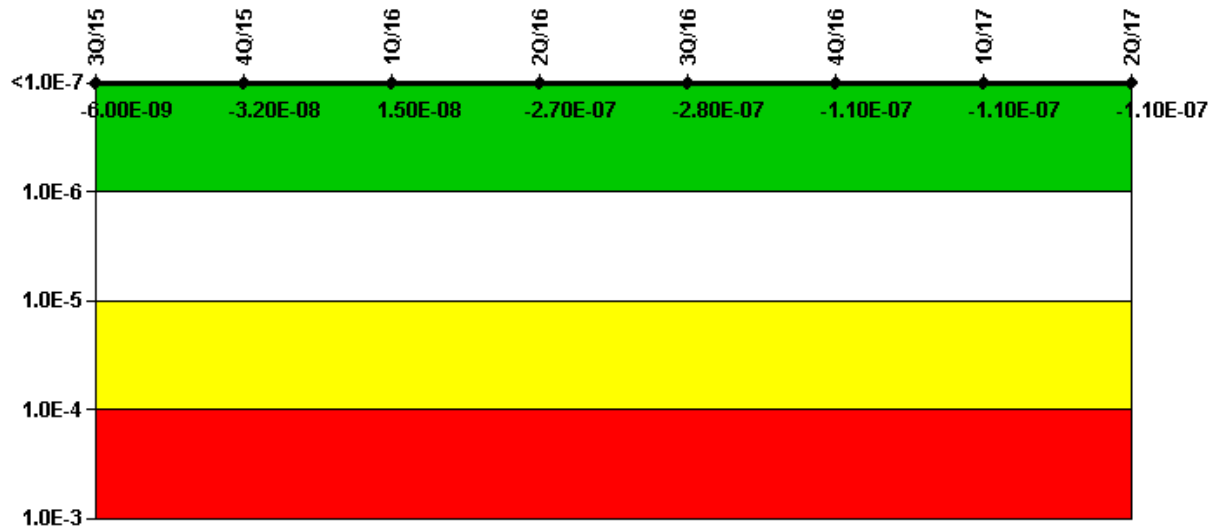
Safety System Functional Failures 0 0 0 0 0 0 0 0

Indicator value 1 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	3Q/15	4Q/15	1Q/16	2Q/16	3Q/16	4Q/16	1Q/17	2Q/17
UAI (ΔCDF)	1.99E-08	-5.17E-09	4.13E-08	4.54E-08	3.66E-08	3.19E-08	3.14E-08	3.10E-08
URI (ΔCDF)	-2.59E-08	-2.68E-08	-2.68E-08	-3.19E-07	-3.18E-07	-1.39E-07	-1.39E-07	-1.39E-07
PLE	NO	NO	NO	NO	NO	NO	NO	NO
Indicator value	-6.00E-09	-3.20E-08	1.50E-08	-2.70E-07	-2.80E-07	-1.10E-07	-1.10E-07	-1.10E-07

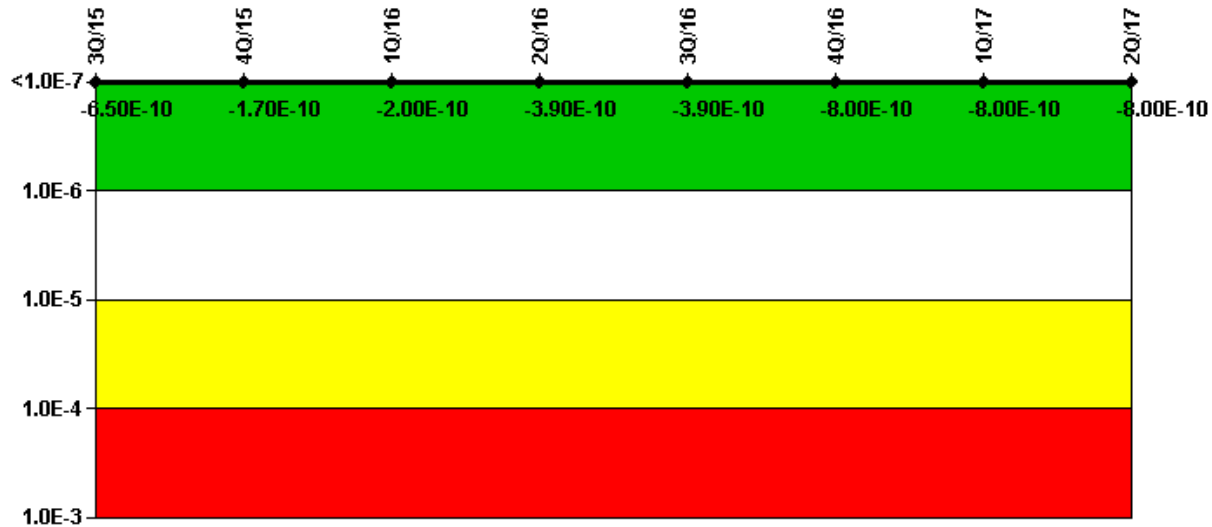
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Licensee Comments:

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.

4Q/15: Changed PRA Parameter(s). Diablo Canyon Probabilistic Risk Assessment (PRA) model revision DC03 was approved on 7/30/2015. The Mitigating System Performance Index (MSPI) basis document revision 8 was approved on 1/20/2016 and contains the updated PRA parameters. The DC03 model revision is a periodic update that incorporates new model data for initiating events, equipment failures probabilities, and Human Reliability Analysis (HRA) probabilities. As a result of this update, the Core Damage Frequency, Fussel-Vessely, 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

UAI (ΔCDF)	3Q/15	4Q/15	1Q/16	2Q/16	3Q/16	4Q/16	1Q/17	2Q/17
UAI (ΔCDF)	5.10E-10	1.02E-10	6.96E-11					

				-1.21E-10	-1.21E-10	-1.13E-10	-1.13E-10	-1.13E-10
URI (ΔCDF)	-1.16E-09	-2.68E-10	-2.68E-10	-2.68E-10	-2.68E-10	-6.88E-10	-6.88E-10	-6.88E-10
PLE	NO	NO	NO	NO	NO	NO	NO	NO
Indicator value	-6.50E-10	-1.70E-10	-2.00E-10	-3.90E-10	-3.90E-10	-8.00E-10	-8.00E-10	-8.00E-10

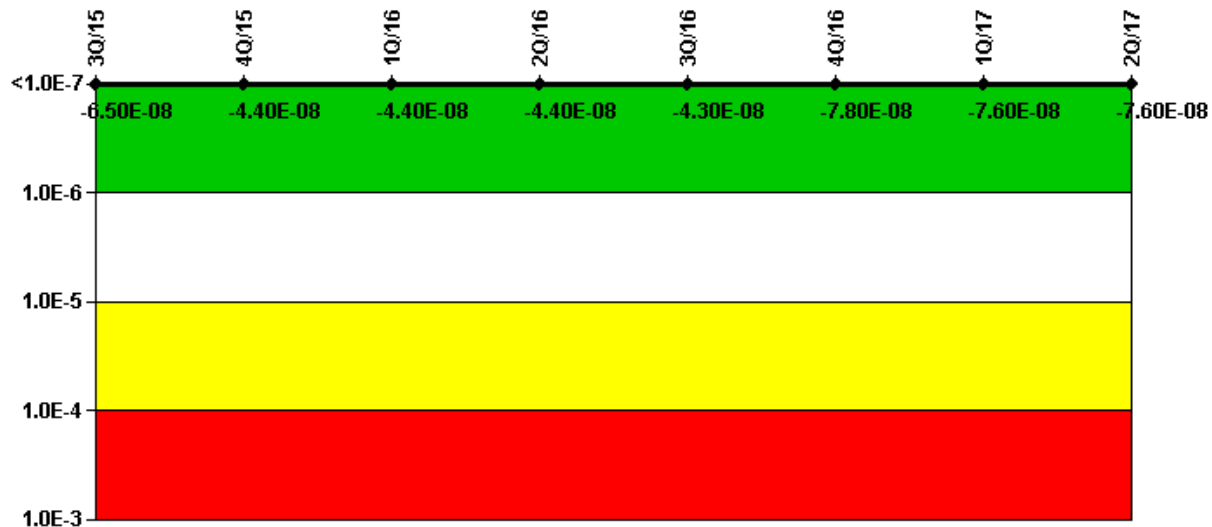
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Mitigating Systems Performance Index, Heat Removal System



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

Notes

Mitigating Systems Performance Index, Heat Removal System

	3Q/15	4Q/15	1Q/16	2Q/16	3Q/16	4Q/16	1Q/17	2Q/17
UAI (ΔCDF)	-1.19E-08	-1.78E-08	-1.78E-08	-1.78E-08	-1.78E-08	-1.85E-08	-1.85E-08	-1.85E-08
URI (ΔCDF)	-5.33E-08	-2.62E-08	-2.62E-08	-2.62E-08	-2.55E-08	-5.92E-08	-5.74E-08	-5.74E-08

PLE	NO	NO	NO	NO	NO	NO	NO	NO
Indicator value	-6.50E-08	-4.40E-08	-4.40E-08	-4.40E-08	-4.30E-08	-7.80E-08	-7.60E-08	-7.60E-08

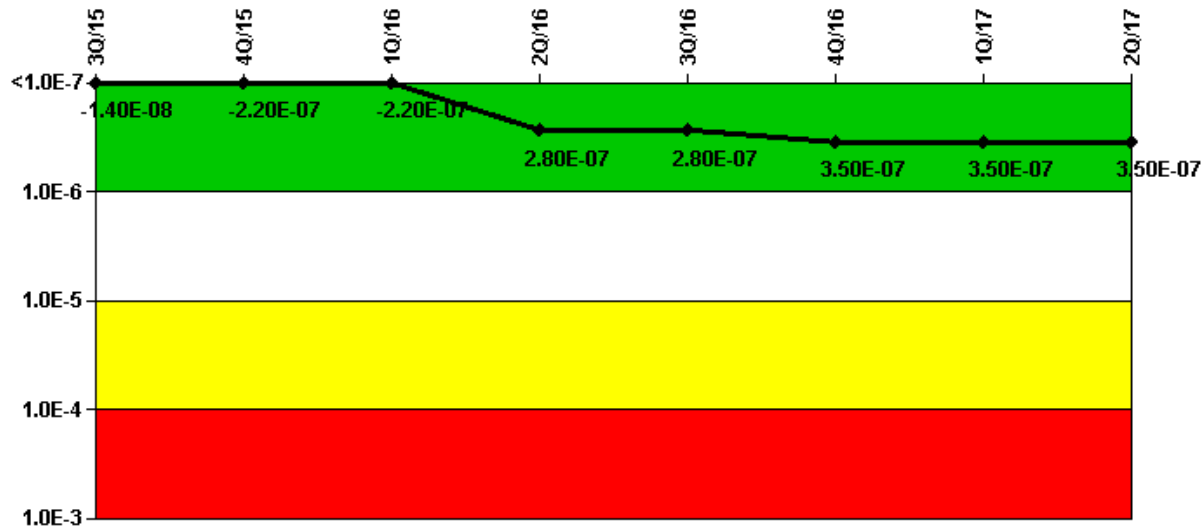
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Licensee Comments:

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4Q/15: Changed PRA Parameter(s). Diablo Canyon Probabilistic Risk Assessment (PRA) model revision DC03 was approved on 7/30/2015. The Mitigating System Performance Index (MSPI) basis document revision 8 was approved on 1/20/2016 and contains the updated PRA parameters. The DC03 model revision is a periodic update that incorporates new model data for initiating events, equipment failures probabilities, and Human Reliability Analysis (HRA) probabilities. As a result of this update, the Core Damage Frequency, Fussel-Vessely, 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)	-2.41E-09	-3.22E-08	-3.18E-08	-2.97E-08	-3.00E-08	-1.91E-08	-1.91E-08	-1.91E-08
URI (ΔCDF)	-1.19E-08	-1.90E-07	-1.90E-07	3.10E-07	3.10E-07	3.74E-07	3.74E-07	3.74E-07
PLE	NO	NO	NO	NO	NO	NO	NO	NO
Indicator value	-1.40E-08	-2.20E-07	-2.20E-07	2.80E-07	2.80E-07	3.50E-07	3.50E-07	3.50E-07



Licensee Comments:

2Q/17: Risk Cap Invoked.

1Q/17: Risk Cap Invoked.

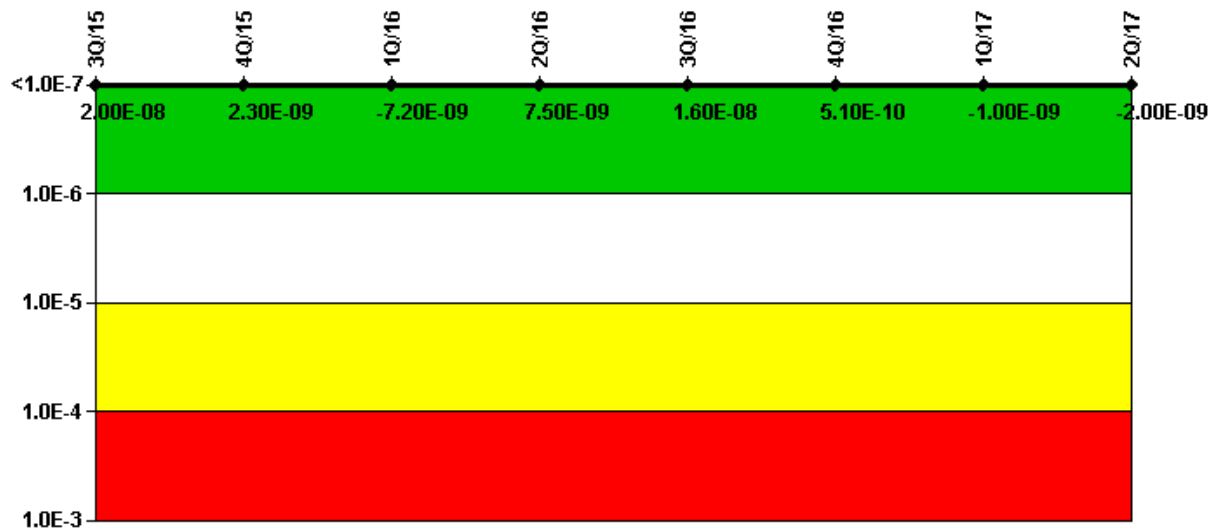
4Q/16: Risk Cap Invoked. Changed PRA Parameter(s). Diablo Canyon Probabilistic Risk Assessment (PRA) model revision DC03A was approved on 9/30/2016. The Mitigating System Performance Index (MSPI) basis document revision 10 was approved on 10/6/2016 and contains the updated PRA parameters. The DC03A model 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.

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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)	6.66E-08	1.94E-08	9.90E-09	2.46E-08	3.32E-08	4.98E-09	3.42E-09	2.44E-09
URI (ΔCDF)	-4.68E-08	-1.71E-08	-1.71E-08	-1.71E-08	-1.71E-08	-4.47E-09	-4.46E-09	-4.46E-09
PLE	NO	NO	NO	NO	NO	NO	NO	NO

Indicator value	2.00E-08	2.30E-09	-7.20E-09	7.50E-09	1.60E-08	5.10E-10	-1.00E-09	-2.00E-09
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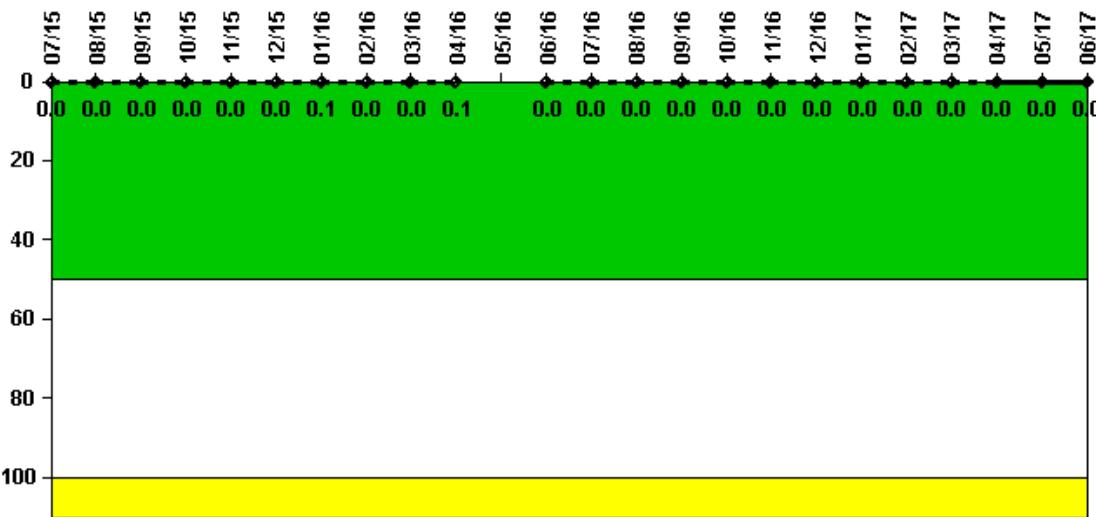


Licensee Comments:

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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	0.000265	0.000269	0.000273	0.000286	0.000290	0.000313	0.000611	0.000352	0.000352	0.000530	N/A	0.000146
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	0.1	0	0	0.1	N/A	0

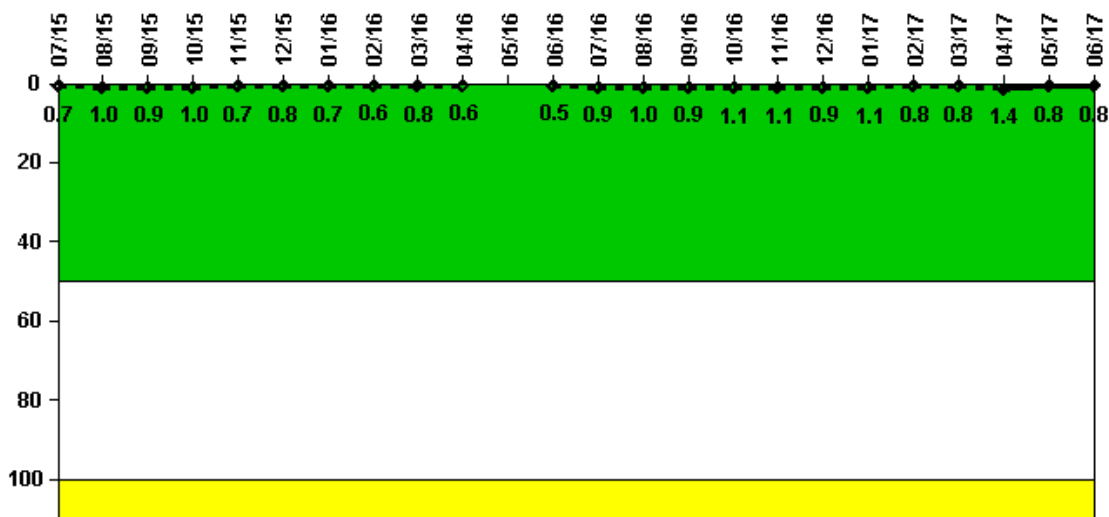
Reactor Coolant System Activity	7/16	8/16	9/16	10/16	11/16	12/16	1/17	2/17	3/17	4/17	5/17	6/17
Maximum activity	0.000143	0.000149	0.000157	0.000168	0.000161	0.000167	0.000172	0.000176	0.000186	0.000184	0.000195	0.000195
Technical specification limit	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0

Indicator value 0 0 0 0 0 0 0 0 0 0 0

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Licensee Comments: none

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	0.074	0.097	0.091	0.099	0.069	0.082	0.073	0.064	0.080	0.064	N/A	0.052
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

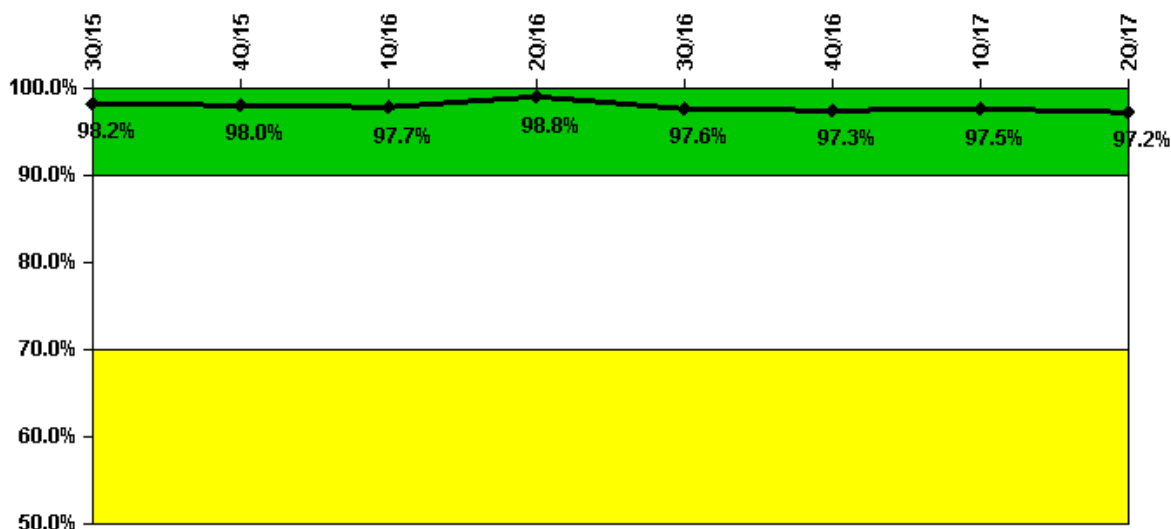
Indicator value	0.7	1.0	0.9	1.0	0.7	0.8	0.7	0.6	0.8	0.6	N/A	0.5
Reactor Coolant System Leakage	7/16	8/16	9/16	10/16	11/16	12/16	1/17	2/17	3/17	4/17	5/17	6/17
Maximum leakage	0.092	0.101	0.085	0.105	0.108	0.088	0.113	0.083	0.076	0.137	0.083	0.079
Technical specification limit	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0

Indicator value 0.9 1.0 0.9 1.1 1.1 0.9 1.1 0.8 0.8 1.4 0.8 0.8

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Licensee Comments: none

Drill/Exercise Performance



Thresholds: White < 90.0% Yellow < 70.0%

Notes

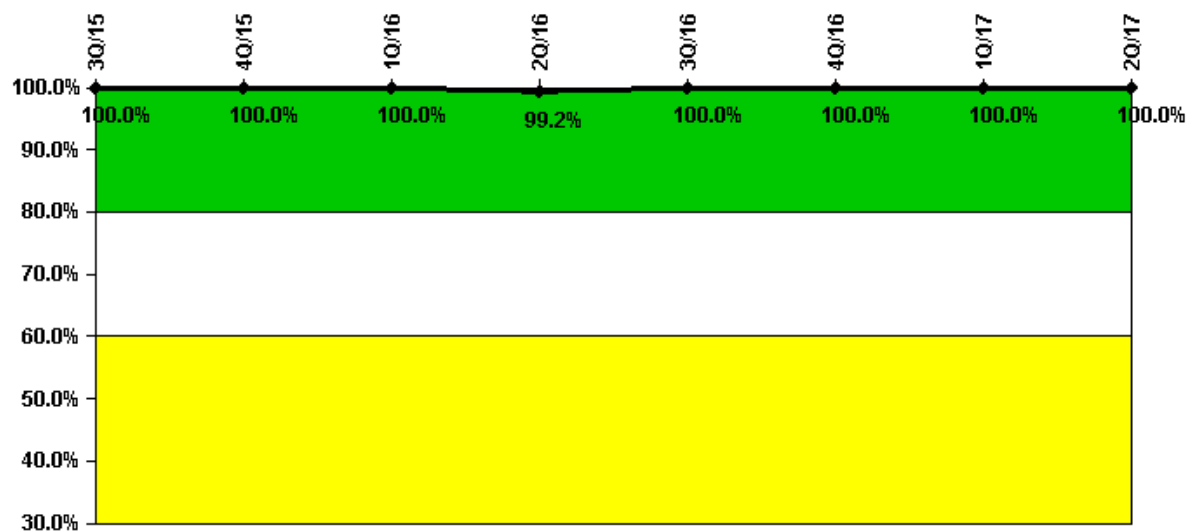
Drill/Exercise Performance	3Q/15	4Q/15	1Q/16	2Q/16	3Q/16	4Q/16	1Q/17	2Q/17
Successful opportunities	22.0	4.0	37.0	48.0	33.0	37.0	44.0	16.0
Total opportunities	23.0	4.0	38.0	48.0	36.0	38.0	44.0	17.0

Indicator value 98.2% 98.0% 97.7% 98.8% 97.6% 97.3% 97.5% 97.2%

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Licensee Comments: none

ERO Drill Participation



Thresholds: White < 80.0% Yellow < 60.0%

Notes

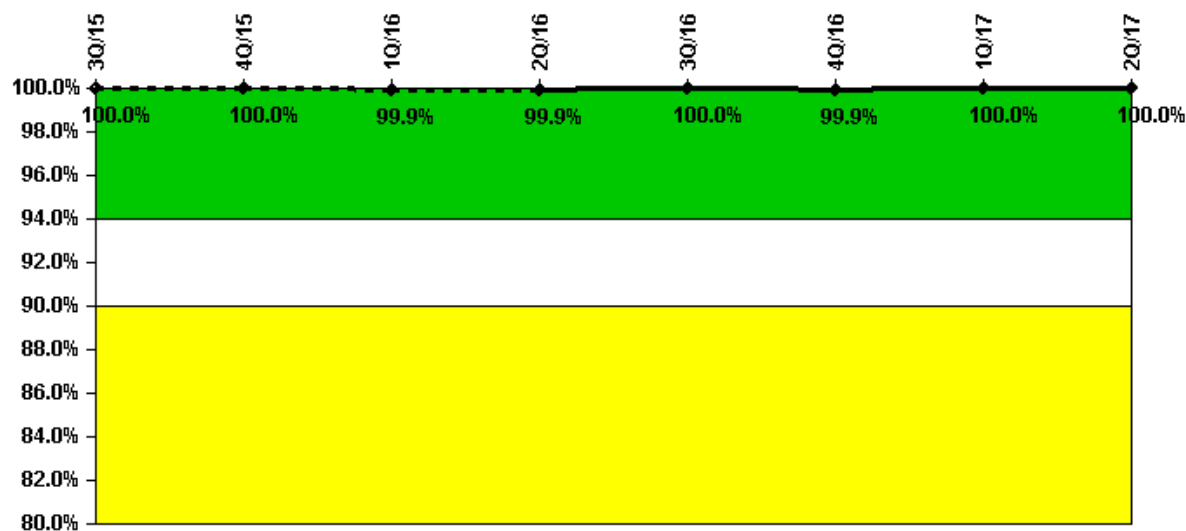
ERO Drill Participation	3Q/15	4Q/15	1Q/16	2Q/16	3Q/16	4Q/16	1Q/17	2Q/17
Participating Key personnel	121.0	119.0	121.0	122.0	127.0	124.0	132.0	131.0
Total Key personnel	121.0	119.0	121.0	123.0	127.0	124.0	132.0	131.0

Indicator value **100.0% 100.0% 100.0% 99.2% 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

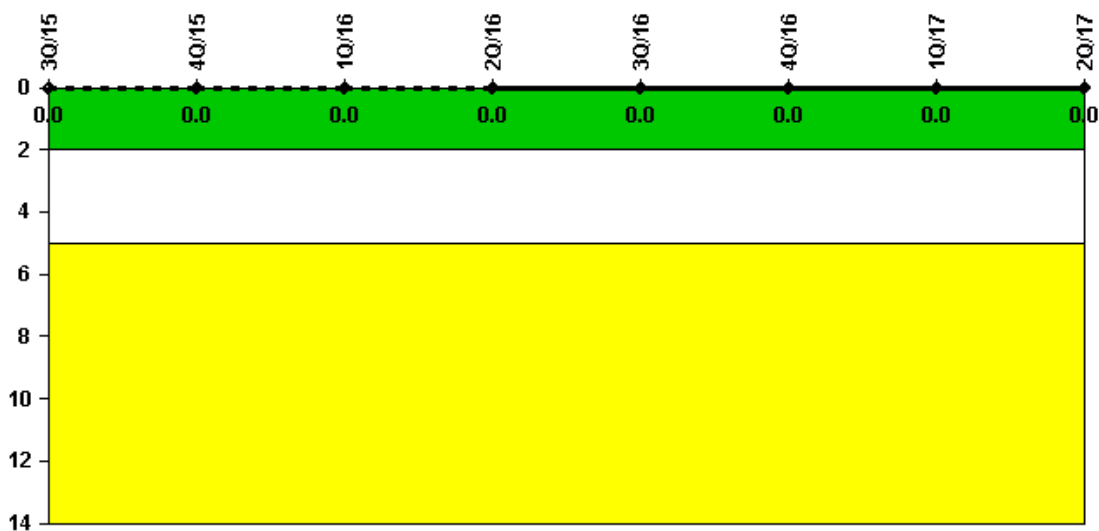
Alert & Notification System	3Q/15	4Q/15	1Q/16	2Q/16	3Q/16	4Q/16	1Q/17	2Q/17
Successful siren-tests	1178	1048	916	1047	1179	1047	917	1048
Total sirens-tests	1179	1048	917	1048	1179	1048	917	1048

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

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Licensee Comments: none

Occupational Exposure Control Effectiveness



Thresholds: White > 2.0 Yellow > 5.0

Notes

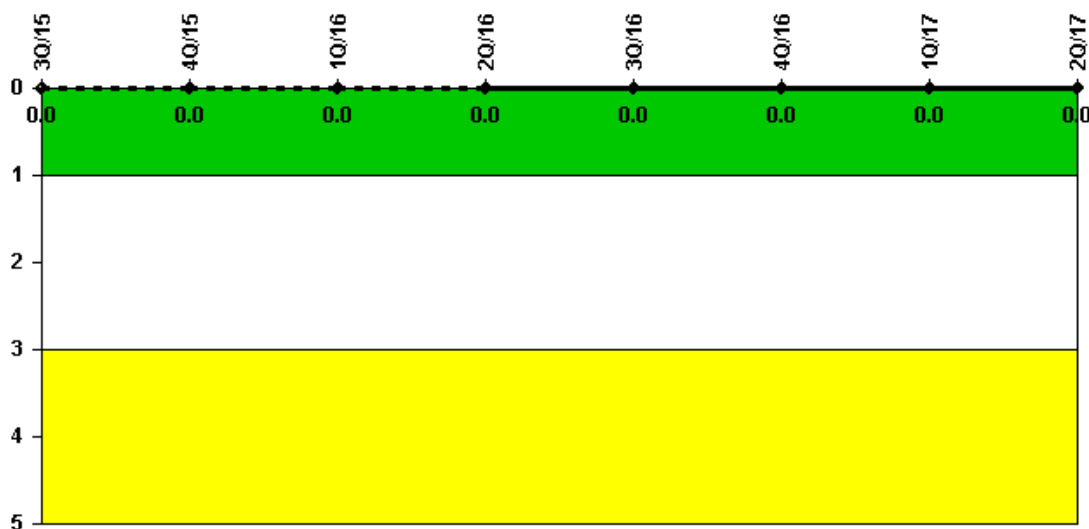
Occupational Exposure Control Effectiveness 3Q/15 4Q/15 1Q/16 2Q/16 3Q/16 4Q/16 1Q/17 2Q/17

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
Indicator value	0	0	0	0	0	0	0	0

TOP

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

▲ TOP

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