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Indian Point 2 – Quarterly Performance Indicators

1Q/2017 Performance Indicators

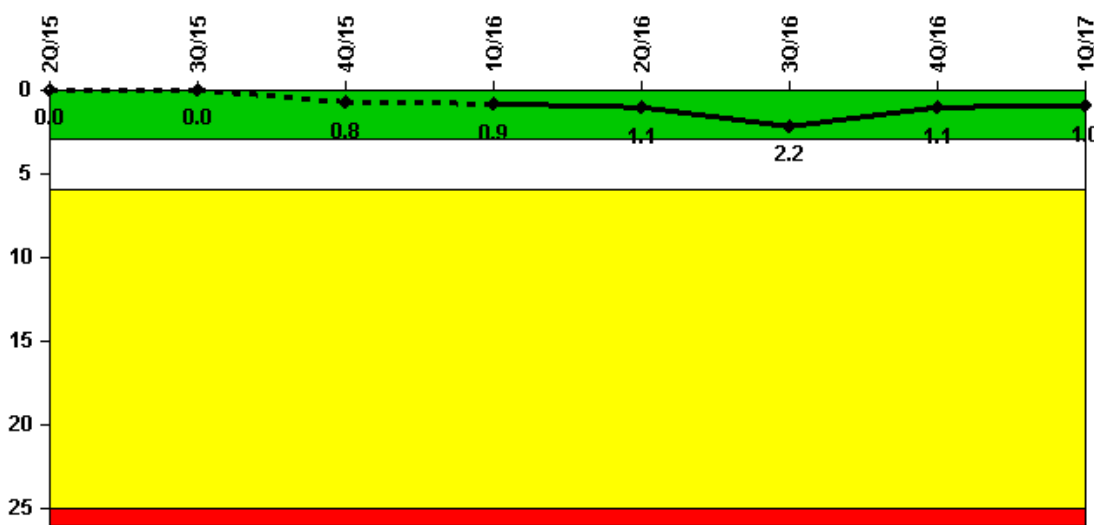
The solid trend line represents the current reporting period.

Licensee's General Comments: 1. EP01 (Drill/Exercise Performance) June 2016 (2Q16) Units 2 and 3 Comment to add in Change Report for EP01 ((Drill/Exercise Performance) for each unit: Revised Drill Opportunities from 8 to 7 based on NRC and NEI Working Group input per position on FAQ 13-07. 2. Comment to be added to the Change Reports for all unit 2 and unit 3 impacted MSPIs MSPI06 (EDG), MSPI07(HHSI), MSPI08(AFW), MSPI09(RHR), MSPI10 (CCW+SW) as a result of resolution of CR-IP2-2016-07044 (inappropriate counting of post maintenance tests as a demand). Time of consideration is 36 months (12Qs). As a result of an NRC RI review comment, an engineering review of the reporting guidelines of NEI 99-02 for recording MSPI data for Demand, Loads, Run Hours and Failures was performed. The review identified a discrepancy in the current method used to record MSPI data for reporting. In accordance with NEI 99-02, post maintenance test (PMT) demands, loads and run hours are to be excluded from the total count, except in cases where failures occurred independent of the maintenance performed. Engineering identified that IPEC did not exclude PMT demands, loads and run hours. Revisions as necessary were made to the previous 36 months of MSPI data to conform to the reporting guidelines of NEI 99-02. Condition was recorded in the Indian Point Corrective Action Program (CAP) as CR-IP2-2016-07044.

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- Alert and Notification System Reliability (EP03)
- Occupational Exposure Control Effectiveness (OR01)
- RETS/OCDM Radiological Effluent Occurrence (PR01)
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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	2Q/15	3Q/15	4Q/15	1Q/16	2Q/16	3Q/16	4Q/16	1Q/17
Unplanned scrams	0	0	1.0	0	0	1.0	0	0
Critical hours	2184.0	2208.0	2154.3	1584.0	319.8	2189.0	2209.0	2159.0
Indicator value	0	0	0.8	0.9	1.1	2.2	1.1	1.0

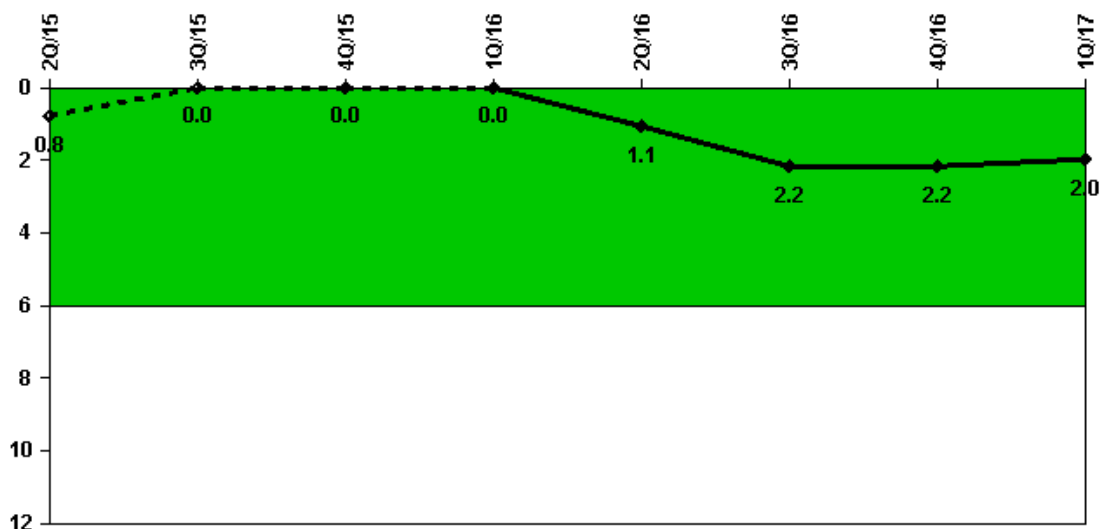
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Licensee Comments:

3Q/16: On July 6, 2016, an automatic reactor trip was initiated during preparations for testing the reactor protection system logic train B actuation logic. LER-2016-009 reported this event on September 6, 2016.

4Q/15: On December 5, 2015, a manual reactor trip was initiated due to indications of multiple dropped control rods. Initiating event was a fault of Motor Control Center (MCC) 24-2H that caused the upstream supply breaker to open to clear the fault resulting in a loss of power to the operating backup power supply in Rod Control Cabinet 2BD with a degraded primary power supply. The loss of power to the Control Rod System caused the Control Rod stationary grippers to de-energize and rods inserted into the reactor core.

Unplanned Power Changes per 7000 Critical Hrs



Thresholds: White > 6.0

Notes

Unplanned Power Changes per 7000 Critical Hrs	2Q/15	3Q/15	4Q/15	1Q/16	2Q/16	3Q/16	4Q/16	1Q/17
Unplanned power changes	0	0	0	0	1.0	1.0	0	0
Critical hours	2184.0	2208.0	2154.3	1584.0	319.8	2189.0	2209.0	2159.0

Indicator value	0.8	0	0	0	1.1	2.2	2.2	2.0
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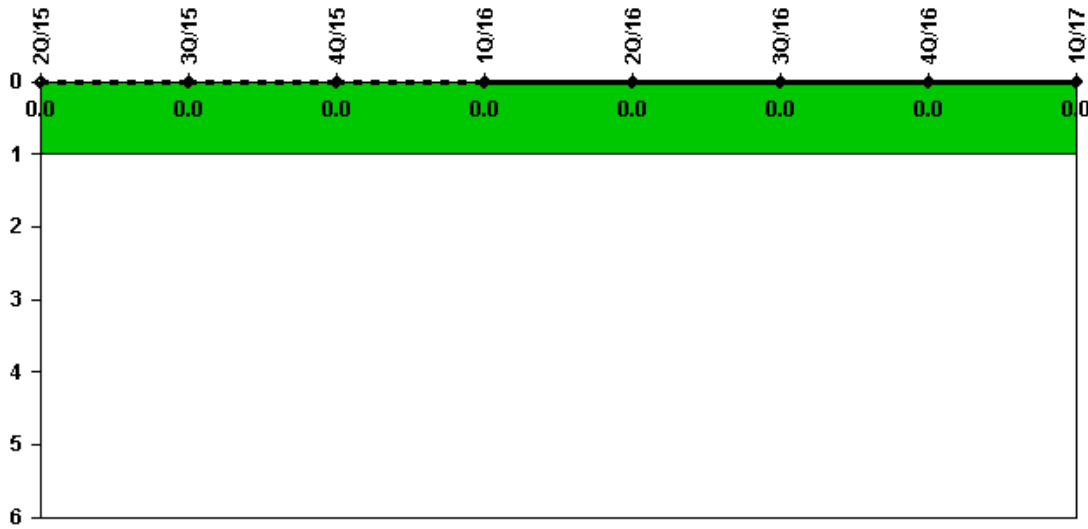
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Licensee Comments:

3Q/16: On August 6, 2016, Heater Drain Tank (HDT) level controller failed causing both HDT discharge level control valves to fail open. HDT level lowered and both HDT pumps tripped at the low level setpoint. Operators rapidly reduced load to match steam flow and feedwater flow. During the rapid downpower, the RCS was borated and control rods were inserted. Critical parameters were maintained within limits. Power was stabilized at 78%.

2Q/16: On June 24, 2016, actions were initiated to commence reactor shutdown to comply the Technical Specification LCO 3.7.7 in order to repair a leaking weld on the 20 inch Service Water pipe to nozzle weld on the 21 Component Cooling Water Heat Exchanger. Entered Mode 3 at 07:59 hours, after normal plant shutdown and reactor trip per normal shutdown procedure 2-POP-3.1 (Plant Shutdown From 45% Power).

Unplanned Scrams with Complications



Thresholds: White > 1.0

Notes

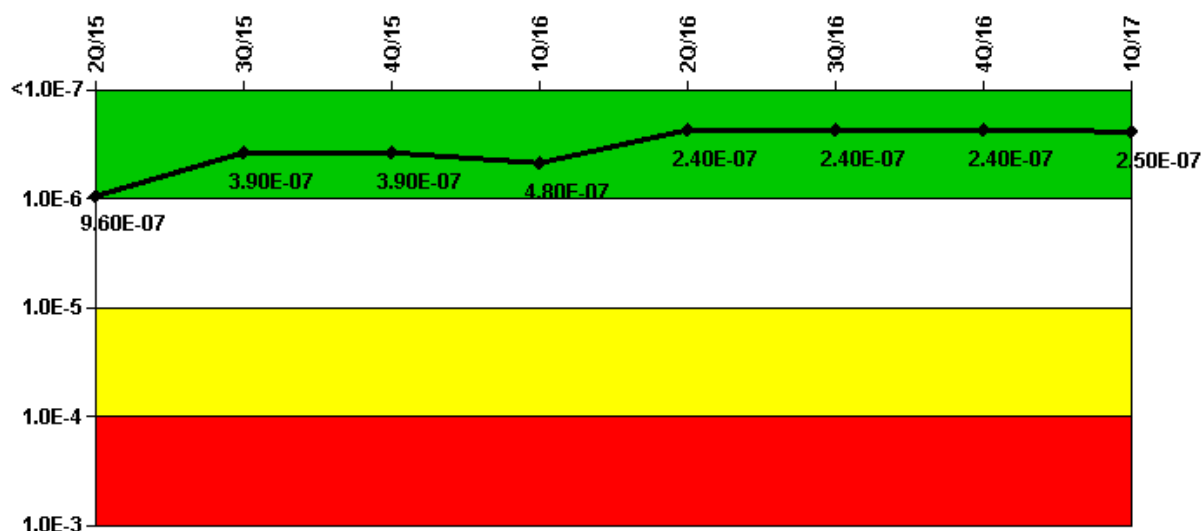
Unplanned Scrams with Complications	2Q/15	3Q/15	4Q/15	1Q/16	2Q/16	3Q/16	4Q/16	1Q/17
Scrams with complications	0	0	0	0	0	0	0	0

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

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

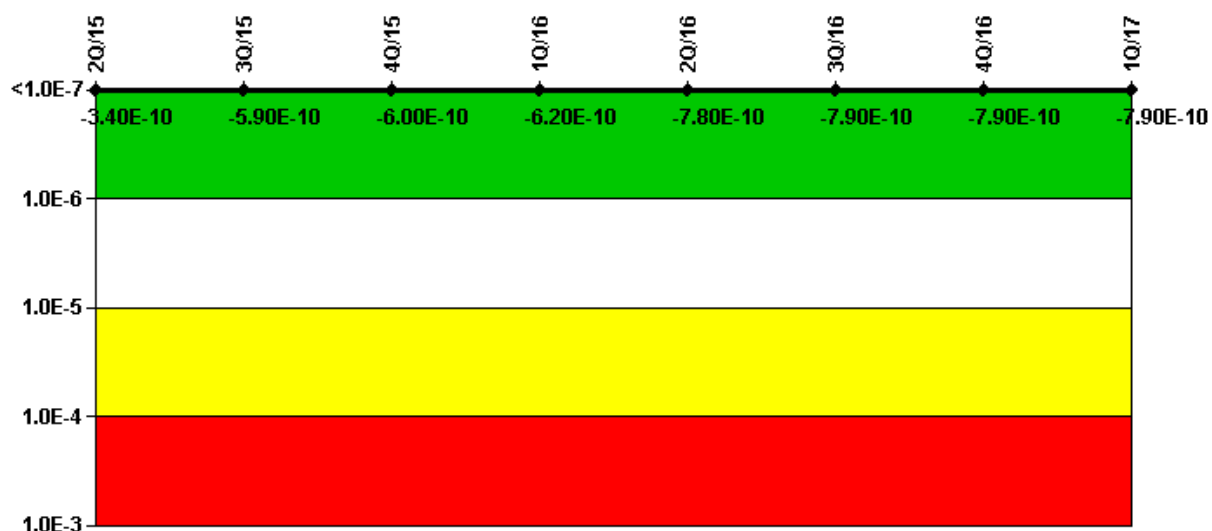
	2Q/15	3Q/15	4Q/15	1Q/16	2Q/16	3Q/16	4Q/16	1Q/17
UAI (ΔCDF)	3.77E-07	8.74E-08	8.64E-08	1.02E-07	8.06E-08	7.31E-08	7.10E-08	6.43E-08
URI (ΔCDF)	5.85E-07	3.01E-07	3.02E-07	3.82E-07	1.59E-07	1.62E-07	1.67E-07	1.86E-07
PLE	NO	NO	NO	NO	NO	NO	NO	NO
Indicator value	9.60E-07	3.90E-07	3.90E-07	4.80E-07	2.40E-07	2.40E-07	2.40E-07	2.50E-07

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Licensee Comments:

- 1Q/16: Load failure of 23 EDG recorded on 3/7/16 report # 321856 due to a degraded automatic voltage regulator.
- 1Q/16: Load failure of 23 EDG recorded on 3/7/16 report # 321856 due to a degraded automatic voltage regulator.
- 3Q/15: Changed PRA Parameter(s). 3Q15 report includes changes to the Unit 2 MSPI PSA parameters as a result of a PRA model interim update approved on May 6, 2015 from the EDG MSPI Margin Improvement Plan. Changes made were to Monitored Component PRA information to be effective July 1, 2015. Also included were changes in the plant specific EAC planned baseline unavailability in MSPI.
- 3Q/15: 3Q15 report includes changes to the Unit 2 MSPI PSA parameters as a result of a PRA model interim update approved on May 6, 2015 from the EDG MSPI Margin Improvement Plan. Changes made were to Monitored Component PRA information to be effective July 1, 2015. Also included were changes in the plant specific EAC planned baseline unavailability in MSPI.
- 2Q/15: Risk Cap Invoked.
- 2Q/15: Risk Cap Invoked.

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

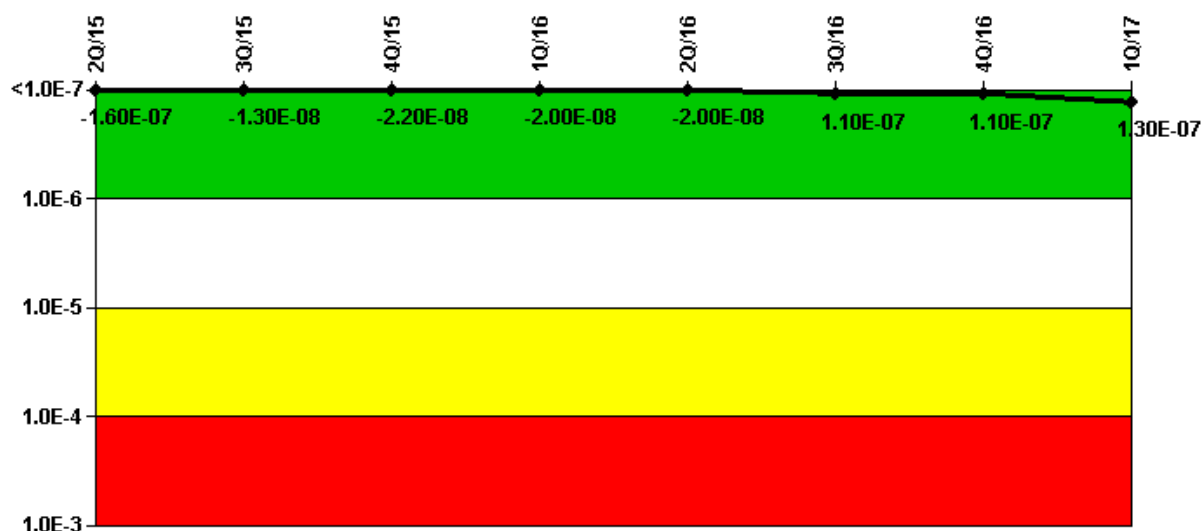
	2Q/15	3Q/15	4Q/15	1Q/16	2Q/16	3Q/16	4Q/16	1Q/17
UAI (ΔCDF)	-2.54E-11	-1.41E-10	-1.51E-10	-1.46E-10	-3.14E-10	-3.27E-10	-3.27E-10	-3.29E-10
URI (ΔCDF)	-3.11E-10	-4.51E-10	-4.53E-10	-4.75E-10	-4.69E-10	-4.60E-10	-4.60E-10	-4.62E-10
PLE	NO	NO	NO	NO	NO	NO	NO	NO
Indicator value	-3.40E-10	-5.90E-10	-6.00E-10	-6.20E-10	-7.80E-10	-7.90E-10	-7.90E-10	-7.90E-10

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Licensee Comments:

3Q/15: Changed PRA Parameter(s). 3Q15 report includes changes to the Unit 2 MSPI PSA parameters as a result of a PRA model interim update approved on May 6, 2015 from the EDG MSPI Margin Improvement Plan. Changes made were to Monitored Component PRA information to be effective July 1, 2015. Also included were changes in the plant specific EAC planned baseline unavailability in MSPI.

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

	2Q/15	3Q/15	4Q/15	1Q/16	2Q/16	3Q/16	4Q/16	1Q/17
UAI (ΔCDF)	1.06E-08	1.40E-08	6.84E-09	1.05E-08	1.24E-08	1.56E-08	1.79E-08	2.52E-08
URI (ΔCDF)	-1.69E-07	-2.73E-08	-2.84E-08	-3.07E-08	-3.22E-08	9.18E-08	9.20E-08	1.07E-07
PLE	NO	NO	NO	NO	NO	NO	NO	NO
Indicator value	-1.60E-07	-1.30E-08	-2.20E-08	-2.00E-08	-2.00E-08	1.10E-07	1.10E-07	1.30E-07

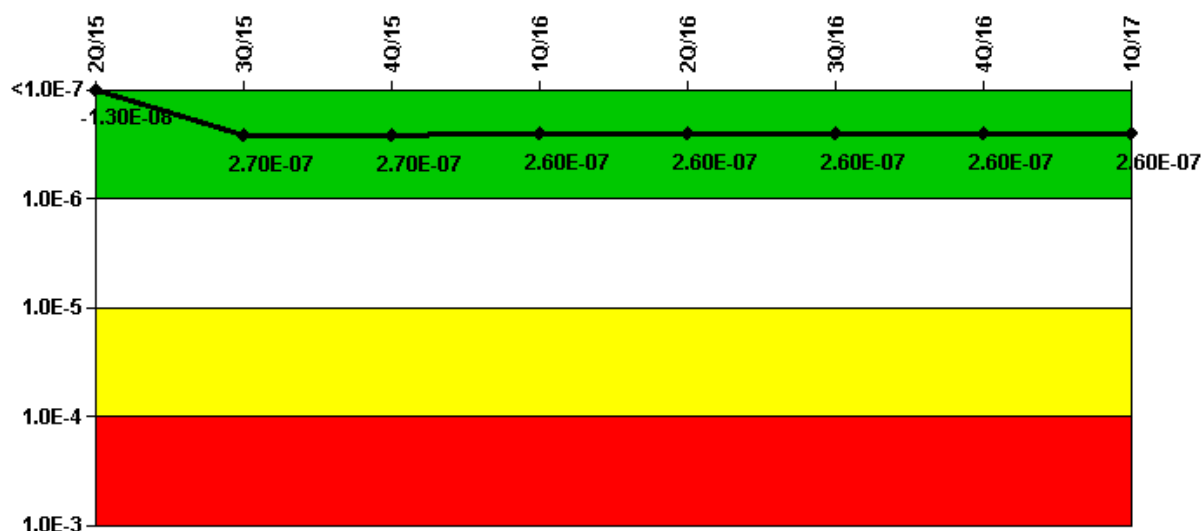
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Licensee Comments:

3Q/15: 3Q15 report includes changes to the Unit 2 MSPI PSA parameters as a result of a PRA model interim update approved on May 6, 2015 from the EDG MSPI Margin Improvement Plan. Changes made were to Monitored Component PRA information to be effective July 1, 2015. Also included were changes in the plant specific EAC planned baseline unavailability in MSPI.

3Q/15: Changed PRA Parameter(s). 3Q15 report includes changes to the Unit 2 MSPI PSA parameters as a result of a PRA model interim update approved on May 6, 2015 from the EDG MSPI Margin Improvement Plan. Changes made were to Monitored Component PRA information to be effective July 1, 2015. Also included were changes in the plant specific EAC planned baseline unavailability in MSPI.

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

	2Q/15	3Q/15	4Q/15	1Q/16	2Q/16	3Q/16	4Q/16	1Q/17
UAI (ΔCDF)	-4.36E-09	-3.99E-09	-4.26E-09	-4.13E-09	-8.89E-09	-8.26E-09	-9.38E-09	-9.30E-09
URI (ΔCDF)	-8.26E-09	2.70E-07	2.70E-07	2.67E-07	2.65E-07	2.65E-07	2.65E-07	2.69E-07
PLE	NO	NO	NO	NO	NO	NO	NO	NO
Indicator value	-1.30E-08	2.70E-07	2.70E-07	2.60E-07	2.60E-07	2.60E-07	2.60E-07	2.60E-07

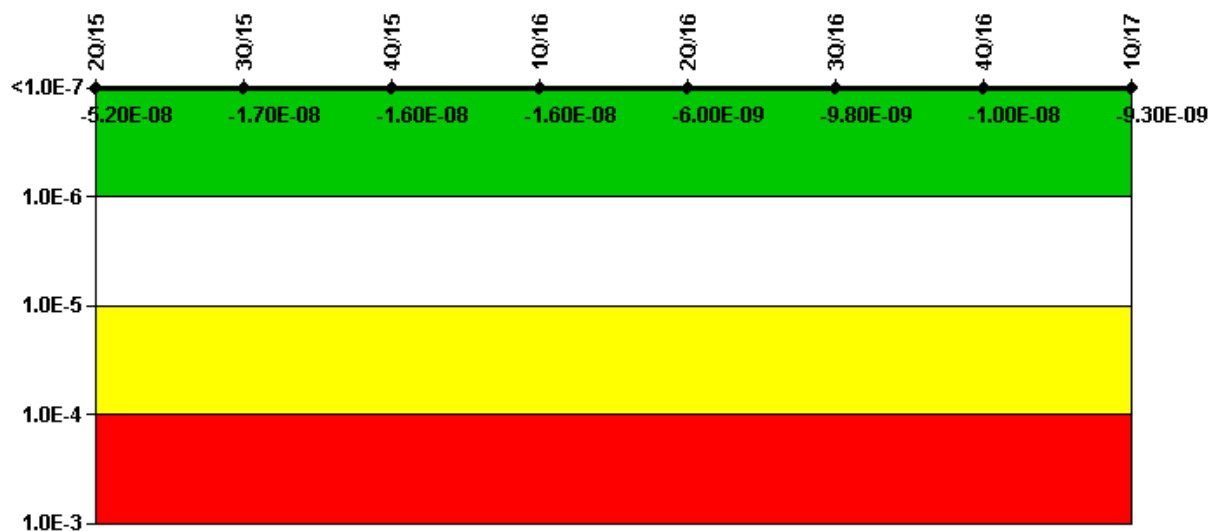
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Licensee Comments:

3Q/15: The planned unavailability hours changed for the 21 and 22 RHR pump (0.0 hrs to 0.8 hrs) to reflect the final OE that the valves were inoperable as a result of the response to a CBDI inspection question and a final determination that the normally closed 21 and 22 RHR Pumps Heat Exchanger outlet valves (MOV-746 & MOV-747) would not adequately operate under degraded voltage conditions as a result of inadequate fuses. This resulted in both trains of RHR being considered inoperable. LER-2015-002 reported this event as a safety system functional failure. On December 29, 2015, ICES input data for the RHR event was determined to be complete which included a Maintenance Rule functional failure and MSPI safety system functional failure of both RHR Hx outlet valves. The ICES report was completed in ICES and initiated for review by INPO December 29, 2015. This action caused MSPI to be recalculated.

3Q/15: Changed PRA Parameter(s). 3Q15 report includes changes to the Unit 2 MSPI PSA parameters as a result of a PRA model interim update approved on May 6, 2015 from the EDG MSPI Margin Improvement Plan. Changes made were to Monitored Component PRA information to be effective July 1, 2015. Also included were changes in the plant specific EAC planned baseline unavailability in MSPI.

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

	2Q/15	3Q/15	4Q/15	1Q/16	2Q/16	3Q/16	4Q/16	1Q/17
UAI (ΔCDF)	-5.17E-09	3.42E-09	3.50E-09	3.67E-09	1.43E-08	1.07E-08	1.08E-08	1.12E-08
URI (ΔCDF)	-4.64E-08	-2.07E-08	-1.95E-08	-2.02E-08	-2.03E-08	-2.06E-08	-2.10E-08	-2.04E-08
PLE	NO	NO	NO	NO	NO	NO	NO	NO
Indicator value	-5.20E-08	-1.70E-08	-1.60E-08	-1.60E-08	-6.00E-09	-9.80E-09	-1.00E-08	-9.30E-09

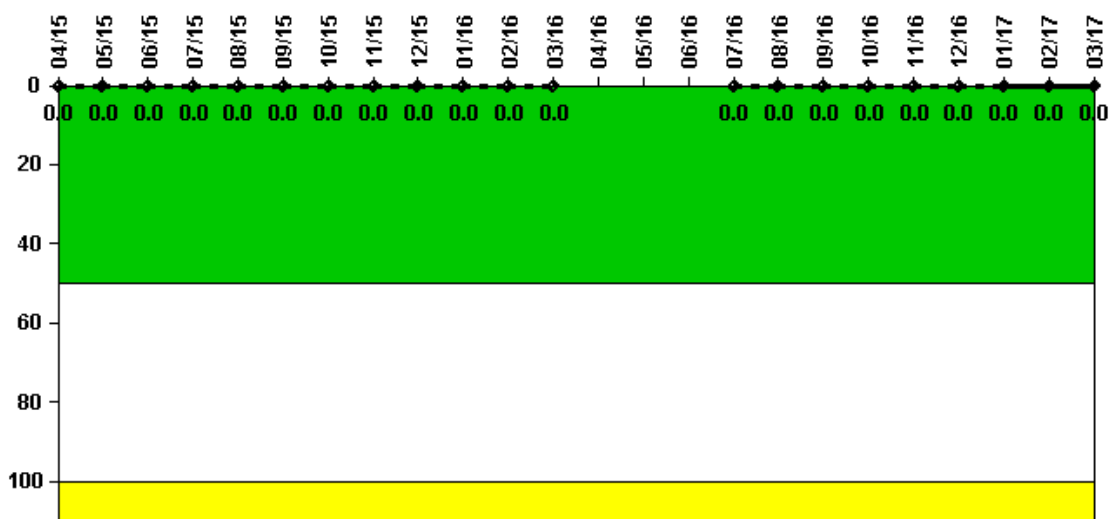
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Licensee Comments:

3Q/15: The September 2015 CCWP demands and run hours were revised. 21 CCP demands changed from 0 to 1, run hours changed from 0.0 to 0.58; 22 CCP demands changed from 0 to 1, run hours changed from 720.0 to 719.48; 23 CCP demands changed from 0 to 1; run hours changed from 720.0 to 719.47.

3Q/15: Changed PRA Parameter(s). 3Q15 report includes changes to the Unit 2 MSPI PSA parameters as a result of a PRA model interim update approved on May 6, 2015 from the EDG MSPI Margin Improvement Plan. Changes were made to Monitored Component PRA information to be effective July 1, 2015. Also included were changes in the plant specific EAC planned baseline unavailability in MSPI.

Reactor Coolant System Activity



Thresholds: White > 50.0 Yellow > 100.0

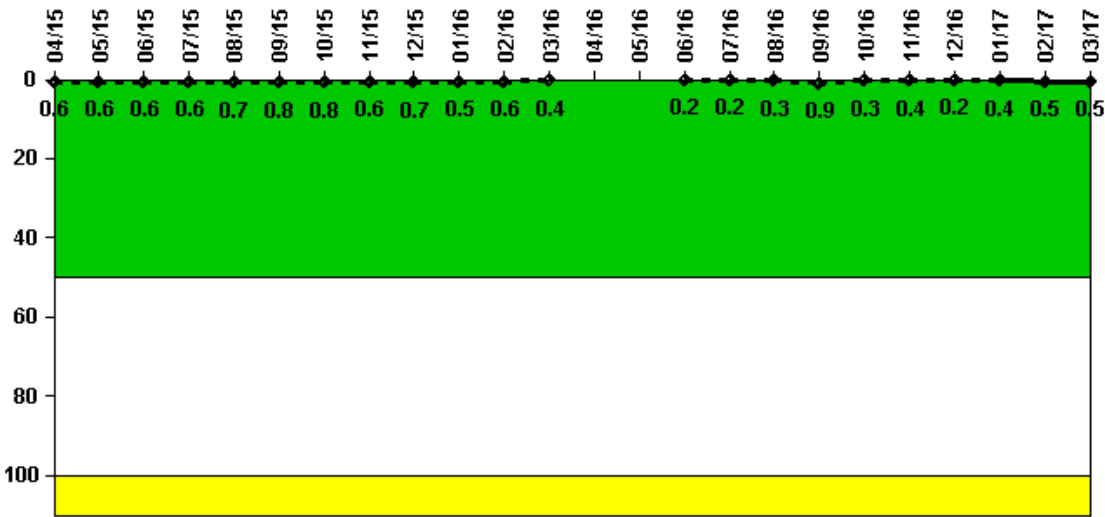
Notes

Reactor Coolant System Activity	4/15	5/15	6/15	7/15	8/15	9/15	10/15	11/15	12/15	1/16	2/16	3/16
Maximum activity	0.000182	0.000179	0.000190	0.000206	0.000202	0.000203	0.000216	0.000260	0.000223	0.000271	0.000245	0.000150
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
Reactor Coolant System Activity	4/16	5/16	6/16	7/16	8/16	9/16	10/16	11/16	12/16	1/17	2/17	3/17
Maximum activity	N/A	N/A	N/A	0.000134	0.000131	0.000150	0.000126	0.000145	0.000139	0.000150	0.000150	0.000168
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	N/A	N/A	N/A	0	0	0	0	0	0	0	0	0

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Licensee Comments:
6/16: Plant started refueling outage 3/7/16. No RCS coolant activity calculated.

Reactor Coolant System Leakage



Thresholds: White > 50.0 Yellow > 100.0

Notes

Reactor Coolant System Leakage	4/15	5/15	6/15	7/15	8/15	9/15	10/15	11/15	12/15	1/16	2/16	3/16
Maximum leakage	0.060	0.060	0.060	0.060	0.070	0.080	0.080	0.060	0.070	0.050	0.060	0.040
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	0.6	0.6	0.6	0.6	0.7	0.8	0.8	0.6	0.7	0.5	0.6	0.4
Reactor Coolant System Leakage	4/16	5/16	6/16	7/16	8/16	9/16	10/16	11/16	12/16	1/17	2/17	3/17
Maximum leakage	N/A	N/A	0.020	0.024	0.030	0.090	0.030	0.040	0.020	0.040	0.050	0.050
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

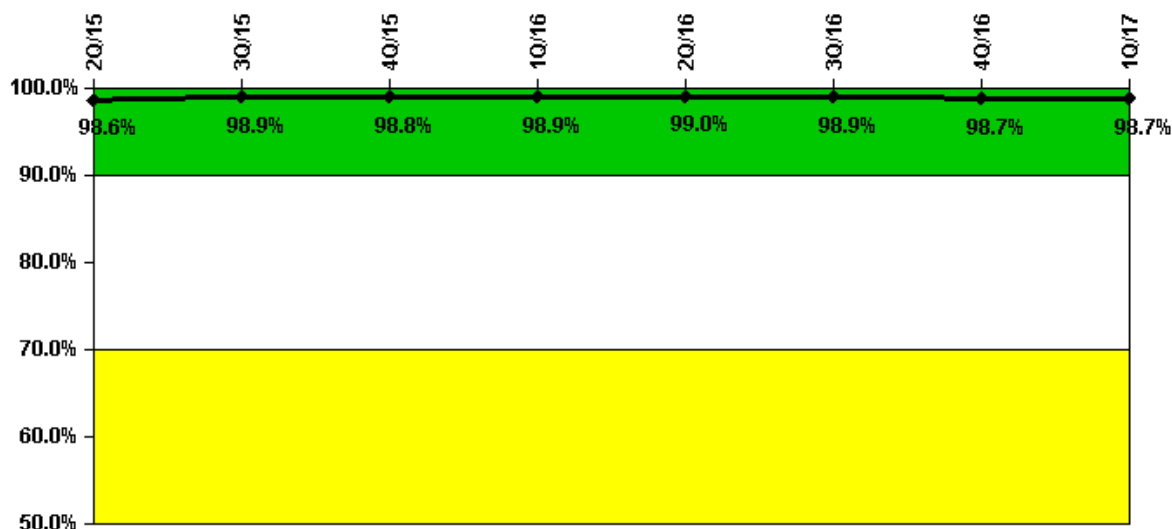
Indicator value	N/A	N/A	0.2	0.2	0.3	0.9	0.3	0.4	0.2	0.4	0.5	0.5
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Licensee Comments:

6/16: Plant started refueling outage which was extended due to degraded RV baffle-former bolts. Unit startup was 6/16/16. No RCS Leak Rate was determined during outage due to plant in outage.

Drill/Exercise Performance



Thresholds: White < 90.0% Yellow < 70.0%

Notes

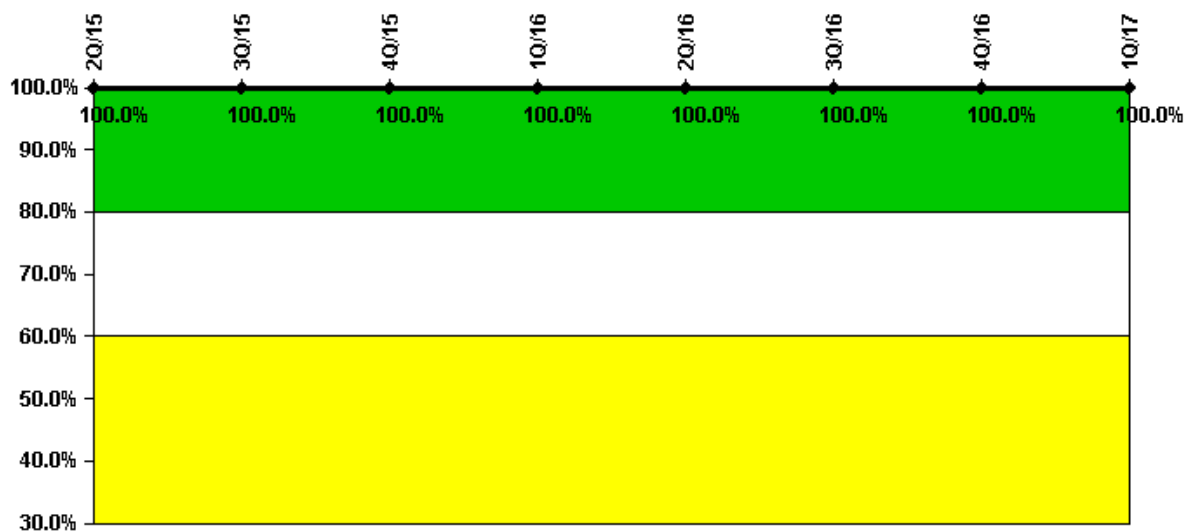
Drill/Exercise Performance	2Q/15	3Q/15	4Q/15	1Q/16	2Q/16	3Q/16	4Q/16	1Q/17
Successful opportunities	71.0	146.0	28.0	26.0	62.0	103.0	93.0	23.0
Total opportunities	72.0	147.0	28.0	26.0	63.0	105.0	94.0	24.0

Indicator value **98.6% 98.9% 98.8% 98.9% 99.0% 98.9% 98.7% 98.7%**

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Licensee Comments: none

ERO Drill Participation



Thresholds: White < 80.0% Yellow < 60.0%

Notes

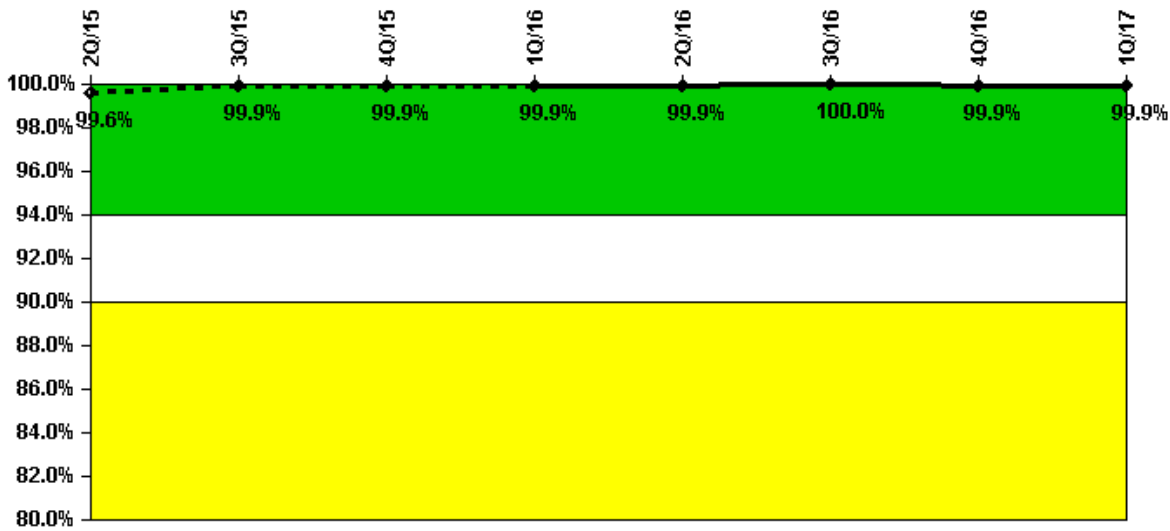
ERO Drill Participation	2Q/15	3Q/15	4Q/15	1Q/16	2Q/16	3Q/16	4Q/16	1Q/17
Participating Key personnel	104.0	105.0	103.0	103.0	101.0	100.0	104.0	108.0
Total Key personnel	104.0	105.0	103.0	103.0	101.0	100.0	104.0	108.0

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

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Licensee Comments: none

Alert & Notification System



Thresholds: White < 94.0% Yellow < 90.0%

Notes

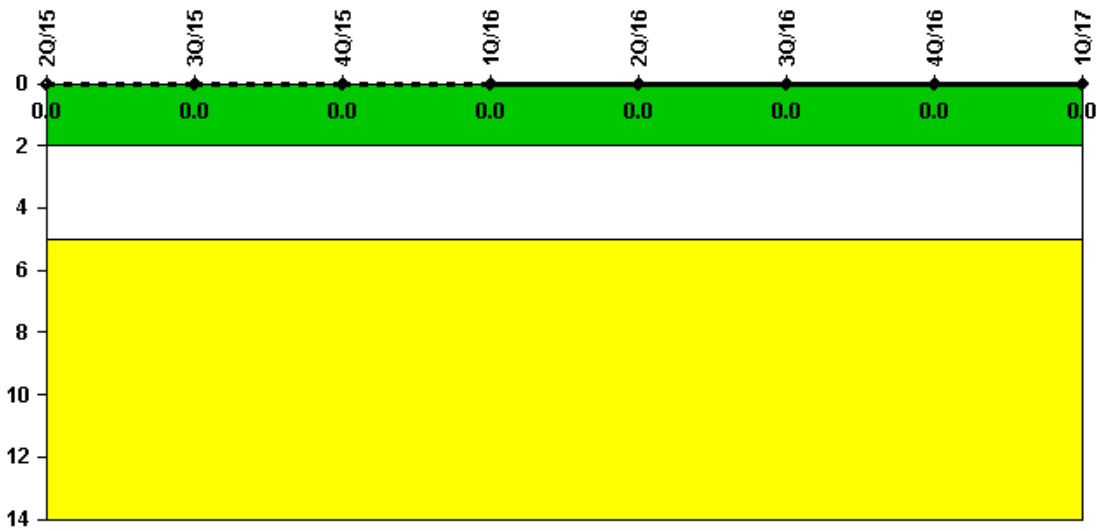
Alert & Notification System	2Q/15	3Q/15	4Q/15	1Q/16	2Q/16	3Q/16	4Q/16	1Q/17
Successful siren-tests	917	1105	1046	1188	1050	1081	1201	1203
Total sirens-tests	917	1109	1046	1188	1050	1081	1204	1204

Indicator value 99.6% 99.9% 99.9% 99.9% 99.9% 100.0% 99.9% 99.9%

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Licensee Comments: none

Occupational Exposure Control Effectiveness



Thresholds: White > 2.0 Yellow > 5.0

Notes

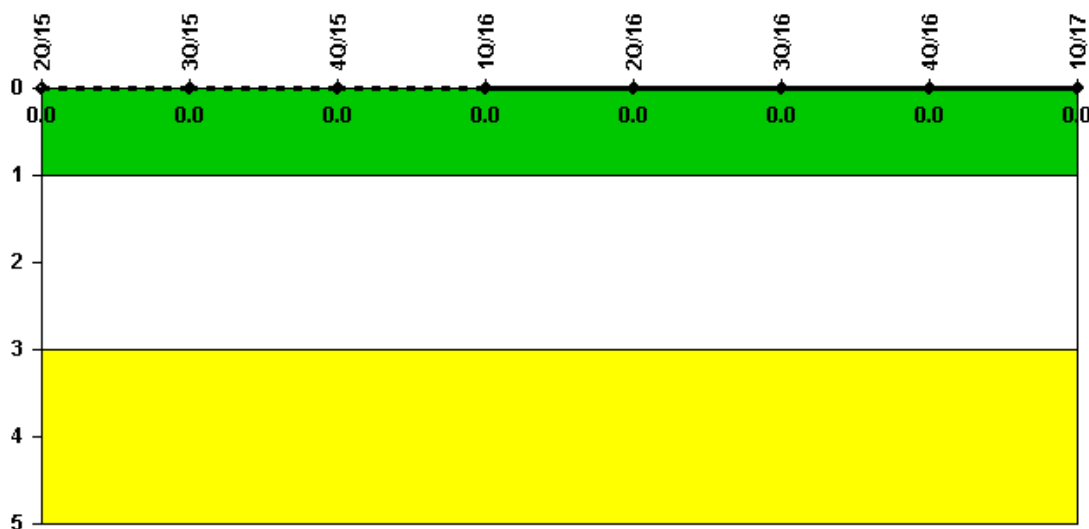
Occupational Exposure Control Effectiveness 2Q/15 3Q/15 4Q/15 1Q/16 2Q/16 3Q/16 4Q/16 1Q/17

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 2Q/15 3Q/15 4Q/15 1Q/16 2Q/16 3Q/16 4Q/16 1Q/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: May 5, 2017

Page Last Reviewed/Updated Wednesday, June 07, 2017