

# Columbia Generating Station

## 1Q/2012 Performance Indicators

Licensee's General Comments: none

### Unplanned Scrams per 7000 Critical Hrs



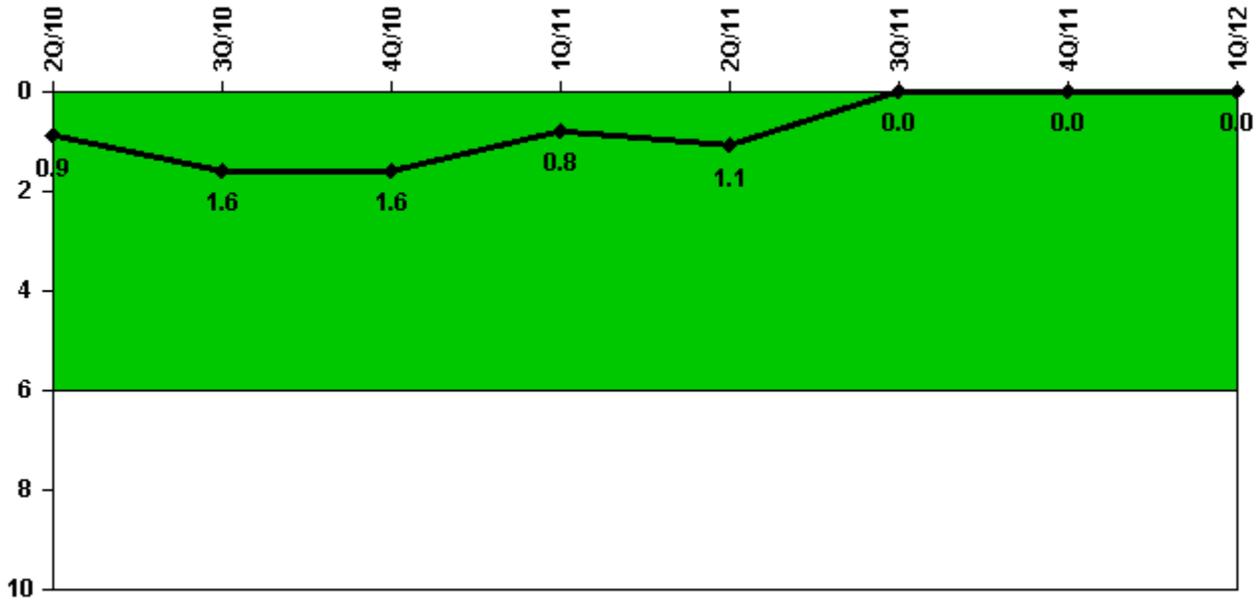
Thresholds: White > 3.0 Yellow > 6.0 Red > 25.0

### Notes

Unplanned Scrams per 7000 Critical Hrs	2Q/10	3Q/10	4Q/10	1Q/11	2Q/11	3Q/11	4Q/11	1Q/12
Unplanned scrams	0	0	0	0	0	0	0	0
Critical hours	2184.0	2208.0	2209.0	2159.0	40.6	272.6	2209.0	2183.0
Indicator value	1.8	0.8	0	0	0	0	0	0

Licensee Comments: none

## Unplanned Power Changes per 7000 Critical Hrs



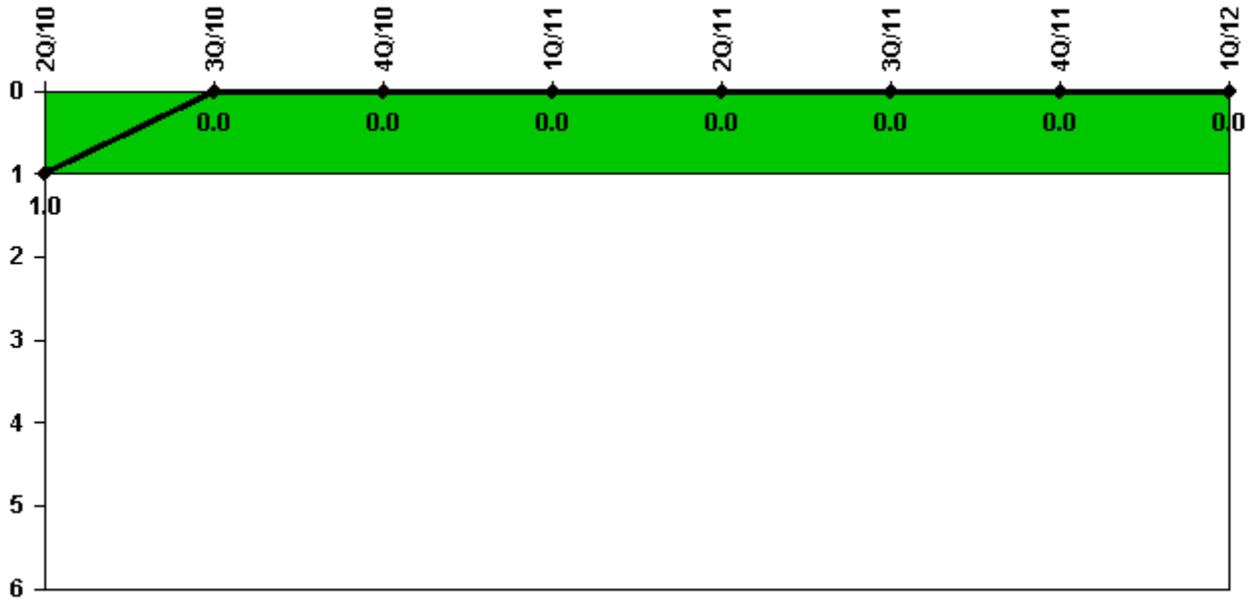
Thresholds: White > 6.0

### Notes

Unplanned Power Changes per 7000 Critical Hrs	2Q/10	3Q/10	4Q/10	1Q/11	2Q/11	3Q/11	4Q/11	1Q/12
Unplanned power changes	0	1.0	0	0	0	0	0	0
Critical hours	2184.0	2208.0	2209.0	2159.0	40.6	272.6	2209.0	2183.0
Indicator value	0.9	1.6	1.6	0.8	1.1	0	0	0

Licensee Comments: none

## Unplanned Scrams with Complications



Thresholds: White > 1.0

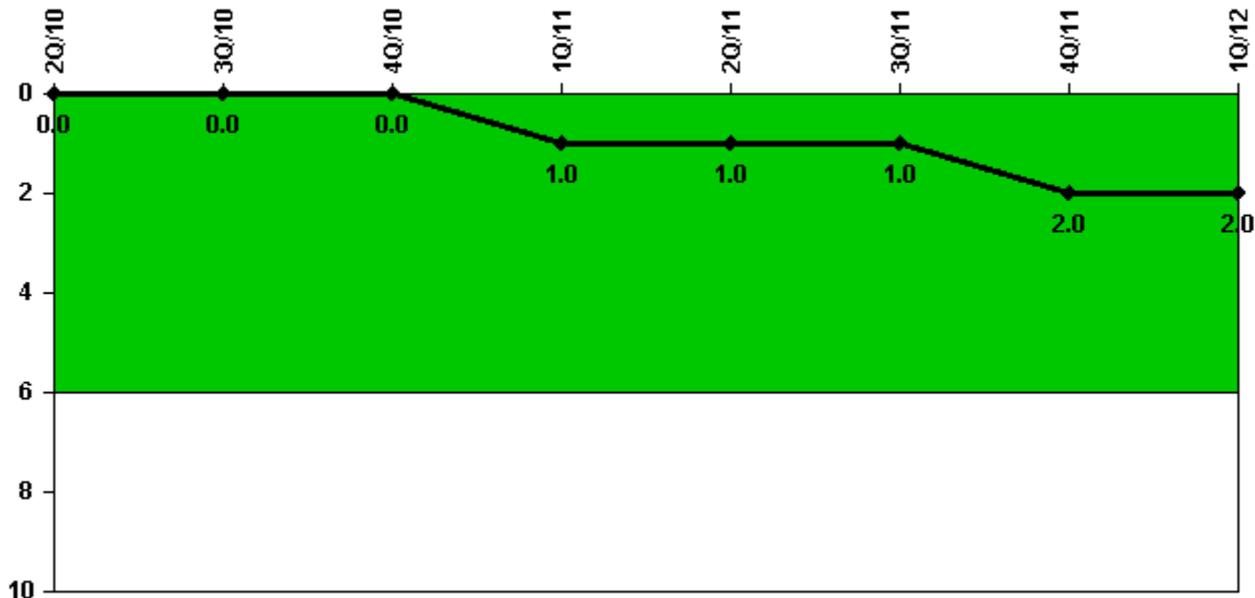
### Notes

Unplanned Scrams with Complications	2Q/10	3Q/10	4Q/10	1Q/11	2Q/11	3Q/11	4Q/11	1Q/12
Scrams with complications	0	0	0	0	0	0	0	0
Indicator value	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Licensee Comments: none

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## Safety System Functional Failures (BWR)



Thresholds: White > 6.0

### Notes

Safety System Functional Failures (BWR)	2Q/10	3Q/10	4Q/10	1Q/11	2Q/11	3Q/11	4Q/11	1Q/12
Safety System Functional Failures	0	0	0	1	0	0	1	1
Indicator value	0	0	0	1	1	1	2	2

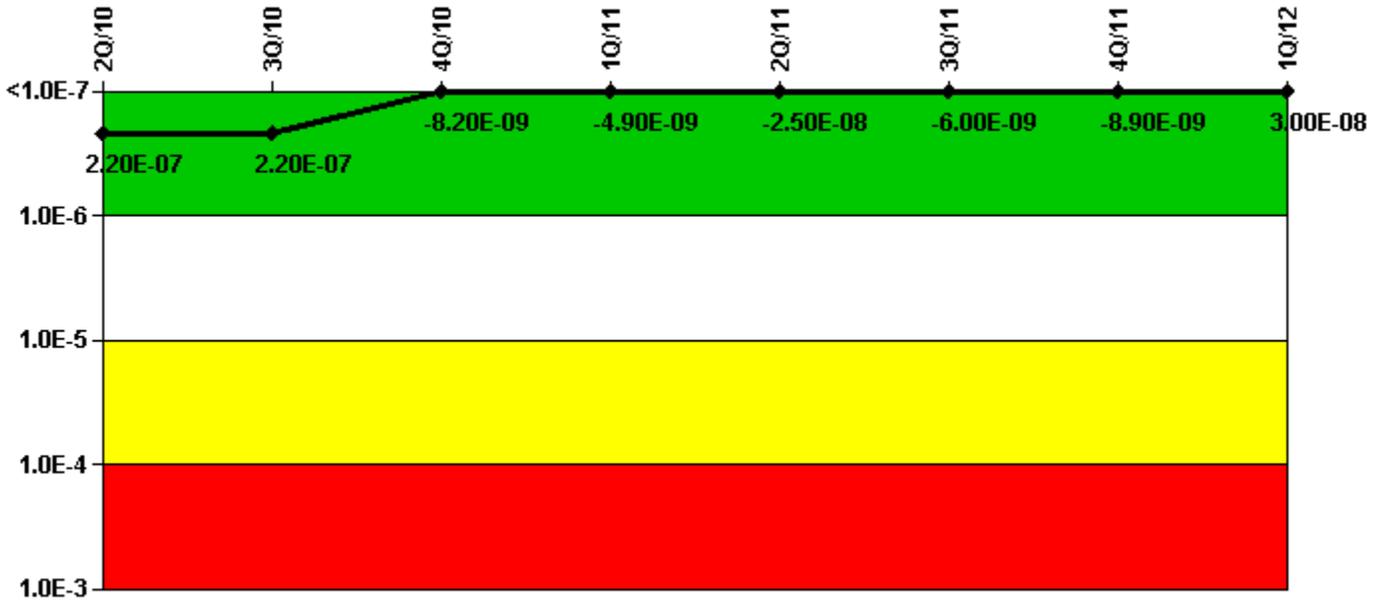
Licensee Comments:

1Q/12: LER 2011-004 Secondary Containment Low Differential Pressure due to Ice Buildup 12/10/2011

4Q/11: LER 2011-02-011 -- Loss of shutdown cooling due to logic card failure.

1Q/11: LER 2010-002 Reported February 2010 Low pressure core spray minimum flow valve failure to open due to premature fuse failure at the solder joint. This discrepant condition was discovered on December 20, 2010.

# Mitigating Systems Performance Index, Emergency AC Power System



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

## Notes

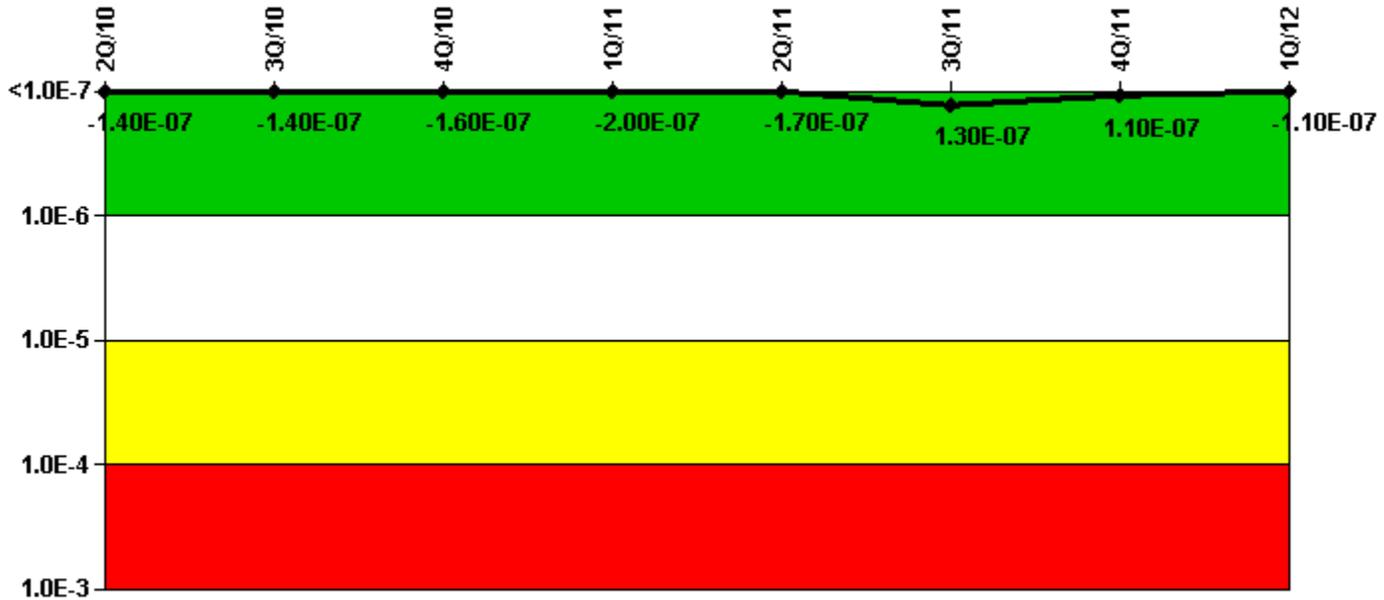
Mitigating Systems Performance Index, Emergency AC Power System	2Q/10	3Q/10	4Q/10	1Q/11	2Q/11	3Q/11	4Q/11	1Q/12
UAI ( $\Delta$ CDF)	9.20E-08	8.90E-08	2.31E-08	2.96E-08	1.30E-08	7.61E-09	5.70E-09	9.48E-09
URI ( $\Delta$ CDF)	1.30E-07	1.26E-07	-3.12E-08	-3.45E-08	-3.76E-08	-1.36E-08	-1.46E-08	2.06E-08
PLE	NO	NO	NO	NO	NO	NO	NO	NO
Indicator value	2.20E-07	2.20E-07	-8.20E-09	-4.90E-09	-2.50E-08	-6.00E-09	-8.90E-09	3.00E-08

## Licensee Comments:

4Q/11: FAQ 480, 484, 487 were incorporated into the MSPI Basis Document. Additional changes included demand/runtime estimates for the 3 DGs were updated. Removal of planned baseline temporary change for RCIC since 3 year period is over. The baseline planned unavailability was changed due to needed one-time maintenance activities on SWC. The baseline planned unavailability for DG3 was changed incorporating the 2yr/4yr PM to be permanent. Provisional coefficient changes included: RCIC, HPCS-DG, HPCS-SW, and DG1.

2Q/11: The plant specific PRA was updated. Many changes in the FV & UA and FV & UR coefficients for DG1, DG2, HPCS, RCIC, RHRA, RHRB, SWA, & SWB. However, there were no changes in the MSPI Systems ???Baseline Planned UA Coefficients for any of the MSPI Systems. There are numerous changes to the Table 2.1.1, CGS Initiating Event Frequencies. The PRA model used for this update is Rev. 7.1.

# 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/10	3Q/10	4Q/10	1Q/11	2Q/11	3Q/11	4Q/11	1Q/12
UAI ( $\Delta$ CDF)	9.21E-08	8.87E-08	7.41E-08	3.55E-08	7.10E-08	4.77E-07	4.62E-07	2.38E-07
URI ( $\Delta$ CDF)	-2.32E-07	-2.34E-07	-2.35E-07	-2.36E-07	-2.38E-07	-3.45E-07	-3.47E-07	-3.44E-07
PLE	NO							
Indicator value	-1.40E-07	-1.40E-07	-1.60E-07	-2.00E-07	-1.70E-07	1.30E-07	1.10E-07	-1.10E-07

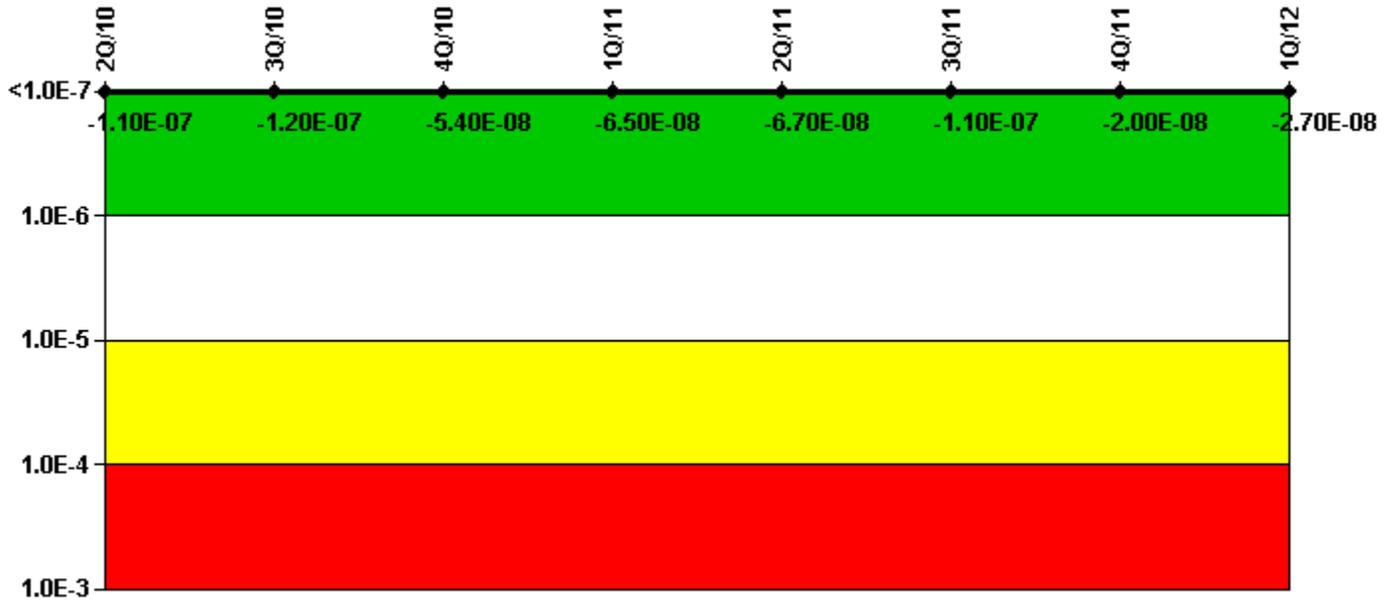
## Licensee Comments:

1Q/12: Submitted FAQ 12-01 on the characterization of the DG3 failure that occurred 2/28/2010. DRJ.

4Q/11: FAQ 480, 484, 487 were incorporated into the MSPI Basis Document. Additional changes included demand/runtime estimates for the 3 DGs were updated. Removal of planned baseline temporary change for RCIC since 3 year period is over. The baseline planned unavailability was changed due to needed one-time maintenance activities on SWC. The baseline planned unavailability for DG3 was changed incorporating the 2yr/4yr PM to be permanent. Provisional coefficient changes included: RCIC, HPCS-DG, HPCS-SW, and DG1.

2Q/11: The plant specific PRA was updated. Many changes in the FV & UA and FV & UR coefficients for DG1, DG2, HPCS, RCIC, RHRA, RHRB, SWA, & SWB. However, there were no changes in the MSPI Systems ???Baseline Planned UA Coefficients for any of the MSPI Systems. There are numerous changes to the Table 2.1.1, CGS Initiating Event Frequencies. The PRA model used for this update is Rev. 7.1.

# Mitigating Systems Performance Index, Heat Removal System



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

## Notes

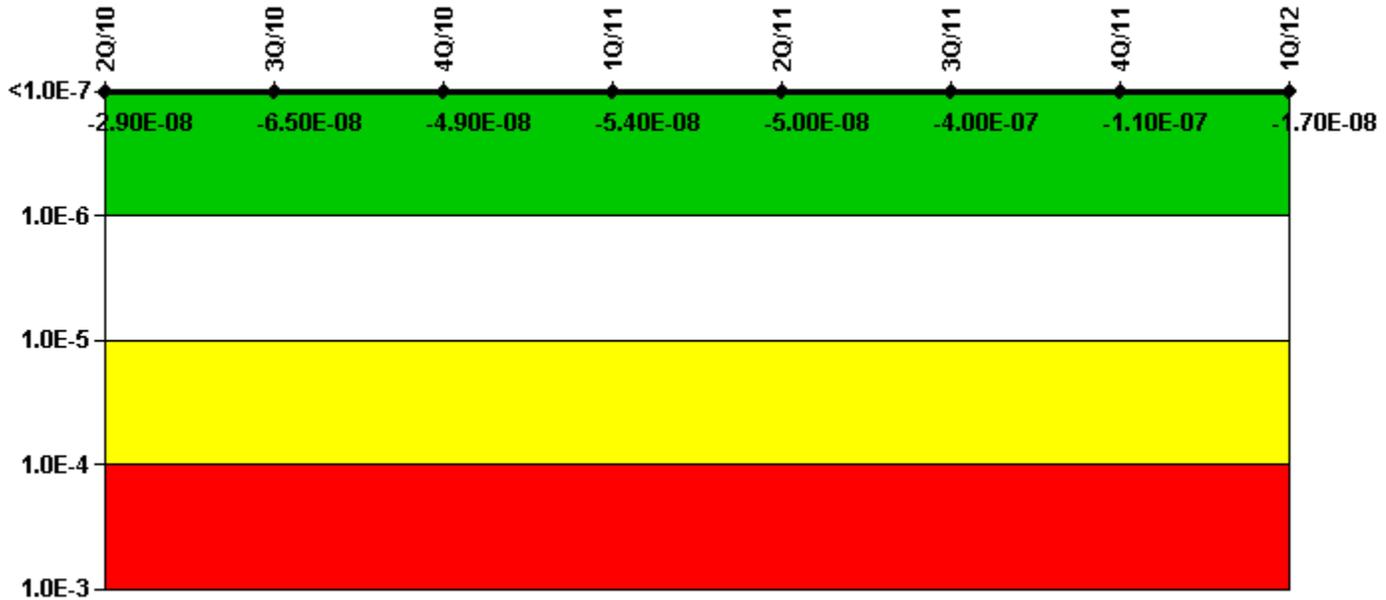
Mitigating Systems Performance Index, Heat Removal System	2Q/10	3Q/10	4Q/10	1Q/11	2Q/11	3Q/11	4Q/11	1Q/12
UAI ( $\Delta$ CDF)	8.56E-09	-9.37E-10	6.27E-08	5.15E-08	5.02E-08	3.12E-08	1.18E-07	1.11E-07
URI ( $\Delta$ CDF)	-1.15E-07	-1.16E-07	-1.17E-07	-1.17E-07	-1.17E-07	-1.38E-07	-1.38E-07	-1.38E-07
PLE	NO							
Indicator value	-1.10E-07	-1.20E-07	-5.40E-08	-6.50E-08	-6.70E-08	-1.10E-07	-2.00E-08	-2.70E-08

## Licensee Comments:

4Q/11: FAQ 480, 484, 487 were incorporated into the MSPI Basis Document. Additional changes included demand/runtime estimates for the 3 DGs were updated. Removal of planned baseline temporary change for RCIC since 3 year period is over. The baseline planned unavailability was changed due to needed one-time maintenance activities on SWC. The baseline planned unavailability for DG3 was changed incorporating the 2yr/4yr PM to be permanent. Provisional coefficient changes included: RCIC, HPCS-DG, HPCS-SW, and DG1.

2Q/11: The plant specific PRA was updated. Many changes in the FV & UA and FV & UR coefficients for DG1, DG2, HPCS, RCIC, RHRA, RHRB, SWA, & SWB. However, there were no changes in the MSPI Systems ???Baseline Planned UA Coefficients for any of the MSPI Systems. There are numerous changes to the Table 2.1.1, CGS Initiating Event Frequencies. The PRA model used for this update is Rev. 7.1.

# Mitigating Systems Performance Index, Residual Heat Removal System



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

## Notes

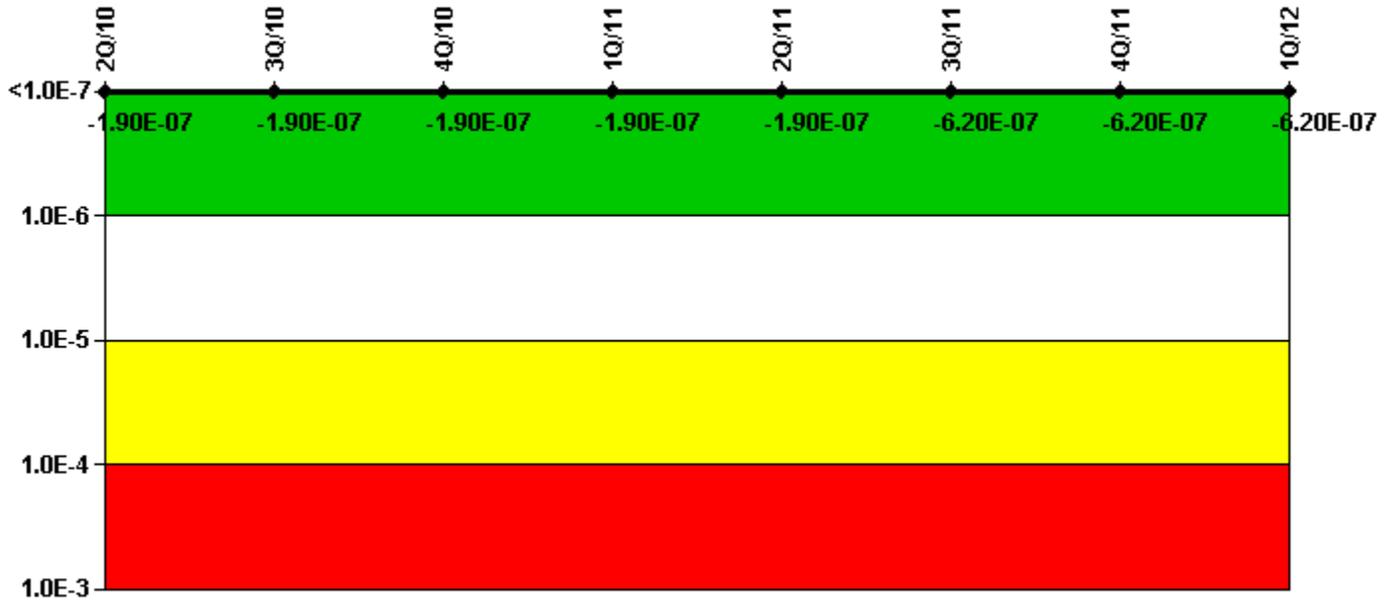
Mitigating Systems Performance Index, Residual Heat Removal System	2Q/10	3Q/10	4Q/10	1Q/11	2Q/11	3Q/11	4Q/11	1Q/12
UAI ( $\Delta$ CDF)	6.30E-09	4.78E-09	2.13E-08	1.66E-08	2.02E-08	1.92E-08	8.82E-08	1.82E-07
URI ( $\Delta$ CDF)	-3.58E-08	-7.03E-08	-7.03E-08	-7.03E-08	-7.03E-08	-4.18E-07	-1.99E-07	-1.99E-07
PLE	NO							
Indicator value	-2.90E-08	-6.50E-08	-4.90E-08	-5.40E-08	-5.00E-08	-4.00E-07	-1.10E-07	-1.70E-08

## Licensee Comments:

4Q/11: FAQ 480, 484, 487 were incorporated into the MSPI Basis Document. Additional changes included demand/runtime estimates for the 3 DGs were updated. Removal of planned baseline temporary change for RCIC since 3 year period is over. The baseline planned unavailability was changed due to needed one-time maintenance activities on SWC. The baseline planned unavailability for DG3 was changed incorporating the 2yr/4yr PM to be permanent. Provisional coefficient changes included: RCIC, HPCS-DG, HPCS-SW, and DG1.

2Q/11: The plant specific PRA was updated. Many changes in the FV & UA and FV & UR coefficients for DG1, DG2, HPCS, RCIC, RHRA, RHRB, SWA, & SWB. However, there were no changes in the MSPI Systems ???Baseline Planned UA Coefficients for any of the MSPI Systems. There are numerous changes to the Table 2.1.1, CGS Initiating Event Frequencies. The PRA model used for this update is Rev. 7.1.

# 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/10	3Q/10	4Q/10	1Q/11	2Q/11	3Q/11	4Q/11	1Q/12
UAI ( $\Delta$ CDF)	-3.12E-08	-3.12E-08	-3.12E-08	-3.12E-08	-3.12E-08	-1.04E-07	-1.04E-07	-1.04E-07
URI ( $\Delta$ CDF)	-1.63E-07	-1.63E-07	-1.63E-07	-1.63E-07	-1.63E-07	-5.19E-07	-5.19E-07	-5.19E-07
PLE	NO							
Indicator value	-1.90E-07	-1.90E-07	-1.90E-07	-1.90E-07	-1.90E-07	-6.20E-07	-6.20E-07	-6.20E-07

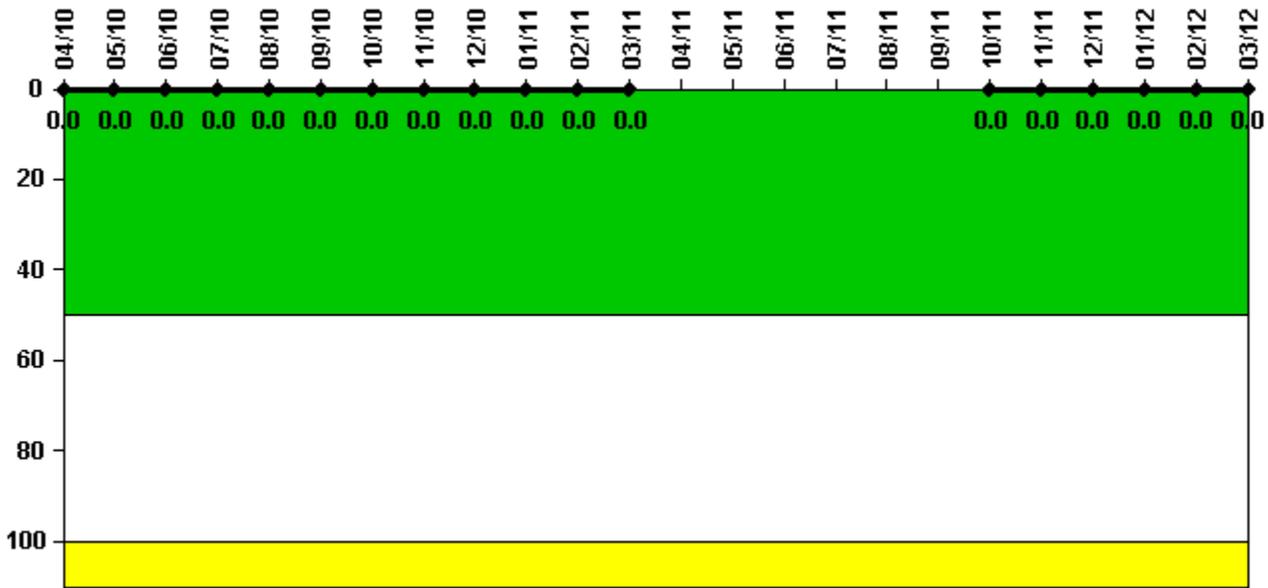
## Licensee Comments:

1Q/12: MSPI Basis document was revised deleting ftn 2 on pp 18 and 19 as the planned activity for SWC was cancelled and moved to planned outage in 5/2012. DRJ

4Q/11: FAQ 480, 484, 487 were incorporated into the MSPI Basis Document. Additional changes included demand/runtime estimates for the 3 DGs were updated. Removal of planned baseline temporary change for RCIC since 3 year period is over. The baseline planned unavailability was changed due to needed one-time maintenance activities on SWC. The baseline planned unavailability for DG3 was changed incorporating the 2yr/4yr PM to be permanent. Provisiona coefficient changes included: RCIC, HPCS-DG, HPCS-SW, and DG1.

2Q/11: The plant specific PRA was updated. Many changes in the FV & UA and FV & UR coefficients for DG1, DG2, HPCS, RCIC, RHRA, RHRB,SWA, & SWB. However, there were no changes in the MSPI Systems ???Baseline Planned UA Coefficients for any of the MSPI Systems. There are numerous changes to the Table 2.1.1, CGS Initiating Event Frequencies. The PRA model used for this update is Rev. 7.1.

# Reactor Coolant System Activity



Thresholds: White > 50.0 Yellow > 100.0

## Notes

Reactor Coolant System Activity	4/10	5/10	6/10	7/10	8/10	9/10	10/10	11/10	12/10	1/11	2/11	3/11
Maximum activity	0.000003	0.000003	0.000003	0.000004	0.000002	0.000002	0.000002	0.000002	0.000002	0.000002	0.000002	0.000003
Technical specification limit	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
Indicator value	0	0	0	0	0	0	0	0	0	0	0	0

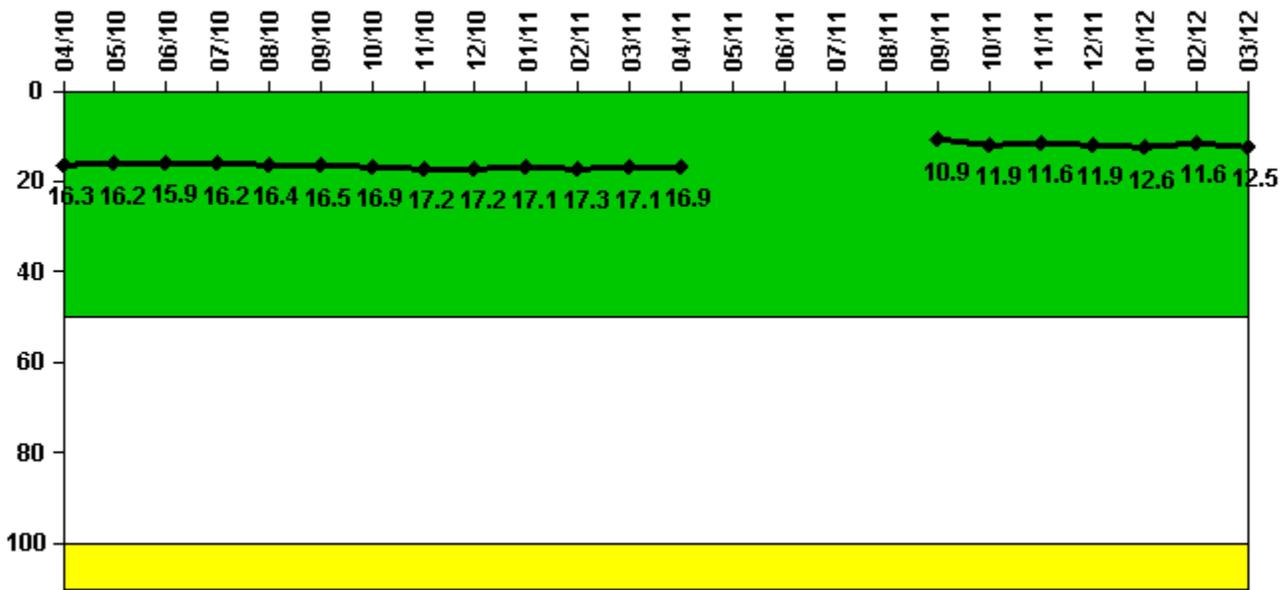
Reactor Coolant System Activity	4/11	5/11	6/11	7/11	8/11	9/11	10/11	11/11	12/11	1/12	2/12	3/12
Maximum activity	N/A	N/A	N/A	N/A	N/A	N/A	0.000002	0.000001	0.000001	0.000001	0.000001	0.000001
Technical specification limit	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
Indicator value	N/A	N/A	N/A	N/A	N/A	N/A	0	0	0	0	0	0

Licensee Comments:

9/11: CGS is in refueling outage R-20.

6/11: CGS is in refueling outage R-20.

## Reactor Coolant System Leakage



Thresholds: White > 50.0 Yellow > 100.0

### Notes

Reactor Coolant System Leakage	4/10	5/10	6/10	7/10	8/10	9/10	10/10	11/10	12/10	1/11	2/11	3/11
Maximum leakage	4.070	4.060	3.970	4.040	4.090	4.130	4.230	4.310	4.310	4.280	4.320	4.270
Technical specification limit	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0
Indicator value	16.3	16.2	15.9	16.2	16.4	16.5	16.9	17.2	17.2	17.1	17.3	17.1

Reactor Coolant System Leakage	4/11	5/11	6/11	7/11	8/11	9/11	10/11	11/11	12/11	1/12	2/12	3/12
Maximum leakage	4.230	N/A	N/A	N/A	N/A	2.730	2.970	2.900	2.970	3.140	2.890	3.130
Technical specification limit	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0
Indicator value	16.9	N/A	N/A	N/A	N/A	10.9	11.9	11.6	11.9	12.6	11.6	12.5

### Licensee Comments:

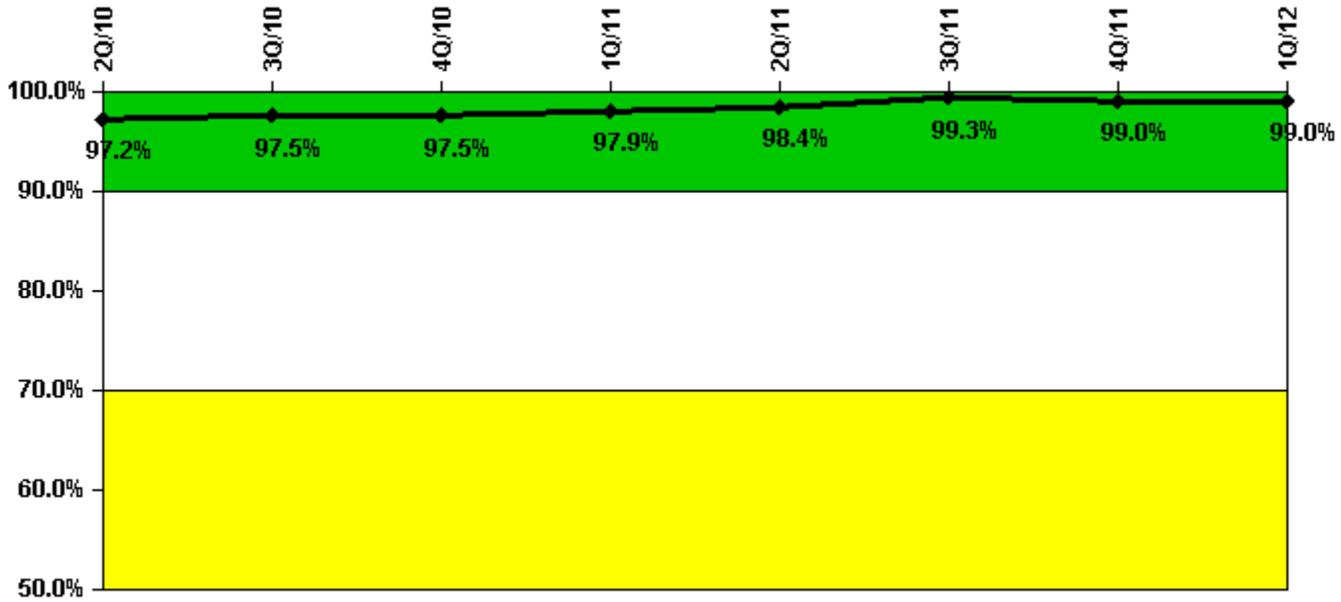
9/11: CGS is in refueling outage R-20. Data changed to conform to NEI 99-02. Tech Specs do not require RCS Leakage measurement in Modes 4 or 5.

9/11: CGS is in refueling outage R-20. Data changed to conform to NEI 99-02. Tech Specs do not require RCS Leakage measurement in Modes 4 or 5.

6/11: CGS is in refueling outage R-20. Data changed to conform to NEI 99-02. Tech Specs do not require RCS Leakage measurement in Modes 4 or 5.

6/11: CGS is in refueling outage R-20. Data changed to conform to NEI 99-02. Tech Specs do not require RCS Leakage measurement in Modes 4 or 5.

## Drill/Exercise Performance



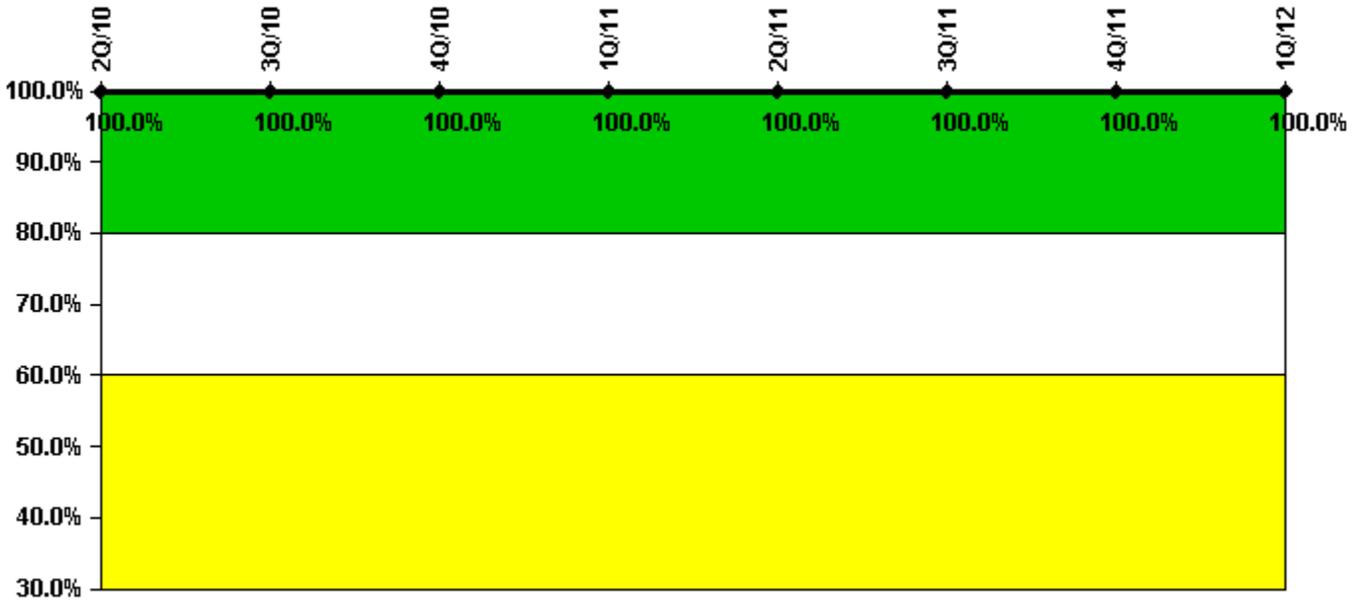
Thresholds: White < 90.0% Yellow < 70.0%

### Notes

Drill/Exercise Performance	2Q/10	3Q/10	4Q/10	1Q/11	2Q/11	3Q/11	4Q/11	1Q/12
Successful opportunities	39.0	35.0	57.0	19.0	5.0	33.0	92.0	31.0
Total opportunities	40.0	36.0	57.0	19.0	5.0	33.0	93.0	31.0
Indicator value	97.2%	97.5%	97.5%	97.9%	98.4%	99.3%	99.0%	99.0%

Licensee Comments: none

## ERO Drill Participation



Thresholds: White < 80.0% Yellow < 60.0%

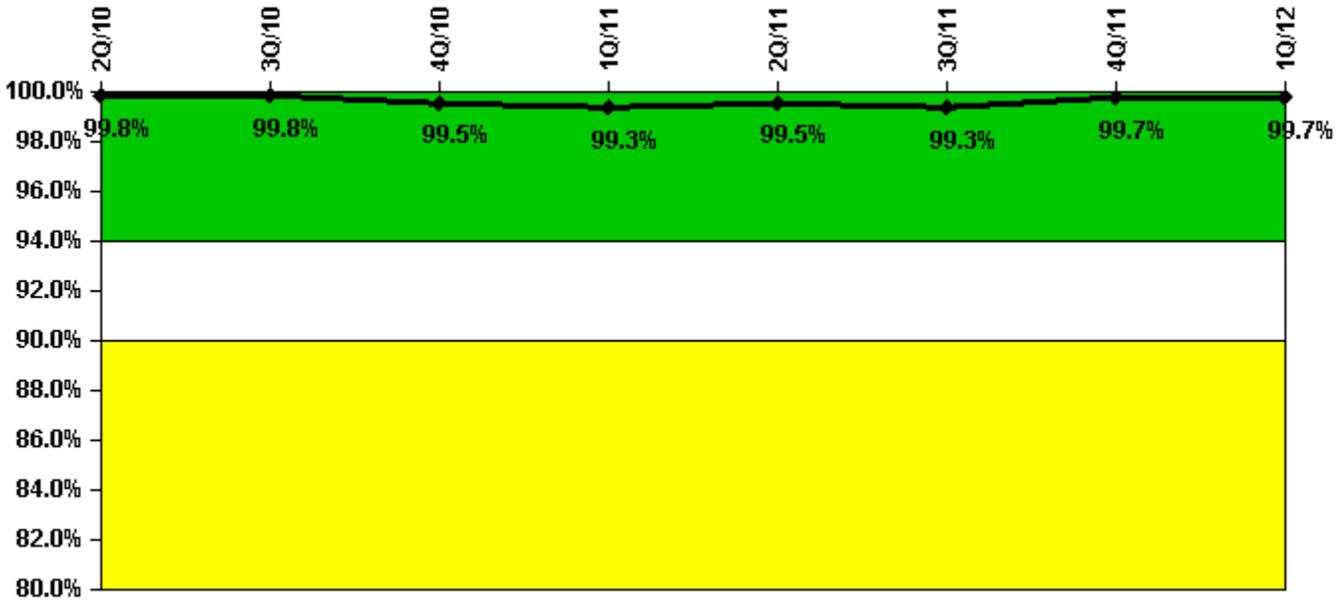
### Notes

ERO Drill Participation	2Q/10	3Q/10	4Q/10	1Q/11	2Q/11	3Q/11	4Q/11	1Q/12
Participating Key personnel	60.0	55.0	56.0	57.0	55.0	54.0	55.0	59.0
Total Key personnel	60.0	55.0	56.0	57.0	55.0	54.0	55.0	59.0
Indicator value	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Licensee Comments: none

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# Alert & Notification System



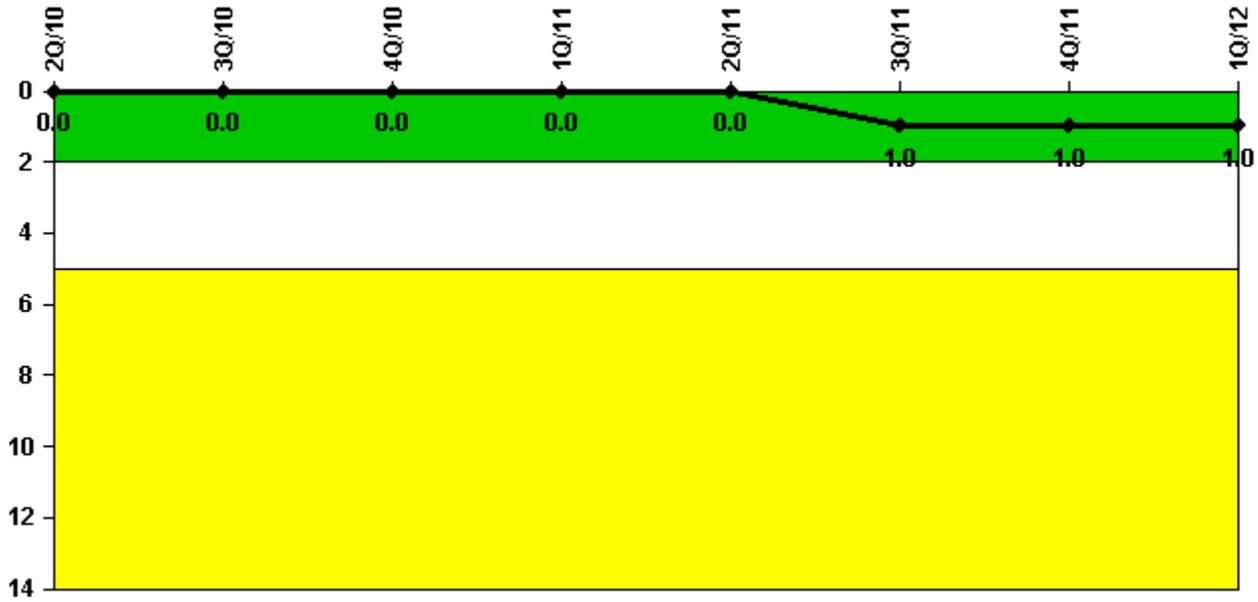
Thresholds: White < 94.0% Yellow < 90.0%

## Notes

Alert & Notification System	2Q/10	3Q/10	4Q/10	1Q/11	2Q/11	3Q/11	4Q/11	1Q/12
Successful siren-tests	142	143	152	140	143	142	154	153
Total sirens-tests	143	143	154	141	143	143	154	154
Indicator value	99.8%	99.8%	99.5%	99.3%	99.5%	99.3%	99.7%	99.7%

Licensee Comments: none

## Occupational Exposure Control Effectiveness



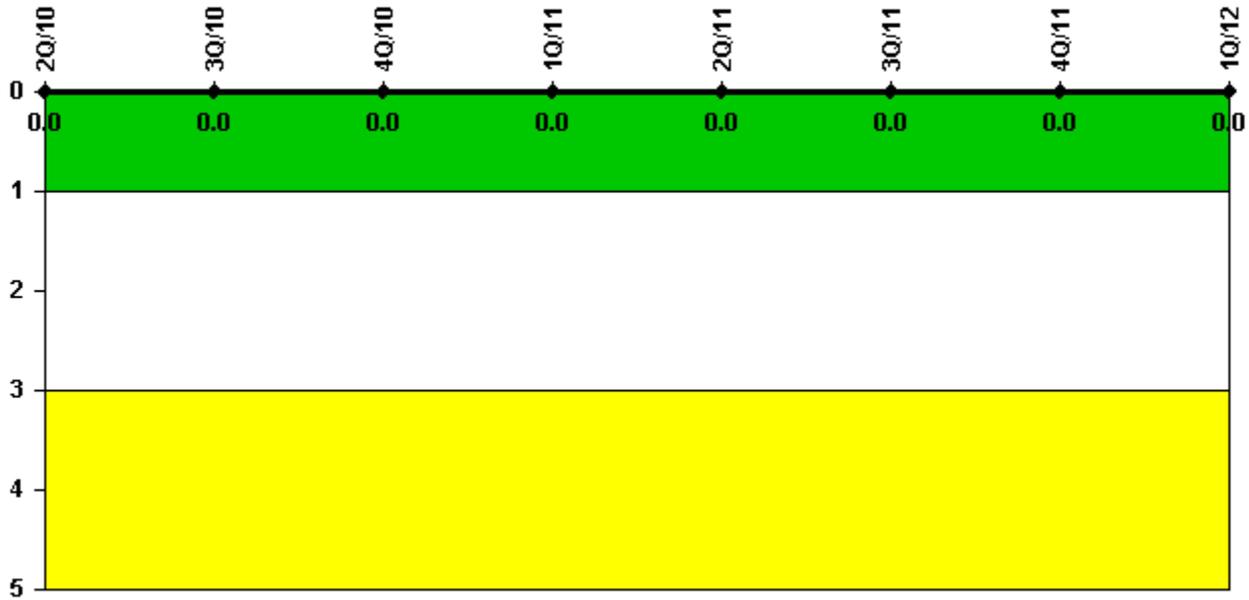
Thresholds: White > 2.0 Yellow > 5.0

### Notes

Occupational Exposure Control Effectiveness	2Q/10	3Q/10	4Q/10	1Q/11	2Q/11	3Q/11	4Q/11	1Q/12
High radiation area occurrences	0	0	0	0	0	1	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>1</b>	<b>1</b>	<b>1</b>

Licensee Comments: none

## RETS/ODCM Radiological Effluent



Thresholds: White > 1.0 Yellow > 3.0

### Notes

RETS/ODCM Radiological Effluent	2Q/10	3Q/10	4Q/10	1Q/11	2Q/11	3Q/11	4Q/11	1Q/12
RETS/ODCM occurrences	0	0	0	0	0	0	0	0
Indicator value	0	0	0	0	0	0	0	0

Licensee Comments: none

[Security](#) information not publicly available.