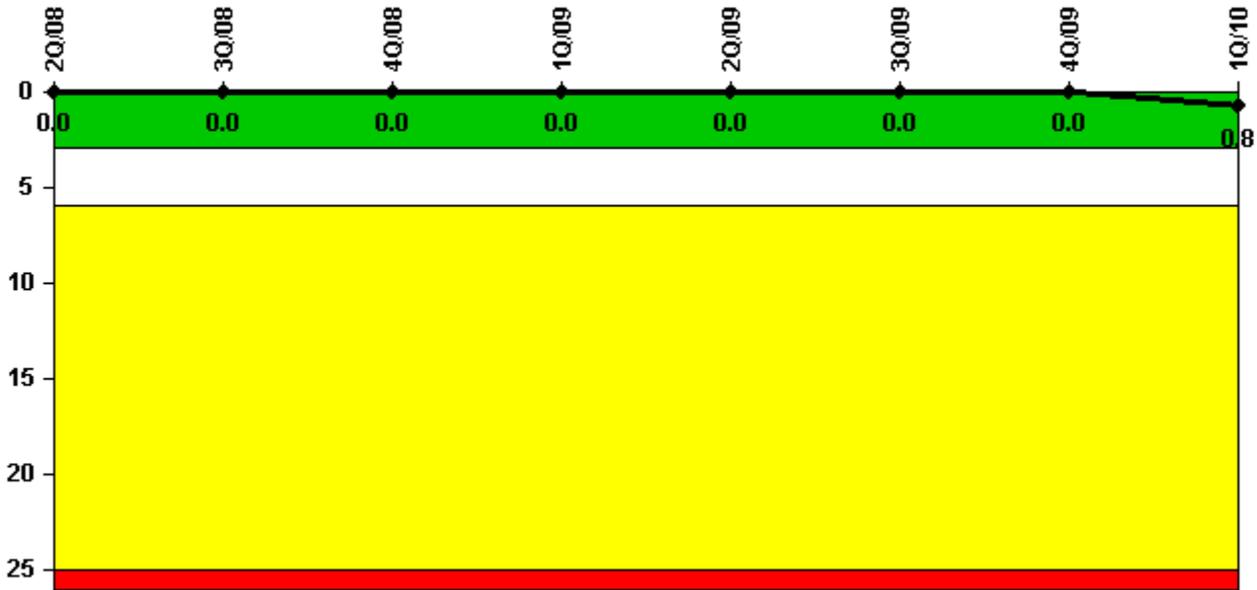


Palo Verde 1

1Q/2010 Performance Indicators

Licensee's General Comments: none

Unplanned Scrams per 7000 Critical Hrs



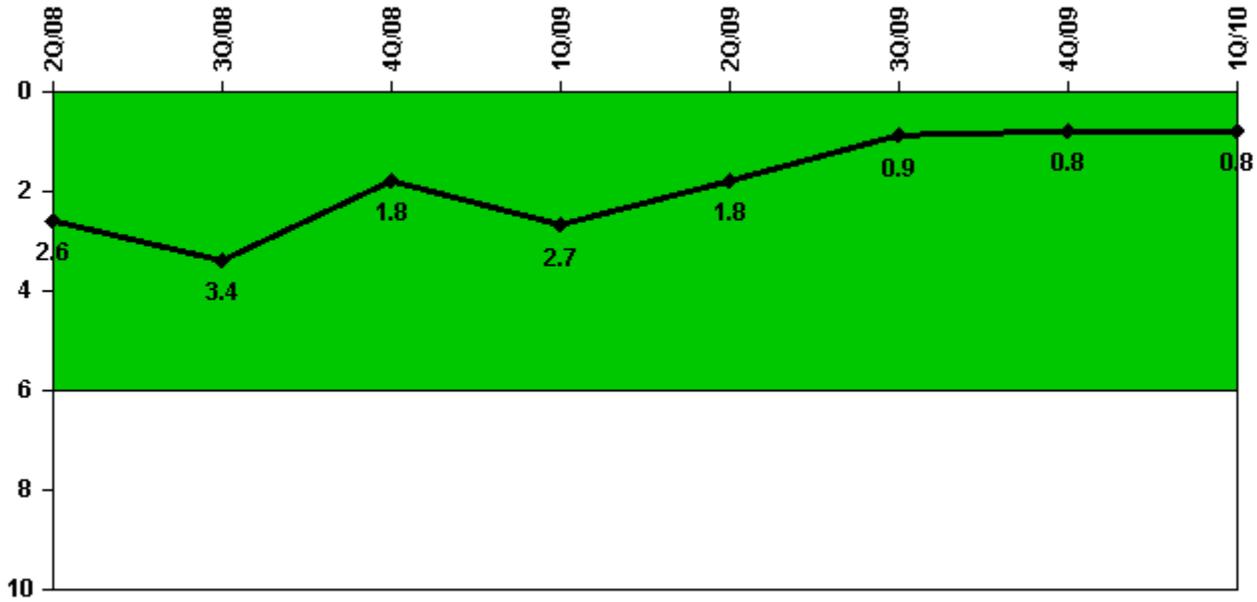
Thresholds: White > 3.0 Yellow > 6.0 Red > 25.0

Notes

Unplanned Scrams per 7000 Critical Hrs	2Q/08	3Q/08	4Q/08	1Q/09	2Q/09	3Q/09	4Q/09	1Q/10
Unplanned scrams	0	0	0	0	0	0	0	1.0
Critical hours	2131.1	2208.0	1155.6	2160.0	2184.0	2208.0	2208.0	1880.6
Indicator value	0	0	0	0	0	0	0	0.8

Licensee Comments: none

Unplanned Power Changes per 7000 Critical Hrs



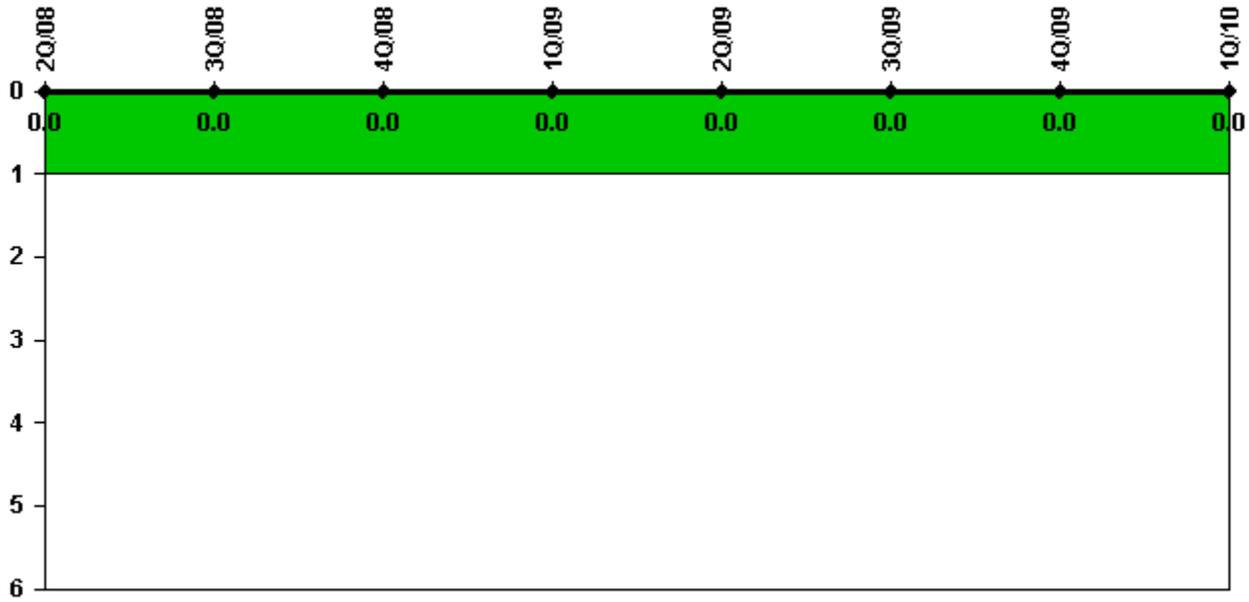
Thresholds: White > 6.0

Notes

Unplanned Power Changes per 7000 Critical Hrs	2Q/08	3Q/08	4Q/08	1Q/09	2Q/09	3Q/09	4Q/09	1Q/10
Unplanned power changes	1.0	1.0	0	1.0	0	0	0	1.0
Critical hours	2131.1	2208.0	1155.6	2160.0	2184.0	2208.0	2208.0	1880.6
Indicator value	2.6	3.4	1.8	2.7	1.8	0.9	0.8	0.8

Licensee Comments: none

Unplanned Scrams with Complications



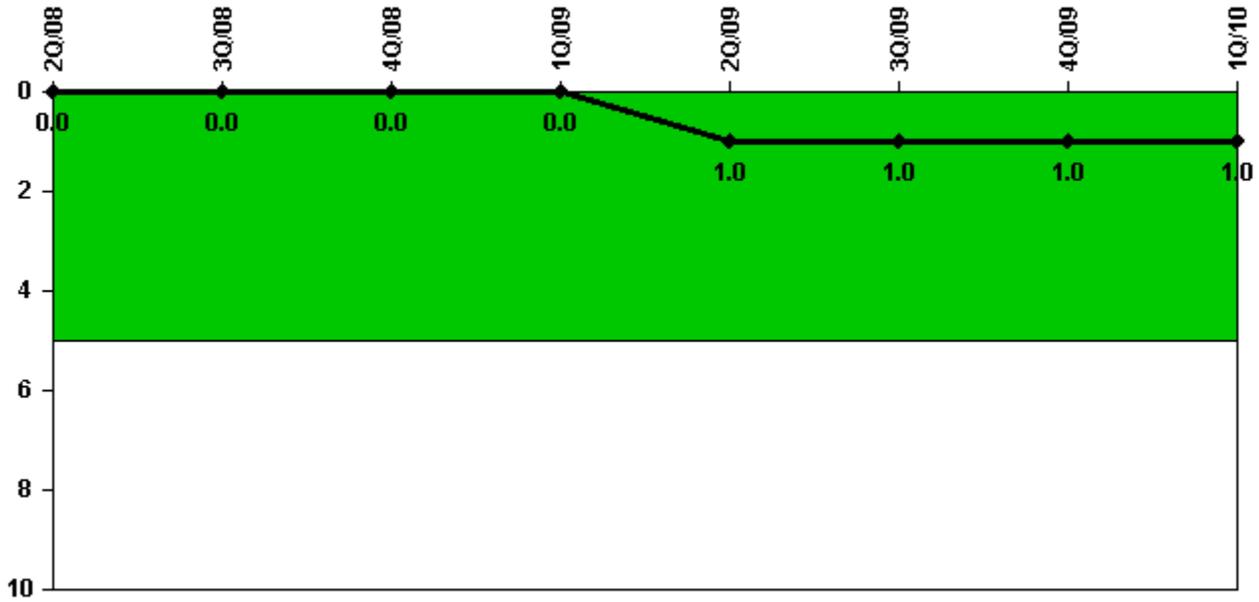
Thresholds: White > 1.0

Notes

Unplanned Scrams with Complications	2Q/08	3Q/08	4Q/08	1Q/09	2Q/09	3Q/09	4Q/09	1Q/10
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

Licensee Comments: none

Safety System Functional Failures (PWR)



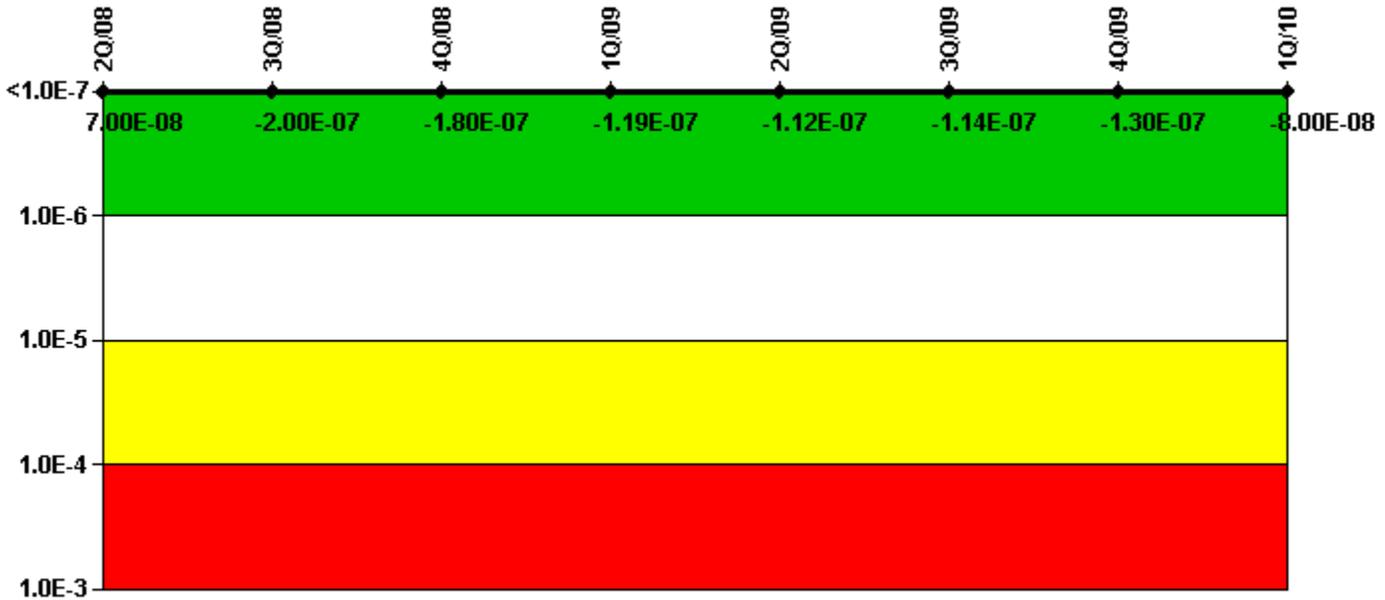
Thresholds: White > 5.0

Notes

Safety System Functional Failures (PWR)	2Q/08	3Q/08	4Q/08	1Q/09	2Q/09	3Q/09	4Q/09	1Q/10
Safety System Functional Failures	0	0	0	0	1	0	0	0
Indicator value	0	0	0	0	1	1	1	1

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

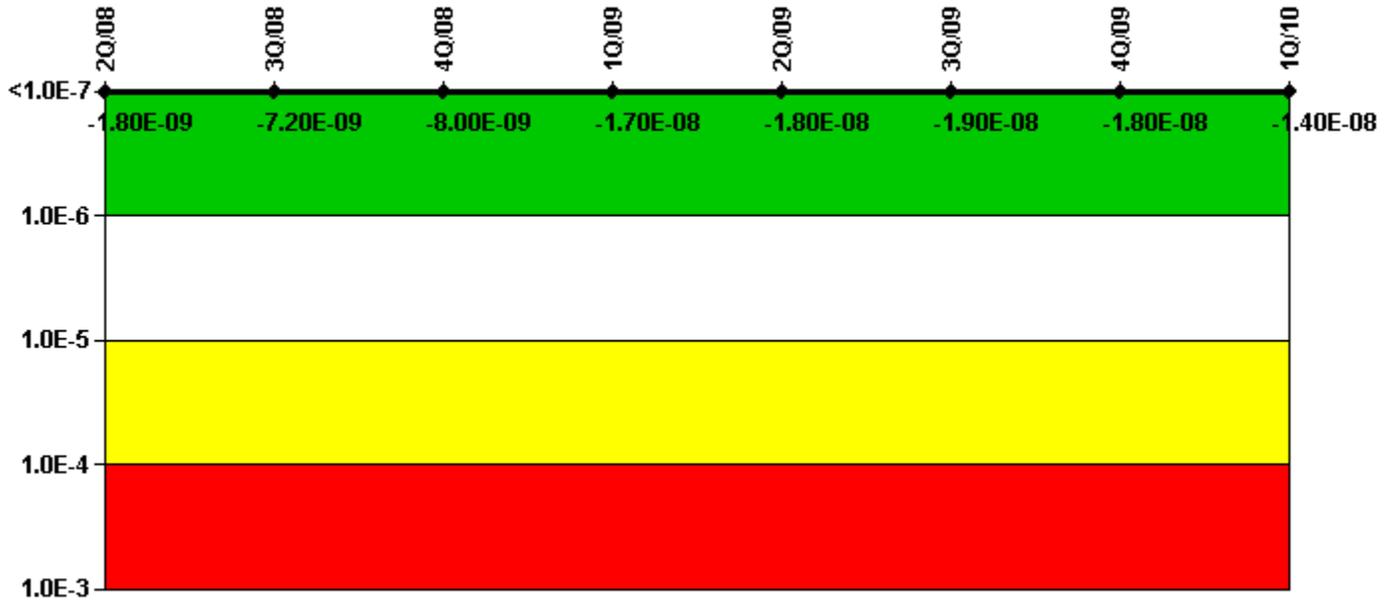
Mitigating Systems Performance Index, Emergency AC Power System	2Q/08	3Q/08	4Q/08	1Q/09	2Q/09	3Q/09	4Q/09	1Q/10
UAI (Δ CDF)	2.90E-07	1.80E-07	2.00E-07	5.10E-08	5.80E-08	5.60E-08	4.13E-08	2.92E-09
URI (Δ CDF)	-2.20E-07	-3.80E-07	-3.80E-07	-1.70E-07	-1.70E-07	-1.70E-07	-1.67E-07	-8.32E-08
PLE	NO							
Indicator value	7.00E-08	-2.00E-07	-1.80E-07	-1.19E-07	-1.12E-07	-1.14E-07	-1.30E-07	-8.00E-08

Licensee Comments:

1Q/10: MSPI base CDF changes occurred as a result of PRA updates in January and March 2010. These affected Unavailability and Unreliability values for all MSPI systems. No color change occurred.

4Q/09: MSPI base CDF changes occurred as a result of PRA updates in January and March 2010. These affected Unavailability and Unreliability values for all MSPI systems. No color change occurred.

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/08	3Q/08	4Q/08	1Q/09	2Q/09	3Q/09	4Q/09	1Q/10
UAI (Δ CDF)	1.37E-08	8.24E-09	7.39E-09	6.10E-09	4.67E-09	3.82E-09	3.59E-09	-3.98E-10
URI (Δ CDF)	-1.54E-08	-1.54E-08	-1.54E-08	-2.33E-08	-2.29E-08	-2.24E-08	-2.20E-08	-1.40E-08
PLE	NO							
Indicator value	-1.80E-09	-7.20E-09	-8.00E-09	-1.70E-08	-1.80E-08	-1.90E-08	-1.80E-08	-1.40E-08

Licensee Comments:

1Q/10: MSPI base CDF changes occurred as a result of PRA updates in January and March 2010. These affected Unavailability and Unreliability values for all MSPI systems. No color change occurred. Prior Safety Injection System availability credit which had been used to determine unavailability that accrued during surveillance tests was removed. The time was related to the use of a dedicated operator to restore system function if required during the surveillance tests. The additional unavailability time was added back into respective quarters through 2007. No color change occurred.

4Q/09: MSPI base CDF changes occurred as a result of PRA updates in January and March 2010. These affected Unavailability and Unreliability values for all MSPI systems. No color change occurred.

3Q/09: During an update of reliability record demand estimates to take effect in the 4th quarter 2009, the station discovered that the manner of input for reliability record demand estimates revised in the 4th quarter 2008 inadvertently changed historical high pressure safety injection and residual heat removal reliability index reported values reported since 2006. The corrected values were submitted in an October 2009 change report. The differences between the results were minor and did not result in a color change.

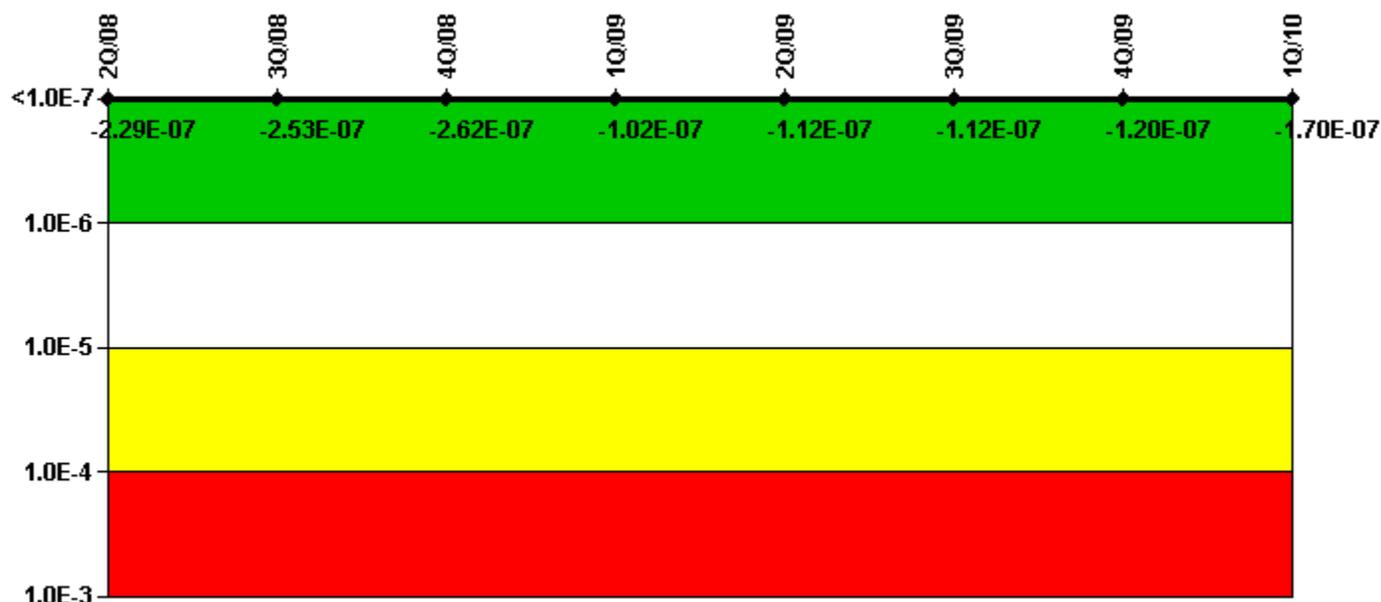
1Q/09: Effective 1st Quarter 2009, MSPI model changes accommodated changes in the PRA model: Diesel generator failure modes have been changed from start and run failures to start, load and run for one hour; and run for greater than one hour; recovery rules associated with AF vs. Alternate Feedwater and those with power recovery for the new DG failure modes are updated; crediting MFW for the full 24-hour mission time, as well as recovering loss of all feedwater with restarting Main Feedwater. Also, unavailability values used in the PRA model

were updated with MSPI system unavailability parameters. Finally, estimated valve test demands for the HPSI and RHR systems were adjusted to comply with the changes to testing procedures.

4Q/08: An adverse error was detected in Safety Injection valve group demand estimates. The error was corrected going forward and MSPI model updated. No color change resulted.

4Q/07: The MSPI Model was revised, effective 4 quarter 2007. The model resulted in major shifts in auxiliary feedwater importance impacting MSPI coefficients.

Mitigating Systems Performance Index, Heat Removal System



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

Notes

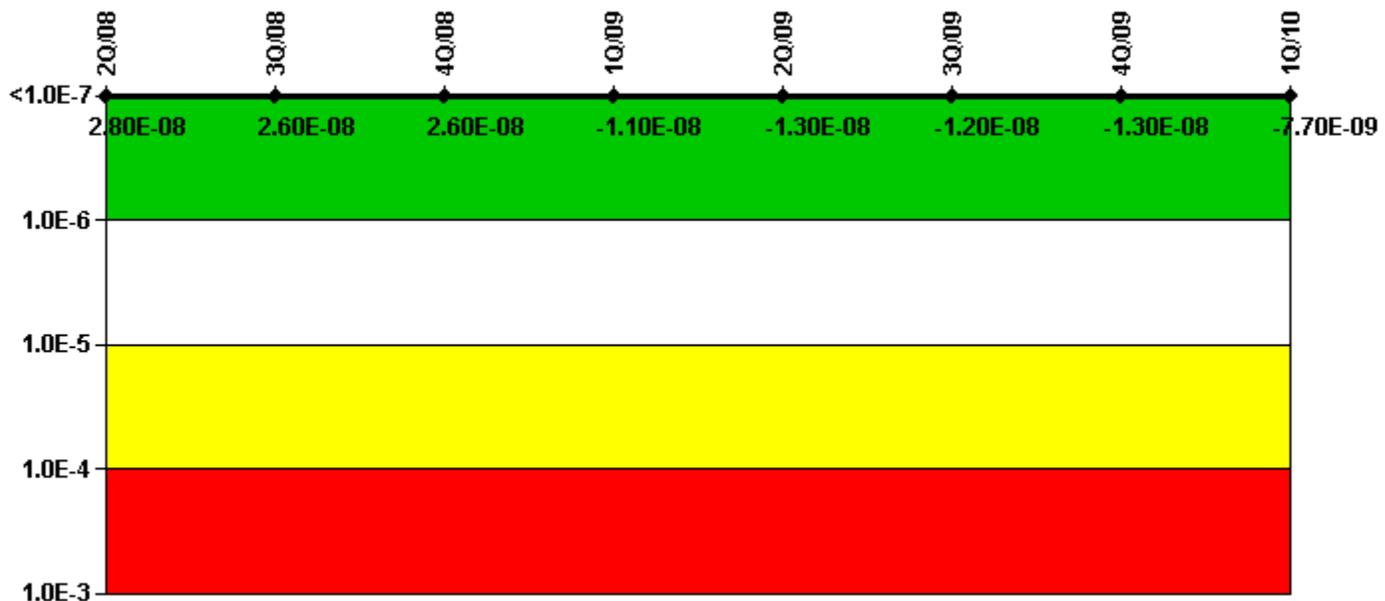
Mitigating Systems Performance Index, Heat Removal System	2Q/08	3Q/08	4Q/08	1Q/09	2Q/09	3Q/09	4Q/09	1Q/10
UAI (ΔCDF)	9.50E-10	-2.30E-08	-3.20E-08	-3.80E-09	-1.40E-08	-1.40E-08	-1.71E-08	-2.45E-08
URI (ΔCDF)	-2.30E-07	-2.30E-07	-2.30E-07	-9.80E-08	-9.80E-08	-9.80E-08	-9.96E-08	-1.42E-07
PLE	NO							
Indicator value	-2.29E-07	-2.53E-07	-2.62E-07	-1.02E-07	-1.12E-07	-1.12E-07	-1.20E-07	-1.70E-07

Licensee Comments:

1Q/10: MSPI base CDF changes occurred as a result of PRA updates in January and March 2010. These affected Unavailability and Unreliability values for all MSPI systems. No color change occurred.

4Q/09: MSPI base CDF changes occurred as a result of PRA updates in January and March 2010. These affected Unavailability and Unreliability values for all MSPI systems. No color change occurred.

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/08	3Q/08	4Q/08	1Q/09	2Q/09	3Q/09	4Q/09	1Q/10
UAI (Δ CDF)	3.74E-08	3.50E-08	3.45E-08	1.16E-08	1.01E-08	1.03E-08	9.83E-09	-5.24E-10
URI (Δ CDF)	-8.96E-09	-8.96E-09	-8.96E-09	-2.31E-08	-2.28E-08	-2.25E-08	-2.23E-08	-7.14E-09
PLE	NO							
Indicator value	2.80E-08	2.60E-08	2.60E-08	-1.10E-08	-1.30E-08	-1.20E-08	-1.30E-08	-7.70E-09

Licensee Comments:

1Q/10: MSPI base CDF changes occurred as a result of PRA updates in January and March 2010. These affected Unavailability and Unreliability values for all MSPI systems. No color change occurred. Prior Safety Injection System availability credit which had been used to determine unavailability that accrued during surveillance tests was removed. The time was related to the use of a dedicated operator to restore system function if required during the surveillance tests. The additional unavailability time was added back into respective quarters through 2007. No color change occurred.

4Q/09: MSPI base CDF changes occurred as a result of PRA updates in January and March 2010. These affected Unavailability and Unreliability values for all MSPI systems. No color change occurred.

3Q/09: During an update of reliability record demand estimates to take effect in the 4th quarter 2009, the station discovered that the manner of input for reliability record demand estimates revised in the 4th quarter 2008 inadvertently changed historical high pressure safety injection and residual heat removal reliability index reported values reported since 2006. The corrected values were submitted in an October 2009 change report. The differences between the results were minor and did not result in a color change.

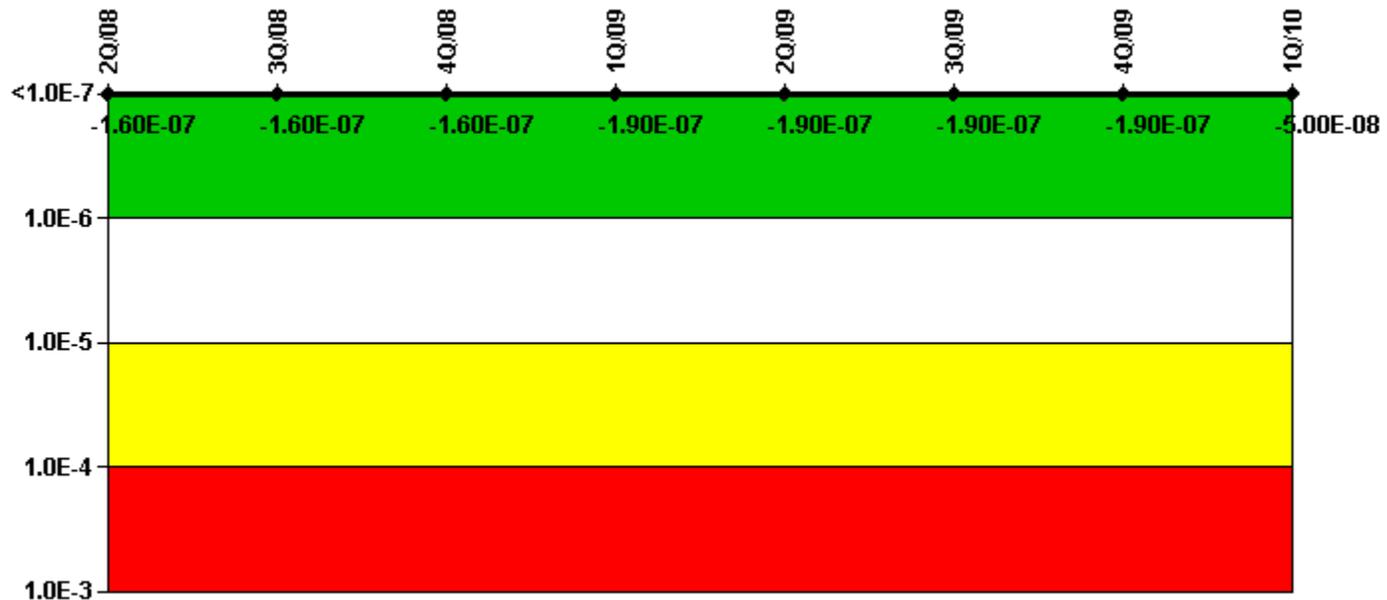
1Q/09: Unavailability since April 2006 was revised to include time Containment Spray was unavailable while the Refueling Water Tanks was in full-flow recirculation. LER 05000528/529/530-2009-001. No color change

occurred. Effective 1st Quarter 2009, MSPI model changes accommodated changes in the PRA model: Diesel generator failure modes have been changed from start and run failures to start, load and run for one hour; and run for greater than one hour; recovery rules associated with AF vs. Alternate Feedwater and those with power recovery for the new DG failure modes are updated; crediting MFW for the full 24-hour mission time, as well as recovering loss of all feedwater with restarting Main Feedwater. Also, unavailability values used in the PRA model were updated with MSPI system unavailability parameters. Finally, estimated valve test demands for the HPSI and RHR systems were adjusted to comply with the changes to testing procedures.

4Q/08: An adverse error was detected in Safety Injection valve group demand estimates. The error was corrected going forward and MSPI model updated. No color change resulted.

3Q/08: An adverse error was detected in Safety Injection valve group demand estimates since MSPI inception. The error was corrected and MSPI model updated. No color change resulted.

Mitigating Systems Performance Index, Cooling Water Systems



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

Notes

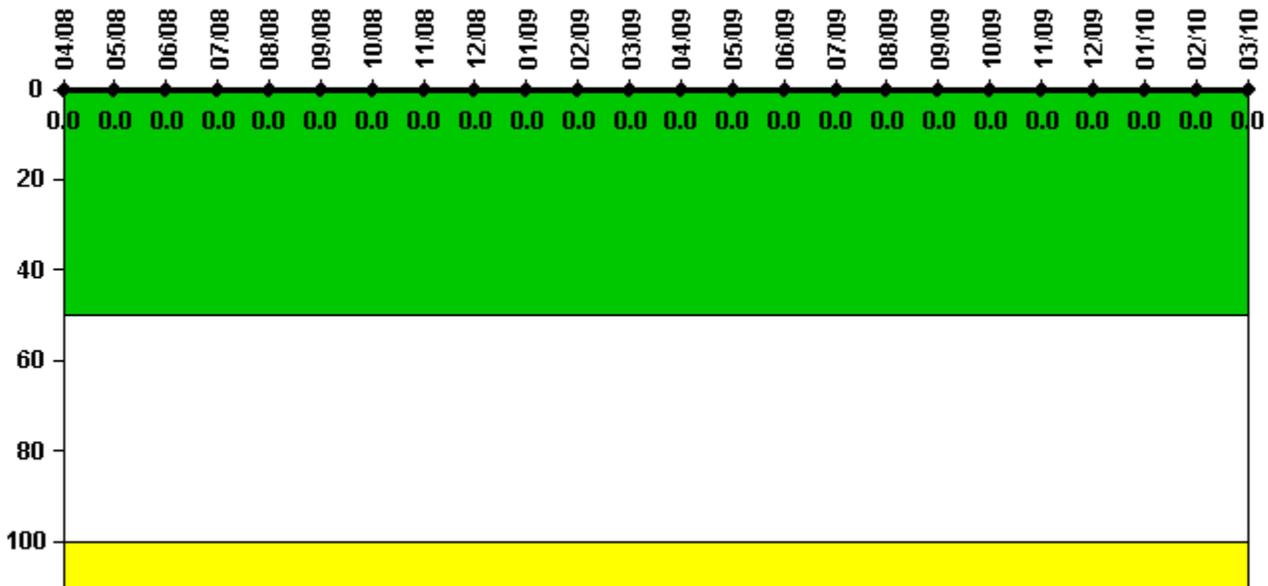
Mitigating Systems Performance Index, Cooling Water Systems	2Q/08	3Q/08	4Q/08	1Q/09	2Q/09	3Q/09	4Q/09	1Q/10
UAI (ΔCDF)	-5.20E-11	-5.20E-11	-5.20E-11	-1.50E-11	-1.50E-11	-1.50E-11	-1.47E-11	0.00E+00
URI (ΔCDF)	-1.60E-07	-1.60E-07	-1.60E-07	-1.90E-07	-1.90E-07	-1.90E-07	-1.94E-07	-4.99E-08
PLE	NO							
Indicator value	-1.60E-07	-1.60E-07	-1.60E-07	-1.90E-07	-1.90E-07	-1.90E-07	-1.90E-07	-5.00E-08

Licensee Comments:

1Q/10: MSPI base CDF changes occurred as a result of PRA updates in January and March 2010. These affected Unavailability and Unreliability values for all MSPI systems. No color change occurred.

4Q/09: MSPI base CDF changes occurred as a result of PRA updates in January and March 2010. These affected Unavailability and Unreliability values for all MSPI systems. No color change occurred.

Reactor Coolant System Activity



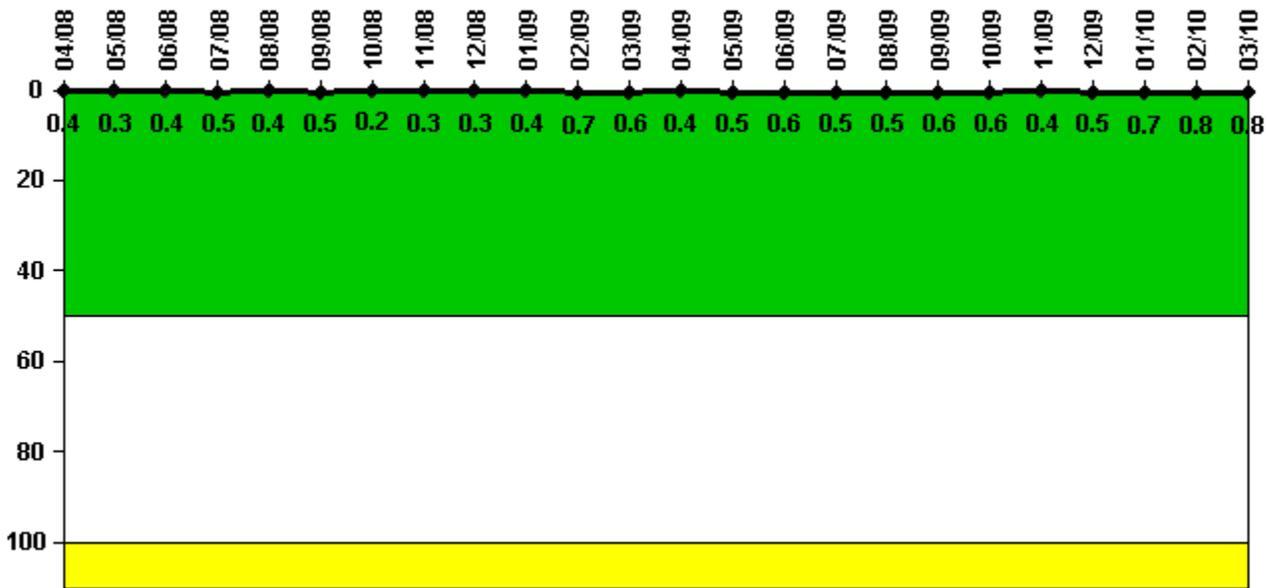
Thresholds: White > 50.0 Yellow > 100.0

Notes

Reactor Coolant System Activity	4/08	5/08	6/08	7/08	8/08	9/08	10/08	11/08	12/08	1/09	2/09	3/09
Maximum activity	0.000347	0.000360	0.000378	0.000386	0.000388	0.000405	0.000385	0.000225	0.000246	0.000262	0.000265	0.000277
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	4/09	5/09	6/09	7/09	8/09	9/09	10/09	11/09	12/09	1/10	2/10	3/10
Maximum activity	0.000289	0.000298	0.000307	0.000399	0.000313	0.000332	0.000340	0.000339	0.000344	0.000349	0.000370	0.000363
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

License Comments: none

Reactor Coolant System Leakage



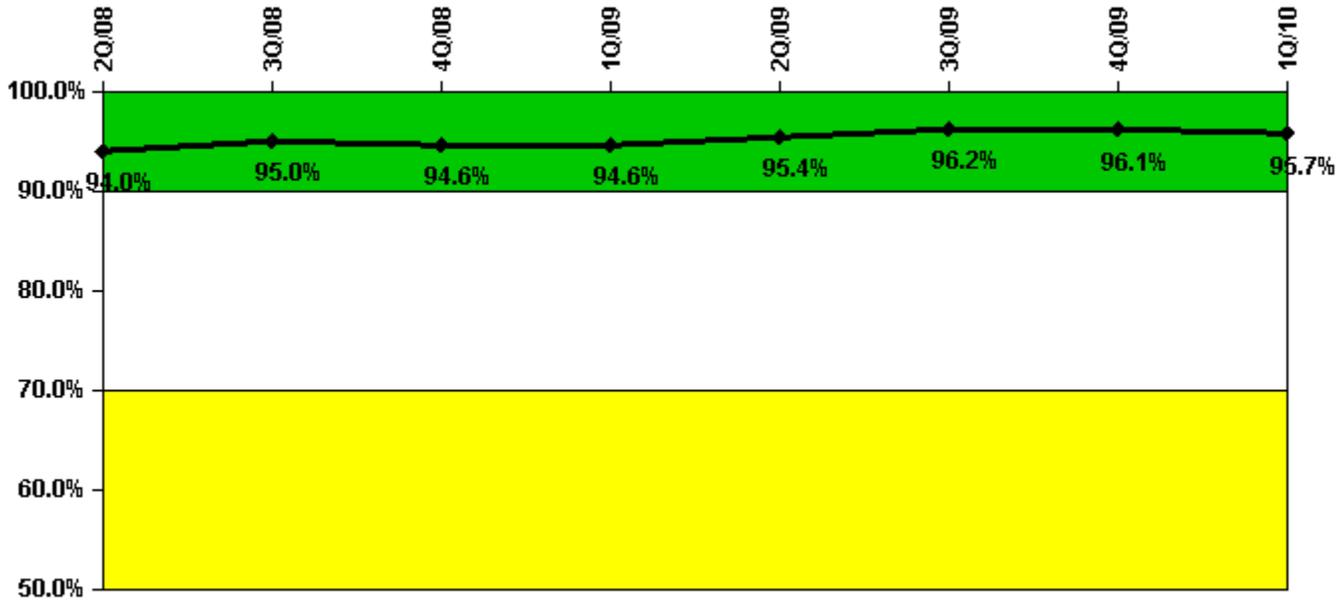
Thresholds: White > 50.0 Yellow > 100.0

Notes

Reactor Coolant System Leakage	4/08	5/08	6/08	7/08	8/08	9/08	10/08	11/08	12/08	1/09	2/09	3/09
Maximum leakage	0.043	0.033	0.039	0.052	0.035	0.048	0.024	0.028	0.025	0.044	0.067	0.058
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	0.4	0.3	0.4	0.5	0.4	0.5	0.2	0.3	0.3	0.4	0.7	0.6
Reactor Coolant System Leakage	4/09	5/09	6/09	7/09	8/09	9/09	10/09	11/09	12/09	1/10	2/10	3/10
Maximum leakage	0.038	0.047	0.060	0.045	0.054	0.055	0.056	0.043	0.049	0.071	0.076	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	0.4	0.5	0.6	0.5	0.5	0.6	0.6	0.4	0.5	0.7	0.8	0.8

Licensee Comments: none

Drill/Exercise Performance



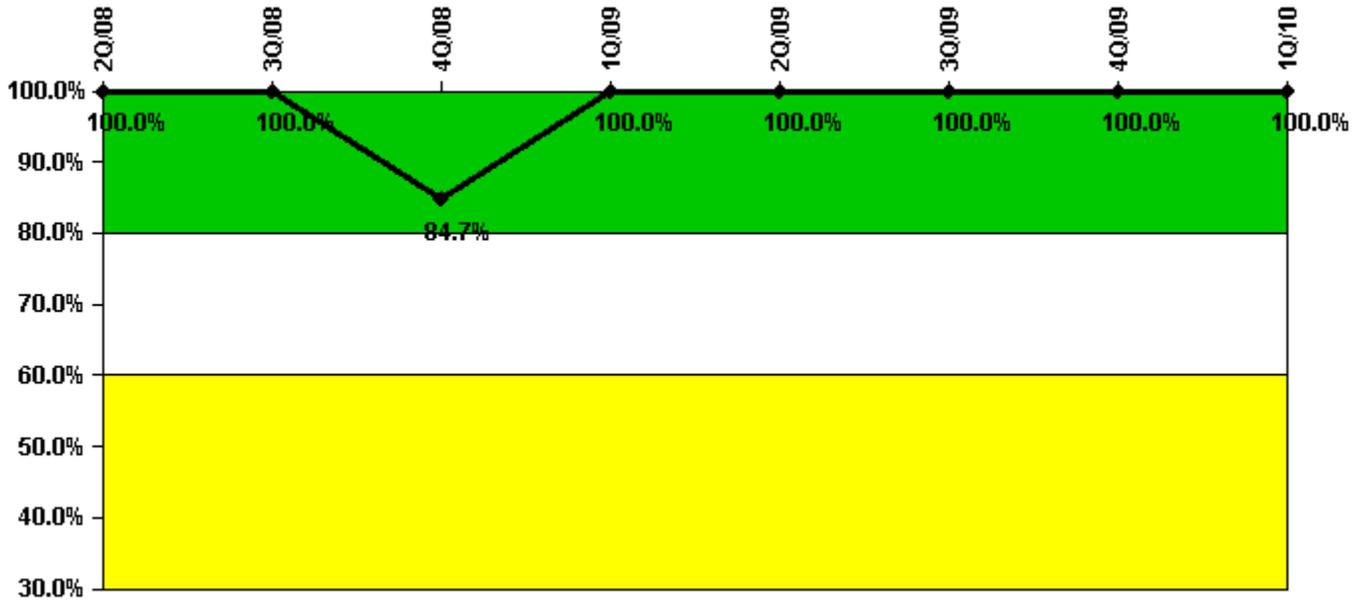
Thresholds: White < 90.0% Yellow < 70.0%

Notes

Drill/Exercise Performance	2Q/08	3Q/08	4Q/08	1Q/09	2Q/09	3Q/09	4Q/09	1Q/10
Successful opportunities	35.0	43.0	35.0	75.0	109.0	49.0	13.0	87.0
Total opportunities	39.0	43.0	39.0	79.0	112.0	50.0	14.0	90.0
Indicator value	94.0%	95.0%	94.6%	94.6%	95.4%	96.2%	96.1%	95.7%

Licensee Comments: none

ERO Drill Participation



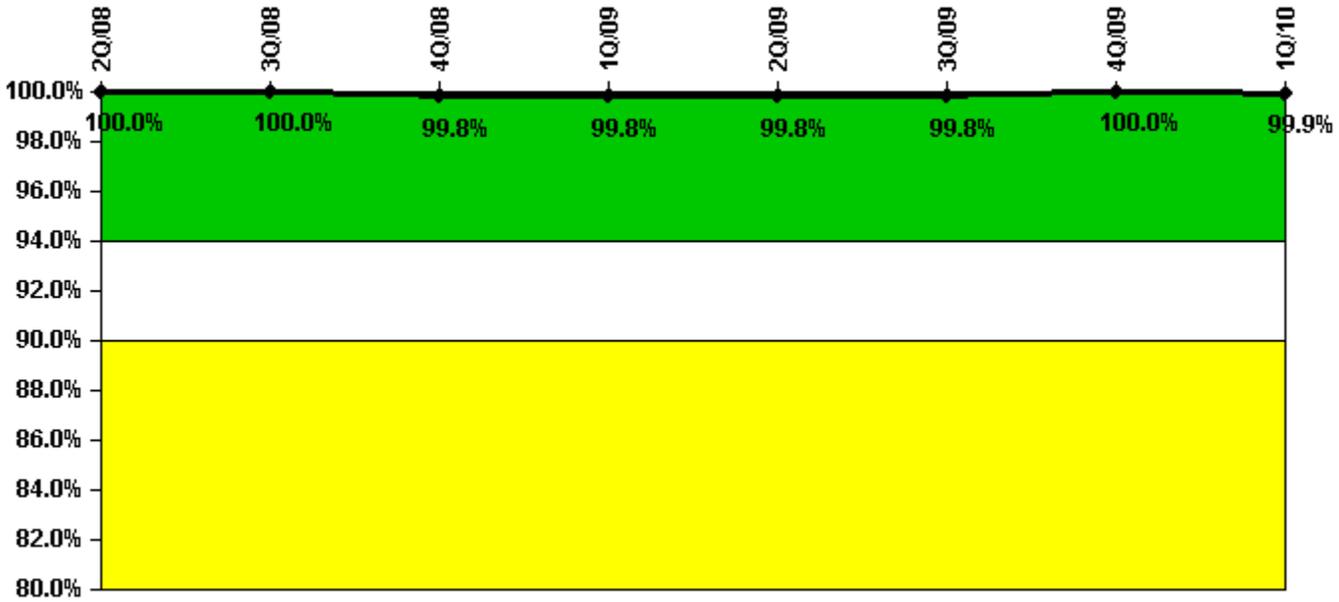
Thresholds: White < 80.0% Yellow < 60.0%

Notes

ERO Drill Participation	2Q/08	3Q/08	4Q/08	1Q/09	2Q/09	3Q/09	4Q/09	1Q/10
Participating Key personnel	191.0	183.0	72.0	78.0	87.0	95.0	92.0	97.0
Total Key personnel	191.0	183.0	85.0	78.0	87.0	95.0	92.0	97.0
Indicator value	100.0%	100.0%	84.7%	100.0%	100.0%	100.0%	100.0%	100.0%

Licensee Comments: none

Alert & Notification System



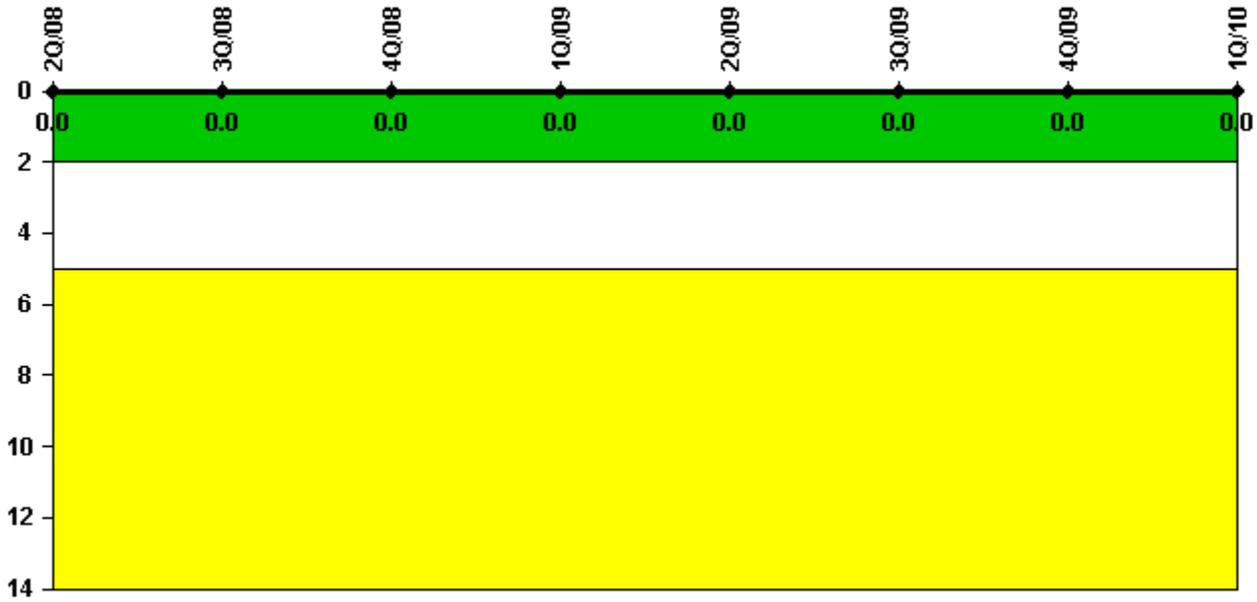
Thresholds: White < 94.0% Yellow < 90.0%

Notes

Alert & Notification System	2Q/08	3Q/08	4Q/08	1Q/09	2Q/09	3Q/09	4Q/09	1Q/10
Successful siren-tests	296	296	331	296	296	296	333	959
Total sirens-tests	296	296	333	296	296	296	333	960
Indicator value	100.0%	100.0%	99.8%	99.8%	99.8%	99.8%	100.0%	99.9%

Licensee Comments: none

Occupational Exposure Control Effectiveness



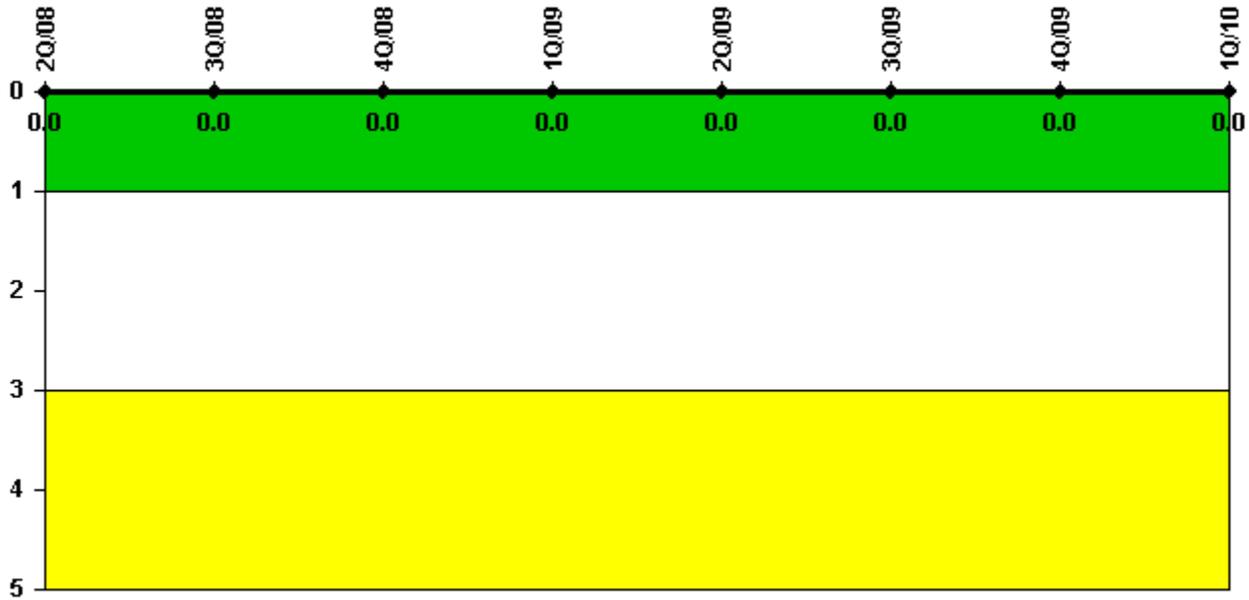
Thresholds: White > 2.0 Yellow > 5.0

Notes

Occupational Exposure Control Effectiveness	2Q/08	3Q/08	4Q/08	1Q/09	2Q/09	3Q/09	4Q/09	1Q/10
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							

Licensee Comments: none

RETS/ODCM Radiological Effluent



Thresholds: White > 1.0 Yellow > 3.0

Notes

RETS/ODCM Radiological Effluent	2Q/08	3Q/08	4Q/08	1Q/09	2Q/09	3Q/09	4Q/09	1Q/10
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.