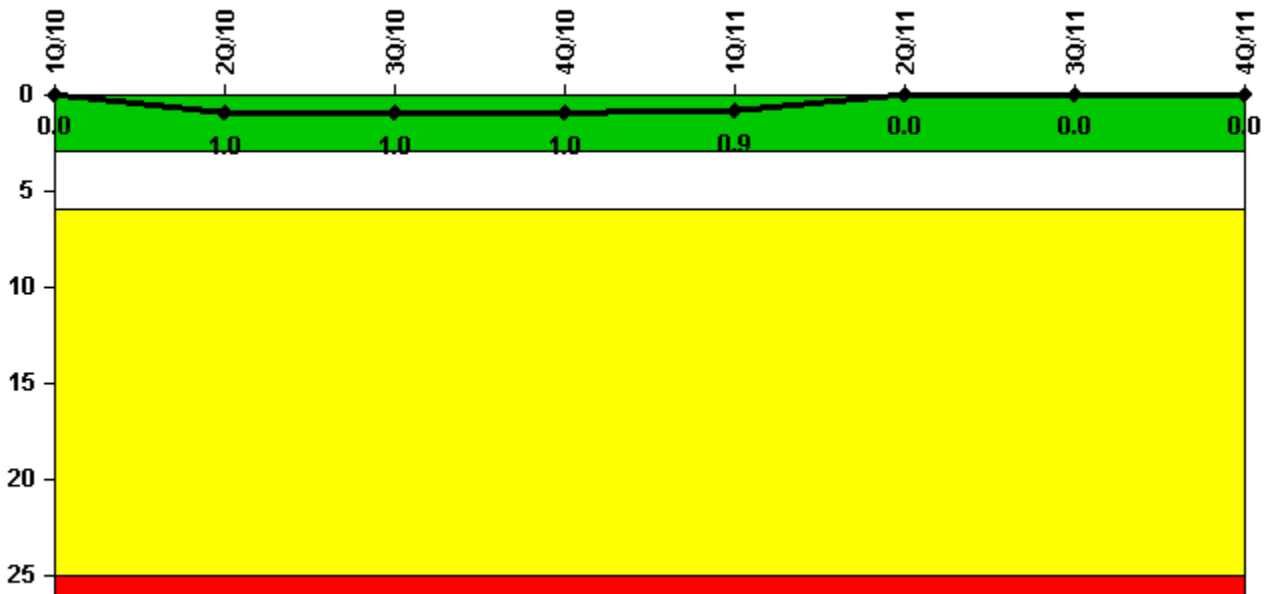


# Brunswick 1

## 4Q/2011 Performance Indicators

Licensee's General Comments: Revision to previously submitted data: An error in methodology used to calculate RCS Leakage was identified during the 4th quarter of 2011. The methodology was used starting in October 2010. The recalculated numbers from October 2010 to September 2011 resulted in minimal change to the PI, with the largest increase in total leakage for one month of 0.07gpm on Unit 1, and 0.23gpm on Unit 2. This represents an increase of less than 1% of the allowed Technical Specification limit for Total RCS Leakage on either unit. This correction did not affect the color of the performance indicator for this time period.

### Unplanned Scrams per 7000 Critical Hrs



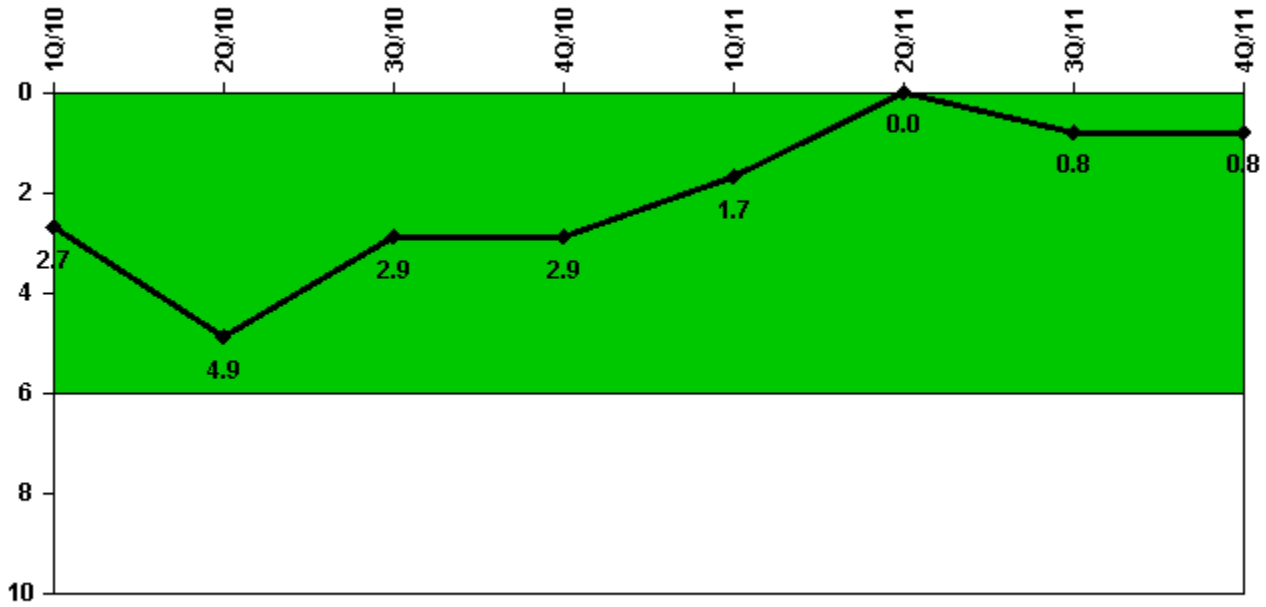
Thresholds: White > 3.0 Yellow > 6.0 Red > 25.0

### Notes

Unplanned Scrams per 7000 Critical Hrs	1Q/10	2Q/10	3Q/10	4Q/10	1Q/11	2Q/11	3Q/11	4Q/11
Unplanned scrams	0	1.0	0	0	0	0	0	0
Critical hours	1369.3	1543.5	2208.0	2209.0	2159.0	2109.7	2208.0	2209.0
Indicator value	0	1.0	1.0	1.0	0.9	0	0	0

Licensee Comments: none

## Unplanned Power Changes per 7000 Critical Hrs



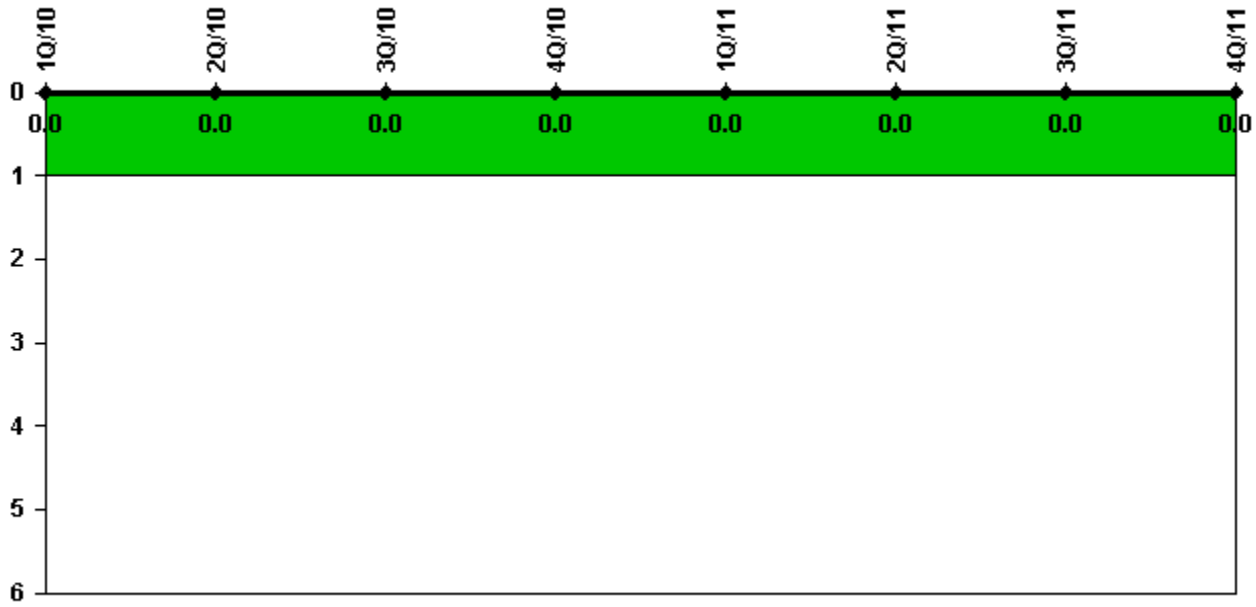
Thresholds: White > 6.0

### Notes

Unplanned Power Changes per 7000 Critical Hrs	1Q/10	2Q/10	3Q/10	4Q/10	1Q/11	2Q/11	3Q/11	4Q/11
Unplanned power changes	1.0	2.0	0	0	0	0	1.0	0
Critical hours	1369.3	1543.5	2208.0	2209.0	2159.0	2109.7	2208.0	2209.0
Indicator value	2.7	4.9	2.9	2.9	1.7	0	0.8	0.8

Licensee Comments: none

# Unplanned Scrams with Complications



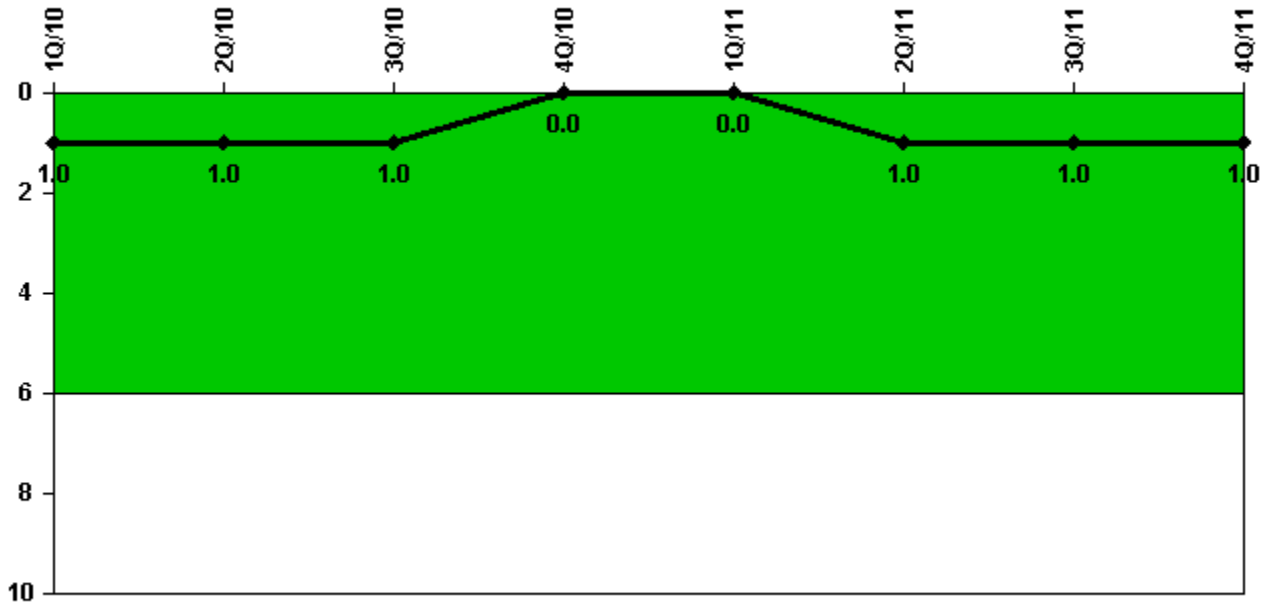
Thresholds: White > 1.0

## Notes

Unplanned Scrams with Complications	1Q/10	2Q/10	3Q/10	4Q/10	1Q/11	2Q/11	3Q/11	4Q/11
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 (BWR)



Thresholds: White > 6.0

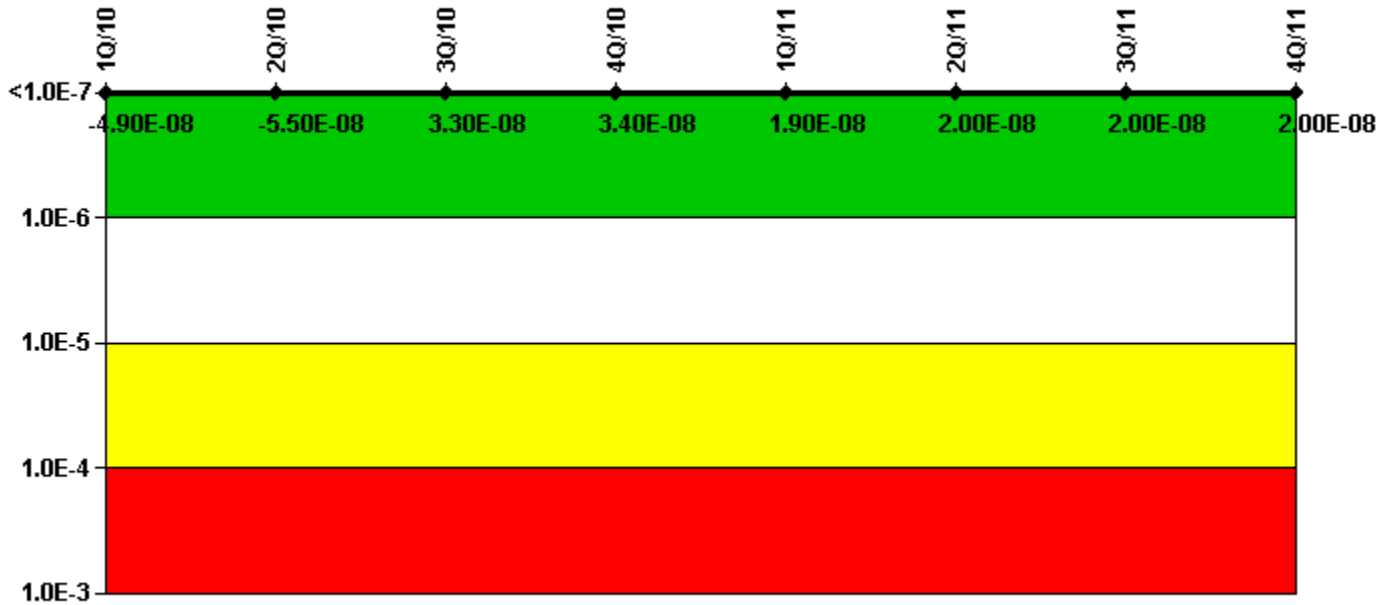
### Notes

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

Licensee Comments: none

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# Mitigating Systems Performance Index, Emergency AC Power System



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

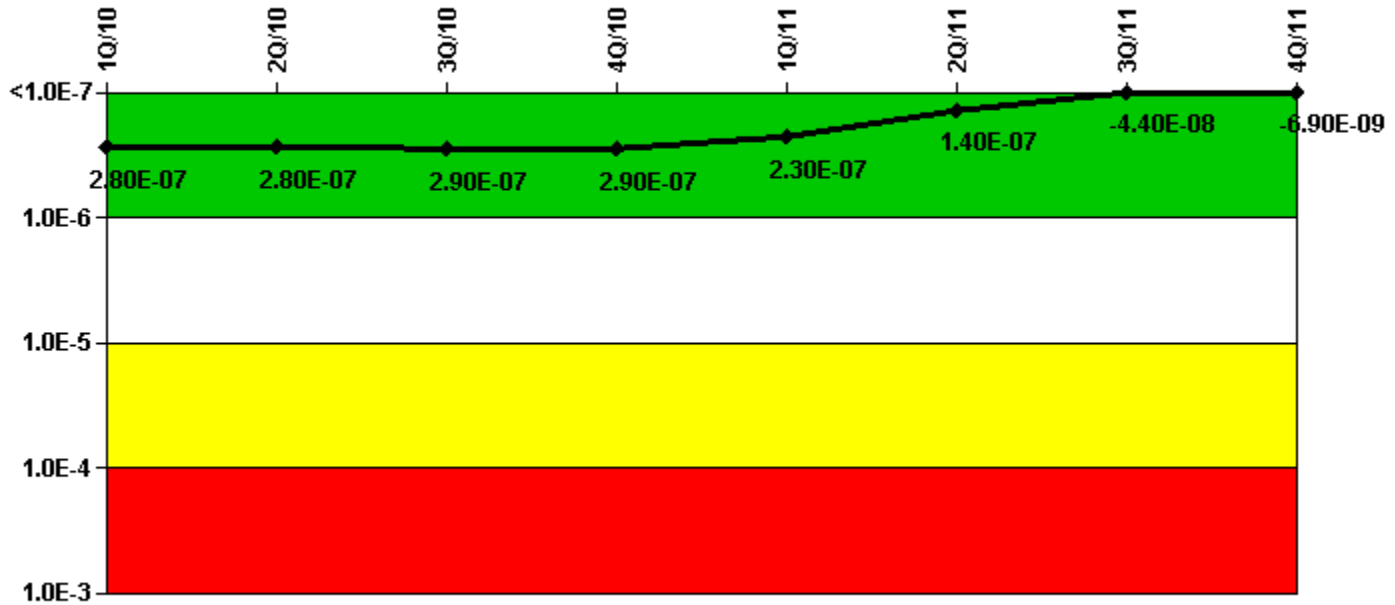
## Notes

Mitigating Systems Performance Index, Emergency AC Power System	1Q/10	2Q/10	3Q/10	4Q/10	1Q/11	2Q/11	3Q/11	4Q/11
UAI ( $\Delta$ CDF)	8.34E-10	-3.76E-09	-3.20E-09	-2.52E-09	-4.37E-09	-3.83E-09	-4.11E-09	7.64E-09
URI ( $\Delta$ CDF)	-4.98E-08	-5.09E-08	3.65E-08	3.65E-08	2.39E-08	2.39E-08	2.39E-08	1.23E-08
PLE	NO	NO	NO	NO	NO	NO	NO	NO
Indicator value	-4.90E-08	-5.50E-08	3.30E-08	3.40E-08	1.90E-08	2.00E-08	2.00E-08	2.00E-08

## Licensee Comments:

4Q/11: Changed PRA Parameter(s). Changes to Brunswick's plant-specific PRA were made resulting in new MSPI coefficients entered into CDE effective for the 4th quarter of 2011. Model changes included updating accident sequences for loss of offsite power analysis, providing more detailed common cause methods for component failures, changes to data related to component failures was updated to currently available data, and the human reliability analysis was updated to use the industry standard database. The plant-specific PRA and MSPI Basis Document were updated in the 3rd quarter and the 4th quarter of 2011, respectively.

# Mitigating Systems Performance Index, High Pressure Injection System



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

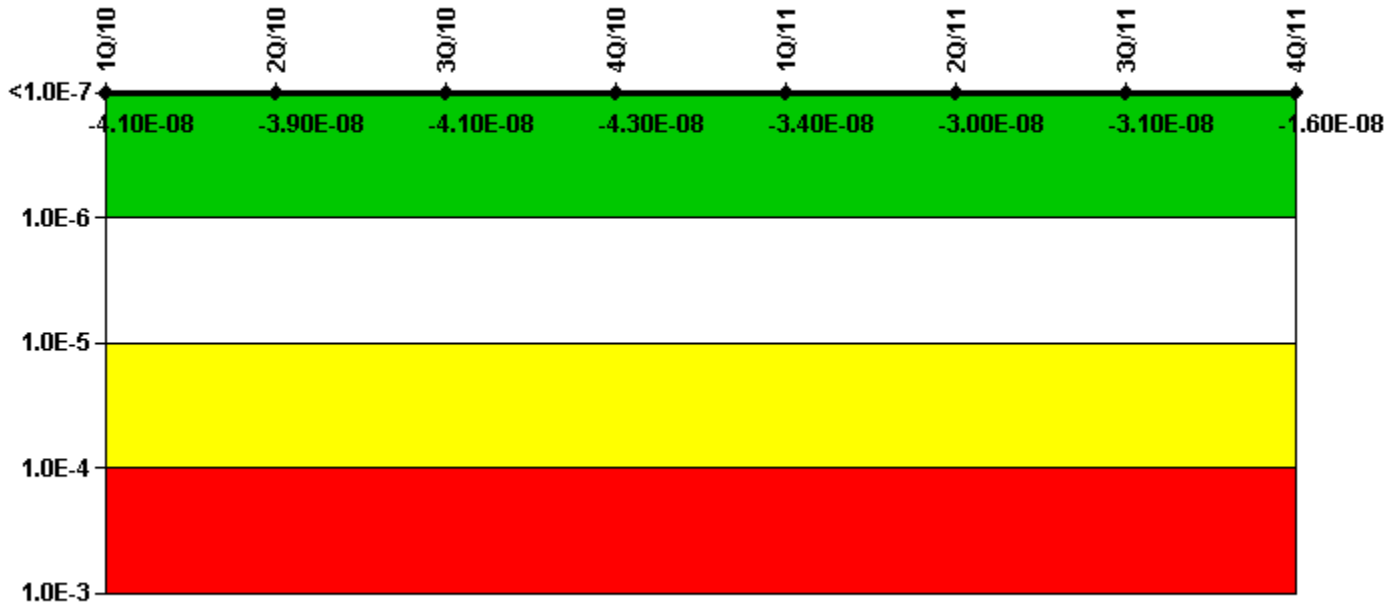
## Notes

Mitigating Systems Performance Index, High Pressure Injection System	1Q/10	2Q/10	3Q/10	4Q/10	1Q/11	2Q/11	3Q/11	4Q/11
UAI (ΔCDF)	2.00E-07	2.07E-07	2.11E-07	2.17E-07	1.69E-07	1.01E-07	1.52E-08	1.68E-09
URI (ΔCDF)	7.60E-08	7.65E-08	7.70E-08	7.70E-08	6.46E-08	3.49E-08	-5.88E-08	-8.57E-09
PLE	NO	NO	NO	NO	NO	NO	NO	NO
Indicator value	2.80E-07	2.80E-07	2.90E-07	2.90E-07	2.30E-07	1.40E-07	-4.40E-08	-6.90E-09

Licensee Comments:

4Q/11: Changed PRA Parameter(s). Changes to Brunswick's plant-specific PRA were made resulting in new MSPI coefficients entered into CDE effective for the 4th quarter of 2011. Model changes included updating accident sequences for loss of offsite power analysis, providing more detailed common cause methods for component failures, changes to data related to component failures was updated to currently available data, and the human reliability analysis was updated to use the industry standard database. The plant-specific PRA and MSPI Basis Document were updated in the 3rd quarter and the 4th quarter of 2011, respectively.

# Mitigating Systems Performance Index, Heat Removal System



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

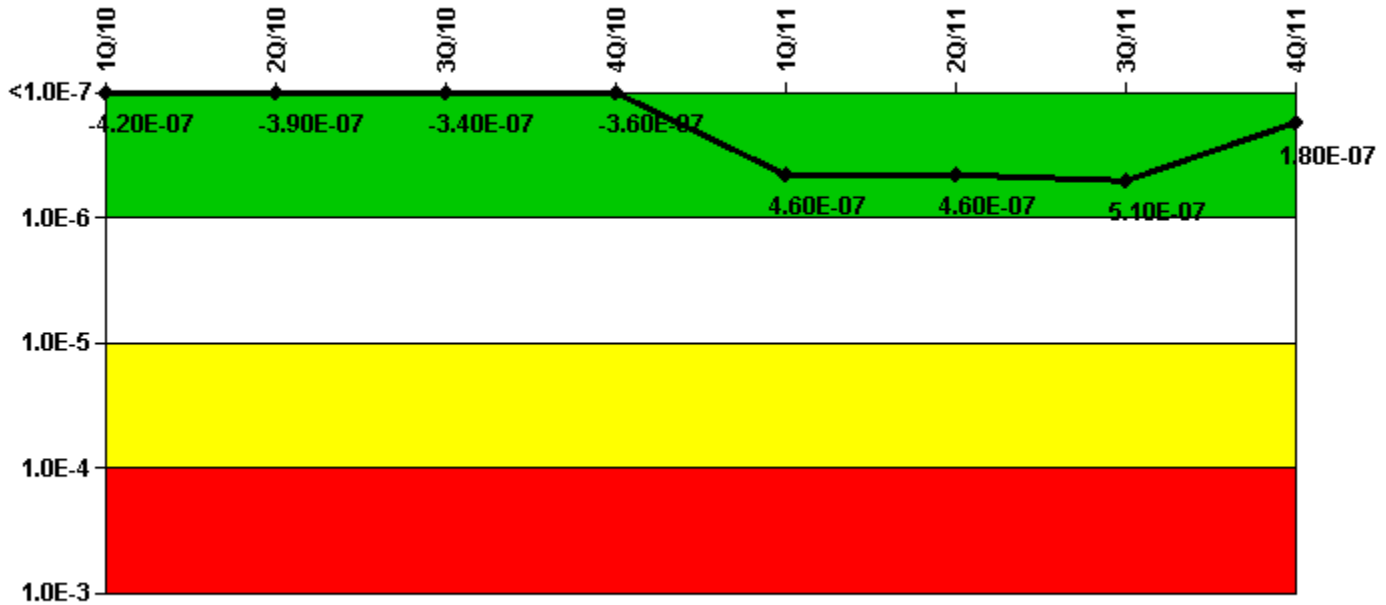
## Notes

Mitigating Systems Performance Index, Heat Removal System	1Q/10	2Q/10	3Q/10	4Q/10	1Q/11	2Q/11	3Q/11	4Q/11
UAI ( $\Delta$ CDF)	-5.60E-09	-3.39E-09	-6.50E-09	-8.30E-09	-6.81E-09	-3.15E-09	-3.44E-09	-1.46E-09
URI ( $\Delta$ CDF)	-3.55E-08	-3.51E-08	-3.48E-08	-3.48E-08	-2.71E-08	-2.71E-08	-2.72E-08	-1.42E-08
PLE	NO	NO	NO	NO	NO	NO	NO	NO
Indicator value	-4.10E-08	-3.90E-08	-4.10E-08	-4.30E-08	-3.40E-08	-3.00E-08	-3.10E-08	-1.60E-08

## Licensee Comments:

4Q/11: Changed PRA Parameter(s). Changes to Brunswick's plant-specific PRA were made resulting in new MSPI coefficients entered into CDE effective for the 4th quarter of 2011. Model changes included updating accident sequences for loss of offsite power analysis, providing more detailed common cause methods for component failures, changes to data related to component failures was updated to currently available data, and the human reliability analysis was updated to use the industry standard database. The plant-specific PRA and MSPI Basis Document were updated in the 3rd quarter and the 4th quarter of 2011, respectively.

# Mitigating Systems Performance Index, Residual Heat Removal System



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

## Notes

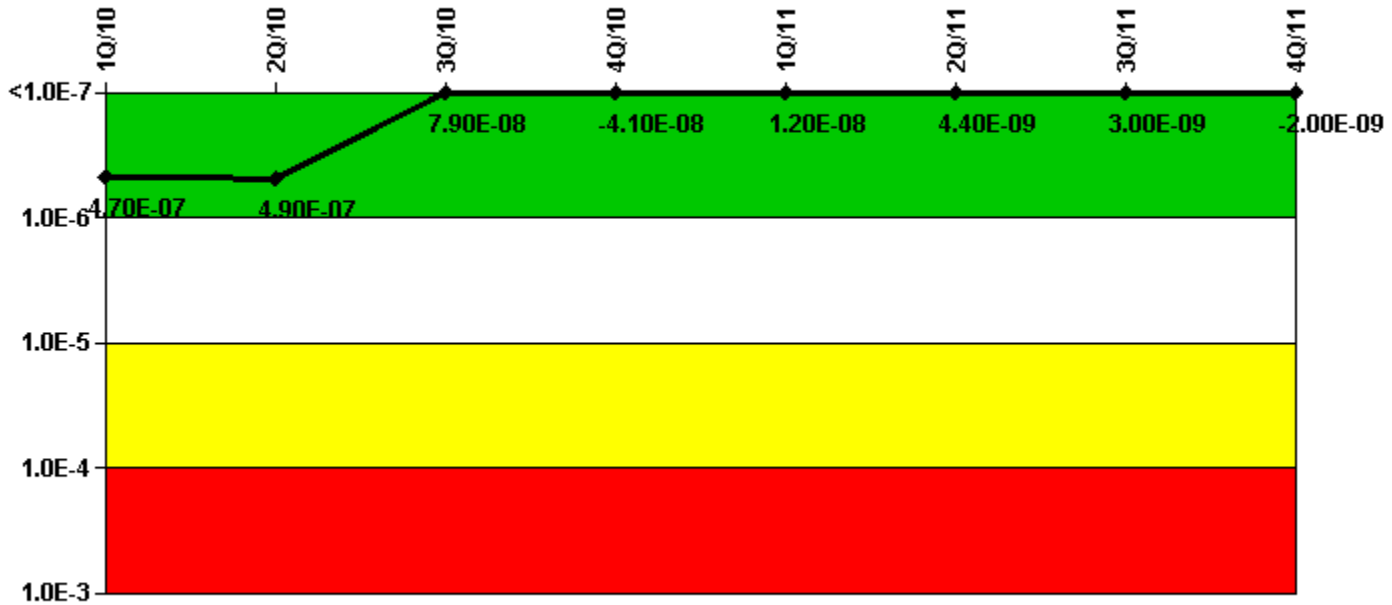
Mitigating Systems Performance Index, Residual Heat Removal System	1Q/10	2Q/10	3Q/10	4Q/10	1Q/11	2Q/11	3Q/11	4Q/11
UAI ( $\Delta$ CDF)	-5.46E-09	1.48E-08	4.81E-08	2.62E-08	3.39E-07	3.29E-07	3.77E-07	1.20E-07
URI ( $\Delta$ CDF)	-4.15E-07	-4.04E-07	-3.91E-07	-3.87E-07	1.25E-07	1.31E-07	1.37E-07	6.35E-08
PLE	NO	NO	NO	NO	NO	NO	NO	NO
Indicator value	-4.20E-07	-3.90E-07	-3.40E-07	-3.60E-07	4.60E-07	4.60E-07	5.10E-07	1.80E-07

Licensee Comments:

4Q/11: Changed PRA Parameter(s). Changes to Brunswick's plant-specific PRA were made resulting in new MSPI coefficients entered into CDE effective for the 4th quarter of 2011. Model changes included updating accident sequences for loss of offsite power analysis, providing more detailed common cause methods for component failures, changes to data related to component failures was updated to currently available data, and the human reliability analysis was updated to use the industry standard database. The plant-specific PRA and MSPI Basis Document were updated in the 3rd quarter and the 4th quarter of 2011, respectively.



# Mitigating Systems Performance Index, Cooling Water Systems



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

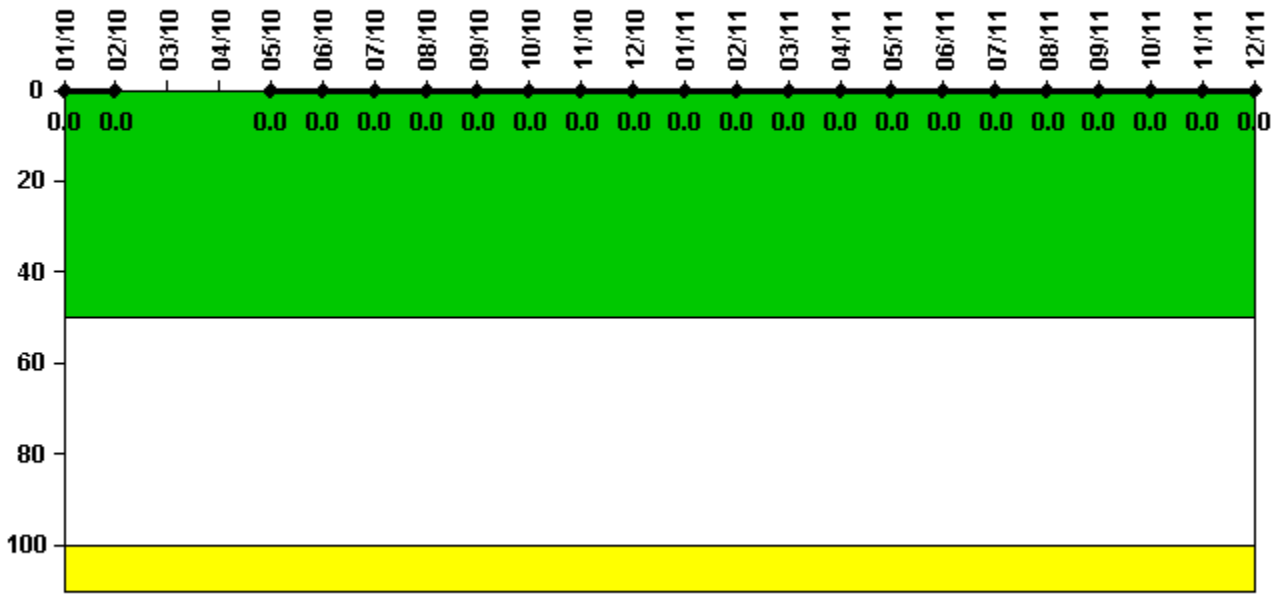
## Notes

Mitigating Systems Performance Index, Cooling Water Systems	1Q/10	2Q/10	3Q/10	4Q/10	1Q/11	2Q/11	3Q/11	4Q/11
UAI (ΔCDF)	4.23E-07	4.42E-07	9.23E-08	-2.75E-08	2.96E-08	2.20E-08	2.06E-08	-2.25E-09
URI (ΔCDF)	4.46E-08	4.43E-08	-1.33E-08	-1.33E-08	-1.75E-08	-1.75E-08	-1.75E-08	2.11E-10
PLE	NO	NO	NO	NO	NO	NO	NO	NO
Indicator value	4.70E-07	4.90E-07	7.90E-08	-4.10E-08	1.20E-08	4.40E-09	3.00E-09	-2.00E-09

## Licensee Comments:

4Q/11: Changed PRA Parameter(s). Changes to Brunswick's plant-specific PRA were made resulting in new MSPI coefficients entered into CDE effective for the 4th quarter of 2011. Model changes included updating accident sequences for loss of offsite power analysis, providing more detailed common cause methods for component failures, changes to data related to component failures was updated to currently available data, and the human reliability analysis was updated to use the industry standard database. The plant-specific PRA and MSPI Basis Document were updated in the 3rd quarter and the 4th quarter of 2011, respectively.

# Reactor Coolant System Activity



Thresholds: White > 50.0 Yellow > 100.0

## Notes

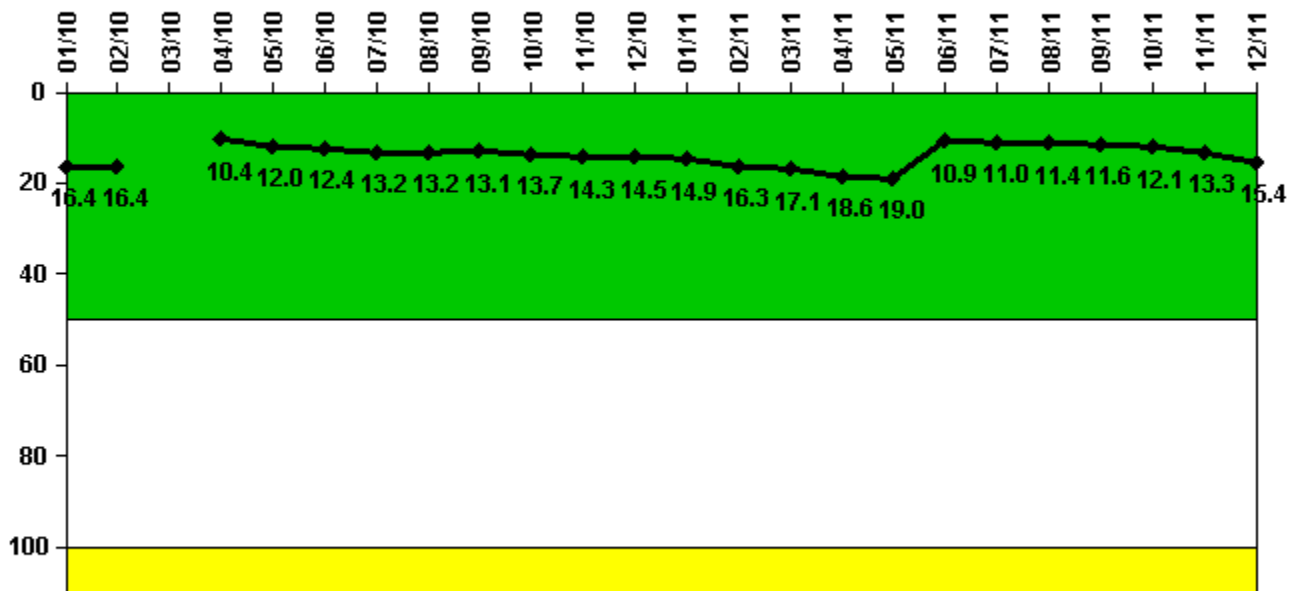
Reactor Coolant System Activity	1/10	2/10	3/10	4/10	5/10	6/10	7/10	8/10	9/10	10/10	11/10	12/10
Maximum activity	0.000070	0.000070	N/A	N/A	0.000042	0.000043	0.000048	0.000056	0.000050	0.000053	0.000057	0.000053
Technical specification limit	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
Indicator value	0	0	N/A	N/A	0	0	0	0	0	0	0	0

Reactor Coolant System Activity	1/11	2/11	3/11	4/11	5/11	6/11	7/11	8/11	9/11	10/11	11/11	12/11
Maximum activity	0.000053	0.000052	0.000060	0.000060	0.000058	0.000058	0.000061	0.000062	0.000062	0.000057	0.000058	0.000058
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

Licensee Comments: none

## Reactor Coolant System Leakage



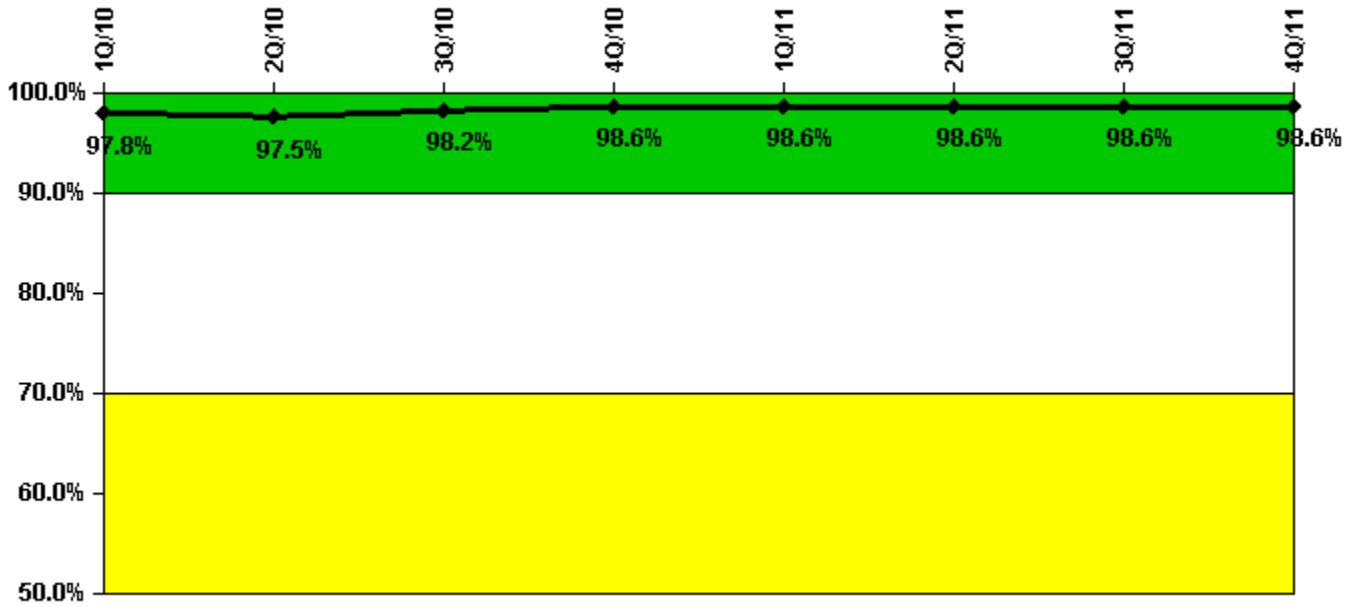
Thresholds: White > 50.0 Yellow > 100.0

### Notes

<b>Reactor Coolant System Leakage</b>	<b>1/10</b>	<b>2/10</b>	<b>3/10</b>	<b>4/10</b>	<b>5/10</b>	<b>6/10</b>	<b>7/10</b>	<b>8/10</b>	<b>9/10</b>	<b>10/10</b>	<b>11/10</b>	<b>12/10</b>
Maximum leakage	4.100	4.100	N/A	2.600	3.000	3.100	3.300	3.300	3.270	3.420	3.580	3.620
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	16.4	16.4	N/A	10.4	12.0	12.4	13.2	13.2	13.1	13.7	14.3	14.5
<b>Reactor Coolant System Leakage</b>	<b>1/11</b>	<b>2/11</b>	<b>3/11</b>	<b>4/11</b>	<b>5/11</b>	<b>6/11</b>	<b>7/11</b>	<b>8/11</b>	<b>9/11</b>	<b>10/11</b>	<b>11/11</b>	<b>12/11</b>
Maximum leakage	3.730	4.080	4.270	4.650	4.750	2.730	2.760	2.850	2.910	3.020	3.330	3.860
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	14.9	16.3	17.1	18.6	19.0	10.9	11.0	11.4	11.6	12.1	13.3	15.4

Licensee Comments: none

## Drill/Exercise Performance



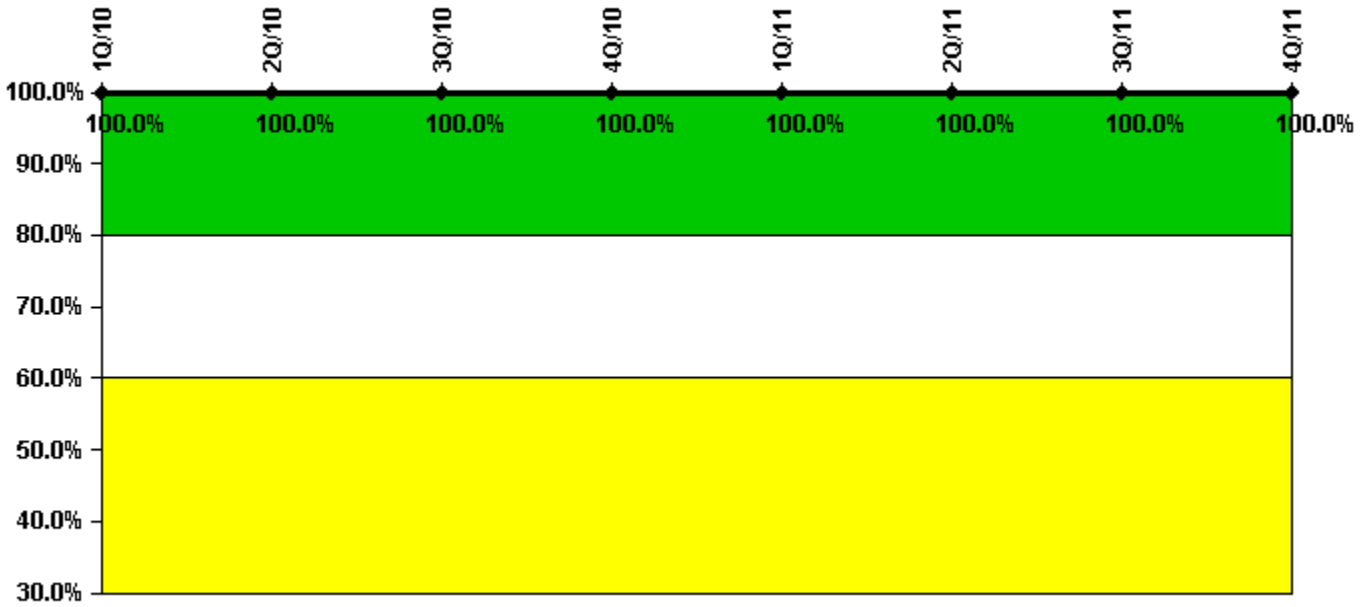
Thresholds: White < 90.0% Yellow < 70.0%

### Notes

Drill/Exercise Performance	1Q/10	2Q/10	3Q/10	4Q/10	1Q/11	2Q/11	3Q/11	4Q/11
Successful opportunities	4.0	30.0	50.0	39.0	10.0	31.0	4.0	38.0
Total opportunities	4.0	32.0	50.0	40.0	10.0	31.0	4.0	38.0
Indicator value	97.8%	97.5%	98.2%	98.6%	98.6%	98.6%	98.6%	98.6%

Licensee Comments: none

# ERO Drill Participation



Thresholds: White < 80.0% Yellow < 60.0%

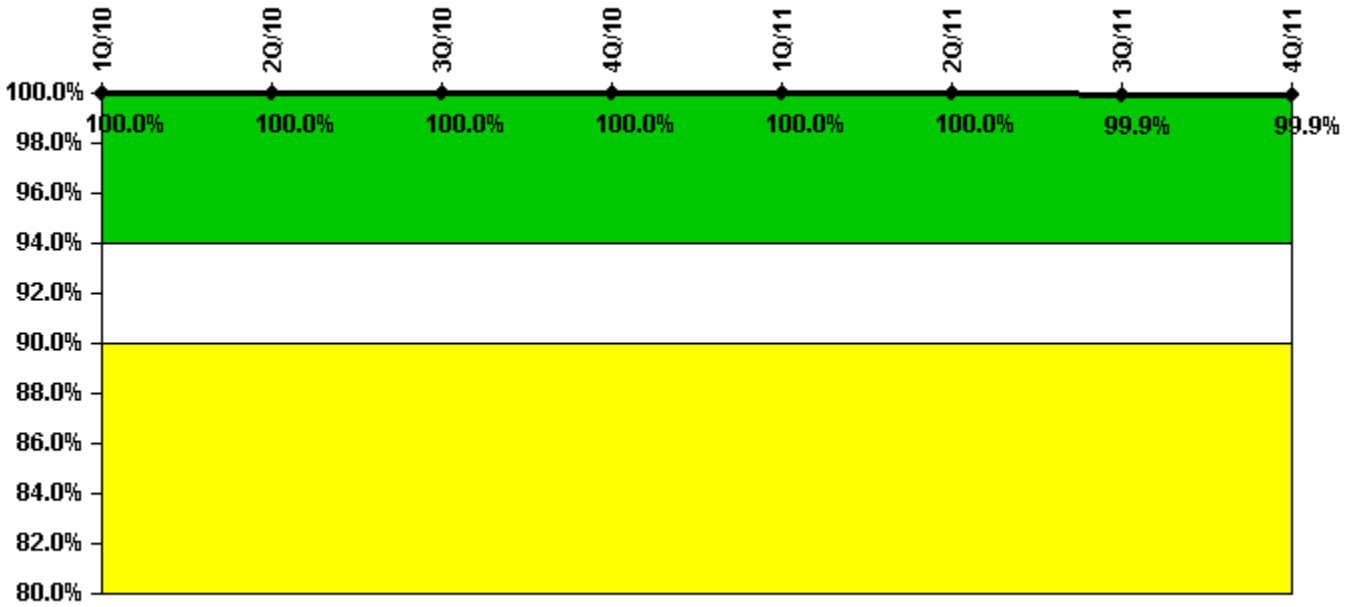
## Notes

ERO Drill Participation	1Q/10	2Q/10	3Q/10	4Q/10	1Q/11	2Q/11	3Q/11	4Q/11
Participating Key personnel	95.0	98.0	109.0	102.0	109.0	107.0	105.0	106.0
Total Key personnel	95.0	98.0	109.0	102.0	109.0	107.0	105.0	106.0
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



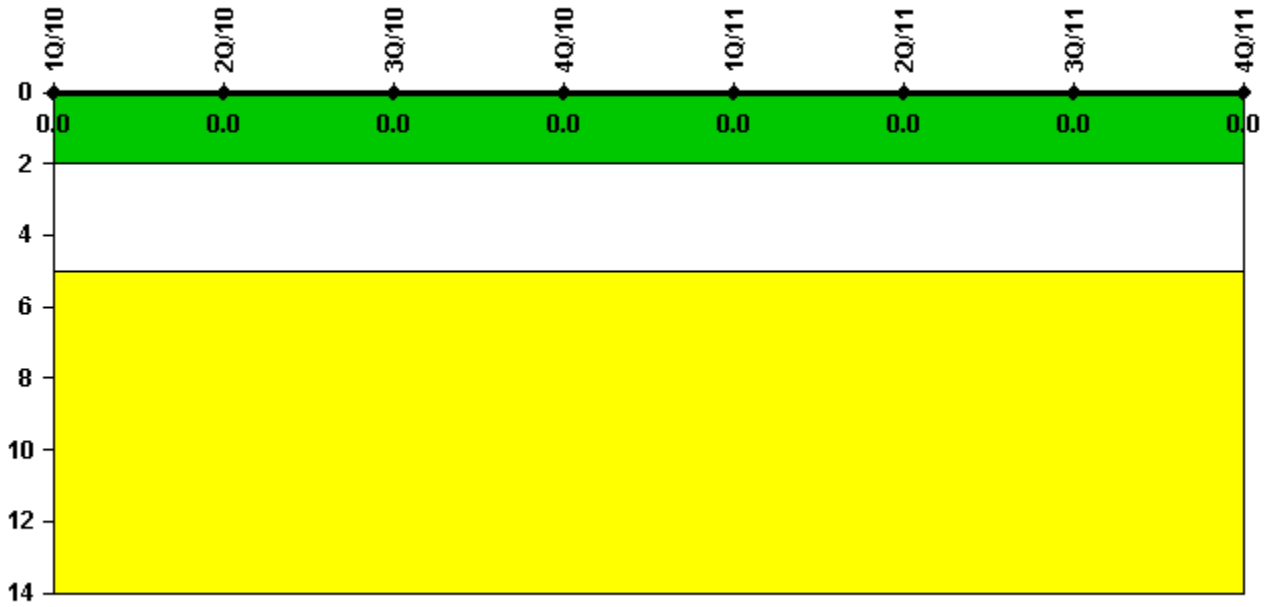
Thresholds: White < 94.0% Yellow < 90.0%

## Notes

Alert & Notification System	1Q/10	2Q/10	3Q/10	4Q/10	1Q/11	2Q/11	3Q/11	4Q/11
Successful siren-tests	532	532	532	570	532	532	530	570
Total sirens-tests	532	532	532	570	532	532	532	570
Indicator value	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	99.9%	99.9%

Licensee Comments: none

# Occupational Exposure Control Effectiveness



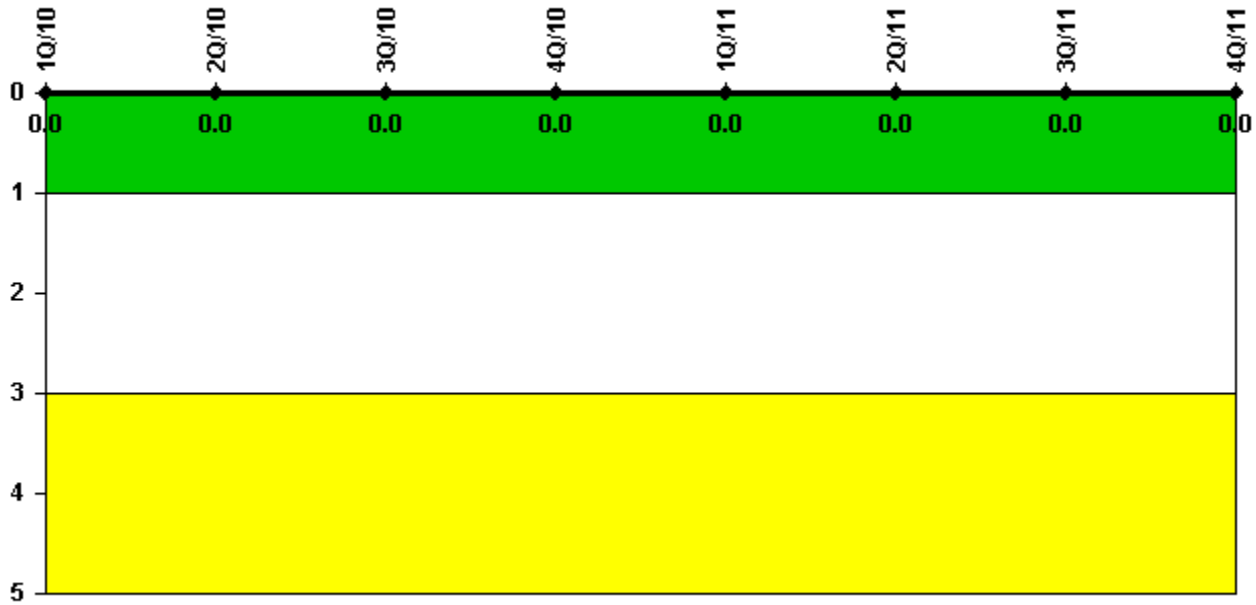
Thresholds: White > 2.0 Yellow > 5.0

## Notes

Occupational Exposure Control Effectiveness	1Q/10	2Q/10	3Q/10	4Q/10	1Q/11	2Q/11	3Q/11	4Q/11
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
<b>Indicator value</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>

Licensee Comments: none

## RETS/ODCM Radiological Effluent



Thresholds: White > 1.0 Yellow > 3.0

### Notes

RETS/ODCM Radiological Effluent	1Q/10	2Q/10	3Q/10	4Q/10	1Q/11	2Q/11	3Q/11	4Q/11
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.