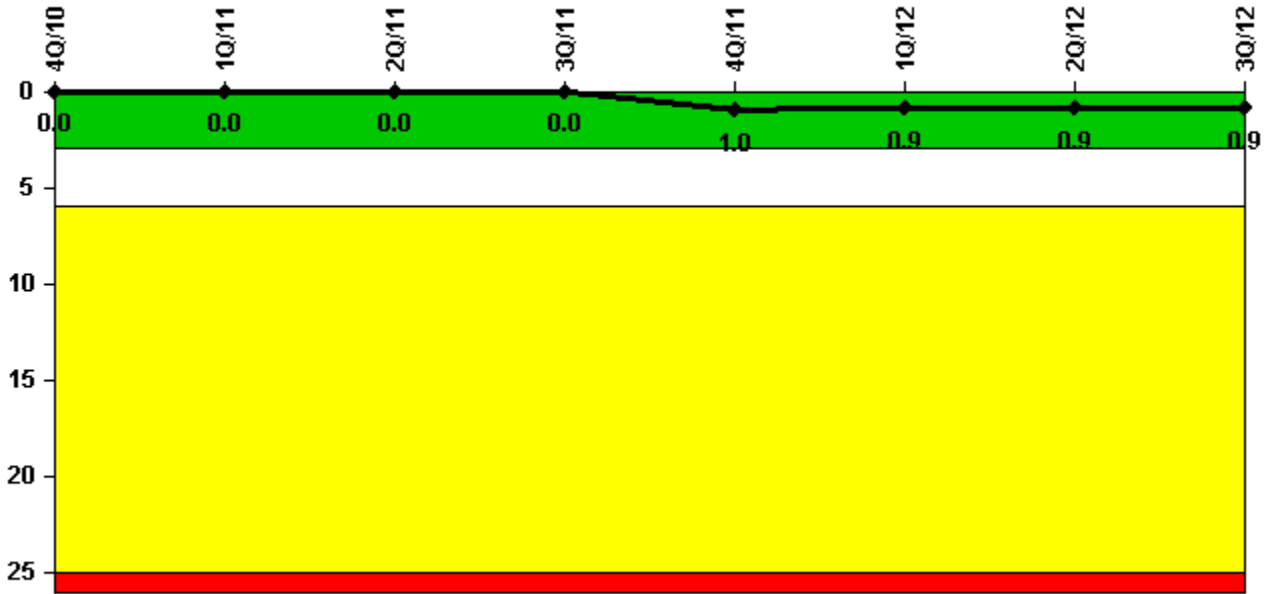


## Brunswick 2

### 3Q/2012 Performance Indicators

Licensee's General Comments: none

#### Unplanned Scrams per 7000 Critical Hrs



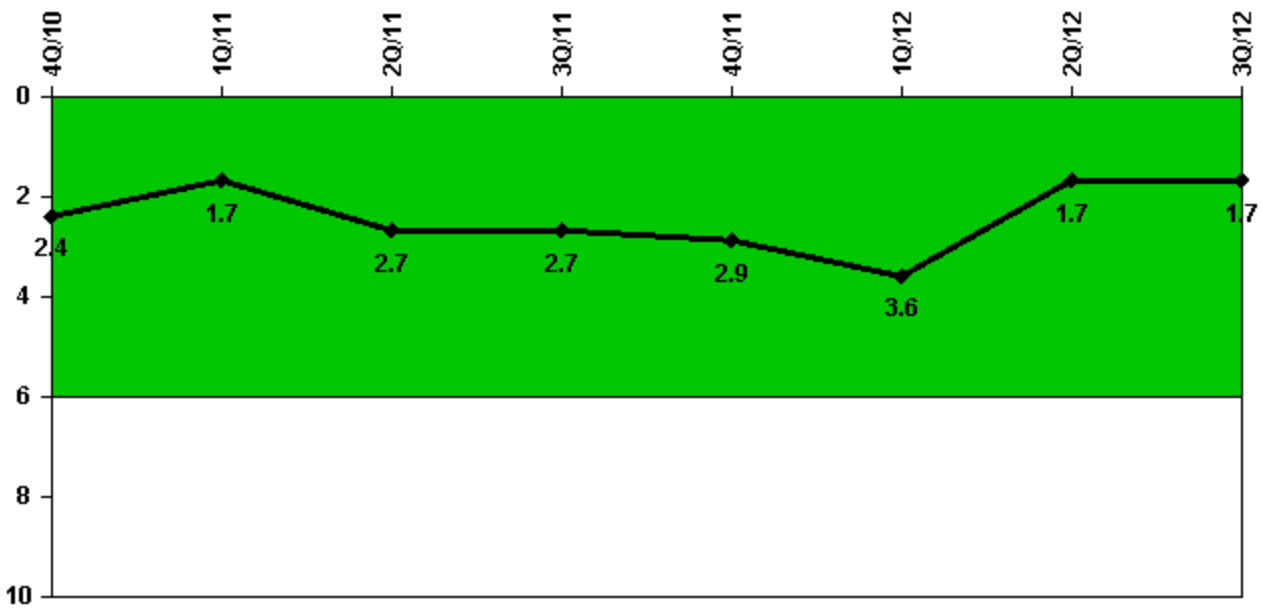
Thresholds: White > 3.0 Yellow > 6.0 Red > 25.0

#### Notes

Unplanned Scrams per 7000 Critical Hrs	4Q/10	1Q/11	2Q/11	3Q/11	4Q/11	1Q/12	2Q/12	3Q/12
Unplanned scrams	0	0	0	0	1.0	0	0	0
Critical hours	2209.0	1510.1	1847.5	2208.0	1605.1	2183.0	2184.0	2208.0
<b>Indicator value</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>1.0</b>	<b>0.9</b>	<b>0.9</b>	<b>0.9</b>

Licensee Comments: none

### Unplanned Power Changes per 7000 Critical Hrs



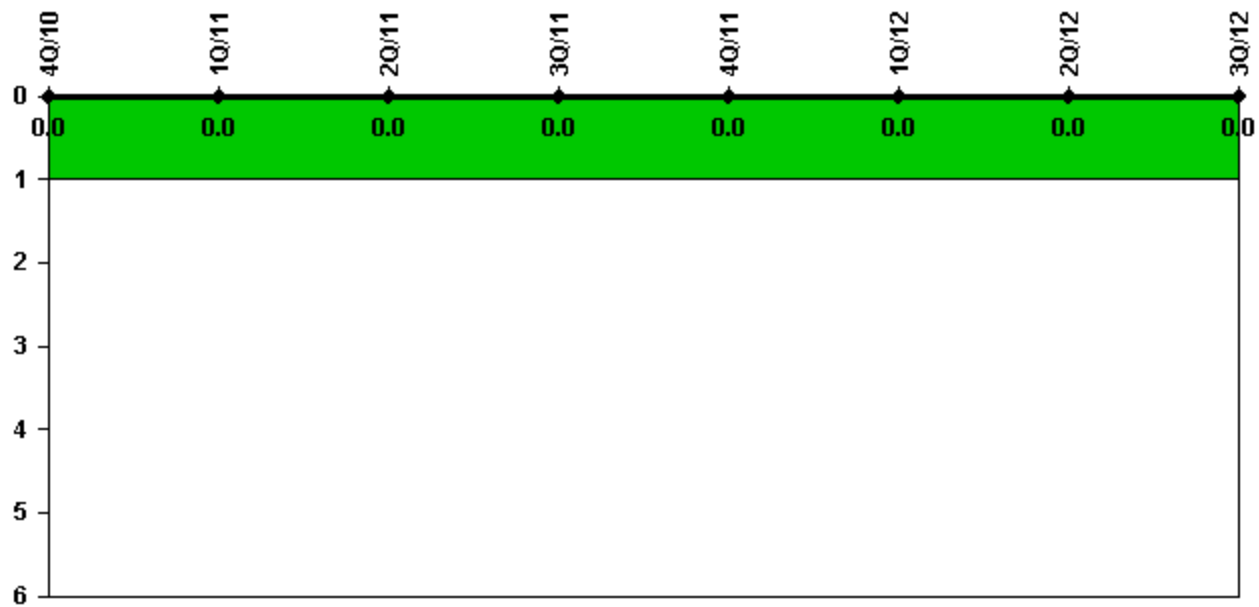
Thresholds: White > 6.0

#### Notes

Unplanned Power Changes per 7000 Critical Hrs	4Q/10	1Q/11	2Q/11	3Q/11	4Q/11	1Q/12	2Q/12	3Q/12
Unplanned power changes	1.0	0	2.0	0	1.0	1.0	0	0
Critical hours	2209.0	1510.1	1847.5	2208.0	1605.1	2183.0	2184.0	2208.0
<b>Indicator value</b>	<b>2.4</b>	<b>1.7</b>	<b>2.7</b>	<b>2.7</b>	<b>2.9</b>	<b>3.6</b>	<b>1.7</b>	<b>1.7</b>

Licensee Comments: none

### Unplanned Scrams with Complications



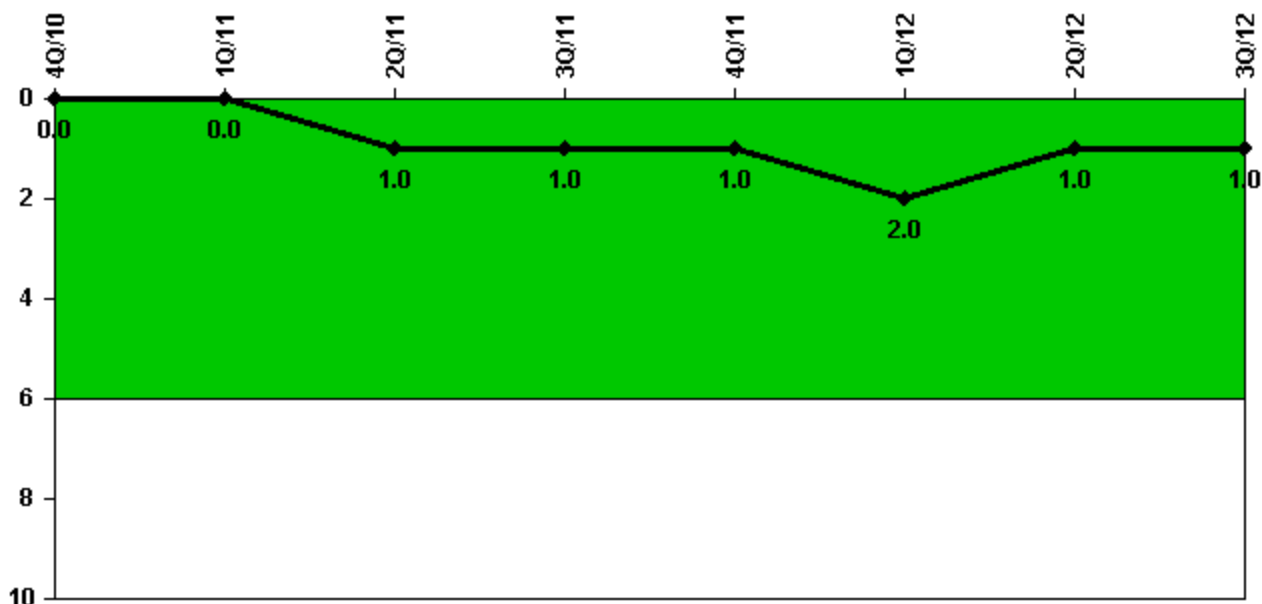
Thresholds: White > 1.0

#### Notes

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

Licensee Comments: none

### Safety System Functional Failures (BWR)



Thresholds: White > 6.0

#### Notes

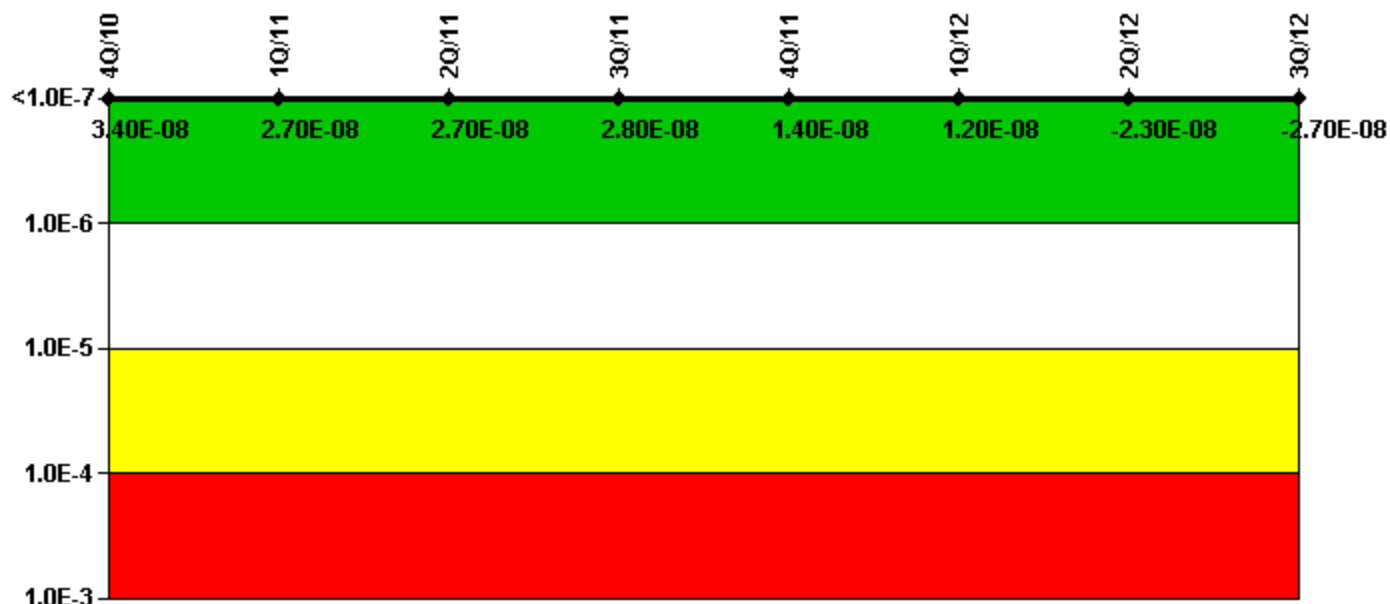
Safety System Functional Failures (BWR)	4Q/10	1Q/11	2Q/11	3Q/11	4Q/11	1Q/12	2Q/12	3Q/12
Safety System Functional Failures	0	0	1	0	0	1	0	0
<b>Indicator value</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>1</b>	<b>1</b>	<b>2</b>	<b>1</b>	<b>1</b>

Licensee Comments:

1Q/12: LER 1-2011-003 was submitted on January 30, 2012, for loss of Control Room Air Conditioning and Emergency Ventilation (CREV) due to failure of the control building instrument air dryer.

2Q/11: LER 1-2011-001 was submitted on 06/02/2011 for loss of Control Room Emergency Ventilation (CREV) due to trip of emergency bus E7.

### 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	4Q/10	1Q/11	2Q/11	3Q/11	4Q/11	1Q/12	2Q/12	3Q/12
UAI ( $\Delta$ CDF)	-9.92E-11	2.03E-10	4.38E-10	1.25E-09	4.27E-09	1.09E-09	2.46E-09	-4.61E-09
URI ( $\Delta$ CDF)	3.46E-08	2.68E-08	2.68E-08	2.68E-08	9.61E-09	1.12E-08	-2.56E-08	-2.21E-08
PLE	NO	NO	NO	NO	NO	NO	NO	NO
Indicator value	3.40E-08	2.70E-08	2.70E-08	2.80E-08	1.40E-08	1.20E-08	-2.30E-08	-2.70E-08

#### Licensee Comments:

1Q/12: The emergency diesel generators run time hours were revised to incorporate NRC approved FAQ 480. The run time hours decreased, and were entered as estimated beginning in the first quarter of 2012. The Brunswick MSPI Basis Document was revised in the 4th quarter of 2011.

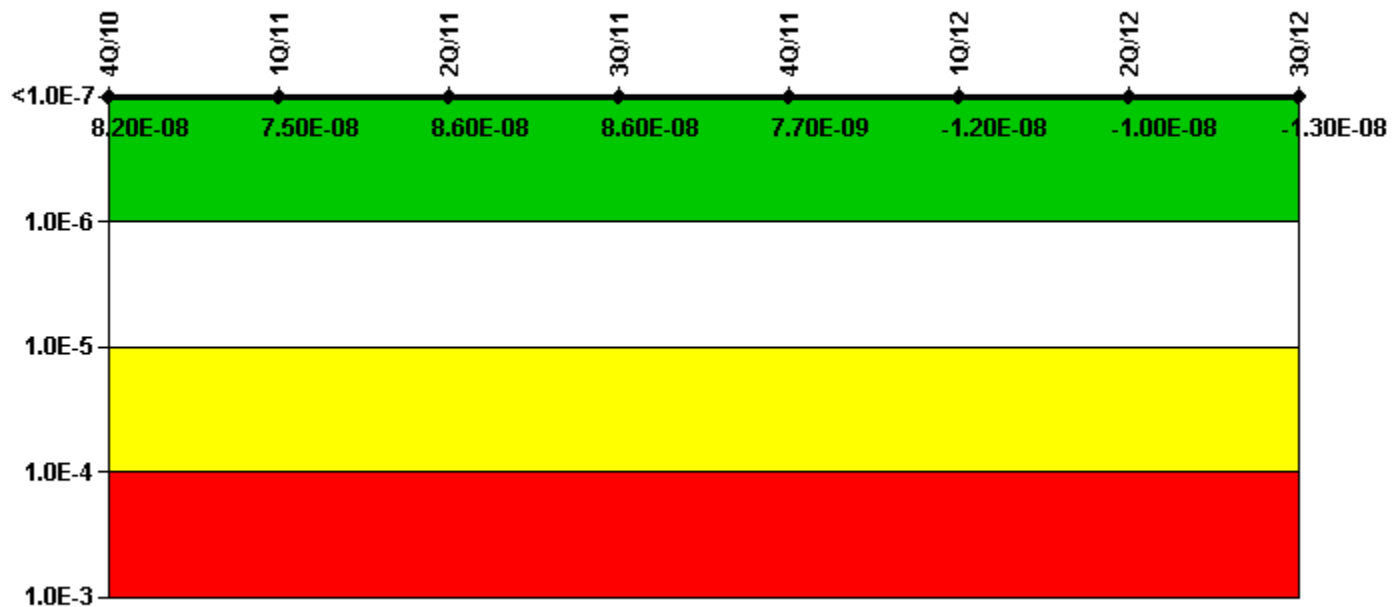
4Q/11: Changed PRA Parameter(s). Changes to Brunswick's plant-specific PRA were made resulting in new MSPI coefficients entered into CDE effective for the 4th quarter of 2011. Model changes included updating accident sequences for loss of offsite power analysis, providing more detailed common cause methods 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.

2Q/11: Changed PRA Parameter(s). PRA parameters were unchanged for the 2nd quarter. PRA parameters were entered into CDE in April (i.e., prior to April 21, in accordance with NEI 99-02) to be effective for the 1st quarter. See the 1st quarter submittal for explanation of changes.

1Q/11: Changed PRA Parameter(s). The Brunswick PRA model-of-record was revised in December 2010, and the revised MSPI coefficients were entered into INPOs CDE and the Brunswick MSPI Basis Document to be effective for the 1st Quarter of 2011. Changes included using plant-specific Common Cause Factors (CCFs) for the RHR system versus generic values, updated the instrument air system due to plant modifications, incorporated some Reg Guide 1.200 improvements, and updated ATWS to industry standard BWR methodology. Coefficients on all five MSPI systems for both Unit 1 and Unit 2 were affected by this revision. In addition, 96 hours of Planned Unavailability was added to the baseline for Emergency Diesel Generator (EDG) 2 and EDG 4, to account for a one-time maintenance evolution to replace the collector rings. These additional hours will be removed in the first quarter 2014.

4Q/10: A revision to previously submitted data has been made. It was identified in the 4th quarter that unavailability due to the performance of a PT was missed as follows: 4.15 hours in June 2010 to EDG4, 2.92 hours in July 2010 to EDG1, and 2.28 hours in September 2010 to DG3. The addition of these hours had negligible effect on the MSPI, and does not affect the color of the indicator.

### 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	4Q/10	1Q/11	2Q/11	3Q/11	4Q/11	1Q/12	2Q/12	3Q/12
UAI (ΔCDF)	2.93E-09	5.01E-09	1.52E-08	1.53E-08	-3.06E-09	-3.45E-09	-1.51E-09	-4.24E-09
URI (ΔCDF)	7.86E-08	7.04E-08	7.04E-08	7.04E-08	1.07E-08	-8.63E-09	-8.63E-09	-8.63E-09

PLE	NO	NO	NO	NO	NO	NO	NO	NO
<b>Indicator value</b>	<b>8.20E-08</b>	<b>7.50E-08</b>	<b>8.60E-08</b>	<b>8.60E-08</b>	<b>7.70E-09</b>	<b>-1.20E-08</b>	<b>-1.00E-08</b>	<b>-1.30E-08</b>

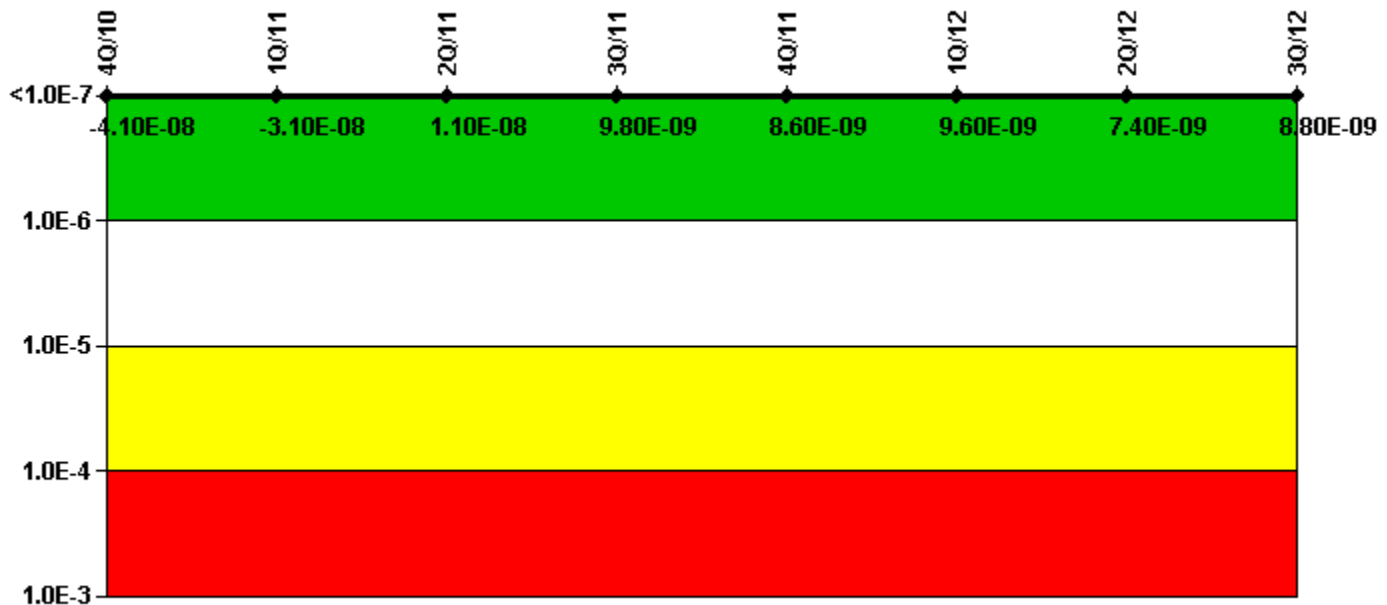
Licensee Comments:

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.

2Q/11: Changed PRA Parameter(s). PRA parameters were unchanged for the 2nd quarter. PRA parameters were entered into CDE in April (i.e., prior to April 21, in accordance with NEI 99-02) to be effective for the 1st quarter. See the 1st quarter submittal for explanation of changes.

1Q/11: Changed PRA Parameter(s). The Brunswick PRA model-of-record was revised in December 2010, and the revised MSPI coefficients were entered into INPOs CDE and the Brunswick MSPI Basis Document to be effective for the 1st Quarter of 2011. Changes included using plant-specific Common Cause Factors (CCFs) for the RHR system versus generic values, updated the instrument air system due to plant modifications, incorporated some Reg Guide 1.200 improvements, and updated ATWS to industry standard BWR methodology. Coefficients on all five MSPI systems for both Unit 1 and Unit 2 were affected by this revision.

### 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	4Q/10	1Q/11	2Q/11	3Q/11	4Q/11	1Q/12	2Q/12	3Q/12
UAI ( $\Delta$ CDF)	-7.57E-09	-2.53E-09	9.88E-09	9.58E-09	8.76E-09	1.00E-08	8.07E-09	9.78E-09
URI ( $\Delta$ CDF)	-3.39E-08	-2.88E-08	7.67E-10	2.25E-10	-1.22E-10	-4.00E-10	-6.70E-10	-9.35E-10
PLE	NO	NO	NO	NO	NO	NO	NO	NO
<b>Indicator value</b>	<b>-4.10E-08</b>	<b>-3.10E-08</b>	<b>1.10E-08</b>	<b>9.80E-09</b>	<b>8.60E-09</b>	<b>9.60E-09</b>	<b>7.40E-09</b>	<b>8.80E-09</b>

## Licensee Comments:

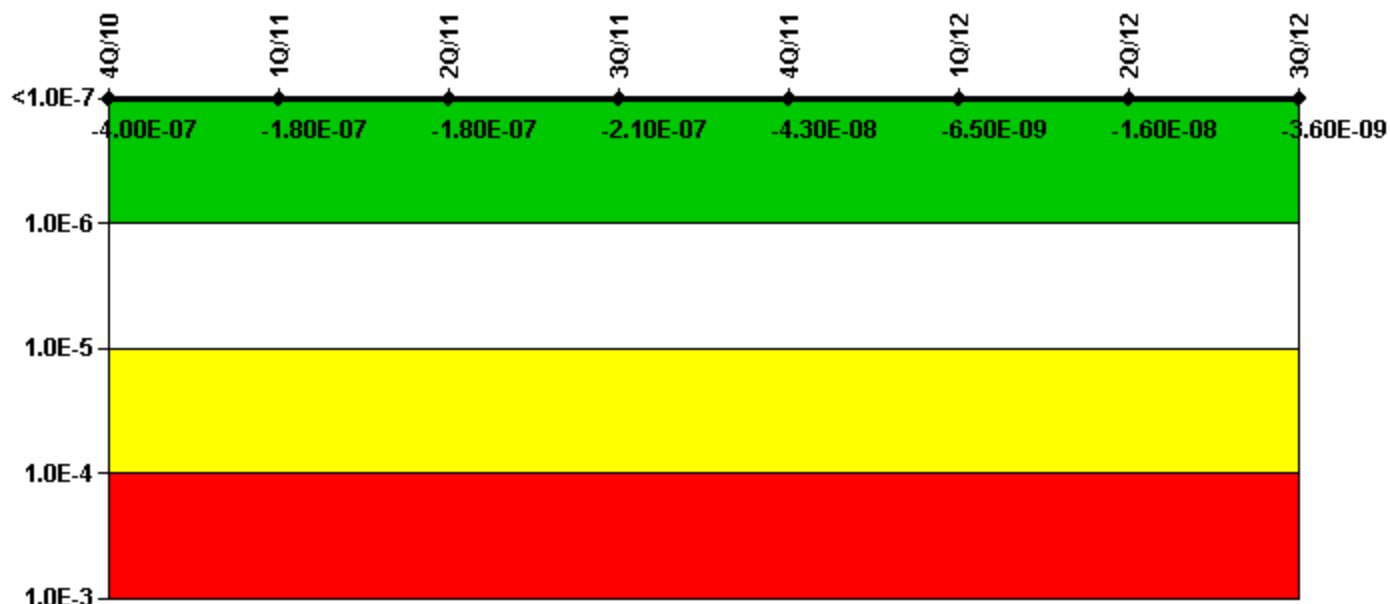
4Q/11: Changed PRA Parameter(s). Changes to Brunswick's plant-specific PRA were made resulting in new MSPI coefficients entered into CDE effective for the 4th quarter of 2011. Model changes included updating accident sequences for loss of offsite power analysis, providing more detailed common cause methods 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.

2Q/11: Changed PRA Parameter(s). PRA parameters were unchanged for the 2nd quarter. PRA parameters were entered into CDE in April (i.e., prior to April 21, in accordance with NEI 99-02) to be effective for the 1st quarter. See the 1st quarter submittal for explanation of changes.

1Q/11: Changed PRA Parameter(s). The Brunswick PRA model-of-record was revised in December 2010, and the revised MSPI coefficients were entered into INPOs CDE and the Brunswick MSPI Basis Document to be effective for the 1st Quarter of 2011. Changes included using plant-specific Common Cause Factors (CCFs) for the RHR system versus generic values, updated the instrument air system due to plant modifications, incorporated some Reg Guide 1.200 improvements, and updated ATWS to industry standard BWR methodology. Coefficients on all five MSPI systems for both Unit 1 and Unit 2 were affected by this revision.



## 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	4Q/10	1Q/11	2Q/11	3Q/11	4Q/11	1Q/12	2Q/12	3Q/12
UAI ( $\Delta$ CDF)	-2.18E-08	-1.38E-08	-1.29E-08	-4.12E-08	4.53E-08	7.99E-08	6.84E-08	7.89E-08
URI ( $\Delta$ CDF)	-3.78E-07	-1.70E-07	-1.67E-07	-1.64E-07	-8.83E-08	-8.64E-08	-8.45E-08	-8.24E-08
PLE	NO	NO	NO	NO	NO	NO	NO	NO
Indicator value	<b>-4.00E-07</b>	<b>-1.80E-07</b>	<b>-1.80E-07</b>	<b>-2.10E-07</b>	<b>-4.30E-08</b>	<b>-6.50E-09</b>	<b>-1.60E-08</b>	<b>-3.60E-09</b>

### Licensee Comments:

1Q/12: Changed PRA Parameter(s). The planned baseline unavailability hours were revised to include a chemical decontamination of the Unit 2 RHR system (an infrequent activity). These hours shall be removed beginning in the 4th quarter of 2014. The Brunswick MSPI Basis Document was revised in the 4th quarter of 2011, incorporating these changes.

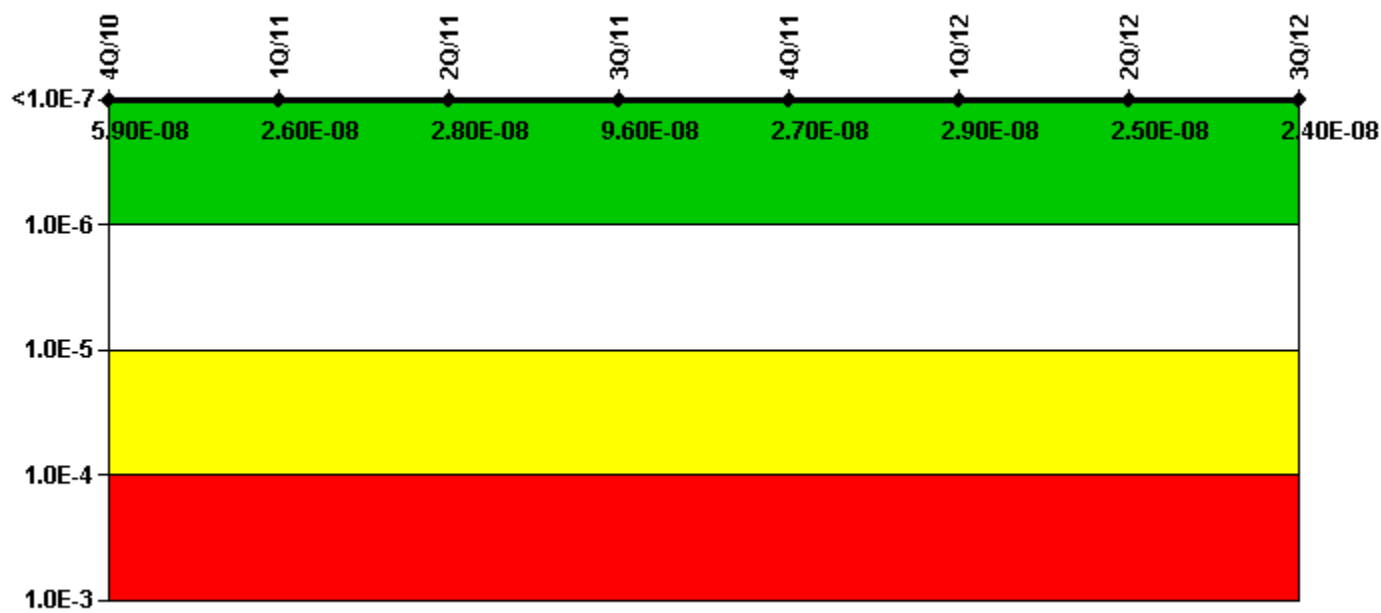
4Q/11: Changed PRA Parameter(s). Changes to Brunswick's plant-specific PRA were made resulting in new MSPI coefficients entered into CDE effective for the 4th quarter of 2011. Model changes included updating accident sequences for loss of offsite power analysis, providing more detailed common cause methods 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.

2Q/11: Changed PRA Parameter(s). PRA parameters were unchanged for the 2nd quarter. PRA parameters were entered into CDE in April (i.e., prior to April 21, in accordance with NEI 99-02) to be effective for the 1st quarter.

See the 1st quarter submittal for explanation of changes.

1Q/11: Changed PRA Parameter(s). The Brunswick PRA model-of-record was revised in December 2010, and the revised MSPI coefficients were entered into INPOs CDE and the Brunswick MSPI Basis Document to be effective for the 1st Quarter of 2011. Changes included using plant-specific Common Cause Factors (CCFs) for the RHR system versus generic values, updated the instrument air system due to plant modifications, incorporated some Reg Guide 1.200 improvements, and updated ATWS to industry standard BWR methodology. Coefficients on all five MSPI systems for both Unit 1 and Unit 2 were affected by this revision.

### 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	4Q/10	1Q/11	2Q/11	3Q/11	4Q/11	1Q/12	2Q/12	3Q/12
UAI (ΔCDF)	6.69E-08	4.23E-08	4.48E-08	1.05E-07	3.11E-08	3.26E-08	2.89E-08	2.81E-08
URI (ΔCDF)	-7.69E-09	-1.66E-08	-1.66E-08	-9.40E-09	-3.69E-09	-3.70E-09	-3.71E-09	-3.71E-09
PLE	NO	NO	NO	NO	NO	NO	NO	NO
Indicator value	5.90E-08	2.60E-08	2.80E-08	9.60E-08	2.70E-08	2.90E-08	2.50E-08	2.40E-08

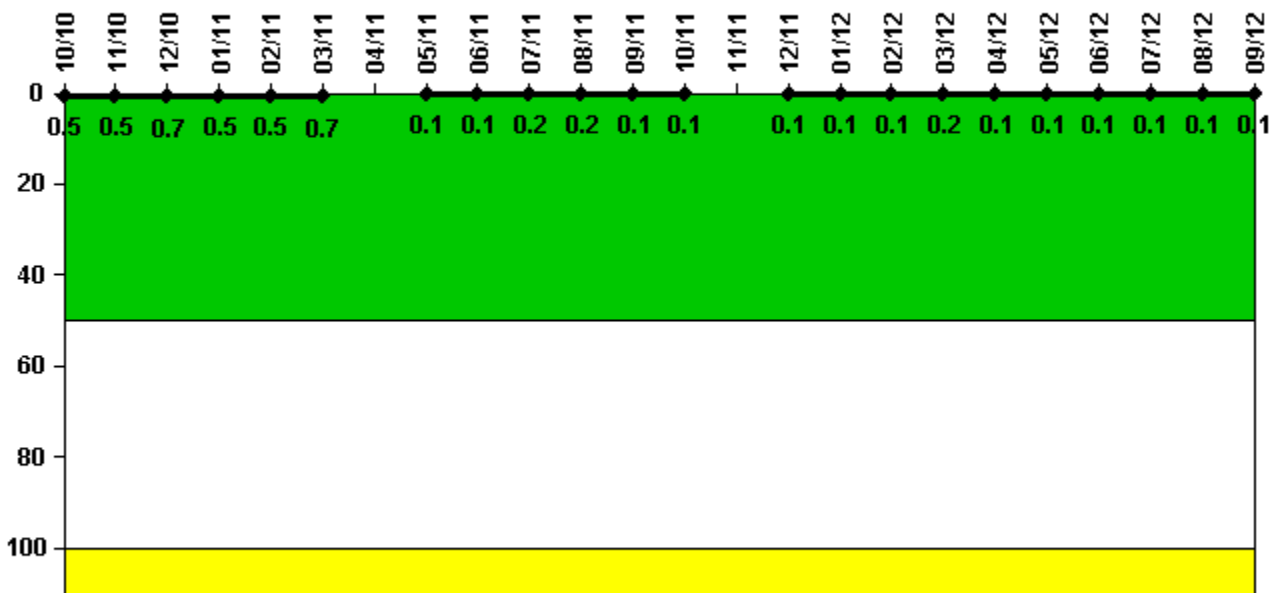
Licensee Comments:

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.

2Q/11: Changed PRA Parameter(s). PRA parameters were unchanged for the 2nd quarter. PRA parameters were entered into CDE in April (i.e., prior to April 21, in accordance with NEI 99-02) to be effective for the 1st quarter. See the 1st quarter submittal for explanation of changes.

1Q/11: Changed PRA Parameter(s). The Brunswick PRA model-of-record was revised in December 2010, and the revised MSPI coefficients were entered into INPOs CDE and the Brunswick MSPI Basis Document to be effective for the 1st Quarter of 2011. Changes included using plant-specific Common Cause Factors (CCFs) for the RHR system versus generic values, updated the instrument air system due to plant modifications, incorporated some Reg Guide 1.200 improvements, and updated ATWS to industry standard BWR methodology. Coefficients on all five MSPI systems for both Unit 1 and Unit 2 were affected by this revision.

### Reactor Coolant System Activity



Thresholds: White > 50.0 Yellow > 100.0

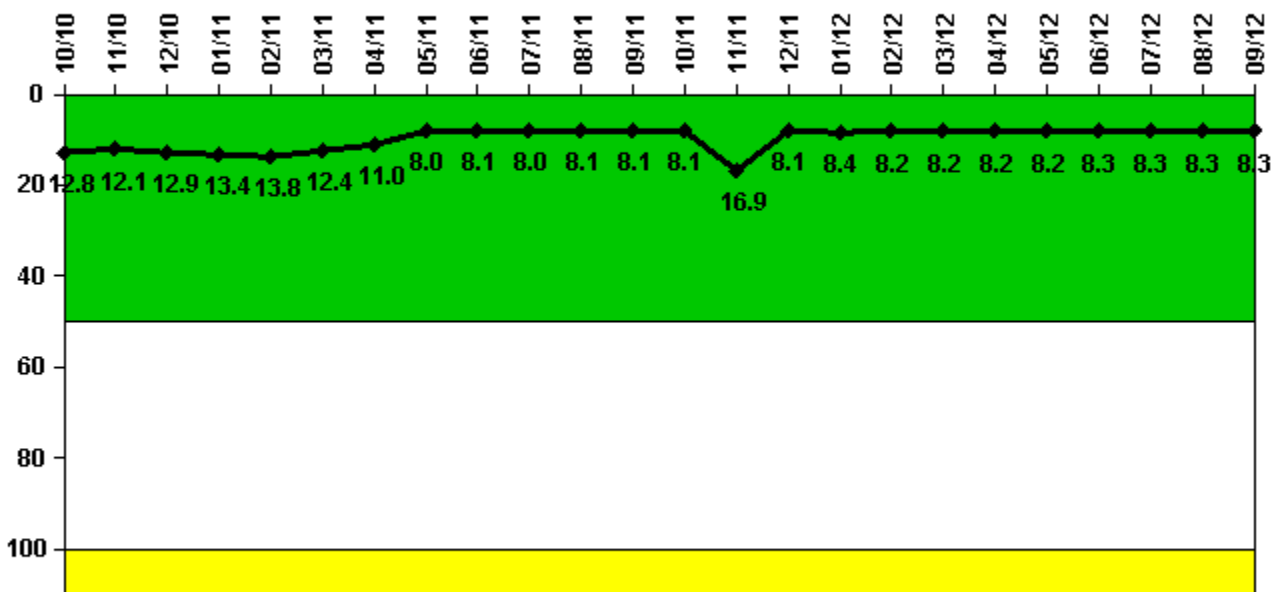
### Notes

Reactor Coolant System Activity	10/10	11/10	12/10	1/11	2/11	3/11	4/11	5/11	6/11	7/11	8/11	9/11
Maximum activity	0.000962	0.000900	0.001326	0.000962	0.000939	0.001409	N/A	0.000268	0.000276	0.000302	0.000342	0.000257
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
<b>Indicator value</b>	<b>0.5</b>	<b>0.5</b>	<b>0.7</b>	<b>0.5</b>	<b>0.5</b>	<b>0.7</b>	<b>N/A</b>	<b>0.1</b>	<b>0.1</b>	<b>0.2</b>	<b>0.2</b>	<b>0.1</b>
<b>Reactor Coolant System Activity</b>	<b>10/11</b>	<b>11/11</b>	<b>12/11</b>	<b>1/12</b>	<b>2/12</b>	<b>3/12</b>	<b>4/12</b>	<b>5/12</b>	<b>6/12</b>	<b>7/12</b>	<b>8/12</b>	<b>9/12</b>
Maximum activity	0.000299	N/A	0.000209	0.000230	0.000236	0.000312	0.000262	0.000248	0.000233	0.000245	0.000290	0.000248
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
<b>Indicator value</b>	<b>0.1</b>	<b>N/A</b>	<b>0.1</b>	<b>0.1</b>	<b>0.1</b>	<b>0.2</b>	<b>0.1</b>	<b>0.1</b>	<b>0.1</b>	<b>0.1</b>	<b>0.1</b>	<b>0.1</b>

Licensee Comments: none

### Reactor Coolant System Leakage



Thresholds: White > 50.0 Yellow > 100.0

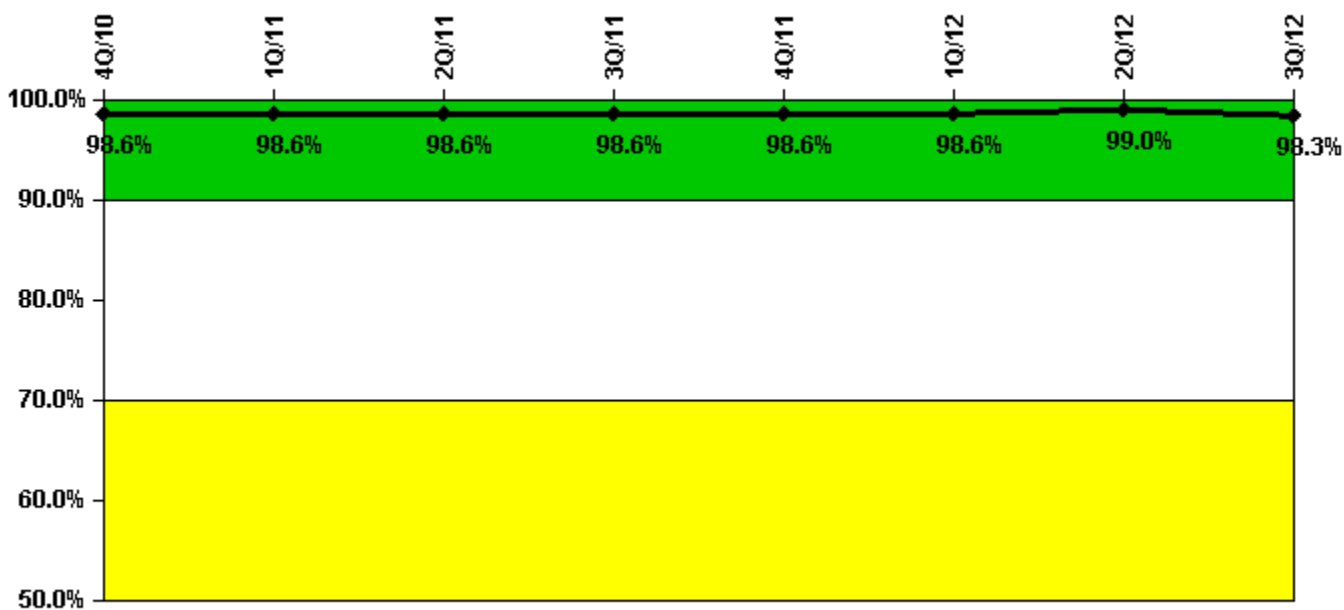
### Notes

Reactor Coolant System Leakage	10/10	11/10	12/10	1/11	2/11	3/11	4/11	5/11	6/11	7/11	8/11	9/11
Maximum leakage	3.190	3.020	3.220	3.350	3.460	3.110	2.760	2.000	2.020	2.010	2.020	2.020
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
<b>Indicator value</b>	<b>12.8</b>	<b>12.1</b>	<b>12.9</b>	<b>13.4</b>	<b>13.8</b>	<b>12.4</b>	<b>11.0</b>	<b>8.0</b>	<b>8.1</b>	<b>8.0</b>	<b>8.1</b>	<b>8.1</b>
Reactor Coolant System Leakage	10/11	11/11	12/11	1/12	2/12	3/12	4/12	5/12	6/12	7/12	8/12	9/12

Maximum leakage	2.020	4.220	2.020	2.110	2.040	2.040	2.040	2.060	2.070	2.080	2.070	2.080
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
<b>Indicator value</b>	<b>8.1</b>	<b>16.9</b>	<b>8.1</b>	<b>8.4</b>	<b>8.2</b>	<b>8.2</b>	<b>8.2</b>	<b>8.2</b>	<b>8.3</b>	<b>8.3</b>	<b>8.3</b>	<b>8.3</b>

Licensee Comments: none

### Drill/Exercise Performance



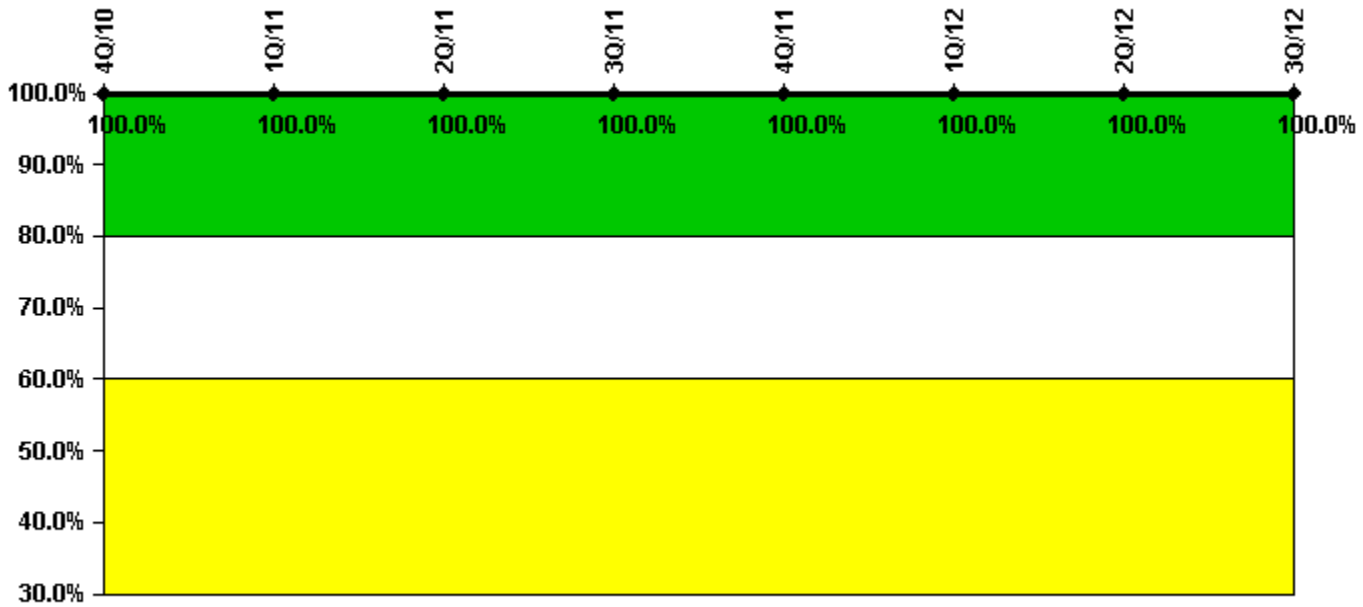
Thresholds: White < 90.0% Yellow < 70.0%

### Notes

Drill/Exercise Performance	4Q/10	1Q/11	2Q/11	3Q/11	4Q/11	1Q/12	2Q/12	3Q/12
Successful opportunities	39.0	10.0	31.0	4.0	38.0	8.0	17.0	26.0
Total opportunities	40.0	10.0	31.0	4.0	38.0	8.0	18.0	27.0
<b>Indicator value</b>	<b>98.6%</b>	<b>98.6%</b>	<b>98.6%</b>	<b>98.6%</b>	<b>98.6%</b>	<b>98.6%</b>	<b>99.0%</b>	<b>98.3%</b>

Licensee Comments: none

### ERO Drill Participation



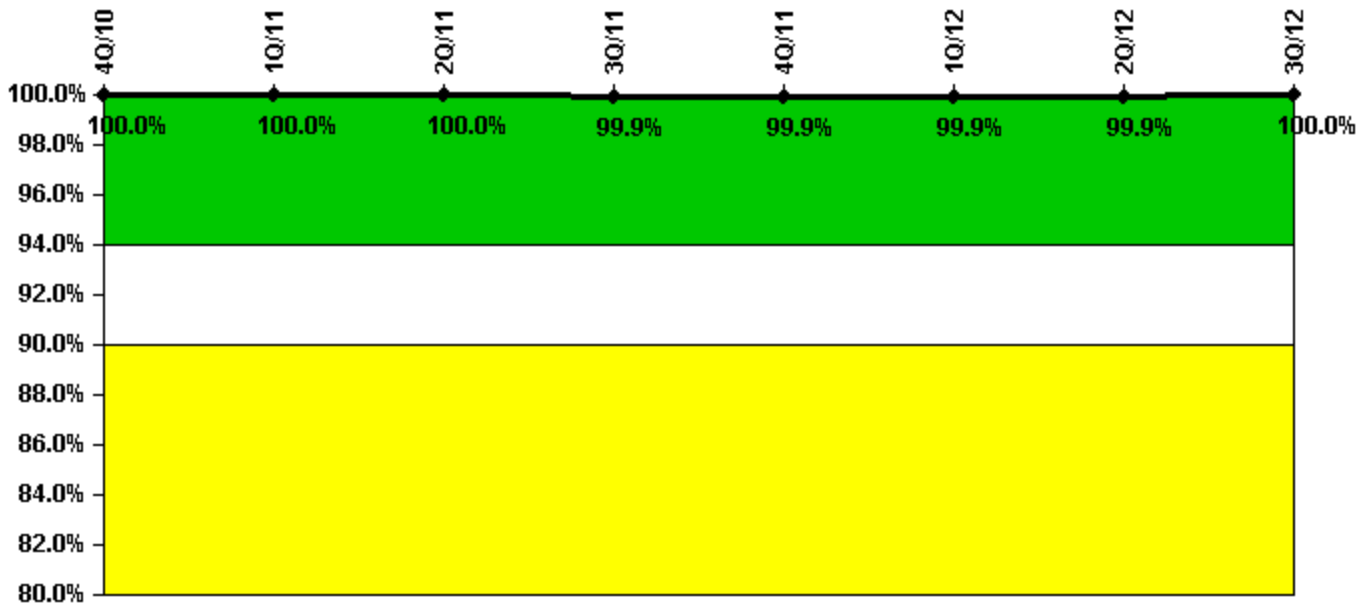
Thresholds: White < 80.0% Yellow < 60.0%

#### Notes

ERO Drill Participation	4Q/10	1Q/11	2Q/11	3Q/11	4Q/11	1Q/12	2Q/12	3Q/12
Participating Key personnel	102.0	109.0	107.0	105.0	106.0	103.0	103.0	100.0
Total Key personnel	102.0	109.0	107.0	105.0	106.0	103.0	103.0	100.0
Indicator value	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Licensee Comments: none

### Alert & Notification System



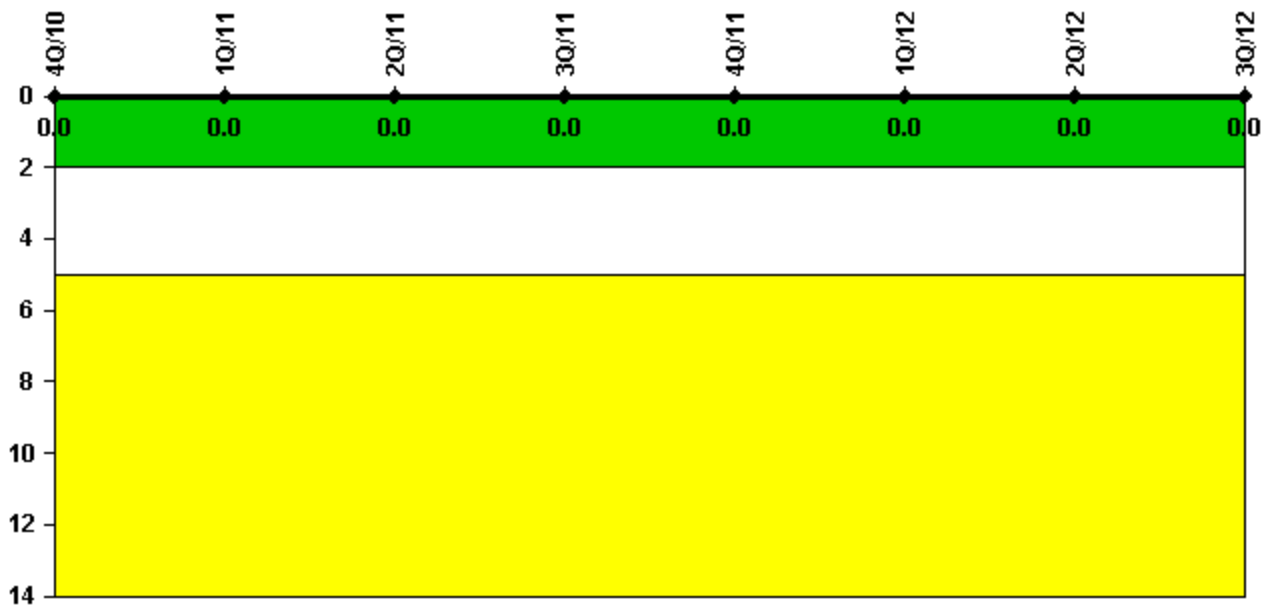
Thresholds: White < 94.0% Yellow < 90.0%

#### Notes

Alert & Notification System	4Q/10	1Q/11	2Q/11	3Q/11	4Q/11	1Q/12	2Q/12	3Q/12
Successful siren-tests	570	532	532	530	570	532	532	531
Total sirens-tests	570	532	532	532	570	532	532	532
Indicator value	100.0%	100.0%	100.0%	99.9%	99.9%	99.9%	99.9%	100.0%

Licensee Comments: none

### Occupational Exposure Control Effectiveness



Thresholds: White > 2.0 Yellow > 5.0

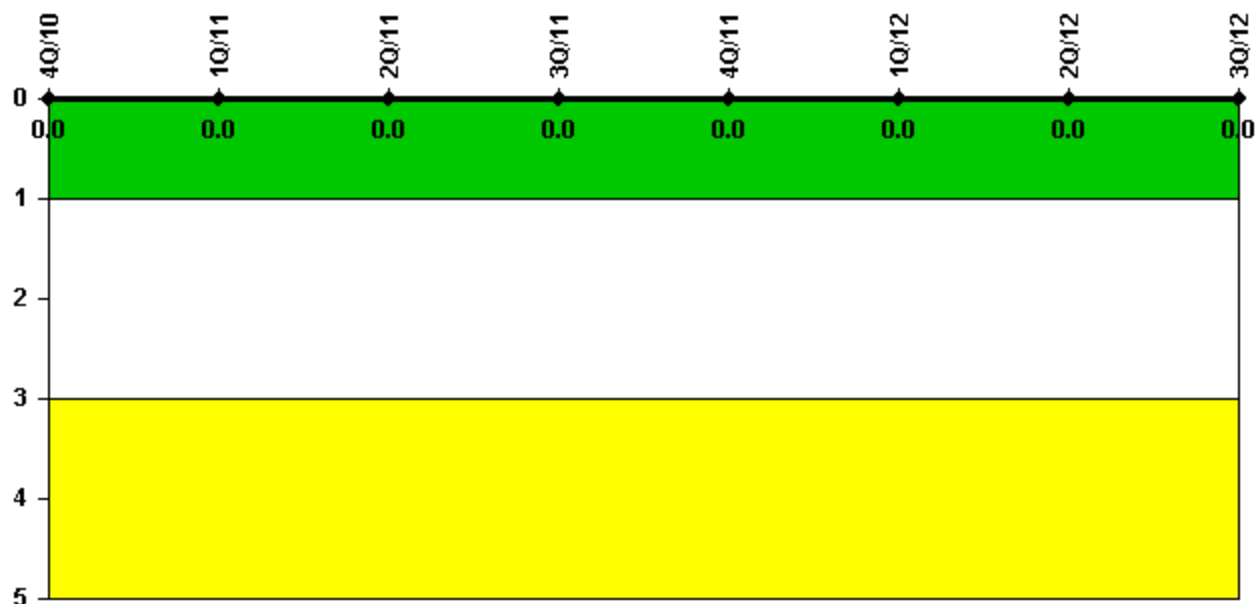
#### Notes

Occupational Exposure Control Effectiveness	4Q/10	1Q/11	2Q/11	3Q/11	4Q/11	1Q/12	2Q/12	3Q/12
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	4Q/10	1Q/11	2Q/11	3Q/11	4Q/11	1Q/12	2Q/12	3Q/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

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.

 [Action Matrix Summary](#) | [Inspection Findings Summary](#) | [PI Summary](#) | [Reactor Oversight Process](#)

*Last Modified: October 24, 2012*