

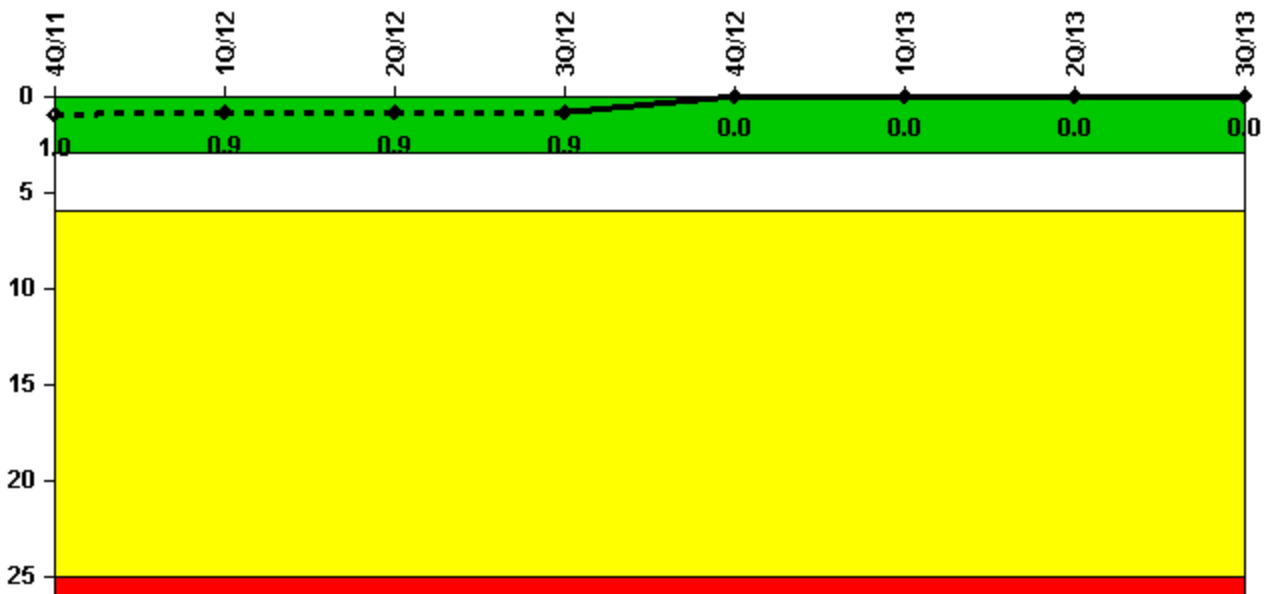
## Brunswick 2

### 3Q/2013 Performance Indicators

The solid trend line represents the current reporting period.

Licensee's General Comments: none

#### Unplanned Scrams per 7000 Critical Hrs



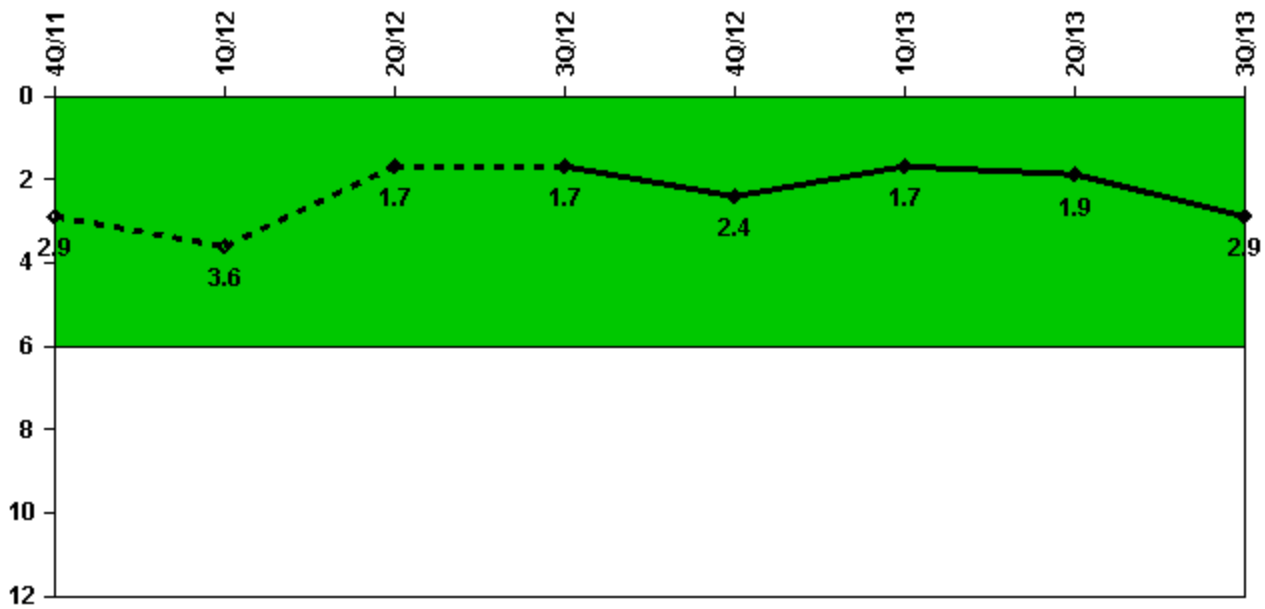
Thresholds: White > 3.0 Yellow > 6.0 Red > 25.0

#### Notes

| Unplanned Scrams per 7000 Critical Hrs | 4Q/11      | 1Q/12      | 2Q/12      | 3Q/12      | 4Q/12    | 1Q/13    | 2Q/13    | 3Q/13    |
|--|------------|------------|------------|------------|----------|----------|----------|----------|
| Unplanned scrams                       | 1.0        | 0          | 0          | 0          | 0        | 0        | 0        | 0        |
| Critical hours                         | 1605.1     | 2183.0     | 2184.0     | 2208.0     | 2209.0   | 1460.9   | 1353.3   | 2208.0   |
| <b>Indicator value</b>                 | <b>1.0</b> | <b>0.9</b> | <b>0.9</b> | <b>0.9</b> | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b> |

Licensee Comments: none

### Unplanned Power Changes per 7000 Critical Hrs



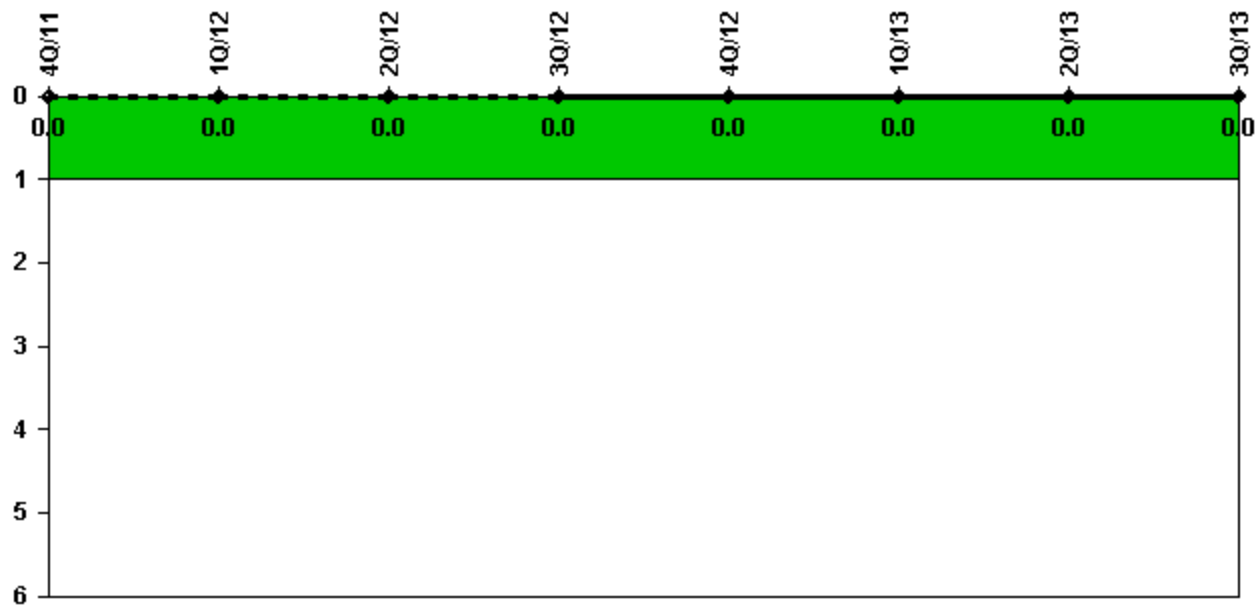
Thresholds: White > 6.0

#### Notes

| Unplanned Power Changes per 7000 Critical Hrs | 4Q/11      | 1Q/12      | 2Q/12      | 3Q/12      | 4Q/12      | 1Q/13      | 2Q/13      | 3Q/13      |
|---|------------|------------|------------|------------|------------|------------|------------|------------|
| Unplanned power changes                       | 1.0        | 1.0        | 0          | 0          | 2.0        | 0          | 0          | 1.0        |
| Critical hours                                | 1605.1     | 2183.0     | 2184.0     | 2208.0     | 2209.0     | 1460.9     | 1353.3     | 2208.0     |
| <b>Indicator value</b>                        | <b>2.9</b> | <b>3.6</b> | <b>1.7</b> | <b>1.7</b> | <b>2.4</b> | <b>1.7</b> | <b>1.9</b> | <b>2.9</b> |

Licensee Comments: none

### Unplanned Scrams with Complications



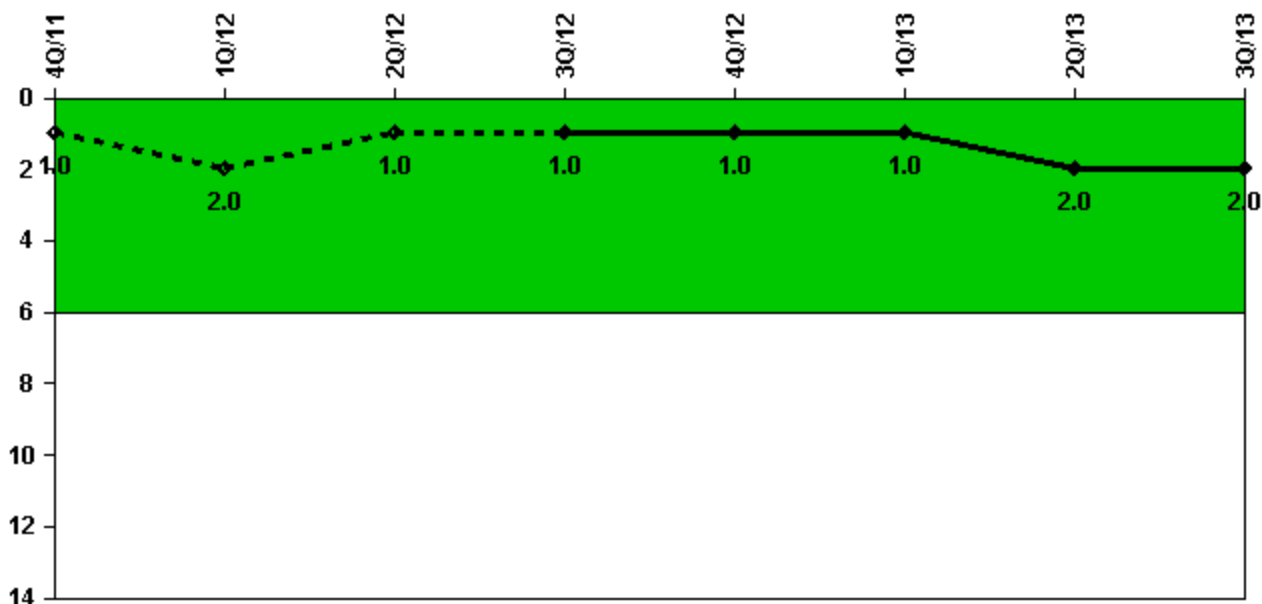
Thresholds: White > 1.0

#### Notes

| Unplanned Scrams with Complications | 4Q/11      | 1Q/12      | 2Q/12      | 3Q/12      | 4Q/12      | 1Q/13      | 2Q/13      | 3Q/13      |
|-------------------------------------|------------|------------|------------|------------|------------|------------|------------|------------|
| 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/11    | 1Q/12    | 2Q/12    | 3Q/12    | 4Q/12    | 1Q/13    | 2Q/13    | 3Q/13    |
|---|----------|----------|----------|----------|----------|----------|----------|----------|
| Safety System Functional Failures       | 0        | 1        | 0        | 0        | 0        | 1        | 1        | 0        |
| <b>Indicator value</b>                  | <b>1</b> | <b>2</b> | <b>1</b> | <b>1</b> | <b>1</b> | <b>1</b> | <b>2</b> | <b>2</b> |

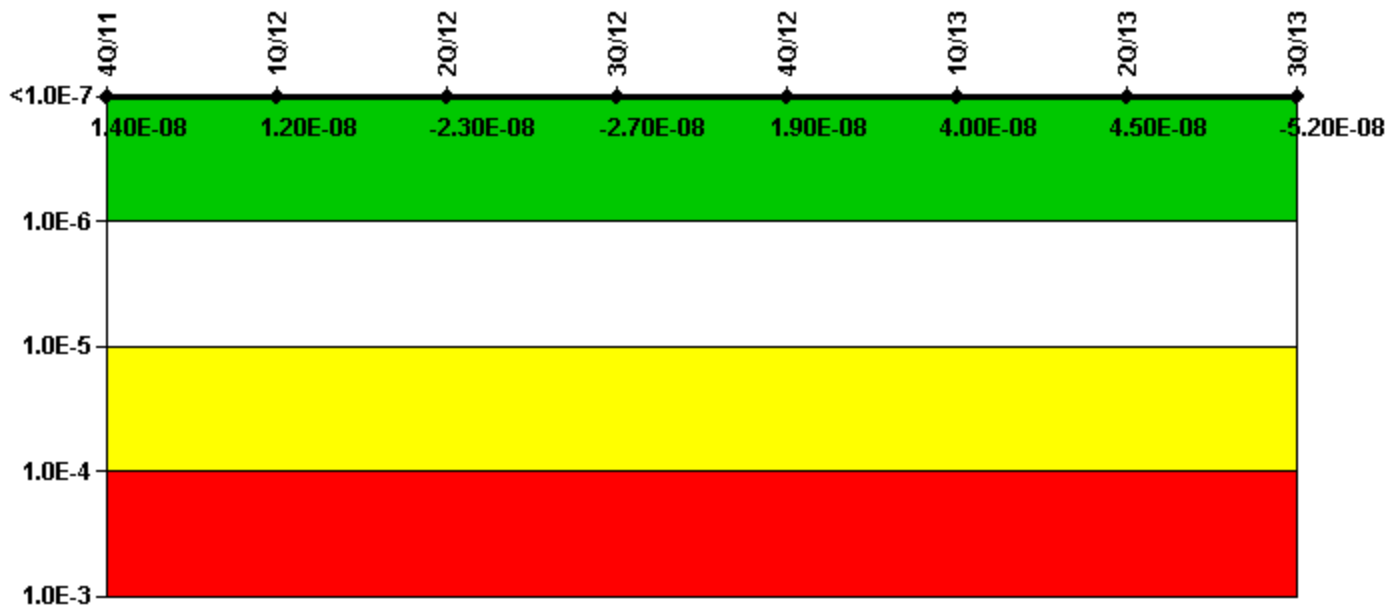
#### Licensee Comments:

2Q/13: LER 2-2013-002 was submitted on May 28, 2013, for loss of safety function due to the A Loop of RHR being declared inoperable when a valve was discovered with broken yoke-to-bonnet stud, while the B Loop was inoperable due to scheduled maintenance.

1Q/13: LER 1-2012-007 was submitted on February 12, 2013, for an MSPI Safety System Functional Failure (SSFF) that occurred on Unit 1 and Unit 2 for the loss of Control Room Emergency Ventilation (CREV). The loss of CREV occurred due to a human performance error during implementation of a plant modification. It is applicable to both Units since Brunswick has a shared control room.

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.

### Mitigating Systems Performance Index, Emergency AC Power System



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

#### Notes

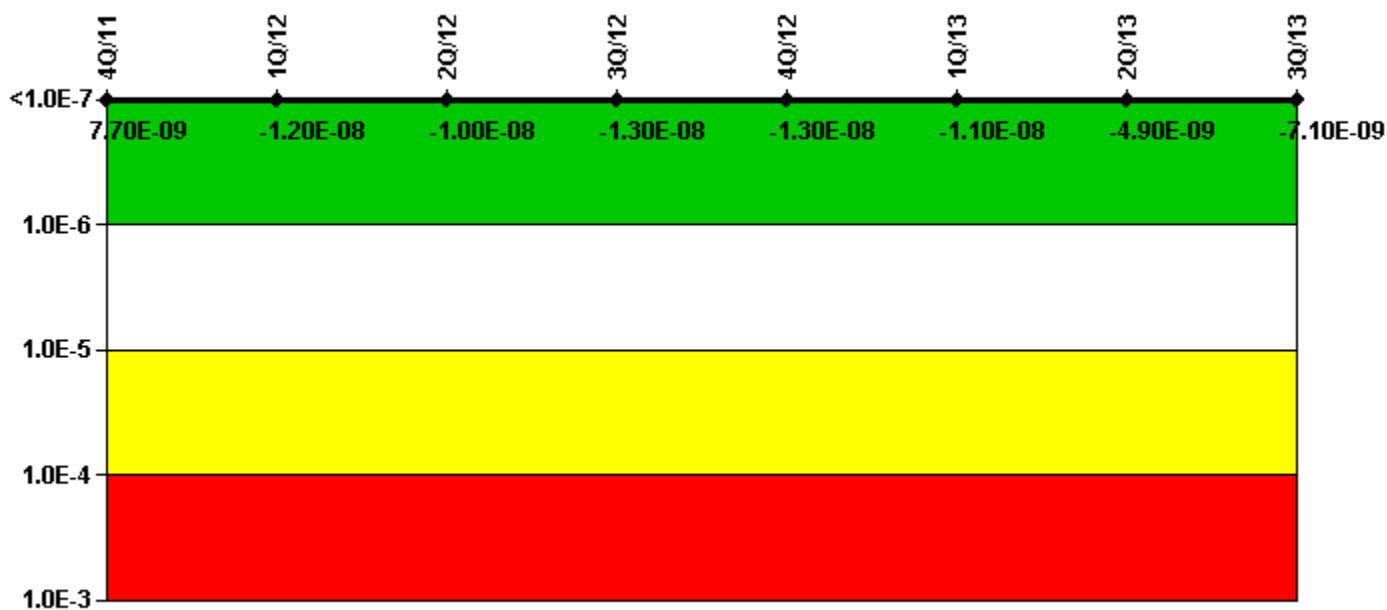
| Mitigating Systems Performance Index, Emergency AC Power System | 4Q/11    | 1Q/12    | 2Q/12     | 3Q/12     | 4Q/12    | 1Q/13    | 2Q/13    | 3Q/13     |
|---|----------|----------|-----------|-----------|----------|----------|----------|-----------|
| UAI ( $\Delta$ CDF)   | 4.27E-09 | 1.09E-09 | 2.46E-09  | -4.61E-09 | 1.48E-09 | 2.10E-08 | 2.42E-08 | 2.19E-08  |
| URI ( $\Delta$ CDF)   | 9.61E-09 | 1.12E-08 | -2.56E-08 | -2.21E-08 | 1.79E-08 | 1.92E-08 | 2.05E-08 | -7.38E-08 |
| PLE   | NO       | NO       | NO        | NO        | NO       | NO       | NO       | NO        |
| Indicator value   | 1.40E-08 | 1.20E-08 | -2.30E-08 | -2.70E-08 | 1.90E-08 | 4.00E-08 | 4.50E-08 | -5.20E-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.

### Mitigating Systems Performance Index, High Pressure Injection System



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

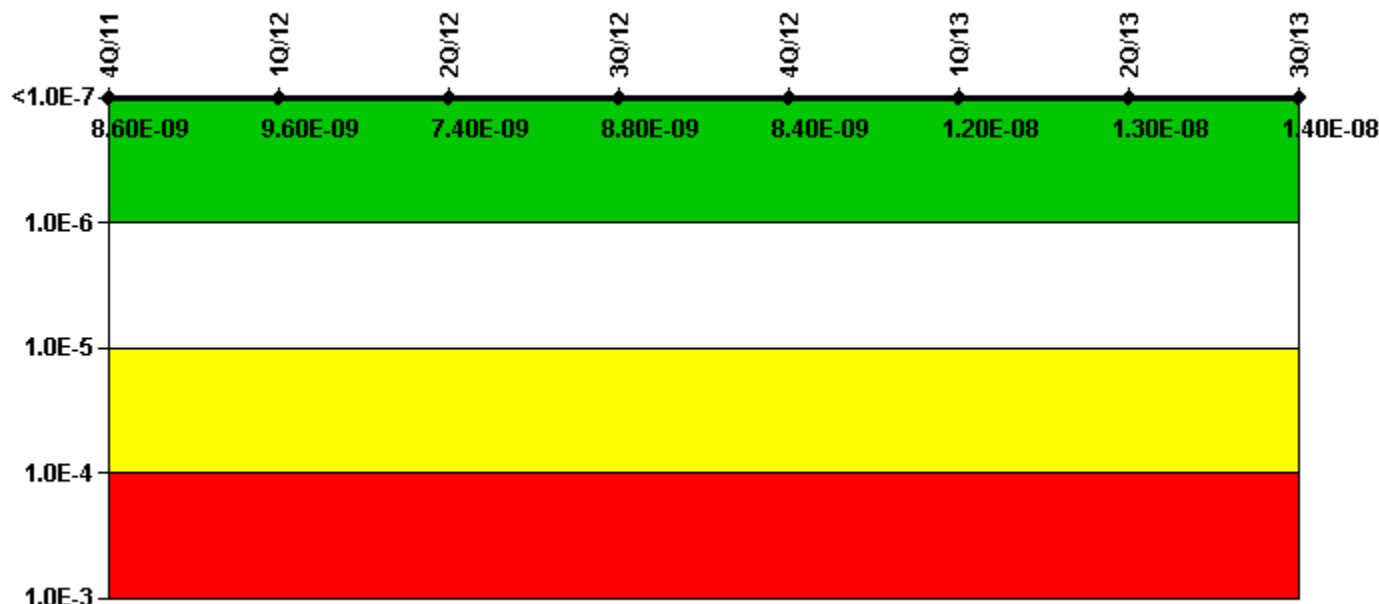
#### Notes

| Mitigating Systems Performance Index, High Pressure Injection System | 4Q/11           | 1Q/12            | 2Q/12            | 3Q/12            | 4Q/12            | 1Q/13            | 2Q/13            | 3Q/13            |
|--|-----------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|
| UAI ( $\Delta$ CDF)  | -3.06E-09       | -3.45E-09        | -1.51E-09        | -4.24E-09        | -4.24E-09        | -2.86E-09        | 3.70E-09         | 1.58E-09         |
| URI ( $\Delta$ CDF)  | 1.07E-08        | -8.63E-09        | -8.63E-09        | -8.63E-09        | -8.63E-09        | -8.63E-09        | -8.63E-09        | -8.63E-09        |
| PLE  | NO              | NO               | NO               | NO               | NO               | NO               | NO               | NO               |
| Indicator value  | <b>7.70E-09</b> | <b>-1.20E-08</b> | <b>-1.00E-08</b> | <b>-1.30E-08</b> | <b>-1.30E-08</b> | <b>-1.10E-08</b> | <b>-4.90E-09</b> | <b>-7.10E-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.

### Mitigating Systems Performance Index, Heat Removal System



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

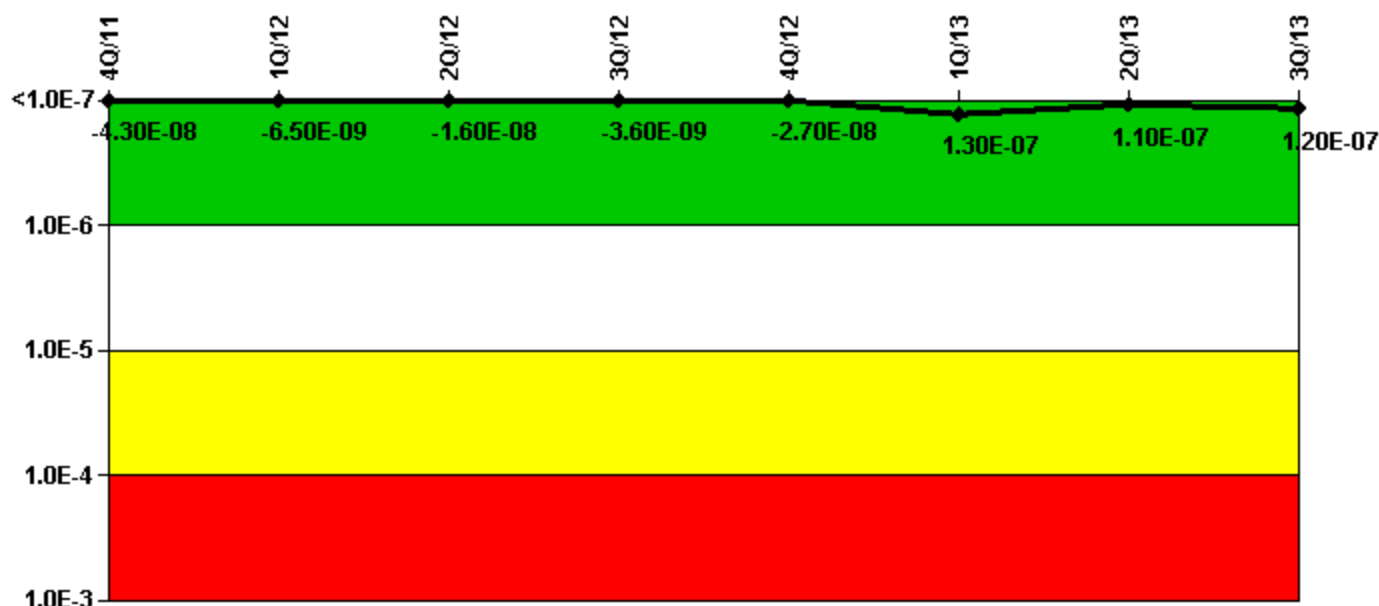
#### Notes

| Mitigating Systems Performance Index, Heat Removal System | 4Q/11     | 1Q/12     | 2Q/12     | 3Q/12     | 4Q/12     | 1Q/13     | 2Q/13     | 3Q/13     |
|---|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
| UAI ( $\Delta$ CDF)                                       | 8.76E-09  | 1.00E-08  | 8.07E-09  | 9.78E-09  | 9.63E-09  | 1.28E-08  | 1.37E-08  | 1.55E-08  |
| URI ( $\Delta$ CDF)                                       | -1.22E-10 | -4.00E-10 | -6.70E-10 | -9.35E-10 | -1.19E-09 | -1.19E-09 | -1.19E-09 | -1.19E-09 |
| PLE   | NO        | NO        | NO        | NO        | NO        | NO        | NO        | NO        |
| Indicator value   | 8.60E-09  | 9.60E-09  | 7.40E-09  | 8.80E-09  | 8.40E-09  | 1.20E-08  | 1.30E-08  | 1.40E-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.

## 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/11     | 1Q/12     | 2Q/12     | 3Q/12     | 4Q/12     | 1Q/13    | 2Q/13    | 3Q/13    |
|--|-----------|-----------|-----------|-----------|-----------|----------|----------|----------|
| UAI ( $\Delta$ CDF)  | 4.53E-08  | 7.99E-08  | 6.84E-08  | 7.89E-08  | 5.28E-08  | 4.38E-08 | 2.37E-08 | 3.47E-08 |
| URI ( $\Delta$ CDF)  | -8.83E-08 | -8.64E-08 | -8.45E-08 | -8.24E-08 | -8.03E-08 | 8.76E-08 | 8.76E-08 | 8.76E-08 |
| PLE  | NO        | NO        | NO        | NO        | NO        | NO       | NO       | NO       |
| Indicator value  | -4.30E-08 | -6.50E-09 | -1.60E-08 | -3.60E-09 | -2.70E-08 | 1.30E-07 | 1.10E-07 | 1.20E-07 |

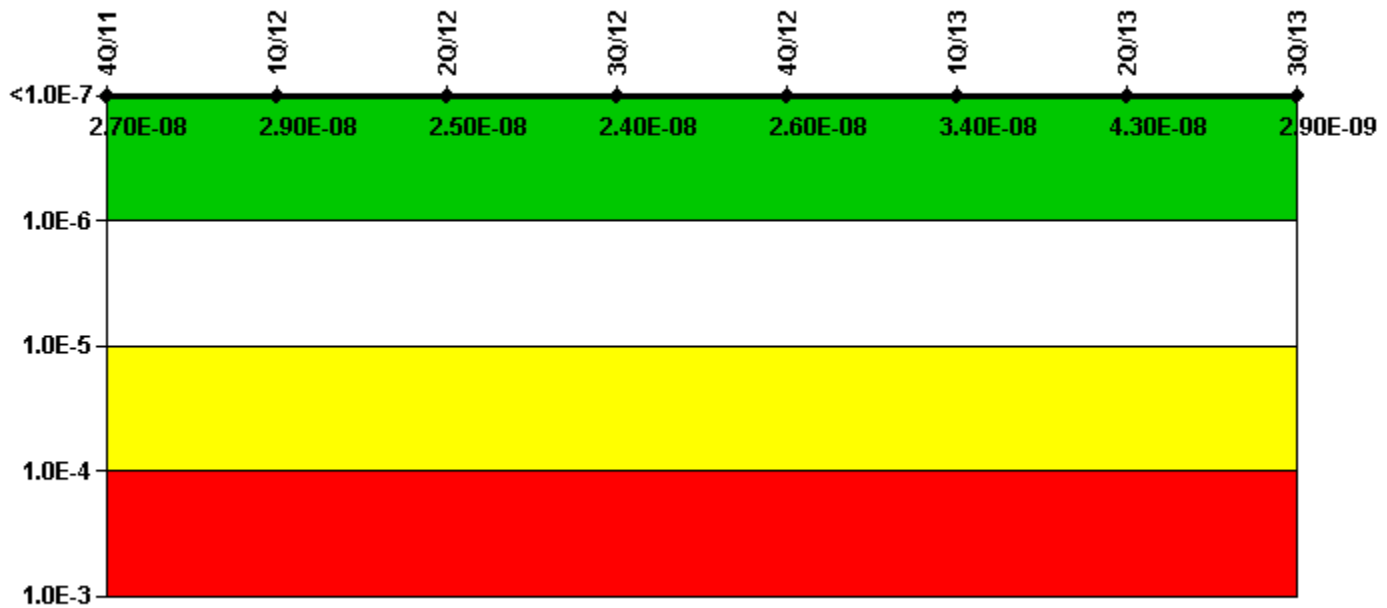
### Licensee Comments:

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.



### Mitigating Systems Performance Index, Cooling Water Systems



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

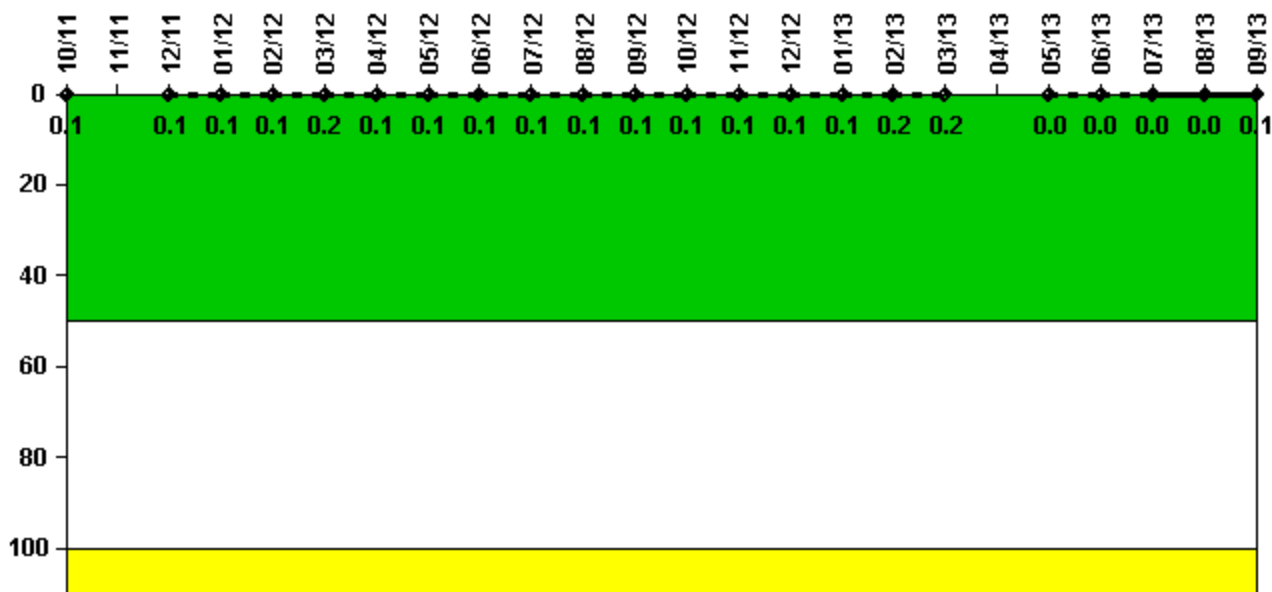
#### Notes

| Mitigating Systems Performance Index, Cooling Water Systems | 4Q/11     | 1Q/12     | 2Q/12     | 3Q/12     | 4Q/12     | 1Q/13     | 2Q/13     | 3Q/13     |
|---|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
| UAI ( $\Delta$ CDF)   | 3.11E-08  | 3.26E-08  | 2.89E-08  | 2.81E-08  | 2.94E-08  | 3.73E-08  | 4.57E-08  | 5.44E-09  |
| URI ( $\Delta$ CDF)   | -3.69E-09 | -3.70E-09 | -3.71E-09 | -3.71E-09 | -3.72E-09 | -3.73E-09 | -2.39E-09 | -2.51E-09 |
| PLE   | NO        | NO        | NO        | NO        | NO        | NO        | NO        | NO        |
| Indicator value   | 2.70E-08  | 2.90E-08  | 2.50E-08  | 2.40E-08  | 2.60E-08  | 3.40E-08  | 4.30E-08  | 2.90E-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.

### Reactor Coolant System Activity



Thresholds: White > 50.0 Yellow > 100.0

#### Notes

| Reactor Coolant System Activity | 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 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      |
| Indicator value                 | 0.1      | N/A   | 0.1      | 0.1      | 0.1      | 0.2      | 0.1      | 0.1      | 0.1      | 0.1      | 0.1      | 0.1      |

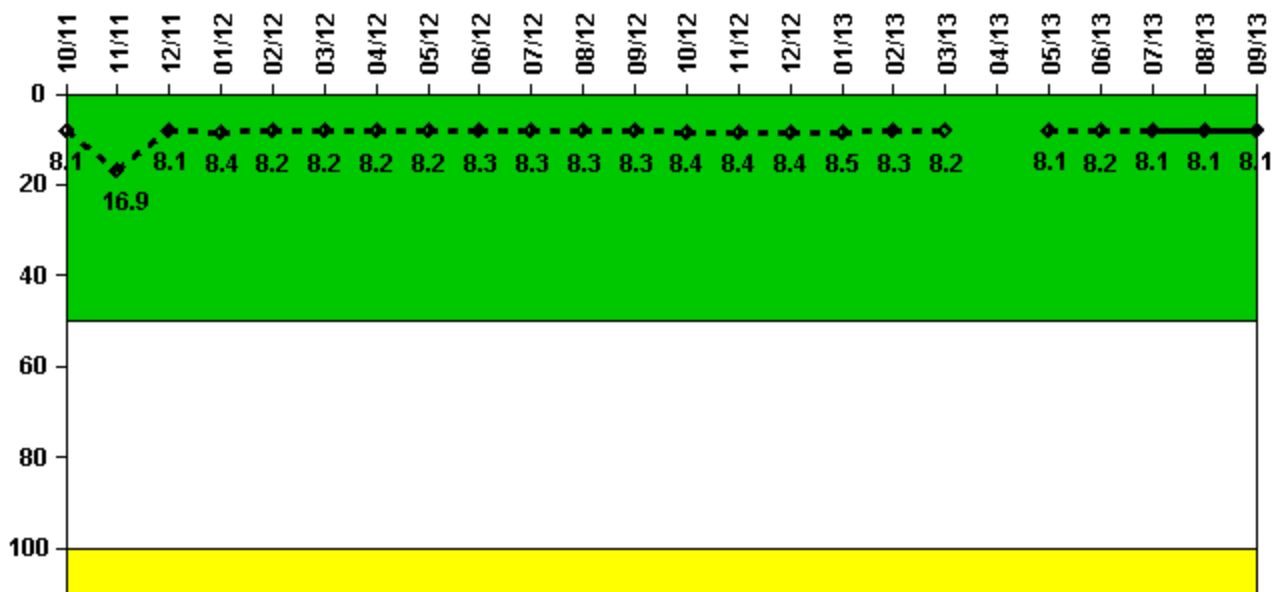
  

| Reactor Coolant System Activity | 10/12    | 11/12    | 12/12    | 1/13     | 2/13     | 3/13     | 4/13 | 5/13     | 6/13     | 7/13     | 8/13     | 9/13     |
|---------------------------------|----------|----------|----------|----------|----------|----------|------|----------|----------|----------|----------|----------|
| Maximum activity                | 0.000224 | 0.000209 | 0.000225 | 0.000207 | 0.000314 | 0.000345 | N/A  | 0.000074 | 0.000086 | 0.000089 | 0.000097 | 0.000105 |
| 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                 | 0.1      | 0.1      | 0.1      | 0.1      | 0.2      | 0.2      | N/A  | 0        | 0        | 0        | 0        | 0.1      |

#### Licensee Comments:

6/13: RCS Specific Activity calculations were unavailable for the month of April due to existing plant conditions while Unit 2 was in refueling outage B221R1 the entire month.

### Reactor Coolant System Leakage



Thresholds: White > 50.0 Yellow > 100.0

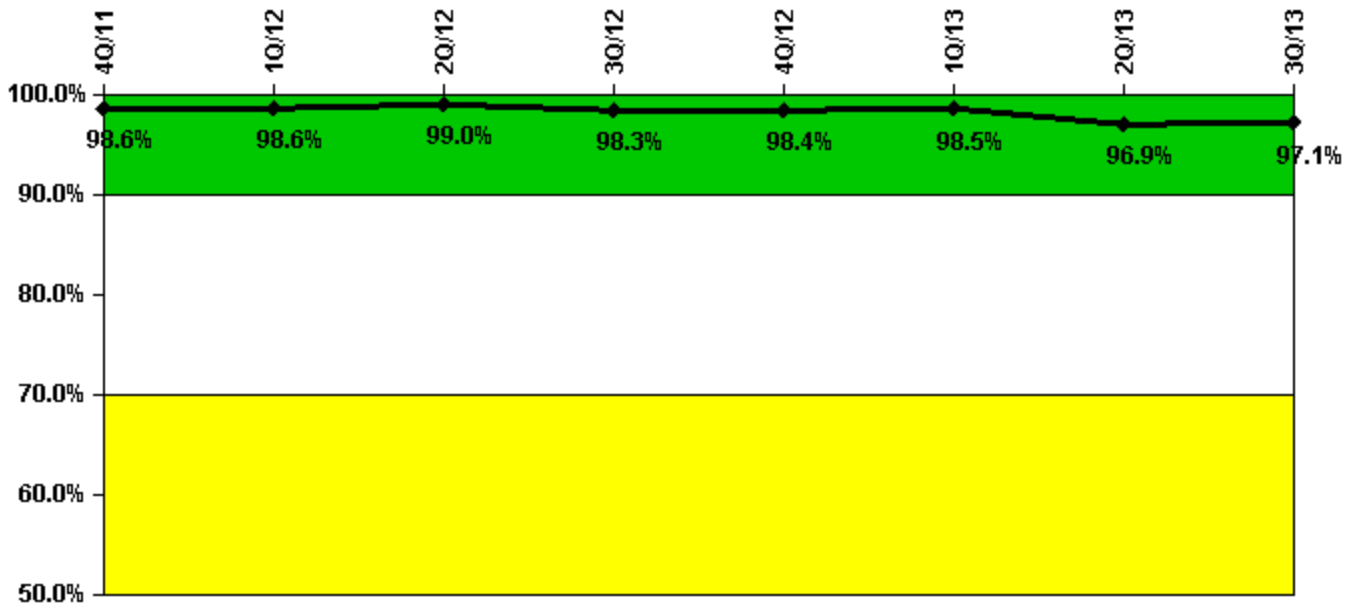
#### Notes

| 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> |
| Reactor Coolant System Leakage | 10/12      | 11/12       | 12/12      | 1/13       | 2/13       | 3/13       | 4/13       | 5/13       | 6/13       | 7/13       | 8/13       | 9/13       |
| Maximum leakage                | 2.090      | 2.090       | 2.100      | 2.120      | 2.080      | 2.040      | N/A        | 2.020      | 2.060      | 2.030      | 2.035      | 2.037      |
| 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>8.4</b> | <b>8.4</b>  | <b>8.4</b> | <b>8.5</b> | <b>8.3</b> | <b>8.2</b> | <b>N/A</b> | <b>8.1</b> | <b>8.2</b> | <b>8.1</b> | <b>8.1</b> | <b>8.1</b> |

#### Licensee Comments:

6/13: RCS Leakage calculations were unavailable for the month of April due to existing plant conditions while Unit 2 was in refueling outage B221R1 the entire month.

### Drill/Exercise Performance



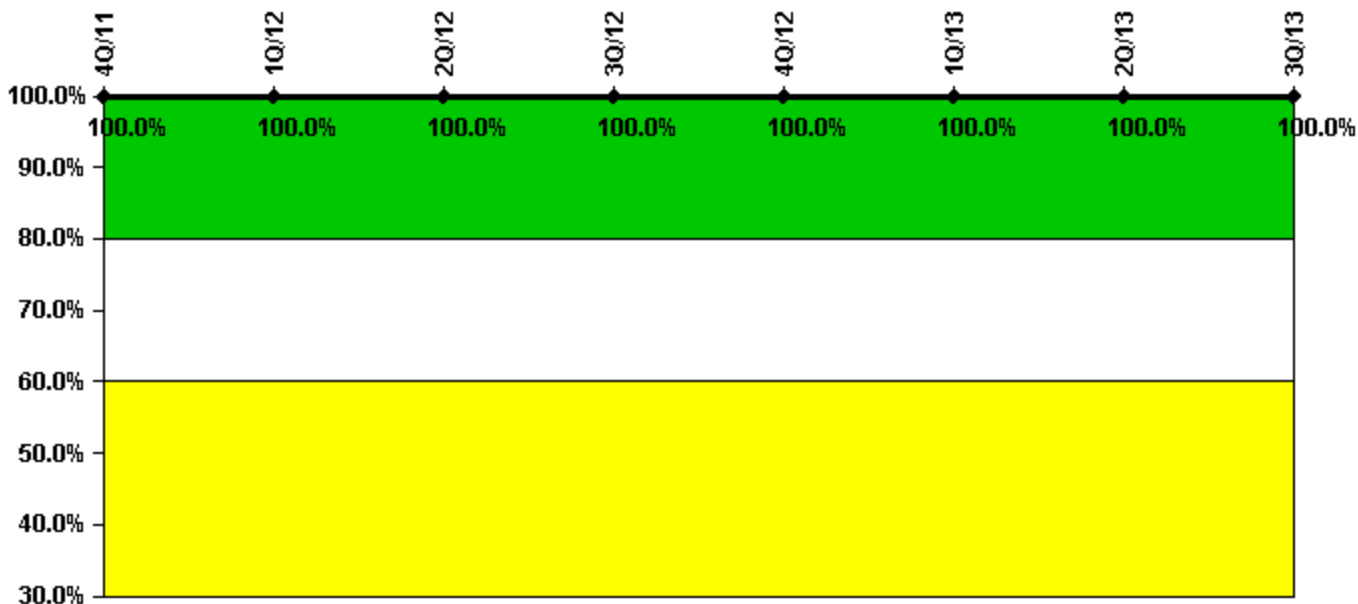
Thresholds: White < 90.0% Yellow < 70.0%

#### Notes

| Drill/Exercise Performance | 4Q/11 | 1Q/12 | 2Q/12 | 3Q/12 | 4Q/12 | 1Q/13 | 2Q/13 | 3Q/13 |
|----------------------------|-------|-------|-------|-------|-------|-------|-------|-------|
| Successful opportunities   | 38.0  | 8.0   | 17.0  | 26.0  | 46.0  | 22.0  | 25.0  | 18.0  |
| Total opportunities        | 38.0  | 8.0   | 18.0  | 27.0  | 47.0  | 22.0  | 28.0  | 18.0  |
| Indicator value            | 98.6% | 98.6% | 99.0% | 98.3% | 98.4% | 98.5% | 96.9% | 97.1% |

Licensee Comments: none

### ERO Drill Participation



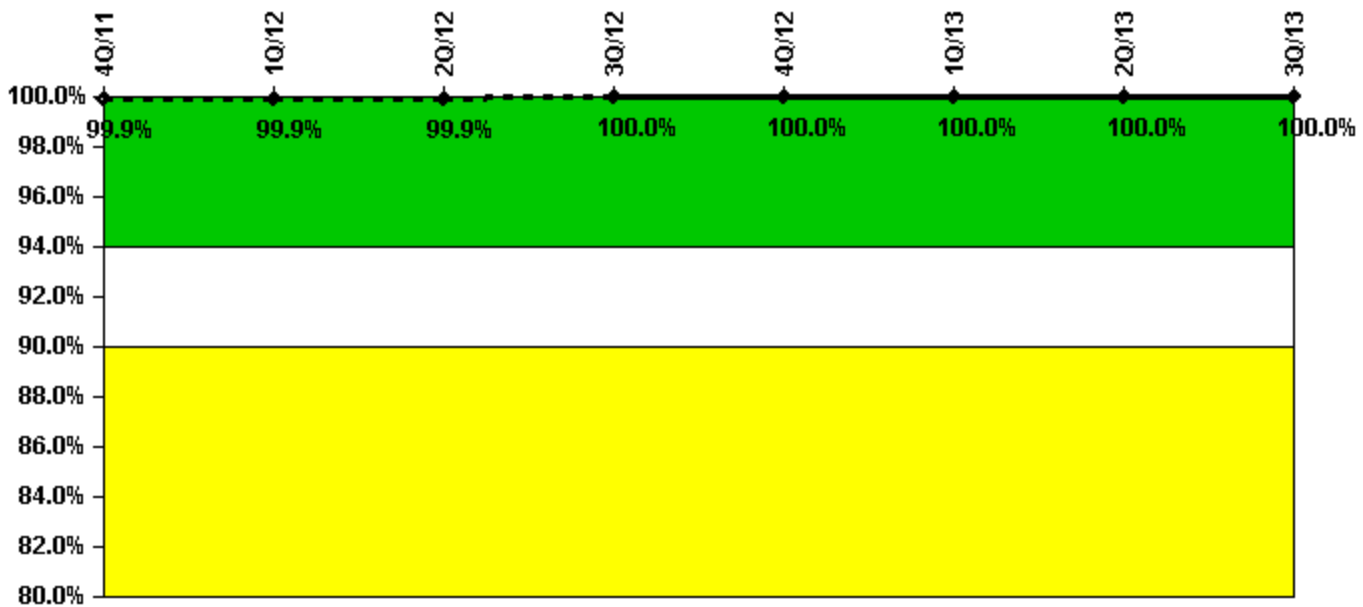
Thresholds: White < 80.0% Yellow < 60.0%

#### Notes

| ERO Drill Participation     | 4Q/11  | 1Q/12  | 2Q/12  | 3Q/12  | 4Q/12  | 1Q/13  | 2Q/13  | 3Q/13  |
|-----------------------------|--------|--------|--------|--------|--------|--------|--------|--------|
| Participating Key personnel | 106.0  | 103.0  | 103.0  | 100.0  | 97.0   | 98.0   | 94.0   | 95.0   |
| Total Key personnel         | 106.0  | 103.0  | 103.0  | 100.0  | 97.0   | 98.0   | 94.0   | 95.0   |
| Indicator value             | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% |

Licensee Comments: none

### Alert & Notification System



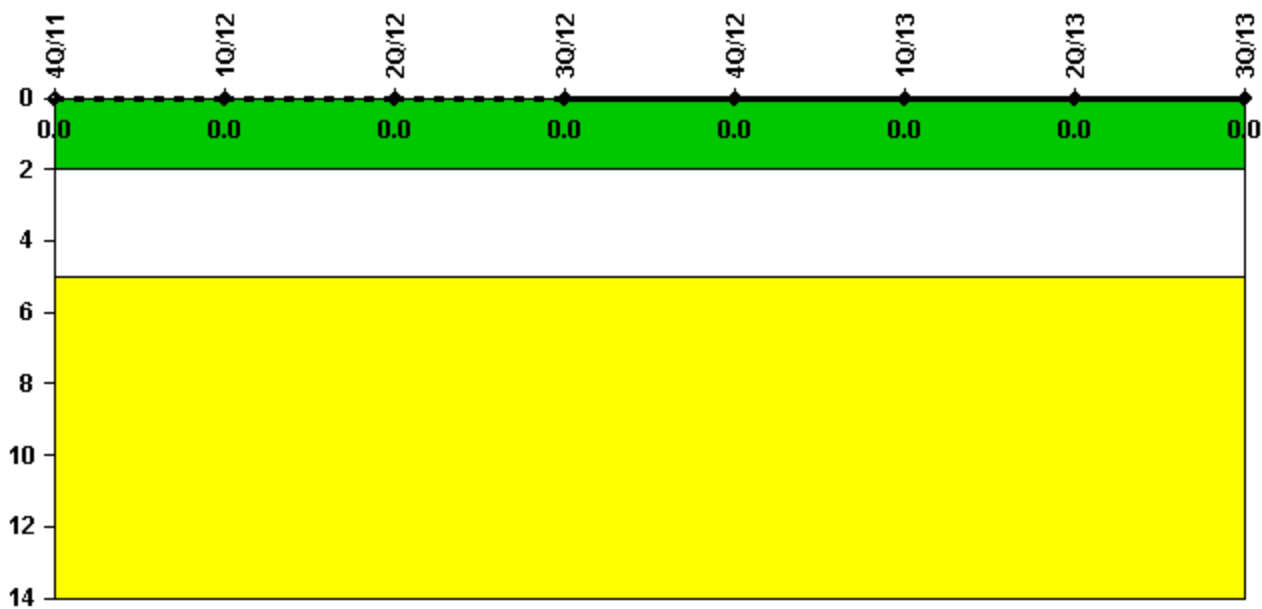
Thresholds: White < 94.0% Yellow < 90.0%

#### Notes

| Alert & Notification System | 4Q/11 | 1Q/12 | 2Q/12 | 3Q/12  | 4Q/12  | 1Q/13  | 2Q/13  | 3Q/13  |
|-----------------------------|-------|-------|-------|--------|--------|--------|--------|--------|
| Successful siren-tests      | 570   | 532   | 532   | 531    | 570    | 532    | 532    | 532    |
| Total sirens-tests          | 570   | 532   | 532   | 532    | 570    | 532    | 532    | 532    |
| Indicator value             | 99.9% | 99.9% | 99.9% | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% |

Licensee Comments: none

### Occupational Exposure Control Effectiveness



Thresholds: White > 2.0 Yellow > 5.0

#### Notes

| Occupational Exposure Control Effectiveness | 4Q/11    | 1Q/12    | 2Q/12    | 3Q/12    | 4Q/12    | 1Q/13    | 2Q/13    | 3Q/13    |
|---|----------|----------|----------|----------|----------|----------|----------|----------|
| 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/11 | 1Q/12 | 2Q/12 | 3Q/12 | 4Q/12 | 1Q/13 | 2Q/13 | 3Q/13 |
|---------------------------------|-------|-------|-------|-------|-------|-------|-------|-------|
| 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 22, 2013*