

Peter Dietrich  
Senior Vice President and Chief Nuclear Officer

DTE Energy Company  
6400 N. Dixie Highway, Newport, MI 48166  
Tel: 734.586.4153 Fax: 734.586.1431  
Email: peter.dietrich@dteenergy.com



June 23, 2020  
NRC-20-0040

U.S. Nuclear Regulatory Commission  
Attention: Document Control Desk  
Washington, DC 20555-0001

Fermi 2 Power Plant  
NRC Docket No. 50-341  
NRC License No. NPF-43

Subject: Response to NRC Request from Audit of License Amendment Request to Revise  
Technical Specifications to Change Surveillance Intervals to Accommodate a  
24-Month Fuel Cycle

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- References:
- 1) DTE Electric letter to NRC "License Amendment Request to Revise Technical Specifications to Change Surveillance Intervals to Accommodate a 24-Month Fuel Cycle" NRC-19-0054, dated November 8, 2019 (ML19312A110)
  - 2) NRC Letter to DTE Electric "Fermi 2 – Audit Plan in Support of the Review of License Amendment Request to Revise Technical Specifications to Change Surveillance Intervals to Accommodate a 24-Month Fuel Cycle (EPID L-2019-LLA-0249)," dated April 8, 2020 (ML20094G814)

In Reference 1, DTE Electric Company (DTE) submitted a license amendment request (LAR) to revise Technical Specifications to Change Surveillance Intervals to Accommodate a 24-Month Fuel Cycle. The NRC performed an audit in support of review of the LAR, per the audit plan in Reference 2. In an email from Mr. Surinder Arora to Mr. Derek Corrin dated June 2, 2020, the NRC sent DTE a request for report DTE-19001 "Surveillance Historical Failure Analysis in Support of a 24 Month Fuel Cycle License Amendment Request," Revision 1, dated July 1st, 2019. This report was one of the documents reviewed by the NRC during the audit. The requested report is included in the Enclosure to this letter.

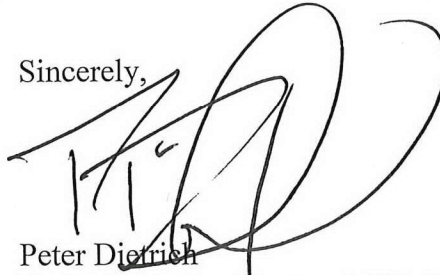
DTE has reviewed the information supporting a finding of No Significant Hazards Consideration and the Environmental Consideration provided to the NRC in Sections 5.3 and 6.0 of Enclosure 1 of the Reference 1 LAR. The reference information provided in this letter does not affect the bases for concluding that the proposed license amendment does not involve a significant hazards consideration. In addition, the reference information provided in this letter does not affect the bases for concluding that neither an environmental impact statement nor an environmental assessment needs to be prepared in connection with the proposed amendment.

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No new commitments are being made in this submittal.

Should you have any questions or require additional information, please contact Ms. Margaret Offerle, Manager – Nuclear Licensing, at (734) 586-5076.

Sincerely,

A handwritten signature in black ink, appearing to be "Peter Dietrich", written over a horizontal line.

Peter Dietrich  
Senior Vice President and Chief Nuclear Officer

Enclosure: DTE-19001 "Surveillance Historical Failure Analysis in Support of a 24 Month Fuel Cycle License Amendment Request"

cc: NRC Project Manager  
NRC Resident Office  
Regional Administrator, Region III  
Michigan Department of Environment, Great Lakes, and Energy

**Enclosure to  
NRC-20-0040**

**Fermi 2 NRC Docket No. 50-341  
Operating License No. NPF-43**

**DTE-19001 “Surveillance Historical Failure Analysis in Support of a 24 Month Fuel Cycle  
License Amendment Request”**

## Engineering Report No. DTE-19001, Revision 1

### Surveillance Historical Failure Analysis in Support of a 24 Month Fuel Cycle License Amendment Request

Prepared for:

DTE Energy Fermi 2 Power Plant  
6400 North Dixie Highway  
Newport, MI 48166



**SERVICES CORPORATION**  
**Nuclear Engineering Consulting**

11921 Rockville Pike, Suite 100  
Rockville, MD 20852

Co-Prepared By:	<u>Brian E. Townsend</u>	<u>7/1/2019</u>
	Brian E. Townsend	
Co-Prepared By:	<u>Bruce L. Crabbs</u>	<u>7/1/2019</u>
	Bruce L. Crabbs	
Reviewed By:	<u>James H. Osborne</u>	<u>7/1/2019</u>
	James H. Osborne	
Approved By:	<u>Kirk R. Melson</u>	<u>7/1/2019</u>
	Kirk R. Melson	

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Attachment 1	Categorization Flow Chart	(2 Pages Incl. cover)
Attachment 2	Technical Specification Surveillance Requirement Interval Extension/Justification Scope	(100 Pages Incl. cover)
Attachment 3	Technical Specification Event Failure History Evaluation	(270 Pages Incl. cover)
Attachment 4	Technical Specification Event "Unique Failures"	(6 Pages Incl. cover)
Attachment 5	Technical Specification Event "Unique Failures" Evaluation	(6 Pages Incl. cover)

**RECORD OF REVISION**

Rev. No.	Description of Changes	Revision On Page(s)	Dated
0	Original issue	All	6/19/2019
1	Revised Event 0881 failure from Category D Unique Failures to Category B More Frequent Testing	Att. 3 Pages 146, 147 Att. 4, Pages 4 and 5, and Att. 5, Pages 4 and 5	7/1/2019

## 1 Background

DTE Energy Fermi 2 Power Plant is pursuing a fuel cycle extension from the current 18 months to 24 months, in accordance with the requirements of NRC Generic Letter 91-04 (Ref. 9.1.1). An essential part of this effort is to ensure that the surveillance interval requirements that are tied to the length of the plant's nuclear fuel cycle are extended, as necessary, to accommodate the proposed fuel cycle. To verify that the reliability and availability of the components is unchanged by the change in fuel cycle, any failures associated with the performance of these Surveillance Requirements (SR) are evaluated, classified and justified to verify they will not impact plant safety.

The surveillance test history analysis is discussed in Generic Letter 91-04 (Ref. 9.1.1) as required to support the License Amendment Request (LAR) for transition to 24-month fuel cycles. Surveillance test analyses are performed on historical completed Events, as contained within the project scope.

## 2 Purpose

The purpose of this report is to provide a summary of the Technical Specification Surveillance Historical Failure Analysis performed in support of the 24 Month Fuel Cycle Extension Project to ensure that the availability and reliability of systems, components and functions will not be significantly reduced by repetitive or time-based failures.

The project scope includes an analysis for all Technical Specification (TS) related SRs, with 18-month surveillance intervals (or multiples thereof), tied to the length of the plant's nuclear fuel cycle. This includes both outage and non-outage surveillances. All TS SRs in scope were reviewed to determine which Events are used to satisfy the SR. This resulted in scope as defined by DTE-18005, Rev 2, Attachments 2 and 3.

This Technical Specification Surveillance Historical Failure Analysis documents evaluations performed to identify historical failures, categorize the type of failures, and justify the acceptability of the surveillance interval extension with the existence of these identified failures. Specifically, the analysis, by evaluating each applicable TS SR, supports the conclusion that the impact on system availability and reliability, if any, will be small as a result of the change to a 24-month surveillance interval. This analysis, in combination with applicable Allowable Value and Nominal Trip Setpoint verifications and applicable UFSAR reviews, also verifies that the assumptions in the plant-licensing basis are maintained.

## 3 Design Inputs

- 3.1 The 24 Month Project Team performed a review of all TS Surveillance Requirements (SRs) that would require a change in the performance frequency to support the change to a 24-month fuel cycle. The SRs and Events identified as within scope were documented in DTE-18005, Rev 2 Attachments 2 and 3.  
All available performances of the applicable Events were collected from the site document control system (i.e., WebARMS). Each collected performance was reviewed to identify any failure of the procedure and then each failure was evaluated to determine if the failure resulted in a potential for the SR to not be met. Attachment 2 identifies the Events associated with the scoped Technical Specification SRs.
- 3.2 Copies of the completed Events were obtained from WebARMS searches. These completed performances were used to provide the necessary failure information.

Where Event performances referred to a CARD (Condition Assessment Resolution Document) and/or Work Orders, these documents were also obtained from WebARMS searches, in order to provide the information necessary to categorize and assess consequences of the failures.

- 3.3 Event 0350, Perform 24.630.01 Remote Shutdown Panel Control Circuit/Switch Test, Procedure 24.630.01, Rev 35 was revised and issued 11/16/2016. Procedure 24.630.01, Rev 34 included 9 separate sections, 5.1 through 5.9, which for purposes of performance were sectioned off into seven "Sub-Events": 0350, 0350A, 0350B, 0350C, 0350D, 0350E and 0350F. Procedure 24.630.01, Rev 35 includes 5 separate sections, 5.1 through 5.5 and is performed by five Events: 0350, 0350A, 0350B, 0350C and 0350F. Event 0350 is at times completed by "entire performance" of 24.630.01 or a combination of sections (e.g. 5.1, 5.2, 5.3, etc.) of the surveillance to complete the entire surveillance performance.

Events 897, 3300, 3301, 3302, 3304, and 3307 series for Instrument Line Excess Flow Check Valve (EFCV) Functional performances are also, depending on scheduling, completed by a series of "Sub-Events" (A, B, C, etc.) in order to complete the entire required performance or completed entirely in one performance.

- 3.4 As related to Event performances which included Acceptable Performance Tolerance (APT) range, position taken with regard to failure analysis is:
- 3.4.1 If As Found data is NOT within APT range, then performance is considered to have failed and Description of Failure is documented.
- 3.4.2 If As Found data is within APT range but NOT within the As Left Tolerance (ALT) range, then performance is NOT considered to have failed; no Description of Failure is documented.
- 3.5 For Events reviewed associated with leakage detection, any leakage indicated during the Event performance is considered a Category A failure unless it exceeded allowances provided within the surveillance Acceptance Criteria. In this case, it is considered to be Category D.

## 4 Assumptions

To complete this analysis, the following assumption was made to clearly define the scope of the analysis and the methodology used to evaluate the surveillance test history. The generic assumption, with a bases statement to justify the assumption, is presented as follows:

- 4.1 The review of the credited Event performances, within a time frame required for a minimum of five Event performances (18-month frequency), can be used to evaluate the Event test history and support the justification to extend the associated TS SR Frequency to 24 months (maximum of 30 months with the allowance of TS SR 3.0.2). Generally, only a review of the surveillance tests which implement the 18-month TS SRs is required.

### **Bases:**

Five surveillance test performances (approximately seven years of history for 18-month frequency) provide an adequate performance history. As stated in the review methodology, the surveillance test history analysis is a qualitative review of the surveillance test performances to ensure there is no evidence of any repetitive

failures associated with the surveillance requirement which would invalidate the conclusion that the impact on system availability, if any, will be small as a result of the change to a 24-month surveillance interval. The five performances ensure that approximately three 30-month surveillance periods are reviewed to identify any repetitive problems. It has been concluded, based on engineering judgment, that three 30-month periods provide adequate surveillance test history. The aforementioned amount of historical data has been proven to be acceptable by the United States Nuclear Regulatory Commission (USNRC) in previous nuclear plant (i.e., Perry Nuclear Plant, Hatch Nuclear Plant, DC Cook Nuclear Plant and Oconee Nuclear Station) license submittals for surveillance interval extensions.

## 5 Methodology

### 5.1 Background/Overview of Methodology

As stated in the Purpose section, this analysis (the scope of which is defined in Attachment 2) is being performed to confirm that the impact on system availability, if any, from the change to a 24-month surveillance interval will be small. To confirm this conclusion, it is necessary to demonstrate that the surveillance test history does not indicate a history of repetitive failures, which would go undetected if the current surveillance interval were extended to the proposed surveillance interval.

The purpose of surveillance testing is to verify that the tested TS function/feature will perform as assumed in the associated safety analysis. By periodically testing the TS function/feature, the availability of the associated function/feature is confirmed. As such, with the extension of TS SR intervals, a longer period of time will exist between performances of the surveillance testing. If a failure, which results in the loss of the associated function, should occur during the operating cycle which could only be detected by the testing associated with the operating cycle-based TS SRs, then the increase in the surveillance testing interval would result in a decrease in the associated Function's availability.

To ensure the acceptability of the change to a 24-month (from 18-month) surveillance interval, a two-step process was employed for TS SRs. The first step was a qualitative review of the associated TS SR. A qualitative evaluation of each TS SR was performed to document the acceptability of going to a TS SR Frequency of 24 months. These evaluations employ arguments similar to those suggested in Generic Letter 91-04 (Ref. 9.1.1), such as redundant channels and more frequent testing performed during the operating cycle. These qualitative evaluations should be applied in the Documentation of Change accompanying the TS change submittal. The second step is the evaluation of the surveillance test history which is being performed in this analysis. This evaluation is being performed to confirm the general conclusion reached as part of step one. The results of each of the qualitative evaluations may be found in Attachments 3, 4 and 5 of this report and are also summarized in Section 7.

### 5.2 Surveillance Test History Analysis Methodology

As established in Section 5.1, the two-fold purpose of the analysis is: 1) to ensure that there is no evidence of repetitive surveillance test failures which would potentially result in a decrease in the system availability from the change to a 24-month surveillance interval, and; 2) to ensure that there is no evidence of repetitive surveillance test failures which would indicate that the current 18-month surveillance

interval does not provide adequate system availability and reliability. To demonstrate this, a review of the surveillance test history has been performed. Only a review of the surveillance tests which implement the 18-month TS SRs is required. Failures detected by more frequent surveillance tests are not being impacted by this change and will continue to detect failures which have been previously detected by these activities. To simplify the evaluations necessary for this analysis, surveillance test failures have been classified into categories which can, in most cases, be generically justified. The classification technique is graphically shown in Attachment 1, and each of the failure categories is described in Section 6.1. As is explained in Section 6.1, the failures in each of these categories can be demonstrated to not change the conclusion that the impact on system availability, if any, will be small as a result of the change to a 24-month surveillance test interval. The one exception to this conclusion is Category D "Unique Failures".

To ensure that repetitive failures of similar components tested by different surveillance tests would be identified, a separate evaluation was performed of all the Category D failures. This evaluation, documented in Section 6.2, reviews the Category D failures from this analysis as a group to determine if there is any evidence of repetitive failures among similar plant components.

These two evaluations (failure categorization and review of unique failures) identify any repetitive failures which could potentially invalidate the conclusion that the impact on system availability, if any, will be small from the change to a 24-month surveillance test interval.

### 5.3 Determination of Scope

As stated in Section 2, the purpose of this analysis is to support the conclusion, for all TS SRs (as displayed in Attachment 2 of this analysis) which are being changed to a 24 month surveillance interval, that the impact on system availability and reliability, if any, will be small as a result in a change to the surveillance interval. The total scope of the TS SRs requiring review, along with the applicable Events which satisfy those requirements, is identified in Attachment 2. Therefore, Attachment 2 provides the total scope of Events requiring review.

## 6 Detailed Discussion

### 6.1 Surveillance Test History Categorization and Evaluation

As stated in Section 5.3, the Events requiring review are identified in Attachment 2. For each of the identified Events, all credited Event performances occurring over at least the past seven years which were available for review, have been retrieved and any identified failures have been evaluated and categorized into one of the five categories identified in Attachment 1. As stated in Section 5.2, the categories have been established to simplify the review process. In the following paragraphs, a basis is provided to justify why each of the failure categories does not impact the conclusion that the impact on system availability, if any, from a change to a 24-month surveillance test interval will be small.

#### **CATEGORY A - NO LOSS OF DESIGN/SAFETY FUNCTION**

##### **Bases:**

A Category 'A' failure is one in which there is no impact on the ability of the component and/or system to perform its specific design/safety function. A typical

and common example of this type of failure is one where the surveillance requirement is to verify that a breaker trips on overcurrent. The test record verifies this action, but observes a failure of an indication of this trip. The indication is not the safety function being tested, but the breaker trip is. The Category A failure does not result in a loss of the design/safety function and therefore, does not affect the operability of the component or the ability of the equipment to perform its intended function. Category 'A' failures are not considered significant failures relative to the other failure categories. If the failure of the surveillance test did not result in the failure of the associated component and/or system to perform its function, and the TS requirements were satisfied, then these failures have no impact on system availability. Therefore, these failures do not impact the conclusion that the impact on system availability, if any, from the change in the surveillance test interval is small.

### **CATEGORY B - MORE FREQUENT TESTING**

#### **Bases:**

A Category 'B' failure is assigned to surveillance test failures which would be detected by the performance of other required testing or plant monitoring activities that are performed more frequently. An example of a Category 'B' failure would be finding level in a tank below the required value during an 18-month surveillance, when a Channel Check or Operator Log procedure requires this level to be verified above the same or more conservative value on a more frequent basis (such as quarterly or daily). It is anticipated that the inadequate condition would be discovered during the performance of the surveillance performed more frequently than the 18-month surveillance. If the failure can be detected by a more frequently performed test or monitoring activity, the extension of the surveillance test interval will have no impact on system availability because the failure would be detected by the more frequently performed activity and would not go undetected for a longer period of time as a result of extending the current surveillance interval. Therefore, these failures do not impact the conclusion that the impact on system availability, if any, from the change in the surveillance test interval is small.

### **CATEGORY C - EVENT DRIVEN FAILURES**

#### **Bases:**

A Category 'C' failure is assigned to surveillance test failures where the cause can be directly attributed to an associated event such as a preventative maintenance task or a modification. An example of a Category 'C' failure would be a procedure deficiency in which the surveillance procedure was unable to be completed as written due to the implementation of a modification that may have altered the plant installed equipment but was not reflected in the surveillance procedure. Also, if the failure has been caused by an event such as a modification where the performance of the surveillance test will be required to demonstrate the operability/functionality of the system or component prior to declaring the associated system operable/functional, then this failure has no impact on the system availability. Therefore, these failures do not impact the conclusion that the impact on system availability, if any, from the change in the surveillance test interval is small.

## **CATEGORY D - UNIQUE FAILURES**

### **Bases:**

A Category 'D' failure, or a 'unique' failure, is a surveillance test failure that does not occur on a repetitive basis and is not associated with a time-based failure mechanism. If the failure was caused by a 'unique' failure, then any subsequent failure which could occur would not result in a significant impact on system/component availability. That is to say that any subsequent failures would not be of the same type as previously experienced since the original failure, classified as a unique failure, would not occur on a repetitive basis or be associated with any time-based mechanism. This conclusion is based on the fact that generally all impacted systems are designed to be single failure proof and a unique failure of one of the associated systems/components will not prevent performance of the function. Therefore, these failures do not impact the conclusion that the impact on system availability, if any, from the change in the surveillance test interval is small.

## **CATEGORY E - ADDITIONAL EVALUATIONS**

### **Bases:**

If the failure cannot be grouped in any of the previous categories, A through D, then it is assigned Category E and requires additional evaluations to determine if the extended surveillance can be justified. If the surveillance cannot be justified, then an evaluation is made to determine if the surveillance test can be performed at power.

All of the Events requiring review have been evaluated and any surveillance test failures were identified and categorized. Once this step was completed, a qualitative review of each surveillance test failure was performed and a determination was made as to whether the surveillance test history supports the change to a 24-month surveillance interval. Once all the associated Events were reviewed for a particular TS SR, if all these supported a change to a 24-month TS SR frequency, the associated TS SR was identified as acceptable for a change to a 24-month surveillance interval. This evaluation is documented in Attachment 3.

### **6.2 Review of Unique Failures**

As stated in Section 5.2, a separate review of the Unique Failures from this analysis (documented in Attachment 4) was performed to ensure that no repetitive failures of similar components occurred under different Events. This review was completed by performing a review of all the Category D failures identified in this analysis as a group to determine if there was any indication of a repetitive failure mechanism or a time-based failure mechanism. Attachment 5 contains this evaluation for each Unique Failure with a summary of the conclusion for each failure.

### **6.3 Additional Evaluations**

There were no failures identified in the analysis which have been classified as Category E failures.

## **7 Summary of Results**

A Surveillance Failure Analysis was performed for the Surveillance Requirements and associated events listed in Attachment 2. The analysis of each event is documented in Attachment 3, and only 4 unique failures were observed over the study period, as

summarized in Attachment 4. Analysis of these failures as documented in Attachment 5 concludes that none are of a repetitive nature which would preclude extension of the surveillance interval from 18 to 24 months. For each event analyzed in Attachment 3, it is concluded that the surveillance test history supports the conclusion that the impact, if any, on system availability will be small as a result of the change to a 24 month surveillance interval. Therefore, the Surveillance Failure Analysis supports the extension of frequency for each of the Surveillance Requirements listed in Attachment 2 from 18 to 24 months.

## 8 Conclusion and Recommendations

All DTE Energy Fermi 2 Power Plant TS SRs (under the scope of this analysis, as defined in DTE-18005, Rev 2 Attachment 2 and 3), Events and associated failures have been reviewed and found to support the general conclusions required by Generic Letter 91-04 (Ref. 9.1.1). There is no evidence of repetitive failures or failures with a time-based failure mechanism which would invalidate the conclusion that the impact, if any, on system availability will be small as a result of the change to a 24-month surveillance test interval.

## 9 References

### 9.1 Methodology References

- 9.1.1 NRC Generic Letter 91-04, "Changes in Technical Specification Surveillance Requirements to Accommodate a 24 Month Fuel Cycle," April 2, 1991

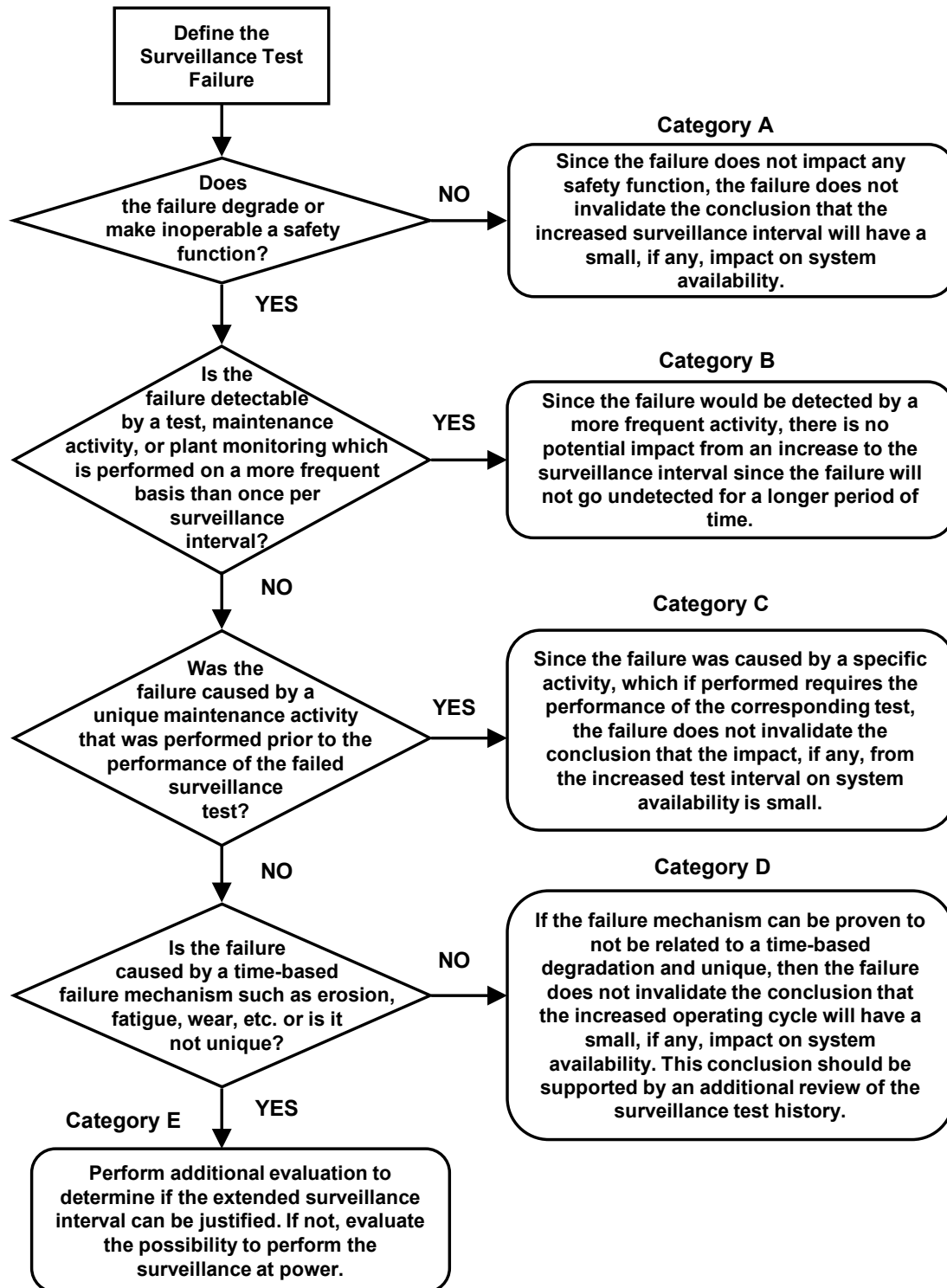
### 9.2 General References

- 9.2.1 Renewed Facility Operating License NPF-43, Technical Specifications for DTE Electric Company Fermi 2, Amendment No. 213
- 9.2.2 DTE-18005 Revision 2, 24-Month Surveillance Extension Project Scope Evaluation

## 10 Attachments

- 1. Categorization Flow Chart
- 2. Technical Specification Surveillance Requirement Interval Extension/Justification Scope
- 3. Technical Specification Event Failure History Evaluation
- 4. Technical Specification Event "Unique Failures"
- 5. Technical Specification Event "Unique Failures" Evaluation

**ATTACHMENT 1**  
**CATEGORIZATION FLOW CHART**  
**(2 PAGES)**

**ATTACHMENT 1 – CATEGORIZATION FLOW CHART**

## **ATTACHMENT 2**

### **TECHNICAL SPECIFICATION SURVEILLANCE REQUIREMENT INTERVAL EXTENSION/JUSTIFICATION SCOPE**

**(100 PAGES)**

## ATTACHMENT 2 - FERMI 2 TECHNICAL SPECIFICATION SURVEILLANCE REQUIREMENT INTERVAL EXTENSION SCOPE

REQUIREMENT	REQUIREMENT TITLE	FREQ
SR 3.1.7.8	Verify flow through one SLC subsystem from pump into reactor pressure vessel.	IAW SFCP - 18 months on a STAGGERED TEST BASIS
<b>EVENTS:</b>	<b>EVENT TITLE</b>	
0245	PERFORM 24.139.03 SEC-5.3,5.4 SLC LOOP A PUMP FLOW,MANUAL INITIATE & SQUIB FIRING	
1245	PERFORM 24.139.03 SEC-5.3,5.4 SLC LOOP B PUMP FLOW,MANUAL INITIATE & SQUIB FIRING	
SR 3.1.7.9	Verify all piping between storage tank and explosive valve is unblocked.	IAW SFCP - 18 months
<b>EVENTS:</b>	<b>EVENT TITLE</b>	
0245	PERFORM 24.139.03 SEC-5.3,5.4 SLC LOOP A PUMP FLOW,MANUAL INITIATE & SQUIB FIRING	
1245	PERFORM 24.139.03 SEC-5.3,5.4 SLC LOOP B PUMP FLOW,MANUAL INITIATE & SQUIB FIRING	
SR 3.1.8.2.a	Verify each SDV vent and drain valve: a. Closes in $\leq 30$ seconds after receipt of an actual or simulated scram signal; and	IAW SFCP - 18 months
<b>EVENTS:</b>	<b>EVENT TITLE</b>	
0227	PERFORM 24.106.06 SCRAM DISCHARGE VOL. VENT AND DRAIN VALVES SCRAM OPERABILITY	
SR 3.1.8.2.b	Verify each SDV vent and drain valve: b. Opens when the actual or simulated scram signal is reset.	IAW SFCP - 18 months
<b>EVENTS:</b>	<b>EVENT TITLE</b>	
0227	PERFORM 24.106.06 SCRAM DISCHARGE VOL. VENT AND DRAIN VALVES SCRAM OPERABILITY	
SR 3.3.1.1.13-11	CHANNEL FUNCTIONAL TEST Reactor Protection System Instrumentation Reactor Mode Switch - Shutdown Position	IAW SFCP - 18 months
<b>EVENTS:</b>	<b>EVENT TITLE</b>	
0516	PERFORM 44.010.061 RPS LOGIC FUNCTIONAL	

REQUIREMENT	REQUIREMENT TITLE	FREQ
SR 3.3.1.1.14-3	CHANNEL CALIBRATION Reactor Protection System Instrumentation Reactor Vessel Steam Dome Pressure - High	IAW SFCP - 18 months
<b>EVENTS:</b>	<b>EVENT TITLE</b>	
0701	PERFORM 44.010.005 RPS-RX STEAM DOME PRESS, TRIP SYS A, CHNL A1/A, XMTR CAL	
0703	PERFORM 44.010.006 RPS-RX STEAM DOME PRESS, TRIP SYS B, CHNL B1/B, XMTR CAL	
0704	PERFORM 44.010.007 RPS-RX STEAM DOME PRESS, TRIP SYS A, CHNL A2/C, XMTR CAL	
0705	PERFORM 44.010.008 RPS-RX STEAM DOME PRESS, TRIP SYS B, CHNL B2/D, XMTR CAL	
1701	PERFORM 44.010.005 RPS-RX STEAM DOME PRESS,TRIP SYS A,CHNL A1/A,MTU CAL/FUNC	
1703	PERFORM 44.010.006 RPS-RX STEAM DOME PRESS,TRIP SYS B,CHNL B1/B,MTU CAL/FUNC	
1704	PERFORM 44.010.007 RPS-RX STEAM DOME PRESS,TRIP SYS A,CHNL A2/C,MTU CAL/FUNC	
1705	PERFORM 44.010.008 RPS-RX STEAM DOME PRESS,TRIP SYS B,CHNL B2/D,MTU CAL/FUNC	
SR 3.3.1.1.14-4	CHANNEL CALIBRATION Reactor Protection System Instrumentation Reactor Vessel Water Level - Low, Level 3	IAW SFCP - 18 months
<b>EVENTS:</b>	<b>EVENT TITLE</b>	
0750	PERFORM 44.010.017 RPS(TS A/TC A1)-NS4(TS A/TC A) RX LOW WTR LVL 3, B21N080A, XMTR CAL	
0751	PERFORM 44.010.018 RPS(TS B/TC B1)-NS4(TS A/TC B) RX LOW WTR LVL 3, B21N080B, XTMR CAL	
0752	PERFORM 44.010.019 RPS(TS A/TC A2)-NS4(TS B/TC C) RX LOW WTR LVL 3, B21N080C, XMTR CAL	
0753	PERFORM 44.010.020 RPS(TS B/TC B2)-NS4(TS B/TC D) RX LOW WTR LVL 3, B21N080D, XMTR CAL	
1750	PERFORM 44.010.017 RPS(TS A/TC A1)-NS4(TS A/TC A) RX LOW WTR LVL 3, B21N680A MTU CAL/FUNC	
1751	PERFORM 44.010.018 RPS(TS B/TC B1)-NS4(TS A/TC B) RX LOW WTR LVL 3, B21N680B MTU CAL/FUNC	
1752	PERFORM 44.010.019 RPS(TS A/TC A2)-NS4(TS B/TC C) RX LOW WTR LVL 3, B21N680C MTU CAL/FUNC	
1753	PERFORM 44.010.020 RPS(TS B/TC B2)-NS4(TS B/TC D) RX LOW WTR LVL 3, B21N680D MTU CAL/FUNC	
SR 3.3.1.1.14-5	CHANNEL CALIBRATION Reactor Protection System Instrumentation Main Steam isolation Valve - Closure	IAW SFCP - 18 months
<b>EVENTS:</b>	<b>EVENT TITLE</b>	
0517	PERFORM 44.010.062 RPS MSIV'S-INBOARD VALVE LIMIT SWITCH,DIV 1&2,CAL	
0518	PERFORM 44.010.063 RPS MSIV-OUTBOARD VALVE LIMIT SWITCH,DIV 1&2,CAL	

REQUIREMENT	REQUIREMENT TITLE	FREQ
SR 3.3.1.1.14-7	CHANNEL CALIBRATION Reactor Protection System Instrumentation Drywell Pressure - High	IAW SFCP - 18 months
<b>EVENTS:</b>	<b>EVENT TITLE</b>	
0496	PERFORM 44.010.037 RPS(TS A/TC A1)-NS4(TS A/TC A) DW PRESSURE, C71N650A, CALIBRATION/FUNC	
0497	PERFORM 44.010.038 RPS(TS B/TC B1)-NS4(TS A/TC B) DW PRESSURE, C71N650B, CALIBRATION/FUNC	
0498	PERFORM 44.010.039 RPS(TS A/TC A2)-NS4(TS B/TC C) DW PRESSURE, C71N650C, CALIBRATION/FUNC	
0499	PERFORM 44.010.040 RPS(TS B/TC B2)-NS4(TS B/TC D) DW PRESSURE, C71N650D, CALIBRATION/FUNC	
SR 3.3.1.1.14-8.a	CHANNEL CALIBRATION Reactor Protection System Instrumentation Scram Discharge Volume Water Level - High a. Level Transmitter	IAW SFCP - 18 months
<b>EVENTS:</b>	<b>EVENT TITLE</b>	
0523	PERFORM 44.010.075 RPS-SDV HIGH WTR LVL TRIP SYS A, CHANNEL A1/A CAL/FUNCT.	
0524	PERFORM 44.010.076 RPS-SDV HIGH WTR LVL TRIP SYS B, CHANNEL B1/B CAL/FUNCT.	
0525	PERFORM 44.010.077 RPS-SDV HIGH WTR LVL TRIP SYS A, CHANNEL A2/C CAL/FUNCT.	
0526	PERFORM 44.010.078 RPS-SDV HIGH WTR LVL TRIP SYS B, CHANNEL B2/D CAL/FUNCT.	
SR 3.3.1.1.14-8.b	CHANNEL CALIBRATION Reactor Protection System Instrumentation Scram Discharge Volume Water Level - High b. Float Switch	IAW SFCP - 18 months
<b>EVENTS:</b>	<b>EVENT TITLE</b>	
1070	PERFORM 44.010.045 RPS SDV HIGH WTR LVL TRIP SYS A, CH A1/A FLT SWITCH CAL/FUNCT	
1071	PERFORM 44.010.046 RPS SDV HIGH WTR LVL TRIP SYS B, CH B1/B FLT SWITCH CAL/FUNCT	
1072	PERFORM 44.010.047 RPS SDV HIGH WTR LVL TRIP SYS A, CH A2/C FLT SWITCH CAL/FUNCT	
1073	PERFORM 44.010.048 RPS SDV HIGH WTR LVL TRIP SYS B, CH B2/D FLT SWITCH CAL/FUNCT	
SR 3.3.1.1.14-9	CHANNEL CALIBRATION Reactor Protection System Instrumentation Turbine Stop Valve - Closure	IAW SFCP - 18 months
<b>EVENTS:</b>	<b>EVENT TITLE</b>	
1051	PERFORM 44.010.064 RPS-TURBINE STOP VA. LIMIT SWITCH CLOSURE CALIBRATION	
SR 3.3.1.1.15-1.a	LOGIC SYSTEM FUNCTIONAL TEST Reactor Protection System Instrumentation Intermediate Range Monitors a. Neutron Flux-High	IAW SFCP - 18 months
<b>EVENTS:</b>	<b>EVENT TITLE</b>	
0516	PERFORM 44.010.061 RPS LOGIC FUNCTIONAL	

REQUIREMENT	REQUIREMENT TITLE	FREQ
SR 3.3.1.1.15-1.b	LOGIC SYSTEM FUNCTIONAL TEST Reactor Protection System Instrumentation Intermediate Range Monitors b. Inop	IAW SFCP - 18 months
<b>EVENTS:</b>	<b>EVENT TITLE</b>	
0516	PERFORM 44.010.061 RPS LOGIC FUNCTIONAL	
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SR 3.3.1.1.15-3	LOGIC SYSTEM FUNCTIONAL TEST Reactor Protection System Instrumentation Reactor Vessel Steam Dome Pressure - High	IAW SFCP - 18 months
<b>EVENTS:</b>	<b>EVENT TITLE</b>	
0516	PERFORM 44.010.061 RPS LOGIC FUNCTIONAL	
0701	PERFORM 44.010.005 RPS-RX STEAM DOME PRESS, TRIP SYS A, CHNL A1/A, XMTR CAL	
0703	PERFORM 44.010.006 RPS-RX STEAM DOME PRESS, TRIP SYS B, CHNL B1/B, XMTR CAL	
0704	PERFORM 44.010.007 RPS-RX STEAM DOME PRESS, TRIP SYS A, CHNL A2/C, XMTR CAL	
0705	PERFORM 44.010.008 RPS-RX STEAM DOME PRESS, TRIP SYS B, CHNL B2/D, XMTR CAL	
1701	PERFORM 44.010.005 RPS-RX STEAM DOME PRESS,TRIP SYS A,CHNL A1/A,MTU CAL/FUNC	
1703	PERFORM 44.010.006 RPS-RX STEAM DOME PRESS,TRIP SYS B,CHNL B1/B,MTU CAL/FUNC	
1704	PERFORM 44.010.007 RPS-RX STEAM DOME PRESS,TRIP SYS A,CHNL A2/C,MTU CAL/FUNC	
1705	PERFORM 44.010.008 RPS-RX STEAM DOME PRESS,TRIP SYS B,CHNL B2/D,MTU CAL/FUNC	
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SR 3.3.1.1.15-4	LOGIC SYSTEM FUNCTIONAL TEST Reactor Protection System Instrumentation Reactor Vessel Water Level - Low, Level 3	IAW SFCP - 18 months
<b>EVENTS:</b>	<b>EVENT TITLE</b>	
0516	PERFORM 44.010.061 RPS LOGIC FUNCTIONAL	
0750	PERFORM 44.010.017 RPS(TS A/TC A1)-NS4(TS A/TC A) RX LOW WTR LVL 3, B21N080A, XMTR CAL	
0751	PERFORM 44.010.018 RPS(TS B/TC B1)-NS4(TS A/TC B) RX LOW WTR LVL 3, B21N080B, XTMR CAL	
0752	PERFORM 44.010.019 RPS(TS A/TC A2)-NS4(TS B/TC C) RX LOW WTR LVL 3, B21N080C, XMTR CAL	
0753	PERFORM 44.010.020 RPS(TS B/TC B2)-NS4(TS B/TC D) RX LOW WTR LVL 3, B21N080D, XMTR CAL	
1750	PERFORM 44.010.017 RPS(TS A/TC A1)-NS4(TS A/TC A) RX LOW WTR LVL 3, B21N680A MTU CAL/FUNC	
1751	PERFORM 44.010.018 RPS(TS B/TC B1)-NS4(TS A/TC B) RX LOW WTR LVL 3, B21N680B MTU CAL/FUNC	
1752	PERFORM 44.010.019 RPS(TS A/TC A2)-NS4(TS B/TC C) RX LOW WTR LVL 3, B21N680C MTU CAL/FUNC	
1753	PERFORM 44.010.020 RPS(TS B/TC B2)-NS4(TS B/TC D) RX LOW WTR LVL 3, B21N680D MTU CAL/FUNC	
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REQUIREMENT	REQUIREMENT TITLE	FREQ
SR 3.3.1.1.15-5	LOGIC SYSTEM FUNCTIONAL TEST Reactor Protection System Instrumentation Main Steam isolation Valve - Closure	IAW SFCP - 18 months
<b>EVENTS:</b>	<b>EVENT TITLE</b>	
0516	PERFORM 44.010.061 RPS LOGIC FUNCTIONAL	
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SR 3.3.1.1.15-7	LOGIC SYSTEM FUNCTIONAL TEST Reactor Protection System Instrumentation Drywell Pressure - High	IAW SFCP - 18 months
<b>EVENTS:</b>	<b>EVENT TITLE</b>	
0496	PERFORM 44.010.037 RPS(TS A/TC A1)-NS4(TS A/TC A) DW PRESSURE, C71N650A, CALIBRATION/FUNC	
0497	PERFORM 44.010.038 RPS(TS B/TC B1)-NS4(TS A/TC B) DW PRESSURE, C71N650B, CALIBRATION/FUNC	
0498	PERFORM 44.010.039 RPS(TS A/TC A2)-NS4(TS B/TC C) DW PRESSURE, C71N650C, CALIBRATION/FUNC	
0499	PERFORM 44.010.040 RPS(TS B/TC B2)-NS4(TS B/TC D) DW PRESSURE, C71N650D, CALIBRATION/FUNC	
0516	PERFORM 44.010.061 RPS LOGIC FUNCTIONAL	
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SR 3.3.1.1.15-8.a	LOGIC SYSTEM FUNCTIONAL TEST Reactor Protection System Instrumentation Scram Discharge Volume Water Level - High a. Level Transmitter	IAW SFCP - 18 months
<b>EVENTS:</b>	<b>EVENT TITLE</b>	
0516	PERFORM 44.010.061 RPS LOGIC FUNCTIONAL	
0523	PERFORM 44.010.075 RPS-SDV HIGH WTR LVL TRIP SYS A, CHANNEL A1/A CAL/FUNCT.	
0524	PERFORM 44.010.076 RPS-SDV HIGH WTR LVL TRIP SYS B, CHANNEL B1/B CAL/FUNCT.	
0525	PERFORM 44.010.077 RPS-SDV HIGH WTR LVL TRIP SYS A, CHANNEL A2/C CAL/FUNCT.	
0526	PERFORM 44.010.078 RPS-SDV HIGH WTR LVL TRIP SYS B, CHANNEL B2/D CAL/FUNCT.	
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SR 3.3.1.1.15-8.b	LOGIC SYSTEM FUNCTIONAL TEST Reactor Protection System Instrumentation Scram Discharge Volume Water Level - High b. Float Switch	IAW SFCP - 18 months
<b>EVENTS:</b>	<b>EVENT TITLE</b>	
0516	PERFORM 44.010.061 RPS LOGIC FUNCTIONAL	
1070	PERFORM 44.010.045 RPS SDV HIGH WTR LVL TRIP SYS A, CH A1/A FLT SWITCH CAL/FUNCT	
1071	PERFORM 44.010.046 RPS SDV HIGH WTR LVL TRIP SYS B, CH B1/B FLT SWITCH CAL/FUNCT	
1072	PERFORM 44.010.047 RPS SDV HIGH WTR LVL TRIP SYS A, CH A2/C FLT SWITCH CAL/FUNCT	
1073	PERFORM 44.010.048 RPS SDV HIGH WTR LVL TRIP SYS B, CH B2/D FLT SWITCH CAL/FUNCT	
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REQUIREMENT	REQUIREMENT TITLE	FREQ
SR 3.3.1.1.15-9	LOGIC SYSTEM FUNCTIONAL TEST Reactor Protection System Instrumentation Turbine Stop Valve - Closure	IAW SFCP - 18 months
<b>EVENTS:</b>	<b>EVENT TITLE</b>	
0516	PERFORM 44.010.061 RPS LOGIC FUNCTIONAL	
1167	PERFORM 44.010.067 RPS-TS A, CH A, TURB STOP/CONTROL VLV TRIP BYPASS CAL/FUNC	
1168	PERFORM 44.010.068 RPS-TS B, CHL B TURB STOP/CONTROL VLV TRIP BYPASS CAL/FUNC	
1169	PERFORM 44.010.069 RPS-TS A, CH C TURB STOP/CONTROL VLV TRIP BYPASS CAL/FUNC	
1170	PERFORM 44.010.070 RPS-TS B, CH D TURB STOP/CONTROL VLV TRIP BYPASS CAL/FUNC	
SR 3.3.1.1.15-10	LOGIC SYSTEM FUNCTIONAL TEST Reactor Protection System Instrumentation Turbine Control Valve Fast Closure	IAW SFCP - 18 months
<b>EVENTS:</b>	<b>EVENT TITLE</b>	
0516	PERFORM 44.010.061 RPS LOGIC FUNCTIONAL	
1167	PERFORM 44.010.067 RPS-TS A, CH A, TURB STOP/CONTROL VLV TRIP BYPASS CAL/FUNC	
1168	PERFORM 44.010.068 RPS-TS B, CHL B TURB STOP/CONTROL VLV TRIP BYPASS CAL/FUNC	
1169	PERFORM 44.010.069 RPS-TS A, CH C TURB STOP/CONTROL VLV TRIP BYPASS CAL/FUNC	
1170	PERFORM 44.010.070 RPS-TS B, CH D TURB STOP/CONTROL VLV TRIP BYPASS CAL/FUNC	
SR 3.3.1.1.15-11	LOGIC SYSTEM FUNCTIONAL TEST Reactor Protection System Instrumentation Reactor Mode Switch - Shutdown Position	IAW SFCP - 18 months
<b>EVENTS:</b>	<b>EVENT TITLE</b>	
0516	PERFORM 44.010.061 RPS LOGIC FUNCTIONAL	
SR 3.3.1.1.15-12	LOGIC SYSTEM FUNCTIONAL TEST Reactor Protection System Instrumentation Manual Scram	IAW SFCP - 18 months
<b>EVENTS:</b>	<b>EVENT TITLE</b>	
0516	PERFORM 44.010.061 RPS LOGIC FUNCTIONAL	

REQUIREMENT	REQUIREMENT TITLE	FREQ
SR 3.3.1.1.16-9	Verify Turbine Stop Valve-Closure and Turbine Control Valve Fast Closure Functions are not bypassed when THERMAL POWER is > 29.5% RTP. Turbine Stop Valve - Closure	IAW SFCP - 18 months
<b>EVENTS:      EVENT TITLE</b>		
1167	PERFORM 44.010.067 RPS-TS A, CH A, TURB STOP/CONTROL VLV TRIP BYPASS CAL/FUNC	
1168	PERFORM 44.010.068 RPS-TS B, CHL B TURB STOP/CONTROL VLV TRIP BYPASS CAL/FUNC	
1169	PERFORM 44.010.069 RPS-TS A, CH C TURB STOP/CONTROL VLV TRIP BYPASS CAL/FUNC	
1170	PERFORM 44.010.070 RPS-TS B, CH D TURB STOP/CONTROL VLV TRIP BYPASS CAL/FUNC	
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SR 3.3.1.1.16-10	Verify Turbine Stop Valve-Closure and Turbine Control Valve Fast Closure Functions are not bypassed when THERMAL POWER is > 29.5% RTP. Turbine Control Valve Fast Closure	IAW SFCP - 18 months
<b>EVENTS:      EVENT TITLE</b>		
1167	PERFORM 44.010.067 RPS-TS A, CH A, TURB STOP/CONTROL VLV TRIP BYPASS CAL/FUNC	
1168	PERFORM 44.010.068 RPS-TS B, CHL B TURB STOP/CONTROL VLV TRIP BYPASS CAL/FUNC	
1169	PERFORM 44.010.069 RPS-TS A, CH C TURB STOP/CONTROL VLV TRIP BYPASS CAL/FUNC	
1170	PERFORM 44.010.070 RPS-TS B, CH D TURB STOP/CONTROL VLV TRIP BYPASS CAL/FUNC	
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SR 3.3.1.1.17-2.e	Note: Neutron detectors are excluded. Verify the RPS RESPONSE TIME is within limits. Average Power Range Monitors e. 2-out-of-4 Voter	IAW SFCP - 18 months on a STAGGERED TEST BASIS
<b>EVENTS:      EVENT TITLE</b>		
0729	PERFORM 44.010.136 APRM TWO-OUT-OF-FOUR RPS A1 RTT	
0730	PERFORM 44.010.137 APRM TWO-OUT-OF-FOUR RPS B1 RTT	
0731	PERFORM 44.010.138 APRM TWO-OUT-OF-FOUR RPS A2 RTT	
0732	PERFORM 44.010.139 APRM TWO-OUT-OF-FOUR RPS B2 RTT	
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SR 3.3.1.1.17-5	Note: Neutron detectors are excluded. Verify the RPS RESPONSE TIME is within limits. Main Steam isolation Valve - Closure	IAW SFCP - 18 months on a STAGGERED TEST BASIS
<b>EVENTS:      EVENT TITLE</b>		
0504	PERFORM 44.010.049 RPS-MSIV, TRIP SYS A CHANNEL A1,RTT	
0505	PERFORM 44.010.050 RPS-MSIV, TRIP SYS B CHANNEL B1,RTT	
0506	PERFORM 44.010.051 RPS-MSIV, TRIP SYS A CHANNEL A2,RTT	
0507	PERFORM 44.010.052 RPS-MSIV, TRIP SYS B CHANNEL B2,RTT	
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REQUIREMENT	REQUIREMENT TITLE	FREQ
SR 3.3.1.1.17-9	Note: Neutron detectors are excluded. Verify the RPS RESPONSE TIME is within limits. Turbine Stop Valve - Closure	IAW SFCP - 18 months on a STAGGERED TEST BASIS
<b>EVENTS:      EVENT TITLE</b>		
0508	PERFORM 44.010.053 RPS-TURBINE STOP VALVE CLOSURE, TRIP SYS A,CHAN A1,RTT	
0509	PERFORM 44.010.054 RPS-TURBINE STOP VALVE CLOSURE, TRIP SYS B, CHAN B1,RTT	
0510	PERFORM 44.010.055 RPS-TURBINE STOP VALVE CLOSURE, TRIP SYS A, CHAN A2, RTT	
0511	PERFORM 44.010.056 RPS-TURBINE STOP VALVE CLOSURE, TRIP SYS B, CHAN B2, RTT	
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SR 3.3.1.1.17-10	Note: Neutron detectors are excluded. Verify the RPS RESPONSE TIME is within limits. Turbine Control Valve Fast Closure	IAW SFCP - 18 months on a STAGGERED TEST BASIS
<b>EVENTS:      EVENT TITLE</b>		
0512	PERFORM 44.010.057 RPS-TURBINE CONT VALVE FAST CLOSURE,TRIP SYS A,CH A1,RTT	
0513	PERFORM 44.010.058 RPS-TURBINE CONT VALVE FAST CLOSURE,TRIP SYS B,CH B1,RTT	
0514	PERFORM 44.010.059 RPS-TURBINE CONT VALVE FAST CLOSURE,TRIP SYS A,CH A2,RTT	
0515	PERFORM 44.010.060 RPS-TURBINE CONT VALVE FAST CLOSURE,TRIP SYS B,CH B2,RTT	
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SR 3.3.2.1.4-3	CHANNEL FUNCTIONAL TEST Control Rod Block Instrumentation Reactor Mode Switch - Shutdown Position	IAW SFCP - 18 months
<b>EVENTS:      EVENT TITLE</b>		
0516	PERFORM 44.010.061 RPS LOGIC FUNCTIONAL	
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SR 3.3.2.2.3	CHANNEL CALIBRATION The Allowable Value shall be 219 inches. Feedwater and Main Turbine High Water Level Trip Instrumentation	IAW SFCP - 18 months
<b>EVENTS:      EVENT TITLE</b>		
0765	PERFORM 44.030.265 ECCS RX WTR LVL (ADS LVL3 & FW/MN TURB LVL8)D1,CH A,XMTR CAL	
0766	PERFORM 44.030.266 ECCS RX WTR LVL (ADS LVL3 & FW/MN TURB LVL8)D2,CH B,XMTR CAL	
0885	PERFORM 44.190.009 FEEDWTR/M. TURB TRIP SYS-RX WATER LVL 8,DIV 1,CHNL C,XMTR CAL	
0886	PERFORM 44.190.010 FEEDWTR/M. TURB TRIP SYS-RX WATER LVL 8,DIV 2,CHNL D,XMTR CAL	
1765	PERFORM 44.030.265 ECCS RX WTR LVL (ADS LVL3-FW/MN TURB LVL8)D1,CH A,MTU CAL/CF	
1766	PERFORM 44.030.266 ECCS RX WTR LVL (ADS LVL3-FW/MN TURB LVL8)D2,CH B,MTU CAL/CF	
1885	PERFORM 44.190.009 FEEDWTR/M. TURB TRIP SYS-RX WATER LVL 8,D1,CHNL C,MTU CAL/CF	
1886	PERFORM 44.190.010 FEEDWTR/M. TURB TRIP SYS-RX WATER LVL 8,D2,CHNL D,MTU CAL/CF	
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REQUIREMENT	REQUIREMENT TITLE	FREQ
SR 3.3.2.2.4	LOGIC SYSTEM FUNCTIONAL TEST including valve actuation. Feedwater and Main Turbine High Water Level Trip Instrumentation	IAW SFCP - 18 months
	<b>EVENTS:</b>	
	<b>EVENT TITLE</b>	
0765	PERFORM 44.030.265 ECCS RX WTR LVL (ADS LVL3 & FW/MN TURB LVL8)D1,CH A,XMTR CAL	
0766	PERFORM 44.030.266 ECCS RX WTR LVL (ADS LVL3 & FW/MN TURB LVL8)D2,CH B,XMTR CAL	
0882	PERFORM 44.190.001 FEEDWTR/MAIN TURBINE TRIP SYSTEM-LOGIC FUNCTIONAL TEST-NEIL REQ'D	
0885	PERFORM 44.190.009 FEEDWTR/M. TURB TRIP SYS-RX WATER LVL 8,DIV 1,CHNL C,XMTR CAL	
0886	PERFORM 44.190.010 FEEDWTR/M. TURB TRIP SYS-RX WATER LVL 8,DIV 2,CHNL D,XMTR CAL	
1765	PERFORM 44.030.265 ECCS RX WTR LVL (ADS LVL3-FW/MN TURB LVL8)D1,CH A,MTU CAL/CF	
1766	PERFORM 44.030.266 ECCS RX WTR LVL (ADS LVL3-FW/MN TURB LVL8)D2,CH B,MTU CAL/CF	
1885	PERFORM 44.190.009 FEEDWTR/M. TURB TRIP SYS-RX WATER LVL 8,D1,CHNL C,MTU CAL/CF	
1886	PERFORM 44.190.010 FEEDWTR/M. TURB TRIP SYS-RX WATER LVL 8,D2,CHNL D,MTU CAL/CF	
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SR 3.3.3.1.2-1	CHANNEL CALIBRATION Post Accident Monitoring Instrumentation Reactor Vessel Pressure	IAW SFCP - 18 months
	<b>EVENTS:</b>	
	<b>EVENT TITLE</b>	
0850	PERFORM 44.120.001 ACCIDENT MONITORING RX PRESSURE,DIV 1, CHANNEL CALIBRATION	
0851	PERFORM 44.120.002 ACCIDENT MONITORING RX PRESSURE,DIV 2, CHANNEL CALIBRATION	
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SR 3.3.3.1.2-2	CHANNEL CALIBRATION Post Accident Monitoring Instrumentation Reactor Vessel Water Level - Fuel Zone	IAW SFCP - 18 months
	<b>EVENTS:</b>	
	<b>EVENT TITLE</b>	
0801	PERFORM 44.030.082 ACCIDENT MONITOR RX WTR LEVEL,DIV 1, XMTR CAL	
0802	PERFORM 44.030.083 ACCIDENT MONITOR RX WTR LEVEL,DIV 2, XMTR CAL	
1801	PERFORM 44.030.082 ACCIDENT MONITOR RX WTR LEVEL,DIV 1, MTU CAL/FUNC	
1802	PERFORM 44.030.083 ACCIDENT MONITOR RX WTR LEVEL,DIV 2, MTU CAL/FUNC	
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REQUIREMENT	REQUIREMENT TITLE	FREQ
SR 3.3.3.1.2-3	CHANNEL CALIBRATION Post Accident Monitoring Instrumentation Reactor Vessel Water Level - Wide Range	IAW SFCP - 18 months
<b>EVENTS:</b>	<b>EVENT TITLE</b>	
0672	PERFORM 44.030.256 ECCS RX WTR LVL 1,2&8 DIV 2,CHNL B, XMTR CALIBRATION	
0673	PERFORM 44.030.257 ECCS RX WTR LVL 1,2&8 DIV 1,CHNL C, XMTR CALIBRATION	
0850	PERFORM 44.120.001 ACCIDENT MONITORING RX PRESSURE,DIV 1, CHANNEL CALIBRATION	
0851	PERFORM 44.120.002 ACCIDENT MONITORING RX PRESSURE,DIV 2, CHANNEL CALIBRATION	
1672	PERFORM 44.030.256 ECCS RX WTR LVL 1,2&8 DIV 2,CHNL B, MTU CAL	
1673	PERFORM 44.030.257 ECCS RX WTR LVL 1,2&8 DIV 1,CHNL C, MTU CAL	
SR 3.3.3.1.2-4	CHANNEL CALIBRATION Post Accident Monitoring Instrumentation Suppression Pool Water Level	IAW SFCP - 18 months
<b>EVENTS:</b>	<b>EVENT TITLE</b>	
0856	PERFORM 44.120.009 ACCIDENT MONITORING TORUS WTR LVL,DIV 1,CALIBRATION	
0857	PERFORM 44.120.010 ACCIDENT MONITORING TORUS WTR LVL,DIV 2,CALIBRATION	
SR 3.3.3.1.2-5	CHANNEL CALIBRATION Post Accident Monitoring Instrumentation Suppression Pool Water Temperature	IAW SFCP - 18 months
<b>EVENTS:</b>	<b>EVENT TITLE</b>	
0854	PERFORM 44.120.007 ACCIDENT MONITORING DIV 1,TEMPERATURE RECORDER,CALIBRATION	
0855	PERFORM 44.120.008 ACCIDENT MONITORING DIV 2,TEMPERATURE RECORDER,CALIBRATION	
SR 3.3.3.1.2-6	CHANNEL CALIBRATION Post Accident Monitoring Instrumentation Drywell Pressure - Wide Range	IAW SFCP - 18 months
<b>EVENTS:</b>	<b>EVENT TITLE</b>	
0852	PERFORM 44.120.005 ACCIDENT MONITORING DW PRESSURE,DIV 1, CHANNEL CALIBRATION	
0853	PERFORM 44.120.006 ACCIDENT MONITORING DW PRESSURE,DIV 2,CHANNEL CALIBRATION	

REQUIREMENT	REQUIREMENT TITLE	FREQ
SR 3.3.3.1.2-7	CHANNEL CALIBRATION Post Accident Monitoring Instrumentation Primary Containment High Range Radiation Monitor	IAW SFCP - 18 months
<b>EVENTS:</b>		
	<b>EVENT TITLE</b>	
0866	PERFORM 64.120.040 CONTAINMENT AREA HIGH RANGE RADIATION MONITOR DIV 1 ELEC CAL	
0867	PERFORM 64.120.041 CONTAINMENT AREA HIGH RANGE RADIATION MONITOR DIV 2 ELEC CAL	
3866	PERFORM 64.120.040 CONTAINMENT AREA HIGH RANGE RADIATION MONITOR DIV 1 RAD CAL	
3867	PERFORM 64.120.041 CONTAINMENT AREA HIGH RANGE RADIATION MONITOR DIV 2 RAD CAL	

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REQUIREMENT	REQUIREMENT TITLE	FREQ
SR 3.3.3.1.2-8	CHANNEL CALIBRATION Post Accident Monitoring Instrumentation PCIV Position	IAW SFCP - 18 months
<b>EVENTS:</b>	<b>EVENT TITLE</b>	
0239	PERFORM 24.137.18 SEC-5.2 MS LINE DRN & DRN ISO VLV OP & LOC POSITION VERIF TEST	
0244	PERFORM 24.138.02 SEC-5.2 RX RECIRC LOCAL VALVE POSITION VERIFICATION TEST	
0248	PERFORM 24.144.01 SEC-5.2 TWMS VALVE OPERABILITY & POSITION VERIF. TEST	
0255	PERFORM 24.202.05 SEC-5.2 & 5.3 HPCI LOCAL VALVE POS INDICATION VERIF & LSFT	
0260	PERFORM 24.203.04 SEC-5.3 DIV.1 CSS LOCAL VALVE POSITION INDICATION VERIF.	
0265	PERFORM 24.204.05 SEC-5.1 DIV. 1 RHR LOCAL VALVE POSITION INDICATION & STROKE	
0272	PERFORM 24.206.02 SEC-5.2 RCIC VAL POS INDICATION VERIF. / MANUAL INITIATE	
0280	PERFORM 24.207.04 SEC-5.2 RBCCW/EECW DIV 1 VALVE POSTION INDICATION VERIF	
0321	PERFORM 24.406.02 SEC-5.2 NITROGEN INERT VLV POS INDICATION VERIF MODE 4,5	
0322	PERFORM 24.408.03 SEC-5.2 DIV 1 PRIMARY CONT MONT SYS VLV OP AND IND VERIF	
0324	PERFORM 24.409.02 SEC-5.2 DIV.1 POST LOCA RECOMBINER LOCAL VALVE POSITION IND	
0351	PERFORM 24.702.01 SEC-5.3 MISCELLANEOUS SYSTEMS LOCAL VALVE POSITION VERIF.	
0353	PERFORM 24.707.01 SEC-5.1 RWCU LOCAL VALVE POSITION VERIFICATION	
1120	PERFORM 24.409.03 SEC-5.2 DIV.2 POST LOCA RECOMBINER LOCAL VALVE POSITION IND	
1134	PERFORM 24.204.05 SEC-5.3 DIV. 2 RHR LOCAL VALVE POSITION INDICATION & STROKE	
1135	PERFORM 24.204.08 NON-DIVISIONAL RHR VALVE POSITION & STROKE TIME TEST	
1233	PERFORM 24.137.03 SEC-5.1 & 5.3 MSIV FAIL SAFE TEST / POSITION INDICATION	
1260	PERFORM 24.203.04 SEC-5.4 DIV.2 CSS LOCAL VALVE POSITION INDICATION VERIF.	
1265	PERFORM 24.204.05 SEC-5.2 DIV 1 RHR LOCAL VALVE POSITION INDICATION VERIF.	
1266	PERFORM 24.204.05 SEC-5.4 DIV 2 RHR LOCAL VALVE POSITION INDICATION VERIF.	
1315	PERFORM 24.404.03 SEC-5.2 SGTS VALVE OPERABILITY & POSITION INDICATION VERIF.	
1321	PERFORM 24.406.02 SEC-5.1 NITROGEN INERT VLV POS INDICATION VERIF ANY MODE	
2280	PERFORM 24.207.11 SEC-5.2 RBCCW/EECW DIV 2 VALVE POSITION INDICATION VERIF	
2322	PERFORM 24.408.04 SEC-5.2 DIV 2 PRIMARY CONT MONT SYS VLV OP AND POS IND VERIF	

REQUIREMENT	REQUIREMENT TITLE	FREQ
SR 3.3.3.2.2	Verify each required control circuit and transfer switch is capable of performing the intended function. Remote Shutdown System	IAW SFCP - 18 months
<b>EVENTS:</b>	<b>EVENT TITLE</b>	
0350	PERFORM 24.630.01 REMOTE SHUTDOWN PANEL CONTROL CIRCUIT/SWITCH TEST	
0350A	PERFORM 24.630.01 Sec-5.1(SDC Vlv-E1150F008) & Sec-5.2(CRD) REMOTE S/D PNL CONTROL CIRCUIT/SW. TEST	
0350B	PERFORM 24.630.01 Sec-5.4(RCIC Vlvs & SRVs) REMOTE S/D PNL CONTROL CIRCUIT/SW. TEST	
0350C	PERFORM 24.630.01 Sec-5.3, 5.4(Div 1-RHR,RHRSW,MDCT FAN) REMOTE S/D PNL CONTROL CIRCUIT/SW. TEST	
0350D	PERFORM 24.630.01 (E1150F008 only) REMOTE S/D PANEL CONTROL CIRCUIT/SWITCH TEST	
0350E	PERFORM 24.630.01 (Sec-5.7-RX Recirc) REMOTE SHUTDOWN PANEL CONTROL CIRCUIT/SWITCH TEST	
0350F	PERFORM 24.630.01 Sec-5.3(E1150F009 & B3105F023A) REMOTE S/D PANEL CONTROL CIRCUIT/SWITCH TEST	
1135	PERFORM 24.204.08 NON-DIVISIONAL RHR VALVE POSITION & STROKE TIME TEST	
2244	PERFORM 24.321.03 DEDICATED SHUTDOWN(3L) H21P626 OPERABILITY - ONLINE	
2809	PERFORM 44.060.002 RCIC SYSTEM LOGIC FUNCTIONAL TEST - ONLINE	
SR 3.3.3.2.3-1	CHANNEL CALIBRATION Remote Shutdown System Reactor Vessel Pressure	IAW SFCP - 18 months
<b>EVENTS:</b>	<b>EVENT TITLE</b>	
0845	PERFORM 44.110.001 REMOTE SHUTDOWN RX PRESS,DIV 1,CAL	
SR 3.3.3.2.3-2	CHANNEL CALIBRATION Remote Shutdown System Reactor Vessel Water Level	IAW SFCP - 18 months
<b>EVENTS:</b>	<b>EVENT TITLE</b>	
0673	PERFORM 44.030.257 ECCS RX WTR LVL 1,2&8 DIV 1,CHNL C, XMTR CALIBRATION	
1673	PERFORM 44.030.257 ECCS RX WTR LVL 1,2&8 DIV 1,CHNL C, MTU CAL	
SR 3.3.3.2.3-3	CHANNEL CALIBRATION Remote Shutdown System Suppression Chamber Water Temperature	IAW SFCP - 18 months
<b>EVENTS:</b>	<b>EVENT TITLE</b>	
0849	PERFORM 44.110.009 REMOTE SHUTDOWN TORUS WATER TEMP,DIV 1,CALIBRATION	

REQUIREMENT	REQUIREMENT TITLE	FREQ
SR 3.3.3.2.3-4	CHANNEL CALIBRATION Remote Shutdown System Drywell Pressure	IAW SFCP - 18 months
<b>EVENTS:</b>	<b>EVENT TITLE</b>	
0848	PERFORM 44.110.006 REMOTE SHUTDOWN DW PRESS,DIV 1,CHANNEL CALIBRATION	
SR 3.3.3.2.3-5	CHANNEL CALIBRATION Remote Shutdown System RHR Heat Exchanger Discharge Flow	IAW SFCP - 18 months
<b>EVENTS:</b>	<b>EVENT TITLE</b>	
0846	PERFORM 44.110.003 REMOTE SHUTDOWN RHR FLOW INDICATION,CAL	
SR 3.3.3.2.3-6	CHANNEL CALIBRATION Remote Shutdown System RCIC Flow	IAW SFCP - 18 months
<b>EVENTS:</b>	<b>EVENT TITLE</b>	
0847	PERFORM 44.110.004 REMOTE SHUTDOWN RCIC FLOW INDICATION,CAL	
SR 3.3.4.1.3.a	CHANNEL CALIBRATION The Allowable Values shall be: a. Reactor Vessel Water Level-Low Low, Level 2: > 103.8 inches; and	IAW SFCP - 18 months
<b>EVENTS:</b>	<b>EVENT TITLE</b>	
0671	PERFORM 44.030.255 ECCS RX WTR LVL 1,2&8 DIV 1, CHNL A, XMTR CALIBRATION	
0672	PERFORM 44.030.256 ECCS RX WTR LVL 1,2&8 DIV 2,CHNL B, XMTR CALIBRATION	
0673	PERFORM 44.030.257 ECCS RX WTR LVL 1,2&8 DIV 1,CHNL C, XMTR CALIBRATION	
0674	PERFORM 44.030.258 ECCS RX WTR LVL 1,2&8 DIV 2,CHNL D, XMTR CALIBRATION	
1671	PERFORM 44.030.255 ECCS RX WTR LVL 1,2&8 DIV 1,CHNL A, MTU CAL	
1672	PERFORM 44.030.256 ECCS RX WTR LVL 1,2&8 DIV 2,CHNL B, MTU CAL	
1673	PERFORM 44.030.257 ECCS RX WTR LVL 1,2&8 DIV 1,CHNL C, MTU CAL	
1674	PERFORM 44.030.258 ECCS RX WTR LVL 1,2&8 DIV 2,CHNL D, MTU CALIBRATION	

REQUIREMENT	REQUIREMENT TITLE	FREQ
SR 3.3.4.1.3.b	CHANNEL CALIBRATION The Allowable Values shall be: b. Reactor Vessel Pressure-High: < 1153 psig.	IAW SFCP - 18 months
<b>EVENTS:      EVENT TITLE</b>		
0803	PERFORM 44.040.005 ATWS/SRV LOW LOW SET RX PRESS, DIV 1, CHL "A", XMTR CAL	
0804	PERFORM 44.040.006 ATWS/SRV LOW LOW SET RX PRESS, DIV 2, CHL "B", XMTR CAL	
0805	PERFORM 44.040.007 ATWS/SRV LOW LOW SET RX PRESS, DIV 1, CHL "C", XMTR CAL	
0806	PERFORM 44.040.008 ATWS/SRV LOW LOW SET RX PRESS, DIV 2, CHL "D", XMTR CAL	
1803	PERFORM 44.040.005 ATWS/SRV LLS RX PRESS,DIV 1,CHNL A, MTU CAL/FUNC	
1804	PERFORM 44.040.006 ATWS/SRV LLS RX PRESS,DIV 2,CHNL B, MTU CAL/FUNC	
1805	PERFORM 44.040.007 ATWS/SRV LLS RX PRESS,DIV 1,CHNL C, MTU CAL/FUNC	
1806	PERFORM 44.040.008 ATWS/SRV LOW LOW SET RX PRESS, DIV 2, CHL "D", MTU CAL/FUNC	
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SR 3.3.4.1.4.a	LOGIC SYSTEM FUNCTIONAL TEST including breaker actuation. a. Reactor Vessel Water Level-Low Low, Level 2	IAW SFCP - 18 months
<b>EVENTS:      EVENT TITLE</b>		
0671	PERFORM 44.030.255 ECCS RX WTR LVL 1,2&8 DIV 1, CHNL A, XMTR CALIBRATION	
0672	PERFORM 44.030.256 ECCS RX WTR LVL 1,2&8 DIV 2,CHNL B, XMTR CALIBRATION	
0673	PERFORM 44.030.257 ECCS RX WTR LVL 1,2&8 DIV 1,CHNL C, XMTR CALIBRATION	
0674	PERFORM 44.030.258 ECCS RX WTR LVL 1,2&8 DIV 2,CHNL D, XMTR CALIBRATION	
0807	PERFORM 44.040.009 ATWS-SRV LOW LOW SET DIV 1 LOGIC FUNCTIONAL TEST	
0808	PERFORM 44.040.010 ATWS-SRV LOW LOW SET DIV 2 LOGIC FUNCTIONAL TEST	
1671	PERFORM 44.030.255 ECCS RX WTR LVL 1,2&8 DIV 1,CHNL A, MTU CAL	
1672	PERFORM 44.030.256 ECCS RX WTR LVL 1,2&8 DIV 2,CHNL B, MTU CAL	
1673	PERFORM 44.030.257 ECCS RX WTR LVL 1,2&8 DIV 1,CHNL C, MTU CAL	
1674	PERFORM 44.030.258 ECCS RX WTR LVL 1,2&8 DIV 2,CHNL D, MTU CALIBRATION	
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REQUIREMENT	REQUIREMENT TITLE	FREQ
SR 3.3.4.1.4.b	LOGIC SYSTEM FUNCTIONAL TEST including breaker actuation. b. Reactor Vessel Pressure-High	IAW SFCP - 18 months
<b>EVENTS:      EVENT TITLE</b>		
0803	PERFORM 44.040.005 ATWS/SRV LOW LOW SET RX PRESS, DIV 1, CHL "A", XMTR CAL	
0804	PERFORM 44.040.006 ATWS/SRV LOW LOW SET RX PRESS, DIV 2, CHL "B", XMTR CAL	
0805	PERFORM 44.040.007 ATWS/SRV LOW LOW SET RX PRESS, DIV 1, CHL "C", XMTR CAL	
0806	PERFORM 44.040.008 ATWS/SRV LOW LOW SET RX PRESS, DIV 2, CHL "D", XMTR CAL	
0807	PERFORM 44.040.009 ATWS-SRV LOW LOW SET DIV 1 LOGIC FUNCTIONAL TEST	
0808	PERFORM 44.040.010 ATWS-SRV LOW LOW SET DIV 2 LOGIC FUNCTIONAL TEST	
1803	PERFORM 44.040.005 ATWS/SRV LLS RX PRESS,DIV 1,CHNL A, MTU CAL/FUNC	
1804	PERFORM 44.040.006 ATWS/SRV LLS RX PRESS,DIV 2,CHNL B, MTU CAL/FUNC	
1805	PERFORM 44.040.007 ATWS/SRV LLS RX PRESS,DIV 1,CHNL C, MTU CAL/FUNC	
1806	PERFORM 44.040.008 ATWS/SRV LOW LOW SET RX PRESS, DIV 2, CHL "D", MTU CAL/FUNC	
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SR 3.3.5.1.4-1.a	CHANNEL CALIBRATION Emergency Core Cooling System Instrumentation Core Spray System a. Reactor Vessel Water Level - Low Low Low Level 1	IAW SFCP - 18 months
<b>EVENTS:      EVENT TITLE</b>		
0671	PERFORM 44.030.255 ECCS RX WTR LVL 1,2&8 DIV 1, CHNL A, XMTR CALIBRATION	
0672	PERFORM 44.030.256 ECCS RX WTR LVL 1,2&8 DIV 2,CHNL B, XMTR CALIBRATION	
0673	PERFORM 44.030.257 ECCS RX WTR LVL 1,2&8 DIV 1,CHNL C, XMTR CALIBRATION	
0674	PERFORM 44.030.258 ECCS RX WTR LVL 1,2&8 DIV 2,CHNL D, XMTR CALIBRATION	
1671	PERFORM 44.030.255 ECCS RX WTR LVL 1,2&8 DIV 1,CHNL A, MTU CAL	
1672	PERFORM 44.030.256 ECCS RX WTR LVL 1,2&8 DIV 2,CHNL B, MTU CAL	
1673	PERFORM 44.030.257 ECCS RX WTR LVL 1,2&8 DIV 1,CHNL C, MTU CAL	
1674	PERFORM 44.030.258 ECCS RX WTR LVL 1,2&8 DIV 2,CHNL D, MTU CALIBRATION	
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REQUIREMENT	REQUIREMENT TITLE	FREQ
SR 3.3.5.1.4-1.b	CHANNEL CALIBRATION Emergency Core Cooling System Instrumentation Core Spray System b. Drywell Pressure - High	IAW SFCP - 18 months
<b>EVENTS:</b>	<b>EVENT TITLE</b>	
0781	PERFORM 44.030.303 ECCS DW PRESS RHR/CSS & HPCI ACTUATE,DIV 1,CHNL A,CAL/FUNC	
0782	PERFORM 44.030.304 ECCS DW PRESS RHR/CSS & HPCI ACTUATE,DIV 2,CHNL B,CAL/FUNC	
0783	PERFORM 44.030.305 ECCS DW PRESS RHR/CSS & HPCI ACTUATE,DIV 1,CHNL C,CAL/FUNCT	
0784	PERFORM 44.030.306 ECCS DW PRESS RHR/CSS & HPCI ACTUATE,DIV 2,CHNL D,CAL/FUNC	
SR 3.3.5.1.4-1.c	CHANNEL CALIBRATION Emergency Core Cooling System Instrumentation Core Spray System c. Reactor Steam Dome Pressure - Low (Injection Permissive)	IAW SFCP - 18 months
<b>EVENTS:</b>	<b>EVENT TITLE</b>	
0769	PERFORM 44.030.271 ECCS RX STM DOME PRES RHR/CSS INJECT,DIV 1,CHNL A,XMTR CAL	
0770	PERFORM 44.030.272 ECCS RX STM DOME PRES RHR/CSS INJECT,DIV 2,CHNL B,XMTR CAL	
0771	PERFORM 44.030.273 ECCS RX STM DOME PRES RHR/CSS INJECT,DIV 1,CHNL C,XMTR CAL	
0772	PERFORM 44.030.274 ECCS RX STM DOME PRES RHR/CSS INJECT,DIV 2,CHNL D,XMTR CAL	
1769	PERFORM 44.030.271 ECCS RX STM DOME PRES RHR/CSS INJECT,DIV 1,CHNL A,MTU CAL/FUNC	
1770	PERFORM 44.030.272 ECCS RX STM DOME PRES RHR/CSS INJECT,DIV 2,CHNL B,MTU CAL/FUNC	
1771	PERFORM 44.030.273 ECCS RX STM DOME PRES RHR/CSS INJECT,DIV 1,CHNL C,MTU CAL/FUNC	
1772	PERFORM 44.030.274 ECCS RX STM DOME PRES RHR/CSS INJECT,DIV 2,CHNL D,MTU CAL/FUNC	
SR 3.3.5.1.4-2.a	CHANNEL CALIBRATION Emergency Core Cooling System Instrumentation Low Pressure Coolant Injection (LPCI) System a. Reactor Vessel Water Level - Low Low Low Level 1	IAW SFCP - 18 months
<b>EVENTS:</b>	<b>EVENT TITLE</b>	
0671	PERFORM 44.030.255 ECCS RX WTR LVL 1,2&8 DIV 1, CHNL A, XMTR CALIBRATION	
0672	PERFORM 44.030.256 ECCS RX WTR LVL 1,2&8 DIV 2,CHNL B, XMTR CALIBRATION	
0673	PERFORM 44.030.257 ECCS RX WTR LVL 1,2&8 DIV 1,CHNL C, XMTR CALIBRATION	
0674	PERFORM 44.030.258 ECCS RX WTR LVL 1,2&8 DIV 2,CHNL D, XMTR CALIBRATION	
1671	PERFORM 44.030.255 ECCS RX WTR LVL 1,2&8 DIV 1,CHNL A, MTU CAL	
1672	PERFORM 44.030.256 ECCS RX WTR LVL 1,2&8 DIV 2,CHNL B, MTU CAL	
1673	PERFORM 44.030.257 ECCS RX WTR LVL 1,2&8 DIV 1,CHNL C, MTU CAL	
1674	PERFORM 44.030.258 ECCS RX WTR LVL 1,2&8 DIV 2,CHNL D, MTU CALIBRATION	

REQUIREMENT	REQUIREMENT TITLE	FREQ
SR 3.3.5.1.4-2.b	CHANNEL CALIBRATION Emergency Core Cooling System Instrumentation Low Pressure Coolant Injection (LPCI) System b. Drywell Pressure - High	IAW SFCP - 18 months
<b>EVENTS:</b>	<b>EVENT TITLE</b>	
0781	PERFORM 44.030.303 ECCS DW PRESS RHR/CSS & HPCI ACTUATE,DIV 1,CHNL A,CAL/FUNC	
0782	PERFORM 44.030.304 ECCS DW PRESS RHR/CSS & HPCI ACTUATE,DIV 2,CHNL B,CAL/FUNC	
0783	PERFORM 44.030.305 ECCS DW PRESS RHR/CSS & HPCI ACTUATE,DIV 1,CHNL C,CAL/FUNCT	
0784	PERFORM 44.030.306 ECCS DW PRESS RHR/CSS & HPCI ACTUATE,DIV 2,CHNL D,CAL/FUNC	
SR 3.3.5.1.4-2.c	CHANNEL CALIBRATION Emergency Core Cooling System Instrumentation Low Pressure Coolant Injection (LPCI) System c. Reactor Steam Dome Pressure - Low (Injection Permissive)	IAW SFCP - 18 months
<b>EVENTS:</b>	<b>EVENT TITLE</b>	
0769	PERFORM 44.030.271 ECCS RX STM DOME PRES RHR/CSS INJECT,DIV 1,CHNL A,XMTR CAL	
0770	PERFORM 44.030.272 ECCS RX STM DOME PRES RHR/CSS INJECT,DIV 2,CHNL B,XMTR CAL	
0771	PERFORM 44.030.273 ECCS RX STM DOME PRES RHR/CSS INJECT,DIV 1,CHNL C,XMTR CAL	
0772	PERFORM 44.030.274 ECCS RX STM DOME PRES RHR/CSS INJECT,DIV 2,CHNL D,XMTR CAL	
1769	PERFORM 44.030.271 ECCS RX STM DOME PRES RHR/CSS INJECT,DIV 1,CHNL A,MTU CAL/FUNC	
1770	PERFORM 44.030.272 ECCS RX STM DOME PRES RHR/CSS INJECT,DIV 2,CHNL B,MTU CAL/FUNC	
1771	PERFORM 44.030.273 ECCS RX STM DOME PRES RHR/CSS INJECT,DIV 1,CHNL C,MTU CAL/FUNC	
1772	PERFORM 44.030.274 ECCS RX STM DOME PRES RHR/CSS INJECT,DIV 2,CHNL D,MTU CAL/FUNC	
SR 3.3.5.1.4-2.d	CHANNEL CALIBRATION Emergency Core Cooling System Instrumentation Low Pressure Coolant Injection (LPCI) System d. Reactor Vessel Water Level - Low Low Level 2 (Loop Select Logic)	IAW SFCP - 18 months
<b>EVENTS:</b>	<b>EVENT TITLE</b>	
0671	PERFORM 44.030.255 ECCS RX WTR LVL 1,2&8 DIV 1, CHNL A, XMTR CALIBRATION	
0672	PERFORM 44.030.256 ECCS RX WTR LVL 1,2&8 DIV 2,CHNL B, XMTR CALIBRATION	
0673	PERFORM 44.030.257 ECCS RX WTR LVL 1,2&8 DIV 1,CHNL C, XMTR CALIBRATION	
0674	PERFORM 44.030.258 ECCS RX WTR LVL 1,2&8 DIV 2,CHNL D, XMTR CALIBRATION	
1671	PERFORM 44.030.255 ECCS RX WTR LVL 1,2&8 DIV 1,CHNL A, MTU CAL	
1672	PERFORM 44.030.256 ECCS RX WTR LVL 1,2&8 DIV 2,CHNL B, MTU CAL	
1673	PERFORM 44.030.257 ECCS RX WTR LVL 1,2&8 DIV 1,CHNL C, MTU CAL	
1674	PERFORM 44.030.258 ECCS RX WTR LVL 1,2&8 DIV 2,CHNL D, MTU CALIBRATION	

REQUIREMENT	REQUIREMENT TITLE	FREQ
SR 3.3.5.1.4-2.e	CHANNEL CALIBRATION Emergency Core Cooling System Instrumentation Low Pressure Coolant Injection (LPCI) System e. Reactor Steam Dome Pressure - Low (Break Detection Logic)	IAW SFCP - 18 months
<b>EVENTS:</b>	<b>EVENT TITLE</b>	
0773	PERFORM 44.030.283 ECCS RX STM DOME PRES RHR LOOP SLCT PERM,D1,CHL A, XMTR CAL	
0774	PERFORM 44.030.284 ECCS RX STM DOME PRES RHR LOOP SLCT PERM,DIV 2,CH "B",XMTR CAL	
0775	PERFORM 44.030.285 ECCS RX STM DOME PRES RHR LOOP SLCT PERM,DIV 1,CH "C",XMTR CAL	
0776	PERFORM 44.030.286 ECCS RX STM DOME PRES RHR LOOP SLCT PERM,DIV 2,CH "D",XMTR CAL	
1773	PERFORM 44.030.283 ECCS RX STM DOME PRES RHR LOOP SELECT,D1,CHL A,MTU-CAL/CF	
1774	PERFORM 44.030.284 ECCS RX STM DOME PRES RHR LOOP SELECT,D2,CHL B,MTU-CAL/CF	
1775	PERFORM 44.030.285 ECCS RX STM DOME PRES RHR LOOP SELECT,D1,CHL C,MTU-CAL/CF	
1776	PERFORM 44.030.286 ECCS RX STM DOME PRES RHR LOOP SELECT,D2,CHL D,MTU-CAL/CF	
SR 3.3.5.1.4-2.f	CHANNEL CALIBRATION Emergency Core Cooling System Instrumentation Low Pressure Coolant Injection (LPCI) System f. Riser Differential Pressure - High (Break Detection)	IAW SFCP - 18 months
<b>EVENTS:</b>	<b>EVENT TITLE</b>	
0793	PERFORM 44.030.060 ECCS RX RECIRC RISER DP,DIV 1,CHNL A,CAL/FUNCTIONAL	
0794	PERFORM 44.030.061 ECCS RX RECIRC RISER DP,DIV 2,CHNL B,CAL/FUNCTIONAL	
0795	PERFORM 44.030.062 ECCS RX RECIRC RISER DP,DIV 1,CHNL C, CALIBRATION/FUNCTIONAL	
0796	PERFORM 44.030.063 ECCS RX RECIRC RISER DP,DIV 2,CHNL D,CAL/FUNCTIONAL	
SR 3.3.5.1.4-2.g	CHANNEL CALIBRATION Emergency Core Cooling System Instrumentation Low Pressure Coolant Injection (LPCI) System g. Recirculation Pump Differential Pressure - High (Break Detection)	IAW SFCP - 18 months
<b>EVENTS:</b>	<b>EVENT TITLE</b>	
0797	PERFORM 44.030.072 ECCS RX RECIRC PUMP A DP, DIV 1, CHNL A, CALIBRATION/FUNCT	
0798	PERFORM 44.030.073 ECCS RX RECIRC PUMP B DP, DIV 1, CHNL B, CALIBRATION/FUNCT	
0799	PERFORM 44.030.074 ECCS RX RECIRC PUMP B DP, DIV 2, CHNL A, CALIBRATION/FUNCT	
0800	PERFORM 44.030.075 ECCS RX RECIRC PUMP A DP, DIV 2, CHNL B, CALIBRATION/FUNCT	
1797	PERFORM 44.030.076 ECCS RX RECIRC PUMP A DP, DIV 1, CH C, CALIBRATION/FUNCTIONAL	
1798	PERFORM 44.030.077 ECCS RX RECIRC PUMP B DP, DIV 1, CH D, CALIBRATION/FUNCTIONAL	
1799	PERFORM 44.030.078 ECCS RX RECIRC PUMP B DP, DIV 2, CHNL C, CALIBRATION/FUNCT	
1800	PERFORM 44.030.079 ECCS RX RECIRC PUMP A DP, DIV 2, CH D, CALIBRATION/FUNCTIONAL	

REQUIREMENT	REQUIREMENT TITLE	FREQ
SR 3.3.5.1.4-3.a	CHANNEL CALIBRATION Emergency Core Cooling System Instrumentation High Pressure Coolant Injection (HPCI) System a. Reactor Vessel Water Level — Low Low, Level 2	IAW SFCP - 18 months
<b>EVENTS:</b>	<b>EVENT TITLE</b>	
0671	PERFORM 44.030.255 ECCS RX WTR LVL 1,2&8 DIV 1, CHNL A, XMTR CALIBRATION	
0672	PERFORM 44.030.256 ECCS RX WTR LVL 1,2&8 DIV 2,CHNL B, XMTR CALIBRATION	
0673	PERFORM 44.030.257 ECCS RX WTR LVL 1,2&8 DIV 1,CHNL C, XMTR CALIBRATION	
0674	PERFORM 44.030.258 ECCS RX WTR LVL 1,2&8 DIV 2,CHNL D, XMTR CALIBRATION	
1671	PERFORM 44.030.255 ECCS RX WTR LVL 1,2&8 DIV 1,CHNL A, MTU CAL	
1672	PERFORM 44.030.256 ECCS RX WTR LVL 1,2&8 DIV 2,CHNL B, MTU CAL	
1673	PERFORM 44.030.257 ECCS RX WTR LVL 1,2&8 DIV 1,CHNL C, MTU CAL	
1674	PERFORM 44.030.258 ECCS RX WTR LVL 1,2&8 DIV 2,CHNL D, MTU CALIBRATION	
SR 3.3.5.1.4-3.b	CHANNEL CALIBRATION Emergency Core Cooling System Instrumentation High Pressure Coolant Injection (HPCI) System b. Drywell Pressure — High	IAW SFCP - 18 months
<b>EVENTS:</b>	<b>EVENT TITLE</b>	
0781	PERFORM 44.030.303 ECCS DW PRESS RHR/CSS & HPCI ACTUATE,DIV 1,CHNL A,CAL/FUNC	
0782	PERFORM 44.030.304 ECCS DW PRESS RHR/CSS & HPCI ACTUATE,DIV 2,CHNL B,CAL/FUNC	
0783	PERFORM 44.030.305 ECCS DW PRESS RHR/CSS & HPCI ACTUATE,DIV 1,CHNL C,CAL/FUNCT	
0784	PERFORM 44.030.306 ECCS DW PRESS RHR/CSS & HPCI ACTUATE,DIV 2,CHNL D,CAL/FUNC	
SR 3.3.5.1.4-3.c	CHANNEL CALIBRATION Emergency Core Cooling System Instrumentation High Pressure Coolant Injection (HPCI) System c. Reactor Vessel Water Level — High, Level 8	IAW SFCP - 18 months
<b>EVENTS:</b>	<b>EVENT TITLE</b>	
0671	PERFORM 44.030.255 ECCS RX WTR LVL 1,2&8 DIV 1, CHNL A, XMTR CALIBRATION	
0672	PERFORM 44.030.256 ECCS RX WTR LVL 1,2&8 DIV 2,CHNL B, XMTR CALIBRATION	
0673	PERFORM 44.030.257 ECCS RX WTR LVL 1,2&8 DIV 1,CHNL C, XMTR CALIBRATION	
0674	PERFORM 44.030.258 ECCS RX WTR LVL 1,2&8 DIV 2,CHNL D, XMTR CALIBRATION	
1671	PERFORM 44.030.255 ECCS RX WTR LVL 1,2&8 DIV 1,CHNL A, MTU CAL	
1672	PERFORM 44.030.256 ECCS RX WTR LVL 1,2&8 DIV 2,CHNL B, MTU CAL	
1673	PERFORM 44.030.257 ECCS RX WTR LVL 1,2&8 DIV 1,CHNL C, MTU CAL	
1674	PERFORM 44.030.258 ECCS RX WTR LVL 1,2&8 DIV 2,CHNL D, MTU CALIBRATION	

REQUIREMENT	REQUIREMENT TITLE	FREQ
SR 3.3.5.1.4-3.d	CHANNEL CALIBRATION Emergency Core Cooling System Instrumentation High Pressure Coolant Injection (HPCI) System d. Condensate Storage Tank Level — Low	IAW SFCP - 18 months
<b>EVENTS:</b>	<b>EVENT TITLE</b>	
0645	PERFORM 44.030.400 ECCS HPCI/RCIC CST LEVEL, E41N061B, CALIBRATION/FUNCTIONAL	
1645	PERFORM 44.030.401 ECCS HPCI/RCIC CST LEVEL, E41N061D, CALIBRATION/FUNCTIONAL	
SR 3.3.5.1.4-3.e	CHANNEL CALIBRATION Emergency Core Cooling System Instrumentation High Pressure Coolant Injection (HPCI) System e. Suppression Pool Water Level — High	IAW SFCP - 18 months
<b>EVENTS:</b>	<b>EVENT TITLE</b>	
0646	PERFORM 44.030.156 ECCS HPCI TORUS LEVEL CALIBRATION - Div 1 areas	
0646D2	PERFORM 44.030.156 ECCS HPCI TORUS LEVEL CALIBRATION - Div 2 area	
SR 3.3.5.1.4-4.a	CHANNEL CALIBRATION Emergency Core Cooling System Instrumentation Automatic Depressurization System (ADS) Trip System A a. Reactor Vessel Water Level - Low Low Low, Level 1	IAW SFCP - 18 months
<b>EVENTS:</b>	<b>EVENT TITLE</b>	
0671	PERFORM 44.030.255 ECCS RX WTR LVL 1,2&8 DIV 1, CHNL A, XMTR CALIBRATION	
0673	PERFORM 44.030.257 ECCS RX WTR LVL 1,2&8 DIV 1,CHNL C, XMTR CALIBRATION	
1671	PERFORM 44.030.255 ECCS RX WTR LVL 1,2&8 DIV 1,CHNL A, MTU CAL	
1673	PERFORM 44.030.257 ECCS RX WTR LVL 1,2&8 DIV 1,CHNL C, MTU CAL	
SR 3.3.5.1.4-4.b	CHANNEL CALIBRATION Emergency Core Cooling System Instrumentation Automatic Depressurization System (ADS) Trip System A b. Drywell Pressure - High	IAW SFCP - 18 months
<b>EVENTS:</b>	<b>EVENT TITLE</b>	
0777	PERFORM 44.030.295 ECCS DW PRESSURE ADS ACTUATION,DIV 1,CHNL A,CALIBRATION/FUNC	
0779	PERFORM 44.030.297 ECCS DW PRESSURE ADS ACTUATION,DIV 1,CHNL C,CALIBRATION/FUNC	
SR 3.3.5.1.4-4.d	CHANNEL CALIBRATION Emergency Core Cooling System Instrumentation Automatic Depressurization System (ADS) Trip System A d. Reactor Vessel Water Level - Low, Level 3 (Confirmatory)	IAW SFCP - 18 months
<b>EVENTS:</b>	<b>EVENT TITLE</b>	
0765	PERFORM 44.030.265 ECCS RX WTR LVL (ADS LVL3 & FW/MN TURB LVL8)D1,CH A,XMTR CAL	
1765	PERFORM 44.030.265 ECCS RX WTR LVL (ADS LVL3-FW/MN TURB LVL8)D1,CH A,MTU CAL/CF	

REQUIREMENT	REQUIREMENT TITLE	FREQ
SR 3.3.5.1.4-4.e	CHANNEL CALIBRATION Emergency Core Cooling System Instrumentation Automatic Depressurization System (ADS) Trip System A e. Core Spray Pump Discharge Pressure - High	IAW SFCP - 18 months
<b>EVENTS:</b>	<b>EVENT TITLE</b>	
0649	PERFORM 44.030.209 ECCS CSS PUMP C DISCH PRESS, TRIP SYS A, ADS PERMIT, CAL/FUNC	
0651	PERFORM 44.030.211 ECCS CSS PUMP A DISCH PRESS, TRIP SYS A, ADS PERMIT,CAL/FUNC	
SR 3.3.5.1.4-4.f	CHANNEL CALIBRATION Emergency Core Cooling System Instrumentation Automatic Depressurization System (ADS) Trip System A f. Low Pressure Coolant Injection Pump Discharge Pressure - High	IAW SFCP - 18 months
<b>EVENTS:</b>	<b>EVENT TITLE</b>	
0657	PERFORM 44.030.217 ECCS RHR PUMP A DISCH PRESS (ADS PERMIT) CAL/FUNC.	
0659	PERFORM 44.030.219 ECCS RHR PUMP C DISCH PRESS (ADS PERMIT) CAL/FUNC.	
SR 3.3.5.1.4-5.a	CHANNEL CALIBRATION Emergency Core Cooling System Instrumentation Automatic Depressurization System (ADS) Trip System B a. Reactor Vessel Water Level - Low Low Low, Level 1	IAW SFCP - 18 months
<b>EVENTS:</b>	<b>EVENT TITLE</b>	
0672	PERFORM 44.030.256 ECCS RX WTR LVL 1,2&8 DIV 2,CHNL B, XMTR CALIBRATION	
0674	PERFORM 44.030.258 ECCS RX WTR LVL 1,2&8 DIV 2,CHNL D, XMTR CALIBRATION	
1672	PERFORM 44.030.256 ECCS RX WTR LVL 1,2&8 DIV 2,CHNL B, MTU CAL	
1674	PERFORM 44.030.258 ECCS RX WTR LVL 1,2&8 DIV 2,CHNL D, MTU CALIBRATION	
SR 3.3.5.1.4-5.b	CHANNEL CALIBRATION Emergency Core Cooling System Instrumentation Automatic Depressurization System (ADS) Trip System B b. Drywell Pressure - High	IAW SFCP - 18 months
<b>EVENTS:</b>	<b>EVENT TITLE</b>	
0778	PERFORM 44.030.296 ECCS DW PRESSURE ADS ACTUATION,DIV 2,CHNL B,CALIBRATION/FUNC	
0780	PERFORM 44.030.298 ECCS DW PRESSURE ADS ACTUATION,DIV 2,CHNL D,CALIBRATION/FUNC	
SR 3.3.5.1.4-5.d	CHANNEL CALIBRATION Emergency Core Cooling System Instrumentation Automatic Depressurization System (ADS) Trip System B d. Reactor Vessel Water Level - Low, Level 3 (Confirmatory)	IAW SFCP - 18 months
<b>EVENTS:</b>	<b>EVENT TITLE</b>	
0766	PERFORM 44.030.266 ECCS RX WTR LVL (ADS LVL3 & FW/MN TURB LVL8)D2,CH B,XMTR CAL	
1766	PERFORM 44.030.266 ECCS RX WTR LVL (ADS LVL3-FW/MN TURB LVL8)D2,CH B,MTU CAL/CF	

REQUIREMENT	REQUIREMENT TITLE	FREQ
SR 3.3.5.1.4-5.e	CHANNEL CALIBRATION Emergency Core Cooling System Instrumentation Automatic Depressurization System (ADS) Trip System B e. Core Spray Pump Discharge Pressure - High	IAW SFCP - 18 months
	<b>EVENTS:</b> <b>EVENT TITLE</b>	
	0650 PERFORM 44.030.210 ECCS CSS PUMP D DISCH PRESS, TRIP SYS B, ADS PERMIT, CAL/FUNC	
	0652 PERFORM 44.030.212 ECCS CSS PUMP B DISCH PRESS, TRIP SYS B, (ADS PERMIT),CAL/FUNC	
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SR 3.3.5.1.4-5.f	CHANNEL CALIBRATION Emergency Core Cooling System Instrumentation Automatic Depressurization System (ADS) Trip System B f. Low Pressure Coolant Injection Pump Discharge Pressure - High	IAW SFCP - 18 months
	<b>EVENTS:</b> <b>EVENT TITLE</b>	
	0658 PERFORM 44.030.218 ECCS RHR PUMP B DISCH PRESS (ADS PERMIT) CAL/FUNC.	
	0670 PERFORM 44.030.220 ECCS RHR PUMP D DISCH PRESS(ADS PERMIT) DIV 2, CAL/FUNC.	
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REQUIREMENT	REQUIREMENT TITLE	FREQ
SR 3.3.5.1.5-1.a	LOGIC SYSTEM FUNCTIONAL TEST Emergency Core Cooling System Instrumentation Core Spray System a. Reactor Vessel Water Level - Low Low Low, Level 1	IAW SFCP - 18 months
	<b>EVENTS:</b>	
	<b>EVENT TITLE</b>	
0213	PERFORM 42.302.02 DIV 1 BUS 64B/11EA 4160V UNDERVOLTAGE LOGIC FUNCTIONAL	
0257	PERFORM 24.203.02 SEC-5.3 DIVISION 1 CSS SIM AUTO ACT -E2150F005A ONLY	
0258	PERFORM 24.203.03 SEC-5.3 DIVISION 2 CSS SIM AUTO ACT - E2150F005B ONLY	
0281	PERFORM 24.307.01 SECT 5.2 EDG 11 ECCS START WITH LOSS OF OFFSITE POWER TEST	
0282	PERFORM 24.307.02 SECT 5.2 EDG 12 ECCS START WITH LOSS OF OFFSITE POWER TEST	
0283	PERFORM 24.307.03 SECT 5.2 EDG 13 ECCS START WITH LOSS OF OFFSITE POWER TEST	
0284	PERFORM 24.307.04 SECT 5.2 EDG 14 ECCS START WITH LOSS OF OFFSITE POWER TEST	
0640	PERFORM 44.030.001 ECCS - CORE SPRAY SYSTEM, DIV 1, LOGIC FUNCTIONAL TEST	
0641	PERFORM 44.030.002 ECCS - CORE SPRAY SYSTEM, DIV 2, LOGIC FUNCTIONAL TEST	
0671	PERFORM 44.030.255 ECCS RX WTR LVL 1,2&8 DIV 1, CHNL A, XMTR CALIBRATION	
0672	PERFORM 44.030.256 ECCS RX WTR LVL 1,2&8 DIV 2,CHNL B, XMTR CALIBRATION	
0673	PERFORM 44.030.257 ECCS RX WTR LVL 1,2&8 DIV 1,CHNL C, XMTR CALIBRATION	
0674	PERFORM 44.030.258 ECCS RX WTR LVL 1,2&8 DIV 2,CHNL D, XMTR CALIBRATION	
1079	PERFORM 42.302.04 DIV 2 BUS 65E/13EC 4160V UNDERVOLTAGE LOGIC FUNCTIONAL	
1087	PERFORM 42.302.05 DIV 1 BUS 64C/12EB 4160V UNDERVOLTAGE LOGIC FUNCTIONAL	
1088	PERFORM 42.302.06 DIV 2 BUS 65F/14ED 4160V UNDERVOLTAGE LOGIC FUNCTIONAL	
1290	PERFORM 42.307.01 DIV 1 EDG ECCS EMERG START CIRCUITS & AUTO TRIP/BYPASS,LF	
1291	PERFORM 42.307.02 DIV 2 EDG ECCS EMERG START CIRCUITS & AUTO TRIP/BYPASS, LF	
1671	PERFORM 44.030.255 ECCS RX WTR LVL 1,2&8 DIV 1,CHNL A, MTU CAL	
1672	PERFORM 44.030.256 ECCS RX WTR LVL 1,2&8 DIV 2,CHNL B, MTU CAL	
1673	PERFORM 44.030.257 ECCS RX WTR LVL 1,2&8 DIV 1,CHNL C, MTU CAL	
1674	PERFORM 44.030.258 ECCS RX WTR LVL 1,2&8 DIV 2,CHNL D, MTU CALIBRATION	
2257	PERFORM 24.203.02 SEC-5.2 DIVISION 1 CSS SIMULATED AUTOMATIC ACTUATION TEST	
2258	PERFORM 24.203.03 SEC-5.2 DIVISION 2 CSS SIMULATED AUTOMATIC ACTUATION TEST	
2281	PERFORM 24.307.01 SECT 5.1 EDG 11 LOSS OF OFFSITE POWER TEST	
2282	PERFORM 24.307.02 SECT 5.1 EDG 12 LOSS OF OFFSITE POWER TEST	
2283	PERFORM 24.307.03 SECT 5.1 EDG 13 LOSS OF OFFSITE POWER TEST	
2284	PERFORM 24.307.04 SECT 5.1 EDG 14 LOSS OF OFFSITE POWER TEST	

REQUIREMENT	REQUIREMENT TITLE	FREQ
SR 3.3.5.1.5-1.b	LOGIC SYSTEM FUNCTIONAL TEST Emergency Core Cooling System Instrumentation Core Spray System b. Drywell Pressure - High	IAW SFCP - 18 months
<b>EVENTS:</b>	<b>EVENT TITLE</b>	
0213	PERFORM 42.302.02 DIV 1 BUS 64B/11EA 4160V UNDERVOLTAGE LOGIC FUNCTIONAL	
0257	PERFORM 24.203.02 SEC-5.3 DIVISION 1 CSS SIM AUTO ACT -E2150F005A ONLY	
0258	PERFORM 24.203.03 SEC-5.3 DIVISION 2 CSS SIM AUTO ACT - E2150F005B ONLY	
0277	PERFORM 24.207.06 DIV. 1 EECW/EESW ACTUATION FUNCTIONAL TEST	
0278	PERFORM 24.207.07 DIV. 2 EECW/EESW ACTUATION FUNCTIONAL TEST	
0281	PERFORM 24.307.01 SECT 5.2 EDG 11 ECCS START WITH LOSS OF OFFSITE POWER TEST	
0282	PERFORM 24.307.02 SECT 5.2 EDG 12 ECCS START WITH LOSS OF OFFSITE POWER TEST	
0283	PERFORM 24.307.03 SECT 5.2 EDG 13 ECCS START WITH LOSS OF OFFSITE POWER TEST	
0284	PERFORM 24.307.04 SECT 5.2 EDG 14 ECCS START WITH LOSS OF OFFSITE POWER TEST	
0640	PERFORM 44.030.001 ECCS - CORE SPRAY SYSTEM, DIV 1, LOGIC FUNCTIONAL TEST	
0641	PERFORM 44.030.002 ECCS - CORE SPRAY SYSTEM, DIV 2, LOGIC FUNCTIONAL TEST	
0781	PERFORM 44.030.303 ECCS DW PRESS RHR/CSS & HPCI ACTUATE,DIV 1,CHNL A,CAL/FUNC	
0782	PERFORM 44.030.304 ECCS DW PRESS RHR/CSS & HPCI ACTUATE,DIV 2,CHNL B,CAL/FUNC	
0783	PERFORM 44.030.305 ECCS DW PRESS RHR/CSS & HPCI ACTUATE,DIV 1,CHNL C,CAL/FUNCT	
0784	PERFORM 44.030.306 ECCS DW PRESS RHR/CSS & HPCI ACTUATE,DIV 2,CHNL D,CAL/FUNC	
1079	PERFORM 42.302.04 DIV 2 BUS 65E/13EC 4160V UNDERVOLTAGE LOGIC FUNCTIONAL	
1087	PERFORM 42.302.05 DIV 1 BUS 64C/12EB 4160V UNDERVOLTAGE LOGIC FUNCTIONAL	
1088	PERFORM 42.302.06 DIV 2 BUS 65F/14ED 4160V UNDERVOLTAGE LOGIC FUNCTIONAL	
1290	PERFORM 42.307.01 DIV 1 EDG ECCS EMERG START CIRCUITS & AUTO TRIP/BYPASS, LF	
1291	PERFORM 42.307.02 DIV 2 EDG ECCS EMERG START CIRCUITS & AUTO TRIP/BYPASS, LF	
2257	PERFORM 24.203.02 SEC-5.2 DIVISION 1 CSS SIMULATED AUTOMATIC ACTUATION TEST	
2258	PERFORM 24.203.03 SEC-5.2 DIVISION 2 CSS SIMULATED AUTOMATIC ACTUATION TEST	
2281	PERFORM 24.307.01 SECT 5.1 EDG 11 LOSS OF OFFSITE POWER TEST	
2282	PERFORM 24.307.02 SECT 5.1 EDG 12 LOSS OF OFFSITE POWER TEST	
2283	PERFORM 24.307.03 SECT 5.1 EDG 13 LOSS OF OFFSITE POWER TEST	
2284	PERFORM 24.307.04 SECT 5.1 EDG 14 LOSS OF OFFSITE POWER TEST	

REQUIREMENT	REQUIREMENT TITLE	FREQ
SR 3.3.5.1.5-1.c	LOGIC SYSTEM FUNCTIONAL TEST Emergency Core Cooling System Instrumentation Core Spray System c. Reactor Steam Dome Pressure - Low (Injection Permissive)	IAW SFCP - 18 months
<b>EVENTS:</b>		
	<b>EVENT TITLE</b>	
0640	PERFORM 44.030.001 ECCS - CORE SPRAY SYSTEM, DIV 1, LOGIC FUNCTIONAL TEST	
0641	PERFORM 44.030.002 ECCS - CORE SPRAY SYSTEM, DIV 2, LOGIC FUNCTIONAL TEST	
0769	PERFORM 44.030.271 ECCS RX STM DOME PRES RHR/CSS INJECT,DIV 1,CHNL A,XMTR CAL	
0770	PERFORM 44.030.272 ECCS RX STM DOME PRES RHR/CSS INJECT,DIV 2,CHNL B,XMTR CAL	
0771	PERFORM 44.030.273 ECCS RX STM DOME PRES RHR/CSS INJECT,DIV 1,CHNL C,XMTR CAL	
0772	PERFORM 44.030.274 ECCS RX STM DOME PRES RHR/CSS INJECT,DIV 2,CHNL D,XMTR CAL	
1769	PERFORM 44.030.271 ECCS RX STM DOME PRES RHR/CSS INJECT,DIV 1,CHNL A,MTU CAL/FUNC	
1770	PERFORM 44.030.272 ECCS RX STM DOME PRES RHR/CSS INJECT,DIV 2,CHNL B,MTU CAL/FUNC	
1771	PERFORM 44.030.273 ECCS RX STM DOME PRES RHR/CSS INJECT,DIV 1,CHNL C,MTU CAL/FUNC	
1772	PERFORM 44.030.274 ECCS RX STM DOME PRES RHR/CSS INJECT,DIV 2,CHNL D,MTU CAL/FUNC	
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SR 3.3.5.1.5-2.a	LOGIC SYSTEM FUNCTIONAL TEST Emergency Core Cooling System Instrumentation Low Pressure Coolant Injection (LPCI) System a. Reactor Vessel Water Level - Low Low Low, Level 1	IAW SFCP - 18 months
<b>EVENTS:</b>		
	<b>EVENT TITLE</b>	
0263	PERFORM 24.204.03 DIV 1 & 2 LPCI SIMUL. AUTO ACTUATION TEST & VALVE OPER TEST	
0671	PERFORM 44.030.255 ECCS RX WTR LVL 1,2&8 DIV 1, CHNL A, XMTR CALIBRATION	
0672	PERFORM 44.030.256 ECCS RX WTR LVL 1,2&8 DIV 2,CHNL B, XMTR CALIBRATION	
0673	PERFORM 44.030.257 ECCS RX WTR LVL 1,2&8 DIV 1,CHNL C, XMTR CALIBRATION	
0674	PERFORM 44.030.258 ECCS RX WTR LVL 1,2&8 DIV 2,CHNL D, XMTR CALIBRATION	
0791	PERFORM 44.030.051 ECCS-RHR (LPCI MODE) DIV 1, LOGIC FUNCTIONAL TEST	
0792	PERFORM 44.030.052 ECCS-RHR (LPCI MODE) DIV 2, LOGIC FUNCT TEST & VLV ACTUATION	
1263	PERFORM 24.204.03 DIV 1 & 2 LPCI SIMUL. AUTO ACT. TEST (RHR Pump's & Vlv's)	
1671	PERFORM 44.030.255 ECCS RX WTR LVL 1,2&8 DIV 1,CHNL A, MTU CAL	
1672	PERFORM 44.030.256 ECCS RX WTR LVL 1,2&8 DIV 2,CHNL B, MTU CAL	
1673	PERFORM 44.030.257 ECCS RX WTR LVL 1,2&8 DIV 1,CHNL C, MTU CAL	
1674	PERFORM 44.030.258 ECCS RX WTR LVL 1,2&8 DIV 2,CHNL D, MTU CALIBRATION	
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REQUIREMENT	REQUIREMENT TITLE	FREQ
SR 3.3.5.1.5-2.b	LOGIC SYSTEM FUNCTIONAL TEST Emergency Core Cooling System Instrumentation Low Pressure Coolant Injection (LPCI) System b. Drywell Pressure - High	IAW SFCP - 18 months
<b>EVENTS:</b>	<b>EVENT TITLE</b>	
0263	PERFORM 24.204.03 DIV 1 & 2 LPCI SIMUL. AUTO ACTUATION TEST & VALVE OPER TEST	
0277	PERFORM 24.207.06 DIV. 1 EECW/EESW ACTUATION FUNCTIONAL TEST	
0278	PERFORM 24.207.07 DIV. 2 EECW/EESW ACTUATION FUNCTIONAL TEST	
0781	PERFORM 44.030.303 ECCS DW PRESS RHR/CSS & HPCI ACTUATE,DIV 1,CHNL A,CAL/FUNC	
0782	PERFORM 44.030.304 ECCS DW PRESS RHR/CSS & HPCI ACTUATE,DIV 2,CHNL B,CAL/FUNC	
0783	PERFORM 44.030.305 ECCS DW PRESS RHR/CSS & HPCI ACTUATE,DIV 1,CHNL C,CAL/FUNCT	
0784	PERFORM 44.030.306 ECCS DW PRESS RHR/CSS & HPCI ACTUATE,DIV 2,CHNL D,CAL/FUNC	
0791	PERFORM 44.030.051 ECCS-RHR (LPCI MODE) DIV 1, LOGIC FUNCTIONAL TEST	
0792	PERFORM 44.030.052 ECCS-RHR (LPCI MODE) DIV 2, LOGIC FUNCT TEST & VLV ACTUATION	
1263	PERFORM 24.204.03 DIV 1 & 2 LPCI SIMUL. AUTO ACT. TEST (RHR Pump's & Vlv's)	
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SR 3.3.5.1.5-2.c	LOGIC SYSTEM FUNCTIONAL TEST Emergency Core Cooling System Instrumentation Low Pressure Coolant Injection (LPCI) System c. Reactor Steam Dome Pressure - Low (Injection Permissive)	IAW SFCP - 18 months
<b>EVENTS:</b>	<b>EVENT TITLE</b>	
0263	PERFORM 24.204.03 DIV 1 & 2 LPCI SIMUL. AUTO ACTUATION TEST & VALVE OPER TEST	
0769	PERFORM 44.030.271 ECCS RX STM DOME PRES RHR/CSS INJECT,DIV 1,CHNL A,XMTR CAL	
0770	PERFORM 44.030.272 ECCS RX STM DOME PRES RHR/CSS INJECT,DIV 2,CHNL B,XMTR CAL	
0771	PERFORM 44.030.273 ECCS RX STM DOME PRES RHR/CSS INJECT,DIV 1,CHNL C,XMTR CAL	
0772	PERFORM 44.030.274 ECCS RX STM DOME PRES RHR/CSS INJECT,DIV 2,CHNL D,XMTR CAL	
0791	PERFORM 44.030.051 ECCS-RHR (LPCI MODE) DIV 1, LOGIC FUNCTIONAL TEST	
0792	PERFORM 44.030.052 ECCS-RHR (LPCI MODE) DIV 2, LOGIC FUNCT TEST & VLV ACTUATION	
1263	PERFORM 24.204.03 DIV 1 & 2 LPCI SIMUL. AUTO ACT. TEST (RHR Pump's & Vlv's)	
1769	PERFORM 44.030.271 ECCS RX STM DOME PRES RHR/CSS INJECT,DIV 1,CHNL A,MTU CAL/FUNC	
1770	PERFORM 44.030.272 ECCS RX STM DOME PRES RHR/CSS INJECT,DIV 2,CHNL B,MTU CAL/FUNC	
1771	PERFORM 44.030.273 ECCS RX STM DOME PRES RHR/CSS INJECT,DIV 1,CHNL C,MTU CAL/FUNC	
1772	PERFORM 44.030.274 ECCS RX STM DOME PRES RHR/CSS INJECT,DIV 2,CHNL D,MTU CAL/FUNC	
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REQUIREMENT	REQUIREMENT TITLE	FREQ
SR 3.3.5.1.5-2.d	LOGIC SYSTEM FUNCTIONAL TEST Emergency Core Cooling System Instrumentation Low Pressure Coolant Injection (LPCI) System d. Reactor Vessel Water Level - Low Low, Level 2 (Loop Select Logic)	IAW SFCP - 18 months
<b>EVENTS:</b>		
	<b>EVENT TITLE</b>	
0263	PERFORM 24.204.03 DIV 1 & 2 LPCI SIMUL. AUTO ACTUATION TEST & VALVE OPER TEST	
0671	PERFORM 44.030.255 ECCS RX WTR LVL 1,2&8 DIV 1, CHNL A, XMTR CALIBRATION	
0672	PERFORM 44.030.256 ECCS RX WTR LVL 1,2&8 DIV 2,CHNL B, XMTR CALIBRATION	
0673	PERFORM 44.030.257 ECCS RX WTR LVL 1,2&8 DIV 1,CHNL C, XMTR CALIBRATION	
0674	PERFORM 44.030.258 ECCS RX WTR LVL 1,2&8 DIV 2,CHNL D, XMTR CALIBRATION	
0791	PERFORM 44.030.051 ECCS-RHR (LPCI MODE) DIV 1, LOGIC FUNCTIONAL TEST	
0792	PERFORM 44.030.052 ECCS-RHR (LPCI MODE) DIV 2, LOGIC FUNCT TEST & VLV ACTUATION	
1263	PERFORM 24.204.03 DIV 1 & 2 LPCI SIMUL. AUTO ACT. TEST (RHR Pump's & Vlv's)	
1671	PERFORM 44.030.255 ECCS RX WTR LVL 1,2&8 DIV 1,CHNL A, MTU CAL	
1672	PERFORM 44.030.256 ECCS RX WTR LVL 1,2&8 DIV 2,CHNL B, MTU CAL	
1673	PERFORM 44.030.257 ECCS RX WTR LVL 1,2&8 DIV 1,CHNL C, MTU CAL	
1674	PERFORM 44.030.258 ECCS RX WTR LVL 1,2&8 DIV 2,CHNL D, MTU CALIBRATION	

REQUIREMENT	REQUIREMENT TITLE	FREQ
SR 3.3.5.1.5-2.e	LOGIC SYSTEM FUNCTIONAL TEST Emergency Core Cooling System Instrumentation Low Pressure Coolant Injection (LPCI) System e. Reactor Steam Dome Pressure - Low (Break Detection Logic)	IAW SFCP - 18 months
	<b>EVENTS:</b>	
	<b>EVENT TITLE</b>	
0263	PERFORM 24.204.03 DIV 1 & 2 LPCI SIMUL. AUTO ACTUATION TEST & VALVE OPER TEST	
0773	PERFORM 44.030.283 ECCS RX STM DOME PRES RHR LOOP SLCT PERM,D1,CHL A, XMTR CAL	
0774	PERFORM 44.030.284 ECCS RX STM DOME PRES RHR LOOP SLCT PERM,DIV 2,CH "B",XMTR CAL	
0775	PERFORM 44.030.285 ECCS RX STM DOME PRES RHR LOOP SLCT PERM,DIV 1,CH "C",XMTR CAL	
0776	PERFORM 44.030.286 ECCS RX STM DOME PRES RHR LOOP SLCT PERM,DIV 2,CH "D",XMTR CAL	
0791	PERFORM 44.030.051 ECCS-RHR (LPCI MODE) DIV 1, LOGIC FUNCTIONAL TEST	
0792	PERFORM 44.030.052 ECCS-RHR (LPCI MODE) DIV 2, LOGIC FUNCT TEST & VLV ACTUATION	
1263	PERFORM 24.204.03 DIV 1 & 2 LPCI SIMUL. AUTO ACT. TEST (RHR Pump's & Vlv's)	
1773	PERFORM 44.030.283 ECCS RX STM DOME PRES RHR LOOP SELECT,D1,CHL A,MTU-CAL/CF	
1774	PERFORM 44.030.284 ECCS RX STM DOME PRES RHR LOOP SELECT,D2,CHL B,MTU-CAL/CF	
1775	PERFORM 44.030.285 ECCS RX STM DOME PRES RHR LOOP SELECT,D1,CHL C,MTU-CAL/CF	
1776	PERFORM 44.030.286 ECCS RX STM DOME PRES RHR LOOP SELECT,D2,CHL D,MTU-CAL/CF	

REQUIREMENT	REQUIREMENT TITLE	FREQ
SR 3.3.5.1.5-2.f	LOGIC SYSTEM FUNCTIONAL TEST Emergency Core Cooling System Instrumentation Low Pressure Coolant Injection (LPCI) System f. Riser Differential Pressure - High (Break Detection)	IAW SFCP - 18 months
	<b>EVENTS:</b>	
	<b>EVENT TITLE</b>	
0263	PERFORM 24.204.03 DIV 1 & 2 LPCI SIMUL. AUTO ACTUATION TEST & VALVE OPER TEST	
0777	PERFORM 44.030.295 ECCS DW PRESSURE ADS ACTUATION,DIV 1,CHNL A,CALIBRATION/FUNC	
0778	PERFORM 44.030.296 ECCS DW PRESSURE ADS ACTUATION,DIV 2,CHNL B,CALIBRATION/FUNC	
0779	PERFORM 44.030.297 ECCS DW PRESSURE ADS ACTUATION,DIV 1,CHNL C,CALIBRATION/FUNC	
0780	PERFORM 44.030.298 ECCS DW PRESSURE ADS ACTUATION,DIV 2,CHNL D,CALIBRATION/FUNC	
0791	PERFORM 44.030.051 ECCS-RHR (LPCI MODE) DIV 1, LOGIC FUNCTIONAL TEST	
0792	PERFORM 44.030.052 ECCS-RHR (LPCI MODE) DIV 2, LOGIC FUNCT TEST & VLV ACTUATION	
0793	PERFORM 44.030.060 ECCS RX RECIRC RISER DP,DIV 1,CHNL A,CAL/FUNCTIONAL	
0794	PERFORM 44.030.061 ECCS RX RECIRC RISER DP,DIV 2,CHNL B,CAL/FUNCTIONAL	
0795	PERFORM 44.030.062 ECCS RX RECIRC RISER DP,DIV 1,CHNL C, CALIBRATION/FUNCTIONAL	
0796	PERFORM 44.030.063 ECCS RX RECIRC RISER DP,DIV 2,CHNL D,CAL/FUNCTIONAL	
1263	PERFORM 24.204.03 DIV 1 & 2 LPCI SIMUL. AUTO ACT. TEST (RHR Pump's & Vlv's)	

REQUIREMENT	REQUIREMENT TITLE	FREQ
SR 3.3.5.1.5-2.g	LOGIC SYSTEM FUNCTIONAL TEST Emergency Core Cooling System Instrumentation Low Pressure Coolant Injection (LPCI) System g. Recirculation Pump Differential Pressure - High (Break Detection)	IAW SFCP - 18 months
<b>EVENTS:</b>	<b>EVENT TITLE</b>	
0263	PERFORM 24.204.03 DIV 1 & 2 LPCI SIMUL. AUTO ACTUATION TEST & VALVE OPER TEST	
0791	PERFORM 44.030.051 ECCS-RHR (LPCI MODE) DIV 1, LOGIC FUNCTIONAL TEST	
0792	PERFORM 44.030.052 ECCS-RHR (LPCI MODE) DIV 2, LOGIC FUNCT TEST & VLV ACTUATION	
0797	PERFORM 44.030.072 ECCS RX RECIRC PUMP A DP, DIV 1, CHNL A, CALIBRATION/FUNCT	
0798	PERFORM 44.030.073 ECCS RX RECIRC PUMP B DP, DIV 1, CHNL B, CALIBRATION/FUNCT	
0799	PERFORM 44.030.074 ECCS RX RECIRC PUMP B DP, DIV 2, CHNL A, CALIBRATION/FUNCT	
0800	PERFORM 44.030.075 ECCS RX RECIRC PUMP A DP, DIV 2, CHNL B, CALIBRATION/FUNCT	
1263	PERFORM 24.204.03 DIV 1 & 2 LPCI SIMUL. AUTO ACT. TEST (RHR Pump's & Vlv's)	
1797	PERFORM 44.030.076 ECCS RX RECIRC PUMP A DP, DIV 1, CH C, CALIBRATION/FUNCTIONAL	
1798	PERFORM 44.030.077 ECCS RX RECIRC PUMP B DP, DIV 1, CH D, CALIBRATION/FUNCTIONAL	
1799	PERFORM 44.030.078 ECCS RX RECIRC PUMP B DP, DIV 2, CHNL C, CALIBRATION/FUNCT	
1800	PERFORM 44.030.079 ECCS RX RECIRC PUMP A DP, DIV 2, CH D, CALIBRATION/FUNCTIONAL	
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SR 3.3.5.1.5-3.a	LOGIC SYSTEM FUNCTIONAL TEST Emergency Core Cooling System Instrumentation High Pressure Coolant Injection (HPCI) System a. Reactor Vessel Water Level - Low Low, Level 2	IAW SFCP - 18 months
<b>EVENTS:</b>	<b>EVENT TITLE</b>	
0253	PERFORM 24.202.04 HPCI OFFLINE AUTO INITIATION AND TIME RESPONSE TEST	
0671	PERFORM 44.030.255 ECCS RX WTR LVL 1,2&8 DIV 1, CHNL A, XMTR CALIBRATION	
0672	PERFORM 44.030.256 ECCS RX WTR LVL 1,2&8 DIV 2,CHNL B, XMTR CALIBRATION	
0673	PERFORM 44.030.257 ECCS RX WTR LVL 1,2&8 DIV 1,CHNL C, XMTR CALIBRATION	
0674	PERFORM 44.030.258 ECCS RX WTR LVL 1,2&8 DIV 2,CHNL D, XMTR CALIBRATION	
1100	PERFORM 24.202.08 SEC-5.1 (Wtr Lvl) HPCI RTT & PUMP OPERABILITY AT 1025 PSIG	
1671	PERFORM 44.030.255 ECCS RX WTR LVL 1,2&8 DIV 1,CHNL A, MTU CAL	
1672	PERFORM 44.030.256 ECCS RX WTR LVL 1,2&8 DIV 2,CHNL B, MTU CAL	
1673	PERFORM 44.030.257 ECCS RX WTR LVL 1,2&8 DIV 1,CHNL C, MTU CAL	
1674	PERFORM 44.030.258 ECCS RX WTR LVL 1,2&8 DIV 2,CHNL D, MTU CALIBRATION	
2100	PERFORM 24.202.08 SEC-5.2 (Dw Press) HPCI LSFT & PUMP OPERABILITY AT 1025 PSIG	
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REQUIREMENT	REQUIREMENT TITLE	FREQ
SR 3.3.5.1.5-3.b	LOGIC SYSTEM FUNCTIONAL TEST Emergency Core Cooling System Instrumentation High Pressure Coolant Injection (HPCI) System b. Drywell Pressure - High	IAW SFCP - 18 months
<b>EVENTS:</b>	<b>EVENT TITLE</b>	
0253	PERFORM 24.202.04 HPCI OFFLINE AUTO INITIATION AND TIME RESPONSE TEST	
0277	PERFORM 24.207.06 DIV. 1 EECW/EESW ACTUATION FUNCTIONAL TEST	
0278	PERFORM 24.207.07 DIV. 2 EECW/EESW ACTUATION FUNCTIONAL TEST	
0781	PERFORM 44.030.303 ECCS DW PRESS RHR/CSS & HPCI ACTUATE,DIV 1,CHNL A,CAL/FUNC	
0782	PERFORM 44.030.304 ECCS DW PRESS RHR/CSS & HPCI ACTUATE,DIV 2,CHNL B,CAL/FUNC	
0783	PERFORM 44.030.305 ECCS DW PRESS RHR/CSS & HPCI ACTUATE,DIV 1,CHNL C,CAL/FUNCT	
0784	PERFORM 44.030.306 ECCS DW PRESS RHR/CSS & HPCI ACTUATE,DIV 2,CHNL D,CAL/FUNC	
1100	PERFORM 24.202.08 SEC-5.1 (Wtr Lvl) HPCI RTT & PUMP OPERABILITY AT 1025 PSIG	
2100	PERFORM 24.202.08 SEC-5.2 (Dw Press) HPCI LSFT & PUMP OPERABILITY AT 1025 PSIG	
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SR 3.3.5.1.5-3.c	LOGIC SYSTEM FUNCTIONAL TEST Emergency Core Cooling System Instrumentation High Pressure Coolant Injection (HPCI) System c. Reactor Vessel Water Level — High, Level 8	IAW SFCP - 18 months
<b>EVENTS:</b>	<b>EVENT TITLE</b>	
0253	PERFORM 24.202.04 HPCI OFFLINE AUTO INITIATION AND TIME RESPONSE TEST	
0671	PERFORM 44.030.255 ECCS RX WTR LVL 1,2&8 DIV 1, CHNL A, XMTR CALIBRATION	
0672	PERFORM 44.030.256 ECCS RX WTR LVL 1,2&8 DIV 2,CHNL B, XMTR CALIBRATION	
0673	PERFORM 44.030.257 ECCS RX WTR LVL 1,2&8 DIV 1,CHNL C, XMTR CALIBRATION	
0674	PERFORM 44.030.258 ECCS RX WTR LVL 1,2&8 DIV 2,CHNL D, XMTR CALIBRATION	
1671	PERFORM 44.030.255 ECCS RX WTR LVL 1,2&8 DIV 1,CHNL A, MTU CAL	
1672	PERFORM 44.030.256 ECCS RX WTR LVL 1,2&8 DIV 2,CHNL B, MTU CAL	
1673	PERFORM 44.030.257 ECCS RX WTR LVL 1,2&8 DIV 1,CHNL C, MTU CAL	
1674	PERFORM 44.030.258 ECCS RX WTR LVL 1,2&8 DIV 2,CHNL D, MTU CALIBRATION	
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REQUIREMENT	REQUIREMENT TITLE	FREQ
SR 3.3.5.1.5-3.d	LOGIC SYSTEM FUNCTIONAL TEST Emergency Core Cooling System Instrumentation High Pressure Coolant Injection (HPCI) System d. Condensate Storage Tank Level — Low	IAW SFCP - 18 months
<b>EVENTS:</b>	<b>EVENT TITLE</b>	
0645	PERFORM 44.030.400 ECCS HPCI/RCIC CST LEVEL, E41N061B, CALIBRATION/FUNCTIONAL	
1645	PERFORM 44.030.401 ECCS HPCI/RCIC CST LEVEL, E41N061D, CALIBRATION/FUNCTIONAL	
1646	PERFORM 44.030.402 HPCI SYSTEM CST/TORUS VALVES INTERLOCK TEST	
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SR 3.3.5.1.5-3.e	LOGIC SYSTEM FUNCTIONAL TEST Emergency Core Cooling System Instrumentation High Pressure Coolant Injection (HPCI) System e. Suppression Pool Water Level — High	IAW SFCP - 18 months
<b>EVENTS:</b>	<b>EVENT TITLE</b>	
0646	PERFORM 44.030.156 ECCS HPCI TORUS LEVEL CALIBRATION - Div 1 areas	
0646D2	PERFORM 44.030.156 ECCS HPCI TORUS LEVEL CALIBRATION - Div 2 area	
1646	PERFORM 44.030.402 HPCI SYSTEM CST/TORUS VALVES INTERLOCK TEST	
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SR 3.3.5.1.5-4.a	LOGIC SYSTEM FUNCTIONAL TEST Emergency Core Cooling System Instrumentation Automatic Depressurization System (ADS) Trip System A a. Reactor Vessel Water Level - Low Low Low, Level 1	IAW SFCP - 18 months
<b>EVENTS:</b>	<b>EVENT TITLE</b>	
0647	PERFORM 44.030.201 ECCS - ADS,TRIP SYS A LOGIC FUNCTIONAL TEST	
0671	PERFORM 44.030.255 ECCS RX WTR LVL 1,2&8 DIV 1, CHNL A, XMTR CALIBRATION	
0673	PERFORM 44.030.257 ECCS RX WTR LVL 1,2&8 DIV 1,CHNL C, XMTR CALIBRATION	
1671	PERFORM 44.030.255 ECCS RX WTR LVL 1,2&8 DIV 1,CHNL A, MTU CAL	
1673	PERFORM 44.030.257 ECCS RX WTR LVL 1,2&8 DIV 1,CHNL C, MTU CAL	
2440	PERFORM 44.210.059 ECCS/ADS/MDS D1 SRV SOLENOID FUNC TEST	
2441	PERFORM 44.210.060 ECCS/ADS/MDS D2 SRV SOLENOID FUNC TEST	
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REQUIREMENT	REQUIREMENT TITLE	FREQ
SR 3.3.5.1.5-4.b	LOGIC SYSTEM FUNCTIONAL TEST Emergency Core Cooling System Instrumentation Automatic Depressurization System (ADS) Trip System A b. Drywell Pressure - High	IAW SFCP - 18 months
<b>EVENTS:</b>	<b>EVENT TITLE</b>	
0277	PERFORM 24.207.06 DIV. 1 EECW/EESW ACTUATION FUNCTIONAL TEST	
0278	PERFORM 24.207.07 DIV. 2 EECW/EESW ACTUATION FUNCTIONAL TEST	
0647	PERFORM 44.030.201 ECCS - ADS,TRIP SYS A LOGIC FUNCTIONAL TEST	
0777	PERFORM 44.030.295 ECCS DW PRESSURE ADS ACTUATION,DIV 1,CHNL A,CALIBRATION/FUNC	
0779	PERFORM 44.030.297 ECCS DW PRESSURE ADS ACTUATION,DIV 1,CHNL C,CALIBRATION/FUNC	
2440	PERFORM 44.210.059 ECCS/ADS/MDS D1 SRV SOLENOID FUNC TEST	
2441	PERFORM 44.210.060 ECCS/ADS/MDS D2 SRV SOLENOID FUNC TEST	
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SR 3.3.5.1.5-4.c	LOGIC SYSTEM FUNCTIONAL TEST Emergency Core Cooling System Instrumentation Automatic Depressurization System (ADS) Trip System A c. Automatic Depressurization System Initiation Timer	IAW SFCP - 18 months
<b>EVENTS:</b>	<b>EVENT TITLE</b>	
0647	PERFORM 44.030.201 ECCS - ADS,TRIP SYS A LOGIC FUNCTIONAL TEST	
2440	PERFORM 44.210.059 ECCS/ADS/MDS D1 SRV SOLENOID FUNC TEST	
2441	PERFORM 44.210.060 ECCS/ADS/MDS D2 SRV SOLENOID FUNC TEST	
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SR 3.3.5.1.5-4.d	LOGIC SYSTEM FUNCTIONAL TEST Emergency Core Cooling System Instrumentation Automatic Depressurization System (ADS) Trip System A d. Reactor Vessel Level - Low, Level 3 (Confirmatory)	IAW SFCP - 18 months
<b>EVENTS:</b>	<b>EVENT TITLE</b>	
0647	PERFORM 44.030.201 ECCS - ADS,TRIP SYS A LOGIC FUNCTIONAL TEST	
0765	PERFORM 44.030.265 ECCS RX WTR LVL (ADS LVL3 & FW/MN TURB LVL8)D1,CH A,XMTR CAL	
1765	PERFORM 44.030.265 ECCS RX WTR LVL (ADS LVL3-FW/MN TURB LVL8)D1,CH A,MTU CAL/CF	
2440	PERFORM 44.210.059 ECCS/ADS/MDS D1 SRV SOLENOID FUNC TEST	
2441	PERFORM 44.210.060 ECCS/ADS/MDS D2 SRV SOLENOID FUNC TEST	
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REQUIREMENT	REQUIREMENT TITLE	FREQ
SR 3.3.5.1.5-4.e	LOGIC SYSTEM FUNCTIONAL TEST Emergency Core Cooling System Instrumentation Automatic Depressurization System (ADS) Trip System A e. Core Spray Pump Discharge Pressure - High	IAW SFCP - 18 months
<b>EVENTS:</b>	<b>EVENT TITLE</b>	
0647	PERFORM 44.030.201 ECCS - ADS,TRIP SYS A LOGIC FUNCTIONAL TEST	
0649	PERFORM 44.030.209 ECCS CSS PUMP C DISCH PRESS, TRIP SYS A, ADS PERMIT, CAL/FUNC	
0651	PERFORM 44.030.211 ECCS CSS PUMP A DISCH PRESS, TRIP SYS A, ADS PERMIT,CAL/FUNC	
2440	PERFORM 44.210.059 ECCS/ADS/MDS D1 SRV SOLENOID FUNC TEST	
2441	PERFORM 44.210.060 ECCS/ADS/MDS D2 SRV SOLENOID FUNC TEST	
SR 3.3.5.1.5-4.f	LOGIC SYSTEM FUNCTIONAL TEST Emergency Core Cooling System Instrumentation Automatic Depressurization System (ADS) Trip System A f. Low Pressure Coolant Injection Pump Discharge Pressure - High	IAW SFCP - 18 months
<b>EVENTS:</b>	<b>EVENT TITLE</b>	
0647	PERFORM 44.030.201 ECCS - ADS,TRIP SYS A LOGIC FUNCTIONAL TEST	
0657	PERFORM 44.030.217 ECCS RHR PUMP A DISCH PRESS (ADS PERMIT) CAL/FUNC.	
0659	PERFORM 44.030.219 ECCS RHR PUMP C DISCH PRESS (ADS PERMIT) CAL/FUNC.	
2440	PERFORM 44.210.059 ECCS/ADS/MDS D1 SRV SOLENOID FUNC TEST	
2441	PERFORM 44.210.060 ECCS/ADS/MDS D2 SRV SOLENOID FUNC TEST	
SR 3.3.5.1.5-4.g	LOGIC SYSTEM FUNCTIONAL TEST Emergency Core Cooling System Instrumentation Automatic Depressurization System (ADS) Trip System A g. Drywell Pressure - High Bypass	IAW SFCP - 18 months
<b>EVENTS:</b>	<b>EVENT TITLE</b>	
0647	PERFORM 44.030.201 ECCS - ADS,TRIP SYS A LOGIC FUNCTIONAL TEST	
2440	PERFORM 44.210.059 ECCS/ADS/MDS D1 SRV SOLENOID FUNC TEST	
2441	PERFORM 44.210.060 ECCS/ADS/MDS D2 SRV SOLENOID FUNC TEST	
SR 3.3.5.1.5-4.h	LOGIC SYSTEM FUNCTIONAL TEST Emergency Core Cooling System Instrumentation Automatic Depressurization System (ADS) Trip System A h. Manual Inhibit	IAW SFCP - 18 months
<b>EVENTS:</b>	<b>EVENT TITLE</b>	
0647	PERFORM 44.030.201 ECCS - ADS,TRIP SYS A LOGIC FUNCTIONAL TEST	
2440	PERFORM 44.210.059 ECCS/ADS/MDS D1 SRV SOLENOID FUNC TEST	
2441	PERFORM 44.210.060 ECCS/ADS/MDS D2 SRV SOLENOID FUNC TEST	

REQUIREMENT	REQUIREMENT TITLE	FREQ
SR 3.3.5.1.5-5.a	LOGIC SYSTEM FUNCTIONAL TEST Emergency Core Cooling System Instrumentation Automatic Depressurization System (ADS) Trip System B a. Reactor Vessel Water Level - Low Low Low, Level 1	IAW SFCP - 18 months
<b>EVENTS:</b>	<b>EVENT TITLE</b>	
0648	PERFORM 44.030.202 ECCS - ADS,TRIP SYS B LOGIC FUNCTIONAL TEST	
0672	PERFORM 44.030.256 ECCS RX WTR LVL 1,2&8 DIV 2,CHNL B, XMTR CALIBRATION	
0674	PERFORM 44.030.258 ECCS RX WTR LVL 1,2&8 DIV 2,CHNL D, XMTR CALIBRATION	
1672	PERFORM 44.030.256 ECCS RX WTR LVL 1,2&8 DIV 2,CHNL B, MTU CAL	
1674	PERFORM 44.030.258 ECCS RX WTR LVL 1,2&8 DIV 2,CHNL D, MTU CALIBRATION	
2440	PERFORM 44.210.059 ECCS/ADS/MDS D1 SRV SOLENOID FUNC TEST	
2441	PERFORM 44.210.060 ECCS/ADS/MDS D2 SRV SOLENOID FUNC TEST	
SR 3.3.5.1.5-5.b	LOGIC SYSTEM FUNCTIONAL TEST Emergency Core Cooling System Instrumentation Automatic Depressurization System (ADS) Trip System B b. Drywell Pressure - High	IAW SFCP - 18 months
<b>EVENTS:</b>	<b>EVENT TITLE</b>	
0277	PERFORM 24.207.06 DIV. 1 EECW/EESW ACTUATION FUNCTIONAL TEST	
0278	PERFORM 24.207.07 DIV. 2 EECW/EESW ACTUATION FUNCTIONAL TEST	
0648	PERFORM 44.030.202 ECCS - ADS,TRIP SYS B LOGIC FUNCTIONAL TEST	
0778	PERFORM 44.030.296 ECCS DW PRESSURE ADS ACTUATION,DIV 2,CHNL B,CALIBRATION/FUNC	
0780	PERFORM 44.030.298 ECCS DW PRESSURE ADS ACTUATION,DIV 2,CHNL D,CALIBRATION/FUNC	
2440	PERFORM 44.210.059 ECCS/ADS/MDS D1 SRV SOLENOID FUNC TEST	
2441	PERFORM 44.210.060 ECCS/ADS/MDS D2 SRV SOLENOID FUNC TEST	
SR 3.3.5.1.5-5.c	LOGIC SYSTEM FUNCTIONAL TEST Emergency Core Cooling System Instrumentation Automatic Depressurization System (ADS) Trip System B c. Automatic Depressurization System Initiation Timer	IAW SFCP - 18 months
<b>EVENTS:</b>	<b>EVENT TITLE</b>	
0648	PERFORM 44.030.202 ECCS - ADS,TRIP SYS B LOGIC FUNCTIONAL TEST	
2440	PERFORM 44.210.059 ECCS/ADS/MDS D1 SRV SOLENOID FUNC TEST	
2441	PERFORM 44.210.060 ECCS/ADS/MDS D2 SRV SOLENOID FUNC TEST	

REQUIREMENT	REQUIREMENT TITLE	FREQ
SR 3.3.5.1.5-5.d	LOGIC SYSTEM FUNCTIONAL TEST Emergency Core Cooling System Instrumentation Automatic Depressurization System (ADS) Trip System B d. Reactor Vessel Level - Low, Level 3 (Confirmatory)	IAW SFCP - 18 months
<b>EVENTS:</b>	<b>EVENT TITLE</b>	
0648	PERFORM 44.030.202 ECCS - ADS,TRIP SYS B LOGIC FUNCTIONAL TEST	
0766	PERFORM 44.030.266 ECCS RX WTR LVL (ADS LVL3 & FW/MN TURB LVL8)D2,CH B,XMTR CAL	
1766	PERFORM 44.030.266 ECCS RX WTR LVL (ADS LVL3-FW/MN TURB LVL8)D2,CH B,MTU CAL/CF	
2440	PERFORM 44.210.059 ECCS/ADS/MDS D1 SRV SOLENOID FUNC TEST	
2441	PERFORM 44.210.060 ECCS/ADS/MDS D2 SRV SOLENOID FUNC TEST	
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SR 3.3.5.1.5-5.e	LOGIC SYSTEM FUNCTIONAL TEST Emergency Core Cooling System Instrumentation Automatic Depressurization System (ADS) Trip System B e. Core Spray Pump Discharge Pressure - High	IAW SFCP - 18 months
<b>EVENTS:</b>	<b>EVENT TITLE</b>	
0648	PERFORM 44.030.202 ECCS - ADS,TRIP SYS B LOGIC FUNCTIONAL TEST	
0650	PERFORM 44.030.210 ECCS CSS PUMP D DISCH PRESS, TRIP SYS B, ADS PERMIT, CAL/FUNC	
0652	PERFORM 44.030.212 ECCS CSS PUMP B DISCH PRESS, TRIP SYS B, (ADS PERMIT),CAL/FUNC	
2440	PERFORM 44.210.059 ECCS/ADS/MDS D1 SRV SOLENOID FUNC TEST	
2441	PERFORM 44.210.060 ECCS/ADS/MDS D2 SRV SOLENOID FUNC TEST	
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SR 3.3.5.1.5-5.f	LOGIC SYSTEM FUNCTIONAL TEST Emergency Core Cooling System Instrumentation Automatic Depressurization System (ADS) Trip System B f. Low Pressure Coolant Injection Pump Discharge Pressure - High	IAW SFCP - 18 months
<b>EVENTS:</b>	<b>EVENT TITLE</b>	
0648	PERFORM 44.030.202 ECCS - ADS,TRIP SYS B LOGIC FUNCTIONAL TEST	
0658	PERFORM 44.030.218 ECCS RHR PUMP B DISCH PRESS (ADS PERMIT) CAL/FUNC.	
0670	PERFORM 44.030.220 ECCS RHR PUMP D DISCH PRESS(ADS PERMIT) DIV 2, CAL/FUNC.	
2440	PERFORM 44.210.059 ECCS/ADS/MDS D1 SRV SOLENOID FUNC TEST	
2441	PERFORM 44.210.060 ECCS/ADS/MDS D2 SRV SOLENOID FUNC TEST	
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REQUIREMENT	REQUIREMENT TITLE	FREQ
SR 3.3.5.1.5-5.g	LOGIC SYSTEM FUNCTIONAL TEST Emergency Core Cooling System Instrumentation Automatic Depressurization System (ADS) Trip System B g. Drywell Pressure - High Bypass	IAW SFCP - 18 months
<b>EVENTS:</b>	<b>EVENT TITLE</b>	
0648	PERFORM 44.030.202 ECCS - ADS,TRIP SYS B LOGIC FUNCTIONAL TEST	
2440	PERFORM 44.210.059 ECCS/ADS/MDS D1 SRV SOLENOID FUNC TEST	
2441	PERFORM 44.210.060 ECCS/ADS/MDS D2 SRV SOLENOID FUNC TEST	
SR 3.3.5.1.5-5.h	LOGIC SYSTEM FUNCTIONAL TEST Emergency Core Cooling System Instrumentation Automatic Depressurization System (ADS) Trip System B h. Manual Inhibit	IAW SFCP - 18 months
<b>EVENTS:</b>	<b>EVENT TITLE</b>	
0648	PERFORM 44.030.202 ECCS - ADS,TRIP SYS B LOGIC FUNCTIONAL TEST	
2440	PERFORM 44.210.059 ECCS/ADS/MDS D1 SRV SOLENOID FUNC TEST	
2441	PERFORM 44.210.060 ECCS/ADS/MDS D2 SRV SOLENOID FUNC TEST	
SR 3.3.5.1.6-1.d	CHANNEL FUNCTIONAL TEST Emergency Core Cooling System Instrumentation Core Spray System d. Manual Initiation	IAW SFCP - 18 months
<b>EVENTS:</b>	<b>EVENT TITLE</b>	
0260	PERFORM 24.203.04 SEC-5.3 DIV.1 CSS LOCAL VALVE POSITION INDICATION VERIF.	
1260	PERFORM 24.203.04 SEC-5.4 DIV.2 CSS LOCAL VALVE POSITION INDICATION VERIF.	
2257	PERFORM 24.203.02 SEC-5.2 DIVISION 1 CSS SIMULATED AUTOMATIC ACTUATION TEST	
2258	PERFORM 24.203.03 SEC-5.2 DIVISION 2 CSS SIMULATED AUTOMATIC ACTUATION TEST	
3293	PERFORM 43.401.711 DIV 1 CORE SPRAY INJECTION CHECK VALVE EXERCISE TEST	
3294	PERFORM 43.401.712 DIV 2 CORE SPRAY INJECTION CHECK VALVE EXERCISE TEST	

REQUIREMENT	REQUIREMENT TITLE	FREQ
SR 3.3.5.1.6-2.h	CHANNEL FUNCTIONAL TEST Emergency Core Cooling System Instrumentation Low Pressure Coolant Injection (LPCI) System h. Manual Initiation	IAW SFCP - 18 months
<b>EVENTS:</b>	<b>EVENT TITLE</b>	
0244	PERFORM 24.138.02 SEC-5.2 RX RECIRC LOCAL VALVE POSITION VERIFICATION TEST	
0265	PERFORM 24.204.05 SEC-5.1 DIV. 1 RHR LOCAL VALVE POSITION INDICATION & STROKE	
1134	PERFORM 24.204.05 SEC-5.3 DIV. 2 RHR LOCAL VALVE POSITION INDICATION & STROKE	
1135	PERFORM 24.204.08 NON-DIVISIONAL RHR VALVE POSITION & STROKE TIME TEST	
1265	PERFORM 24.204.05 SEC-5.2 DIV 1 RHR LOCAL VALVE POSITION INDICATION VERIF.	
1266	PERFORM 24.204.05 SEC-5.4 DIV 2 RHR LOCAL VALVE POSITION INDICATION VERIF.	
SR 3.3.5.1.6-3.f	CHANNEL FUNCTIONAL TEST Emergency Core Cooling System Instrumentation High Pressure Coolant Injection (HPCI) System f. Manual Initiation	IAW SFCP - 18 months
<b>EVENTS:</b>	<b>EVENT TITLE</b>	
0255	PERFORM 24.202.05 SEC-5.2 & 5.3 HPCI LOCAL VALVE POS INDICATION VERIF & LSFT	
SR 3.3.5.1.6-4.i	CHANNEL FUNCTIONAL TEST Emergency Core Cooling System Instrumentation Automatic Depressurization System (ADS) Trip System A i. Manual Initiation	IAW SFCP - 18 months
<b>EVENTS:</b>	<b>EVENT TITLE</b>	
2440	PERFORM 44.210.059 ECCS/ADS/MDS D1 SRV SOLENOID FUNC TEST	
2441	PERFORM 44.210.060 ECCS/ADS/MDS D2 SRV SOLENOID FUNC TEST	
SR 3.3.5.1.6-5.i	CHANNEL FUNCTIONAL TEST Emergency Core Cooling System Instrumentation Automatic Depressurization System (ADS) Trip System B i. Manual Initiation	IAW SFCP - 18 months
<b>EVENTS:</b>	<b>EVENT TITLE</b>	
2440	PERFORM 44.210.059 ECCS/ADS/MDS D1 SRV SOLENOID FUNC TEST	
2441	PERFORM 44.210.060 ECCS/ADS/MDS D2 SRV SOLENOID FUNC TEST	

REQUIREMENT	REQUIREMENT TITLE	FREQ
SR 3.3.5.2.4-1	CHANNEL CALIBRATION Reactor Core Isolation Cooling System Instrumentation 1. Reactor Vessel Water Level — Low Low, Level 2	IAW SFCP - 18 months
<b>EVENTS:      EVENT TITLE</b>		
0671	PERFORM 44.030.255 ECCS RX WTR LVL 1,2&8 DIV 1, CHNL A, XMTR CALIBRATION	
0672	PERFORM 44.030.256 ECCS RX WTR LVL 1,2&8 DIV 2,CHNL B, XMTR CALIBRATION	
0673	PERFORM 44.030.257 ECCS RX WTR LVL 1,2&8 DIV 1,CHNL C, XMTR CALIBRATION	
0674	PERFORM 44.030.258 ECCS RX WTR LVL 1,2&8 DIV 2,CHNL D, XMTR CALIBRATION	
1671	PERFORM 44.030.255 ECCS RX WTR LVL 1,2&8 DIV 1,CHNL A, MTU CAL	
1672	PERFORM 44.030.256 ECCS RX WTR LVL 1,2&8 DIV 2,CHNL B, MTU CAL	
1673	PERFORM 44.030.257 ECCS RX WTR LVL 1,2&8 DIV 1,CHNL C, MTU CAL	
1674	PERFORM 44.030.258 ECCS RX WTR LVL 1,2&8 DIV 2,CHNL D, MTU CALIBRATION	
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SR 3.3.5.2.4-2	CHANNEL CALIBRATION Reactor Core Isolation Cooling System Instrumentation 2. Reactor Vessel Water Level — High, Level 8	IAW SFCP - 18 months
<b>EVENTS:      EVENT TITLE</b>		
0671	PERFORM 44.030.255 ECCS RX WTR LVL 1,2&8 DIV 1, CHNL A, XMTR CALIBRATION	
0672	PERFORM 44.030.256 ECCS RX WTR LVL 1,2&8 DIV 2,CHNL B, XMTR CALIBRATION	
1671	PERFORM 44.030.255 ECCS RX WTR LVL 1,2&8 DIV 1,CHNL A, MTU CAL	
1672	PERFORM 44.030.256 ECCS RX WTR LVL 1,2&8 DIV 2,CHNL B, MTU CAL	
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SR 3.3.5.2.4-3	CHANNEL CALIBRATION Reactor Core Isolation Cooling System Instrumentation 3. Condensate Storage Tank Level — Low	IAW SFCP - 18 months
<b>EVENTS:      EVENT TITLE</b>		
0645	PERFORM 44.030.400 ECCS HPCI/RCIC CST LEVEL, E41N061B, CALIBRATION/FUNCTIONAL	
1645	PERFORM 44.030.401 ECCS HPCI/RCIC CST LEVEL, E41N061D, CALIBRATION/FUNCTIONAL	
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REQUIREMENT	REQUIREMENT TITLE	FREQ
SR 3.3.5.2.5-1	LOGIC SYSTEM FUNCTIONAL TEST Reactor Core Isolation Cooling System Instrumentation 1. Reactor Vessel Water Level — Low Low, Level 2	IAW SFCP - 18 months
	<b>EVENTS:</b>	<b>EVENT TITLE</b>
	0272	PERFORM 24.206.02 SEC-5.2 RCIC VAL POS INDICATION VERIF. / MANUAL INITIATE
	0671	PERFORM 44.030.255 ECCS RX WTR LVL 1,2&8 DIV 1, CHNL A, XMTR CALIBRATION
	0672	PERFORM 44.030.256 ECCS RX WTR LVL 1,2&8 DIV 2,CHNL B, XMTR CALIBRATION
	0673	PERFORM 44.030.257 ECCS RX WTR LVL 1,2&8 DIV 1,CHNL C, XMTR CALIBRATION
	0674	PERFORM 44.030.258 ECCS RX WTR LVL 1,2&8 DIV 2,CHNL D, XMTR CALIBRATION
	1671	PERFORM 44.030.255 ECCS RX WTR LVL 1,2&8 DIV 1,CHNL A, MTU CAL
	1672	PERFORM 44.030.256 ECCS RX WTR LVL 1,2&8 DIV 2,CHNL B, MTU CAL
	1673	PERFORM 44.030.257 ECCS RX WTR LVL 1,2&8 DIV 1,CHNL C, MTU CAL
	1674	PERFORM 44.030.258 ECCS RX WTR LVL 1,2&8 DIV 2,CHNL D, MTU CALIBRATION
	2809	PERFORM 44.060.002 RCIC SYSTEM LOGIC FUNCTIONAL TEST - ONLINE
SR 3.3.5.2.5-2	LOGIC SYSTEM FUNCTIONAL TEST Reactor Core Isolation Cooling System Instrumentation 2. Reactor Vessel Water Level — High, Level 8	IAW SFCP - 18 months
	<b>EVENTS:</b>	<b>EVENT TITLE</b>
	0272	PERFORM 24.206.02 SEC-5.2 RCIC VAL POS INDICATION VERIF. / MANUAL INITIATE
	0671	PERFORM 44.030.255 ECCS RX WTR LVL 1,2&8 DIV 1, CHNL A, XMTR CALIBRATION
	0672	PERFORM 44.030.256 ECCS RX WTR LVL 1,2&8 DIV 2,CHNL B, XMTR CALIBRATION
	1671	PERFORM 44.030.255 ECCS RX WTR LVL 1,2&8 DIV 1,CHNL A, MTU CAL
	1672	PERFORM 44.030.256 ECCS RX WTR LVL 1,2&8 DIV 2,CHNL B, MTU CAL
	2809	PERFORM 44.060.002 RCIC SYSTEM LOGIC FUNCTIONAL TEST - ONLINE
SR 3.3.5.2.5-3	LOGIC SYSTEM FUNCTIONAL TEST Reactor Core Isolation Cooling System Instrumentation 3. Condensate Storage Tank Level — Low	IAW SFCP - 18 months
	<b>EVENTS:</b>	<b>EVENT TITLE</b>
	0272	PERFORM 24.206.02 SEC-5.2 RCIC VAL POS INDICATION VERIF. / MANUAL INITIATE
	0645	PERFORM 44.030.400 ECCS HPCI/RCIC CST LEVEL, E41N061B, CALIBRATION/FUNCTIONAL
	1645	PERFORM 44.030.401 ECCS HPCI/RCIC CST LEVEL, E41N061D, CALIBRATION/FUNCTIONAL
	2809	PERFORM 44.060.002 RCIC SYSTEM LOGIC FUNCTIONAL TEST - ONLINE

REQUIREMENT	REQUIREMENT TITLE	FREQ
SR 3.3.5.2.6-4	CHANNEL FUNCTIONAL TEST Reactor Core Isolation Cooling System Instrumentation 4. Manual Initiation	IAW SFCP - 18 months
<b>EVENTS:</b>	<b>EVENT TITLE</b>	
0272	PERFORM 24.206.02 SEC-5.2 RCIC VAL POS INDICATION VERIF. / MANUAL INITIATE	
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SR 3.3.5.3.3-1.b	CHANNEL FUNCTIONAL TEST RPV Water Inventory Control Instrumentation Core Spray System b. Manual Initiation	IAW SFCP - 18 months
<b>EVENTS:</b>	<b>EVENT TITLE</b>	
0260	PERFORM 24.203.04 SEC-5.3 DIV.1 CSS LOCAL VALVE POSITION INDICATION VERIF.	
1260	PERFORM 24.203.04 SEC-5.4 DIV.2 CSS LOCAL VALVE POSITION INDICATION VERIF.	
2257	PERFORM 24.203.02 SEC-5.2 DIVISION 1 CSS SIMULATED AUTOMATIC ACTUATION TEST	
2258	PERFORM 24.203.03 SEC-5.2 DIVISION 2 CSS SIMULATED AUTOMATIC ACTUATION TEST	
3293	PERFORM 43.401.711 DIV 1 CORE SPRAY INJECTION CHECK VALVE EXERCISE TEST	
3294	PERFORM 43.401.712 DIV 2 CORE SPRAY INJECTION CHECK VALVE EXERCISE TEST	
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SR 3.3.5.3.3-2.b	CHANNEL FUNCTIONAL TEST RPV Water Inventory Control Instrumentation Low Pressure Coolant Injection (LPCI) System b. Manual Initiation.	IAW SFCP - 18 months
<b>EVENTS:</b>	<b>EVENT TITLE</b>	
0265	PERFORM 24.204.05 SEC-5.1 DIV. 1 RHR LOCAL VALVE POSITION INDICATION & STROKE	
1134	PERFORM 24.204.05 SEC-5.3 DIV. 2 RHR LOCAL VALVE POSITION INDICATION & STROKE	
1135	PERFORM 24.204.08 NON-DIVISIONAL RHR VALVE POSITION & STROKE TIME TEST	
1265	PERFORM 24.204.05 SEC-5.2 DIV 1 RHR LOCAL VALVE POSITION INDICATION VERIF.	
1266	PERFORM 24.204.05 SEC-5.4 DIV 2 RHR LOCAL VALVE POSITION INDICATION VERIF.	
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REQUIREMENT	REQUIREMENT TITLE	FREQ
SR 3.3.6.1.4-1.a	CHANNEL CALIBRATION Primary Containment Isolation Instrumentation Main Steam Line Isolation a. Reactor Vessel Water Level - Low Low Low, Level 1	IAW SFCP - 18 months
<b>EVENTS:</b>	<b>EVENT TITLE</b>	
0531	PERFORM 44.020.007 NS4 RX VESSEL LOW WTR LEVEL 1&2,TRIP SYS A,CHNL A,XMTR CAL	
0532	PERFORM 44.020.008 NS4 RX VESSEL LOW WTR LEVEL 1&2,TRIP SYS B,CHNL B,XMTR CAL	
0533	PERFORM 44.020.009 NS4 RX VESSEL LOW WTR LEVEL 1&2,TRIP SYS A,CHNL C,XMTR CAL	
0534	PERFORM 44.020.010 NS4 RX VESSEL LOW WTR LEVEL 1&2,TRIP SYS B,CHNL D,XMTR CAL	
1531	PERFORM 44.020.007 NS4 RX VESSEL LOW WTR LEVEL 1&2,TRIP SYS A,CHL A,MTU CAL/FUNC	
1532	PERFORM 44.020.008 NS4 RX VESSEL LOW WTR LEVEL 1&2,TRIP SYS B,CHL B,MTU CAL/FUNC	
1533	PERFORM 44.020.009 NS4 RX VESSEL LOW WTR LEVEL 1&2,TRIP SYS A,CHL C,MTU CAL/FUNC	
1534	PERFORM 44.020.010 NS4 RX VESSEL LOW WTR LEVEL 1&2,TRIP SYS B,CHL D,MTU CAL/FUNC	
SR 3.3.6.1.4-1.b	CHANNEL CALIBRATION Primary Containment Isolation Instrumentation Main Steam Line Isolation b. Main Steam line Pressure - Low	IAW SFCP - 18 Months
<b>EVENTS:</b>	<b>EVENT TITLE</b>	
0600	PERFORM 44.020.027 NS4 MAIN STEAM LINE PRESSURE, TRIP SYS A, CH A, CAL/FUNC	
0601	PERFORM 44.020.028 NS4 MAIN STEAM LINE PRESSURE,TRIP SYS B, CH B, CAL/FUNC	
0602	PERFORM 44.020.029 NS4 MAIN STEAM LINE PRESSURE,TRIP SYS A, CHNL C,CAL/FUNC	
0603	PERFORM 44.020.030 NS4 MAIN STEAM LINE PRESSURE, TRIP SYS B, CH D, CAL/FUNC	
SR 3.3.6.1.4-1.d	CHANNEL CALIBRATION Primary Containment Isolation Instrumentation Main Steam Line Isolation d. Condenser Pressure - High	IAW SFCP - 18 months
<b>EVENTS:</b>	<b>EVENT TITLE</b>	
0632	PERFORM 44.020.063 NS4 CONDENSER PRESS TRIP SYSTEM A, CHANNEL A, CAL/FUNCT	
0633	PERFORM 44.020.064 NS4 CONDENSER PRESS TRIP SYSTEM B, CHANNEL B, CAL/FUNC	
0634	PERFORM 44.020.065 NS4 CONDENSER PRESS TRIP SYSTEM A, CHANNEL C, CAL/FUNCT	
0635	PERFORM 44.020.066 NS4 CONDENSER PRESS TRIP SYSTEM B, CHANNEL D, CAL/FUNC	

REQUIREMENT	REQUIREMENT TITLE	FREQ
SR 3.3.6.1.4-1.e	CHANNEL CALIBRATION Primary Containment Isolation Instrumentation Main Steam Line Isolation e. Main Steam Tunnel Temperature - High	IAW SFCP - 18 months
<b>EVENTS:</b>	<b>EVENT TITLE</b>	
0628	PERFORM 44.020.416 NS4 MAIN STEAM LINE TUNNEL TEMP,TRIP SYS A,B21N612A,CAL/FUNC	
0629	PERFORM 44.020.420 NS4 MAIN STEAM LINE TUNNEL TEMP,TRIP SYS B,B21N612B,CAL/FUNC	
0630	PERFORM 44.020.424 NS4 MAIN STEAM LINE TUNNEL TEMP,TRIP SYS A,B21N612C,CAL/FUNC	
0631	PERFORM 44.020.428 NS4 MAIN STEAM LINE TUNNEL TEMP,TRIP SYS B,B21N612D,CAL/FUNC	
1628	PERFORM 44.020.417 NS4 MAIN STEAM LINE TUNNEL TEMP,TRIP SYS A,B21N613A,CAL/FUNC	
1629	PERFORM 44.020.421 NS4 MAIN STEAM LINE TUNNEL TEMP,TRIP SYS B,B21N613B,CAL/FUNC	
1630	PERFORM 44.020.422 NS4 MAIN STEAM LINE TUNNEL TEMP,TRIP SYS B,B21N614B,CAL/FUNC	
1631	PERFORM 44.020.423 NS4 MAIN STEAM LINE TUNNEL TEMP,TRIP SYS B,B21N615B,CAL/FUNC	
1728	PERFORM 44.020.418 NS4 MAIN STEAM LINE TUNNEL TEMP,TRIP SYS A,B21N614A,CAL/FUNC	
1730	PERFORM 44.020.425 NS4 MAIN STEAM LINE TUNNEL TEMP,TRIP SYS A,B21N613C,CAL/FUNC	
1731	PERFORM 44.020.426 NS4 MAIN STEAM LINE TUNNEL TEMP,TRIP SYS A,B21N614C,CAL/FUNC	
1732	PERFORM 44.020.427 NS4 MAIN STEAM LINE TUNNEL TEMP,TRIP SYS A,B21N615C,CAL/FUNC	
1828	PERFORM 44.020.419 NS4 MAIN STEAM LINE TUNNEL TEMP,TRIP SYS A,B21N615A,CAL/FUNC	
1831	PERFORM 44.020.429 NS4 MAIN STEAM LINE TUNNEL TEMP,TRIP SYS B,B21N613D,CAL/FUNC	
1832	PERFORM 44.020.430 NS4 MAIN STEAM LINE TUNNEL TEMP,TRIP SYS B,B21N614D,CAL/FUNC	
1833	PERFORM 44.020.431 NS4 MAIN STEAM LINE TUNNEL TEMP,TRIP SYS B,B21N615D,CAL/FUNC	

REQUIREMENT	REQUIREMENT TITLE	FREQ
SR 3.3.6.1.4-1.g	CHANNEL CALIBRATION Primary Containment Isolation Instrumentation Main Steam Line Isolation g. Turbine Building Area Temperature - High	IAW SFCP - 18 months
<b>EVENTS:      EVENT TITLE</b>		
0636	PERFORM 44.020.432 NS4 TB AREA TEMP, TRIP SYS A, CH A, B21N616A, CAL/FUNC	
0637	PERFORM 44.020.434 NS4 TB AREA TEMP, TRIP SYS B, CH B, B21N616B, CAL/FUNC	
0638	PERFORM 44.020.436 NS4 TB AREA TEMP, TRIP SYS A, CH C, B21N616C, CAL/FUNC	
0639	PERFORM 44.020.438 NS4 TB AREA TEMP, TRIP SYS B, CH D, B21N616D, CAL/FUNC	
1636	PERFORM 44.020.433 NS4 TB AREA TEMP, TRIP SYS A, CH A, B21N617A, CAL/FUNC	
1637	PERFORM 44.020.435 NS4 TB AREA TEMP, TRIP SYS B, CH B, B21N617B, CAL/FUNC	
1638	PERFORM 44.020.437 NS4 TB AREA TEMP, TRIP SYS A, CH C, B21N617C, CAL/FUNC	
1639	PERFORM 44.020.439 NS4 TB AREA TEMP TRIP SYS B, CH D, B21N617D, CAL/FUNC	
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SR 3.3.6.1.4-2.a	CHANNEL CALIBRATION Primary Containment Isolation Instrumentation Primary Containment Isolation a. Reactor Vessel Water Level Low, Level 3	IAW SFCP - 18 months
<b>EVENTS:      EVENT TITLE</b>		
0750	PERFORM 44.010.017 RPS(TS A/TC A1)-NS4(TS A/TC A) RX LOW WTR LVL 3, B21N080A, XMTR CAL	
0751	PERFORM 44.010.018 RPS(TS B/TC B1)-NS4(TS A/TC B) RX LOW WTR LVL 3, B21N080B, XTMR CAL	
0752	PERFORM 44.010.019 RPS(TS A/TC A2)-NS4(TS B/TC C) RX LOW WTR LVL 3, B21N080C, XMTR CAL	
0753	PERFORM 44.010.020 RPS(TS B/TC B2)-NS4(TS B/TC D) RX LOW WTR LVL 3, B21N080D, XMTR CAL	
1750	PERFORM 44.010.017 RPS(TS A/TC A1)-NS4(TS A/TC A) RX LOW WTR LVL 3, B21N680A MTU CAL/FUNC	
1751	PERFORM 44.010.018 RPS(TS B/TC B1)-NS4(TS A/TC B) RX LOW WTR LVL 3, B21N680B MTU CAL/FUNC	
1752	PERFORM 44.010.019 RPS(TS A/TC A2)-NS4(TS B/TC C) RX LOW WTR LVL 3, B21N680C MTU CAL/FUNC	
1753	PERFORM 44.010.020 RPS(TS B/TC B2)-NS4(TS B/TC D) RX LOW WTR LVL 3, B21N680D MTU CAL/FUNC	
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REQUIREMENT	REQUIREMENT TITLE	FREQ
SR 3.3.6.1.4-2.b	CHANNEL CALIBRATION Primary Containment Isolation Instrumentation Primary Containment Isolation b. Reactor Vessel Water Level - Low, Level 2	IAW SFCP - 18 months
	<b>EVENTS:</b>	
	<b>EVENT TITLE</b>	
0531	PERFORM 44.020.007 NS4 RX VESSEL LOW WTR LEVEL 1&2,TRIP SYS A,CHNL A,XMTR CAL	
0532	PERFORM 44.020.008 NS4 RX VESSEL LOW WTR LEVEL 1&2,TRIP SYS B,CHNL B,XMTR CAL	
0533	PERFORM 44.020.009 NS4 RX VESSEL LOW WTR LEVEL 1&2,TRIP SYS A,CHNL C,XMTR CAL	
0534	PERFORM 44.020.010 NS4 RX VESSEL LOW WTR LEVEL 1&2,TRIP SYS B,CHNL D,XMTR CAL	
1531	PERFORM 44.020.007 NS4 RX VESSEL LOW WTR LEVEL 1&2,TRIP SYS A,CHL A,MTU CAL/FUNC	
1532	PERFORM 44.020.008 NS4 RX VESSEL LOW WTR LEVEL 1&2,TRIP SYS B,CHL B,MTU CAL/FUNC	
1533	PERFORM 44.020.009 NS4 RX VESSEL LOW WTR LEVEL 1&2,TRIP SYS A,CHL C,MTU CAL/FUNC	
1534	PERFORM 44.020.010 NS4 RX VESSEL LOW WTR LEVEL 1&2,TRIP SYS B,CHL D,MTU CAL/FUNC	
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SR 3.3.6.1.4-2.c	CHANNEL CALIBRATION Primary Containment Isolation Instrumentation Primary Containment Isolation c. Drywell Pressure - High	IAW SFCP - 18 months
	<b>EVENTS:</b>	
	<b>EVENT TITLE</b>	
0496	PERFORM 44.010.037 RPS(TS A/TC A1)-NS4(TS A/TC A) DW PRESSURE, C71N650A, CALIBRATION/FUNC	
0497	PERFORM 44.010.038 RPS(TS B/TC B1)-NS4(TS A/TC B) DW PRESSURE, C71N650B, CALIBRATION/FUNC	
0498	PERFORM 44.010.039 RPS(TS A/TC A2)-NS4(TS B/TC C) DW PRESSURE, C71N650C, CALIBRATION/FUNC	
0499	PERFORM 44.010.040 RPS(TS B/TC B2)-NS4(TS B/TC D) DW PRESSURE, C71N650D, CALIBRATION/FUNC	
0781	PERFORM 44.030.303 ECCS DW PRESS RHR/CSS & HPCI ACTUATE,DIV 1,CHNL A,CAL/FUNC	
0782	PERFORM 44.030.304 ECCS DW PRESS RHR/CSS & HPCI ACTUATE,DIV 2,CHNL B,CAL/FUNC	
0783	PERFORM 44.030.305 ECCS DW PRESS RHR/CSS & HPCI ACTUATE,DIV 1,CHNL C,CAL/FUNCT	
0784	PERFORM 44.030.306 ECCS DW PRESS RHR/CSS & HPCI ACTUATE,DIV 2,CHNL D,CAL/FUNC	
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REQUIREMENT	REQUIREMENT TITLE	FREQ
SR 3.3.6.1.4-2.d	CHANNEL CALIBRATION Primary Containment Isolation Instrumentation Primary Containment Isolation d. Main Steam Line Radiation - High	IAW SFCP - 18 months
<b>EVENTS:</b>	<b>EVENT TITLE</b>	
0761	PERFORM 64.080.029, MAIN STEAM LINE RADIATION MONITOR CHANNEL A CALIBRATION - LICENSE RENEWAL REQD	
0762	PERFORM 64.080.030, MAIN STEAM LINE RADIATION MONITOR CHANNEL B CALIBRATION - LICENSE RENEWAL REQD	
0763	PERFORM 64.080.031, MAIN STEAM LINE RADIATION MONITOR CHANNEL C CALIBRATION - LICENSE RENEWAL REQD	
0764	PERFORM 64.080.032, MAIN STEAM LINE RADIATION MONITOR CHANNEL D CALIBRATION - LICENSE RENEWAL REQD	
1068	PERFORM 64.080.033 MAIN STEAM LINE RADIATION DETECTOR D11N600E CALIBRATION WITH CHANNEL A (was 64.010.033)	
1069	PERFORM 64.080.034 MAIN STEAM LINE RADIATION DETECTOR D11N600F CALIBRATION WITH CHANNEL C (was 64.010.034)	
2068	PERFORM 64.080.033 MAIN STEAM LINE RADIATION DETECTOR D11N600E CALIBRATION WITH CHANNEL B	
2069	PERFORM 64.080.034 MAIN STEAM LINE RADIATION DETECTOR D11N600F CALIBRATION WITH CHANNEL D	
SR 3.3.6.1.4-3.a	CHANNEL CALIBRATION Primary Containment Isolation Instrumentation High Pressure Coolant Injection (HPCI) System Isolation a. HPCI Steam Line Flow - High	IAW SFCP - 18 months
<b>EVENTS:</b>	<b>EVENT TITLE</b>	
0560	PERFORM 44.020.203 NS4 HPCI STEAM LINE FLOW, TRIP SYS A, CAL/FUNCTIONAL	
0561	PERFORM 44.020.204 NS4 HPCI STEAM LINE FLOW, TRIP SYS B, CAL/FUNCTIONAL	
SR 3.3.6.1.4-3.b	CHANNEL CALIBRATION Primary Containment Isolation Instrumentation High Pressure Coolant Injection (HPCI) System Isolation b. HPCI Steam Supply Line Pressure - Low	IAW SFCP - 18 months
<b>EVENTS:</b>	<b>EVENT TITLE</b>	
0563	PERFORM 44.020.211 NS4 HPCI STEAM LINE PRESSURE,TRIP SYS A,CHANNEL A,CAL/FUNC.	
0564	PERFORM 44.020.212 NS4 HPCI STEAM LINE PRESSURE,TRIP SYS B,CHANNEL B,CAL/FUNC.	
0565	PERFORM 44.020.213 NS4 HPCI STEAM LINE PRESSURE,TRIP SYS A,CHANNEL C,CAL/FUNC.	
0566	PERFORM 44.020.214 NS4 HPCI STEAM LINE PRESSURE, TRIP SYS B, CH D, CAL/FUNC	

REQUIREMENT	REQUIREMENT TITLE	FREQ
SR 3.3.6.1.4-3.c	CHANNEL CALIBRATION Primary Containment Isolation Instrumentation High Pressure Coolant Injection (HPCI) System Isolation c. HPCI Turbine Exhaust Diaphragm Pressure - High	IAW SFCP - 18 months
<b>EVENTS:      EVENT TITLE</b>		
0572	PERFORM 44.020.223 NS4 HPCI TURB EXHAUST DIAPHRAGM PRESS,TRIP SYS A,CH A,CAL/FUNC	
0573	PERFORM 44.020.224 NS4 HPCI TURB EXHAUST DIAPHRAGM PRESS,D2,CHL"B", CAL. / FUNC.	
0574	PERFORM 44.020.225 NS4 HPCI TURB EXHAUST DIAPHRAGM PRESS,TRIP SYS A,CH C,CAL/FUNC	
0575	PERFORM 44.020.226 NS4 HPCI TURB EXHAUST DIAPHRAGM PRESS,D2,CHL"D", CAL. / FUNC.	
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SR 3.3.6.1.4-3.d	CHANNEL CALIBRATION Primary Containment Isolation Instrumentation High Pressure Coolant Injection (HPCI) System Isolation d. HPCI Equipment Room Temperature - High	IAW SFCP - 18 months
<b>EVENTS:      EVENT TITLE</b>		
0578	PERFORM 44.020.229 NS4 HPCI/RCIC ROOMS AREA TEMP,CHNL A, CALIBRATION / FUNC.	
0579	PERFORM 44.020.230 NS4 HPCI/RCIC ROOMS AREA TEMP,CHNL B, CALIBRATION / FUNC.	
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SR 3.3.6.1.4-3.e	CHANNEL CALIBRATION Primary Containment Isolation Instrumentation High Pressure Coolant Injection (HPCI) System Isolation e. Drywell Pressure-High	IAW SFCP - 18 months
<b>EVENTS:      EVENT TITLE</b>		
0781	PERFORM 44.030.303 ECCS DW PRESS RHR/CSS & HPCI ACTUATE,DIV 1,CHNL A,CAL/FUNC	
0782	PERFORM 44.030.304 ECCS DW PRESS RHR/CSS & HPCI ACTUATE,DIV 2,CHNL B,CAL/FUNC	
0783	PERFORM 44.030.305 ECCS DW PRESS RHR/CSS & HPCI ACTUATE,DIV 1,CHNL C,CAL/FUNCT	
0784	PERFORM 44.030.306 ECCS DW PRESS RHR/CSS & HPCI ACTUATE,DIV 2,CHNL D,CAL/FUNC	
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SR 3.3.6.1.4-4.a	CHANNEL CALIBRATION Primary Containment Isolation Instrumentation Reactor Core Isolation Cooling (RCIC) System Isolation a. RCIC Steam Line Flow - High	IAW SFCP - 18 months
<b>EVENTS:      EVENT TITLE</b>		
0582	PERFORM 44.020.233 NS4 RCIC STEAM LINE FLOW, TRIP SYS A, CAL/FUNCT	
0583	PERFORM 44.020.234 NS4 RCIC STEAM LINE FLOW, TRIP SYS B, CALIBRATION/FUNCTIONAL	
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REQUIREMENT	REQUIREMENT TITLE	FREQ
SR 3.3.6.1.4-4.b	CHANNEL CALIBRATION Primary Containment Isolation Instrumentation Reactor Core Isolation Cooling (RCIC) System Isolation b. RCIC Steam Supply Line Pressure - Low	IAW SFCP - 18 months
<b>EVENTS:</b>	<b>EVENT TITLE</b>	
0584	PERFORM 44.020.239 NS4 RCIC STEAM LINE PRESSURE,DIV 1,CHNL A,CALIBRATION/FUNC.	
0585	PERFORM 44.020.240 NS4 RCIC STEAM LINE PRESSURE,DIV 2,CHNL B,CALIBRATION/FUNC.	
0586	PERFORM 44.020.241 NS4 RCIC STEAM LINE PRESSURE,DIV 1,CHNL C,CALIBRATION/FUNC.	
0587	PERFORM 44.020.242 NS4 RCIC STEAM LINE PRESSURE,DIV 2,CHNL D,CALIBRATION/FUNC.	
SR 3.3.6.1.4-4.c	CHANNEL CALIBRATION Primary Containment Isolation Instrumentation Reactor Core Isolation Cooling (RCIC) System Isolation c. RCIC Turbine Exhaust Diaphragm Pressure - High	IAW SFCP - 18 months
<b>EVENTS:</b>	<b>EVENT TITLE</b>	
0588	PERFORM 44.020.247 NS4 RCIC TURBINE EXH DIA PRESS,D1,CHNL A,CALIBRATION/FUNC	
0589	PERFORM 44.020.248 NS4 RCIC TURBINE EXH DIA PRESS,D2,CHNL B,CALIBRATION/FUNC	
0590	PERFORM 44.020.249 NS4 RCIC TURBINE EXH DIA PRESS,D1,CHNL C,CALIBRATION/FUNC	
0591	PERFORM 44.020.250 NS4 RCIC TURBINE EXH DIA PRESS,D2,CHNL D CALIBRATION/FUNC	
SR 3.3.6.1.4-4.d	CHANNEL CALIBRATION Primary Containment Isolation Instrumentation Reactor Core Isolation Cooling (RCIC) System Isolation d. RCIC Equipment Room Temperature - High	IAW SFCP - 18 months
<b>EVENTS:</b>	<b>EVENT TITLE</b>	
0578	PERFORM 44.020.229 NS4 HPCI/RCIC ROOMS AREA TEMP,CHNL A, CALIBRATION / FUNC.	
0579	PERFORM 44.020.230 NS4 HPCI/RCIC ROOMS AREA TEMP,CHNL B, CALIBRATION / FUNC.	
SR 3.3.6.1.4-4.e	CHANNEL CALIBRATION Primary Containment Isolation Instrumentation Reactor Core Isolation Cooling (RCIC) System Isolation e. Drywell Pressure - High	IAW SFCP - 18 months
<b>EVENTS:</b>	<b>EVENT TITLE</b>	
0781	PERFORM 44.030.303 ECCS DW PRESS RHR/CSS & HPCI ACTUATE,DIV 1,CHNL A,CAL/FUNC	
0782	PERFORM 44.030.304 ECCS DW PRESS RHR/CSS & HPCI ACTUATE,DIV 2,CHNL B,CAL/FUNC	
0783	PERFORM 44.030.305 ECCS DW PRESS RHR/CSS & HPCI ACTUATE,DIV 1,CHNL C,CAL/FUNCT	
0784	PERFORM 44.030.306 ECCS DW PRESS RHR/CSS & HPCI ACTUATE,DIV 2,CHNL D,CAL/FUNC	

REQUIREMENT	REQUIREMENT TITLE	FREQ
SR 3.3.6.1.4-5.a	CHANNEL CALIBRATION Primary Containment Isolation Instrumentation Reactor Water Cleanup (RWCU) System Isolation a. Differential Flow - High	IAW SFCP - 18 months
<b>EVENTS:</b>	<b>EVENT TITLE</b>	
0548	PERFORM 44.020.152 NS4 REACTOR WATER CLEANUP DIFFERENTIAL FLOW CAL./FUNC.	
SR 3.3.6.1.4-5.b	CHANNEL CALIBRATION Primary Containment Isolation Instrumentation Reactor Water Cleanup (RWCU) System Isolation b. Area Temperature - High	IAW SFCP - 18 months
<b>EVENTS:</b>	<b>EVENT TITLE</b>	
0551	PERFORM 44.020.158 NS4 RWCU AREA TEMP, DIV 1, CAL/FUNCTIONAL	
0552	PERFORM 44.020.159 NS4 RWCU AREA NRHX DISCHARGE TEMPERATURE, DIV 2,CAL/FUNC.	
SR 3.3.6.1.4-5.c	CHANNEL CALIBRATION Primary Containment Isolation Instrumentation Reactor Water Cleanup (RWCU) System Isolation c. Area Ventilation Differential Temperature - High	IAW SFCP - 18 months
<b>EVENTS:</b>	<b>EVENT TITLE</b>	
1551	PERFORM 44.020.160 NS4 RWCU AREA DIFFERENTIAL TEMPERATURE DIV 1, CAL/FUNC	
1552	PERFORM 44.020.161 NS4 RWCU AREA DIFFERENTIAL TEMP, DIV 2, CAL/FUNCTIONAL	
SR 3.3.6.1.4-5.e	CHANNEL CALIBRATION Primary Containment Isolation Instrumentation Reactor Water Cleanup (RWCU) System Isolation e. Reactor Vessel Water Level - Low Low, Level 2	IAW SFCP - 18 months
<b>EVENTS:</b>	<b>EVENT TITLE</b>	
0531	PERFORM 44.020.007 NS4 RX VESSEL LOW WTR LEVEL 1&2,TRIP SYS A,CHNL A,XMTR CAL	
0532	PERFORM 44.020.008 NS4 RX VESSEL LOW WTR LEVEL 1&2,TRIP SYS B,CHNL B,XMTR CAL	
0533	PERFORM 44.020.009 NS4 RX VESSEL LOW WTR LEVEL 1&2,TRIP SYS A,CHNL C,XMTR CAL	
0534	PERFORM 44.020.010 NS4 RX VESSEL LOW WTR LEVEL 1&2,TRIP SYS B,CHNL D,XMTR CAL	
1531	PERFORM 44.020.007 NS4 RX VESSEL LOW WTR LEVEL 1&2,TRIP SYS A,CHL A,MTU CAL/FUNC	
1532	PERFORM 44.020.008 NS4 RX VESSEL LOW WTR LEVEL 1&2,TRIP SYS B,CHL B,MTU CAL/FUNC	
1533	PERFORM 44.020.009 NS4 RX VESSEL LOW WTR LEVEL 1&2,TRIP SYS A,CHL C,MTU CAL/FUNC	
1534	PERFORM 44.020.010 NS4 RX VESSEL LOW WTR LEVEL 1&2,TRIP SYS B,CHL D,MTU CAL/FUNC	

REQUIREMENT	REQUIREMENT TITLE	FREQ
SR 3.3.6.1.4-6.a	CHANNEL CALIBRATION Primary Containment Isolation Instrumentation Shutdown Cooling System Isolation a. Reactor Steam Dome Pressure - High	IAW SFCP - 18 months
<b>EVENTS:      EVENT TITLE</b>		
0606	PERFORM 44.020.303 NS4 RX PRESS SDC CUT- IN PERMIS,D1,CAL/FUNC**ISOLATES SDC-F009	
0607	PERFORM 44.020.304 NS4 RX PRESS SDC CUT- IN PERMIS,D2,CAL/FUNC**ISOLATES SDC-F008	
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SR 3.3.6.1.4-6.b	CHANNEL CALIBRATION Primary Containment Isolation Instrumentation Shutdown Cooling System Isolation b. Reactor Vessel Water Level Low, Level 3	IAW SFCP - 18 months
<b>EVENTS:      EVENT TITLE</b>		
0750	PERFORM 44.010.017 RPS(TS A/TC A1)-NS4(TS A/TC A) RX LOW WTR LVL 3, B21N080A, XMTR CAL	
0751	PERFORM 44.010.018 RPS(TS B/TC B1)-NS4(TS A/TC B) RX LOW WTR LVL 3, B21N080B, XTMR CAL	
0752	PERFORM 44.010.019 RPS(TS A/TC A2)-NS4(TS B/TC C) RX LOW WTR LVL 3, B21N080C, XMTR CAL	
0753	PERFORM 44.010.020 RPS(TS B/TC B2)-NS4(TS B/TC D) RX LOW WTR LVL 3, B21N080D, XMTR CAL	
1750	PERFORM 44.010.017 RPS(TS A/TC A1)-NS4(TS A/TC A) RX LOW WTR LVL 3, B21N680A MTU CAL/FUNC	
1751	PERFORM 44.010.018 RPS(TS B/TC B1)-NS4(TS A/TC B) RX LOW WTR LVL 3, B21N680B MTU CAL/FUNC	
1752	PERFORM 44.010.019 RPS(TS A/TC A2)-NS4(TS B/TC C) RX LOW WTR LVL 3, B21N680C MTU CAL/FUNC	
1753	PERFORM 44.010.020 RPS(TS B/TC B2)-NS4(TS B/TC D) RX LOW WTR LVL 3, B21N680D MTU CAL/FUNC	
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SR 3.3.6.1.4-7.a	CHANNEL CALIBRATION Primary Containment Isolation Instrumentation Traversing In-core Probe Isolation a. Reactor Vessel Water Level - Low, Level 3	IAW SFCP - 18 months
<b>EVENTS:      EVENT TITLE</b>		
0750	PERFORM 44.010.017 RPS(TS A/TC A1)-NS4(TS A/TC A) RX LOW WTR LVL 3, B21N080A, XMTR CAL	
0751	PERFORM 44.010.018 RPS(TS B/TC B1)-NS4(TS A/TC B) RX LOW WTR LVL 3, B21N080B, XTMR CAL	
0752	PERFORM 44.010.019 RPS(TS A/TC A2)-NS4(TS B/TC C) RX LOW WTR LVL 3, B21N080C, XMTR CAL	
0753	PERFORM 44.010.020 RPS(TS B/TC B2)-NS4(TS B/TC D) RX LOW WTR LVL 3, B21N080D, XMTR CAL	
1750	PERFORM 44.010.017 RPS(TS A/TC A1)-NS4(TS A/TC A) RX LOW WTR LVL 3, B21N680A MTU CAL/FUNC	
1751	PERFORM 44.010.018 RPS(TS B/TC B1)-NS4(TS A/TC B) RX LOW WTR LVL 3, B21N680B MTU CAL/FUNC	
1752	PERFORM 44.010.019 RPS(TS A/TC A2)-NS4(TS B/TC C) RX LOW WTR LVL 3, B21N680C MTU CAL/FUNC	
1753	PERFORM 44.010.020 RPS(TS B/TC B2)-NS4(TS B/TC D) RX LOW WTR LVL 3, B21N680D MTU CAL/FUNC	
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REQUIREMENT	REQUIREMENT TITLE	FREQ
SR 3.3.6.1.4-7.b	CHANNEL CALIBRATION Primary Containment Isolation Instrumentation Traversing In-core Probe Isolation b. Drywell Pressure - High	IAW SFCP - 18 Months
<b>EVENTS:</b>	<b>EVENT TITLE</b>	
0496	PERFORM 44.010.037 RPS(TS A/TC A1)-NS4(TS A/TC A) DW PRESSURE, C71N650A, CALIBRATION/FUNC	
0497	PERFORM 44.010.038 RPS(TS B/TC B1)-NS4(TS A/TC B) DW PRESSURE, C71N650B, CALIBRATION/FUNC	
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SR 3.3.6.1.5-1.a	LOGIC SYSTEM FUNCTIONAL TEST Primary Containment Isolation Instrumentation Main Steam Line Isolation a. Reactor Vessel Water Level -Low Low Low, Level 1	IAW SFCP - 18 months
<b>EVENTS:</b>	<b>EVENT TITLE</b>	
0531	PERFORM 44.020.007 NS4 RX VESSEL LOW WTR LEVEL 1&2,TRIP SYS A,CHNL A,XMTR CAL	
0532	PERFORM 44.020.008 NS4 RX VESSEL LOW WTR LEVEL 1&2,TRIP SYS B,CHNL B,XMTR CAL	
0533	PERFORM 44.020.009 NS4 RX VESSEL LOW WTR LEVEL 1&2,TRIP SYS A,CHNL C,XMTR CAL	
0534	PERFORM 44.020.010 NS4 RX VESSEL LOW WTR LEVEL 1&2,TRIP SYS B,CHNL D,XMTR CAL	
1531	PERFORM 44.020.007 NS4 RX VESSEL LOW WTR LEVEL 1&2,TRIP SYS A,CHL A,MTU CAL/FUNC	
1532	PERFORM 44.020.008 NS4 RX VESSEL LOW WTR LEVEL 1&2,TRIP SYS B,CHL B,MTU CAL/FUNC	
1533	PERFORM 44.020.009 NS4 RX VESSEL LOW WTR LEVEL 1&2,TRIP SYS A,CHL C,MTU CAL/FUNC	
1534	PERFORM 44.020.010 NS4 RX VESSEL LOW WTR LEVEL 1&2,TRIP SYS B,CHL D,MTU CAL/FUNC	
2528	PERFORM 44.020.001 SECT 6.3 NSSS MSIV DRNS/ RECIRC SAMPLE INBD VLV'S LOGIC SYS FUNC	
2529	PERFORM 44.020.001 SECT 6.4 - VENT/PURGE ISO NSSSS DIV 1 LOGIC SYSTEM FUNCTIONAL	
2530	PERFORM 44.020.001 SECT 6.5 - NS4 DIV 1 SECONDARY CONT, DW SUMP & DRN, CCHVAC LF	
3529	PERFORM 44.020.002 NSSSS MSIV DRN/ RECIRC SAMPLE OTBD VLV'S LOGIC SYS FUNC	
3530	PERFORM 44.020.002 SECT 6.4 - VENT/PURGE ISO NSSSS DIV 2 LOGIC SYSTEM FUNCTIONAL	
3531	PERFORM 44.020.002 SECT 6.5 - NS4 DIV 2 SECONDARY CONT, DW SUMP & DRN, CCHVAC LF	
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REQUIREMENT	REQUIREMENT TITLE	FREQ
SR 3.3.6.1.5-1.b	LOGIC SYSTEM FUNCTIONAL TEST Primary Containment Isolation Instrumentation Main Steam Line Isolation b. Main Steam line Pressure - Low	IAW SFCP - 18 Months
<b>EVENTS:      EVENT TITLE</b>		
0516	PERFORM 44.010.061 RPS LOGIC FUNCTIONAL	
0600	PERFORM 44.020.027 NS4 MAIN STEAM LINE PRESSURE, TRIP SYS A, CH A, CAL/FUNC	
0601	PERFORM 44.020.028 NS4 MAIN STEAM LINE PRESSURE,TRIP SYS B, CH B, CAL/FUNC	
0602	PERFORM 44.020.029 NS4 MAIN STEAM LINE PRESSURE,TRIP SYS A, CHNL C,CAL/FUNC	
0603	PERFORM 44.020.030 NS4 MAIN STEAM LINE PRESSURE, TRIP SYS B, CH D, CAL/FUNC	
2528	PERFORM 44.020.001 SECT 6.3 NSSS MSIV DRNS/ RECIRC SAMPLE INBD VLV'S LOGIC SYS FUNC	
2529	PERFORM 44.020.001 SECT 6.4 - VENT/PURGE ISO NSSSS DIV 1 LOGIC SYSTEM FUNCTIONAL	
2530	PERFORM 44.020.001 SECT 6.5 - NS4 DIV 1 SECONDARY CONT, DW SUMP & DRN, CCHVAC LF	
3529	PERFORM 44.020.002 NSSSS MSIV DRN/ RECIRC SAMPLE OTBD VLV'S LOGIC SYS FUNC	
3530	PERFORM 44.020.002 SECT 6.4 - VENT/PURGE ISO NSSSS DIV 2 LOGIC SYSTEM FUNCTIONAL	
3531	PERFORM 44.020.002 SECT 6.5 - NS4 DIV 2 SECONDARY CONT, DW SUMP & DRN, CCHVAC LF	
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SR 3.3.6.1.5-1.d	LOGIC SYSTEM FUNCTIONAL TEST Primary Containment Isolation Instrumentation Main Steam Line Isolation d. Condenser Pressure - High	IAW SFCP - 18 months
<b>EVENTS:      EVENT TITLE</b>		
0632	PERFORM 44.020.063 NS4 CONDENSER PRESS TRIP SYSTEM A, CHANNEL A, CAL/FUNCT	
0633	PERFORM 44.020.064 NS4 CONDENSER PRESS TRIP SYSTEM B, CHANNEL B, CAL/FUNC	
0634	PERFORM 44.020.065 NS4 CONDENSER PRESS TRIP SYSTEM A, CHANNEL C, CAL/FUNCT	
0635	PERFORM 44.020.066 NS4 CONDENSER PRESS TRIP SYSTEM B, CHANNEL D, CAL/FUNC	
2528	PERFORM 44.020.001 SECT 6.3 NSSS MSIV DRNS/ RECIRC SAMPLE INBD VLV'S LOGIC SYS FUNC	
2529	PERFORM 44.020.001 SECT 6.4 - VENT/PURGE ISO NSSSS DIV 1 LOGIC SYSTEM FUNCTIONAL	
2530	PERFORM 44.020.001 SECT 6.5 - NS4 DIV 1 SECONDARY CONT, DW SUMP & DRN, CCHVAC LF	
3529	PERFORM 44.020.002 NSSSS MSIV DRN/ RECIRC SAMPLE OTBD VLV'S LOGIC SYS FUNC	
3530	PERFORM 44.020.002 SECT 6.4 - VENT/PURGE ISO NSSSS DIV 2 LOGIC SYSTEM FUNCTIONAL	
3531	PERFORM 44.020.002 SECT 6.5 - NS4 DIV 2 SECONDARY CONT, DW SUMP & DRN, CCHVAC LF	
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REQUIREMENT	REQUIREMENT TITLE	FREQ
SR 3.3.6.1.5-1.e	LOGIC SYSTEM FUNCTIONAL TEST Primary Containment Isolation Instrumentation Main Steam Line Isolation e. Main Steam Tunnel Temperature - High	IAW SFCP - 18 months
<b>EVENTS:</b>		
	<b>EVENT TITLE</b>	
0628	PERFORM 44.020.416 NS4 MAIN STEAM LINE TUNNEL TEMP,TRIP SYS A,B21N612A,CAL/FUNC	
0629	PERFORM 44.020.420 NS4 MAIN STEAM LINE TUNNEL TEMP,TRIP SYS B,B21N612B,CAL/FUNC	
0630	PERFORM 44.020.424 NS4 MAIN STEAM LINE TUNNEL TEMP,TRIP SYS A,B21N612C,CAL/FUNC	
0631	PERFORM 44.020.428 NS4 MAIN STEAM LINE TUNNEL TEMP,TRIP SYS B,B21N612D,CAL/FUNC	
1628	PERFORM 44.020.417 NS4 MAIN STEAM LINE TUNNEL TEMP,TRIP SYS A,B21N613A,CAL/FUNC	
1629	PERFORM 44.020.421 NS4 MAIN STEAM LINE TUNNEL TEMP,TRIP SYS B,B21N613B,CAL/FUNC	
1630	PERFORM 44.020.422 NS4 MAIN STEAM LINE TUNNEL TEMP,TRIP SYS B,B21N614B,CAL/FUNC	
1631	PERFORM 44.020.423 NS4 MAIN STEAM LINE TUNNEL TEMP,TRIP SYS B,B21N615B,CAL/FUNC	
1728	PERFORM 44.020.418 NS4 MAIN STEAM LINE TUNNEL TEMP,TRIP SYS A,B21N614A,CAL/FUNC	
1730	PERFORM 44.020.425 NS4 MAIN STEAM LINE TUNNEL TEMP,TRIP SYS A,B21N613C,CAL/FUNC	
1731	PERFORM 44.020.426 NS4 MAIN STEAM LINE TUNNEL TEMP,TRIP SYS A,B21N614C,CAL/FUNC	
1732	PERFORM 44.020.427 NS4 MAIN STEAM LINE TUNNEL TEMP,TRIP SYS A,B21N615C,CAL/FUNC	
1828	PERFORM 44.020.419 NS4 MAIN STEAM LINE TUNNEL TEMP,TRIP SYS A,B21N615A,CAL/FUNC	
1831	PERFORM 44.020.429 NS4 MAIN STEAM LINE TUNNEL TEMP,TRIP SYS B,B21N613D,CAL/FUNC	
1832	PERFORM 44.020.430 NS4 MAIN STEAM LINE TUNNEL TEMP,TRIP SYS B,B21N614D,CAL/FUNC	
1833	PERFORM 44.020.431 NS4 MAIN STEAM LINE TUNNEL TEMP,TRIP SYS B,B21N615D,CAL/FUNC	
2528	PERFORM 44.020.001 SECT 6.3 NSSS MSIV DRNS/ RECIRC SAMPLE INBD VLV'S LOGIC SYS FUNC	
2529	PERFORM 44.020.001 SECT 6.4 - VENT/PURGE ISO NSSSS DIV 1 LOGIC SYSTEM FUNCTIONAL	
2530	PERFORM 44.020.001 SECT 6.5 - NS4 DIV 1 SECONDARY CONT, DW SUMP & DRN, CCHVAC LF	
3529	PERFORM 44.020.002 NSSSS MSIV DRN/ RECIRC SAMPLE OTBD VLV'S LOGIC SYS FUNC	
3530	PERFORM 44.020.002 SECT 6.4 - VENT/PURGE ISO NSSSS DIV 2 LOGIC SYSTEM FUNCTIONAL	
3531	PERFORM 44.020.002 SECT 6.5 - NS4 DIV 2 SECONDARY CONT, DW SUMP & DRN, CCHVAC LF	

REQUIREMENT	REQUIREMENT TITLE	FREQ
SR 3.3.6.1.5-1.g	LOGIC SYSTEM FUNCTIONAL TEST Primary Containment Isolation Instrumentation Main Steam Line Isolation g. Turbine Building Area Temperature - High	IAW SFCP - 18 months
	<b>EVENTS:</b>	
0636	PERFORM 44.020.432 NS4 TB AREA TEMP, TRIP SYS A, CH A, B21N616A, CAL/FUNC	
0637	PERFORM 44.020.434 NS4 TB AREA TEMP, TRIP SYS B, CH B, B21N616B, CAL/FUNC	
0638	PERFORM 44.020.436 NS4 TB AREA TEMP, TRIP SYS A, CH C, B21N616C, CAL/FUNC	
0639	PERFORM 44.020.438 NS4 TB AREA TEMP, TRIP SYS B, CH D, B21N616D, CAL/FUNC	
1636	PERFORM 44.020.433 NS4 TB AREA TEMP, TRIP SYS A, CH A, B21N617A, CAL/FUNC	
1637	PERFORM 44.020.435 NS4 TB AREA TEMP, TRIP SYS B, CH B, B21N617B, CAL/FUNC	
1638	PERFORM 44.020.437 NS4 TB AREA TEMP, TRIP SYS A, CH C, B21N617C, CAL/FUNC	
1639	PERFORM 44.020.439 NS4 TB AREA TEMP TRIP SYS B, CH D, B21N617D, CAL/FUNC	
2528	PERFORM 44.020.001 SECT 6.3 NSSS MSIV DRNS/ RECIRC SAMPLE INBD VLV'S LOGIC SYS FUNC	
2529	PERFORM 44.020.001 SECT 6.4 - VENT/PURGE ISO NSSSS DIV 1 LOGIC SYSTEM FUNCTIONAL	
2530	PERFORM 44.020.001 SECT 6.5 - NS4 DIV 1 SECONDARY CONT, DW SUMP & DRN, CCHVAC LF	
3529	PERFORM 44.020.002 NSSSS MSIV DRN/ RECIRC SAMPLE OTBD VLV'S LOGIC SYS FUNC	
3530	PERFORM 44.020.002 SECT 6.4 - VENT/PURGE ISO NSSSS DIV 2 LOGIC SYSTEM FUNCTIONAL	
3531	PERFORM 44.020.002 SECT 6.5 - NS4 DIV 2 SECONDARY CONT, DW SUMP & DRN, CCHVAC LF	

REQUIREMENT	REQUIREMENT TITLE	FREQ
SR 3.3.6.1.5-2.a	LOGIC SYSTEM FUNCTIONAL TEST Primary Containment Isolation Instrumentation Primary Containment Isolation a. Reactor Vessel Water Level Low, Level 3	IAW SFCP - 18 months
<b>EVENTS:</b>		
	<b>EVENT TITLE</b>	
0239	PERFORM 24.137.18 SEC-5.2 MS LINE DRN & DRN ISO VLV OP & LOC POSITION VERIF TEST	
0750	PERFORM 44.010.017 RPS(TS A/TC A1)-NS4(TS A/TC A) RX LOW WTR LVL 3, B21N080A, XMTR CAL	
0751	PERFORM 44.010.018 RPS(TS B/TC B1)-NS4(TS A/TC B) RX LOW WTR LVL 3, B21N080B, XTMR CAL	
0752	PERFORM 44.010.019 RPS(TS A/TC A2)-NS4(TS B/TC C) RX LOW WTR LVL 3, B21N080C, XMTR CAL	
0753	PERFORM 44.010.020 RPS(TS B/TC B2)-NS4(TS B/TC D) RX LOW WTR LVL 3, B21N080D, XMTR CAL	
1750	PERFORM 44.010.017 RPS(TS A/TC A1)-NS4(TS A/TC A) RX LOW WTR LVL 3, B21N680A MTU CAL/FUNC	
1751	PERFORM 44.010.018 RPS(TS B/TC B1)-NS4(TS A/TC B) RX LOW WTR LVL 3, B21N680B MTU CAL/FUNC	
1752	PERFORM 44.010.019 RPS(TS A/TC A2)-NS4(TS B/TC C) RX LOW WTR LVL 3, B21N680C MTU CAL/FUNC	
1753	PERFORM 44.010.020 RPS(TS B/TC B2)-NS4(TS B/TC D) RX LOW WTR LVL 3, B21N680D MTU CAL/FUNC	
2528	PERFORM 44.020.001 SECT 6.3 NSSS MSIV DRNS/ RECIRC SAMPLE INBD VLV'S LOGIC SYS FUNC	
2529	PERFORM 44.020.001 SECT 6.4 - VENT/PURGE ISO NSSSS DIV 1 LOGIC SYSTEM FUNCTIONAL	
2530	PERFORM 44.020.001 SECT 6.5 - NS4 DIV 1 SECONDARY CONT, DW SUMP & DRN, CCHVAC LF	
3529	PERFORM 44.020.002 NSSSS MSIV DRN/ RECIRC SAMPLE OTBD VLV'S LOGIC SYS FUNC	
3530	PERFORM 44.020.002 SECT 6.4 - VENT/PURGE ISO NSSSS DIV 2 LOGIC SYSTEM FUNCTIONAL	
3531	PERFORM 44.020.002 SECT 6.5 - NS4 DIV 2 SECONDARY CONT, DW SUMP & DRN, CCHVAC LF	

REQUIREMENT	REQUIREMENT TITLE	FREQ
SR 3.3.6.1.5-2.b	LOGIC SYSTEM FUNCTIONAL TEST Primary Containment Isolation Instrumentation Primary Containment Isolation b. Reactor Vessel Water Level - Low, Level 2	IAW SFCP - 18 months
	<b>EVENTS:</b>	
	<b>EVENT TITLE</b>	
0239	PERFORM 24.137.18 SEC-5.2 MS LINE DRN & DRN ISO VLV OP & LOC POSITION VERIF TEST	
0531	PERFORM 44.020.007 NS4 RX VESSEL LOW WTR LEVEL 1&2,TRIP SYS A,CHNL A,XMTR CAL	
0532	PERFORM 44.020.008 NS4 RX VESSEL LOW WTR LEVEL 1&2,TRIP SYS B,CHNL B,XMTR CAL	
0533	PERFORM 44.020.009 NS4 RX VESSEL LOW WTR LEVEL 1&2,TRIP SYS A,CHNL C,XMTR CAL	
0534	PERFORM 44.020.010 NS4 RX VESSEL LOW WTR LEVEL 1&2,TRIP SYS B,CHNL D,XMTR CAL	
1531	PERFORM 44.020.007 NS4 RX VESSEL LOW WTR LEVEL 1&2,TRIP SYS A,CHL A,MTU CAL/FUNC	
1532	PERFORM 44.020.008 NS4 RX VESSEL LOW WTR LEVEL 1&2,TRIP SYS B,CHL B,MTU CAL/FUNC	
1533	PERFORM 44.020.009 NS4 RX VESSEL LOW WTR LEVEL 1&2,TRIP SYS A,CHL C,MTU CAL/FUNC	
1534	PERFORM 44.020.010 NS4 RX VESSEL LOW WTR LEVEL 1&2,TRIP SYS B,CHL D,MTU CAL/FUNC	
2528	PERFORM 44.020.001 SECT 6.3 NSSS MSIV DRNS/ RECIRC SAMPLE INBD VLV'S LOGIC SYS FUNC	
2529	PERFORM 44.020.001 SECT 6.4 - VENT/PURGE ISO NSSSS DIV 1 LOGIC SYSTEM FUNCTIONAL	
2530	PERFORM 44.020.001 SECT 6.5 - NS4 DIV 1 SECONDARY CONT, DW SUMP & DRN, CCHVAC LF	
3529	PERFORM 44.020.002 NSSSS MSIV DRN/ RECIRC SAMPLE OTBD VLV'S LOGIC SYS FUNC	
3530	PERFORM 44.020.002 SECT 6.4 - VENT/PURGE ISO NSSSS DIV 2 LOGIC SYSTEM FUNCTIONAL	
3531	PERFORM 44.020.002 SECT 6.5 - NS4 DIV 2 SECONDARY CONT, DW SUMP & DRN, CCHVAC LF	

REQUIREMENT	REQUIREMENT TITLE	FREQ
SR 3.3.6.1.5-2.c	LOGIC SYSTEM FUNCTIONAL TEST Primary Containment Isolation Instrumentation Primary Containment Isolation c. Drywell Pressure - High	IAW SFCP - 18 months
<b>EVENTS:</b>		
	<b>EVENT TITLE</b>	
0239	PERFORM 24.137.18 SEC-5.2 MS LINE DRN & DRN ISO VLV OP & LOC POSITION VERIF TEST	
0496	PERFORM 44.010.037 RPS(TS A/TC A1)-NS4(TS A/TC A) DW PRESSURE, C71N650A, CALIBRATION/FUNC	
0497	PERFORM 44.010.038 RPS(TS B/TC B1)-NS4(TS A/TC B) DW PRESSURE, C71N650B, CALIBRATION/FUNC	
0498	PERFORM 44.010.039 RPS(TS A/TC A2)-NS4(TS B/TC C) DW PRESSURE, C71N650C, CALIBRATION/FUNC	
0499	PERFORM 44.010.040 RPS(TS B/TC B2)-NS4(TS B/TC D) DW PRESSURE, C71N650D, CALIBRATION/FUNC	
2528	PERFORM 44.020.001 SECT 6.3 NSSS MSIV DRNS/ RECIRC SAMPLE INBD VLV'S LOGIC SYS FUNC	
2529	PERFORM 44.020.001 SECT 6.4 - VENT/PURGE ISO NSSSS DIV 1 LOGIC SYSTEM FUNCTIONAL	
2530	PERFORM 44.020.001 SECT 6.5 - NS4 DIV 1 SECONDARY CONT, DW SUMP & DRN, CCHVAC LF	
3529	PERFORM 44.020.002 NSSSS MSIV DRN/ RECIRC SAMPLE OTBD VLV'S LOGIC SYS FUNC	
3530	PERFORM 44.020.002 SECT 6.4 - VENT/PURGE ISO NSSSS DIV 2 LOGIC SYSTEM FUNCTIONAL	
3531	PERFORM 44.020.002 SECT 6.5 - NS4 DIV 2 SECONDARY CONT, DW SUMP & DRN, CCHVAC LF	

REQUIREMENT	REQUIREMENT TITLE	FREQ
SR 3.3.6.1.5-2.d	LOGIC SYSTEM FUNCTIONAL TEST Primary Containment Isolation Instrumentation Primary Containment Isolation d. Main Steam Line Radiation - High	IAW SFCP - 18 months
	<b>EVENTS:</b>	
0239	PERFORM 24.137.18 SEC-5.2 MS LINE DRN & DRN ISO VLV OP & LOC POSITION VERIF TEST	
0761	PERFORM 64.080.029, MAIN STEAM LINE RADIATION MONITOR CHANNEL A CALIBRATION - LICENSE RENEWAL REQD	
0762	PERFORM 64.080.030, MAIN STEAM LINE RADIATION MONITOR CHANNEL B CALIBRATION - LICENSE RENEWAL REQD	
0763	PERFORM 64.080.031, MAIN STEAM LINE RADIATION MONITOR CHANNEL C CALIBRATION - LICENSE RENEWAL REQD	
0764	PERFORM 64.080.032, MAIN STEAM LINE RADIATION MONITOR CHANNEL D CALIBRATION - LICENSE RENEWAL REQD	
1068	PERFORM 64.080.033 MAIN STEAM LINE RADIATION DETECTOR D11N600E CALIBRATION WITH CHANNEL A (was 64.010.033)	
1069	PERFORM 64.080.034 MAIN STEAM LINE RADIATION DETECTOR D11N600F CALIBRATION WITH CHANNEL C (was 64.010.034)	
2068	PERFORM 64.080.033 MAIN STEAM LINE RADIATION DETECTOR D11N600E CALIBRATION WITH CHANNEL B	
2069	PERFORM 64.080.034 MAIN STEAM LINE RADIATION DETECTOR D11N600F CALIBRATION WITH CHANNEL D	
2528	PERFORM 44.020.001 SECT 6.3 NSSS MSIV DRNS/ RECIRC SAMPLE INBD VLV'S LOGIC SYS FUNC	
2529	PERFORM 44.020.001 SECT 6.4 - VENT/PURGE ISO NSSSS DIV 1 LOGIC SYSTEM FUNCTIONAL	
2530	PERFORM 44.020.001 SECT 6.5 - NS4 DIV 1 SECONDARY CONT, DW SUMP & DRN, CCHVAC LF	
3529	PERFORM 44.020.002 NSSSS MSIV DRN/ RECIRC SAMPLE OTBD VLV'S LOGIC SYS FUNC	
3530	PERFORM 44.020.002 SECT 6.4 - VENT/PURGE ISO NSSSS DIV 2 LOGIC SYSTEM FUNCTIONAL	
3531	PERFORM 44.020.002 SECT 6.5 - NS4 DIV 2 SECONDARY CONT, DW SUMP & DRN, CCHVAC LF	
SR 3.3.6.1.5-3.a	LOGIC SYSTEM FUNCTIONAL TEST Primary Containment Isolation Instrumentation High Pressure Coolant Injection (HPCI) System Isolation a. HPCI Steam Line Flow - High	IAW SFCP - 18 months
	<b>EVENTS:</b>	
0255	PERFORM 24.202.05 SEC-5.2 & 5.3 HPCI LOCAL VALVE POS INDICATION VERIF & LSFT	
0560	PERFORM 44.020.203 NS4 HPCI STEAM LINE FLOW, TRIP SYS A, CAL/FUNCTIONAL	
0561	PERFORM 44.020.204 NS4 HPCI STEAM LINE FLOW, TRIP SYS B, CAL/FUNCTIONAL	
1644	PERFORM 44.030.152 ONLINE - HPCI SYSTEM LOGIC FUNCTIONAL TEST	

REQUIREMENT	REQUIREMENT TITLE	FREQ
SR 3.3.6.1.5-3.b	LOGIC SYSTEM FUNCTIONAL TEST Primary Containment Isolation Instrumentation High Pressure Coolant Injection (HPCI) System Isolation b. HPCI Steam Supply Line Pressure - Low	IAW SFCP - 18 months
<b>EVENTS:</b>	<b>EVENT TITLE</b>	
0255	PERFORM 24.202.05 SEC-5.2 & 5.3 HPCI LOCAL VALVE POS INDICATION VERIF & LSFT	
0563	PERFORM 44.020.211 NS4 HPCI STEAM LINE PRESSURE,TRIP SYS A,CHANNEL A,CAL/FUNC.	
0564	PERFORM 44.020.212 NS4 HPCI STEAM LINE PRESSURE,TRIP SYS B,CHANNEL B,CAL/FUNC.	
0565	PERFORM 44.020.213 NS4 HPCI STEAM LINE PRESSURE,TRIP SYS A,CHANNEL C,CAL/FUNC.	
0566	PERFORM 44.020.214 NS4 HPCI STEAM LINE PRESSURE, TRIP SYS B, CH D, CAL/FUNC	
1644	PERFORM 44.030.152 ONLINE - HPCI SYSTEM LOGIC FUNCTIONAL TEST	
SR 3.3.6.1.5-3.c	LOGIC SYSTEM FUNCTIONAL TEST Primary Containment Isolation Instrumentation High Pressure Coolant Injection (HPCI) System Isolation c. HPCI Turbine Exhaust Diaphragm Pressure - High	IAW SFCP - 18 months
<b>EVENTS:</b>	<b>EVENT TITLE</b>	
0255	PERFORM 24.202.05 SEC-5.2 & 5.3 HPCI LOCAL VALVE POS INDICATION VERIF & LSFT	
0572	PERFORM 44.020.223 NS4 HPCI TURB EXHAUST DIAPHRAGM PRESS,TRIP SYS A,CH A,CAL/FUNC	
0573	PERFORM 44.020.224 NS4 HPCI TURB EXHAUST DIAPHRAGM PRESS,D2,CHL"B", CAL. / FUNC.	
0574	PERFORM 44.020.225 NS4 HPCI TURB EXHAUST DIAPHRAGM PRESS,TRIP SYS A,CH C,CAL/FUNC	
0575	PERFORM 44.020.226 NS4 HPCI TURB EXHAUST DIAPHRAGM PRESS,D2,CHL"D", CAL. / FUNC.	
1644	PERFORM 44.030.152 ONLINE - HPCI SYSTEM LOGIC FUNCTIONAL TEST	
SR 3.3.6.1.5-3.d	LOGIC SYSTEM FUNCTIONAL TEST Primary Containment Isolation Instrumentation High Pressure Coolant Injection (HPCI) System Isolation d. HPCI Equipment Room Temperature - High	IAW SFCP - 18 months
<b>EVENTS:</b>	<b>EVENT TITLE</b>	
0255	PERFORM 24.202.05 SEC-5.2 & 5.3 HPCI LOCAL VALVE POS INDICATION VERIF & LSFT	
0578	PERFORM 44.020.229 NS4 HPCI/RCIC ROOMS AREA TEMP,CHNL A, CALIBRATION / FUNC.	
0579	PERFORM 44.020.230 NS4 HPCI/RCIC ROOMS AREA TEMP,CHNL B, CALIBRATION / FUNC.	
1644	PERFORM 44.030.152 ONLINE - HPCI SYSTEM LOGIC FUNCTIONAL TEST	

REQUIREMENT	REQUIREMENT TITLE	FREQ
SR 3.3.6.1.5-3.e	LOGIC SYSTEM FUNCTIONAL TEST Primary Containment Isolation Instrumentation High Pressure Coolant Injection (HPCI) System Isolation e. Drywell Pressure-High	IAW SFCP - 18 months
<b>EVENTS:</b>	<b>EVENT TITLE</b>	
1644	PERFORM 44.030.152 ONLINE - HPCI SYSTEM LOGIC FUNCTIONAL TEST	
SR 3.3.6.1.5-4.a	LOGIC SYSTEM FUNCTIONAL TEST Primary Containment Isolation Instrumentation Reactor Core Isolation Cooling (RCIC) System Isolation a. RCIC Steam Line Flow - High	IAW SFCP - 18 months
<b>EVENTS:</b>	<b>EVENT TITLE</b>	
0582	PERFORM 44.020.233 NS4 RCIC STEAM LINE FLOW, TRIP SYS A, CAL/FUNCT	
0583	PERFORM 44.020.234 NS4 RCIC STEAM LINE FLOW, TRIP SYS B, CALIBRATION/FUNCTIONAL	
2809	PERFORM 44.060.002 RCIC SYSTEM LOGIC FUNCTIONAL TEST - ONLINE	
SR 3.3.6.1.5-4.b	LOGIC SYSTEM FUNCTIONAL TEST Primary Containment Isolation Instrumentation Reactor Core Isolation Cooling (RCIC) System Isolation b. RCIC Steam Supply Line Pressure - Low	IAW SFCP - 18 months
<b>EVENTS:</b>	<b>EVENT TITLE</b>	
0584	PERFORM 44.020.239 NS4 RCIC STEAM LINE PRESSURE,DIV 1,CHNL A,CALIBRATION/FUNC.	
0585	PERFORM 44.020.240 NS4 RCIC STEAM LINE PRESSURE,DIV 2,CHNL B,CALIBRATION/FUNC.	
0586	PERFORM 44.020.241 NS4 RCIC STEAM LINE PRESSURE,DIV 1,CHNL C,CALIBRATION/FUNC.	
0587	PERFORM 44.020.242 NS4 RCIC STEAM LINE PRESSURE,DIV 2,CHNL D,CALIBRATION/FUNC.	
2809	PERFORM 44.060.002 RCIC SYSTEM LOGIC FUNCTIONAL TEST - ONLINE	
SR 3.3.6.1.5-4.c	LOGIC SYSTEM FUNCTIONAL TEST Primary Containment Isolation Instrumentation Reactor Core Isolation Cooling (RCIC) System Isolation c. RCIC Turbine Exhaust Diaphragm Pressure - High	IAW SFCP - 18 months
<b>EVENTS:</b>	<b>EVENT TITLE</b>	
0588	PERFORM 44.020.247 NS4 RCIC TURBINE EXH DIA PRESS,D1,CHNL A,CALIBRATION/FUNC	
0589	PERFORM 44.020.248 NS4 RCIC TURBINE EXH DIA PRESS,D2,CHNL B,CALIBRATION/FUNC	
0590	PERFORM 44.020.249 NS4 RCIC TURBINE EXH DIA PRESS,D1,CHNL C,CALIBRATION/FUNC	
0591	PERFORM 44.020.250 NS4 RCIC TURBINE EXH DIA PRESS,D2,CHNL D CALIBRATION/FUNC	
2809	PERFORM 44.060.002 RCIC SYSTEM LOGIC FUNCTIONAL TEST - ONLINE	

REQUIREMENT	REQUIREMENT TITLE	FREQ
SR 3.3.6.1.5-4.d	LOGIC SYSTEM FUNCTIONAL TEST Primary Containment Isolation Instrumentation Reactor Core Isolation Cooling (RCIC) System Isolation d. RCIC Equipment Room Temperature - High	IAW SFCP - 18 months
<b>EVENTS:      EVENT TITLE</b>		
0578	PERFORM 44.020.229 NS4 HPCI/RCIC ROOMS AREA TEMP,CHNL A, CALIBRATION / FUNC.	
0579	PERFORM 44.020.230 NS4 HPCI/RCIC ROOMS AREA TEMP,CHNL B, CALIBRATION / FUNC.	
2809	PERFORM 44.060.002 RCIC SYSTEM LOGIC FUNCTIONAL TEST - ONLINE	
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SR 3.3.6.1.5-4.e	LOGIC SYSTEM FUNCTIONAL TEST Primary Containment Isolation Instrumentation Reactor Core Isolation Cooling (RCIC) System Isolation e. Drywell Pressure - High	IAW SFCP - 18 months
<b>EVENTS:      EVENT TITLE</b>		
2809	PERFORM 44.060.002 RCIC SYSTEM LOGIC FUNCTIONAL TEST - ONLINE	
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SR 3.3.6.1.5-5.a	LOGIC SYSTEM FUNCTIONAL TEST Primary Containment Isolation Instrumentation Reactor Water Cleanup (RWCU) System Isolation a. Differential Flow - High	IAW SFCP - 18 months
<b>EVENTS:      EVENT TITLE</b>		
0353	PERFORM 24.707.01 SEC-5.1 RWCU LOCAL VALVE POSITION VERIFICATION	
0527	PERFORM 44.020.501 RWCU NSSSS- INBD ISOLATION VALVE LOGIC SYSTEM FUNCTIONAL	
0528	PERFORM 44.020.601 RWCU NSSSS- OTBD ISOLATION VALVE LOGIC SYSTEM FUNCTIONAL	
0548	PERFORM 44.020.152 NS4 REACTOR WATER CLEANUP DIFFERENTIAL FLOW CAL./FUNC.	
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SR 3.3.6.1.5-5.b	LOGIC SYSTEM FUNCTIONAL TEST Primary Containment Isolation Instrumentation Reactor Water Cleanup (RWCU) System Isolation b. Area Temperature - High	IAW SFCP - 18 months
<b>EVENTS:      EVENT TITLE</b>		
0353	PERFORM 24.707.01 SEC-5.1 RWCU LOCAL VALVE POSITION VERIFICATION	
0527	PERFORM 44.020.501 RWCU NSSSS- INBD ISOLATION VALVE LOGIC SYSTEM FUNCTIONAL	
0528	PERFORM 44.020.601 RWCU NSSSS- OTBD ISOLATION VALVE LOGIC SYSTEM FUNCTIONAL	
0551	PERFORM 44.020.158 NS4 RWCU AREA TEMP, DIV 1, CAL/FUNCTIONAL	
0552	PERFORM 44.020.159 NS4 RWCU AREA NRHX DISCHARGE TEMPERATURE, DIV 2,CAL/FUNC.	
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REQUIREMENT	REQUIREMENT TITLE	FREQ
SR 3.3.6.1.5-5.c	LOGIC SYSTEM FUNCTIONAL TEST Primary Containment Isolation Instrumentation Reactor Water Cleanup (RWCU) System Isolation c. Area Ventilation Differential Temperature - High	IAW SFCP - 18 months
<b>EVENTS:</b>	<b>EVENT TITLE</b>	
0353	PERFORM 24.707.01 SEC-5.1 RWCU LOCAL VALVE POSITION VERIFICATION	
0527	PERFORM 44.020.501 RWCU NSSSS- INBD ISOLATION VALVE LOGIC SYSTEM FUNCTIONAL	
0528	PERFORM 44.020.601 RWCU NSSSS- OTBD ISOLATION VALVE LOGIC SYSTEM FUNCTIONAL	
1551	PERFORM 44.020.160 NS4 RWCU AREA DIFFERENTIAL TEMPERATURE DIV 1, CAL/FUNC	
1552	PERFORM 44.020.161 NS4 RWCU AREA DIFFERENTIAL TEMP, DIV 2, CAL/FUNCTIONAL	
SR 3.3.6.1.5-5.d	LOGIC SYSTEM FUNCTIONAL TEST Primary Containment Isolation Instrumentation Reactor Water Cleanup (RWCU) System Isolation d. SLC System Initiation	IAW SFCP - 18 months
<b>EVENTS:</b>	<b>EVENT TITLE</b>	
0353	PERFORM 24.707.01 SEC-5.1 RWCU LOCAL VALVE POSITION VERIFICATION	
0527	PERFORM 44.020.501 RWCU NSSSS- INBD ISOLATION VALVE LOGIC SYSTEM FUNCTIONAL	
0528	PERFORM 44.020.601 RWCU NSSSS- OTBD ISOLATION VALVE LOGIC SYSTEM FUNCTIONAL	
1345	PERFORM 24.139.03 SEC-5.1 SLC - RWCU ISOLATION FUNCTIONAL TEST	
SR 3.3.6.1.5-5.e	LOGIC SYSTEM FUNCTIONAL TEST Primary Containment Isolation Instrumentation Reactor Water Cleanup (RWCU) System Isolation e. Reactor Vessel Water Level - Low Low, Level 2	IAW SFCP - 18 months
<b>EVENTS:</b>	<b>EVENT TITLE</b>	
0353	PERFORM 24.707.01 SEC-5.1 RWCU LOCAL VALVE POSITION VERIFICATION	
0527	PERFORM 44.020.501 RWCU NSSSS- INBD ISOLATION VALVE LOGIC SYSTEM FUNCTIONAL	
0528	PERFORM 44.020.601 RWCU NSSSS- OTBD ISOLATION VALVE LOGIC SYSTEM FUNCTIONAL	
0531	PERFORM 44.020.007 NS4 RX VESSEL LOW WTR LEVEL 1&2,TRIP SYS A,CHNL A,XMTR CAL	
0532	PERFORM 44.020.008 NS4 RX VESSEL LOW WTR LEVEL 1&2,TRIP SYS B,CHNL B,XMTR CAL	
0533	PERFORM 44.020.009 NS4 RX VESSEL LOW WTR LEVEL 1&2,TRIP SYS A,CHNL C,XMTR CAL	
0534	PERFORM 44.020.010 NS4 RX VESSEL LOW WTR LEVEL 1&2,TRIP SYS B,CHNL D,XMTR CAL	
1531	PERFORM 44.020.007 NS4 RX VESSEL LOW WTR LEVEL 1&2,TRIP SYS A,CHL A,MTU CAL/FUNC	
1532	PERFORM 44.020.008 NS4 RX VESSEL LOW WTR LEVEL 1&2,TRIP SYS B,CHL B,MTU CAL/FUNC	
1533	PERFORM 44.020.009 NS4 RX VESSEL LOW WTR LEVEL 1&2,TRIP SYS A,CHL C,MTU CAL/FUNC	
1534	PERFORM 44.020.010 NS4 RX VESSEL LOW WTR LEVEL 1&2,TRIP SYS B,CHL D,MTU CAL/FUNC	

REQUIREMENT	REQUIREMENT TITLE	FREQ
SR 3.3.6.1.5-6.a	LOGIC SYSTEM FUNCTIONAL TEST Primary Containment Isolation Instrumentation Shutdown Cooling System Isolation a. Reactor Steam Dome Pressure - High	IAW SFCP - 18 months
<b>EVENTS:      EVENT TITLE</b>		
0606	PERFORM 44.020.303 NS4 RX PRESS SDC CUT- IN PERMIS,D1,CAL/FUNC**ISOLATES SDC-F009	
0607	PERFORM 44.020.304 NS4 RX PRESS SDC CUT- IN PERMIS,D2,CAL/FUNC**ISOLATES SDC-F008	
2527	PERFORM 44.020.502 INBD SDC-HEAD SPRAY AUTO ISOLATION LOGIC FUNCTIONAL	
3528	PERFORM 44.020.602 OTBD SDC - HEAD SPRAY AUTO ISOLATION LOGIC FUNCTIONAL	
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SR 3.3.6.1.5-6.b	LOGIC SYSTEM FUNCTIONAL TEST Primary Containment Isolation Instrumentation Shutdown Cooling System Isolation b. Reactor Vessel Water Level - Low, Level 3	IAW SFCP - 18 months
<b>EVENTS:      EVENT TITLE</b>		
0750	PERFORM 44.010.017 RPS(TS A/TC A1)-NS4(TS A/TC A) RX LOW WTR LVL 3, B21N080A, XMTR CAL	
0751	PERFORM 44.010.018 RPS(TS B/TC B1)-NS4(TS A/TC B) RX LOW WTR LVL 3, B21N080B, XTMR CAL	
0752	PERFORM 44.010.019 RPS(TS A/TC A2)-NS4(TS B/TC C) RX LOW WTR LVL 3, B21N080C, XMTR CAL	
0753	PERFORM 44.010.020 RPS(TS B/TC B2)-NS4(TS B/TC D) RX LOW WTR LVL 3, B21N080D, XMTR CAL	
1750	PERFORM 44.010.017 RPS(TS A/TC A1)-NS4(TS A/TC A) RX LOW WTR LVL 3, B21N680A MTU CAL/FUNC	
1751	PERFORM 44.010.018 RPS(TS B/TC B1)-NS4(TS A/TC B) RX LOW WTR LVL 3, B21N680B MTU CAL/FUNC	
1752	PERFORM 44.010.019 RPS(TS A/TC A2)-NS4(TS B/TC C) RX LOW WTR LVL 3, B21N680C MTU CAL/FUNC	
1753	PERFORM 44.010.020 RPS(TS B/TC B2)-NS4(TS B/TC D) RX LOW WTR LVL 3, B21N680D MTU CAL/FUNC	
2527	PERFORM 44.020.502 INBD SDC-HEAD SPRAY AUTO ISOLATION LOGIC FUNCTIONAL	
3528	PERFORM 44.020.602 OTBD SDC - HEAD SPRAY AUTO ISOLATION LOGIC FUNCTIONAL	
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REQUIREMENT	REQUIREMENT TITLE	FREQ
SR 3.3.6.1.5-7.a	LOGIC SYSTEM FUNCTIONAL TEST Primary Containment Isolation Instrumentation Traversing In-core Probe Isolation a. Reactor Vessel Water Level - Low, Level 3	IAW SFCP - 18 months
	<b>EVENTS:</b>	
	<b>EVENT TITLE</b>	
0750	PERFORM 44.010.017 RPS(TS A/TC A1)-NS4(TS A/TC A) RX LOW WTR LVL 3, B21N080A, XMTR CAL	
0751	PERFORM 44.010.018 RPS(TS B/TC B1)-NS4(TS A/TC B) RX LOW WTR LVL 3, B21N080B, XTMR CAL	
0752	PERFORM 44.010.019 RPS(TS A/TC A2)-NS4(TS B/TC C) RX LOW WTR LVL 3, B21N080C, XMTR CAL	
0753	PERFORM 44.010.020 RPS(TS B/TC B2)-NS4(TS B/TC D) RX LOW WTR LVL 3, B21N080D, XMTR CAL	
1750	PERFORM 44.010.017 RPS(TS A/TC A1)-NS4(TS A/TC A) RX LOW WTR LVL 3, B21N680A MTU CAL/FUNC	
1751	PERFORM 44.010.018 RPS(TS B/TC B1)-NS4(TS A/TC B) RX LOW WTR LVL 3, B21N680B MTU CAL/FUNC	
1752	PERFORM 44.010.019 RPS(TS A/TC A2)-NS4(TS B/TC C) RX LOW WTR LVL 3, B21N680C MTU CAL/FUNC	
1753	PERFORM 44.010.020 RPS(TS B/TC B2)-NS4(TS B/TC D) RX LOW WTR LVL 3, B21N680D MTU CAL/FUNC	
2530	PERFORM 44.020.001 SECT 6.5 - NS4 DIV 1 SECONDARY CONT, DW SUMP & DRN, CCHVAC LF	
3531	PERFORM 44.020.002 SECT 6.5 - NS4 DIV 2 SECONDARY CONT, DW SUMP & DRN, CCHVAC LF	
SR 3.3.6.1.5-7.b	LOGIC SYSTEM FUNCTIONAL TEST Primary Containment Isolation Instrumentation Traversing In-core Probe Isolation b. Drywell Pressure - High	IAW SFCP - 18 months
	<b>EVENTS:</b>	
	<b>EVENT TITLE</b>	
0496	PERFORM 44.010.037 RPS(TS A/TC A1)-NS4(TS A/TC A) DW PRESSURE, C71N650A, CALIBRATION/FUNC	
0497	PERFORM 44.010.038 RPS(TS B/TC B1)-NS4(TS A/TC B) DW PRESSURE, C71N650B, CALIBRATION/FUNC	

REQUIREMENT	REQUIREMENT TITLE	FREQ
SR 3.3.6.1.6-2.e	CHANNEL FUNCTIONAL TEST Primary Containment Isolation Instrumentation Primary Containment Isolation d. Manual Initiation	IAW SFCP - 18 months
<b>EVENTS:</b>	<b>EVENT TITLE</b>	
0239	PERFORM 24.137.18 SEC-5.2 MS LINE DRN & DRN ISO VLV OP & LOC POSITION VERIF TEST	
0244	PERFORM 24.138.02 SEC-5.2 RX RECIRC LOCAL VALVE POSITION VERIFICATION TEST	
0248	PERFORM 24.144.01 SEC-5.2 TWMS VALVE OPERABILITY & POSITION VERIF. TEST	
0265	PERFORM 24.204.05 SEC-5.1 DIV. 1 RHR LOCAL VALVE POSITION INDICATION & STROKE	
0321	PERFORM 24.406.02 SEC-5.2 NITROGEN INERT VLV POS INDICATION VERIF MODE 4,5	
0322	PERFORM 24.408.03 SEC-5.2 DIV 1 PRIMARY CONT MONT SYS VLV OP AND IND VERIF	
0351	PERFORM 24.702.01 SEC-5.3 MISCELLANEOUS SYSTEMS LOCAL VALVE POSITION VERIF.	
1134	PERFORM 24.204.05 SEC-5.3 DIV. 2 RHR LOCAL VALVE POSITION INDICATION & STROKE	
1135	PERFORM 24.204.08 NON-DIVISIONAL RHR VALVE POSITION & STROKE TIME TEST	
1265	PERFORM 24.204.05 SEC-5.2 DIV 1 RHR LOCAL VALVE POSITION INDICATION VERIF.	
1266	PERFORM 24.204.05 SEC-5.4 DIV 2 RHR LOCAL VALVE POSITION INDICATION VERIF.	
1315	PERFORM 24.404.03 SEC-5.2 SGTS VALVE OPERABILITY & POSITION INDICATION VERIF.	
1321	PERFORM 24.406.02 SEC-5.1 NITROGEN INERT VLV POS INDICATION VERIF ANY MODE	
SR 3.3.6.1.6-3.f	CHANNEL FUNCTIONAL TEST Primary Containment Isolation Instrumentation High Pressure Coolant Injection (HPCI) System Isolation f. Manual Initiation	IAW SFCP - 18 months
<b>EVENTS:</b>	<b>EVENT TITLE</b>	
0255	PERFORM 24.202.05 SEC-5.2 & 5.3 HPCI LOCAL VALVE POS INDICATION VERIF & LSFT	
SR 3.3.6.1.6-4.f	CHANNEL FUNCTIONAL TEST Primary Containment Isolation Instrumentation Reactor Core Isolation Cooling (RCIC) System Isolation f. Manual Initiation	IAW SFCP - 18 months
<b>EVENTS:</b>	<b>EVENT TITLE</b>	
0272	PERFORM 24.206.02 SEC-5.2 RCIC VAL POS INDICATION VERIF. / MANUAL INITIATE	
SR 3.3.6.1.6-5.f	CHANNEL FUNCTIONAL TEST Primary Containment Isolation Instrumentation Reactor Water Cleanup (RWCU) System Isolation f. Manual Initiation	IAW SFCP - 18 months
<b>EVENTS:</b>	<b>EVENT TITLE</b>	
0353	PERFORM 24.707.01 SEC-5.1 RWCU LOCAL VALVE POSITION VERIFICATION	

REQUIREMENT	REQUIREMENT TITLE	FREQ
SR 3.3.6.1.6-6.c	CHANNEL FUNCTIONAL TEST Primary Containment Isolation Instrumentation Shutdown Cooling System Isolation c. Manual Initiation	IAW SFCP - 18 months
<b>EVENTS:</b>	<b>EVENT TITLE</b>	
0265	PERFORM 24.204.05 SEC-5.1 DIV. 1 RHR LOCAL VALVE POSITION INDICATION & STROKE	
1134	PERFORM 24.204.05 SEC-5.3 DIV. 2 RHR LOCAL VALVE POSITION INDICATION & STROKE	
1135	PERFORM 24.204.08 NON-DIVISIONAL RHR VALVE POSITION & STROKE TIME TEST	
1265	PERFORM 24.204.05 SEC-5.2 DIV 1 RHR LOCAL VALVE POSITION INDICATION VERIF.	
1266	PERFORM 24.204.05 SEC-5.4 DIV 2 RHR LOCAL VALVE POSITION INDICATION VERIF.	
SR 3.3.6.1.7-1.a	Verify the Main Steam Line Isolation Instrumentation DC Output Relays response time allows the overall ISOLATION SYSTEM RESPONSE TIME to remain within limits. Main Steam Line Isolation a. Reactor Vessel Water Level - Low Low Low, Level 1	IAW SFCP - 18 months on a STAGGERED TEST BASIS
<b>EVENTS:</b>	<b>EVENT TITLE</b>	
1540	PERFORM 44.020.011 PHASE 2 RX LOW WATER LEVEL 1, TRIP SYS A, CHANNEL A, RTT	
2540	PERFORM 44.020.011 PHASE 3 RX LOW WATER LEVEL 1, TRIP SYS A, CHANNEL A, RTT	
SR 3.3.6.1.7-1.c	Verify the Main Steam Line Isolation Instrumentation DC Output Relays response time allows the overall ISOLATION SYSTEM RESPONSE TIME to remain within limits. Main Steam Line Isolation c. Main Steam Line Flow - High	IAW SFCP - 18 months on a STAGGERED TEST BASIS
<b>EVENTS:</b>	<b>EVENT TITLE</b>	
1623	PERFORM 44.020.046 PHASE 2 MAIN STEAM LINE FLOW, DIV 2, CHANNEL D, RTT	
2623	PERFORM 44.020.046 PHASE 3 MAIN STEAM LINE FLOW, DIV 2, CHANNEL D, RTT	
SR 3.3.6.2.4-1	CHANNEL CALIBRATION Secondary Containment Isolation Instrumentation Reactor Vessel Water Level - Low Low, Level 2	IAW SFCP - 18 months
<b>EVENTS:</b>	<b>EVENT TITLE</b>	
0531	PERFORM 44.020.007 NS4 RX VESSEL LOW WTR LEVEL 1&2,TRIP SYS A,CHNL A,XMTR CAL	
0532	PERFORM 44.020.008 NS4 RX VESSEL LOW WTR LEVEL 1&2,TRIP SYS B,CHNL B,XMTR CAL	
0533	PERFORM 44.020.009 NS4 RX VESSEL LOW WTR LEVEL 1&2,TRIP SYS A,CHNL C,XMTR CAL	
0534	PERFORM 44.020.010 NS4 RX VESSEL LOW WTR LEVEL 1&2,TRIP SYS B,CHNL D,XMTR CAL	
1531	PERFORM 44.020.007 NS4 RX VESSEL LOW WTR LEVEL 1&2,TRIP SYS A,CHL A,MTU CAL/FUNC	
1532	PERFORM 44.020.008 NS4 RX VESSEL LOW WTR LEVEL 1&2,TRIP SYS B,CHL B,MTU CAL/FUNC	
1533	PERFORM 44.020.009 NS4 RX VESSEL LOW WTR LEVEL 1&2,TRIP SYS A,CHL C,MTU CAL/FUNC	
1534	PERFORM 44.020.010 NS4 RX VESSEL LOW WTR LEVEL 1&2,TRIP SYS B,CHL D,MTU CAL/FUNC	

REQUIREMENT	REQUIREMENT TITLE	FREQ
SR 3.3.6.2.4-2	CHANNEL CALIBRATION Secondary Containment Isolation Instrumentation Drywell Pressure - High	IAW SFCP - 18 months
<b>EVENTS:</b>	<b>EVENT TITLE</b>	
0496	PERFORM 44.010.037 RPS(TS A/TC A1)-NS4(TS A/TC A) DW PRESSURE, C71N650A, CALIBRATION/FUNC	
0497	PERFORM 44.010.038 RPS(TS B/TC B1)-NS4(TS A/TC B) DW PRESSURE, C71N650B, CALIBRATION/FUNC	
0498	PERFORM 44.010.039 RPS(TS A/TC A2)-NS4(TS B/TC C) DW PRESSURE, C71N650C, CALIBRATION/FUNC	
0499	PERFORM 44.010.040 RPS(TS B/TC B2)-NS4(TS B/TC D) DW PRESSURE, C71N650D, CALIBRATION/FUNC	
SR 3.3.6.2.4-3	CHANNEL CALIBRATION Secondary Containment Isolation Instrumentation Fuel Pool Ventilation Exhaust Radiation - High	IAW SFCP - 18 months
<b>EVENTS:</b>	<b>EVENT TITLE</b>	
0535	PERFORM 64.020.105 FUEL POOL VENT EXH RAD MON,DIV 1,CHL A,RADIOLOGICAL CAL	
0536	PERFORM 64.020.106 FUEL POOL VENT EXH RAD MON, DIV 2, CH B, RADIOLOGICAL CAL	
0537	PERFORM 64.020.107 FUEL POOL VENT EXH RAD MON, DIV 1, CH C, RADIOLOGICAL CAL	
0538	PERFORM 64.020.108 FUEL POOL VENT EXH RAD MON, DIV 2, CH D, RADIOLOGICAL CAL	
SR 3.3.6.2.5-1	LOGIC SYSTEM FUNCTIONAL TEST Secondary Containment Isolation Instrumentation Reactor Vessel Water Level - Low Low, Level 2	IAW SFCP - 18 months
<b>EVENTS:</b>	<b>EVENT TITLE</b>	
0531	PERFORM 44.020.007 NS4 RX VESSEL LOW WTR LEVEL 1&2,TRIP SYS A,CHNL A,XMTR CAL	
0532	PERFORM 44.020.008 NS4 RX VESSEL LOW WTR LEVEL 1&2,TRIP SYS B,CHNL B,XMTR CAL	
0533	PERFORM 44.020.009 NS4 RX VESSEL LOW WTR LEVEL 1&2,TRIP SYS A,CHNL C,XMTR CAL	
0534	PERFORM 44.020.010 NS4 RX VESSEL LOW WTR LEVEL 1&2,TRIP SYS B,CHNL D,XMTR CAL	
1531	PERFORM 44.020.007 NS4 RX VESSEL LOW WTR LEVEL 1&2,TRIP SYS A,CHL A,MTU CAL/FUNC	
1532	PERFORM 44.020.008 NS4 RX VESSEL LOW WTR LEVEL 1&2,TRIP SYS B,CHL B,MTU CAL/FUNC	
1533	PERFORM 44.020.009 NS4 RX VESSEL LOW WTR LEVEL 1&2,TRIP SYS A,CHL C,MTU CAL/FUNC	
1534	PERFORM 44.020.010 NS4 RX VESSEL LOW WTR LEVEL 1&2,TRIP SYS B,CHL D,MTU CAL/FUNC	
2530	PERFORM 44.020.001 SECT 6.5 - NS4 DIV 1 SECONDARY CONT, DW SUMP & DRN, CCHVAC LF	
3531	PERFORM 44.020.002 SECT 6.5 - NS4 DIV 2 SECONDARY CONT, DW SUMP & DRN, CCHVAC LF	

REQUIREMENT	REQUIREMENT TITLE	FREQ
SR 3.3.6.2.5-2	LOGIC SYSTEM FUNCTIONAL TEST Secondary Containment Isolation Instrumentation Drywell Pressure - High	IAW SFCP - 18 months
<b>EVENTS:</b>	<b>EVENT TITLE</b>	
0496	PERFORM 44.010.037 RPS(TS A/TC A1)-NS4(TS A/TC A) DW PRESSURE, C71N650A, CALIBRATION/FUNC	
0497	PERFORM 44.010.038 RPS(TS B/TC B1)-NS4(TS A/TC B) DW PRESSURE, C71N650B, CALIBRATION/FUNC	
0498	PERFORM 44.010.039 RPS(TS A/TC A2)-NS4(TS B/TC C) DW PRESSURE, C71N650C, CALIBRATION/FUNC	
0499	PERFORM 44.010.040 RPS(TS B/TC B2)-NS4(TS B/TC D) DW PRESSURE, C71N650D, CALIBRATION/FUNC	
2530	PERFORM 44.020.001 SECT 6.5 - NS4 DIV 1 SECONDARY CONT, DW SUMP & DRN, CCHVAC LF	
3531	PERFORM 44.020.002 SECT 6.5 - NS4 DIV 2 SECONDARY CONT, DW SUMP & DRN, CCHVAC LF	
SR 3.3.6.2.5-3	LOGIC SYSTEM FUNCTIONAL TEST Secondary Containment Isolation Instrumentation Fuel Pool Ventilation Exhaust Radiation - High	IAW SFCP - 18 months
<b>EVENTS:</b>	<b>EVENT TITLE</b>	
0535	PERFORM 64.020.105 FUEL POOL VENT EXH RAD MON, DIV 1, CHL A, RADIOLOGICAL CAL	
0536	PERFORM 64.020.106 FUEL POOL VENT EXH RAD MON, DIV 2, CH B, RADIOLOGICAL CAL	
0537	PERFORM 64.020.107 FUEL POOL VENT EXH RAD MON, DIV 1, CH C, RADIOLOGICAL CAL	
0538	PERFORM 64.020.108 FUEL POOL VENT EXH RAD MON, DIV 2, CH D, RADIOLOGICAL CAL	
2530	PERFORM 44.020.001 SECT 6.5 - NS4 DIV 1 SECONDARY CONT, DW SUMP & DRN, CCHVAC LF	
3531	PERFORM 44.020.002 SECT 6.5 - NS4 DIV 2 SECONDARY CONT, DW SUMP & DRN, CCHVAC LF	
SR 3.3.6.2.5-4	LOGIC SYSTEM FUNCTIONAL TEST Secondary Containment Isolation Instrumentation Manual Initiation	IAW SFCP - 18 months
<b>EVENTS:</b>	<b>EVENT TITLE</b>	
0314	PERFORM 24.404.02 SEC-5.3 DIV. 1 SGTS RUN/AUTO INITIATE/POSITION IND.	
1142	PERFORM 24.404.04 SEC-5.3 DIV.2 SGTS RUN/AUTO INITIATE/POSITION IND.	
2530	PERFORM 44.020.001 SECT 6.5 - NS4 DIV 1 SECONDARY CONT, DW SUMP & DRN, CCHVAC LF	

REQUIREMENT	REQUIREMENT TITLE	FREQ
SR 3.3.6.3.3-1	CHANNEL CALIBRATION Low-Low Set Instrumentation Reactor Steam Dome Pressure - High	IAW SFCP - 18 months
	<b>EVENTS:</b>	
	<b>EVENT TITLE</b>	
0803	PERFORM 44.040.005 ATWS/SRV LOW LOW SET RX PRESS, DIV 1, CHL "A", XMTR CAL	
0804	PERFORM 44.040.006 ATWS/SRV LOW LOW SET RX PRESS, DIV 2, CHL "B", XMTR CAL	
1803	PERFORM 44.040.005 ATWS/SRV LLS RX PRESS,DIV 1,CHNL A, MTU CAL/FUNC	
1804	PERFORM 44.040.006 ATWS/SRV LLS RX PRESS,DIV 2,CHNL B, MTU CAL/FUNC	
SR 3.3.6.3.3-2	CHANNEL CALIBRATION Low-Low Set Instrumentation Low-Low Set Pressure Setpoints	IAW SFCP - 18 months
	<b>EVENTS:</b>	
	<b>EVENT TITLE</b>	
0803	PERFORM 44.040.005 ATWS/SRV LOW LOW SET RX PRESS, DIV 1, CHL "A", XMTR CAL	
0804	PERFORM 44.040.006 ATWS/SRV LOW LOW SET RX PRESS, DIV 2, CHL "B", XMTR CAL	
0805	PERFORM 44.040.007 ATWS/SRV LOW LOW SET RX PRESS, DIV 1, CHL "C", XMTR CAL	
0806	PERFORM 44.040.008 ATWS/SRV LOW LOW SET RX PRESS, DIV 2, CHL "D", XMTR CAL	
1803	PERFORM 44.040.005 ATWS/SRV LLS RX PRESS,DIV 1,CHNL A, MTU CAL/FUNC	
1804	PERFORM 44.040.006 ATWS/SRV LLS RX PRESS,DIV 2,CHNL B, MTU CAL/FUNC	
1805	PERFORM 44.040.007 ATWS/SRV LLS RX PRESS,DIV 1,CHNL C, MTU CAL/FUNC	
1806	PERFORM 44.040.008 ATWS/SRV LOW LOW SET RX PRESS, DIV 2, CHL "D", MTU CAL/FUNC	
SR 3.3.6.3.3-3	CHANNEL CALIBRATION Low-Low Set Instrumentation Tailpipe Pressure Switch	IAW SFCP - 18 months
	<b>EVENTS:</b>	
	<b>EVENT TITLE</b>	
0889	PERFORM 44.210.003 SRV TAIL PIPE PRES INSTRUMENTATION CALIBRATION	

REQUIREMENT	REQUIREMENT TITLE	FREQ
SR 3.3.6.3.4-1	LOGIC SYSTEM FUNCTIONAL TEST Low-Low Set Instrumentation Reactor Steam Dome Pressure - High	IAW SFCP - 18 months
<b>EVENTS:</b>	<b>EVENT TITLE</b>	
0803	PERFORM 44.040.005 ATWS/SRV LOW LOW SET RX PRESS, DIV 1, CHL "A", XMTR CAL	
0804	PERFORM 44.040.006 ATWS/SRV LOW LOW SET RX PRESS, DIV 2, CHL "B", XMTR CAL	
0807	PERFORM 44.040.009 ATWS-SRV LOW LOW SET DIV 1 LOGIC FUNCTIONAL TEST	
0808	PERFORM 44.040.010 ATWS-SRV LOW LOW SET DIV 2 LOGIC FUNCTIONAL TEST	
1082	PERFORM 44.210.004 SRV LO LO SET, SRV POSITION MONITOR FUNCTIONAL TEST	
1803	PERFORM 44.040.005 ATWS/SRV LLS RX PRESS,DIV 1,CHNL A, MTU CAL/FUNC	
1804	PERFORM 44.040.006 ATWS/SRV LLS RX PRESS,DIV 2,CHNL B, MTU CAL/FUNC	
2440	PERFORM 44.210.059 ECCS/ADS/MDS D1 SRV SOLENOID FUNC TEST	
2441	PERFORM 44.210.060 ECCS/ADS/MDS D2 SRV SOLENOID FUNC TEST	
SR 3.3.6.3.4-2	LOGIC SYSTEM FUNCTIONAL TEST Low-Low Set Instrumentation Low-Low Set Pressure Setpoints	IAW SFCP - 18 months
<b>EVENTS:</b>	<b>EVENT TITLE</b>	
0803	PERFORM 44.040.005 ATWS/SRV LOW LOW SET RX PRESS, DIV 1, CHL "A", XMTR CAL	
0804	PERFORM 44.040.006 ATWS/SRV LOW LOW SET RX PRESS, DIV 2, CHL "B", XMTR CAL	
0805	PERFORM 44.040.007 ATWS/SRV LOW LOW SET RX PRESS, DIV 1, CHL "C", XMTR CAL	
0806	PERFORM 44.040.008 ATWS/SRV LOW LOW SET RX PRESS, DIV 2, CHL "D", XMTR CAL	
0807	PERFORM 44.040.009 ATWS-SRV LOW LOW SET DIV 1 LOGIC FUNCTIONAL TEST	
0808	PERFORM 44.040.010 ATWS-SRV LOW LOW SET DIV 2 LOGIC FUNCTIONAL TEST	
1082	PERFORM 44.210.004 SRV LO LO SET, SRV POSITION MONITOR FUNCTIONAL TEST	
1803	PERFORM 44.040.005 ATWS/SRV LLS RX PRESS,DIV 1,CHNL A, MTU CAL/FUNC	
1804	PERFORM 44.040.006 ATWS/SRV LLS RX PRESS,DIV 2,CHNL B, MTU CAL/FUNC	
1805	PERFORM 44.040.007 ATWS/SRV LLS RX PRESS,DIV 1,CHNL C, MTU CAL/FUNC	
1806	PERFORM 44.040.008 ATWS/SRV LOW LOW SET RX PRESS, DIV 2, CHL "D", MTU CAL/FUNC	
2440	PERFORM 44.210.059 ECCS/ADS/MDS D1 SRV SOLENOID FUNC TEST	
2441	PERFORM 44.210.060 ECCS/ADS/MDS D2 SRV SOLENOID FUNC TEST	

REQUIREMENT	REQUIREMENT TITLE	FREQ
SR 3.3.6.3.4-3	LOGIC SYSTEM FUNCTIONAL TEST Low-Low Set Instrumentation Tailpipe Pressure Switch	IAW SFCP - 18 months
<b>EVENTS:</b>	<b>EVENT TITLE</b>	
0807	PERFORM 44.040.009 ATWS-SRV LOW LOW SET DIV 1 LOGIC FUNCTIONAL TEST	
0808	PERFORM 44.040.010 ATWS-SRV LOW LOW SET DIV 2 LOGIC FUNCTIONAL TEST	
0889	PERFORM 44.210.003 SRV TAIL PIPE PRES INSTRUMENTATION CALIBRATION	
1082	PERFORM 44.210.004 SRV LO LO SET, SRV POSITION MONITOR FUNCTIONAL TEST	
2440	PERFORM 44.210.059 ECCS/ADS/MDS D1 SRV SOLENOID FUNC TEST	
2441	PERFORM 44.210.060 ECCS/ADS/MDS D2 SRV SOLENOID FUNC TEST	
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SR 3.3.7.1.5-1	CHANNEL CALIBRATION Control Room Emergency Filtration System Instrumentation Reactor Vessel Water Level - Low Low, Level 2	IAW SFCP - 18 months
<b>EVENTS:</b>	<b>EVENT TITLE</b>	
0531	PERFORM 44.020.007 NS4 RX VESSEL LOW WTR LEVEL 1&2,TRIP SYS A,CHNL A,XMTR CAL	
0532	PERFORM 44.020.008 NS4 RX VESSEL LOW WTR LEVEL 1&2,TRIP SYS B,CHNL B,XMTR CAL	
0533	PERFORM 44.020.009 NS4 RX VESSEL LOW WTR LEVEL 1&2,TRIP SYS A,CHNL C,XMTR CAL	
0534	PERFORM 44.020.010 NS4 RX VESSEL LOW WTR LEVEL 1&2,TRIP SYS B,CHNL D,XMTR CAL	
1531	PERFORM 44.020.007 NS4 RX VESSEL LOW WTR LEVEL 1&2,TRIP SYS A,CHL A,MTU CAL/FUNC	
1532	PERFORM 44.020.008 NS4 RX VESSEL LOW WTR LEVEL 1&2,TRIP SYS B,CHL B,MTU CAL/FUNC	
1533	PERFORM 44.020.009 NS4 RX VESSEL LOW WTR LEVEL 1&2,TRIP SYS A,CHL C,MTU CAL/FUNC	
1534	PERFORM 44.020.010 NS4 RX VESSEL LOW WTR LEVEL 1&2,TRIP SYS B,CHL D,MTU CAL/FUNC	
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SR 3.3.7.1.5-2	CHANNEL CALIBRATION Control Room Emergency Filtration System Instrumentation Drywell Pressure - High	IAW SFCP - 18 months
<b>EVENTS:</b>	<b>EVENT TITLE</b>	
0496	PERFORM 44.010.037 RPS(TS A/TC A1)-NS4(TS A/TC A) DW PRESSURE, C71N650A, CALIBRATION/FUNC	
0497	PERFORM 44.010.038 RPS(TS B/TC B1)-NS4(TS A/TC B) DW PRESSURE, C71N650B, CALIBRATION/FUNC	
0498	PERFORM 44.010.039 RPS(TS A/TC A2)-NS4(TS B/TC C) DW PRESSURE, C71N650C, CALIBRATION/FUNC	
0499	PERFORM 44.010.040 RPS(TS B/TC B2)-NS4(TS B/TC D) DW PRESSURE, C71N650D, CALIBRATION/FUNC	
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REQUIREMENT	REQUIREMENT TITLE	FREQ
SR 3.3.7.1.5-3	CHANNEL CALIBRATION Control Room Emergency Filtration System Instrumentation Fuel Pool Ventilation Exhaust Radiation - High	IAW SFCP - 18 months
<b>EVENTS:      EVENT TITLE</b>		
0535	PERFORM 64.020.105 FUEL POOL VENT EXH RAD MON,DIV 1,CHL A,RADIOLOGICAL CAL	
0536	PERFORM 64.020.106 FUEL POOL VENT EXH RAD MON, DIV 2, CH B, RADIOLOGICAL CAL	
0537	PERFORM 64.020.107 FUEL POOL VENT EXH RAD MON, DIV 1, CH C, RADIOLOGICAL CAL	
0538	PERFORM 64.020.108 FUEL POOL VENT EXH RAD MON, DIV 2, CH D, RADIOLOGICAL CAL	
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SR 3.3.7.1.5-4	CHANNEL CALIBRATION Control Room Emergency Filtration System Instrumentation Control Center Normal Makeup Air Radiation - High	IAW SFCP - 18 months
<b>EVENTS:      EVENT TITLE</b>		
0836	PERFORM 64.080.403 CONTROL CENTER MAKEUP AIR MNFLD RAD MON,D1,CAL	
0837	PERFORM 64.080.404 CONTROL CENTER MAKEUP AIR MNFLD RAD MON,D2,CAL	
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SR 3.3.7.1.6-1	LOGIC SYSTEM FUNCTIONAL TEST Control Room Emergency Filtration System Instrumentation Reactor Vessel Water Level - Low Low, Level 2	IAW SFCP - 18 months
<b>EVENTS:      EVENT TITLE</b>		
0531	PERFORM 44.020.007 NS4 RX VESSEL LOW WTR LEVEL 1&2,TRIP SYS A,CHNL A,XMTR CAL	
0532	PERFORM 44.020.008 NS4 RX VESSEL LOW WTR LEVEL 1&2,TRIP SYS B,CHNL B,XMTR CAL	
0533	PERFORM 44.020.009 NS4 RX VESSEL LOW WTR LEVEL 1&2,TRIP SYS A,CHNL C,XMTR CAL	
0534	PERFORM 44.020.010 NS4 RX VESSEL LOW WTR LEVEL 1&2,TRIP SYS B,CHNL D,XMTR CAL	
1111	PERFORM 24.413.05 DIV 2 CR EMRG FILTER AUTO TRANSFER TEST	
1531	PERFORM 44.020.007 NS4 RX VESSEL LOW WTR LEVEL 1&2,TRIP SYS A,CHL A,MTU CAL/FUNC	
1532	PERFORM 44.020.008 NS4 RX VESSEL LOW WTR LEVEL 1&2,TRIP SYS B,CHL B,MTU CAL/FUNC	
1533	PERFORM 44.020.009 NS4 RX VESSEL LOW WTR LEVEL 1&2,TRIP SYS A,CHL C,MTU CAL/FUNC	
1534	PERFORM 44.020.010 NS4 RX VESSEL LOW WTR LEVEL 1&2,TRIP SYS B,CHL D,MTU CAL/FUNC	
2530	PERFORM 44.020.001 SECT 6.5 - NS4 DIV 1 SECONDARY CONT, DW SUMP & DRN, CCHVAC LF	
3531	PERFORM 44.020.002 SECT 6.5 - NS4 DIV 2 SECONDARY CONT, DW SUMP & DRN, CCHVAC LF	
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REQUIREMENT	REQUIREMENT TITLE	FREQ
SR 3.3.7.1.6-2	LOGIC SYSTEM FUNCTIONAL TEST Control Room Emergency Filtration System Instrumentation Drywell Pressure - High	IAW SFCP - 18 months
<b>EVENTS:</b>	<b>EVENT TITLE</b>	
0496	PERFORM 44.010.037 RPS(TS A/TC A1)-NS4(TS A/TC A) DW PRESSURE, C71N650A, CALIBRATION/FUNC	
0497	PERFORM 44.010.038 RPS(TS B/TC B1)-NS4(TS A/TC B) DW PRESSURE, C71N650B, CALIBRATION/FUNC	
0498	PERFORM 44.010.039 RPS(TS A/TC A2)-NS4(TS B/TC C) DW PRESSURE, C71N650C, CALIBRATION/FUNC	
0499	PERFORM 44.010.040 RPS(TS B/TC B2)-NS4(TS B/TC D) DW PRESSURE, C71N650D, CALIBRATION/FUNC	
1111	PERFORM 24.413.05 DIV 2 CR EMRG FILTER AUTO TRANSFER TEST	
2530	PERFORM 44.020.001 SECT 6.5 - NS4 DIV 1 SECONDARY CONT, DW SUMP & DRN, CCHVAC LF	
3531	PERFORM 44.020.002 SECT 6.5 - NS4 DIV 2 SECONDARY CONT, DW SUMP & DRN, CCHVAC LF	
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SR 3.3.7.1.6-3	LOGIC SYSTEM FUNCTIONAL TEST Control Room Emergency Filtration System Instrumentation Fuel Pool Ventilation Exhaust Radiation - High	IAW SFCP - 18 months
<b>EVENTS:</b>	<b>EVENT TITLE</b>	
0535	PERFORM 64.020.105 FUEL POOL VENT EXH RAD MON, DIV 1, CHL A, RADIOLOGICAL CAL	
0536	PERFORM 64.020.106 FUEL POOL VENT EXH RAD MON, DIV 2, CH B, RADIOLOGICAL CAL	
0537	PERFORM 64.020.107 FUEL POOL VENT EXH RAD MON, DIV 1, CH C, RADIOLOGICAL CAL	
0538	PERFORM 64.020.108 FUEL POOL VENT EXH RAD MON, DIV 2, CH D, RADIOLOGICAL CAL	
1111	PERFORM 24.413.05 DIV 2 CR EMRG FILTER AUTO TRANSFER TEST	
2530	PERFORM 44.020.001 SECT 6.5 - NS4 DIV 1 SECONDARY CONT, DW SUMP & DRN, CCHVAC LF	
3531	PERFORM 44.020.002 SECT 6.5 - NS4 DIV 2 SECONDARY CONT, DW SUMP & DRN, CCHVAC LF	
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REQUIREMENT	REQUIREMENT TITLE	FREQ
SR 3.3.7.2.3	CHANNEL CALIBRATION Mechanical Vacuum Pump (MVP) Trip Instrumentation Main Steam Line Radiation - High	IAW SFCP - 18 months
<b>EVENTS:</b>		
	<b>EVENT TITLE</b>	
0761	PERFORM 64.080.029, MAIN STEAM LINE RADIATION MONITOR CHANNEL A CALIBRATION - LICENSE RENEWAL REQD	
0762	PERFORM 64.080.030, MAIN STEAM LINE RADIATION MONITOR CHANNEL B CALIBRATION - LICENSE RENEWAL REQD	
0763	PERFORM 64.080.031, MAIN STEAM LINE RADIATION MONITOR CHANNEL C CALIBRATION - LICENSE RENEWAL REQD	
0764	PERFORM 64.080.032, MAIN STEAM LINE RADIATION MONITOR CHANNEL D CALIBRATION - LICENSE RENEWAL REQD	
1068	PERFORM 64.080.033 MAIN STEAM LINE RADIATION DETECTOR D11N600E CALIBRATION WITH CHANNEL A (was 64.010.033)	
1069	PERFORM 64.080.034 MAIN STEAM LINE RADIATION DETECTOR D11N600F CALIBRATION WITH CHANNEL C (was 64.010.034)	
2068	PERFORM 64.080.033 MAIN STEAM LINE RADIATION DETECTOR D11N600E CALIBRATION WITH CHANNEL B	
2069	PERFORM 64.080.034 MAIN STEAM LINE RADIATION DETECTOR D11N600F CALIBRATION WITH CHANNEL D	
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SR 3.3.7.2.4	LOGIC SYSTEM FUNCTIONAL TEST Mechanical Vacuum Pump (MVP) Trip Instrumentation Main Steam Line Radiation - High	IAW SFCP - 18 months
<b>EVENTS:</b>		
	<b>EVENT TITLE</b>	
0204	PERFORM 44.080.605 EAST AND WEST GLAND SEAL EXHAUSTER/MECHANICAL VACUUM PUMP	
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REQUIREMENT	REQUIREMENT TITLE	FREQ
SR 3.3.7.3.3	CHANNEL CALIBRATION Gland Seal Exhauster (GSE) Trip Instrumentation Main Steam Line Radiation - High	IAW SFCP - 18 months
<b>EVENTS:</b>	<b>EVENT TITLE</b>	
0761	PERFORM 64.080.029, MAIN STEAM LINE RADIATION MONITOR CHANNEL A CALIBRATION - LICENSE RENEWAL REQD	
0762	PERFORM 64.080.030, MAIN STEAM LINE RADIATION MONITOR CHANNEL B CALIBRATION - LICENSE RENEWAL REQD	
0763	PERFORM 64.080.031, MAIN STEAM LINE RADIATION MONITOR CHANNEL C CALIBRATION - LICENSE RENEWAL REQD	
0764	PERFORM 64.080.032, MAIN STEAM LINE RADIATION MONITOR CHANNEL D CALIBRATION - LICENSE RENEWAL REQD	
1068	PERFORM 64.080.033 MAIN STEAM LINE RADIATION DETECTOR D11N600E CALIBRATION WITH CHANNEL A (was 64.010.033)	
1069	PERFORM 64.080.034 MAIN STEAM LINE RADIATION DETECTOR D11N600F CALIBRATION WITH CHANNEL C (was 64.010.034)	
2068	PERFORM 64.080.033 MAIN STEAM LINE RADIATION DETECTOR D11N600E CALIBRATION WITH CHANNEL B	
2069	PERFORM 64.080.034 MAIN STEAM LINE RADIATION DETECTOR D11N600F CALIBRATION WITH CHANNEL D	
SR 3.3.7.3.4	LOGIC SYSTEM FUNCTIONAL TEST Gland Seal Exhauster (GSE) Trip Instrumentation Main Steam Line Radiation - High	IAW SFCP - 18 months
<b>EVENTS:</b>	<b>EVENT TITLE</b>	
0204	PERFORM 44.080.605 EAST AND WEST GLAND SEAL EXHAUSTER/MECHANICAL VACUUM PUMP	
SR 3.3.8.2.2.a	CHANNEL CALIBRATION The Allowable Values shall be: a. Overvoltage $\leq$ 132 V.	IAW SFCP - 18 months
<b>EVENTS:</b>	<b>EVENT TITLE</b>	
2272	PERFORM 42.610.02 Div 1, NORMAL FEED, EPA's A & C, CAL/FUNCTIONAL	
2274	PERFORM 42.610.04 Div 2, NORMAL FEED, EPA's B & D, CAL/FUNCTIONAL	
2295	PERFORM 42.610.01 Div 1, ALTERNATE FEED, EPA's E & G, CAL/FUNC	
2297	PERFORM 42.610.03 Div 2, ALTERNATE FEED, EPA's F & H, CAL/FUNC	

REQUIREMENT	REQUIREMENT TITLE	FREQ
SR 3.3.8.2.2.b	CHANNEL CALIBRATION The Allowable Values shall be: b. Undervoltage $\geq 108$ V.	IAW SFCP - 18 months
	<b>EVENTS:</b>	
	<b>EVENT TITLE</b>	
2272	PERFORM 42.610.02 Div 1, NORMAL FEED, EPA's A & C, CAL/FUNCTIONAL	
2274	PERFORM 42.610.04 Div 2, NORMAL FEED, EPA's B & D, CAL/FUNCTIONAL	
2295	PERFORM 42.610.01 Div 1, ALTERNATE FEED, EPA's E & G, CAL/FUNC	
2297	PERFORM 42.610.03 Div 2, ALTERNATE FEED, EPA's F & H, CAL/FUNC	
SR 3.3.8.2.2.c	CHANNEL CALIBRATION The Allowable Values shall be: c. Underfrequency $\geq 57$ Hz.	IAW SFCP - 18 months
	<b>EVENTS:</b>	
	<b>EVENT TITLE</b>	
2272	PERFORM 42.610.02 Div 1, NORMAL FEED, EPA's A & C, CAL/FUNCTIONAL	
2274	PERFORM 42.610.04 Div 2, NORMAL FEED, EPA's B & D, CAL/FUNCTIONAL	
2295	PERFORM 42.610.01 Div 1, ALTERNATE FEED, EPA's E & G, CAL/FUNC	
2297	PERFORM 42.610.03 Div 2, ALTERNATE FEED, EPA's F & H, CAL/FUNC	
SR 3.3.8.2.3	Perform a system functional test.	IAW SFCP - 18 months
	<b>EVENTS:</b>	
	<b>EVENT TITLE</b>	
2272	PERFORM 42.610.02 Div 1, NORMAL FEED, EPA's A & C, CAL/FUNCTIONAL	
2274	PERFORM 42.610.04 Div 2, NORMAL FEED, EPA's B & D, CAL/FUNCTIONAL	
2295	PERFORM 42.610.01 Div 1, ALTERNATE FEED, EPA's E & G, CAL/FUNC	
2297	PERFORM 42.610.03 Div 2, ALTERNATE FEED, EPA's F & H, CAL/FUNC	
SR 3.4.3.2	Verify each required SRV is capable of being opened.	IAW SFCP - 18 months
	<b>EVENTS:</b>	
	<b>EVENT TITLE</b>	
2440	PERFORM 44.210.059 ECCS/ADS/MDS D1 SRV SOLENOID FUNC TEST	
2441	PERFORM 44.210.060 ECCS/ADS/MDS D2 SRV SOLENOID FUNC TEST	

REQUIREMENT	REQUIREMENT TITLE	FREQ
SR 3.4.6.3	Perform a CHANNEL CALIBRATION of required leakage detection instrumentation.	IAW SFCP - 18 months
<b>EVENTS:      EVENT TITLE</b>		
0868	PERFORM 44.120.050 DW FLOOR DRN SUMP LVL CAL (TRANSMITTERS PORTION)	
0888	PERFORM 44.210.002 DRYWELL SUMP LEVEL CHANNEL CALIBRATION	
0890	PERFORM 64.210.031 PRIMARY CONTAINMENT ATMOSPHERE RADIATION MONITOR CALIBRATION	
1868	PERFORM 44.120.050 DW FLOOR DRN SUMP LVL CAL (ALARM, LOGIC & INDICATION)	
3887	PERFORM 44.210.006 DRYWELL SUMP FLOW CHANNEL CALIBRATION/FUNCTIONAL	
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SR 3.5.1.7	Verify each recirculation pump discharge valve cycles through one complete cycle of full travel or is de-energized in the closed position.	IAW SFCP - 18 months
<b>EVENTS:      EVENT TITLE</b>		
0244	PERFORM 24.138.02 SEC-5.2 RX RECIRC LOCAL VALVE POSITION VERIFICATION TEST	
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SR 3.5.1.10	Verify, with reactor pressure $\leq$ 215 psig, the HPCI pump can develop a flow rate $\geq$ 5000 gpm against a system head corresponding to reactor pressure.	IAW SFCP - 18 months
<b>EVENTS:      EVENT TITLE</b>		
0250	PERFORM 24.202.02 HPCI FLOW RATE TEST AT 165 PSIG	
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REQUIREMENT	REQUIREMENT TITLE	FREQ
SR 3.5.1.11	Verify each ECCS injection/spray subsystem actuates on an actual or simulated automatic initiation signal.	IAW SFCP - 18 months
<b>EVENTS:</b>	<b>EVENT TITLE</b>	
0253	PERFORM 24.202.04 HPCI OFFLINE AUTO INITIATION AND TIME RESPONSE TEST	
0257	PERFORM 24.203.02 SEC-5.3 DIVISION 1 CSS SIM AUTO ACT -E2150F005A ONLY	
0258	PERFORM 24.203.03 SEC-5.3 DIVISION 2 CSS SIM AUTO ACT - E2150F005B ONLY	
0263	PERFORM 24.204.03 DIV 1 & 2 LPCI SIMUL. AUTO ACTUATION TEST & VALVE OPER TEST	
0281	PERFORM 24.307.01 SECT 5.2 EDG 11 ECCS START WITH LOSS OF OFFSITE POWER TEST	
0282	PERFORM 24.307.02 SECT 5.2 EDG 12 ECCS START WITH LOSS OF OFFSITE POWER TEST	
0283	PERFORM 24.307.03 SECT 5.2 EDG 13 ECCS START WITH LOSS OF OFFSITE POWER TEST	
0284	PERFORM 24.307.04 SECT 5.2 EDG 14 ECCS START WITH LOSS OF OFFSITE POWER TEST	
0640	PERFORM 44.030.001 ECCS - CORE SPRAY SYSTEM, DIV 1, LOGIC FUNCTIONAL TEST	
0641	PERFORM 44.030.002 ECCS - CORE SPRAY SYSTEM, DIV 2, LOGIC FUNCTIONAL TEST	
0671	PERFORM 44.030.255 ECCS RX WTR LVL 1,2&8 DIV 1, CHNL A, XMTR CALIBRATION	
0672	PERFORM 44.030.256 ECCS RX WTR LVL 1,2&8 DIV 2,CHNL B, XMTR CALIBRATION	
0673	PERFORM 44.030.257 ECCS RX WTR LVL 1,2&8 DIV 1,CHNL C, XMTR CALIBRATION	
0674	PERFORM 44.030.258 ECCS RX WTR LVL 1,2&8 DIV 2,CHNL D, XMTR CALIBRATION	
0769	PERFORM 44.030.271 ECCS RX STM DOME PRES RHR/CSS INJECT,DIV 1,CHNL A,XMTR CAL	
0770	PERFORM 44.030.272 ECCS RX STM DOME PRES RHR/CSS INJECT,DIV 2,CHNL B,XMTR CAL	
0771	PERFORM 44.030.273 ECCS RX STM DOME PRES RHR/CSS INJECT,DIV 1,CHNL C,XMTR CAL	
0772	PERFORM 44.030.274 ECCS RX STM DOME PRES RHR/CSS INJECT,DIV 2,CHNL D,XMTR CAL	
0773	PERFORM 44.030.283 ECCS RX STM DOME PRES RHR LOOP SLCT PERM,D1,CHL A, XMTR CAL	
0774	PERFORM 44.030.284 ECCS RX STM DOME PRES RHR LOOP SLCT PERM,DIV 2,CH "B",XMTR CAL	
0775	PERFORM 44.030.285 ECCS RX STM DOME PRES RHR LOOP SLCT PERM,DIV 1,CH "C",XMTR CAL	
0776	PERFORM 44.030.286 ECCS RX STM DOME PRES RHR LOOP SLCT PERM,DIV 2,CH "D",XMTR CAL	
0781	PERFORM 44.030.303 ECCS DW PRESS RHR/CSS & HPCI ACTUATE,DIV 1,CHNL A,CAL/FUNC	
0782	PERFORM 44.030.304 ECCS DW PRESS RHR/CSS & HPCI ACTUATE,DIV 2,CHNL B,CAL/FUNC	
0783	PERFORM 44.030.305 ECCS DW PRESS RHR/CSS & HPCI ACTUATE,DIV 1,CHNL C,CAL/FUNCT	
0784	PERFORM 44.030.306 ECCS DW PRESS RHR/CSS & HPCI ACTUATE,DIV 2,CHNL D,CAL/FUNC	
0791	PERFORM 44.030.051 ECCS-RHR (LPCI MODE) DIV 1, LOGIC FUNCTIONAL TEST	
0792	PERFORM 44.030.052 ECCS-RHR (LPCI MODE) DIV 2, LOGIC FUNCT TEST & VLV ACTUATION	

REQUIREMENT	REQUIREMENT TITLE	FREQ
0793	PERFORM 44.030.060 ECCS RX RECIRC RISER DP,DIV 1,CHNL A,CAL/FUNCTIONAL	
0794	PERFORM 44.030.061 ECCS RX RECIRC RISER DP,DIV 2,CHNL B,CAL/FUNCTIONAL	
0795	PERFORM 44.030.062 ECCS RX RECIRC RISER DP,DIV 1,CHNL C, CALIBRATION/FUNCTIONAL	
0796	PERFORM 44.030.063 ECCS RX RECIRC RISER DP,DIV 2,CHNL D,CAL/FUNCTIONAL	
0797	PERFORM 44.030.072 ECCS RX RECIRC PUMP A DP, DIV 1, CHNL A, CALIBRATION/FUNCT	
0798	PERFORM 44.030.073 ECCS RX RECIRC PUMP B DP, DIV 1, CHNL B, CALIBRATION/FUNCT	
0799	PERFORM 44.030.074 ECCS RX RECIRC PUMP B DP, DIV 2, CHNL A, CALIBRATION/FUNCT	
0800	PERFORM 44.030.075 ECCS RX RECIRC PUMP A DP, DIV 2, CHNL B, CALIBRATION/FUNCT	
0807	PERFORM 44.040.009 ATWS-SRV LOW LOW SET DIV 1 LOGIC FUNCTIONAL TEST	
1100	PERFORM 24.202.08 SEC-5.1 (Wtr Lvl) HPCI RTT & PUMP OPERABILITY AT 1025 PSIG	
1263	PERFORM 24.204.03 DIV 1 & 2 LPCI SIMUL. AUTO ACT. TEST (RHR Pump's & Vlv's)	
1671	PERFORM 44.030.255 ECCS RX WTR LVL 1,2&8 DIV 1,CHNL A, MTU CAL	
1672	PERFORM 44.030.256 ECCS RX WTR LVL 1,2&8 DIV 2,CHNL B, MTU CAL	
1673	PERFORM 44.030.257 ECCS RX WTR LVL 1,2&8 DIV 1,CHNL C, MTU CAL	
1674	PERFORM 44.030.258 ECCS RX WTR LVL 1,2&8 DIV 2,CHNL D, MTU CALIBRATION	
1769	PERFORM 44.030.271 ECCS RX STM DOME PRES RHR/CSS INJECT,DIV 1,CHNL A,MTU CAL/FUNC	
1770	PERFORM 44.030.272 ECCS RX STM DOME PRES RHR/CSS INJECT,DIV 2,CHNL B,MTU CAL/FUNC	
1771	PERFORM 44.030.273 ECCS RX STM DOME PRES RHR/CSS INJECT,DIV 1,CHNL C,MTU CAL/FUNC	
1772	PERFORM 44.030.274 ECCS RX STM DOME PRES RHR/CSS INJECT,DIV 2,CHNL D,MTU CAL/FUNC	
1773	PERFORM 44.030.283 ECCS RX STM DOME PRES RHR LOOP SELECT,D1,CHL A,MTU-CAL/CF	
1774	PERFORM 44.030.284 ECCS RX STM DOME PRES RHR LOOP SELECT,D2,CHL B,MTU-CAL/CF	
1775	PERFORM 44.030.285 ECCS RX STM DOME PRES RHR LOOP SELECT,D1,CHL C,MTU-CAL/CF	
1776	PERFORM 44.030.286 ECCS RX STM DOME PRES RHR LOOP SELECT,D2,CHL D,MTU-CAL/CF	
1797	PERFORM 44.030.076 ECCS RX RECIRC PUMP A DP, DIV 1, CH C, CALIBRATION/FUNCTIONAL	
1798	PERFORM 44.030.077 ECCS RX RECIRC PUMP B DP, DIV 1, CH D, CALIBRATION/FUNCTIONAL	
1799	PERFORM 44.030.078 ECCS RX RECIRC PUMP B DP, DIV 2, CHNL C, CALIBRATION/FUNCT	
1800	PERFORM 44.030.079 ECCS RX RECIRC PUMP A DP, DIV 2, CH D, CALIBRATION/FUNCTIONAL	
2100	PERFORM 24.202.08 SEC-5.2 (Dw Press) HPCI LSFT & PUMP OPERABILITY AT 1025 PSIG	
2257	PERFORM 24.203.02 SEC-5.2 DIVISION 1 CSS SIMULATED AUTOMATIC ACTUATION TEST	
2258	PERFORM 24.203.03 SEC-5.2 DIVISION 2 CSS SIMULATED AUTOMATIC ACTUATION TEST	

REQUIREMENT	REQUIREMENT TITLE	FREQ
SR 3.5.1.12	Verify the ADS actuates on an actual or simulated automatic initiation signal.	IAW SFCP - 18 months
<b>EVENTS:</b>	<b>EVENT TITLE</b>	
0647	PERFORM 44.030.201 ECCS - ADS,TRIP SYS A LOGIC FUNCTIONAL TEST	
0648	PERFORM 44.030.202 ECCS - ADS,TRIP SYS B LOGIC FUNCTIONAL TEST	
0671	PERFORM 44.030.255 ECCS RX WTR LVL 1,2&8 DIV 1, CHNL A, XMTR CALIBRATION	
0672	PERFORM 44.030.256 ECCS RX WTR LVL 1,2&8 DIV 2,CHNL B, XMTR CALIBRATION	
0673	PERFORM 44.030.257 ECCS RX WTR LVL 1,2&8 DIV 1,CHNL C, XMTR CALIBRATION	
0674	PERFORM 44.030.258 ECCS RX WTR LVL 1,2&8 DIV 2,CHNL D, XMTR CALIBRATION	
0765	PERFORM 44.030.265 ECCS RX WTR LVL (ADS LVL3 & FW/MN TURB LVL8)D1,CH A,XMTR CAL	
0766	PERFORM 44.030.266 ECCS RX WTR LVL (ADS LVL3 & FW/MN TURB LVL8)D2,CH B,XMTR CAL	
0777	PERFORM 44.030.295 ECCS DW PRESSURE ADS ACTUATION,DIV 1,CHNL A,CALIBRATION/FUNC	
0778	PERFORM 44.030.296 ECCS DW PRESSURE ADS ACTUATION,DIV 2,CHNL B,CALIBRATION/FUNC	
0779	PERFORM 44.030.297 ECCS DW PRESSURE ADS ACTUATION,DIV 1,CHNL C,CALIBRATION/FUNC	
0780	PERFORM 44.030.298 ECCS DW PRESSURE ADS ACTUATION,DIV 2,CHNL D,CALIBRATION/FUNC	
1671	PERFORM 44.030.255 ECCS RX WTR LVL 1,2&8 DIV 1,CHNL A, MTU CAL	
1672	PERFORM 44.030.256 ECCS RX WTR LVL 1,2&8 DIV 2,CHNL B, MTU CAL	
1673	PERFORM 44.030.257 ECCS RX WTR LVL 1,2&8 DIV 1,CHNL C, MTU CAL	
1674	PERFORM 44.030.258 ECCS RX WTR LVL 1,2&8 DIV 2,CHNL D, MTU CALIBRATION	
1765	PERFORM 44.030.265 ECCS RX WTR LVL (ADS LVL3-FW/MN TURB LVL8)D1,CH A,MTU CAL/CF	
1766	PERFORM 44.030.266 ECCS RX WTR LVL (ADS LVL3-FW/MN TURB LVL8)D2,CH B,MTU CAL/CF	
SR 3.5.1.13	Verify each ADS valve is capable of being opened.	IAW SFCP - 18 months
<b>EVENTS:</b>	<b>EVENT TITLE</b>	
2440	PERFORM 44.210.059 ECCS/ADS/MDS D1 SRV SOLENOID FUNC TEST	
2441	PERFORM 44.210.060 ECCS/ADS/MDS D2 SRV SOLENOID FUNC TEST	

REQUIREMENT	REQUIREMENT TITLE	FREQ
SR 3.5.1.14	Verify ECCS RESPONSE TIME is within limits.	IAW SFCP - 18 months
	<b>EVENTS:</b>	
	<b>EVENT TITLE</b>	
0253	PERFORM 24.202.04 HPCI OFFLINE AUTO INITIATION AND TIME RESPONSE TEST	
0257	PERFORM 24.203.02 SEC-5.3 DIVISION 1 CSS SIM AUTO ACT -E2150F005A ONLY	
0258	PERFORM 24.203.03 SEC-5.3 DIVISION 2 CSS SIM AUTO ACT - E2150F005B ONLY	
0263	PERFORM 24.204.03 DIV 1 & 2 LPCI SIMUL. AUTO ACTUATION TEST & VALVE OPER TEST	
0265	PERFORM 24.204.05 SEC-5.1 DIV. 1 RHR LOCAL VALVE POSITION INDICATION & STROKE	
1100	PERFORM 24.202.08 SEC-5.1 (Wtr Lvl) HPCI RTT & PUMP OPERABILITY AT 1025 PSIG	
1134	PERFORM 24.204.05 SEC-5.3 DIV. 2 RHR LOCAL VALVE POSITION INDICATION & STROKE	
2257	PERFORM 24.203.02 SEC-5.2 DIVISION 1 CSS SIMULATED AUTOMATIC ACTUATION TEST	
2258	PERFORM 24.203.03 SEC-5.2 DIVISION 2 CSS SIMULATED AUTOMATIC ACTUATION TEST	
2263	PERFORM 24.204.03 DIV 1 & 2 LPCI SIMUL. AUTO ACT. TEST (Recirc Vlv's)	
SR 3.5.2.8	Verify each valve credited for automatically isolating a penetration flow path actuates to the isolation position on an actual or simulated isolation signal.	IAW SFCP - 18 months
	<b>EVENTS:</b>	
	<b>EVENT TITLE</b>	
0353	PERFORM 24.707.01 SEC-5.1 RWCU LOCAL VALVE POSITION VERIFICATION	
0511	PERFORM 44.010.056 RPS-TURBINE STOP VALVE CLOSURE, TRIP SYS B, CHAN B2, RTT	
0527	PERFORM 44.020.501 RWCU NSSSS- INBD ISOLATION VALVE LOGIC SYSTEM FUNCTIONAL	
0528	PERFORM 44.020.601 RWCU NSSSS- OTBD ISOLATION VALVE LOGIC SYSTEM FUNCTIONAL	
0548	PERFORM 44.020.152 NS4 REACTOR WATER CLEANUP DIFFERENTIAL FLOW CAL./FUNC.	
0552	PERFORM 44.020.159 NS4 RWCU AREA NRHX DISCHARGE TEMPERATURE, DIV 2,CAL/FUNC.	
0791	PERFORM 44.030.051 ECCS-RHR (LPCI MODE) DIV 1, LOGIC FUNCTIONAL TEST	
0792	PERFORM 44.030.052 ECCS-RHR (LPCI MODE) DIV 2, LOGIC FUNCT TEST & VLV ACTUATION	
1135	PERFORM 24.204.08 NON-DIVISIONAL RHR VALVE POSITION & STROKE TIME TEST	
2527	PERFORM 44.020.502 INBD SDC-HEAD SPRAY AUTO ISOLATION LOGIC FUNCTIONAL	
2528	PERFORM 44.020.001 SECT 6.3 NSSS MSIV DRNS/ RECIRC SAMPLE INBD VLV'S LOGIC SYS FUNC	

REQUIREMENT	REQUIREMENT TITLE	FREQ
SR 3.5.2.9	Verify the required ECCS injection/spray subsystem can be manually operated.	IAW SFCP - 18 months
<b>EVENTS:</b>		
	<b>EVENT TITLE</b>	
0257	PERFORM 24.203.02 SEC-5.3 DIVISION 1 CSS SIM AUTO ACT -E2150F005A ONLY	
0258	PERFORM 24.203.03 SEC-5.3 DIVISION 2 CSS SIM AUTO ACT - E2150F005B ONLY	
0260	PERFORM 24.203.04 SEC-5.3 DIV.1 CSS LOCAL VALVE POSITION INDICATION VERIF.	
0265	PERFORM 24.204.05 SEC-5.1 DIV. 1 RHR LOCAL VALVE POSITION INDICATION & STROKE	
1134	PERFORM 24.204.05 SEC-5.3 DIV. 2 RHR LOCAL VALVE POSITION INDICATION & STROKE	
1260	PERFORM 24.203.04 SEC-5.4 DIV.2 CSS LOCAL VALVE POSITION INDICATION VERIF.	
1265	PERFORM 24.204.05 SEC-5.2 DIV 1 RHR LOCAL VALVE POSITION INDICATION VERIF.	
1266	PERFORM 24.204.05 SEC-5.4 DIV 2 RHR LOCAL VALVE POSITION INDICATION VERIF.	
2257	PERFORM 24.203.02 SEC-5.2 DIVISION 1 CSS SIMULATED AUTOMATIC ACTUATION TEST	
2258	PERFORM 24.203.03 SEC-5.2 DIVISION 2 CSS SIMULATED AUTOMATIC ACTUATION TEST	
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SR 3.5.3.4	Verify, with reactor pressure $\leq$ 200 psig, the RCIC pump can develop a flow rate $\geq$ 600 gpm against a system head corresponding to reactor pressure.	IAW SFCP - 18 months
<b>EVENTS:</b>		
	<b>EVENT TITLE</b>	
0271	PERFORM 24.206.04 SEC-5.1 RCIC SYSTEM FLOW TEST AT 150 PSIG	
0274	PERFORM 24.206.04 SEC-5.2 RCIC SYSTEM AUTOMATIC ACTUATION TEST	
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REQUIREMENT	REQUIREMENT TITLE	FREQ
SR 3.5.3.5	Verify the RCIC System actuates on an actual or simulated automatic initiation signal.	IAW SFCP - 18 months
<b>EVENTS:</b>		
	<b>EVENT TITLE</b>	
0272	PERFORM 24.206.02 SEC-5.2 RCIC VAL POS INDICATION VERIF. / MANUAL INITIATE	
0274	PERFORM 24.206.04 SEC-5.2 RCIC SYSTEM AUTOMATIC ACTUATION TEST	
0671	PERFORM 44.030.255 ECCS RX WTR LVL 1,2&8 DIV 1, CHNL A, XMTR CALIBRATION	
0672	PERFORM 44.030.256 ECCS RX WTR LVL 1,2&8 DIV 2,CHNL B, XMTR CALIBRATION	
0673	PERFORM 44.030.257 ECCS RX WTR LVL 1,2&8 DIV 1,CHNL C, XMTR CALIBRATION	
0674	PERFORM 44.030.258 ECCS RX WTR LVL 1,2&8 DIV 2,CHNL D, XMTR CALIBRATION	
1671	PERFORM 44.030.255 ECCS RX WTR LVL 1,2&8 DIV 1,CHNL A, MTU CAL	
1672	PERFORM 44.030.256 ECCS RX WTR LVL 1,2&8 DIV 2,CHNL B, MTU CAL	
1673	PERFORM 44.030.257 ECCS RX WTR LVL 1,2&8 DIV 1,CHNL C, MTU CAL	
1674	PERFORM 44.030.258 ECCS RX WTR LVL 1,2&8 DIV 2,CHNL D, MTU CALIBRATION	
2809	PERFORM 44.060.002 RCIC SYSTEM LOGIC FUNCTIONAL TEST - ONLINE	
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SR 3.6.1.1.2	Verify drywell to suppression chamber differential pressure does not decrease at a rate > 0.2 inch water gauge per minute tested over a 10 minute period at an initial differential pressure of 1 psid.	IAW SFCP - 18 months
<b>EVENTS:</b>		
	<b>EVENT TITLE</b>	
0311	PERFORM 24.402.06 DRYWELL TO TORUS BYPASS LEAK TEST (AS FOUND)	
1311	PERFORM 24.402.06 DRYWELL TO TORUS BYPASS LEAK TEST (AS LEFT)	
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REQUIREMENT	REQUIREMENT TITLE	FREQ
SR 3.6.1.3.8	Verify each automatic PCIV actuates to the isolation position on an actual or simulated isolation signal.	IAW SFCP - 18 months
<b>EVENTS:</b>	<b>EVENT TITLE</b>	
0239	PERFORM 24.137.18 SEC-5.2 MS LINE DRN & DRN ISO VLV OP & LOC POSITION VERIF TEST	
0255	PERFORM 24.202.05 SEC-5.2 & 5.3 HPCI LOCAL VALVE POS INDICATION VERIF & LSFT	
0353	PERFORM 24.707.01 SEC-5.1 RWCU LOCAL VALVE POSITION VERIFICATION	
0496	PERFORM 44.010.037 RPS(TS A/TC A1)-NS4(TS A/TC A) DW PRESSURE, C71N650A, CALIBRATION/FUNC	
0497	PERFORM 44.010.038 RPS(TS B/TC B1)-NS4(TS A/TC B) DW PRESSURE, C71N650B, CALIBRATION/FUNC	
0498	PERFORM 44.010.039 RPS(TS A/TC A2)-NS4(TS B/TC C) DW PRESSURE, C71N650C, CALIBRATION/FUNC	
0499	PERFORM 44.010.040 RPS(TS B/TC B2)-NS4(TS B/TC D) DW PRESSURE, C71N650D, CALIBRATION/FUNC	
0527	PERFORM 44.020.501 RWCU NSSSS- INBD ISOLATION VALVE LOGIC SYSTEM FUNCTIONAL	
0528	PERFORM 44.020.601 RWCU NSSSS- OTBD ISOLATION VALVE LOGIC SYSTEM FUNCTIONAL	
0531	PERFORM 44.020.007 NS4 RX VESSEL LOW WTR LEVEL 1&2,TRIP SYS A,CHNL A,XMTR CAL	
0532	PERFORM 44.020.008 NS4 RX VESSEL LOW WTR LEVEL 1&2,TRIP SYS B,CHNL B,XMTR CAL	
0533	PERFORM 44.020.009 NS4 RX VESSEL LOW WTR LEVEL 1&2,TRIP SYS A,CHNL C,XMTR CAL	
0534	PERFORM 44.020.010 NS4 RX VESSEL LOW WTR LEVEL 1&2,TRIP SYS B,CHNL D,XMTR CAL	
0560	PERFORM 44.020.203 NS4 HPCI STEAM LINE FLOW, TRIP SYS A, CAL/FUNCTIONAL	
0561	PERFORM 44.020.204 NS4 HPCI STEAM LINE FLOW, TRIP SYS B, CAL/FUNCTIONAL	
0582	PERFORM 44.020.233 NS4 RCIC STEAM LINE FLOW, TRIP SYS A, CAL/FUNCT	
0583	PERFORM 44.020.234 NS4 RCIC STEAM LINE FLOW, TRIP SYS B, CALIBRATION/FUNCTIONAL	
0600	PERFORM 44.020.027 NS4 MAIN STEAM LINE PRESSURE, TRIP SYS A, CH A, CAL/FUNC	
0601	PERFORM 44.020.028 NS4 MAIN STEAM LINE PRESSURE,TRIP SYS B, CH B, CAL/FUNC	
0602	PERFORM 44.020.029 NS4 MAIN STEAM LINE PRESSURE,TRIP SYS A, CHNL C,CAL/FUNC	
0603	PERFORM 44.020.030 NS4 MAIN STEAM LINE PRESSURE, TRIP SYS B, CH D, CAL/FUNC	
0628	PERFORM 44.020.416 NS4 MAIN STEAM LINE TUNNEL TEMP,TRIP SYS A,B21N612A,CAL/FUNC	
0629	PERFORM 44.020.420 NS4 MAIN STEAM LINE TUNNEL TEMP,TRIP SYS B,B21N612B,CAL/FUNC	
0630	PERFORM 44.020.424 NS4 MAIN STEAM LINE TUNNEL TEMP,TRIP SYS A,B21N612C,CAL/FUNC	
0631	PERFORM 44.020.428 NS4 MAIN STEAM LINE TUNNEL TEMP,TRIP SYS B,B21N612D,CAL/FUNC	
0632	PERFORM 44.020.063 NS4 CONDENSER PRESS TRIP SYSTEM A, CHANNEL A, CAL/FUNCT	
0633	PERFORM 44.020.064 NS4 CONDENSER PRESS TRIP SYSTEM B, CHANNEL B, CAL/FUNC	
0634	PERFORM 44.020.065 NS4 CONDENSER PRESS TRIP SYSTEM A, CHANNEL C, CAL/FUNCT	

REQUIREMENT	REQUIREMENT TITLE	FREQ
0635	PERFORM 44.020.066 NS4 CONDENSER PRESS TRIP SYSTEM B, CHANNEL D, CAL/FUNC	
0636	PERFORM 44.020.432 NS4 TB AREA TEMP, TRIP SYS A, CH A, B21N616A, CAL/FUNC	
0637	PERFORM 44.020.434 NS4 TB AREA TEMP, TRIP SYS B, CH B, B21N616B, CAL/FUNC	
0638	PERFORM 44.020.436 NS4 TB AREA TEMP, TRIP SYS A, CH C, B21N616C, CAL/FUNC	
0639	PERFORM 44.020.438 NS4 TB AREA TEMP, TRIP SYS B, CH D, B21N616D, CAL/FUNC	
0640	PERFORM 44.030.001 ECCS - CORE SPRAY SYSTEM, DIV 1, LOGIC FUNCTIONAL TEST	
0641	PERFORM 44.030.002 ECCS - CORE SPRAY SYSTEM, DIV 2, LOGIC FUNCTIONAL TEST	
0671	PERFORM 44.030.255 ECCS RX WTR LVL 1,2&8 DIV 1, CHNL A, XMTR CALIBRATION	
0672	PERFORM 44.030.256 ECCS RX WTR LVL 1,2&8 DIV 2,CHNL B, XMTR CALIBRATION	
0673	PERFORM 44.030.257 ECCS RX WTR LVL 1,2&8 DIV 1,CHNL C, XMTR CALIBRATION	
0674	PERFORM 44.030.258 ECCS RX WTR LVL 1,2&8 DIV 2,CHNL D, XMTR CALIBRATION	
0750	PERFORM 44.010.017 RPS(TS A/TC A1)-NS4(TS A/TC A) RX LOW WTR LVL 3, B21N080A, XMTR CAL	
0751	PERFORM 44.010.018 RPS(TS B/TC B1)-NS4(TS A/TC B) RX LOW WTR LVL 3, B21N080B, XTMR CAL	
0752	PERFORM 44.010.019 RPS(TS A/TC A2)-NS4(TS B/TC C) RX LOW WTR LVL 3, B21N080C, XMTR CAL	
0753	PERFORM 44.010.020 RPS(TS B/TC B2)-NS4(TS B/TC D) RX LOW WTR LVL 3, B21N080D, XMTR CAL	
0761	PERFORM 64.080.029, MAIN STEAM LINE RADIATION MONITOR CHANNEL A CALIBRATION - LICENSE RENEWAL REQD	
0762	PERFORM 64.080.030, MAIN STEAM LINE RADIATION MONITOR CHANNEL B CALIBRATION - LICENSE RENEWAL REQD	
0763	PERFORM 64.080.031, MAIN STEAM LINE RADIATION MONITOR CHANNEL C CALIBRATION - LICENSE RENEWAL REQD	
0764	PERFORM 64.080.032, MAIN STEAM LINE RADIATION MONITOR CHANNEL D CALIBRATION - LICENSE RENEWAL REQD	
0781	PERFORM 44.030.303 ECCS DW PRESS RHR/CSS & HPCI ACTUATE,DIV 1,CHNL A,CAL/FUNC	
0782	PERFORM 44.030.304 ECCS DW PRESS RHR/CSS & HPCI ACTUATE,DIV 2,CHNL B,CAL/FUNC	
0783	PERFORM 44.030.305 ECCS DW PRESS RHR/CSS & HPCI ACTUATE,DIV 1,CHNL C,CAL/FUNCT	
0784	PERFORM 44.030.306 ECCS DW PRESS RHR/CSS & HPCI ACTUATE,DIV 2,CHNL D,CAL/FUNC	
1068	PERFORM 64.080.033 MAIN STEAM LINE RADIATION DETECTOR D11N600E CALIBRATION WITH CHANNEL A (was 64.010.033)	
1069	PERFORM 64.080.034 MAIN STEAM LINE RADIATION DETECTOR D11N600F CALIBRATION WITH CHANNEL C (was 64.010.034)	
1531	PERFORM 44.020.007 NS4 RX VESSEL LOW WTR LEVEL 1&2,TRIP SYS A,CHL A,MTU CAL/FUNC	
1532	PERFORM 44.020.008 NS4 RX VESSEL LOW WTR LEVEL 1&2,TRIP SYS B,CHL B,MTU CAL/FUNC	

REQUIREMENT	REQUIREMENT TITLE	FREQ
1533	PERFORM 44.020.009 NS4 RX VESSEL LOW WTR LEVEL 1&2,TRIP SYS A,CHL C,MTU CAL/FUNC	
1534	PERFORM 44.020.010 NS4 RX VESSEL LOW WTR LEVEL 1&2,TRIP SYS B,CHL D,MTU CAL/FUNC	
1628	PERFORM 44.020.417 NS4 MAIN STEAM LINE TUNNEL TEMP,TRIP SYS A,B21N613A,CAL/FUNC	
1629	PERFORM 44.020.421 NS4 MAIN STEAM LINE TUNNEL TEMP,TRIP SYS B,B21N613B,CAL/FUNC	
1630	PERFORM 44.020.422 NS4 MAIN STEAM LINE TUNNEL TEMP,TRIP SYS B,B21N614B,CAL/FUNC	
1631	PERFORM 44.020.423 NS4 MAIN STEAM LINE TUNNEL TEMP,TRIP SYS B,B21N615B,CAL/FUNC	
1636	PERFORM 44.020.433 NS4 TB AREA TEMP, TRIP SYS A, CH A, B21N617A, CAL/FUNC	
1637	PERFORM 44.020.435 NS4 TB AREA TEMP, TRIP SYS B, CH B, B21N617B, CAL/FUNC	
1638	PERFORM 44.020.437 NS4 TB AREA TEMP, TRIP SYS A, CH C, B21N617C, CAL/FUNC	
1639	PERFORM 44.020.439 NS4 TB AREA TEMP TRIP SYS B, CH D, B21N617D, CAL/FUNC	
1644	PERFORM 44.030.152 ONLINE - HPCI SYSTEM LOGIC FUNCTIONAL TEST	
1671	PERFORM 44.030.255 ECCS RX WTR LVL 1,2&8 DIV 1,CHNL A, MTU CAL	
1672	PERFORM 44.030.256 ECCS RX WTR LVL 1,2&8 DIV 2,CHNL B, MTU CAL	
1673	PERFORM 44.030.257 ECCS RX WTR LVL 1,2&8 DIV 1,CHNL C, MTU CAL	
1674	PERFORM 44.030.258 ECCS RX WTR LVL 1,2&8 DIV 2,CHNL D, MTU CALIBRATION	
1728	PERFORM 44.020.418 NS4 MAIN STEAM LINE TUNNEL TEMP,TRIP SYS A,B21N614A,CAL/FUNC	
1730	PERFORM 44.020.425 NS4 MAIN STEAM LINE TUNNEL TEMP,TRIP SYS A,B21N613C,CAL/FUNC	
1731	PERFORM 44.020.426 NS4 MAIN STEAM LINE TUNNEL TEMP,TRIP SYS A,B21N614C,CAL/FUNC	
1732	PERFORM 44.020.427 NS4 MAIN STEAM LINE TUNNEL TEMP,TRIP SYS A,B21N615C,CAL/FUNC	
1750	PERFORM 44.010.017 RPS(TS A/TC A1)-NS4(TS A/TC A) RX LOW WTR LVL 3, B21N680A MTU CAL/FUNC	
1751	PERFORM 44.010.018 RPS(TS B/TC B1)-NS4(TS A/TC B) RX LOW WTR LVL 3, B21N680B MTU CAL/FUNC	
1752	PERFORM 44.010.019 RPS(TS A/TC A2)-NS4(TS B/TC C) RX LOW WTR LVL 3, B21N680C MTU CAL/FUNC	
1753	PERFORM 44.010.020 RPS(TS B/TC B2)-NS4(TS B/TC D) RX LOW WTR LVL 3, B21N680D MTU CAL/FUNC	
1828	PERFORM 44.020.419 NS4 MAIN STEAM LINE TUNNEL TEMP,TRIP SYS A,B21N615A,CAL/FUNC	
1831	PERFORM 44.020.429 NS4 MAIN STEAM LINE TUNNEL TEMP,TRIP SYS B,B21N613D,CAL/FUNC	
1832	PERFORM 44.020.430 NS4 MAIN STEAM LINE TUNNEL TEMP,TRIP SYS B,B21N614D,CAL/FUNC	
1833	PERFORM 44.020.431 NS4 MAIN STEAM LINE TUNNEL TEMP,TRIP SYS B,B21N615D,CAL/FUNC	
2068	PERFORM 64.080.033 MAIN STEAM LINE RADIATION DETECTOR D11N600E CALIBRATION WITH CHANNEL B	
2069	PERFORM 64.080.034 MAIN STEAM LINE RADIATION DETECTOR D11N600F CALIBRATION WITH CHANNEL D	
2527	PERFORM 44.020.502 INBD SDC-HEAD SPRAY AUTO ISOLATION LOGIC FUNCTIONAL	
2528	PERFORM 44.020.001 SECT 6.3 NSSS MSIV DRNS/ RECIRC SAMPLE INBD VLV'S LOGIC SYS FUNC	

REQUIREMENT	REQUIREMENT TITLE	FREQ
2529	PERFORM 44.020.001 SECT 6.4 - VENT/PURGE ISO NSSSS DIV 1 LOGIC SYSTEM FUNCTIONAL	
2530	PERFORM 44.020.001 SECT 6.5 - NS4 DIV 1 SECONDARY CONT, DW SUMP & DRN, CCHVAC LF	
2809	PERFORM 44.060.002 RCIC SYSTEM LOGIC FUNCTIONAL TEST - ONLINE	
3528	PERFORM 44.020.602 OTBD SDC - HEAD SPRAY AUTO ISOLATION LOGIC FUNCTIONAL	
3529	PERFORM 44.020.002 NSSSS MSIV DRN/ RECIRC SAMPLE OTBD VLV'S LOGIC SYS FUNC	
3530	PERFORM 44.020.002 SECT 6.4 - VENT/PURGE ISO NSSSS DIV 2 LOGIC SYSTEM FUNCTIONAL	
3531	PERFORM 44.020.002 SECT 6.5 - NS4 DIV 2 SECONDARY CONT, DW SUMP & DRN, CCHVAC LF	
3730	PERFORM 44.020.604 NS4 DIV 1 TIP ISO VALVES LOGIC FUNCTIONAL	

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REQUIREMENT	REQUIREMENT TITLE	FREQ
SR 3.6.1.3.9	Verify a representative sample of reactor instrumentation line EFCVs actuates on a simulated instrument line break to restrict flow.	IAW SFCP - 18 Months
<b>EVENTS:</b>	<b>EVENT TITLE</b>	
0897	PERFORM 44.220.115 SECT. 6.1 (H21P004) GROUP 1 INSTRUMENT LINE EXCESS FLOW CHECK VALVE FUNCTIONAL	
0897A	PERFORM 44.220.115 SECT. 6.2 (H21P009) GROUP 1 INSTRUMENT LINE EXCESS FLOW CHECK VALVE FUNCTIONAL	
0897B	PERFORM 44.220.115 SECT. 6.3 (H21P015) GROUP 1 INSTRUMENT LINE EXCESS FLOW CHECK VALVE FUNCTIONAL	
0897C	PERFORM 44.220.115 SECT. 6.4 (H21P036) GROUP 1 INSTRUMENT LINE EXCESS FLOW CHECK VALVE FUNCTIONAL	
3300	PERFORM 44.220.110 SECT. 6.1 (H21P015) GRP 2 INST LINES EFCV'S, FUNCTIONAL TEST	
3300A	PERFORM 44.220.110 SECT. 6.2 (H21P025) GRP 2 INST LINES EFCV'S, FUNCTIONAL TEST	
3300B	PERFORM 44.220.110 SECT. 6.3 (H21P009) GRP 2 INST LINES EFCV'S, FUNCTIONAL TEST	
3300C	PERFORM 44.220.110 SECT. 6.4 (H21P006) GRP 2 INST LINES EFCV'S, FUNCTIONAL TEST	
3300D	PERFORM 44.220.110 SECT. 6.5 (H21P022) GRP 2 INST LINES EFCV'S, FUNCTIONAL TEST	
3300E	PERFORM 44.220.110 SECT. 6.6 (H21P421A) GRP 2 -N21F539B only	
3301	PERFORM 44.220.112 SECT. 6.1 (H21P009) GROUP 4 INST LINES EFCV'S, FUNCTIONAL TEST	
3301A	PERFORM 44.220.112 SECT. 6.6 (B21F517B only) GROUP 4 INST LINES EFCV'S, FUNCTIONAL TEST	
3301B	PERFORM 44.220.112 SECT. 6.2 (H21P015) GROUP 4 INST LINES EFCV'S, FUNCTIONAL TEST	
3301C	PERFORM 44.220.112 SECT. 6.3 (H21P016) GROUP 4 INST LINES EFCV'S, FUNCTIONAL TEST	
3301D	PERFORM 44.220.112 SECT. 6.4 (H21P035) GROUP 4 INST LINES EFCV'S, FUNCTIONAL TEST	
3301E	PERFORM 44.220.112 SECT. 6.5 (H21P421B) GROUP 4 INST LINES EFCV'S, FUNCTIONAL TEST	
3302	PERFORM 44.220.113 (Sec-6.1-H21P006)GRP 5 INSTRUMENT LINE EXCESS FLOW CHECK VALVE FUNCTIONAL	
3302A	PERFORM 44.220.113 (Sec-6.2-H21P009)GRP 5 INSTRUMENT LINE EXCESS FLOW CHECK VALVE FUNCTIONAL	
3302B	PERFORM 44.220.113 (Sec-6.3-H21P025)GRP 5 INSTRUMENT LINE EXCESS FLOW CHECK VALVE FUNCTIONAL	
3304	PERFORM 44.220.111 SECT. 6.1 (H21P005) GROUP 3 INST LINES EFCV'S, FUNCTIONAL TEST	
3304A	PERFORM 44.220.111 SECT. 6.2 (H21P010) GROUP 3 INST LINES EFCV'S, FUNCTIONAL TEST	
3304B	PERFORM 44.220.111 SECT. 6.3 (H21P038) GROUP 3 INST LINES EFCV'S, FUNCTIONAL TEST	
3307	PERFORM 44.220.114 SECT. 6.1 (H21P010) GROUP 6 INSTRUMENT LINE EXCESS FLOW CHECK VALVE FUNCTIONAL	
3307A	PERFORM 44.220.114 SECT. 6.2 (H21P022) GROUP 6 INSTRUMENT LINE EXCESS FLOW CHECK VALVE FUNCTIONAL	

REQUIREMENT	REQUIREMENT TITLE	FREQ
SR 3.6.1.3.10	Remove and test the explosive squib from each shear isolation valve of the TIP System.	IAW SFCP - 18 months on a STAGGERED TEST BASIS
<b>EVENTS:      EVENT TITLE</b>		
0981	PERFORM 43.606.001 TRAVERSING IN-CORE PROBE SHEAR VALVE 'A' EXPLOSIVE CHARGE	
1981	PERFORM 43.606.001 TRAVERSING IN-CORE PROBE SHEAR VALVE 'B' EXPLOSIVE CHARGE	
1982	PERFORM 43.606.001 TRAVERSING IN-CORE PROBE SHEAR VALVE 'C' EXPLOSIVE CHARGE	
1983	PERFORM 43.606.001 TRAVERSING IN-CORE PROBE SHEAR VALVE 'D' EXPLOSIVE CHARGE	
1984	PERFORM 43.606.001 TRAVERSING IN-CORE PROBE SHEAR VALVE 'E' EXPLOSIVE CHARGE	
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SR 3.6.1.6.1	Verify each LLS valve is capable of being opened.	IAW SFCP - 18 months
<b>EVENTS:      EVENT TITLE</b>		
2440	PERFORM 44.210.059 ECCS/ADS/MDS D1 SRV SOLENOID FUNC TEST	
2441	PERFORM 44.210.060 ECCS/ADS/MDS D2 SRV SOLENOID FUNC TEST	
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SR 3.6.1.6.2	Verify the LLS System actuates on an actual or simulated automatic initiation signal.	IAW SFCP - 18 months
<b>EVENTS:      EVENT TITLE</b>		
0803	PERFORM 44.040.005 ATWS/SRV LOW LOW SET RX PRESS, DIV 1, CHL "A", XMTR CAL	
0804	PERFORM 44.040.006 ATWS/SRV LOW LOW SET RX PRESS, DIV 2, CHL "B", XMTR CAL	
0805	PERFORM 44.040.007 ATWS/SRV LOW LOW SET RX PRESS, DIV 1, CHL "C", XMTR CAL	
0806	PERFORM 44.040.008 ATWS/SRV LOW LOW SET RX PRESS, DIV 2, CHL "D", XMTR CAL	
0807	PERFORM 44.040.009 ATWS-SRV LOW LOW SET DIV 1 LOGIC FUNCTIONAL TEST	
0808	PERFORM 44.040.010 ATWS-SRV LOW LOW SET DIV 2 LOGIC FUNCTIONAL TEST	
0889	PERFORM 44.210.003 SRV TAIL PIPE PRES INSTRUMENTATION CALIBRATION	
1082	PERFORM 44.210.004 SRV LO LO SET, SRV POSITION MONITOR FUNCTIONAL TEST	
1803	PERFORM 44.040.005 ATWS/SRV LLS RX PRESS,DIV 1,CHNL A, MTU CAL/FUNC	
1804	PERFORM 44.040.006 ATWS/SRV LLS RX PRESS,DIV 2,CHNL B, MTU CAL/FUNC	
1805	PERFORM 44.040.007 ATWS/SRV LLS RX PRESS,DIV 1,CHNL C, MTU CAL/FUNC	
1806	PERFORM 44.040.008 ATWS/SRV LOW LOW SET RX PRESS, DIV 2, CHL "D", MTU CAL/FUNC	
2440	PERFORM 44.210.059 ECCS/ADS/MDS D1 SRV SOLENOID FUNC TEST	
2441	PERFORM 44.210.060 ECCS/ADS/MDS D2 SRV SOLENOID FUNC TEST	
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REQUIREMENT	REQUIREMENT TITLE	FREQ
SR 3.6.1.7.3	Verify the opening setpoint of each vacuum breaker is $\leq 0.5$ psid.	IAW SFCP - 18 months
<b>EVENTS:</b>	<b>EVENT TITLE</b>	
0905	PERFORM 44.220.204 TORUS TO RX BLDG VACUUM BREAKER VALVE POS INDICATION CAL	
SR 3.6.1.8.3	Verify the opening setpoint of each vacuum breaker is $\leq 0.5$ psid.	IAW SFCP - 18 months
<b>EVENTS:</b>	<b>EVENT TITLE</b>	
0904	PERFORM 44.220.203 TORUS TO DRYWELL VACUUM BREAKER VALVE POS INDICATION CAL	
SR 3.6.4.1.5	Verify each standby gas treatment (SGT) subsystem will draw down the secondary containment to $\geq 0.25$ inch of vacuum water gauge in $\leq 12$ minutes.	IAW SFCP - 18 months on a STAGGERED TEST BASIS
<b>EVENTS:</b>	<b>EVENT TITLE</b>	
0317	PERFORM 24.405.03 SECONDARY CONTAINMENT INTEGRITY TEST (USING DIV 1 SGTS)	
1317	PERFORM 24.405.03 SECONDARY CONTAINMENT INTEGRITY TEST (USING DIV 2 SGTS)	
SR 3.6.4.1.6	Verify each SGT subsystem can maintain $\geq 0.25$ inch of vacuum water gauge in the secondary containment for 1 hour at a flow rate $\leq 3000$ cfm.	IAW SFCP - 18 months on a STAGGERED TEST BASIS
<b>EVENTS:</b>	<b>EVENT TITLE</b>	
0317	PERFORM 24.405.03 SECONDARY CONTAINMENT INTEGRITY TEST (USING DIV 1 SGTS)	
1317	PERFORM 24.405.03 SECONDARY CONTAINMENT INTEGRITY TEST (USING DIV 2 SGTS)	
SR 3.6.4.2.3	Verify each automatic SCIV actuates to the isolation position on an actual or simulated actuation signal.	IAW SFCP - 18 months
<b>EVENTS:</b>	<b>EVENT TITLE</b>	
0314	PERFORM 24.404.02 SEC-5.3 DIV. 1 SGTS RUN/AUTO INITIATE/POSITION IND.	
0496	PERFORM 44.010.037 RPS(TS A/TC A1)-NS4(TS A/TC A) DW PRESSURE, C71N650A, CALIBRATION/FUNC	
0497	PERFORM 44.010.038 RPS(TS B/TC B1)-NS4(TS A/TC B) DW PRESSURE, C71N650B, CALIBRATION/FUNC	
0498	PERFORM 44.010.039 RPS(TS A/TC A2)-NS4(TS B/TC C) DW PRESSURE, C71N650C, CALIBRATION/FUNC	
0499	PERFORM 44.010.040 RPS(TS B/TC B2)-NS4(TS B/TC D) DW PRESSURE, C71N650D, CALIBRATION/FUNC	
1142	PERFORM 24.404.04 SEC-5.3 DIV.2 SGTS RUN/AUTO INITIATE/POSITION IND.	
2530	PERFORM 44.020.001 SECT 6.5 - NS4 DIV 1 SECONDARY CONT, DW SUMP & DRN, CCHVAC LF	
3531	PERFORM 44.020.002 SECT 6.5 - NS4 DIV 2 SECONDARY CONT, DW SUMP & DRN, CCHVAC LF	

REQUIREMENT	REQUIREMENT TITLE	FREQ
SR 3.6.4.3.3	Verify each SGT subsystem actuates on an actual or simulated initiation signal.	IAW SFCP - 18 months
<b>EVENTS:</b>	<b>EVENT TITLE</b>	
0314	PERFORM 24.404.02 SEC-5.3 DIV. 1 SGTS RUN/AUTO INITIATE/POSITION IND.	
0496	PERFORM 44.010.037 RPS(TS A/TC A1)-NS4(TS A/TC A) DW PRESSURE, C71N650A, CALIBRATION/FUNC	
0497	PERFORM 44.010.038 RPS(TS B/TC B1)-NS4(TS A/TC B) DW PRESSURE, C71N650B, CALIBRATION/FUNC	
0498	PERFORM 44.010.039 RPS(TS A/TC A2)-NS4(TS B/TC C) DW PRESSURE, C71N650C, CALIBRATION/FUNC	
0499	PERFORM 44.010.040 RPS(TS B/TC B2)-NS4(TS B/TC D) DW PRESSURE, C71N650D, CALIBRATION/FUNC	
0531	PERFORM 44.020.007 NS4 RX VESSEL LOW WTR LEVEL 1&2,TRIP SYS A,CHNL A,XMTR CAL	
0532	PERFORM 44.020.008 NS4 RX VESSEL LOW WTR LEVEL 1&2,TRIP SYS B,CHNL B,XMTR CAL	
0533	PERFORM 44.020.009 NS4 RX VESSEL LOW WTR LEVEL 1&2,TRIP SYS A,CHNL C,XMTR CAL	
0534	PERFORM 44.020.010 NS4 RX VESSEL LOW WTR LEVEL 1&2,TRIP SYS B,CHNL D,XMTR CAL	
1142	PERFORM 24.404.04 SEC-5.3 DIV.2 SGTS RUN/AUTO INITIATE/POSITION IND.	
1531	PERFORM 44.020.007 NS4 RX VESSEL LOW WTR LEVEL 1&2,TRIP SYS A,CHL A,MTU CAL/FUNC	
1532	PERFORM 44.020.008 NS4 RX VESSEL LOW WTR LEVEL 1&2,TRIP SYS B,CHL B,MTU CAL/FUNC	
1533	PERFORM 44.020.009 NS4 RX VESSEL LOW WTR LEVEL 1&2,TRIP SYS A,CHL C,MTU CAL/FUNC	
1534	PERFORM 44.020.010 NS4 RX VESSEL LOW WTR LEVEL 1&2,TRIP SYS B,CHL D,MTU CAL/FUNC	
2530	PERFORM 44.020.001 SECT 6.5 - NS4 DIV 1 SECONDARY CONT, DW SUMP & DRN, CCHVAC LF	
3531	PERFORM 44.020.002 SECT 6.5 - NS4 DIV 2 SECONDARY CONT, DW SUMP & DRN, CCHVAC LF	
SR 3.6.4.3.4	Verify each SGT filter cooler bypass damper can be opened and the fan started.	IAW SFCP - 18 months
<b>EVENTS:</b>	<b>EVENT TITLE</b>	
0314	PERFORM 24.404.02 SEC-5.3 DIV. 1 SGTS RUN/AUTO INITIATE/POSITION IND.	
1142	PERFORM 24.404.04 SEC-5.3 DIV.2 SGTS RUN/AUTO INITIATE/POSITION IND.	

REQUIREMENT	REQUIREMENT TITLE	FREQ
SR 3.7.2.5	Verify each EECW/EESW subsystem actuates on an actual or simulated initiation signal.	IAW SFCP - 18 months
<b>EVENTS:</b>	<b>EVENT TITLE</b>	
0277	PERFORM 24.207.06 DIV. 1 EECW/EESW ACTUATION FUNCTIONAL TEST	
0278	PERFORM 24.207.07 DIV. 2 EECW/EESW ACTUATION FUNCTIONAL TEST	
0781	PERFORM 44.030.303 ECCS DW PRESS RHR/CSS & HPCI ACTUATE,DIV 1,CHNL A,CAL/FUNC	
0782	PERFORM 44.030.304 ECCS DW PRESS RHR/CSS & HPCI ACTUATE,DIV 2,CHNL B,CAL/FUNC	
0783	PERFORM 44.030.305 ECCS DW PRESS RHR/CSS & HPCI ACTUATE,DIV 1,CHNL C,CAL/FUNCT	
0784	PERFORM 44.030.306 ECCS DW PRESS RHR/CSS & HPCI ACTUATE,DIV 2,CHNL D,CAL/FUNC	
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SR 3.7.3.3	Verify each CREF subsystem actuates on an actual or simulated initiation signal.	IAW SFCP - 18 months
<b>EVENTS:</b>	<b>EVENT TITLE</b>	
0327	PERFORM 24.413.04 DIV 1 CR EMRG FILTER AUTO TRANSFER TEST	
0496	PERFORM 44.010.037 RPS(TS A/TC A1)-NS4(TS A/TC A) DW PRESSURE, C71N650A, CALIBRATION/FUNC	
0497	PERFORM 44.010.038 RPS(TS B/TC B1)-NS4(TS A/TC B) DW PRESSURE, C71N650B, CALIBRATION/FUNC	
0498	PERFORM 44.010.039 RPS(TS A/TC A2)-NS4(TS B/TC C) DW PRESSURE, C71N650C, CALIBRATION/FUNC	
0499	PERFORM 44.010.040 RPS(TS B/TC B2)-NS4(TS B/TC D) DW PRESSURE, C71N650D, CALIBRATION/FUNC	
0531	PERFORM 44.020.007 NS4 RX VESSEL LOW WTR LEVEL 1&2,TRIP SYS A,CHNL A,XMTR CAL	
0532	PERFORM 44.020.008 NS4 RX VESSEL LOW WTR LEVEL 1&2,TRIP SYS B,CHNL B,XMTR CAL	
0533	PERFORM 44.020.009 NS4 RX VESSEL LOW WTR LEVEL 1&2,TRIP SYS A,CHNL C,XMTR CAL	
0534	PERFORM 44.020.010 NS4 RX VESSEL LOW WTR LEVEL 1&2,TRIP SYS B,CHNL D,XMTR CAL	
1111	PERFORM 24.413.05 DIV 2 CR EMRG FILTER AUTO TRANSFER TEST	
1531	PERFORM 44.020.007 NS4 RX VESSEL LOW WTR LEVEL 1&2,TRIP SYS A,CHL A,MTU CAL/FUNC	
1532	PERFORM 44.020.008 NS4 RX VESSEL LOW WTR LEVEL 1&2,TRIP SYS B,CHL B,MTU CAL/FUNC	
1533	PERFORM 44.020.009 NS4 RX VESSEL LOW WTR LEVEL 1&2,TRIP SYS A,CHL C,MTU CAL/FUNC	
1534	PERFORM 44.020.010 NS4 RX VESSEL LOW WTR LEVEL 1&2,TRIP SYS B,CHL D,MTU CAL/FUNC	
2530	PERFORM 44.020.001 SECT 6.5 - NS4 DIV 1 SECONDARY CONT, DW SUMP & DRN, CCHVAC LF	
3531	PERFORM 44.020.002 SECT 6.5 - NS4 DIV 2 SECONDARY CONT, DW SUMP & DRN, CCHVAC LF	
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REQUIREMENT	REQUIREMENT TITLE	FREQ
SR 3.7.6.3	Perform a system functional test.	IAW SFCP - 18 months
<b>EVENTS:</b>	<b>EVENT TITLE</b>	
0881	PERFORM 44.180.005 MAIN TURBINE BYPASS SYSTEM RTT AND CHL FUNCTIONAL	
SR 3.7.6.4	Verify the TURBINE BYPASS SYSTEM RESPONSE TIME is within limits.	IAW SFCP - 18 months
<b>EVENTS:</b>	<b>EVENT TITLE</b>	
0881	PERFORM 44.180.005 MAIN TURBINE BYPASS SYSTEM RTT AND CHL FUNCTIONAL	
SR 3.8.1.13.a	Verify each EDG operates for $\geq 24$ hours: a. For all but the final 2 hours loaded $\geq 2500$ kW and $\leq 2600$ kW; and	IAW SFCP - 18 months
<b>EVENTS:</b>	<b>EVENT TITLE</b>	
0298	PERFORM 24.307.30 EDG NO.11 24 HOUR RUN FOLLOWED BY HOT FAST RESTART	
0299	PERFORM 24.307.31 EDG NO.12 24 HOUR RUN FOLLOWED BY HOT FAST RESTART	
0300	PERFORM 24.307.32 EDG NO.13 24 HOUR RUN FOLLOWED BY HOT FAST RESTART	
0301	PERFORM 24.307.33 EDG NO.14 24 HOUR RUN FOLLOWED BY HOT FAST RESTART	
SR 3.8.1.13.b	Verify each EDG operates for $\geq 24$ hours: b. For the final $\geq 2$ hours of the test loaded $\geq 2800$ kW and $\leq 2900$ kW.	IAW SFCP - 18 months
<b>EVENTS:</b>	<b>EVENT TITLE</b>	
0298	PERFORM 24.307.30 EDG NO.11 24 HOUR RUN FOLLOWED BY HOT FAST RESTART	
0299	PERFORM 24.307.31 EDG NO.12 24 HOUR RUN FOLLOWED BY HOT FAST RESTART	
0300	PERFORM 24.307.32 EDG NO.13 24 HOUR RUN FOLLOWED BY HOT FAST RESTART	
0301	PERFORM 24.307.33 EDG NO.14 24 HOUR RUN FOLLOWED BY HOT FAST RESTART	
SR 3.8.1.14.a	Verify each EDG starts and achieves: a. In $\leq 10$ seconds, voltage $\geq 3950$ V and frequency $\geq 58.8$ Hz; and	IAW SFCP - 18 months
<b>EVENTS:</b>	<b>EVENT TITLE</b>	
0298	PERFORM 24.307.30 EDG NO.11 24 HOUR RUN FOLLOWED BY HOT FAST RESTART	
0299	PERFORM 24.307.31 EDG NO.12 24 HOUR RUN FOLLOWED BY HOT FAST RESTART	
0300	PERFORM 24.307.32 EDG NO.13 24 HOUR RUN FOLLOWED BY HOT FAST RESTART	
0301	PERFORM 24.307.33 EDG NO.14 24 HOUR RUN FOLLOWED BY HOT FAST RESTART	

REQUIREMENT	REQUIREMENT TITLE	FREQ
SR 3.8.1.14.b	Verify each EDG starts and achieves: b. Steady state voltage $\geq 3950$ V and $\leq 4580$ V and frequency $\geq 58.8$ Hz and $\leq 61.2$ Hz.	IAW SFCP - 18 months
	<b>EVENTS:</b>	
	<b>EVENT TITLE</b>	
	0298 PERFORM 24.307.30 EDG NO.11 24 HOUR RUN FOLLOWED BY HOT FAST RESTART	
	0299 PERFORM 24.307.31 EDG NO.12 24 HOUR RUN FOLLOWED BY HOT FAST RESTART	
	0300 PERFORM 24.307.32 EDG NO.13 24 HOUR RUN FOLLOWED BY HOT FAST RESTART	
	0301 PERFORM 24.307.33 EDG NO.14 24 HOUR RUN FOLLOWED BY HOT FAST RESTART	
SR 3.8.1.16	Verify interval between each sequenced load block is within $\pm 10\%$ of design interval for each load sequencer timer.	IAW SFCP - 18 months
	<b>EVENTS:</b>	
	<b>EVENT TITLE</b>	
	0215 PERFORM 42.307.05 DIV 1 EDG AUTO LOAD SEQUENCE TIMER CALIBRATION	
	1215 PERFORM 42.307.05 DIV 2 EDG AUTO LOAD SEQUENCE TIMER CALIBRATION	
SR 3.8.4.3	Verify battery cells, cell plates, and racks show no visual indication of physical damage or abnormal deterioration that could degrade battery performance.	IAW SFCP - 18 months
	<b>EVENTS:</b>	
	<b>EVENT TITLE</b>	
	0217 PERFORM 42.309.03 DIV 1 18 MONTH 130/260 VDC BATTERY CHECK (2A-1 ONLY)	
	1102 PERFORM 42.309.06 DIV 2 18 MONTH 130/260 VDC BATTERY CHECK (2B-1 ONLY)	
	1217 PERFORM 42.309.03 DIV 1 18 MONTH 130/260 VDC BATTERY CHECK (2A-2 ONLY)	
	2102 PERFORM 42.309.06 DIV 2 18 MONTH 130/260 VDC BATTERY CHECK (2B-2 ONLY)	
SR 3.8.4.4	Remove visible corrosion and verify battery cell to cell and terminal connections are coated with anti-corrosion material.	IAW SFCP - 18 months
	<b>EVENTS:</b>	
	<b>EVENT TITLE</b>	
	0217 PERFORM 42.309.03 DIV 1 18 MONTH 130/260 VDC BATTERY CHECK (2A-1 ONLY)	
	1102 PERFORM 42.309.06 DIV 2 18 MONTH 130/260 VDC BATTERY CHECK (2B-1 ONLY)	
	1217 PERFORM 42.309.03 DIV 1 18 MONTH 130/260 VDC BATTERY CHECK (2A-2 ONLY)	
	2102 PERFORM 42.309.06 DIV 2 18 MONTH 130/260 VDC BATTERY CHECK (2B-2 ONLY)	

REQUIREMENT	REQUIREMENT TITLE	FREQ
SR 3.8.4.5.a	Verify each battery: a. Cell-to-cell and terminal connection resistance is $\leq 1.5E-4$ ohm.	IAW SFCP - 18 months
<b>EVENTS:</b>	<b>EVENT TITLE</b>	
0217	PERFORM 42.309.03 DIV 1 18 MONTH 130/260 VDC BATTERY CHECK (2A-1 ONLY)	
1102	PERFORM 42.309.06 DIV 2 18 MONTH 130/260 VDC BATTERY CHECK (2B-1 ONLY)	
1217	PERFORM 42.309.03 DIV 1 18 MONTH 130/260 VDC BATTERY CHECK (2A-2 ONLY)	
2102	PERFORM 42.309.06 DIV 2 18 MONTH 130/260 VDC BATTERY CHECK (2B-2 ONLY)	
SR 3.8.4.5.b	Verify each battery: b. Total cell-to-cell and terminal connection resistance is $\leq 2.7E-3$ ohm.	IAW SFCP - 18 months
<b>EVENTS:</b>	<b>EVENT TITLE</b>	
0217	PERFORM 42.309.03 DIV 1 18 MONTH 130/260 VDC BATTERY CHECK (2A-1 ONLY)	
1102	PERFORM 42.309.06 DIV 2 18 MONTH 130/260 VDC BATTERY CHECK (2B-1 ONLY)	
1217	PERFORM 42.309.03 DIV 1 18 MONTH 130/260 VDC BATTERY CHECK (2A-2 ONLY)	
2102	PERFORM 42.309.06 DIV 2 18 MONTH 130/260 VDC BATTERY CHECK (2B-2 ONLY)	
SR 3.8.4.6	Verify each required battery charger supplies $\geq 100$ amps at $\geq 124.7$ V for $\geq 4$ hours.	IAW SFCP - 18 months
<b>EVENTS:</b>	<b>EVENT TITLE</b>	
0218	PERFORM 42.309.04 DIV 1 BATTERY CHARGER LOAD TEST - 2A-1 ONLY	
1218	PERFORM 42.309.04 DIV 2 BATTERY CHARGER LOAD TEST - 2B-1 ONLY	
1292	PERFORM 42.309.04 DIV 1 BATTERY CHARGER LOAD TEST - 2A-2 ONLY	
1293	PERFORM 42.309.04 DIV 1 BATTERY CHARGER LOAD TEST - 2A1-2 ONLY	
2219	PERFORM 42.309.04 DIV 2 BATTERY CHARGER LOAD TEST - 2B-2 ONLY	
2220	PERFORM 42.309.04 DIV 2 BATTERY CHARGER LOAD TEST - 2B1-2 ONLY	
SR 3.8.4.7	Verify battery capacity is adequate to supply, and maintain in OPERABLE status, the actual or simulated emergency loads for the design duty cycle when subjected to a battery service test.	IAW SFCP - 18 months
<b>EVENTS:</b>	<b>EVENT TITLE</b>	
0217	PERFORM 42.309.03 DIV 1 18 MONTH 130/260 VDC BATTERY CHECK (2A-1 ONLY)	
1102	PERFORM 42.309.06 DIV 2 18 MONTH 130/260 VDC BATTERY CHECK (2B-1 ONLY)	
1217	PERFORM 42.309.03 DIV 1 18 MONTH 130/260 VDC BATTERY CHECK (2A-2 ONLY)	
2102	PERFORM 42.309.06 DIV 2 18 MONTH 130/260 VDC BATTERY CHECK (2B-2 ONLY)	

REQUIREMENT	REQUIREMENT TITLE	FREQ
SR 3.8.4.8	Verify battery capacity is $\geq 80\%$ of the manufacturer's rating when subjected to a performance discharge test.	IAW SFCP - 60 months(Note 4)
<b>EVENTS:      EVENT TITLE</b>		
0219	PERFORM 42.309.05 DIV 1 (5 YEAR) 130/260 VDC BATTERY CHECK (2A-1 ONLY)	
1103	PERFORM 42.309.07 DIV 2 (5 YEAR) 130/260 VDC BATTERY CHECK (2B-1 ONLY)	
1219	PERFORM 42.309.05 DIV 1 (5 YEAR) 130/260 VDC BATTERY CHECK (2A-2 ONLY)	
2103	PERFORM 42.309.07 DIV 2 (5 YEAR) 130/260 VDC BATTERY CHECK (2B-2 ONLY)	
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SR 5.5.2	<p>This program provides controls to minimize leakage from those portions of systems outside containment that could contain highly radioactive fluids during a serious transient or accident to levels as low as practicable. The systems include Core Spray, High Pressure Coolant Injection, Residual Heat Removal, Reactor Core Isolation Cooling, reactor water sampling, Post Accident Sampling, reactor water cleanup, Hydrogen Recombiners, Primary Containment Monitoring, control rod drive discharge headers, and Standby Gas Treatment. The program shall include the following:</p> <p>a. Preventive maintenance and periodic visual requirements; and inspection</p> <p>b. Integrated leak test requirements for refueling cycle intervals or less.</p>	TS - at refueling cycle intervals or less
<b>EVENTS:      EVENT TITLE</b>		
0359	PERFORM 43.202.001 HPCI LEAKAGE MONITORING TEST	
0360	PERFORM 43.203.001 CSS DIV 1 LEAKAGE MONITORING TEST	
0361	PERFORM 43.203.005 CSS DIV 2 LEAKAGE MONITORING TEST	
0362	PERFORM 43.204.001 RHR DIVISION 1 LEAKAGE MONITORING TEST	
0363	PERFORM 43.204.002 RHR DIVISION 2 LEAKAGE MONITORING TEST	
0493	PERFORM 43.404.002 DIVISION 2 STANDBY GAS TREATMENT FILTER PERFORMANCE TEST	
0494	PERFORM 43.409.001 DIV 1 POST LOCA THERMAL RECOMBINER SYSTEM LEAKAGE TEST	
0977	PERFORM 43.206.001 RCIC LEAKAGE MONITORING TEST	
1043	PERFORM 43.714.001 POST ACCIDENT SAMPLING SYSTEM LEAKAGE MONITORING TEST	
1090	PERFORM 43.404.001 DIV 1 STANDBY GAS TREATMENT FILTER PERFORMANCE TEST	
1117	PERFORM 43.409.002 DIV 2 POST LOCA THERMAL RECOMBINER SYSTEM LEAKAGE TEST	
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REQUIREMENT	REQUIREMENT TITLE	FREQ
SR 5.5.7.a	Demonstrate for each of the ESF systems that an inplace test of the HEPA filters shows a penetration and system bypass < specified below when tested in accordance with Regulatory Guide 1.52, Revision 2, and ASME N510-1980 at the system flowrate specified below $\pm 10\%$ .	TS - at the frequencies specified in Regulatory Guide 1.52, Revision 2
	<b>EVENTS:</b>	
	<b>EVENT TITLE</b>	
	0493	PERFORM 43.404.002 DIVISION 2 STANDBY GAS TREATMENT FILTER PERFORMANCE TEST
	0495	PERFORM 43.413.001 SECTIONS 5.1, 5.2 AND 5.5 THRU 5.13 CONTL RM EMERG FILTER PERF
	1090	PERFORM 43.404.001 DIV 1 STANDBY GAS TREATMENT FILTER PERFORMANCE TEST
SR 5.5.7.b	Demonstrate for each of the ESF systems that an inplace test of the charcoal adsorber shows a penetration and system bypass < specified below when tested in accordance with Regulatory Guide 1.52, Revision 2, and ASME N510-1980 at the system flowrate specified below $\pm 10\%$ .	TS - at the frequencies specified in Regulatory Guide 1.52, Revision 2
	<b>EVENTS:</b>	
	<b>EVENT TITLE</b>	
	0493	PERFORM 43.404.002 DIVISION 2 STANDBY GAS TREATMENT FILTER PERFORMANCE TEST
	0495	PERFORM 43.413.001 SECTIONS 5.1, 5.2 AND 5.5 THRU 5.13 CONTL RM EMERG FILTER PERF
	1090	PERFORM 43.404.001 DIV 1 STANDBY GAS TREATMENT FILTER PERFORMANCE TEST
SR 5.5.7.c	Demonstrate for each of the ESF systems that a laboratory test of a sample of the charcoal adsorber, when obtained as described in Regulatory Guide 1.52, Revision 2, shows the methyl iodide penetration less than the value specified below when tested in accordance with ASTM D3803-1989 at a temperature of 30°C (86°F) and at the relative humidity specified below.	TS - at the frequencies specified in Regulatory Guide 1.52, Revision 2
	<b>EVENTS:</b>	
	<b>EVENT TITLE</b>	
	1493	PERFORM 43.404.002 DIVISION 2 SGTS CHARCOAL SAMPLE WITHDRAWAL
	1495	PERFORM 43.413.001 SECT 5.3 & 5.4 CHARCOAL SAMPLE WITHDRAWAL & LAB TESTING
	2090	PERFORM 43.404.001 DIVISION 1 SGTS CHARCOAL SAMPLE WITHDRAWAL
SR 5.5.7.d	Demonstrate for each of the ESF systems that the pressure drop across the combined HEPA filters, the prefilters, and the charcoal adsorbers is less than the value specified below when tested in accordance with Regulatory Guide 1.52, Revision 2, and ASME N510-1980 at the system flowrate specified as follows $\pm 10\%$ .	TS - at the frequencies specified in Regulatory Guide 1.52, Revision 2
	<b>EVENTS:</b>	
	<b>EVENT TITLE</b>	
	0493	PERFORM 43.404.002 DIVISION 2 STANDBY GAS TREATMENT FILTER PERFORMANCE TEST
	0495	PERFORM 43.413.001 SECTIONS 5.1, 5.2 AND 5.5 THRU 5.13 CONTL RM EMERG FILTER PERF
	1090	PERFORM 43.404.001 DIV 1 STANDBY GAS TREATMENT FILTER PERFORMANCE TEST
	1205	PERFORM 43.413.005 CONTROL RM ENVELOPE DIFFERENTIAL PRESS TEST

REQUIREMENT	REQUIREMENT TITLE	FREQ
SR 5.5.7.e	Demonstrate that the heaters for each of the ESF systems dissipate the value specified below when tested in accordance with ASME N510-1980.	TS - at the frequencies specified in Regulatory Guide 1.52, Revision 2
	<b>EVENTS:</b>	
	<b>EVENT TITLE</b>	
0493	PERFORM 43.404.002 DIVISION 2 STANDBY GAS TREATMENT FILTER PERFORMANCE TEST	
0495	PERFORM 43.413.001 SECTIONS 5.1, 5.2 AND 5.5 THRU 5.13 CONTL RM EMERG FILTER PERF	
1090	PERFORM 43.404.001 DIV 1 STANDBY GAS TREATMENT FILTER PERFORMANCE TEST	
SR 5.5.14.d	Measurement, at designated locations, of the CRE pressure relative to all external areas adjacent to the CRE boundary during the pressurization mode of operation by one subsystem of the CREF System, operating at the flow rate required by the VFTP, at a Frequency of 18 months on a STAGGERED TEST BASIS. The results shall be trended and assessed every 18 months.	TS - 18 months on a STAGGERED TEST BASIS
	<b>EVENTS:</b>	
	<b>EVENT TITLE</b>	
1205	PERFORM 43.413.005 CONTROL RM ENVELOPE DIFFERENTIAL PRESS TEST	
1205A	PERFORM ASSESSMENT of 43.413.005 RESULTS	

**ATTACHMENT 3**

**TECHNICAL SPECIFICATION EVENT  
FAILURE HISTORY EVALUATION**

**(270 PAGES)**

# ATTACHMENT 3 - FERMI 2 TECHNICAL SPECIFICATION EVENT FAILURE HISTORY EVALUATION

TRVEND 24MCGNF319001 Rev 1

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Event	Title	Associated SRs and Function	
0204	PERFORM 44.080.605 EAST AND WEST GLAND SEAL EXHAUSTER/MECHANICAL VACUUM PUMP	SR 3.3.7.2.4	SR 3.3.7.3.4

# Performances: 1      # Failures: 0

## 24 Month Justification:    Notes:

There were no failures, therefore the surveillance test history supports the conclusion that the impact, if any, on system availability will be small as a result of the change to a 24 month surveillance interval.

Event	Title	Associated SRs and Function	TRVEND 24MCGNF319001 Rev 1
0213	PERFORM 42.302.02 DIV 1 BUS 64B/11EA 4160V UNDERVOLTAGE LOGIC FUNCTIONAL	SR 3.3.5.1.5-1.a SR 3.3.5.1.5-1.b	Page 116 of 395

# Performances: 7 # Failures: 3

#### 24 Month Justification: Notes:

The failures do not impact any safety function; therefore, the surveillance test history supports the conclusion that the impact, if any, on system availability will be small as a result of the change to a 24 month surveillance interval.

#### Failure Review:

##### Perf. Date Fail Cat. Description of Failure

6/17/2009 A SPF Note 1: "Step 6.5.12, 64B B9 Bkr left in Removed due to breaker retaining bolt CARD 09-24754". CARD 09-24754 states: "During performance of 42.302.02 step 6.5.7 breaker compartment 64B-B9 was accessed to remove a previously installed jumper per the procedure. When the cubicle door was opened a 3/8" bolt, nut, and lock washer were found in the front of the cubicle near the lower left corner of the breaker. During performance of the procedure the breaker was racked from disconnect to test and was cycled closed and then back open. Test leader and work group supervisor were informed. With test leader and work group supervisor concurrence the hardware was removed from the cubicle and the procedure was completed satisfactorily. After the procedure was completed the breaker was removed from the switchgear and left removed for subsequent inspection. The hardware that was removed from the cubicle has been given to the Component Engineer. An inspection should performed of the breaker to determine the cause and replace the hardware. A review of past CARDS documents a potentially similar event on CARD 09-22885 at breaker 64A-A7." As described in investigation: "the 3/8" bolt, nut, and lock washer found were found in the front of the cubicle near the lower left corner of the breaker. This is one of the two bolts that mount the racking mechanism to the breaker. The second bolt, nut and washer are orientated at a right angle to the bolt mentioned above. At all times the racking mechanism was fully attached to the breaker and permitted the breaker to be racked in or out as needed. The loss of this bolt would not have affected the function of this breaker." Reportability/Operability Review states: "This is the maintenance tie breaker and would only be used to power the bus during outages. To support the bus operability the breaker would have to have the ability to open to load shed the bus in a loss of voltage scenario. Because the breaker has been removed from the cubicle it is in a condition that would support its accident condition and therefore the switchgear is OPERABLE." Cause states: "The nut was not sufficiently tightened, but the cause cannot clearly be determined. The work was completed four years ago. Some contributory causes at the time may have been time pressure to complete the refurbishment combined with an underlying reduced emphasis on human performance tools. The station's human performance program has been significantly enhanced since 2005. A review of the procedure 35.304.010 was conducted and found to be adequate. However it should be noted that 35.304.010 is currently in revision to include additional points for verification

##### Justification of Failure

The identified failure(s) would not have prevented the performance of the required safety function of the equipment. Therefore, this failure will have no impact on an extension to a 24 month surveillance interval.

during breaker assembly to be align with station Human Performance expectations. Because this breaker is Safety-Related, a WO will be required to install a new bolt, nut and washer." WO 29994339 completed reinstallation of recovered hardware and checked breaker for any loose or missing hardware that is accessible.

8/19/2010	A	SPF Note "unexpected Annunciator Alarm - Submitted CARD 10-27260" CARD 10-27260 states: "Annunciator alarm 9D24 ("DIV 1 ESS BUS 11A BRKR TRIPPED" ) on panel H11 P809 was still engaged and had not cleared after step 6.5.24. After careful circuit analysis step 6.4.19, subtext 3. "Take E.D.G. OUTPUT CONTROL SWITCH to TRIP and then release. " of 42.302.02 was performed. At this point alarm 9D24 on H11 P809 cleared. It is theorized that the Control Switch was not taken far enough to left detent during the initial performance of the Trip Test. (step 6.4.19, subtext 3). This resulted in a RED window in the Neutral Spring Return position. Following the second evolution of step 6.4.19, subtext 3 a GREEN window appeared in the Neutral position and the alarm cleared." No impact as related to completion of the procedure or acceptance criteria. Submitted CARD for trending.	The identified failure(s) would not have prevented the performance of the required safety function of the equipment. Therefore, this failure will have no impact on an extension to a 24 month surveillance interval.
6/19/2014	A	SPF Note: "Completed up to Step 6.2.10. Step 6.2.11 stopped, found breaker out of positon due to error in previously installed jumper. Performing restoration per SM direction. CARD 14-25101 was written." CARD 14-25101 states: "Step 6.1.24 at R3000S005 was to install a jumper from terminal TC4-11 to TD3-6. While installing a jumper on terminal point TC4-11, worker inadvertently made contact with another point on term block TC-4. The inadvertent contact caused Bus 11EA Position EA3 breaker to close. Note that breaker was in test position and at no point was there a transient or challenge to personnel, nuclear, or radiological safety. An investigation determined the correct termination point was flagged but due to close proximity, another point was inadvertently contacted when installing on TC4-11. The HU tools not properly used were situational awareness and self-checking. This event was evaluated against MGA23 and determined to be a Crew Level Reset based on criteria 5.5.6.1.b and 5.5.6.6.c. No further action is required." SPF states: Procedure not performed, Take no credit.	The identified failure(s) would not have prevented the performance of the required safety function of the equipment. Therefore, this failure will have no impact on an extension to a 24 month surveillance interval.

Event	Title	Associated SRs and Function
0215	PERFORM 42.307.05 DIV 1 EDG AUTO LOAD SEQUENCE TIMER CALIBRATION	SR 3.8.1.16
# Performances: 6      # Failures: 0		
<b>24 Month Justification:</b> <b>Notes:</b>		
There were no failures, therefore the surveillance test history supports the conclusion that the impact, if any, on system availability will be small as a result of the change to a 24 month surveillance interval.		

Event	Title	Associated SRs and Function
0217	PERFORM 42.309.03 DIV 1 18 MONTH 130/260 VDC BATTERY CHECK (2A-1 ONLY)	SR 3.8.4.3 SR 3.8.4.5.a SR 3.8.4.7
		SR 3.8.4.4 SR 3.8.4.5.b

# Performances: 4 # Failures: 1

#### 24 Month Justification: Notes:

One failure identified which did not impact any safety function; therefore, the surveillance test history supports the conclusion that the impact, if any, on system availability will be small as a result of the change to a 24 month surveillance interval.

#### Failure Review:

##### Perf. Date Fail Cat. Description of Failure

2/19/2014 A Noted during performance of Step 6.12, CARD 14-21296 written: CARD 14-21296 states: "Performing step 6.12, Post Discharge Data of procedure 42.309.03; observed small pieces of positive and negative plate material in between plates and across portions of plates. Concerned that this may be abnormal deterioration or a contributor to the battery cell health, the system engineer should mitigate the possible abnormalities. The following numbered cells have the above concerns on the front and top of the battery plates: 1, 5, 23, 31, 33, 39, 43, 49, and 51. The following numbered cells have the above concerns on the back and top of the battery plates: 24, 50, and 52. All test parameters met acceptance criteria and were satisfactorily completed for the 18 Month Surveillance of 2a-1 Battery Bank." Reportability/Operability Review states: "Some of the battery cells had protrusions from some of the plates. These are only a concern if they extend to a plate of the opposite polarity. None of the protrusions are in contact with both polarity plates. The insulators described above function to keep these protrusions from contacting a plate of the opposite polarity. The SE has known about this cell and has been monitoring it. There has been no change over the past year which included a recent discharge test and recharge. Div 1 Batteries remain Operable."

##### Justification of Failure

The identified failure(s) would not have prevented the performance of the required safety function of the equipment. Therefore, this failure will have no impact on an extension to a 24 month surveillance interval.

Event	Title	Associated SRs and Function	TRVEND 24MCGNF319001 Rev 1
0218	PERFORM 42.309.04 DIV 1 BATTERY CHARGER LOAD TEST - 2A-1 ONLY	SR 3.8.4.6	Page 119 of 395

# Performances: 6      # Failures: 1

**24 Month Justification: Notes:**

One failure is identified as an event driven failure which is not indicative of a repetitive time based failure mechanism. There are no other failures; therefore, the surveillance test history supports the conclusion that the impact, if any, on system availability will be small as a result of a change to a 24 month surveillance interval.

**Failure Review:**

**Perf. Date Fail Cat. Description of Failure**

8/23/2012      C      SPF Comments Note: "Failed Load Test - CARD 12-26958 written and load test reperfomed after calibration of charger was performed. Second load test performed SAT." SPF Cover Sheet Note: "2nd test following charger PM (WO 32378478) completed SAT." WO 32378478 - Test Div 1 130 Vdc Batt Charger 2A-1 performed and Div 1 130 Vdc Battery Charger 2A-1 returned to service on 8/23/2012. During performance of WO 32378478, ammeter failed calibration. CARD 12-26973 written. CARD 12-26973 states: "During the performance of Work Order 32378478 and in accordance with 35.309.010, Step 4.7.6 the panel mounted DC ammeter for R3200S020A failed to calibrate. If the DC ammeter was adjusted to meet acceptance criteria for the lower band set points it would not meet acceptance criteria when mVolt input was adjusted for the high band set point. The AS LEFT condition of the DC ammeter is such that the (3) lower band set points are within acceptance criteria and the high band set point was (off scale) > 150 DC Amps which is greater than Acceptance Criteria of 144A - 150A DC. Reportability/Operability Review states: "The panel mounted DC ammeter failed to calibrate. This is local indication only and has no impact on the ability of the 2A-1 charger to perform its safety function, which has been demonstrated with a battery charger load test. 2A-1 130V Battery charger remains OPERABLE." WO 35214905 initiated. Per Maximo, WO 35214905 is cancelled, POD Note: Ammeter will be replaced by WO 34790291. WO 34790291 "Replace 'A' and 'B' Boards and Test Charger 2A-1" performed; replaced all 3 Control B Cards and 1 Control A Card on 1/22/2014. CARD 12-26958 "2A-1 Battery Charger did not meet voltage acceptance criteria" states: "charger output voltage dropped to 121 VDC. This is below the acceptance criteria of 124.7 VDC. Aborted test, notified shift manager, maintenance supervisor, and submitted CARD." Reportability/Operability Review states: "This condition was discovered during planned maintenance and requires resolution in order for the battery charger to perform its intended function. There is no loss of function with the spare battery charger in service in place of 2A-1. 2A-1 130V Battery charger remains inoperable on LCO 12-0423. This is a tracking LCO with the spare charger in service." Description/Investigation explained: This activity was investigated and determined to be the cable and or the connections to the Alber Unit. This was confirmed with the use of new cables and the problem was corrected. No further

**Justification of Failure**

This is an event driven failure in that a test equipment cable/connection were confirmed to be defective as use of new cables resolved the issue. Therefore, this failure will have no impact on an extension to a 24 month surveillance interval.

investigation is required." While performing load test of Division 1 battery charger 2A-1, charger output voltage dropped to 121 VDC. This is below the acceptance criteria of 124.7 VDC. Aborted test, notified Shift Manager, Maint Supv and submitted CARD. CARD 12-26958 documents that 2A-1 charger output voltage did not meet acceptance criteria during the performance of a planned load test. The load test was suspended and calibration of the battery charger performed with no issue noted. The charger load test was then re-performed satisfactorily. The most probable cause for the low voltage reading on the initial test is a degraded cable connection in the test setup. Since this was a test equipment issue and the test has been re-performed successfully this condition does not impact the ability of 2A-1 to perform its safety function. The new cables will be installed prior to the next performance of the charger load test. CARD 12-26958 Reportability/Operability Review states: This condition was discovered during planned maintenance and requires resolution in order for the battery charger to perform its intended function. There is no loss of function with the spare battery charger in service in place of 2A-1.

Event	Title	Associated SRs and Function
0219	PERFORM 42.309.05 DIV 1 (5 YEAR) 130/260 VDC BATTERY CHECK (2A-1 ONLY)	SR 3.8.4.8

# Performances: 2 # Failures: 2

**24 Month Justification: Notes:**

The failures do not impact any safety function; therefore, the surveillance test history supports the conclusion that the impact, if any, on system availability will be small as a result of the change to a 24 month surveillance interval.

**Failure Review:**

**Perf. Date Fail Cat. Description of Failure**

4/6/2006 A SPF note: "Battery Charger 2A-1 Tripping. Put spare charger in service, wrote CARD 06-21855 for WR." CARD 06-21855 states: "With Op's support it was reset several times. We installed a temporary cooling fan blowing into the charger but it did not resolve the problem. Op's requested to put the batteries on float due to the loads on the system. The room temperature where the charge is located is elevated due to the Air Conditioner being down due to no water supply. With Op's support put the charger on float." Reportability/Operability Review states: "Division 1 DC is currently inoperable for maintenance and this issue needs to be resolved to allow an equalizing charge post battery testing." WO 00OZ061006 written to perform troubleshooting on Battery Charger 2A-1, R32005D20A, to determine why charger kept tripping while on equalize. Work Order Work Performed / Corrective Action states: "High Voltage Shutdown (HVSD) card setting found too low. Adjusted card to high end of acceptance criteria. Contacted Ops for restoration of AC power to charger in order to set float & equalize voltages as required by Steps 4.9.22 and 23. Although voltages were within range, adjusted equalize voltage to lower end of acceptance criteria band. This allows more tolerance between equalize voltage and high voltage shutdown. Removed temp battery & equipment, restored to normal configuration using applicable steps (4.11.7, 4.11.8, 4.11.10 & 4.11.11) of 35.309.010. Notified Ops to restore charger on DC grid for PMT. Work package completed on 4/10/2006 satisfactorily.

**Justification of Failure**

The identified failure(s) would not have prevented the performance of the required safety function of the equipment. Therefore, this failure will have no impact on an extension to a 24 month surveillance interval.

11/14/2010	A	<p>SPF Note: "2A-1 Charger found with blown output fuse at 0600 on 11/10/10. Overall Batt voltage dropped to <math>\leq 113V</math>. Battery was off equalize charge for an unknown amount of time so need to restart 36 hour clock from time of restart. 1) CARD 10-30412 submitted. 2) Replaced output fuse. 3) Adjusted current limit of 2A-1 Charger (WO 32024706). 4) Placed Battery back on charge at 1100 hours." CARD 10-30412 states: "During equalize charge of battery 2A-1, output fuse of 2A-1 battery charger (2PA-2 ckt 3) blew. This occurred between 0600 &amp; 0700 on 11/10/10. At approx. 0900 we replaced both fuses in this position, and placed charger 2A-1 back in service on float charge. Observed output current for approx. 5 mins. and found to be 122 amps (near capacity of 125A fuse). OPS procedure 23.309 identifies output current limit should be 115 amps. Advised OPS to remove charger from service until 2A-1 charger current limit is adjusted. Charger was removed from service awaiting WO to repair."</p> <p>Reportability/Operability Review Comments state: "Fuses were replaced by Operation and current limiter adjustment performed by electrical maintenance per 35.309.01. The battery charger has been returned to fully function and will support DC Electrical as needed. During the period of time when the battery charger was shutdown it was not required battery charger (by Tech Spec 3.8.5). DC Electrical remains operable." WO 32024706 created and completed adjustment of current limit.</p>	<p>The identified failure(s) would not have prevented the performance of the required safety function of the equipment. Therefore, this failure will have no impact on an extension to a 24 month surveillance interval.</p>
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Event	Title	Associated SRs and Function	TRVEND 24MCGNF319001 Rev 1 Page 123 of 395
0227	PERFORM 24.106.06 SCRAM DISCHARGE VOL. VENT AND DRAIN VALVES SCRAM OPERABILITY	SR 3.1.8.2.a SR 3.1.8.2.b	
# Performances: 6		# Failures: 1	

**24 Month Justification: Notes:**

One failure is identified as an event driven failure which is not indicative of a repetitive time based failure mechanism. There are no other failures; therefore, the surveillance test history supports the conclusion that the impact, if any, on system availability will be small as a result of a change to a 24 month surveillance interval.

**Failure Review:**

**Perf. Date Fail Cat. Description of Failure**

11/13/2015 C SPF states Steps 5.1.4, 5.1.5, and 5.1.8; C1100-F180 failed to stroke, C1100-F010 stroked but time was not recorded due to failure of C1100-F180. CARD 15-28941 was written. CARD states: "During performance of 24.106.06 Scram Discharge Volume Vent and Drain Valve Operability Test C1100-F180 failed to close when a full scram was inserted. All other valves stroked as expected during this surveillance." Maintenance Rule Functional Failure (MRFF) evaluation states "because the vent valves (C1100F010, C1100F180) are redundant the F010 would have prevented any system leakage to the Reactor Building Equipment Drain Sump (G1101D073) in the occurrence of a scram signal. The F180 was never and would never have been challenged and thus function C1100-13 was maintained. No other MR functions were impacted by this event. Therefore, this event is NOT considered a MRFF." CARD 15-28941 generated work order 44298153 for I&C to troubleshoot/perform valve diagnostics. Troubleshooting under WO 44298153 found C1100-F180 manual operator in the full open position vice the neutral position. The handwheel must be in the neutral position for this actuator to stroke properly. This explains why the valve failed to close on the scram signal. The manual operator was returned to the neutral position and PMT was successfully performed.

**Justification of Failure**

This is an event driven failure in that the valve failing to close when a scram signal was provided was due to a mispositioned handwheel (manual operator for C1100F180 in full "Open" verse "Neutral"). The handwheel must be in the "Neutral" position for this actuator to stroke properly. Therefore, this failure will have no impact on an extension to a 24 month surveillance interval.

Event	Title	Associated SRs and Function
0239	PERFORM 24.137.18 SEC-5.2 MS LINE DRN & DRN ISO VLV OP & LOC POSITION VERIF TEST	SR 3.3.3.1.2-8 SR 3.3.6.1.5-2.b SR 3.3.6.1.5-2.d SR 3.6.1.3.8 SR 3.3.6.1.5-2.a SR 3.3.6.1.5-2.c SR 3.3.6.1.6-2.e
# Performances: 6		# Failures: 0

**24 Month Justification: Notes:**

There were no failures, therefore the surveillance test history supports the conclusion that the impact, if any, on system availability will be small as a result of the change to a 24 month surveillance interval.

Event	Title	Associated SRs and Function	TRVEND 24MCGNF319001 Rev 1 Page 124 of 395
0244	PERFORM 24.138.02 SEC-5.2 RX RECIRC LOCAL VALVE POSITION VERIFICATION TEST	SR 3.3.3.1.2-8 SR 3.3.6.1.6-2.e	SR 3.3.5.1.6-2.h SR 3.5.1.7
	# Performances: 6      # Failures: 0		

24 Month Justification:	Notes:
	There were no failures, therefore the surveillance test history supports the conclusion that the impact, if any, on system availability will be small as a result of the change to a 24 month surveillance interval.

Event	Title	Associated SRs and Function	TRVEND 24MCGNF319001 Rev 1
0245	PERFORM 24.139.03 SEC-5.3,5.4 SLC LOOP A PUMP FLOW,MANUAL INITIATE & SQUIB FIRING	SR 3.1.7.8 SR 3.1.7.9	Page 125 of 395
# Performances: 4		# Failures: 3	

24 Month Justification:	Notes:
The failures do not impact any safety function; therefore, the surveillance test history supports the conclusion that the impact, if any, on system availability will be small as a result of the change to a 24 month surveillance interval.	

Failure Review:			Justification of Failure
Perf. Date	Fail Cat.	Description of Failure	
10/16/2007	A	SPF States: C4100-F006 did not indicate open at H11P603 or local (RWCU PIT above RWCU Pump Room RB2-C12). Stopped surveillance, placed system in a safe condition to allow investigation. SPF also noted was that "Water flow into RPV was observed by 'CRUD' and bubbles on RB-5 as well as test tank level lowering." CARD 07-26218 submitted. CARD 07-26218 states: "During surveillance 24.139.03 (Step 5.4.11.6) SLC outboard injection check valve C4100F006 did not indicate open in the control room. Disc open lite never came on. The valve showed slight movement locally and test tank level lowered as expected giving indication that water was going into the vessel. Further, the 5th floor reported air bubbles then crud burst positively confirming flow from SLC. CRS and SM informed." CARD Reportability/Operability Review states: "As stated in the CARD there was positive confirmation of SLC injection into the RPV. This issue deals with the injection check valve indication only." WO 25892091 written to troubleshoot and repair as required. WO 25892091 found both limit switch actuating arms out of position due to loose set screws. Manually "stroked" valve and set position switches C41N402A and C41N402B. Valve was hard to rotate. Replaced worn out spring and limit switch set screws. Manually stroked C4100F006 and verified proper Control Room indication.	The identified failure(s) would not have prevented the performance of the required safety function of the equipment. Therefore, this failure will have no impact on an extension to a 24 month surveillance interval.

11/16/2010 A

SPF Note 1: 3D11 SLC Ignition Continuity Loss did not alarm. Alarm is defeated for SLC Pump A (Step 5.4.12.5) - Alarm is scheduled to be repaired during RF 14 (WO 30725183). SPF Note 2: C4100-F006, SLC Inj Line Otbd Check Valve, DISC Open light did not light at H11P603 (Step 5.4.12.6). Valve indicated open locally. CARD 10-30382 submitted. CARD 10-30382 states: While performing 24.139.03, SLC Manual Initiation Operability Test, C4100-F006 did not indicate OPEN in MCR on H11P603 as required by step 5.4.12.6. Light bulbs were replaced and OPEN indication still was not received. The valve was observed open locally. This step is not Acceptance Criteria. CARD Reportability/Operability Review states: C4100-F006 closed indication is required as acceptance criteria for operability per 24.139.03. Although the closed indication was lit, when required, it never went away, even when there was flow through the system and the C4100-F006 was verified open locally. This renders the closed indication Inoperable. SU code, must be repaired prior to Mode 2. WO 32025826 written to repair open indication. Limit switches checked okay. Control Room confirmed indication of Full Open and Full Closed. It was noted that C4100-F006 Check Valve was very difficult to move. Even with spring return, when manipulated open, valve would not close on its own. Valve had to be moved to closed position. CARD 10-31037 written to investigate problem. CARD states: While checking limit switches for C4100-F006 check valve indication (WO#32025826), found C4100-F006 binding and hard to manipulate. CARD Troubleshooting Datasheet WR 32076094 prepared to investigate issue. WO 32076094 written to investigate possible valve binding, rework and repair as necessary. Valve was stroked and observed "tightness is normal and acceptable" per PE/ISI, per telecom. Valve does not need rework or repair. Valve is acceptable as-is. As per OCC no work needs to be performed on valve. Limit switch set.

The identified failure(s) would not have prevented the performance of the required safety function of the equipment. Therefore, this failure will have no impact on an extension to a 24 month surveillance interval.

3/12/2014	A	<p>SPF states: Step 5.4.12.4, C4100-F006, SLC Inj Line Otbd Check Valve, DISC Open light, did not come on. Flow was observed into vessel from SLC Test Tank. Also, at step 5.4.12.8, 3D11 SLC Ignition Continuity Loss, did not alarm. CARD 14-22182 written. CARD states: "During performance of 24.139.03 (step 5.4.12.4), C4100-F006 'SLC Inj Line Otbd Check Valve' Disc Open light did not indicate ON with flow to the vessel. The green Disc Closed light remained ON. The valve moved in the Open direction locally, however, the lever arm did not come in contact with the limit switch. Flow noise was heard locally at the valve and flow was verified into the reactor vessel by observing a decreasing level in the SLC Test Tank. The green Disc Closed light remained ON the entire time. Also on step 5.4.12.8, did not receive 3D11 'SLC Ignition Continuity Loss' alarm as required on this step. At H11P613, C41M600A Squib Valve current verified &lt;2mA. Request adjustment/repair of limit switch on C4100-F006." CARD Reportability / Operability Review states: "Valve position indication is required by Tech Spec 5.5.6, ISI-IST Program. Outage Milestone 16RFM2 Prior to Mode 2. LCO SU. "Maintenance Rule Functional Failure Evaluation states: "C4100-F006 valve did change position as noted in the CARD. The limit switch provides indication only. Operations noted the valve moved in the open direction. The CARD also states the 3D11 "SLC Ignition Continuity Loss" alarm was not received per Step 5.4.12.8. The alarm should have come in it was verified the C41M600A squib valve current was below 2ma. Consulted with Operations (Expert Panel Member) and C97 SE, per operation the 3D11 SLC ignition continuity Loss Alarm is used for indication only and has no impact on Maintenance Rule (MR). Therefore, since 3D11 has no impact on MR there is no impact on C9700 functions. The function of C4100F006 valve was not lost, therefore this event is not Maintenance Rule Functional Failure." C4100F006 functioned as designed and as expected should it be called upon to actuate during plant operation. WO 38139016 written to troubleshoot and rework cause for no Open position indication on C4100-F006. Work Order completed adjustment of limit position switches and C4100-F006 retested indication and 3D11 SLC Ignition Continuity Loss, satisfactorily.</p>	<p>The identified failure(s) would not have prevented the performance of the required safety function of the equipment. Therefore, this failure will have no impact on an extension to a 24 month surveillance interval.</p>
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Event	Title	Associated SRs and Function	
0248	PERFORM 24.144.01 SEC-5.2 TWMS VALVE OPERABILITY & POSITION VERIF. TEST	SR 3.3.3.1.2-8	SR 3.3.6.1.6-2.e
# Performances: 6		# Failures: 0	
24 Month Justification:		Notes:	
There were no failures, therefore the surveillance test history supports the conclusion that the impact, if any, on system availability will be small as a result of the change to a 24 month surveillance interval.			

# Performances: 6      # Failures: 2

**24 Month Justification:    Notes:**

The failures do not impact any safety function; therefore, the surveillance test history supports the conclusion that the impact, if any, on system availability will be small as a result of the change to a 24 month surveillance interval.

**Failure Review:**

**Perf. Date   Fail Cat.   Description of Failure**

4/29/2009	A	<p>SPF notes: Note 1 E41-RA06, E41-RA10, and E41-RA13 readings were high above the allowable range in step 5.1.14 and 5.1.33. Note 2 E41-RA11 low below allowable range in Step 5.1.14 and 5.1.33. Several local parameters not as expected during HPCI Run. CARD 09-23432 submitted. System Engineer and Shift Mgr informed. CARD 09-23432 states: The following HPCI lube oil parameters were not as expected during the performance of 24.202.02. Readings were taken while unit was running per step 5.1.33: 1) Thrust bearing pressure (E41-RA11)-11.5 psig, allowable 14-18 psig, 2) Overspeed Trip inlet pressure (E41-RA10)-21.2 psig, allowable 17-21psig and; 3) Oil supply to trip unit (E41-RA06)-22 psig, allowable 17-21 psig. The following readings were taken while the unit was shutdown with the aux oil pump running per step 5.1.14: 1) Oil supply to trip unit (E41-Ra06)-23.5 psig, allowable 17-21 psig, 2) Thrust bearing pressure (E41-RA11)-11.5 psig, allowable 14-18 psig, 3) Overspeed Trip inlet pressure (E41-RA10)-23 psig, allowable 17-21 psig, and 4) Coupler Bearing Pressure (E41-RA13)-13.5 psig allowable 9-13 psig. All of this data was forwarded to the system engineer and no actions are recommended at this time. None of the readings were acceptance criteria and no unexpected alarms were received during the run. CARD Reportability/Operability Review states: The gage E41RA11 still reads 12# with the oil system shutdown and needs to be replaced. This failed instrumentation does not make the HPCI pump INOPERABLE. This reading is acceptance criteria for 24.202.01 and needs to be available for the next run of the surveillance once the issues with the first performance are resolved involving the affect on RCIC during the HPCI surveillance run. Authorized a scope add to get a package to replace the gage. Each of the noted oil pressures (with one exception) were slightly out of the band high due to cold oil on the initial start of the lube oil pump and HPCI turbine. This has been discussed with the system engineer and is acceptable. During the HPCI run those oil pressures dropped down into the acceptable band as the oil heated up. The one exception was the thrust bearing oil pressure, which was low out of the band at 11.5 psi, with an acceptable band of 14 - 18 psi. This was the result of a failed pressure gauge (as discovered by the fact that it continued to read approximately 12 psi after the oil pump was shutdown), which was replaced under a work order 29766192 the following day.</p>
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**Justification of Failure**

The identified failure(s) would not have prevented the performance of the required safety function of the equipment. Therefore, this failure will have no impact on an extension to a 24 month surveillance interval.

12/4/2010	A	<p>SPF Notes: Coupler Bearing Pressure below the allowable band in Steps 5.1.14 (Table 1) and 5.1.33 ((Table 2). CARD 10-30378 had already been written prior to start of this surveillance. CARD Reportability/Operability Review states: This is a non-Tech Spec component. HPCI Coupler Bearing Pressure is recorded during surveillances: 24.202.01, 24.202.02 and 24.202.08 however this is not used to satisfy acceptance criteria. No operability concerns or impact. WO 32034966 replaced old gauge with new gauge. Returned to service.</p>	<p>The identified failure(s) would not have prevented the performance of the required safety function of the equipment. Therefore, this failure will have no impact on an extension to a 24 month surveillance interval.</p>
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Event	Title	Associated SRs and Function
0253	PERFORM 24.202.04 HPCI OFFLINE AUTO INITIATION AND TIME RESPONSE TEST	SR 3.3.5.1.5-3.a SR 3.3.5.1.5-3.c SR 3.5.1.14

# Performances: 6      # Failures: 2

**24 Month Justification: Notes:**

Two failures are identified as event driven failures which are not indicative of a repetitive time based failure mechanism. There are no other failures; therefore, the surveillance test history supports the conclusion that the impact, if any, on system availability will be small as a result of a change to a 24 month surveillance interval.

**Failure Review:**

**Perf. Date Fail Cat. Description of Failure**

4/20/2009      C      SPF Note 1: Wrong test box connected, CARD 09-23014 submitted; No credit for steps performed. Surveillance will be re-performed. CARD 09-23014 states: "During the performance of surveillance 24.202.04 HPCI system offline auto initiation time response test a GE style 1 test box was used vice a style 2 box. This lead to not getting the expected system response during step 5.1.56.3 and not meeting acceptance criteria. This mistake will cause the need to run an addition partial surveillance to meet the acceptance criteria." Reportability/Operability Review states: "Surveillance signed off as unsat, no credit taken. Reperforming surveillance." CARD Closure Summary indicates: "The cause of the event was a lack of attention to detail when reviewing the required test equipment list in the surveillance and therefore not complying with that procedural requirement. Assumptions were also made that the GE test box that was used in the past for other surveillances would also be acceptable for this surveillance. Selecting the wrong GE test box only impacted the performance of this surveillance." Actions taken as a result of this issue were: 1) Addressing the individual performance issues with the operators involved. 2) Communicating lessons learned to the operations department via required reading package 09-06-03, which also explained the different styles of GE test boxes along with the methods available to determine which test box to use. Note 3: Wrong step number referenced in Step 6.1.2 (Should be Step 5.1.70), CARD 09-23016 submitted. DCR 09-0976 corrects issue with regard to incorrect step number referenced.

**Justification of Failure**

This is an event driven failure in that the selection of the wrong GE Test box (M&TE) contributed directly to the failure of the test. Therefore, this failure will have no impact on an extension to a 24 month surveillance interval.

5/1/2012

C

First performance: SPF Note 1: AT Step 5.1.25, E4150F006, HPCI Pump Disch Inbd Iso Vlv, failed to Open. CARD 12-23967 submitted. Backed out of procedure. SPF Response: EIT found Test Jack broken. CARD 12-23967 states: "During performance, at step 5.1.25, actuation did not happen for approximately 2 minutes and when it did E4150F006 did not open. Everything else that should have happened did after delay accept E4150F006 did not open. Stopped surveillance, placed HPCI Aux. oil pump in off, and placed test box switch in off." Reportability/Operability Review states: "HPCI is inoperable. Condition added to LCO 2011-0359. CARD Notes state: Determined to be a test plug issue. Surveillance was TCN'd and completed satisfactorily. The test plug will need repair in the future to allow use of the test box. WO 34402117 initiated to correct faulty test jack. WO 34402117 was completed on 2/21/2014. Cannon pin tool was used to push "Pin F" back into connector. Continuity testing completed SAT. During a second performance: SPF Note 3: Step 5.1.22.3, E4100-F054 will not open since L/S are not adjusted right (valve is actually open) - CARD 12-24024." CARD 12-24024 states: E4100F054 did not indicate open with valve fully open (indicated closed), fingered limit switches, and lost all indication with valve open. Verified power, air and valve position locally, all are in service and correct; just limit switches are not working. Request I&C work limit switches." CARD Reportability/Operability Review states: "Indication only, not required to support HPCI operability." WO 34426276 written for limit switches adjustment of E4100F054. During performance of WO (05/29/2013) it was determined that Marotta Regulator needs to be replaced (P50F411). CARD 13-23878 submitted. CARD states: "During performance of WO 34426276 to rework/repair E4100F054 indication problem, it was found that valve was not fully stroking and that pressure coming out of Marotta was at 31.3 psig; should be at 37.5 PSIG. This Marotta was changed out in December of 2012 by WO 26108190 and appears to have drifted down in the past 5 months. There is one Marotta in stock. Require a shop work order to check to see if Marotta we have in stock is properly calibrated to be used as replacement for P50F411." System Engineering recommends keeping current regulator in service at this time and a ERE completed to replace regulator to fix re-occurring issues with the Marotta regulator. CARD 13-23878 Reportability/Operability Review states: "E4100F054 is HPCI turbine steam line drain pot steam trap bypass AOV. Valve opens if the Drain Pot level gets too high. Valve is closed when HPCI is started. To support the HPCI function the valve is closed or isolated from the main condenser by 2 other valves E4100F028 and E4100F029. Valve is closing properly and supports HPCI system function. HPCI remains OPERABLE." WO 36635876 replaced faulty Marotta Regulator on 10/29/2014.

Both are event driven failures that during the first performance, the failure was determined to be associated with a faulty test jack used to connect the GE Test Module into Jack E41A-J1 to facilitate testing. The procedure was revised (TCN) to install single pole test switches, in place of the GE Test Module. During the second performance, the low output of the regulator did not provide sufficient pressure to fully stroke valve E4100F054. Hence, the reason for the faulty indication of the valve position, not the limit switches. The degraded function of this valve to fully open did not impact the safety functions of HPCI to add water to the RPV or isolate containment. System Eng recommended keeping the deficient Marotta regulator in place until an ERE could be completed to correct the reoccurring issue with the regulator. The Marotta pressure regulator was eventually replaced. Therefore, both failures will have no impact on an extension to a 24 month surveillance interval.

Event	Title	Associated SRs and Function	
0255	PERFORM 24.202.05 SEC-5.2 & 5.3 HPCI LOCAL VALVE POS INDICATION VERIF & LSFT	SR 3.3.3.1.2-8 SR 3.3.6.1.5-3.a SR 3.3.6.1.5-3.c SR 3.3.6.1.6-3.f	SR 3.3.5.1.6-3.f SR 3.3.6.1.5-3.b SR 3.3.6.1.5-3.d SR 3.6.1.3.8

# Performances: 6      # Failures: 3

**24 Month Justification: Notes:**

Two failures are identified as event driven failures which are not indicative of a repetitive time based failure mechanism. The other failure did not impact any safety function; therefore, the surveillance test history supports the conclusion that the impact, if any, on system availability will be small as a result of the change to a 24 month surveillance interval.

**Failure Review:**

**Perf. Date Fail Cat. Description of Failure**

3/19/2014      A      During the testing of Valve E4150-F042, Torus Suction Inboard Isolation valve, the Open pushbutton had to be continually depressed to fully stroke the valve to the full open position. CARD 12-24169 was written to document this finding. CARD 12-24169 states: "When given an open signal by pressing the pushbutton in the MCR, E4150F042 does not stroke full open unless the open pushbutton is held. The valve works fine in the closed direction. According to Drawing 1-2221-08, it appears there is a problem in the opening circuit seal-in through the closed pushbutton. Based on the fact that the valve properly strokes closed and it opens when the pushbutton is held, there is no concerns with the auto positioning circuitry." CARD 12-24169 Reportability/Operability review states: "The suction for HPCI comes from either the CST or the Torus. The E4150F042 is the suction from the Torus. The valve still functions strokes closed as required which supports the Primary Containment isolation function. The valve open contactor functioned and the auto open signal does not rely upon the seal-in from the closed push button as the auto signal is a contact from a relay that goes directly to the contactor so the function to support HPCI operability is maintained. The HPCI system and primary containment isolation valve are OPERABLE because the valve is still capable of auto opening and closing to support the design functions." Work Order 34450676 was previously written on 5/8/12 to correct valve issue. On 5/27/14, WO found broken Aux contact O/A, removed contact and replaced with new one from stock.

**Justification of Failure**

The identified failure(s) would not have prevented the performance of the required safety function of the equipment. Therefore, this failure will have no impact on an extension to a 24 month surveillance interval.

3/23/2014	C	<p>In Step 5.2.42 of the surveillance procedure, valve E4100F029 position indication in the Main Control Room did not change state (indicated full closed). Valve did stroke locally. CARD 14-22730 written to address problem. CARD 14-22730 states: "While trying to perform PMT for 36700624 the open light did come on when the open push button was depressed. The closed light stayed on the entire time. Locally the valve is moving what appears to be about 3/4 of an inch." Valve E4100F029 was repacked to correct a steam leak via WO 36700624 and returned to service following diagnostic valve testing on 3/8/14 with the limit switches never being removed during the valve repack and diagnostic testing. On 3/18/14, WO 36700624 was revised to troubleshoot and rework loss of the OPEN position indication for valve E4100F029. Valve was stroked from the control room with the pushbutton and the stroke length came up short of desired stroke length. WO 36700624 comments state: "The actuator for valve E4100F029 has a bench set of 21.5 -32.6 psig to stroke full travel. The Marotta regulator is outputting approx. 32 psig. This is a known issue and CARD 13-23878 was written to create WO to replace. This regulator supplies four valves and just does not have enough output to fully stroke valve. Limit switches were mechanically actuated with proper indication in control room verifying good limit switches." The review of WO 36700624 in CARD 14-22730 indicates that per the valve diagnostics, 32.0 psig is approximately half stroke. Full stroke appeared to be at 35.0 psi during the valve diagnostic. This is an approximation based on looking at graphs. Conferred with the AOV engineer, and the calculated full stroke psi from the diagnostic data is 34.7 psi. This supports that the lack of full stroke length is due to low air pressure and not from valve friction.</p>	<p>This is an event driven failure in that the output of the regulator did not provide sufficient pressure to fully stroke valve E4100F029 following the diagnostic testing. Hence, the reason for the faulty indication of the valve position in the Main Control Room. The output of the regulator was miscalculated by the technicians performing the valve diagnostic testing. The correct calculated output pressure is 34.7 psig and this is the value to which the regulator output should have been set upon completion of the diagnostic testing. Therefore, this failure will have no impact on an extension to a 24 month surveillance interval.</p>
11/23/2015	C	<p>In Step 5.2.21 of the procedure, valve E4150F042, HPCI Torus Suction Inboard Isolation Valve, did not go to the full open position without continually depressing the Open pushbutton. WO 42002118 is referenced on the Surveillance Procedure Form (SPF). WO 42002118 states the issue with the open seal-in circuit of valve E4150F042 was discovered during the performance of another procedure (44.030.152) on 10/28/14. WO 42002118 was initiated on 10/30/2014 but was not worked until 2/23/16. Consequently, the aforementioned issue with the Open pushbutton and the subsequent opening of valve E4150F042 occurred prior to the start of this surveillance procedure on 11/23/15. WO 42002118 found Open contactor Aux contact block interlock finger broken off. Replaced the Base 2 position aux contact block. Restored the open contactor and verified the mechanical interlocks are operational. Coordinated testing with Operations to confirm the Open circuit is working and functional.</p>	<p>This is an event driven failure in that the discovery of the Open contactor Aux contact block interlock finger being broken was discovered during the performance of procedure 44.030.152, Online HPCI System Logic Functional Test, which was being performed in October 2014 prior to the refueling outage dates for RF-10. Consequently, the discovery of the identified failure occurred prior to the 18-month scheduled performance of procedure 24.202.05 during the RF-10 outage. Therefore, this failure will have no impact on an extension to a 24 month surveillance interval.</p>

Event	Title	Associated SRs and Function	
0257	PERFORM 24.203.02 SEC-5.3 DIVISION 1 CSS SIM AUTO ACT - E2150F005A ONLY	SR 3.3.5.1.5-1.a SR 3.5.1.11 SR 3.5.2.9	SR 3.3.5.1.5-1.b SR 3.5.1.14

# Performances: 6      # Failures: 0

**24 Month Justification: Notes:**

There were no failures, therefore the surveillance test history supports the conclusion that the impact, if any, on system availability will be small as a result of the change to a 24 month surveillance interval.

Event	Title	Associated SRs and Function	
0258	PERFORM 24.203.03 SEC-5.3 DIVISION 2 CSS SIM AUTO ACT - E2150F005B ONLY	SR 3.3.5.1.5-1.a SR 3.5.1.11 SR 3.5.2.9	SR 3.3.5.1.5-1.b SR 3.5.1.14

# Performances: 6      # Failures: 0

**24 Month Justification: Notes:**

There were no failures, therefore the surveillance test history supports the conclusion that the impact, if any, on system availability will be small as a result of the change to a 24 month surveillance interval.

Event	Title	Associated SRs and Function	
0260	PERFORM 24.203.04 SEC-5.3 DIV.1 CSS LOCAL VALVE POSITION INDICATION VERIF.	SR 3.3.3.1.2-8 SR 3.3.5.3.3-1.b	SR 3.3.5.1.6-1.d SR 3.5.2.9

# Performances: 6      # Failures: 0

**24 Month Justification: Notes:**

There were no failures, therefore the surveillance test history supports the conclusion that the impact, if any, on system availability will be small as a result of the change to a 24 month surveillance interval.

Event	Title	Associated SRs and Function
0263	PERFORM 24.204.03 DIV 1 & 2 LPCI SIMUL. AUTO ACTUATION TEST & VALVE OPER TEST	SR 3.3.5.1.5-2.a SR 3.3.5.1.5-2.c SR 3.3.5.1.5-2.e SR 3.3.5.1.5-2.g SR 3.5.1.14
		SR 3.3.5.1.5-2.b SR 3.3.5.1.5-2.d SR 3.3.5.1.5-2.f SR 3.5.1.11

# Performances: 5      # Failures: 1

**24 Month Justification:**    **Notes:** Per Maximo: Perform 0263 OR (1263 + 2263) depending on equipment availability.

One failure is identified as a unique failure which is not indicative of a repetitive time based failure mechanism. There are no other failures; therefore, the surveillance test history supports the conclusion that the impact, if any, on system availability will be small as a result of a change to a 24 month surveillance interval.

#### Failure Review:

##### Perf. Date   Fail Cat.   Description of Failure

4/9/2017      D      SPF Note: "At Step 5.2.35.2, 72CF threw on to 72F Bus. It did not affect stroke times." CARD 17-23266 submitted. CARD 17-23266 states: "72C-3C tripped. Walkdown of the breaker found a trip of the 87 device (over current) and the Lockout Relay. Surveillance 24.204.03 (LPCI Simulated Automatic Actuation Test) was in progress at step 5.2.35.2. Loads off swing bus 72CF were transferred to position 72F-5F as expected. No other abnormalities were noted. This event is similar to CARD 15-28495." Reportability/Operability Review states: Declared LPCI Swing bus inoperable and added condition to LCO 2016-0381. Applied mode 1, 2 and 3 restraints." CARD Cause: "The Direct Cause was: Degraded CT. This was the only change to the circuit since successful completion of the circuit. The Apparent Cause is Abnormal Electrical Stress from a loose connection/open circuit in RF17 (CARD 15-28495). The open circuit of the CT in RF17 could have developed high voltages and degraded the CT. This degradation cannot be detected at low current test conditions. Due to the fast acting relaying the high voltages may not have been long enough in duration to cause a complete failure of the CT. A Contributing Cause is Degradation of the 87 relay time delay. Original manufacture time delay curve states the relay should actuate between 14 and 38 milliseconds and should be around 30 at the test values utilized by Fermi. The 87 relay is actuating at 8 milliseconds. Cause Code E01-Setpoint Drift. Corrective Actions: DC/AC-Replace the affected CT's at 72C-F MCC completed. CC-Replace the 87 relay with a relay including a time delay per ERE-44596 - completed. The extent of the apparent cause is limited to CT's that have been open circuited. There is one other known occurrence in which a CT was open circuited. This was the failed knife switch in the 345KV relay house coming out of RF17. This CT has been operated throughout the last cycle in the range it is expected to operate at and has not shown any degradation. The extent of the contributing cause is limited to the 50 and 87 relays in the 72C-3C circuit. The model relay was not found used in any other locations. The 50 and 87 relays were replaced under ERE-44596. This failure was determined to be a Functional Failure as when breaker 72C, position 3C tripped unexpectedly this resulted in inability of the

##### Justification of Failure

The identified failure is unique and does not occur on a repetitive basis and is not associated with a time-based failure mechanism. Therefore, this failure will have no impact on an extension to a 24 month surveillance interval.

breaker to supply power to MCC 72-CF which is a risk significant load. Failure of Function R1400-01 resulted. MRFF Evaluation Justification states: "The causal analysis determined that the cause was most likely that the CT was degraded during the RF17 event in which the CT was open-circuited. Fermi performed testing on the CT which did not reveal the degradation due to the differences in testing capabilities and in-field currents. There was also no OE or industry recommendations to suggest that the CT should be replaced just because it was open-circuited since it passed testing. The closest cause code is M3 as the CT tested SAT and there was no industry recommendation or OE available to suggest that any other actions should have been taken in RF17 to prevent this failure. Therefore this is not a Maintenance Preventable Functional Failure. The performance criteria of 0 bus failures has been exceeded. CARD 17-23803 has been submitted to evaluate the system for classification of (a)(1) status. CARD 17-23803 states: "The system has been evaluated for (a)(1) status and the 8/7/17 MR Expert panel approved the system to remain (a)(2). This recommendation is because the only maintenance preventable failure was an HU issue not an equipment issue. There are also no actions to be driven by a Get-Well-Plan to improve the reliability of the equipment." WO 47455670 replaced CT-1 Current Transformers with new CT's in MCC 72C-F, position 1C and also replaced both 50 & 87 relays at Bus 72C-3C. Partial performance of 24.204.03, Section 5.2 was performed as PMT for this Work Order.

Event	Title	Associated SRs and Function
0265	PERFORM 24.204.05 SEC-5.1 DIV. 1 RHR LOCAL VALVE POSITION INDICATION & STROKE	SR 3.3.3.1.2-8 SR 3.3.5.3.3-2.b SR 3.3.6.1.6-6.c SR 3.5.2.9

# Performances: 6      # Failures: 1

**24 Month Justification: Notes:**

One failure identified which did not impact any safety function; therefore, the surveillance test history supports the conclusion that the impact, if any, on system availability will be small as a result of the change to a 24 month surveillance interval.

**Failure Review:**

**Perf. Date Fail Cat. Description of Failure**

2/21/2014      A      SPF Note 1: Step 5.1.6.2 E1100F050A green light did not go out, failed acceptance criteria - CARD 14-21515 submitted to repair" CARD 14-21515 states : "Step 5.1.6.2 of 24.204.05 requires the E1100F050A Closed light to go out for acceptance criteria. The valve stroked locally and the Open light came on, meeting those two parts of the three acceptance criteria. The failure of the closed light to go out means step 5.1.6 did not meet acceptance criteria. Request the position indication for E1100F050A be adjusted to complete the surveillance meeting acceptance criteria." Reportability/Operability Review states: "E1100F050A did not indicate full open during surveillance testing. The local position of the valve was verified to be full open. A limit switch adjustment is required. The limit switch for the E1100-F050A was adjusted by I&C and the test reperformed Sat." Maintenance Rule Functional Failure evaluation completed, it explains: "the safety related functions of the E1100F050A are to open to permit LPCI flow to the reactor vessel during a postulated LOCA and to automatically close upon cessation of flow to maintain reactor coolant pressure boundary. The non-safety related function is to open to permit flow for the Shutdown Cooling mode of operation. The condition described in the CARD is concerned with the ability of the valve to stroke with the actuator - i.e. the limit switch was required to be adjusted to resolve the indication issue. This condition had no effect on the ability of the check valve to physically open or close. Each of the potentially-affected functions were retained, and no MRFF occurred."

**Justification of Failure**

The identified failure(s) would not have prevented the performance of the required safety function of the equipment. Therefore, this failure will have no impact on an extension to a 24 month surveillance interval.

Event	Title	Associated SRs and Function
0271	PERFORM 24.206.04 SEC-5.1 RCIC SYSTEM FLOW TEST AT 150 PSIG	SR 3.5.3.4
# Performances: 0      # Failures: 0		
<b>24 Month Justification: Notes:</b> Satisfied by Event 0274 when performed with Reactor Pressure between 150 psig and 200 psig		

Event	Title	Associated SRs and Function
0272	PERFORM 24.206.02 SEC-5.2 RCIC VAL POS INDICATION VERIF. / MANUAL INITIATE	SR 3.3.3.1.2-8 SR 3.3.5.2.5-2 SR 3.3.5.2.6-4 SR 3.5.3.5

# Performances: 6      # Failures: 1

**24 Month Justification: Notes:**

One failure identified which did not impact any safety function; therefore, the surveillance test history supports the conclusion that the impact, if any, on system availability will be small as a result of the change to a 24 month surveillance interval.

**Failure Review:**

**Perf. Date Fail Cat. Description of Failure**

4/15/2017      A      SPF Note 1: "E5150-F084 failed to stroke closed in 24.206.02. CARD 17-23503 After T.S. no issues found, stroked valve SAT" CARD 17-23503 states: "there is proper open indication in the MCR, upon pushing the close push button had no change in state, checked pushbutton lights, mechanical operation of the pushbutton to no avail." Reportability/Operability Review states: "As part of the troubleshooting, the operator attempted to stroke the valve so that electrical maintenance could collect data. The valve stroked on the first attempt. Data collected during the troubleshooting were all satisfactory. Following troubleshooting the CR operator again stroked the valve without issue. RCIC is fully capable of performing its intended safety function." Additional comments provided state: "The condition described in the CARD impacts the manual operation of the valve for stroke time testing only. Follow-up attempts to manually close and reopen the valve from the MCR was successful and no high resistance readings were discovered when addition troubleshooting was performed. RCIC was able to perform its Maintenance Rule functions. This is not a Maintenance Rule Functional Failure or MSPI failure. RCIC would have been able to meet the mission time of 24 hours. "SPF Note 2: "TCN# generated for stroking E5150F045 due to Lvl 8 isolation being in affect, CARD written to incorporate TCN and reorder steps for efficiency: CARD 17-23507" CARD 17-23507 states: "section 5.2 Recently added steps 5.2.77 & 5.2.78 and did not account for plant conditions, Currently level 8 Shutdown is in affect for RCIC and stroking of the E5150F045 is not possible unless Level 8 is defeated, Currently TCN is being made to continue, this needs to be incorporated into the Procedure. Also for efficiency request reorder step to place all defeats for interlocks in section 5.2 at the beginning of the procedure and restoration at then end, due to this section requires Local position indication TOT, Steam tunnel RCIC Quad which, can accrue dose while waiting for manipulations in the Relay Room. TCN # Will be added after processing." CARD indicates: "TCN number T12608; Revision 45 issued."

**Justification of Failure**

The identified failure(s) would not have prevented the performance of the required safety function of equipment. Therefore, this failure will have no impact on an extension to a 24 month surveillance interval.

Event	Title	Associated SRs and Function	TRVEND 24MCGNF319001 Rev 1
0274	PERFORM 24.206.04 SEC-5.2 RCIC SYSTEM AUTOMATIC ACTUATION TEST	SR 3.5.3.4 SR 3.5.3.5	Page 139 of 395

# Performances: 6 # Failures: 3

**24 Month Justification:** Notes: Satisfies Event 0271 when performed with Reactor Pressure between 150 psig and 200 psig

The failures do not impact any safety function; therefore, the surveillance test history supports the conclusion that the impact, if any, on system availability will be small as a result of the change to a 24 month surveillance interval.

#### Failure Review:

#### Perf. Date Fail Cat. Description of Failure

4/29/2009 A SPF Note 1: "Step 5.2.40 verifies 1D24 alarms. The step should verify 1D24 clears. Rev 45 says "Clear", Rev 46 was changed to "Alarms" - Discuss with SM and submit CARD 09-23429" CARD 09-23429 Closure Summary states: "This CARD is being closed to CARD 09-23471: Procedure enhancement for 24.206.04 RCIC SYSTEM AUTOMATIC ACTUATION, which has additional procedure enhancements to the same procedure."

#### Justification of Failure

The identified failure(s) would not have prevented the performance of the required safety function of the equipment. Therefore, this failure will have no impact on an extension to a 24 month surveillance interval.

12/3/2010	A	<p>SPF Note 1: "Step 5.2.36 oil filter inlet pressure slightly low at 12.5 psig (range 13-20 psig). CARD 10-31523 submitted for investigation. Oil filter inlet pressure is SAT." CARD 10-31523 states: "RCIC turbine oil filter inlet pressure indication on E51-RA01 was reading 12.5 psig. Expected band is 13-17 psig and allowable band is 13-20 psig. Inlet steam pressure was 150 psig and turbine speed at that time was 2400 RPM." CARD Reportability/Operability Review states: "The condition of the RCIC turbine oil filter inlet pressure indication on E51-RA01 being less than allowable band is 13-20 psig, recorded pressure 12.5psig, has been attributed to instrument error by the System Engineer based upon past performances RCIC surveillance run. System Engineer comments: "The last time this low press surveillance was performed (4/09) the oil dp was 1.5. The last two high press surveillances (5/10 and 8/10) the oil filter dp was 2.0. Since the oil outlet pressure was 12.0 psig, using the same 1.5 psid (since no work was performed on the oil system) the inlet oil pressure was about 13.5 psig. This would indicate that the gauge is not reading correctly, and may need calibration." Additional comments provided indicate oil filter outlet pressure was in band at 12 psig, therefore adequate oil pressure to the machine exists. System Engineer calculated inlet oil pressure was about 13.5 psig, which is an acceptable oil pressure. RCIC lube oil system is capable of adequately supplying the required lubrication for RICIC operation. RCIC is capable of meeting the safety related functions and is OPERABLE." WO 32114199 eventually replaced the gauge in May 2011. SPF Note 2: "Step 5.2.40 verifies alarm 1D24 alarms; should be alarm clears." CARD 10-31520 submitted to correct Step 5.2.40 which incorrectly verifies alarm 1D24 "alarms" verse "clears". CARD 10-31520 investigation determined: "The procedure revision (49) was done by DCR 10-1453 but only included changes based on the request from CARD 09-23471. Two different procedure changes were requested by CARDS 09-23429 and 09-23471. The 09-23429 CARD was closed to the 09-23471 CARD. The closed CARD (09-23429) information was included in the immediate actions of the open CARD but was missed by the CARD owner and the technical reviewer during the procedure revision 49 process. A review of the procedure revisions found that rev 44 had the correct information for step 5.2.40 to verify the alarm clear. However revision 45 (2008) changed step 5.2.40 from clear to alarm. There is no change summary or revision bar for this step to be changed. Therefore this step was inadvertently changed and was not caught during the revision 45 change, done after RF12." This discrepancy was found during the cyclic performance of the procedure during RF13 and was not corrected for the RF14 performance. This event was determined to be an Engineering Human Performance (HU) Event. Procedure revised by DCR 10-1600 to change the alarm status verification from alarm to clear.</p>	<p>The identified failure(s) would not have prevented the performance of the required safety function of the equipment. Therefore, this failure will have no impact on an extension to a 24 month surveillance interval.</p>
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4/19/2017	A	<p>SPF Note: "Step 5.2.36 E51-RA01 is low OOS. This also effects oil filter dip reading (neg number). RA02 is in band but higher than RA01. Performed final walkdown on RCIC. All other parameters are normal. RA01 verified valve open. Mech agitated gauge with no difference noted. CARD 17-23743 submitted." CARD 17-23743 states: "E51RA01, Turbine Oil Filter Inlet Pressure Indication, is reading low OOS at 11.5 PSIG. Outlet pressure, E41RA02, is reading in band at 12 PSIG." CARD Reportability/Operability Review states: RCIC turbine oil filter inlet pressure was below allowable pressure of 15-20 psig. Indicated pressure was 11.5 psig. The filter outlet pressure was 12 psig which is the pressure supply to the turbine bearings which was in the allowable band. The inlet pressure is marked only to get a differential reading for the filter to know if it needs to be changed or not. There was no concern with this low reading because of the outlet pressure being in band. This is not acceptance criteria for the surveillance. These readings are taken for system engineering trending of system performance. All acceptance criteria for the surveillance were met. No impact on the ability of the RCIC system to fulfill it's design function. RCIC remains Operable." WO 47555089 written. Maximo indicates status is WDLY (Waiting On Daily Scheduling).</p>	<p>The identified failure(s) would not have prevented the performance of the required safety function of the equipment. Therefore, this failure will have no impact on an extension to a 24 month surveillance interval.</p>
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Event	Title	Associated SRs and Function	
0277	PERFORM 24.207.06 DIV. 1 EECW/EESW ACTUATION FUNCTIONAL TEST	SR 3.3.5.1.5-1.b	SR 3.3.5.1.5-2.b
		SR 3.3.5.1.5-3.b	SR 3.3.5.1.5-4.b
		SR 3.3.5.1.5-5.b	SR 3.7.2.5
# Performances: 6		# Failures: 0	
24 Month Justification:		Notes:	
There were no failures, therefore the surveillance test history supports the conclusion that the impact, if any, on system availability will be small as a result of the change to a 24 month surveillance interval.			

Event	Title	Associated SRs and Function	TRVEND 24MCGNF319001 Rev 1
0278	PERFORM 24.207.07 DIV. 2 EECW/EESW ACTUATION FUNCTIONAL TEST	SR 3.3.5.1.5-1.b SR 3.3.5.1.5-3.b SR 3.3.5.1.5-5.b	SR 3.3.5.1.5-2.b SR 3.3.5.1.5-4.b SR 3.7.2.5

# Performances: 6      # Failures: 2

#### 24 Month Justification: Notes:

The failures do not impact any safety function; therefore, the surveillance test history supports the conclusion that the impact, if any, on system availability will be small as a result of the change to a 24 month surveillance interval.

#### Failure Review:

##### Perf. Date Fail Cat. Description of Failure

10/13/2015      A      SPF states: "Steps 5.1.19 and 5.1.35, P4400-F603B did not indicate full closed by limit switches (dual in MCR) and prevented P4400-F602B from opening. P4400-F603B indicated closed locally. Shift Manager informed. CARD 15-27745 submitted." CARD 15-27745 states: "On initiation of Div. 2 EECW IAW 24.207.07, P4400-F603B did not indicate full closed in the MCR and P4400-F602B did not open (due to its logic not seeing the P4400-F603B full closed). Locally, from the floor, the valve appeared full closed. The test was continued and the valve opened normally, and indicates properly in the open position. Another stroke was attempted IAW a 24.207.05 partial surveillance, with an operator monitoring valve closure locally. No abnormalities were noted locally, but the valve again indicated dual in the MCR when it was full closed locally and P4400-F602B did not open. It appears the limit switches associated with the open indicating light and interlock to P4400-F602B (these 2 limit switches are on the same rotor) require adjustment. This is a failed PMT for W.O. 36245899." Reportability/Operability Review states: "Div 2 EECW is currently Inoperable for RF17 work and is being controlled under LCO 15-0030. Work order 44128630 is being prepared to address the position indication issue on P4400-F603B and has been added to that LCO." This event was determined not to be a Functional Failure. WO 44128630 completed adjustment of limit switches and stroked P4400-F603B to verify proper valve position indication satisfactorily. The problem was caused, identified and corrected during the same maintenance / out of service period. The system was run on 09/22 for placing the Div 2 EECW Hx B001D in - service. At that time there was no issue with the indication of valve P4400-F603B. The work performed during this event took place at the P4400-F603B valve: P4400-F603B-PERFORM MOV THRUST (VIPER) TESTING.

##### Justification of Failure

The identified failure(s) would not have prevented the performance of the required safety function of equipment. Therefore, this failure will have no impact on an extension to a 24 month surveillance interval.

4/10/2017	A	<p>SPF notes that alarm 2D22 EECW Makeup Tank B Pressure High/Low is in alarm, alarm is invalid. A CARD was NOT written for this occurrence. Reference is to CARD 16-21856 (Div 2 EECW Head Tank Low Pressure Alarm will not clear) written 2-27-2016, CARD 16-21963 (Switch calibration drift) written 3/2/2016, and CARD 17-21705 (2D22 Div 2 EECW Head Tank Low Pressure Alarm locked in) written 3/1/2017. WO 47178162 replaced P44N410B, calibrated, and returned to service on 3/16/2017. Per Maximo, WO 46558652, Calibrate Div 2 EECW Make-Up Tank Pump Instruments, was performed on 6/20/2017. Work Order, Step 40.3 Perform 44N410B calibration check per the Instrument Spec Sheet, indicates P44N410B (including Ann. 2D22) was As Found SAT, no adjustment required.</p>	<p>The identified failure(s) would not have prevented the performance of the required safety function of equipment. Therefore, this failure will have no impact on an extension to a 24 month surveillance interval.</p>
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# Performances: 6                      # Failures: 1

**24 Month Justification:      Notes:**

One failure is identified as an event driven failure which is not indicative of a repetitive time based failure mechanism. There are no other failures; therefore, the surveillance test history supports the conclusion that the impact, if any, on system availability will be small as a result of a change to a 24 month surveillance interval.

**Failure Review:**

Perf. Date	Fail Cat.	Description of Failure	Justification of Failure
4/7/2012	C	<p>SPF Note 1: "Step 5.2.9 P4400F246 could not be verified sufficiently closed. Drain hose remained at full stream for 1 minute. Drainage never stopped or substantially slowed. This does not meet acceptance criteria. CARD 12-22910 submitted." CARD 12-22910 states: "After 30 seconds, the drainage should have stopped or substantially slowed. This did not occur. Reportability/Operability Review states: "EECW inside the Drywell is not required to support Mode 4, 5 functions of EECW including OPDRVs and movement of recently irradiated fuel. EECW inside the Drywell is required to support Mode 1,2,3 and has been declared inoperable." Maintenance Rule Functional Failure evaluation completed: "P4400F246 check valve is internal to the drywell and therefore would not have any impact on being able to isolate the drywell from the rest of the system. Furthermore, since this failure was found during the PMT of WO# P423100100 and prior to being returned to service, per MMR APP D table 1, the failure would not be considered a functional failure." CARD recommendation is to replace the valve. WO 34290900 written to perform As Found "Inspection" and replace valve. WO notes "History" that valve was recently inspected under PM P423100100, but failed surveillance testing, due to not fully closing." WO 34290900 found valve in like new condition and installed in correct orientation. Valve stroked "smoothly" in both directions. No debris or FME observed in inlet or outlet. Valve was determined to have nothing wrong and was returned to system. No replacement required.</p>	<p>This is an event driven failure in that the valve maintenance contributed directly to the As Found condition. Therefore, this failure will have no impact on an extension to a 24 month surveillance interval.</p>

Event	Title	Associated SRs and Function
0281	PERFORM 24.307.01 SECT 5.2 EDG 11 ECCS START WITH LOSS OF OFFSITE POWER TEST	SR 3.3.5.1.5-1.a SR 3.5.1.11

# Performances: 6 # Failures: 1

**24 Month Justification: Notes:**

One failure identified which did not impact any safety function; therefore, the surveillance test history supports the conclusion that the impact, if any, on system availability will be small as a result of the change to a 24 month surveillance interval.

**Failure Review:**

**Perf. Date Fail Cat. Description of Failure**

11/23/2015 A SPF states: "When open button for E1150F024A pushed, lost indication for valve. CARD 15-29268 written." CARD 15-29268 states: "During performance of 24.307.01, Div-1 EDG-11 LOP LOCA Testing, in section 5.2, E1150-F024A deenergized during a remote operation attempt from the MCR. RHR (pump A) had just started from LOP/LOCA digital sequencer initiation signal, and panel operator depressed the open pushbutton for E1150-F024A. Valve indication immediately went blank. No RHR flow was indicated on panel gage. Pump remained running on minimum flow. MCC bucket 72B-3A-5A thermal overloads were reset with no return of valve position indication. Bucket was deenergized locally and inspected. Fuses were checked in-place satisfactory. System remained filled - no voiding occurred." Reportability/Operability Review states: "E1150-F024A lost position indication during a remote operation attempt from the MCR. Investigation found a blown control power fuse that impacted control room position indication only. This had no impact on the control functions of the valve. All fuses in bucket replaced, bucket reenergized, and MCR indication restored." Following the replacement of the fuses, E1150-F024A was successfully stroked per 24.204.01. This issue had no impact on the ability of the E1150-F024A to meet its design functions. The E1150F024A remains operable. There is no component failure or degradation that could prevent the equipment from performing its functions and this is supported by the shift managers comments. "E1150-F024A lost position indication during a remote operation attempt from the MCR. Investigation found a blown control power fuse that impacted control room position indication only. This had no impact on the control functions of the valve."

**Justification of Failure**

The identified failure(s) would not have prevented the performance of the required safety function of the equipment. Therefore, this failure will have no impact on an extension to a 24 month surveillance interval.

Event	Title	Associated SRs and Function
0282	PERFORM 24.307.02 SECT 5.2 EDG 12 ECCS START WITH LOSS OF OFFSITE POWER TEST	SR 3.3.5.1.5-1.a SR 3.5.1.11

# Performances: 6 # Failures: 2

**24 Month Justification: Notes:**

The failures do not impact any safety function; therefore, the surveillance test history supports the conclusion that the impact, if any, on system availability will be small as a result of the change to a 24 month surveillance interval.

**Failure Review:**

**Perf. Date Fail Cat. Description of Failure**

3/20/2014 A SPF Note 1 states: "Step 5.2.57, Output breaker closure time 12.22 seconds; greater than 10 seconds limit. CRS/SM - OCC informed. CARD 14-22590 written." CARD 14-22590 states: "During RF16 LOP/LOCA surveillance testing for EDG 12 via 24.307.02, it was found on Step 5.2.57 that EDG 12 failed output breaker (EB3) closure time acceptance criteria. Breaker closure time was 12.22 seconds while Acceptance Criteria is <= 10 seconds (Tech Spec 3.8.1). The memory function on the chart recorder was used to reprint the script chart and closure time was verified. Field flash time was 3.0 seconds and rated voltage/frequency time was 8.0 seconds. These are all normal values for EDG 12. Investigate cause and provide corrective action." Under troubleshooting WO 38172364, the 12EB-EB3 breaker was functionally tested and the following relays were tested: T3A1, 59SX, 59S, 1MV62 and 27X-12EB. All testing was performed satisfactorily, except for time delay testing of relay 1MV62. The initial as found time delay was 16.56 seconds. The time delay testing was repeated numerous times, however the relay was never able to meet the ALT of 4.5825 – 4.8175 seconds and there was no repeatability in the values; repeat attempts were 6.38, 7.00 and 6.51 sec's, the setpoint is 4.7 sec. The relay contacts were verified to be changing state and working properly. CARD 14-22732 was written to document failed relay. CARD 14-22732 states: "Performing WO 38172364, testing relays due to EDG12 not meeting LOP/LOCA criteria, found time delay relay 1MV62 (print I-N-2572-18) high out of spec and could not adjust the relay to meet acceptance criteria." WO 38172364 allows replacement of the relay if found out of spec. 1MV62 relay was replaced with a bench tested relay from stock and the PMT (24.307.02, Section 5.2) was completed satisfactorily. CARD 14-22590 Description/Investigation notes state: "The 1MV62 time delay relay is a 125 VDC Agastat 7012PB (delay on pick-up) model with a range of 0.5 to 5 seconds. Per CECO, it is QA1, Seismic I and Tech Spec related. A review of the work history revealed that the relay set point had been 1 second until RF14. EDP 35621 Rev A (Degraded Voltage Improvements) revised the time delay setting to 4.7 seconds for all the load shed time delay relays (4) for the EDG output breakers. This change was to ensure that during a degraded voltage event coincident with a LOCA, there is adequate time from the initiation of load shedding for voltage to decay at large motors prior to the EDG output breaker reclosing. The 1MV62 relay was as found within the 1 second APT (0.9 to 1.1 sec) and then adjusted to within the new ALT (4.5825 to 4.8175 sec) and tested twice

**Justification of Failure**

The identified failure(s) would not have prevented the performance of the required safety function of the equipment. Therefore, this failure will have no impact on an extension to a 24 month surveillance interval.

under WO 31423675 on 11/10/10. Based on PM/CM history, there is no replacement documentation for the 1MV62 relay.” An evaluation of the current Agastat 7012PB model relay for the load shed time delay application was completed and it was determined, with EFT support, that the 7012PC model is more appropriate for the application. “The current 4.7 second time delay setpoint for the relays (7012PB) is near the end of the 0.5 to 5 second timing range. The setpoint of 4.7 seconds is within the timing range; however, VMR4-9, for Agastat Timing Relays, states that for easiest adjustment and lowest cost, the shortest time range suitable for the application should be selected. The next highest range is the 7012PC with a range of 1.5 to 15 seconds.” Four WOs were created to replace the existing relays with the 7012PC model, or equivalent. To date (July 2018), per Maximo, two WOs, 38563406 (11EA) and 38182257 (13EC) have been completed. CARD 14-22590 Failure Information details: “The slow time occurred while performing 24.307.02 (ECCS Start w/ LOP) Section 5.2 of, however Section 5.1 (LOP) had been performed successfully and the output breaker closed in under 10 seconds. Since the output breaker had closed in under 10 seconds for Section 5.1, there is reasonable assurance that the failure had occurred when Section 5.2 was performed.” A review of all the EDG 12 supported loads was performed by PSE to determine the impact of the 2.2 second delay in 12EB-EB3 closure time. Based on review, the delay would not have affected the availability of the EDG 12 support and auxiliary equipment (MCC 72EB-2D), as this equipment, is not sequenced on for at least 45 seconds. Per DC-6034, Vol I/II and TRVEND GE14 LOCA Report Rev 1, the LOP/LOCA response assumes a 20-25 second EDG starting delay. Additionally, low pressure injection is delayed approximately 10-13 minutes for the limiting small break LOCA. There would be no impact to the essential room coolers supported by EDG 12 (Div 1 Battery Charger/MCC area, Div 1 SGTS Fan, Div 1 RHR, Div 1 Thermal Recombiner area and Div 1 EECW area) as the delay is judged to be well within the thermal inertia of the room heat sources and sinks such that its effect on area environmental responses would be expected to be negligible. The review also determined that all the Div 1 EDG 12 supported valves would not be affected by the delay. EDG 12 remained capable of performing its required MR functions under design conditions with the output breaker closure time of 12.22 seconds. Therefore, there was no loss of functions R1400-01, R1400-02, R3000-01, R3000-02 and R3000-07. There was not a MRFF for R1400 or R3000, or an R1400 bus failure. This failure would not have resulted in the inability to control a critical safety function (e.g. Reactor water level and pressure, Primary and Secondary Containment, Drywell temperature and pressure, Spent Fuel Pool temperature and level, etc.), or capability to shutdown the Reactor and maintain it in a shutdown condition. The EDG did start and load. The EDG's are considered a "CC2", which is a Low Critical Component defined in AP-913. By definition, a CC2 component cannot cause a loss of a critical safety function. The 10 second start criteria is a design requirement listed in the UFSAR. Although the EDG did start and load, it did not meet the Technical Specifications and UFSAR design criteria description. Additionally, an evaluation of the current PM strategy for the EDG output breaker load shed time delay relays was performed and the frequencies of PMs R931 and R932 were revised from 3300 days to 2200 days (4R). CARD 14-22590

Closure Summary states: "THE DIRECT CAUSE IS: E01 Setpoint Drift, because the as found time delay of 1MV62 was 16.56 seconds, as opposed to the setpoint of 4.7 seconds with an APT of 4.5546 - 4.8454 seconds. The setpoint drift of the relay caused the EDG 12 output breaker 12EB-EB3 to close in 12.22 seconds after the EDG 12 emergency start signal."

4/15/2017	A	<p>SPF notes:"Step 5.2.113 and 5.2.115 EDG-12 center phase amps reading low in MCR at 140 Amps verse 418 Amps locally. CARD 17-23535 submitted." CARD 17-23535 states: "EDG-12 Ammeter in MCR reading low on center phase compared to local indication, noted during 24.307.02 section 5.2. Cycled selector switch several times to validate good connection. With EDG-12 at 2600kW R30-R818 indicated X -&gt; 400, Y -&gt;140, and Z -&gt; 425 amps where-as local readings are x -&gt;408, Y -&gt; 418, and Z -&gt; 425. Need investigation and WO generated if required." Reportability/Operability Review states: "R30R818, EDG 12 Ammeter provides indication only for the MCR operator. The lower than normal reading on the center phase does not impact the safety related functions required to be performed by EDG12. EDG 12 remains operable." WO 47506238 written to calibrate EDG-12 AC Ammeters. WO Work Performed states: "Found Y Phase '1TZ' transducer bad. Replaced with like for like replacement. All calibrations performed satisfactorily."</p>	<p>The identified failure(s) would not have prevented the performance of the required safety function of the equipment. Therefore, this failure will have no impact on an extension to a 24 month surveillance interval.</p>
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Event	Title	Associated SRs and Function
0283	PERFORM 24.307.03 SECT 5.2 EDG 13 ECCS START WITH LOSS OF OFFSITE POWER TEST	SR 3.3.5.1.5-1.a SR 3.5.1.11

# Performances: 6 # Failures: 1

**24 Month Justification: Notes:**

One failure identified which did not impact any safety function; therefore, the surveillance test history supports the conclusion that the impact, if any, on system availability will be small as a result of the change to a 24 month surveillance interval.

**Failure Review:**

**Perf. Date Fail Cat. Description of Failure**

11/17/2015 A SPF Note 1: "EDG 13 received auto start but no load shed or load sequence. Note 1: Steps not performed due to EDG Synch to bus. EDG Paralleled and load IAW SOP 23.307 and S/D IAW 24.307.03, CARD 15-29052" SPF Cover noted: "HU error at Step 5.2.32.6 prevented automatic load shedding and resequencing." CARD 15-29052 states: "During LOP/LOCA testing of EDG #13 per 24.307.03, page 59, at Step 5, at the count of two (counting down from 10) the 27C Potential Cutoff Switches were opened in the Div 2 Swgr Room. At Step 6, the 27A & 27C Potential Cutoff Switches were closed prior to 65E-E6 tripping Open, which is not in accordance with the procedure. At the count of zero, Step 7 was performed in the Relay Room, which repositioned Test Switch Modules for Core Spray and RHR. This resulted in Bus 65E not load shedding. In order to continue an EIT will be formed for recommendations on how to either back out or continue forward in the procedure, and how to load the EDG." CARD Reportability/Operability Review states: "Initial investigation determined that the failure to open all three of the 27C device knife switches and then re-closed prior to the LOCA signal was the reason the Load shed did not occur. The logic was reset and component restored to the standby condition and the retest was performed successfully. No additional actions required to support Operability of EDG 13." CARD Investigation determined operator opened the knife switches and then before the feeder breaker for the bus opened, operator closed the knife switches because countdown to 0 ended. Expected response was not observed. Operator believed he needed to complete his action "by the count of 0" instead of waiting on the action to take place.

**Justification of Failure**

The identified failure(s) would not have prevented the performance of the required safety function of the equipment. Therefore, this failure will have no impact on an extension to a 24 month surveillance interval.

# Performances: 6      # Failures: 1

**24 Month Justification:    Notes:**

One failure is identified as an event driven failure which is not indicative of a repetitive time based failure mechanism. There are no other failures; therefore, the surveillance test history supports the conclusion that the impact, if any, on system availability will be small as a result of a change to a 24 month surveillance interval.

**Failure Review:**

<b>Perf. Date</b>	<b>Fail Cat.</b>	<b>Description of Failure</b>
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4/28/2012	C	<p>SPF Note 1 (Event 284): "Steps 5.2.23.1, 5.2.24, 5.2.26.12, 5.2.38.2.a, 5.2.51.7 not performed due to 72F-3A breaker issue. CARD 12-23915 submitted, TE-R30-12-044" Technical Evaluation concluded: "Based on this Technical Evaluation, there is no impact on the acceptance criteria of Surveillance Procedure 24.307.04. This is based on troubleshooting that verified that load shed occurred which tripped the breaker, and the 52XX was verified to have picked up from the load sequencer relay contact. The 72F-3A post maintenance testing (WO 34392170) must perform 'overlap' testing to verify proper closing of the breaker. CARD 12-23915 states: "During LOP/LOCA testing of EDG #14 per 24.307.04 Section 5.1, Step 5.1.19.7 T4600C004 Div 2 SGTS exhaust fan did not sequence back on. 72F pos 3A supplies Div 2 SGTS, the load that should have sequenced back on is T4600C004, SGTS Div 2 Exhaust Fan. The CMC for 72F pos 3A is in the "Close" position, it indicates "Open" green light, and "Tripped" white light. The CMC for the SGTS Div 2 Exhaust Fan is in "Run" with no indication, and ammeter indicating zero. SM/CRS informed." One of the "Immediate/Compensatory Actions was to perform troubleshooting per MMA26. WO 34392170 initiated to: "Troubleshoot 72F Pos 3A Switchgear Breaker for reason it would not sequence back on as expected, during LOP / LOCA Testing. Inspect breaker and Perform cubicle inspection." Troubleshooting identified that the secondary disconnect was in poor condition. The close signal was validated at 52XX contact 2-8 lower terminal. This leaves potential causes of loose wiring, high resistance secondary disconnect and potential mechanical binding. Wiring inspections were SAT, if mechanically bound, the breaker would prematurely trip free when racked out and it did not (eliminating binding). With the breaker removed from the cubicle, approximately 10 ohms resistance was identified from 52XX contact 2-8 to the secondary disconnect 3 with the 52XX contact closed. The resistance was likely much higher at the position the breaker was sitting on the secondary disconnect, however to perform this measurement the breaker has to be racked out (thus wiping the contact). It is concluded that the cause of this failure was a high resistance secondary disconnect due to poor condition which could have been prevented through proper maintenance practices. Therefore, this was MPFF cause code (E10) Personnel Error." WO 34392170 performed; secondary disconnects were cleaned and breaker was functionally tested SAT. CARD investigation concluded cause of event appears to be</p>
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**Justification of Failure**

This is an event driven failure in that breaker secondary contacts were not cleaned thoroughly which contributed directly to the As Found condition. Therefore, this failure will have no impact on an extension to a 24 month surveillance interval.

due to the secondary contact cleaning that was performed during the Bus Inspection. The contacts had been cleaned but not enough to remove all of the film on the secondary contacts. As detailed in CARD "Conclusion": "This is partly attributed to not being allowed to use wire brushes in switchgear anymore due to FME along with not spending the time need to get the contacts properly cleaned. An alternate method needs to be identified to allow a more positive cleaning of the contacts." From CARD Action Item Completion Comments: 07/20/2012 11:39:28 AM "Communicated this event to the Electrical Department at the refocus meeting on 7/19/12. The group brought up the issue of not being able to use wire brushes when needed in the RRA for appropriate work activities mainly cleaning the secondary contact. Comments relayed were that "we can still use them we just have to spend the time to get the proper paperwork filled out to get the brush approved for the job." Discussion included the need to take the time required to perform the work correctly the first time. Maintenance Rule Functional Failure form completed, Justification states: "The Maintenance Rule Specific Guidelines for R1400 is "A loss of Switchgear (electrical bus) or switchgear position resulting in the loss of another SSC's Maintenance Rule function is a Switchgear FF". The load shed portion of maintenance rule function R3000-01 was maintained when the breaker tripped as required. The breaker failed to close, however the load sequencer close signal was received as verified by the 52XX relay energized and close signal validated at 52XX contact 2-8 lower terminal during MMA26 troubleshooting, thus the load sequence portion was met as well. When the breaker failed to close, MR functions T4600-01 and R1400-02 were not maintained, therefore this was a MRFF.

Event	Title	Associated SRs and Function	TRVEND 24MCGNF319001 Rev 1 Page 152 of 395
0298	PERFORM 24.307.30 EDG NO.11 24 HOUR RUN FOLLOWED BY HOT FAST RESTART	SR 3.8.1.13.a SR 3.8.1.14.a	SR 3.8.1.13.b SR 3.8.1.14.b

# Performances: 6      # Failures: 4

**24 Month Justification: Notes:**

The failures do not impact any safety function; therefore, the surveillance test history supports the conclusion that the impact, if any, on system availability will be small as a result of the change to a 24 month surveillance interval.

**Failure Review:**

**Perf. Date Fail Cat. Description of Failure**

12/22/2008	A	SPF Note 1: Step 5.1.76, Fuel oil level is less than Tech Spec limit of 35,645 gallons. Reading is at 33kgal. Entered LCO 2008-0577. SPF Note 2: LCO 2008-0577 cleared 12/23/08 0427; Level 39 kgallons, Acceptance Criteria is met.
5/18/2010	A	SPF Note: Two performances; "Fuel Oil Tank level is not within acceptance criteria. Low level is being tracked by LCO 2010-0202." A second partial surveillance performance to validate tank level at 38.3 kgallons was also completed on 5/18/2010.
12/18/2013	A	SPF Note 1: "Step 5.1.76 acceptance criteria for EDG 11 Fuel Oil Tank not met. Low level is being tracked by LCO 2013-0501, tanker is on-site." A second partial surveillance performance to validate tank level at 41,000 gallons was completed on 12/18/2013. SPF Note 2: "Step 5.1.85, Lube Oil Tank High/Low alarm not clear. CARD 13-28896 was initiated to order lube oil." CARD 13-28896 states: "EDG #11 Lube oil tank noted 11.75 at step 5.1.38 of 24.307.30, which is less than the NOTE previous to the step, which states the Desired level is 18" or greater." CARD 13-28896 Reportability/Operability Review states: "There is no specific surveillance requirement for the storage tank level and the low level alarm actuates at 62 Gallons of capacity left. The actions to be taken at the low level alarm is to add oil." WO 37826817 added approximately 210 gallons of lube oil on 12/20/2013.
1/13/2017	A	SPF Note: Step 5.1.76 "Fuel Oil Storage Tank LOOS". Low level is being tracked by LCO 2017-0055. A second partial surveillance performance to validate tank level at 36.7 kgallons was completed on 1/13/2017.

**Justification of Failure**

The identified failure(s) would not have prevented the performance of the required safety function of equipment. Therefore, this failure will have no impact on an extension to a 24 month surveillance interval.
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Event	Title	Associated SRs and Function	TRVEND 24MCGNF319001 Rev 1
0299	PERFORM 24.307.31 EDG NO.12 24 HOUR RUN FOLLOWED BY HOT FAST RESTART	SR 3.8.1.13.a SR 3.8.1.14.a	SR 3.8.1.13.b SR 3.8.1.14.b

# Performances: 6      # Failures: 5

**24 Month Justification: Notes:**

The failures do not impact any safety function; therefore, the surveillance test history supports the conclusion that the impact, if any, on system availability will be small as a result of the change to a 24 month surveillance interval.

**Failure Review:**

**Perf. Date Fail Cat. Description of Failure**

9/26/2008      A      SPF Note: "Step 5.1.76 Fuel Oil Storage Tank low (32.8kgal) due to extended run. Fuel oil ordered and enroute with delivery expected 9-26-2008, 0630." LCO 2008-0400 is tracking. A second partial surveillance performance to validate tank level at 39.6 kgallons was completed on 9/26/2008.

5/25/2010      A      SPF Note: "Fuel Oil Storage Tank low due to 24hr run. - Fuel oil truck arriving @ 0800 5/25/10 LCO 2010-0213 is tracking fuel oil level" A second partial surveillance performance to validate tank level at 37.7 kgallons was completed on 5/25/2010.

8/22/2013      A      SPF Front Page: "EDG 12 FO Level Low (33.8kgal) - Step 5.1.7 & 7 7.3.6 not met - tracked on LCO 2013-0353." A second partial surveillance performance to validate tank level at 39.3 kgallons was completed on 8/23/2013. SPF Note 2: "Step 5.1.76 page 26, fuel oil tank level < 35,645 gallons - LCO entered as fuel delivery will be days on 8/23/2013"

6/19/2015      A      SPF Note 2: "Step 5.1.76 Fuel Oil Storage Tank below Tech Spec. LCO 2015-0117" A second partial surveillance performance to validate tank level at 39.6 kgallons was completed on 6/19/2015.

**Justification of Failure**

The identified failure(s) would not have prevented the performance of the required safety function of equipment. Therefore, this failure will have no impact on an extension to a 24 month surveillance interval.

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The identified failure(s) would not have prevented the performance of the required safety function of equipment. Therefore, this failure will have no impact on an extension to a 24 month surveillance interval.

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8/19/2016	A	<p>SPF Note 1: "Unable to perform steps due to A DFOT pump check valve not fully closing. Selector switch for EDG 12 transfer pumps is caution tagged in A position. CARD 16-25753 and LCO 2016-0322 written." CARD 16-25753 states: "EDG 12 FO xfer pump A discharge check valve did not close with FO xfer pump B running. agitated check valve and it closed. This inops FO xfer pump B, need to repair A pump's discharge check valve." CARD 16-25753 Reportability / Operability Review states: "The fuel oil transfer pumps are designed support EDG function by continuously transfer of fuel oil from the storage tank to the day tank. EDG 12 Fuel oil transfer pump selector switch is selected to the "A" pump and caution tagged (STR 16-1001) to maintain the function. EDG-12 remains OPERABLE." E-mail: Note from SE about 16-25753 states: "MRFF evaluation not required: The CARD clearly states that there was no equipment failure / degradation that could prevent the equipment from performing its function and this is supported by Shift Manager's comments. As long as one FO transfer pump remains in service the EDG is capable of performing it's maintenance rule and safety related functions." WO 45743816 written to disassemble, inspect, clean, and rework check valve as necessary. New plug, spring and gasket replaced for valve. PMT to leak check valve with transfer pump R3000C002 in operation completed SAT. SPF Note "Storage Tank level 33.8 kgallons - below acceptance criteria due to 24 hour run." LCO 2016-0403" A second partial surveillance performance to validate tank level at 39 kgallons was completed on 8/20/2016.</p>	<p>The identified failure(s) would not have prevented the performance of the required safety function of equipment. Therefore, this failure will have no impact on an extension to a 24 month surveillance interval.</p>
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Event	Title	Associated SRs and Function	TRVEND 24MCGNF319001 Rev 1
0300	PERFORM 24.307.32 EDG NO.13 24 HOUR RUN FOLLOWED BY HOT FAST RESTART	SR 3.8.1.13.a SR 3.8.1.14.a	SR 3.8.1.13.b SR 3.8.1.14.b

# Performances: 6      # Failures: 6

#### 24 Month Justification: Notes:

The failures do not impact any safety function; therefore, the surveillance test history supports the conclusion that the impact, if any, on system availability will be small as a result of the change to a 24 month surveillance interval.

#### Failure Review:

##### Perf. Date Fail Cat. Description of Failure

10/3/2008	A	SPF Note 1: "Fuel Oil Storage Tank level low out of spec." LCO 2008-0435 expires 10/4/08 3:20 pm; Fuel oil is on order, level will be corrected within 24 hours." A second partial surveillance performance to validate tank level at 37.6 kgallons was completed on 10/3/2008.
8/3/2010	A	SPF Note: "Step 5.1.76, Fuel Oil Storage Tank acceptance criteria not met, level < 35,645 gallons LCO 2010-0329 entered; Fuel oil ordered." A separate performance for "Fuel Oil Level only" to document LCO Log Form indicating LCO 2010-0329 was exited on 08/03/2010 at 13:21.
2/3/2012	A	SPF Note: "During 24 hour run oil tank level rose from 29.5 at 1523 to 31.5 at 1210, A third measurement was taken at 1600 which measure 30". Suspect inaccuracy in initial measurement." CARD 12-20936 written." CARD 12-20936 states: "Measured lube oil tank level during the 24-hr run increased 2 inches during the 20-hr measuring period, suspect an inaccurate initial oil level measurement, due to a third measurement toward the end of the run showing a lowering lube oil level as expected. These steps in the surveillance are to determine lube oil consumption rate of the engine during a 20-hour portion of the 24-hour run. These steps are not acceptance criteria." Reportability/Operability Review states: "There is no acceptance criteria for the amount of oil required in the tank and the tank can be filled as needed during the assumed mission time for the EDG. Because there is still adequate volume in the storage tank and the reservoir has adequate oil to provide lubrication throughout the EDG mission time no operability concerns exist." CARD Closure Summary: Event was reviewed at the CRC and this is determined to be a personnel error. No training required. Lube oil tank level was misread. Event was determined to be Operations - Operations Support Crew Clock Reset briefing sheet completed.

##### Justification of Failure

The identified failure(s) would not have prevented the performance of the required safety function of equipment. Therefore, this failure will have no impact on an extension to a 24 month surveillance interval.

The identified failure(s) would not have prevented the performance of the required safety function of equipment. Therefore, this failure will have no impact on an extension to a 24 month surveillance interval.

The identified failure(s) would not have prevented the performance of the required safety function of equipment. Therefore, this failure will have no impact on an extension to a 24 month surveillance interval.

8/30/2013	A	SPF Note 1: "Step 5.1.76 acceptance criteria not met. EDG 13 Fuel Oil Storage Tank Level less than 35,645 gallons. CR informed, fuel oil ordered LCO 2013-0167 " A second partial surveillance performance to validate tank level at 40 kgallons was completed on 8/30/2013.	The identified failure(s) would not have prevented the performance of the required safety function of equipment. Therefore, this failure will have no impact on an extension to a 24 month surveillance interval.
5/9/2015	A	SPF Note: "24.307.32, pg 23 Step 5.1.76 FO Storage Tank Level low out of spec at 34.5 kgallons, Tech Spec $\geq$ 35645 gallons - LCO 15-0112" A second partial surveillance performance to validate level at 38.7kgallons completed on 5/9/2015.	The identified failure(s) would not have prevented the performance of the required safety function of equipment. Therefore, this failure will have no impact on an extension to a 24 month surveillance interval.
11/21/2016	A	SPF Cover Sheet Note: "Step 5.1.76 EDG 13 FO Storage Tank level less than Tech Spec requirement. LCO 2016-0609 is tracking" A second partial surveillance performance to validate level at 38.7kgallons completed on 11/22/2016.	The identified failure(s) would not have prevented the performance of the required safety function of equipment. Therefore, this failure will have no impact on an extension to a 24 month surveillance interval.

Event	Title	Associated SRs and Function	TRVEND 24MCGNF319001 Rev 1
0301	PERFORM 24.307.33 EDG NO.14 24 HOUR RUN FOLLOWED BY HOT FAST RESTART	SR 3.8.1.13.a SR 3.8.1.14.a	SR 3.8.1.13.b SR 3.8.1.14.b

# Performances: 7      # Failures: 7

#### 24 Month Justification: Notes:

Two failures are identified as event driven failures which are not indicative of a repetitive time based failure mechanism. The other failures do not impact any safety function; therefore, the surveillance test history supports the conclusion that the impact, if any, on system availability will be small as a result of the change to a 24 month surveillance interval.

#### Failure Review:

##### Perf. Date Fail Cat. Description of Failure

11/14/2008	A	SPF cover sheet note: Fuel oil level LCO-2008-0511 entered. Restore fuel oil level to within limits. LCO 2008-0511 exited 11/14/2008 at 2334. This performance also served as PMT for WO 28905658 which was written to drain, flush and refill EDG 14 Governor with oil to eliminate bubbles collecting in the governor sightglass.
4/9/2010	A	SPF Note 1: "EDG 14 Fuel Oil Storage Tank level less than 35,645 gallons. LCO 2010-0121" SPF Note 2: "EDG Rectifier Diode light flickers. CARD 10-23229 written for bulb replacement." CARD 10-23229 states: "EDG-14 exciter cabinet neon rectifier bulb DS45 is dimming from normal EDG full load lighting characteristics. Compared to other rectifier bulbs, this bulb is much dimmer. Rectifier bulbs indicate if there are problems with the diodes contained within the rectifier. Work Order required to change bulb before next EDG-14 Run week of May 10, 2010." CARD 10-23229 Reportability/Operability Review states: "the dim bulb does not affect the function of the component. Even if the light is completely out the function is maintained. The engine was also just run loaded for 24 hours per a surveillance with no noted voltage control issues; therefore the EDG remains OPERABLE." WO 31180518 written to replace light bulbs. Noted to System Engineer in WO 31180518: "During EDG 14 run on 6/8/10, DS45 light was back on, but dim and oscillating. There were 3 neon lights that were slightly dimmer and oscillating, there are DS43, DS45 and DS51. Recommend replacing all 3 lights. WO 31180518 replaced rectifier bulbs DS43, DS45 and DS51 on 1/3/2011.

##### Justification of Failure

The identified failure(s) would not have prevented the performance of the required safety function of equipment. Therefore, this failure will have no impact on an extension to a 24 month surveillance interval.

The identified failure(s) would not have prevented the performance of the required safety function of equipment. Therefore, this failure will have no impact on an extension to a 24 month surveillance interval.

8/9/2013

C

SPF Note: "Surveillance stopped at 23 hour mark due to air leak on supply line to air coolant system TCV. Performed SOP S/D and tagged out EDG 14 STR 13-2341 and CARD 13-25574 written." CARD 13-25574 states: "EDG #14 was manually shutdown during 24.307.33 due to high air temperature going to the blower. Repair is needed to the broken fitting between F048D and RA07D. Evaluation is needed from System Engineering whether or not a blower clearance/tolerance inspection is warranted based on the air temperature of 210 degrees on RA23D. Evaluation is also needed to determine if the air relief valve setpoint on F048D should be checked, along with air regulator setpoint on RA07D, also to determine if the loss of air pressure in this control loop should have driven the TCV F023D to the full cool position, and if that is the case, then why did the air temperature go high instead of low. The time frame the engine ran with the air temperature between 180 to 210 degrees was 3-4 minutes." What happened? ACE investigation for CARD 13-25574 had determined the EDG 14 pipe nipple was found broken during implementation of WO# 013B881201 (Repair/Replace Damaged Air Pressure Regulator R30F047D to R30-PI-RA07D) in the year 1988. A review of this WO had determined that it is probable the pipe nipple was incorrectly replaced with Schedule 40 pipe, rather than Schedule 80 pipe, during implementation of WO# 013B881201 in the year 1988 even though the WO did not specifically state the nipple was replaced. The as-found installation of Schedule 40 pipe nipple contributed to the unplanned shutdown of EDG 14 during a 24 hour run on 8/9/13 (CARD 13-25574). As noted in ACE for CARD 13-25574 timeline of some key events are: 1) "EDG 14 air cooler temperature transmitter pneumatic R30NA18D was found failed during EDG 14 air cooler temperature control loop calibration check per WO 30897690. Output of transmitter was found to stay low at 3 psig with a temperature input of 145 degree F whereas the expected output should have been 15 psig. EDG 14 air cooler temperature transmitter pneumatic R30NA18D was then replaced and loop calibration check was performed per WO 37065764. 2) EDG 14 engine air coolant control header relief valve R3000F048D was tested per WO 37060708 and as-found to be relieving low, out of tolerance at 37 psig, versus the required 40 psig. Relief valve R3000F048D was then replaced per WO 37060708. 3) The broken air line pipe nipple between EDG 14 engine air coolant control header relief valve R3000F048D and EDG 14 air cooler pressure regulator valve R30FA01D as well as Pressure regulator valve R30FA01D were replaced per WO 37060690. 4) EDG 14 blower inspection and cylinder liner inspections were performed per WO 37061328 following high blower air temperatures during the 24 hour run. Results of the inspections were satisfactory. 5) On 8/11/2013, at 0042, Operations returned R3001S004 EDG 14 to service in accordance with SOP 23.307, section 5.8 - Standby Mode EDG 14 following repairs. 6) On 8/11/2013, Exited LCO 2013-0336 for EDG 14 broken air line after return to service and completion of a licensed operator walkdown. EDG 14 was declared operable. 7) On 8/17/2013, Started R3001S004 EDG 14 in accordance with 24.307.33 - Emergency Diesel Generator 14 - 24 Hour Run Followed By Hot Fast Restart. CARD 13-25574, CARD Closure Summary states: "During the performance of 24.307.33, EDG 14, 24 hour Run on 08/09/2013, Scavenge Air Temperature increased to a point where the EDG was manually shut down by operations approximately twenty two hours into the run. THE DIRECT CAUSE IS -

This is an event driven failure in that maintenance performed in 1988 to repair/replace a damaged air pressure regulator contributed directly to the As Found condition. Therefore, this failure will have no impact on an extension to a 24 month surveillance interval.

The air pipe nipple fitting between EDG 14 engine air coolant control header relief valve R3000F048D and EDG 14 air cooler pressure regulator R30FA01D on EDG 14 had sheared causing pressure oscillations to the air coolant system (ACS) which resulted in a failure of EDG 14 air cooler temperature pneumatic transmitter R30NA18D.

APPARENT CAUSE ONE IS - Incorrect Material Identified - The pipe nipple air line fitting between relief valve R3000F048D and pressure regulator valve R30FA01D on EDG 14 had completely sheared due to the use of schedule 40 pipe as opposed to schedule 80. APPARENT CAUSE TWO IS - Abnormal Stress - The use of U-bolts to support the connecting valves R3000F048D and R30FA01D caused bending fatigue on the pipe nipple fitting MRFF = Maintenance Rule Functional Failure Yes MSPI = Mitigating System Performance Indicator No MPFF = Maintenance Performance Functional Failure = No Revised MSPI basis failure criteria for this MRFF as the previous basis was incorrect. MSPI basis documentation (WebARMS DSN: MSPI) states in Table 1-SC that one of four EDGs are required for the EDG system to provide its MSPI function. Further, credit can be taken to cross tie an EDG to other ESF busses within the same division. This is accomplished via procedure 23.321. Based on this reason, the existing MRFF was revised to remove the MSPI failure.

The identified failure(s) would not have prevented the performance of the required safety function of equipment. Therefore, this failure will have no impact on an extension to a 24 month surveillance interval.

8/18/2013 A SPF Note 1: "Step 5.1.76, EDG 14 Fuel Oil Storage Tank level less than Tech Spec value. Track per LCO 2013-0348" LCO 2013-0348 exited 8/18/2013, 1810 - Final storage tank level is 39,000 gallons. SPF Note 2: "Step 5.1.38 EDG 14 Lube Oil Storage Tank level less than desired level of  $\geq 18$  inches. Level at end of surveillance 14.5 inches. CARD 13-25794 written." CARD 13-25794 states: "During the 24 hour run on EDG #14, the measured Lube Oil Storage Tank was measured at 16.5 inches. A note prior to the step states that desired level is greater than 18 inches. Recommend a work order to add oil to the tank to bring level above desired level. The step is not acceptance criteria, it is used to determine lube oil consumption rate during the 24-hr run which will still be able to be performed." CARD 13-25794 Reportability/Operability Review states: "There is no specific surveillance requirement for the storage tank level and the low level alarm actuates at 62 gallons of capacity left. The actions to be taken at the low level alarm is to add oil. Priority 4 work order to get this included in the EDG 14 SSO scheduled this year. If the low level alarm is received then the ARP will direct oil to be added to clear the alarm. The alarm is at 10" decreasing." WO 37128427 is referenced by this CARD, Maximo indicates Work Order "CAN". SE concurs with cancellation.

The identified failure(s) would not have prevented the performance of the required safety function of equipment. Therefore, this failure will have no impact on an extension to a 24 month surveillance interval.

3/6/2015 A SPF Note: "Step 5.1.76 FO Storage Tank level low out of spec at 33.85 kgallons, Tech Spec  $\geq 35,645$  gallons. LCO 2015-0062 is tracking" A second partial surveillance performance to validate level at 39.1kgallons completed on 3/7/2015.

8/5/2016	C	<p>SPF Note 3: "Water separator leaking by cross-tie with EDG 13 air compressor. Re-performed step 5.1.77 following cross tying EDG 13 supplying EDG 14" CARD 16-26206 written. CARD 16-26206 states: "While performing 24.307.33 EDG Starting Air compressor runtime alarm came up (3D18-IPCS inputs abnormal). An operator determined the excess runtime was due to leakage past Trap (R3001D088). The leakage is preventing the shut down of the compressor, and is currently at 234 psig and steady. Starting Air Reservoir Tech Spec is 215 psig. The same issue had been corrected under PM work order 42282686, trap (MM100047082) had been changed out with new. The plastic base of the trap was found cracked causing the leak. Also reference CARD 16-24244, Request WO to repair issue." Reportability/Operability Review states: "The safety function to support the EDG is to provide a flow path from the air compressor to the receiver to maintain a minimum pressure of 225# to allow for 5 starts of the EDG without need of replenishment. The air system has been cross tied with the EDG 13 air system and the receiver pressure is being maintained above the minimum. Condition on the air dryer is not affecting the ability to maintain the receiver charged and EDG 14 remains operable." Event was determined to NOT be a MRFF or MSPI failure. On 9/7/16, the Rework Review Board determined that this condition (i.e. CARD 16-26206) is rework. CARD 16-26206 was closed to CARD 16-28067 "Repeat Rework Events due to Parts Deficiency associated with R3001D088". CARD 16-26206 generated WO 45852822. WO 45852822 installed a new water trap on 8/21/2016. CARD 16-28067 states: "In the past 2 months, multiple rework events have occurred due to a parts deficiency associated with R3001D088, EDG14 Starting Air Compressor Water Trap. Theserework events were documented under CARDS 16-26205 and 16-27204. From 2000 to 2016, there have been approximately 18 CARDS documenting a degrading condition associated with this component. Request Engineering FIRST Team evaluate an equivalent part that this less susceptible to premature degradation. On 10/10/16, Maintenance verified with the Engineering FIRST Team that there is no existing Equivalent Replacement Evaluation (ERE) in the Configuration Management Interface System (CMIS) for this water trap. Investigation documents from SE - 11/11/2016 09:32:49 PM. These units can continue to be rebuilt with rebuild kits from the manufacturer, Stock item master 100118137. The subject drain traps appear to have reached the end of their useful life. The installed model is constructed with carbon steel and stainless steel with various soft goods. Recommend replacement with a new unit which is still available. Recommend 505SS unit where the materials of construction are stainless and the seals are Viton. WO 46523276 requested. Per Maximo WO 46523276 status is WAITASGN.</p>	<p>This is an event driven failure in that parts deficiency (i.e., more proficient parts for rebuild are available) contributed directly to the As Found condition. Therefore, this failure will have no impact on an extension to a 24 month surveillance interval.</p>
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8/5/2016	A	<p>SPF Note 1: "Re-perform Steps 5.1.28, substeps 4 and 5. CARD 16-26203" CARD 16-26203 states: "EDG output breaker did not close at top (12) noon on the synchroscope during the first attempt for breaker sync per 24.307.33. The output breaker tripped alarm was received in the MCR and on the SOER but no breaker tripped indication was present on the actual breaker or CMC switch. The performers reported they let go of the breaker closed switch just past top (12) noon on the synchroscope and the breaker did not attempt to close. The performers stopped and expanded their team; following discussing the issue with the tagging center and MCR the performers attempted a second breaker sync of the output breaker. During the second attempt the breaker did close, but the breaker closed when the DG 14 synchroscope was approximately 5 minutes past top 12 noon." CARD 16-26203 Reportability/Operability Review states: "The local synchroscope indicator or the synch. check relay needs to be calibrated. These components are utilized when performing manual synchronization of the EDG-14 output breaker, and are not used during an emergency start and load of the EDG. This condition has no impact on the ability of EDG-14 to supply its safety busses following an accident signal. This will not impact the ability of EDG-14 to performing is safety functions." WO 45852781 written to Calibrate/Adjust EDG 14 Synchroscope and to also calibrate synch check relay. Synch check relay was calibrated per 35.318.011 SAT on 1/23/2017. EDG Synchroscope (R30R010D) was calibrated under WO 43736993, Recal EDG 14 Local and Control Room Indicators, also on 1/23/2017. Noticed static buildup on meter (R30R010D) during initial testing. Worked fine after static removal. SPF Note 2: Step 5.1.76 recorded 34.3kgallons of fuel after 24 hour run. Tech Spec is <math>\geq 35,645</math> gallons. LCO 2016-0319 is tracking. A second performance of surveillance was completed to validate EDG Fuel Oil Storage Tank at 39.478 kgallons on 8/5/2016.</p>	<p>The identified failure(s) would not have prevented the performance of the required safety function of equipment. Therefore, these failures will have no impact on an extension to a 24 month surveillance interval.</p>
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Event	Title	Associated SRs and Function
0311	<p><b>PERFORM 24.402.06 DRYWELL TO TORUS BYPASS LEAK TEST (AS FOUND)</b></p> <p><b># Performances: 6      # Failures: 0</b></p>	<p><b>SR 3.6.1.1.2</b></p>
<p><b>24 Month Justification:    Notes:</b></p> <div> <p>There were no failures, therefore the surveillance test history supports the conclusion that the impact, if any, on system availability will be small as a result of the change to a 24 month surveillance interval.</p> </div>		

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Event	Title	Associated SRs and Function	
0314	PERFORM 24.404.02 SEC-5.3 DIV. 1 SGTS RUN/AUTO INITIATE/POSITION IND.	SR 3.3.6.2.5-4 SR 3.6.4.3.3	SR 3.6.4.2.3 SR 3.6.4.3.4
# Performances: 6		# Failures: 0	

**24 Month Justification:**    **Notes:**

There were no failures, therefore the surveillance test history supports the conclusion that the impact, if any, on system availability will be small as a result of the change to a 24 month surveillance interval.

Event	Title	Associated SRs and Function	
0317	PERFORM 24.405.03 SECONDARY CONTAINMENT INTEGRITY TEST (USING DIV 1 SGTS)	SR 3.6.4.1.5	SR 3.6.4.1.6
# Performances: 4		# Failures: 0	

**24 Month Justification:**    **Notes:**

There were no failures, therefore the surveillance test history supports the conclusion that the impact, if any, on system availability will be small as a result of the change to a 24 month surveillance interval.

Event	Title	Associated SRs and Function	
0321	PERFORM 24.406.02 SEC-5.2 NITROGEN INERT VLV POS INDICATION VERIF MODE 4,5	SR 3.3.3.1.2-8	SR 3.3.6.1.6-2.e
# Performances: 6		# Failures: 0	

**24 Month Justification:**    **Notes:**

There were no failures, therefore the surveillance test history supports the conclusion that the impact, if any, on system availability will be small as a result of the change to a 24 month surveillance interval.

# Performances: 7      # Failures: 2

**24 Month Justification:    Notes:**

One failure is identified as an event driven failure which is not indicative of a repetitive time based failure mechanism. One failure would be detected by the performance of a surveillance test on a more frequent basis. There are no other failures; therefore, the surveillance test history supports the conclusion that the impact, if any, on system availability will be small as a result of a change to a 24 month surveillance interval.

**Failure Review:**

<b>Perf. Date</b>	<b>Fail Cat.</b>	<b>Description of Failure</b>	
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1/19/2015	B	SPF comments state: "Could not complete Step 5.2.37: T50-F450, PCMS Rad Mon In Otbd Iso valve, would not reopen after several attempts. Shutdown PCRMS IAW 23-408. Stopped Surveillance testing. Backed out of 24.408.03 Section 5.2." CARD 15-20450 was written to document finding. CARD 15-20450 states: "During performance of 24.408.03, T50-F450 would not open back up. Valve will indicate dual with the open pushbutton depressed, then go full closed when the button is released. T50-F450 is a primary containment isolation valve which is currently closed meeting its function." Summary of CARD 15-20450 Reportability / Operability review indicates the valve failing to re-open during the surveillance test results in a loss of flowpath for PCRMS; however, the PCIV function of valve T50-F450 is not impacted due to the fact that the valve remains closed. CARD 15-20450 lists the direct cause of the failure to be an out of calibration OPEN reed switch. CARD 15-20450 also indicates that the valve is tested every 91 days for Operability, Calibration, and Stroke Position per Section 5.1 of this same surveillance procedure, 24.408.03. WO 42407068 was initiated on 01/20/2015 to test, adjust position switches for T50-F450. WO troubleshooting found that loosening the open switch clamp screw caused the valve to stroke open and closed as designed. There is no specified vendor torque for the screw and it is to be adjusted by skill of the craft so the switch functions properly. The valve indication also started working again. The valve was then stroked multiple times without any failures. The cover for the electric assembly was reinstalled loosely with a new gasket and the valve was then stroked several more times and functioned properly. The valve was returned to service and LCO 15-0041 was cleared.	
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**Justification of Failure**

Although this failure occurred during the 18-month surveillance procedure test, the failure would have been identified on a more frequent basis during the 91 day surveillance performance. Consequently, the identified failure would be detected by a more frequent activity. Therefore, this failure will have no impact on an extension to a 24 month surveillance interval.

7/23/2016	C	In procedure Step 5.2.62, there is a procedure error in that valve T5000-T421A is directed to the Close position; however, the verification in Steps 5.2.62.1 and 5.2.62.2 is for the valve to indicate full Open. Additionally, the valve identification number is incorrect in Step 5.2.62.2. CARD 16-25843 written to document this procedure deficiency. CARD reflects DCR 16-1075 is making the identified changes to the procedure.	This is an event driven failure in that a procedure error prevented the procedure from being completed as written. The required verification of Valve T5000-F421A position was not able to be achieved due to the procedure error. The procedure was revised to address the deficiency and reperformed at a later date with satisfactory results. Therefore, this failure will have no impact on an extension to a 24 month surveillance interval.
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Event	Title	Associated SRs and Function
0324	PERFORM 24.409.02 SEC-5.2 DIV.1 POST LOCA RECOMBINER LOCAL VALVE POSITION IND	SR 3.3.3.1.2-8

# Performances: 6      # Failures: 0

**24 Month Justification: Notes:**

There were no failures, therefore the surveillance test history supports the conclusion that the impact, if any, on system availability will be small as a result of the change to a 24 month surveillance interval.

Event	Title	Associated SRs and Function
0327	PERFORM 24.413.04 DIV 1 CR EMRG FILTER AUTO TRANSFER TEST	SR 3.7.3.3

# Performances: 5      # Failures: 0

**24 Month Justification: Notes:**

There were no failures, therefore the surveillance test history supports the conclusion that the impact, if any, on system availability will be small as a result of the change to a 24 month surveillance interval.

Event	Title	Associated SRs and Function
0350	PERFORM 24.630.01 REMOTE SHUTDOWN PANEL CONTROL CIRCUIT/SWITCH TEST	SR 3.3.3.2.2

# Performances: 5      # Failures: 0

**24 Month Justification: Notes:** Ref. DTE-19001, Section 3 Design Inputs

There were no failures, therefore the surveillance test history supports the conclusion that the impact, if any, on system availability will be small as a result of the change to a 24 month surveillance interval.

Event	Title	Associated SRs and Function
0350A	PERFORM 24.630.01 Sec-5.1(SDC Vlv-E1150F008) & Sec-5.2(CRD) REMOTE S/D PNL CONTROL CIRCUIT/SW. TEST	SR 3.3.3.2.2
# Performances: 2      # Failures: 0		

**24 Month Justification:**    **Notes:** Ref. DTE-19001, Section 3 Design Inputs

There were no failures, therefore the surveillance test history supports the conclusion that the impact, if any, on system availability will be small as a result of the change to a 24 month surveillance interval.

Event	Title	Associated SRs and Function
0350B	PERFORM 24.630.01 Sec-5.4(RCIC Vlvs & SRVs) REMOTE S/D PNL CONTROL CIRCUIT/SW. TEST	SR 3.3.3.2.2
# Performances: 1      # Failures: 0		

**24 Month Justification:**    **Notes:** Ref. DTE-19001, Section 3 Design Inputs

There were no failures, therefore the surveillance test history supports the conclusion that the impact, if any, on system availability will be small as a result of the change to a 24 month surveillance interval.

Event	Title	Associated SRs and Function
0350C	PERFORM 24.630.01 Sec-5.3, 5.4(Div 1-RHR,RHRSW,MDCT FAN) REMOTE S/D PNL CONTROL CIRCUIT/SW. TEST	SR 3.3.3.2.2
# Performances: 2      # Failures: 0		

**24 Month Justification:**    **Notes:** Ref. DTE-19001, Section 3 Design Inputs

There were no failures, therefore the surveillance test history supports the conclusion that the impact, if any, on system availability will be small as a result of the change to a 24 month surveillance interval.

Event	Title	Associated SRs and Function
0350D	PERFORM 24.630.01 (E1150F008 only) REMOTE S/D PANEL CONTROL CIRCUIT/SWITCH TEST	SR 3.3.3.2.2
# Performances: 2      # Failures: 0		

**24 Month Justification:**    **Notes:** Ref. DTE-19001, Section 3 Design Inputs

There were no failures, therefore the surveillance test history supports the conclusion that the impact, if any, on system availability will be small as a result of the change to a 24 month surveillance interval.

# Performances: 0      # Failures: 0

24 Month Justification:      Notes: Ref. DTE-19001, Section 3 Design Inputs

There were no failures, therefore the surveillance test history supports the conclusion that the impact, if any, on system availability will be small as a result of the change to a 24 month surveillance interval.

Event	Title	Associated SRs and Function
0350F	PERFORM 24.630.01 Sec-5.3(E1150F009 & B3105F023A) REMOTE S/D PANEL CONTROL CIRCUIT/SWITCH TEST	SR 3.3.3.2.2

# Performances: 1      # Failures: 0

24 Month Justification:      Notes: Ref. DTE-19001, Section 3 Design Inputs

There were no failures, therefore the surveillance test history supports the conclusion that the impact, if any, on system availability will be small as a result of the change to a 24 month surveillance interval.

Event	Title	Associated SRs and Function
0351	PERFORM 24.702.01 SEC-5.3 MISCELLANEOUS SYSTEMS LOCAL VALVE POSITION VERIF.	SR 3.3.3.1.2-8      SR 3.3.6.1.6-2.e

# Performances: 6      # Failures: 0

24 Month Justification:      Notes:

There were no failures, therefore the surveillance test history supports the conclusion that the impact, if any, on system availability will be small as a result of the change to a 24 month surveillance interval.

Event	Title	Associated SRs and Function
0353	PERFORM 24.707.01 SEC-5.1 RWCU LOCAL VALVE POSITION VERIFICATION	SR 3.3.3.1.2-8      SR 3.3.6.1.5-5.a SR 3.3.6.1.5-5.b      SR 3.3.6.1.5-5.c SR 3.3.6.1.5-5.d      SR 3.3.6.1.5-5.e SR 3.3.6.1.6-5.f      SR 3.5.2.8 SR 3.6.1.3.8

# Performances: 6      # Failures: 0

24 Month Justification:      Notes:

There were no failures, therefore the surveillance test history supports the conclusion that the impact, if any, on system availability will be small as a result of the change to a 24 month surveillance interval.

# Performances: 6      # Failures: 6

**24 Month Justification:    Notes:**

The failures do not impact any safety function; therefore, the surveillance test history supports the conclusion that the impact, if any, on system availability will be small as a result of the change to a 24 month surveillance interval.

**Failure Review:**

**Perf. Date   Fail Cat.   Description of Failure**

3/3/2011	A	<p>SPF Note 1: "E4100-F054 has a 2ml/min packing leak CARD 11-22355 generated" CARD 11-22355 states: "E4100F054 (HPCI Steam Supply Drain Pot BypassValve) was identified as having a 1 ml/min packing leak." Reportability/Operability Review states: "The minor leakage that was identified (1 ml/min) does not impact the ability of the HPCI system to meet it's safety functions. There is no noticeable impact to the area room temperatures which are monitored daily and has limits for maximum design temperatures with the turbine in standby therefore there is no impact on the EQ program for the equipment in the room. No operability concerns or impact." WO 32449278 requested. Per Maximo, POD Notes, WO 34151339 Replace Valve E4100F054 Per RID-82399 completed in RF15, 04/25/2012SPF Note 2: "E4101C001A Inboard Seal has a 3ml/min leak CARD 11-22352 generated" CARD 11-22352 states: "During the performance of 43.202.001 a 3 ml/min leak was identified on the Main High Pressure Coolant Injection Pump (E4101C001A) inboard pump seal." Reportability/Operability Review states: "The minor leakage that was identified (3 ml/min) does not impact the ability of the HPCI system to meet it's safety functions as listed below. No operability concerns or impact." WO 32454815 requested. Per Maximo WO 32454815 = CAN.</p>
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**Justification of Failure**

The identified failure(s) would not have prevented the performance of the required safety function of the equipment. Therefore, this failure will have no impact on an extension to a 24 month surveillance interval.

SPF Note 3: "E4101C002 Outboard side has a 3ml/min leak under insulation; exact location could not be identified. CARD 11-22354 generated" CARD 11-22354 states "During the performance of 43.202.001, a 3 ml/min was identified on the outboard side to the High Pressure Coolant Injection Turbine (E4102C002). The exact source of the leak could not be located because of the insulation." Reportability/Operability Review states: "The minor leakage that was identified (3 ml/min) does not impact the ability of the HPCI system to meet it's safety functions. There was no noticeable impact to the area room temperatures therefore there is no impact on the EQ program for the equipment in the room. No operability concerns or impact." WO 32449266 requested. Scope of this work request is to locate blockage and replace small bore piping on the gland seal piping to the barometric condenser if required. WO 32449266, Leak on HPCI Turbine While Operating, performed troubleshooting for leak and identified a lose pipe union under insulation. Union was cleaned and tighten; completed SAT on 10/8/2018.

1/1/2013	A	<p>SPF Note 1: E4100F227 10ml/min leak through seat CARD 11-00092 (written 3/3/2011) and WO 32449205 E4100F227 HPCI keep fill pressure relief is leaking by (reported 3/7/2011, scheduled start 5/29/2013) SPF Note 2: E4101C002 Outboard seal leak 0.25 ml/min CARD 11-22354 - Leak on HPCI Turbine (written 3/3/2011) and WO 32449266 - Leak on HPCI Turbine While Operating already exist. SPF Note 3: "E4101C001A 20ml/min Outboard seal leak; 25ml/min Inboard seal leak CARD 11-22352 Leak on Inboard Pump Seal (written 3/3/2011) and WO 32454815 "04-Leak on Inboard Pump Seal exists and leakage is being trended by System Engineering" (per Maximo WO 32454815 status = CAN)</p>	<p>The identified failure(s) would not have prevented the performance of the required safety function of the equipment. Therefore, this failure will have no impact on an extension to a 24 month surveillance interval.</p>
5/28/2014	A	<p>SPF Note 1: "E4101C001A has 8ml/min seal leak CARD 11-22352 Leak on Inboard Pump Seal (written 3/3/2011) and WO 29766220 "Water leaking from outboard mechanical seal of HPCI main pump exist. The work order is in replan to add the replacement of inboard pump seal" (per Maximo WO 29766220 status = CAN 12/4/2015) SPF Note 2: "E4100F174 has a 15 dpm (0.75 ml/min) packing leak. In addition, the pipe cap downstream of the E4100F174 has a 15 dpm (0.75 ml/min) leak. With the packing leak on the E4100F174, this would be indication that the E4100F773 is leaking past its seat. CARD 14-24476 was generated for the packing leak on E4100F174 and pipe cap downstream of the E4100F174." CARD 14-24476 states: "Per 43.202.001, the current system leakage total is 9.50 ml/min versus the 250 ml/min total system leakage acceptance criteria in step 5.4.1 of 43.202.001." Reportability/Operability Review states: "Because leakage is within allowable limits and no EQ concern exists this condition will not prevent HPCI from performing its safety function. HPCI remains OPERABLE." Determined to be NOT a Maintenance Rule Functional Failure. WO 38493090 - Cut out and replace valves E4100F173 and E4100F174 written and completed on 8/23/2017.</p>	<p>The identified failure(s) would not have prevented the performance of the required safety function of the equipment. Therefore, this failure will have no impact on an extension to a 24 month surveillance interval.</p>

8/27/2015	A	<p>SPF Note 1: "E4150-F041 packing leak 0.8ml/min - Existing CARD 15-00196 and WO 29416225" (Per Maximo WO 29416225 status = CAN 4/10/2018) SPF Note 2: "E4101C001A (pump) has seal leak of 5.3 ml/min; WO 29766220 exists (Per Maximo WO 29766220 status = CAN 12/4/2015) SPF Note 3: "E4101C002 has leak 2.8 ml/min; Existing CARD 15-21492, WO 32449266 exts "SPF Note 4: "E4100-F028 packing leak 1.0 ml/min - CARDS 14-00120 and 14-29232 were generated and WO 38574926 and WO 38578191 exist." CARD 14-00120 (9/8/2014 ), WO 38574926 requested. WO 38574926 - perform As-Found / As-left diagnostics and repack valve E4100F028. (Returned to Service 10/26/2015 CARD 14-29232 (12/6/2014 ), WO 38574926 and WO 38578191 requested. (NOTE: WO 38578191 "Electrical Security Routine Work Order (CAMERAS)" is not relevant to E4100-F028); WO 38574926 - perform As-Found / As-left diagnostics and repack valve E4100F028. (Returned to Service 10/26/2015)SPF Note 5: "E4100-F031 packing leak 0.3 ml/min - CARD 15-23775 was generated (5/30/2015 during rounds) and WO 43179751 exists." WO 43179751 Repack valve E4100F031 (Returned to Service 11/6/2015) SPF Note 6: "E4100-F174 leak 0.1 ml/min - CARD 14-24476 was generated (5/28/2014) and WO 38493066 and WO 28493090 exist" CARD 14-24476 (WO 28493090 Returned to Service 8/22/2017; (Per Maximo WO 38493066 status = CAN-CLSD) SPF Note 7: "E4100-F087 leak 1.5 ml/min - Existing CARD 14-00756 (12/23/2014) and existing WO 42317426" WO 42317426 Repack valve E4100F087 (Returned to Service 11/7/2015)</p>	<p>The identified failure(s) would not have prevented the performance of the required safety function of the equipment. Therefore, this failure will have no impact on an extension to a 24 month surveillance interval.</p>
5/25/2017	A	<p>SPF Note 1: "E4100F173 was identified to have 3 ml/min packing leak CARD 17-20848 (WO 38493090) already exists to address issue" CARD 17-20848 "Possible water intrusion at Security Staging area" is incorrect reference. CARD 14-24476 is referenced by WO 38493090 - WO 38493090 - Cut out and replace valves E4100F173 and E4100F174. WO 38493090 completed, Returned to Service 8/22/2017 SPF Note 2: "E4150F041 was identified to have a 0.8 ml/min packing leak CARD 15-00196 (WO 29416225) already exists to address issue" (Per Maximo WO 29416225 status = CAN 4/10/2018)</p>	<p>The identified failure(s) would not have prevented the performance of the required safety function of the equipment. Therefore, this failure will have no impact on an extension to a 24 month surveillance interval.</p>

8/25/2018	A	SPF Note 1: E4101C002 has 200 ml/min leak. CARD 17-30495 previously written. Work Order 32449266 is scheduled to work 10/1/2018. WO 32449266 (WO status per Maximo = COMP 10/9/2018) SPF Note 2: "E4150F059 has a 1.5 ml/min packing leak CARD 18-26398 generated. CARD 18-26398 states: "E4150F059 "HPCI Lube Oil Cooling Water SupplyIsolation MOV" has a 1.5 ml/min (30 dpm) packing leak. The current total leakage for HPCI system is 201.5 ml/min, which is below the acceptance criteria of 250 ml/min (see 43.202.001 Step 5.4.1). This total includes the 1.5 ml/min packing leak for the E4150F059. Reportability/Operability Review states: "This minor leak does not impact the ability of E4150-F059 to perform its required function in support the HPCI system in standby or running conditions. E4150-F059 and the HPCI system remain OPERABLE." WO 51689529 (WO status per Maximo = INPLN sch start 8-17-2020)	The identified failure(s) would not have prevented the performance of the required safety function of the equipment. Therefore, this failure will have no impact on an extension to a 24 month surveillance interval.
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Event	Title	Associated SRs and Function
0360	PERFORM 43.203.001 CSS DIV 1 LEAKAGE MONITORING TEST	SR 5.5.2

# Performances: 6 # Failures: 0

**24 Month Justification: Notes:**

There were no failures, therefore the surveillance test history supports the conclusion that the impact, if any, on system availability will be small as a result of the change to a 24 month surveillance interval.

Event	Title	Associated SRs and Function
0361	PERFORM 43.203.005 CSS DIV 2 LEAKAGE MONITORING TEST	SR 5.5.2

# Performances: 6 # Failures: 0

**24 Month Justification: Notes:**

There were no failures, therefore the surveillance test history supports the conclusion that the impact, if any, on system availability will be small as a result of the change to a 24 month surveillance interval.

# Performances: 6      # Failures: 6

**24 Month Justification:    Notes:**

The failures do not impact any safety function; therefore, the surveillance test history supports the conclusion that the impact, if any, on system availability will be small as a result of the change to a 24 month surveillance interval.

**Failure Review:**

**Perf. Date   Fail Cat.   Description of Failure**

**Justification of Failure**

7/27/2010	A	<p>SPF Note: "E1150F047A - 1 dpm packing leak CARD 10-26405 generated" CARD 10-26405 states: "E1150F047A, RHR Division 1 Heat Exchanger A Inlet Isolation Motor Operated Valve, was noted to have a 1 dpm packing leak. Catch is installed to contain leak. This packing leak was originally identified on CARD 07-01630, which was closed to WO 25369596. WO 25369596 has since been cancelled" Reportability/Operability Review states: "The size of the leak from the packing does not inhibit the ability of the RHR system to perform its functions of LPCI injection, Torus Cooling, Torus Spray or Drywell spray. The system will still develop sufficient flow with this leak to support all the required modes of RHR. Therefore the RHR system remains OPERABLE." Event has been evaluated by Engineering as NOT a MRFF. WO 31596221 requested. Per Maximo WO 31596221 status = CAN 4/16/2014 - On 8/26/13, Performance Engineering did not note any leakage from this valve under Surveillance 43.204.001 (Work Order 34062480). Therefore, System Engineering recommends the cancellation of this Work Order.</p>	<p>The identified failure(s) would not have prevented the performance of the required safety function of the equipment. Therefore, this failure will have no impact on an extension to a 24 month surveillance interval.</p>
4/6/2012	A	<p>SPF Note 1: "E1150F017A has a 3 dpm packing leak CARD 12-22866 generated" CARD 12-22866 Reportability/Operability Review states: "43.204.001 "RHR DIVISION 1 LEAKAGE MONITORING TEST" tracks system leakage against a cumulative limit of 40 ml/min. This leak brings the current total system leakage of Div 1 RHR to 3.5 ml/min, which is in the acceptable range for total system leakage. Division 1 RHR will be declared operable following the current system outage." WO 34300003 requested. Per Maximo WO 34300003 status = CAN 1/19/2018 SPF Note 2: "E1150F048A has a 4 dpm packing leak CARD 12-22870 generated" CARD 12-22870 Reportability/Operability Review states: "Per 43.204.01 , the specification is less than or equal to 40 ml/min. Current RHR System leakage is 3.5ml/min. Significant margin is maintain for total system leak with the minor leak on E1150F048A. Therefore, TS 5.5.2 has been met and Div 1 RHR is able to perform its function(s). Division 1 RHR remains operable due to the leakage not impacting the operation of the RHR pump" WO 34300042 scope is to torque the packing on valve E1150F048A. WO 34300042 completed 10/23/2013.</p>	<p>The identified failure(s) would not have prevented the performance of the required safety function of the equipment. Therefore, this failure will have no impact on an extension to a 24 month surveillance interval.</p>

8/26/2013	A	<p>SPF Note 1: "E1150F017A has a 3 dpm (0.15 ml/min) packing leak CARD 12-22866 exists and Work Order 34300003 exists" CARD 12-22866 Reportability / Operability Review states: "43.204.001 "RHR DIVISION 1 LEAKAGE MONITORING TEST" tracks system leakage against a cumulative limit of 40 ml/min. This leak brings the current total system leakage of Div 1 RHR to 3.5 ml/min, which is in the acceptable range for total system leakage. Division 1 RHR will be declared operable following the current system outage." WO 34300003 requested. Per Maximo WO 34300003 Log note: WO Cancel - Per SE recommendation. OSC approved. Maximo Status: CAN 1/19/2018 - Potential RF21 work SPF Note 2: "E1150F007A - Packing was wet on the E1150F007A &lt;1dpm, small puddle on floor below valve (probably from stroking during system lineup) Based on leak description no CARD required "packing is wet".</p>	<p>The identified failure(s) would not have prevented the performance of the required safety function of the equipment. Therefore, this failure will have no impact on an extension to a 24 month surveillance interval.</p>
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1/22/2015	A	<p>SPF Note 1: "E1150F048A has 1 dpm (0.05 ml/min) packing leak CARD 15-20559 was initiated" CARD 15-20559 states: "E1150F048A (RHR-Div I Hx A Bypass Valve) was identified as having 0.05 mL/min (1 dpm) leak from the packing area. The total leakage for the Div I RHR system was determined to be 0.6 mL/min, which is below the acceptance criteria of 40 mL/min" Reportability/Operability Review states: "TS 5.5.2 has been met. Division 1 RHR remains Operable." WO 42443178 requested. WO 42443178 - E1150F048A Packing Leak Discovered during Leakage Reduction Walkdown, status per Maximo = INPLN 3/10/2015</p> <p>SPF Note 2: "E1150F047A has 1 dpm (0.05 ml/min) packing leak CARD 15-20558 was initiated" CARD 15-20558 states: "E1150F047A (RHR-Div I Hx A InletIsolation Valve) was identified as having 0.05 ml/min (1 dpm) leak from the packing area. The total leakage for the Div I RHR system was determined to be 0.6 ml/min, which is below the acceptance criteria of 40 mL/min" Reportability/Operability Review states: "TS 5.5.2 has been met. Division 1 RHR remains Operable." WO 42443131 requested. WO 42443131 - E1150F047A Packing Leak Discovered during Leakage Reduction Walkdown, status per Maximo = CAN5/11/2018</p> <p>SPF Note 3: "E1150F017A has a 4 dpm (0.2 ml/min) packing leak CARD 12-22866 was generated (4/6/2012) and Work Order 34300003 exists" Per Maximo WO 34300003 status = CAN 1/19/2018</p> <p>SPF Note 4: "E1100F082A has 2 dpm (0.1 ml/min) packing leak CARD 15-20562 was initiated" CARD 15-20562 states: "E1150F082A (RHR-Div I Cross-tieBypass Valve) was identified as having 0.1 mL/min (2 dpm) leak from the packing area. The total leakage for the Div I RHR system was determined to be 0.6 ml/min, which is below the acceptance criteria of 40 mL/min" Reportability/Operability Review states: "TS 5.5.2 has been met. Division 1 RHR remains Operable." No WO requested. CARD Closure Summary states: "Minor packing adjustment made. Monitored valve packing with no leakage apparent." SPF Note 5: "E1150F007A has 4 dpm (0.2 ml/min) packing leak CARD 15-20556 was initiated" CARD 15-20556 states: "E1150F007A (Div I RHR Pumps MinFlow Valve) was identified as having 0.2 ml/min (4 dpm) leak from the packing area. The total leakage for the Div I RHR system was determined to be 0.6 ml/min, which is below the acceptance criteria of 40 mL/min" Reportability/Operability Review states: "The total leakage for the Div I RHR system was determined to be 0.6 ml/min, which is below the acceptance criteria of 40 ml/min (see 43.204.001). Therefore, TS 5.5.2 has been met. Division 1 RHR remains Operable." WO 42443124 requested. WO 42443124 - E1150F007A Packing Leak Discovered during Leakage Reduction Walkdown, status per Maximo = INPLN 3/10/2015</p>	<p>The identified failure(s) would not have prevented the performance of the required safety function of the equipment. Therefore, this failure will have no impact on an extension to a 24 month surveillance interval.</p>
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8/23/2016	A	<p>SPF Note 1: "E1100F082A has 0.2 ml/min packing leak CARD 16-26674 was created to address leak" CARD 16-26674 states: "E1100F082A (RHR Div. 1 Cross Tie Bypass Valve) was identified as having 0.2 ml/min (4 dpm) packing leak. Based on this leak rate, E1100F082A is not a major contributor to the RHR Div. 1 total leakage. The current total leakage for the Div. 1 RHR system is 474.28 mL/min, which is above the acceptance criteria of 40 ml/min (see 43.204.001 step 5.3). A previously identified leak of 473.18 ml/min (0.125 gpm), coming from a drain downstream of E1100F087 (RHR Keep Fill Station relief valve) caused the 40 ml/min acceptance criteria to be exceeded. See CARD 16-25846 (WOs 45744382 and 45744411) for more detail. CARD 16-26674 - WO 45959457 requested. During execution of the WO, mechanical maintenance noted the end of the leak off port on the valve was wet and stated the leak appeared to be coming from the leak off port; not the valve packing. Mechanical maintenance also noted there was not an active leak, but did state the valve is in the closed position which could mask any leak through the leak off port. To remediate the leak, CARD 19-20340 is requesting a WO to cap/plug the leak-off port IAW 3071-012. No further engineering paperwork is required SPF Note 2: "E1150F017A has 0.4 ml/min packing leak CARD already exists to address issue (see WO 34300003)" Per Maximo WO 34300003 status = CAN 1/19/2018 SPF Note 3: "E1150F007A has a 0.2 ml/min leak CARD already exists to address issue (see WO 42443124)" WO 42443124 - E1150F007A Packing Leak Discovered during Leakage Reduction Walkdown, status per Maximo = INPLN 3/10/2015 SPF Note 4: "E1150F047A has a 0.05 ml/min packing leak CARD already exists to address issue (see WO 42443131)" WO 42443131 - E1150F047A Packing Leak Discovered during Leakage Reduction Walkdown, status per Maximo = CAN 5/11/2018, Maximo Log note: "SE -Cancel: This WO can be canceled. 1 DPM packing leak does not necessitate repack. "SPF Note 5: "E1150F048A has a 0.25 ml/min) packing leak CARD already exists to address issue (see WO 42443178)" WO 42443178 - E1150F048A Packing Leak Discovered during Leakage Reduction Walkdown, Maximo status: INPLN 3/10/2015Surv 43.204.001 (Page 11) Table 6: Other Leakage and Remarks state: "No internal leakage identified on E1100F184 and E1100F185 although CARD 16-25846 identified leakage (7/24/2016) past E100F184 and E1100F185 seats at a leakage rate of approximately 0.125gpm" This was previously identified leakage during performance of 24.204.01, LPCI Pump and Suppression Pool Cooling/Spray Pump and Valve Operability. WOs 45744382 and 45744411 were both completed 3/22/2017 to rework/replace the respective check valves.</p>	<p>The identified failure(s) would not have prevented the performance of the required safety function of the equipment. Therefore, this failure will have no impact on an extension to a 24 month surveillance interval.</p>
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1/18/2018	A	<p>SPF Note 1: "E1150F007A has 1.5 ml/min (300 dpm) packing leak - CARD 15-20556/ WO 42443124 already exists. WO 42443124 - E1150F007A Packing Leak Discovered during Leakage Reduction Walkdown, status per Maximo = INPLN 3/10/2015 SPF Note 2: "E1150F017A has 0.4 ml/min (8 dpm) packing leak - CARD 12-22866 (WO 34300003) already exists" WO 34300003 status per Maximo = CAN 1/19/2018 SPF Note 3: "E1150F047A has a 0.05 ml/min (1 dpm) packing leak - CARD 15-20558 (WO 42443131) already exists" WO 42443131 - E1150F047A Packing Leak Discovered during Leakage Reduction Walkdown, status per Maximo = CAN 5/11/2018; Maximo Log note: "SE -Cancel: This WO can be canceled. 1 DPM packing leak does not necessitate repack." SPF Note 4: "E1150F048A has a 0.25 ml/min (5 dpm) packing leak - CARD 15-20559 (WO 42443178) already exists" WO 42443178 - E1150F048A Packing Leak Discovered during Leakage Reduction Walkdown, status per Maximo = INPLN 3/10/2015 SPF Note 5: "E1100F082A has 0.2 ml/min (4 dpm) packing leak CARD 16-26674 (WO 45959457) already exists" WO 45959457 Leakage Reduction Inspection - E1100F082A Packing Leak status per Maximo = WCREV 6/28/2018</p>	<p>The identified failure(s) would not have prevented the performance of the required safety function of the equipment. Therefore, this failure will have no impact on an extension to a 24 month surveillance interval.</p>
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# Performances: 6      # Failures: 4

**24 Month Justification:    Notes:**

The failures do not impact any safety function; therefore, the surveillance test history supports the conclusion that the impact, if any, on system availability will be small as a result of the change to a 24 month surveillance interval.

**Failure Review:**

**Perf. Date   Fail Cat.   Description of Failure**

12/8/2011	A	<p>SPF Note 1: "E1150F007B has 20 dpm (1ml/min) packing leak - CARD 11-30813 generated" CARD 11-30813 states: "E1150F007B has a packing leak of 20 dpm (1 ml/min). Repair leak. Informed Main Control Room of leak." Reportability/Operability Review states: "TS 5.5.2 has been met. Division 2 RHR remains operable due to leakage not impacting operation of RHR pump and system leakage remaining below 40 ml/min." MRFF Evaluation completed: "This packing leak is the only identified leakage on this division, with the leakage at 1 ml/m, this does not exceed the criterion of less than 40 ml/m. Therefore, this event is a NOT a Maintenance Rule Functional Failure." WO 33753013 requested. WO 33753013 -Packing Leak On E1150F007B was not able to repair leakage. New CARD 12-25028 written. CARD states: "Attempt was made to retorque, and no movement was attained. Need new work request to go deeper into valve. Follower was sitting 1/16" on shaft. Follower cannot be raised up against motor base support arms. Arms are bolted about 1/8" low." Purpose of CARD 12-25028 was to document attempt to tighten packing to reduce leak rate was unsuccessful. CARD 12-25028 documents leak rate has remained unchanged from CARD 11-30813. On 6/20/12, System Engineering verified from Performance Engineering total leak rate for Division 2 RHR is still 1 mL/min out of a total allowable of 40 mL/min. Since current leak rate is still within leakage reduction program limits as specified in UFSAR and Technical Specifications (RHR Function E1100-17), this condition is not a MRFF. WO 34606001 requested. Per Maximo WO 34606001 Status: CAN 9/11/2013" On 2/26/13, Performance Engineering inspected condition of this packing leak under 43.204.002. Within 43.204.002, engineer noted packing was wet and leakage rate to be significantly less than 1 dpm. Therefore, System Engineering recommends cancellation of this work order. SPF Note 2: "E1150F017A has a 5 dpm (0.25 ml/min packing leak - WO 32037189 exists for repack, WO 32633929 exists for contingency bonnet replacement" Per Maximo WO 32037189 status: CAN 2/10/2012; WO 34014106 replaced WO 32037189. WO 34014106 refers to WO 34300003; WO indicates SE Cancel - Refueling Outage 21. WO 32633929 status: SE CANCEL 7/1/2014</p>
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**Justification of Failure**

The identified failure(s) would not have prevented the performance of the required safety function of the equipment. Therefore, this failure will have no impact on an extension to a 24 month surveillance interval.

11/25/2014	A	<p>SPF Note 1: "E1100F089 and F090 were inaccessible. RWCU was protected due to Condenser tube leak. "SPF Note 2: "E1150F017B has 1 dpm (0.05 ml/min) leak - CARD 14-24282 already exists to address this issue. CARD requests WO 38465413 for repair. SPF Note 3: "E1150F007B has 1 dpm (0.05 ml/min) packing leak - CARD 14-29049 was written to address this issue." CARD 14-29049 states: "1dpm (0.05 mL/min) leak was identified from the E1150F007B (RHR Pmps B&amp;D Min Flow Bypass) packing area. The current total identified leak for the Div 2 RHR system is 0.1 ml/min, which is below the acceptance criteria listed in 43.204.002 of 40ml/min."</p> <p>Reportability/Operability Review states: "This is a small leak of 1 dpm (per 43.204.002, RHR Division 2 Leakage monitoring test 20 dpm = 1 ml/min). The current total identified leak for the Div 2 RHR system is 0.1 mL/min, which is below the acceptance criteria listed in 43.204.002 of 40 mL/min. Therefore, TS 5.5.2 has been met. Division 2 RHR remains Operable" WO 42175345 requested. WO 42175345 CBM - Leak from Packing Area of E1150F007B status per Maximo = CAN; Maximo Log Note: SE-CANCEL</p>	<p>The identified failure(s) would not have prevented the performance of the required safety function of the equipment. Therefore, this failure will have no impact on an extension to a 24 month surveillance interval.</p>
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9/4/2016	A	<p>SPF Note 1: "E1150F006D - 0.15 ml/min packing leak coming from leak off nipple. - CARD 15-23754 previously written (5/29/2015) - WO 43179716" Per Maximo WO 43179716 = CAN 2/15/2018. SPF Note 2: "E1150F007B 0.60 ml/min packing leak - CARD 15-27859 (10/16/2015) previously written WO 44159467" WO 44159467 E1150F007B Leaking - 12 dpm packing leak completed 4/18/2017 SPF Note 3: "E1100F078 0.05 ml/min leak on indicator shaft packing - CARD 15-27716 previously written WO 44138441" Per Maximo WO 44138441 status = CAN 5/11/2018 SPF Note 4: "E1100F034D 0.05 ml/min packing leak - CARD 16-27065 generated" CARD 16-27065 states: "E1100F034D (RHR Pump D Discharge Isolation Valve) was identified as having 0.05 mL/min (1 dpm) packing leak. The current total leakage for the RHR Div 2 system is 6.35 mL/min, which is below the acceptance criteria of 40 mL/min" Reportability/Operability Review states: "Per the Leakage Reduction procedure 43.204.002, total system leakage for Div 2 RHR is 6.35 ml/min versus the 40 ml/min acceptance criteria. Minor system leakage does not impact the safety related function of Div 2 RHR. D2 RHR remains OPERABLE" WO 46021508 requested. WO 46021508 Leakage Reduction Inspection Results - E1100F034D completed 11/27/2017 SPF Note 5: "E1150F024B 0.05 ml/min packing leak - CARD 16-27066 generated" CARD 16-27066 states: "E1150F024B (Div 2 RHR Torus Cooling Isolation Valve) was identified as having 0.05 mL/min (1 dpm) packing leak. The current total leakage for the RHR Div 2 system is 6.35 mL/min, which is below the acceptance criteria of 40 mL/min" Reportability/Operability Review states: "Per the Leakage Reduction procedure 43.204.002, total system leakage for Div 2 RHR is 6.35 ml/min versus the 40 ml/min acceptance criteria. Minor system leakage does not impact the safety related function of Div 2 RHR. D2 RHR remains OPERABLE" WO 46021535 requested. Per Maximo WO 46021535 status = WDLY 9/8/2016 SPF Note 6: "E1100F180B 0.05 ml/min packing leak - CARD 16-27067 generated" CARD 16-27067 states: "E1100F180B (RHR Div 2 Supply to Thermal Recombiner Water Spray Cooler T4804B001B Vent Valve) was identified as having 0.05 mL/min (1 dpm) packing leak. The current total leakage for the RHR Div 2 system is 6.35 mL/min, which is below the acceptance criteria of 40 mL/min" Reportability/Operability Review states: "Per the Leakage Reduction procedure 43.204.002, total system leakage for Div 2 RHR is 6.35 ml/min versus the 40 ml/min acceptance criteria. Minor system leakage does not impact the safety related function of Div 2 RHR. D2 RHR remains OPERABLE" WO 46021557 requested. WO 46021557 status per Maximo = WDLY 9/8/2016 SPF Note 7: "E1100F090 and E1100F089 leaking past their seats coming from the E1100F087. (108 dpm) 5.4 ml/min - CARD 16-27068 generated" CARD 16-27068 states: "leakage of 5.4 mL/min (108 dpm) was observed into the funnel drain of E1100F087 (RHR Keep Fill Station relief valve). This is an indication of Div 2 RHR Keep Fill check valves (E1100F089 and E1100F090) are leaking past their seat. The 5.4 mL/min is now tracked under the Leakage Reduction program. The current total leakage for the RHR Div 2 system is 6.35 mL/min, which is below the acceptance criteria of 40 mL/min" Reportability/Operability Review states: "Per the Leakage Reduction procedure 43.204.002, total system leakage for Div 2 RHR is 6.35 ml/min versus the 40 ml/min acceptance criteria. Minor system leakage does not impact the safety related function of</p>	<p>The identified failure(s) would not have prevented the performance of the required safety function of the equipment. Therefore, this failure will have no impact on an extension to a 24 month surveillance interval.</p>
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11/21/2017	A	<p>SPF Note 1: "E1150F006B has a 0.1 ml/min (2 dpm) packing leak. CARD 17-20919 (WO 47058381) already exists." Per Maximo WO 47058381 status = INPLN 10/12/2018</p> <p>SPF Note 2: "E1150F006D has a 0.1 ml/min (2 dpm) packing leak. CARD 15-23754 (WO 43179716) already exists." Per Maximo WO 43179716 status = CAN 2/15/2018</p> <p>SPF Note 3: E1100F034D has a 0.05 ml/min (1 dpm) packing leak. CARD 16-27065 (WO 46021508) already exists." WO 46021508 Leakage Reduction Inspection Results - E1100F034D completed 11/27/2017 SPF Note 4: "E1100F001B has a 0.05 ml/min (1 dpm) leak from a threaded connection. CARD 17-23248 (WO 47454538) already exists." Per Maximo WO 47454538 Leak identified on E1100F001B during PMT VT-2 Inspection status = INPLN 4/26/2017 SPF Note 5: "E1100F089 and E1100F090 leaking past their seat. Leak is coming from E1100F089 into a floor drain at 5.4 ml/min (108 dpm) CARD 16-27068 (WO 46067141 for F089 and WO 46067164 for F090) already exist." Per Maximo WO 46067141 Leakage Reduction Program - E1100F089 - Leaking past seat and WO 46067164 Leakage Reduction Program - E1100F090 leaking past seat status = INPLN (5/30/2017) SPF Note 6: "E1150F047B has a 0.05 ml/min (1 dpm) leak from the leak off nipple. CARD 17-29383 was created to address issue." CARD 17-29383 states: "E1150F047B (RHR DIV2 HX "B" INLET ISO MOV) was identified as having 0.05mL/min (1 dpm) leak coming from the leak off nipple. The current total leakage for the RHR Div 2 system is 5.75 mL/min, which is below the acceptance criteria of 40 mL/min" Reportability/Operability Review states: "Current system leakage per 43.204.002 "RHR Division 2 Leakage Monitoring Test" including the 1dpm (0.05 ml/min) identified in this CARD is 5.75 ml/min, versus the 40.0 ml/min total system leakage acceptance (per step 5.4 in procedure 43.204.002). The 1 dpm leak does not affect the ability of the valve to be positioned to support RHR modes of operation. Div 2 RHR remains OPERABLE." WO 49267598 requested. WO 49267598 Leakage Reduction Program Inspection E5150F047B status per Maximo = WDLY 11/28/2017</p>	<p>The identified failure(s) would not have prevented the performance of the required safety function of the equipment. Therefore, this failure will have no impact on an extension to a 24 month surveillance interval.</p>
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Event	Title	Associated SRs and Function
0493	PERFORM 43.404.002 DIVISION 2 STANDBY GAS TREATMENT FILTER PERFORMANCE TEST	SR 5.5.2 SR 5.5.7.b SR 5.5.7.e

# Performances: 6 # Failures: 2

**24 Month Justification: Notes:**

The failures do not impact any safety function; therefore, the surveillance test history supports the conclusion that the impact, if any, on system availability will be small as a result of the change to a 24 month surveillance interval.

**Failure Review:**

**Perf. Date Fail Cat. Description of Failure**

11/2/2016	A	SPF Note: "Light burned out in compartment behind door with test port #5. Does not impact function of filter. CARD 16-28700 initiated for Work Order."Also noted: "Test was interrupted prior to performance of Step 5.5 due to suspect heater wires. CARD 16-28716 initiated, Work Order 46449609 corrected wiring issue. (See Event 3493, WO 43150321 for detail). Performed Section 5.3, then performed 5.5. Entire ST
6/19/2018	A	Noted on page 16, Step 5.1.8 CARD 16-28700 previously submitted. WO 46461838 is R2WK status and scheduled for 7/31/2018 to replace burnt out light inside door with Test Port #5 - does not impact the function of the filter system. WO 46461838 completed replacement of light bulb on 7/31/2018.

**Justification of Failure**

The identified failure(s) would not have prevented the performance of the required safety function of the equipment. Therefore, this failure will have no impact on an extension to a 24 month surveillance interval.

The identified failure(s) would not have prevented the performance of the required safety function of the equipment. Therefore, this failure will have no impact on an extension to a 24 month surveillance interval.

# Performances: 6                      # Failures: 2

**24 Month Justification:      Notes:**

The failures do not impact any safety function; therefore, the surveillance test history supports the conclusion that the impact, if any, on system availability will be small as a result of the change to a 24 month surveillance interval.

**Failure Review:**

Perf. Date	Fail Cat.	Description of Failure	Justification of Failure
10/19/2015	A	SPF Note: "System leakage within Spec, However leakage was detected on examination points 5 and 16 on the leakage Examination Data Sheet (Attachment 2, Page 1 of 1) CARD 15-27979 was written per Step 6.1.7.1" CARD 15-27979 states: "43.409.001 has an allowable total system leakage acceptance criterion of 3.00 SCFH and the actual measured leakage was 1.44 SCFH. However, Step 6.1.7.1 in procedure 43.409.001 Rev. 30, requires a CARD be written to identify which components had detected leakage. The two components with detected leakage were T4804F003A, Bonnet Area (#5 on the Leakage Examination Data Sheet in 43.409.001) and T4804F604A, Flange farthest from Containment (#16 on the Leakage Examination Data Sheet in 43.409.001)." Reportability/Operability Review states: "System leakage determined to be less than total system leak acceptance criteria and therefore no degraded condition. No operability or Reportability assessment required." Maintenance Rule Functional Failure (MRFF) evaluation not required. System leakage is less than total system leak acceptance criteria and there is no degraded condition.	The identified failure(s) would not have prevented the performance of the required safety function of the equipment. Therefore, this failure will have no impact on an extension to a 24 month surveillance interval.
4/10/2017	A	SPF Note: "Leakage identified from T4804-F003A and T4804-F604A. CARD 17-23217 initiated." CARD 17-23217 states: "total system leakage was identified at 2.95 SCFH with an acceptance criteria of 3.0 SCFH. Two valves were identified as the major contributors to the total system leakage. Valves T4804F003A and T4804F604A both have significant packing /packing gland leakage. It is requested that both valves be repacked or have the packing adjusted prior to the next scheduled test. Both of these valves were previously identified as leaking during RF17 testing." Reportability/Operability Review states: "T4804F604A is a primary containment isolation valves (PCIV). As found leakage thru this penetration determined to be 2.95 SCFH. Allowable leakage for this penetration met acceptance criteria 3.0 SCFH. This condition does not impact the ability of the PCIV to perform its safety related function. T4804F604A remains OPERABLE." Per Maximo WO 47458075 Status:FLDCOMP, 10/10/2017	The identified failure(s) would not have prevented the performance of the required safety function of the equipment. Therefore, this failure will have no impact on an extension to a 24 month surveillance interval.

Event	Title	Associated SRs and Function	TRVEND 24MCGNF319001 Rev 1
0495	PERFORM 43.413.001 SECTIONS 5.1, 5.2 AND 5.5 THRU 5.13 CONTL RM EMERG FILTER PERF	SR 5.5.7.a SR 5.5.7.d	SR 5.5.7.b SR 5.5.7.e

# Performances: 6 # Failures: 2

**24 Month Justification: Notes:**

One failure is identified as event driven failure which is not indicative of a repetitive time based failure mechanism. The other failure did not impact any safety function; therefore, the surveillance test history supports the conclusion that the impact, if any, on system availability will be small as a result of the change to a 24 month surveillance interval.

**Failure Review:**

**Perf. Date Fail Cat. Description of Failure**

4/18/2009 C SPF Note 3: Determined downstream Halide detector had failed. Section 5.10 and 5.11 results are invalid. Test equipment left installed. Resolution: CARD 09-22871; reperform Sections 5.5, 5.10 and 5.11 using second copy of procedure. CARD 09-22871 states: "Halide detectors are used to measure charcoal bed upstream and downstream halide concentrations to verify proper charcoal operation. Downstream halide concentrations were zero for both the Recirculation Filter and Emergency Filter Charcoal during performance of 43.413.001 on 4/16/09. The Emergency Filter Charcoal is expected to have a downstream reading due to its small bed depth. To validate results, the downstream sample tap was moved to the upstream detector and residual halide was detected, indicating that the downstream detector, M&TE Number ZZ-108-M, had failed. Notified Shift Manager in the Main Control Room." Reportability/Operability Review states: "SGTS is not required to be Operable in the current mode. Retesting of both divisions of SGTS need to be completed prior to plant startup from RF13." Work Orders 29710795 and 29710836 are referenced, however, per Maximo, both were cancelled. Determined to be M&TE failure, reperform partial surveillance is indicated. Applicable steps in Section 5.5, and Sections 5.10 and 5.11 were reperformed satisfactorily.

**Justification of Failure**

This is an event driven failure in that the test equipment (Halide detector) being utilized to document the test results failed during the procedure performance. Therefore, this failure will have no impact on an extension to a 24 month surveillance interval.

11/1/2015	A	<p>SPF Note: "Zip-lock bag entered CCHVAC System during restoration activities. CARD 15-28460 initiated to retrieve Zip-lock bag." CARD 15-28460 states: "During performance of WO# 37581722 to restore CCHVAC to its normal configuration, a one gallon zip-lock bag entered the internals of the CCHVAC system through T4102 testport #11. Per 43.413.001, Encl. C, Page 1 it is presumed that the bag is displaced against the HEPA filter within the compartment directly below testport #11. Request WO to retrieve zip-lock bag during RF17." It was removed on 11/04/15 with work order 44238494. During performance of this work order the System Engineer removed the bag and inspected the HEPA filters, which are in this compartment, to ensure there was no damage. No damage to the filters was expected and none was noted during the inspection. Primary causes were attributed to Work Quality (Workmanship) to maintain situational awareness and procedure use and adherence. A Crew Learning Opportunity (CLO) was written to share lessons learned. Action Item Completion Comments state: "The functions evaluated for this issue are: Function T4102-03, Maintain Control Center Envelope at a positive pressure with respect to outside ambient pressure in Emergency Recirculation Mode. Function T4102-04, Filtration system ensures that resultant operator doses are within regulatory limits following a DBA. The CCHVAC system was declared inoperable to perform this PST event and was not declared operable again until after the bag was removed and the system returned to normal configuration. The Control Center Envelope was maintained at a positive pressure with respect to the outside ambient pressure prior to and after the bag entered the filter compartment. During this event, the CCHVAC system maintained its T4102-03 function. A small area of a HEPA filter was covered. There was adequate flow through the filtration unit because the Control Center Envelop pressure was maintained. No flow was impeded in the area of the charcoal filter so Operator doses would have been maintained within regulatory limits following a DBA. The unit maintained its T4102-04 function. This event is not a functional failure."</p>	<p>The identified failure(s) would not have prevented the performance of the required safety function of the equipment. Therefore, this failure will have no impact on an extension to a 24 month surveillance interval.</p>
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Event	Title	Associated SRs and Function	
0496	PERFORM 44.010.037 RPS(TS A/TC A1)-NS4(TS A/TC A) DW PRESSURE, C71N650A, CALIBRATION/FUNC	SR 3.3.1.1.14-7	SR 3.3.1.1.15-7
		SR 3.3.6.1.4-2.c	SR 3.3.6.1.4-7.b
		SR 3.3.6.1.5-2.c	SR 3.3.6.1.5-7.b
		SR 3.3.6.2.4-2	SR 3.3.6.2.5-2
		SR 3.3.7.1.5-2	SR 3.3.7.1.6-2
		SR 3.6.1.3.8	SR 3.6.4.2.3
		SR 3.6.4.3.3	SR 3.7.3.3

# Performances: 6      # Failures: 0

**24 Month Justification: Notes:**

There were no failures, therefore the surveillance test history supports the conclusion that the impact, if any, on system availability will be small as a result of the change to a 24 month surveillance interval.

Event	Title	Associated SRs and Function	
		SR 3.3.1.1.14-7	SR 3.3.1.1.15-7
0497	PERFORM 44.010.038 RPS(TS B/TC B1)-NS4(TS A/TC B) DW PRESSURE, C71N650B, CALIBRATION/FUNC	SR 3.3.6.1.4-2.c	SR 3.3.6.1.4-7.b
		SR 3.3.6.1.5-2.c	SR 3.3.6.1.5-7.b
		SR 3.3.6.2.4-2	SR 3.3.6.2.5-2
		SR 3.3.7.1.5-2	SR 3.3.7.1.6-2
		SR 3.6.1.3.8	SR 3.6.4.2.3
		SR 3.6.4.3.3	SR 3.7.3.3

# Performances: 6      # Failures: 0

**24 Month Justification: Notes:**

There were no failures, therefore the surveillance test history supports the conclusion that the impact, if any, on system availability will be small as a result of the change to a 24 month surveillance interval.

Event	Title	Associated SRs and Function	
		SR 3.3.1.1.14-7	SR 3.3.1.1.15-7
0498	PERFORM 44.010.039 RPS(TS A/TC A2)-NS4(TS B/TC C) DW PRESSURE, C71N650C, CALIBRATION/FUNC	SR 3.3.6.1.4-2.c	SR 3.3.6.1.5-2.c
		SR 3.3.6.2.4-2	SR 3.3.6.2.5-2
		SR 3.3.7.1.5-2	SR 3.3.7.1.6-2
		SR 3.6.1.3.8	SR 3.6.4.2.3
		SR 3.6.4.3.3	SR 3.7.3.3

# Performances: 6      # Failures: 0

**24 Month Justification: Notes:**

There were no failures, therefore the surveillance test history supports the conclusion that the impact, if any, on system availability will be small as a result of the change to a 24 month surveillance interval.

Event	Title	Associated SRs and Function	
		SR 3.3.1.1.14-7	SR 3.3.1.1.15-7
0499	PERFORM 44.010.040 RPS(TS B/TC B2)-NS4(TS B/TC D) DW PRESSURE, C71N650D, CALIBRATION/FUNC	SR 3.3.6.1.4-2.c	SR 3.3.6.1.5-2.c
		SR 3.3.6.2.4-2	SR 3.3.6.2.5-2
		SR 3.3.7.1.5-2	SR 3.3.7.1.6-2
		SR 3.6.1.3.8	SR 3.6.4.2.3
		SR 3.6.4.3.3	SR 3.7.3.3

# Performances: 6      # Failures: 0

**24 Month Justification: Notes:**

There were no failures, therefore the surveillance test history supports the conclusion that the impact, if any, on system availability will be small as a result of the change to a 24 month surveillance interval.

# Performances: 4      # Failures: 0

24 Month Justification:      Notes:

There were no failures, therefore the surveillance test history supports the conclusion that the impact, if any, on system availability will be small as a result of the change to a 24 month surveillance interval.

Event	Title	Associated SRs and Function
0505	PERFORM 44.010.050 RPS-MSIV, TRIP SYS B CHANNEL B1,RTT	SR 3.3.1.1.17-5
# Performances: 5      # Failures: 0		

24 Month Justification:      Notes:

There were no failures, therefore the surveillance test history supports the conclusion that the impact, if any, on system availability will be small as a result of the change to a 24 month surveillance interval.

Event	Title	Associated SRs and Function
0506	PERFORM 44.010.051 RPS-MSIV, TRIP SYS A CHANNEL A2,RTT	SR 3.3.1.1.17-5
# Performances: 4      # Failures: 0		

24 Month Justification:      Notes:

There were no failures, therefore the surveillance test history supports the conclusion that the impact, if any, on system availability will be small as a result of the change to a 24 month surveillance interval.

Event	Title	Associated SRs and Function
0507	PERFORM 44.010.052 RPS-MSIV, TRIP SYS B CHANNEL B2,RTT	SR 3.3.1.1.17-5
# Performances: 4      # Failures: 0		

24 Month Justification:      Notes:

There were no failures, therefore the surveillance test history supports the conclusion that the impact, if any, on system availability will be small as a result of the change to a 24 month surveillance interval.

Event	Title	Associated SRs and Function
0508	PERFORM 44.010.053 RPS-TURBINE STOP VALVE CLOSURE, TRIP SYS A, CHAN A1, RTT	SR 3.3.1.1.17-9
# Performances: 4		# Failures: 0

**24 Month Justification: Notes:**

There were no failures, therefore the surveillance test history supports the conclusion that the impact, if any, on system availability will be small as a result of the change to a 24 month surveillance interval.

Event	Title	Associated SRs and Function
0509	PERFORM 44.010.054 RPS-TURBINE STOP VALVE CLOSURE, TRIP SYS B, CHAN B1, RTT	SR 3.3.1.1.17-9
# Performances: 4		# Failures: 0

**24 Month Justification: Notes:**

There were no failures, therefore the surveillance test history supports the conclusion that the impact, if any, on system availability will be small as a result of the change to a 24 month surveillance interval.

Event	Title	Associated SRs and Function
0510	PERFORM 44.010.055 RPS-TURBINE STOP VALVE CLOSURE, TRIP SYS A, CHAN A2, RTT	SR 3.3.1.1.17-9
# Performances: 4		# Failures: 0

**24 Month Justification: Notes:**

There were no failures, therefore the surveillance test history supports the conclusion that the impact, if any, on system availability will be small as a result of the change to a 24 month surveillance interval.

Event	Title	Associated SRs and Function
0511	PERFORM 44.010.056 RPS-TURBINE STOP VALVE CLOSURE, TRIP SYS B, CHAN B2, RTT	SR 3.3.1.1.17-9 SR 3.5.2.8
# Performances: 4		# Failures: 0

**24 Month Justification: Notes:**

There were no failures, therefore the surveillance test history supports the conclusion that the impact, if any, on system availability will be small as a result of the change to a 24 month surveillance interval.

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Event	Title	Associated SRs and Function
0512	PERFORM 44.010.057 RPS-TURBINE CONT VALVE FAST CLOSURE,TRIP SYS A,CH A1,RTT	SR 3.3.1.1.17-10
# Performances: 4      # Failures: 0		

**24 Month Justification:**    **Notes:**

There were no failures, therefore the surveillance test history supports the conclusion that the impact, if any, on system availability will be small as a result of the change to a 24 month surveillance interval.

Event	Title	Associated SRs and Function
0513	PERFORM 44.010.058 RPS-TURBINE CONT VALVE FAST CLOSURE,TRIP SYS B,CH B1,RTT	SR 3.3.1.1.17-10
# Performances: 4      # Failures: 0		
<b>24 Month Justification:</b> <b>Notes:</b> <div> There were no failures, therefore the surveillance test history supports the conclusion that the impact, if any, on system availability will be small as a result of the change to a 24 month surveillance interval. </div>		

**Event Title**  
**0514 PERFORM 44.010.059 RPS-TURBINE CONT VALVE FAST CLOSURE,TRIP SYS A,CH A2,RTT**

**# Performances: 4      # Failures: 1**

**24 Month Justification: Notes:**

One failure identified which did not impact any safety function; therefore, the surveillance test history supports the conclusion that the impact, if any, on system availability will be small as a result of the change to a 24 month surveillance interval.

**Failure Review:**

**Perf. Date Fail Cat. Description of Failure**

11/29/2010      A      SPF Notes: "Step 6.1.13 Response time for relay 37C de-energizing to four Pilot SCRAM Solenoids de-energized in 54 milli-seconds exceeds the acceptance criteria of <50 milli-seconds. Notified CRS, Discussed with I&C Supervisor, he recommended obtaining copy of the recording. Per CRS discussion, continued with surveillance. Step 6.1.20 acceptance criteria exceeded, 52 msec (accept Criteria <50 msec). Notified CRS. Saved as Record 12 in BT folder on the hard (C) drive. Step 8.1 failed to meet Acceptance Criteria. Notified CRS. CARD 10-31266 written." CARD 10-31266 Description/Investigation states: "Step 6.1.13 response time was found to be 54 msec, which did not meet the ACCEPTANCE CRITERIA of < 50 msec, and the Step 6.1.20 response time was found to be 52 msec, which did not meet the ACCEPTANCE CRITERIA of < 50 msec. After Step 6.1.13, the Control Room Supervisor (CRS) was notified, and the situation was discussed with an I&C Supervisor. The Vision XP (RC-058-M , 5/20/2011) data for the Step 6.1.13 response time recorded was downloaded to a memory stick, as well as the previously run 44.010.059 data. The surveillance was continued. When Step 6.1.20 failed to meet the A.C., the CRS was notified, the data was saved as RECORD 12 in BT folder on the hard (C) drive of the recorder, and the surveillance continued. The CRS was notified that Step 8.1 ACCEPTANCE CRITERIA had failed. The recorder was brought back to the I&C shop to download and print out the re-performed Step 6.1.20 results." Investigation determined that the Surveillance was performed on Day shift with SAT results, then re-performed on Nights with UNSAT results. The difference was in the testing method. The SAT performance had the recorder hooked up to the back of the scram light holder. The UNSAT performance had the scram light bulbs removed and a test adapter installed in the bulb socket. The Surveillance performance over the years has been close to the 50ms acceptance criteria. The slight difference in the times was with the different testing method. Maintenance Rule Functional Failure form documents: "The description of this event indicates that the RPS system met the Maintenance Rule function C7100-02 in that a scram signal was present. The issue is that the signal did not meet the acceptance criteria for response time. The event documents the second time that the procedure was performed. During the first performance (which passed the acceptance criteria) I&C noted that no qualified individual performed the test. The first performance occurred measuring the response across a relay room scram light. The second performance, which initiated CARD 10-

**Justification of Failure**

The identified failure(s) would not have prevented the performance of the required safety function of the equipment. Therefore, this failure will have no impact on an extension to a 24 month surveillance interval.

31266, was performed with qualified individuals and the relay room scram light removed with response measured at the removed light lamp socket. However, the test was repeated later with the scram light installed and measuring the response time across the light (additional path to discharge the energy stored in the scram solenoids) and the acceptance criteria was met. Work Order 32084102, assigned to CARD 10-31266, was cancelled as no corrective actions are necessary. The RPS met the criteria for response time and performed the scram function as expected thus no Maintenance Rule Functional Failure occurred." CARD 10-31266-02 Action Item Completion Comments state: "CARD 10-31320 was also written to address a similar issue. The difference between the two equipment hook-ups is minimal; a couple of milliseconds(ms). The corrective action from CARD 10-31320 was to change the Acceptance Criteria from 50 to 65 ms. Therefore we will not be close to the time and either testing method is acceptable." CARD 10-31320 investigation determined, from the revision history, that up until 44.010.059, Rev 21, the acceptance criteria for the TCV fast closure response time was < 80ms. During revision 22 of procedure 44.010.059, the response time was changed from < 80 ms to < 50 ms using NE-PJ-90-0271 dated May 30, 1990, a letter from PSE to I&C Maintenance. A review of NE-PJ-90-0271 concluded that the change of response time from < 80 ms to < 50 ms during revision 22 of procedure 44.010.059 was an error. As a CAAAC, a cross-discipline group meeting was conducted and determined, the 44.010.057 through 44.010.060 procedures needed to have acceptance criteria changed from <50 milliseconds (msec) to <65 msec." Procedures 44.010.057 through 44.010.060 were revised to change the acceptance criteria Response Time from <50 msec to <65 msec.

Event	Title	Associated SRs and Function
0515	<b>PERFORM 44.010.060 RPS-TURBINE CONT VALVE FAST CLOSURE,TRIP SYS B,CH B2,RTT</b>	<b>SR 3.3.1.1.17-10</b>
<b># Performances: 4      # Failures: 0</b>		
<b>24 Month Justification:</b>	<b>Notes:</b>	
There were no failures, therefore the surveillance test history supports the conclusion that the impact, if any, on system availability will be small as a result of the change to a 24 month surveillance interval.		

Event	Title	Associated SRs and Function	TRVEND 24MCGNF319001 Rev 1
0516	PERFORM 44.010.061 RPS LOGIC FUNCTIONAL	SR 3.3.1.1.13-11 SR 3.3.1.1.15-1.b SR 3.3.1.1.15-4 SR 3.3.1.1.15-7 SR 3.3.1.1.15-8.b SR 3.3.1.1.15-10 SR 3.3.1.1.15-12 SR 3.3.6.1.5-1.b	Page 190 of 395

# Performances: 7      # Failures: 7

**24 Month Justification: Notes:**

One failure is identified as event driven failures which is not indicative of a repetitive time based failure mechanism. The other failures do not impact any safety function; therefore, the surveillance test history supports the conclusion that the impact, if any, on system availability will be small as a result of the change to a 24 month surveillance interval.

**Failure Review:**

**Perf. Date Fail Cat. Description of Failure**

4/24/2009      C      SPF Note: "Step 6.6.18.2, Channel 9, failed to indicate approximately 120 Vac, discussed with I&C Supervisor and CRS; permission granted to check for voltage at H11-P611, AA-98 to AA-100. Found approximately 120 Vac at terminals. Checked voltage at input to recorder and found 0 Vac. Determined cable or connector breakout for channel 9 is faulty. Since time delay value is not acceptance criteria and function of the channel was proven by voltage check, was directed to write a CARD later and continue with surveillance. CARD 09-23175 submitted." CARD 09-23175 Closure Summary states: "CARD was initiated when the timing of C7100M017D was not obtained as part of 44.010.061 due to a cable failure within the testing device. The cable failure was identified and corrected. The relay in question was shown through voltage checks to have changed state. RPS would require a second relay to time out prematurely as well to create an issue. The other associated relay was not identified as timing prematurely. Relay C7100M017D was replaced on 08-05-2009 as expected and dropout times are SAT and recorded in the package. No further activity is required for this CARD."

**Justification of Failure**

This is an event driven failure in that the test equipment cable failed during the procedure performance. Function of the channel was proven by other means (i.e., voltage check). Therefore, this failure will have no impact on an extension to a 24 month surveillance interval.

4/24/2009	A	<p>SPF Notes several issues: 1) "Step 6.1.3.2 After shorting link was removed when attempting to tighten thermal screw on AA-114 Technician found screw cross threaded and unable to re-tighten screw. Lifted wire 114 from terminal to take half SCRAM. CARD 09-23150 written. CARD 09-23150 states: "found screw that holds in the SRM shorting links cross threaded. Terminal AA-114 in H11P611 (see step 6.1.3.2 of 44.010.061) needs to be tapped/ re-threaded. Plant has a half scram installed at this time due to lifting of wire 114 in order to check the screw alignment. Contingency: if the terminal cannot be cleaned or tapped: then the terminal block may need to be replaced." WO 29738038 written to replace screw/rethread terminal in H11P611. WO 29738038 successfully chased threads, screw engaged SAT. 2) Step 6.6.12.9, Blue SCRAM lights failed to come on for rod 02-31. Associated valves (i.e., C11 -F126 and C11-F127) indicate OPEN. CARD 09-23169 submitted. CARD 09-23169 states: "BLUE SCRAM lights on Full Core Display not ON for rod 02-31, C1103D085 during 44.010.061, Step 6.6.12.9. IAW with 44.010.061, Step 6.6.13.6, verified C11-F126 and C11-F127 for 02-31 OPEN." Continued surveillance, this step was not ACCEPTANCE CRITERIA. Comments state: "Limit switches need adjustment/replaced. No operability impact on the HCU." WO 29741807 is referenced but per Maximo was cancelled. WO POD Notes State: Contingent on results of Event AB74. WO 29610163 (AB74) Perform Verification of SCRAM Lights on Full Core Display completed AE on 10/24/2010. 3) "Step 6.6.17.6 Time delay value obtained in Step 6.6.17.1 for relay K17A is outside of specified value. CARD 09-23173 submitted." CARD 09-23173 states: "1) In Step 6.6.17.6., the time delay value obtained in Step 6.6.17.1. (drop out time of 12.122 seconds for C71AK17A ) was not within the specified value of 10 +/-1 seconds. 2) In Step 6.6.18.6., the time delay value obtained in Step 6.6.18.1 (drop out time of 13.033 seconds for C71AK17B ) was not within the specified value of 10 +/-1 seconds. I&amp;C Supervisor and CRS notified at each Step; directed to continue with surveillance and submit CARD later." Comments provided in CARD 09-23173 state: "The C71AK17A and C71AK17B relays allow resetting a scram 10 seconds after the mode switch is taken to shutdown. The relays functioned as expected with the exception of the time delay being slightly out of acceptable band. The time delay value is not acceptance criteria for the surveillance and does not impact the operability of the RPS system." WO 29741891 is referenced but per Maximo Status is CAN. C71A-K17A relay will be calibrated under WO 25969785 (PM F765). C71A-K17B is being replaced under WO 29155712, NRC Part 21 Notification - Tyco Electronics E7024 Time-Delay Relays.</p>	<p>The identified failure(s) would not have prevented the performance of the required safety function of the equipment. Therefore, this failure will have no impact on an extension to a 24 month surveillance interval.</p>
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11/15/2010	A	SPF Note 2: Steps 6.6.17.1 C71A K17A, Step 6.6.18.1 C71A K17B, and Step 6.6.18.2 C71A K17D all had drop out times UNSAT. Discussed with CRS and CARD written 10-30696. CARD 10-30696 states: "Step(s) 6.1.16 and 6.1.17 relays K17A, K17B, and K17D drop out times were not within specification. Times were: K17A - 13.15 seconds, K17B - 12.48 seconds, K17D - 13.15 seconds. The specification for these relays is 10 +2/-1 seconds. Informed Control Room Supervisor during the surveillance. Request a work order be generated to adjust the Agastat relays." Comments stated in CARD 10-30696 state: "The drop out times identified in the CARD did not impact any of the surveillance acceptance criteria. No operability concerns or impact." CARD also noted: "This is not a new issue. Every outage there are issues with the timing of the RPS scram reset time delay relays. There is no adverse condition to quality for the event described in that the safety function requires a minimum of eight seconds before the relay drops out. There is no safety function associated with relay dropouts longer than the listed tolerance. No operability concerns or impact."	The identified failure(s) would not have prevented the performance of the required safety function of the equipment. Therefore, this failure will have no impact on an extension to a 24 month surveillance interval.
4/30/2012	A	SPF noted: "The time delay relay value in Step 6.6.18.1 did not meet the expected time interval (10 +2/-1 seconds, time was 14.950 seconds). A work order needs to be generated to adjust this relay (K17B)." This value is not acceptance criteria for 44.010.061. CARD was not written.	The identified failure(s) would not have prevented the performance of the required safety function of the equipment. Therefore, this failure will have no impact on an extension to a 24 month surveillance interval.
3/20/2014	A	SPF: Note: "Step 6.6.18.1 failed specified tolerance. Discussed with FLS and CRS. This has failed in past performances of this surveillance. The time documented does meet Tech Specs. A CARD will be written to document this issue. SM concurs. CARD 14-22609 written." CARD 14-22609 states: "Step 6.6.18.1 states, "This time should be 10 +2/-1 seconds." The actual time was 17.5 seconds. This value is not acceptance criteria. Request WO for Electrical to repair / replace." As noted in CARD 14-22609, EFFECT ON SSC ABILITY TO PERFORM SAFETY FUNCTION: "...this time delay value is not acceptance criteria. 44.010.061 was completed satisfactorily and all acceptance criteria were met. This relay controls the minimum amount of time required to allow operators to reset a reactor scram following a reactor scram. There are no Tech Spec or Operability requirements associated with this function." OPERABILITY IMPACT: RPS Trip System B remains Operable. MRFF Justification states: "The sufficient minimum time for rods to fully insert is 8 seconds. The setpoint for the timing relay is 10/ -1, +2 seconds. The setpoint and tolerance allows sufficient time plus margin for the rods to fully insert before a scram can be reset. Once the timing relay has exceeded 8 seconds, the support function of the relay has been met. Since the as found time of the relay was 17.5 seconds, the relay provided the required support function and thus no Maintenance Rule Function was lost. The timing relay does not provide interface to other Maintenance Rule systems that would be impacted by this event. C7100 Maintenance Rule Functional Failure, Maintenance Preventable Functional Failure, or Repetitive Maintenance Preventable Functional Failure did not occur during this event."	The identified failure(s) would not have prevented the performance of the required safety function of the equipment. Therefore, this failure will have no impact on an extension to a 24 month surveillance interval.

11/16/2015	A	<p>SPF notes two issues: 1) "At Step 6.6.5.9, SCRAM light is on for Rod 22-59. Associated valves are open by STR 15-5109. Step 6.6.12.9 will NOT be satisfied for rod 22-59. CRS and Supervisor informed. Proceed with surveillance. CARD 15-29030 submitted." 2) "At Step 6.6.12.9, rods 6-47, 14-11, 18-27, 18-39, 18-51, 22-19, 30-15, 30-23, 38-27, 38-43, 38-55, 42-47, 58-39 SCRAM lights did not turn on. All assoc valves verified open except 6-47, 18-51, and 58-39. CARD 15-29030 written. Supervisor and CRS informed. Turn over to Day Shift. Cycled switches on associated HCU's SAT. All SCRAM lights on . CARD 15-20930 Description / Investigation states: "HCU's 58-39, 06-47 and 18-51 After receiving a turnover from the I&amp;C night shift the day shift received permission from the FLS and SM to go out and cycle the F126 and F127 limit switches on these 3 HCU's to see if the blue SCRAM lights would illuminate on the full core display. HCU 06-47 illuminated on its own during the shift turnover. Cycled the limit switches for HCU's 58-39 and 18-51 and both SCRAM lights on the full core display illuminated. 44.010.061 was continued to completion." CARD closed with no further action required.</p>	<p>The identified failure(s) would not have prevented the performance of the required safety function of the equipment. Therefore, this failure will have no impact on an extension to a 24 month surveillance interval.</p>
4/15/2017	A	<p>SPF Note: "Steps 6.6.17.1, 6.6.18.1 and 6.6.18.2, response times for relays K17A, K17B and K17D were found out of spec high. Time delay values are not acceptance criteria. Notified FLS so Work Order can be initiated for adjustments." CARD was not documented on SPF. No reference to Work Order.</p>	<p>The identified failure(s) would not have prevented the performance of the required safety function of the equipment. Therefore, this failure will have no impact on an extension to a 24 month surveillance interval.</p>

Event	Title	Associated SRs and Function
0517	PERFORM 44.010.062 RPS MSIV'S-INBOARD VALVE LIMIT SWITCH,DIV 1&2,CAL	SR 3.3.1.1.14-5
	# Performances: 6	# Failures: 3

24 Month Justification:    Notes:

Two failures are identified as event driven failures which are not indicative of a repetitive time based failure mechanism. The other failure did not impact any safety function; therefore, the surveillance test history supports the conclusion that the impact, if any, on system availability will be small as a result of the change to a 24 month surveillance interval.

Failure Review:

Perf. Date	Fail Cat.	Description of Failure	Justification of Failure
4/22/2009	A	As Found data for Limit Switch B21-N572B was out of tolerance. Switch was adjusted to within tolerance and As Left data was acceptable.	The identified failure(s) would not have prevented the performance of the required safety function of the equipment. Therefore, this failure will have no impact on an extension to a 24 month surveillance interval.
4/20/2012	C	As Found data for Limit Switch B21-N572D was out of calibration tolerance and exceeded Allowable Value. Switch was adjusted to within tolerance and As Left data was acceptable.	This is an event dirven failure in that the As Found data being out of tolerance and exceeding the allowable value was due to the limit switch being removed and reinstalling during maintenance on the valve actuator. Therefore, this failure will have no impact on an extension to a 24 month surveillance interval.
11/9/2015	C	As Found data for Limit Switch B21-N572A was out of calibration tolerance and exceeded Allowable Value. Switch was adjusted to within tolerance and As Left data was acceptable.	This is an event driven failure in that the failure was caused from the rebuild of the MSIV and replacement of the limit switch. Therefore, this failure will have no impact on an extension to a 24 month surveillance interval.

<b>Event</b>	<b>Title</b>	<b>Associated SRs and Function</b>	TRVEND 24MCGNF319001 Rev 1 Page 195 of 395
0518	PERFORM 44.010.063 RPS MSIV-OUTBOARD VALVE LIMIT SWITCH,DIV 1&2,CAL	SR 3.3.1.1.14-5	
# Performances: 7		# Failures: 1	

**24 Month Justification: Notes:**

One failure is identified as an event driven failure which is not indicative of a repetitive time based failure mechanism. There are no other failures; therefore, the surveillance test history supports the conclusion that the impact, if any, on system availability will be small as a result of a change to a 24 month surveillance interval.

**Failure Review:**

**Perf. Date Fail Cat. Description of Failure**

4/14/2017 C As Found data for Limit Switch B21-N574D was out of calibration tolerance and exceeded Allowable Value. Switch was adjusted to within tolerance and As Left data was acceptable.

**Justification of Failure**

This is an event driven failure in that the failure was caused by the replacement of the limit switch. This procedure performance is the first calibration after the replacement. Therefore, this failure will have no impact on an extension to a 24 month surveillance interval.

<b>Event</b>	<b>Title</b>	<b>Associated SRs and Function</b>
0523	PERFORM 44.010.075 RPS-SDV HIGH WTR LVL TRIP SYS A, CHANNEL A1/A CAL/FUNCT.	SR 3.3.1.1.14-8.a SR 3.3.1.1.15-8.a
# Performances: 6		# Failures: 1

**24 Month Justification: Notes:**

One failure identified which did not impact any safety function; therefore, the surveillance test history supports the conclusion that the impact, if any, on system availability will be small as a result of the change to a 24 month surveillance interval.

**Failure Review:**

**Perf. Date Fail Cat. Description of Failure**

7/10/2017 A As Found data for transmitter C11-N016A was out of tolerance high. Transmitter was adjusted to within tolerance and As Left data was acceptable.

**Justification of Failure**

The identified failure(s) would not have prevented the performance of the required safety function of the equipment. Therefore, this failure will have no impact on an extension to a 24 month surveillance interval.

Event	Title	Associated SRs and Function
0524	PERFORM 44.010.076 RPS-SDV HIGH WTR LVL TRIP SYS B, CHANNEL B1/B CAL/FUNCT.	SR 3.3.1.1.14-8.a SR 3.3.1.1.15-8.a
# Performances: 7 # Failures: 0		

**24 Month Justification: Notes:**

There were no failures, therefore the surveillance test history supports the conclusion that the impact, if any, on system availability will be small as a result of the change to a 24 month surveillance interval.

Event	Title	Associated SRs and Function
0525	PERFORM 44.010.077 RPS-SDV HIGH WTR LVL TRIP SYS A, CHANNEL A2/C CAL/FUNCT.	SR 3.3.1.1.14-8.a SR 3.3.1.1.15-8.a
# Performances: 6 # Failures: 0		

**24 Month Justification: Notes:**

There were no failures, therefore the surveillance test history supports the conclusion that the impact, if any, on system availability will be small as a result of the change to a 24 month surveillance interval.

Event	Title	Associated SRs and Function
0526	PERFORM 44.010.078 RPS-SDV HIGH WTR LVL TRIP SYS B, CHANNEL B2/D CAL/FUNCT.	SR 3.3.1.1.14-8.a SR 3.3.1.1.15-8.a
# Performances: 6 # Failures: 0		

**24 Month Justification: Notes:**

There were no failures, therefore the surveillance test history supports the conclusion that the impact, if any, on system availability will be small as a result of the change to a 24 month surveillance interval.

Event	Title	Associated SRs and Function
0527	PERFORM 44.020.501 RWCN NSSSS- INBD ISOLATION VALVE LOGIC SYSTEM FUNCTIONAL	SR 3.3.6.1.5-5.a SR 3.3.6.1.5-5.b SR 3.3.6.1.5-5.c SR 3.3.6.1.5-5.d SR 3.3.6.1.5-5.e SR 3.5.2.8 SR 3.6.1.3.8
# Performances: 6 # Failures: 0		

**24 Month Justification: Notes:**

There were no failures, therefore the surveillance test history supports the conclusion that the impact, if any, on system availability will be small as a result of the change to a 24 month surveillance interval.

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Event	Title	Associated SRs and Function	
0528	PERFORM 44.020.601 RWCU NSSSS- OTBD ISOLATION VALVE LOGIC SYSTEM FUNCTIONAL	SR 3.3.6.1.5-5.a SR 3.3.6.1.5-5.c SR 3.3.6.1.5-5.e SR 3.6.1.3.8	SR 3.3.6.1.5-5.b SR 3.3.6.1.5-5.d SR 3.5.2.8

# Performances: 6      # Failures: 0

**24 Month Justification:    Notes:**

There were no failures, therefore the surveillance test history supports the conclusion that the impact, if any, on system availability will be small as a result of the change to a 24 month surveillance interval.

Event	Title	Associated SRs and Function	
0531	PERFORM 44.020.007 NS4 RX VESSEL LOW WTR LEVEL 1&2,TRIP SYS A,CHNL A,XMTR CAL	SR 3.3.6.1.4-1.a SR 3.3.6.1.4-5.e SR 3.3.6.1.5-2.b SR 3.3.6.2.4-1 SR 3.3.7.1.5-1 SR 3.6.1.3.8 SR 3.7.3.3	SR 3.3.6.1.4-2.b SR 3.3.6.1.5-1.a SR 3.3.6.1.5-5.e SR 3.3.6.2.5-1 SR 3.3.7.1.6-1 SR 3.6.4.3.3

# Performances: 6      # Failures: 0

**24 Month Justification:    Notes:**

There were no failures, therefore the surveillance test history supports the conclusion that the impact, if any, on system availability will be small as a result of the change to a 24 month surveillance interval.

Event	Title	Associated SRs and Function	
0532	PERFORM 44.020.008 NS4 RX VESSEL LOW WTR LEVEL 1&2,TRIP SYS B,CHNL B,XMTR CAL	SR 3.3.6.1.4-1.a SR 3.3.6.1.4-5.e SR 3.3.6.1.5-2.b SR 3.3.6.2.4-1 SR 3.3.7.1.5-1 SR 3.6.1.3.8 SR 3.7.3.3	SR 3.3.6.1.4-2.b SR 3.3.6.1.5-1.a SR 3.3.6.1.5-5.e SR 3.3.6.2.5-1 SR 3.3.7.1.6-1 SR 3.6.4.3.3

# Performances: 6      # Failures: 0

**24 Month Justification:    Notes:**

There were no failures, therefore the surveillance test history supports the conclusion that the impact, if any, on system availability will be small as a result of the change to a 24 month surveillance interval.

Event	Title	Associated SRs and Function	
0533	PERFORM 44.020.009 NS4 RX VESSEL LOW WTR LEVEL 1&2,TRIP SYS A,CHNL C,XMTR CAL	SR 3.3.6.1.4-1.a	SR 3.3.6.1.4-2.b
		SR 3.3.6.1.4-5.e	SR 3.3.6.1.5-1.a
		SR 3.3.6.1.5-2.b	SR 3.3.6.1.5-5.e
		SR 3.3.6.2.4-1	SR 3.3.6.2.5-1
		SR 3.3.7.1.5-1	SR 3.3.7.1.6-1
		SR 3.6.1.3.8	SR 3.6.4.3.3
		SR 3.7.3.3	

# Performances: 6      # Failures: 0

**24 Month Justification: Notes:**

There were no failures, therefore the surveillance test history supports the conclusion that the impact, if any, on system availability will be small as a result of the change to a 24 month surveillance interval.

Event	Title	Associated SRs and Function	
0534	PERFORM 44.020.010 NS4 RX VESSEL LOW WTR LEVEL 1&2,TRIP SYS B,CHNL D,XMTR CAL	SR 3.3.6.1.4-1.a	SR 3.3.6.1.4-2.b
		SR 3.3.6.1.4-5.e	SR 3.3.6.1.5-1.a
		SR 3.3.6.1.5-2.b	SR 3.3.6.1.5-5.e
		SR 3.3.6.2.4-1	SR 3.3.6.2.5-1
		SR 3.3.7.1.5-1	SR 3.3.7.1.6-1
		SR 3.6.1.3.8	SR 3.6.4.3.3
		SR 3.7.3.3	

# Performances: 6      # Failures: 0

**24 Month Justification: Notes:**

There were no failures, therefore the surveillance test history supports the conclusion that the impact, if any, on system availability will be small as a result of the change to a 24 month surveillance interval.

Event	Title	Associated SRs and Function	
0535	PERFORM 64.020.105 FUEL POOL VENT EXH RAD MON,DIV 1,CHL A,RADIOLOGICAL CAL	SR 3.3.6.2.4-3 SR 3.3.7.1.5-3	SR 3.3.6.2.5-3 SR 3.3.7.1.6-3

# Performances: 7      # Failures: 1

**24 Month Justification: Notes:**

One failure identified which did not impact any safety function; therefore, the surveillance test history supports the conclusion that the impact, if any, on system availability will be small as a result of the change to a 24 month surveillance interval.

**Failure Review:**

Perf. Date	Fail Cat.	Description of Failure	Justification of Failure
4/21/2015	A	As Found Trip Unit readings were out of tolerance (high) at 5 and 50 mr/hr and recorder reading was out of tolerance (high) at 50 mr/hr. Per Section 6.3 Sensor/Converter Adjustment, adjustments were applied with all As Left tolerance readings within tolerance.	The identified failure(s) would not have prevented the performance of the required safety function of the equipment. Therefore, this failure will have no impact on an extension to a 24 month surveillance interval.

Event	Title	Associated SRs and Function	
0536	PERFORM 64.020.106 FUEL POOL VENT EXH RAD MON, DIV 2, CH B, RADIOLOGICAL CAL	SR 3.3.6.2.4-3 SR 3.3.7.1.5-3	SR 3.3.6.2.5-3 SR 3.3.7.1.6-3

# Performances: 6      # Failures: 0

**24 Month Justification: Notes:**

There were no failures, therefore the surveillance test history supports the conclusion that the impact, if any, on system availability will be small as a result of the change to a 24 month surveillance interval.

Event	Title	Associated SRs and Function	
0537	PERFORM 64.020.107 FUEL POOL VENT EXH RAD MON, DIV 1, CH C, RADIOLOGICAL CAL	SR 3.3.6.2.4-3 SR 3.3.7.1.5-3	SR 3.3.6.2.5-3 SR 3.3.7.1.6-3

# Performances: 7      # Failures: 1

**24 Month Justification: Notes:**

One failure identified which did not impact any safety function; therefore, the surveillance test history supports the conclusion that the impact, if any, on system availability will be small as a result of the change to a 24 month surveillance interval.

**Failure Review:**

**Perf. Date Fail Cat. Description of Failure**

1/25/2010      A      As Found Trip Unit and recorder readings were out of tolerance (low) at 5 mr/hr. Per Section 6.3 Sensor/Converter Adjustment, adjustments were applied with all As Left tolerance readings within tolerance.

**Justification of Failure**

The identified failure(s) would not have prevented the performance of the required safety function of the equipment. Therefore, this failure will have no impact on an extension to a 24 month surveillance interval.

Event	Title	Associated SRs and Function	
		SR 3.3.6.2.4-3	SR 3.3.6.2.5-3
0538	PERFORM 64.020.108 FUEL POOL VENT EXH RAD MON, DIV 2, CH D, RADIOLOGICAL CAL	SR 3.3.7.1.5-3	SR 3.3.7.1.6-3

# Performances: 6 # Failures: 1

#### 24 Month Justification: Notes:

One failure is identified as an event driven failure which is not indicative of a repetitive time based failure mechanism. There are no other failures; therefore, the surveillance test history supports the conclusion that the impact, if any, on system availability will be small as a result of a change to a 24 month surveillance interval.

#### Failure Review:

##### Perf. Date Fail Cat. Description of Failure

10/27/2016 C SPF notes that "while acceptance criteria was met, a secondary containment isolation signal was generated at Step 7.3.1. Annunciator 3D27 remains in alarm, Notified Supervisor, CRS and SM. Entered LCO 2016-0565, CARD 16-28575 written." CARD 16-28575 states: "Unplanned ESF actuation (Trip of RBHVAC, Auto start Div 1 SGTS and CCHVAC Auto Swap to Recirc) following surveillance test on fuel pool vent radiation monitor. Performing 64.020.108 for Fuel Pool Ventilation Exhaust Radiation Monitor, Division 2, Channel D, after jumpers had been removed and independent verification in progress, notified by control room to stop work." Rpt/Op Comments state: "Troubleshooting determined that the isolation signal was due to a blown fuse D11A, in H11P606 which supplies 24 VDC to FP Vent Exh Rad Mon D upscale trip and downscale relays. The fuse was replaced, and the alarm cleared. Following the completion of 44.020.104, and completion of a licensed operator walkdown, Channel D Fuel Pool Vent Exhaust Rad Monitor was declared Operable and LCO 2016-0565 was Exited. Direct Cause of the blown fuse was attributed to inadvertent contact inside the cabinet while removing the jumpers during calibration activities on fuel pool vent radiation monitor. Comments provided state: "CARD 16-28575 does not require a Maintenance Rule Functional Failure evaluation. Per criteria iv. MRFF evaluation not required: The problem was caused, identified and will be corrected during the same maintenance / out of service period. RBHVAC, SGTS, CCHVAC, Process Radiation Monitors, Isolation Logic, and the Visual Annunciator System were impacted by this event. Given this was an invalid actuation and all systems functioned as designed, there are no additional Maintenance Rule Functional Failure evaluations necessary for this event." CARD 16-28575, Action Item 16-28575-04 determined reset criteria was met and briefing sheet was issued.

##### Justification of Failure

This is an event driven failure in that the failure was caused by inadvertent contact (i.e. grounding) within the cabinet during jumper removal which caused a fuse to blow. This caused relays K81 and K82 in the aux trip unit to lose power, which in turn caused ESF actuations. Therefore, this failure will have no impact on an extension to a 24 month surveillance interval.

Event	Title	Associated SRs and Function
0548	PERFORM 44.020.152 NS4 REACTOR WATER CLEANUP DIFFERENTIAL FLOW CAL./FUNC.	SR 3.3.6.1.4-5.a SR 3.5.2.8

# Performances: 6      # Failures: 3

**24 Month Justification: Notes:**

One failure is identified as event driven failure which is not indicative of a repetitive time based failure mechanism. The other failures do not impact any safety function; therefore, the surveillance test history supports the conclusion that the impact, if any, on system availability will be small as a result of the change to a 24 month surveillance interval.

**Failure Review:**

**Perf. Date Fail Cat. Description of Failure**

11/9/2010	A	G33-R616A (Table 15) As Found reading was out of tolerance (high). Per Step 6.6.13, Timer dial adjustment made. G33-R616A (Table 15) As Left within tolerance.
4/13/2012	A	SPF notes that Table 6 values are out of tolerance (Step 6.2.7) Notified CRS. WO 33287816 written to repair (9/9/2011) related to CARD 11-28226. Work Order Partial Completion Notification Form (5/9/2012) states: "Per management, work to be completed at a later date. A defective power supply C96K754 needs to be replaced. RWCU Differential Loop is in service. The input to IPS G33DF1055 is faulty." CARD 12-24322 (written 5/9/2012) is referenced as well as new WO 34468061. CARD 12-24322 Reportability / Operability Review states: "A substitute value has been inserted for this point since initial discovery (see CARD 11-28226), therefore no impact to the calculated heat balance." WO 34407194 replaced defective power supply in February 2014.
7/8/2015	C	SPF Note: "6.2.2.4: High side vent plug flats rounded off. Could not get 90 in-lbs torque, able to achieve 70 in-lbs. Found torque at 50 in-lbs. Generated CARD 15-24662 to replace plugs. WO 42506575 revised to replace vent plug and torqued to 90 in-lbs." CARD 15-24662 states: "While performing 44.020.152, it was found that the high pressure side vent plug on G33N036 (RWCU PMPS DISCH FLOW XMTR) had rounded off flats. Procedure has us torque the vent plugs to 90 Inch pounds but we were only able to achieve 70 inch pounds due to the rounded flats. Found the torque at 50 inch pounds." CARD Reportability / Operability Review states: "There was no noted leakage from the vent plug as found. With no leakage from the plug noted there is no impact on the function of the flow transmitter and the flow indication was normal prior to the RWCU system shutdown." New vent plug was ordered, then replaced by WO 42506575 on 7/8/2015.

**Justification of Failure**

The identified failure(s) would not have prevented the performance of the required safety function of the equipment. Therefore, this failure will have no impact on an extension to a 24 month surveillance interval.

The identified failure(s) would not have prevented the performance of the required safety function of the equipment. Therefore, this failure will have no impact on an extension to a 24 month surveillance interval.

This is an event driven failure in that previous maintenance caused vent plug flats to be rounded off. Therefore, this failure will have no impact on an extension to a 24 month surveillance interval.

Event	Title	Associated SRs and Function	
0551	PERFORM 44.020.158 NS4 RWCU AREA TEMP, DIV 1, CAL/FUNCTIONAL	SR 3.3.6.1.4-5.b	SR 3.3.6.1.5-5.b
# Performances: 6		# Failures: 0	

**24 Month Justification: Notes:**

There were no failures, therefore the surveillance test history supports the conclusion that the impact, if any, on system availability will be small as a result of the change to a 24 month surveillance interval.

Event	Title	Associated SRs and Function	
0552	PERFORM 44.020.159 NS4 RWCU AREA NRHX DISCHARGE TEMPERATURE, DIV 2,CAL/FUNC.	SR 3.3.6.1.4-5.b	SR 3.3.6.1.5-5.b
# Performances: 6		SR 3.5.2.8	
# Failures: 0			

**24 Month Justification: Notes:**

There were no failures, therefore the surveillance test history supports the conclusion that the impact, if any, on system availability will be small as a result of the change to a 24 month surveillance interval.

Event	Title	Associated SRs and Function	
0560	PERFORM 44.020.203 NS4 HPCI STEAM LINE FLOW, TRIP SYS A, CAL/FUNCTIONAL	SR 3.3.6.1.4-3.a	SR 3.3.6.1.5-3.a
# Performances: 6		SR 3.6.1.3.8	
# Failures: 0			

**24 Month Justification: Notes:**

There were no failures, therefore the surveillance test history supports the conclusion that the impact, if any, on system availability will be small as a result of the change to a 24 month surveillance interval.

Event	Title	Associated SRs and Function	
0561	PERFORM 44.020.204 NS4 HPCI STEAM LINE FLOW, TRIP SYS B, CAL/FUNCTIONAL	SR 3.3.6.1.4-3.a	SR 3.3.6.1.5-3.a
# Performances: 6		SR 3.6.1.3.8	
# Failures: 0			

**24 Month Justification: Notes:**

There were no failures, therefore the surveillance test history supports the conclusion that the impact, if any, on system availability will be small as a result of the change to a 24 month surveillance interval.

Event	Title	Associated SRs and Function	
0563	PERFORM 44.020.211 NS4 HPCI STEAM LINE PRESSURE,TRIP SYS A,CHANNEL A,CAL/FUNC.	SR 3.3.6.1.4-3.b	SR 3.3.6.1.5-3.b
# Performances: 6		# Failures: 0	

**24 Month Justification: Notes:**

There were no failures, therefore the surveillance test history supports the conclusion that the impact, if any, on system availability will be small as a result of the change to a 24 month surveillance interval.

Event	Title	Associated SRs and Function	
0564	PERFORM 44.020.212 NS4 HPCI STEAM LINE PRESSURE,TRIP SYS B,CHANNEL B,CAL/FUNC.	SR 3.3.6.1.4-3.b	SR 3.3.6.1.5-3.b
# Performances: 6		# Failures: 0	

**24 Month Justification: Notes:**

There were no failures, therefore the surveillance test history supports the conclusion that the impact, if any, on system availability will be small as a result of the change to a 24 month surveillance interval.

Event	Title	Associated SRs and Function	
0565	PERFORM 44.020.213 NS4 HPCI STEAM LINE PRESSURE,TRIP SYS A,CHANNEL C,CAL/FUNC.	SR 3.3.6.1.4-3.b	SR 3.3.6.1.5-3.b
# Performances: 6		# Failures: 0	

**24 Month Justification: Notes:**

There were no failures, therefore the surveillance test history supports the conclusion that the impact, if any, on system availability will be small as a result of the change to a 24 month surveillance interval.

Event	Title	Associated SRs and Function	
0566	PERFORM 44.020.214 NS4 HPCI STEAM LINE PRESSURE, TRIP SYS B, CH D, CAL/FUNC	SR 3.3.6.1.4-3.b	SR 3.3.6.1.5-3.b
# Performances: 6		# Failures: 0	

**24 Month Justification: Notes:**

There were no failures, therefore the surveillance test history supports the conclusion that the impact, if any, on system availability will be small as a result of the change to a 24 month surveillance interval.

Event	Title	Associated SRs and Function	
0572	PERFORM 44.020.223 NS4 HPCI TURB EXHAUST DIAPHRAGM PRESS,TRIP SYS A,CH A,CAL/FUNC	SR 3.3.6.1.4-3.c	SR 3.3.6.1.5-3.c
# Performances: 6		# Failures: 0	

**24 Month Justification: Notes:**

There were no failures, therefore the surveillance test history supports the conclusion that the impact, if any, on system availability will be small as a result of the change to a 24 month surveillance interval.

Event	Title	Associated SRs and Function	
0573	PERFORM 44.020.224 NS4 HPCI TURB EXHAUST DIAPHRAGM PRESS,D2,CHL"B", CAL. / FUNC.	SR 3.3.6.1.4-3.c	SR 3.3.6.1.5-3.c
# Performances: 6		# Failures: 0	

**24 Month Justification: Notes:**

There were no failures, therefore the surveillance test history supports the conclusion that the impact, if any, on system availability will be small as a result of the change to a 24 month surveillance interval.

Event	Title	Associated SRs and Function	
0574	PERFORM 44.020.225 NS4 HPCI TURB EXHAUST DIAPHRAGM PRESS,TRIP SYS A,CH C,CAL/FUNC	SR 3.3.6.1.4-3.c	SR 3.3.6.1.5-3.c
# Performances: 6		# Failures: 0	

**24 Month Justification: Notes:**

There were no failures, therefore the surveillance test history supports the conclusion that the impact, if any, on system availability will be small as a result of the change to a 24 month surveillance interval.

Event	Title	Associated SRs and Function	
0575	PERFORM 44.020.226 NS4 HPCI TURB EXHAUST DIAPHRAGM PRESS,D2,CHL"D", CAL. / FUNC.	SR 3.3.6.1.4-3.c	SR 3.3.6.1.5-3.c
# Performances: 7		# Failures: 0	

**24 Month Justification: Notes:**

There were no failures, therefore the surveillance test history supports the conclusion that the impact, if any, on system availability will be small as a result of the change to a 24 month surveillance interval.

Event	Title	Associated SRs and Function
0578	PERFORM 44.020.229 NS4 HPCI/RCIC ROOMS AREA TEMP,CHNL A, CALIBRATION / FUNC.	SR 3.3.6.1.4-3.d SR 3.3.6.1.5-3.d

# Performances: 7 # Failures: 2

#### 24 Month Justification: Notes:

One failure is identified as event driven failure which is not indicative of a repetitive time based failure mechanism. The other failure did not impact any safety function; therefore, the surveillance test history supports the conclusion that the impact, if any, on system availability will be small as a result of the change to a 24 month surveillance interval.

#### Failure Review:

##### Perf. Date Fail Cat. Description of Failure

12/2/2011 A SPF Note 2: "At Step 6.1.3, when knife switches RR-21 and RR-22 were opened 1D70 unexpectedly alarmed. Analysis verified the knife switches RR-19 and RR-20 are degraded or terminals are possibly loose. CARD 11-30668 - WOs written after Supervision and MCR Staff ascertained trouble. WR to be generated to perform surveillance to clean/torque/replace terminal block." CARD 11-30668 states: "During performance of step 6.1.3 Control Room annunciator 1D70 "STEAM LEAK DETECTION DIFFERENTIAL TEMP HIGH" came in unexpectedly. Test team stopped, re-verified proper terminal knife block switches (RR21 & RR22) in H11P614, had been opened and notified CRS and I&C supervision. Review of plant drawing I-2095-27 revealed adjacent terminal knife block switches (RR19 & RR20) which are terminated to E41N601A (HPCI AREA LEAK DETECT "A" TEMP DIFF SW) are associated with 1D70. Recommend replacing knife switches RR19 & RR20." Reportability/Operability Review states: "temperature switch is for differential temperature in HPCI room; not a Technical Specification instrument. Switch is only an alarm which would alert Operators for further investigation." CARD Description/Investigation: "Ops log, 01/04/2012 06:04, Performed 1D70 STEAM LEAK DETECTION DIFF TEMP HIGH Annunciator in and clear numerous times. Cause of alarm is E41N601A, HPCI AREA LEAK DETECT "A" TEMP DIFF SW, reading erratically between 40 and 60 degF. HPCI Room temperature is unchanged and G33R621 Pt. 3 reads 6 degF. CARD 11-30668 previously submitted. FIN WO 33721983 is planned to work on day shift today." CARD Notes: "Oxidation may have built up on knife switches causing an intermittent open." WO 33721983 replaced two knife switches on 1-4-12.

##### Justification of Failure

The identified failure(s) would not have prevented the performance of the required safety function of the equipment. Therefore, this failure will have no impact on an extension to a 24 month surveillance interval.

12/2/2011	C	<p>SPF Note 1: "At Step 6.2.9 we could not get proper torque value because terminal block screws are damaged - CARD 11-30673 written, obtained permission to move forward." CARD 11-30673 states: "While performing surveillance 44.020.229 for WR# 30980704, at steps 6.2.9 and 6.5.9 we were not able to get proper torque applied / verified at the terminal blocks. The screw heads for RR-21 ( E41N602A) and the screw heads for TT-3 and TT-4 (E51N602A) were damaged by previous overtightening. Need to generate WR to replace these three terminal blocks." Reportability/Operability Review states: "there is reasonable assurance that the terminations are greater than or equal to the proper minimum torque value. This condition has no impact on the ability of the noted instruments and associated circuitry to perform their respective safety functions. E41N602A, E51N602A and the associated circuitry remain operable." From CARD 11-30673: "The Cause: Investigation for CARD 11-30673 identified the hole for the screw is &gt;4 mm, the diameter of the screw head is 3.75 mm, the area for applying torque to the screw is 0.7 mm, the screw is not attached rigidly in the hole. The screw is attached to the clamping mechanism and it is not rigidly held in place. Therefore the tip of the screwdriver is not centered on the screw head. If the screw was rigid, and the screwdriver tip was not centered, the torque can be applied to about 3.75 mm -3.5 mm -(4-3.5)/2 or 0.1 mm of the 0.7 mm, causing damage to the metal of the screw. The Corrective Action(s): For Tech Spec procedures, revise procedures 44.020.159 &amp;160, 44.020.229 &amp; 230. Revision to include: Torque terminals to 0.5 nm using torque screwdriver, Weidmuller, (0.5 – 1.7 Nm) with 0.8 x 4 MM screwdriver tip." Procedures 44.020.229 has been revised. Work request 33734802 replaces terminals on RR and TT terminal strips in H11P614 for E41N602A and E51N602A. SPF Note 3: "At Step 6.5.9 both TT-3 and TT-4 terminal blocks are stripped also, unable to torque - Notified Ops again; obtained permission to move forward and wrote CARD 11-30673."</p>	<p>This is an event driven failure in that the failure was caused by previous overtightening of the terminal screws. Therefore, this failure will have no impact on an extension to a 24 month surveillance interval.</p>
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Event	Title	Associated SRs and Function	
0579	PERFORM 44.020.230 NS4 HPCI/RCIC ROOMS AREA TEMP,CHNL B, CALIBRATION / FUNC.	SR 3.3.6.1.4-3.d SR 3.3.6.1.5-3.d	SR 3.3.6.1.4-4.d SR 3.3.6.1.5-4.d
# Performances: 6		# Failures: 0	

**24 Month Justification: Notes:**

There were no failures, therefore the surveillance test history supports the conclusion that the impact, if any, on system availability will be small as a result of the change to a 24 month surveillance interval.

Event	Title	Associated SRs and Function
0582	PERFORM 44.020.233 NS4 RCIC STEAM LINE FLOW, TRIP SYS A, CAL/FUNCT	SR 3.3.6.1.4-4.a SR 3.3.6.1.5-4.a SR 3.6.1.3.8

# Performances: 6      # Failures: 1

**24 Month Justification: Notes:**

One failure identified which did not impact any safety function; therefore, the surveillance test history supports the conclusion that the impact, if any, on system availability will be small as a result of the change to a 24 month surveillance interval.

**Failure Review:**

Perf. Date	Fail Cat.	Description of Failure	Justification of Failure
4/13/2010	A	Table 5, E51-N657A Gross Fail Trips, As Found readings, found out of Acceptable Performance Tolerance (APT) range. E51-N657A Gross Fail Trips calibrated per Attachment 1, Step 3 to within As Left Tolerance (ALT) Table 7, E51-N660A Gross Fail Trips, As Found readings, found out of Acceptable Performance Tolerance (APT) range. E51-N660A Gross Fail Trips calibrated per Attachment 1, Step 3 to within As Left Tolerance (ALT).	The identified failure(s) would not have prevented the performance of the required safety function of the equipment. Therefore, this failure will have no impact on an extension to a 24 month surveillance interval.

Event	Title	Associated SRs and Function
0583	PERFORM 44.020.234 NS4 RCIC STEAM LINE FLOW, TRIP SYS B, CALIBRATION/FUNCTIONAL	SR 3.3.6.1.4-4.a SR 3.3.6.1.5-4.a SR 3.6.1.3.8

# Performances: 6      # Failures: 1

**24 Month Justification: Notes:**

One failure identified which did not impact any safety function; therefore, the surveillance test history supports the conclusion that the impact, if any, on system availability will be small as a result of the change to a 24 month surveillance interval.

**Failure Review:**

Perf. Date	Fail Cat.	Description of Failure	Justification of Failure
4/13/2010	A	Table 4, E51-N657B Gross Fail Trips, As Found readings, found out of Acceptable Performance Tolerance (APT) range. E51-N657B Gross Fail Trips calibrated per Attachment 2, Step 2 to within As Left Tolerance (ALT) Table 6, E51-N660B Gross Fail Trips, As Found readings, found out of Acceptable Performance Tolerance (APT) range. E51-N660B Gross Fail Trips calibrated per Attachment 1, Step 1 to within As Left Tolerance (ALT).	The identified failure(s) would not have prevented the performance of the required safety function of the equipment. Therefore, this failure will have no impact on an extension to a 24 month surveillance interval.

Event	Title	Associated SRs and Function	
0584	PERFORM 44.020.239 NS4 RCIC STEAM LINE PRESSURE,DIV 1,CHNL A,CALIBRATION/FUNC.	SR 3.3.6.1.4-4.b	SR 3.3.6.1.5-4.b
# Performances: 6		# Failures: 0	

**24 Month Justification: Notes:**

There were no failures, therefore the surveillance test history supports the conclusion that the impact, if any, on system availability will be small as a result of the change to a 24 month surveillance interval.

Event	Title	Associated SRs and Function	
0585	PERFORM 44.020.240 NS4 RCIC STEAM LINE PRESSURE,DIV 2,CHNL B,CALIBRATION/FUNC.	SR 3.3.6.1.4-4.b	SR 3.3.6.1.5-4.b
# Performances: 6		# Failures: 0	

**24 Month Justification: Notes:**

There were no failures, therefore the surveillance test history supports the conclusion that the impact, if any, on system availability will be small as a result of the change to a 24 month surveillance interval.

Event	Title	Associated SRs and Function	
0586	PERFORM 44.020.241 NS4 RCIC STEAM LINE PRESSURE,DIV 1,CHNL C,CALIBRATION/FUNC.	SR 3.3.6.1.4-4.b	SR 3.3.6.1.5-4.b
# Performances: 6		# Failures: 0	

**24 Month Justification: Notes:**

There were no failures, therefore the surveillance test history supports the conclusion that the impact, if any, on system availability will be small as a result of the change to a 24 month surveillance interval.

Event	Title	Associated SRs and Function
0587	PERFORM 44.020.242 NS4 RCIC STEAM LINE PRESSURE,DIV 2,CHNL D,CALIBRATION/FUNC.	SR 3.3.6.1.4-4.b SR 3.3.6.1.5-4.b

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# Performances: 6 # Failures: 1

**24 Month Justification: Notes:**

One failure identified which did not impact any safety function; therefore, the surveillance test history supports the conclusion that the impact, if any, on system availability will be small as a result of the change to a 24 month surveillance interval.

**Failure Review:**

**Perf. Date Fail Cat. Description of Failure**

1/24/2013 A SPF Note: "Step 6.1.83 As Found below zero. Per Surv went to Attachment 1, Step 2, completed 2.a thru 2.d. Could not adjust Gross Fail Low to within spec, Table 4 is NOT Acceptance Criteria. - I&C Supervisor/SM/CRS informed; Low Gross Fail not Acceptance Criteria, complete Surv as follows: perform Att 1, Step 3.g and 3.j, continuing with Step 6.1.11 through completion of procedure. NOTE 1: Att 1 Steps 2d - 2.g, 3.a - 3.f, 3.h and 3.i will not be performed as Low Gross Fail circuit has failed. Intention is to complete surveillance as Low Gross Fail is NOT Acceptance Criteria. SM Approval has been obtained. Initiated CARD 13-20599." CARD 13-20599 states: "Step 6.1.6.8, Table 4 (not acceptance criteria) Low gross fails outside of Acceptable Performance Tolerance (APT). Attempted to calibrate it per Att. 1, Step 2. Would not calibrate. Informed CRS/ SM/I&C Supervisor. Completed rest of surveillance SAT." Reportability/Operability Review states: "The ability of the RCIC system to perform it's safety function is not impacted by the failure of the GROSS FAIL LATCH. RCIC remains operable." MRFF Evaluation completed: "Failure of the Gross Fail Latch would not have prevented RCIC from starting or cause steam line isolation and the system to trip. Therefore RCIC would be able to perform its Maintenance Rule function. Therefore this event is not a MR functional failure." CARD is requesting a WO to replace MTU E51N658D. WO 35977374 requested. Per Maximo WO 35977374 cancelled. WO 36462465 used in place of cancelled WO. WO 36462465 - replace Rosemount Trip Unit, E51N658D, RCIC Stm Line Low Press Diff Trip Unit, due to Multiple failures. WO 36462465 replaced MTU, As Left data SAT, 5/1/2013.

**Justification of Failure**

The identified failure(s) would not have prevented the performance of the required safety function of the equipment. Therefore, this failure will have no impact on an extension to a 24 month surveillance interval.

Event	Title	Associated SRs and Function
0588	PERFORM 44.020.247 NS4 RCIC TURBINE EXH DIA PRESS,D1,CHNL A,CALIBRATION/FUNC	SR 3.3.6.1.4-4.c SR 3.3.6.1.5-4.c

# Performances: 6 # Failures: 0

**24 Month Justification: Notes:**

There were no failures, therefore the surveillance test history supports the conclusion that the impact, if any, on system availability will be small as a result of the change to a 24 month surveillance interval.

Event	Title	Associated SRs and Function	
0589	PERFORM 44.020.248 NS4 RCIC TURBINE EXH DIA PRESS,D2,CHNL B,CALIBRATION/FUNC	SR 3.3.6.1.4-4.c	SR 3.3.6.1.5-4.c
# Performances: 6		# Failures: 0	

**24 Month Justification: Notes:**

There were no failures, therefore the surveillance test history supports the conclusion that the impact, if any, on system availability will be small as a result of the change to a 24 month surveillance interval.

Event	Title	Associated SRs and Function	
0590	PERFORM 44.020.249 NS4 RCIC TURBINE EXH DIA PRESS,D1,CHNL C,CALIBRATION/FUNC	SR 3.3.6.1.4-4.c	SR 3.3.6.1.5-4.c
# Performances: 6		# Failures: 1	

**24 Month Justification: Notes:**

One failure identified which did not impact any safety function; therefore, the surveillance test history supports the conclusion that the impact, if any, on system availability will be small as a result of the change to a 24 month surveillance interval.

**Failure Review:**

**Perf. Date Fail Cat. Description of Failure**

8/10/2016	A	SPF Note: "MTU Reset value found low out of Acceptable Performance Tolerance (APT) - See Table 3, page 5 (Step 6.1.4) - Supervisor, CRS, SM informed CARD 16-26297 written. Continued with Surv. As Left SAT." CARD 16-26297 states: "reset value for MTU E51N655C was As Found low out of APT. The low tolerance is 9.05, and the reset was found at 9.04." Reportability/Operability Review states: "The instrument was calibrated successfully, and the as left readings are satisfactory. This condition does not impact the ability of the trip unit to perform its required function. E51N655C is OPERABLE." Action Item Completion Comments: "Two signals are required for each division of isolation logic which prevents a failure of one instrument from causing an unnecessary isolation by using two-out-of-two logic. MTU E51N655C tripped conservatively low while E51N655A tripped within APT. The CARD clearly states that there was no equipment failure / degradation that could prevent the equipment from performing its function and this is supported by Shift Manager's comments." Trend Condition Only.
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**Justification of Failure**

The identified failure(s) would not have prevented the performance of the required safety function of the equipment. Therefore, this failure will have no impact on an extension to a 24 month surveillance interval.

Event	Title	Associated SRs and Function
0591	PERFORM 44.020.250 NS4 RCIC TURBINE EXH DIA PRESS,D2,CHNL D CALIBRATION/FUNC	SR 3.3.6.1.4-4.c SR 3.3.6.1.5-4.c
# Performances: 6 # Failures: 0		

**24 Month Justification: Notes:**

There were no failures, therefore the surveillance test history supports the conclusion that the impact, if any, on system availability will be small as a result of the change to a 24 month surveillance interval.

Event	Title	Associated SRs and Function
0600	PERFORM 44.020.027 NS4 MAIN STEAM LINE PRESSURE, TRIP SYS A, CH A, CAL/FUNC	SR 3.3.6.1.4-1.b SR 3.3.6.1.5-1.b SR 3.6.1.3.8
# Performances: 6 # Failures: 3		

**24 Month Justification: Notes:**

The failures do not impact any safety function; therefore, the surveillance test history supports the conclusion that the impact, if any, on system availability will be small as a result of the change to a 24 month surveillance interval.

**Failure Review:**

Perf. Date	Fail Cat.	Description of Failure	Justification of Failure
10/24/2009	A	B21-N076A Transmitter As Found Acceptance Criteria was not met. All readings were low, with most below the Acceptable Performance Tolerance (APT) MIN value. Transmitter was successfully calibrated with all As Left Tolerance (ALT) values in range.	The identified failure(s) would not have prevented the performance of the required safety function of the equipment. Therefore, this failure will have no impact on an extension to a 24 month surveillance interval.
6/14/2011	A	B21-N076A Transmitter As Found Acceptance Criteria was not met. All readings were above the Acceptable Performance Tolerance (APT) MAX value. Transmitter was successfully calibrated with all As Left Tolerance (ALT) values in range.	The identified failure(s) would not have prevented the performance of the required safety function of the equipment. Therefore, this failure will have no impact on an extension to a 24 month surveillance interval.
2/21/2013	A	B21-N076A Transmitter As Found Acceptance Criteria was not met. All readings were low, with some readings below the Acceptable Performance Tolerance (APT) MIN value. Transmitter was successfully calibrated with all As Left Tolerance (ALT) values in range.	The identified failure(s) would not have prevented the performance of the required safety function of the equipment. Therefore, this failure will have no impact on an extension to a 24 month surveillance interval.

Event	Title	Associated SRs and Function
0601	PERFORM 44.020.028 NS4 MAIN STEAM LINE PRESSURE,TRIP SYS B, CH B, CAL/FUNC	SR 3.3.6.1.4-1.b SR 3.6.1.3.8

# Performances: 6 # Failures: 1

**24 Month Justification: Notes:**

One failure identified which did not impact any safety function; therefore, the surveillance test history supports the conclusion that the impact, if any, on system availability will be small as a result of the change to a 24 month surveillance interval.

**Failure Review:**

**Perf. Date Fail Cat. Description of Failure**

8/24/2016 A SPF Note 1: "While performing step 6.1.13 did not get expected results. MS Line Low Pressure Ch-B remained red. Should have changed to green. Resolution: Informed Control Room Supervisor and I&C Supervisor. Plan to re-perform steps 6.1.1, 6.1.2, 6.1.7 & 6.1.12.4 to cycle relay A71B-K4B. Repeat once if necessary." SPF Note 2: "Did not resolve discrepancy in Note 1. Completed remainder of procedure per CRS/Supervision. Wrote CARD 16-26685" Several CARDS have been written in the past dating back to 2000. The last was CARD 15-23625 Troubleshooting determined Work Order needed to rework/replace A71K4B. CARD 16-26685 requested WO 43192002. WO 43192002 was worked 11/8/2016 to clean contacts. Annunciator was re-tested satisfactorily using 44.020.024, NSSSS-Main Steam Line Press, Div II Chn Func Test.

**Justification of Failure**

The identified failure(s) would not have prevented the performance of the required safety function of the equipment. Therefore, this failure will have no impact on an extension to a 24 month surveillance interval.

Event	Title	Associated SRs and Function
0602	PERFORM 44.020.029 NS4 MAIN STEAM LINE PRESSURE,TRIP SYS A, CHNL C,CAL/FUNC	SR 3.3.6.1.4-1.b SR 3.6.1.3.8

# Performances: 6 # Failures: 1

**24 Month Justification: Notes:**

One failure identified which did not impact any safety function; therefore, the surveillance test history supports the conclusion that the impact, if any, on system availability will be small as a result of the change to a 24 month surveillance interval.

**Failure Review:**

**Perf. Date Fail Cat. Description of Failure**

6/14/2011 A B21-N676C MTU Gross Fail Trip reset working intermittently. Informed CRS & Supervisor CARD 11-25872 written to correct." CARD 11-25872 states: "at step 6.1.9 the gross fail reset button worked intermittently, requiring many presses of the button before the alarm would come into the Control Room. It would clear at testability but when it would come back in at testability it would not come in Control Room. Recommend Changing out the 510 card for a 710 card." Reportability/Operability Review states "This is not acceptance criteria in the procedure nor does it affect the trip function of the unit. No operability concern." WO 32878407 initiated to replace B21N676C, Main Steam Line Pressure, MTU. WO 32878407 was completed on 12/20/2012.

**Justification of Failure**

The identified failure(s) would not have prevented the performance of the required safety function of the equipment. Therefore, this failure will have no impact on an extension to a 24 month surveillance interval.

Event	Title	Associated SRs and Function
0603	PERFORM 44.020.030 NS4 MAIN STEAM LINE PRESSURE, TRIP SYS B, CH D, CAL/FUNC	SR 3.3.6.1.4-1.b SR 3.6.1.3.8

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# Performances: 6 # Failures: 1

**24 Month Justification: Notes:**

One failure identified which did not impact any safety function; therefore, the surveillance test history supports the conclusion that the impact, if any, on system availability will be small as a result of the change to a 24 month surveillance interval.

**Failure Review:**

**Perf. Date Fail Cat. Description of Failure**

3/2/2012 A SPF Note: B21N676D (MTU) failed. The input resistor check Table 2. Write a CARD to rework B21N676D MTU. Talked to Supervisor, CRS, and SM. Decided to back out per Steps 6.3.1, 6.3.11 - 6.3.14 and 8.2" CARD 12-21682 states: "MTU B21N676D failed the input resistor check on Table 2. There is no adjustment for this resistor. 44.020.030 Step 6.1.4 states: If 'As Found' data recorded on Table 2 are within As Left Tolerance (ALT), then enter N/A in As Left column. Otherwise, issue a work order to rework the MTU. Reportability/Operability Review states: "Instrument Declared inoperable, NS4 signal was restored to support repairs. The Instrument is required to be placed in a tripped condition by 3/3/12, 0059 per T.S. 3.3.6.1." The Main Steam Line Pressure Low MSIV Closure logic depends on trip channel A (B21N676A or C) and trip channel B (B21N676B or D) with the Mode Switch in Run to initiate an MSIV Closure (ref 23.601 pg 33 B21N076A, B, C, and D). All 4 instruments and trip units were capable of performing the MSIV Closure function in accordance with MR function B2100-05. Based on the analysis, no Maintenance Rule Function was lost during the event. Since no Maintenance Rule Function was lost, no MRFF occurred. Also, the event was not a Maintenance Preventable Functional Failure as no MRFF occurred. WO 34118863 replaced original Rosemount 510 DU MTU with more current 710 DU MTU. Partial performance per Rev 36 and WO 34118863 completed successfully. Procedure was revised (Rev 37) in support of replacement of B21-N676D and performed successfully.

**Justification of Failure**

The identified failure(s) would not have prevented the performance of the required safety function of the equipment. Therefore, this failure will have no impact on an extension to a 24 month surveillance interval.

Event	Title	Associated SRs and Function
0606	PERFORM 44.020.303 NS4 RX PRESS SDC CUT- IN PERMIS,D1,CAL/FUNC**ISOLATES SDC-F009	SR 3.3.6.1.4-6.a SR 3.3.6.1.5-6.a

# Performances: 6 # Failures: 0

**24 Month Justification: Notes:**

There were no failures, therefore the surveillance test history supports the conclusion that the impact, if any, on system availability will be small as a result of the change to a 24 month surveillance interval.

Event	Title	Associated SRs and Function	
0607	PERFORM 44.020.304 NS4 RX PRESS SDC CUT- IN PERMIS,D2,CAL/FUNC**ISOLATES SDC-F008	SR 3.3.6.1.4-6.a	SR 3.3.6.1.5-6.a
# Performances: 6		# Failures: 0	

**24 Month Justification: Notes:**

There were no failures, therefore the surveillance test history supports the conclusion that the impact, if any, on system availability will be small as a result of the change to a 24 month surveillance interval.

Event	Title	Associated SRs and Function	
0628	PERFORM 44.020.416 NS4 MAIN STEAM LINE TUNNEL TEMP,TRIP SYS A,B21N612A,CAL/FUNC	SR 3.3.6.1.4-1.e	SR 3.3.6.1.5-1.e
# Performances: 6		SR 3.6.1.3.8	
# Failures: 0			

**24 Month Justification: Notes:**

There were no failures, therefore the surveillance test history supports the conclusion that the impact, if any, on system availability will be small as a result of the change to a 24 month surveillance interval.

Event	Title	Associated SRs and Function	
0629	PERFORM 44.020.420 NS4 MAIN STEAM LINE TUNNEL TEMP,TRIP SYS B,B21N612B,CAL/FUNC	SR 3.3.6.1.4-1.e	SR 3.3.6.1.5-1.e
# Performances: 6		SR 3.6.1.3.8	
# Failures: 0			

**24 Month Justification: Notes:**

There were no failures, therefore the surveillance test history supports the conclusion that the impact, if any, on system availability will be small as a result of the change to a 24 month surveillance interval.

Event	Title	Associated SRs and Function	
0630	PERFORM 44.020.424 NS4 MAIN STEAM LINE TUNNEL TEMP,TRIP SYS A,B21N612C,CAL/FUNC	SR 3.3.6.1.4-1.e	SR 3.3.6.1.5-1.e
# Performances: 6		SR 3.6.1.3.8	
# Failures: 0			

**24 Month Justification: Notes:**

There were no failures, therefore the surveillance test history supports the conclusion that the impact, if any, on system availability will be small as a result of the change to a 24 month surveillance interval.

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Event	Title	Associated SRs and Function
0631	PERFORM 44.020.428 NS4 MAIN STEAM LINE TUNNEL TEMP,TRIP SYS B,B21N612D,CAL/FUNC	SR 3.3.6.1.4-1.e SR 3.3.6.1.5-1.e SR 3.6.1.3.8
# Performances: 6		# Failures: 0

24 Month Justification:

Notes:

There were no failures, therefore the surveillance test history supports the conclusion that the impact, if any, on system availability will be small as a result of the change to a 24 month surveillance interval.

Event	Title	Associated SRs and Function
0632	PERFORM 44.020.063 NS4 CONDENSER PRESS TRIP SYSTEM A, CHANNEL A, CAL/FUNCT	SR 3.3.6.1.4-1.d SR 3.3.6.1.5-1.d SR 3.6.1.3.8
# Performances: 6		# Failures: 1

24 Month Justification:

Notes:

One failure identified which did not impact any safety function; therefore, the surveillance test history supports the conclusion that the impact, if any, on system availability will be small as a result of the change to a 24 month surveillance interval.

Failure Review:

Perf. Date	Fail Cat.	Description of Failure	Justification of Failure
2/25/2009	A	B21-N096A Transmitter As Found Acceptable Performance Tolerance (APT) was not met. Most all readings were above the Acceptable Performance Tolerance (APT) MAX values. Transmitter was successfully calibrated with all As Left Tolerance (ALT) values in range.	The identified failure(s) would not have prevented the performance of the required safety function of the equipment. Therefore, this failure will have no impact on an extension to a 24 month surveillance interval.

Event 0633	Title PERFORM 44.020.064 NS4 CONDENSER PRESS TRIP SYSTEM B, CHANNEL B, CAL/FUNC	Associated SRs and Function SR 3.3.6.1.4-1.d SR 3.6.1.3.8
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# Performances: 6      # Failures: 4

**24 Month Justification: Notes:**

The failures do not impact any safety function; therefore, the surveillance test history supports the conclusion that the impact, if any, on system availability will be small as a result of the change to a 24 month surveillance interval.

**Failure Review:**

**Perf. Date Fail Cat. Description of Failure**

8/11/2008	A	B21-N696B Gross Fail Trip, As Found; Low and High values were found out of the Acceptable Performance Tolerance (APT) range. B21-N696B MTU High Gross Fail trip was calibrated to within As Left Tolerance (ALT) values. CARD was NOT written.
2/10/2012	A	B21-N696B Gross Fail Trip, As Found Low reading was found below and As Found High reading was found above the Acceptable Performance Tolerance (APT). B21-N696B MTU High Gross Fail trip was calibrated to within As Left Tolerance (ALT) values. CARD 12-21110 written - The primary function of the gross failure circuits is to detect an open and shorted transmitter loop. A precision accuracy is not required to ensure that the gross failure circuits perform their intended function. Also, the single turn potentiometers used to make the gross failure adjustments cause inherent inaccuracies that affect the tolerance of the gross failure circuits. Consequently, the 2% tolerance insures that field calibration is achievable, but does not affect the intended function of the gross failure circuits. The B21N696B is the master trip unit (MTU) and the gross failure does not impact the testability instruments' functions or set-points. The condenser pressure high function was working as designed and within acceptable tolerance. The problem was in the MTU gross failure verification. All the testing for the trip units were completed satisfactorily, therefore all instruments remained OPERABLE.

**Justification of Failure**

The identified failure(s) would not have prevented the performance of the required safety function of the equipment. Therefore, this failure will have no impact on an extension to a 24 month surveillance interval.

The identified failure(s) would not have prevented the performance of the required safety function of the equipment. Therefore, this failure will have no impact on an extension to a 24 month surveillance interval.

11/6/2013	A	B21-N696B Analog Indicator As Found reading at 77.78% of Span (decr) was found below Acceptable Performance Tolerance (APT) . Analog Indicator was successfully calibrated with all As Left Tolerance (ALT) values in range. CARD was NOT written.
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The identified failure(s) would not have prevented the performance of the required safety function of the equipment. Therefore, this failure will have no impact on an extension to a 24 month surveillance interval.

2/5/2015	A	SPF Note: "B21-N696B Analog Indicator outside of As Left Tolerance. Informed Lead Tech and CS, performed best Cal fit for As Left data. Wrote CARD 15-20944 to replace MTU under a Work Order." CARD 15-20944 states: "found B21-N696B analog indicator outside of As Left Tolerance. B21-N696B is a 510 MTU. Recommend replacing unit with a 710 MTU under a work order." Reportability/Operability Review states: "The failure of the analog indicator to calibrate does not impact the B21N696B Trip Unit's ability to perform its safety function. B21N696B Trip Unit remains OPERABLE." WO 42531710 was written to replace Rosemount Trip Unit, B21N696B with 710 MTU. Performance of 44.020.064, dated 8/3/2016, was completed as PMT for WO 42531710.	The identified failure(s) would not have prevented the performance of the required safety function of the equipment. Therefore, this failure will have no impact on an extension to a 24 month surveillance interval.
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Event	Title	Associated SRs and Function
0634	PERFORM 44.020.065 NS4 CONDENSER PRESS TRIP SYSTEM A, CHANNEL C, CAL/FUNCT	SR 3.3.6.1.4-1.d      SR 3.3.6.1.5-1.d SR 3.6.1.3.8
# Performances: 6      # Failures: 0		
24 Month Justification:      Notes:		
There were no failures, therefore the surveillance test history supports the conclusion that the impact, if any, on system availability will be small as a result of the change to a 24 month surveillance interval.		

Event	Title	Associated SRs and Function
0635	PERFORM 44.020.066 NS4 CONDENSER PRESS TRIP SYSTEM B, CHANNEL D, CAL/FUNC	SR 3.3.6.1.4-1.d SR 3.6.1.3.8

# Performances: 6      # Failures: 2

**24 Month Justification: Notes:**

The failures do not impact any safety function; therefore, the surveillance test history supports the conclusion that the impact, if any, on system availability will be small as a result of the change to a 24 month surveillance interval.

**Failure Review:**

**Perf. Date Fail Cat. Description of Failure**

8/11/2008	A	B21-N696D Gross Fail Trip, High reading was found below Acceptable Performance Tolerance (APT) MIN value. High Gross Fail Trip was calibrated to within As Left Tolerance (ALT).
6/4/2010	A	B21-N696D Gross Fail Trip, High reading was found above Acceptable Performance Tolerance (APT) MAX value. High Gross Fail Trip was calibrated to within As Left Tolerance (ALT).

**Justification of Failure**

The identified failure(s) would not have prevented the performance of the required safety function of the equipment. Therefore, this failure will have no impact on an extension to a 24 month surveillance interval.

The identified failure(s) would not have prevented the performance of the required safety function of the equipment. Therefore, this failure will have no impact on an extension to a 24 month surveillance interval.

Event	Title	Associated SRs and Function	TRVEND 24MCGNF319001 Rev 1
0636	PERFORM 44.020.432 NS4 TB AREA TEMP, TRIP SYS A, CH A, B21N616A, CAL/FUNC	SR 3.3.6.1.4-1.g SR 3.6.1.3.8	Page 221 of 395
# Performances: 6		# Failures: 2	

24 Month Justification:	Notes:
The failures do not impact any safety function; therefore, the surveillance test history supports the conclusion that the impact, if any, on system availability will be small as a result of the change to a 24 month surveillance interval.	

Failure Review:			
Perf. Date	Fail Cat.	Description of Failure	Justification of Failure
12/8/2010	A	<p>SPF Note: "Step 6.1.20 Resistance readings bad for BB-20 and BB-21. Readings bad because leads lifted incorrectly in Step 6.1.3. Believe shield cable lifted and RTD lead left landed on TB-BB-19. Stopped, discussed with I&amp;C Supervisor and CRS. Finished out current Surv. Intend to reperform. CARD 10-31676" CARD 10-31676 states: "During performance of step 6.1.21, in surveillance procedure 44.020.432 (Turbine Building Area Temp Cal/Func), Instrument &amp; Control Technicians lifted two leads from the same terminal. Both leads were labeled "19". The tech's performed a resistance reading and found it out of spec low. The surveillance was stopped after concurrence with the Shift Manager and the I&amp;C Supervisor. During the performance review it was found that though the tech's lifted the leads from the correct terminal they assumed which lead was the one that needed the resistance reading. They reasoned that this surveillance had been performed successfully in the past and took the reading on the incorrect wire." Resistance values obtained at Step 6.1.20 exceeded tolerance. CARD Description/Investigation states: "Interview with the crew identified that the wires were not marked (e.g. which was the shield and which was the RTD ground). They both were labeled with a "19" wire marker. As it turned out, the last time the surveillance was performed the technicians landed the negative lead and then the shield. When my crew performed it and when presented with two wires on the same term identified as the same wire, they may have assumed the outer most wire was the negative lead as that should be where the technicians who last performed it should have re-terminated it. The technicians sorted out the error and when they went to re-perform the surveillance they added wire markers to better identity the wires so this error would not happen again. The surveillance was completed and the system restored to normal. This event was shared with the I&amp;C shop, Electrical shop, and the Projects group. The surveillance was successfully reperformed and during this performance a wire marker was put on the correct wire. A review of the panels that contain the terminals of the sister surveillance's revealed no like issues."</p>	<p>The identified failure(s) would not have prevented the performance of the required safety function of the equipment. Therefore, this failure will have no impact on an extension to a 24 month surveillance interval.</p>

7/19/2017

A

SPF Note: "During performance of 6.1.13, Z2 nest lost power and half SCRAM occurred. Surveillance cannot be completed; CARD 17-25956 - Put equipment in safe condition and return to a normal, As Found condition. Perform Steps 6.1.18, 6.1.19, 6.1.21 and 6.2.11." Reportability/Operability Review states: "During performance of Step 6.1.13, when read out assembly was installed and when Calibration Select and Command Switch center knob was pushed in, power supply fuse to H21P084 Z2 nest blew. Received half SCRAM A Train along with 3D81, Primary Containment Pressure High/Low, 3D85, Primary Containment Press A1 Trip, 3D94, Disch Vol Water Level A1 Trip and 1D35, NSSS Reac Vessel H2O L2 Ch A / C Trip. Additionally received NSSS Channel A trips for Reactor Vessel Low Wtr Level 1 and Condenser Low Vacuum. All trip units responded as expected to the loss of power and the following tracking LCO's were entered TS 3.3.1.1, 3.3.6.1, 3.3.6.2 and 3.3.7.1. Following fuse replacement all alarms and half SCRAM and half MSIV isolation was reset. The system was restored to normal and channel "A" of TB area temperature was verified to be reading as expected when compared to the as found indication. Exit 24 hour action per 3.3.6.1 condition A. TB area temperature, trip system A, channel A, B21N616A remains operable." Action Item Completion Comments: "The blown fuse put the Master Trip Units into their required safety function state. This would not have prevented an actual trip or actuation should they have been required by actual plant conditions. MRFF evaluation not required. Licensing reviewed the condition and events and determined the condition to be not reportable. WO 48200356 initiated to replace the cal unit and check the readout utilized during this surveillance. B21NA03A Calibration Unit and B21N616A MTU were replaced. Procedure 44.020.432 performed in entirety, satisfactorily.

The identified failure(s) would not have prevented the performance of the required safety function of the equipment. Therefore, this failure will have no impact on an extension to a 24 month surveillance interval.

**Event****Title**

0637

**PERFORM 44.020.434 NS4 TB AREA TEMP, TRIP SYS B, CH B, B21N616B, CAL/FUNC**

**Associated SRs and Function**

SR 3.3.6.1.4-1.g

SR 3.3.6.1.5-1.g

SR 3.6.1.3.8

# Performances: 6

# Failures: 0

**24 Month Justification: Notes:**

There were no failures, therefore the surveillance test history supports the conclusion that the impact, if any, on system availability will be small as a result of the change to a 24 month surveillance interval.

Event	Title	Associated SRs and Function
0638	PERFORM 44.020.436 NS4 TB AREA TEMP, TRIP SYS A, CH C, B21N616C, CAL/FUNC	SR 3.3.6.1.4-1.g SR 3.6.1.3.8
# Performances: 6		# Failures: 0

**24 Month Justification: Notes:**

There were no failures, therefore the surveillance test history supports the conclusion that the impact, if any, on system availability will be small as a result of the change to a 24 month surveillance interval.

Event	Title	Associated SRs and Function
0639	PERFORM 44.020.438 NS4 TB AREA TEMP, TRIP SYS B, CH D, B21N616D, CAL/FUNC	SR 3.3.6.1.4-1.g SR 3.6.1.3.8
# Performances: 6		# Failures: 0

**24 Month Justification: Notes:**

There were no failures, therefore the surveillance test history supports the conclusion that the impact, if any, on system availability will be small as a result of the change to a 24 month surveillance interval.

Event	Title	Associated SRs and Function
0640	PERFORM 44.030.001 ECCS - CORE SPRAY SYSTEM, DIV 1, LOGIC FUNCTIONAL TEST	SR 3.3.5.1.5-1.a SR 3.3.5.1.5-1.c SR 3.6.1.3.8
# Performances: 7		# Failures: 0

**24 Month Justification: Notes:**

There were no failures, therefore the surveillance test history supports the conclusion that the impact, if any, on system availability will be small as a result of the change to a 24 month surveillance interval.

Event	Title	Associated SRs and Function
0641	PERFORM 44.030.002 ECCS - CORE SPRAY SYSTEM, DIV 2, LOGIC FUNCTIONAL TEST	SR 3.3.5.1.5-1.a SR 3.3.5.1.5-1.c SR 3.6.1.3.8
# Performances: 6		# Failures: 0

**24 Month Justification: Notes:**

There were no failures, therefore the surveillance test history supports the conclusion that the impact, if any, on system availability will be small as a result of the change to a 24 month surveillance interval.

Event	Title	Associated SRs and Function
0645	PERFORM 44.030.400 ECCS HPCI/RCIC CST LEVEL, E41N061B, CALIBRATION/FUNCTIONAL	SR 3.3.5.1.4-3.d SR 3.3.5.2.4-3

# Performances: 6 # Failures: 1

**24 Month Justification: Notes:**

The failure does not impact any safety function; therefore, the surveillance test history supports the conclusion that the impact, if any, on system availability will be small as a result of the change to a 24 month surveillance interval.

**Failure Review:**

**Perf. Date Fail Cat. Description of Failure**

9/3/2010 A E41-N061B Transmitter As Found readings, with exception of 100% of Span, were below Acceptable Performance Tolerance (APT) MIN values. Transmitter was successfully calibrated with all readings within As Left Tolerance.

**Justification of Failure**

The identified failure(s) would not have prevented the performance of the required safety function of the equipment. Therefore, this failure will have no impact on an extension to a 24 month surveillance interval.

Event	Title	Associated SRs and Function
0646	PERFORM 44.030.156 ECCS HPCI TORUS LEVEL CALIBRATION - Div 1 areas	SR 3.3.5.1.4-3.e SR 3.3.5.1.5-3.e

# Performances: 6 # Failures: 1

**24 Month Justification: Notes:** Maximo Notes: 09/21/2011, Split event 0646 into two events 0646 and 0646D2, to work Div 1 & Div 2 areas separately.

One failure identified which did not impact any safety function; therefore, the surveillance test history supports the conclusion that the impact, if any, on system availability will be small as a result of the change to a 24 month surveillance interval.

**Failure Review:**

**Perf. Date Fail Cat. Description of Failure**

4/8/2012 A E41-N662B Analog Indicator As Found reading at 98.7% of Span was below Acceptable Performance Tolerance (APT) MIN value. Analog indicator was successfully calibrated with all As Left Tolerance (ALT) within range. E41-N062B Transmitter As Found readings were all within Acceptable Performance Tolerance (APT) but all readings were below As Left Tolerance (ALT) MIN values. Transmitter was successfully calibrated with all readings within As Left Tolerance.

**Justification of Failure**

The identified failure(s) would not have prevented the performance of the required safety function of the equipment. Therefore, this failure will have no impact on an extension to a 24 month surveillance interval.

<b>Event</b>	<b>Title</b>	<b>Associated SRs and Function</b>	TRVEND 24MCGNF319001 Rev 1 Page 225 of 395
0646D2	PERFORM 44.030.156 ECCS HPCI TORUS LEVEL CALIBRATION - Div 2 area	SR 3.3.5.1.4-3.e      SR 3.3.5.1.5-3.e	

# Performances: 4      # Failures: 0

**24 Month Justification: Notes:**

There were no failures, therefore the surveillance test history supports the conclusion that the impact, if any, on system availability will be small as a result of the change to a 24 month surveillance interval.

<b>Event</b>	<b>Title</b>	<b>Associated SRs and Function</b>
0647	PERFORM 44.030.201 ECCS - ADS,TRIP SYS A LOGIC FUNCTIONAL TEST	SR 3.3.5.1.5-4.a      SR 3.3.5.1.5-4.b SR 3.3.5.1.5-4.c      SR 3.3.5.1.5-4.d SR 3.3.5.1.5-4.e      SR 3.3.5.1.5-4.f SR 3.3.5.1.5-4.g      SR 3.3.5.1.5-4.h SR 3.5.1.12

# Performances: 6      # Failures: 2

**24 Month Justification: Notes:**

The failures do not impact any safety function; therefore, the surveillance test history supports the conclusion that the impact, if any, on system availability will be small as a result of the change to a 24 month surveillance interval.

**Failure Review:**

Perf. Date	Fail Cat.	Description of Failure	Justification of Failure
11/17/2010	A	SPF Note: "Step 6.4.11.2 - Term AA-7 to AA-8 read approx. 1.3K ohms. CRS suggests performing Sect 6.4 at end of shift. Cycle SW's (pushbuttons) "Div 1 ADS Countdown Timer Reset" and E1150F047A Manual Inhibit" then re-perform Step 6.4.11.2." Step was reperformed satisfactorily. This was not acceptance criteria.	The identified failure(s) would not have prevented the performance of the required safety function of the equipment. Therefore, this failure will have no impact on an extension to a 24 month surveillance interval.
4/16/2017	A	SPF Note: "Step 6.4.11.2, looking for closed circuit AA-7 to AA-8 resulted in approx. 500K ohms. Notified CRS and I&C Supervisor, I&C Supervisor suggested using Simpson resulted in 400 Ohm reading; SAT reading for closed contacts. Continued on, no problems. Cycling test switch in Step 6.6 brought readings to <100 Ohms, SAT" This was not acceptance criteria.	The identified failure(s) would not have prevented the performance of the required safety function of the equipment. Therefore, this failure will have no impact on an extension to a 24 month surveillance interval.

Event	Title	Associated SRs and Function	
0648	PERFORM 44.030.202 ECCS - ADS, TRIP SYS B LOGIC FUNCTIONAL TEST	SR 3.3.5.1.5-5.a SR 3.3.5.1.5-5.c SR 3.3.5.1.5-5.e SR 3.3.5.1.5-5.g SR 3.5.1.12	SR 3.3.5.1.5-5.b SR 3.3.5.1.5-5.d SR 3.3.5.1.5-5.f SR 3.3.5.1.5-5.h

# Performances: 6      # Failures: 0

**24 Month Justification: Notes:**

There were no failures, therefore the surveillance test history supports the conclusion that the impact, if any, on system availability will be small as a result of the change to a 24 month surveillance interval.

Event	Title	Associated SRs and Function	
0649	PERFORM 44.030.209 ECCS CSS PUMP C DISCH PRESS, TRIP SYS A, ADS PERMIT, CAL/FUNC	SR 3.3.5.1.4-4.e	SR 3.3.5.1.5-4.e

# Performances: 6      # Failures: 0

**24 Month Justification: Notes:**

There were no failures, therefore the surveillance test history supports the conclusion that the impact, if any, on system availability will be small as a result of the change to a 24 month surveillance interval.

Event	Title	Associated SRs and Function	
0650	PERFORM 44.030.210 ECCS CSS PUMP D DISCH PRESS, TRIP SYS B, ADS PERMIT, CAL/FUNC	SR 3.3.5.1.4-5.e	SR 3.3.5.1.5-5.e

# Performances: 6      # Failures: 0

**24 Month Justification: Notes:**

There were no failures, therefore the surveillance test history supports the conclusion that the impact, if any, on system availability will be small as a result of the change to a 24 month surveillance interval.

Event	Title	Associated SRs and Function
0651	PERFORM 44.030.211 ECCS CSS PUMP A DISCH PRESS, TRIP SYS A, ADS PERMIT,CAL/FUNC	SR 3.3.5.1.4-4.e SR 3.3.5.1.5-4.e
# Performances: 6 # Failures: 1		

**24 Month Justification: Notes:**

One failure identified which did not impact any safety function; therefore, the surveillance test history supports the conclusion that the impact, if any, on system availability will be small as a result of the change to a 24 month surveillance interval.

**Failure Review:**

Perf. Date	Fail Cat.	Description of Failure	Justification of Failure
12/26/2012	A	E21-N662A Analog Indicator As Found readings at 50% and 25% of Span (decr) were below the Acceptable Performance Tolerance (APT). Analog Indicator was successfully calibrated with all readings within As Left Tolerance.	The identified failure(s) would not have prevented the performance of the required safety function of the equipment. Therefore, this failure will have no impact on an extension to a 24 month surveillance interval.

Event	Title	Associated SRs and Function
0652	PERFORM 44.030.212 ECCS CSS PUMP B DISCH PRESS, TRIP SYS B, (ADS PERMIT),CAL/FUNC	SR 3.3.5.1.4-5.e SR 3.3.5.1.5-5.e
# Performances: 6 # Failures: 0		

**24 Month Justification: Notes:**

There were no failures, therefore the surveillance test history supports the conclusion that the impact, if any, on system availability will be small as a result of the change to a 24 month surveillance interval.

**Event Title**  
**0657 PERFORM 44.030.217 ECCS RHR PUMP A DISCH PRESS (ADS PERMIT) CAL/FUNC.**

**Associated SRs and Function**  
**SR 3.3.5.1.4-4.f SR 3.3.5.1.5-4.f**

**# Performances: 6 # Failures: 1**

**24 Month Justification: Notes:**

One failure identified which did not impact any safety function; therefore, the surveillance test history supports the conclusion that the impact, if any, on system availability will be small as a result of the change to a 24 month surveillance interval.

**Failure Review:**

**Perf. Date Fail Cat. Description of Failure**

1/25/2010 A SPF states: "Table 7 on page 10 and Table B on attachment 4, page 2 was unable to calibrate at the 60% mark for E11-R803 red pointer. Conferred with Shift Manager and Supervisor. It was determined that this was not in the Tech Spec loop nor Acceptance Criteria. It was also determined that this instrument would be best repaired/addressed under the CARD process. CARD 10-20611 written to address issue." CARD 10-20611 Reportability/Operability Review states: "The discharge pressure indication is used for monitoring and does not prevent the pump from producing the necessary discharge pressure to support the safety functions. RHR and ADS remain OPERABLE." WO 30853073 requested. WO 30853073 status per Maximo = CAN. Maximo indicates: SE Comment 6/5/2015 - Recommend cancellation because E11R803 has since cal'd successfully. Also in; Table 1 - E11-N655A Analog Indicator, As Found reading at 100% was below Acceptable Performance Tolerance (APT). Indicator was successfully calibrated with all readings within As Left Tolerance.

**Justification of Failure**

The identified failure(s) would not have prevented the performance of the required safety function of the equipment. Therefore, this failure will have no impact on an extension to a 24 month surveillance interval.

**Event Title**  
**0658 PERFORM 44.030.218 ECCS RHR PUMP B DISCH PRESS (ADS PERMIT) CAL/FUNC.**

**Associated SRs and Function**  
**SR 3.3.5.1.4-5.f SR 3.3.5.1.5-5.f**

**# Performances: 6 # Failures: 0**

**24 Month Justification: Notes:**

There were no failures, therefore the surveillance test history supports the conclusion that the impact, if any, on system availability will be small as a result of the change to a 24 month surveillance interval.

Event	Title	Associated SRs and Function	
0659	PERFORM 44.030.219 ECCS RHR PUMP C DISCH PRESS (ADS PERMIT) CAL/FUNC.	SR 3.3.5.1.4-4.f	SR 3.3.5.1.5-4.f
# Performances: 6		# Failures: 0	

**24 Month Justification: Notes:**

There were no failures, therefore the surveillance test history supports the conclusion that the impact, if any, on system availability will be small as a result of the change to a 24 month surveillance interval.

Event	Title	Associated SRs and Function	
0670	PERFORM 44.030.220 ECCS RHR PUMP D DISCH PRESS(ADS PERMIT) DIV 2, CAL/FUNC.	SR 3.3.5.1.4-5.f	SR 3.3.5.1.5-5.f
# Performances: 6		# Failures: 0	

**24 Month Justification: Notes:**

There were no failures, therefore the surveillance test history supports the conclusion that the impact, if any, on system availability will be small as a result of the change to a 24 month surveillance interval.

Event	Title	Associated SRs and Function	
0671	PERFORM 44.030.255 ECCS RX WTR LVL 1,2&8 DIV 1, CHNL A, XMTR CALIBRATION	SR 3.3.4.1.3.a	SR 3.3.4.1.4.a
		SR 3.3.5.1.4-1.a	SR 3.3.5.1.4-2.a
		SR 3.3.5.1.4-2.d	SR 3.3.5.1.4-3.a
		SR 3.3.5.1.4-3.c	SR 3.3.5.1.4-4.a
		SR 3.3.5.1.5-1.a	SR 3.3.5.1.5-2.a
		SR 3.3.5.1.5-2.d	SR 3.3.5.1.5-3.a
		SR 3.3.5.1.5-3.c	SR 3.3.5.1.5-4.a
		SR 3.3.5.2.4-1	SR 3.3.5.2.4-2
		SR 3.3.5.2.5-1	SR 3.3.5.2.5-2
		SR 3.5.1.11	SR 3.5.1.12
		SR 3.5.3.5	SR 3.6.1.3.8
# Performances: 6		# Failures: 0	

**24 Month Justification: Notes:**

There were no failures, therefore the surveillance test history supports the conclusion that the impact, if any, on system availability will be small as a result of the change to a 24 month surveillance interval.

Event	Title	Associated SRs and Function	
		SR	Function
0672	PERFORM 44.030.256 ECCS RX WTR LVL 1,2&8 DIV 2,CHNL B, XMTR CALIBRATION	SR 3.3.3.1.2-3	SR 3.3.4.1.3.a
		SR 3.3.4.1.4.a	SR 3.3.5.1.4-1.a
		SR 3.3.5.1.4-2.a	SR 3.3.5.1.4-2.d
		SR 3.3.5.1.4-3.a	SR 3.3.5.1.4-3.c
		SR 3.3.5.1.4-5.a	SR 3.3.5.1.5-1.a
		SR 3.3.5.1.5-2.a	SR 3.3.5.1.5-2.d
		SR 3.3.5.1.5-3.a	SR 3.3.5.1.5-3.c
		SR 3.3.5.1.5-5.a	SR 3.3.5.2.4-1
		SR 3.3.5.2.4-2	SR 3.3.5.2.5-1
		SR 3.3.5.2.5-2	SR 3.5.1.11
		SR 3.5.1.12	SR 3.5.3.5
		SR 3.6.1.3.8	

# Performances: 6      # Failures: 0

**24 Month Justification: Notes:**

There were no failures, therefore the surveillance test history supports the conclusion that the impact, if any, on system availability will be small as a result of the change to a 24 month surveillance interval.

Event	Title	Associated SRs and Function	
		SR	Function
0673	PERFORM 44.030.257 ECCS RX WTR LVL 1,2&8 DIV 1,CHNL C, XMTR CALIBRATION	SR 3.3.3.1.2-3	SR 3.3.3.2.3-2
		SR 3.3.4.1.3.a	SR 3.3.4.1.4.a
		SR 3.3.5.1.4-1.a	SR 3.3.5.1.4-2.a
		SR 3.3.5.1.4-2.d	SR 3.3.5.1.4-3.a
		SR 3.3.5.1.4-3.c	SR 3.3.5.1.4-4.a
		SR 3.3.5.1.5-1.a	SR 3.3.5.1.5-2.a
		SR 3.3.5.1.5-2.d	SR 3.3.5.1.5-3.a
		SR 3.3.5.1.5-3.c	SR 3.3.5.1.5-4.a
		SR 3.3.5.2.4-1	SR 3.3.5.2.5-1
		SR 3.5.1.11	SR 3.5.1.12
		SR 3.5.3.5	SR 3.6.1.3.8

# Performances: 6      # Failures: 0

**24 Month Justification: Notes:**

There were no failures, therefore the surveillance test history supports the conclusion that the impact, if any, on system availability will be small as a result of the change to a 24 month surveillance interval.

Event	Title	Associated SRs and Function	
0674	PERFORM 44.030.258 ECCS RX WTR LVL 1,2&8 DIV 2,CHNL D, XMTR CALIBRATION	SR 3.3.4.1.3.a	SR 3.3.4.1.4.a
		SR 3.3.5.1.4-1.a	SR 3.3.5.1.4-2.a
		SR 3.3.5.1.4-2.d	SR 3.3.5.1.4-3.a
		SR 3.3.5.1.4-3.c	SR 3.3.5.1.4-5.a
		SR 3.3.5.1.5-1.a	SR 3.3.5.1.5-2.a
		SR 3.3.5.1.5-2.d	SR 3.3.5.1.5-3.a
		SR 3.3.5.1.5-3.c	SR 3.3.5.1.5-5.a
		SR 3.3.5.2.4-1	SR 3.3.5.2.5-1
		SR 3.5.1.11	SR 3.5.1.12
		SR 3.5.3.5	SR 3.6.1.3.8

# Performances: 6      # Failures: 0

**24 Month Justification: Notes:**

There were no failures, therefore the surveillance test history supports the conclusion that the impact, if any, on system availability will be small as a result of the change to a 24 month surveillance interval.

Event	Title	Associated SRs and Function	
0701	PERFORM 44.010.005 RPS-RX STEAM DOME PRESS, TRIP SYS A, CHNL A1/A, XMTR CAL	SR 3.3.1.1.14-3	SR 3.3.1.1.15-3

# Performances: 6      # Failures: 0

**24 Month Justification: Notes:**

There were no failures, therefore the surveillance test history supports the conclusion that the impact, if any, on system availability will be small as a result of the change to a 24 month surveillance interval.

Event	Title	Associated SRs and Function	
0703	PERFORM 44.010.006 RPS-RX STEAM DOME PRESS, TRIP SYS B, CHNL B1/B, XMTR CAL	SR 3.3.1.1.14-3	SR 3.3.1.1.15-3

# Performances: 6      # Failures: 0

**24 Month Justification: Notes:**

There were no failures, therefore the surveillance test history supports the conclusion that the impact, if any, on system availability will be small as a result of the change to a 24 month surveillance interval.

Event	Title	Associated SRs and Function
0704	PERFORM 44.010.007 RPS-RX STEAM DOME PRESS, TRIP SYS A, CHNL A2/C, XMTR CAL	SR 3.3.1.1.14-3 SR 3.3.1.1.15-3
# Performances: 6 # Failures: 0		

**24 Month Justification: Notes:**

There were no failures, therefore the surveillance test history supports the conclusion that the impact, if any, on system availability will be small as a result of the change to a 24 month surveillance interval.

Event	Title	Associated SRs and Function
0705	PERFORM 44.010.008 RPS-RX STEAM DOME PRESS, TRIP SYS B, CHNL B2/D, XMTR CAL	SR 3.3.1.1.14-3 SR 3.3.1.1.15-3
# Performances: 6 # Failures: 0		

**24 Month Justification: Notes:**

There were no failures, therefore the surveillance test history supports the conclusion that the impact, if any, on system availability will be small as a result of the change to a 24 month surveillance interval.

Event	Title	Associated SRs and Function
0729	PERFORM 44.010.136 APRM TWO-OUT-OF-FOUR RPS A1 RTT	SR 3.3.1.1.17-2.e
# Performances: 4 # Failures: 0		

**24 Month Justification: Notes:**

There were no failures, therefore the surveillance test history supports the conclusion that the impact, if any, on system availability will be small as a result of the change to a 24 month surveillance interval.

Event	Title	Associated SRs and Function
0730	PERFORM 44.010.137 APRM TWO-OUT-OF-FOUR RPS B1 RTT	SR 3.3.1.1.17-2.e
# Performances: 4 # Failures: 0		

**24 Month Justification: Notes:**

There were no failures, therefore the surveillance test history supports the conclusion that the impact, if any, on system availability will be small as a result of the change to a 24 month surveillance interval.

# Performances: 5      # Failures: 0

24 Month Justification:      Notes:

There were no failures, therefore the surveillance test history supports the conclusion that the impact, if any, on system availability will be small as a result of the change to a 24 month surveillance interval.

Event	Title	Associated SRs and Function
0732	PERFORM 44.010.139 APRM TWO-OUT-OF-FOUR RPS B2 RTT	SR 3.3.1.1.17-2.e
# Performances: 5      # Failures: 0		

24 Month Justification:      Notes:

There were no failures, therefore the surveillance test history supports the conclusion that the impact, if any, on system availability will be small as a result of the change to a 24 month surveillance interval.

Event	Title	Associated SRs and Function
0750	PERFORM 44.010.017 RPS(TS A/TC A1)-NS4(TS A/TC A) RX LOW WTR LVL 3, B21N080A, XMTR CAL	SR 3.3.1.1.14-4      SR 3.3.1.1.15-4 SR 3.3.6.1.4-2.a      SR 3.3.6.1.4-6.b SR 3.3.6.1.4-7.a      SR 3.3.6.1.5-2.a SR 3.3.6.1.5-6.b      SR 3.3.6.1.5-7.a SR 3.6.1.3.8
# Performances: 6      # Failures: 0		

24 Month Justification:      Notes:

There were no failures, therefore the surveillance test history supports the conclusion that the impact, if any, on system availability will be small as a result of the change to a 24 month surveillance interval.

Event	Title	Associated SRs and Function
0751	PERFORM 44.010.018 RPS(TS B/TC B1)-NS4(TS A/TC B) RX LOW WTR LVL 3, B21N080B, XTMR CAL	SR 3.3.1.1.14-4      SR 3.3.1.1.15-4 SR 3.3.6.1.4-2.a      SR 3.3.6.1.4-6.b SR 3.3.6.1.4-7.a      SR 3.3.6.1.5-2.a SR 3.3.6.1.5-6.b      SR 3.3.6.1.5-7.a SR 3.6.1.3.8
# Performances: 6      # Failures: 0		

24 Month Justification:      Notes:

There were no failures, therefore the surveillance test history supports the conclusion that the impact, if any, on system availability will be small as a result of the change to a 24 month surveillance interval.

Event	Title	Associated SRs and Function	
0752	PERFORM 44.010.019 RPS(TS A/TC A2)-NS4(TS B/TC C) RX LOW WTR LVL 3, B21N080C, XMTR CAL	SR 3.3.1.1.14-4 SR 3.3.6.1.4-2.a SR 3.3.6.1.4-7.a SR 3.3.6.1.5-6.b SR 3.6.1.3.8	SR 3.3.1.1.15-4 SR 3.3.6.1.4-6.b SR 3.3.6.1.5-2.a SR 3.3.6.1.5-7.a

# Performances: 6      # Failures: 0

**24 Month Justification: Notes:**

There were no failures, therefore the surveillance test history supports the conclusion that the impact, if any, on system availability will be small as a result of the change to a 24 month surveillance interval.

Event	Title	Associated SRs and Function	
0753	PERFORM 44.010.020 RPS(TS B/TC B2)-NS4(TS B/TC D) RX LOW WTR LVL 3, B21N080D, XMTR CAL	SR 3.3.1.1.14-4 SR 3.3.6.1.4-2.a SR 3.3.6.1.4-7.a SR 3.3.6.1.5-6.b SR 3.6.1.3.8	SR 3.3.1.1.15-4 SR 3.3.6.1.4-6.b SR 3.3.6.1.5-2.a SR 3.3.6.1.5-7.a

# Performances: 6      # Failures: 1

**24 Month Justification: Notes:**

One failure identified which did not impact any safety function; therefore, the surveillance test history supports the conclusion that the impact, if any, on system availability will be small as a result of the change to a 24 month surveillance interval.

**Failure Review:**

**Perf. Date Fail Cat. Description of Failure**

4/12/2009      A      B21-N080D Transmitter As Found readings at 25% (incr) of Span was below the Acceptable Performance Tolerance (APT) MIN value. Transmitter was successfully calibrated with all readings within As Left Tolerance.

**Justification of Failure**

The identified failure(s) would not have prevented the performance of the required safety function of the equipment. Therefore, this failure will have no impact on an extension to a 24 month surveillance interval.

Event	Title	Associated SRs and Function	
0761	PERFORM 64.080.029, MAIN STEAM LINE RADIATION MONITOR CHANNEL A CALIBRATION - LICENSE RENEWAL REQD	SR 3.3.6.1.4-2.d SR 3.3.7.2.3 SR 3.6.1.3.8	SR 3.3.6.1.5-2.d SR 3.3.7.3.3

# Performances: 6      # Failures: 0

#### 24 Month Justification: Notes:

There were no failures, therefore the surveillance test history supports the conclusion that the impact, if any, on system availability will be small as a result of the change to a 24 month surveillance interval.

Event	Title	Associated SRs and Function	
0762	PERFORM 64.080.030, MAIN STEAM LINE RADIATION MONITOR CHANNEL B CALIBRATION - LICENSE RENEWAL REQD	SR 3.3.6.1.4-2.d SR 3.3.7.2.3 SR 3.6.1.3.8	SR 3.3.6.1.5-2.d SR 3.3.7.3.3

# Performances: 6      # Failures: 0

#### 24 Month Justification: Notes:

There were no failures, therefore the surveillance test history supports the conclusion that the impact, if any, on system availability will be small as a result of the change to a 24 month surveillance interval.

Event	Title	Associated SRs and Function	
0763	PERFORM 64.080.031, MAIN STEAM LINE RADIATION MONITOR CHANNEL C CALIBRATION - LICENSE RENEWAL REQD	SR 3.3.6.1.4-2.d SR 3.3.7.2.3 SR 3.6.1.3.8	SR 3.3.6.1.5-2.d SR 3.3.7.3.3

# Performances: 6      # Failures: 0

#### 24 Month Justification: Notes:

There were no failures, therefore the surveillance test history supports the conclusion that the impact, if any, on system availability will be small as a result of the change to a 24 month surveillance interval.

Event	Title	Associated SRs and Function	
0764	PERFORM 64.080.032, MAIN STEAM LINE RADIATION MONITOR CHANNEL D CALIBRATION - LICENSE RENEWAL REQD	SR 3.3.6.1.4-2.d SR 3.3.7.2.3 SR 3.6.1.3.8	SR 3.3.6.1.5-2.d SR 3.3.7.3.3

# Performances: 6      # Failures: 0

#### 24 Month Justification: Notes:

There were no failures, therefore the surveillance test history supports the conclusion that the impact, if any, on system availability will be small as a result of the change to a 24 month surveillance interval.

Event	Title	Associated SRs and Function	
0765	PERFORM 44.030.265 ECCS RX WTR LVL (ADS LVL3 & FW/MN TURB LVL8)D1,CH A,XMTR CAL	SR 3.3.2.2.3 SR 3.3.5.1.4-4.d SR 3.5.1.12	SR 3.3.2.2.4 SR 3.3.5.1.5-4.d

# Performances: 6      # Failures: 0

**24 Month Justification:    Notes:**

There were no failures, therefore the surveillance test history supports the conclusion that the impact, if any, on system availability will be small as a result of the change to a 24 month surveillance interval.

Event	Title	Associated SRs and Function
0766	PERFORM 44.030.266 ECCS RX WTR LVL (ADS LVL3 & FW/MN TURB LVL8)D2,CH B,XMTR CAL	SR 3.3.2.2.3 SR 3.3.5.1.4-5.d SR 3.5.1.12

# Performances: 6 # Failures: 2

#### 24 Month Justification: Notes:

One failure is identified as a unique failure which is not indicative of a repetitive time based failure mechanism. The other failure did not impact any safety function; therefore, the surveillance test history supports the conclusion that the impact, if any, on system availability will be small as a result of a change to a 24 month surveillance interval.

#### Failure Review:

##### Perf. Date Fail Cat. Description of Failure

4/2/2009 D SPF Note 1: "Table 5 As Found data all high outside As Found tolerance." SPF Note 2: "Step 6.2.7 Required limit exceeded for 19.85% (See Table 5) Step 6.2.9 Unable to calibrate transmitter due to large deadband at zero adjustment (either 0.988 or 1.023, closest to 1.000) Informed CRS and SM CARD 09-22140 - Back out of surveillance, performed 6.2.10 - 6.2.12, 6.2.20.2, 6.2.20.3, 6.2.21, 7.0, 7.4, 8.2" CARD 09-22140 states: "Unable to adjust zero pot of transmitter B21N095B, NB RX LVL 3 TRIP (NARROW RNG) DIV2 LVL XMTR for Main Turbine/N and S FW Turbine Level 8 Trips and ADS located on Rack H21P005. Deadband is 0.988 to 1.023 Vdc even after cleaning of pot. All As Found values were approx. 0.035 high throughout range. Required limit of 1.821 Vdc at 19.85% was exceeded with reading at 1.827 Vdc. Transmitter replacement is recommended. Mode 2 restraint. WO 29640637 requested. WO 29640637 scope is: replace B21N095B, Div 2 Reactor Level Narrow Range Transmitter with a new transmitter. B21N095B replaced with "like for like" transmitter and calibrated to within As Left tolerance successfully. WO feedback states: "Transmitter probably original installation, went out due to age."

##### Justification of Failure

The identified failure is unique and does not occur on a repetitive basis and is not associated with a time-based failure mechanism. Therefore, this failure will have no impact on an extension to a 24 month surveillance interval.

10/26/2010 A SPF Note: "B21N095B OOS low UNSAT - Calibrated SAT, wrote CARD 10-29528" CARD 10-29528 states: "Calibrated according to procedure. SAT." Most all As Found readings were below Acceptable Performance Tolerance (APT) MIN values. Reportability/Operability Review Comments: "B21N095B NB RX LVL 3 TRIP (NARROW RNG) DIV2 LVL XMTR Calibrated according to procedure. SAT."

The identified failure(s) would not have prevented the performance of the required safety function of the equipment. Therefore, this failure will have no impact on an extension to a 24 month surveillance interval.

Event	Title	Associated SRs and Function	
0769	PERFORM 44.030.271 ECCS RX STM DOME PRES RHR/CSS INJECT,DIV 1,CHNL A,XMTR CAL	SR 3.3.5.1.4-1.c SR 3.3.5.1.5-1.c SR 3.5.1.11	SR 3.3.5.1.4-2.c SR 3.3.5.1.5-2.c

# Performances: 6 # Failures: 0

**24 Month Justification: Notes:**

There were no failures, therefore the surveillance test history supports the conclusion that the impact, if any, on system availability will be small as a result of the change to a 24 month surveillance interval.

Event	Title	Associated SRs and Function	
0770	PERFORM 44.030.272 ECCS RX STM DOME PRES RHR/CSS INJECT,DIV 2,CHNL B,XMTR CAL	SR 3.3.5.1.4-1.c SR 3.3.5.1.5-1.c SR 3.5.1.11	SR 3.3.5.1.4-2.c SR 3.3.5.1.5-2.c

# Performances: 6 # Failures: 0

**24 Month Justification: Notes:**

There were no failures, therefore the surveillance test history supports the conclusion that the impact, if any, on system availability will be small as a result of the change to a 24 month surveillance interval.

Event	Title	Associated SRs and Function	
0771	PERFORM 44.030.273 ECCS RX STM DOME PRES RHR/CSS INJECT,DIV 1,CHNL C,XMTR CAL	SR 3.3.5.1.4-1.c SR 3.3.5.1.5-1.c SR 3.5.1.11	SR 3.3.5.1.4-2.c SR 3.3.5.1.5-2.c

# Performances: 6 # Failures: 0

**24 Month Justification: Notes:**

There were no failures, therefore the surveillance test history supports the conclusion that the impact, if any, on system availability will be small as a result of the change to a 24 month surveillance interval.

Event	Title	Associated SRs and Function	
0772	PERFORM 44.030.274 ECCS RX STM DOME PRES RHR/CSS INJECT,DIV 2,CHNL D,XMTR CAL	SR 3.3.5.1.4-1.c SR 3.3.5.1.5-1.c SR 3.5.1.11	SR 3.3.5.1.4-2.c SR 3.3.5.1.5-2.c

# Performances: 6 # Failures: 0

**24 Month Justification: Notes:**

There were no failures, therefore the surveillance test history supports the conclusion that the impact, if any, on system availability will be small as a result of the change to a 24 month surveillance interval.

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Event	Title	Associated SRs and Function
0773	PERFORM 44.030.283 ECCS RX STM DOME PRES RHR LOOP SLCT PERM,D1,CHL A, XMTR CAL	SR 3.3.5.1.4-2.e    SR 3.3.5.1.5-2.e SR 3.5.1.11
# Performances: 6      # Failures: 0		

**24 Month Justification:**    **Notes:**

There were no failures, therefore the surveillance test history supports the conclusion that the impact, if any, on system availability will be small as a result of the change to a 24 month surveillance interval.

Event	Title	Associated SRs and Function
0774	PERFORM 44.030.284 ECCS RX STM DOME PRES RHR LOOP SLCT PERM,DIV 2,CH "B",XMTR CAL	SR 3.3.5.1.4-2.e    SR 3.3.5.1.5-2.e SR 3.5.1.11
# Performances: 6      # Failures: 0		

**24 Month Justification:**    **Notes:**

There were no failures, therefore the surveillance test history supports the conclusion that the impact, if any, on system availability will be small as a result of the change to a 24 month surveillance interval.

Event	Title	Associated SRs and Function
0775	PERFORM 44.030.285 ECCS RX STM DOME PRES RHR LOOP SLCT PERM,DIV 1,CH "C",XMTR CAL	SR 3.3.5.1.4-2.e    SR 3.3.5.1.5-2.e SR 3.5.1.11
# Performances: 6      # Failures: 0		

**24 Month Justification:**    **Notes:**

There were no failures, therefore the surveillance test history supports the conclusion that the impact, if any, on system availability will be small as a result of the change to a 24 month surveillance interval.

Event	Title	Associated SRs and Function
0776	PERFORM 44.030.286 ECCS RX STM DOME PRES RHR LOOP SLCT PERM,DIV 2,CH "D",XMTR CAL	SR 3.3.5.1.4-2.e    SR 3.3.5.1.5-2.e SR 3.5.1.11
# Performances: 6      # Failures: 0		

**24 Month Justification:**    **Notes:**

There were no failures, therefore the surveillance test history supports the conclusion that the impact, if any, on system availability will be small as a result of the change to a 24 month surveillance interval.

Event	Title	Associated SRs and Function	
0777	PERFORM 44.030.295 ECCS DW PRESSURE ADS ACTUATION,DIV 1,CHNL A,CALIBRATION/FUNC	SR 3.3.5.1.4-4.b SR 3.3.5.1.5-4.b	SR 3.3.5.1.5-2.f SR 3.5.1.12
# Performances: 6		# Failures: 1	

**24 Month Justification: Notes:**

One failure identified which did not impact any safety function; therefore, the surveillance test history supports the conclusion that the impact, if any, on system availability will be small as a result of the change to a 24 month surveillance interval.

**Failure Review:**

Perf. Date	Fail Cat.	Description of Failure	Justification of Failure
7/23/2009	A	B21-N094A Transmitter As Found readings at 0%, 25% (incr) and 0% (decr) of Span were below the Acceptable Performance Tolerance (APT) MIN values. Transmitter was successfully calibrated with all readings within As Left Tolerance.	The identified failure(s) would not have prevented the performance of the required safety function of the equipment. Therefore, this failure will have no impact on an extension to a 24 month surveillance interval.

Event	Title	Associated SRs and Function	
0778	PERFORM 44.030.296 ECCS DW PRESSURE ADS ACTUATION,DIV 2,CHNL B,CALIBRATION/FUNC	SR 3.3.5.1.4-5.b SR 3.3.5.1.5-5.b	SR 3.3.5.1.5-2.f SR 3.5.1.12
# Performances: 6		# Failures: 0	

**24 Month Justification: Notes:**

There were no failures, therefore the surveillance test history supports the conclusion that the impact, if any, on system availability will be small as a result of the change to a 24 month surveillance interval.

Event	Title	Associated SRs and Function	
0779	PERFORM 44.030.297 ECCS DW PRESSURE ADS ACTUATION,DIV 1,CHNL C,CALIBRATION/FUNC	SR 3.3.5.1.4-4.b SR 3.3.5.1.5-4.b	SR 3.3.5.1.5-2.f SR 3.5.1.12
# Performances: 6		# Failures: 0	

**24 Month Justification: Notes:**

There were no failures, therefore the surveillance test history supports the conclusion that the impact, if any, on system availability will be small as a result of the change to a 24 month surveillance interval.

Event	Title	Associated SRs and Function	
0780	PERFORM 44.030.298 ECCS DW PRESSURE ADS ACTUATION,DIV 2,CHNL D,CALIBRATION/FUNC	SR 3.3.5.1.4-5.b SR 3.3.5.1.5-5.b	SR 3.3.5.1.5-2.f SR 3.5.1.12
# Performances: 6		# Failures: 0	

**24 Month Justification: Notes:**

There were no failures, therefore the surveillance test history supports the conclusion that the impact, if any, on system availability will be small as a result of the change to a 24 month surveillance interval.

Event	Title	Associated SRs and Function	
0781	PERFORM 44.030.303 ECCS DW PRESS RHR/CSS & HPCI ACTUATE,DIV 1,CHNL A,CAL/FUNC	SR 3.3.5.1.4-1.b SR 3.3.5.1.4-3.b SR 3.3.5.1.5-2.b SR 3.3.6.1.4-2.c SR 3.3.6.1.4-4.e SR 3.6.1.3.8	SR 3.3.5.1.4-2.b SR 3.3.5.1.5-1.b SR 3.3.5.1.5-3.b SR 3.3.6.1.4-3.e SR 3.5.1.11 SR 3.7.2.5
# Performances: 6		# Failures: 0	

**24 Month Justification: Notes:**

There were no failures, therefore the surveillance test history supports the conclusion that the impact, if any, on system availability will be small as a result of the change to a 24 month surveillance interval.

Event	Title	Associated SRs and Function	
0782	PERFORM 44.030.304 ECCS DW PRESS RHR/CSS & HPCI ACTUATE,DIV 2,CHNL B,CAL/FUNC	SR 3.3.5.1.4-1.b SR 3.3.5.1.4-3.b SR 3.3.5.1.5-2.b SR 3.3.6.1.4-2.c SR 3.3.6.1.4-4.e SR 3.6.1.3.8	SR 3.3.5.1.4-2.b SR 3.3.5.1.5-1.b SR 3.3.5.1.5-3.b SR 3.3.6.1.4-3.e SR 3.5.1.11 SR 3.7.2.5

# Performances: 6      # Failures: 1

**24 Month Justification: Notes:**

One failure identified which did not impact any safety function; therefore, the surveillance test history supports the conclusion that the impact, if any, on system availability will be small as a result of the change to a 24 month surveillance interval.

**Failure Review:**

Perf. Date	Fail Cat.	Description of Failure	Justification of Failure
11/8/2013	A	CARD 13-27999 - B21N694F Drywell Pressure High Analog Indicator could not be calibrated. This indicator has no impact on the ability of the transmitter to initiate the trip function as designed when the setpoint is reached. It is not acceptance criteria in the surveillance. WO 37791351 initiated to replace B21N694F MTU. Replaced with new Rosemount model 710DUOTT2700 on 5/6/2014.	The identified failure(s) would not have prevented the performance of the required safety function of the equipment. Therefore, this failure will have no impact on an extension to a 24 month surveillance interval.

Event	Title	Associated SRs and Function	
0783	PERFORM 44.030.305 ECCS DW PRESS RHR/CSS & HPCI ACTUATE,DIV 1,CHNL C,CAL/FUNCT	SR 3.3.5.1.4-1.b SR 3.3.5.1.4-3.b SR 3.3.5.1.5-2.b SR 3.3.6.1.4-2.c SR 3.3.6.1.4-4.e SR 3.6.1.3.8	SR 3.3.5.1.4-2.b SR 3.3.5.1.5-1.b SR 3.3.5.1.5-3.b SR 3.3.6.1.4-3.e SR 3.5.1.11 SR 3.7.2.5

# Performances: 6      # Failures: 0

**24 Month Justification: Notes:**

There were no failures, therefore the surveillance test history supports the conclusion that the impact, if any, on system availability will be small as a result of the change to a 24 month surveillance interval.

Event	Title	Associated SRs and Function	TRVEND 24MCGNF319001 Rev 1
0784	PERFORM 44.030.306 ECCS DW PRESS RHR/CSS & HPCI ACTUATE,DIV 2,CHNL D,CAL/FUNC	SR 3.3.5.1.4-1.b SR 3.3.5.1.4-3.b SR 3.3.5.1.5-2.b SR 3.3.6.1.4-2.c SR 3.3.6.1.4-4.e SR 3.6.1.3.8	SR 3.3.5.1.4-2.b SR 3.3.5.1.5-1.b SR 3.3.5.1.5-3.b SR 3.3.6.1.4-3.e SR 3.5.1.11 SR 3.7.2.5

# Performances: 6      # Failures: 2

#### 24 Month Justification: Notes:

The failures do not impact any safety function; therefore, the surveillance test history supports the conclusion that the impact, if any, on system availability will be small as a result of the change to a 24 month surveillance interval.

#### Failure Review:

##### Perf. Date Fail Cat. Description of Failure

2/13/2009      A      SPF Note: Analog indicator for B21N694H unable to adjust to bring within ALT. CARD 09-20983 written to address problem" CARD 09-20983 states: "Drywell Pressure cal/functional surveillance, analog indicator on MTU B21N694H would not calibrate. Technicians informed their supervisor and Control Room supervision. Since the analog indicator was not Acceptance Criteria, the technicians were instructed to continue with the surveillance. Analog indicator data on Table 2 of 44.030.306 is outside of As Left Tolerance. WO 29445781 initiated to replace B21N694H Meter. The surveillance was completed - all Acceptance Criteria was Sat. Request a work order to replace the analog indicator on B21N694H." Reportability/Operability Review states: "The analog indication is used during performance of shiftly surveillance to satisfy channel check. Although the analog indication is slightly outside of its tolerance bands it is providing trendable information to be evaluated against multiple channels monitoring the same parameter during performance of the shiftly channel check. ECCS DW pressure instrument B21N694H remains operable." WO 29445781 requested. WO 29445781 replaced meter for B21N694H and calibrated with As Left Tolerance successfully.

##### Justification of Failure

The identified failure(s) would not have prevented the performance of the required safety function of the equipment. Therefore, this failure will have no impact on an extension to a 24 month surveillance interval.

8/12/2010      A      B21-N694H Gross Fail Latch As Found LOW was found outside the Acceptable Performance Tolerance (APT) MAX value. B21-N694H Gross Fail Latch was calibrated within As Left Tolerance.

The identified failure(s) would not have prevented the performance of the required safety function of the equipment. Therefore, this failure will have no impact on an extension to a 24 month surveillance interval.

Event	Title	Associated SRs and Function	
0791	PERFORM 44.030.051 ECCS-RHR (LPCI MODE) DIV 1, LOGIC FUNCTIONAL TEST	SR 3.3.5.1.5-2.a SR 3.3.5.1.5-2.c SR 3.3.5.1.5-2.e SR 3.3.5.1.5-2.g SR 3.5.2.8	SR 3.3.5.1.5-2.b SR 3.3.5.1.5-2.d SR 3.3.5.1.5-2.f SR 3.5.1.11

# Performances: 6      # Failures: 0

**24 Month Justification: Notes:**

There were no failures, therefore the surveillance test history supports the conclusion that the impact, if any, on system availability will be small as a result of the change to a 24 month surveillance interval.

Event	Title	Associated SRs and Function	
0792	PERFORM 44.030.052 ECCS-RHR (LPCI MODE) DIV 2, LOGIC FUNCT TEST & VLV ACTUATION	SR 3.3.5.1.5-2.a SR 3.3.5.1.5-2.c SR 3.3.5.1.5-2.e SR 3.3.5.1.5-2.g SR 3.5.2.8	SR 3.3.5.1.5-2.b SR 3.3.5.1.5-2.d SR 3.3.5.1.5-2.f SR 3.5.1.11

# Performances: 6      # Failures: 0

**24 Month Justification: Notes:**

There were no failures, therefore the surveillance test history supports the conclusion that the impact, if any, on system availability will be small as a result of the change to a 24 month surveillance interval.

Event	Title	Associated SRs and Function	
0793	PERFORM 44.030.060 ECCS RX RECIRC RISER DP,DIV 1,CHNL A,CAL/FUNCTIONAL	SR 3.3.5.1.4-2.f SR 3.5.1.11	SR 3.3.5.1.5-2.f

# Performances: 6      # Failures: 0

**24 Month Justification: Notes:**

There were no failures, therefore the surveillance test history supports the conclusion that the impact, if any, on system availability will be small as a result of the change to a 24 month surveillance interval.

Event	Title	Associated SRs and Function	
0794	PERFORM 44.030.061 ECCS RX RECIRC RISER DP,DIV 2,CHNL B,CAL/FUNCTIONAL	SR 3.3.5.1.4-2.f SR 3.5.1.11	SR 3.3.5.1.5-2.f
# Performances: 6		# Failures: 0	

**24 Month Justification: Notes:**

There were no failures, therefore the surveillance test history supports the conclusion that the impact, if any, on system availability will be small as a result of the change to a 24 month surveillance interval.

Event	Title	Associated SRs and Function	
0795	PERFORM 44.030.062 ECCS RX RECIRC RISER DP,DIV 1,CHNL C, CALIBRATION/FUNCTIONAL	SR 3.3.5.1.4-2.f SR 3.5.1.11	SR 3.3.5.1.5-2.f
# Performances: 6		# Failures: 0	

**24 Month Justification: Notes:**

There were no failures, therefore the surveillance test history supports the conclusion that the impact, if any, on system availability will be small as a result of the change to a 24 month surveillance interval.

Event	Title	Associated SRs and Function	
0796	PERFORM 44.030.063 ECCS RX RECIRC RISER DP,DIV 2,CHNL D,CAL/FUNCTIONAL	SR 3.3.5.1.4-2.f SR 3.5.1.11	SR 3.3.5.1.5-2.f
# Performances: 6		# Failures: 0	

**24 Month Justification: Notes:**

There were no failures, therefore the surveillance test history supports the conclusion that the impact, if any, on system availability will be small as a result of the change to a 24 month surveillance interval.

Event	Title	Associated SRs and Function	
0797	PERFORM 44.030.072 ECCS RX RECIRC PUMP A DP, DIV 1, CHNL A, CALIBRATION/FUNCT	SR 3.3.5.1.4-2.g SR 3.5.1.11	SR 3.3.5.1.5-2.g
# Performances: 6		# Failures: 0	

**24 Month Justification: Notes:**

There were no failures, therefore the surveillance test history supports the conclusion that the impact, if any, on system availability will be small as a result of the change to a 24 month surveillance interval.

Event	Title	Associated SRs and Function
0798	PERFORM 44.030.073 ECCS RX RECIRC PUMP B DP, DIV 1, CHNL B, CALIBRATION/FUNCT	SR 3.3.5.1.4-2.g SR 3.5.1.11

# Performances: 6 # Failures: 1

**24 Month Justification: Notes:**

One failure identified which did not impact any safety function; therefore, the surveillance test history supports the conclusion that the impact, if any, on system availability will be small as a result of the change to a 24 month surveillance interval.

**Failure Review:**

**Perf. Date Fail Cat. Description of Failure**

9/15/2010 A B31-N614A Gross Fail Latch As Found LOW was found outside the Acceptable Performance Tolerance (APT) MIN value. B31-N614A Gross Fail Latch was calibrated within As Left Tolerance.

**Justification of Failure**

The identified failure(s) would not have prevented the performance of the required safety function of the equipment. Therefore, this failure will have no impact on an extension to a 24 month surveillance interval.

Event	Title	Associated SRs and Function
0799	PERFORM 44.030.074 ECCS RX RECIRC PUMP B DP, DIV 2, CHNL A, CALIBRATION/FUNCT	SR 3.3.5.1.4-2.g SR 3.5.1.11

# Performances: 6 # Failures: 1

**24 Month Justification: Notes:**

One failure identified which did not impact any safety function; therefore, the surveillance test history supports the conclusion that the impact, if any, on system availability will be small as a result of the change to a 24 month surveillance interval.

**Failure Review:**

**Perf. Date Fail Cat. Description of Failure**

8/6/2009 A B21-N612B Gross Fail Trip As Found LOW was found outside the Acceptable Performance Tolerance (APT) MIN value . B21-N612B Gross Fail Trip was calibrated within As Left Tolerance.

**Justification of Failure**

The identified failure(s) would not have prevented the performance of the required safety function of the equipment. Therefore, this failure will have no impact on an extension to a 24 month surveillance interval.

Event	Title	Associated SRs and Function
0800	PERFORM 44.030.075 ECCS RX RECIRC PUMP A DP, DIV 2, CHNL B, CALIBRATION/FUNCT	SR 3.3.5.1.4-2.g SR 3.5.1.11
# Performances: 6		# Failures: 0

**24 Month Justification: Notes:**

There were no failures, therefore the surveillance test history supports the conclusion that the impact, if any, on system availability will be small as a result of the change to a 24 month surveillance interval.

Event	Title	Associated SRs and Function
0801	PERFORM 44.030.082 ACCIDENT MONITOR RX WTR LEVEL,DIV 1, XMTR CAL	SR 3.3.3.1.2-2
# Performances: 6		# Failures: 0

**24 Month Justification: Notes:**

There were no failures, therefore the surveillance test history supports the conclusion that the impact, if any, on system availability will be small as a result of the change to a 24 month surveillance interval.

Event	Title	Associated SRs and Function
0802	PERFORM 44.030.083 ACCIDENT MONITOR RX WTR LEVEL,DIV 2, XMTR CAL	SR 3.3.3.1.2-2
# Performances: 6		# Failures: 0

**24 Month Justification: Notes:**

There were no failures, therefore the surveillance test history supports the conclusion that the impact, if any, on system availability will be small as a result of the change to a 24 month surveillance interval.

Event	Title	Associated SRs and Function
0803	PERFORM 44.040.005 ATWS/SRV LOW LOW SET RX PRESS, DIV 1, CHL "A", XMTR CAL	SR 3.3.4.1.3.b SR 3.3.4.1.4.b SR 3.3.6.3.3-1 SR 3.3.6.3.4-1 SR 3.6.1.6.2
# Performances: 6		# Failures: 0

**24 Month Justification: Notes:**

There were no failures, therefore the surveillance test history supports the conclusion that the impact, if any, on system availability will be small as a result of the change to a 24 month surveillance interval.

Event	Title	Associated SRs and Function	
0804	PERFORM 44.040.006 ATWS/SRV LOW LOW SET RX PRESS, DIV 2, CHL "B", XMTR CAL	SR 3.3.4.1.3.b SR 3.3.6.3.3-1 SR 3.3.6.3.4-1 SR 3.6.1.6.2	SR 3.3.4.1.4.b SR 3.3.6.3.3-2 SR 3.3.6.3.4-2

# Performances: 6      # Failures: 0

**24 Month Justification: Notes:**

There were no failures, therefore the surveillance test history supports the conclusion that the impact, if any, on system availability will be small as a result of the change to a 24 month surveillance interval.

Event	Title	Associated SRs and Function	
0805	PERFORM 44.040.007 ATWS/SRV LOW LOW SET RX PRESS, DIV 1, CHL "C", XMTR CAL	SR 3.3.4.1.3.b SR 3.3.6.3.3-2 SR 3.6.1.6.2	SR 3.3.4.1.4.b SR 3.3.6.3.4-2

# Performances: 6      # Failures: 0

**24 Month Justification: Notes:**

There were no failures, therefore the surveillance test history supports the conclusion that the impact, if any, on system availability will be small as a result of the change to a 24 month surveillance interval.

Event	Title	Associated SRs and Function	
0806	PERFORM 44.040.008 ATWS/SRV LOW LOW SET RX PRESS, DIV 2, CHL "D", XMTR CAL	SR 3.3.4.1.3.b SR 3.3.6.3.3-2 SR 3.6.1.6.2	SR 3.3.4.1.4.b SR 3.3.6.3.4-2

# Performances: 6      # Failures: 0

**24 Month Justification: Notes:**

There were no failures, therefore the surveillance test history supports the conclusion that the impact, if any, on system availability will be small as a result of the change to a 24 month surveillance interval.

Event	Title	Associated SRs and Function
0807	PERFORM 44.040.009 ATWS-SRV LOW LOW SET DIV 1 LOGIC FUNCTIONAL TEST	SR 3.3.4.1.4.a SR 3.3.6.3.4-1 SR 3.3.6.3.4-3 SR 3.6.1.6.2

# Performances: 6      # Failures: 2

**24 Month Justification: Notes:**

One failure is identified as an event driven failure which is not indicative of a repetitive time based failure mechanism. The other failure did not impact any safety function; therefore, the surveillance test history supports the conclusion that the impact, if any, on system availability will be small as a result of the change to a 24 month surveillance interval.

**Failure Review:**

**Perf. Date Fail Cat. Description of Failure**

4/26/2009      C      SPF Note 1: "Step 6.1.20, 6.1.21, 6.1.24, 6.1.25 Seal in light would not come on and 130 Vdc not present. Informed CRS, SM and Supervisor. Continued with Surveillance to get out. Only problems noted. CARD 09-23278." CARD 09-23278 states: "step 6.1.20 unable to get the LLS DIV 1 SCRAM PRESS SEALED IN light to come on. Informed CRS and Supervisor, Continued thru the surveillance and found step 6.1.21 at 0 VDC vice 130 VDC and the same conditions at 6.1.24.1 and 6.1.25 for the rest of the surveillance no further problems were noted. Technician at H21-P082 also states that he never saw dim lights for test lights above Keylock test switches." WO 29744906 requested. Second performance SPF comments state: Failure of first surveillance was due to technician misunderstanding Step 6.1.10 which he believed step implied to "increase current source until both MTUs Trip, then adjust back to 0 after trips, This caused relay B21K253C to reset and lose lock in signal for relay/light action (see I-2095-38 drawing) with K33A." WO 29744906 cancellation note" Prior to signing on package further investigation revealed this event was due to an error while performing 44.040.009, this work order no longer needed."

**Justification of Failure**

This is an event driven failure in that the failure caused by a misunderstanding of the technician performing the surveillance as related to trip and reset of the MTUs. Therefore, this failure will have no impact on an extension to a 24 month surveillance interval.

11/19/2015 A

SPF Note 1: "Step 6.1.1 - Placed CMC switch to Run and got "Tripped" indication on CMC switch, annunciators 3D96 and 3D126 (expected). Did not receive "Run" indication on CMC switch. Stopped surveillance and informed FLS and CRS. Re-verified prerequisites in place. Turned over to night shift. - Power restored to F031A and F031B. Attempt to continue surveillance. SPF Note 2: "Step 6.1.1, 6.1.2 - Placed CMC to Run for A and B. Run lights on for both. B3105F031A started to open. Operator attempt to close. Unable to maintain closed. F023A closed, F031A opened. CMC for A and B returned to off. A field Bkr shows closed. - Emergent Issue Team (EIT) Formed, Attempt to troubleshoot problems with F031A opening and field Bkr closed. CARD 15-29087 written. Perform Steps 6.1.41, Section 6.6, Steps 7.1, 7.2, 7.5-7.8" CARD 15-29087 states: "B3105F031A jogged open unexpectedly during performance of 44.040.009 after Operations had completed steps 6.1.1 and 6.1.2. The F031A valve should have remained closed for the surveillance. The other division B3105F031B did not stroke open. Field breaker for Recirc MG Set A in Test Position did close before the jumper install step of 6.1.3. Operations attempted to close F031A via its pushbutton operator but the valve reopened after reaching its closed position. Surveillance was stopped and CRS and I&C Supervisor contacted. I&C Superintendent (Nights) and another Supervisor confirmed that fuses pulled and wire lifted for initial conditions were indeed the correct components called out in surveillance 44.040.009. The OCC initiated an EIT to determine the abnormal response issue." Reportability/Operability Review states: "Impact on LPCI function: The LPCI function was not impacted by this condition and remains OPERABLE. Impact on SDC function: Based on the low decay heat value and the significant cooling capacity available the Decay Heat Removal function was maintained. Div 1 RHR SDC and LPCI are Operable." Licensing Review completed" "Licensing has reviewed the condition and information provided in this CARD and CARD 15-29093; initiated to document and evaluate plant impact. Operations conservatively entered TS 3.4.9; however, there was no loss of SDC. Per the System Engineer, SDC was continually provided to the vessel at all times during this event even while the flow path was not in the normal configuration. SDC flow was taken from the vessel from the B RRS loop and returned to the vessel through the A RRS loop. There was no bypass flow. A review of IPCS data identified that both Div 1 RHR SDC Flow and Div 1 RHR HX Inlet Temperatures remained within the normal variances that were present before and after the event, with no noted changes. Based on all of the above, there was no loss of SDC." Investigation states: "Troubleshooting by the EIT team determined that the cause of the failure was due to the 52H switch in the 65G position G3 breaker failed to changed state when the breaker was racked out. The G3 breaker being racked in is a permissive in the auto-open circuit for the F031A valve and is the only break in the circuit that prevents the valve from opening during the surveillance. With the 52H switch stuck in the racked in state the circuit remained intact and allowed the valve to open. Maintenance was able to fix the alignment issue with the 52H switch linkages. These linkages and switch operation are checked as part of the 6 year breaker PM. This PM has proven adequate at preventing failures of the 52H switch as this is the first time Fermi has experienced this issue." "THE DIRECT CAUSE IS M11 - Out of Mechanical Adjustment. This was chosen because the 52H linkages were out of

The identified failure(s) would not have prevented the performance of the required safety function of the equipment. Therefore, this failure will have no impact on an extension to a 24 month surveillance interval.

adjustment and bound." WO 44319594 requested, WO 44319594 Disassembled 52H Switch pivot arm, cleaned, filed burrs and applied grease to pivot points, verified proper operation during manual manipulation of switch. Removed Shutter guard, coordinated functional test with operations, functional test SAT. SPF Note 3: "EIT Found issue with breaker and electricians repaired it. No longer need to restore to normal. CRS and I&C Supervisor informed. Reverify prerequisites and start procedure performance at Section 6.1" SPF Note 4: "11-18-15/2207 Step 6.1.1 After reperforming/validating the prerequisites, when those step was performed, the RUN light never came ON; the CMC TRIP light immediately came ON, 3D96 MOTOR TRIPPED annunciated (along with 3D150). Stopped and discussed with CRS and I&C Supervisor: CRS wanted to see what would happen during 6.1.2; same thing happened. Stopped job. - Operations initiated STR C2015-002182 to lift leads to defeat the trips from B3105F031A & B to RRMG Breakers. SPF Note 5: "11-19-15/0159 Step 6.1.2 "B" RUN light did not come ON; TRIP light briefly can ON, then OFF and 3996 came in & stayed in alarm. 3D150 never did alarm. Steps 6.6.1 through 6.6.7 N/A'd per CRS in order to maintain setup for 44.040.010 performance. Also N/A'd - Problem was identified by Ops at the CMC switch; reoperation of it corrected the problem. Per CRS, continue with surveillance."

Event	Title	Associated SRs and Function	
0808	PERFORM 44.040.010 ATWS-SRV LOW LOW SET DIV 2 LOGIC FUNCTIONAL TEST	SR 3.3.4.1.4.a SR 3.3.6.3.4-1 SR 3.3.6.3.4-3	SR 3.3.4.1.4.b SR 3.3.6.3.4-2 SR 3.6.1.6.2

# Performances: 6      # Failures: 0

**24 Month Justification: Notes:**

There were no failures, therefore the surveillance test history supports the conclusion that the impact, if any, on system availability will be small as a result of the change to a 24 month surveillance interval.

Event	Title	Associated SRs and Function
0836	PERFORM 64.080.403 CONTROL CENTER MAKEUP AIR MNFLD RAD MON,D1,CAL	SR 3.3.7.1.5-4

# Performances: 6      # Failures: 0

**24 Month Justification: Notes:**

There were no failures, therefore the surveillance test history supports the conclusion that the impact, if any, on system availability will be small as a result of the change to a 24 month surveillance interval.

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Event	Title	Associated SRs and Function
0837	PERFORM 64.080.404 CONTROL CENTER MAKEUP AIR MNFLD RAD MON,D2,CAL	SR 3.3.7.1.5-4
<div># Performances: 6      # Failures: 0</div>		

24 Month Justification:
Notes:

There were no failures, therefore the surveillance test history supports the conclusion that the impact, if any, on system availability will be small as a result of the change to a 24 month surveillance interval.

Event	Title	Associated SRs and Function
0845	PERFORM 44.110.001 REMOTE SHUTDOWN RX PRESS,DIV 1,CAL	SR 3.3.3.2.3-1
<div># Performances: 6      # Failures: 0</div>		
<div> 24 Month Justification: Notes: </div> <div> There were no failures, therefore the surveillance test history supports the conclusion that the impact, if any, on system availability will be small as a result of the change to a 24 month surveillance interval. </div>		

# Performances: 6                      # Failures: 2

**24 Month Justification:      Notes:**

The failures do not impact any safety function; therefore, the surveillance test history supports the conclusion that the impact, if any, on system availability will be small as a result of the change to a 24 month surveillance interval.

**Failure Review:**

Perf. Date	Fail Cat.	Description of Failure	Justification of Failure
10/26/2012	A	Unable to physically attain 100% span indication value on Indicator E11-R603A due to indicator needle being bent and hitting upper stop. All other calibration data within tolerance. Text in procedure states indication is for information only and does not satisfy any Technical Specification requirements. CARD 12-28765 written. CARD states: "While performing surv. 44.110.003, it was found that Div 1 RHR Flow Indicator E11R603A would not go to above 27500 mark. Needle is hitting upper stop and is bent. The 28000 reading for Table 2 in surv. 44.110.003 could not be obtained. Stopped and notified Senior Lead, CRS and SM. Table 2 is not acceptance criteria and was told to write this CARD and continue with Surv. Recorder is a Hayes Republic and performing the calibration per the surv. would not remedy this issue. Recommend replacing recorder." Reportability/Operability Review states: "E11R603A is not required for RHR operability. Div 1 RHR remains OPERABLE." WO 35551395 requested.	The identified failure(s) would not have prevented the performance of the required safety function of the equipment. Therefore, this failure will have no impact on an extension to a 24 month surveillance interval.
1/23/2014	A	Procedure states "Table 2 data As Found Unsat/Unobtainable: Indicator is documented bad." CARD 12-28765 and WO 35551395 generated to repair/replace E11R603A. Procedure NOTE states that data recorded for Indicator E11-R603A is for instrument loop performance information only and is not required for Technical Specifications requirements. CARD 12-28765 (written10/26/2012) states the indicator would not go above the 27500 mark. Needle is hitting the upper stop and is bent. CARD also states the indicator is not used as acceptance criteria for testing RHR but is used as a Channel Check of C35R005 which is intended as a gross comparison. Indicator E11R603A is not required for RHR Operability. WO 35551395 replaced E11R603A on 7/20/2015	The identified failure(s) would not have prevented the performance of the required safety function of the equipment. Therefore, this failure will have no impact on an extension to a 24 month surveillance interval.

Event	Title	Associated SRs and Function	TRVEND 24MCGNF319001 Rev 1
0847	PERFORM 44.110.004 REMOTE SHUTDOWN RCIC FLOW INDICATION,CAL	SR 3.3.3.2.3-6	Page 254 of 395
	# Performances: 7      # Failures: 0		

**24 Month Justification: Notes:**

There were no failures, therefore the surveillance test history supports the conclusion that the impact, if any, on system availability will be small as a result of the change to a 24 month surveillance interval.

Event	Title	Associated SRs and Function
0848	PERFORM 44.110.006 REMOTE SHUTDOWN DW PRESS,DIV 1,CHANNEL CALIBRATION	SR 3.3.3.2.3-4
	# Performances: 7      # Failures: 0	

**24 Month Justification: Notes:**

There were no failures, therefore the surveillance test history supports the conclusion that the impact, if any, on system availability will be small as a result of the change to a 24 month surveillance interval.

Event	Title	Associated SRs and Function
0849	PERFORM 44.110.009 REMOTE SHUTDOWN TORUS WATER TEMP,DIV 1,CALIBRATION	SR 3.3.3.2.3-3
	# Performances: 6      # Failures: 0	

**24 Month Justification: Notes:**

There were no failures, therefore the surveillance test history supports the conclusion that the impact, if any, on system availability will be small as a result of the change to a 24 month surveillance interval.

Event	Title	Associated SRs and Function
0850	PERFORM 44.120.001 ACCIDENT MONITORING RX PRESSURE,DIV 1, CHANNEL CALIBRATION	SR 3.3.3.1.2-1      SR 3.3.3.1.2-3
	# Performances: 6      # Failures: 0	

**24 Month Justification: Notes:**

There were no failures, therefore the surveillance test history supports the conclusion that the impact, if any, on system availability will be small as a result of the change to a 24 month surveillance interval.

Event	Title	Associated SRs and Function
0851	PERFORM 44.120.002 ACCIDENT MONITORING RX PRESSURE,DIV 2, CHANNEL CALIBRATION	SR 3.3.3.1.2-1 SR 3.3.3.1.2-3
# Performances: 6 # Failures: 0		

**24 Month Justification: Notes:**

There were no failures, therefore the surveillance test history supports the conclusion that the impact, if any, on system availability will be small as a result of the change to a 24 month surveillance interval.

Event	Title	Associated SRs and Function
0852	PERFORM 44.120.005 ACCIDENT MONITORING DW PRESSURE,DIV 1, CHANNEL CALIBRATION	SR 3.3.3.1.2-6
# Performances: 6 # Failures: 0		

**24 Month Justification: Notes:**

There were no failures, therefore the surveillance test history supports the conclusion that the impact, if any, on system availability will be small as a result of the change to a 24 month surveillance interval.

Event	Title	Associated SRs and Function
0853	PERFORM 44.120.006 ACCIDENT MONITORING DW PRESSURE,DIV 2,CHANNEL CALIBRATION	SR 3.3.3.1.2-6
# Performances: 6 # Failures: 0		

**24 Month Justification: Notes:**

There were no failures, therefore the surveillance test history supports the conclusion that the impact, if any, on system availability will be small as a result of the change to a 24 month surveillance interval.

Event	Title	Associated SRs and Function
0854	PERFORM 44.120.007 ACCIDENT MONITORING DIV 1,TEMPERATURE RECORDER,CALIBRATION	SR 3.3.3.1.2-5
# Performances: 6 # Failures: 0		

**24 Month Justification: Notes:**

There were no failures, therefore the surveillance test history supports the conclusion that the impact, if any, on system availability will be small as a result of the change to a 24 month surveillance interval.

Event	Title	Associated SRs and Function
0855	PERFORM 44.120.008 ACCIDENT MONITORING DIV 2,TEMPERATURE RECORDER,CALIBRATION	SR 3.3.3.1.2-5
# Performances: 6      # Failures: 0		

**24 Month Justification: Notes:**

There were no failures, therefore the surveillance test history supports the conclusion that the impact, if any, on system availability will be small as a result of the change to a 24 month surveillance interval.

Event	Title	Associated SRs and Function
0856	PERFORM 44.120.009 ACCIDENT MONITORING TORUS WTR LVL,DIV 1,CALIBRATION	SR 3.3.3.1.2-4
# Performances: 6      # Failures: 0		

**24 Month Justification: Notes:**

There were no failures, therefore the surveillance test history supports the conclusion that the impact, if any, on system availability will be small as a result of the change to a 24 month surveillance interval.

Event	Title	Associated SRs and Function
0857	PERFORM 44.120.010 ACCIDENT MONITORING TORUS WTR LVL,DIV 2,CALIBRATION	SR 3.3.3.1.2-4
# Performances: 6      # Failures: 0		

**24 Month Justification: Notes:**

There were no failures, therefore the surveillance test history supports the conclusion that the impact, if any, on system availability will be small as a result of the change to a 24 month surveillance interval.

# Performances: 6                      # Failures: 1

**24 Month Justification:    Notes:**

One failure identified which did not impact any safety function; therefore, the surveillance test history supports the conclusion that the impact, if any, on system availability will be small as a result of the change to a 24 month surveillance interval.

**Failure Review:**

<b>Perf. Date</b>	<b>Fail Cat.</b>	<b>Description of Failure</b>
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2/19/2015	A	<p>SPF Note: "100% Full Scale reading on meter failed low, other readings checked were within acceptance criteria - Notified CRS and initiated CARD 15-21384" CARD 15-21384 states: "Containment Area High Range Radiation Monitor Div 1, electronic calibration, it was found that at 100% input D11K816A monitor output voltage of 9.87 VDC did not meet acceptance criteria for being between 9.90 and 10.10 VDC. All other points checked were within acceptance criteria." Reportability/Operability Review states: "CARD documents that the as found readings for D11K816A meter does not meet acceptance criteria for 64.120.040. The D11K816A, Div 1 Containment Area Hi Range Rad Monitor has been declared inoperable and LCO 15-0092 entered. Division 2 CHRRMS is inoperable and LCO 15-0092 entered." Investigation states: "This event is not a failure. The radiation monitor was still able to provide its function throughout the usable range of the instrument despite the 100% scale range being low by 0.03 VDC. During the performance of 64.120.041, the 100% scale voltage of D11K816A was found to be 9.87VDC when it should have been between 9.90VDC and 10.10VDC. This does not impact the usable range of the indicator during an actual event. As found data was within specification for every test input except for the 100% scale reading which was low by 0.03 VDC. In the Containment High Range Radiation Monitor scale, every reading from 5.8x10<sup>0</sup> through 1.7x10<sup>7</sup> would still give accurate indication to operators during an actual event requiring this radiation monitor. Emergency procedures to determine core damage would still be able to use this radiation monitor to reliably determine cladding loss since a reading of 50,000 R/hr (5x10<sup>4</sup>) corresponds to 100% GAP release two hours after shutdown. (EP-101 Rev. 39 Enclosure A Tab F) The radiation monitor's high setpoint is 500 R/hr (5x10<sup>2</sup>) and the high-high setpoint is 1000 R/hr (1x10<sup>3</sup>). This event is not a Maintenance Rule Functional Failure. This does not impact the usable range of the indicator during an actual event. WO 42596242 requested, WO 42598602 (cancelled - duplicate). WO 42596242 completed with RP Technicians performing calibration with SAT results.</p>
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**Justification of Failure**

The identified failure(s) would not have prevented the performance of the required safety function of the equipment. Therefore, this failure will have no impact on an extension to a 24 month surveillance interval.

Event	Title	Associated SRs and Function
0867	PERFORM 64.120.041 CONTAINMENT AREA HIGH RANGE RADIATION MONITOR DIV 2 ELEC CAL	SR 3.3.3.1.2-7
# Performances: 6      # Failures: 0		

**24 Month Justification: Notes:**

There were no failures, therefore the surveillance test history supports the conclusion that the impact, if any, on system availability will be small as a result of the change to a 24 month surveillance interval.

Event	Title	Associated SRs and Function
0868	PERFORM 44.120.050 DW FLOOR DRN SUMP LVL CAL (TRANSMITTERS PORTION)	SR 3.4.6.3
# Performances: 6      # Failures: 0		

**24 Month Justification: Notes:**

There were no failures, therefore the surveillance test history supports the conclusion that the impact, if any, on system availability will be small as a result of the change to a 24 month surveillance interval.

Event 0881	Title PERFORM 44.180.005 MAIN TURBINE BYPASS SYSTEM RTT AND CHL FUNCTIONAL	Associated SRs and Function SR 3.7.6.3	TRVEND 24MCGNF319001 Rev 1 Page 259 of 395 SR 3.7.6.4
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# Performances: 6      # Failures: 2

**24 Month Justification: Notes:**

One failure would be detected by the performance of a surveillance test on a more frequent basis. The other failure did not impact any safety function; therefore, the surveillance test history supports the conclusion that the impact, if any, on system availability will be small as a result of a change to a 24 month surveillance interval.

**Failure Review:**

**Perf. Date Fail Cat. Description of Failure**

2/12/2014      B      SPF states: "At Step 6.1.2.8, The West Bypass Valve remained at 0% and Press Low light ON. CRS and I&C Supv were notified. CRS directed lead to back out of procedure. NSO wrote CARD 14-20992 to address Lo Pressure on UA problem." CARD 14-20992 states: "Received 4D3 (Unitized Actuator Bypass Valve Fault) for Pressure Low on West Bypass Valve when Governor Interlock Switch was placed in EXERCISE PERMIT per 44.180.005. West Bypass Valve did not open as expected. N3021-C041 W Byp Vlv UA remained running. Locally verified W Byp Vlv closed with UA hydraulic pressure at 160 psig. Shutdown UA IAW 23.110, accumulator nitrogen precharge pressures were low with #1 at 1300 psig and #2 at 1350 psig (1485 to 1515 psig required per SOP)." Reportability/Operability Review states: "West MT Bypass Valve declared Inoperable and coded with S/U code." Description/Investigation states: "Troubleshooting under WO 38029454 found a poor connection at jumper bar for a terminal between resistors. This caused the solenoid valve to de-energize, resulting in the UA closing the valve/keeping it closed. WO documents that a high resistance connection was measured across the resistor network (made up of 2 resistors), but resistance measurements across each resistor individually was acceptable. A jumper link (bar) terminal, which connects the two resistors together was tightened, which corrected the high resistance condition." WO 38029454 completed follow-up performance (PMT) on 03/24/2014 satisfactorily. This failure is a Maintenance Rule Functional Failure (MRFF), counted against N3012 (Main Turbine Control System), for MR functions N3012-01 and N3012-05. Based on the maintenance performed each outage, maintenance is conducted in accordance with all known industry/vendor recommendations. Failure is not considered Maintenance Preventable.

**Justification of Failure**

Although this failure occurred during the 18-month surveillance procedure test, the failure would have been identified on a more frequent basis during the 120 day surveillance (TS SR 3.7.6.1) performance. Consequently, the identified failure would be detected by a more frequent activity. Therefore, this failure will have no impact on an extension to a 24 month surveillance interval.

11/22/2015	A	<p>SPF Note (1st performance) "Step 6.1.2.8 Neither East or West Bypass Valves indicated Full Open via position limit switches (Both valves Close light still Lit). Notified CRS and I&amp;C Supv. IPCS indication for East Bypass is 97.4%, West Bypass 98.8%. Local for both indicated 100%. For indicators on H11P804, East Bypass is 98%, West Bypass is 99%. Recommendation is to return system to normal and investigate issue. CARD 15-28945 submitted." CARD 15-28945 states: During performance of 44.180.005 (Main Turbine Bypass System RTT and Ch Functional) the East and West Bypass Valves (N1100-F059A/B) were directed to be fully OPEN by lowering Pressure Control setpoint to -12 psi. Both bypass valves stroked open. West Bypass Valve opened to 99% and East Bypass Valve opened to 97.5% as seen on IPCS and position indicator on H11-P804. However the OPEN/CLOSED pushbuttons for both the East and West Bypass Valves remained indicating dual. East Bypass Valve was previously identified as not indicating full open on CARD 13-23003. No current position indication issues identified for the West Bypass Valve. Request WO to identify cause of and repair failure to receive full open indication on the OPEN/CLOSED pushbuttons for the East and West Bypass Valves (N1100-F059A/B.)" Reportability/Operability Review states: "No operability requirements are specifically applicable to the Open/Closed lights." WO 44305263 written to troubleshoot and repair the cause for not receiving a Full Open light on the Open/Close pushbutton in the Main Control Room for the East and West Main Steam Bypass valves. WO44305263, Work Performed page states: "Found East Bypass UA with low pressure alarm. CARD 15-29088 initiated. As Found limit switches SAT. Only able to optimize a small amount due to design of the ramps. Any further adjustment and limit switch will not reset until valve closes. This is for both East and West Bypass Valves. Don't think this was enough adjustment to pass 44.180.005. Supervision informed." CARD 15-29088 states: "Low pressure alarm is in due to valve having an open signal with the bypass tripped. It appears the servo bias shifted at the time the low pressure alarm came in. This happened previously, documented in WO 38174587. Recommend investigate servo bias drift and repair." WO 44323334 written to resolve this issue. WO completed (11/20/2015) to replace Servo valves, calibration completed SAT.</p>	<p>The identified failure(s) would not have prevented the performance of the required safety function of the equipment. Therefore, this failure will have no impact on an extension to a 24 month surveillance interval.</p>
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Event	Title	Associated SRs and Function
0882	PERFORM 44.190.001 FEEDWTR/MAIN TURBINE TRIP SYSTEM-LOGIC FUNCTIONAL TEST-NEIL REQ'D	SR 3.3.2.2.4
	# Performances: 7	# Failures: 1

**24 Month Justification: Notes:**

One failure is identified as an event driven failure which is not indicative of a repetitive time based failure mechanism. There are no other failures; therefore, the surveillance test history supports the conclusion that the impact, if any, on system availability will be small as a result of a change to a 24 month surveillance interval.

**Failure Review:**

**Perf. Date Fail Cat. Description of Failure**

3/27/2014 C During performance of 44.190.001, Step 6.2.1.6, dual indication was seen on N1100-F001B. I&C technicians entered the room and saw what appeared to be a misalignment of the linkage for the LVDT. Recommend a WO to correct the misalignment. Maintenance performed on the SRFPT HPSV limit switch indication box during RF16 caused the linkage and piston to be at an off angle which resulted in the dual indication. Removed the bracket between the valve marriage block and the limit switch rod. The end of the bracket was bent and resulted in the rod rubbing against the limit switch box. Straightened the bracket and adjusted the limit switch rod to 0 percent with the valve in the closed position. Contacted operations to re perform 44.190.001. Recommend this CARD be closed to tool pouch maintenance. In step 6.2.12, H21-P082 is incorrect. The panel should be H21P083 per set up 6.1.2. CARD 14-22896 written to correct panel reference.

**Justification of Failure**

This is an event driven failure in that previously completed maintenance contributed directly to the As Found condition. Therefore, this failure will have no impact on an extension to a 24 month surveillance interval.

Event	Title	Associated SRs and Function	
0885	PERFORM 44.190.009 FEEDWTR/M. TURB TRIP SYS-RX WATER LVL 8,DIV 1,CHNL C,XMTR CAL	SR 3.3.2.2.3	SR 3.3.2.2.4

# Performances: 6      # Failures: 1

**24 Month Justification: Notes:**

One failure identified which did not impact any safety function; therefore, the surveillance test history supports the conclusion that the impact, if any, on system availability will be small as a result of the change to a 24 month surveillance interval.

**Failure Review:**

Perf. Date	Fail Cat.	Description of Failure	Justification of Failure
3/30/2009	A	B21-N094C Transmitter As Found readings were below the Acceptable Performance Tolerance (APT) MIN values. Transmitter was successfully calibrated with all readings within As Left Tolerance.	The identified failure(s) would not have prevented the performance of the required safety function of the equipment. Therefore, this failure will have no impact on an extension to a 24 month surveillance interval.

Event	Title	Associated SRs and Function	
0886	PERFORM 44.190.010 FEEDWTR/M. TURB TRIP SYS-RX WATER LVL 8,DIV 2,CHNL D,XMTR CAL	SR 3.3.2.2.3	SR 3.3.2.2.4

# Performances: 6      # Failures: 0

**24 Month Justification: Notes:**

There were no failures, therefore the surveillance test history supports the conclusion that the impact, if any, on system availability will be small as a result of the change to a 24 month surveillance interval.

Event	Title	Associated SRs and Function
0888	PERFORM 44.210.002 DRYWELL SUMP LEVEL CHANNEL CALIBRATION	SR 3.4.6.3

# Performances: 6      # Failures: 0

**24 Month Justification: Notes:**

There were no failures, therefore the surveillance test history supports the conclusion that the impact, if any, on system availability will be small as a result of the change to a 24 month surveillance interval.

Event	Title	Associated SRs and Function
0889	PERFORM 44.210.003 SRV TAIL PIPE PRES INSTRUMENTATION CALIBRATION	SR 3.3.6.3.3-3 SR 3.6.1.6.2

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# Performances: 6 # Failures: 1

**24 Month Justification: Notes:**

One failure identified which did not impact any safety function; therefore, the surveillance test history supports the conclusion that the impact, if any, on system availability will be small as a result of the change to a 24 month surveillance interval.

**Failure Review:**

**Perf. Date Fail Cat. Description of Failure**

11/10/2015 A SPF Note: B21N411 pressure switch was as found low outside limits of Leave Alone Tolerance (LAT). Switch is factory set with no adjustments. All other instruments were within tolerance and meet acceptance criteria. - Notified CRS & FLS of instrument condition, CARD 15-28851 written to replace B21-N411N. CARD 15-28851 states: "While performing I&C Surveillance Procedure 44.210.003, (Reactor Coolant System - Safety Relief Valve (SRV) Tail-Pipe Pressure Instrumentation Calibration), Pressure Switch B21-N411N was As Found below Leave Alone Tolerance (LAT). This Instrument is factory set and has no adjustment. Request a W/O be generated to replace B21-N411N and test." There is no component failure or degradation that could prevent the equipment from performing its function. The tail pipe pressure switch energizes when there is >30psig in the tail pipe. Since the pressure switch was found BELOW the Leave Alone tolerance the switch would have energized as a slightly lower pressure in the tail pipe. This is more conservative and the pressure switch would have continued to provide the necessary signals into the LLS logic as required. The identified failure(s) would not have prevented the performance of the required safety function of the equipment. WO 44283594 written to replace failed pressure switch B21N411N. Switch replaced and returned to service by performance of 44.210.003.

**Justification of Failure**

The identified failure(s) would not have prevented the performance of the required safety function of the equipment. Therefore, this failure will have no impact on an extension to a 24 month surveillance interval.

Event	Title	Associated SRs and Function
0890	PERFORM 64.210.031 PRIMARY CONTAINMENT ATMOSPHERE RADIATION MONITOR CALIBRATION	SR 3.4.6.3

# Performances: 6 # Failures: 0

**24 Month Justification: Notes:**

There were no failures, therefore the surveillance test history supports the conclusion that the impact, if any, on system availability will be small as a result of the change to a 24 month surveillance interval.

Event	Title	Associated SRs and Function
0897	PERFORM 44.220.115 SECT. 6.1 (H21P004) GROUP 1 INSTRUMENT LINE EXCESS FLOW CHECK VALVE FUNCTIONAL	SR 3.6.1.3.9
# Performances: 1      # Failures: 1		

**24 Month Justification:**    **Notes:** Performance includes 0897A, B and C Ref. DTE-19001, Section 3 Design Inputs

One failure identified which did not impact any safety function; therefore, the surveillance test history supports the conclusion that the impact, if any, on system availability will be small as a result of the change to a 24 month surveillance interval.

**Failure Review:**

Perf. Date	Fail Cat.	Description of Failure	Justification of Failure
4/25/2009	A	SPF Noted at Step 6.1.30.2.a & b: Green Closed lights did not illuminate. Check valve did close, no fluid leak by. CARD 09-23266 submitted. CARD 09-23266 states: "the green closed light for the B21-F507 excess flow check valve did not illuminate at either the H11-P805 panel (as required in step 6.1.30.2.a) or at H21-P402A (as required by step 6.1.30.2.b). Neither of these steps are acceptance criteria. The open indication does work." Reportability/Operability Review states: "B21-F507 excess flow check valve closed and performed its safety function and indicates open to know status of the valve therefore no operability issues." OCC decided that adjustment to the close indication would be performed at some other time. WO 29746050 corrected 11/24/2010.	The identified failure(s) would not have prevented the performance of the required safety function of the equipment. Therefore, this failure will have no impact on an extension to a 24 month surveillance interval.

Event	Title	Associated SRs and Function
0897A	PERFORM 44.220.115 SECT. 6.2 (H21P009) GROUP 1 INSTRUMENT LINE EXCESS FLOW CHECK VALVE FUNCTIONAL	SR 3.6.1.3.9
# Performances: 0      # Failures: 0		

**24 Month Justification:**    **Notes:** Completed by Event 0897

Event	Title	Associated SRs and Function
0897B	PERFORM 44.220.115 SECT. 6.3 (H21P015) GROUP 1 INSTRUMENT LINE EXCESS FLOW CHECK VALVE FUNCTIONAL	SR 3.6.1.3.9
# Performances: 0      # Failures: 0		

**24 Month Justification:**    **Notes:** Completed by Event 0897

Event	Title	Associated SRs and Function	TRVEND 24MCGNF319001 Rev 1 Page 265 of 395
0897C	PERFORM 44.220.115 SECT. 6.4 (H21P036) GROUP 1 INSTRUMENT LINE EXCESS FLOW CHECK VALVE FUNCTIONAL	SR 3.6.1.3.9	
	# Performances: 0      # Failures: 0		
24 Month Justification:	Notes: Completed by Event 0897		

Event 0904	Title PERFORM 44.220.203 TORUS TO DRYWELL VACUUM BREAKER VALVE POS INDICATION CAL	Associated SRs and Function SR 3.6.1.8.3
# Performances: 6		# Failures: 2

24 Month Justification:    Notes:

One failure is identified as event driven failure which is not indicative of a repetitive time based failure mechanism. The other failure did not impact any safety function; therefore, the surveillance test history supports the conclusion that the impact, if any, on system availability will be small as a result of the change to a 24 month surveillance interval.

Failure Review:

Perf. Date	Fail Cat.	Description of Failure	Justification of Failure
4/25/2009	A	Two issues noted on SPF: 1) During performance at Step 6.1.4.1 for T2300-F400B, valve did not stroke at all. Observed no change in light indications. NSO researched problem. I&C Supv contacted. Operations personnel verified pneumatic supply lineup - SAT, and electric power supply - SAT, including verifying fuse was good per their procedure. NSO stated the OPEN pushbutton operation felt normal. Performed an opening stroke of adjacent T2300F400A - SAT, to confirm pneumatics. Retested T2300F400B - unsat again. Notified I&C Supervisor and CRS. Directed to submit this CARD, and continue with other valve tests. Suspect T2300F400B solenoid valve is faulty. Recommend a troubleshoot / rework / repair/replace WO. CARD 09-22893 written. CARD 09-22893 states: "The torus vacuum breakers are not part of the AOV program. These valves have an air actuator that is utilized during test stroking of the vacuum breakers only. These valves self actuate to limit differential pressure between the drywell and torus. This CARD is being re-assigned to the System Engineer to document cause for failure to stroke during testing." Troubleshooting performed under WO 29714444 , identified a failed air solenoid valve. Valve was replaced and T2300F400B was stroked successfully. 2) T23N402E would not calibrate. CARD 09-23024 was submitted; CARD 09-23024 states: "While performing 44.220.203 to test vacuum breakers, limit switch T23-N402E could not be adjusted to within expected tolerances. Request that the limit switch be replaced. If adjusted to meet the tolerance for opening then the deadband will not allow the close light to come on." WO 29726455 installed new switch on 4/22/2009.	The identified failure(s) would not have prevented the performance of the required safety function of the equipment. Therefore, this failure will have no impact on an extension to a 24 month surveillance interval.

4/11/2017	C	<p>SPF Note: "T2300F400C would not open when CR switch depressed. CARD 17-23343 initiated. - Discrepancy resolved after proper valve line-up performed by Ops" CARD 17-23343 states: "During performance of 44.220.203 step 6.3.4 substep 1, the valve did not open. Locally the valve actuator moved to contact the valve pallet but did not seem to have any force behind it. The pallet was pressed on slightly by a technician and the valve pallet moved to about 1/3 open and held there. When the open button was released the valve shut as expected. Technicians were able to manually open the valve pallet and the Setpoint Pressure Calibration was SAT at 27.5 lbs. force. Request investigation and work order to determine why the valve cannot be opened from the control room." Reportability/Operability Review states: "Per I&amp;C note attached to this CARD, the Nitrogen supply was not lined up to support Vacuum Breaker operation. Once Nitrogen was aligned properly, the valves operated. There is no equipment deficiency. OPERATIONS did not line up pneumatics for Torus Vacuum breakers per 23.425.02 as called out in Surveillance 44.220.203 Step 5.3. Removed WO from Action Requested."</p>	<p>This is an event driven failure. The failure caused by Operations did not perform/complete system alignment per 23.425.02. Once Nitrogen was aligned properly, the valves operated. There is no equipment deficiency. Therefore, this failure will have no impact on an extension to a 24 month surveillance interval.</p>
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Event	Title	Associated SRs and Function
0905	PERFORM 44.220.204 TORUS TO RX BLDG VACUUM BREAKER VALVE POS INDICATION CAL	SR 3.6.1.7.3

# Performances: 6 # Failures: 2

**24 Month Justification: Notes:**

The failures do not impact any safety function; therefore, the surveillance test history supports the conclusion that the impact, if any, on system availability will be small as a result of the change to a 24 month surveillance interval.

**Failure Review:**

Perf. Date	Fail Cat.	Description of Failure	Justification of Failure
11/25/2010	A	Vacuum Breaker T2300-F450A Valve Closure Time of 1.44 second was outside As Found tolerance. Adjusted valve to within tolerance with As Left time of 2.68 second. Vacuum Breaker T2300-F450B Opening Pressure (CT-F) of 45 lbs was outside As Found tolerance. Adjusted valve to within tolerance with As Left pressure of 32.5 lbs. Vacuum Breaker T2300-F450B Limit Switch As Found CLOSE Gap was Unsat. Adjustment was made and As Left tolerance was SAT.	The identified failure(s) would not have prevented the performance of the required safety function of the equipment. Therefore, this failure will have no impact on an extension to a 24 month surveillance interval.
10/22/2015	A	Vacuum Breaker T2300-F450B Opening Pressure (CT-F) was outside As Found tolerance. Valve was checked by Maintenance with no adjustment needed. As Left Opening Pressure (CT-F) was in tolerance.	The identified failure(s) would not have prevented the performance of the required safety function of the equipment. Therefore, this failure will have no impact on an extension to a 24 month surveillance interval.

# Performances: 6      # Failures: 6

**24 Month Justification:    Notes:**

The failures do not impact any safety function; therefore, the surveillance test history supports the conclusion that the impact, if any, on system availability will be small as a result of the change to a 24 month surveillance interval.

**Failure Review:**

**Perf. Date   Fail Cat.   Description of Failure**

**Justification of Failure**

2/18/2010	A	<p>SPF Note 1: "E5101C001 1.5 ml/min pump seal leak - CARD 09-23961 and WO 29866490 exist" Per Maximo WO 29866490, 04-Mechanical Seal Leak on RCIC pump status = CAN 7/29/2014 SPF Note 2: "E5100F024 1ml/min pacing leak - CARD 10-21495 generated" CARD 10-21494 Reportability/Operability Review states: "The small magnitude of the leak is within the acceptance criteria of 200ml/min total leakage and does not prevent the turbine from getting adequate steam pressure to rotate the turbine and pump therefore RCIC remains OPERABLE. Operations has performed tool pouch maintenance for a manual valve IAW ODE-2 and tightened 2 flats each nut and checked the valve on the on the open back seat and the leakage did not stop." CARD Notes indicate: "On 2/18/10 1700 leakage on E5100F024 was stopped using tool pouch maintenance and tighten up on packing. Took up a total of 6 flats to stop leak. "SPF Note 3: "E5150F054 2 ml/min packing leak - CARD 09-23448 and WO 29769683 already exist." WO 29769683, 04-Packing leak on E5150F054, completed 11/19/2010</p> <p>SPF Note 4: "E501C002 150 ml/min pump seal leak - CARD 08-24198 and WO 28179863 exist." Per Maximo WO 28179863, RCIC turbine water leaks status = CAN 1/12/2015</p>	<p>The identified failure(s) would not have prevented the performance of the required safety function of the equipment. Therefore, this failure will have no impact on an extension to a 24 month surveillance interval.</p>
8/18/2011	A	<p>SPF Note 1: "E5101C001 RCIC Pump seal leak 1ml/min - WO 29866490 exists" Per Maximo WO 29866490 status = CAN 7/29/2014 SPF Note 2: "E5101C002 RCIC Turbine seal leak 150ml/min - WO 28179863 exists" Per Maximo WO 28179863 status = CAN 1/12/2015 SPF Note 3: "E5150F054 packing leak 2ml/min - WO 29769683 exists" WO 29769683, 04-Packing leak on E5150F054, completed 11/19/2010</p>	<p>The identified failure(s) would not have prevented the performance of the required safety function of the equipment. Therefore, this failure will have no impact on an extension to a 24 month surveillance interval.</p>

2/12/2013	A	<p>SPF Note 1: "A 1 dpm packing leak was identified on the source valve (V1) for E51N058B which was located on H21P038. CARD 13-21068 generated" CARD 13-21068 states: "1 dpm packing leak was identified on the Source Valve (V1) for E51N058B "RCIC Stm Line Low Pressure Transmitter", which is located on H21P038 "Local PNL/Rack (MR only) RCIC leak Detect Sys B Div.2 Inst. Rack."The overall system leakage is still within the system leakage criteria." Reportability/Operability Review states: "The 1 dpm packing leak on the source valve to the E51N058B is within system leakage limits and will not affect the ability of the instrument to generate the required isolation signal. Therefore, no impact on safety function. RCIC and Primary Containment Isolation Instrumentation remains OPERABLE." WO 36080302 requested. WO 36080302 CBM - 04-Packing Leak on Source Valve (V1) for E51N058B Located on H21P038, status per Maximo = INPLN 2/18/2013 SPF Note 2: "A 1 ml/min packing leak on E5150F054 - Existing CARD 12-00329 (10/6/2012)" WO 35445274 requested. WO 35445274, Steam leak on E5150F054, completed 3/24/2014 SPF Note 3: "A 1 ml/min packing leak on E5150F025 - Existing CARD 12-28228" WO 35445716 requested. WO 35445716, Repack E5150F025 Perform Diagnostics, completed 6/19/2013 SPF Note 4: "A 1.25 ml/min packing leak on E5150F053 - Existing CARD 12-26557 - Existing Work Order 35118569" WO 35118569, Repack E5100-F053, completed 6/18/2013 SPF Note 5: "A seal leak of 175 ml/min on E5101C002 - Existing CARD 08-24198, Work Order (existing) 28179863 - Made Log Entry in WO 28179863 for increase of leakage on seal. Per Maximo WO 28179863 status = CAN 1/12/2015</p>	<p>The identified failure(s) would not have prevented the performance of the required safety function of the equipment. Therefore, this failure will have no impact on an extension to a 24 month surveillance interval.</p>
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8/12/2014	A	<p>SPF Note 1: "1 dpm (0.05 ml/min) packing leak identified on the source valve (V1) for E51N058B which is located on H21P038 (root isolation for PDXE-E51-N057B PXE-E51-N058B) - Existing CARD 13-21068 (2/12/2013), Existing Work Order 36080302. Per Maximo WO 36080302 status = INPLN 2/18/2013 SPF Note 2: "A 3 dpm (0.15 ml/min) packing leak on E5150F046 - CARD 14-26438 generated" - CARD 14-26438 states: "overall system total leakage is 178.75 ml/min, which is below the system leakage criteria of 200 ml/min in step 5.4 of 43.206.001." Reportability/Operability Review states: "The leak on this valve would not divert sufficient cooling flow from the RCIC Lube Oil Cooler to prevent it from performing its safety function. Overall system total leakage is 178.75 ml/min, which remains below the system leakage criteria of 200 ml/min. Area temperature remains unchanged, therefore no EQ concern exists. RCIC remains OPERABLE." MRFF Evaluation completed; Justification concluded: "The Acceptance Criteria for RCIC Total System Leakage is less than 200 mL/min. The total system leakage for RCIC including the leak from E5150F046 is 178.75 ml/min. Since 178.75 mL/min is less than the acceptance criteria of 200 mL/min, the additional 0.15 mL/min leak does not cause a Maintenance Rule Functional Failure or MSPI failure. RCIC can meet the mission time of 24 hours with the additional leak." WO 38568284 requested. WO 38568284 CBM-Packing Leak on E5150F046 status per Maximo = WDLY 8/18/2014 SPF Note 3: "A 2.5.ml/min packing leak on E5150F054 - CARD 14-26439 generated" CARD 14-26439 states: "overall system total leakage is 178.75 ml/min, which is below the system leakage criteria of 200 ml/min in step 5.4 of 43.206.001." Reportability/Operability Review states: "The leak on this valve would not divert sufficient steam from the RCIC turbine to prevent it from performing its safety function. Overall system total leakage is 178.75 ml/min, which remains below the system leakage criteria of 200 ml/min of 43.206.001. Area temperature remains unchanged, therefore no EQ concern exists. RCIC remains OPERABLE." MRFF Evaluation completed; Justification concluded: "The total system leakage for RCIC including the leak from E5150F054 is 178.75 ml/min. Since 178.75 mL/min is less than the acceptance criteria of 200 mL/min, the additional 2.5 mL/min leak does not cause a Maintenance Rule Functional Failure or MSPI failure. RCIC can meet the mission time of 24 hours with the additional leak." Investigation states: " The valve was to be replaced during the outage however upon investigation of the disassembled valve it was determined that the bonnet was steam cut and could be repaired. The bonnet was removed from the system and taken to the machine shop for repair. The duration of the required repair conflicted with other outage priorities and the decision was made to repair the vice replace the bonnet. Repairs were performed and the valve was placed back in service. It is unclear at this time why this valve is leaking after just four months. Until the valve is disassembled we will be unable to determine if the bonnet or other components are the cause for the leakage. The valve has had a history on continued leakage and when the bonnet was found to be steam cut we thought we had discovered the cause." Conclusion states: "The valve needs to be replaced because it is installed for use in the wrong application." The issue is considered rework due to fact the valve failed within 12 months of being repaired. This valve can only be worked during outages and should have been repaired to minimize risk to the safe operation of the</p>	<p>The identified failure(s) would not have prevented the performance of the required safety function of the equipment. Therefore, this failure will have no impact on an extension to a 24 month surveillance interval.</p>
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system through the operating cycle. WO 38568287 requested: WO 38568287 scope: cut-out and replace E5150F054 - W0 38568287 replaced E5150F054; returned to Service 11/5/2015; PMT Leak Inspection per 43.206.01 performed SAT 11/27/2015. SPF Note 4: "A 1ml/min packing leak on E5150F025 - CARD 26440 generated" CARD 14-26440 states: "Per 43.206.001 the overall system total leakage is 178.75 ml/min, which is below the system leakage criteria of 200 ml/min in step 5.4 of 43.206.001." Reportability/Operability Review states: "The leak on this valve would not divert sufficient steam from the RCIC turbine to prevent it from performing its safety function. Overall system total leakage is 178.75 ml/min, which remains below the system leakage criteria of 200 ml/min of 43.206.001. Area temperature remains unchanged, therefore no EQ concern exists. RCIC remains OPERABLE." WO 37976612 requested. WO 37976612 scope: Replace E5150F025 valve and actuator, replace hanger W-E51-5078-G11, and rework actuator pneumatic supply tubing per RID 85229. PMT Leak Checks per 43.206.001 completed SAT 11/27/2015 SPF Note 5: "A seal leak of 175 ml/min on E5101C002 - Existing CARD 08-24198, Existing Work Order 28179863" Per Maximo WO 28179863 status = CAN 1/12/2015 SPF Note 6: "Less than 1 dpm (0.05 ml/min) packing leak on E51F504 - CARD 14-26441 generated" CARD 14-26441 states: "overall system total leakage is 178.75 ml/min, which is below the system leakage criteria of 200 ml/min in step 5.4 of 43.206.001." Reportability/Operability Review states: "The leak on this valve would not divert sufficient steam from the RCIC turbine to prevent it from performing its safety function. Overall system total leakage is 178.75 ml/min, which remains below the system leakage criteria of 200 ml/min of 43.206.001. Area temperature remains unchanged, therefore no EQ concern exists. The minor packing leak does not affect the ability of the EFCV to close, there is no impact its function as a PCIV. E51F504 and RCIC remain OPERABLE." MRFF Evaluation completed: Justification, in part, states: "The leak found during the Leakage Monitoring Test does not cause a Maintenance Rule Functional Failure or MSPI failure. RCIC can meet the mission time of 24 hours with the additional leak." WO 38568292 requested. WO 38568292 scope: Repack E51F504 RCIC Stm Flow To Turb V13-2384 Excess Flow Check Vlv. E51F504 repaired, returned to service 10/17/2015, leak checked; zero leaks noted, 11/20/2015

2/9/2016	A	<p>SPF Note 1: "A 175.0 ml/min seal leak on E5101C002. CARD 08-24198 was previously written, Work Order W303100100 exists." Work Order W303100100, Perform Internal Inspection of RCIC Turbine per NUE NE-PJ-90-0373, completed 3/31/2017</p> <p>SPF Note 2: "A 0.05 ml/min packing leak identified on the source valve (V1) for E51N058B which is located on H21P038 (root isolation for PDXE-E51-N057B PXE-E51-N058B) - CARD 13-21068 was previously written; WO 36080302 exists" Per Maximo WO 36080302, CBM - 04-Packing Leak on Source Valve (V1) for E51N058B Located on H21P038 = INPLN 2/18/2013</p> <p>SPF Note 3: "A 0.05 ml/min packing leak identified on E5150F046 - CARD 14-26438 was previously written, WO 38568284 exists." Per Maximo WO 38568284, CBM - Packing Leak on E5150F046 status = WDLY 8/18/2014</p> <p>SPF Note 4: "A 0.05 ml/min packing leak identified on E5150F029 - CARD 16-21239 was generated" CARD 16-21239 states: "The current overall system leakage is 175.15 ml/min versus the system leakage criteria of 200 ml/min in step 5.4 of 43.206.001." Reportability/Operability Review states: "This is minor water packing leak from the suction isolation valve. The leakage is small and the overall leakage for the system is 175.15 ml/min and is below the leakage criteria of 200 ml/min. No impact on the system function to pump water into the reactor vessel and the required flow and pressure. RCIC remains OPERABLE." Determined not to be a Functional Failure. WO 44744158 requested. WO 44744158 CBM - Packing Leak on E5150F029 status per Maximo = WCREV 8/25/2017</p>	<p>The identified failure(s) would not have prevented the performance of the required safety function of the equipment. Therefore, this failure will have no impact on an extension to a 24 month surveillance interval.</p>
8/5/2017	A	<p>SPF Note 1: "E5150F029 has a 1 dpm (0.05 ml/min) packing leak - CARD 16-21239 (2/9/2016) - WO 44744158 already exists." Per Maximo WO 44744158 CBM - Packing Leak on E5150F029 status = WCREV 8/25/2017</p> <p>SPF Note 2: "E5150F054 has 1 dpm (0.05 ml/min) packing leak - CARD 17-26594 was written to address issue." CARD 17-26594 states: "While performing 43.206.001 "RCIC Leakage Monitoring Test", E5150F054 (RCIC DIV1 STM HEADER DRAIN POT TO WATER TRAP BYPASS AOV) was found to have a small plume of steam coming from its packing. It is estimated that this plume is equivalent to a 0.05 mL/min (1dpm) leak. The current total leakage for the RCIC system is 0.6 mL/min, which is below the acceptance criteria of 200 mL/min (see 43.206.001)." Reportability/Operability Review states: "The E5150F054 is the steam header drain pot to water trap bypass AOV. On a subsequent walk down there was no leak identified from the valve and therefore no impact on the system operability or the EQ requirements for the equipment in the area. RCIC remains OPERABLE." SPF Note 3: "E5100F039 has 10 dpm (0.5 ml/min packing leak - CARD 17-00103 (1/20/2017) -WO 46921343 already exists." WO 46921343, Packing Steam Leak from E5100-F039 completed 11/7/2017</p>	<p>The identified failure(s) would not have prevented the performance of the required safety function of the equipment. Therefore, this failure will have no impact on an extension to a 24 month surveillance interval.</p>

Event	Title	Associated SRs and Function	TRVEND 24MCGNF319001 Rev 1 Page 273 of 395
0981	PERFORM 43.606.001 TRAVERSING IN-CORE PROBE SHEAR VALVE 'A' EXPLOSIVE CHARGE	SR 3.6.1.3.10	
# Performances: 1      # Failures: 0			

**24 Month Justification:**    **Notes:** Surveillance test rotates with Events 1981 (TIP Shear Vlv B), 1982 (TIP Shear Vlv C), 1983 (TIP Shear Vlv D), and 1984 (TIP Shear Vlv E)

There were no failures, therefore the surveillance test history supports the conclusion that the impact, if any, on system availability will be small as a result of the change to a 24 month surveillance interval.
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Event	Title	Associated SRs and Function	TRVEND 24MCGNF319001 Rev 1 Page 274 of 395
1043	PERFORM 43.714.001 POST ACCIDENT SAMPLING SYSTEM LEAKAGE MONITORING TEST	SR 5.5.2	

# Performances: 6      # Failures: 1

**24 Month Justification: Notes:**

One failure identified which did not impact any safety function; therefore, the surveillance test history supports the conclusion that the impact, if any, on system availability will be small as a result of the change to a 24 month surveillance interval.

**Failure Review:**

**Perf. Date Fail Cat. Description of Failure**

6/16/2017      A      SPF Note 1: "Test #1 - leakage rate was SAT. CARD 17-25342 generated when restoring valve lineup P34-F404A indicated dual in the control room. STR C2017-1501 restored remaining valve lineup. "CARD states: "attempted to close P34-F404A Div 2 PASS Drywell Atm OTBD Isol, however valve is not indicating full closed in less than 2 seconds. After approximately 15-20 minutes, observed valve no longer indicated dual, indicated fully closed." Reportability/Operability Review states: "IST required stroke time to close is <=2 seconds per 24.714.01. Therefore, valve is not capable of performing its isolation function. Penetration remained isolable with inboard isolation valve. Primary containment isolation function and position indication function are INOPERABLE and being tracked on LCO 17-0347. The 4-hour action to isolate the affected penetration is complete." Evaluated and determined not to be a MRFF against P3400 or A7100. WO 47957122 initiated. WO notes: "Could not get valve to indicate dual. Valve stroked full open and full closed each stroke. As Found data SAT. Cycle times of P34F404A were SAT (less than 0.5 seconds open, less than 0.5 seconds closed) Indication in MCR SAT. Could not recreate problem. SPF Note 2: "Test #2 - measured leakage rate was above acceptance criteria. The measured leakage rate for test #2 was 1.64 scfh verse 1.00 scfh. CARD 17-25370 generated" CARD states: "Snoop testing of all valve packing and fittings in test boundary resulted in no external air leakage identified. Therefore, 1.64 scfh leakage is attributed to internal leakage, past test boundary valve seats. Test boundary valves with suspected leakage are P3400F015 and P3400F018. Both valves are normally seal locked open. Since 43.714.001 is a Leakage Reduction procedure for identifying external leakage, and identified leakage is internal (past valve seats) troubleshooting of suspect test boundary valves to identify cause of seat leakage, will be performed during next LLRT of P3400F405A/P3400F406A (43.401.387), and P3400F405B/P3400F406B (43.401.386). P3400F015 and P3400F018 act as test boundary valves in these LLRT procedures, which contain troubleshooting steps to identify the source of internal leakage. Next scheduled LLRT on these valves is RF19. No further action is required. CARD is trend only." Reportability/Operability Review states: "P3400F015 and P3400F018 are test boundary valves only, and are not containment isolation valves. No operability requirements are applicable." This event has been evaluated and determined not to be a MR functional Failure against P3400.

**Justification of Failure**

The identified failure(s) would not have prevented the performance of the required safety function of the equipment. Therefore, this failure will have no impact on an extension to a 24 month surveillance interval.

Event	Title	Associated SRs and Function
1051	PERFORM 44.010.064 RPS-TURBINE STOP VA. LIMIT SWITCH CLOSURE CALIBRATION	SR 3.3.1.1.14-9

# Performances: 5 # Failures: 1

**24 Month Justification: Notes:**

One failure identified which did not impact any safety function; therefore, the surveillance test history supports the conclusion that the impact, if any, on system availability will be small as a result of the change to a 24 month surveillance interval.

**Failure Review:**

Perf. Date	Fail Cat.	Description of Failure	Justification of Failure
11/10/2015	A	As Found valve travel data for HP Stop Valve #1 was outside Acceptance Criteria. Valve limit switches were adjusted per procedure guidance and As Left data was Acceptable.	The identified failure(s) would not have prevented the performance of the required safety function of the equipment. Therefore, this failure will have no impact on an extension to a 24 month surveillance interval.

Event	Title	Associated SRs and Function
1068	PERFORM 64.080.033 MAIN STEAM LINE RADIATION DETECTOR D11N600E CALIBRATION WITH CHANNEL A (was 64.010.033)	SR 3.3.6.1.4-2.d SR 3.3.6.1.5-2.d SR 3.3.7.2.3 SR 3.3.7.3.3 SR 3.6.1.3.8

# Performances: 6 # Failures: 0

**24 Month Justification: Notes:**

There were no failures, therefore the surveillance test history supports the conclusion that the impact, if any, on system availability will be small as a result of the change to a 24 month surveillance interval.

Event	Title	Associated SRs and Function
1069	PERFORM 64.080.034 MAIN STEAM LINE RADIATION DETECTOR D11N600F CALIBRATION WITH CHANNEL C (was 64.010.034)	SR 3.3.6.1.4-2.d SR 3.3.6.1.5-2.d SR 3.3.7.2.3 SR 3.3.7.3.3 SR 3.6.1.3.8

# Performances: 6 # Failures: 0

**24 Month Justification: Notes:**

There were no failures, therefore the surveillance test history supports the conclusion that the impact, if any, on system availability will be small as a result of the change to a 24 month surveillance interval.

Event	Title	Associated SRs and Function
1070	PERFORM 44.010.045 RPS SDV HIGH WTR LVL TRIP SYS A, CH A1/A FLT SWITCH CAL/FUNCT	SR 3.3.1.1.14-8.b SR 3.3.1.1.15-8.b
# Performances: 6		# Failures: 1

**24 Month Justification: Notes:**

One failure identified which did not impact any safety function; therefore, the surveillance test history supports the conclusion that the impact, if any, on system availability will be small as a result of the change to a 24 month surveillance interval.

**Failure Review:**

**Perf. Date Fail Cat. Description of Failure**

3/9/2011 A As Found trip setpoint for Level Switch C11-N013A was outside the procedure Acceptance Criteria tolerance. The switch was adjusted per procedure guidance to within tolerance and returned to service satisfactorily.

**Justification of Failure**

The identified failure(s) would not have prevented the performance of the required safety function of the equipment. Therefore, this failure will have no impact on an extension to a 24 month surveillance interval.

Event	Title	Associated SRs and Function
1071	PERFORM 44.010.046 RPS SDV HIGH WTR LVL TRIP SYS B, CH B1/B FLT SWITCH CAL/FUNCT	SR 3.3.1.1.14-8.b SR 3.3.1.1.15-8.b
# Performances: 6		# Failures: 1

**24 Month Justification: Notes:**

One failure identified which did not impact any safety function; therefore, the surveillance test history supports the conclusion that the impact, if any, on system availability will be small as a result of the change to a 24 month surveillance interval.

**Failure Review:**

**Perf. Date Fail Cat. Description of Failure**

3/9/2011 A As Found trip setpoint for Level Switch C11-N013B was outside the procedure Acceptance Criteria tolerance. The switch was adjusted per procedure guidance to within tolerance and returned to service satisfactorily.

**Justification of Failure**

The identified failure(s) would not have prevented the performance of the required safety function of the equipment. Therefore, this failure will have no impact on an extension to a 24 month surveillance interval.

Event	Title
1072	PERFORM 44.010.047 RPS SDV HIGH WTR LVL TRIP SYS A, CH A2/C FLT SWITCH CAL/FUNCT

Associated SRs and Function  
SR 3.3.1.1.14-8.b SR 3.3.1.1.15-8.b

# Performances: 6 # Failures: 1

**24 Month Justification: Notes:**

One failure is identified as an event driven failure which is not indicative of a repetitive time based failure mechanism. There are no other failures; therefore, the surveillance test history supports the conclusion that the impact, if any, on system availability will be small as a result of a change to a 24 month surveillance interval.

**Failure Review:**

**Perf. Date Fail Cat. Description of Failure**

Perf. Date	Fail Cat.	Description of Failure
9/3/2015	C	As Found trip setpoint for Level Switch C11-N013C was outside the procedure Acceptance Criteria tolerance. The switch was NOT able to be adjusted to within tolerance. CARD 15-26255 was initiated. CARD 15-26255 states: "C11N013C as-found unsat and unable to calibrate. Several attempts to calibrate Magnetrol level indicating switch were unsuccessful; manually actuating switch did not initiate annunciator (3D94)." CARD 15-26255 investigation states: "During the calibration, the technician referred to enclosure A per step 6.1.7 and misinterpreted the function of the adjustment screw. All of the correct and required information was on enclosure A; however, the illustration in enclosure A has a large screwdriver going to the wrong adjustment screw for this calibration, which is misleading. The technician performed the incorrect adjustment and when he did not get the required results, realized he had adjusted the wrong screw on the switch." The switch was able to be readjusted to within tolerance per WO 43849721.

**Justification of Failure**

This is an event driven failure in that the failure was caused by the technician performing an adjustment on the wrong adjustment screw of the switch. This caused the level switch to stop operating and the surveillance to fail. Therefore, this failure will have no impact on an extension to a 24 month surveillance interval.

Event	Title
1073	PERFORM 44.010.048 RPS SDV HIGH WTR LVL TRIP SYS B, CH B2/D FLT SWITCH CAL/FUNCT

Associated SRs and Function  
SR 3.3.1.1.14-8.b SR 3.3.1.1.15-8.b

# Performances: 6 # Failures: 0

**24 Month Justification: Notes:**

There were no failures, therefore the surveillance test history supports the conclusion that the impact, if any, on system availability will be small as a result of the change to a 24 month surveillance interval.

Event	Title	Associated SRs and Function	
1079	PERFORM 42.302.04 DIV 2 BUS 65E/13EC 4160V UNDERVOLTAGE LOGIC FUNCTIONAL	SR 3.3.5.1.5-1.a	SR 3.3.5.1.5-1.b
# Performances: 6		# Failures: 0	

**24 Month Justification: Notes:**

There were no failures, therefore the surveillance test history supports the conclusion that the impact, if any, on system availability will be small as a result of the change to a 24 month surveillance interval.

Event	Title	Associated SRs and Function	
1082	PERFORM 44.210.004 SRV LO LO SET, SRV POSITION MONITOR FUNCTIONAL TEST	SR 3.3.6.3.4-1	SR 3.3.6.3.4-2
# Performances: 6		SR 3.3.6.3.4-3	SR 3.6.1.6.2
# Failures: 2			

**24 Month Justification: Notes:**

The failures do not impact any safety function; therefore, the surveillance test history supports the conclusion that the impact, if any, on system availability will be small as a result of the change to a 24 month surveillance interval.

**Failure Review:**

**Perf. Date Fail Cat. Description of Failure**

11/11/2015	A	At Step 6.13.10.4, IPCS point B21DC0643 was indicating OPEN when it should have been indicating CLOSED. All other indications showed CLOSED. CARD 15-28865 written and states: "During the performance of 44.210.004 step 6.13.10.4 IPCS Point B21DC0643 failed to indicate closed. Could be the card or relay contacts. All other indications for B2104-F013M were closed." Procedure performance was stopped and Control Room Supervisor and I&C Supervisor were notified. The procedure step is not acceptance criteria. Decision was made by all parties to continue the procedure performance and write up a discrepancy with a CARD to fix the problem. No other issues were found. System Engineering performed a Maintenance Rule Functional Failure evaluation and determined this condition is NOT a Functional Failure.
4/13/2017	A	At Step 6.13.10.4, IPCS point B21DC0643 did not indicate CLOSED as expected. This same issue was identified during the 11/11/2015 performance, CARD 15-28865 written and WO 44294945 requested. Deficiency remains unresolved at this performance. With ref to Maximo, WO 44294945 is currently INPLN with Scheduled Start on 04/10/2020.

**Justification of Failure**

The identified failure(s) would not have prevented the performance of the required safety function of the equipment. Therefore, this failure will have no impact on an extension to a 24 month surveillance interval.

The identified failure(s) would not have prevented the performance of the required safety function of the equipment. Therefore, this failure will have no impact on an extension to a 24 month surveillance interval.

Event	Title	Associated SRs and Function
1087	PERFORM 42.302.05 DIV 1 BUS 64C/12EB 4160V UNDERVOLTAGE LOGIC FUNCTIONAL	SR 3.3.5.1.5-1.a SR 3.3.5.1.5-1.b
# Performances: 6 # Failures: 2		

**24 Month Justification: Notes:**

The failures do not impact any safety function; therefore, the surveillance test history supports the conclusion that the impact, if any, on system availability will be small as a result of the change to a 24 month surveillance interval.

**Failure Review:**

Perf. Date	Fail Cat.	Description of Failure	Justification of Failure
4/8/2009	A	During the performance of Step 6.4.17, the EDG O/P breaker did not close as expected. The jumper dislodged from RA device terminal 9. Relanded the jumper and reformed the section with proper indications. Additionally, in Step 6.5.16 the relay target on YZ-27 (orange target) fell off. CARD 09-22455 written for repair. CARD 09-22455 states: "The undervoltage relay did reset but the indicator is broken. This does not affect the functionality of the relay."	The identified failure(s) would not have prevented the performance of the required safety function of the equipment. Therefore, this failure will have no impact on an extension to a 24 month surveillance interval.
11/20/2010	A	In "Step 6.5.16 substep 2 and Step 7.1.1 substep 3, Undervoltage Relay YZ-27 on Bus 12EB Pos EB3 target indicator is broken off. This is not procedure Acceptance Criteria. WO 29672297 already scheduled to repair relay." In 2012 WO 29672297 bench tested and calibrated new replacement relay and installed. CARD 09-22455 previously addressed (4/8/2009) this condition and states: "The undervoltage relay did reset but the indicator is broken. This does not affect the functionality of the relay."	The identified failure(s) would not have prevented the performance of the required safety function of the equipment. Therefore, this failure will have no impact on an extension to a 24 month surveillance interval.

Event	Title	Associated SRs and Function
1088	PERFORM 42.302.06 DIV 2 BUS 65F/14ED 4160V UNDERVOLTAGE LOGIC FUNCTIONAL	SR 3.3.5.1.5-1.a SR 3.3.5.1.5-1.b
# Performances: 6 # Failures: 0		

**24 Month Justification: Notes:**

There were no failures, therefore the surveillance test history supports the conclusion that the impact, if any, on system availability will be small as a result of the change to a 24 month surveillance interval.

Event	Title	Associated SRs and Function
1090	PERFORM 43.404.001 DIV 1 STANDBY GAS TREATMENT FILTER PERFORMANCE TEST	SR 5.5.2 SR 5.5.7.b SR 5.5.7.e

# Performances: 6      # Failures: 1

**24 Month Justification: Notes:**

One failure identified which did not impact any safety function; therefore, the surveillance test history supports the conclusion that the impact, if any, on system availability will be small as a result of the change to a 24 month surveillance interval.

**Failure Review:**

**Perf. Date Fail Cat. Description of Failure**

8/15/2018      A      SPF Note: "Approximately 1 inch square of chipping paint noted near upstream filters. Loose debris was removed. CARD 18-26127 submitted. CARD 18-26127 states: "some loose paint was found in the Div 1 filter unit compartment upstream of the charcoal adsorber, see attached. The loose chips were removed so there is no impact to the charcoal adsorber. Requesting a WO to touch up the areas of removed paint. Reportability/Operability Review states: "the loose paint has been removed and there is no impact to the charcoal adsorber. With condition described in this CARD SGTS is capable of performing its design function under all operational conditions." WO 51590845 is currently at status INPLN per Maximo.

**Justification of Failure**

The identified failure(s) would not have prevented the performance of the required safety function of the equipment. Therefore, this failure will have no impact on an extension to a 24 month surveillance interval.

Event	Title	Associated SRs and Function
1100	PERFORM 24.202.08 SEC-5.1 (Wtr Lvl) HPCI RTT & PUMP OPERABILITY AT 1025 PSIG	SR 3.3.5.1.5-3.a SR 3.5.1.11

# Performances: 6 # Failures: 1

#### 24 Month Justification: Notes:

One failure identified which did not impact any safety function; therefore, the surveillance test history supports the conclusion that the impact, if any, on system availability will be small as a result of the change to a 24 month surveillance interval.

#### Failure Review:

##### Perf. Date Fail Cat. Description of Failure

8/27/2014 A SPF Note 2: "Step 5.1.13, G4100-F028 stroke time outside IST Limit. IAW P&L 2.20 restroked valve with same time. CARD 14-26778 submitted" CARD 14-26778 states: "Closed stroke time data collected for E4100F028 on 8/27/14 was found to be 0.1 second higher (6 seconds) compared to the IST limit of 2 seconds to 5.9 seconds. Second stroke obtained was also 6 seconds which resulted in failure of IST testing requirements." Reportability/Operability Review states: "E4100F028 "HPCI steam header drain to main condenser isolation valve" shuts to prevent direct flow of steam from steam piping into main condenser. No impact on system operability should valves fail to close. HPCI remains OPERABLE." No MRFF evaluation required. Investigation determined "Procedure 24.202.08 was revised (Rev. 6) to perform closed stroke time for valves E4100F028 and E4100F029 prior to pump test per an NRC concern about preconditioning. At that time, focus was on obtaining baseline data for E4100F029 and two similar RCIC valves because valves did not have any stroke time data. Noted: work to obtain stroke times was on a challenging schedule to be done week prior to RF16. When WO 37990793 was requested to obtain baseline measurements on E4100F029; E4100F028 was not included. E4100F028 should have been included in baseline testing WO mentioned above because reference stroke was affected. In other words, the former reference stroke time for E4100F028 was performed when all steam was isolated. New sequence placed E4100F028 ahead of pump test where steam was not isolated which had a slight impact on closed stroke time. As a result, when surveillance was performed in August 2014, stroke time of 6 seconds was found to be 0.1 seconds higher than IST upper limit. This is not related to degradation; only a change in test conditions. Recommended new reference stroke time be created using an IST evaluation and data listed above. Also, procedures 24.202.01 (Event 0249) and 24.202.08 (Event 1100) will be revised to incorporate new stroke time acceptance criteria for E4100F028."

##### Justification of Failure

The identified failure(s) would not have prevented the performance of the required safety function of the equipment. Therefore, this failure will have no impact on an extension to a 24 month surveillance interval.

Event	Title	Associated SRs and Function	TRVEND 24MCGNF319001 Rev 1
1102	PERFORM 42.309.06 DIV 2 18 MONTH 130/260 VDC BATTERY CHECK (2B-1 ONLY)	SR 3.8.4.3 SR 3.8.4.5.a SR 3.8.4.7	SR 3.8.4.4 SR 3.8.4.5.b Page 282 of 395

# Performances: 4      # Failures: 3

#### 24 Month Justification: Notes:

The failures do not impact any safety function; therefore, the surveillance test history supports the conclusion that the impact, if any, on system availability will be small as a result of the change to a 24 month surveillance interval.

#### Failure Review:

##### Perf. Date Fail Cat. Description of Failure

4/19/2009      A      Note at Acceptance Criteria Step 8.2 indicates "CARD 09-22790 documents abnormal indications. TE-R32-09-040 evaluated the condition and determined it to be acceptable." In Step 6.16.1 of SOE 08-05, found an anomaly on top of the black (+) plates of Battery 2B-1. CARD 09-22790 initiated. CARD 09-22790 states: "Step 6.16.1 of SOE 08-05 performs an inspection of the new battery installed during RF13. A grey material was noted on top of the positive and negative plates during the inspection. This was unexpected. Both the Div 1 and new BOP batteries were inspected and do not exhibit this same anomaly." The CARD goes on to state that a battery representative was dispatched to inspect the condition and determined that the grey material on top of the plates internal to the battery is lead sulfate. The lead sulfate on top of the battery plates will not have an adverse impact on the performance of the battery. In addition to the grey material on top of the plates, some of the cell separators are warped or frayed. Two of the cells (9 and 109) have a white appearance on the side edge of one of the positive (black) plates. Separator material is non-conductive and is used to separate the positive and negative plates from each other to keep them from shorting together. Therefore, any warping or fraying will not prevent the separator from performing its function since this is only seen on the edges of the separator. The last item of interest is the plate straps on a few of the cells do not have a smooth appearance. This is at the top of the cell where the plates transition to the positive or negative posts that extend to the exterior of the battery. The uneven look of the plate straps is caused by the manufacturing process. If this process was not properly performed, a high resistance connection would cause the battery to fail its load test performed at the factory.

##### Justification of Failure

The identified failure(s) would not have prevented the performance of the required safety function of the equipment. Therefore, this failure will have no impact on an extension to a 24 month surveillance interval.

3/4/2014	A	During the visual inspection performed in Step 6.1.1, battery charger for 2B-1, R3200S021A, has broken power indication lens. CARD 14-21792 was initiated. CARD 14-21792 states: "... R3200S021A Battery Charger was missing its power indication lens, and the R3200S021B lens is badly cracked. The power indicating lights are for indication only and do not prevent the Div 2 ESF Battery Chargers from performing their safety function. This condition does not affect Div 2 ESF Battery Charger operability." WO 38107056 is referenced in the CARD. WO 38107056 is at status in Maximo "INPRG" with a scheduled start date of 3/27/19.	The identified failure(s) would not have prevented the performance of the required safety function of the equipment. Therefore, this failure will have no impact on an extension to a 24 month surveillance interval.
3/29/2017	A	1) Found cracks and lifted posts on 95% of the battery cells. Initiated CARD 17-22739 for trending. CARD 17-22739 states "that 95% of the cells have cell top cracking and positive post lifting. Numerous Cards have been initiated over this condition. Consulted the system engineer and these conditions are normal wear and are being tracked over the life of the battery. This is a trending Card. The Battery load test performed satisfactory on 2B-1 and 2B-2." 2) Found damaged load stud on the positive link of pos #11 in 2PB2 R3200S011. Initiated CARD 17-22688 for repair. CARD 17-22688 states that while reinstalling the nut on the positive link stud, the stud began turning with the nut working its way back into the switchgear. Was able to turn the stud back out to its normal position. CARD evaluation states: "Position 11 in MCC 2PB-2 is a spare position and is only utilized in the performance of electrical maintenance procedures 42.309.06 and 42.309.07. Testing has been completed for RF18 and will not be required again until RF19. Based on this, repairs to the positive link stud is not required to be performed in RF18 but must be repaired prior to the Division 2 battery test in RF19.	The identified failure(s) would not have prevented the performance of the required safety function of the equipment. Therefore, this failure will have no impact on an extension to a 24 month surveillance interval.

Event	Title	Associated SRs and Function
1103	<b>PERFORM 42.309.07 DIV 2 (5 YEAR) 130/260 VDC BATTERY CHECK (2B-1 ONLY)</b>	<b>SR 3.8.4.8</b>
	<b># Performances: 2      # Failures: 0</b>	
<b>24 Month Justification:    Notes:</b>		
There were no failures, therefore the surveillance test history supports the conclusion that the impact, if any, on system availability will be small as a result of the change to a 24 month surveillance interval.		

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Event	Title	Associated SRs and Function	
1111	PERFORM 24.413.05 DIV 2 CR EMRG FILTER AUTO TRANSFER TEST	SR 3.3.7.1.6-1 SR 3.3.7.1.6-3	SR 3.3.7.1.6-2 SR 3.7.3.3

# Performances: 5      # Failures: 0

24 Month Justification:    Notes:

There were no failures, therefore the surveillance test history supports the conclusion that the impact, if any, on system availability will be small as a result of the change to a 24 month surveillance interval.

Event	Title	Associated SRs and Function	
1117	PERFORM 43.409.002 DIV 2 POST LOCA THERMAL RECOMBINER SYSTEM LEAKAGE TEST	SR 5.5.2	

# Performances: 7      # Failures: 0

24 Month Justification:    Notes:

There were no failures, therefore the surveillance test history supports the conclusion that the impact, if any, on system availability will be small as a result of the change to a 24 month surveillance interval.

# Performances: 6                      # Failures: 3

**24 Month Justification:      Notes:**

The failures do not impact any safety function; therefore, the surveillance test history supports the conclusion that the impact, if any, on system availability will be small as a result of the change to a 24 month surveillance interval.

**Failure Review:**

<b>Perf. Date</b>	<b>Fail Cat.</b>	<b>Description of Failure</b>	<b>Justification of Failure</b>
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8/1/2012	A	<p>In Step 5.2.21, valve T4804-F003B would not indicate full open at H11-P887 panel but did indicate full open locally. Issue previously documented on CARD 11-29863. CARD 11-29863 (originated 11/02/11). CARD states: "During performance of 24.409.03, Section 5.1 on 11-2-2011, T4804F003B, CAC H2 RECOMB THERMAL RECOMB DIV2 INLET FLOW CTRL MOV, did not indicate full open six minutes after depressing open pushbutton at RR H11-P887. Suspect problem with MOV limit switches. Request WO to troubleshoot and repair as needed. Step 5.1.20 of 24.409.03, strokes T4804-F003B open and close. When given close signal, T4804-F003B indicated full closed after stroking." CARD Reportability /Operability Review states: There are no Tech Spec or TRM requirements associated with this valve. Valve timing history was not available. Valve went closed in approximately one minute after giving it a closed signal. Visual observation of valve on RB4 is not available to determine actual valve position when it was indicating dual. Valve now indicates closed as required." CARD indicates there was no Maintenance Rule Functional Failure and "the issue was the indication on flow control valve. Failure is not related to isolation failure." Work Order 33583960 written for repair of valve on 1/22/15. WO troubleshooting found torque switch broken and MOV binding. "While taking valve to manual, noted a piece of metal fly out of the torque switch. Valve is extremely difficult to operate, suspect valve is torqueing out as soon as torque switch bypass opens. Suspect stem bushing misalignment is causing excessive drag. OPS declared MOV INOP and CARD 15-20788 written." CARD 15-20788 states "During troubleshooting under WR 33583960 for valve not indicating Full Open, part of torque switch was found in limit switch compartment. Also noted MOV operated very difficult in manual mode and made squealing sounds and felt like valve has excessive dragging and binding." WO 42503092 written for repair on 7/25/16. WO 42503092 troubleshooting revealed valve could not be moved. Nudged actuator with yolk bolts loosened and noticed yoke bushing moving and lower flange moving - this should not happen. Yoke bushing should be welded. Also noted weight bearing bracket is warped and causes stress on yoke bushing. Mechanical WO is needed to correct issues. CARD 16-25908 written. CARD 16-25908 states: "While performing WO 42503092, binding issue on valve actuator T4804F003B, it was determined: actuator will no longer operate in hand mode; when actuator yolk bolts were removed actuator moved freely in both CW and CCW directions</p>	
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The failure of the valve in this surveillance performance was identified prior to the start of the scheduled surveillance test. CARD 11-29863, which documented the failure of T4804F003B, was originated on 11/02/2011 and the start of the surveillance test performance was approximately nine months later on 08/01/2012. As a result, this valve failure was discovered during the interval between the normally scheduled 18-month surveillance tests. Therefore, this failure will have no impact on an extension to a 24 month surveillance interval.

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while valve stem stayed still, and; suspect valve packing is too tight or valve stem has become frozen in place." CARD 16-25908 determined this issue to NOT be a MRFF. CARD NOTES indicate yoke bushing moving and getting cocked is apparent cause of valve binding. WO 45800147 is referenced in CARD. WO 45800147 is NOT in progress and has a scheduled work start date of 09-26-2019.

1/24/2014

A

In Step 5.2.21, valve T4804-F003B full open indication not functional. Followed Note on SPF which directed giving valve a full open signal for one minute. Issue previously documented on CARD 11-29863. CARD 11-29863 (originated 11/02/11). CARD states: "During performance of 24.409.03, Section 5.1 on 11-2-2011, T4804F003B, CAC H2 RECOMB THERMAL RECOMB DIV2 INLET FLOW CTRL MOV, did not indicate full open six minutes after depressing open pushbutton at RR H11-P887. Suspect problem with MOV limit switches. Request WO to troubleshoot and repair as needed. Step 5.1.20 of 24.409.03, DIVISION II POST LOCA THERMAL RECOMBINER SYSTEM VALVE OPERABILITY TEST, strokes T4804-F003B open and close. When given close signal, T4804-F003B indicated full closed after stroking." CARD Reportability /Operability Review states: There are no Tech Spec or TRM requirements associated with this valve. Valve timing history was not available. Valve went closed in approximately one minute after giving it a closed signal. Visual observation of valve on RB4 is not available to determine actual valve position when it was indicating dual. Valve now indicates closed as required." CARD indicates there was no Maintenance Rule Functional Failure and "the issue was the indication on the flow control valve. T4804 no longer has a MRule function to recombine. The only MRule function T4804 has is containment isolation. This failure is not related to the isolation failure." WO 33583960 was written for repair of valve on 1/22/15. WO troubleshooting found torque switch broken and MOV binding. "While taking valve to manual, noted a piece of metal fly out of the torque switch. Valve is extremely difficult to operate, suspect the valve is torquing out as soon as torque switch bypass opens. Suspect stem bushing misalignment is causing excessive drag. OPS declared MOV INOP and CARD 15-20788 written." CARD 15-20788 states "During troubleshooting under WR 33583960 for valve not indicating Full Open, part of torque switch was found in limit switch compartment. Also noted MOV operated very difficult in manual mode and made squealing sounds and felt like valve has excessive dragging and binding." WO 42503092 written for repair on 7/25/16. WO 42503092 troubleshooting revealed valve could not be moved. Nudged actuator with yolk bolts loosened and noticed yoke bushing moving and lower flange moving - this should not happen. Yoke bushing should be welded. Also noted weight bearing bracket is warped and causes stress on yoke bushing. Mechanical WO is needed to correct issues. CARD 16-25908 written. CARD 16-25908 states: "While performing WO 42503092, binding issue on valve actuator T4804F003B, it was determined: actuator will no longer operate in hand mode; when actuator yolk bolts were removed actuator moved freely in both CW and CCW directions while valve stem stayed still, and; suspect valve packing is too tight or valve stem has become frozen in place." CARD 16-25908 determined this issue to NOT be a MRFF. CARD NOTES indicate yoke bushing moving and getting cocked is apparent cause of valve binding. WO 45800147 is referenced in CARD. WO 45800147 is NOT in progress and has a scheduled work start date of 09-26-2019.

The failure of the valve in this surveillance performance was identified prior to the start of the 2012 scheduled surveillance test. CARD 11-29863, which documented the failure of T4804F003B, was originated on 11/02/2011. There is a past history and continued long period of time that this valve was in need of repair prior to being returned to service. As a result, this valve failure was discovered prior to the normally scheduled 18-month surveillance test for 2014. Therefore, this failure will have no impact on an extension to a 24 month surveillance interval.

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7/29/2015

A

In Step 5.2.21, valve T4804-F003B indicates dual regardless of position. Unable to verify whether open or closed. CARD 11-29863 and 15-23061 document this condition. CARD 15-23061 (initiated 4/29/15) states: "During 24.409.03, attempted to close the T4804F003B, Flow Control Valve, on the H11P887, and valve stayed dual. Valve switch was placed in close for several minutes. Locally, valve appears to be closed and attempted to agitate valve with no success. This valve has a past issue and CARD 11-29863 (initiated 11/2/11) was written on the open indication (valve shows dual in the open direction). Appears to be an issue with MOV limit switches." CARD Reportability / Operability Report states: "The T4804F003B is not license based. It is not a primary containment isolation valve and has no safety function. This is not license based." System Engineering performed a Maintenance Rule Functional Failure evaluation and determined this failure to NOT be a Functional Failure. CARD 15-23061 references Work Order 42978887. WO 42978887 is at status "CAN" in the Online Work Management Website. WO 42978887 provides reason for cancellation: "Problem identified in CARD 15-20788. Equipment will be corrected in WO 42503092."

The failure of the valve in this surveillance performance was identified prior to the start of the 2012 scheduled surveillance test. CARD 11-29863, which documented the failure of T4804F003B, was originated on 11/02/2011. There is a past history and continued long period of time that this valve was in need of repair prior to being returned to service. As a result, this valve failure was discovered prior to the normally scheduled 18-month surveillance test for 2015. Therefore, this failure will have no impact on an extension to a 24 month surveillance interval.

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Event	Title	Associated SRs and Function
1134	PERFORM 24.204.05 SEC-5.3 DIV. 2 RHR LOCAL VALVE POSITION INDICATION & STROKE	<div>SR 3.3.3.1.2-8</div> <div>SR 3.3.5.3.3-2.b</div> <div>SR 3.3.6.1.6-6.c</div> <div>SR 3.5.2.9</div> <div>SR 3.3.5.1.6-2.h</div> <div>SR 3.3.6.1.6-2.e</div> <div>SR 3.5.1.14</div>

# Performances: 6      # Failures: 2

**24 Month Justification: Notes:**

One failure is identified as an event driven failure which is not indicative of a repetitive time based failure mechanism. The other failure did not impact any safety function; therefore, the surveillance test history supports the conclusion that the impact, if any, on system availability will be small as a result of the change to a 24 month surveillance interval.

**Failure Review:**

**Perf. Date Fail Cat. Description of Failure**

4/22/2012	C	Panel H11-P902 circuit 4 broken which feeds indication and control to E11-F610B. As a result, valve E1100-F050B was not able to be tested. CARD 12-23620 written to document issue. CARD 12-23620 states that while clearing STR 2012-001669, it was noted the MCR valves did not receive any power. After investigation, found H11P902 circuit 4 power fuse good with no power coming out of the switch. Circuit 4 was cycled many times and the door overridden with the switch on and had no power out of the switch to the fuses. H11P902 is powered up. This feeds control to E11F610B, torus purge and vent, drywell purge and vent valves, etc. Tool pouch repair was performed, no WO needed.
4/23/2012	A	Valve E1100-F050B did not indicate Open properly (indicated dual). CARD 12-23670 written to document issue. Indication repaired. CARD 12-23670 states: "While stroking E1100-F050B during partial surveillance 24.205.05, the valve indicated dual while stroking open. Local position was verified as open. The open limit switch appeared not to be in proper alignment. The valve does indicate the closed position properly. This is a non contact type of limit switch. Request investigation and repair to realign the limit switch." CARD Reportability / Operability Review states: "E1100F050B does not meet ISI test requirements (TS 5.5.6)." CARD NOTES state: "The proximity probe was adjusted 2 degrees, and the indication was restored to normal."

**Justification of Failure**

This is an event driven failure in that Panel H11-P902 circuit 4 was discovered to be broken while clearing STR 2012-001669 during the performance of the surveillance procedure which prevented the testing of valve E1100-F050B. Therefore, this failure will have no impact on an extension to a 24 month surveillance interval.

The identified failure(s) would not have prevented the performance of the required safety function of the equipment. The valve operated as expected in that the local valve position was verified to be open. The problem was with the valve position indication and not the actual valve position. Therefore, this failure will have no impact on an extension to a 24 month surveillance interval.

Event	Title	Associated SRs and Function	
1135	PERFORM 24.204.08 NON-DIVISIONAL RHR VALVE POSITION & STROKE TIME TEST	SR 3.3.3.1.2-8 SR 3.3.5.1.6-2.h SR 3.3.6.1.6-2.e SR 3.5.2.8	SR 3.3.3.2.2 SR 3.3.5.3.3-2.b SR 3.3.6.1.6-6.c

# Performances: 6 # Failures: 0

**24 Month Justification: Notes:**

There were no failures, therefore the surveillance test history supports the conclusion that the impact, if any, on system availability will be small as a result of the change to a 24 month surveillance interval.

Event	Title	Associated SRs and Function	
1142	PERFORM 24.404.04 SEC-5.3 DIV.2 SGTS RUN/AUTO INITIATE/POSITION IND.	SR 3.3.6.2.5-4 SR 3.6.4.3.3	SR 3.6.4.2.3 SR 3.6.4.3.4

# Performances: 6 # Failures: 0

**24 Month Justification: Notes:**

There were no failures, therefore the surveillance test history supports the conclusion that the impact, if any, on system availability will be small as a result of the change to a 24 month surveillance interval.

Event	Title	Associated SRs and Function	
1167	PERFORM 44.010.067 RPS-TS A, CH A, TURB STOP/CONTROL VLV TRIP BYPASS CAL/FUNC	SR 3.3.1.1.15-9 SR 3.3.1.1.16-9	SR 3.3.1.1.15-10 SR 3.3.1.1.16-10

# Performances: 6 # Failures: 0

**24 Month Justification: Notes:**

There were no failures, therefore the surveillance test history supports the conclusion that the impact, if any, on system availability will be small as a result of the change to a 24 month surveillance interval.

Event	Title	Associated SRs and Function	
1168	PERFORM 44.010.068 RPS-TS B, CHL B TURB STOP/CONTROL VLV TRIP BYPASS CAL/FUNC	SR 3.3.1.1.15-9 SR 3.3.1.1.16-9	SR 3.3.1.1.15-10 SR 3.3.1.1.16-10

# Performances: 6 # Failures: 0

**24 Month Justification: Notes:**

There were no failures, therefore the surveillance test history supports the conclusion that the impact, if any, on system availability will be small as a result of the change to a 24 month surveillance interval.

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Event	Title	Associated SRs and Function	
1169	PERFORM 44.010.069 RPS-TS A, CH C TURB STOP/CONTROL VLV TRIP BYPASS CAL/FUNC	SR 3.3.1.1.15-9 SR 3.3.1.1.16-9	SR 3.3.1.1.15-10 SR 3.3.1.1.16-10
# Performances: 6		# Failures: 0	

**24 Month Justification: Notes:**

There were no failures, therefore the surveillance test history supports the conclusion that the impact, if any, on system availability will be small as a result of the change to a 24 month surveillance interval.

Event	Title	Associated SRs and Function	
1170	PERFORM 44.010.070 RPS-TS B, CH D TURB STOP/CONTROL VLV TRIP BYPASS CAL/FUNC	SR 3.3.1.1.15-9 SR 3.3.1.1.16-9	SR 3.3.1.1.15-10 SR 3.3.1.1.16-10
# Performances: 6		# Failures: 1	

**24 Month Justification: Notes:**

One failure identified which did not impact any safety function; therefore, the surveillance test history supports the conclusion that the impact, if any, on system availability will be small as a result of the change to a 24 month surveillance interval.

**Failure Review:**

Perf. Date	Fail Cat.	Description of Failure	Justification of Failure
2/13/2014	A	During Step 6.1.3.2, the Master Trip Unit C71-N652D analog indicator needle was sticking on analog indicator face/scale - unable to obtain data. Backed out of procedure performance. Second performance of surveillance was completed satisfactorily.	The identified failure(s) would not have prevented the performance of the required safety function of the equipment. Therefore, this failure will have no impact on an extension to a 24 month surveillance interval.

Event	Title	Associated SRs and Function	
1205	PERFORM 43.413.005 CONTROL RM ENVELOPE DIFFERENTIAL PRESS TEST	SR 5.5.7.d	SR 5.5.14.d
# Performances: 3		# Failures: 0	

**24 Month Justification: Notes:**

There were no failures, therefore the surveillance test history supports the conclusion that the impact, if any, on system availability will be small as a result of the change to a 24 month surveillance interval.



Event	Title	Associated SRs and Function	TRVEND 24MCGNF319001 Rev 1
1219	PERFORM 42.309.05 DIV 1 (5 YEAR) 130/260 VDC BATTERY CHECK (2A-2 ONLY)	SR 3.8.4.8	Page 293 of 395

# Performances: 2      # Failures: 2

**24 Month Justification: Notes:**

One failure would be detected by the performance of a surveillance test on a more frequent basis. The other failure did not impact any safety function; therefore, the surveillance test history supports the conclusion that the impact, if any, on system availability will be small as a result of a change to a 24 month surveillance interval.

**Failure Review:**

**Perf. Date Fail Cat. Description of Failure**

11/13/2010      A      SPF Note: "The following inter cell connections were high after clean and retorque; Cells 82, 91 and 104. CARD 10-30481 written to track resistance readings." CARD 10-30481 states: "After the Div 1 2A-2 Battery test, step 6.9.4 of procedure 42.309.05 has maintenance take apart, clean and refasten the intercell battery connections of any cells that have a resistance greater than 38 micro-ohms. This value is a low threshold value used to keep the battery within 20% of the new connection resistance values. The battery is now 10 years old. The Tech Spec acceptance criteria is 150 micro-ohms. After, step 6.9.4 was performed, the following cells had resistances greater than the rework value: Cell 82 (45.3 micro-ohms) for posts A to CCell 91 (43.3 micro-ohms) for posts A to CCell 104 (75.2 micro-ohms) for posts A to CCell 104 (43.1 micro-ohms) for posts B to D. These values are well within TS acceptance criteria have no impact on the battery to perform its intended safety function. An administrative limit was placed on the battery resistance of 2700 micro-ohms for the entire bank of 58 cells. The total measured is 1892 micro-ohms. This value is also well within the administrative limit. Therefore, no concern exists for the battery intercell connection resistances. It is recommended that this CARD be used for trending only and that no further maintenance is necessary on the battery connections." Reportability/Operability Review states: "No additional operability impact from this condition."

**Justification of Failure**

The identified failure(s) would not have prevented the performance of the required safety function of the equipment. Therefore, this failure will have no impact on an extension to a 24 month surveillance interval.

10/29/2015	B	<p>SPF Note 1: "The following cells have term post separations and cracks; Cells 70, 68, 72, 95, 98, 100, 103, and 113. CARD 15-21979 written (03/18/2015) for addressing these issues, terminals passed Digital Low Range Ohmmeter (DLRO) testing under this SPF Event and per 42.309.05." CARD 15-21979 states: "While performing quarterly battery checks on Division 1 /130/260 VDC/2PA W.O.# 37498263, procedure # 42.309.02. Battery #83 has a crack in the top of the jar casing." Reportability/Operability Review states: "The crack identified in this CARD involves the top plastic cover of the battery cell only. This minor cracking has no impact on the structural integrity of the battery. The same minor cracking is evident on several other battery cells and has been repaired using beads of sealant. This condition has no impact on the ability of the battery to perform its safety function. Battery 2PA remains OPERABLE." SPF Note 2: "Battery cells 74 and 95. Have copper contamination (74) and a bulged term post (95). CARDS 15-26054 (8/27/2015, monthly Sys Eng walkdown) for cell (74) and 15-26601 (9/17/2015, performing WO 38301298 Div I Battery Surveillance) for cell (95). Both cells were changed out under WO 43878966." Both of these issues were identified previously to performance of this surveillance. CARD 15-26054 (8/27/2015) states: "During the monthly system engineering walkdown it was discovered that cell 74 of the Division 1 battery had a brick red coating on the negative plate strap. This is early signs of copper contamination. It is recommended that cell 74 be replaced during RF-17." Reportability/Operability Review states: "All acceptance criteria has been met. The noted issues have no impact on the ability of the Div 1 Batteries to meet their design function. Div 1 130/260 Volt Battery remains Operable." CARD Closure Summary states: "The Cause. ES1 - Manufacturing: Copper contamination is most frequently caused by a misalignment of the copper inserts during the manufacturing process which causes some parts of the copper to have an abnormally thin lead coating. The Corrective Action. Replaced cell 74 per WO 43878966 during RF17." CARD 15-26601 (9/17/15) states: "While performing WO 38301298 Div I Quarterly 130/260 VDC Battery Check Surveillance, during General Inspection it was found that Cell 95 Positive Left Post appears to be swollen on the right side between the intercell connections. All Test Data was SAT for this cell and condition does not appear to be affecting the cell's current state." Reportability/Operability Review states: "...condition has no impact on the ability of the battery to perform its safety function. Battery 2PA remains OPERABLE." Cells 50, 52, &amp; 95 were replaced per WO 43878966 during RF17.</p>	<p>All issues had been previously identified and documented in CARDS discovered while performing monthly walkdown or quarterly surveillances. Although the failures/or similar failures to those previously identified were documented in the 18-month surveillance, the failures were identified on a more frequent basis during either a monthly system engineering walkdown or during 91 day surveillance performances. Consequently, the identified failures were detected by a more frequent activity. Therefore, this failure will have no impact on an extension to a 24 month surveillance interval.</p>
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Event	Title	Associated SRs and Function
1233	PERFORM 24.137.03 SEC-5.1 & 5.3 MSIV FAIL SAFE TEST / POSITION INDICATION	SR 3.3.3.1.2-8
# Performances: 6      # Failures: 0		
<b>24 Month Justification:</b> <b>Notes:</b>		
There were no failures, therefore the surveillance test history supports the conclusion that the impact, if any, on system availability will be small as a result of the change to a 24 month surveillance interval.		

Event	Title	Associated SRs and Function	TRVEND 24MCGNF319001 Rev 1 Page 295 of 395
1245	PERFORM 24.139.03 SEC-5.3,5.4 SLC LOOP B PUMP FLOW,MANUAL INITIATE & SQUIB FIRING  # Performances: 3      # Failures: 3	SR 3.1.7.8      SR 3.1.7.9	

24 Month Justification:	Notes:
The failures do not impact any safety function; therefore, the surveillance test history supports the conclusion that the impact, if any, on system availability will be small as a result of the change to a 24 month surveillance interval.	

Failure Review:			
Perf. Date	Fail Cat.	Description of Failure	Justification of Failure
4/21/2009	A	Control Room Indication light for Valve C4100-F006, SLC Inj Line Outbd Check Valve, indicated dual position, Valve was verified Closed. CARD 09-22849 submitted. CARD 09-22849 states while fast filling the system with air IAW procedure, there was a steady flow of air with no bubbles. This proves the check valve was closed locally. Requested I&C to troubleshoot and repair limit switch for C4100-F006. CARD Reportability / Operability Review states that proper operation of C4100-F006 has been demonstrated; therefore, indication for check valve position does not impact operability of the SLC System. Work Order 29710512 found the valve position switch actuating arms and actuating cams loose and out of adjustment. Tightened and adjusted cams and limit switch arms for proper operation. Check valve is closed and lights indicate closed. Adjusted Open switch to best achievable. Unable to stroke valve to verify operation. Checked lights by actuating switches with wrench.	The identified failure(s) would not have prevented the performance of the required safety function of the equipment. The valve operated as expected; however, the indicating lights did not indicate proper valve position. Therefore, this failure will have no impact on an extension to a 24 month surveillance interval.

4/16/2012	A	<p>Two issues are identified in this performance. 1) Control Room Indication light for Valve C4100-F006, SLC Inj Line Outbd Check Valve, did not have a DISC OPEN light as expected. CARD 12-23026 submitted. CARD 12-23026 states "Locally at the valve the Operator reported that the arm on the valve moved in the Open direction but did not come in contact with the limit switch. Locally the Operator heard flow noise in the in the pipe and when the pump was shut down the valve went closed. This is a repeat problem from RFO#14 CARD 10-30382." CARD 12-23026 Reportability / Operability Review states "Primary Containment Isolation Valve position indication requirements are not met for this valve. C4100F006 PCIV position indication in Inoperable." Maintenance Rule Functional Failure evaluation determined there to be NO functional failure. Work Order 34306046 created to track completion of Step 5.4.14.6. WO 34306046 troubleshooting indicated a defective position switch C41N402B. Replaced old switch with a new switch, installed old switch actuating arm on new switch, and verified Open/Close position from junction box near valve. 2) Procedure form states "did not get alarm 3D11 and ammeter/continuity light did not have proper indication." CARD 12-23027 written. CARD 12-23027 states " When B Pump was started, did not get alarm 3D11 SLC ignition continuity loss and did not lose squib ckt B continuity light on P603. Ammeter C41M600B still showed 4 mA down from greater than 5 mA but not less than 2 mA. Since the ammeter did not go below 2 mA the alarm 3D11 did not come in and Ckt B continuity light did not go out." There was indication that the squib valve did fire based on the discharge pressure of the pump and pumping 3 inches of water out of the test tank. Operator in the area heard the valve fire, noted flow noise in the system, and movement of the arm on C4100F006 SLC Outbd check valve. CARD Reportability / Operability Review states this condition does not involve surveillance acceptance criteria and the CARD is for procedural enhancement with no system impact.</p>	<p>The identified failure(s) would not have prevented the performance of the required safety function of the equipment. The valve operated as expected; however, the indicating lights did not indicate proper valve position. Therefore, this failure will have no impact on an extension to a 24 month surveillance interval.</p>
11/18/2015	A	<p>Control Room Indication light for Valve C4100-F006, SLC Inj Line Outbd Check Valve, indicated Closed during Pump run when it should have indicated Open. Good flow and indication locally. CARD 15-28895 submitted. CARD 15-28895 states the valve indicated closed during the whole pump run. Locally valve did stroke open when pump started and reclosed when pump was secured. Indicating lights in the MCR were checked and they were good. Flow looked good from the test tank, pump pressure was good, and pump operated with no abnormalities locally. CARD also states this failure is identified as rework and that the Valve team initially set up the limit switches and later while the system was being run for PMT the condition described in the CARD occurred. WO 44292412 referenced in CARD. Work Order indicates the check valve was able to be hand rotated toward Close and picked up the Close light. Rotation is about another 1/4 inch or so. There is a spring assist on Close for this valve which is about an inch long and 1/4 inch in diameter anchored to the shaft via a piece of metal. Cycled it closed and open a few times by hand with the same results each time. Operations says the valve is good to go.</p>	<p>The identified failure(s) would not have prevented the performance of the required safety function of the equipment. The valve operated as expected; however, the indicating lights did not indicate proper valve position. Therefore, this failure will have no impact on an extension to a 24 month surveillance interval.</p>

Event	Title	Associated SRs and Function	TRVEND 24MCGNF319001 Rev 1
1260	PERFORM 24.203.04 SEC-5.4 DIV.2 CSS LOCAL VALVE POSITION INDICATION VERIF.	SR 3.3.3.1.2-8 SR 3.3.5.3.3-1.b	SR 3.3.5.1.6-1.d SR 3.5.2.9

# Performances: 6 # Failures: 1

**24 Month Justification: Notes:**

One failure is identified as an event driven failure which is not indicative of a repetitive time based failure mechanism. There are no other failures; therefore, the surveillance test history supports the conclusion that the impact, if any, on system availability will be small as a result of a change to a 24 month surveillance interval.

**Failure Review:**

**Perf. Date Fail Cat. Description of Failure**

4/24/2012 C Valve E2100-F006B failed to move even with valve E2150-F005B full open. CARD 12-23741 submitted. CARD 12-23741 states the valve did not move at all and the actuator open light did not come on. Fully closed the valve, then opened it, and the Operator in the drywell saw no movement of the valve disk. Did note a level increase in the RPV, but no movement of the disc. Valve lineup for the actuator was verified. Two problems are identified - one, the actuator did not move and two, the disc did not move. Additional troubleshooting attempted to cycle the valve again while the test pushbutton for F006B valve was held, the solenoid picked up, realigned but nitrogen was venting the entire time the pushbutton was held. When the Operator in the field used the breakaway tool the valve did open and proper indication for the disc and actuator was obtained. CARD 12-23741 Reportability/Operability Review states: "The E2100-F006B valve is able to be stroked by the local manual method with proper position indication and flow to the RPV. A separate CARD is being written to change the procedure to include the guidance that was in the previous revision, which allowed local manual operation of the E2100-F006B valve. The valve is currently capable of meeting the Acceptance Criteria in the back of the surveillance procedure; however, the procedure cannot be performed as written. Once the procedure is revised, this issue will not prevent restoration of Div 2 Core Spray system to Operable status. The applicable Maintenance Rule Functional Failure evaluation attached to the CARD states: "The failure of the actuator to open the check valve resulted in the need for manual operation to open E2100-F006B for testing. However, this actuator is used only for testing purposes, and its failure would not have prevented the check valve from opening when required - that is, in an accident scenario with the Div 2 CS pumps running and CS pressure greater than reactor pressure." WO 34381192 was generated to repair the valve. WO removed actuator from valve and rebuilt actuator. Replaced all elastomers, most of which were elastic but flat. Cylinder was SAT. Reinstalled rebuilt actuator and tested valve with satisfactory results.

**Justification of Failure**

This is an event driven failure in that procedure could not be performed as written. Once revised, this issue will not prevent restoration of Div 2 Core Spray to Operable status. Therefore, this failure will have no impact on an extension to a 24 month surveillance interval.

Event	Title	Associated SRs and Function	
1263	PERFORM 24.204.03 DIV 1 & 2 LPCI SIMUL. AUTO ACT. TEST (RHR Pump's & Vlv's)	SR 3.3.5.1.5-2.a SR 3.3.5.1.5-2.c SR 3.3.5.1.5-2.e SR 3.3.5.1.5-2.g	SR 3.3.5.1.5-2.b SR 3.3.5.1.5-2.d SR 3.3.5.1.5-2.f SR 3.5.1.11

# Performances: 1      # Failures: 0

**24 Month Justification:**    **Notes:** Per Maximo: Perform 0263 OR (1263 + 2263) depending on equipment availability.

There were no failures, therefore the surveillance test history supports the conclusion that the impact, if any, on system availability will be small as a result of the change to a 24 month surveillance interval.

Event	Title	Associated SRs and Function	
1265	PERFORM 24.204.05 SEC-5.2 DIV 1 RHR LOCAL VALVE POSITION INDICATION VERIF.	SR 3.3.3.1.2-8 SR 3.3.5.3.3-2.b SR 3.3.6.1.6-6.c	SR 3.3.5.1.6-2.h SR 3.3.6.1.6-2.e SR 3.5.2.9

# Performances: 6      # Failures: 1

**24 Month Justification:**    **Notes:**

One failure identified which did not impact any safety function; therefore, the surveillance test history supports the conclusion that the impact, if any, on system availability will be small as a result of the change to a 24 month surveillance interval.

#### Failure Review:

##### Perf. Date   Fail Cat.   Description of Failure

4/28/2011      A      Valve position for E1150-F006A did not indicate either open or closed in the main control room. Valve did stroke and position was verified locally in the field to be correct. CARD 11-22973 previously written to address valve and CARD 11-24328 written for this occurrence. CARD 11-22973 states: "The CLOSE light was seen flickering and then simply went out. Light bulbs were replaced, CLOSE light did not return. Power and control fuses were determined to be good. These indications were seen while stroking E1150-F004A which is powered from the MCC position directly above. Voltage reading was taken, 32 VDC was present. This would indicate a problem with LS3 or TR23 or a loose connection in MCC. MCC was turned off and all wires in the MCC were found tight. When MCC was turned back on, E1150-F006A indicated CLOSED." WO 32528607 referenced. WO found wires 5 and 6 coming from the MCC and going to the limit switch broken off behind the lugs. Replaced lugs and verified continuity. Verified the proper orientation and sequence of valve limit switch rotors. Valve was fully stroked with proper valve indication and left in satisfactory condition.

##### Justification of Failure

The identified failure(s) would not have prevented the performance of the required safety function of the equipment. CARD 11-22973 Reportability / Operability Review states: "Previous troubleshooting performed for CARD 10-22173 provided information that the problem was associated with the Limit Switch that provides closed indication only (in the MCR) and does not impact the valve from performing its intended function. RHR remains operable. The problem with the closed position indication is intermittent and currently the closed indication is lit." Therefore, this failure will have no impact on an extension to a 24 month surveillance interval.

Event	Title	Associated SRs and Function
1266	PERFORM 24.204.05 SEC-5.4 DIV 2 RHR LOCAL VALVE POSITION INDICATION VERIF.	SR 3.3.3.1.2-8 SR 3.3.5.3.3-2.b SR 3.3.6.1.6-6.c
		SR 3.3.5.1.6-2.h SR 3.3.6.1.6-2.e SR 3.5.2.9

# Performances: 5 # Failures: 2

#### 24 Month Justification: Notes:

The failures do not impact any safety function; therefore, the surveillance test history supports the conclusion that the impact, if any, on system availability will be small as a result of the change to a 24 month surveillance interval.

#### Failure Review:

##### Perf. Date Fail Cat. Description of Failure

4/23/2012 A Valve E1100-F050B did not indicate OPEN properly - indicated dual. CARD 12-23670 written to document issue. CARD 12-23670 states "While stroking E1100-F050B during partial performance, the valve indicated dual while stroking open. Local position was verified as open. The open limit switch appeared not to be in proper alignment. The valve does indicate the close position properly. This is a non-contact type of limit switch." Maintenance performed a minor adjustment to the proximity probe. The proximity probe was adjusted two degrees and the indication was restored to normal.

9/6/2012 A Valve E1100-F074 local position cannot be determined. CARD 12-27394 written to document issue. CARD 12-27394 states: "The local positioner for E1100-F074 is misaligned so that position cannot be properly determined. This also does not allow proper contact with the limit switches. This is not acceptance criteria for the surveillance." WO 35290864 referenced. WO states: "Determined via OPS procedure enclosure that the undocumented, unwired limit switches are used to visually verify valve stroke. Reinstalled actuating arm to make limits move. Stroked SAT. Returned to service."

##### Justification of Failure

The identified failure(s) would not have prevented the performance of the required safety function of the equipment. Therefore, this failure will have no impact on an extension to a 24 month surveillance interval.

The identified failure(s) would not have prevented the performance of the required safety function of the equipment. CARD 12-27394 Reportability / Operability Review states: "A misaligned position indication does not prevent this drain valve from opening or closing when required. Therefore, no impact on the ability of the E1100-F074 from performing its function." Therefore, this failure will have no impact on an extension to a 24 month surveillance interval.

<b>Event</b> <b>1290</b>	<b>Title</b> <b>PERFORM 42.307.01 DIV 1 EDG ECCS EMERG START CIRCUITS &amp; AUTO TRIP/BYPASS,LF</b>  <b># Performances: 6      # Failures: 1</b>	<b>Associated SRs and Function</b> <b>SR 3.3.5.1.5-1.a      SR 3.3.5.1.5-1.b</b>
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**24 Month Justification:    Notes:**

One failure identified which did not impact any safety function; therefore, the surveillance test history supports the conclusion that the impact, if any, on system availability will be small as a result of the change to a 24 month surveillance interval.

**Failure Review:**

Perf. Date	Fail Cat.	Description of Failure	Justification of Failure
2/17/2017	A	SPF Notes: "Wrote CARD 17-21352" CARD states: "While performing SPF# 43250733, Procedure 42.307.01 in EDG-11 Switchgear Room an Acceptance Criteria step Failed. Step 6.5.4, Sub Step 6, expected results were supposed to be to verify circuit between terminals B2107 and B2108 are closed; circuit is open. All Sub Steps were satisfactory prior to this step. Results of action shows contacts #5 & #6 in 4A relay failed, relay is Start Logic Relay. Immediate Actions: Stopped job at step that failed and did not proceed. Immediately notified CR, NSO, and immediate Supervisor. Supervisor went to field with craft and verified all work performed in step 6.5.4, all Sub Steps and performed; Peer Check and Verification completed. All work performed correctly. Troubleshooting plan presented to Operations and OCC." CARD Reportability/Operability Review states: "EDG 11 is currently inoperable for surveillance testing; condition does not impact operability of EDG 11. EDG 11 will be returned to operable status following surveillance testing." During surveillance testing an unsatisfactory reading was obtained when checking closed contact 5-6 of relay 4A for EDG 11. DMM (Agilent U1253B multimeter) in question uses a very low voltage when measuring low resistance readings. Fluke Model 8060A (M&TE) uses a higher voltage (2.5V) for determining resistances. When the Fluke 8060A was used an acceptable resistance reading was obtained (110 ohms). The higher voltage, used by Fluke 8060A, allowed resistance reading to be measured. Therefore, issue of high resistance measurement is the result of test equipment used and NOT of the contact itself. Test equipment had insufficient voltage to break through the oxide layer present on contacts. This is not a problem for circuit because normal operating voltage is 130VDC. No maintenance rule or safety related functions were affected. Justification of closed contact using digital multimeters provided in CARD: "System Engineering has determined criteria in section 3.9 of 42.307.01, Rev 35 has been met; therefore, circuit will perform its function as designed."	The identified failure(s) would not have prevented the performance of the required safety function of the equipment. Therefore, this failure will have no impact on an extension to a 24 month surveillance interval.

Event	Title	Associated SRs and Function
1291	PERFORM 42.307.02 DIV 2 EDG ECCS EMERG START CIRCUITS & AUTO TRIP/BYPASS, LF	SR 3.3.5.1.5-1.a SR 3.3.5.1.5-1.b

# Performances: 6 # Failures: 3

**24 Month Justification: Notes:**

The failures do not impact any safety function; therefore, the surveillance test history supports the conclusion that the impact, if any, on system availability will be small as a result of the change to a 24 month surveillance interval.

**Failure Review:**

**Perf. Date Fail Cat. Description of Failure**

7/16/2009 A SPF Note: "Step 6.4.4.2.a Alarm Card not functioning properly CARD 09-25525 written. Performed MWC05 Troubleshooting, found SFR contact 5-6 Open as expected, continued Test with SM permission" CARD 09-25525 states: "EDG14 Start Failure alarm alarmed as expected however would not silence without holding silence button in. Suspect a failed alarm card. Please initiate a WO to repair/replace the card." Reportability/Operability Review states: "EDG 14 is currently inoperable for surveillance this is for the local alarm function only and has no impact on EDG 14 start or trip logic therefore no related operability issues." WO 30096983 written. WO scope is to determine if reason for Start Failure alarm to not silence is due to the Ronan Card and replace the card if necessary. WO replaced alarm card and PMT completed SAT.

7/8/2015 A SPF notes: "CARD 15-24666 written for failed alarm card. Card will be replaced under WO 43423068" CARD states: "While performing 42.307.02 on EDG-14, fuse FU-9 was removed. When this fuse was removed 5 expected alarms came in. After the alarms came in they were acknowledged. Once acknowledged the Jacket Coolant Level Low alarm continues to alarm." Operations check the level and verified it was in the normal band. Reportability/Operability Review states: "The EDG 14 JCS level was verified to in the normal standby condition per operator rounds. The condition of the annunciator horn sounding continuously does not impact the EDG's ability to perform its safety function. EDG14 is OPERABLE." WO 43423068 scope: replace the Ronan Card for EDG-14 Jacket Coolant Level Low (local window #8) due to failure to reset. Work order completed satisfactorily, local and remote alarms verified to be working as required.

**Justification of Failure**

The identified failure(s) would not have prevented the performance of the required safety function of the equipment. Therefore, this failure will have no impact on an extension to a 24 month surveillance interval.

The identified failure(s) would not have prevented the performance of the required safety function of the equipment. Therefore, this failure will have no impact on an extension to a 24 month surveillance interval.

1/6/2017

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SPF Note 1: Expected response not achieved following performance of Step 6.18.3 - CARD 17-20141 (CARD noted in SPF is 17-20417) CARD 17-20141 states: "While performing section 6.18, EDG 14 emergency stop button is to be manually pushed to bring in shutdown relay. When operations manually operated the emergency stop button nothing happened. After about an hour and a half the overspeed alarm came in. Notified operations, engineering, and first line supervision." Reportability/Operability Review states: "Due to failure identified in CARD, ACCEPTANCE CRITEREA steps of 42.307.02 are not met. This renders EDG-14 INOPERABLE." Tracked on LCO 17-0027. Completion of the fault tree identified R3001S004-022 Emergency Overspeed Switch (EOS) electronic limit switch had failed. WO 46819697 was created and replaced EOS. EOS was quarantined for further investigation of failure. As documented in EACE: "Infield disassembly confirmed oil present within the EOS, and a degraded oil seal on the EOS housing. EOS housing has an oil seal on the cover that helps to prevent oil intrusion. It should be noted that this switch is not designed to be installed in an oil rich environment. However, the degraded oil seal allowed for the minimal amount of oil intrusion at this location. As-found condition inspection of the EOS housing concluded housing oil seal was not properly seated in one location. Additionally, source of oil was a small seep from upper air start distributor gasket that only occurred with EDG in standby. This gasket was replaced by WO 42996058 (1-25-2017)." R3001S004-022 EDG 14 Emergency Overspeed Switch was replaced per WO 46819697 "Replace EOS switch for EDG 14" on 01/06/2017. 42.307.02, Section 6.18 was performed following EOS replacement satisfactorily. The EOS was sent to Fairbanks-Morse for failure analysis. Conclusion: "oil intrusion into this switch caused a condition where the contacts were unable to make a connection when switch was released. Further, the amount of oil that was contained within switch also contributed to plunger assembly hanging up due to a hydraulic vacuum or lock around plunger, so when engine trip mechanism moved away from the micro switch, plunger did not move back with it so contacts could close. The combination of these conditions from oil intrusion into switch mechanism caused failure of this micro switch." Technical Evaluation TE-R30-17-014 concluded: "loss of EOS would not have prevented engine from shutting down, only prevented opening of the EDG output breaker. There is no impact on lose of EOS because opening of the output breaker would have been accomplished via one of the other engine trip functions such as low lube oil or jacket coolant pressure that also energize shutdown relay (SDR), and open the output breaker." No maintenance rule or safety related functions were lost. Event was not an MSPI failure. Failure of EOS would not have prevented EDG from starting or running while supplying power to its emergency loads. The loss of one of the trips doesn't prevent engine from performing its emergency functions; it only prevents automatic shutdown. Therefore, EDG 14 would have remained operable with the degraded EOS.

The identified failure(s) would not have prevented the performance of the required safety function of the equipment. Therefore, this failure will have no impact on an extension to a 24 month surveillance interval.

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Event	Title	Associated SRs and Function
1292	PERFORM 42.309.04 DIV 1 BATTERY CHARGER LOAD TEST - 2A-2 ONLY	SR 3.8.4.6

# Performances: 6 # Failures: 0

**24 Month Justification: Notes:**

There were no failures, therefore the surveillance test history supports the conclusion that the impact, if any, on system availability will be small as a result of the change to a 24 month surveillance interval.

Event	Title	Associated SRs and Function
1293	PERFORM 42.309.04 DIV 1 BATTERY CHARGER LOAD TEST - 2A1-2 ONLY	SR 3.8.4.6

# Performances: 6 # Failures: 0

**24 Month Justification: Notes:**

There were no failures, therefore the surveillance test history supports the conclusion that the impact, if any, on system availability will be small as a result of the change to a 24 month surveillance interval.

Event	Title	Associated SRs and Function
1311	PERFORM 24.402.06 DRYWELL TO TORUS BYPASS LEAK TEST (AS LEFT)	SR 3.6.1.1.2

# Performances: 1 # Failures: 0

**24 Month Justification: Notes:** Only one "As Left" performance completed during analysis period following valve maintenance.

There were no failures, therefore the surveillance test history supports the conclusion that the impact, if any, on system availability will be small as a result of the change to a 24 month surveillance interval.

Event	Title	Associated SRs and Function
1315	PERFORM 24.404.03 SEC-5.2 SGTS VALVE OPERABILITY & POSITION INDICATION VERIF.	SR 3.3.3.1.2-8 SR 3.3.6.1.6-2.e

# Performances: 6 # Failures: 0

**24 Month Justification: Notes:**

There were no failures, therefore the surveillance test history supports the conclusion that the impact, if any, on system availability will be small as a result of the change to a 24 month surveillance interval.

Event	Title	Associated SRs and Function	
1317	PERFORM 24.405.03 SECONDARY CONTAINMENT INTEGRITY TEST (USING DIV 2 SGTS)	SR 3.6.4.1.5	SR 3.6.4.1.6
# Performances: 3		# Failures: 0	

**24 Month Justification: Notes:**

There were no failures, therefore the surveillance test history supports the conclusion that the impact, if any, on system availability will be small as a result of the change to a 24 month surveillance interval.

Event	Title	Associated SRs and Function	
1321	PERFORM 24.406.02 SEC-5.1 NITROGEN INERT VLV POS INDICATION VERIF ANY MODE	SR 3.3.3.1.2-8	SR 3.3.6.1.6-2.e
# Performances: 6		# Failures: 0	

**24 Month Justification: Notes:**

There were no failures, therefore the surveillance test history supports the conclusion that the impact, if any, on system availability will be small as a result of the change to a 24 month surveillance interval.

Event	Title	Associated SRs and Function
1345	PERFORM 24.139.03 SEC-5.1 SLC - RWCU ISOLATION FUNCTIONAL TEST	SR 3.3.6.1.5-5.d
# Performances: 6		# Failures: 0

**24 Month Justification: Notes:**

There were no failures, therefore the surveillance test history supports the conclusion that the impact, if any, on system availability will be small as a result of the change to a 24 month surveillance interval.

Event	Title	Associated SRs and Function
1493	PERFORM 43.404.002 DIVISION 2 SGTS CHARCOAL SAMPLE WITHDRAWAL	SR 5.5.7.c
# Performances: 6		# Failures: 0

**24 Month Justification: Notes:**

There were no failures, therefore the surveillance test history supports the conclusion that the impact, if any, on system availability will be small as a result of the change to a 24 month surveillance interval.

Event	Title	Associated SRs and Function	TRVEND 24MCGNF319001 Rev 1
1495	PERFORM 43.413.001 SECT 5.3 & 5.4 CHARCOAL SAMPLE WITHDRAWAL & LAB TESTING	SR 5.5.7.c	Page 305 of 395
# Performances: 6		# Failures: 0	

**24 Month Justification: Notes:**

There were no failures, therefore the surveillance test history supports the conclusion that the impact, if any, on system availability will be small as a result of the change to a 24 month surveillance interval.

Event	Title	Associated SRs and Function	
1531	PERFORM 44.020.007 NS4 RX VESSEL LOW WTR LEVEL 1&2,TRIP SYS A,CHL A,MTU CAL/FUNC	SR 3.3.6.1.4-1.a	SR 3.3.6.1.4-2.b
		SR 3.3.6.1.4-5.e	SR 3.3.6.1.5-1.a
		SR 3.3.6.1.5-2.b	SR 3.3.6.1.5-5.e
		SR 3.3.6.2.4-1	SR 3.3.6.2.5-1
		SR 3.3.7.1.5-1	SR 3.3.7.1.6-1
		SR 3.6.1.3.8	SR 3.6.4.3.3
		SR 3.7.3.3	
# Performances: 6		# Failures: 0	

**24 Month Justification: Notes:**

There were no failures, therefore the surveillance test history supports the conclusion that the impact, if any, on system availability will be small as a result of the change to a 24 month surveillance interval.

Event	Title	Associated SRs and Function	
1532	PERFORM 44.020.008 NS4 RX VESSEL LOW WTR LEVEL 1&2,TRIP SYS B,CHL B,MTU CAL/FUNC	SR 3.3.6.1.4-1.a	SR 3.3.6.1.4-2.b
		SR 3.3.6.1.4-5.e	SR 3.3.6.1.5-1.a
		SR 3.3.6.1.5-2.b	SR 3.3.6.1.5-5.e
		SR 3.3.6.2.4-1	SR 3.3.6.2.5-1
		SR 3.3.7.1.5-1	SR 3.3.7.1.6-1
		SR 3.6.1.3.8	SR 3.6.4.3.3
		SR 3.7.3.3	
# Performances: 6		# Failures: 0	

**24 Month Justification: Notes:**

There were no failures, therefore the surveillance test history supports the conclusion that the impact, if any, on system availability will be small as a result of the change to a 24 month surveillance interval.

Event	Title	Associated SRs and Function	
1533	PERFORM 44.020.009 NS4 RX VESSEL LOW WTR LEVEL 1&2,TRIP SYS A,CHL C,MTU CAL/FUNC	SR 3.3.6.1.4-1.a SR 3.3.6.1.4-5.e SR 3.3.6.1.5-2.b SR 3.3.6.2.4-1 SR 3.3.7.1.5-1 SR 3.6.1.3.8 SR 3.7.3.3	SR 3.3.6.1.4-2.b SR 3.3.6.1.5-1.a SR 3.3.6.1.5-5.e SR 3.3.6.2.5-1 SR 3.3.7.1.6-1 SR 3.6.4.3.3

# Performances: 6      # Failures: 0

**24 Month Justification: Notes:**

There were no failures, therefore the surveillance test history supports the conclusion that the impact, if any, on system availability will be small as a result of the change to a 24 month surveillance interval.

Event	Title	Associated SRs and Function	
1534	PERFORM 44.020.010 NS4 RX VESSEL LOW WTR LEVEL 1&2,TRIP SYS B,CHL D,MTU CAL/FUNC	SR 3.3.6.1.4-1.a SR 3.3.6.1.4-5.e SR 3.3.6.1.5-2.b SR 3.3.6.2.4-1 SR 3.3.7.1.5-1 SR 3.6.1.3.8 SR 3.7.3.3	SR 3.3.6.1.4-2.b SR 3.3.6.1.5-1.a SR 3.3.6.1.5-5.e SR 3.3.6.2.5-1 SR 3.3.7.1.6-1 SR 3.6.4.3.3

# Performances: 6      # Failures: 0

**24 Month Justification: Notes:**

There were no failures, therefore the surveillance test history supports the conclusion that the impact, if any, on system availability will be small as a result of the change to a 24 month surveillance interval.

Event	Title	Associated SRs and Function
1540	PERFORM 44.020.011 PHASE 2 RX LOW WATER LEVEL 1, TRIP SYS A, CHANNEL A, RTT	SR 3.3.6.1.7-1.a
	# Performances: 4	# Failures: 1

24 Month Justification:    Notes:

One failure identified which did not impact any safety function; therefore, the surveillance test history supports the conclusion that the impact, if any, on system availability will be small as a result of the change to a 24 month surveillance interval.

Failure Review:

Perf. Date   Fail Cat.   Description of Failure

7/12/2016	A	<p>SPF note: "Step 6.2.5.2 time was slower than requirement. Discussed with Supervisor and CRS." "CRS requested we note slower response time in CARD and proceed with completing SPF. Submitted CARD 16-25547." CARD 16-25547 states: "Response Time Test of B21N681A and B21N684A, step 6.2.5.2 failed to meet satisfactory value. Value is supposed to be &lt;144mSec, value obtained during test was168mSec."</p> <p>Reportability/Operability Review states: "The Div 1 Rx Water Level 1 MSIV Isolation Master and Slave Trip Units exhibited a Phase 2 response time of 168 msec which is more than the expected value of 144 msec. Based on the most recent results of Phase 1 and 3 response time testing for the same trip units, 19 msec and 89 msec, respectively, the total response time for the described condition is 276 msec which remains below the total response time allowable value of 1 second (TRM Table TR3.3.6.1-1, Function 1.a). Therefore, the results of the Phase 2 response time testing being higher than expected does not prevent fulfillment of the specified safety function of Rx Water Level 1 MSIV Isolation. Div 1 Rx Water Level 1 MSIV Isolation Master and Slave Trip Units remain OPERABLE." Two Work Orders are referenced in CARD 16-25547; WO 45758803 and WO 45758812. There is also a Note in the CARD that states: "The issue described in this CARD would be addressed by performing WO 34728649 to replace the MTU." Per Maximo WO 34728649 and WO 45758803 were both Cancelled. WO 45758812 was completed; however MTU for B21N681A did not fit in the nest. A follow-up Work Order, WO 48871140 was initiated to replace MTU. CARD 17-28279 was also initiated. Per Maximo WO 48871140 was Cancelled. CARD 17-28279 references WO 48876158 Replace MTU B21N681A. Per Maximo, WO 48876158 is at status WCREV with scheduled start of 10/07/2019.</p>
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Justification of Failure

The identified failure(s) would not have prevented the performance of the required safety function of the equipment. Therefore, this failure will have no impact on an extension to a 24 month surveillance interval.

Event	Title	Associated SRs and Function	TRVEND 24MCGNF319001 Rev 1
1551	PERFORM 44.020.160 NS4 RWCU AREA DIFFERENTIAL TEMPERATURE DIV 1, CAL/FUNC	SR 3.3.6.1.4-5.c SR 3.3.6.1.5-5.c	Page 308 of 395
# Performances: 6 # Failures: 2			

24 Month Justification:	Notes:
The failures do not impact any safety function; therefore, the surveillance test history supports the conclusion that the impact, if any, on system availability will be small as a result of the change to a 24 month surveillance interval.	

Failure Review:			
Perf. Date	Fail Cat.	Description of Failure	Justification of Failure
10/13/2011	A	SPF note: "6.4.9.2 RR-12 right terminal too damaged to torque. Notified CRS/I&C supervisor, added terminal to CARD 11-29296" CARD 11-29296 states: "Calibration/Functional requires terminal screws to be tightened to a torque value of 0.5 Nanometers. CARD 11-29296 was initiated when terminal screws were found damaged associated with performance of 44.020.159 - NSSSS RWCU Area NRHX Discharge Temperature, Div 2 Calibration/Functional. Added by note to CARD 11-29296: "Terminal RR-12 right side was identified as too damaged to torque while performing 44.020.160 - NSSSS-RWCU Area Differential Temperature, Division 1, Calibration/Functional". Reportability/Operability Review states: "The terminal screws that were found damaged and unable to be torqued had not been previously loosened during the performance of 44.020.159. The surveillance demonstrated proper performance of the RWCU Area Temperature -high instrumentation. The damaged terminal screws have no affect on RWCU Area Temp - High instrumentation. RWCU Area Temperature -High instrumentation remains operable. This condition does not impact the function of RWCU-Area temperature - high isolation instrumentation." This statement would apply similarly to the damaged RR-12 terminal identified while performing 44.020.160. Terminal RR-12 was eventually replaced by WO 32044326 on 10/9/2015.	The damaged terminal at RR-12 had not been loosened. The condition did not impact the function of Temperature Monitor G33-N602C. Surveillance was completed satisfactorily. The identified failure(s) would not have prevented the performance of the required safety function of the equipment. Therefore, this failure will have no impact on an extension to a 24 month surveillance interval.

4/8/2016	A	<p>SPF note: "Resistance to ground readings for G33N022C and G33N023C were low 187 and 181 Ohms, expected to see &gt;1Mohm. Notified CRS, wrote CARD 16-22957" CARD 16-22957 states: "step 6.3.4.4 had an unsatisfactory resistance reading of 181 ohms when it was expected to read &gt;1.0 MEG Ohm. Discussed with CRS and Shift Manager and was directed to continue with test and generate a CARD."</p> <p>Reportability/Operability Review states: "The surveillance 44.020.160 contains a note prior to obtaining this reading that states the resistance reading may suggest thermocouple and/or lead wire degradation. The note goes on to say that these resistance readings do not make the channel inoperable because a failure is not indicated unless the TRIP of Temperature Monitor G33-N602C is affected. This was testing during the performance of 44.020.160 and found to be satisfactory. This has no impact on the ability of the instrument to function as designed. G33-N023C, RWCU Steam leak detection "C" Heat Exchanger room outlet temp element remains operable." WO 45100037 initiated for troubleshooting and repair. Work Order completed troubleshooting SAT for resistance readings; repair was not required. Suspect that terminal knife switches RR-11 and RR-12 were not fully open. Work Order was completed on 10/4/2016.</p>	<p>The identified failure(s) would not have prevented the performance of the required safety function of the equipment. Therefore, this failure will have no impact on an extension to a 24 month surveillance interval.</p>
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<b>Event</b>	<b>Title</b>
1552	PERFORM 44.020.161 NS4 RWCU AREA DIFFERENTIAL TEMP, DIV 2, CAL/FUNCTIONAL

**Associated SRs and Function**  
SR 3.3.6.1.4-5.c SR 3.3.6.1.5-5.c

# Performances: 6 # Failures: 1

**24 Month Justification: Notes:**

One failure identified which did not impact any safety function; therefore, the surveillance test history supports the conclusion that the impact, if any, on system availability will be small as a result of the change to a 24 month surveillance interval.

**Failure Review:**

**Perf. Date Fail Cat. Description of Failure**

10/13/2011	A	SPF note: "6.2.9.1 & 6.4.9.2; PP-13 and PP-12 left side terminal screws damaged. Neither could be torqued. Notified CRS/I&C Supervisor, CARD 11-29296 written to identify terminals" CARD 11-29296 states: "Calibration/Functional requires terminal screws to be tightened to a torque value of 0.5 Nanometers. CARD 11-29296 was initiated when terminal screws were found damaged associated with performance of 44.020.159 - NSSSS RWCU Area NRHX Discharge Temperature, Div 2 Calibration/Functional. Added by note to CARD 11-29296: "Terminals PP-12 and PP-13 left side were identified as too damaged to torque while performing 44.020.161 - NSSSS RWCU Area Differential Temperature, Division 2, Calibration/Functional". Reportability/Operability Review states: "The terminal screws that were found damaged and unable to be torqued had not been previously loosened during the performance of 44.020.159. The surveillance demonstrated proper performance of the RWCU Area Temperature -high instrumentation. The damaged terminal screws have no affect on RWCU Area Temp - High instrumentation. RWCU Area Temperature -High instrumentation remains operable. This condition does not impact the function of RWCU-Area temperature - high isolation instrumentation." This statement would apply similarly to the damaged PP-12 & PP-13 terminals identified while performing 44.020.161. Terminals PP-12 & PP-13 were eventually replaced by WO 33485963 on 10/10/2015.
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**Justification of Failure**

The identified failure(s) would not have prevented the performance of the required safety function of the equipment. Therefore, this failure will have no impact on an extension to a 24 month surveillance interval.

<b>Event</b>	<b>Title</b>
1623	PERFORM 44.020.046 PHASE 2 MAIN STEAM LINE FLOW, DIV 2, CHANNEL D, RTT

**Associated SRs and Function**  
SR 3.3.6.1.7-1.c

# Performances: 4 # Failures: 0

**24 Month Justification: Notes:**

There were no failures, therefore the surveillance test history supports the conclusion that the impact, if any, on system availability will be small as a result of the change to a 24 month surveillance interval.

Event	Title	Associated SRs and Function
1628	PERFORM 44.020.417 NS4 MAIN STEAM LINE TUNNEL TEMP,TRIP SYS A,B21N613A,CAL/FUNC	SR 3.3.6.1.4-1.e SR 3.6.1.3.8
# Performances: 6		# Failures: 0

**24 Month Justification: Notes:**

There were no failures, therefore the surveillance test history supports the conclusion that the impact, if any, on system availability will be small as a result of the change to a 24 month surveillance interval.

Event	Title	Associated SRs and Function
1629	PERFORM 44.020.421 NS4 MAIN STEAM LINE TUNNEL TEMP,TRIP SYS B,B21N613B,CAL/FUNC	SR 3.3.6.1.4-1.e SR 3.6.1.3.8
# Performances: 6		# Failures: 0

**24 Month Justification: Notes:**

There were no failures, therefore the surveillance test history supports the conclusion that the impact, if any, on system availability will be small as a result of the change to a 24 month surveillance interval.

Event	Title	Associated SRs and Function
1630	PERFORM 44.020.422 NS4 MAIN STEAM LINE TUNNEL TEMP,TRIP SYS B,B21N614B,CAL/FUNC	SR 3.3.6.1.4-1.e SR 3.6.1.3.8
# Performances: 6		# Failures: 0

**24 Month Justification: Notes:**

There were no failures, therefore the surveillance test history supports the conclusion that the impact, if any, on system availability will be small as a result of the change to a 24 month surveillance interval.

Event	Title	Associated SRs and Function
1631	PERFORM 44.020.423 NS4 MAIN STEAM LINE TUNNEL TEMP,TRIP SYS B,B21N615B,CAL/FUNC	SR 3.3.6.1.4-1.e SR 3.6.1.3.8
# Performances: 6		# Failures: 0

**24 Month Justification: Notes:**

There were no failures, therefore the surveillance test history supports the conclusion that the impact, if any, on system availability will be small as a result of the change to a 24 month surveillance interval.

Event	Title	Associated SRs and Function
1636	PERFORM 44.020.433 NS4 TB AREA TEMP, TRIP SYS A, CH A, B21N617A, CAL/FUNC	SR 3.3.6.1.4-1.g      SR 3.3.6.1.5-1.g SR 3.6.1.3.8
# Performances: 6      # Failures: 0		

**24 Month Justification: Notes:**

There were no failures, therefore the surveillance test history supports the conclusion that the impact, if any, on system availability will be small as a result of the change to a 24 month surveillance interval.

Event	Title	Associated SRs and Function
1637	PERFORM 44.020.435 NS4 TB AREA TEMP, TRIP SYS B, CH B, B21N617B, CAL/FUNC	SR 3.3.6.1.4-1.g      SR 3.3.6.1.5-1.g SR 3.6.1.3.8
# Performances: 6      # Failures: 0		

**24 Month Justification: Notes:**

There were no failures, therefore the surveillance test history supports the conclusion that the impact, if any, on system availability will be small as a result of the change to a 24 month surveillance interval.

Event	Title	Associated SRs and Function
1638	PERFORM 44.020.437 NS4 TB AREA TEMP, TRIP SYS A, CH C, B21N617C, CAL/FUNC	SR 3.3.6.1.4-1.g      SR 3.3.6.1.5-1.g SR 3.6.1.3.8
# Performances: 6      # Failures: 1		

**24 Month Justification: Notes:**

One failure identified which did not impact any safety function; therefore, the surveillance test history supports the conclusion that the impact, if any, on system availability will be small as a result of the change to a 24 month surveillance interval.

**Failure Review:****Perf. Date Fail Cat. Description of Failure**

5/15/2012      A      B21-N617C Gross Fail Trip, As Found Low and High readings out of range associated with Acceptable Performance Tolerance (APT) values. B21-N617C Gross Fail Trip was successfully calibrated with both Low and High readings within As Left Tolerance.

**Justification of Failure**

The identified failure(s) would not have prevented the performance of the required safety function of the equipment. Therefore, this failure will have no impact on an extension to a 24 month surveillance interval.

Event	Title	Associated SRs and Function
1639	PERFORM 44.020.439 NS4 TB AREA TEMP TRIP SYS B, CH D, B21N617D, CAL/FUNC  # Performances: 8      # Failures: 1	SR 3.3.6.1.4-1.g      SR 3.3.6.1.5-1.g SR 3.6.1.3.8

**24 Month Justification: Notes:**

One failure identified which did not impact any safety function; therefore, the surveillance test history supports the conclusion that the impact, if any, on system availability will be small as a result of the change to a 24 month surveillance interval.

**Failure Review:**

Perf. Date	Fail Cat.	Description of Failure	Justification of Failure
3/28/2015	A	B21-N617D RTD Input Bridge As Found, 50% increasing and decreasing readings were below Acceptable Performance Tolerance (APT) MIN value. RTD Input Bridge was successfully calibrated within As Left Tolerance.	The identified failure(s) would not have prevented the performance of the required safety function of the equipment. Therefore, this failure will have no impact on an extension to a 24 month surveillance interval.

Event	Title	Associated SRs and Function
1644	PERFORM 44.030.152 ONLINE - HPCI SYSTEM LOGIC FUNCTIONAL TEST	<div>SR 3.3.6.1.5-3.a</div> <div>SR 3.3.6.1.5-3.c</div> <div>SR 3.3.6.1.5-3.e</div> <div>SR 3.3.6.1.5-3.b</div> <div>SR 3.3.6.1.5-3.d</div> <div>SR 3.6.1.3.8</div>

# Performances: 6      # Failures: 1

#### 24 Month Justification: Notes:

One failure identified which did not impact any safety function; therefore, the surveillance test history supports the conclusion that the impact, if any, on system availability will be small as a result of the change to a 24 month surveillance interval.

#### Failure Review:

##### Perf. Date Fail Cat. Description of Failure

10/28/2014      A      SPF Note 1: "Step 6.2.5, E4150F042 did not open when pushbutton was momentarily depressed. Pushbutton had to be held to fully open valve." CARD 14-28404 written. CARD 14-28404 states: "During performance of 44.030.152, E4150F042, HPCI Torus Suction Inboard Isolation Valve failed to open while performing step 6.2.5. Second attempt to manually open valve holding open pushbutton depressed for 3 seconds resulted in dual indication. Valve was then closed, and a third attempt to open valve while holding open pushbutton depressed until valve fully opened was performed. This fully opened valve. Appears problem with opening circuit "seal in" when manually opening valve. Surveillance closes valve using a test box to simulate in inboard isolation valve logic signal and valve responded properly. This is similar issue as documented in CARD 12-24169. Request WO to troubleshoot and repair valve circuitry for E4150F042." Reportability/Operability Review states: "Suction for HPCI comes from either CST or Torus. E4150F042 is the suction from Torus. Valve still functions strokes closed as required which supports Primary Containment isolation function. Valve open contactor functioned and auto open signal does not rely upon seal in from closed push button as auto signal is a contact from a relay that goes directly to the contactor so function to support HPCI operability is maintained. HPCI system and primary containment isolation valve are OPERABLE because valve is still capable of auto opening and closing to support the design functions." Work Order 42002118 initiated to Troubleshoot E4150F042 Valve Open Seal-in Circuit. Work Order Notes: "This problem was last attempted to be repaired under WO 34450676 on 5/27/2014. During that W/O, O/a seal-in contact was replaced." WO found Aux Contact Block Interlock finger broken. Replaced broken Base 2 Position Aux Contact block. Opening circuit tested satisfactorily; Work Order completed 2-24-2016.

##### Justification of Failure

The identified failure(s) would not have prevented the performance of the required safety function of the equipment. Therefore, this failure will have no impact on an extension to a 24 month surveillance interval.

Event	Title	Associated SRs and Function	TRVEND 24MCGNF319001 Rev 1
1645	PERFORM 44.030.401 ECCS HPCI/RCIC CST LEVEL, E41N061D, CALIBRATION/FUNCTIONAL	SR 3.3.5.1.4-3.d SR 3.3.5.2.4-3	SR 3.3.5.1.5-3.d SR 3.3.5.2.5-3
# Performances: 7		# Failures: 5	

24 Month Justification:	Notes:
The failures do not impact any safety function; therefore, the surveillance test history supports the conclusion that the impact, if any, on system availability will be small as a result of the change to a 24 month surveillance interval.	

Failure Review:			
Perf. Date	Fail Cat.	Description of Failure	Justification of Failure
5/7/2009	A	SPF note: "Found damaged fitting on low pressure side of E41N061D, this side is open to atmosphere and used for calibration of transmitter only. CRS notified, CARD written 09-23677" CARD 09-23677 Reportability/Operability Review states: "The identified damage to the low pressure side fitting does not affect the components ability to perform it's safety function. The E41N061 Transmitter is OPERABLE." WO 29810849 initiated to install new fitting on transmitter. WO 29810849 completed on 5/10/2012.	The identified failure(s) would not have prevented the performance of the required safety function of the equipment. Therefore, this failure will have no impact on an extension to a 24 month surveillance interval.
10/5/2010	A	Table 5, E41-N061D Transmitter, As Found readings, found out of Acceptable Performance Tolerance (APT) range. E41-N061D Transmitter calibrated per Attachment 2, to within As Left Tolerance (ALT).	The identified failure(s) would not have prevented the performance of the required safety function of the equipment. Therefore, this failure will have no impact on an extension to a 24 month surveillance interval.

12/20/2013 A

SPF Note: " Performance of Step 6.1.6.3, power was lost to section Z2 of H21P081. Indication for all units in Z2 was lost, current indication on readout assembly was lost and DMM voltage indicated 0.0. Worked stopped. CRS, Shift Manager and I&C Supervisor informed. Verified indications with Ops. Coordinated with Ops under Shift Manager directions. Pulled center knob of Cal Select and Command switch. Dialed Stable Current CCW, Turned Cal Select and Command switch to off. Turned Cal Power off and removed Readout Assy. Operators attempted to replace power fuse in Section Z2. Fuse immediately blew and flame was observed, Coordinated with Shift Manager, removed MTU E41N661D from H21P081. Observed damage to MTU circuitry. No other damage observed in Panel. Operators replaced power fuse again. Z2 power was restored. Operators reset Gross Fail on Z2. Indications were verified restored. CARD 13-28975 written. MTU, removed from E41N661D location, was quarantined for analysis." CARD 13-28875 states: "During performance of 44.030.401(HPCI/RCIC CST level, E41N061D Calibration/Functional) indication was lost on the H21-P081 Panel Z2 surface. Commenced ARP 2D5 (Testability Div 2 ECCS Logic/Power Failure) and discovered Fuse E41F2B blown. A new fuse was obtained and during replacement sparks, smoke and a small flame were visible coming from Trip Unit E41-N661D. Fuse E41F2B was promptly removed. After a discussion between Operations and I&C, Trip Unit E41-N661D was removed the adjacent cards inspected and Fuse E41F2B was replace successfully. The Z2 surface of H21-P081 was energized. With the Trip Unit E41-N661D removed HPCI and RCIC suction will remain selected to the Torus. CARD Reportability/Operability Review states: "CST Level Instrument E41-N661D is inoperable and tracked on LCO 13-0598. When the fuse blew the following instruments were affected B21N690D, B21N685B, E11N655B/D, E11N656B/D, E21N655B, E21N662B, E41N661B/D and E41N662B/D. The limiting time allowed was 24 Hours per Tech Spec 3.3.5.1, 3.3.5.2 and 3.3.3.1. Operability of these instruments was validated by a channel check following fuse replacement. No loss of safety function occurred during this event. RCIC and HPCI Suction remain aligned to the Torus due to the instrument failure. Investigation determined the cause of open fuse is a failed C25 capacitor on the circuit board on E41N661D HPCI Condensate Storage Tank (CST) Low Level Signal to Suppression Pool Suction Trip Unit. The failed capacitor caused a short and subsequent loss of power. On 6/18/1999, Rosemount made a Part 21 notification to the NRC, Event #35844. The purpose of the notification was regarding a potential need for capacitor replacement in specific trip/calibration units. Rosemount found that capacitors that were exposed to temperatures and voltages in excess of normal operating conditions have failed. Introduction of contaminant such as moisture could also possibly cause a failure. The affected capacitors have a date code prior to 8630. As a precautionary measure, Rosemount made a component change featuring an enhanced moisture seal. Fermi evaluated this Part 21 notification per CARD 99-15134. The conclusion of this evaluation was to remain with the original C25 capacitors (reasons are listed in CARD). Event was determined to be a MRFF due to non risk significant functions lost on the E11 and E21 systems. E41N661D failure was the initiating event, therefore in accordance with MMR APP D the failure will be counted against E4100. MRFF was determined to be NOT maintenance preventable. Work Order 37841716

The identified failure(s) would not have prevented the performance of the required safety function of the equipment. Therefore, this failure will have no impact on an extension to a 24 month surveillance interval.

initiated to troubleshoot loss of testability power associated with E41N661D. MTU for E41N661D replaced. Surveillance test 44.030.401 was used as PMT for Work Order and completed satisfactorily. Acceptance Criteria was met.

8/21/2015	A	Table 5, E41-N661D Desired Trip/Reset values, As Found readings, found out of Acceptable Performance Tolerance (APT) range. E41-N661D Trip/Reset values calibrated per procedure, Step 6.1.6, to within As Left Tolerance (ALT).	The identified failure(s) would not have prevented the performance of the required safety function of the equipment. Therefore, this failure will have no impact on an extension to a 24 month surveillance interval.
10/28/2016	A	SPF note: "Acceptance Criteria in Table 5 was not met for As Found data; Notified Supervisor and CRS; calibrated per Attachment 2, As Left data was satisfactory, wrote CARD 16-28615." CARD 16-28615 states: "E41N061D was found out of calibration. The As Found Data for the Acceptance criteria in table 5 of 44.030.401 was not met as the data was out of APT. A calibration performed per attachment 2 of 44.030.401 was successful and As Left Data for Table 5 was satisfactory. Request investigation into whether E41N061D should be replaced as the As Found Data was outside APT by a significant amount which is extremely unusual for a Rosemount transmitter." CARD 16-28615 Reportability/Operability Review states: "calibration performed per attachment 2 of 44.030.401 was successful and As Left Data was satisfactory. This has no further impact on the ability of the E41N061D to function as designed in support of the CST Level-low suction transfer function for HPCI and RCIC systems. The E41N061D, HPCI and RCIC systems remain OPERABLE." CARD 16-28615 generated WO 46610734 as a contingency replacement work order scheduled with next performance of 44.030.401. Per Maximo, WO 46610734 is at status GLHOLD Hold for GL Acct Determination scheduled start date 10/29/2019. Additionally, E41-N661D Gross Fail Latch As Found Low reading was above the Acceptable Left Tolerance (ALT) MAX value. E41-N661D was successfully calibrated, using attachment 1, Steps 2 and 3, with all readings within As Left Tolerance.	The identified failure(s) would not have prevented the performance of the required safety function of the equipment. Therefore, this failure will have no impact on an extension to a 24 month surveillance interval.

Event	Title	Associated SRs and Function	
1646	PERFORM 44.030.402 HPCI SYSTEM CST/TORUS VALVES INTERLOCK TEST	SR 3.3.5.1.5-3.d	SR 3.3.5.1.5-3.e
# Performances: 6		# Failures: 0	
24 Month Justification:		Notes:	
There were no failures, therefore the surveillance test history supports the conclusion that the impact, if any, on system availability will be small as a result of the change to a 24 month surveillance interval.			

# Performances: 6

# Failures: 0

24 Month Justification: Notes:

There were no failures, therefore the surveillance test history supports the conclusion that the impact, if any, on system availability will be small as a result of the change to a 24 month surveillance interval.

Event	Title	Associated SRs and Function	
1672	PERFORM 44.030.256 ECCS RX WTR LVL 1,2&8 DIV 2,CHNL B, MTU CAL	SR 3.3.3.1.2-3	SR 3.3.4.1.3.a
		SR 3.3.4.1.4.a	SR 3.3.5.1.4-1.a
		SR 3.3.5.1.4-2.a	SR 3.3.5.1.4-2.d
		SR 3.3.5.1.4-3.a	SR 3.3.5.1.4-3.c
		SR 3.3.5.1.4-5.a	SR 3.3.5.1.5-1.a
		SR 3.3.5.1.5-2.a	SR 3.3.5.1.5-2.d
		SR 3.3.5.1.5-3.a	SR 3.3.5.1.5-3.c
		SR 3.3.5.1.5-5.a	SR 3.3.5.2.4-1
		SR 3.3.5.2.4-2	SR 3.3.5.2.5-1
		SR 3.3.5.2.5-2	SR 3.5.1.11
		SR 3.5.1.12	SR 3.5.3.5
		SR 3.6.1.3.8	

# Performances: 6

# Failures: 0

24 Month Justification: Notes:

There were no failures, therefore the surveillance test history supports the conclusion that the impact, if any, on system availability will be small as a result of the change to a 24 month surveillance interval.

Event		Associated SRs and Function	
1673	PERFORM 44.030.257 ECCS RX WTR LVL 1,2&8 DIV 1,CHNL C, MTU CAL	SR 3.3.3.1.2-3	SR 3.3.3.2.3-2
		SR 3.3.4.1.3.a	SR 3.3.4.1.4.a
		SR 3.3.5.1.4-1.a	SR 3.3.5.1.4-2.a
		SR 3.3.5.1.4-2.d	SR 3.3.5.1.4-3.a
		SR 3.3.5.1.4-3.c	SR 3.3.5.1.4-4.a
		SR 3.3.5.1.5-1.a	SR 3.3.5.1.5-2.a
		SR 3.3.5.1.5-2.d	SR 3.3.5.1.5-3.a
		SR 3.3.5.1.5-3.c	SR 3.3.5.1.5-4.a
		SR 3.3.5.2.4-1	SR 3.3.5.2.5-1
		SR 3.5.1.11	SR 3.5.1.12
		SR 3.5.3.5	SR 3.6.1.3.8

# Performances: 6      # Failures: 1

#### 24 Month Justification: Notes:

One failure identified which did not impact any safety function; therefore, the surveillance test history supports the conclusion that the impact, if any, on system availability will be small as a result of the change to a 24 month surveillance interval.

#### Failure Review:

##### Perf. Date Fail Cat. Description of Failure

4/27/2011      A      SPF Note: "6.1.27.5 1D42 did not clear when step 6.1.26 performed. CRS informed, CARD 11-24254 written." CARD states: "Channel C, MTU CAL, alarm 1D42 did not clear during step 6.1.26. Recorder read approximately 172". Recorder needs to be cal checked, reading low. Reportability/Operability Review states: "Recorder cannot perform its intended function for level only and is inoperable. RPV pressure indication is still accurate with expected plant conditions." WO 000Z063230: replace model 21000 recorder B21R623A with new model SV10C-150-133-A00 per IRID-77277. Recorder was replaced satisfactorily on 5/20/2011.

##### Justification of Failure

The identified failure(s) would not have prevented the performance of the required safety function of the equipment. Therefore, this failure will have no impact on an extension to a 24 month surveillance interval.

Event	Title
1674	PERFORM 44.030.258 ECCS RX WTR LVL 1,2&8 DIV 2,CHNL D, MTU CALIBRATION

Associated SRs and Function	
SR 3.3.4.1.3.a	SR 3.3.4.1.4.a
SR 3.3.5.1.4-1.a	SR 3.3.5.1.4-2.a
SR 3.3.5.1.4-2.d	SR 3.3.5.1.4-3.a
SR 3.3.5.1.4-3.c	SR 3.3.5.1.4-5.a
SR 3.3.5.1.5-1.a	SR 3.3.5.1.5-2.a
SR 3.3.5.1.5-2.d	SR 3.3.5.1.5-3.a
SR 3.3.5.1.5-3.c	SR 3.3.5.1.5-5.a
SR 3.3.5.2.4-1	SR 3.3.5.2.5-1
SR 3.5.1.11	SR 3.5.1.12
SR 3.5.3.5	SR 3.6.1.3.8

# Performances: 6      # Failures: 0

**24 Month Justification:    Notes:**

There were no failures, therefore the surveillance test history supports the conclusion that the impact, if any, on system availability will be small as a result of the change to a 24 month surveillance interval.

<b>Event</b>	<b>Title</b>
<b>1701</b>	<b>PERFORM 44.010.005 RPS-RX STEAM DOME PRESS,TRIP SYS A,CHNL A1/A,MTU CAL/FUNC</b>

**Associated SRs and Function**  
**SR 3.3.1.1.14-3      SR 3.3.1.1.15-3**

**# Performances: 6      # Failures: 1**

**24 Month Justification:      Notes:**

One failure identified which did not impact any safety function; therefore, the surveillance test history supports the conclusion that the impact, if any, on system availability will be small as a result of the change to a 24 month surveillance interval.

**Failure Review:**

**Perf. Date   Fail Cat.   Description of Failure**

9/14/2009	A	SPF Note: "6.1.6 During performance of trip pot cycling technician reported abnormal effort required to adjust pot. Also pot was not responding properly when adjusted. Notified CRS and I&C Supervisor. Instructed to perform steps to return to normal (6.1.11 & 6.1.21 - 6.1.25, 6.1.27) returned to normal. Wrote CARD." CARD 10-28058 states: "Technician reported an abnormal effort was required to adjust potentiometer while performing the ten turn adjust for step 6.1.6. Technician also reported unexpected results when trip setpoint adjustments were attempted. For example what would normally require very small adjustments for optimal setting was requiring in excess of three complete turns of the pot." MRFF evaluation states: "The specific function B2100-02, Provide signals to RPS on high RPV pressure, low RPV water level, or MSIV closure. Since surveillance 44.010.005, RPS- Reactor Steam Dome Pressure, Trip System A, Channel A1/A (B21N678A) Calibration/Functional, met the as found acceptance criteria, the instrument/channel would have functioned as designed. MTU B21N678A trip adjustment potentiometer responding abnormally was not a MRFF." Cause of failure was B21N678A, Signal conditioner, trip adjustment potentiometer seized as a result of age. The signal conditioner was the original Rosemount 510 model which are being replaced with the upgraded 710 model as the older conditioners fail in service. Work order 31769478 replaced the original Rosemount 510 conditioner with the upgraded 710 model. This surveillance was performed to verify proper operation of the new conditioner and all surveillance acceptance criteria was met.
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**Justification of Failure**

The identified failure(s) would not have prevented the performance of the required safety function of the equipment. Therefore, this failure will have no impact on an extension to a 24 month surveillance interval.

<b>Event</b>	<b>Title</b>
<b>1703</b>	<b>PERFORM 44.010.006 RPS-RX STEAM DOME PRESS,TRIP SYS B,CHNL B1/B,MTU CAL/FUNC</b>

**Associated SRs and Function**  
**SR 3.3.1.1.14-3      SR 3.3.1.1.15-3**

**# Performances: 6      # Failures: 0**

**24 Month Justification:      Notes:**

There were no failures, therefore the surveillance test history supports the conclusion that the impact, if any, on system availability will be small as a result of the change to a 24 month surveillance interval.

Event	Title	Associated SRs and Function	
1704	PERFORM 44.010.007 RPS-RX STEAM DOME PRESS,TRIP SYS A,CHNL A2/C,MTU CAL/FUNC	SR 3.3.1.1.14-3	SR 3.3.1.1.15-3
# Performances: 6		# Failures: 0	

**24 Month Justification: Notes:**

There were no failures, therefore the surveillance test history supports the conclusion that the impact, if any, on system availability will be small as a result of the change to a 24 month surveillance interval.

Event	Title	Associated SRs and Function	
1705	PERFORM 44.010.008 RPS-RX STEAM DOME PRESS,TRIP SYS B,CHNL B2/D,MTU CAL/FUNC	SR 3.3.1.1.14-3	SR 3.3.1.1.15-3
# Performances: 6		# Failures: 0	

**24 Month Justification: Notes:**

There were no failures, therefore the surveillance test history supports the conclusion that the impact, if any, on system availability will be small as a result of the change to a 24 month surveillance interval.

Event	Title	Associated SRs and Function	
1728	PERFORM 44.020.418 NS4 MAIN STEAM LINE TUNNEL TEMP,TRIP SYS A,B21N614A,CAL/FUNC	SR 3.3.6.1.4-1.e SR 3.6.1.3.8	SR 3.3.6.1.5-1.e
# Performances: 6		# Failures: 0	

**24 Month Justification: Notes:**

There were no failures, therefore the surveillance test history supports the conclusion that the impact, if any, on system availability will be small as a result of the change to a 24 month surveillance interval.

Event	Title	Associated SRs and Function	
1730	PERFORM 44.020.425 NS4 MAIN STEAM LINE TUNNEL TEMP,TRIP SYS A,B21N613C,CAL/FUNC	SR 3.3.6.1.4-1.e SR 3.6.1.3.8	SR 3.3.6.1.5-1.e
# Performances: 6		# Failures: 0	

**24 Month Justification: Notes:**

There were no failures, therefore the surveillance test history supports the conclusion that the impact, if any, on system availability will be small as a result of the change to a 24 month surveillance interval.

Event	Title	Associated SRs and Function	
1731	PERFORM 44.020.426 NS4 MAIN STEAM LINE TUNNEL TEMP,TRIP SYS A,B21N614C,CAL/FUNC	SR 3.3.6.1.4-1.e SR 3.6.1.3.8	SR 3.3.6.1.5-1.e
# Performances: 6		# Failures: 0	

**24 Month Justification: Notes:**

There were no failures, therefore the surveillance test history supports the conclusion that the impact, if any, on system availability will be small as a result of the change to a 24 month surveillance interval.

Event	Title	Associated SRs and Function	
1732	PERFORM 44.020.427 NS4 MAIN STEAM LINE TUNNEL TEMP,TRIP SYS A,B21N615C,CAL/FUNC	SR 3.3.6.1.4-1.e SR 3.6.1.3.8	SR 3.3.6.1.5-1.e
# Performances: 6		# Failures: 0	

**24 Month Justification: Notes:**

There were no failures, therefore the surveillance test history supports the conclusion that the impact, if any, on system availability will be small as a result of the change to a 24 month surveillance interval.

Event	Title	Associated SRs and Function	
1750	PERFORM 44.010.017 RPS(TS A/TC A1)-NS4(TS A/TC A) RX LOW WTR LVL 3, B21N680A MTU CAL/FUNC	SR 3.3.1.1.14-4 SR 3.3.6.1.4-2.a SR 3.3.6.1.4-7.a SR 3.3.6.1.5-6.b SR 3.6.1.3.8	SR 3.3.1.1.15-4 SR 3.3.6.1.4-6.b SR 3.3.6.1.5-2.a SR 3.3.6.1.5-7.a
# Performances: 6		# Failures: 0	

**24 Month Justification: Notes:**

There were no failures, therefore the surveillance test history supports the conclusion that the impact, if any, on system availability will be small as a result of the change to a 24 month surveillance interval.

# Performances: 6

# Failures: 0

24 Month Justification: Notes:

There were no failures, therefore the surveillance test history supports the conclusion that the impact, if any, on system availability will be small as a result of the change to a 24 month surveillance interval.

Event	Title	Associated SRs and Function	
1752	PERFORM 44.010.019 RPS(TS A/TC A2)-NS4(TS B/TC C) RX LOW WTR LVL 3, B21N680C MTU CAL/FUNC	SR 3.3.1.1.14-4	SR 3.3.1.1.15-4
		SR 3.3.6.1.4-2.a	SR 3.3.6.1.4-6.b
		SR 3.3.6.1.4-7.a	SR 3.3.6.1.5-2.a
		SR 3.3.6.1.5-6.b	SR 3.3.6.1.5-7.a
		SR 3.6.1.3.8	

# Performances: 6

# Failures: 0

24 Month Justification: Notes:

There were no failures, therefore the surveillance test history supports the conclusion that the impact, if any, on system availability will be small as a result of the change to a 24 month surveillance interval.

Event	Title	Associated SRs and Function	
1753	PERFORM 44.010.020 RPS(TS B/TC B2)-NS4(TS B/TC D) RX LOW WTR LVL 3, B21N680D MTU CAL/FUNC	SR 3.3.1.1.14-4	SR 3.3.1.1.15-4
		SR 3.3.6.1.4-2.a	SR 3.3.6.1.4-6.b
		SR 3.3.6.1.4-7.a	SR 3.3.6.1.5-2.a
		SR 3.3.6.1.5-6.b	SR 3.3.6.1.5-7.a
		SR 3.6.1.3.8	

# Performances: 6

# Failures: 0

24 Month Justification: Notes:

There were no failures, therefore the surveillance test history supports the conclusion that the impact, if any, on system availability will be small as a result of the change to a 24 month surveillance interval.

Event	Title	Associated SRs and Function	
1765	PERFORM 44.030.265 ECCS RX WTR LVL (ADS LVL3-FW/MN TURB LVL8)D1,CH A,MTU CAL/CF	SR 3.3.2.2.3 SR 3.3.5.1.4-4.d SR 3.5.1.12	SR 3.3.2.2.4 SR 3.3.5.1.5-4.d

# Performances: 6      # Failures: 0

**24 Month Justification: Notes:**

There were no failures, therefore the surveillance test history supports the conclusion that the impact, if any, on system availability will be small as a result of the change to a 24 month surveillance interval.

Event	Title	Associated SRs and Function	
1766	PERFORM 44.030.266 ECCS RX WTR LVL (ADS LVL3-FW/MN TURB LVL8)D2,CH B,MTU CAL/CF	SR 3.3.2.2.3 SR 3.3.5.1.4-5.d SR 3.5.1.12	SR 3.3.2.2.4 SR 3.3.5.1.5-5.d

# Performances: 6      # Failures: 0

**24 Month Justification: Notes:**

There were no failures, therefore the surveillance test history supports the conclusion that the impact, if any, on system availability will be small as a result of the change to a 24 month surveillance interval.

Event	Title	Associated SRs and Function	
1769	PERFORM 44.030.271 ECCS RX STM DOME PRES RHR/CSS INJECT,DIV 1,CHNL A,MTU CAL/FUNC	SR 3.3.5.1.4-1.c SR 3.3.5.1.5-1.c SR 3.5.1.11	SR 3.3.5.1.4-2.c SR 3.3.5.1.5-2.c

# Performances: 6      # Failures: 0

**24 Month Justification: Notes:**

There were no failures, therefore the surveillance test history supports the conclusion that the impact, if any, on system availability will be small as a result of the change to a 24 month surveillance interval.

Event	Title	Associated SRs and Function	
1770	PERFORM 44.030.272 ECCS RX STM DOME PRES RHR/CSS INJECT,DIV 2,CHNL B,MTU CAL/FUNC	SR 3.3.5.1.4-1.c SR 3.3.5.1.5-1.c SR 3.5.1.11	SR 3.3.5.1.4-2.c SR 3.3.5.1.5-2.c

# Performances: 6      # Failures: 0

**24 Month Justification: Notes:**

There were no failures, therefore the surveillance test history supports the conclusion that the impact, if any, on system availability will be small as a result of the change to a 24 month surveillance interval.

Event	Title	Associated SRs and Function	
1771	PERFORM 44.030.273 ECCS RX STM DOME PRES RHR/CSS INJECT,DIV 1,CHNL C,MTU CAL/FUNC	SR 3.3.5.1.4-1.c SR 3.3.5.1.5-1.c SR 3.5.1.11	SR 3.3.5.1.4-2.c SR 3.3.5.1.5-2.c

# Performances: 6      # Failures: 1

**24 Month Justification: Notes:**

One failure identified which did not impact any safety function; therefore, the surveillance test history supports the conclusion that the impact, if any, on system availability will be small as a result of the change to a 24 month surveillance interval.

**Failure Review:**

**Perf. Date Fail Cat. Description of Failure**

6/10/2015      A      B21-N690C Analog Indicator As Found readings were below Acceptable Performance Tolerance (APT) MIN value. Analog Indicator was successfully calibrated with all readings within As Left Tolerance.

**Justification of Failure**

The identified failure(s) would not have prevented the performance of the required safety function of the equipment. Therefore, this failure will have no impact on an extension to a 24 month surveillance interval.

Event	Title	Associated SRs and Function
1772	PERFORM 44.030.274 ECCS RX STM DOME PRES RHR/CSS INJECT,DIV 2,CHNL D,MTU CAL/FUNC	SR 3.3.5.1.4-1.c SR 3.3.5.1.5-1.c SR 3.5.1.11

# Performances: 6 # Failures: 2

#### 24 Month Justification: Notes:

The failures do not impact any safety function; therefore, the surveillance test history supports the conclusion that the impact, if any, on system availability will be small as a result of the change to a 24 month surveillance interval.

#### Failure Review:

##### Perf. Date Fail Cat. Description of Failure

7/29/2015	A	B21-N690D Analog Indicator As Found, 100% reading was below Acceptable Performance Tolerance (APT) MIN value. Analog Indicator was successfully calibrated with all readings within As Left Tolerance.
2/2/2017	A	SPF Note: "The analog indicator on B21N690D unable to cal per Att 1, Step 1. Zero adjust screw fell out. Not acceptance criteria. Data is "best fit" Stopped, talked to CRS, SM and I&C Supervisor. Said to write CARD and continue. CARD 17-20981" CARD states: "analog indicator B21N690D as found data was un-sat. This meter could not be calibrated to within as left tolerance per attachment 1 step 1. This is not acceptance criteria. Recommend replacing analog indicator or MTU." Reportability/Operability Review states: "Analog indicator is not used in the calibration of the trip unit nor the transmitter. The indicator is for trending data only. Talked to CARD initiator and only one point was outside ALT - 1200psig (which is above normal operating pressure and above when low pressure systems would be required), all other points were good. This indicator has no impact on the low pressure (ECCS) injection permissive. B21N690D (B21N090D) remains operable." Action Item Completion comments state: "The instrument provides a pressure signal for ECCS response. The isolation logic is 1 out of 2 taken twice as referenced in 23.601, "Instrument Trip Sheets." Each trip channel has 4 instruments that would generate the necessary input to trip the channel. B21N690D being outside of calibration does not adversely impact the isolation logic because the 3 remaining instruments would generate the necessary signals to cause the isolation. Therefore, the function listed above was maintained. No MRFF occurred."

##### Justification of Failure

The identified failure(s) would not have prevented the performance of the required safety function of the equipment. Therefore, this failure will have no impact on an extension to a 24 month surveillance interval.

The identified failure(s) would not have prevented the performance of the required safety function of the equipment. Therefore, this failure will have no impact on an extension to a 24 month surveillance interval.

Event	Title	Associated SRs and Function
1773	PERFORM 44.030.283 ECCS RX STM DOME PRES RHR LOOP SELECT,D1,CHL A,MTU-CAL/CF	SR 3.3.5.1.4-2.e SR 3.5.1.11
# Performances: 6      # Failures: 0		

**24 Month Justification: Notes:**

There were no failures, therefore the surveillance test history supports the conclusion that the impact, if any, on system availability will be small as a result of the change to a 24 month surveillance interval.

Event	Title	Associated SRs and Function
1774	PERFORM 44.030.284 ECCS RX STM DOME PRES RHR LOOP SELECT,D2,CHL B,MTU-CAL/CF	SR 3.3.5.1.4-2.e SR 3.5.1.11
# Performances: 6      # Failures: 0		

**24 Month Justification: Notes:**

There were no failures, therefore the surveillance test history supports the conclusion that the impact, if any, on system availability will be small as a result of the change to a 24 month surveillance interval.

Event	Title	Associated SRs and Function
1775	PERFORM 44.030.285 ECCS RX STM DOME PRES RHR LOOP SELECT,D1,CHL C,MTU-CAL/CF	SR 3.3.5.1.4-2.e SR 3.5.1.11
# Performances: 6      # Failures: 0		

**24 Month Justification: Notes:**

There were no failures, therefore the surveillance test history supports the conclusion that the impact, if any, on system availability will be small as a result of the change to a 24 month surveillance interval.

Event	Title	Associated SRs and Function
1776	PERFORM 44.030.286 ECCS RX STM DOME PRES RHR LOOP SELECT,D2,CHL D,MTU-CAL/CF	SR 3.3.5.1.4-2.e SR 3.5.1.11
# Performances: 6      # Failures: 0		

**24 Month Justification: Notes:**

There were no failures, therefore the surveillance test history supports the conclusion that the impact, if any, on system availability will be small as a result of the change to a 24 month surveillance interval.

Event	Title	Associated SRs and Function
1797	PERFORM 44.030.076 ECCS RX RECIRC PUMP A DP, DIV 1, CH C, CALIBRATION/FUNCTIONAL	SR 3.3.5.1.4-2.g SR 3.5.1.11

# Performances: 6 # Failures: 2

**24 Month Justification: Notes:**

The failures do not impact any safety function; therefore, the surveillance test history supports the conclusion that the impact, if any, on system availability will be small as a result of the change to a 24 month surveillance interval.

**Failure Review:**

**Perf. Date Fail Cat. Description of Failure**

9/16/2011	A	B31-N113A Transmitter As Found 100% reading was below Acceptable Performance Tolerance (APT) MIN value. Transmitter was successfully calibrated within As Left Tolerance.
3/15/2013	A	SPF Note: "Step 6.2.5, Table 5 Transmitter outside of APT at 100% point. Informed SM & I&C Supervisor. Cal'd transmitter to within ALT, Initiated CARD 13-21935 for investigation." CARD states: "During performance of 44.030.076, transmitter B31N113A was found outside of APT at 100% point. All other points were within APT. Calibrated B31N113A per procedure to within ALT." Reportability/Operability Review states: "The transmitter was calibrated to within As Left Tolerance (ALT), therefore this condition does not affect the ability of the ECCS Logic to perform its intended function. ECCS Instrumentation remains OPERABLE." Investigation determined the loss of one transmitter will not prevent the system from performing as designed. No functional failure occurred.

**Justification of Failure**

The identified failure(s) would not have prevented the performance of the required safety function of the equipment. Therefore, this failure will have no impact on an extension to a 24 month surveillance interval.

The identified failure(s) would not have prevented the performance of the required safety function of the equipment. Therefore, this failure will have no impact on an extension to a 24 month surveillance interval.

Event	Title	Associated SRs and Function
1798	PERFORM 44.030.077 ECCS RX RECIRC PUMP B DP, DIV 1, CH D, CALIBRATION/FUNCTIONAL	SR 3.3.5.1.4-2.g SR 3.5.1.11

# Performances: 6 # Failures: 1

**24 Month Justification: Notes:**

One failure identified which did not impact any safety function; therefore, the surveillance test history supports the conclusion that the impact, if any, on system availability will be small as a result of the change to a 24 month surveillance interval.

**Failure Review:**

**Perf. Date Fail Cat. Description of Failure**

6/9/2016 A B31-N615A Desired Trip/Reset Values As Found readings were above Acceptable Performance Tolerance (APT) MAX value. B31-N615A Trip/Reset values calibrated per procedure, Step 6.1.6, to within As Left Tolerance (ALT).

**Justification of Failure**

The identified failure(s) would not have prevented the performance of the required safety function of the equipment. Therefore, this failure will have no impact on an extension to a 24 month surveillance interval.

Event	Title	Associated SRs and Function
1799	PERFORM 44.030.078 ECCS RX RECIRC PUMP B DP, DIV 2, CHNL C, CALIBRATION/FUNCT	SR 3.3.5.1.4-2.g SR 3.5.1.11

# Performances: 6 # Failures: 0

**24 Month Justification: Notes:**

There were no failures, therefore the surveillance test history supports the conclusion that the impact, if any, on system availability will be small as a result of the change to a 24 month surveillance interval.

Event	Title	Associated SRs and Function
1800	PERFORM 44.030.079 ECCS RX RECIRC PUMP A DP, DIV 2, CH D, CALIBRATION/FUNCTIONAL	SR 3.3.5.1.4-2.g SR 3.5.1.11

# Performances: 6 # Failures: 0

**24 Month Justification: Notes:**

There were no failures, therefore the surveillance test history supports the conclusion that the impact, if any, on system availability will be small as a result of the change to a 24 month surveillance interval.

# Performances: 6      # Failures: 0

24 Month Justification:      Notes:

There were no failures, therefore the surveillance test history supports the conclusion that the impact, if any, on system availability will be small as a result of the change to a 24 month surveillance interval.

Event	Title	Associated SRs and Function
1802	PERFORM 44.030.083 ACCIDENT MONITOR RX WTR LEVEL,DIV 2, MTU CAL/FUNC	SR 3.3.3.1.2-2
# Performances: 7      # Failures: 0		

24 Month Justification:      Notes:

There were no failures, therefore the surveillance test history supports the conclusion that the impact, if any, on system availability will be small as a result of the change to a 24 month surveillance interval.

Event	Title	Associated SRs and Function
1803	PERFORM 44.040.005 ATWS/SRV LLS RX PRESS,DIV 1,CHNL A, MTU CAL/FUNC	SR 3.3.4.1.3.b      SR 3.3.4.1.4.b SR 3.3.6.3.3-1      SR 3.3.6.3.3-2 SR 3.3.6.3.4-1      SR 3.3.6.3.4-2 SR 3.6.1.6.2
# Performances: 6      # Failures: 0		

24 Month Justification:      Notes:

There were no failures, therefore the surveillance test history supports the conclusion that the impact, if any, on system availability will be small as a result of the change to a 24 month surveillance interval.

Event	Title	Associated SRs and Function
1804	PERFORM 44.040.006 ATWS/SRV LLS RX PRESS,DIV 2,CHNL B, MTU CAL/FUNC	SR 3.3.4.1.3.b      SR 3.3.4.1.4.b SR 3.3.6.3.3-1      SR 3.3.6.3.3-2 SR 3.3.6.3.4-1      SR 3.3.6.3.4-2 SR 3.6.1.6.2
# Performances: 6      # Failures: 0		

24 Month Justification:      Notes:

There were no failures, therefore the surveillance test history supports the conclusion that the impact, if any, on system availability will be small as a result of the change to a 24 month surveillance interval.

Event	Title	Associated SRs and Function	
1805	PERFORM 44.040.007 ATWS/SRV LLS RX PRESS,DIV 1,CHNL C, MTU CAL/FUNC	SR 3.3.4.1.3.b SR 3.3.6.3.3-2 SR 3.6.1.6.2	SR 3.3.4.1.4.b SR 3.3.6.3.4-2

# Performances: 6      # Failures: 1

**24 Month Justification: Notes:**

One failure identified which did not impact any safety function; therefore, the surveillance test history supports the conclusion that the impact, if any, on system availability will be small as a result of the change to a 24 month surveillance interval.

**Failure Review:**

**Perf. Date Fail Cat. Description of Failure**

7/29/2009      A      Both B21-N611C Gross Fail Trip and B21-N708C Gross Fail Trip As Found readings out of Acceptable Performance Tolerance (APT) range. CARD was not written. Each were calibrated successfully within As Left Tolerance range.

**Justification of Failure**

The identified failure(s) would not have prevented the performance of the required safety function of the equipment. Therefore, this failure will have no impact on an extension to a 24 month surveillance interval.

Event	Title	Associated SRs and Function	
1806	PERFORM 44.040.008 ATWS/SRV LOW LOW SET RX PRESS, DIV 2, CHL "D", MTU CAL/FUNC	SR 3.3.4.1.3.b SR 3.3.6.3.3-2 SR 3.6.1.6.2	SR 3.3.4.1.4.b SR 3.3.6.3.4-2

# Performances: 6      # Failures: 0

**24 Month Justification: Notes:**

There were no failures, therefore the surveillance test history supports the conclusion that the impact, if any, on system availability will be small as a result of the change to a 24 month surveillance interval.

Event	Title	Associated SRs and Function
1828	PERFORM 44.020.419 NS4 MAIN STEAM LINE TUNNEL TEMP,TRIP SYS A,B21N615A,CAL/FUNC	SR 3.3.6.1.4-1.e SR 3.6.1.3.8

# Performances: 6      # Failures: 1

**24 Month Justification: Notes:**

One failure identified which did not impact any safety function; therefore, the surveillance test history supports the conclusion that the impact, if any, on system availability will be small as a result of the change to a 24 month surveillance interval.

**Failure Review:**

**Perf. Date Fail Cat. Description of Failure**

7/14/2016      A      B21-N615A RTD Input Bridge As Found - some As Found readings (75% and 100%) were below Acceptable Performance Tolerance (APT) MIN value. RTD Input Bridge was successfully calibrated within As Left Tolerance.

**Justification of Failure**

The identified failure(s) would not have prevented the performance of the required safety function of the equipment. Therefore, this failure will have no impact on an extension to a 24 month surveillance interval.

Event	Title	Associated SRs and Function
1831	PERFORM 44.020.429 NS4 MAIN STEAM LINE TUNNEL TEMP,TRIP SYS B,B21N613D,CAL/FUNC	SR 3.3.6.1.4-1.e SR 3.6.1.3.8

# Performances: 6      # Failures: 1

**24 Month Justification: Notes:**

One failure identified which did not impact any safety function; therefore, the surveillance test history supports the conclusion that the impact, if any, on system availability will be small as a result of the change to a 24 month surveillance interval.

**Failure Review:**

**Perf. Date Fail Cat. Description of Failure**

2/6/2015      A      B21-N613D Analog Indicator, some As Found readings were below Acceptable Performance Tolerance (APT) MIN value. Analog Indicator was successfully calibrated with all readings within As Left Tolerance.

**Justification of Failure**

The identified failure(s) would not have prevented the performance of the required safety function of the equipment. Therefore, this failure will have no impact on an extension to a 24 month surveillance interval.

Event	Title	Associated SRs and Function
1832	PERFORM 44.020.430 NS4 MAIN STEAM LINE TUNNEL TEMP,TRIP SYS B,B21N614D,CAL/FUNC	SR 3.3.6.1.4-1.e SR 3.6.1.3.8

# Performances: 6      # Failures: 1

**24 Month Justification: Notes:**

One failure identified which did not impact any safety function; therefore, the surveillance test history supports the conclusion that the impact, if any, on system availability will be small as a result of the change to a 24 month surveillance interval.

**Failure Review:**

**Perf. Date Fail Cat. Description of Failure**

2/1/2018      A      SPF Note: "Half MSIV Isolation came in during performance of Step 6.1.5. Suspected issue with NSSSS Test Box. Resolution states: Perform steps to remove suspected test box and replace with another tested test box. If necessary, Reset MSIV Trip Logic. CARD 18-20892 written" CARD 18-20892 states: "Half MSIV isolation signal occurred during performance of 44.020.430 during Step 6.1.6. NSSS test box was installed and should have prevented any surveillance related trip from coming in. Suspect bad test box was removed. Suspect test box was tested SAT. Reviewed drawing I-2095-15 to determine exactly what test box jumpers out, determined that it only jumpers the A71B-K2D relay contacts in the MSIV isolation string. Leaving various other possibilities for a potential cause of this occurrence. Also, reviewed past spurious trips in this string. I&C supervisor consulted with SM and determined to discontinue surveillances on this string until further investigation, and proper risk determinations can be made." Reportability/Operability Review states: "There was no effect on the relays ability to perform the safety function. Actuation state of A71B-K7D is de-energized to support the safety functions. A71B-K7D relay did de-energize following receipt of the alarm. Half isolation was received during testing, utilizing an N4S test box. this test box jumpered out the A71B-K2D relay string. A71B-K7D did perform as designed, investigation is required into cause of spurious actuation. A71BK7D relay will fully perform its function and is operable but degraded." Troubleshooting package in RF19 produced no new results for cause of spurious half isolation. Previous events and monitoring have concluded that issue lies within the K10D string. WO # 52108126 exists to replace remaining components of K10D string (relay bases and crimp connections for C71K220D, C71K221D, and C71K222D. Next step would be to execute that WO. Installing an intrusive temporary modification would not provide much value at this time as the issue has been localized to the K10D string. WO 52108126 was generated to perform this work and was attempted to be scope added in RF19 but was not completed. Recommended that WO be added to next outage as another method of solving spurious half isolation issue.

**Justification of Failure**

The identified failure(s) would not have prevented the performance of the required safety function of the equipment. Therefore, this failure will have no impact on an extension to a 24 month surveillance interval.

Event	Title	Associated SRs and Function
1833	<b>PERFORM 44.020.431 NS4 MAIN STEAM LINE TUNNEL TEMP,TRIP SYS B,B21N615D,CAL/FUNC</b>	<b>SR 3.3.6.1.4-1.e      SR 3.3.6.1.5-1.e</b> <b>SR 3.6.1.3.8</b>
	<b># Performances: 6      # Failures: 0</b>	

24 Month Justification:	Notes:
	<div> There were no failures, therefore the surveillance test history supports the conclusion that the impact, if any, on system availability will be small as a result of the change to a 24 month surveillance interval. </div>

Event 1868	Title PERFORM 44.120.050 DW FLOOR DRN SUMP LVL CAL (ALARM,LOGIC & INDICATION)	Associated SRs and Function SR 3.4.6.3
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# Performances: 6      # Failures: 4

**24 Month Justification: Notes:**

The failures do not impact any safety function; therefore, the surveillance test history supports the conclusion that the impact, if any, on system availability will be small as a result of the change to a 24 month surveillance interval.

**Failure Review:**

**Perf. Date Fail Cat. Description of Failure**

7/10/2009      A      G1100-M002 Timer does not come on as expected in Step 6.1.4.1, but VOM goes closed. Informed Control Room Supervisor, CARD 09-21464 already written about problem. CARD 09-21464 states the problem as the timer green light would not come on during the performance of procedure 44.120.051 on 3/9/2009. The CARD goes on to state that the timer was counting down and the alarm did work when tested on 3/9/2009. Reference is made to WO 29544182. WO 29544182 tested Timer G1100-M002 and found the green light not functioning. The As Found time of the timer was within tolerance. Additionally, tested and inspected relays G11A-K626, K627, and K628 - all relays functioning as expected. New timer obtained from stores - was tested, calibrated, and installed. Timer was left operating satisfactory.

**Justification of Failure**

The identified failure(s) would not have prevented the performance of the required safety function of the equipment. The timing function of Timer G1100-M002 was found to be functioning as expected and the As Found time setting was within the procedure acceptance criteria. The only function of Timer G1100-M002 that was not operating as expected was the green light. The green light on the timer is for indication purposes only and the failure of the green light did not impact the ability of the timer to perform its intended function. Therefore, this failure will have no impact on an extension to a 24 month surveillance interval.

1/6/2011	A	<p>1) Pilot light on G1100-M002 Timer did not illuminate as expected in Step 6.1.4.1. This has been previously documented on CARD 10-25685. 2) In Step 6.1.4.2, VOM #1 indicates an Open circuit (46 Mohm), timer is running. Notified Control Room and I&amp;C Supervisor. Agreed to let timer time out, restore, and back out of procedure to investigate issue. NOTE: At 80.57 minutes, VOM #1 dropped from 4.6 VAC to 220 mVAC. CARD 11-20159 submitted. CARD 11-20159 states the contacts of time delay relay G1100M002 did not change state with a request to change the time delay relay. WO 31500450 is referenced. WO replaced the timer since the light bulb on the timer that was defective is not able to be replaced without replacing the timer. Timer was calibrated and returned to service operating satisfactorily.</p>	<p>The identified failure(s) would not have prevented the performance of the required safety function of the equipment. The timing function of Timer G1100-M002 was found to be functioning as expected and the As Found time setting was within the procedure acceptance criteria. The only function of Timer G1100-M002 that was not operating as expected was the pilot light. The pilot light on the timer is for indication purposes only and the failure of the pilot light did not impact the ability of the timer to perform its intended function. Therefore, this failure will have no impact on an extension to a 24 month surveillance interval.</p>
8/9/2012	A	<p>1) Pilot light on G1100-M002 Timer did not illuminate as expected in Step 6.1.4.1. This is a known issue. CARD 11-28300 Operability Report states the failure of the timer pilot light to light does not impair the timer's ability to time down or initiate annunciator 2D95. WO 33151301 scheduled for 5/6/2013. Per Maximo WO 33151301 was cancelled. WO 37614152 replaced timer, ran partial calibration and performed functional test satisfactorily (WO 37654501) on 11/12/2013. 2) Annunciator 2D95 alarmed immediately following Step 6.2.2 versus approximately five minutes later as expected. Discussed problem with Control Room Supervisor and I&amp;C Senior Leader. Cause was determined to be G1100-M002 timing out when Step 6.2.2 was performed, even though M002 pilot light was "OFF". Instructed to place test switch to OFF and push D072 RESET pushbutton on H11-P614 to clear 2D95, then wait for G1100-M002 to time out prior to reperforming Step 6.2.2 and continuing with the surveillance.</p>	<p>The identified failure(s) would not have prevented the performance of the required safety function of the equipment. Therefore, this failure will have no impact on an extension to a 24 month surveillance interval.</p>

12/28/2016	A	<p>Pilot light on G110-M002 Timer did not illuminate as expected in Step 6.1.4.1. Verified the timer was running as expected by the VOM indicating closed. CARD 16-30268 written to document issue. CARD 16-30268 Operability Review states "G1100-M002 DW FLR DRN Sump G1101-D072 Fill Timer light failed to come on during the pump down of the sump. The timer is functioning correctly but the proper operation of the pilot lamp is ACCEPTANCE CRITERIA in the surveillance procedure." WO 46799638 is referenced in the CARD. However, the CARD also states: "This CARD was written for failure of the light to function properly during 44.120.050. In that surveillance, the steps were not ACCEPTANCE CRITERIA. Later in the day, it failed to function again during 44.120.051. In that surveillance, steps 6.1.6.1 and 6.1.7.1 are ACCEPTANCE CRITERIA steps which are not satisfied due to the light not functioning properly. This condition is not new and there is a work order (45572493) status of INPLN with no scheduled start date. A new WO is not needed. The surveillance was revised to remove the light being lit as the acceptance criteria and the light does not make the surveillance a failure."</p>	<p>The identified failure(s) would not have prevented the performance of the required safety function of the equipment. The timing function of Timer G110-M002 was found to be functioning as expected. The only function of Timer G110-M002 that was not operating as expected was the pilot light. The pilot light on the timer is for indication purposes only and the failure of the pilot light did not impact the ability of the timer to perform its intended function. Therefore, this failure will have no impact on an extension to a 24 month surveillance interval.</p>
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Event	Title	Associated SRs and Function	
1885	PERFORM 44.190.009 FEEDWTR/M. TURB TRIP SYS-RX WATER LVL 8,D1,CHNL C,MTU CAL/CF	SR 3.3.2.2.3	SR 3.3.2.2.4

# Performances: 6      # Failures: 1

**24 Month Justification: Notes:**

One failure identified which did not impact any safety function; therefore, the surveillance test history supports the conclusion that the impact, if any, on system availability will be small as a result of the change to a 24 month surveillance interval.

**Failure Review:**

**Perf. Date Fail Cat. Description of Failure**

1/19/2011	A	Table 3 (page 6) B21-N695C Desired Trip/Reset Values, As Found Reset Reading was below Acceptable Performance Tolerance (APT). There is no discussion of out of tolerance. Page 7, which performs "Setpoint Adjust Pot Calibration/Preventive Maintenance" is not included in file copy. As left Readings for Trip and Reset were left within tolerance.
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**Justification of Failure**

The identified failure(s) would not have prevented the performance of the required safety function of the equipment. Therefore, this failure will have no impact on an extension to a 24 month surveillance interval.

Event	Title	Associated SRs and Function	TRVEND 24MCGNF319001 Rev 1
1886	PERFORM 44.190.010 FEEDWTR/M. TURB TRIP SYS-RX WATER LVL 8,D2,CHNL D,MTU CAL/CF	SR 3.3.2.2.3 SR 3.3.2.2.4	Page 339 of 395
# Performances: 7		# Failures: 1	

24 Month Justification:	Notes:
One failure identified which did not impact any safety function; therefore, the surveillance test history supports the conclusion that the impact, if any, on system availability will be small as a result of the change to a 24 month surveillance interval.	

Failure Review:			Justification of Failure
Perf. Date	Fail Cat.	Description of Failure	
7/27/2015	A	SPF Note: "Step 6.1.6.3 Trip LED and output relay chatter while adjusting setpoint. CRS, I&C Supervisor informed. Restored to Step 6.1.9 until decision is made." Backed out of Surveillance, CARD 15-25191 written to address issue found during calibration check. CARD states: "During surveillance calibration step 6.1.6 of procedure 44.190.010, the trip unit B21N695D trip led and associated relays cycled excessively while trying to obtain setpoint. Will require new trip unit replacement and calibration." Reportability/Operability Review states: "B21N695D has been declared Inoperable and is being controlled under LCO 15-0362. This includes a 7 Day action to place the channel in the tripped condition per T.S. 3.3.2.2 Action A.1." Event was evaluated against function B2100-08 - Provide signals on high level to terminate water injection to avert steam line flooding and initiate main turbine trip to prevent a water induction event. The function of the trip unit is to provide input into the trip logic for the main turbine and feedwater pumps when reactor water level exceeds 214". The associated trip logic is 1 out of 2 taken twice. Therefore, the failure or actuation of any one trip unit will not cause or prevent an actuation. The failed trip unit is an older style while the remaining three trip units are newer and are not likely to be experiencing this failure mechanism. No failure of instrumentation that prevents actuation of the logic and/or associated equipment in one or both divisions was experienced. No B2100 Maintenance Rule Functional Failure occurred and no MPFF occurred. Work Order 43565374 written. WO 43565374 scope is to replace B21N695D - Reactor Level 8 Trip Unit Division 2 Level Indication Switch. Currently installed instrument is a 510, replacement is a 710. New MTU installed and calibrated using 44.190.010, Section 6.1 and all steps to support Section 6.1.	The identified failure(s) would not have prevented the performance of the required safety function of the equipment. Therefore, this failure will have no impact on an extension to a 24 month surveillance interval.

Event	Title	Associated SRs and Function	TRVEND 24MCGNF319001 Rev 1 Page 340 of 395
1981	PERFORM 43.606.001 TRAVERSING IN-CORE PROBE SHEAR VALVE 'B' EXPLOSIVE CHARGE	SR 3.6.1.3.10	
	# Performances: 3      # Failures: 0		

**24 Month Justification:**    **Notes:** Surveillance test rotates with Events 0981 (TIP Shear Vlv A), 1982 (TIP Shear Vlv C), 1983 (TIP Shear Vlv D), and 1984 (TIP Shear Vlv E)

There were no failures, therefore the surveillance test history supports the conclusion that the impact, if any, on system availability will be small as a result of the change to a 24 month surveillance interval.

Event	Title	Associated SRs and Function	TRVEND 24MCGNF319001 Rev 1 Page 341 of 395
1982	PERFORM 43.606.001 TRAVERSING IN-CORE PROBE SHEAR VALVE 'C' EXPLOSIVE CHARGE	SR 3.6.1.3.10	

# Performances: 1 # Failures: 1

**24 Month Justification:** Notes: Surveillance test rotates with Events 0981 (TIP Shear Vlv A), 1981 (TIP Shear Vlv B), 1983 (TIP Shear Vlv D), and 1984 (TIP Shear Vlv E)

One failure identified which did not impact any safety function; therefore, the surveillance test history supports the conclusion that the impact, if any, on system availability will be small as a result of the change to a 24 month surveillance interval.

#### Failure Review:

#### Perf. Date Fail Cat. Description of Failure

2/26/2014 A SPF Note: "TIP B is past expiration date. Wrote CARD 14-20752" CARD 14-20752 states: "During the preparation RF16 event 1982 Perform 43.606.001 Traversing In-Core Probe Shear Valve "C" explosive charge, we discovered TIP "B" Shear valve explosive charge was past its expiration date. TIP "B" explosive charge was installed in RF13 with the following information: Batch Number MSV-1148-17, Serial Number 946 , Expiration Date 01/2014" Reportability/Operability Review states: "This CARD documents that TIP "B" Shear valve explosive charge is past its expiration date. Both 43.606.001, Traversing In-Core Probe Shear Valve Explosive Charge Test and Replacement Section 7.0 Acceptance Criteria and UFSAR Table 6.2-2 Note 17 support that the explosive charge shall be replaced according to the manufacturer's recommended lifetime for the charge, i.e. prior to the expiration date. Therefore the C5100F001B cannot be relied upon to perform its safety function. The TIP System however is still capable of performing its intended non-safety related function of LPRM calibration with the remaining 4 channels available. TIP B Shear Valve is INOPERABLE. Traversing In-Core Probe (TIP) System remains OPERABLE. TIP B Ball Valve, C5100F002B remained OPERABLE and capable of isolating the penetration, therefore no loss of safety function." MRFF Evaluation was also completed. Justification stated: "Since TIP "B" shear valve explosive charge has passed its expiration date, surveillance procedure 43.606.001 'Traversing In-Core Probe Shear Valve Explosive Charge Test and Replacement', work order 27033831, SST event 1981, was performed on 2-20-2014. TIP B squib fired when the keylock switch on the valve control monitor was placed in the fire position and completed the surveillance satisfactory. Since TIP B squib fired, it was able to perform its Maintenance Rule function to isolate containment. Therefore, this is not a Maintenance Rule Functional Failure (MRFF). Since this is not a MRFF, Maintenance Preventable Functional Failure (MPFF) is not applicable." THE DIRECT CAUSE IS PR9 Program/Process Weakness because surveillance procedure 43.606.001 'Traversing In-Core Probe Shear Valve Explosive Charge Test and Replacement' is adequate, as written. No changes to the procedure are required due to this event. This procedure works well to replace expired squibs before the next refueling outage as long as the date of the refueling outage is not changed. No additional squibs needed to be replaced in RF15 due to expiration date

#### Justification of Failure

The identified failure(s) would not have prevented the performance of the required safety function of the equipment. Therefore, this failure will have no impact on an extension to a 24 month surveillance interval.

based on RF16 being scheduled for Fall 2013. When RF16 was moved out to 2/2014, the critical date for this SST event was verified, but the squib expiration dates were not. There was nothing in place to reevaluate the expiration dates if the outage was moved out to a later date. This deficiency has been corrected by the SST Coordinator being required to review the completed SST event and adjust the critical date of the next SST event based on the earliest expiration date of the squibs. The Corrective Actions are: The SST Coordinator has been added as a post work reviewer to each of the events and will adjust the critical date of the next SST event based on the earliest expiration date of the squibs. This action item addresses cause code PR9 Program/Process Weakness, since the SST critical date will coincide with the earliest squib expiration date and will accurately be reviewed if a future refueling outage is moved out from the original date.

Event	Title	Associated SRs and Function
1983	PERFORM 43.606.001 TRAVERSING IN-CORE PROBE SHEAR VALVE 'D' EXPLOSIVE CHARGE	SR 3.6.1.3.10

# Performances: 2      # Failures: 0

**24 Month Justification:**    **Notes:** Surveillance test rotates with Events 0981 (TIP Shear Vlv A), 1981 (TIP Shear Vlv B), 1982 (TIP Shear Vlv C), and 1984 (TIP Shear Vlv E)

There were no failures, therefore the surveillance test history supports the conclusion that the impact, if any, on system availability will be small as a result of the change to a 24 month surveillance interval.

Event	Title	Associated SRs and Function
1984	PERFORM 43.606.001 TRAVERSING IN-CORE PROBE SHEAR VALVE 'E' EXPLOSIVE CHARGE	SR 3.6.1.3.10

# Performances: 2      # Failures: 0

**24 Month Justification:**    **Notes:** Surveillance test rotates with Events 0981 (TIP Shear Vlv A), 1981 (TIP Shear Vlv B), 1982 (TIP Shear Vlv C), and 1983 (TIP Shear Vlv D)

There were no failures, therefore the surveillance test history supports the conclusion that the impact, if any, on system availability will be small as a result of the change to a 24 month surveillance interval.

Event	Title	Associated SRs and Function	
2068	PERFORM 64.080.033 MAIN STEAM LINE RADIATION DETECTOR D11N600E CALIBRATION WITH CHANNEL B	SR 3.3.6.1.4-2.d SR 3.3.7.2.3 SR 3.6.1.3.8	SR 3.3.6.1.5-2.d SR 3.3.7.3.3

# Performances: 7      # Failures: 1

**24 Month Justification: Notes:**

One failure identified which did not impact any safety function; therefore, the surveillance test history supports the conclusion that the impact, if any, on system availability will be small as a result of the change to a 24 month surveillance interval.

**Failure Review:**

**Perf. Date Fail Cat. Description of Failure**

10/10/2018      A      SPF Note: "D11R603 calculated efficiencies fails low - Informed CRS and initiated CARD 18-28141" CARD 18-28141 states: "During performance of 64.080.033, calibration of MSL Rad monitor D11N006E failed its calculated efficiencies on the recorder (D11R603) when routed through processing unit D11K603B. Efficiencies were low similar to those found during performance of 64.080.030 on 10/9/18 (CARD 18-28100). The output on the processing unit (D11K603B) read correctly while the recorder output failed low. Reportability/Operability Review states: "Main Steam Line radiation monitor E (spare) was calibrated and determined to be within tolerance per 64.080.030. The associated recorder, D11-R603 Channel B did not provide accurate data. MSL Radiation Monitor E demonstrated its ability to generate a trip signal based radiation levels detected. The recorder provides control room indication but is not required for operability. WO 52113739 is referenced WO 52113739 MSL Rad Monitor B Recorder calculated efficiencies fail low status per Maximo = CAN

**Justification of Failure**

The identified failure(s) would not have prevented the performance of the required safety function of the equipment. Therefore, this failure will have no impact on an extension to a 24 month surveillance interval.

Event	Title	Associated SRs and Function	
2069	PERFORM 64.080.034 MAIN STEAM LINE RADIATION DETECTOR D11N600F CALIBRATION WITH CHANNEL D	SR 3.3.6.1.4-2.d SR 3.3.7.2.3 SR 3.6.1.3.8	SR 3.3.6.1.5-2.d SR 3.3.7.3.3

# Performances: 7      # Failures: 0

**24 Month Justification: Notes:**

There were no failures, therefore the surveillance test history supports the conclusion that the impact, if any, on system availability will be small as a result of the change to a 24 month surveillance interval.

Event	Title	Associated SRs and Function	TRVEND 24MCGNF319001 Rev 1 Page 344 of 395
2090	PERFORM 43.404.001 DIVISION 1 SGTS CHARCOAL SAMPLE WITHDRAWAL	SR 5.5.7.c	
	# Performances: 7	# Failures: 0	

**24 Month Justification: Notes:**

There were no failures, therefore the surveillance test history supports the conclusion that the impact, if any, on system availability will be small as a result of the change to a 24 month surveillance interval.

Event	Title	Associated SRs and Function
2100	PERFORM 24.202.08 SEC-5.2 (Dw Press) HPCI LSFT & PUMP OPERABILITY AT 1025 PSIG	SR 3.3.5.1.5-3.a SR 3.5.1.11

# Performances: 7 # Failures: 4

**24 Month Justification: Notes:**

The failures do not impact any safety function; therefore, the surveillance test history supports the conclusion that the impact, if any, on system availability will be small as a result of the change to a 24 month surveillance interval.

**Failure Review:**

**Perf. Date Fail Cat. Description of Failure**

3/3/2011 A SPF Note: "E4150-F008 will not close fully without holding close button. Valve also is not fully closed when MCR H11-P602 indication for valve position shows full closed. Resolution states: Previous CRIS Dot 155 placed issue documented in CARD 10-32190. Valve positions verified locally. Verified by contactor operation at MCC position and verified by system response (flowrate). Stroke time of valve measured by both MCR indication and contactor positioning at MCC. Both stroke times fall within limits." Within the surveillance noted on page 112 are "Note 1: Step 5.2.88 - E4150-F008 full close indication on H11-P602 comes in early before valve is full shut. See CARD 10-32190. Valve verified closed by system response (0 gpm flow), local position indication and by MCC contactor positioning at MCC 2PB-1 Position 6A. CARD 10-32190 documents pushbutton problem on H11-P602. Note 2: Step 5.2.121 - See same comments above. Stroke time recorded by MCR valve position indication on H11-P602. Stroke time also measured at MCC 2PB-1 Position 6A via contactor positioning. This stroke time was 100.5 sec and meets acceptance criteria (BTC) of Step 5.2.121"

**Justification of Failure**

The identified failure(s) would not have prevented the performance of the required safety function of the equipment. Therefore, this failure will have no impact on an extension to a 24 month surveillance interval.

8/30/2012 A SPF Note 2: "Step 5.2.66.d nomenclature for step referenced is incorrect. Verified data points were correct. Also Step 5.2.75 .6.c & .d step nomenclature should reference Steps in 5.2.75 vice 5.1.65. Notified CRS, CARD 12-27249" CARD 12-27249 states: "Calculation data in 24.202.08 steps 5.2.66 and 5.2.75 reference steps for section 5.1. These are obvious "cut and paste errors" but need to be corrected. These should reflect the data collected per section 5.2." See DCR 13-0187SPF Note 3: "Elevated CST temperature were recorded in error. CARD 12-26895 documents the CST Temp Loop would not calibrate and there is a discrepancy between local temp and MCR indication. Verified delta between MCR indicated temperature and local temp. A 40F difference exists. Corrected recorded temperatures by subtracting 40F. Recalculated and verified acceptance criteria still met.

The identified failure(s) would not have prevented the performance of the required safety function of the equipment. Therefore, this failure will have no impact on an extension to a 24 month surveillance interval.

8/27/2015	A	<p>SPF Note 1: "Step 5.2.101: E41-R609 read approximately 70 psig with 2D51 locked in. Current configuration has system in a pressure lock. 5.2.101 can be signed off SAT but sequence of steps 5.2.101 and 5.2.103 are incorrect. System Eng informed and provided input. Reviewed revisions to 24.202.01, Step 5.1.88 opens E4100-F025 prior to verifying check valve E4100-F005 is properly seated. CARD 15-26057" CARD states: "Step 5.2.101 and 5.2.103 are sequenced wrong. Step 5.2.103 must be performed first. The same steps are correctly sequenced in 24.202.01 (steps 5.1.88 and 5.1.89). As sequenced now there is pressure locked in suction of HPCI pump which impacts evaluating acceptance criteria in step 5.2.101. When step 5.2.103 is performed there is no question evaluating E4150-F005 check valve in step 5.2.101." 24.202.08 rev 9 DCR 15-0857 made requested change. SPF Note 2: "Step 5.2.172 E4100-F025 failed to stroke within owners specified limit. Second stroke time IAW P&amp;L resulted in same stroke time, 8.3 seconds. CARD 15-26058 submitted" CARD states: "E4100F025, HPCI Cond to DRW OTBD ISO VLV, failed to stroke within Owner specified limit IAW 24.202.08, step 5.2.172. Owner specified limit is 1.9 to 7.3 seconds, valve stroked closed in 8.3 seconds. E4100F025 stroked in 8.3 seconds the second time." Reportability/Operability Review states: "Safety position for E4100F025 is closed and function was proven during surveillance. Slow stroke time does not affect the ability to perform its safety function." CARD Closure Summary: "Steps were placed in 24.202.01 (Rev. 106) and 24.202.08 (Rev. 8) to stroke time test E4100-F025 on 7/30/15 and 8/3/15 respectively. When Operations ran 24.202.08 on 8/27/15, which is first time stroke time test was performed after baseline measurement was obtained, E4100-F025 failed surveillance acceptance criteria. Direct cause: TESTING (OM3) because stroke time failure was a result of how the test was performed; not degradation. Indirect cause: VERIFICATION PRACTICES (IP11) because IST Program owner did not verify position of test within surveillance. Test was placed at a step in surveillance that did not match baseline conditions. This happened because Operations lined out step number on SPF and it confused IST Program Engineer. IST Engineer should have gone to tagging center to ask Operations to interpret line out. IST prepared a MMA26 to allow Operations to confirm baseline measurements were collected prior to pump test within surveillance. (See attached). MMA26 requested that new measurements be collected with HPCI turbine idle. Stroke time measurements, collected prior while HPCI turbine / pump was idle, were found to be nearly identical to baseline average of 4.6 seconds. This confirms original baseline stroke measurements were collected prior to HPCI pump test. This in turn confirms there is no degradation of valve. Revision of 24.202.01(Rev.107) and 24.202.08 (Rev.9) completed. Stroke time measurements are now taken at a step in surveillances that has identical conditions to baseline test.</p>	<p>The identified failure(s) would not have prevented the performance of the required safety function of the equipment. Therefore, this failure will have no impact on an extension to a 24 month surveillance interval.</p>
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5/26/2017

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SPF Notes 1,2: "Steps 5.2.16, 5.2.17 - E4100-F029 stroke times not updated following valve maintenance. CARD 17-24849 submitted" CARD 17-24849 states: "E4100F029 (HPCI Stm Sply Drn Pot Otbd Iso valve) is stroke timed both closed and open. Stroke time close for this valve on two attempts was 8.8 seconds both times. This is outside IST limit of 2.9 to 8.6 seconds. Further, stroke time open on two attempts was 10.5 seconds and 10.7 seconds. These times do not meet IST limits of 2.6 to 7.8 seconds OR owner specified limit of 2.1 to 8.3 seconds. Discussion with System Engineer revealed new stroke times were baselined in WO 45667801 step 160.2. New IST and Owner Specified Limits were not updated into surveillance 24.202.08." Reportability/Operability Review states: "This condition has no impact on HPCI performing its intended function nor its operability. The stroke time was re-baselined during RF18, but the surveillance was not revised. The revision came through today and stroke times were verified to be satisfactory. HPCI remains OPERABLE." Action Item Completion Comments state: "The E4100F029 valve and actuator was replaced in RF18 and stroke times changed due to the larger size actuator. The procedure was not updated to include the new stroke times prior to the surveillance." Operations requested that an IST evaluation be performed to revise the surveillance (24.202.08) to help them clear the LCO. IST Evaluation 17-022 was performed on 5/25/17 and was used to revise 24.202.08 (revision 13). IST Evaluation 17-022 concluded that the changes against the reference stroke time were due to the maintenance and that a change to the acceptance criteria was acceptable. Partial surveillance test was performed to stroke time of E4100-F029 on 5/26/2017 satisfactorily. SPF Note 3: "Step 5.2.42 - E4100-F025 closed in Step 5.2.13 and not reopened but is required to be open in Step 5.2.42. TCN T12706 issued to open E4100-F025 prior to Step 5.2.42, CARD 17-24854 issued." CARD 17-24854 states: "E4100F025 is closed at step 5.1.13 of 24.202.08 (rev 12) (also 5.2.13) for timing measurement. The valve is to be required to be verified open at step 5.1.42 (also 5.2.42) and has not been re-opened by procedural steps. This discrepancy led to delays in performing 24.202.08 section 5.2." TCN was incorporated into rev 13. Surveillance completed satisfactorily.

The identified failure(s) would not have prevented the performance of the required safety function of the equipment. Therefore, this failure will have no impact on an extension to a 24 month surveillance interval.

Event	Title	Associated SRs and Function	TRVEND 24MCGNF319001 Rev 1 Page 348 of 395
2102	PERFORM 42.309.06 DIV 2 18 MONTH 130/260 VDC BATTERY CHECK (2B-2 ONLY)	SR 3.8.4.3 SR 3.8.4.5.a SR 3.8.4.7	SR 3.8.4.4 SR 3.8.4.5.b

# Performances: 4      # Failures: 2

#### 24 Month Justification: Notes:

The failures do not impact any safety function; therefore, the surveillance test history supports the conclusion that the impact, if any, on system availability will be small as a result of the change to a 24 month surveillance interval.

#### Failure Review:

##### Perf. Date Fail Cat. Description of Failure

4/19/2009      A      SPF Note (Event 2102) states: "2B-2 Equalize Timer not functioning properly for timing. CARD 09-22744 Action requested / WO per information." CARD 09-22744 states: "Battery Charger 2B-2, Equalize Timer, noted as Not Functioning Properly. The Equalize Timer Dial has Maintained its current position of 19 hours for the past 5 hours. 2B-2 Timer is performing the Equalize Voltage Function which was verified by Checking Battery Bank Voltage Directly at the 2B-2 Battery Bank." Reportability/Operability Review states: "The equalize timer has no impact on normal battery charging therefore no operability issues." WO 29694454 requested. Per Maximo WO 29694454 status is cancelled. POD Notes state: "Added CARD 09-22744 to E791080100 to repair or replace 24 hour equalize timer." WO E791080100 - Replace Control Boards in Div. 2 130 VDC Charger 2B-2, replaced equalize timer, completed charger cal/inspect satisfactorily. Note at Acceptance Criteria Step 8.2 indicates: "CARD 09-22790 documents abnormal indications. TE-R32-09-040 evaluated the condition and determined it to be acceptable." In Step 6.16.1 of SOE 08-05, found an anomaly on top of the black (+) plates of Battery 2B-1. CARD 09-22790 initiated. CARD 09-22790 states: "Step 6.16.1 of SOE 08-05 performs an inspection of the new battery installed during RF13. A grey material was noted on top of the positive and negative plates during the inspection. This was unexpected. Both the Div 1 and new BOP batteries were inspected and do not exhibit this same anomaly." The CARD goes on to state that a battery representative was dispatched to inspect the condition and determined that the grey material on top of the plates internal to the battery is lead sulfate. The lead sulfate on top of the battery plates will not have an adverse impact on the performance of the battery. In addition to the grey material on top of the plates, some of the cell separators are warped or frayed. Two of the cells (9 and 109) have a white appearance on the side edge of one of the positive (black) plates. Separator material is non-conductive and is used to separate the positive and negative plates from each other to keep them from shorting together. Therefore, any warping or fraying will not prevent the separator from performing its function since this is only seen on the edges of the separator. The last item of interest is the plate straps on a few of the cells do not have a smooth appearance. This is at the top of the cell where the plates transition to the positive or negative posts that extend to the exterior of the battery. The

##### Justification of Failure

The identified failure(s) would not have prevented the performance of the required safety function of the equipment. Therefore, this failure will have no impact on an extension to a 24 month surveillance interval.

uneven look of the plate straps is caused by the manufacturing process. If this process was not properly performed, a high resistance connection would cause the battery to fail its load test performed at the factory.

3/29/2017	A	<p>SPF Note: "During the inspection portion of the procedure 42.309.06, Step 6.1.1. it was identified that 95% of the cells had top cracks and positive terminals lifting out of the jar. CARD 17-22739 initiated to document and trend." CARD 17-22739 states: "During the load tests of the Div 2 station batteries, 2B-1 and 2B-2, under SPF's 44108051 and 43908340 it was identified in the inspection portion of procedure 42.309.06 that 95% of the cells have cell top cracking and positive post lifting. Numerous Cards have been initiated over this condition. Consulted the system engineer and these conditions are normal wear and are being tracked over the life of the Battery. This is a trending Card. The Battery load test performed satisfactory on 2B-1, and 2B-2." Reportability/Operability Review states: "The cracks were noted on approximately 95% of the battery cells. The hairline cracks on the battery cells mentioned in this CARD by visual examination are on the surface of the covers and do not reveal signs of leakage. There is no adverse impact on the function of the Div 2 battery. There is no impact on the ability of the Div 2 Batteries to perform their safety related function."</p>	<p>The identified failure(s) would not have prevented the performance of the required safety function of the equipment. Therefore, this failure will have no impact on an extension to a 24 month surveillance interval.</p>
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Event	Title	Associated SRs and Function
2103	PERFORM 42.309.07 DIV 2 (5 YEAR) 130/260 VDC BATTERY CHECK (2B-2 ONLY)	SR 3.8.4.8

# Performances: 2      # Failures: 0

**24 Month Justification: Notes:**

There were no failures, therefore the surveillance test history supports the conclusion that the impact, if any, on system availability will be small as a result of the change to a 24 month surveillance interval.

Event	Title	Associated SRs and Function
2219	PERFORM 42.309.04 DIV 2 BATTERY CHARGER LOAD TEST - 2B-2 ONLY	SR 3.8.4.6

# Performances: 6      # Failures: 0

**24 Month Justification: Notes:**

There were no failures, therefore the surveillance test history supports the conclusion that the impact, if any, on system availability will be small as a result of the change to a 24 month surveillance interval.

# Performances: 6      # Failures: 0

24 Month Justification:      Notes:

There were no failures, therefore the surveillance test history supports the conclusion that the impact, if any, on system availability will be small as a result of the change to a 24 month surveillance interval.

Event	Title	Associated SRs and Function
2244	PERFORM 24.321.03 DEDICATED SHUTDOWN(3L) H21P626 OPERABILITY - ONLINE	SR 3.3.3.2.2
# Performances: 6      # Failures: 0		

24 Month Justification:      Notes:

There were no failures, therefore the surveillance test history supports the conclusion that the impact, if any, on system availability will be small as a result of the change to a 24 month surveillance interval.

Event	Title	Associated SRs and Function
2257	PERFORM 24.203.02 SEC-5.2 DIVISION 1 CSS SIMULATED AUTOMATIC ACTUATION TEST	SR 3.3.5.1.5-1.a      SR 3.3.5.1.5-1.b SR 3.3.5.1.6-1.d      SR 3.3.5.3.3-1.b SR 3.5.1.11      SR 3.5.1.14 SR 3.5.2.9
# Performances: 6      # Failures: 0		

24 Month Justification:      Notes:

There were no failures, therefore the surveillance test history supports the conclusion that the impact, if any, on system availability will be small as a result of the change to a 24 month surveillance interval.

Event	Title	Associated SRs and Function
2258	PERFORM 24.203.03 SEC-5.2 DIVISION 2 CSS SIMULATED AUTOMATIC ACTUATION TEST	SR 3.3.5.1.5-1.a      SR 3.3.5.1.5-1.b SR 3.3.5.1.6-1.d      SR 3.3.5.3.3-1.b SR 3.5.1.11      SR 3.5.1.14 SR 3.5.2.9
# Performances: 6      # Failures: 0		

24 Month Justification:      Notes:

There were no failures, therefore the surveillance test history supports the conclusion that the impact, if any, on system availability will be small as a result of the change to a 24 month surveillance interval.

Event	Title	Associated SRs and Function	TRVEND 24MCGNF319001 Rev 1
2263	PERFORM 24.204.03 DIV 1 & 2 LPCI SIMUL. AUTO ACT. TEST (Recirc Vlv's)	SR 3.5.1.14	Page 351 of 395
<div> <div># Performances: 1</div> <div># Failures: 0</div> </div>			

**24 Month Justification:**    **Notes:** Per Maximo: Perform 0263 OR (1263 + 2263) depending on equipment availability.

There were no failures, therefore the surveillance test history supports the conclusion that the impact, if any, on system availability will be small as a result of the change to a 24 month surveillance interval.

Event	Title	Associated SRs and Function	TRVEND 24MCGNF319001 Rev 1
2272	PERFORM 42.610.02 Div 1, NORMAL FEED, EPA's A & C, CAL/FUNCTIONAL	SR 3.3.8.2.2.a SR 3.3.8.2.2.c	SR 3.3.8.2.2.b SR 3.3.8.2.3

# Performances: 6      # Failures: 2

#### 24 Month Justification: Notes:

The failures do not impact any safety function; therefore, the surveillance test history supports the conclusion that the impact, if any, on system availability will be small as a result of the change to a 24 month surveillance interval.

#### Failure Review:

##### Perf. Date Fail Cat. Description of Failure

10/20/2015	A	SPF Note: As Found Underfrequency Trip of C7100S003C outside acceptance criteria. Notified SM, adjusted per procedure. Wrote CARD 15-28048. CARD 15-28048 states: "...at step 6.2.1.7, the As Found value for Underfrequency trip of C7100S003C was 57.07 Hz. The Acceptance Criteria is 57.1-57.3 Hz." Calibration was performed per Step 6.2.1.8 with As Left value of 57.20 Hz. Reportability/Operability Review states: "No operability or reportability assessment required." The breaker did trip although below the acceptance range of the procedure. Since the breaker did trip and no violation of technical Specification occurred, no loss of function occurred with this event. With no loss of function, there was no Maintenance Rule Functional Failure, Maintenance Preventable Functional Failure, or Repetitive Maintenance Preventable Functional Failure occurred with this event.
3/24/2017	A	SPF Note: As Found Overvoltage Trip of C7100S003A was high at 131.5 Vac Recalibrated per procedure, wrote CARD 17-22507. CARD 17-22507states: "the following did not meet as found acceptance criteria: 1) voltage to frequency converter as found 11885 (criteria is 11940 to 12060) - calibrated to as left 12003, 2) over voltage as found 131.5 (criteria is 129 to 131) - calibrated as left 129.9, 3) as left undervoltage trip is 109.9 (criteria is 109 to 111). Reportability/Operability Review states: "All parameters were calibrated to within acceptance criteria and testing has been completed satisfactorily. There is no current impact on the ability of the C7100S003A EPA breaker to perform its design function. The RPS A EPA breaker, C7100S003A, remains operable.

##### Justification of Failure

The identified failure(s) would not have prevented the performance of the required safety function of the equipment. Therefore, this failure will have no impact on an extension to a 24 month surveillance interval.

The identified failure(s) would not have prevented the performance of the required safety function of the equipment. Therefore, this failure will have no impact on an extension to a 24 month surveillance interval.

Event	Title	Associated SRs and Function	TRVEND 24MCGNF319001 Rev 1
2274	PERFORM 42.610.04 Div 2, NORMAL FEED, EPA's B & D, CAL/FUNCTIONAL	SR 3.3.8.2.2.a SR 3.3.8.2.2.c	SR 3.3.8.2.2.b SR 3.3.8.2.3

# Performances: 6 # Failures: 1

**24 Month Justification: Notes:**

One failure identified which did not impact any safety function; therefore, the surveillance test history supports the conclusion that the impact, if any, on system availability will be small as a result of the change to a 24 month surveillance interval.

**Failure Review:**

**Perf. Date Fail Cat. Description of Failure**

11/7/2010 A SPF Note 1: "Step 6.2.2.2 (D EPA) Keylock S2 went to breaker trip as soon as key was inserted in the switch. – Replaced under WO 31035220" WO 31035220 (started on 10/27/2010) - Replace SW1, SW2, XFMR 1 and Tefzel wiring in EPA Bkr D Pnl was completed and on 11/2/2010 and per Task 40, Step 1, protection was released to allow functional testing of RPS "D" Electrical Protection Assembly, C7100S003D. Surveillance testing per 42.610.04 began on 11/5/2010 at 0815. SPF Note 2: "Step 6.3.1.3.c did not get high state when 120V was applied. At this point we stopped. Output breaker of MG Set tripped unexpectedly. Per Maint Foreman we backed out and requested a tagout of the MG Set and EPAs. CARD 10-30187. CARD 10-30187 states: "At Step 6.2.2.2 (D EPA) Keylock S2 went to breaker trip as soon as key was inserted in the switch. At Step 6.3.1.3.c when 120V is applied, you should get a "high state" at E4. A high state reading did not appear at E4. While performing the above step the output breaker of the B MG tripped as well as the D EPA breaker for unknown reasons." Reportability/Operability Review states: "C7102S001B Description: RPS WEST MG SET "B" SYSTEM RPS B supported functions are currently inoperable for outage related work, including the surveillance listed above, and documented on LCO 10-0345." Problem description notes: "This switch is very sensitive when the key is placed in the lock. The switch will easily "snap" to the center position upon placing the key in the lock. The switch should remain in the extreme left position until intentionally moved to the center position." SPF Note 3: "After completion of Step 6.2.2m, Step 22 removed key from switch S2 caused breaker to trip. - Revising WR 31035220 to T/S switch S2 and replace as necessary." Original WO 31035220 scope was to replace SW1, SW2, XFMR 1 and Tefzel wiring in EPA Bkr D. On 11/6/2010, WO 31035220, Rev 1 provided additional steps to replace S2 switch due to failure during testing. On 11/7/2010, WO 31035220, Rev 2 provided additional steps to replace S2 switch, once again. Work was completed and PMT performed using surveillance 42.610.04 satisfactorily. CARD notes: "One of the two switches issued on 11/07/2010 from batch 25575 delivered on 3/30/2009 was determined, based on the functional problems exhibited in the card condition, to be defective. The cause of this defect cannot be determined but the most probable cause is mfg defect. Actions were taken in this card to determine if this defect was exhibited in additional switches. The 2nd switch in the batch was tested and the result was satisfactory. An additional 4 switches were procured

**Justification of Failure**

The identified failure(s) would not have prevented the performance of the required safety function of the equipment. Therefore, this failure will have no impact on an extension to a 24 month surveillance interval.

and delivered in June 2011 (batch: 37687), action item 3 tested these switches and the results were satisfactory. Following the noted defect an additional 5 switches were tested satisfactory. Additionally, an increased inventory (Qty of 4) of this particular switch has been invested in to provide ample backup if this concern is exhibited again. Close card no further action required." Maintenance Rule Functional Failure analysis states: " Since the keylock switch S2 had just been installed as part of the PM event C725 and the discovery that the keylock switch failed to function properly occurred as part of the PMT for the PM event, this event is not a Functional Failure under Maintenance Rule.

Event	Title	Associated SRs and Function
2280	PERFORM 24.207.11 SEC-5.2 RBCCW/EECW DIV 2 VALVE POSITION INDICATION VERIF	SR 3.3.3.1.2-8

# Performances: 6      # Failures: 1

**24 Month Justification: Notes:**

One failure identified which did not impact any safety function; therefore, the surveillance test history supports the conclusion that the impact, if any, on system availability will be small as a result of the change to a 24 month surveillance interval.

**Failure Review:**

**Perf. Date Fail Cat. Description of Failure**

4/10/2017	A	SPF Note 1: "Closed light would not illuminate, local stroke PIT SAT. Close light still needs resolution. CARD 17-23319. CARD 17-23319 states: "closed light for the P4400F607B did not illuminate, Locally valve stoked correctly. during the stroke, in the close direction, the close light flickered once and never lit,changed light bulbs no affect, during open stoke the closed light flickered once,current the valve is opened in the MCR and locally." WO 47470406 written. WO 47470406 completed, found loose wiring in limit switch. Tightened lose wiring and tested SAT.
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**Justification of Failure**

The identified failure(s) would not have prevented the performance of the required safety function of the equipment. Therefore, this failure will have no impact on an extension to a 24 month surveillance interval.

# Performances: 6      # Failures: 2

**24 Month Justification:      Notes:**

The failures do not impact any safety function; therefore, the surveillance test history supports the conclusion that the impact, if any, on system availability will be small as a result of the change to a 24 month surveillance interval.

**Failure Review:**

**Perf. Date   Fail Cat.   Description of Failure**

3/20/2014      A      SPF states: EDG 11 was manually tripped after Step 5.1.33 due to fire at Turbo Charger. Removed EDG 11 from service IAW 23.307. CARD 14-22612 submitted. CARD 14-22612 states: "While performing LOP/LOCA testing per 24.307.01 (step 5.1.34 carrying ~1800kW and ~1100 kVAR in parallel with offsite), EDG 11 was manually tripped (locally) due to fire from lagging on the turbo inlet flange area of the exhaust manifold. CO2 was used to extinguish the fire. Inspection of the immediate area reveals no damage to governor and only surface indication of the fire." Reportability/Operability Review states: "EDG 11 declared inoperable and added to LCO 2014-0096." The Operator who put the fire out, the System Engineer, and Maintenance Electrician, who were all present at the fire, stated the "flame was no more than 12 inches high. The EDG 11 fire was extinguished within one minute from several blasts of CO2 from the hand held fire extinguisher." The damage was limited to insulation lagging only. AP-913 CONSEQUENTIAL FAILURE EVENT CLOCK RESET SCREENING determined: "This failure would not have resulted in the inability to control a critical safety function (e.g. Reactor water level and pressure, Primary and Secondary Containment, Drywell temperature and pressure, Spent Fuel Pool temperature and level, etc.), or capability to shutdown the Reactor and maintain it in a shutdown condition. The EDG did start and load and was only manually shut down by operators. This failure is NOT a failure of an MSPI monitored component. Evaluation has shown a reasonable assurance that the fire would have subsided after several minutes and the EDG would have continued to operate." During the investigation on 3/20/14 it was determined a lube oil leak from EDG 11 front engine cover on the control side was seeping through the seam of insulation lagging which accumulated on top of the exhaust manifold under lagging insulation at the control side of the turbo inlet flange area on EDG 11. The accumulation of oil on the exhaust manifold resulted in the fire after the exhaust manifold had heated up during the engine run for surveillance 24.307.01. Mechanical Maintenance found multiple bolts loose on the front cover of the EDG. However, after torqueing these bolts the leak was still evident a few hours later. While the engine was in standby a slow drip rate (< 1 drip per 5 minutes) of oil pooled up on top of the four-barrel exhaust inlet to the Control Side (CS) turbocharger from the front engine cover leak. Decision was made to use a sealant to prevent the leak from continuing. Since the front cover is a non-pressurized boundary, and high temperatures (above 250 degrees F) would not be seen, Pro-Seal 34 was used on the seam between the

**Justification of Failure**

The EDG did start and load and was only manually shut down by operators. New design was put on EDG 11 post-fire which has a "flap" that covers the seam and redirects any oils onto the floor away from the exhaust. The identified failure(s) would not have prevented the performance of the required safety function of the equipment. Therefore, this failure will have no impact on an extension to a 24 month surveillance interval.

front cover and engine block (WO 38176344). This stopped the leak. Background Information included with CARD 14-22612 states: "CARD 12-29936 was initiated on 12/12/2012 which identified smoke in the EDG 11 engine room during the monthly surveillance run of the engine. CARD stated "most of the exhaust/smoke in the engine room appeared to be coming from under the insulating blanket over the control side 4 barrel exhaust manifold. When the engine is first loaded, exhaust temperatures increase and the oil that is inside or outside of the exhaust manifold burns off. After about 15-20 minutes of loaded engine run time, the generation of exhaust/smoke in the engine room subsides." CARD requested a work order to inspect the EDG 11 control side 4 barrel exhaust manifold for possible cracks and stated "it would require removal of the insulation blankets and may require removal of hard insulation (if any exist) under the insulation blankets. Based on the fact exhaust/smoke cleared up after the engine had been loaded, System Engineering stated EDG 11 was able to perform its intended function since the smoke dissipates within 15-20 minutes." CARD 12-29936 Reportability/Operability Review states "the smoke/exhaust could be caused by small oil leaks where the oil collects within the insulation and burns off or a small crack on the exhaust manifold. In either case, there is not a concern with EDG 11 being able to meet its intended safety functions as demonstrated by satisfactory completion 24.307.14 operability surveillance." CARD 12-29936 initiated Work Order 35778469 to inspect EDG 11 exhaust manifold to determine cause of smoke and implement corrective action. Work Order 35778469 was coded a priority 5 and was scheduled for an EDG 11 safety system outage (SSO); scheduled during a planned EDG 11 SSO on 1/13/14. However, the EDG 11 SSO was rescheduled from 1/13/14 to 5/13/14, which was after RF16. Thus, the EDG 11 fire occurred on 3/20/14 during RF16 prior to the new schedule date of 5/13/14 for Work Order 35778469. Stated in CARD 14-22612 Description/Investigation: "System Engineering and Operations are used to seeing some smoke during initial operation of an EDG. Due to the design of the engine, some oil will accumulate inside the exhaust manifold from barring the engine over from the previous run. In addition, some oil will enter the inside of exhaust manifold during the initial start of the engine and operation at low load due to the piston rings not having as good a seal allowing some oil to enter the cylinder combustion chamber and then enter the exhaust manifold. When the engine is first loaded to approximately 1750 kW and combined exhaust temperatures increase to approximately 650 degrees F, the oil that is inside or outside of the exhaust manifold normally burns off. After approximately 15-20 minutes of loaded engine run time, the generation of exhaust/smoke subsides. During the engine runs prior to the 3/20/2014 fire, System Engineering had seen "more smoke at EDG 11" than on EDGs 12, 13, and 14 when the engine was first loaded to approximately 1750 kW and then saw the smoke clear after approximately 15-20 minutes of loaded engine run time. Thus, even though EDG 11 had more smoke than the other three EDGs, most of the smoke that was at EDG 11 was thought to have been coming from inside the exhaust manifold and leaking out of the exhaust manifold flanges and did not present a fire hazard. Since previous CARD 12-29936 had already initiated Work Order 35778469 to inspect EDG 11 exhaust manifold to determine the cause of smoke and implement corrective action, no new CARDS were initiated by

System Engineering or Operations for the EDG 11 smoke. Because the insulation lagging on EDG 11 exhaust manifold had not been removed to inspect for possible cracks or oil leaks as requested by Work Order 35778469, the risk significance of a fire hazard was not properly understood or challenged by Operations and System Engineering. It is concluded that a higher priority, such as priority 3 or 4, should have been given to Work Order 35778469 by Operations to do the inspection much sooner than the next scheduled EDG 11 SSO. It is expected that completion of Work Order 35778469 would have removed the insulation lagging and allowed the accumulation of lube oil on the exhaust manifold to be found and the source of the oil leak corrected which would have prevented the EDG 11 fire on 3/20/14.” From CARD 14-22612, “THE DIRECT CAUSE IS M14 - Cause Code: M10 - Mechanical Damage, M19 - Gasket/O-ring/Seal Failure - A fiber gasket located between the control side of the EDG 11 front cover and the engine block had failed which allowed lube oil to leak and accumulate on top of the exhaust manifold under the lagging insulation and resulted in a fire during a loaded run of EDG 11.” The damage was limited to only the lagging. CARD 14-22612 includes two Apparent Causes which are summarized as follows: 1) “The fiber gasket located between the front cover and the control side of EDG 11 front cover and the engine block failed due to repetitive cyclic compression/decompression that takes place on the gasket during the removal of the top cover of the EDG for its 24 month PM inspections. A 1 ½ inch section of the front cover gasket was missing. These two conditions resulted in oil leakage from the front cover.” 2) “Monitoring by plant personnel did not identify a lube oil leak which resulted in an accumulation of oil on top of the exhaust manifold, under the lagging insulation at the control side of the turbo inlet flange area on EDG 11, which presented a fire hazard. Operations did not identify or challenge the risk significance related to CARD 12-29936 initiated on 12/12/2012 and assign the proper priority to the work order for a smoking engine; the lagging was not removed and source of smoke was not identified to determine if a fire hazard existed.” Some of the CARD 14-22612 Corrective Actions are: 1) Replacement of lagging insulation blankets on the EDG 11 and EDG 13 exhaust manifolds prior to the turbo on the control side (CS) and opposite control side (OCS) with a different configuration to eliminate the seam that is located right under the corner of the front cover. The new configuration has a flap to divert oil leaks to the floor and prevent oil from leaking into the seam opening and pooling on the exhaust manifold piping. 2) Tightening of the bolts on the front engine cover and applied an approved sealant to the area of the leak on EDG 11 front engine cover to eliminate the leak that caused the fire until the split front cover could be installed. Also torque checks were performed on the other remaining engine front cover bolts. 3) Replace the one piece front cover with the new split cover design, as well as replacing the front cover gaskets. 4) New technical requirement was added to the 24-month PM to inspect areas around and under front engine cover and front engine cover gasket for evidence of oil leaks. If evidence of leaks are found, replace gasket. 5) Revised maintenance procedure 34.307.001 to perform a torque check on all the engine front cover bolts to verify proper crush of the front cover gasket. 6) Revised PM events W836, W840, W844, and W848 (PERFORM 24 MONTH PM TASKS PER 34.307.001 ON EMERGENCY DIESEL GENERATOR) in Maximo

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to revise the PM job plans to specifically look for small fuel oil or lube oil leaks that can come in contact with the exhaust manifold with the EDG in standby following completion of work and with the engine running.

4/15/2017	A	<p>SPF states: "Step 5.1.86 Jacket Coolant Trouble still in with temperature at 104F (also step 6.1.3). Sect 5.2 will be performed as soon as LO temperature lowers &lt; 150F. CARD 17-23557 submitted for evaluation and repair" CARD 17-23557 states: "EDG-11 JCS Trouble would not clear Low Temperature Alarm with temperature at 104F. Need evaluation performed, and if required generate a WO to calibrate or replace switch." Reportability/Operability Review states: EDG 11 Jacket Coolant temperature low is a non essential trip and would not impact the operation of EDG 11 if required to start to perform its safety related function. EDG 11 will remain OPERABLE with the Standby Jacket Coolant Temperature &gt;85F. EDG-11 is currently inoperable for RF-18 testing. This issue will not prevent restoring EDG 11 to operable status.NOTE: CARD was initiated on 4/15/2017, 06:50:34PM; CARD Notes state that alarm is currently clear, 4/15/17, 07:24:13PM. WO 47506434, Calibrate R30NA04A JCS Stby Htr is referenced. WO 47506434 to calibrate switch was issued on 4/17/2017 and completed SAT on 8/6/2018.</p>	<p>The identified failure(s) would not have prevented the performance of the required safety function of the equipment. Therefore, this failure will have no impact on an extension to a 24 month surveillance interval.</p>
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# Performances: 6      # Failures: 2

**24 Month Justification:      Notes:**

Two failures are identified as unique failure which is not indicative of a repetitive time based failure mechanism. The other failure did not impact any safety function; therefore, the surveillance test history supports the conclusion that the impact, if any, on system availability will be small as a result of a change to a 24 month surveillance interval.

**Failure Review:**

**Perf. Date   Fail Cat.   Description of Failure**

11/21/2015	D	<p>SPF Note 1: "Manually tripped EDG 12 locally due to loss of 72EB-2D. Breaker tripped after LOCA Test from Sequencer panel, Entered 'Loss of 64C' and 'Loss of 72C' to reenergize buses and loads. EDG 12 remains shutdown. MCC 72EB-2D remains deenergized, D7 EECW - (No EESW Pump) 72CF restored. All bus relays are reset. CARD 15-29239 submitted." CARD 15-29239 states: "During the performance of 24.307.02 - Emergency Diesel Generator 12 - Loss of Offsite Power and ECCS Start With Loss of Offsite Power Test, on step 5.1.32 &amp; 5.1.33, a LOCA signal is injected into the Digital load sequencer to resequence the loads. Following trip and reclosing of 12EB-EB3 (EDG 12 output breaker) the EDG12 DGSW Pump attempted to start and lost power. This created a situation in which an EDG was running and sequencing on loads with no forced Diesel Generator Service Water. The operating crew tripped EDG 12 using the local overspeed trip. AOPs for loss of 64C and 72C were entered. The operating crew backed out of the surveillance. Bus 64C and 72C have been restored IAW the SOPs. Request investigation and work order to repair."</p> <p>Reportability/Operability Review states: "DGSW pump tripped during EDG 12 LOP testing; Supply breaker to the MCC 72EB-2D was found tripped. DGSW pump could not support function for running the EDG. EDG 12 DGSW pump declared inoperable. LCO 2015-0568." Surveillance 24.307.02 was reviewed to ensure the appropriate conditions were set to close breakers 72EB-2D for EDG12 DGSW and 72EB-2C for Division 1 EESW pump. On 11/21/15 during performance of 23.307.02 a LOCA signal was initiated via Step 5.1.32 &amp; 5.1.33 (CARD 15-29239) to sequence loads on to EDG-12. Approximately 45-50 seconds into the load sequence, 72EB POS 2D closed then tripped approximately 1 second later. EDG 12 was the manually tripped due to a loss of EDG-12 DGSW C pump. Work order 44339839 released to Work Group at 0455 11/22/2015:1. Test Power Shield - if bad replace, if trip/reset button not working may need to check MCC 72EB-2D loads2. Verify resistor for local red light is not shorted, also a physical inspection to ensure not shorted to adjacent terminals - if resistor shorted replace, if terminals shorted repair.3. Insulation resistance checks on breaker control wiring and feed to MCC - repair if required.4. Test load shed string associated with 4NV94 - verify working correctly, replace relays as necessary5. Test relay 4NV94 - replace if required.WO 44339839 was completed. No issues identified with all components inspected. Conclusion was that the issue is within the breaker. Confirmed that 72EB-2D</p>
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**Justification of Failure**

The identified failure is unique and does not occur on a repetitive basis and is not associated with a time-based failure mechanism. Therefore, this failure will have no impact on an extension to a 24 month surveillance interval.

was REFURBED in 2009. It was an Extent of Condition position from CARD 09-27133. The breaker was inspected by Maintenance and no issues were found with the breaker. On 11/22/15, WO 44340274 initiated to replace the 72EB-2D breaker with a refurbished/PM'd spare. On 11/23/15 during performance of 23.307.02, Section 5.1 (WO 44349460) of EDG12 LOP/LOCA when a LOCA signal was initiated (CARD 15-29278), Division 1 EESW pump (72EB-2C) tripped immediately after re-sequencing the second time, whereas, EDG-12 DGSW C Pump (R1600S017A, 72EB-2D) re-started as expected. LOR 27X-12EB was observed cycling following the closure of 12EB-EB3. 72EB-2C attempted to close and tripped immediately during load sequencing. The following are other facts from the event:• 27X 12EB LOR Turning on and off (Load Sequence correlates with cycling).• Relay 3NV94 on and off with 27X-12EB by design (Could not confirm other 94 relays).• 72EB-2C did not re-close (closed and re-opened - per video view of breaker lights).• In Relay Room, 12EB light flashed in/out during evolution. (note: also saw this a few times Saturday 11/21/2015) This is the XK31 indicating light on drawing I-2714-22. This is lit from 12EB Load Shed Relay 2MR69 (Drawings I-N-2572-18 Grid D-7, B-7 & I-2714-22).• EDSW restarted as expected (see video).• EESW tripped today AND Saturday (see pump flow curves).• Checked Potential Transformers (PT); circuits good.• Check EB3 52S and 52H cell switch. Indications show these are positioned properly. Work order 44346132 "Inspect and Test 27X-12EB, 27-XY, and 27-YZ" was completed. It was determined that the issue was caused by erratic cycling of the LOR 27X-12EB. The relay was replaced and issue was resolved. A failure analysis will be conducted on the LOR 27X-12EB in order to determine the cause of the failure. This CARD will track the failure analysis of LOR 27X-12EB. Failure analysis of LOR 27X-12EB was completed. "Direct Cause found to be inconclusive. Simulation performed wedged a piece of a foreign material behind the trip lever which replicated the original failure. After disassembly of the relay, substance was observed as being drier than normal grease and came off of the lockout relay's internal parts in chunks. The failure analysis led to the conclusion that hardened grease found in the relay could have become foreign material and caused cycling of the relay." CORRECTIVE ACTIONS: Twenty one PMs were created to replace selected LOR relays (see CARD 15-29239). This CARD action plan is applicable to CARDS 15-29239 and 15-29278. The issues in those CARDS were the result of the failure of LOR 27X-

11/23/2015 A

SPF Note 1: "Step 5.1.38, Step 1.c, 72C-2D failed to close in. CARD 15-29280 written." CARD 15-29280 states: "During performance of 24.307.02, Breaker 72C-2D was being restored and tripped. SOER shows breaker closed at 12:08:11.567 seconds and tripped at 12:08:14.719 seconds. Reports from the field showed no Flags, the 94 device was de-energized and the 52XX relay was picked up. An acrid odor was also noticed by this breaker. Informed CRS, left in tripped for further evaluation." Investigation detailed that breaker 72C position 2D feeds non-safety related and non-risk significant distribution cabinet 72C-2D. This failure resulted in the loss of a maintenance rule non-risk significant function and a mode 2 restraint. Breaker is load shed and is not sequenced back on during a LOP or LOP/LOCA. The breaker failed to close after completion of the LOP/LOCA during restoration from the procedure. The breaker was pulled out and troubleshot under WO 44347395. "It was found that the x coil (closing coil) had failed which prevented the breaker from closing. The coil was replaced and the breaker was verified to be working properly. The acrid odor indicates that the coil likely shorted. The coil was not saved for inspection." The DIRECT CAUSE E05 - Shorted/Grounded was chosen because the coil failed to create a magnetic field to close the breaker and a smell of burnt electrical insulation was noted. Investigation noted that "Review of work history for this breaker revealed breaker PM had been completed one month prior to the failure." PM indicated the x coil operated as expected. "There was no indication of the coil failure that could have been detected. The breaker is refurbished every 8R and the PM is performed every 4R which is in alignment with the industry recommendations." Maintenance Rule evaluation determined "because breaker failed to close, it failed to supply power to its load, and therefore, failed function R1400-02, provide power to 4160 VAC and 480 VAC Maintenance Rule Non-Risk Significant loads throughout the plant. The breaker was opened which successfully allows it to perform its function of protecting bus 72C. Therefore function R1400-01, was not lost. The PM work order, 34484681 (i.e., completed one month prior to the failure) was reviewed to determine if there was any indication of the x coil being degraded. The x coil operated as expected at 80% rated voltage (the requirement is 95%) and the minimum megger value was greater than 550 meg-ohms. There was no indication of binding discovered during the PM or the investigation WO and the breaker was cycled for PMT at the end of each WO. There has also been no history of issues associated with this breaker serial number. Maintenance on the breaker is performed in accordance with all known industry and vendor recommendations which include the coil acceptance criteria for determining if the coil is degraded. The industry does not recommend periodic replacement of the closing or trip coils as most pending coil failures can be caught by the testing during the PM. There was no indication of the coil failure that could have been detected." As noted: "Sys Engineering- 01/28/2016 08:43:04 AM To address managers comments. This CARD gives an inappropriate level of perceived component importance due to an improper selection of MR function during the initial MRFF evaluation. The actual function lost was non-risk significant and this CARD should have only been made a Level 3. This error in the MRFF evaluation will be corrected during the update from L1-pending investigation. The failed coil was not kept for any failure analysis. As discussed in the CARD body, the PMs are consistent with the

The identified failure(s) would not have prevented the performance of the required safety function of the equipment. Therefore, this failure will have no impact on an extension to a 24 month surveillance interval.

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industry recommendations for maintenance on this model of circuit breaker which are reviewed yearly at the Circuit Breakers Users Group meeting and is based on plant experiences. These recommendations do not include periodic replacement of the closing or trip coils. Fermi should maintain alignment with the industry/vendor recommendations."

# Performances: 6      # Failures: 2

**24 Month Justification:      Notes:**

One failure is identified as a unique failure which is not indicative of a repetitive time based failure mechanism. The other failure did not impact any safety function; therefore, the surveillance test history supports the conclusion that the impact, if any, on system availability will be small as a result of a change to a 24 month surveillance interval.

**Failure Review:**

**Perf. Date   Fail Cat.   Description of Failure**

11/25/2010	A	SPF Note: " Step 5.1.56 EDG 13 was not operated unloaded for five minutes due to leak at #3 opposite control side injection pump to fuel header gasket increasing - CARD 10-30701 previously identified this issue. Added note to CARD concerning increased leakage rate. WO 32047813 repaired Fuel Oil pump leaks on 11/25/2010
4/14/2017	D	SPF Note 1 - "During performance of surveillance, #12 Drywell Cooling Fan (T4700C012) did not restart during load sequencing following loss of offsite power auto start signal to EDG 13. Walkdown at MCC 72E 5B found an acrid odor. MCC 73E 5B was de-energized. To back out of surveillance, steps were performed to load EDG 13, restore offsite power to 65E, and then shutdown EDG 13 to place in standby conditions. Steps are NA that were not required to accomplish this. CARD 17-23496" CARD 17-23496 states: "Drywell Cooling Fan 12 did not restart during the load sequence following simulated loss of power. Reference Acceptance Criteria Step 5.1.17. The CMC switch for T4700C012 was in Auto and indicated TRIPPED upon attempted restart. A couple minutes later all indications were lost at the CMC switch. Field walkdown found an acrid odor at MCC 72E 5B. The MCC was deenergized and initial investigation shows indication of a burnt contactor. Investigate cause and repair." CARD Reportability/Operability Review states: "72E-5B was de-energized following the failure, to de-energize the MCC for Drywell Fan #12. The inoperability is tracked on LCO 2017-0210. 24.307.03 was backed out of, with only part of Section 5.1 complete." Investigation by electrical maintenance and operations found the contactor coil burnt. The Direct Cause is E04 - insulation breakdown because the coil insulation broke down and shorted resulting in the inability to close the contactor and start the drywell cooler. WO 47495796 initiated to replace contactor. A replacement contactor (i.e., 2 Overload blocks and Aux contact block) was installed and DWC #12 operated as expected.

**Justification of Failure**

The identified failure(s) would not have prevented the performance of the required safety function of the equipment. Therefore, this failure will have no impact on an extension to a 24 month surveillance interval.

The identified failure is unique and does not occur on a repetitive basis and is not associated with a time-based failure mechanism. Therefore, this failure will have no impact on an extension to a 24 month surveillance interval.

# Performances: 6      # Failures: 2

24 Month Justification:      Notes:

One failure is identified as an event driven failures which are not indicative of a repetitive time based failure mechanism. The other failure did not impact any safety function; therefore, the surveillance test history supports the conclusion that the impact, if any, on system availability will be small as a result of the change to a 24 month surveillance interval.

Failure Review:

Perf. Date   Fail Cat.   Description of Failure

4/28/2012	C	SPF Note 2: "72F 3A Brkr failed to close which stopped T4600C004 from starting. CARD 12-23915 submitted." See "Description of Failure" for Event 284 (WO 31841074)
4/13/2017	A	SPF Note 1: "Step 5.1.25.1 N/A, Section 5.2 will be performed, Step 6.1.3.1 also. CARD 17-23400 previously submitted on this concern for DCR." CARD 17-23400 was initiated after it was discovered during markup of surveillance that substep 5.1.25.1 directs disconnecting the chart recorder leads. CARD 17-23400 states: "From the revision summary, "9) Added removal of chart recorder and restoration of RWCU, MPU2 and MPU3 to Section 5.1 if desired." The step added to 5.1.25 is not conditional and this is a Continuous Use procedure." As noted in the CARD: " DCR 16-1329 did not implement change to step 5.1.25 note to state "if desired" (e.g. not intending to perform section 5.2. ) Section 5.2 needs the recorder installed, and has step to remove it after data is obtained. Step 5.1.25.1 can be N/A'd in the current revision and documented as such on the SPF, this will not affect acceptance criteria or intent of surveillance." CARD closed to DCR 17-0575.

Justification of Failure

This is an event driven failure in that breaker secondary contacts were not cleaned thoroughly which contributed directly to the As Found condition. Therefore, this failure will have no impact on an extension to a 24 month surveillance interval.

The identified failure(s) would not have prevented the performance of the required safety function of the equipment. Therefore, this failure will have no impact on an extension to a 24 month surveillance interval.

Event	Title	Associated SRs and Function	
2295	PERFORM 42.610.01 Div 1, ALTERNATE FEED, EPA's E & G, CAL/FUNC	SR 3.3.8.2.2.a SR 3.3.8.2.2.c	SR 3.3.8.2.2.b SR 3.3.8.2.3

# Performances: 7      # Failures: 1

**24 Month Justification:    Notes:**

One failure identified which did not impact any safety function; therefore, the surveillance test history supports the conclusion that the impact, if any, on system availability will be small as a result of the change to a 24 month surveillance interval.

**Failure Review:**

Perf. Date	Fail Cat.	Description of Failure	Justification of Failure
12/7/2015	A	SPF Note: "As Found underfrequency on C7100S003E high out of band. Adjusted to within band. CARD 15-29732" CARD 15-29732 states: "Div 1 Alternate Feed EPA's per 42.610.01, the As Found setpoint for C7100S003E was 57.48 Hz. Acceptance Criteria tolerance is 57.3 - 57.1 Hz. Notified SM and supervisor. Adjusted to 57.21 Hz per 42.610.01. Wrote Trend Card to document." Reportability/Operability Review states: "Acceptance Criteria tolerance is 57.1 - 57.3 Hz. Per 42.601.01 the underfrequency trip was reset to within tolerance (57.21 Hz) and the test was completed sat. All acceptance criteria and testing has been completed satisfactorily. No operability concern exist. The RPS A alternate EPA breaker, C7100S003E, remains operable." Action Item Completion Comments: "Maintenance Rule Functional Failure evaluations determined that the event is not a MRFF and thus based on the original OSC note, this CARD is treated as a Trend Only."	The identified failure(s) would not have prevented the performance of the required safety function of the equipment. Therefore, this failure will have no impact on an extension to a 24 month surveillance interval.

Event	Title	Associated SRs and Function
2297	PERFORM 42.610.03 Div 2, ALTERNATE FEED, EPA's F & H, CAL/FUNC	SR 3.3.8.2.2.a SR 3.3.8.2.2.c

# Performances: 6 # Failures: 1

**24 Month Justification: Notes:**

One failure identified which did not impact any safety function; therefore, the surveillance test history supports the conclusion that the impact, if any, on system availability will be small as a result of the change to a 24 month surveillance interval.

**Failure Review:**

**Perf. Date Fail Cat. Description of Failure**

8/7/2012 A SPF Note: "C7100S003H Logic Board could not be tested SAT or adjusted - CARD 12-26524" CARD 12-26524 states: "alternate feed EPA breaker C7100S003H, did not meet the as found undervoltage time delay acceptance criteria of 3.0 to 3.1 seconds. Procedure allows for the adjustment of the time delay. When adjusting the potentiometer, the time delay was inconsistent from one test to another. Performed several tests without disturbing the pot with continued inconsistent results (example, OOS low at 2.88, adjust pot to increase time delay, trip would occur instantaneously). Wiped potentiometer several times, readjusted to original setting with unsatisfactory results. Made final setting adjustment and tested four times without touching adjustment pot... 3.02s, 2.88s, 2.88s and 0.08s. Stopped work...informed Maintenance Foreman and Shift Mgr, wrote CARD." Reportability/Operability Review states: "Only the in service EPA breakers are required to be operable. The normal EPA breaker that is in service is not affected by this condition and remains OPERABLE." Maintenance Rule Functional Failure evaluation completed; event is not a Maintenance Rule Functional Failure. WO 35091774 requested. WO 35091774 replaced logic card in C7100S003H with new Card and completed testing per 42.610.03, SAT.

**Justification of Failure**

The identified failure(s) would not have prevented the performance of the required safety function of the equipment. Therefore, this failure will have no impact on an extension to a 24 month surveillance interval.

Event	Title	Associated SRs and Function
2322	PERFORM 24.408.04 SEC-5.2 DIV 2 PRIMARY CONT MONT SYS VLV OP AND POS IND VERIF	SR 3.3.3.1.2-8

# Performances: 6 # Failures: 0

**24 Month Justification: Notes:**

There were no failures, therefore the surveillance test history supports the conclusion that the impact, if any, on system availability will be small as a result of the change to a 24 month surveillance interval.

		Associated SRs and Function	
Event	Title		
2440	PERFORM 44.210.059 ECCS/ADS/MDS D1 SRV SOLENOID FUNC TEST	SR 3.3.5.1.5-4.a	SR 3.3.5.1.5-4.b
		SR 3.3.5.1.5-4.c	SR 3.3.5.1.5-4.d
		SR 3.3.5.1.5-4.e	SR 3.3.5.1.5-4.f
		SR 3.3.5.1.5-4.g	SR 3.3.5.1.5-4.h
		SR 3.3.5.1.5-5.a	SR 3.3.5.1.5-5.b
		SR 3.3.5.1.5-5.c	SR 3.3.5.1.5-5.d
		SR 3.3.5.1.5-5.e	SR 3.3.5.1.5-5.f
		SR 3.3.5.1.5-5.g	SR 3.3.5.1.5-5.h
		SR 3.3.5.1.6-4.i	SR 3.3.5.1.6-5.i
		SR 3.3.6.3.4-1	SR 3.3.6.3.4-2
		SR 3.3.6.3.4-3	SR 3.4.3.2
		SR 3.5.1.13	SR 3.6.1.6.1
		SR 3.6.1.6.2	

# Performances: 3      # Failures: 0

**24 Month Justification: Notes:**

There were no failures, therefore the surveillance test history supports the conclusion that the impact, if any, on system availability will be small as a result of the change to a 24 month surveillance interval.

		Associated SRs and Function	
Event	Title		
2441	PERFORM 44.210.060 ECCS/ADS/MDS D2 SRV SOLENOID FUNC TEST	SR 3.3.5.1.5-4.a	SR 3.3.5.1.5-4.b
		SR 3.3.5.1.5-4.c	SR 3.3.5.1.5-4.d
		SR 3.3.5.1.5-4.e	SR 3.3.5.1.5-4.f
		SR 3.3.5.1.5-4.g	SR 3.3.5.1.5-4.h
		SR 3.3.5.1.5-5.a	SR 3.3.5.1.5-5.b
		SR 3.3.5.1.5-5.c	SR 3.3.5.1.5-5.d
		SR 3.3.5.1.5-5.e	SR 3.3.5.1.5-5.f
		SR 3.3.5.1.5-5.g	SR 3.3.5.1.5-5.h
		SR 3.3.5.1.6-4.i	SR 3.3.5.1.6-5.i
		SR 3.3.6.3.4-1	SR 3.3.6.3.4-2
		SR 3.3.6.3.4-3	SR 3.4.3.2
		SR 3.5.1.13	SR 3.6.1.6.1
		SR 3.6.1.6.2	

# Performances: 3      # Failures: 0

**24 Month Justification: Notes:**

There were no failures, therefore the surveillance test history supports the conclusion that the impact, if any, on system availability will be small as a result of the change to a 24 month surveillance interval.

Event	Title	Associated SRs and Function	
2527	PERFORM 44.020.502 INBD SDC-HEAD SPRAY AUTO ISOLATION LOGIC FUNCTIONAL	SR 3.3.6.1.5-6.a SR 3.5.2.8	SR 3.3.6.1.5-6.b SR 3.6.1.3.8
# Performances: 6		# Failures: 0	

**24 Month Justification: Notes:**

There were no failures, therefore the surveillance test history supports the conclusion that the impact, if any, on system availability will be small as a result of the change to a 24 month surveillance interval.

Event	Title	Associated SRs and Function	
2528	PERFORM 44.020.001 SECT 6.3 NSSS MSIV DRNS/ RECIRC SAMPLE INBD VLV'S LOGIC SYS FUNC	SR 3.3.6.1.5-1.a SR 3.3.6.1.5-1.d SR 3.3.6.1.5-1.g SR 3.3.6.1.5-2.b SR 3.3.6.1.5-2.d SR 3.6.1.3.8	SR 3.3.6.1.5-1.b SR 3.3.6.1.5-1.e SR 3.3.6.1.5-2.a SR 3.3.6.1.5-2.c SR 3.5.2.8
# Performances: 7		# Failures: 0	

**24 Month Justification: Notes:**

There were no failures, therefore the surveillance test history supports the conclusion that the impact, if any, on system availability will be small as a result of the change to a 24 month surveillance interval.

Event	Title	Associated SRs and Function	
2529	PERFORM 44.020.001 SECT 6.4 - VENT/PURGE ISO NSSSS DIV 1 LOGIC SYSTEM FUNCTIONAL	SR 3.3.6.1.5-1.a SR 3.3.6.1.5-1.d SR 3.3.6.1.5-1.g SR 3.3.6.1.5-2.b SR 3.3.6.1.5-2.d	SR 3.3.6.1.5-1.b SR 3.3.6.1.5-1.e SR 3.3.6.1.5-2.a SR 3.3.6.1.5-2.c SR 3.6.1.3.8
# Performances: 6		# Failures: 0	

**24 Month Justification: Notes:**

There were no failures, therefore the surveillance test history supports the conclusion that the impact, if any, on system availability will be small as a result of the change to a 24 month surveillance interval.

Event	Title	Associated SRs and Function
2530	PERFORM 44.020.001 SECT 6.5 - NS4 DIV 1 SECONDARY CONT, DW SUMP & DRN, CCHVAC LF	SR 3.3.6.1.5-1.a    SR 3.3.6.1.5-1.b SR 3.3.6.1.5-1.d    SR 3.3.6.1.5-1.e SR 3.3.6.1.5-1.g    SR 3.3.6.1.5-2.a SR 3.3.6.1.5-2.b    SR 3.3.6.1.5-2.c SR 3.3.6.1.5-2.d    SR 3.3.6.1.5-7.a SR 3.3.6.2.5-1       SR 3.3.6.2.5-2 SR 3.3.6.2.5-3       SR 3.3.6.2.5-4 SR 3.3.7.1.6-1       SR 3.3.7.1.6-2 SR 3.3.7.1.6-3       SR 3.6.1.3.8 SR 3.6.4.2.3          SR 3.6.4.3.3 SR 3.7.3.3

# Performances: 6      # Failures: 0

**24 Month Justification: Notes:**

There were no failures, therefore the surveillance test history supports the conclusion that the impact, if any, on system availability will be small as a result of the change to a 24 month surveillance interval.

Event	Title	Associated SRs and Function
2540	PERFORM 44.020.011 PHASE 3 RX LOW WATER LEVEL 1, TRIP SYS A, CHANNEL A, RTT	SR 3.3.6.1.7-1.a

# Performances: 4      # Failures: 0

**24 Month Justification: Notes:**

There were no failures, therefore the surveillance test history supports the conclusion that the impact, if any, on system availability will be small as a result of the change to a 24 month surveillance interval.

Event	Title	Associated SRs and Function
2623	PERFORM 44.020.046 PHASE 3 MAIN STEAM LINE FLOW, DIV 2, CHANNEL D, RTT	SR 3.3.6.1.7-1.c

# Performances: 4      # Failures: 0

**24 Month Justification: Notes:**

There were no failures, therefore the surveillance test history supports the conclusion that the impact, if any, on system availability will be small as a result of the change to a 24 month surveillance interval.

Event	Title	Associated SRs and Function	TRVEND 24MCGNF319001 Rev 1
2809	PERFORM 44.060.002 RCIC SYSTEM LOGIC FUNCTIONAL TEST - ONLINE	SR 3.3.3.2.2 SR 3.3.5.2.5-2 SR 3.3.6.1.5-4.a SR 3.3.6.1.5-4.c SR 3.3.6.1.5-4.e SR 3.6.1.3.8	Page 370 of 395

# Performances: 6      # Failures: 2

**24 Month Justification: Notes:**

Two failures are identified as event driven failures which are not indicative of a repetitive time based failure mechanism. There are no other failures; therefore, the surveillance test history supports the conclusion that the impact, if any, on system availability will be small as a result of a change to a 24 month surveillance interval.

**Failure Review:**

**Perf. Date Fail Cat. Description of Failure**

2/16/2010      C      SPF Notes 2 issues: 1) "Step 6.5.12 The 1D24 Annunciator never did alarm or subsequently clear. Discussed with CRS and I&C Supervisor. Told to continue with surveillance." 2) "Step 6.6.9.2 VOM 2 indicates approx. 550 ohms. Also Step 8.1. Discussed with CRS and I&C Supervisor (observing). During discussion/evaluation period of approx. 20 minutes, saw resistance vary from approx. 15 ohms to 33 Megohms. Per CRS, note it, and move on. Continued with surveillance; no additional problems. Refer to CARD 10-21400." CARD 10-21400 states: "...an unexpected resistance was detected in the E51-K20 (E5100M020) relay. Specifically, step 6.6.9.2 did not meet Acceptance Criteria. This step measures resistance between terminals A-32 and A-36 (relay K20, contacts 3-4). Expected resistance is 0 ohms. Actual measured resistance during performance of the surveillance was 550 ohms and slowly increased to 33 megohms. This indicates contacts 3-4 have failed in the closed (deenergized) state. This condition affects the ability of the E5150F013 to close on a RCIC Turbine trip signal." Cause of the failure is stated as follows: "Surface contamination on relay contact surfaces is expected and unavoidable (tarnish and dust). The wiping action of the relay is typically sufficient to remove these contaminants. However, stubborn contamination may not be removed during the first few wipes of the relay. Depending on the level of contamination, different test devices will indicate different levels of resistance. The surveillance utilizes a Fluke VOM for resistance determination in this surveillance. Since the VOM only applies small currents through the contacts being tested the current level may not be sufficient enough to pass through even minor contamination. This would result in a high calculated resistance reading, which can be construed as a failed surveillance. If a different meter with a stronger current source is used, minor contamination does not present sufficient resistance to the current flow and the calculated resistance will be lower. The minor surface contamination does not prevent the relay contact from performing its intended function because in the logic chain, the contacts carry high enough currents to overcome this minor resistance.

**Justification of Failure**

This is an event driven failure in that the test equipment (Fluke VOM) being utilized only applies small current through the contacts being tested which may not be sufficient enough to pass through even minor contamination. As a result, relay contacts that were expected to be closed and were actually closed, appeared to be open as indicated on the test equipment being used. This was considered a "one time fluke anomaly that could not be reproduced in the lab" during the procedure performance. Therefore, this failure will have no impact on an extension to a 24 month surveillance interval.

Engineering concluded that the voltage from the Fluke used for the surveillance is very low and may not measure correctly the resistance of the contact with the very low voltage that the unit can supply. To determine if the relay had truly failed its surveillance, a bench test was developed to test the relay contact resistance at rated power and loads. Bench test results indicated that the relay contact 3-4 would have worked as required. Therefore, the in-situ testing of the relay with a fluke meter is very conservative due to low voltage and may allow for a false failure to be concluded for a relay contact." WO 30934249 replaced E51-K20 relay on 2-16-2010. This event was determined to not be a MRFF.

11/11/2014	C	SPF: "While performing 6.6.5.1 when E5150F001 reached full open, VOM 1 flickered but did not settle in at a value. Then returned to 110 ohms. All other steps were SAT. Talked to Supervisor and CRS to reperform 6.5 & 6.6 to get a reading for 6.6.5.1, installed a different meter." Sections 6.5 and 6.6 were completed successfully on second performance of those sections.	This is an event driven failure in that the test equipment (VOM) being utilized to document the test results failed during the procedure performance. As a result, the procedure acceptance criteria was not able to be confirmed as acceptable; a second VOM was used and steps were performed, once again, to confirm results. Therefore, this failure will have no impact on an extension to a 24 month surveillance interval.
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Event	Title	Associated SRs and Function	
3293	PERFORM 43.401.711 DIV 1 CORE SPRAY INJECTION CHECK VALVE EXERCISE TEST	SR 3.3.5.1.6-1.d	SR 3.3.5.3.3-1.b
# Performances: 6		# Failures: 0	
<b>24 Month Justification:</b> <b>Notes:</b>			
There were no failures, therefore the surveillance test history supports the conclusion that the impact, if any, on system availability will be small as a result of the change to a 24 month surveillance interval.			

Event	Title	Associated SRs and Function	
3294	PERFORM 43.401.712 DIV 2 CORE SPRAY INJECTION CHECK VALVE EXERCISE TEST	SR 3.3.5.1.6-1.d	SR 3.3.5.3.3-1.b
# Performances: 6		# Failures: 0	
24 Month Justification: Notes:			
There were no failures, therefore the surveillance test history supports the conclusion that the impact, if any, on system availability will be small as a result of the change to a 24 month surveillance interval.			

Event	Title	Associated SRs and Function	TRVEND 24MCGNF319001 Rev 1
3300	PERFORM 44.220.110 SECT. 6.1 (H21P015) GRP 2 INST LINES EFCV'S, FUNCTIONAL TEST	SR 3.6.1.3.9	Page 372 of 395

# Performances: 1 # Failures: 1

**24 Month Justification:** Notes: Performance includes 3300A, B, C, D and E Ref. DTE-19001, Section 3 Design Inputs

One failure identified which did not impact any safety function; therefore, the surveillance test history supports the conclusion that the impact, if any, on system availability will be small as a result of the change to a 24 month surveillance interval.

#### Failure Review:

#### Perf. Date Fail Cat. Description of Failure

11/24/2010 A SPF notes four issues: 1) "Step 6.4.10.2.a and b. No Closed lights. See WO 29748936, switches were adjusted and retest was SAT." WO 29748936 was written (4/27/09) in support of CARD 09-23281 (written 4/26/09). CARD 09-23281 states: "B31-F506A Excess flow check valve has no indication . The check valve worked until 4/25/09 until the "A" recirc pump was shut down. Troubleshoot and repair". WO 29748936 was completed on 11/24/2010 to adjust limit switches satisfactorily. 2) "Step 6.5.11.2.a & b., no closed lights also Step 6.5.11.4. See WO 29748902, Definitely got a good "check" the first time but closed L/S's weren't properly aligned - doesn't appear to be resetting properly, as shown by subsequent tests for closure (3 times) did not get the flow/check action at P022 drain like we did the first time; believe check valve is now stuck closed. New CARD 10-31289." WO 29748902 was written in support of CARD 09-23249 (written 4/25/09). The Corrective Actions stated in CARD 09-23249 are: "Work order 29748902 initiated to replace B31-F503B in RF14. Work order is included in RF14 potential scope and also included on the B3100 System Health Report as a targeted milestone to return system health to GREEN." During this performance of 44.220.110, WO 29748902 was revised as stated: "The original scope of this work order was to replace Excess Flow Check Valve B31-F503B due to its poor maintenance history, a replacement valve could not be received in time for RF14 so it is desired to fix only the dual indication at this time. The purpose of this work order is to replace the limit switches for B31-F503B and to adjust limit switches for proper indication. NOTE: This work request is written to utilize 18 month surveillance 44.220.110 to establish initial conditions, perform testing and calibration, and to restore and IV instruments back to service." WO 29748902 was completed as revised satisfactorily. New CARD 10-31289 (written for this 11/24/2010 event performance) Description/Investigation states: "B31F503B has been worked every refuel outage since RF8 except for RF10. The original plan for RF14 was a complete valve replacement. The work package was planned in January 2010 and the EFCV was ordered by the planner. The part did not arrive for RF 14 because there was a discrepancy between the vendor and the item master number. The part was never ordered due to this discrepancy. We knew going into RF14 that we were not going to be successful, but we had a commitment to attempt to repair the indication. A new Work Order was generated for RF15, the WO number is 32174694 and the EFCV was ordered by the planner." CARD 10-31289 Closure

#### Justification of Failure

All three valves were able to perform the intended safety function. The identified failure(s) would not have prevented the performance of the required safety function of the equipment. Therefore, this failure will have no impact on an extension to a 24 month surveillance interval.

Summary states: "The Vendor discrepancy was cleared up and a new PO was created for the Work Order in RF15." CARD Reportability/Operability Review states: "B31F503B, Recirc Loop B flow instrumentation EFCV, is a PCIV. During the RPV pressure test the B31F503B demonstrated isolation function by closing as demanded. B31F503B remains operable as a PCIV." CARD Description/Investigation details that: " The valve is closing properly and passes the Closing Functional exam (Step 6.6.11.2.c) in 44.220.110. The valve will successfully close on demand to satisfy it's safety function. It is evident the valve is currently open - providing it's function as a source valve for Recirc Flow instrumentation." 3) "Step 6.5.11.6.a & b. and 6.5.11.7, no open lights. Step 6.5.11.8, Adjustment for B31-F503B position switches is not required per SM." B21-F503A red Open lights on Panel H21-P402H and H11-P805 were verified ON in WO 29748902. 4) "Step 7.1, Table 1 B21-N003A should be C32-N003A, CRS Informed, CARD 10-31151 written" CARD 10-31151 states: "...Verified C32-N003A is correct by referring to page 5 where step 6.1.5 is taking C32-N003A out of service (not B21-N003A)." DCR 10-1613 was initiated to process this procedure revision.

Event	Title	Associated SRs and Function
3300A	PERFORM 44.220.110 SECT. 6.2 (H21P025) GRP 2 INST LINES EFCV'S, FUNCTIONAL TEST	SR 3.6.1.3.9

# Performances: 0 # Failures: 0

24 Month Justification: Notes: Completed by Event 3300

Event	Title	Associated SRs and Function
3300B	PERFORM 44.220.110 SECT. 6.3 (H21P009) GRP 2 INST LINES EFCV'S, FUNCTIONAL TEST	SR 3.6.1.3.9

# Performances: 0 # Failures: 0

24 Month Justification: Notes: Completed by Event 3300

Event	Title	Associated SRs and Function
3300C	PERFORM 44.220.110 SECT. 6.4 (H21P006) GRP 2 INST LINES EFCV'S, FUNCTIONAL TEST	SR 3.6.1.3.9

# Performances: 0 # Failures: 0

24 Month Justification: Notes: Completed by Event 3300

Event	Title	Associated SRs and Function
3300D	PERFORM 44.220.110 SECT. 6.5 (H21P022) GRP 2 INST LINES EFCV'S, FUNCTIONAL TEST	SR 3.6.1.3.9

# Performances: 0 # Failures: 0

24 Month Justification: Notes: Completed by Event 3300

Event	Title	Associated SRs and Function
3300E	PERFORM 44.220.110 SECT. 6.6 (H21P421A) GRP 2 -N21F539B only	SR 3.6.1.3.9

# Performances: 0 # Failures: 0

24 Month Justification: Notes: Completed by Event 3300

Event	Title	Associated SRs and Function
3301	PERFORM 44.220.112 SECT. 6.1 (H21P009) GROUP 4 INST LINES EFCV'S, FUNCTIONAL TEST	SR 3.6.1.3.9

# Performances: 1 # Failures: 0

24 Month Justification: Notes: Performance of this Event covers 3301A, B, C, D and E in all cases within the analysis period.

There were no failures, therefore the surveillance test history supports the conclusion that the impact, if any, on system availability will be small as a result of the change to a 24 month surveillance interval.

Event	Title	Associated SRs and Function
3301A	PERFORM 44.220.112 SECT. 6.6 (B21F517B only) GROUP 4 INST LINES EFCV'S, FUNCTIONAL TEST	SR 3.6.1.3.9

# Performances: 0 # Failures: 0

24 Month Justification: Notes: Completed by Event 3301

Event	Title	Associated SRs and Function
3301B	PERFORM 44.220.112 SECT. 6.2 (H21P015) GROUP 4 INST LINES EFCV'S, FUNCTIONAL TEST	SR 3.6.1.3.9

# Performances: 0 # Failures: 0

24 Month Justification: Notes: Completed by Event 3301

Event	Title	Associated SRs and Function
3301C	PERFORM 44.220.112 SECT. 6.3 (H21P016) GROUP 4 INST LINES EFCV'S, FUNCTIONAL TEST	SR 3.6.1.3.9

# Performances: 0 # Failures: 0

24 Month Justification: Notes: Completed by Event 3301

Event	Title	Associated SRs and Function
3301D	PERFORM 44.220.112 SECT. 6.4 (H21P035) GROUP 4 INST LINES EFCV'S, FUNCTIONAL TEST	SR 3.6.1.3.9

# Performances: 0 # Failures: 0

24 Month Justification: Notes: Completed by Event 3301

Event	Title	Associated SRs and Function
3301E	PERFORM 44.220.112 SECT. 6.5 (H21P421B) GROUP 4 INST LINES EFCV'S, FUNCTIONAL TEST	SR 3.6.1.3.9

# Performances: 0 # Failures: 0

24 Month Justification: Notes: Completed by Event 3301

Event	Title	Associated SRs and Function
3302	PERFORM 44.220.113 (Sec-6.1-H21P006)GRP 5 INSTRUMENT LINE EXCESS FLOW CHECK VALVE FUNCTIONAL	SR 3.6.1.3.9

# Performances: 1

# Failures: 1

**24 Month Justification: Notes:**

One failure identified which did not impact any safety function; therefore, the surveillance test history supports the conclusion that the impact, if any, on system availability will be small as a result of the change to a 24 month surveillance interval.

**Failure Review:****Perf. Date Fail Cat. Description of Failure**

11/20/2015 A SPF noted: "At Step 6.1.23.6, dual indication on reset. Attempted to check and reset again, still dual. Supervisor, CRS, SM informed. Valve indicates at least partial open. Intend to proceed and verify indication restored for G33N037. Indication restored with G33N037 return to service. CARD 15-29159 written." CARD 15-29159 states: "At step 6.1.23.6, G33F583 (Excess Flow Check Valve) showed dual indication on reset." Reportability/Operability Review states: "During the RPV Leakage Test, G33F583 was tested satisfactorily for its Tech Spec Excess Flow Check Valve function. Following restoration the G33F583 indicated dual. Dual indication does not impact function and RWCU Bottom Head flow indication remained normal for existing plant conditions. G33F583 remains OPERABLE." CARD Note states: "indication corrected to open indication without action at some point following surveillance. Exact time of correction is unknown." Per Maximo WO 44335025 Status CAN; Log Notes "System Eng walkdown this condition on 3/22/16 and concurs with cancelling WO. Condition no longer exists".

**Justification of Failure**

G33F583 was tested satisfactorily for its Tech Spec Excess Flow Check Valve function. Following restoration the G33F583 indicated dual. Valve indication eventually corrected on its own. WO was not required. The identified failure(s) would not have prevented the performance of the required safety function of the equipment. Therefore, this failure will have no impact on an extension to a 24 month surveillance interval.

Event	Title	Associated SRs and Function
3302A	PERFORM 44.220.113 (Sec-6.2-H21P009)GRP 5 INSTRUMENT LINE EXCESS FLOW CHECK VALVE FUNCTIONAL	SR 3.6.1.3.9

# Performances: 1

# Failures: 0

**24 Month Justification: Notes:**

There were no failures, therefore the surveillance test history supports the conclusion that the impact, if any, on system availability will be small as a result of the change to a 24 month surveillance interval.

Event	Title	Associated SRs and Function
3302B	PERFORM 44.220.113 (Sec-6.3-H21P025)GRP 5 INSTRUMENT LINE EXCESS FLOW CHECK VALVE FUNCTIONAL	SR 3.6.1.3.9
# Performances: 1      # Failures: 0		

**24 Month Justification: Notes:**

There were no failures, therefore the surveillance test history supports the conclusion that the impact, if any, on system availability will be small as a result of the change to a 24 month surveillance interval.

Event	Title	Associated SRs and Function
3304	PERFORM 44.220.111 SECT. 6.1 (H21P005) GROUP 3 INST LINES EFCV'S, FUNCTIONAL TEST	SR 3.6.1.3.9
# Performances: 1      # Failures: 0		

**24 Month Justification: Notes:** Performance of this Event covers 3304A and B in all cases within the analysis period.

There were no failures, therefore the surveillance test history supports the conclusion that the impact, if any, on system availability will be small as a result of the change to a 24 month surveillance interval.

Event	Title	Associated SRs and Function
3304A	PERFORM 44.220.111 SECT. 6.2 (H21P010) GROUP 3 INST LINES EFCV'S, FUNCTIONAL TEST	SR 3.6.1.3.9
# Performances: 0      # Failures: 0		

**24 Month Justification: Notes:** Completed by 3304

Event	Title	Associated SRs and Function
3304B	PERFORM 44.220.111 SECT. 6.3 (H21P038) GROUP 3 INST LINES EFCV'S, FUNCTIONAL TEST	SR 3.6.1.3.9
# Performances: 0      # Failures: 0		

**24 Month Justification: Notes:** Completed by 3304

Event	Title
3307	PERFORM 44.220.114 SECT. 6.1 (H21P010) GROUP 6 INSTRUMENT LINE EXCESS FLOW CHECK VALVE FUNCTIONAL

Associated SRs and Function  
SR 3.6.1.3.9

# Performances: 1 # Failures: 0

**24 Month Justification: Notes:**

There were no failures, therefore the surveillance test history supports the conclusion that the impact, if any, on system availability will be small as a result of the change to a 24 month surveillance interval.

Event	Title
3307A	PERFORM 44.220.114 SECT. 6.2 (H21P022) GROUP 6 INSTRUMENT LINE EXCESS FLOW CHECK VALVE FUNCTIONAL

Associated SRs and Function  
SR 3.6.1.3.9

# Performances: 1 # Failures: 1

**24 Month Justification: Notes:**

One failure identified which did not impact any safety function; therefore, the surveillance test history supports the conclusion that the impact, if any, on system availability will be small as a result of the change to a 24 month surveillance interval.

**Failure Review:**

**Perf. Date Fail Cat. Description of Failure**

4/12/2017	A	SPF notes two issues: 1) "Step 6.2.16.3, on both H11P805 and H21P402H the Closed light failed to illuminate. Both Open lights did extinguish." 2) All Acceptance Criteria steps SAT with exception of 6.2.16.3.a due to discrepancy 1). CRS and I&C Supervisor notified. CARD 17-23442 written. CARD 17-23442 states: "Check valve checked as there was no leakage to drain. Pulled the bulbs at the H21-P402H panel. On visual inspection, it was verified that the bulbs were blown at that panel. Recommend checking the light bulbs on H11P805 as well. It is unlikely but possible that both bulbs were blown at same time. The issue also indicates it might be a switch problem." Reportability/Operability Review states: "During testing of the B31F515B EFCV, during the RPV leakage test, the EFCV closed as expected and performed its isolation function (44.220.112 completed satisfactorily). The B31F515B did not indicate close but check valve performed satisfactorily. B31F515B closes as required to meet its intended isolation function. B31F515B remains OPERABLE." CARD 17-23442 Action Item Completion Comments state: "During the testing, B31F515B closed as expected and performed its isolation function, as stated in the Shift Manager's comments." Per Maximo WO 47505854 Status CAN; Log Notes state: "The condition was corrected - that is, the light bulb at the H21-P402H panel was replaced, eliminating the condition."
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**Justification of Failure**

The function of B31F515B valve was not lost, B31F515B closed as required to meet its intended isolation function. The identified failure(s) would not have prevented the performance of the required safety function of the equipment. Therefore, this failure will have no impact on an extension to a 24 month surveillance interval.

Event	Title	Associated SRs and Function	
3528	PERFORM 44.020.602 OTBD SDC - HEAD SPRAY AUTO ISOLATION LOGIC FUNCTIONAL	SR 3.3.6.1.5-6.a SR 3.6.1.3.8	SR 3.3.6.1.5-6.b
# Performances: 6		# Failures: 0	

**24 Month Justification: Notes:**

There were no failures, therefore the surveillance test history supports the conclusion that the impact, if any, on system availability will be small as a result of the change to a 24 month surveillance interval.

Event	Title	Associated SRs and Function	
3529	PERFORM 44.020.002 NSSSS MSIV DRN/ RECIRC SAMPLE OTBD VLV'S LOGIC SYS FUNC	SR 3.3.6.1.5-1.a SR 3.3.6.1.5-1.d SR 3.3.6.1.5-1.g SR 3.3.6.1.5-2.b SR 3.3.6.1.5-2.d	SR 3.3.6.1.5-1.b SR 3.3.6.1.5-1.e SR 3.3.6.1.5-2.a SR 3.3.6.1.5-2.c SR 3.6.1.3.8
# Performances: 6		# Failures: 0	

**24 Month Justification: Notes:**

There were no failures, therefore the surveillance test history supports the conclusion that the impact, if any, on system availability will be small as a result of the change to a 24 month surveillance interval.

Event	Title	Associated SRs and Function	
3530	PERFORM 44.020.002 SECT 6.4 - VENT/PURGE ISO NSSSS DIV 2 LOGIC SYSTEM FUNCTIONAL	SR 3.3.6.1.5-1.a SR 3.3.6.1.5-1.d SR 3.3.6.1.5-1.g SR 3.3.6.1.5-2.b SR 3.3.6.1.5-2.d	SR 3.3.6.1.5-1.b SR 3.3.6.1.5-1.e SR 3.3.6.1.5-2.a SR 3.3.6.1.5-2.c SR 3.6.1.3.8
# Performances: 6		# Failures: 0	

**24 Month Justification: Notes:**

There were no failures, therefore the surveillance test history supports the conclusion that the impact, if any, on system availability will be small as a result of the change to a 24 month surveillance interval.

Event	Title	Associated SRs and Function	TRVEND 24MCGNF319001 Rev 1
3531	PERFORM 44.020.002 SECT 6.5 - NS4 DIV 2 SECONDARY CONT, DW SUMP & DRN, CCHVAC LF	SR 3.3.6.1.5-1.a SR 3.3.6.1.5-1.d SR 3.3.6.1.5-1.g SR 3.3.6.1.5-2.b SR 3.3.6.1.5-2.d SR 3.3.6.2.5-1 SR 3.3.6.2.5-3 SR 3.3.7.1.6-2 SR 3.6.1.3.8 SR 3.6.4.3.3	Page 380 of 395
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# Performances: 6      # Failures: 1

#### 24 Month Justification: Notes:

One failure identified which did not impact any safety function; therefore, the surveillance test history supports the conclusion that the impact, if any, on system availability will be small as a result of the change to a 24 month surveillance interval.

#### Failure Review:

##### Perf. Date Fail Cat. Description of Failure

5/1/2012      A      SPF Note 1: " Unable to satisfy acceptance criteria for Steps 6.5.19.2, 8.5 and unable to verify Step 6.5.21.2. T4901F602 indicated dual prior to performance of Step 6.5.19.2. Attempted to open. Close light did not clear. Continued on. Step 6.5.21.2 attempted to open. Close light did not clear. Attempted to close w/CRS concurrence. Open light did not clear. - SM, CRS I/C Supervisor informed. CARD 12-24028 written. Continued with Surv. Acceptance Criteria not met.SPF Note 2: "Following investigation of T4901F602 performance and discussion with licensed Operator performing surveillance verification that T4901F602 would not open was accomplished by lack of response of light indications on MCRPB's. Following reset of isolation signal PB lights responded as expected when valve was stroked open and closed. (dual indications remained but lights blinked when valve was stroked.) CARD 12-24028 states: "While stroking the T4901-F602, Div 2 DW Pneumatics Supply Inboard Isolation Valve, the valve only indicated dual. Stationed operator at MCC during a stroke and noticed the contactor would pick-up and drop-out approx 18 seconds later during both open and closed strokes(last stroke time was 18.2 seconds (10/16/11), with IST limitof 14.8< BTC >20.0 sec) Then stationed an operator locally at the valve and they reported valve being full closed then full open locally with dual still indicated in MCR Request work order for troubleshooting and adjusting limit switches."Reportability/Operability Review states: "T4901F601 has been declared inoperable and documented on LCO 12-0247." WO 34405491 requested. WO 34405491 completed adjustments to limit switches. Returned to Service 5/1/2012

##### Justification of Failure

The identified failure(s) would not have prevented the performance of the required safety function of the equipment. Therefore, this failure will have no impact on an extension to a 24 month surveillance interval.

Event	Title	Associated SRs and Function
3730	PERFORM 44.020.604 NS4 DIV 1 TIP ISO VALVES LOGIC FUNCTIONAL	SR 3.6.1.3.8

# Performances: 5      # Failures: 0

**24 Month Justification: Notes:**

There were no failures, therefore the surveillance test history supports the conclusion that the impact, if any, on system availability will be small as a result of the change to a 24 month surveillance interval.

Event	Title	Associated SRs and Function
3866	PERFORM 64.120.040 CONTAINMENT AREA HIGH RANGE RADIATION MONITOR DIV 1 RAD CAL	SR 3.3.3.1.2-7

# Performances: 6      # Failures: 0

**24 Month Justification: Notes:**

There were no failures, therefore the surveillance test history supports the conclusion that the impact, if any, on system availability will be small as a result of the change to a 24 month surveillance interval.

Event	Title	Associated SRs and Function
3867	PERFORM 64.120.041 CONTAINMENT AREA HIGH RANGE RADIATION MONITOR DIV 2 RAD CAL	SR 3.3.3.1.2-7

# Performances: 6      # Failures: 0

**24 Month Justification: Notes:**

There were no failures, therefore the surveillance test history supports the conclusion that the impact, if any, on system availability will be small as a result of the change to a 24 month surveillance interval.

Event 3887	Title PERFORM 44.210.006 DRYWELL SUMP FLOW CHANNEL CALIBRATION/FUNCTIONAL	Associated SRs and Function SR 3.4.6.3	TRVEND 24MCGNF319001 Rev 1 Page 382 of 395
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# Performances: 6      # Failures: 2

**24 Month Justification: Notes:**

The failures do not impact any safety function; therefore, the surveillance test history supports the conclusion that the impact, if any, on system availability will be small as a result of the change to a 24 month surveillance interval.

**Failure Review:**

**Perf. Date Fail Cat. Description of Failure**

8/16/2012      A      SPF note: "Transmitter had air in the lines per Data on Table 3. Performed transmitter venting per Attachment 6 with Supervision and CRS approval." During performance, G11-R600 Blue Pen Indication As Found Data did not meet Acceptable Performance Tolerance (APT). During calibration of G11-N003 flow transmitter As Found Data was outside of Acceptable Performance Tolerance (APT) range. Attachment 1, Step 4 refers to Attachment 6 if As Found Data is "non repeatable or non-linear". Transmitter was vented per Attachment 6, then calibrated per Attachment 1 successfully with all data within As Left Tolerance.

**Justification of Failure**

The identified failure(s) would not have prevented the performance of the required safety function of the equipment. Therefore, this failure will have no impact on an extension to a 24 month surveillance interval.

8/8/2018	A	<p>SPF note: "Step 6.3.10 leaves out Table 5 for G11-R600 Recorder cal. This is not acceptance criteria. See CARD 18-25953. Informed Supervisor and CS. Completed surveillance." CARD 18-25953 states: "The significance of this is that recorder G 11R600 red pen indication can be left out of calibration. This recorder was outside of LAT and did not get calibrated during the performance of this procedure. This is not acceptance criteria. The procedure also needs to include additional steps after step 6.3.10, 3 to re-calibrate G11-K603 integrator. This is due to the fact that any calibration of the loop components can change the tolerance of the integrator which is acceptance criteria. Reportability/Operability Review states: "The drywell sumps are used for leakage monitoring. The Drywell Equipment Drain Sump level, flow and pump run time integrators are used to determine changes in identified leakage in the drywell. The Drywell Equipment Drain Sump Effluent Flow integrator is the instrumentation used to meet the TRM requirements. All ACCEPTANCE CRITERIA associated with the flow integrator were met. The flow indication on the G11R600 is not used for determining DW leakage rates, and is not a required indication. The Drywell Equipment Drain Sump level, flow and pump run time system remains OPERABLE." Also noted Reportability/Operability Review is: "The flow recorder point is outside of the Leave Alone Tolerance (LAT) only for the 100% (125 gpm) calibration point. It is within the LAT for all calibration points (100 gpm and below). The normal operating range when the equipment drain sump is pumped is below 100 gpm. So, the MCR flow indication remains accurate for the ranges that the system normally operates." Review of the CARD and of the affected procedure was performed; I&amp;C procedure writer concurred the requested changes should be implemented using a DCR. DCR 18-1780 was initiated.</p>	<p>The identified failure(s) would not have prevented the performance of the required safety function of the equipment. Therefore, this failure will have no impact on an extension to a 24 month surveillance interval.</p>
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## **ATTACHMENT 4**

### **TECHNICAL SPECIFICATION EVENT "UNIQUE FAILURES"**

**(6 PAGES)**

## ATTACHMENT 4 - FERMI 2 TECHNICAL SPECIFICATION EVENT "UNIQUE FAILURES"

Event	Date	Description of Failure	Justification of Failure
0263	4/9/2017	<p>SPF Note: "At Step 5.2.35.2, 72CF threw on to 72F Bus. It did not affect stroke times." CARD 17-23266 submitted. CARD 17-23266 states: "72C-3C tripped. Walkdown of the breaker found a trip of the 87 device (over current) and the Lockout Relay. Surveillance 24.204.03 (LPCI Simulated Automatic Actuation Test) was in progress at step 5.2.35.2. Loads off swing bus 72CF were transferred to position 72F-5F as expected. No other abnormalities were noted. This event is similar to CARD 15-28495." Reportability/Operability Review states: Declared LPCI Swing bus inoperable and added condition to LCO 2016-0381. Applied mode 1, 2 and 3 restraints." CARD Cause: "The Direct Cause was: Degraded CT. This was the only change to the circuit since successful completion of the circuit. The Apparent Cause is Abnormal Electrical Stress from a loose connection/open circuit in RF17 (CARD 15-28495). The open circuit of the CT in RF17 could have developed high voltages and degraded the CT. This degradation cannot be detected at low current test conditions. Due to the fast acting relaying the high voltages may not have been long enough in duration to cause a complete failure of the CT. A Contributing Cause is Degradation of the 87 relay time delay. Original manufacture time delay curve states the relay should actuate between 14 and 38 milliseconds and should be around 30 at the test values utilized by Fermi. The 87 relay is actuating at 8 milliseconds. Cause Code E01-Setpoint Drift. Corrective Actions: DC/AC-Replace the affected CT's at 72C-F MCC completed. CC-Replace the 87 relay with a relay including a time delay per ERE-44596 - completed. The extent of the apparent cause is limited to CT's that have been open circuited. There is one other known occurrence in which a CT was open circuited. This was the failed knife switch in the 345KV relay house coming out of RF17. This CT has been operated throughout the last cycle in the range it is expected to operate at and has not shown any degradation. The extent of the contributing cause is limited to the 50 and 87 relays in the 72C-3C circuit. The model relay was not found used in any other locations. The 50 and 87 relays were replaced under ERE-44596. This failure was determined to be a Functional Failure as when breaker 72C, position 3C tripped unexpectedly this resulted in inability of the breaker to supply power to MCC 72-CF which is a risk significant load. Failure of Function R1400-01 resulted. MRFF Evaluation Justification states: "The causal analysis determined that the cause was most likely that the CT was degraded during the RF17 event in which the CT was open-circuited. Fermi performed testing on the CT which did not reveal the degradation due to the differences in testing capabilities and in-field currents. There was also no OE or industry recommendations to suggest</p>	<p>The identified failure is unique and does not occur on a repetitive basis and is not associated with a time-based failure mechanism. Therefore, this failure will have no impact on an extension to a 24 month surveillance interval.</p>

Event	Date	Description of Failure	Justification of Failure
		that the CT should be replaced just because it was open-circuited since it passed testing. The closest cause code is M3 as the CT tested SAT and there was no industry recommendation or OE available to suggest that any other actions should have been taken in RF17 to prevent this failure. Therefore this is not a Maintenance Preventable Functional Failure. The performance criteria of 0 bus failures has been exceeded. CARD 17-23803 has been submitted to evaluate the system for classification of (a)(1) status. CARD 17-23803 states: "The system has been evaluated for (a)(1) status and the 8/7/17 MR Expert panel approved the system to remain (a)(2). This recommendation is because the only maintenance preventable failure was an HU issue not an equipment issue. There are also no actions to be driven by a Get-Well-Plan to improve the reliability of the equipment." WO 47455670 replaced CT-1 Current Transformers with new CT's in MCC 72C-F, position 1C and also replaced both 50 & 87 relays at Bus 72C-3C. Partial performance of 24.204.03, Section 5.2 was performed as PMT for this Work Order.	
0766	4/2/2009	SPF Note 1: "Table 5 As Found data all high outside As Found tolerance." SPF Note 2: "Step 6.2.7 Required limit exceeded for 19.85% (See Table 5) Step 6.2.9 Unable to calibrate transmitter due to large deadband at zero adjustment (either 0.988 or 1.023, closest to 1.000) Informed CRS and SM CARD 09-22140 - Back out of surveillance, performed 6.2.10 - 6.2.12, 6.2.20.2, 6.2.20.3, 6.2.21, 7.0, 7.4, 8.2" CARD 09-22140 states: "Unable to adjust zero pot of transmitter B21N095B, NB RX LVL 3 TRIP (NARROW RNG) DIV2 LVL XMTR for Main Turbine/N and S FW Turbine Level 8 Trips and ADS located on Rack H21P005. Deadband is 0.988 to 1.023 Vdc even after cleaning of pot. All As Found values were approx. 0.035 high throughout range. Required limit of 1.821 Vdc at 19.85% was exceeded with reading at 1.827 Vdc. Transmitter replacement is recommended. Mode 2 restraint. WO 29640637 requested. WO 29640637 scope is: replace B21N095B, Div 2 Reactor Level Narrow Range Transmitter with a new transmitter. B21N095B replaced with "like for like" transmitter and calibrated to within As Left tolerance successfully. WO feedback states: "Transmitter probably original installation, went out due to age."	The identified failure is unique and does not occur on a repetitive basis and is not associated with a time-based failure mechanism. Therefore, this failure will have no impact on an extension to a 24 month surveillance interval.

Event	Date	Description of Failure	Justification of Failure
2282	11/21/201	<p>SPF Note 1: "Manually tripped EDG 12 locally due to loss of 72EB-2D. Breaker tripped after LOCA Test from Sequencer panel, Entered 'Loss of 64C' and 'Loss of 72C' to reenergize buses and loads. EDG 12 remains shutdown. MCC 72EB-2D remains deenergized, D7 EECW - (No EESW Pump) 72CF restored. All bus relays are reset. CARD 15-29239 submitted." CARD 15-29239 states: "During the performance of 24.307.02 - Emergency Diesel Generator 12 - Loss of Offsite Power and ECCS Start With Loss of Offsite Power Test, on step 5.1.32 &amp; 5.1.33, a LOCA signal is injected into the Digital load sequencer to resequence the loads. Following trip and reclosing of 12EB-EB3 (EDG 12 output breaker) the EDG12 DGSW Pump attempted to start and lost power. This created a situation in which an EDG was running and sequencing on loads with no forced Diesel Generator Service Water. The operating crew tripped EDG 12 using the local overspeed trip. AOPs for loss of 64C and 72C were entered. The operating crew backed out of the surveillance. Bus 64C and 72C have been restored IAW the SOPs. Request investigation and work order to repair." Reportability/Operability Review states: "DGSW pump tripped during EDG 12 LOP testing; Supply breaker to the MCC 72EB-2D was found tripped. DGSW pump could not support function for running the EDG. EDG 12 DGSW pump declared inoperable. LCO 2015-0568." Surveillance 24.307.02 was reviewed to ensure the appropriate conditions were set to close breakers 72EB-2D for EDG12 DGSW and 72EB-2C for Division 1 EESW pump. On 11/21/15 during performance of 23.307.02 a LOCA signal was initiated via Step 5.1.32 &amp; 5.1.33 (CARD 15-29239) to sequence loads on to EDG-12. Approximately 45-50 seconds into the load sequence, 72EB POS 2D closed then tripped approximately 1 second later. EDG 12 was the manually tripped due to a loss of EDG-12 DGSW C pump. Work order 44339839 released to Work Group at 0455 11/22/2015:1. Test Power Shield - if bad replace, if trip/reset button not working may need to check MCC 72EB-2D loads2. Verify resistor for local red light is not shorted, also a physical inspection to ensure not shorted to adjacent terminals - if resistor shorted replace, if terminals shorted repair.3. Insulation resistance checks on breaker control wiring and feed to MCC - repair if required.4. Test load shed string associated with 4NV94 - verify working correctly, replace relays as necessary5. Test relay 4NV94 - replace if required.WO 44339839 was completed. No issues identified with all components inspected. Conclusion was that the issue is within the breaker. Confirmed that 72EB-2D was REFURBED in 2009. It was an Extent of Condition position from CARD 09-27133. The breaker was inspected by Maintenance and no issues were found with the breaker. On 11/22/15, WO 44340274 initiated to replace the 72EB-2D breaker with a refurbished/PM'd spare. On 11/23/15 during performance of 23.307.02, Section 5.1 (WO 44349460) of EDG12 LOP/LOCA when</p>	<p>The identified failure is unique and does not occur on a repetitive basis and is not associated with a time-based failure mechanism. Therefore, this failure will have no impact on an extension to a 24 month surveillance interval.</p>

Event	Date	Description of Failure	Justification of Failure
		<p>a LOCA signal was initiated (CARD 15-29278), Division 1 EESW pump (72EB-2C) tripped immediately after re-sequencing the second time, whereas, EDG-12 DGSW C Pump (R1600S017A, 72EB-2D) re-started as expected. LOR 27X-12EB was observed cycling following the closure of 12EB-EB3. 72EB-2C attempted to close and tripped immediately during load sequencing. The following are other facts from the event:• 27X 12EB LOR Turning on and off (Load Sequence correlates with cycling).• Relay 3NV94 on and off with 27X-12EB by design (Could not confirm other 94 relays).• 72EB-2C did not re-close (closed and re-opened - per video view of breaker lights).• In Relay Room, 12EB light flashed in/out during evolution. (note: also saw this a few times Saturday 11/21/2015) This is the XK31 indicating light on drawing I-2714-22. This is lit from 12EB Load Shed Relay 2MR69 (Drawings I-N-2572-18 Grid D-7, B-7 &amp; I-2714-22).• EDSW restarted as expected (see video).• EESW tripped today AND Saturday (see pump flow curves).• Checked Potential Transformers (PT); circuits good.• Check EB3 52S and 52H cell switch. Indications show these are positioned properly. Work order 44346132 "Inspect and Test 27X-12EB, 27-XY, and 27-YZ" was completed. It was determined that the issue was caused by erratic cycling of the LOR 27X-12EB. The relay was replaced and issue was resolved. A failure analysis will be conducted on the LOR 27X-12EB in order to determine the cause of the failure. This CARD will track the failure analysis of LOR 27X-12EB. Failure analysis of LOR 27X-12EB was completed. "Direct Cause found to be inconclusive. Simulation performed wedged a piece of a foreign material behind the trip lever which replicated the original failure. After disassembly of the relay, substance was observed as being drier than normal grease and came off of the lockout relay's internal parts in chunks. The failure analysis led to the conclusion that hardened grease found in the relay could have become foreign material and caused cycling of the relay." CORRECTIVE ACTIONS: Twenty one PMs were created to replace selected LOR relays (see CARD 15-29239). This CARD action plan is applicable to CARDS 15-29239 and 15-29278. The issues in those CARDS were the result of the failure of LOR 27X-12EB.</p>	

Event	Date	Description of Failure	Justification of Failure
2283	4/14/2017	<p>SPF Note 1 - "During performance of surveillance, #12 Drywell Cooling Fan (T4700C012) did not restart during load sequencing following loss of offsite power auto start signal to EDG 13. Walkdown at MCC 72E 5B found an acrid odor. MCC 73E 5B was de-energized. To back out of surveillance, steps were performed to load EDG 13, restore offsite power to 65E, and then shutdown EDG 13 to place in standby conditions. Steps are NA that were not required to accomplish this. CARD 17-23496" CARD 17-23496 states: "Drywell Cooling Fan 12 did not restart during the load sequence following simulated loss of power. Reference Acceptance Criteria Step 5.1.17. The CMC switch for T4700C012 was in Auto and indicated TRIPPED upon attempted restart. A couple minutes later all indications were lost at the CMC switch. Field walkdown found an acrid odor at MCC 72E 5B. The MCC was deenergized and initial investigation shows indication of a burnt contactor. Investigate cause and repair." CARD Reportability/Operability Review states: "72E-5B was de-energized following the failure, to de-energize the MCC for Drywell Fan #12. The inoperability is tracked on LCO 2017-0210. 24.307.03 was backed out of, with only part of Section 5.1 complete." Investigation by electrical maintenance and operations found the contactor coil burnt. The Direct Cause is E04 - insulation breakdown because the coil insulation broke down and shorted resulting in the inability to close the contactor and start the drywell cooler. WO 47495796 initiated to replace contactor. A replacement contactor (i.e., 2 Overload blocks and Aux contact block) was installed and DWC #12 operated as expected.</p>	<p>The identified failure is unique and does not occur on a repetitive basis and is not associated with a time-based failure mechanism. Therefore, this failure will have no impact on an extension to a 24 month surveillance interval.</p>

## **ATTACHMENT 5**

### **TECHNICAL SPECIFICATION EVENT "UNIQUE FAILURES" EVALUATION**

**(6 PAGES)**

## ATTACHMENT 5 - FERMI 2 TECHNICAL SPECIFICATION EVENT "UNIQUE FAILURES" EVALUATION

Event	Date	Description of Failure	Unique Failure Review
0263	4/9/2017	<p>SPF Note: "At Step 5.2.35.2, 72CF threw on to 72F Bus. It did not affect stroke times." CARD 17-23266 submitted. CARD 17-23266 states: "72C-3C tripped. Walkdown of the breaker found a trip of the 87 device (over current) and the Lockout Relay. Surveillance 24.204.03 (LPCI Simulated Automatic Actuation Test) was in progress at step 5.2.35.2. Loads off swing bus 72CF were transferred to position 72F-5F as expected. No other abnormalities were noted. This event is similar to CARD 15-28495." Reportability/Operability Review states: Declared LPCI Swing bus inoperable and added condition to LCO 2016-0381. Applied mode 1, 2 and 3 restraints." CARD Cause: "The Direct Cause was: Degraded CT. This was the only change to the circuit since successful completion of the circuit. The Apparent Cause is Abnormal Electrical Stress from a loose connection/open circuit in RF17 (CARD 15-28495). The open circuit of the CT in RF17 could have developed high voltages and degraded the CT. This degradation cannot be detected at low current test conditions. Due to the fast acting relaying the high voltages may not have been long enough in duration to cause a complete failure of the CT. A Contributing Cause is Degradation of the 87 relay time delay. Original manufacture time delay curve states the relay should actuate between 14 and 38 milliseconds and should be around 30 at the test values utilized by Fermi. The 87 relay is actuating at 8 milliseconds. Cause Code E01-Setpoint Drift. Corrective Actions: DC/AC-Replace the affected CT's at 72C-F MCC completed. CC-Replace the 87 relay with a relay including a time delay per ERE-44596 - completed. The extent of the apparent cause is limited to CT's that have been open circuited. There is one other known occurrence in which a CT was open circuited. This was the failed knife switch in the 345KV relay house coming out of RF17. This CT has been operated throughout the last cycle in the range it is expected to operate at and has not shown any degradation. The extent of the contributing cause is limited to the 50 and 87 relays in the 72C-3C circuit. The model relay was not found used in any other locations. The 50 and 87 relays were replaced under ERE-44596. This failure was determined to be a Functional Failure as when breaker 72C, position 3C tripped unexpectedly this resulted in inability of the breaker to supply power to MCC 72-CF which is a risk significant load. Failure of Function R1400-01 resulted. MRFF Evaluation Justification states: "The causal analysis determined that the cause was most likely that the CT was degraded during the RF17 event in which the CT was open-circuited. Fermi performed testing on the CT which did not reveal the</p>	<p>No similar failures are identified, therefore the failure is not repetitive in nature. No time based mechanisms are apparent. Therefore, this failure is unique and any subsequent failure would not result in a significant impact on system/component availability.</p>

Event	Date	Description of Failure	Unique Failure Review
		<p>degradation due to the differences in testing capabilities and in-field currents. There was also no OE or industry recommendations to suggest that the CT should be replaced just because it was open-circuited since it passed testing. The closest cause code is M3 as the CT tested SAT and there was no industry recommendation or OE available to suggest that any other actions should have been taken in RF17 to prevent this failure. Therefore this is not a Maintenance Preventable Functional Failure. The performance criteria of 0 bus failures has been exceeded. CARD 17-23803 has been submitted to evaluate the system for classification of (a)(1) status. CARD 17-23803 states: "The system has been evaluated for (a)(1) status and the 8/7/17 MR Expert panel approved the system to remain (a)(2). This recommendation is because the only maintenance preventable failure was an HU issue not an equipment issue. There are also no actions to be driven by a Get-Well-Plan to improve the reliability of the equipment." WO 47455670 replaced CT-1 Current Transformers with new CT's in MCC 72C-F, position 1C and also replaced both 50 &amp; 87 relays at Bus 72C-3C. Partial performance of 24.204.03, Section 5.2 was performed as PMT for this Work Order.</p>	
0766	4/2/2009	<p>SPF Note 1: "Table 5 As Found data all high outside As Found tolerance." SPF Note 2: "Step 6.2.7 Required limit exceeded for 19.85% (See Table 5) Step 6.2.9 Unable to calibrate transmitter due to large deadband at zero adjustment (either 0.988 or 1.023, closest to 1.000) Informed CRS and SM CARD 09-22140 - Back out of surveillance, performed 6.2.10 - 6.2.12, 6.2.20.2, 6.2.20.3, 6.2.21, 7.0, 7.4, 8.2" CARD 09-22140 states: "Unable to adjust zero pot of transmitter B21N095B, NB RX LVL 3 TRIP (NARROW RNG) DIV2 LVL XMTR for Main Turbine/N and S FW Turbine Level 8 Trips and ADS located on Rack H21P005. Deadband is 0.988 to 1.023 Vdc even after cleaning of pot. All As Found values were approx. 0.035 high throughout range. Required limit of 1.821 Vdc at 19.85% was exceeded with reading at 1.827 Vdc. Transmitter replacement is recommended. Mode 2 restraint. WO 29640637 requested. WO 29640637 scope is: replace B21N095B, Div 2 Reactor Level Narrow Range Transmitter with a new transmitter. B21N095B replaced with "like for like" transmitter and calibrated to within As Left tolerance successfully. WO feedback states: "Transmitter probably original installation, went out due to age."</p>	<p>There is a total of one failure of the Rosemount 1153DB4RCN003 transmitter. No time based mechanisms are apparent. Therefore this failure is unique and any subsequent failure would not result in a significant impact on system/component availability.</p>

Event	Date	Description of Failure	Unique Failure Review
2282	11/21/2015	<p>SPF Note 1: "Manually tripped EDG 12 locally due to loss of 72EB-2D. Breaker tripped after LOCA Test from Sequencer panel, Entered 'Loss of 64C' and 'Loss of 72C' to reenergize buses and loads. EDG 12 remains shutdown. MCC 72EB-2D remains deenergized, D7 EECW - (No EESW Pump) 72CF restored. All bus relays are reset. CARD 15-29239 submitted." CARD 15-29239 states: "During the performance of 24.307.02 - Emergency Diesel Generator 12 - Loss of Offsite Power and ECCS Start With Loss of Offsite Power Test, on step 5.1.32 &amp; 5.1.33, a LOCA signal is injected into the Digital load sequencer to resequence the loads. Following trip and reclosing of 12EB-EB3 (EDG 12 output breaker) the EDG12 DGSW Pump attempted to start and lost power. This created a situation in which an EDG was running and sequencing on loads with no forced Diesel Generator Service Water. The operating crew tripped EDG 12 using the local overspeed trip. AOPs for loss of 64C and 72C were entered. The operating crew backed out of the surveillance. Bus 64C and 72C have been restored IAW the SOPs. Request investigation and work order to repair." Reportability/Operability Review states: "DGSW pump tripped during EDG 12 LOP testing; Supply breaker to the MCC 72EB-2D was found tripped. DGSW pump could not support function for running the EDG. EDG 12 DGSW pump declared inoperable. LCO 2015-0568." Surveillance 24.307.02 was reviewed to ensure the appropriate conditions were set to close breakers 72EB-2D for EDG12 DGSW and 72EB-2C for Division 1 EESW pump. On 11/21/15 during performance of 23.307.02 a LOCA signal was initiated via Step 5.1.32 &amp; 5.1.33 (CARD 15-29239) to sequence loads on to EDG-12. Approximately 45-50 seconds into the load sequence, 72EB POS 2D closed then tripped approximately 1 second later. EDG 12 was the manually tripped due to a loss of EDG-12 DGSW C pump. Work order 44339839 released to Work Group at 0455 11/22/2015:1. Test Power Shield - if bad replace, if trip/reset button not working may need to check MCC 72EB-2D loads2. Verify resistor for local red light is not shorted, also a physical inspection to ensure not shorted to adjacent terminals - if resistor shorted replace, if terminals shorted repair.3. Insulation resistance checks on breaker control wiring and feed to MCC - repair if required.4. Test load shed string associated with 4NV94 - verify working correctly, replace relays as necessary5. Test relay 4NV94 - replace if required.WO 44339839 was completed. No issues identified with all components inspected. Conclusion was that the issue is within the breaker. Confirmed that 72EB-2D was REFURBED in 2009. It was an Extent of Condition position from CARD 09-27133. The breaker was inspected by Maintenance and no issues were found with the breaker. On 11/22/15, WO 44340274 initiated to replace the 72EB-2D breaker with a refurbished/PM'd spare. On 11/23/15 during performance of 23.307.02, Section</p>	<p>There are a total of two failures identified related to Electroswitch Lockout relays (1 Model 7823DD and 1 Model 7802D) over the review period. In one case, the model 7823DD LOR (electrically operated), failed to operate as expected, in two instances, both during the same required 18 month performance in 11/2015. The second identified failure in the 11/2015 performance was discovered during a subsequent performance of the surveillance two days after the first performance without any corrective action performed on the failed Model 7823DD LOR. The failure analysis led to the conclusion that hardened grease found in the relay "could have" become foreign material and caused cycling of the relay. In the other case, for the Model 7802D, once again the LOR failed to operate and similar analysis was performed as related to hardened lubrication having separated due to aging, however, as noted in the analysis, hardened lubrication could only impact operation of electrically operated Lockout relays, therefore this (and other mechanical reset) Lockout relays are not affected. Each of the relays was replaced. The identified failure of the grease in the lockout relay, which in turn became foreign material, is identified as a time-dependent failure in the meeting minutes for OSRO Meeting No. 1449 dated August 30, 2018. For extent of condition, PMs were created to replace 21 LORs. While some LORs have already been replaced, the remaining are currently scheduled for replacement through early 2023 as indicated in the Surveillance Test Evaluation Form contained within OSRO No 1449. Therefore, this failure is unique and any subsequent failure would not result in a significant impact on system/component availability.</p>

Event	Date	Description of Failure	Unique Failure Review
		<p>5.1 (WO 44349460) of EDG12 LOP/LOCA when a LOCA signal was initiated (CARD 15-29278), Division 1 EESW pump (72EB-2C) tripped immediately after re-sequencing the second time, whereas, EDG-12 DGSW C Pump (R1600S017A, 72EB-2D) re-started as expected. LOR 27X-12EB was observed cycling following the closure of 12EB-EB3. 72EB-2C attempted to close and tripped immediately during load sequencing. The following are other facts from the event:</p> <ul style="list-style-type: none"> <li>• 27X 12EB LOR Turning on and off (Load Sequence correlates with cycling).</li> <li>• Relay 3NV94 on and off with 27X-12EB by design (Could not confirm other 94 relays).</li> <li>• 72EB-2C did not re-close (closed and re-opened - per video view of breaker lights).</li> <li>• In Relay Room, 12EB light flashed in/out during evolution. (note: also saw this a few times Saturday 11/21/2015) This is the XK31 indicating light on drawing I-2714-22. This is lit from 12EB Load Shed Relay 2MR69 (Drawings I-N-2572-18 Grid D-7, B-7 &amp; I-2714-22).</li> <li>• EDSW restarted as expected (see video).</li> <li>• EESW tripped today AND Saturday (see pump flow curves).</li> <li>• Checked Potential Transformers (PT); circuits good.</li> <li>• Check EB3 52S and 52H cell switch. Indications show these are positioned properly.</li> </ul> <p>Work order 44346132 "Inspect and Test 27X-12EB, 27-XY, and 27-YZ" was completed. It was determined that the issue was caused by erratic cycling of the LOR 27X-12EB. The relay was replaced and issue was resolved. A failure analysis will be conducted on the LOR 27X-12EB in order to determine the cause of the failure. This CARD will track the failure analysis of LOR 27X-12EB. Failure analysis of LOR 27X-12EB was completed. "Direct Cause found to be inconclusive. Simulation performed wedged a piece of a foreign material behind the trip lever which replicated the original failure. After disassembly of the relay, substance was observed as being drier than normal grease and came off of the lockout relay's internal parts in chunks. The failure analysis led to the conclusion that hardened grease found in the relay could have become foreign material and caused cycling of the relay." CORRECTIVE ACTIONS: Twenty one PMs were created to replace selected LOR relays (see CARD 15-29239). This CARD action plan is applicable to CARDS 15-29239 and 15-29278. The issues in those CARDS were the result of the failure of LOR 27X-12EB.</p>	

Event	Date	Description of Failure	Unique Failure Review
2283	4/14/2017	<p>SPF Note 1 - "During performance of surveillance, #12 Drywell Cooling Fan (T4700C012) did not restart during load sequencing following loss of offsite power auto start signal to EDG 13. Walkdown at MCC 72E 5B found an acrid odor. MCC 73E 5B was de-energized. To back out of surveillance, steps were performed to load EDG 13, restore offsite power to 65E, and then shutdown EDG 13 to place in standby conditions. Steps are NA that were not required to accomplish this. CARD 17-23496" CARD 17-23496 states: "Drywell Cooling Fan 12 did not restart during the load sequence following simulated loss of power. Reference Acceptance Criteria Step 5.1.17. The CMC switch for T4700C012 was in Auto and indicated TRIPPED upon attempted restart. A couple minutes later all indications were lost at the CMC switch. Field walkdown found an acrid odor at MCC 72E 5B. The MCC was deenergized and initial investigation shows indication of a burnt contactor. Investigate cause and repair." CARD Reportability/Operability Review states: "72E-5B was de-energized following the failure, to de-energize the MCC for Drywell Fan #12. The inoperability is tracked on LCO 2017-0210. 24.307.03 was backed out of, with only part of Section 5.1 complete." Investigation by electrical maintenance and operations found the contactor coil burnt. The Direct Cause is E04 - insulation breakdown because the coil insulation broke down and shorted resulting in the inability to close the contactor and start the drywell cooler. WO 47495796 initiated to replace contactor. A replacement contactor (i.e., 2 Overload blocks and Aux contact block) was installed and DWC #12 operated as expected.</p>	<p>No similar failures are identified, therefore the failure is not repetitive in nature. No time based mechanisms are apparent. Therefore, this failure is unique and any subsequent failure would not result in a significant impact on system/component available.</p>