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Washington, D. C. 20555-0001

Edwin I. Hatch Nuclear Plant – Units 1 and 2
Fukushima Near-Term Task Force Recommendation 2.1
Expedited Seismic Evaluation Process Report Completion

References:

1. NRC Letter, *Request for Information Pursuant to 10 CFR 50.54(f) Regarding Recommendations 2.1, 2.3, and 9.3 of the NTTF Review of Insights from the Fukushima Daiichi Accident,* dated March 12, 2012.
2. NEI Letter to NRC, *Proposed Path Forward for NTTF Recommendation 2.1: Seismic Reevaluations*, dated April 9, 2013.
3. NRC Letter, *EPRI Final Draft Report XXXXXX, "Seismic Evaluation Guidance: Augmented Approach for the Resolution of Fukushima Near-Term Task Force Recommendation 2.1: Seismic" as an Acceptable Alternative to the March 12, 2012, Information Request for Seismic Reevaluations,* dated May 7, 2013.
4. Letter to NRC, Edwin I. Hatch Nuclear Plant, Expedited Seismic Evaluation Process Report - Fukushima Near-Term Task Force Recommendation 2.1, December 30, 2014. ML15049A502.
5. Letter to NRC, Edwin I. Hatch Nuclear Plant, Request for Additional Information Regarding Expedited Seismic Evaluation Process Report, April 16, 2015. ML15106A549.
6. NRC letter, Edwin I. Hatch Nuclear Plant, Units 1 and 2 – Staff Review of Interim Evaluation Associated with Reevaluated Seismic Hazard Implementation Associated with Reevaluated Seismic Hazard Implementation of the Near-Term Task Force Recommendation 2.1, July 22, 2015. ML15201A474.

Ladies and Gentlemen:

On March 12, 2012, the Nuclear Regulatory Commission (NRC) issued a request for information pursuant to 10 CFR 50.54(f) associated with the recommendations of the Fukushima Near-Term Task Force (NTTF) (Reference 1). Enclosure 1 of Reference 1 requested each licensee to reevaluate the seismic hazards at their sites using present-day NRC requirements and guidance, and to identify actions taken or planned to address plant-specific vulnerabilities associated with the updated seismic hazards.

The NRC endorsed Reference 3 as an acceptable alternative to the information requested in Reference 1. Reference 3 also provided NRC staff approval of the schedule modifications requested by Reference 2. Based on the modified schedule, Central and Eastern United States (CEUS) licensees were required to submit the reports resulting from the Expedited Seismic Evaluation Process (ESEP) by December 2014. Reference 4 provided the Edwin I. Hatch Nuclear Plant ESEP Report for Units 1 and 2.

Following the submittal of the Edwin I. Hatch Nuclear Plant ESEP Report, Southern Nuclear Operating Company (SNC) received a request for additional information (transmitted electronically) by the NRC on April 7, 2015 and Reference 5 provided a SNC response to the NRC. In Reference 6, the NRC staff concluded that the licensee's implementation of the interim evaluation meets the intent of the guidance. Reference 4 contained regulatory commitments to complete walkdowns, evaluations and any necessary modifications not requiring an outage by December 2016 and submit results letters to NRC within 90 days following completion of ESEP activities. Accordingly, walkdowns and evaluations have been completed and no modifications were determined to be necessary. Revision 1 of the Edwin I. Hatch Nuclear Plant ESEP Report is provided in Enclosure 1. An updated table of the actions associated with completion of the ESEP Activities, with an updated schedule for each, is provided in Enclosure 2.

This letter completes the NRC commitments described in Enclosure 3 and contains no new NRC Commitments. If you have any questions, please contact John Giddens at 205.992.7924.

Mr. C. R. Pierce states he is the Regulatory Affairs Director for Southern Nuclear Operating Company, is authorized to execute this oath on behalf of Southern Nuclear Operating Company and, to the best of his knowledge and belief, the facts set forth in this letter are true.

Respectfully submitted,

C. R. Pierce

C. R. Pierce
Regulatory Affairs Director

CRP/JMG/GLS

Sworn to and subscribed before me this 15th *day of* December, *2016.*

Notary Public

My commission expires: 1-2-2018

Enclosures:
1. Expedited Seismic Evaluation Process (ESEP) Report – Revision 1
2. Required Actions and Schedule for Completion of ESEP Activities – Updated
3. Table of Regulatory Commitments

cc: Southern Nuclear Operating Company
Mr. S. E. Kuczynski, Chairman, President & CEO
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Edwin I. Hatch Nuclear Plant – Units 1 and 2
Fukushima Near-Term Task Force Recommendation 2.1
Expedited Seismic Evaluation Process Report Completion

Enclosure 1

Expedited Seismic Evaluation Process (ESEP) Report
Revision 1, dated December 1, 2016
(61 pages)

Plant Hatch Units 1 and 2 Expedited Seismic Evaluation Process (ESEP) Report

MPR-4121
Revision 1
December 1, 2016

QUALITY ASSURANCE DOCUMENT
This document has been prepared, reviewed, and approved in accordance with the Quality Assurance requirements of 10CFR50 Appendix B and/or ASME NQA-1, as specified in the MPR Nuclear Quality Assurance Program.

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RECORD OF REVISIONS

Revision	Affected Pages	Description
0	All	Initial issue.
1	i, ii, iii, 2, 3, 4, 5, 19, 23, 24, 25, 27 Attachment A, Attachment B	Updated to reflect revision of ESEL and completion of ESEP for FLEX equipment installation.

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Executive Summary

Plant Hatch Units 1 and 2 have performed the Expedited Seismic Evaluation Process (ESEP) as an interim action in response to the NRC's 50.54(f) letter (Reference 1). The purpose was to demonstrate seismic margin through a review of a subset of the plant equipment that can be relied upon to protect the reactor core following beyond design basis seismic events. The ESEP was performed using the methodologies in the NRC-endorsed industry guidance in EPRI 3002000704, Seismic Evaluation Guidance: Augmented Approach for the Resolution of Fukushima Near-Term Task Force Recommendation 2.1 – Seismic (Reference 2). As a result of the ESEP, no modifications have been identified as necessary to meet ESEP acceptance criteria specified in Reference 2.

1 Purpose and Objective

Following the accident at the Fukushima Dai-ichi nuclear power plant resulting from the March 11, 2011, Great Tohoku Earthquake and subsequent tsunami, the Nuclear Regulatory Commission (NRC) established a Near Term Task Force (NTTF) to conduct a systematic review of NRC processes and regulations and to determine if the agency should make additional improvements to its regulatory system. The NTTF developed a set of recommendations intended to clarify and strengthen the regulatory framework for protection against natural phenomena. Subsequently, the NRC issued a 50.54(f) letter on March 12, 2012 (Reference 1), requesting information to assure that these recommendations are addressed by all U.S. nuclear power plants. The 50.54(f) letter requests that licensees and holders of construction permits under 10 CFR Part 50 reevaluate the seismic hazards at their sites against present-day NRC requirements and guidance. NRC has considered the need for further risk assessment based on a review of the re-evaluated hazard and available risk information and has concluded that a seismic probabilistic risk assessment (SPRA) is not warranted for Plant Hatch Units 1 and 2 (Reference 18).

This report describes the Expedited Seismic Evaluation Process (ESEP) undertaken for Plant Hatch Units 1 and 2. The intent of the ESEP is to perform an interim action in response to the NRC's 50.54(f) letter (Reference 1) to demonstrate seismic margin through a review of a subset of the plant equipment that can be relied upon to protect the reactor core following beyond design basis seismic events.

The ESEP is implemented using the methodologies in the NRC-endorsed industry guidance in EPRI 3002000704, Seismic Evaluation Guidance: Augmented Approach for the Resolution of Fukushima Near-Term Task Force Recommendation 2.1 – Seismic (Reference 2).

The objective of this report is to provide summary information describing the ESEP evaluations and results. The level of detail provided in the report is intended to enable NRC to understand the inputs used, the evaluations performed, and the decisions made as a result of the interim evaluations.

In July 2015, NRC concluded that Plant Hatch Units 1 and 2 had responded appropriately to Enclosure 1, Item (6) of the 50.54(f) letter (Reference 19). This conclusion was based on NRC's review of Revision 0 of this report and NRC's April 2015 response to NRC requests for additional information (Reference 20). Revision 1 of this report documents completion of ESEP activities in accordance with References 19 and 20.

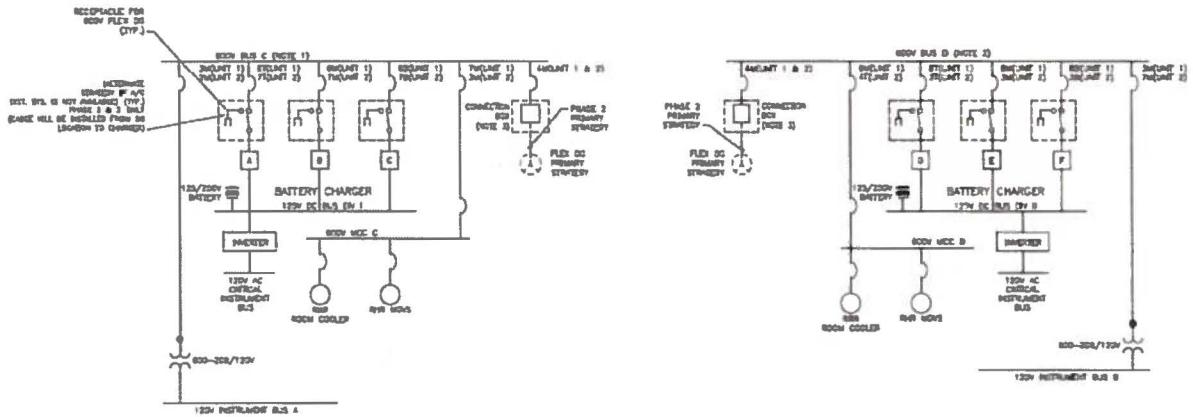
2 Brief Summary of the FLEX Seismic Implementation Strategies

The Plant Hatch FLEX strategies for Reactor Core Cooling and Containment Function are summarized below. This summary is derived from the Plant Hatch Overall Integrated Plan (OIP) in Response to the March 12, 2012, Commission Order EA-12-049 (Reference 3).

During FLEX Phase 1, the primary strategy for reactor core cooling is to supply high quality water via reactor core isolation cooling (RCIC) with suction from the Condensate Storage Tank (CST). If the CST is depleted (in approximately 6-7 hours by analysis), suction will be taken from the torus. Reactor pressure is controlled using safety relief valves (SRVs) with DC control power and pneumatic pressure supplied by the station batteries and accumulators for each SRV. As torus temperature increases, operators reduce reactor pressure to provide margin to the heat capacity temperature limit curve.

During FLEX Phase 2, reactor core cooling will continue to be maintained using RCIC. After depletion of the initial CST inventory and while RCIC is taking suction from the torus, the CST will be replenished using the portable FLEX pump and water from the Ultimate Heat Sink (Altamaha River). RCIC will continue to inject water from the torus until the torus level reaches the low level limit and suction must be re-aligned to the CST. The torus water level drops due to evaporation through the Hardened Containment Vent System (HCVS), which is operated to maintain containment parameters below design limits and RCIC operating parameters within acceptable limits. Reactor pressure will continue to be controlled using the SRVs. The 125V DC batteries will provide power for more than 12 hours without recharging. As shown in Figure 2-1 (Reference 21), the FLEX 600 VDC diesel generators will be connected at approximately 10-12 hours to power two 125/250 VDC Battery Chargers per division, RCIC Controls, and other loads necessary for event mitigation and monitoring.

The FLEX Phase 3 coping strategy is to continue reactor core cooling up to and beyond 72 hours using FLEX Phase 2 on-site equipment with no immediate reliance on equipment from the National SAFER Response Center. RCIC will be used to cool the core until reactor pressure is insufficient to drive the RCIC turbine, at which time the Phase 2 FLEX pump will be used to inject directly to the reactor using the RHRSW-RHR cross tie valves as shown in Figure 2-2 (Reference 21).



	125V DC		120V AC BUS		600V AC BUS		4160V AC BUS	
	STRATEGY	METHOD	STRATEGY	METHOD	STRATEGY	METHOD	STRATEGY	METHOD
PHASE I	PROVIDE CRITICAL INSTRUMENTATION RCIC OR LIGHTING	125V DC BUSES SUPPLIED BY STATION BATTERIES 1V I & II	120V AC POWER NOT AVAILABLE	N/A	600V AC POWER NOT AVAILABLE	N/A	4160V AC POWER NOT AVAILABLE	N/A
PHASE II	CHARGE 125V DC BATTERIES CRITICAL INSTRUMENTS RCIC OR EMERGENCY LIGHTING	POWER 600V BUS C & D FROM FLEX DG TO SUPPLY BATTERIES DG TO POWER BOTH DIV BUSES	POWER 120V AC INSTRUMENT POWER BUS POWER PLANT PA	POWER 120V AC INSTRUMENT BUS VIA 600V BUS	POWER 600V BUS C & D POWER BATTERY CHARGERS POWER 600V MCC	POWER 600V BUS C & D VIA FLEX DG	4160V AC POWER NOT AVAILABLE	N/A
PHASE III	CHARGE 125V DC BATTERIES POWER CRITICAL INSTRUMENTS POWER RCIC OR EMERGENCY LIGHTING MISCELLANEOUS LOADS	POWER 600V BUS C & D VIA 4160V BUS	POWER 120V AC INSTRUMENT BUS POWER PLANT PA	POWER 120V AC INSTRUMENT BUS VIA 600V BUS	POWER 600V BUS C & D POWER BATTERY CHARGERS POWER 600V MCC	POWER 600V BUS C & D VIA 4160V BUS	POWER 4160V AC BUS	POWER 4160V AC BUS VIA 4160V FLEX DG DISCONNECT SMALL DG AS POWER TO 4160V AC BUS IS ESTABLISHED

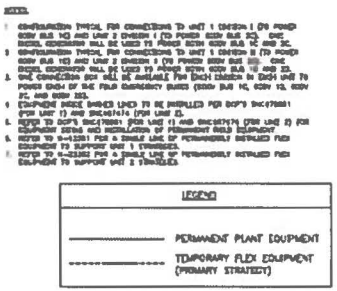


FIGURE 3: **PHASE 2 ELECTRICAL DIAGRAM**

Figure 2-1. Electrical Diagram for Plant Hatch FLEX Strategies (Reference 21)

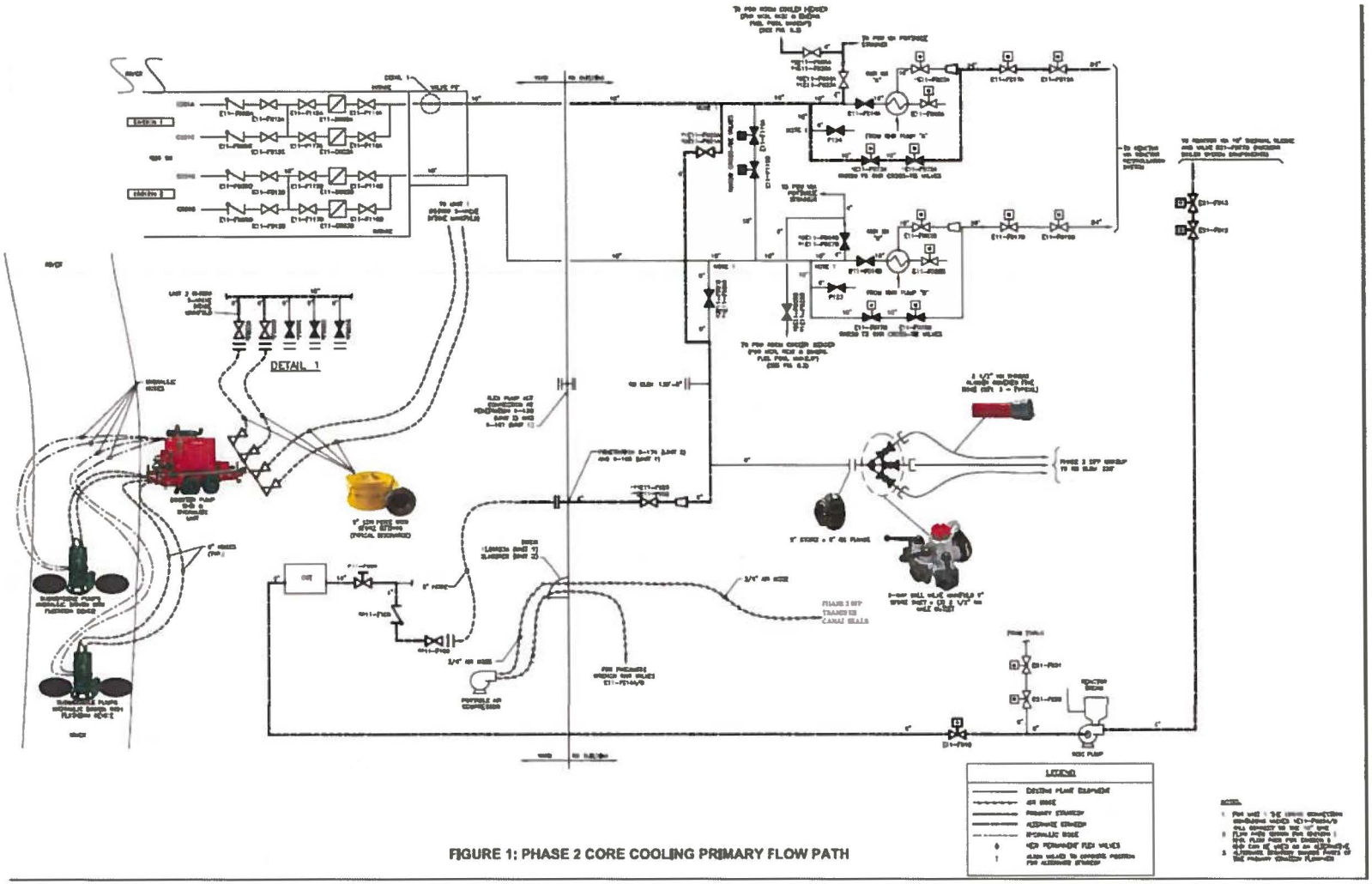


Figure 2-2. Flow Diagram for Plant Hatch FLEX Strategies (Reference 21)

3 Equipment Selection Process and ESEL

The selection of equipment for the Expedited Seismic Equipment List (ESEL) followed the guidelines of EPRI 3002000704 (Reference 2). The ESELs for Units 1 and 2, presented in Attachments A and B, respectively, are based on SNCH106-PR-001 and SNCH106-PR-002 (References 4 and 5).

3.1 Equipment Selection Process and ESEL

The ESEL component selection followed the EPRI guidance outlined in Section 3.2 of Reference 2. The selection of equipment to be included on the ESEL was based on installed plant equipment credited in the FLEX strategies during Phase 1, 2, and 3 mitigation of a Beyond Design Basis External Event (BDBEE), as outlined in the Plant Hatch Overall Integrated Plan (OIP) in Response to the March 12, 2012, Commission Order EA-12-049 (Reference 3). The OIP provides the Plant Hatch FLEX mitigation strategy and serves as the basis for equipment selected for the ESEP.

The Plant Hatch ESEL includes permanently installed plant equipment that could be relied upon to accomplish the core cooling and containment safety functions identified in Table 3-1 of Reference 2 in response to a beyond-design-basis earthquake. Per Reference 2, the ESEL does not include portable or pre-staged FLEX equipment (not permanently installed) or equipment that is used only for recovery strategies. The scope of equipment on the ESEL includes that required to support a single FLEX success path. Instrumentation monitoring requirements for core cooling and containment integrity functions are limited to those discussed in Reference 2.

In accordance with Reference 2, the following structures, systems, and components were excluded from the ESEL:

- Structures (e.g., reactor building and control building)
- Piping, cabling, conduit, HVAC, and their supports
- Manual valves and check valves
- Power-operated valves not required to change state as part of the FLEX mitigation strategies
- Nuclear steam supply system components (e.g., reactor pressure vessel and internals)

3.1.1 ESEL Development

The ESEL was developed by reviewing the Plant Hatch FLEX OIP (Reference 3) to determine the major equipment involved in the FLEX strategies. Plant drawings (e.g., Process and

Instrumentation Diagrams (P&IDs) and electrical one-line diagrams) were reviewed to specify the boundaries of the flow paths used in the FLEX strategies and to identify other components needed to support operation of the systems credited in the FLEX strategies. Boundaries were established at an electrical or mechanical isolation device (e.g., isolation amplifier or valve) in branch circuits/branch lines off the defined strategy electrical or fluid flowpath. P&IDs were the primary reference documents used to identify mechanical components and instrumentation needed for FLEX. Once the flow paths were identified, specific components were selected using the guidance in Reference 2. Electrical components needed to support FLEX were identified using one-line diagrams and schematics. Based on this review, base list tables of components were developed for each of the methods credited with accomplishing key functions in the FLEX strategies.

The base list tables were then reviewed to determine which equipment should be included on the ESEL. Most of the equipment decisions were clearly outlined in the Reference 2 guidance; however, some judgments were necessary as discussed below.

3.1.2 Power Operated Valves

Per the Reference 2 EPRI guidance, the ESEL does not need to include power-operated valves that are not required to change state as part of the FLEX mitigating strategies. However, Reference 2 also states, "In addition to the physical failure modes (load path and anchorage) of specific pieces of installed equipment, functional failure modes of electrical and mechanical portions of the installed Phase 1 equipment should be considered (e.g., RCIC)." Because relay chatter could cause a functional failure, the following criteria were used to determine whether specific power-operated valves should be included on the ESEL:

- Power operated valves in the primary success path will be included on the ESEL if they need to remain energized during Phase 1 in order to maintain core cooling and containment integrity (e.g., certain DC-powered valves).

- Power operated valves not required to change state as part of the FLEX mitigation strategies may be excluded from the ESEL if they would be de-energized by the event that causes the Extended Loss of all AC Power (ELAP) event.

- AC power-operated valves not required to change state as part of the Phase 1 FLEX mitigation strategies may be excluded from the ESEP if they are re-energized and operated during Phase 2 or 3 activities.

3.1.3 Pull Boxes

Pull boxes were deemed unnecessary to add to the ESELs as these components provide completely passive locations for pulling or installing cables. No breaks or connections in the cabling are included in pull boxes. Pull boxes were considered part of the conduit and cabling, which are excluded in accordance with Reference 2.

3.1.4 Termination Cabinets

Although termination cabinets and junction boxes provide a passive function similar to pull boxes, they were included on the ESEL to ensure industry knowledge on panel/anchorage failure vulnerabilities is addressed.

3.1.5 Critical Instrumentation Indicators

Critical indicators and recorders are typically physically located on panels/cabinets and are included as separate components; however, seismic evaluation of the instrument indication may be included in the panel/cabinet seismic evaluation (rule-of-the-box).

3.1.6 Phase 2 and Phase 3 Piping Connections

As noted in Section 3.2 of Reference 2, "the scope of the ESEL is limited to installed plant equipment and FLEX equipment connections" and "the selection process for the ESEL should assume the FLEX strategies (modifications, equipment, procedures, etc.) have been implemented." Section 3.2 of Reference 2 also explains that "piping, cabling, conduit, HVAC, and their supports" are excluded from the ESEL scope. Therefore, piping and pipe supports associated with FLEX Phase 2 and Phase 3 connections are excluded from the scope of the ESEP evaluation. Except as described in Sections 3.1 and 3.1.2 above, valves required to change position to establish/maintain FLEX Phase 2 and Phase 3 flow paths (i.e., active valves) are included in the ESEL.

3.1.7 Inaccessible Valve Interlocks

Some components have interlocks that could potentially inhibit valve operation during Phase 2 or 3 of FLEX. Reference 2 specifically allows exclusion of interlock failures from the ESEL if plant procedures provide instructions for manual operation to ensure performance of the required FLEX function. For valves that cannot be operated locally due to location in containment or high radiation areas, this statement is interpreted as allowing the interlocks in the control circuit to be bypassed to allow remote manual operation. Therefore, these interlocks are excluded in Phase 3.

3.2 JUSTIFICATION FOR USE OF EQUIPMENT THAT IS NOT THE PRIMARY MEANS FOR FLEX IMPLEMENTATION

All components on the ESEL for Plant Hatch Units 1 and 2 are associated with the primary FLEX strategies. Therefore, since no alternate equipment is being used, no justification is needed.

4 Ground Motion Response Spectrum (GMRS)

In response to the 50.54(f) letter (Reference 1), SNC reevaluated the Plant Hatch seismic hazard in accordance with the NRC-endorsed industry guidance (Reference 6).

4.1 Plot of GMRS Submitted by Licensee

The plot of the Plant Hatch GMRS submitted by SNC to the NRC in Reference 7 is shown in Figure 4-1. Table 4-1 contains the corresponding numerical values that were also included in Reference 7. The GMRS and Design Basis Earthquake (DBE) control point elevation is defined at Elevation 129 feet, which is general plant grade.

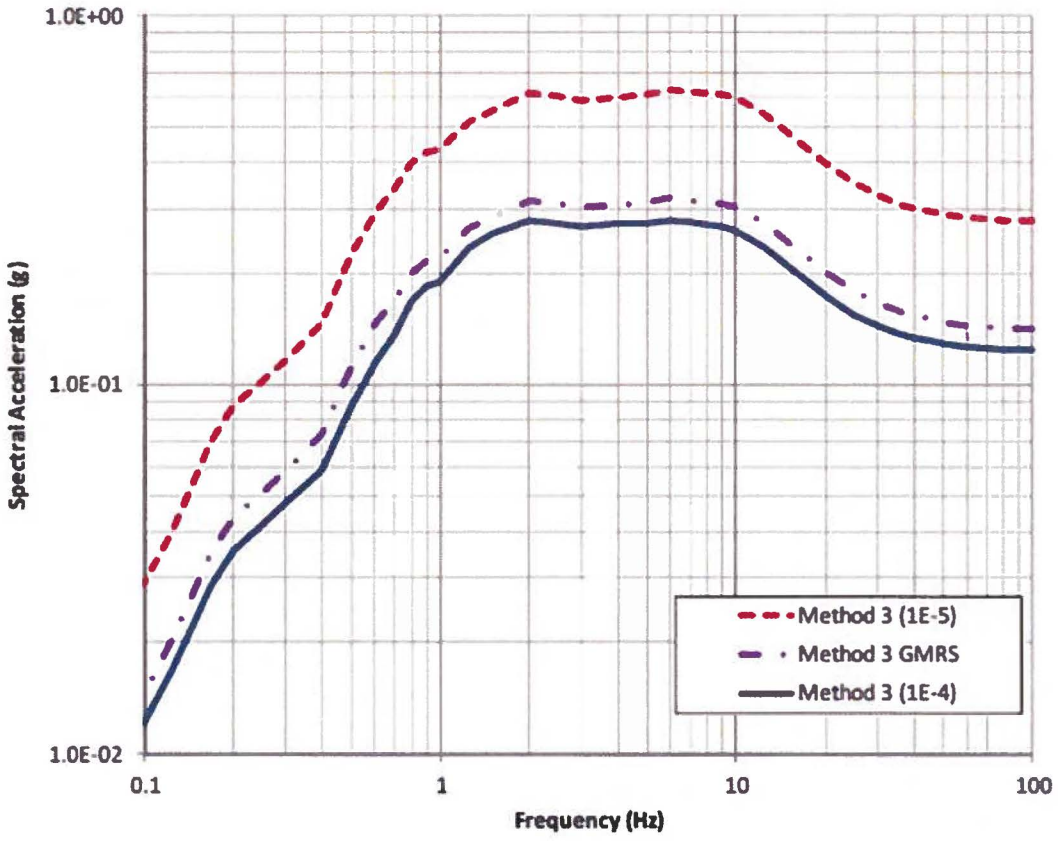


Figure 4-1. Plant Hatch GMRS

Table 4-1. GMRS for Plant Hatch Units 1 and 2

Frequency (Hz)	Spectral Acceleration (g)	Frequency (Hz)	Spectral Acceleration (g)	Frequency (Hz)	Spectral Acceleration (g)
100	0.1422	12.5	0.2744	1.00	0.2206
90.0	0.1422	10.0	0.3039	0.900	0.2171
80.0	0.1427	9.00	0.3111	0.800	0.2009
70.0	0.1438	8.00	0.3142	0.700	0.1696
60.0	0.1452	7.00	0.3164	0.600	0.1452
50.0	0.1478	6.00	0.3203	0.500	0.1113
45.0	0.1508	5.00	0.3118	0.400	0.0737
40.0	0.1532	4.00	0.3080	0.300	0.0580
35.0	0.1583	3.00	0.3029	0.200	0.0437
30.0	0.1666	2.50	0.3096	0.167	0.0346
25.0	0.1790	2.00	0.3158	0.125	0.0203
20.0	0.2027	1.50	0.2844	0.100	0.0145
15.0	0.2459	1.25	0.2654		

4.2 COMPARISON TO SSE

The plots of the Plant Hatch Unit 1 DBE and Unit 2 DBE submitted by SNC to the NRC in Reference 7 are shown in Figure 4-2 along with the GMRS. Tables 4-2 and 4-3 contain the corresponding numerical values that were also included in Reference 7. Note that Reference 7 uses DBE and SSE interchangeably for Plant Hatch.

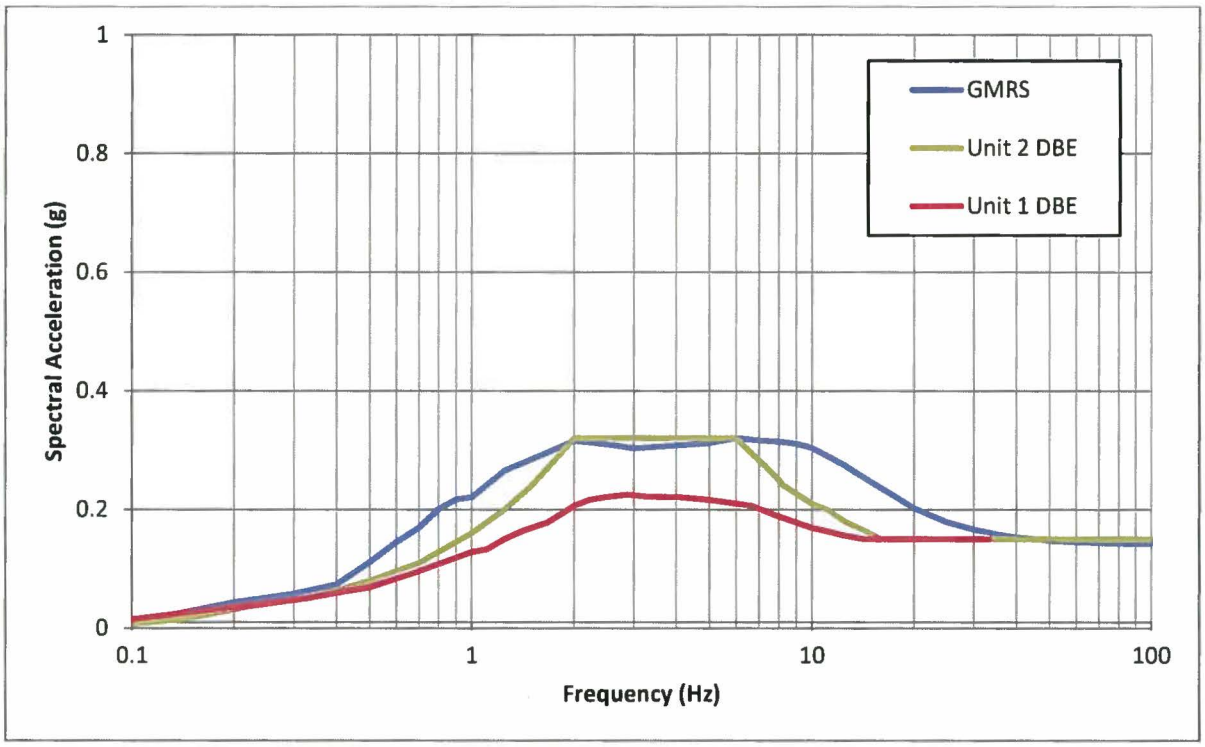


Figure 4-2. Horizontal Design Basis Earthquake (DBE) and GMRS for Plant Hatch

Table 4-2. Horizontal Design Basis Earthquake (DBE) for Plant Hatch Unit 1

Frequency (Hz)	Spectral Acceleration (g)	Frequency (Hz)	Spectral Acceleration (g)
33.33	0.150	3.33	0.221
28.67	0.150	2.86	0.225
25.00	0.150	2.50	0.221
22.22	0.150	2.22	0.216
20.00	0.150	2.00	0.206
16.67	0.150	1.67	0.178
14.29	0.150	1.43	0.165
12.50	0.156	1.25	0.150
11.11	0.163	1.11	0.133
10.00	0.169	1.00	0.128
8.00	0.188	0.67	0.092
6.67	0.206	0.50	0.069
5.00	0.216	0.33	0.051
4.00	0.221	0.10	0.015

Table 4-3. Horizontal Design Basis Earthquake (DBE) for Plant Hatch Unit 2

Frequency (Hz)	Spectral Acceleration (g)	Frequency (Hz)	Spectral Acceleration (g)
100.00	0.150	2.50	0.320
16.00	0.150	2.00	0.320
14.30	0.165	1.50	0.240
12.50	0.180	1.25	0.200
11.10	0.200	1.00	0.160
10.00	0.210	0.70	0.110
8.30	0.240	0.50	0.080
7.70	0.260	0.33	0.050
6.00	0.320	0.22	0.036
5.00	0.320	0.14	0.015
4.00	0.320	0.10	0.007
3.00	0.320		

5 Review Level Ground Motion (RLGM)

Section 4 of Reference 2 states that the ESEP may be performed using either the GMRS or a linearly scaled version of the SSE (DBE for Plant Hatch) that bounds the GMRS between 1 and 10 Hz. In many cases, scaling the SSE facilitates a more expedient evaluation by allowing use of existing SSE-based in-structure response spectra (ISRS) that are simply scaled by the same factor (Scenarios 2 and 3 in Figure 1-2 of Reference 2). However, for surface-mounted items (where ISRS estimates are not necessary), plants may decide to use the GMRS instead of the scaled SSE (Scenario 4 in Figure 1-2 of Reference 2).

The Plant Hatch ESEP was performed using either the GMRS (for two surface-mounted items) or the RLGM used previously by the combined A-46/IPEEE Program at Plant Hatch as discussed below, which is consistent with the guidance in Reference 2.

5.1 Description of RLGM Selected

As discussed in Reference 7 and documented in the 1991 EPRI Report NP-7217 (Reference 8), a full EPRI Seismic Margin Assessment (SMA) was previously performed for Plant Hatch Unit 1 as a trial BWR assessment of the EPRI SMA methodology. That SMA project included a soil failure evaluation and a full relay evaluation and was peer reviewed by several review panels. As part of the Independent Plant Examination of External Events (IPEEE), a focused scope SMA and a full SQUG GIP relay review were performed for Plant Hatch Unit 2 (Reference 9). The Review Level Earthquake (RLE) for both of those SMAs was a median NUREG/CR-0098 type ground response spectrum anchored to 0.3g peak ground acceleration (PGA) as shown in Table 5-1 (Reference 7). As described in Reference 8, a soil-structure interaction analysis was performed and new ISRS were developed for the IPEEE RLE. For comparison purposes, Figure 5-1 includes the Hatch IPEEE RLE, the Hatch Unit 1 DBE, the Hatch Unit 2 DBE, and the Hatch GMRS. Above 1Hz, the Hatch Units 1 and 2 IPEEE RLE spectrum is at least two times or larger than the Hatch Unit 1 DBE and the Hatch Unit 2 DBE, and is about twice the Hatch GMRS.

To facilitate an early start (prior to obtaining the GMRS) and timely completion of the ESEP, the IPEEE RLE was used as the ESEP review level ground motion (RLGM) for most of the equipment in Plant Hatch Units 1 and 2. Only the surface-mounted condensate storage tanks (CSTs), which did not require ISRS, were evaluated to the GMRS.

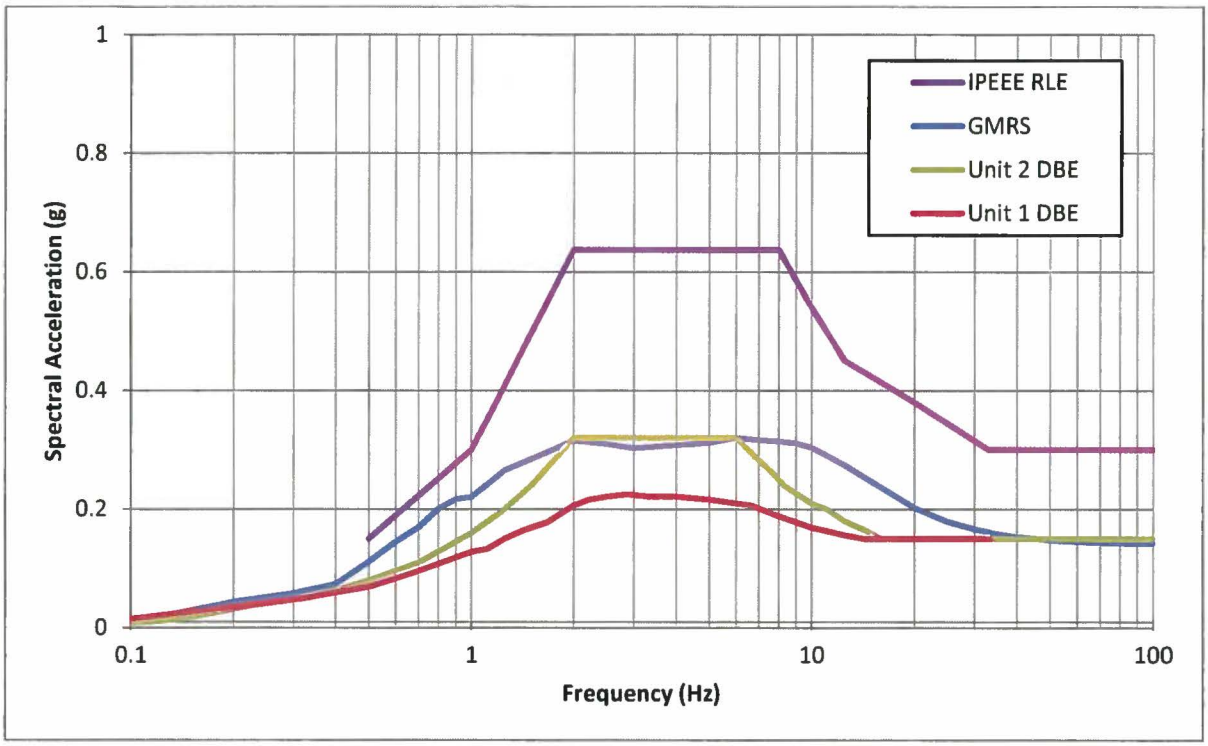


Figure 5-1. Hatch IPEEE RLE Compared to the Unit 1 and Unit 2 DBEs and the GMRS

Table 5-1. Plant Hatch IPEEE RLE

Frequency (Hz)	Spectral Acceleration (g)
100	0.3
33	0.3
20	0.38
12.5	0.45
10	0.54
8	0.637
2	0.637
1	0.3
0.5	0.15

5.2 METHOD TO ESTIMATE IN-STRUCTURE RESPONSE SPECTRUM (ISRS)

For structure-mounted equipment, the ESEP used the IPEEE RLE in-structure response spectra (ISRS). As stated in Section 5.1, the IPEEE ISRS are based on ground motion equal to or larger than twice the Hatch Unit 1 and Hatch Unit 2 DBEs.

6 Seismic Margin Evaluation Approach

The objective of the ESEP is to demonstrate that the ESEL items have sufficient seismic capacity to meet or exceed the seismic demand associated with the RLGM. Section 5 of Reference 2 provides guidance for characterizing the seismic capacity by determining a high confidence of low probability of failure (HCLPF) using either the Seismic Margin Assessment (SMA) methodology of EPRI NP-6041-SL (Reference 10) or the fragility analysis methodology of EPRI TR-103959 (Reference 12). The Plant Hatch ESEP used the EPRI NP-6041-SL SMA approach, consistent with the earlier combined A-46/IPEEE Program.

The HCLPF capacity is based on the weakest or most seismically limiting attribute of the equipment (structural, anchorage, or functional). The HCLPF evaluation considers the dynamic response of the equipment, but the HCLPF value is expressed in terms of a peak ground acceleration (PGA) to provide a common point of reference relative to the RLGM. Per Reference 2, ESEL items have sufficient seismic capacity if the HCLPF capacity is equal to or greater than the RLGM PGA.

6.1 Summary of Methodologies Used

Seismic Margin Assessments (SMAs) were performed for Plant Hatch Units 1 and 2 in the early 1990s and are documented in References 8 and 9. Those SMAs were performed as part of the combined A-46/IPEEE program at Plant Hatch and included many of the items on the ESEL. As part of the ESEP, the Seismic Review Team (SRT) evaluated each accessible item on the ESEL for seismic capacity, anchorage, and relay functionality (when a FLEX methodology relay was identified in the ESEL). (Inaccessible items are discussed in Section 7.1.) The ESEP walkdowns and evaluations were documented in Screening and Evaluation Work Sheets (SEWS), which include checklists that were developed from Appendix F of EPRI NP-6041-SL (Reference 10).

Each member of the SRT was trained as a SQUG Seismic Capability Engineer in accordance with the Generic Implementation Procedure (GIP) and trained in the use of EPRI NP-6041-SL. Selected team members also took the EPRI HCLPF course, which was developed for the ESEP implementation and is based on EPRI NP-6041-SL.

6.2 HCLPF Screening Process

ESEL items were evaluated for the Hatch IPEEE RLE, which is a median NUREG/CR-0098 type ground response spectrum anchored to 0.3g PGA, as shown in Figure 5-1. The only exception to this approach was used for the CSTs, as described below. The 5 percent damped Peak Spectral Acceleration of the Hatch IPEEE RLE allowed the use of the first column (<0.8g PSA) of Reference 10 Table 2-4 "Summary of Equipment and Subsystems Screening Criteria for Seismic Margin Evaluation" in establishing HCLPFs greater than or equal to the RLE for ESEL

items. Anchorage evaluations were performed using the in-structure response spectra developed for the A-46/IPEEE program's RLE (shown in Figure 5-1).

For the CSTs, the HCLPFs were established using the rigorous methodology of Reference 10 Appendix H "Flat-Bottom Vertical Fluid Storage Tanks" and additional information provided during the EPRI HCLPF course (Reference 11). The review level earthquake for the CST HCLPF evaluations was the GMRS.

6.3 SEISMIC WALKDOWN APPROACH

6.3.1 Walkdown Approach

ESEP walkdowns were performed in accordance with the criteria provided in Section 5 of Reference 2, which refers to Reference 10 for the Seismic Margin Assessment process. Pages 2-26 through 2-30 of Reference 10 describe the seismic walkdown guidance, including the following key points.

> *"The SRT [Seismic Review Team] should "walk by" 100% of all components which are reasonably accessible and in non-radioactive or low radioactive environments. Seismic capability assessment of components which are inaccessible, in high-radioactive environments, or possibly within contaminated containment, will have to rely more on alternate means such as photographic inspection, more reliance on seismic reanalysis, and possibly, smaller inspection teams and more hurried inspections. A 100% "walk by" does not mean complete inspection of each component, nor does it mean requiring an electrician or other technician to de-energize and open cabinets or panels for detailed inspection of all components. This walkdown is not intended to be a QA or QC review or a review of the adequacy of the component at the SSE level.*
>
> *If the SRT has a reasonable basis for assuming that the group of components are similar and are similarly anchored, then it is only necessary to inspect one component out of this group. The "similarity-basis" should be developed before the walkdown during the seismic capability preparatory work (Step 3) by reference to drawings, calculations or specifications. The one component or each type which is selected should be thoroughly inspected which probably does mean de-energizing and opening cabinets or panels for this very limited sample. Generally, a spare representative component can be found so as to enable the inspection to be performed while the plant is in operation. At least for the one component of each type which is selected, anchorage should be thoroughly inspected.*
>
> *The walkdown procedure should be performed in an ad hoc manner. For each class of components the SRT should look closely at the first items and compare the field configurations with the construction drawings and/or specifications. If a one-to-one correspondence is found, then subsequent items do not have to be inspected in as great a detail. Ultimately the walkdown becomes a "walk by" of the component class as the SRT becomes*

confident that the construction pattern is typical. This procedure for inspection should be repeated for each component class; although, during the actual walkdown the SRT may be inspecting several classes of components in parallel. If serious exceptions to the drawings or questionable construction practices are found then the system or component class must be inspected in closer detail until the systematic deficiency is defined.

The 100% "walk by" is to look for outliers, lack of similarity, anchorage which is different from that shown on drawings or prescribed in criteria for that component, potential SI [Seismic Interaction[1]] problems, situations that are at odds with the team members' past experience, and any other areas of serious seismic concern. If any such concerns surface, then the limited sample size of one component of each type for thorough inspection will have to be increased. The increase in sample size which should be inspected will depend upon the number of outliers and different anchorages, etc., which are observed. It is up to the SRT to ultimately select the sample size since they are the ones who are responsible for the seismic adequacy of all elements which they screen from the margin review. Appendix D gives guidance for sampling selection."

6.3.2 Application of Previous Walkdown Information

Many ESEL items were previously walked down during the Plant Hatch A-46/IPEEE program using an IPEEE RLE that was equal to or greater than twice the DBEs. Consistent with the guidance in References 2 and 10, the A-46/IPEEE documentation for some electrical items was used to eliminate the need for electrical bus outages and minimize the risk of tripping the plant by not opening some energized electrical equipment that had been opened during the A-46/ IPEEE program.

Specifically, some ESEL items evaluated during the A-46/IPEEE program and shown to have a seismic capacity greater than or equal to the IPEEE RLE were evaluated but not opened to view anchorage. The ESEP walkdowns were performed to confirm consistency of these items with their A-46/IPEEE condition and address seismic capacity questions that could be answered without opening the equipment. Based on this information, which included documentation from the A-46/IPEEE SEWS, NTTF 2.3 seismic information, drawings, and calculations, the SRTs were able to evaluate the equipment capacity and anchorage without electrical bus outages or risk of tripping the plant by opening these items.

Previous walkdown information was also used for evaluation of inaccessible equipment, as discussed in Section 7.1.

[1] EPRI 3002000704 (Reference 2) page 5-4 limits the ESEP seismic interaction reviews to "nearby block walls" and "piping attached to tanks" which are reviewed "to address the possibility of failures due to differential displacements."

6.3.3 Significant Walkdown Findings

Consistent with guidance from Reference 10, no significant seismic issues were identified at Plant Hatch during the final ESEP seismic walkdowns.

During initial ESEP seismic walkdowns, one significant seismic issue was identified:

- Anchorage for the nitrogen ambient vaporizer for each unit (1T48-B004 and 2T48-B002) was degraded at the time of the initial walkdown and condition reports (CRs) were written to resolve the problem. These components were re-evaluated after repairs were made and the HCLPFs for the anchorages now meet or exceed the Hatch IPEEE RLE.

Smaller issues identified during the initial walkdowns (e.g., corrosion on anchor bolts for the Unit 1 outside nitrogen storage tank (1T48-A001)) were entered as condition reports, resolved, and then re-evaluated to confirm that the components have HCLPFs that meet or exceed the Hatch IPEEE RLE.

Some block walls were identified in the proximity of ESEL equipment. During the A-46/IPEEE combined program, these block walls were assessed for their structural adequacy to withstand the seismic loads resulting from the Hatch IPEEE RLE.

6.4 HCLPF Calculation Process

Consistent with the Reference 10 deterministic/SMA methodology, the Plant Hatch ESEP acceptance criteria were that the equipment's structural/functional capacity, anchorage capacity, and relay functional capacity (when required) exceeded the seismic demand of the Hatch IPEEE RLE. Therefore, when these criteria were met, the HCLPF was defined as being at least as high as the IPEEE RLE (0.3g PGA), and calculation of specific HCLPF values in excess of 0.3g PGA was not warranted. Specific HCLPF values were calculated for the CSTs so that both the tank capacities (e.g., shell failure modes) and anchorage capacities (e.g., cast-in-place L-bolts and anchor chairs) could be evaluated using the CDFM methodology in Appendix H of Reference 10 and additional information provided during the EPRI HCLPF course (Reference 11). The CSTs were evaluated using the GMRS instead of the IPEEE RLE.

6.5 Functional Evaluation of Relays

Relays in four cabinets and three motor control centers (total for both units) required functional evaluations. Each relay was evaluated using the SMA relay evaluation criteria in Section 3 of Reference 10.

Seismic qualification test-based capacities were available for these specific relays in Plant Hatch documentation. For the twelve relays contained in four cabinets, capacity to demand evaluations were performed using the Plant Hatch relay seismic capacities and the IPEEE RLE ISRS scaled with the Reference 10 in-cabinet amplification factors. The four relays contained in the three MCCs were qualified during dynamic testing of the MCCs; therefore, the in-cabinet amplification was included within the testing. In each case, the capacity exceeded the demand.

The ESEP relay functional evaluations were documented in the SEWS packages for these four cabinets and three motor control centers.

6.6 Tabulated ESEL HCLPF Values (Including Key Failure Modes)

Tabulated ESEL HCLPF values are provided in Attachment A for Unit 1 and in Attachment B for Unit 2. The following notes apply to the information in the tables.

- Items which screened out of an explicit functional capacity analysis using EPRI NP-6041-SL (Reference 10) Table 2-4 have a HCLPF greater than or equal to the RLGM; therefore, the HCLPF is shown as "≥RLGM" in Tables A-1 and B-1. This is consistent with the SMA methodology of not calculating an explicit HCLPF capacity if the criteria for functional capacity (e.g., EPRI NP-6041-SL Table 2-4) are met and instead providing results as meeting or exceeding the seismic input level selected as the RLGM.

- It is unknown whether anchorage is the controlling failure mode for items that were screened for their functional capacity because the functional capacity may or may not be higher than the anchorage capacity. The one exception to this is that large, flat-bottom vertical tanks (e.g., the Condensate Storage Tanks (CSTs)) were evaluated using a methodology that includes all failure modes (i.e., anchorage failure modes and tank shell failure modes). The HCLPF values for these tanks are reported in Tables A-1 and B-1.

- Equipment containing FLEX Methodology ("FM") relays was assessed for relay functional capacity as described in Section 6.5 of this report. Because it is not known whether the capacity of the equipment containing the relay, the equipment's anchorage, or the relay's capacity is the controlling HCLPF, the HCLPF is shown as "≥RLGM" in Tables A-1 and B-1, and the "Notes/Comments" column identifies the presence of FM relay(s).

7 Inaccessible Items

7.1 Identification of ESEL Items Inaccessible for Walkdown

The Plant Hatch ESELs contain about 70 items (total for both units) that are located in either the Drywells or Locked High Radiation Areas. In order to avoid dose (i.e., maintaining radiation exposure ALARA) and to reduce impact on refueling outages scheduled in 2015 and 2016, these ESEL items were evaluated to determine whether a walkdown was necessary. The inaccessible/high dose equipment includes the following classes:

- Accumulators (for the SRVs)
- Air-Operated Valves (SRVs)
- MOVs
- Temperature Elements
- Junction Boxes
- Pneumatic System Filters and PCV (Unit 2 only)

Appendix D of Reference 10 provides information regarding "Sampling." Specifically, on page D-1, "sampling is technically valid for identical or similar components if there is evidence that the components are manufactured and installed in a consistent manner. ...In some instances access is severely limited by radioactive environments and limited sampling is the only practical method of conducting a walkdown."

Much of the inaccessible/high dose equipment was previously evaluated during the A-46/IPEEE program. Although 6 of the 18 SRV accumulators on the ESEL were not previously evaluated for the Plant Hatch IPEEE RLE, sampling is a practical approach for concluding that they also have HCLPFs that meet or exceed the ESEP RLGM.

Like the SRV accumulators, most of the SRVs were also evaluated during the A-46/IPEEE program, and were found to meet SMA criteria for the IPEEE RLE. The SRVs, however, have been replaced since the A-46/IPEEE, or they are scheduled to be replaced in the next refueling outage (RFO). The replacement valves should be at least as robust as the SRVs that were evaluated during the A-46/IPEEE program. Additionally, in accordance with Reference 10, Table 2-4, active valves screen out from further SMA evaluations at the five percent-damped peak spectral acceleration for the Hatch IPEEE RLE (<0.8g). Therefore, additional ESEP walkdowns and the associated dose are not warranted.

A similar argument is made for the 8 MOVs (total for both units), where half of the MOVs were explicitly included in the A-46/IPEEE program. In accordance with Reference 10, Table 2-4,

active valves screen out from further SMA evaluations at the five percent-damped peak spectral acceleration for the Hatch IPEEE RLE (<0.8g). Therefore, additional ESEP walkdowns and the associated dose are not warranted.

The temperature elements in the Drywell are considered to be represented by the ten temperature elements that were walked down (total for both units), and no seismic issues were identified; therefore, the inaccessible temperature elements do not merit specific walkdowns.

Junction boxes were not part of the A-46/IPEEE program, but dozens have been walked down during the ESEP, and no seismic issues have been identified; therefore, junction boxes in the drywell do not merit walkdowns.

Finally, there are three inaccessible/high dose devices related to the Unit 2 Drywell pneumatic system: two filters and one pressure control valve (PCV). Filters are passive devices and considered seismically rugged, as are typical PCVs. The Unit 1 pneumatic system filters and the PCV are in a Reactor Building diagonal (outside the drywell) and were walked down; no seismic issues were identified for these small passive devices. None of these devices merit a Drywell entry and the dose associated with performing walkdowns for the ESEP.

7.2 Planned Walkdown/Evaluation Schedule/Close Out

Walkdowns have been completed for installed accessible items on the ESELs. Section 7.1 discusses the disposition for inaccessible items.

8 ESEP Conclusions and Results

8.1 Supporting Information

Plant Hatch has performed the ESEP as an interim action in response to the NRC's 50.54(f) letter (Reference 1). It was performed using the methodologies in the NRC endorsed guidance in EPRI 3002000704 (Reference 2).

The ESEP provides an important demonstration of seismic margin and expedites plant safety enhancements through evaluations and potential near-term modifications of plant equipment that can be relied upon to protect the reactor core following beyond design basis seismic events.

The ESEP is part of the overall Plant Hatch response to NRC's 50.54(f) letter (Reference 1). On March 12, 2014, NEI submitted to the NRC results of a study (Reference 13) of seismic core damage risk estimates based on updated seismic hazard information as it applies to operating nuclear reactors in the Central and Eastern United States (CEUS). The study concluded that site-specific seismic hazards show that there has not been an overall increase in seismic risk for the fleet of U.S. plants based on the re-evaluated hazard. As such, the "current seismic design of operating reactors continues to provide a safety margin to withstand potential earthquakes exceeding the seismic design basis."

The NRC's May 9, 2014 NTTF 2.1 Screening and Prioritization letter (Reference 14) concluded that the "fleetwide seismic risk estimates are consistent with the approach and results used in the GI-199 safety/risk assessment." The letter also stated that "As a result, the staff has confirmed that the conclusions reached in GI-199 safety/risk assessment remain valid and that the plants can continue to operate while additional evaluations are conducted."

An assessment of the change in seismic risk for Plant Hatch was included in the fleet risk evaluation submitted in the March 12, 2014 NEI letter (Reference 13); therefore, the conclusions in the NRC's May 9 letter (Reference 14) also apply to Plant Hatch.

In addition, the March 12, 2014 NEI letter (Reference 13) provided an attached "Perspectives on the Seismic Capacity of Operating Plants," which (1) assessed a number of qualitative reasons why the design of SSCs inherently contain margin beyond their design level, (2) discussed industrial seismic experience databases of performance of industry facility components similar to nuclear SSCs, and (3) discussed earthquake experience at operating plants.

The fleet of currently operating nuclear power plants was designed using conservative practices, such that the plants have significant margin to withstand large ground motions safely. This has been borne out for those plants that have actually experienced significant earthquakes. The seismic design process has inherent (and intentional) conservatisms which result in significant seismic margins within structures, systems and components (SSCs). These conservatisms are reflected in several key aspects of the seismic design process, including:

- Safety factors applied in design calculations
- Damping values used in dynamic analysis of SSCs
- Bounding synthetic time histories for in-structure response spectra calculations
- Broadening criteria for in-structure response spectra
- Response spectra enveloping criteria typically used in SSC analysis and testing applications
- Response spectra based frequency domain analysis rather than explicit time history based time domain analysis
- Bounding requirements in codes and standards
- Use of minimum strength requirements of structural components (concrete and steel)
- Bounding testing requirements, and
- Ductile behavior of the primary materials (that is, not crediting the additional capacity of materials such as steel and reinforced concrete beyond the essentially elastic range, etc.).

These design practices combine to result in margins such that the SSCs will continue to fulfill their functions at ground motions well above the SSE.

8.2 Identification of Planned Modifications

No modifications have been identified as necessary to meet ESEP acceptance criteria.

8.3 Modification Implementation Schedule

No modifications have been identified for the items that have been evaluated.

8.4 Summary of Regulatory Commitments

Please refer to the Table of Regulatory Commitments that will accompany this report.

9 References

1. NRC Letter to All Power Reactor Licensees et al., "Request for Information Pursuant to Title 10 of the Code of Federal Regulations 50.54(f) Regarding Recommendations 2.1, 2.3, and 9.3 of the Near-Term Task Force Review of Insights from the Fukushima Dai-ichi Accident," dated March 12, 2012 [ADAMS Accession Number ML12053A340].

2. EPRI Report 3002000704, "Seismic Evaluation Guidance: Augmented Approach for the Resolution of Fukushima Near-Term Task Force Recommendation 2.1 – Seismic," Electric Power Research Institute, May 2013.

3. SNC Nuclear Letter NL-14-0593, "Edwin I. Hatch Nuclear Plant Units 1 and 2 Third Six-Month Status Report of the Implementation of the Requirements of the Commission Order with Regard to Mitigation Strategies for Beyond-Design-Basis External Events (EA-12-049)," dated August 26, 2014.

4. ENERCON Engineering Report SNCH106-PR-001, Rev. 4, "Equipment Selection for the Expedited Seismic Evaluation Process for Southern Nuclear Operating Company, Inc., Hatch Nuclear Plant Unit No. 1."

5. ENERCON Engineering Report SNCH106-PR-002, Rev. 4, "Equipment Selection for the Expedited Seismic Evaluation Process for Southern Nuclear Operating Company, Inc., Hatch Nuclear Plant Unit No. 2."

6. EPRI Report 1025287, "Seismic Evaluation Guidance: Screening, Prioritization and Implementation Details (SPID) for the Resolution of Fukushima Near-Term Task Force Recommendation 2.1: Seismic," Electric Power Research Institute, February 2013.

7. SNC Nuclear Letter NL-14-0343, "Edwin I. Hatch Nuclear Plant Units 1 and 2 Seismic Hazard and Screening Report for CEUS Sites," dated March 31, 2014.

8. EPRI Report NP-7217, "Seismic Margin Assessment of the Edwin I. Hatch Nuclear Plant, Unit 1," Electric Power Research Institute, June 1991.

9. "Individual Plant Examination for External Events, Edwin I. Hatch Nuclear Plant, Units 1 and 2" (Response to Generic Letter 88-20, Supplement 4).

10. EPRI NP-6041-SL, "A Methodology for Assessment of Nuclear Power Plant Seismic Margin, Revision 1," Electric Power Research Institute, August 1991.

11. Hardy, Greg and Dr. Robert Kennedy, "High Confidence of a Low Probability of Failure (HCLPF) Calculation Training," EPRI, (August 2013).

12. EPRI TR-103959, "Methodology for Developing Seismic Fragilities," Electric Power Research Institute, 1999.

13. NEI (A. Pietrangelo) letter to NRC (E. Leeds) dated March 12, 2014, "Seismic Risk Evaluations for Plants in the Central and Eastern United States."

14. NRC (E. Leeds) letter dated May 9, 2014, "Screening and Prioritization Results Regarding Information Pursuant to Title 10 of the Code of Federal Regulations 50.54(f) Regarding Seismic Hazard Re-Evaluations for Recommendation 2.1 of the Near-Term Task Force Review of Insights from the Fukushima Dai-ichi Accident."

15. NEI (A. Pietrangelo) letter to NRC (D. Skeen) dated April 9, 2013, "Proposed Path Forward for NTTF Recommendation 2.1: Seismic Reevaluations."

16. Dr. Robert Kennedy letter to Southern Company Services (D. Moore) dated August 13, 1993, "Re: Hatch Condensate Water Tank."

17. MPR Calculation No. 0380-0050-01, "Hatch Unit 2 Condensate Storage Tank," Revision 0, December 15, 2014.

18. NRC Letter to All Power Reactor Licensees et al., "Final Determination of Licensee Seismic Probabilistic Risk Assessments Under the Request for Information Pursuant to Title 10 of the Code of Federal Regulations 50.54(f) Regarding Recommendation 2.1 "Seismic" of the Near-Term Task Force Review of Insights from the Fukushima Dai-ichi Accident," dated October 27, 2015 [ADAMS Accession Number ML15194A015].

19. NRC Letter to SNC, "Edwin I. Hatch Nuclear Plant, Units 1 and 2 – Staff Review of Interim Evaluation Associated with Reevaluated Seismic Hazard Implementation of Near-Term Task Force Recommendation 2.1 (TAC Nos. MF5243 and MF5244)," dated July 22, 2015 [ML15201A474].

20. SNC Nuclear Letter NL-15-0705, "Edwin I. Hatch Nuclear Plant – Units 1 and 2 Request for Additional Information Regarding Expedited Seismic Evaluation Process Report," dated April 16, 2015 [ML15106A549].

21. Final Integrated Plan, U.S. Nuclear Regulatory Commission Order EA-12-049, Strategies for Beyond Design Basis External Events, Hatch Nuclear Plant Units 1 and 2, Draft Rev. D, October 2016.

Attachment A: Plant Hatch Unit 1 ESEL

Table A-1. Plant Hatch Unit 1 ESEL Items and HCLPF Results

Equipment		Operating State		HCLPF Screening Results	Notes/Comments
ID	Description	Normal	Desired		
1B21-A003B	SRV AIR ACCUMULATOR	Available	Available	N/A	Inaccessible/High Dose; See Section 7.1
1B21-A003D	SRV AIR ACCUMULATOR	Available	Available	N/A	Inaccessible/High Dose; See Section 7.1
1B21-A003E	SRV AIR ACCUMULATOR	Available	Available	N/A	Inaccessible/High Dose; See Section 7.1
1B21-A003F	SRV AIR ACCUMULATOR	Available	Available	N/A	Inaccessible/High Dose; See Section 7.1
1B21-A003G	SRV AIR ACCUMULATOR	Available	Available	N/A	Inaccessible/High Dose; See Section 7.1
1B21-A003H	SRV AIR ACCUMULATOR	Available	Available	N/A	Inaccessible/High Dose; See Section 7.1
1B21-A003J	SRV AIR ACCUMULATOR	Available	Available	N/A	Inaccessible/High Dose; See Section 7.1
1B21-A003K	SRV AIR ACCUMULATOR	Available	Available	N/A	Inaccessible/High Dose; See Section 7.1
1B21-A003L	SRV AIR ACCUMULATOR	Available	Available	N/A	Inaccessible/High Dose; See Section 7.1

Equipment		Operating State		HCLPF Screening Results	Notes/Comments
ID	Description	Normal	Desired		
1B21-F013B	MSL "A" RPV SRV (ADS)	Closed	Closed/Open	N/A	Inaccessible/High Dose; See Section 7.1
1B21-F013D	MSL "B" RPV SRV (ADS)	Closed	Closed/Open	N/A	Inaccessible/High Dose; See Section 7.1
1B21-F013E	MSL "B" RPV SRV (ADS)	Closed	Closed/Open	N/A	Inaccessible/High Dose; See Section 7.1
1B21-F013F	MSL "C' RPV SRV (ADS)	Closed	Closed/Open	N/A	Inaccessible/High Dose; See Section 7.1
1B21-F013G	MSL "C" RPV SRV (LLSL)	Closed	Closed/Open	N/A	Inaccessible/High Dose; See Section 7.1
1B21-F013H	MSL "D" RPV SRV (LLSL)	Closed	Closed/Open	N/A	Inaccessible/High Dose; See Section 7.1
1B21-F013J	MSL "D" RPV SRV (ADS)	Closed	Closed/Open	N/A	Inaccessible/High Dose; See Section 7.1
1B21-F013K	MSL "B" RPV SRV (ADS)	Closed	Closed/Open	N/A	Inaccessible/High Dose; See Section 7.1
1B21-F013L	MSL 'C' RPV SRV (ADS)	Closed	Closed/Open	N/A	Inaccessible/High Dose; See Section 7.1
1B21-N091B	RPV Levels 2 & 1 LT - Div II - Batt	Operating	Operating	≥ RLGM	
1B21-N691B	LPCI RX Water Level MTU LIS - Div II - Batt	Operating	Operating	≥ RLGM	
1B21-R604B	RPV Level (Hot Leg) LI - Div II - Batt	Operating	Operating	≥ RLGM	

Equipment		Operating State		HCLPF Screening Results	Notes/Comments
ID	Description	Normal	Desired		
1C32-K655C	FWC RX Pressure Transmitter C - Div II - Batt	Operating	Operating	≥ RLGM	
1C32-K902	RX WTR LVL RFP TRIP C	Operating	Operating	≥ RLGM	
1C32-N005C	FWC RX Water Level PT - Div II - Batt	Operating	Operating	≥ RLGM	
1C32-R605C	FWC RX PI - Div II - Batt	Operating	Operating	≥ RLGM	
1C82-P001	REMOTE SHUTDOWN PANEL - E51	Available	Available	≥ RLGM	
1C82-P002	REMOTE SHUTDOWN PANEL	Available	Available	≥ RLGM	
1E11-B001A	RHR HEAT EXCHANGER	Available	Available	≥ RLGM	
1E11-F003A	RHR HX OUTLT 16" GATE MOV	Open	Closed	≥ RLGM	
1E11-F008	Shutdown Cooling Outboard Iso	Closed	Closed	N/A	Inaccessible/High Dose; See Section 7.1
1E11-F015A	Inboard Injection Gate MOV (RHR Inbd Inj Vlv)	Closed	Open	N/A	Inaccessible/High Dose; See Section 7.1
1E11-F017A	Outboard Injection Gate MOV (RHR Outbd Inj Vlv)	Open	Throttled	N/A	Inaccessible/High Dose; See Section 7.1
1E11-F048A	RHR HX Bypass Globe MOV (Hx Bypass Vlv)	Open	Closed	≥ RLGM	
1E11-F068A	HX SW FLOW CONTROLLER MOV	Closed	Closed	≥ RLGM	
1E11-F073A	RHRSW TO RHR CROSSTIE MOV	Closed	Closed/Open	≥ RLGM	

Equipment		Operating State		HCLPF Screening Results	Notes/Comments
ID	Description	Normal	Desired		
1E11-F075A	RHRSW TO RHR CROSSTIE MOV	Closed	Closed/Open	≥ RLGM	
1E11-N027B	RHR HX Discharge TE- Div II	Operating	Operating	≥ RLGM	
1E51-A001	RCIC BAROMETRIC CONDENSER	Standby	Operating	≥ RLGM	
1E51-B001	RCIC LUBE OIL COOLER	Standby	Operating	≥ RLGM	
1E51-C001	RCIC REACTOR MAKEUP PUMP	Standby	Operating	≥ RLGM	
1E51-C002	RCIC TURBINE	Standby	Operating	≥ RLGM	
1E51-F008	STEAM SUPPLY ISO GATE VLV	Open	Open	N/A	Inaccessible/High Dose; See Section 7.1
1E51-F010	Pump Suction 6" Gate MOV (CST Suction Valve)	Open	Open/Closed	≥ RLGM	
1E51-F012	RCIC PUMP DISCHARGE GATE MOV	Open	Open	≥ RLGM	
1E51-F013	Pump Disch 4" Gate MOV (Pump Discharge Valve)	Closed	Open	≥ RLGM	
1E51-F015	RCIC COOLING WATER PCV	Open	Operating	≥ RLGM	
1E51-F019	Min Flow 2" Bypass MOV (RCIC Min-Flow Valve)	Closed	Closed/Open	≥ RLGM	
1E51-F029	PUMP SUCTION GATE VALVE (Suppression Pool Suction)	Closed	Closed/Open	≥ RLGM	
1E51-F031	PUMP SUCTION GATE VALVE (Suppression Pool Suction)	Closed	Closed/Open	≥ RLGM	

Equipment		Operating State		HCLPF Screening Results	Notes/Comments
ID	Description	Normal	Desired		
1E51-F033	RCIC BAROMETRIC CONDENSER RELIEF VALVE	Standby	Standby	≥ RLGM	
1E51-F045	RCIC STEAM SUPPLY GLB MOV	Closed	Open	≥ RLGM	
1E51-F046	COOLING WATER GLOBE VALVE MOV (From Pump Discharge)	Closed	Open	≥ RLGM	
1E51-F523	Steam Supply 3" Governing Gate HOV (RCIC Governor Valve)	Open	Operating	≥ RLGM	
1E51-F524	Steam Supply 3" Trip Throttle MOV (RCIC Trip & Throttle Valve)	Open	Open	≥ RLGM	
1E51-N060	RCIC CST LO LS - Div I - Batt	Operating	Operating	≥ RLGM	
1E51-N061	RCIC CST LO LS - Div I - Batt	Operating	Operating	≥ RLGM	
1H11-P601	RX & CTMT CLG & ISO PNL	Available	Available	≥ RLGM	
1H11-P602	RWCU & RECIRC PNL	Available	Available	≥ RLGM	
1H11-P603	Reac Control BN BD - Panel	Available	Available	≥ RLGM	
1H11-P612	FW/Recirc INST Panel	Available	Available	≥ RLGM	
1H11-P621	RCIC RELAY VB	Available	Available	≥ RLGM	Includes FM Relays; See Section 6.5
1H11-P622	Inboard Iso Valve Vert Panel	Available	Available	≥ RLGM	

Equipment		Operating State		HCLPF Screening Results	Notes/Comments
ID	Description	Normal	Desired		
1H11-P623	Outboard Iso Valve Vert Panel	Available	Available	≥ RLGM	Includes FM Relays; See Section 6.5
1H11-P628	AUTO DEPRESS RELAY VB	Available	Available	≥ RLGM	
1H11-P654	Gas Treat Vent Vert BD - Panel	Available	Available	≥ RLGM	
1H11-P655	BEARING TEMP & BAT MON VB	Available	Available	≥ RLGM	
1H11-P657	VENT & DRYWELL INERTING V	Available	Available	≥ RLGM	
1H11-P691B	Analog Signal Converter Panel	Available	Available	≥ RLGM	
1H11-P700	ANAL/VENT & LEAK DET PNL	Available	Available	≥ RLGM	
1H11-P925	ATTS ECCS MCR Panel	Available	Available	≥ RLGM	
1H11-P926	ATTS ECCS MCR Panel	Available	Available	≥ RLGM	
1H11-P927	ATTS ECCS Trip Unit Cabinet - Panel	Available	Available	≥ RLGM	
1H11-P928	ATTS ECCS Trip Unit Cabinet - Panel	Available	Available	≥ RLGM	
1H21-P004	RV LEVEL/PRESS LOC PNL A	Available	Available	≥ RLGM	
1H21-P051	RCIC SYSTEM E51 PANEL	Available	Available	≥ RLGM	
1H21-P173	SHUTDOWN INSTRUMENT PANEL	Available	Available	≥ RLGM	

Equipment		Operating State		HCLPF Screening Results	Notes/Comments
ID	Description	Normal	Desired		
1H21-P255	MOV AND FUEL PMP CP 1A	Available	Available	≥ RLGM	
1H21-P405A	RX VESSEL INST RACK	Available	Available	≥ RLGM	
1P11-A100	Condensate Storage Tank	Available	Available	0.15g	Screened to GMRS instead of IPEEE RLE; Reference 16
1P52-A027A	AIR ACC (BKUP AIR ACCUMULATOR TANK A)	Available	Available	≥ RLGM	
1P52-A027B	AIR ACC (BKUP AIR ACCUMULATOR TANK B)	Available	Available	≥ RLGM	
1P52-F1312	Relief Valve N2 Cylinder Supply Manifold Overpressure Protection	Standby	Standby	≥ RLGM	
1P70-A001	D/W N2 SYSTEM RECEIVER	Available	Available	≥ RLGM	
1P70-D008A	100 MICRON NOM FILTER	Available	Available	≥ RLGM	
1P70-D009A	5 MICRON NOM FILTER	Available	Available	≥ RLGM	
1P70-F001A	D/W PNEUMATIC N2 SPLY AOV	Closed	Open	≥ RLGM	
1P70-F103A	D/W PNEUMATIC HEADER PCV	Operating	Operating	≥ RLGM	
1R11-S004	600-120/208V LGT&MSC XFM	Energized	Energized	≥ RLGM	
1R22-S016	125/250VDC Switchgear 1A	Energized	Energized	≥ RLGM	
1R22-S017	125/250VDC Switchgear 1B	Energized	Energized	≥ RLGM	

Equipment		Operating State		HCLPF Screening Results	Notes/Comments
ID	Description	Normal	Desired		
1R23-S003	600VAC Bus 1C - Switchgear/XFMR	Energized	Energized	≥ RLGM	
1R23-S004	600VAC Bus 1D - Switchgear/XFMR	Energized	Energized	≥ RLGM	
1R24-S021	250VDC MCC 1A	Energized	Energized	≥ RLGM	Includes FM Relays; See Section 6.5
1R24-S021A	250VDC MCC 1A-1	Energized	Energized	≥ RLGM	Includes FM Relays; See Section 6.5
1R24-S022	250VDC MCC 1B	Energized	Energized/ De-Energized	≥ RLGM	
1R24-S025	600/208V MCC 1A ESS DIV 1	Energized	Energized	≥ RLGM	
1R25-S001	125VDC Distribution Cabinet 1A	Energized	Energized	≥ RLGM	
1R25-S002	125VDC Distribution Cabinet 1B	Energized	Energized	≥ RLGM	
1R25-S029	120/208V AC CABINET 1J	Energized	Energized	≥ RLGM	
1R25-S064	120/208VAC Instrument Bus 1A - Div I	Available	Available	≥ RLGM	
1R25-S065	120/208VAC Instrument Bus 1B - Div II	Available	Available	≥ RLGM	
1R25-S066	120VAC CRITICAL INSTRUMENT CABINET 1A	Energized	Energized	≥ RLGM	
1R25-S067	120VAC CRITICAL INSTRUMENT CABINET 1B	Energized	Energized	≥ RLGM	
1R25-S069	Emergency Lighting Cabinet - Div II	Energized	Energized	≥ RLGM	

Equipment		Operating State		HCLPF Screening Results	Notes/Comments
ID	Description	Normal	Desired		
1R25-S094	Emergency Lighting Cabinet - Div II	Energized	Energized	≥ RLGM	
1R25-S106	125VDC Distribution Cabinet 1E	Energized	Energized	≥ RLGM	
1R25-S112	FUSE BOX	Available	Available	≥ RLGM	
1R26-M031A	125VDC THROWOVER SW 1A	Standby/ Closed	Standby/ Closed	≥ RLGM	
1R26-M031B	125VDC THROWOVER SW 1B	Standby/ Closed	Standby/ Closed	≥ RLGM	
1R26-M031C	125VDC THROWOVER SW 1C	Standby/ Closed	Standby/ Closed	≥ RLGM	
1R26-M031D	125VDC THROWOVER SW 1D	Standby/ Closed	Standby/ Closed	≥ RLGM	
1R26-M134	DC INPUT SWITCH FOR INVERTER 1A	Normal	Normal	≥ RLGM	
1R26-M135	DC INPUT SWITCH FOR INVERTER 1B	Normal	Normal	≥ RLGM	
1R26-M136	FLEX TRANSFER SWITCH 1A	Normal	Normal	≥ RLGM	
1R26-M137	FLEX TRANSFER SWITCH 1B	Normal	Normal	≥ RLGM	
1R26-M139	FLEX TRANSFER SWITCH 1D	Normal	Normal	≥ RLGM	
1R26-M140	FLEX TRANSFER SWITCH 1E	Normal	Normal	≥ RLGM	
1R26-M144	BYPASS SWITCH FOR INVERTER 1A	Normal	Normal	≥ RLGM	
1R26-M145	BYPASS SWITCH FOR INVERTER 1B	Normal	Normal	≥ RLGM	

Equipment		Operating State		HCLPF Screening Results	Notes/Comments
ID	Description	Normal	Desired		
1R42-S001A	125/250VDC Station Battery 1A	Energized	Energized	≥ RLGM	
1R42-S001B	125/250VDC Station Battery 1B	Energized	Energized	≥ RLGM	
1R42-S026	Battery Charger 1A - Div I	Energized	Energized	≥ RLGM	
1R42-S027	Battery Charger 1B - Div I	Energized	Energized	≥ RLGM	
1R42-S029	Battery Charger 1D - Div II	Energized	Energized	≥ RLGM	
1R42-S030	Battery Charger 1E - Div II	Energized	Energized	≥ RLGM	
1R43-A002C	DSL FO STOR TANK 1C	Available	Available	≥ RLGM	
1R44-S006	250VDC/120VAC INVERTER 1A	Energized	Energized	≥ RLGM	
1R44-S007	250VDC/120VAC INVERTER 1B	Energized	Energized	≥ RLGM	
1T46-F005	SBGT ISOL TO MAIN STACK	Open	Closed	≥ RLGM	
1T47-K600	SIGNAL CONVERTER R/V	Operating	Operating	≥ RLGM	
1T47-K602	N001A,B SIGNAL CONV R/V	Operating	Operating	≥ RLGM	
1T47-K603	N001M, N003 SIG CONV R/V	Operating	Operating	≥ RLGM	
1T47-K604	N005, N007 SIG CONV R/V	Operating	Operating	≥ RLGM	

Equipment		Operating State		HCLPF Screening Results	Notes/Comments
ID	Description	Normal	Desired		
1T47-K605	N010 SIGNAL CONV R/V	Operating	Operating	≥ RLGM	
1T47-N001A	B009A Inlet Air TE- Div II	Operating	Operating	N/A	Inaccessible/High Dose; See Section 7.1
1T47-N001B	DW CLG Dome Area TE- Div II	Operating	Operating	N/A	Inaccessible/High Dose; See Section 7.1
1T47-N001M	B009A&B Inlet Air TE- Div II	Operating	Operating	N/A	Inaccessible/High Dose; See Section 7.1
1T47-N003	DW CLG Midlevel Area TE- Div II	Operating	Operating	N/A	Inaccessible/High Dose; See Section 7.1
1T47-N005	DW Lower Level Area TE- Div II	Operating	Operating	N/A	Inaccessible/High Dose; See Section 7.1
1T47-N007	DW Lower Level Area TE- Div II	Operating	Operating	N/A	Inaccessible/High Dose; See Section 7.1
1T47-N010	Sacrificial Shield Top TE- Div II	Operating	Operating	N/A	Inaccessible/High Dose; See Section 7.1
1T47-R612	DW CLG CRD/Torus Area TR - Div II	Operating	Operating	≥ RLGM	
1T48-A001	NITROGEN STORAGE TANK	Available	Available	≥ RLGM	Repaired under CAP and re-walked down; See Section 6.3.3.
1T48-B004	N2 TANK AMBIENT VAPORIZER	Available	Available	≥ RLGM	Repaired under CAP and re-walked down; See Section 6.3.3.

Equipment		Operating State		HCLPF Screening Results	Notes/Comments
ID	Description	Normal	Desired		
1T48-F072	B004 DISCH LINE RELIEF VALVE	Standby	Standby	≥ RLGM	
1T48-F075	B004 DISCHARGE PCV (N2 system)	Operating	Operating	≥ RLGM	
1T48-F081	TORUS VENT SGTS ISO VLV	Open	Closed	≥ RLGM	
1T48-F082	HCVS Vent Control AOV	Closed	Closed/Open	≥ RLGM	
1T48-F318	HCVS Containment Isolation AOV	Closed	Closed/Open	≥ RLGM	
1T48-F319	HCVS Containment Isolation AOV	Closed	Closed	≥ RLGM	
1T48-F320	HCVS Containment Isolation AOV	Closed	Closed	≥ RLGM	
1T48-F326	HCVS Containment Isolation AOV	Closed	Closed/Open	≥ RLGM	
1T48-F408	Relief Valve Argon Supply Overpressure Protection	Standby	Standby	≥ RLGM	
1T48-K608B	DW Pressure Inst I/V - Div II	Operating	Operating	≥ RLGM	
1T48-K609B	DW/Torus Pressure Inst I/V - Div II	Operating	Operating	≥ RLGM	
1T48-K623B	Torus Level Inst I/V - Div II	Operating	Operating	≥ RLGM	
1T48-N008B	Torus Midrange PT - Div II	Operating	Operating	≥ RLGM	
1T48-N009B	Torus Water TE- Div II	Operating	Operating	≥ RLGM	
1T48-N009D	Torus Water TE- Div II	Operating	Operating	≥ RLGM	

Equipment		Operating State		HCLPF Screening Results	Notes/Comments
ID	Description	Normal	Desired		
1T48-N009F	Torus Air TE- Div II	Operating	Operating	≥ RLGM	
1T48-N009H	Torus Air TE- Div II	Operating	Operating	≥ RLGM	
1T48-N020B	DW Narrow Range PT - Div II	Operating	Operating	≥ RLGM	
1T48-N021B	Narrow Range Torus LT - Div II	Operating	Operating	≥ RLGM	
1T48-N023B	DW Midrange PT - Div II	Operating	Operating	≥ RLGM	
1T48-R607B	DW and Torus Narrow Range L/PR - Div II	Operating	Operating	≥ RLGM	
1T48-R609	DW/Torus Midrange PR - Div II	Operating	Operating	≥ RLGM	
1X86-S003	600V FLEX Diesel Generator (FLEX Connection Box 1A)	Standby	Standby	≥ RLGM	
1X86-S004	600V FLEX Diesel Generator (FLEX Connection Box 1B)	Standby	Standby	≥ RLGM	
1Y52-C001C	FUEL OIL PMP 1C1 DSL 1C	Available	Available	≥ RLGM	
ESS-II-J379	JUNCTION BOX	Available	Available	≥ RLGM	
ESS-II-J423	JUNCTION BOX	Available	Available	≥ RLGM	
ESS-I-J422	JUNCTION BOX	Available	Available	≥ RLGM	
J614	JUNCTION BOX	Available	Available	N/A	Inaccessible/High Dose; See Section 7.1

Equipment		Operating State		HCLPF Screening Results	Notes/Comments
ID	Description	Normal	Desired		
J615	JUNCTION BOX	Available	Available	N/A	Inaccessible/High Dose; See Section 7.1
J617	JUNCTION BOX	Available	Available	N/A	Inaccessible/High Dose; See Section 7.1
J618	JUNCTION BOX	Available	Available	N/A	Inaccessible/High Dose; See Section 7.1
J619	JUNCTION BOX	Available	Available	N/A	Inaccessible/High Dose; See Section 7.1
J620	JUNCTION BOX	Available	Available	N/A	Inaccessible/High Dose; See Section 7.1
J621	JUNCTION BOX	Available	Available	N/A	Inaccessible/High Dose; See Section 7.1
J647	JUNCTION BOX	Available	Available	N/A	Inaccessible/High Dose; See Section 7.1
J648	JUNCTION BOX	Available	Available	N/A	Inaccessible/High Dose; See Section 7.1
TB1-1529-7	TERMINATION BOX	Available	Available	≥ RLGM	

Attachment B: Plant Hatch Unit 2 ESEL

Table B-1. Plant Hatch Unit 2 ESEL Items and HCLPF Results

Equipment		Operating State		HCLPF Screening Results	Notes/Comments
ID	Description	Normal	Desired		
2B21-A003A	SRV AIR ACCUMULATOR	Available	Available	N/A	Inaccessible/High Dose; See Section 7.1
2B21-A003B	SRV AIR ACCUMULATOR	Available	Available	N/A	Inaccessible/High Dose; See Section 7.1
2B21-A003C	SRV AIR ACCUMULATOR	Available	Available	N/A	Inaccessible/High Dose; See Section 7.1
2B21-A003E	SRV AIR ACCUMULATOR	Available	Available	N/A	Inaccessible/High Dose; See Section 7.1
2B21-A003F	SRV AIR ACCUMULATOR	Available	Available	N/A	Inaccessible/High Dose; See Section 7.1
2B21-A003H	SRV AIR ACCUMULATOR	Available	Available	N/A	Inaccessible/High Dose; See Section 7.1
2B21-A003K	SRV AIR ACCUMULATOR	Available	Available	N/A	Inaccessible/High Dose; See Section 7.1
2B21-A003L	SRV AIR ACCUMULATOR	Available	Available	N/A	Inaccessible/High Dose; See Section 7.1
2B21-A003M	SRV AIR ACCUMULATOR	Available	Available	N/A	Inaccessible/High Dose; See Section 7.1

Equipment		Operating State		HCLPF Screening Results	Notes/Comments
ID	Description	Normal	Desired		
2B21-F013A	MSL "A" RPV SRV (ADS)	Closed	Closed/Open	N/A	Inaccessible/High Dose; See Section 7.1
2B21-F013B	MSL "B" RPV SRV (LLSL)	Closed	Closed/Open	N/A	Inaccessible/High Dose; See Section 7.1
2B21-F013C	MSL "C" RPV SRV (ADS)	Closed	Closed/Open	N/A	Inaccessible/High Dose; See Section 7.1
2B21-F013E	MSL "A" RPV SRV (ADS)	Closed	Closed/Open	N/A	Inaccessible/High Dose; See Section 7.1
2B21-F013F	MSL "B" RPV SRV (LLSL)	Closed	Closed/Open	N/A	Inaccessible/High Dose; See Section 7.1
2B21-F013H	MSL "D" RPV SRV (ADS)	Closed	Closed/Open	N/A	Inaccessible/High Dose; See Section 7.1
2B21-F013K	MSL "B" RPV SRV (ADS)	Closed	Closed/Open	N/A	Inaccessible/High Dose; See Section 7.1
2B21-F013L	MSL "B" RPV SRV (ADS)	Closed	Closed/Open	N/A	Inaccessible/High Dose; See Section 7.1
2B21-F013M	MSL 'C' RPV SRV (ADS)	Closed	Closed/Open	N/A	Inaccessible/High Dose; See Section 7.1
2B21-N091B	RPV Levels 2 & 1 LT - Div II - Batt	Operating	Operating	≥ RLGM	
2B21-N691B	LPCI RX Water Level MTU LIS - Div II - Batt	Operating	Operating	≥ RLGM	
2B21-R604B	RPV Level (Hot Leg) LI - Div II - Batt	Operating	Operating	≥ RLGM	

Equipment		Operating State		HCLPF Screening Results	Notes/Comments
ID	Description	Normal	Desired		
2C32-IN02	RX WTR LVL RFP TRIP C	Operating	Operating	≥ RLGM	
2C32-K655C	FWC RX Pressure Transmitter C - Div II - Batt	Operating	Operating	≥ RLGM	
2C32-N005C	FWC RX Water Level PT - Div II - Batt	Operating	Operating	≥ RLGM	
2C32-R605C	FWC RX PI - Div II - Batt	Operating	Operating	≥ RLGM	
2C82-P001	REMOTE S/D PANEL	Available	Available	≥ RLGM	
2E11-B001A	RHR HEAT EXCHANGER	Available	Available	≥ RLGM	
2E11-F003A	RHR HX OUTLT 16" GATE MOV	Open	Closed	≥ RLGM	
2E11-F008	Shutdown Cooling Outboard Iso	Closed	Closed	N/A	Inaccessible/High Dose; See Section 7.1
2E11-F015A	Inboard Injection Gate MOV (RHR Inbd Inj Vlv)	Closed	Open	N/A	Inaccessible/High Dose; See Section 7.1
2E11-F017A	Outboard Injection Gate MOV (RHR Outbd Inj Vlv)	Open	Throttled	N/A	Inaccessible/High Dose; See Section 7.1
2E11-F048A	RHR HX Bypass Globe MOV (Hx Bypass Vlv)	Open	Closed	≥ RLGM	
2E11-F068A	HX SW FLOW CONTROLLER MOV	Closed	Closed	≥ RLGM	
2E11-F073A	RHRSW CROSSTIE VALVE	Closed	Closed/Open	≥ RLGM	
2E11-F075A	RHRSW CROSSTIE VALVE	Closed	Closed/Open	≥ RLGM	

Equipment		Operating State		HCLPF Screening Results	Notes/Comments
ID	Description	Normal	Desired		
2E11-N027B	RHR HX Discharge TE- Div II	Operating	Operating	≥ RLGM	
2E51-A001	RCIC BAROMETRIC CONDENSER	Standby	Operating	≥ RLGM	
2E51-B001	RCIC LUBE OIL COOLER	Standby	Operating	≥ RLGM	
2E51-C001	RCIC REACTOR MAKEUP PUMP	Standby	Operating	≥ RLGM	
2E51-C002	RCIC TURBINE	Standby	Operating	≥ RLGM	
2E51-F008	STEAM SUPPLY ISO GATE VLV	Open	Open	N/A	Inaccessible/High Dose; See Section 7.1
2E51-F010	Pump Suction 6" Gate MOV (CST Suction Valve)	Open	Open/Closed	≥ RLGM	
2E51-F012	RCIC PUMP DISCHARGE GATE MOV	Open	Open	≥ RLGM	
2E51-F013	Pump Disch 4" Gate MOV (Pump Discharge Valve)	Closed	Open	≥ RLGM	
2E51-F015	RCIC COOLING WATER PCV	Open	Operating	≥ RLGM	
2E51-F019	Min Flow 2" Bypass MOV (RCIC Min-Flow Valve)	Closed	Closed/Open	≥ RLGM	
2E51-F022	TEST THROTTLE GLOBE VALVE	Closed	Closed	≥ RLGM	
2E51-F029	PUMP SUCTION GATE VALVE	Closed	Closed/Open	≥ RLGM	
2E51-F031	PUMP SUCTION GATE VALVE	Closed	Closed/Open	≥ RLGM	

Equipment		Operating State		HCLPF Screening Results	Notes/Comments
ID	Description	Normal	Desired		
2E51-F033	RCIC BAROMETRIC CONDENSER RELIEF VALVE	Standby	Standby	≥ RLGM	
2E51-F045	RCIC STEAM SUPPLY GLB MOV	Closed	Open	≥ RLGM	
2E51-F046	COOLING WATER GLOBE VALVE MOV (RHR Suction Valve)	Closed	Open	≥ RLGM	
2E51-F523	Steam Supply 3" Governing Gate HOV (RCIC Governor Valve)	Open	Operating	≥ RLGM	
2E51-F524	Steam Supply 3" Trip Throttle MOV (RCIC Trip & Throttle Valve)	Open	Open	≥ RLGM	
2E51-N060	RCIC CST LO LS - Div I - Batt	Operating	Operating	≥ RLGM	
2E51-N061	RCIC CST LO LS - Div I - Batt	Operating	Operating	≥ RLGM	
2H11-P601	RX & CTMT CLG & ISO PNL	Available	Available	≥ RLGM	
2H11-P602	RWCU & RECIRC PNL	Available	Available	≥ RLGM	
2H11-P603	Reac Control BN BD - Panel	Available	Available	≥ RLGM	
2H11-P605B	CLS 1E Analog Signal Converter/IS Panel	Available	Available	≥ RLGM	
2H11-P612	FW/Recirc INST Panel	Available	Available	≥ RLGM	
2H11-P621	RCIC RELAY VB	Available	Available	≥ RLGM	Includes FM Relays; See Section 6.5

Equipment		Operating State		HCLPF Screening Results	Notes/Comments
ID	Description	Normal	Desired		
2H11-P622	INBD ISO VLV VERT PNL	Available	Available	≥ RLGM	
2H11-P623	Outboard Iso Valve Vert Panel	Available	Available	≥ RLGM	Includes FM Relays; See Section 6.5
2H11-P628	AUTO DEPRESS RELAY VB	Available	Available	≥ RLGM	
2H11-P650	TURB FDWTR & COND CON PNL	Available	Available	≥ RLGM	
2H11-P654	Gas Treat Vent Vert BD - Panel	Available	Available	≥ RLGM	
2H11-P655	BEARING TEMP & BAT MON VB	Available	Available	≥ RLGM	
2H11-P656	STARTUP BOILER VERT PANEL	Available	Available	≥ RLGM	
2H11-P657	VENT & DRYWELL INERT VER	Available	Available	≥ RLGM	
2H11-P691B	Analog Signal Converter Panel	Available	Available	≥ RLGM	
2H11-P925	ATTS ECCS Trip Unit Cabinet - Panel	Available	Available	≥ RLGM	
2H11-P926	ATTS ECCS MCR Panel	Available	Available	≥ RLGM	
2H11-P927	ATTS ECCS Trip Unit Cabinet - Panel	Available	Available	≥ RLGM	
2H11-P928	ATTS ECCS Trip Unit Cabinet - Panel	Available	Available	≥ RLGM	
2H21-P004	RV LEVEL/PRESS LOC PNL A	Available	Available	≥ RLGM	

Equipment		Operating State		HCLPF Screening Results	Notes/Comments
ID	Description	Normal	Desired		
2H21-P051	RCIC SYSTEM 2E51 PANEL	Available	Available	≥ RLGM	
2H21-P053	RCIC TEST VALVE PI PANEL	Available	Available	≥ RLGM	
2H21-P405A	RX VESSEL INST RACK	Available	Available	≥ RLGM	
2JE1891	JUNCTION BOX	Available	Available	≥ RLGM	
2JE2712	JUNCTION BOX	Available	Available	≥ RLGM	
2JE2798	JUNCTION BOX	Available	Available	≥ RLGM	
2JM7873	JUNCTION BOX	Available	Available	N/A	Inaccessible/High Dose; See Section 7.1
2P11-A001	Condensate Storage Tank	Available	Available	0.18g	Screened to GMRS instead of IPEEE RLE; Ref. 17
2P52-A027A	BKUP AIR ACCUMULATOR TANK A	Available	Available	≥ RLGM	
2P52-A027B	BKUP AIR ACCUMULATOR TANK B	Available	Available	≥ RLGM	
2P52-F1228	Relief Valve N2 Cylinder Supply Manifold Overpressure Protection	Standby	Standby	≥ RLGM	
2P70-D008A	100 MICRON NOM FILTER	Available	Available	N/A	Inaccessible/High Dose; See Section 7.1
2P70-D009A	5 MICRON NOM FILTER	Available	Available	N/A	Inaccessible/High Dose; See Section 7.1
2P70-F103A	D/W PNEUMATIC HEADER PCV	Operating	Operating	N/A	Inaccessible/High Dose; See Section 7.1

Equipment		Operating State		HCLPF Screening Results	Notes/Comments
ID	Description	Normal	Desired		
2R22-S016	125/250VDC Switchgear 2A	Energized	Energized	≥ RLGM	
2R22-S017	125/250VDC Switchgear 2B	Energized	Energized	≥ RLGM	
2R23-S003	600VAC Bus 2C - Switchgear/XFMR	Energized	Energized	≥ RLGM	
2R23-S004	600VAC Bus 2D - Switchgear/XFMR	Energized	Energized	≥ RLGM	
2R24-S021	250VDC MCC 2A	Energized	Energized	≥ RLGM	Includes FM Relays; See Section 6.5
2R24-S022	250VDC MCC 2B	Energized	Energized/ De-Energized	≥ RLGM	
2R25-S001	125VDC Distribution Cabinet 2A	Energized	Energized	≥ RLGM	
2R25-S002	125VDC Distribution Cabinet 2B	Energized	Energized	≥ RLGM	
2R25-S064	120/208VAC Instrument Bus 2A - Div I	Available	Available	≥ RLGM	
2R25-S065	120/208VAC Instrument Bus 2B - Div II	Available	Available	≥ RLGM	
2R25-S066	120VAC Critical Instrument Cabinet 2A	Energized	Energized	≥ RLGM	
2R25-S067	120VAC Critical Instrument Cabinet 2B	Energized	Energized	≥ RLGM	
2R25-S069	Emergency Lighting Cabinet - Div II	Energized	Energized	≥ RLGM	
2R25-S094	Emergency Lighting Cabinet - Div II	Energized	Energized	≥ RLGM	

Equipment		Operating State		HCLPF Screening Results	Notes/Comments
ID	Description	Normal	Desired		
2R25-S130	125VDC Distribution Cabinet 2E	Energized	Energized	≥ RLGM	
2R26-M031A	125VDC THROWOVER SW 2A	Standby/ Closed	Standby/ Closed	≥ RLGM	
2R26-M031B	125VDC THROWOVER SW 2B	Standby/ Closed	Standby/ Closed	≥ RLGM	
2R26-M031C	125VDC THROWOVER SW 2C	Standby/ Closed	Standby/ Closed	≥ RLGM	
2R26-M031D	125VDC THROWOVER SW 2D	Standby/ Closed	Standby/ Closed	≥ RLGM	
2R26-M126	FLEX Transfer Switch 2A	Normal	Normal	≥ RLGM	
2R26-M127	FLEX Transfer Switch 2B	Normal	Normal	≥ RLGM	
2R26-M129	FLEX Transfer Switch 2D	Normal	Normal	≥ RLGM	
2R26-M130	FLEX Transfer Switch 2E	Normal	Normal	≥ RLGM	
2R26-M135	DC INPUT SWITCH FOR INVERTER 2A	Normal	Normal	≥ RLGM	
2R26-M136	BYPASS SWITCH FOR INVERTER 2A	Normal	Normal	≥ RLGM	
2R26-M137	DC INPUT SWITCH FOR INVERTER 2B	Normal	Normal	≥ RLGM	
2R26-M138	BYPASS SWITCH FOR INVERTER 2B	Normal	Normal	≥ RLGM	
2R27-S096	LOCAL STARTER 2E11-F008	Energized	De-Energized	≥ RLGM	
2R42-S001A	125/250VDC Station Battery 2A	Energized	Energized	≥ RLGM	

Equipment		Operating State		HCLPF Screening Results	Notes/Comments
ID	Description	Normal	Desired		
2R42-S001B	125/250VDC Station Battery 2B	Energized	Energized	≥ RLGM	
2R42-S026	Battery Charger 2A - Div I	Energized	Energized	≥ RLGM	
2R42-S027	Battery Charger 2B - Div I	Energized	Energized	≥ RLGM	
2R42-S029	Battery Charger 2D - Div II	Energized	Energized	≥ RLGM	
2R42-S030	Battery Charger 2E - Div II	Energized	Energized	≥ RLGM	
2R44-S006	250VDC/120VAC FLEX Inverter 2A	Energized	Energized	≥ RLGM	
2R44-S007	250VDC/120VAC FLEX Inverter 2B	Energized	Energized	≥ RLGM	
2T46-F002A	FLTR TRAIN OUT BUTTERFLY	Open	Closed	≥ RLGM	
2T46-F002B	FLTR TRAIN OUT BUTTERFLY	Open	Closed	≥ RLGM	
2T47-K600	SIGNAL CONVERTER R/V	Operating	Operating	≥ RLGM	
2T47-K602	N001J,K SIGNAL CONV R/V	Operating	Operating	≥ RLGM	
2T47-K603	N001M, N003 SIG CONV R/V	Operating	Operating	≥ RLGM	
2T47-K604	N005, N007 SIG CONV R/V	Operating	Operating	≥ RLGM	
2T47-K605	N010 SIGNAL CONV R/V	Operating	Operating	≥ RLGM	

Equipment		Operating State		HCLPF Screening Results	Notes/Comments
ID	Description	Normal	Desired		
2T47-N001J	B009A Inlet Air TE- Div II	Operating	Operating	N/A	Inaccessible/High Dose; See Section 7.1
2T47-N001K	DW CLG Dome Area TE- Div II	Operating	Operating	N/A	Inaccessible/High Dose; See Section 7.1
2T47-N001M	B009A&B Inlet Air TE- Div II	Operating	Operating	N/A	Inaccessible/High Dose; See Section 7.1
2T47-N003	DW CLG Midlevel Area TE- Div II	Operating	Operating	N/A	Inaccessible/High Dose; See Section 7.1
2T47-N005	DW Lower Level Area TE- Div II	Operating	Operating	N/A	Inaccessible/High Dose; See Section 7.1
2T47-N007	DW Lower Level Area TE- Div II	Operating	Operating	N/A	Inaccessible/High Dose; See Section 7.1
2T47-N010	Sacrificial Shield Top TE- Div II	Operating	Operating	N/A	Inaccessible/High Dose; See Section 7.1
2T47-R627	DW CLG CRD/Torus Area TR - Div II	Operating	Operating	≥ RLGM	
2T48-A001	NITROGEN STORAGE TANK	Available	Available	≥ RLGM	
2T48-B002	N2 TANK AMBIENT VAPORIZER	Available	Available	≥ RLGM	Repaired under CAP and re-walked down; See Section 6.3.3.
2T48-F081	TORUS VENT SGTS ISO VLV	Open	Closed	≥ RLGM	
2T48-F082	HCVS Vent Control AOV	Closed	Closed/Open	≥ RLGM	

Equipment		Operating State		HCLPF Screening Results	Notes/Comments
ID	Description	Normal	Desired		
2T48-F318	HCVS Containment Isolation AOV	Closed	Closed/Open	≥ RLGM	
2T48-F319	HCVS Containment Isolation AOV	Closed	Closed	≥ RLGM	
2T48-F320	HCVS Containment Isolation AOV	Closed	Closed	≥ RLGM	
2T48-F326	HCVS Containment Isolation AOV	Closed	Closed/Open	≥ RLGM	
2T48-F408	Relief Valve Argon Supply Overpressure Protection	Standby	Standby	≥ RLGM	
2T48-F465	B002 DISCH LINE SRV	Standby	Standby	≥ RLGM	
2T48-F468	B002 DISCHARGE PCV (N2 system)	Operating	Operating	≥ RLGM	
2T48-K608B	DW Pressure Inst I/V - Div II	Operating	Operating	≥ RLGM	
2T48-K620B	DW/Torus Pressure Inst I/V - Div II	Operating	Operating	≥ RLGM	
2T48-K621B	Torus Level Inst I/V - Div II	Operating	Operating	≥ RLGM	
2T48-N008B	Torus Midrange PT - Div II	Operating	Operating	≥ RLGM	
2T48-N009B	Torus Water TE- Div II	Operating	Operating	≥ RLGM	
2T48-N009D	Torus Water TE- Div II	Operating	Operating	≥ RLGM	
2T48-N009E	Torus Air TE- Div II	Operating	Operating	≥ RLGM	
2T48-N009H	Torus Air TE- Div II	Operating	Operating	≥ RLGM	

Equipment		Operating State		HCLPF Screening Results	Notes/Comments
ID	Description	Normal	Desired		
2T48-N020B	DW Narrow Range PT - Div II	Operating	Operating	≥ RLGM	
2T48-N021B	Narrow Range Torus LT - Div II	Operating	Operating	≥ RLGM	
2T48-N023B	DW Midrange PT - Div II	Operating	Operating	≥ RLGM	
2T48-R607B	DW and Torus Narrow Range L/PR - Div II	Operating	Operating	≥ RLGM	
2T48-R609	DW/Torus Midrange PR - Div II	Operating	Operating	≥ RLGM	
2T48-R631B	D/W MIDRANGE PI	Operating	Operating	≥ RLGM	
2T48-R632B	TORUS MIDRANGE PI	Operating	Operating	≥ RLGM	
2X86-S003	FLEX Connection Box 2A	Standby	Standby	≥ RLGM	
2X86-S004	FLEX Connection Box 2B	Standby	Standby	≥ RLGM	

Edwin I. Hatch Nuclear Plant – Units 1 and 2
Fukushima Near-Term Task Force Recommendation 2.1
Expedited Seismic Evaluation Process Report Completion

Enclosure 2

Required Actions and Schedule for Completion of ESEP Activities
(Updated)

Hatch Unit 1 Required Actions and Schedule for ESEL Items Not Installed as of Walkdowns/Report Issuance				
#	**Equipment Number**	**Outage Required**	**Required Action**	**Scheduled Completion Date**
1	• 1R26-M136 FLEX Transfer Switch 1A • 1R26-M137 FLEX Transfer Switch 1B • 1R26-M139 FLEX Transfer Switch 1D • 1R26-M140 FLEX Transfer Switch 1E • 1T48-F408 Relief Argon Supply Overpressure Protection • 1X86-S003 600V FLEX Diesel Generator (FLEX Connection Box 1A) • 1X86-S004 600V FLEX Diesel Generator (FLEX Connection Box 1B) *Note: 1R26-M132 and 1R26-M133 are no longer on the ESEL*	Did NOT require outage to walk down. Walkdowns are complete. No modifications were necessary.	After the items were installed, ESEP activities were completed, HCLPF evaluations were generated in accordance with EPRI 3002000704 and EPRI NP-6041-SL. No modifications necessary to meet ESEP requirements	December 2016 (2 years after ESEP Report submittal) Actual Completion: December 2016
2	• 1P52-A027A BKUP Air Accumulator Tank A • 1P52-A027B BKUP Air Accumulator Tank B • 1P52-F1312 Relief Valve N2 Cylinder Supply Manifold Overpressure Protection • 1R25-S066 120VAC Critical instrument Cabinet 1A • 1R25-S067 120VAC Critical instrument Cabinet 1B • 1R42-S026 Battery Charger 1A – Div I • 1R42-S027 Battery Charger 1B – Div I • 1R44-S006 250VDC/120VAC Inverter 1A • 1R44-S007 250VDC/120VAC Inverter 1B	Took advantage of outages and other opportunities to perform walkdowns. Walkdowns are complete. No modifications were necessary.	After the items were installed, ESEP activities were completed, HCLPF evaluations were generated in accordance with EPRI 3002000704 and EPRI NP-6041-SL. No modifications necessary to meet ESEP requirements.	Spring outage 2018 (2 outages after December 2014) Actual Completion: December 2016

Hatch Unit 1 Required Actions and Schedule for ESEL Items Not Installed as of Walkdowns/Report Issuance				
#	**Equipment Number**	**Outage Required**	**Required Action**	**Scheduled Completion Date**
3	N/A	N/A	This letter to NRC summarizes results of Unit 1 Items 1 and 2 and provides confirmation that no plant modifications associations with Items 1 and 2 were necessary.	90 days following completion of ESEP activities, no later than 90 days after Spring 2018 outage (if an outage is required). Actual Completion: December 2016

Continued on next page for Unit 2

Hatch Unit 2 Required Actions and Schedule for ESEL Items Not Installed as of Walkdowns/Report Issuance				
#	**Equipment Number**	**Description**	**Remaining Scope**	**Completion Date**
1	• 2R26-M126 FLEX Transfer Switch 2A • 2R26-M127 FLEX Transfer Switch 2B • 2R26-M129 FLEX Transfer Switch 2D • 2R26-M130 FLEX Transfer Switch 2E • 2R42-S026 Battery Charger 2A – Div I • 2R42-S027 Battery Charger 2B – Div I • 2T48-F408 Relief Argon Supply Overpressure Protection • 2X86-S003 600V FLEX Diesel Generator (FLEX Connection Box 2A) • 2X86-S004 600V FLEX Diesel Generator (FLEX Connection Box 2B)	Did NOT require outage to walk down. Walkdowns are complete. No modifications were necessary.	After the items were installed, ESEP activities were completed, HCLPF evaluations were generated in accordance with EPRI 3002000704 and EPRI NP-6041-SL. No modifications necessary to meet ESEP requirements.	December 2016 (2 years after ESEP Report submittals) Actual Completion: December 2016
2	• 2P52-A027A BKUP Air Accumulator Tank A • 2P52-A027B BKUP Air Accumulator Tank B • 2P52-F1228 Relief Valve N2 Cylinder Supply Manifold Overpressure Protection • 2R25-S066 120VAC Critical instrument Cabinet 2A • 2R25-S067 120VAC Critical instrument Cabinet 2B • 2R44-S006 250VDC/120VAC Inverter 2A • 2R44-S007 250VDC/120VAC Inverter 2B *Note: 2R26-M132 and 2R26-M133 are no longer on the ESEL*	Took advantage of outages and other opportunities to perform walkdowns. Walkdowns are complete. No modifications were necessary.	After the items were installed, ESEP activities were completed, HCLPF evaluations were generated in accordance with EPRI 3002000704 and EPRI NP-6041-SL. No modifications necessary to meet ESEP requirements.	Spring outage 2017 (2 outages after December 2014) Actual Completion: December 2016

Hatch Unit 2 Required Actions and Schedule for ESEL Items Not Installed as of Walkdowns/Report Issuance				
#	**Equipment Number**	**Description**	**Remaining Scope**	**Completion Date**
3	NA	NA	This letter to NRC summarizes results of Unit 2 Items 1 and 2 and provides confirmation that no plant modifications associations with Items 1 and 2 were necessary.	90 days following completion of ESEP activities, no later than 90 days after Spring 2017 outage (if an outage is required). Actual Completion: December 2016

Edwin I. Hatch Nuclear Plant – Units 1 and 2
Fukushima Near-Term Task Force Recommendation 2.1
Expedited Seismic Evaluation Process Report Completion

Enclosure 3

Table of Regulatory Commitments

Commitment	Type		Actual Completion Date (If Required)
	One-Time Action	Continuing Compliance	
Hatch Unit 1			
Complete the remaining NTTF 2.1 Unit 1 ESEL walkdowns /evaluations for items that are not currently installed. These items are identified in Attachment A of the Hatch Units 1 and 2 ESEP Report (Enclosure 1 of this letter) and summarized in Enclosure 2.	X		Work is complete with this transmittal – December, 2016 Note: 1R26-M132 and 1R26-M133 are no longer on the ESEL and therefore no walkdowns/evaluations were necessary.
Hatch Unit 2			
Complete the remaining NTTF 2.1 Unit 2 ESEL walkdowns/evaluations for items that are not currently installed. These items are identified in Attachment B of the Hatch Units 1 and 2 ESEP Report (Enclosure 1 of this letter) and summarized in Enclosure 2.	X		Work is complete with this transmittal – December, 2016 Note: 2R26-M132 and 2R26-M133 are no longer on the ESEL and therefore no walkdowns/evaluations were necessary.