EXPEDITED SEISMIC EVALUATION PROCESS (ESEP) REPORT

EXAMPLE SECTIONS 1, 2, 3, AND 8

Draft 1
August 10, 2014

Notes for the example:

This document is intended to provide an example of a plant Expedited Seismic Evaluation Process (ESEP) Report. The primary purpose of this example is to demonstrate the amount of detail expected to be provided in the submittals.

As a follow up to the July 23 NRC public meeting, example text is provided for Sections 1, 2, 3, and 8. Sections 4, 5, 6, and 7 include the template guidance explaining the intended content.

This example reflects a combined submittal for a two unit site; however, sites can choose to create a separate submittal for each unit at a site.

Normal text	Typical text showing the amount of detail expected in each template section
{brackets}	Specific to the plant submittal, e.g., {Plant}
Highlighted Italic text	Generic template guidance

EXPEDITED SEISMIC EVALUATION PROCESS REPORT

EXECUTIVE SUMMARY (OPTIONAL)

1.0 Purpose and Objective

This section should include text explaining the purpose of the ESEP and objective of the report.

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 [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. Depending on the comparison between the reevaluated seismic hazard and the current design basis, further risk assessment may be required. Assessment approaches acceptable to the staff include a seismic probabilistic risk assessment (SPRA), or a seismic margin assessment (SMA). Based upon the assessment results, the NRC staff will determine whether additional regulatory actions are necessary.

This report describes the Expedited Seismic Evaluation Process (ESEP) undertaken for {Plant}. The intent of the ESEP is to perform an interim action in response to the NRC's 50.54(f) letter [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 guidance in EPRI 3002000704, *Seismic Evaluation Guidance: Augmented Approach for the Resolution of Fukushima Near-Term Task Force Recommendation 2.1: Seismic* [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.

2.0 Brief Summary of the FLEX Seismic Implementation Strategies

This section should include text summarizing the plant FLEX seismic implementation strategy including the key equipment and cooling water sources credited in the strategy. The text should be derived from, and refer to, the plant FLEX submittal. This description is expected to be a few paragraphs long.

The {Plant} FLEX response strategies for Reactor Core Cooling and Heat Removal, Reactor Inventory Control/Long-term Subcriticality {PWRs}, Core Cooling and Heat Removal (Modes 5 and 6) {PWRs} and Containment Function are summarized below. This summary is derived from the {Plant} Overall Integrated Plan (OIP) in Response to the March 12, 2012, Commission Order EA-12-049 [3].

Reactor core cooling and heat removal is achieved via steam release from the Steam Generators (SGs) with SG makeup from the Turbine Driven Emergency Feedwater Pump (TDEFP) during FLEX Phase 1 with suction from the Emergency Feedwater Storage Tank and/or the buried Condenser Circulating Water (RC) system cross-over header. The Phase 2 strategy includes SG cooling water make-up via a FLEX portable pump, with suction from the Standby Nuclear Service Water Pond. The TDEFP flow control valves and Main Steam (SM) Power-Operated Relief Valves (PORVs) are also required to provide reactor core heat-removal capability. Phase 2 reactor core heat removal is achieved via the credited B.5.b connection (primary) or via the new FLEX mechanical connections located in the Auxiliary Building doghouses. The Phase 2 strategy only requires manipulation of manual valves.

Reactor Inventory Control/Long-term Subcriticality strategy from normal operation and Modes 5 and 6 conditions consists of reactor coolant system borated make-up via the primary make-up connections.

Reactor coolant system inventory control relies upon shrink, passive reactor coolant pump seal leakage, and letdown via head-vents and/or PORVs. The reactor coolant pump seal return outboard containment isolation valve is manually isolated to conserve inventory and maintain leak-off flow within the Reactor Building. To ensure SG continued heat removal capability, the cold-leg accumulator (CLA) block isolation valves are electrically closed during the cooldown to prevent Nitrogen injection into the reactor coolant system.

There are no Phase 1 FLEX actions to maintain containment integrity. The primary Phase 2 FLEX strategy for containment integrity entails repowering one train of hydrogen igniters and providing containment spray capability via the ring header. Phase 2 and/or 3 may entail repowering of select compartment fans inside of containment.

Necessary electrical components are outlined in the {Plant} FLEX Overall Integrated Plan submittal [3], and primarily entail 600 VAC essential motor control centers, vital batteries, equipment installed by FLEX electrical Engineering Changes, and monitoring instrumentation required for core cooling, reactor coolant inventory, and containment integrity.

3.0 Equipment Selection Process and ESEL

The selection of equipment for the Expedited Seismic Equipment List (ESEL) followed the guidelines of EPRI 3002000704 [2]. The ESELs for Unit 1 and Unit 2 are presented in Attachments A and B, respectively. Development of the ESEL is documented in an approved document[1]].

3.1 Equipment Selection Process and ESEL

This section should include text describing the equipment selection process, in accordance with Section 3 of EPRI 3002000704 [2]. This should include the selected items from the installed plant equipment credited in the FLEX strategies during Phase 1, 2 and 3 mitigation of a Beyond Design Basis External Event (BDBEE).

A complete list of the ESEL items should be included as a table in Attachment A of the submittal. At a minimum, the table should identify the equipment (Equipment ID and description) and the Normal State and Desired State for the FLEX strategy.

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} Overall Integrated Plan (OIP) in Response to the March 12, 2012, Commission Order EA-12-049 [3]. The OIP provides the {Plant} FLEX mitigation strategy and serves as the basis for equipment selected for the ESEP.

The scope of "installed plant equipment" includes current and future (to be installed) permanent equipment relied upon for the FLEX strategies to sustain the critical functions of core cooling and containment integrity. FLEX mitigation recovery actions are excluded from the ESEP scope per EPRI 3002000704 [2]. The overall list of planned FLEX modifications and the scope for consideration herein is limited to those required to support core cooling, reactor coolant inventory and subcriticality, and containment integrity functions. Portable and pre-staged FLEX equipment (not permanently installed) are excluded from the ESEL per EPRI 3002000704 [2].

The ESEL component selection followed the EPRI guidance outlined in Section 3.2 of EPRI 3002000704.

1. The scope of components is limited to that required to accomplish the core cooling and containment safety functions identified in Table 3-2 of EPRI 3002000704. The instrumentation monitoring requirements for core cooling/containment safety functions is limited to those outlined in the EPRI

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[1] This example identifies a plant approved document where the ESEL development is filed. Plants may use a variety of documentation processes (e.g. Technical Evaluation, Engineering Evaluation or calculation, Vendor Technical Report, etc.).

3002000704 guidance, and are a subset of those outlined in the Operational Implementation Plan response [3].

2. The scope of components is limited to installed plant equipment, and "to be installed" FLEX connections as described in Section 2.
3. The scope of components assumes the credited FLEX connection modifications are implemented, and are limited to those required to support a single FLEX success path (i.e., either "Primary" or "Back-up/Alternate").
4. The "Primary" FLEX success path is to be specified. Selection of the "Back-up/Alternate" FLEX success path must be justified.
5. Systems, structures and components excluded per the EPRI 3002000704 [2] guidance include:
    - Structures (e.g. containment, reactor building, control building, auxiliary building, etc.)
    - Piping, cabling, conduit, HVAC, and their supports.
    - Manual valves and rupture disks.
    - 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, reactor coolant pumps and seals, etc.)
    - Phase 3 coping strategies are included in the ESEP scope, whereas Phase 3 recovery strategies are excluded.
6. For cases in which neither train was specified as a primary or back-up strategy, then only one train component (generally 'A' train) is included in the ESEL.

3.1.1 ESEL Development

The ESEL was developed by reviewing the {Plant} OIP [3] to determine the major equipment involved in the FLEX strategies. Further reviews of plant drawings (e.g., Process and Instrumentation Diagrams (P&IDs) and Electrical One Line Diagrams) were performed to identify the boundaries of the flowpaths to be used in the FLEX strategies and to identify specific components in the flowpaths needed to support implementation of the FLEX strategies. P&IDs were the primary reference documents used to identify mechanical components and instrumentation. The flow paths used for FLEX strategies were selected and specific components were identified using detailed equipment and instrument drawings, piping isometrics, electrical schematics and one-line drawings, system descriptions, design basis documents, etc., as necessary.

Examples of additional equipment-specific details are provided in Section 3.1.2 through 3.1.5 below.

3.1.2 Power Operated Valves

Page 3-3 of EPRI 3002000704 [2] notes that power operated valves not required to change state are excluded from the ESEL. Page 3-2 also notes that "functional failure modes of electrical and mechanical portions of the installed Phase 1 equipment should be considered (e.g. RCIC/AFW trips)." To address this concern, the following guidance is applied in the {Plant} ESEL:

- Power operated valves that remain energized during the Extended Loss of all AC Power (ELAP) events (such as DC powered valves), were included on the ESEL.
- Power operated valves not required to change state as part of the FLEX mitigation strategies were not included on the ESEL. The seismic event also causes the ELAP event; therefore, the valves are incapable of spurious operation as they would be de-energized.
- Power operated valves not required to change state as part of the FLEX mitigation strategies during Phase 1, and are re-energized and operated during subsequent Phase 2 and 3 strategies, were not included on the ESEL. Spurious valve operation is not a concern in this time frame as the seismic event that caused the ELAP has passed before the valves are re-powered.

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 conduit and cabling, which are excluded in accordance with EPRI 3002000704 [2].

3.1.4 Termination Cabinets

Termination cabinets provide consolidated locations for permanently connecting multiple cables. The termination cabinets and the internal connections provide a completely passive function; however, the cabinets are included in 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).

3.2 Justification for use of Equipment that is not the primary means for FLEX implementation

In accordance with EPRI 3002000704 [2], the ESEL should typically use equipment that is the primary means of implementing the FLEX strategy; however, alternate *equipment may be used with justification. For any ESEL equipment that is not considered the primary means, justification should be provided explaining the basis for selecting the alternate equipment.*

The complete ESELs for Unit 1 and Unit 2 are presented in Attachments A and B, respectively.

4.0 Ground Motion Response Spectrum (GMRS)

4.1 Plot of GMRS submitted by the Licensee

This section should include the site Control Point elevation and Control Point GMRS as used in the ESEP evaluation. If the aforementioned are different from the March 2014 submittal [4], a description of the differences should be included.

4.2 Comparison to SSE.

This section should include a comparison of the site GMRS to the SSE as explained in the site's March 2014 submittal [4].

5.0 Review Level Ground Motion (RLGM)

5.1 Description of RLGM selected

This section should include a description of the selected review level ground motion (RLGM) for the ESEP in accordance with the criteria described in Section 4 of EPRI 3002000704 [2].

Generally, the RLGM is a scaled version of the plant's SSE, not to exceed two times the SSE, and/or the GMRS[2]. The maximum ratio of GMRS/SSE used and the frequency at which it happens should be described. The RLGM should be provided in tabular form (frequency and acceleration at 5% damping) and as a plot.

5.2 Process to estimate ISRS

This section should describe the process used to develop in-structure response spectra (ISRS) for the ESEP. The primary options will typically be either scaled ISRS derived from the SSE using the RLGM scale factor or new ISRS derived using the GMRS.

Alternatively, if the ISRS and other parameters were developed using a method other than scaling, a description of the method must be included. This description should include: applicable guidance, assumptions, and approach.

[2] Some plants may use the scaled SSE for equipment mounted in structures (where ISRS estimates would be necessary) and the GMRS for surface-mounted items (where ISRS estimates would not be necessary).

6.0 Seismic Margin Evaluation Approach

6.1 Summary of methodologies used

This section should describe the methodologies used to perform the seismic margin evaluations with references to the {Plant} seismic margin assessment [7] and High Confidence of a Low Probability of Failure (HCLPF) documentation [8]. Typically, these would include seismic walkdowns as described in EPRI NP 6041 [5], screening evaluations using EPRI NP 6041 screening tables, HCLPF calculations, and fragility calculations [6].

6.2 HCLPF screening process

This section should describe how HCLPF based screening evaluations were performed. Results of the screening should be included.

6.3 HCLPF calculation process

This section should describe how equipment specific HCLPF calculations were performed, including information related to the deterministic or probabilistic (fragility) process as applicable.

6.4 Functional evaluations

This section should describe functional evaluations for functional failure modes of electrical and mechanical portions of the installed Phase 1 equipment (Section 3.2 of EPRI 3002000704[2])

6.5 Tabulated ESEL HCLPF values (including Key failure modes)

This section should provide a discussion of the HCLPF values for the items on the ESEL, including an indication of the controlling failure mode (e.g. anchorage, equipment capacity, functional failure). For items screened out using NP 6041 screening tables, the screening level can be provided as >RLGM and the failure mode can be listed as "Screened", (unless the controlling HCLPF value is governed by anchorage). If there are ESEL items that are screened by other methods such as large available margins in a previous calculation, the screening basis should be stated.

Tabulated HCLPF values should be included in an Attachment(s).

7.0 Inaccessible Items

7.1 Identification of ESEL items inaccessible for walkdowns

Any ESEL items that were inaccessible (e.g. in-containment or electrically energized) and require follow up seismic walkdowns[3] should be identified in this section along with a description of why the items were inaccessible.

7.2 Planned Walkdown / Evaluation Schedule / Close Out

A schedule for performing seismic walkdowns for the inaccessible items identified in Section 7.1 should be provided. Commitment(s) associated with the inaccessible items should be provided in Section 8.4. Close Out/Completion of the ESEP will be by a letter to the NRC summarizing the results of walkdowns and evaluations of the inaccessible items listed in Section 7.1. An updated ESEP report is not required.

8.0 ESEP Conclusions and Results

The conclusions and results of the ESEP evaluation are presented in this section, including the identification of any planned plant modifications and schedules for any follow up actions.

8.1 ESEP Conclusions

This section should describe the overall ESEP conclusions from the review.

{Plant} has performed the ESEP as an interim action in response to the NRC's 50.54(f) letter [1]. The {Plant} ESEP demonstrates additional seismic margin for plant equipment that is relied upon in FLEX strategies to protect the reactor core following a beyond design basis seismic event. It was performed using the methodologies in the NRC endorsed guidance in EPRI 3002000704 [2].

The NRC staff and the industry agree that 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 only part of the overall {Plant} response to the NRC's 50.54(f) letter [1]. On March 12, 2014, NEI submitted to the NRC results of a study [9] of seismic core damage risk estimates based on updated seismic hazard information as it applies to operating nuclear reactors in the Central and Eastern

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[3] The walkdown criteria in EPRI NP 6041 [5] provides for a number of ways of confirming the installed condition of equipment, including detailed seismic walkdowns, walk-bys for some equipment, and photographic or other confirmatory evidence. The key criterion is that the Seismic Review Team needs to have adequate confidence in the installed condition of the equipment, including material condition, installed anchorage, and applicable potential seismic interaction concerns. These criteria should help limit the number of inaccessible items requiring follow up seismic walkdowns.

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 seismic hazards. 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 [11] concluded that the "fleetwide seismic risk estimates are consistent with the approach and results used in the Gl-199 safety/risk assessment." The letter also stated that "As a result, the staff has confirmed that the conclusions reached in Gl-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} was included in the fleet risk evaluation submitted in the March 12, 2014 NEI letter [9] therefore, the conclusions in the NRC's May 9 letter [11] also apply to {Plant}.

In addition, the March 12, 2014 NEI letter [9] 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.

{Extra text for plants with GMRS greater than 2xSSE follows

In order to properly define the effects of each of these conservatisms on a plant specific basis, a more detailed seismic risk assessment (SPRA or risk-based SMA) is to be performed in accordance with EPRI 1025287 [12]. This additional asseeement will more fully characterize the risk impacts of a seismic ground motion represented by the GMRS. As identified in the {Plant} Seismic Hazard and GMRS submittal [4], {Plant} screens in for a risk evaluation. The complete risk evaluation will more completely characterize the probabilistic seismic ground motion input into the plant, the plant response to that probabilistic seismic ground motion input, and the resulting plant risk characterization. {Plant} will complete that evaluation in accordance with the schedule identified in NEI's letter dated April 9, 2013 [10] and endorsed by the NRC in their May 7, 2013 letter [13].}

8.2 Identification of Planned Modifications

This section should describe any ESEL equipment plant modifications necessary to achieve HCLPF values that bound the RLGM.

Insights from the ESEP identified the following two items where the HCLPF is below the RLGM and plant modifications will be made in accordance with EPRI 3002000704 [2] to enhance the seismic capacity of the plant.

1. The Unit 2 electrical enclosure {YYYY} anchorage HCLPF is below the RLGM and a modification to enhance the anchorage is planned.
2. The Unit 1 {XXXX} instrument rack had a HCLPF capacity below the RLGM. A modification is planned to provide additional seismic margin such that the HCLPF will exceed the RLGM.

8.3 Modification Implementation Schedule

This section should include the implementation schedule for the modifications identified above. Modifications should be completed within 2 years of submitting the plant specific ESEP to the NRC. If a plant outage is required to implement the ESEL item modification, the modifications should be completed within 2 planned refueling outages of submitting the ESEP. The submittal should identify the outage for the planned modification(s).

Plant modifications will be performed in accordance with the schedule identified in NEI letter dated April 9, 2013 [10], which states that plant modifications not requiring a planned refueling outage will be completed by December 2016 and modifications requiring a refueling outage will be completed within two planned refueling outages after December 31, 2014.

The first modification described in Section 8.2 can be completed without a plant refueling outage; therefore the electrical enclosure anchorage plant modification will be completed by December 31, 2016. The second plant modification requires a plant refueling outage to be implemented; therefore the instrument rack modification will be completed no later than the end of the second Unit 1 refueling outage to occur following the December 2014 submittal date of the ESEP evaluation.

8.4 Summary of Regulatory Commitments

The ESEP submittal should include a summary of committed follow up actions including resolution for inaccessible items, planned modifications, and a completion letter to the NRC following completion of the equipment modifications. Some licensees may include that summary in this section of the ESEP report while others may include it in another form such as a separate attachment to the submittal letter or as a list in the submittal letter.

The following actions will be performed as a result of the ESEP.

Action #	Equipment ID	Equipment Description	Action Description	Due Date
1	N/A	N/A	Perform seismic walkdowns and HCLPF evaluations for Unit 1 inaccessible items listed in Section 7.1	60 days after next Unit 1 planned refueling outage
2	N/A	N/A	Perform seismic walkdowns and HCLPF evaluations for Unit 2 inaccessible items listed in Section 7.1	60 days after next Unit 2 planned refueling outage
3	YYYY	Unit 2 electrical enclosure	Modify anchorage such that HCLPF > GMRS	December 2016
4	XXXX	Unit 1 instrument rack	Modify the instrument rack such that HCLPF > GMRS	No later than the end of the second Unit 1 refueling outage after December 31, 2014

Action #	Equipment ID	Equipment Description	Action Description	Due Date
5	N/A	N/A	Submit a letter to NRC summarizing the HCLPF results of Items 1 and 2 and confirming implementation of the plant modifications associated with items 1 through 4	60 days following completion of items 1 through 4

9.0 References (typical)

1) NRC (E Leeds and M Johnson) 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,” March 12, 2012.
2) Seismic Evaluation Guidance: Augmented Approach for the Resolution of Fukushima Near-Term Task Force Recommendation 2.1 – Seismic. EPRI, Palo Alto, CA: May 2013. 3002000704.
3) {Plant} Overall Integrated Plan (OIP) in Response to the March 12, 2012, Commission Order EA-12-049
4) {Plant} Seismic Hazard and GMRS submittal, dated March 31, 2014.
5) A Methodology for Assessment of Nuclear Power Plant Seismic Margin, Rev. 1, August 1991, Electric Power Research Institute, Palo Alto, CA. EPRI NP 6041
6) Methodology for Developing Seismic Fragilities, August 1991, EPRI, Palo Alto, CA. 1994, TR-103959
7) {Plant Seismic Margin Assessment}
8) {Plant ESEP HCLPF Calculations and Relay Functional Evaluations}
9) Nuclear Energy Institute (NEI), A. Pietrangelo, Letter to D. Skeen of the USNRC, "Seismic Core Damage Risk Estimates Using the Updated Seismic Hazards for the Operating Nuclear Plants in the Central and Eastern United States", March 12, 2014
10) Nuclear Energy Institute (NEI), A. Pietrangelo, Letter to D. Skeen of the USNRC, "Proposed Path Forward for NTTF Recommendation 2.1: Seismic Reevaluations", April 9, 2013
11) NRC (E Leeds) Letter to All Power Reactor Licensees et al., “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,” May 9, 2014.
12) Seismic Evaluation Guidance: Screening, Prioritization and Implementation Details (SPID) for the Resolution of Fukushima Near-Term Task Force Recommendation 2.1: Seismic. EPRI, Palo Alto, CA: February 2013. 1025287.
13) NRC (E Leeds) Letter to NEI (J Pollock), “Electric Power Research Institute Final Draft Report xxxxx, “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,” May 7 2013

Attachment A

{Plant} Unit 1 ESEL

ESEL Item Num	Equipment		Operating State		Notes/Comments[4]
	ID	Description	Normal State	Desired State	
1	2FW-32B	Refueling Water Recirc Pump Suction isolation	Open / closed	Open / closed	Manually positioned adjacent to mechanical connection (Dwg. MCFD-2571-01.00, Rev. 30)
2	2FW-33A	Refueling Water Recirc Pump Suction isolation	Open / closed	closed	Manually positioned adjacent to mechanical connection (Dwg. MCFD-2571-01.00, Rev. 30)
3	2FW-1A (2nd out from FWST)	Refueling Water Recirc Pump Suction isolation	Open / closed	closed	Manually positioned adjacent to mechanical connection (Dwg. MCFD-2571-01.00, Rev. 30)
4	2ND-56	ND relief- 'A' Cold legs	closed	closed	Dwg. MCFD-2561-01.00, Rev. 22
5	2ND-61	ND relief - Hot legs	closed	closed	Dwg. MCFD-2561-01.00, Rev. 22
6	2ND-64	ND relief - 'B' Cold legs	closed	closed	Dwg. MCFD-2561-01.00, Rev. 22
7	2NI-119	NI relief - 'A' train hot leg	closed	closed	Dwg. MCFD-2562-03.00, Rev. 17
8	2NI-151	NI relief - 'B' train hot leg	closed	closed	Dwg. MCFD-2562-03.00, Rev. 17
9	2NI-161	NI relief - cold leg	closed	closed	Dwg. MCFD-2562-03.01, Rev. 14
10	0RN-7A	SNSWP supply to Units 1 and 2	closed	open	Manually positioned (Dwg. MCFD-1574-01.00, Rev. 20)
11	2NV-95B	NC Pumps Seal Water Return Cont	open	closed	Manually positioned, MCFD-2554-01.01
12	2NC-272AC	Reactor Vessel Head-vent Solenoid Isolation Valve	closed	open and closed	Powered from 2EVDA Panel Board, Control Switch NC28 on 2MC5 and JA on 2SSFARC (Dwg. MCEE- 250-00.29, Rev.6)

[4] *This field can be used to provide notes and/or comments (reference drawings, specific room location, etc.). Codes may also be defined and used to provide a variety of information (e.g., failure mode of interest)*

ESEL	Equipment		Operating State		Notes/Comments[4]
13	2NC-34A	NC System Pressurizer PORV Solenoids and Pneumatic Controls	closed	open and closed	Powered from 2EVDA Panel Board, Control Switch NC71 on 2MC10, Control Switch 2SP51 on Auxiliary Shutdown Panel (ASP), Relay GA in 2ATC10, EL on 2SSFARC (Dwg. MCEE- 250-00.03-01, Rev.11 & MCEE-250-00.03, Rev.10)
14	2NI-430A	2NC-34A Assured Nitrogen Supply from 2A CLA (MOV)	closed	open and closed	Powered from 2EMXA-2, Control Switch NI139 on 2MC11, switch NC102 on 2MC10 (Dwg. MCEE- 251-00.74, Rev.7 & MCEE-251-00.74-001, Rev. 6)
15	2FW-TK-0001	Refueling Water Storage Tank	n/a	n/a	
16	2NI-54A	2A CLA Block Valve (MOV)	open M1-4	closed	Powered from 2EMXA-2, Control Switch NI43 on 2MC11, SSPS(A) Slave Relay K608, disconnect switch NI44 on 2MC11 and remote contactor cabinet 2A (MCEE-251-00.15, Rev. 9, MCEE-251-00.15-01, Rev. 10, & MCM-2399.08-0005.029)

[Note: this table would continue on to list all of the ESEL items.]

Attachment B

{Plant} Unit 2 ESEL

ESEL Item Num	Equipment		Operating State		Notes/Comments[5]
	ID	Description	Normal State	Desired State	

[5] *This field can be used to provide notes and/or comments (reference drawings, specific room location, etc.). Codes may also be defined and used to provide a variety of information (e.g., failure mode of interest)*