

NRR-PMDAPEm Resource

From: Jackson, Diane
Sent: Friday, August 28, 2015 3:28 PM
To: Shams, Mohamed
Cc: DiFrancesco, Nicholas; Spence, Jane; Devlin-Gill, Stephanie; Roche, Kevin; Yee, On; 50.54f_Seismic Resource; RidsNroDsea Resource; Wyman, Stephen; Rivera-Lugo, Richard; Patterson, Malcolm; Hoang, Dan; Le, Tuan; Heeszal, David
Subject: DAVIS-BESSE NUCLEAR POWER STATION, UNIT 1 - TECHNICAL REVIEW CHECKLIST RELATED TO INTERIM ESEP SUPPORTING IMPLEMENTATION OF NTTF R2.1, SEISMIC (TAC NO. MF5238)
Attachments: Davis Besse R2.1 Seismic ESEP NRC Review.docx

August 28, 2015

MEMORANDUM TO: Mohamed K. Shams, Chief
Hazards Management Branch (JHMB)
Japan Lessons-Learned Division
Office of Nuclear Reactor Regulation

FROM: Diane T. Jackson, Chief
Geosciences and Geotechnical Engineering Branch 2 (RGS2)
Division of Site Safety and Environmental Analysis
Office of New Reactors

SUBJECT: DAVIS-BESSE NUCLEAR POWER STATION, UNIT 1 - TECHNICAL REVIEW CHECKLIST RELATED TO INTERIM EXPEDITED SEISMIC EVALUATION PROCESS SUPPORTING IMPLEMENTATION OF NTTF RECOMMENDATION 2.1, SEISMIC, RELATED TO THE FUKUSHIMA DAI-ICHI NUCLEAR POWER PLANT ACCIDENT (TAC NO. MF5238)

The NRC technical staff working through the Geosciences and Geotechnical Engineering Branches 1 and 2 (RGS1 and RGS2) completed the Technical Review Checklist of the DAVIS-BESSE NUCLEAR POWER STATION, UNIT 1 response to Enclosure 1, Item (6) of the March 12, 2012, request for information letter issued per Title 10 of the Code of Federal Regulations, Subpart 50.54(f), to power reactor licensees and holders of construction permits requesting addressees to provide further information to support the NRC staff's evaluation of regulatory actions to be taken in response to Fukushima Near-Term Task Force (NTTF) Recommendation 2.1: Seismic which implements lessons learned from Japan's March 11, 2011, Great Tōhoku Earthquake and subsequent tsunami. This addresses the staff review of the interim Expedited Seismic Evaluation Process (ESEP) report in response to Requested Item (6) of Enclosure 1, "Recommendation 2.1: Seismic," of the 50.54(f) letter. Attached is a file containing the technical review checklist to prepare a response letter to the licensee.

The NRC staff reviewed the information provided and, as documented in the enclosed staff checklist, determined that sufficient information was provided to be responsive to this portion of the Enclosure 1 of the 50.54(f) letter. The application of this staff review is limited to the interim ESEP as part of NTTF R2.1: Seismic activities.

This electronic memo constitutes the DSEA concurrence provided that only editorial changes are made to the staff assessment that would not affect the technical conclusions or technical context of the assessment.

This concludes the NRC's efforts associated with TAC NO. MF5238 for the review of the interim ESEP report for the DAVIS-BESSE NUCLEAR POWER STATION, UNIT 1.

Docket No: 50-346

CONTACT: Stephanie Devlin-Gill
Office of New Reactors
301-415-5301

Copy: Nicholas DiFrancesco, Steve Wyman, Jane Spence, Stephanie Devlin-Gill, Kevin Roche, On Yee, Richie Rivera-Lugo, Malcolm Patterson, Dan Hoang, Tuan Li, David Heeszal, 50.54(f) Seismic Resource; RidsNrodSea Resource

Hearing Identifier: NRR_PMDA
Email Number: 2361

Mail Envelope Properties (d50dda2ec0d541269ced2c6404ae6b91)

Subject: DAVIS-BESSE NUCLEAR POWER STATION, UNIT 1 - TECHNICAL REVIEW
CHECKLIST RELATED TO INTERIM ESEP SUPPORTING IMPLEMENTATION OF NTTF R2.1,
SEISMIC (TAC NO. MF5238)

Sent Date: 8/28/2015 3:28:16 PM

Received Date: 8/28/2015 3:28:33 PM

From: Jackson, Diane

Created By: Diane.Jackson@nrc.gov

Recipients:

"DiFrancesco, Nicholas" <Nicholas.DiFrancesco@nrc.gov>

Tracking Status: None

"Spence, Jane" <Jane.Spence@nrc.gov>

Tracking Status: None

"Devlin-Gill, Stephanie" <Stephanie.Devlin-Gill@nrc.gov>

Tracking Status: None

"Roche, Kevin" <Kevin.Roche@nrc.gov>

Tracking Status: None

"Yee, On" <On.Yee@nrc.gov>

Tracking Status: None

"50.54f_Seismic Resource" <50.54f_Seismic.Resource@nrc.gov>

Tracking Status: None

"RidsNroDsea Resource" <RidsNroDsea.Resource@nrc.gov>

Tracking Status: None

"Wyman, Stephen" <Stephen.Wyman@nrc.gov>

Tracking Status: None

"Rivera-Lugo, Richard" <Richard.Rivera-Lugo@nrc.gov>

Tracking Status: None

"Patterson, Malcolm" <Malcolm.Patterson@nrc.gov>

Tracking Status: None

"Hoang, Dan" <Dan.Hoang@nrc.gov>

Tracking Status: None

"Le, Tuan" <Tuan.Le@nrc.gov>

Tracking Status: None

"Heeszal, David" <David.Heeszal@nrc.gov>

Tracking Status: None

"Shams, Mohamed" <Mohamed.Shams@nrc.gov>

Tracking Status: None

Post Office: R4PWMSMRS03.nrc.gov

Files	Size	Date & Time
MESSAGE	3170	8/28/2015 3:28:33 PM
Davis Besse R2.1 Seismic ESEP NRC Review.docx	53210	

Options

Priority: Standard

Return Notification: No

Reply Requested: No

Sensitivity: Normal
Expiration Date:
Recipients Received:

TECHNICAL REVIEW CHECKLIST
BY THE OFFICE OF NUCLEAR REACTOR REGULATION
RELATED TO EXPEDITED SEISMIC EVALUATION PROCESS/INTERIM EVALUATION
IMPLEMENTING NTTF RECOMMENDATION 2.1 SEISMIC
DAVIS-BESSE NUCLEAR POWER STATION, UNIT 1
DOCKET NO.50-346

By letter dated March 12, 2012 (USNRC, 2012a), the U.S. Nuclear Regulatory Commission (NRC) issued a request for information to all power reactor licensees and holders of construction permits in active or deferred status, pursuant to Title 10 of the *Code of Federal Regulations* (10 CFR), Section 50.54(f) "Conditions of License" (hereafter referred to as the "50.54(f) letter"). Enclosure 1 of the 50.54(f) letter requests addressees to reevaluate the seismic hazard at their site using present-day methods and guidance for licensing new nuclear power plants, and identify actions to address or modify, as necessary, plant components affected with the reevaluated seismic hazards. Requested Information Item (6) in Enclosure 1 to the 50.54(f) letter requests addressees to provide an interim evaluation and actions taken or planned to address a higher seismic hazard relative to the design basis, as appropriate, prior to completion and submission of the seismic risk evaluation.

Additionally, by letter dated April 12, 2013,¹ the Electric Power Research Institute (EPRI) staff submitted EPRI TR 3002000704 "Seismic Evaluation Guidance: Augmented Approach for the Resolution of Fukushima Near-Term Task Force (NTTF) Recommendation 2.1: Seismic" (hereafter referred to as the guidance). The Augmented Approach proposed that licensees would use an Expedited Seismic Evaluation Process (ESEP) to address the interim actions as requested by Information Item (6) in the 50.54(f) letter. The ESEP is a simplified seismic capacity evaluation with a focused scope of certain key installed Mitigating Strategies equipment that is used for core cooling and containment functions to cope with scenarios that involve a loss of all AC power and loss of access to the ultimate heat sink to withstand the Review Level Ground Motion, which is up to two times the safe shutdown earthquake (SSE). Due to the expedited and interim nature of the ESEP, the assessment does not include many considerations that are part of a normal risk evaluation. These deferred items, include but are not limited to, structures, piping, non-seismic failures, and operator actions, as well scenarios such as addressing loss of coolant accidents. By letter dated May 7, 2013,² the NRC staff endorsed the guidance. Central and eastern United States licensees with a reevaluated seismic hazard exceeding the SSE submitted an ESEP interim evaluation in December 2014.

Consistent with the interim nature of this activity, the staff performed the review of the licensee's submittal to assess whether the intent of the guidance was implemented. A multi-disciplined team checked whether the identified methods were consistent with the guidance. A senior expert panel reviewed the team's questions, if any, and checklist for consistency and scope. New or updated parameters (e.g., In-Structure Response Spectra, High Confidence of Low Probability of Failure calculations) presented by the licensees were assessed only based on licensee statements for acceptability for the Item (6) response. The application of this staff review is limited to the ESEP interim evaluation as part of NTTF R2.1: Seismic activities.

1 ADAMS Accession No. ML13102A142

2 ADAMS Accession No. ML13106A331

NTTF Recommendation 2.1 Expedited Seismic Evaluation Process

Technical Review Checklist for Davis-Besse Nuclear Power Station, Unit 1

By letter dated December 19, 2014,³FirstEnergy Nuclear Operating Company (FENOC or the licensee) provided an Expedited Seismic Evaluation Process (ESEP) report in a response to Enclosure 1, Requested Information Item (6) of the 50.54(f) letter, for the Davis-Besse Nuclear Power Station, Unit 1 (Davis-Besse).

I. Review Level Ground Motion

The licensee: <ul style="list-style-type: none"> • described the determination of the review level ground motion (RLGM) using one of the means acceptable by the guidance • identified location of the control point and is consistent with March 2014 seismic hazard and screening report (SHSR)⁴ submittal • compared the site ground motion response spectra used to select the ESEP RLGM to the SSE. 	Yes Yes Yes
Davis-Besse used the GMRS developed for use in the SPRA.	
Notes from the Reviewer: <ul style="list-style-type: none"> • The licensee used a new GMRS rather than its seismic hazard reevaluation GMRS documented in its March 2014 SHSR, which was found acceptable for use in Recommendation 2.1 seismic activities by the staff. The licensee used the same velocity models as in the hazard report but reduced the damping values in the interval between 100 and 500 ft below the control point. The staff notes that the GMRS is less than the SSE over some ranges. Because the new GMRS is similar to and bounds the SHSR GMRS at frequencies above ~3 Hz, the staff judged that this GMRS is acceptable for this interim evaluation. 	
Deviation(s) or Deficiency(ies), and Resolution: No deviations or deficiencies were identified.	
The NRC staff concludes: <ul style="list-style-type: none"> • the licensee's RLGM meets the intent of the guidance • the RLGM is reasonable for use in the interim evaluation 	Yes Yes

II. Selection of the Success Path

The licensee: <ul style="list-style-type: none"> • described the success path • described normal and desired state of the equipment for the success path • ensured that the success path is consistent with the plant's overall mitigating strategies approach or provided a justification for an alternate path • stated that the selection process was in accordance with the guidance or meets the intent of the guidance • used installed FLEX Phase 1 equipment as part of the success path • included FLEX Phase 2 and/or 3 <u>connections</u> • considered installed FLEX Phase 2 and/or 3<u>equipment</u> 	Yes Yes Yes Yes Yes Yes Yes
----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------	---------------------------------------------------------------

³ADAMS Accession No. ML14253A058

⁴ADAMS Accession No ML14092A203

NTTF Recommendation 2.1 Expedited Seismic Evaluation Process

Technical Review Checklist for Davis-Besse Nuclear Power Station, Unit 1

<p>Notes from the Reviewer:</p> <p>1. This licensee relies on a diesel-driven emergency feedwater (EFW) pump for Phase 1, and it appears the licensee included a diesel fuel oil day tank and storage tank on the ESEL.</p>	
<p>Deviation(s) or Deficiency(ies), and Resolution: No deviations or deficiencies were identified.</p>	
<p>The NRC staff concludes that:</p> <ul style="list-style-type: none"> • the selected success path is reasonable for use in the interim evaluation • the licensee considered installed Phase 2 and 3 connections or equipment in the interim evaluation. 	<p>Yes</p> <p>Yes</p>

III. Selection of the Equipment List

<p>The licensee:</p> <ul style="list-style-type: none"> • developed and provided the ESEL by applying the ESEP • identified equipment considering the following functions: <ul style="list-style-type: none"> ○ Core cooling (with focus on Mode 1) function ○ Available, sustainable water source ○ Containment function and integrity 	<p>Yes</p> <p>Yes</p> <p>Yes</p> <p>Yes</p>
<p>Notes from the Reviewer:None</p>	
<p>Deviation(s) or Deficiency(ies), and Resolution: No deviations or deficiencies were identified.</p>	
<p>For PWR Plants ONLY</p>	
<p>The licensee included indicators / instrumentation for the following functions: level, pressure, temperature, that would be indicative of (but not explicitly identified to specific instruments): water level of the steam generator (SG), pressure of SG, containment, and reactor coolant system (RCS); and temperature of the RCS.</p>	<p>Yes</p>
<p>For BWR Plants ONLY</p>	
<p>The licensee considered indicators for the following functions: level, pressure, temperature that would be indicative of (but not explicitly identified to specific instruments): Temperature of suppression pool, RCS, containment); Pressure of suppression pool, RCS, and drywell; water level of the suppression pool.</p>	<p>N/A</p>
<p>Notes from the Reviewer:None</p>	
<p>Deviation(s) or Deficiency(ies), and Resolution: No deviations or deficiencies were identified.</p>	

NTTF Recommendation 2.1 Expedited Seismic Evaluation Process

Technical Review Checklist for Davis-Besse Nuclear Power Station, Unit 1

Through a sampling of the ESEP key components, the NRC staff concludes that: <ul style="list-style-type: none"> • the licensee’s process to develop the ESEL meets the intent of the guidance for the interim evaluation • the desired equipment state for the success path were identified • the licensee considered the support equipment for the ESEL • both front-line and support systems appeared to be included in the ESEL as evidenced by inclusion of SSCs on the success path and of support systems (e.g., batteries, motor control centers, inverters). 	Yes Yes Yes Yes
----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------	----------------------------------

IV. Walkdown Approach

The licensee: <ul style="list-style-type: none"> • described the walkdown screening approach, including walkbys and walkdowns performed exclusively for the ESEP, in accordance with the guidance • credited previous walkdown results, including a description of current action(s) to verify the present equipment condition and/or configuration (e.g., walk-bys), in accordance with the guidance • stated that the walkdown was performed by seismically trained personnel 	Yes Yes Yes
<p>Notes from the Reviewer:</p> <p>1. The staff requested clarification regarding the training of the walkdown engineers. In their response from July 14, 2015 (ML15212A713), the licensee provided additional information on all individuals who performed the plant walkdowns have successfully completed the SQUG Walkdown Screening and Seismic Evaluation Training Course or equivalent training. This adequately responded to the staff’s concern and the licensee demonstrated that it met the intent of the guidance.</p> <p>Deviation(s) or Deficiency(ies), and Resolution: No deviations or deficiencies were identified.</p>	
The licensee: <ul style="list-style-type: none"> • described, as needed, adverse material condition of the equipment (e.g., material degradation) • credited previous walkdown results, included a description of current action(s) to verify the present equipment condition (e.g., walk-bys), meeting the intent of the guidance 	Yes Yes
The licensee: <ul style="list-style-type: none"> • described the conditions of structural items considered for the interim evaluation, including: <ul style="list-style-type: none"> ○ spatial interactions (i.e., interaction between block walls and other items/components) ○ anchorage ○ piping connected to tanks (i.e., differential movement between pipes and tanks at connections) 	Yes Yes Yes
<p>Notes from the Reviewer: None</p> <p>Deviation(s) or Deficiency(ies), and Resolution: No deviations or deficiencies were identified.</p>	

NTTF Recommendation 2.1 Expedited Seismic Evaluation Process

Technical Review Checklist for Davis-Besse Nuclear Power Station, Unit 1

The licensee reported deviations for Davis-Besse.	No
If deviations were identified, there is a discussion of how the deficiencies were or will be addressed in the ESEP submittal report.	N/A
The NRC staff concludes that: <ul style="list-style-type: none"> • the licensee described the performed walkdown approach, including any credited previous efforts (e.g., Individual Plant Examination of External Events(IPEEE)) consistent with the guidance • the licensee addressed identified deviations consistent with the guidance, if any 	 Yes Yes

V. Capacity Screening Approach and HCLPF Calculation Results

The licensee: <ul style="list-style-type: none"> • described the capacity screening process for the ESEL items, consistent with the guidance (e.g., use of EPRI NP-6041 screening table). • presented the results of the screened-out ESEL items in the ESEP report • described the development of in-structure response spectra (ISRS) based on scaling • described the development of ISRS based on new analysis consistent with the guidance • described the method for estimating HCLPF capacity of screened-in ESEL items, including both structural and functional failure modes consistent with the guidance: <ul style="list-style-type: none"> ○ use of Conservative Deterministic Failure Margin (CDFM) ○ use of fragility analysis (FA) ○ use of experience data or generic information • credited IPEEE spectral shape for HCLPF capacity estimates is similar to or envelopes the RLGM, and anchored at the same control point • presented the results of HCLPF capacities including associated failure modes for screened-in ESEL items • reviewed the ESEL items with the lowest HCLPF values to ensure that their capacities are equal or greater than the RLGM 	 Yes Yes N/A Yes Yes Yes No Yes N/A Yes Yes
-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------	------------------------------------------------------------------------------------------------------

Notes from the Reviewer:

1. As allowed by guidance, the licensee did not use a scaled ISRS. The licensee calculated an ISRS based on a new GMRS for its upcoming seismic risk evaluation, as noted in Section I of this checklist. The ISRS is judged by the staff to be acceptable for this interim evaluation only based on the staff's review of ESEP submittal and because the new GMRS is similar to and bounds the SHSR GMRS.
2. The staff requested confirmation that the HCLPF table included in the report as Attachment B represents those items from Attachment A that were "screened in," and to also provide a roadmap between both attachment tables. In their response from July 14, 2015 (ML15212A713), the licensee confirmed this information and provided an updated version of Attachment B that identifies the ESEL item number to serve as a roadmap to Attachment A in the ESEP report. This response satisfies the staff's request for the purposes of this interim evaluation.
3. The staff requested clarification of the approach(es) applied to evaluate the seismic

NTTF Recommendation 2.1 Expedited Seismic Evaluation Process

Technical Review Checklist for Davis-Besse Nuclear Power Station, Unit 1

<p>capacity of components physically located on panels and/or cabinets, known as “rule-of-the-box.” In their response from July 14, 2015 (ML15212A713), the licensee explained that indicators and recorders are listed on the ESEL as distinct items, but their seismic evaluation is based on the evaluation of the “parent” component (ESEP Section 3.1.5), and that when an ESEL item is identified to be mounted on a parent component, the HCLPF of the parent component is assigned to the item. The licensee also stated that all HCLPF calculations are based on the guidance provided in EPRI TR-1002988 and TR-1019200. The staff judged the response from the licensee to be acceptable for the purposes of this interim evaluation.</p> <p>4. The staff requested clarification regarding the soil-structure-interaction (SSI) analysis. In the response dated July 14, 2015 (ML15212A713), the licensee described their use of the peak shifting approach recommended guidelines from EPRI 1019200 and NP-6041. The response adequately addressed the staff’s concern and met the intent of the guidance for this interim evaluation.</p> <p>5. In response to a staff clarification request, the licensee clarified in their response dated July 14, 2015 (ML15212A713) that the CDFM methodology was the only method used for all calculations, as stated in Section 6.4 of the ESEP report. The term “fragility” only refers to use of the hybrid approach to fragilities (described in Section 6.4.1 of EPRI 1025287) and does not imply that an alternative to CDFM was used in calculations.</p> <p>Deviation(s) or Deficiency(ies), and Resolution: No deviations or deficiencies were identified.</p>

<p>The NRC staff concludes that:</p> <ul style="list-style-type: none"> • the licensee described the implementation of the capacity screening process consistent with the intent of the guidance • the licensee presented capacity screening and calculation results, as appropriate, in the ESEP report • the method used to develop the ISRS is consistent with guidance for use in the ESEP • for HCLPF calculations, the licensee used HCLPF calculation methods as endorsed in the guidance • no anomalies were noted in the reported HCLPF 	<p>Yes</p> <p>Yes</p> <p>Yes</p> <p>Yes</p> <p>Yes</p>
-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------	--------------------------------------------------------

VI. Inaccessible Items

<p>The licensee:</p> <ul style="list-style-type: none"> • provided a list of inaccessible items • provided a schedule of the planned walkdown and evaluation for all inaccessible items • provided Regulatory Commitment to complete walkdowns. 	<p>Yes</p> <p>N/A</p> <p>N/A</p>
Davis-Besse will provide results or complete walkdown by: <u>N/A</u>	N/A

<p>Notes from the Reviewer:</p> <p>1. The licensee identified a total of 14 inaccessible items from the ESEL (ESEP report Table 7-1), identified the reason for the inaccessibility of each item, and the criteria used to confirm the installed condition and its fragility. Methods such as photographs from the recent flooding walkdowns, review of plant drawings, and equivalency with other accessible equipment were used to determine the seismic fragility of these items. This to be acceptable for the purposes of this interim evaluation.</p> <p>Deviation(s) or Deficiency(ies), and Resolution:</p>

NTTF Recommendation 2.1 Expedited Seismic Evaluation Process

Technical Review Checklist for Davis-Besse Nuclear Power Station, Unit 1

No deviations or deficiencies were identified.	
The NRC staff concludes that the licensee: <ul style="list-style-type: none"> • listed inaccessible items • committed to provide the results (e.g. walkdowns, walkbys, etc.) of the remaining inaccessible items consistent with the guidance • substitutions, if needed, were appropriately justified 	Yes N/A Yes
VII. Modifications to Plant Equipment	
The licensee: <ul style="list-style-type: none"> • identified modifications for ESEL items necessary to achieve HCLPF values that bound the RLGM (excluding mitigative strategies equipment (FLEX)), as specified in the guidance • provided a schedule to implement such modifications (if any), consistent with the intent of the guidance • provided Regulatory Commitment to complete modifications • provided Regulatory Commitment to report completion of modifications. 	N/A N/A N/A N/A
Davis-Besse will: <ul style="list-style-type: none"> • complete modifications by: <u>N/A</u> • report completion of modifications by: <u>N/A</u> 	
Notes from the Reviewer: <ol style="list-style-type: none"> 1. The licensee does not plan to perform any modifications since all the components in the ESEL have a HCLPF greater than the RLGM (0.20g). 	
Deviation(s) or Deficiency(ies), and Resolution: No deviations or deficiencies were identified.	
The NRC staff concludes that the licensee: <ul style="list-style-type: none"> • identified plant modifications necessary to achieve the target seismic capacity • provided a schedule to implement the modifications (if any) consistent with the guidance 	N/A N/A

VIII. Conclusions:

The NRC staff assessed the licensee's implementation of the ESEP guidance. Due to the interim applicability of the ESEP evaluations, use of the information for another application would require a separate NRC review and approval. Based on its review, the NRC staff concludes that the licensee's implementation of the interim evaluation meets the intent of the guidance. The staff concludes that, through the implementation of the ESEP guidance, the licensee identified and evaluated the seismic capacity of certain key installed Mitigating Strategies equipment that is used for core cooling and containment functions to cope with scenarios that involve a loss of all AC power and loss of access to the ultimate heat sink to withstand a seismic event up to the Review Level Ground Motion (RLGM) and thus, provides additional assurance while the plant seismic risk evaluation is being conducted. In the case of Davis-Besse, in accordance as an option within the guidance and noted above, a GMRS was used as the RLGM, which is less than the SSE in some ranges. The application of this staff review is limited to the ESEP interim evaluation as part of NTTF R2.1: Seismic activities. As noted in the review checklist, the staff did not identify deviations or exceptions were taken from the guidance. The licensee did not identify any modifications of equipment was required from the ESEP.

NTTF Recommendation 2.1 Expedited Seismic Evaluation Process

Technical Review Checklist for Davis-Besse Nuclear Power Station, Unit 1

In summary, the licensee, by implementing the ESEP interim evaluation, has demonstrated additional assurance which supports continued plant safety while the longer-term seismic evaluation is completed to support regulatory decision making. The NRC staff concludes that the licensee responded appropriately to Enclosure 1, Item (6) of the 50.54(f) letter, dated March 12, 2012, for Davis-Besse Nuclear Power Station, Unit 1.

Principal Contributors: Malcolm Patterson, Dan Hoang, Tuan Le, David Heeszal, On Yee, Richard Rivera-Lugo, Richard Morante, (NRC Consultant)