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50-364

NL-13-2369

U. S. Nuclear Regulatory Commission  
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Rockville, MD 20852

Joseph M. Farley Nuclear Plant – Units 1 and 2  
Response to NRC Request for Additional Information Associated with  
Near Term Task Force Recommendation 2.3, Seismic Walkdowns

References:

1. NRC Letter, *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 Daiichi Accident*, dated March 12, 2012.
2. Southern Nuclear Operating Company Letter, *Seismic Recommendation 2.3 Walkdown Reports for the Joseph M. Farley Nuclear Plant* dated November 27, 2012 (Unit 1: NL-12-2266; Unit 2: NL-12-2267).
3. Southern Nuclear Operating Company Letter, *Seismic Recommendation 2.3 Updated Walkdown Report for the Joseph M. Farley Nuclear Plant* dated September 4, 2013 (Unit 2: NL-13-1555).
4. NRC Letter, *NRC Request for Additional Information Associated with Near Term Task Force Recommendation 2.3, Seismic Walkdowns*, dated November 1, 2013.

Ladies and Gentlemen:

On behalf of the Joseph M. Farley Nuclear Plant, Southern Nuclear Operating Company provides the Enclosures to this letter as the unit-specific responses to the request by the Nuclear Regulatory Commission for additional information regarding the seismic walkdowns (Reference 4).

This letter 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 of 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  
Director – Regulatory Affairs



CRP/OCV

Sworn to and subscribed before me this 25 day of November, 2013.

*Laura L. Crofton*  
Notary Public

My commission expires: 10/8/2017

Enclosure 1: RAI Responses for FNP-1  
Enclosure 2: RAI Responses for FNP-2

cc: Southern Nuclear Operating Company  
Mr. S. E. Kuczynski, Chairman, President & CEO  
Mr. D. G. Bost, Executive Vice President & Chief Nuclear Officer  
Mr. T. A. Lynch, Vice President – Farley  
Mr. B. J. Adams, Vice President – Fleet Operation  
Mr. B. L. Ivey, Vice President – Regulatory Affairs  
RTYPE: CFA04.054

U. S. Nuclear Regulatory Commission  
Mr. V. M. McCree, Regional Administrator  
Mr. G. E. Miller, NRR Project Manager - Farley  
Mr. P. K. Niebaum, Senior Resident - Farley  
Mr. J. R. Sowa, Senior Resident - Farley

Alabama Department of Public Health  
Dr. D. E. Williamson, State Health Officer

**Joseph M. Farley Nuclear Plant – Units 1 and 2  
Response to NRC Request for Additional Information Associated with  
Near Term Task Force Recommendation 2.3, Seismic Walkdowns**

**Enclosure 1**

**RAI Responses for the Joseph M. Farley Nuclear Plant – Unit 1**

**NRC RAI 1    **Conduct of the walkdowns, determination of potentially adverse seismic conditions (PASCs), dispositioning of issues, and reporting****

Please provide a description of the overall process used by the licensee (and its contractors) to evaluate observations identified in the field by the SWE. The process should include how a field observation was determined to be a PASC or not and how the bases for determinations were recorded. Once a determination was made that an observation was a PASC, describe the process for creating a condition report (or other tracking mechanism), performing the (LBE) (or other determination method), and the resultant action, such as entering it into the CAP, or documenting the result and basis.

**SNC Response to RAI 1 Part 1**

***From Section 7.0 of report (NL-12-2266)***

The walkdown teams performed the Seismic Walkdowns and Area Walk-bys with support from plant personnel (operators, electricians and engineering), as required, to access equipment and to assist in locating and identifying components. All Component Walkdowns and Area Walk-bys were documented on the Seismic Walkdown Checklists (SWC) and Area Walk-by Checklists (AWC), respectively. The final status of all SWCs and AWCs indicated one of the following statuses:

- “Y” – Yes, the equipment is free from potentially adverse seismic conditions,
- “N” – No, the equipment is not free from at least one potentially adverse seismic condition, or
- “U” – Undetermined, a portion(s) of the walkdown could not be completed due to equipment inaccessibility and the condition is not known.

The walkdowns focused on anchorage and seismic spatial interactions but also included inspections for other potentially adverse seismic conditions. Anchorage in all cases was considered to be anchorage to the structure. This included anchor bolts to concrete walls or floors, structural bolts to structural steel and welds to structural steel or embedded plates. For welds, the walkdown team looked for cracks and corrosion in the weld and base metal. Other bolts such as flange bolts on in-line components were not considered to be anchorage. These connections were evaluated and any potentially adverse seismic concerns were documented under “other adverse seismic conditions.”

As part of the walkdown, the anchorage of at least 50% of the anchored components was evaluated to verify if the anchorage was consistent with plant documentation. The document that provides the anchorage configuration was identified on the SWC and the anchorage in the field was compared to the information on this referenced document. In cases where the anchorage could not be observed (e. g. where the anchorage is inside a cabinet that could not be opened at the time of the walkdown), the items related to anchorage were marked as “U” (Undetermined) and deferred until the piece of equipment was available for inspection. However, all other possible inspections associated with that item were completed and the results were documented on the SWC. These items were considered to be incomplete at that time and deferred to a time when they would be available for inspection. All “U” items were completed by the end of Refueling Outage 1R25. Those results will be transmitted in the final report issued by February 24, 2014.

In cases where the Seismic Walkdown team members identified a potential adverse condition, the condition was noted on the SWC or on the AWC and a Condition Report (CR) was written to document and evaluate/resolve the condition. As part of the process of generating the CR, preliminary licensing basis evaluations were performed by the SWEs during the walkdowns. Additionally, detailed licensing basis reviews were conducted as part of the resolution of the CR, as required. Conditions that were not obviously acceptable were documented on the checklists and a basis was provided for why the observed condition was determined to be acceptable.

***From Section 8.1 of report (NL-12-2266)***

All potentially adverse conditions were conservatively entered into the site Corrective Action Program (CAP) per Southern Nuclear expectations in a timely fashion. While some preliminary licensing basis evaluations were performed by the SWEs as part of the generation of the CAP entries, the items did not first undergo a detailed seismic licensing basis review as described in EPRI Report 1025286. Consequently, the as-found conditions in Table 8-1 of the report (***NL-12-2266***) do not necessarily indicate that SSCs are deficient or not in conformance with their seismic licensing basis. Instead, it is an indication that Southern Nuclear has a very low threshold for CRs and actively uses the system.

SNC personnel familiar with the Plant Farley Seismic Licensing basis, Plant Farley seismic qualification methods and documentation, and Southern Nuclear requirements and procedures for entering items into the CAP, reviewed and dispositioned all of the potentially adverse seismic conditions as part of the CAP process. The subsections summarize the key findings from the CAP reviews that pertain to equipment operability, SSC conformance with the seismic licensing basis, and any required plant changes.

At the time of the Unit 1 report transmittal (***NL-12-2266***) in November 2012, a total of 11 Unit 1 Potentially Adverse Conditions were identified and entered into the Corrective Action Program. In addition, another 3 were entered that are Common to both Units 1 and 2. Table 8-1 of the report (***NL-12-2266***) provided additional details on the SSCs that were identified during the walkdowns and entered into the CAP as degraded, nonconforming, or unanalyzed relative to their seismic licensing basis.

**NRC RAI 1 Part 2**

In order to confirm that the reported information supports concluding that the plant meets the CLB, please follow one of the three acceptable alternatives.

...(c) If no new conditions are identified for addition to the supplement or the CAP entry mentioned above is deemed not necessary, provide a statement of confirmation that all potentially seismic adverse conditions (including conditions for which a calculation, analysis (if more than a simple analysis), or evaluation was used for a determination) identified during the walkdown and walk-bys were addressed and included in the report to the NRC.

### **SNC Response to RAI 1 Part 2 (using acceptable alternative c)**

As described in Section 8.1 of the Farley Unit 1 report (**NL-12-2266**), all potentially seismic adverse conditions identified during the walkdowns and walk-bys were addressed and included in the report to the NRC. Table 8-1 "Potentially Adverse Conditions" from the Farley Unit 1 report provides a listing of the CRs entered into the CAP system.

### **NRC RAI 2 Part 1      **Conduct of the Peer Review Process****

Please confirm whether the following information on the peer review process was provided in the original submittal, and if not, provide the following.

- a) Confirmation that the activities described in the walkdown guidance on page 6-1 were assessed as part of the peer review process.
- b) A complete summary of the peer review process and activities. Details should include confirmation that any individual involved in performing any given walkdown activity was not a peer reviewer for that same activity. If there were cases in which peer reviewers reviewed their own work, please justify how this is in accordance with the objectives of the peer review efforts.

### **SNC Response to NRC RAI 2 Part 1**

- (a) The Peer Review Activities as described on page 6-1 (of the EPRI Guidance document) were assessed as part of the peer review process.
- (b) For each of the areas described in the guidance on page 6-1, the names of the peer reviewers who performed the task are provided in Table 4-2. That table also lists Melanie Brown as the Peer Review Team Leader as well as indicating each activity in which each Peer Team Member participated (Lead, SWEL Reviewer, Walkdown Peer Reviewer, Licensing Basis Peer Reviewer, Submittal Report Peer Reviewer). Sections 4, 7, and 9 provide details about Peer Review involvement in each activity. No individual performing a given walkdown activity was a Peer Team Member for that same activity.

More detailed information can be found in the following portions of the report (**NL-12-2266**):

- Section 4.0 Personnel Qualifications
- Table 4-2 Peer Review Team Members and Responsibilities
- Section 7.0 Seismic Walkdowns and Area Walk-bys
- Section 9.0 Peer Review
- Attachment 1 – Seismic Walkdown Equipment Lists (*NOTE: the SWEL cover sheets show Peer Review signatures*)
- Attachment 2 – Peer Review Checklist for SWEL 1 and SWEL 2

Enclosure 1 to NL-13-2369  
RAI Response for FNP-1

**NRC RAI 2 Part 2**

If there are differences from the original submittal, please provide a description of the above information. If there are differences in the review areas or the manner in which the peer reviews were conducted, describe the actual process that was used.

**SNC Response to NRC RAI 2 Part 2**

There are no differences.

**Joseph M. Farley Nuclear Plant – Units 1 and 2**  
**Response to NRC Request for Additional Information Associated with**  
**Near Term Task Force Recommendation 2.3, Seismic Walkdowns**

**Enclosure 2**

**RAI Responses for the Joseph M. Farley Nuclear Plant – Unit 2**

**NRC RAI 1    **Conduct of the walkdowns, determination of potentially adverse seismic conditions (PASCs), dispositioning of issues, and reporting****

Please provide a description of the overall process used by the licensee (and its contractors) to evaluate observations identified in the field by the SWEs. The process should include how a field observation was determined to be a PASC or not and how the bases for determinations were recorded. Once a determination was made that an observation was a PASC, describe the process for creating a condition report (or other tracking mechanism), performing the LBE (or other determination method), and the resultant action, such as entering it into the CAP, or documenting the result and basis.

**SNC Response to RAI 1 Part 1**

***From Section 7.0 of report (NL-13-1555)***

The walkdown teams performed the Seismic Walkdowns and Area Walk-bys with support from plant personnel (operators, electricians and engineering), as required, to access equipment and to assist in locating and identifying components. All Component Walkdowns and Area Walk-bys were documented on the SWCs and AWCs, respectively. The final status of all SWCs and AWCs indicated one of the following statuses:

- “Y” – Yes, the equipment is free from potentially adverse seismic conditions,
- “N” – No, the equipment is not free from at least one potentially adverse seismic condition, or
- “U” – Undetermined, a portion(s) of the walkdown could not be completed due to equipment inaccessibility and the condition is not known.

The walkdowns focused on anchorage and seismic spatial interactions but also included inspections for other potentially adverse seismic conditions. Anchorage in all cases was considered to be anchorage to the structure. This included anchor bolts to concrete walls or floors, structural bolts to structural steel and welds to structural steel or embedded plates. For welds, the walkdown team looked for cracks and corrosion in the weld and base metal. Other bolts such as flange bolts on in-line components were not considered to be anchorage. These connections were evaluated and any potentially adverse seismic concerns were documented under “other adverse seismic conditions.”

As part of the walkdown, the anchorage of at least 50% of the anchored components were evaluated to verify if the anchorage was consistent with plant documentation. The document that provided the anchorage configuration was identified on the SWC and the anchorage in the field was compared to the information on this referenced document. Reference documents for anchorage verifications included plant drawings as well as Screening and Evaluation Worksheet (SEWS) packages created during IPEEE walkdowns of the plant. In some cases, equipment anchorages were verified to be in accordance with SEWS but it was also determined that some equipment had been modified or replaced since the completion of the walkdowns during which the SEWS were developed. Anchorage checks performed under these conditions duly verified that anchorage evaluations performed under the IPEEE program were still applicable, appropriate and adequate.

In cases where the anchorage could not be observed (e.g., where the anchorage was inside a cabinet that could not be opened except during an outage), the items related to anchorage were marked as "U" (Undetermined) and deferred until an outage when the piece of equipment would be available for inspection. However, as of the issuance of Version 2 of the report, all inspections have been completed and the results are documented on the SWCs.

In cases where the Seismic Walkdown team members identified a potential adverse condition, the condition was noted on the SWC or on the AWC and a Condition Report (CR) was written to document and evaluate/resolve the condition. As part of the process of generating the CR, preliminary licensing basis evaluations were performed by the SWEs during the walkdowns. Additionally, detailed licensing basis reviews were conducted as part of the resolution of the CR, as required. Conditions that were not obviously acceptable were documented on the checklists and a basis was provided for why the observed condition was determined to be acceptable.

***From Section 8.1 of the report (NL-13-1555)***

All potentially adverse conditions were conservatively entered into the Plant's Corrective Action Program (CAP) per Southern Nuclear expectations in a timely fashion. While some preliminary licensing basis evaluations were performed by the SWEs as part of the generation of the CAP entries, the items did not first undergo a detailed seismic licensing basis review as described in EPRI Report 1025286. Consequently, the as-found conditions in Table 8-1 of the report (***NL-13-1555***) do not necessarily indicate that SSCs are deficient or not in conformance with their seismic licensing basis. Instead, it is an indication that Southern Nuclear has a very low threshold for CRs and actively uses the system.

SNC personnel familiar with the Plant Farley Seismic Licensing basis, Plant Farley seismic qualification methods and documentation, and Southern Nuclear requirements and procedures for entering items into the CAP, reviewed and dispositioned all of the potentially adverse seismic conditions as part of the CAP process. The subsections summarize the key findings from the CAP reviews that pertain to equipment operability, SSC conformance with the seismic licensing basis, and any required plant changes.

During the course of the seismic walkdowns, a total of 12 Unit 2 Potentially Adverse Conditions were identified and entered into the Corrective Action Program. In addition, another 3 were entered that are Common to both Units 1 and 2. Table 8-1 of the report (***NL-13-1555***) provided additional details on the SSCs that were identified during the walkdowns and entered into the CAP as degraded, nonconforming, or unanalyzed relative to their seismic licensing basis.

**NRC RAI 1 Part 2**

In order to confirm that the reported information supports concluding that the plant meets the CLB, please follow one of the three acceptable alternatives.

...(c) If no new conditions are identified for addition to the supplement or the CAP entry mentioned above is deemed not necessary, provide a statement of confirmation that all potentially seismic adverse conditions (including conditions for which a calculation,

analysis (if more than a simple analysis), or evaluation was used for a determination) identified during the walkdown and walk-bys were addressed and included in the report to the NRC.

### **SNC Response to RAI 1 Part 2 (using acceptable alternative c)**

As described in Section 8.1 of the Farley Unit 2 report (**NL-13-1555**), all potentially seismic adverse conditions identified during the walkdowns and walk-bys were addressed and included in the report to the NRC. Table 8-1 "Potentially Adverse Conditions" from the Farley Unit 2 report provides a listing of the CRs entered into the CAP system.

### **NRC RAI 2 Part 1     Conduct of the Peer Review Process**

Please confirm whether the following information on the peer review process was provided in the original submittal, and if not, provide the following.

- a) Confirmation that the activities described in the walkdown guidance on page 6-1 were assessed as part of the peer review process.
- b) A complete summary of the peer review process and activities. Details should include confirmation that any individual involved in performing any given walkdown activity was not a peer reviewer for that same activity. If there were cases in which peer reviewers reviewed their own work, please justify how this is in accordance with the objectives of the peer review efforts.

### **SNC Response to NRC RAI 2 Part 1**

- (a) The Peer Review Activities as described on page 6-1 (of the EPRI Guidance document) were assessed as part of the peer review process.
- (b) For each of the areas described in the guidance on page 6-1, the names of the peer reviewers who performed the task are provided in Tables 4-2 and 4-3. Those tables also list Melanie Brown as the Peer Review Team Leader as well as indicating each activity in which each Peer Team Member participated (Lead, SWEL Reviewer, Walkdown Peer Reviewer, Licensing Basis Peer Reviewer, Submittal Report Peer Reviewer). Sections 4, 7, and 9 provide details about Peer Review involvement in each activity. No individual performing a given walkdown activity was a Peer Team Member for that same activity.

More detailed information can be found in the following portions of the reports (**NL-12-2267 and NL-13-1555**):

- Section 4.0 Personnel Qualifications (Report Version 1 **NL-12-2267** and Report Version 2 **NL-13-1555**)
- Table 4-2 Peer Review Team Members and Responsibilities (Report Version 1) (**NL-12-2267**)

Enclosure 2 to NL-13-2369  
RAI Response for FNP-2

- Table 4-3 Peer Review Team Members and Responsibilities (Report Version 2) **(NL-13-1555)**
- Section 7.0 Seismic Walkdowns and Area Walk-bys (Report Version 1 **NL-12-2267** and Report Version 2 **NL-13-1555**)
- Section 9.0 Peer Review (Report Version 1 **NL-12-2267** and Report Version 2 **NL-13-1555**)
- Attachment 1 – Seismic Walkdown Equipment Lists (Report Version 1 **NL-12-2267** and Report Version 2 **NL-13-1555**) (*NOTE: the SWEL cover sheets show Peer Review signatures*)
- Attachment 2 – Peer Review Checklist for SWEL 1 and SWEL 2 (Report Version 1 **NL-12-2267** and Report Version 2 **NL-13-1555**)

**NRC RAI 2 Part 2**

If there are differences from the original submittal, please provide a description of the above information. If there are differences in the review areas or the manner in which the peer reviews were conducted, describe the actual process that was used.

**SNC Response to NRC RAI 2 Part 2**

There are no differences.