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PNP 2013-084

November 22, 2013

U.S. Nuclear Regulatory Commission
ATTN: Document Control Desk
11555 Rockville Pike
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SUBJECT: Response to Request for Additional Information Pursuant to 10 CFR 50.54(f) Regarding the Seismic Hazard Walkdowns Conducted to Verify Current Plant Compliance with the Current Licensing Basis for Seismic Requirements

Palisades Nuclear Plant
Docket No. 50-255
License No. DPR-20

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 Dai-Ichi Accident*, dated March 12, 2012 (ADAMS Accession No. ML12053A340).
2. Electrical Power Research Institute (EPRI), *Seismic Walkdown Guidance For Resolution of Fukushima Near-Term Task Force Recommendation 2.3: Seismic*, EPRI Report 1025286, dated June 2012 (ADAMS Accession No. ML12188A031).
3. NRC letter, *Request for Additional Information Associated with Near-term Task Force Recommendation 2.3, Seismic Walkdowns*, dated November 1, 2013 (ADAMS Accession No. ML13304B418).
4. Entergy Nuclear Operations, Inc. letter, PNP 2012-102, *Seismic Walkdown Report – Response to NRC Request for Information Pursuant to 10 CFR 50.54(f) Regarding the Seismic Aspects of Recommendation 2.3 of the Near-Term Task Force Review of Insights from the Fukushima Dai-Ichi Accident*, dated November 27, 2012 (ADAMS Accession No. ML12334A093).

5. Internal NRC memorandum from Lisa M. Regner, Senior Project Manager, Projects Management Branch, Japan Lessons-Learned Project Directorate, Office of Nuclear Reactor, to Matthew A. Mitchell, Chief Projects Management Branch Japan Lessons-Learned Project Directorate, Office of Nuclear Reactor Regulation, *Summary of the September 12, 2013, Public Meeting to Discuss Implementation of Japan Lessons-Learned Near-Term Task Force Recommendation 2.3, Seismic Walkdowns*, dated October 4, 2013 (ADAMS Accession No. ML13266A424).
6. NRC letter, Endorsement of Electric Power Research Institute (EPRI) Draft Report 1025286, "Seismic Walkdown Guidance," dated May 31, 2012 (ADAMS Accession No. ML12145A529).

Dear Sir or Madam:

On March 12, 2012, the Nuclear Regulatory Commission (NRC) staff issued a letter requesting information per Title 10 to the *Code of Federal Regulations*, Section 50.54(f) (Reference 1). The letter requested licensees to conduct seismic hazard walkdowns to verify current plant configuration with the current licensing basis. The NRC endorsed (Reference 6) an Electric Power Research Institute (EPRI) guidance document that resulted from this effort (Reference 2) because the NRC staff determined that the use of the guidance would address the information requested in the 50.54(f) letter.

Entergy Nuclear Operations, Inc. (ENO) submitted the seismic walkdown report for Palisades Nuclear Plant (PNP) in Reference 4.

Following the staff's initial review of the walkdown reports, regulatory site audits were conducted at a sampling of plants. In internal NRC correspondence (Reference 5), the NRC summarized the public webinar conducted on September 12, 2013, and provided written questions identifying the areas where additional information could assist the NRC staff in completing their reviews of the walkdown reports. These questions were consolidated, and on November 1, 2013, a request for additional information (RAI) was issued by the NRC (Reference 3). The ENO response to the RAI is provided in the enclosed attachment. The attachment provides additional information not required by the original request for information (i.e., Reference 1) to assist the NRC staff in completing their review of the seismic hazard walkdowns conducted at PNP.

This letter contains no new regulatory commitments.

I declare under penalty of perjury that the foregoing is true and correct. Executed on November 22, 2013.

Sincerely,

ajv/jse

Attachment: Palisades Nuclear Plant Information Requested to Support the NRC Review of Seismic Walkdown Inspections

cc: Administrator, Region III, USNRC
Project Manager, Palisades, USNRC
Resident Inspector, Palisades, USNRC

Attachment to PNP 2013-084

Palisades Nuclear Plant

Information Requested to Support the

NRC Review of Seismic Walkdown Inspections

6 Pages Follow

Palisades Nuclear Plant
Information Requested to Support the
NRC Review of Seismic Walkdown Inspections

A follow-up request for additional information (RAI) was received from the Nuclear Regulatory Commission (NRC) on November 1, 2013. The Entergy Nuclear Operations, Inc. (ENO) response to the RAI for Palisades Nuclear Plant (PNP) is provided below.

NRC Request (November 1, 2013)

On March 12, 2012, the U.S. Nuclear Regulatory Commission (NRC) staff issued a letter requesting additional information per Title 10 of the Code of Federal Regulations, Section 50.54(f) (hereafter called the 50.54(f) letter). The 50.54(f) letter requested that licensees conduct seismic hazard walkdowns to verify the plant configuration with the current licensing basis (CLB). The licensees stated by letter that the seismic walkdowns would be performed in accordance with Electric Power Research Institute EPRI-1025286, "Seismic Walkdown Guidance for Resolution of Fukushima Near-Term Task Force Recommendation 2.3: Seismic" (walkdown guidance). Following the NRC staff's initial review of the walkdown reports, regulatory site audits were conducted at a sampling of plants. Based on the walkdown report reviews and site audits, the staff identified additional information necessary to allow the staff to complete its assessments.

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

As a result of the audits and walkdown report reviews, the NRC staff noted that licensees' interpretations of the seismic walkdown guidance varied, which resulted in meaningful differences in the process used to disposition identified issues and in the documentation that was provided to the NRC staff. In particular, the application of engineering judgment in determining what constituted a potentially adverse seismic condition (PASC), the threshold for conducting licensing basis evaluations (LBEs), and determining what information was to be reported to the NRC staff varied.

The NRC staff intended that conditions initially marked No (N) or Unknown (U) in the field by the seismic walkdown engineers (SWEs) for which an analysis or calculation was performed would be considered as PASCs and that an analysis or calculation constituted an LBE. The walkdown guidance allows for analysis as part of engineering judgment; however, the intent was to allow for only simple analyses that could be readily performed in support of engineering judgment. Further, the walkdown activities were intended to allow for transparency in the licensee's process to demonstrate that PASCs were appropriately identified, that they were addressed in an appropriate manner, and the basis documented such that the current condition of the plant was clearly consistent with the CLB with regard to seismic capability.

During the audits, the NRC staff identified examples of field observations that were deemed not to be PASCs. However, the basis for the determination was not clearly recorded. In some cases, the field checklists were amplified by noting that the basis was engineering judgment. During site audit discussions, the staff was able to trace the

basis for the engineering judgments and found that in many cases they were appropriate. It is expected that these situations would not be included in the walkdown report.

There were other situations that a PASC and LBE were not reported; however, the NRC staff found during the audit that a calculation, analysis (more than just simple), or evaluation was conducted but informally. An example is a confirmatory calculation performed to demonstrate that six anchor bolts out of eight was not a seismically adverse condition. Another example would be an analysis to demonstrate that an existing, slightly short weld was as seismically sound as the prescribed weld length in the plant design documentation. The staff expected these types of conditions and evaluations to be captured in the licensee's normal plant processes (e.g., condition report or corrective action program (CAP)), and also reported in the walkdown report, since they were potentially adverse seismic conditions that required more than applying judgment or simple analysis to address.

The NRC staff also found that the process that was used to deal with a field observation that was deemed to be a PASC was also not completely described or captured in the report. In many cases, the licensee reported that an LBE was not performed. However, during the audits, it was clear that an LBE (or an equivalent determination method) was performed and used in determining whether a PASC should be entered into the CAP. The staff expects that these conditions would be reported in the walkdown report.

On the whole, through the audits, the NRC staff found that it was able to conclude that the intent of the guidance was met when the licensee's overall process was completely explained, the information was updated to reflect the actual process, and results were updated. The self-assessments conducted by the licensees of the audited plants also identified the lapse in the description of the process used by the licensee to identify a PASC and disposition it.

Therefore, in order to clarify the process that was followed, 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.

Also, in order to confirm that the reported information supports concluding that the plant meets the CLB, please follow one of the following three acceptable alternatives:

(a) Provide a supplement to the table or text from the original walkdown report, if needed, to include similar conditions as the above examples and situations and for conditions for which a calculation, analysis (if more than a simple analysis), or evaluation was used for a determination. The supplement should include a short description of each condition, how it was dispositioned and the basis for the disposition, as follows: 1) for each condition that was entered into the CAP, provide the CAP reference number, initiation date, and (if known) the planned completion date, or 2) for all other conditions, provide the result of the LBE (or

other determination method), the basis for the result, and how (or where) the result was captured in the plant's documentation or existing plant process.

(b) Following the plant's standard procedures, confirm that a new CAP entry has been made to verify if appropriate actions were taken when reporting and dispositioning identified PASCs (including conditions for which a calculation, analysis (if more than a simple analysis), or evaluation was used for a determination). The eventual CAP closeout, including the process followed and actions taken, should be in sufficient detail to enable NRC resident inspectors to follow up.

(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 walkdowns and walk-bys were addressed and included in the report to the NRC.

ENO Response

On November 27, 2012, PNP documented in Reference 2 the results of the seismic walkdown effort undertaken for resolution of Near-Term Task Force (NTTF) Recommendation 2.3: Seismic, in accordance with the EPRI guidance, and provided the information necessary for responding to Enclosure 3 to the 50.54(f) letter. This industry guidance document, EPRI Report 1025286 (Reference 1), was formally endorsed by the NRC on May 31, 2012 (Reference 3). ENO committed to using this NRC-endorsed guidance as the basis for conducting and documenting seismic walkdowns for resolution of NTTF Recommendation 2.3: Seismic. ENO prepared a fleet procedure, EN-DC-168, "Fukushima Near-Term Task Force Recommendation 2.3 Seismic Walk-down Procedure," in strict accordance with the EPRI guidance for completing the walkdowns with uniform fleet results.

To supplement the site workforce in order to complete the walkdowns, ENO hired ENERCON Engineering to perform the walkdowns, with site assistance, and to oversee the PEER review process.

Seismic walkdowns were performed in accordance with Section 4 of the EPRI Guidance for all items on the SWEL (SWEL 1 plus SWEL 2), except for those items determined to be inaccessible and deferred (see Section 6.3 of the PNP Walkdown Report, Reference 2). To document the results of the walkdown, a Seismic Walkdown Checklist (SWC) with the same content as that included in Appendix C of the EPRI guidance was created for each item. Additionally, where permitted by plant operations, photographs were taken of each item and included in the corresponding final revision of the SWC.

During the course of the seismic walkdowns and area walk-bys, the objective of the SWE teams was to identify existing degraded, non-conforming, or unanalyzed plant conditions with respect to its current seismic licensing basis.

When an unusual condition was observed by a SWE team in the field, the condition was noted on the SWC or Area Walk-By Checklist (AWC) form and briefly discussed

between the two SWEs to agree upon whether it was a potentially adverse seismic condition. These initial conclusions were based on conservative engineering judgment and the training required for SWE qualification. The walkdown sheets were annotated where appropriate with supporting references or justifications for the basis of acceptance. The walkdown sheets included explanations on why some field conditions were not identified as PASC if they were addressed previously or documented by another process (i.e., Seismic Qualification Utility Group (SQUG) walkdowns, modification, or previous condition report). For conditions that were reasonably judged as insignificant to seismic response, the disposition was included on the SWC or AWC checklist and the appropriate question was marked "Y", indicating that no associated potentially adverse seismic condition was observed. Unusual or uncertain conditions that were not seismically significant were reported to site personnel for further resolution through the corrective action program (CAP) (see Section 8.2 of Reference 2). These conditions are not tracked or reported as part of the NTTF 2.3 Seismic Walkdown program, except by noting the condition report numbers generated on the applicable SWCs and AWCs.

For conditions that were judged as potentially significant to seismic response, the condition was photographed, and the appropriate question on the SWC or AWC was marked "N", indicating that a potentially adverse seismic condition was observed. The condition was then immediately reported to site personnel for further resolution and was documented for reporting in Attachment E of Reference 2. These conditions were generally related to housekeeping, non-conforming anchorage, or spatial interaction.

Conditions observed during the seismic walkdowns and area walk-bys determined to be potentially adverse seismic conditions were summarized in Attachment E of Reference 2, including how each condition has been addressed and its current status as of the Report submittal. Each potentially adverse seismic condition is addressed either with a licensing basis evaluation (LBE) to determine whether it requires entry into the CAP, or by entering it into the CAP directly. The decision to conduct a LBE or enter the condition directly into the CAP was made on a case-by-case basis, based on the perceived efficiency of each process for eventual resolution of each specific condition.

After review of the ENO report (Reference 2), ENO confirms that the reported information supports the conclusion that the plant meets its CLB in accordance with alternative (c) listed in the RAI question 1. No new conditions are identified for all of the potentially seismic adverse conditions identified during the walkdowns and walk-bys. All items were addressed and included in the walkdown report (Reference 2).

RAI-2 Conduct of the Peer Review Process

As a result of the walkdown report reviews, the NRC staff noted that some descriptions of the peer reviewers and the peer review process that was followed were varied and, in some cases, unclear. In some cases, the staff could not confirm details of the process, such as if the entire process was reviewed by the peer review team, who were the peer reviewers, what was the role of each peer reviewer, and how the reviews affected the work, if at all, described in the walkdown guidance.

Therefore, in order to clarify the peer review process that was actually used, 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.

Also, 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.

ENO Response

The peer review for the NTTF Recommendation 2.3 Seismic Walkdowns was performed in accordance with Section 6 of the EPRI guidance. The PEER Review Team Lead and SWEL Peer Reviewer were supplied by ENERCON Engineering and were not part of the walkdown teams. The peer review included an evaluation of the following activities:

- review of the selection of the structures, systems, and components that are included in the Seismic Walkdown Equipment List (SWEL);
- review of a sample of the checklists prepared for the seismic walkdowns and area walk-bys;
- sample in-field observations
- review of licensing basis evaluations and decisions for entering the potentially adverse conditions in to the plant's corrective action program; and
- review of the final submittal report.

At least two members of the peer review team (see Table 4-2 of Reference 2) were involved in the peer review of each activity, the team member with the most relevant knowledge and experience taking the lead for that particular activity. A designated overall Peer Review Team Leader provided oversight related to the process and technical aspects of the peer review, paying special attention to the interface between peer review activities involving different members of the peer review team.

A more detailed description of the PEER review is described in Section 9.0 and documented in Attachments G and J of the submitted report (Reference 2).

References

1. Electrical Power Research Institute (EPRI), *Seismic Walkdown Guidance, For Resolution of Fukushima Near-Term Task Force Recommendation 2.3: Seismic*, EPRI Report 1025286, dated June 2012, (ML12188A031).

2. ENO letter, PNP 2012-102, *Seismic Walkdown Report – Entergy's Response to NRC Request for Information Pursuant to 10 CFR 50.54(f) Regarding the Seismic Aspects of Recommendation 2.3 of the Near-Term Task Force Review of Insights from the Fukushima Dai-Ichi Accident*, dated November 27, 2012 (ADAMS Accession No. ML12334A093).

3. NRC letter, Endorsement of Electric Power Research Institute (EPRI) Draft Report 1025286, "Seismic Walkdown Guidance," dated May 31, 2012 (ADAMS Accession No. ML12145A529).