

VIRGINIA ELECTRIC AND POWER COMPANY  
RICHMOND, VIRGINIA 23261

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U.S. Nuclear Regulatory Commission  
Attention: Document Control Desk  
Washington, DC 20555

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**VIRGINIA ELECTRIC AND POWER COMPANY**  
**SURRY POWER STATION UNITS 1 AND 2**  
**RESPONSE TO REQUEST FOR ADDITIONAL INFORMATION**  
**REGARDING SEISMIC ASPECTS OF RECOMMENDATION 2.3**

On March 12, 2012, the Nuclear Regulatory Commission (NRC) issued "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" to all power reactor licensees and holders of construction permits in active or deferred status. Seismic Recommendation 2.3 requires licensees to conduct seismic walkdowns at their plants to identify and address plant specific degraded, nonconforming, or unanalyzed conditions such that the nuclear power plant can respond to external events.

In a letter dated May 31, 2012, the NRC endorsed EPRI 1025286, "Seismic Walkdown Guidance: For Resolution of Fukushima Near-Term Task Force Recommendation 2.3: Seismic," which Virginia Electric and Power Company (Dominion) used to conduct its seismic walkdowns for Surry Power Station (Surry) Units 1 and 2. In a letter dated November 27, 2012 (SN 12-208H), Dominion submitted the walkdown report in response to Seismic Recommendation 2.3 for Surry Units 1 and 2.

In a letter dated November 1, 2013, the NRC generically requested additional information related to the seismic walkdown reports submitted by power reactor licensees. Dominion's response to the request for additional information with respect to the Surry Units 1 and 2 seismic walkdown report is provided in the attachment.

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**ATTACHMENT**

**SURRY SEISMIC WALKDOWN SUMMARY REPORT  
RESPONSE TO REQUEST FOR ADDITIONAL INFORMATION**

**VIRGINIA ELECTRIC AND POWER COMPANY (DOMINION)  
SURRY POWER STATION UNITS 1 AND 2**

## **NRC Request for Additional Information**

*On March 12, 2012, the Nuclear Regulatory Commission (NRC) staff issued a letter requesting additional information per Title 10 to the Code of Federal Regulations, Section 50.54(f) (hereafter called the 50.54(f) letter). The 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.*

### **NRC Question 1**

#### **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.*

## **Dominion Response**

In response to U.S. Nuclear Regulatory Commission (NRC) letter dated March 12, 2012 requesting information pursuant to 10 CFR 50.54(f) related to the Fukushima Near Term Task Force (NTTF) recommendations, Dominion submitted the results of NTTF Recommendation 2.3 Seismic Walkdowns performed at the Surry Power Station (SPS) in a letter dated November 27, 2012 (SN 12-208H).

Dominion followed the NRC-endorsed guidance contained in EPRI Report No. 1025286, *Seismic Walkdown Guidance for Resolution of Fukushima Near-Term Task Force Recommendation 2.3: Seismic*, to perform the walkdowns and develop the Seismic Walkdown Summary Report. Walkdown observations that could not be judged to be non-significant or non-seismic during the walkdown, and were not found to be previously evaluated as acceptable conditions through follow-up review of plant documentation, were identified as potentially adverse seismic conditions and were documented as Condition Reports (CRs) in the SPS corrective action program (CAP). Evaluation of the condition was documented within the CAP. Walkdown observations that were determined to be previously evaluated as acceptable were documented on the walkdown checklist, but not identified as potentially adverse seismic conditions. As stated in the Seismic Walkdown Summary Report, no significant issues that challenged the SPS seismic licensing or design basis were identified as a result of the walkdowns.

Seismic Walkdown Summary Report, Tables 4-1 and 4-2, list potentially adverse seismic conditions identified during the completed seismic walkdowns and area walk-bys for SPS Units 1 and 2, respectively. As stated in the report, the items listed in Tables 4-1 and 4-2 were submitted as CRs in the station CAP. Tables 4-1 and 4-2 summarize the potentially adverse seismic conditions, describe how the condition has been addressed, and provide the status of the resolution. Therefore, item 1. (c) of the request for additional information is applicable. Dominion confirms that potential adverse seismic conditions identified during the walkdowns and walk-bys were addressed and included in the November report to the NRC.

Additionally, a low threshold was used to identify and document potential adverse conditions. In addition to items listed in Tables 4-1 and 4-2, non-seismic related potentially adverse conditions, such as various housekeeping and material condition items, were identified by the walkdown teams and addressed through the CAP.

## **NRC Question 2**

### **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.*

### **Dominion Response:**

The Seismic Walkdown Summary Report, Section 7, Peer Review Summary, provides a complete summary description of the peer review performed for the SPS seismic walkdowns.

The Peer Review Team assessed each of the areas described in EPRI 1025286 Section 6 (page 6-1). The peer review team was not involved in the performance of the seismic walkdowns or area walk-bys or the associated checklists preparation, or the evaluation of potentially adverse seismic conditions. The peer review team lead was involved with the development of the seismic walkdown equipment list (SWEL) and the preparation of the Seismic Walkdown Summary Report; however, the other peer review team member was independent of the SWEL and report preparation. In addition, the SWEL and the Seismic Walkdown Summary Report were each prepared as Engineering Technical Evaluations in accordance with the Dominion Design Control Process, which involves peer review and subject matter expert reviews. Therefore, the SWEL preparation and the report reviews that were performed meet or exceed the intent of the peer review described in EPRI 1025286 Section 6.