April 10, 2012
Revision 1

Summary of NRC Comments and Industry Responses During Public Meeting Held April 3, 2012

An NRC public meeting was held on April 3, 2012, in San Mateo, CA, to discuss the industry's planned response to the NRC 50.54(f) letter sent to all licensees for addressing the requirements associated with the Fukushima Near-Term Task Force (NTTF) Recommendation 2.3: Seismic. A draft of the industry's planned response was submitted to the NRC on March 26, 2012, in a draft Outline of Seismic Walkdown Requirements. The intent the Outline is to provide an abbreviated description of the approach and criteria to be used for developing the Seismic Walkdown Procedure for use by licensees to conduct the NTTF 2.3 seismic walkdown and evaluation.

The principal purpose for the public meeting was to have the NRC Staff provide industry with their initial reaction to the draft Outline. The meeting was also used to give the NRC Staff an opportunity to ask questions and obtain a better understanding of the basis for the approach and criteria described in the Outline.

A summary of the principal comments made by the NRC Staff is listed below along with the industry's response to these comments. These comments and responses are not verbatim statements made during the meeting, but are intended to reflect the intent of the comments and responses. Based on these comments and responses, proposed changes to the approach or additions to be included in the Seismic Walkdown Procedure are identified.

1. Use of IPEEE: The Staff asked for an explanation of the basis for using IPEEE as the basis for selecting equipment for the NTTF 2.3 seismic walkdown. Specifically, they stated that it was not clear why such a subset of the seismic Category I structures, systems, and components (SSCs) in a nuclear power plant is appropriate.

   Response: There was a lot of discussion on this topic both by the NRC Staff and the industry representatives. A synopsis of the principal points discussed is summarized below.

   Selecting a sample of the seismic Category I SSCs from the mechanical and electrical equipment walked down during the IPEEE program is based on (1) the importance of the SSCs to plant safety and (2) the performance of the SSCs during past large earthquakes.

   The approach described in the Outline is analogous to the approach taken by the NRC Staff during Component Design Basis Inspection (CDBI) in that the focus is on risk-significant SSCs.

   Earthquake and testing experience has shown that certain types of SSCs are less likely to suffer malfunction and failure during earthquakes than others. Mechanical

and electrical equipment are more risk-significant, particularly their anchorage, than structures, piping, and nuclear steam supply system equipment.

Proposed Change: No change is planned to the approach described in the Outline. However, additional discussion of this topic will be included in the Seismic Walkdown Procedure.

2. Schedule for Completing NTTF 2.3: Seismic: The Staff asked for an approximate timeline to perform the NTTF 2.3 seismic walkdown and evaluation.

   Response: An approximate timeline to complete the NTTF 2.3 seismic walkdown and evaluation during the 6 months allotted in the 50.54(f) letter is shown in Table 1.

Table 1. Approximate Duration of Activities During Implementation of NTTF 2.3: Seismic

Activity	Approximate Duration (months)
1.a. Identify scope of equipment to be walked down 1.b. SWEs attend NTTF 2.3 Walkdown Training Course	1.5
2. Conduct plant walkdowns of sample of equipment	1
3. Address equipment identified as requiring further evaluation	1.5
4. Prepare draft submittal report	1
5. Utility internal review and acceptance of submittal report	1
Total Duration	**6**

   Proposed Change: No change is planned to the approach described in the Outline.

3. Containment Function: The Staff noted that the IPEEE scope of equipment does not include equipment associated with the containment function, specifically penetration seals.

   Response: The containment function is regularly inspected in accordance with the ASME Code Section XI IWE and 10CFR50, Appendix J. Also, environmental effects are covered by the Maintenance Rule. NRC agreed with this, but requested that it be discussed in the guidance. Therefore, it is not necessary to include the containment in the scope of the NTTF 2.3 seismic walkdowns.

   Proposed Change: The Seismic Walkdown Procedure will provide an explanation of why it is not necessary to include containment features in the scope of the NTTF 2.3 seismic walkdowns.

4. Inaccessible Equipment: The Staff asked how inaccessible equipment would be handled and whether such equipment would be evaluated later when it becomes accessible.

   Response: The goal of the program is to complete the entire project and submit a definitive report within the 180-day timeframe defined in the 50.54(f) letter. Since not all equipment would be accessible in a given 180-day window, the plan is to include only equipment that is readily accessible for inspection. Similarly, as described in Section 3.a.ii of the Outline, if during the walkdown an item of equipment or its anchorage cannot be evaluated due to plant operating conditions, then an alternative, similar item of equipment can be evaluated instead. If a suitable alternative cannot be identified, then that conclusion will be reported and no further evaluations are necessary, provided such occurrences do not exceed 20% of the sample.

   Proposed Change: The Seismic Walkdown Procedure will expand the guidance and explanation above regarding inaccessible equipment.

5. Masonry Block Walls: The Staff asked whether the seismic adequacy of block walls will be assessed.

   Response: The scope of review during the walkdown will include as assessment of the potential for structures, systems, and component located near the item of equipment to pose an adverse seismic interaction hazard. This seismic interaction review will include an evaluation of masonry block walls in the vicinity of the equipment.

   Proposed Change: The Seismic Walkdown Procedure will provide an explanation of the types of seismic interactions to be identified for possible additional evaluations and reviews.

6. Quality of IPEEE Program: The Staff noted that the quality of some of the IPEEE submittals they had received may not be suitable for verifying that equipment meets its plant licensing basis requirements as a part of the NTTF 2.3 seismic walkdown.

   Response: The approach described in the Outline does not rely upon the results of the IPEEE program for verifying that equipment meets its plant licensing basis requirements. Instead, the NTTF 2.3 seismic walkdown relies only upon the list of equipment that was walked down during the IPEEE program as the starting point for selecting a sample of the equipment needed to bring a NPP to a safe shutdown condition.

   Proposed Change: No change is planned to the approach described in the Outline.

7. Operations Personnel: The Staff noted that in Section 1.b.ii of the Outline, plant operators are mentioned as providing support to the two Seismic Walkdown Engineers (SWEs) only "as needed". They indicated that there is some evidence that the licensees who made

significant use of plant operators during implementation of the IPEEE program produced higher quality results.

Response: Plant operators were key personnel in selecting the scope of equipment to be evaluated during the IPEEE program. The NTTF 2.3 seismic walkdowns will be obtaining assistance from operations personnel, as appropriate. In some cases, the engineers performing the seismic walkdown will have sufficient systems and operational experience to resolve questions related to equipment function and its interactions with other SSCs in the vicinity. In other cases, the seismic walkdown engineers would be expected to request support from operators or system engineers.

Proposed Change: No change is planned to the approach described in the Outline.

8. Peer Reviewers: The Staff noted that peer reviewers are required in the 50.54(f) letter for NTTF 2.3: Seismic. However, the Outline does not specifically address peer review requirements.

Response: The approach described in the Outline includes use of two SWEs who are expected to conduct the seismic walkdown together and come to full agreement with each other before reporting the results of their review. This effectively addresses the 50.54(f) requirement for a peer review of the seismic walkdown and evaluation. In this case, the peer review function is performed at the same time and equally by the two independent SWEs during the walkdown and subsequent evaluations of the equipment to assess whether the equipment meets the plant seismic licensing basis requirements. As the Staff noted during the discussion, this is a "participatory peer review."

Proposed Change: The Seismic Walkdown Procedure will provide more discussion and description of how this participatory peer review is accomplished during the walkdown.

9. IPEEE Equipment List for Plants with SPRAs: The Staff noted that the Outline does not provide details for identifying the IPEEE equipment lists for those plants that performed seismic probabilistic risk assessments (SPRAs).

Response: NUREG-1407 requires plant walkdowns to be conducted as one of the enhancements to SPRAs for the IPEEE program "to find as-designed, as-built, and as-operated seismic weaknesses in the plants" (see Sections 3.1.1.4.1 and 3.1.2.1). Although specific guidance is not provided in NUREG-1407 for how to select the equipment to be walked down for SPRAs, additional guidance will be provided in the Seismic Walkdown Procedure being developed for the NTTF 2.3 seismic walkdown and evaluation.

Proposed Change: The Seismic Walkdown Procedure will provide additional guidance on how to select equipment for plants that performed SPRAs for IPEEE.

10. Sampling Methods: The Staff noted that details are not provided in the Outline describing how to select the 100 item sample of the IPEEE walkdown equipment.

    Response: A rigorous statistical sampling process is not necessary, nor intended, for the selection of the sample of equipment to be walked down. Nevertheless, the Seismic Walkdown Procedure will provide additional guidance for selecting the sample of equipment to be walked down.

    Proposed Change: The Seismic Walkdown Procedure will include additional guidance on how the sample of equipment to be walked down should be selected.

11. Extent of Condition: The Staff noted that the Outline does not describe how the sample will be expanded if anomalies are identified during the walkdown and subsequent licensing basis review.

    Response: The focus of the NTTF 2.3 seismic walkdown and evaluation is to confirm that seismic licensing basis requirements are met. If a deviation from the licensing basis is identified, it will be addressed by the plant's Corrective Action Program (CAP), which would include an extent of condition review for the confirmed deficiency. Therefore, it is not necessary for the NTTF 2.3 seismic walkdown program to duplicate the existing plant processes for scope expansion included in the plant CAP.

    Proposed Change: The Seismic Walkdown Procedure will include a discussion of the evaluation of licensing basis deficiencies and the expectation that an extent of condition evaluation will be performed as a part of the plant's CAP, if that equipment does not meet the plant seismic licensing basis.

12. Definition of "Degraded Condition": The Staff noted that several terms, such as "degraded condition", are not clearly defined in the Outline. Without a clear definition of such terms, it will difficult for the licensees and the Staff to assess whether the intent of the evaluations are met.

    Response: Appropriate definition of terms will be included the Seismic Walkdown Procedure. However, the Procedure will not include specific criteria against which to judge the adequacy of the installed equipment against the plant seismic licensing basis. The definitive criteria for making such assessments are plant specific and will be the basis for determining whether equipment meets the plant's seismic licensing basis.

    Nevertheless, the Seismic Walkdown Procedure will provide guidelines for identifying features that have been found to cause equipment to be vulnerable to malfunction or failure during a seismic event. Similarly, the Seismic Walkdown Training Course to be given to SWEs will include additional examples of seismically vulnerable features.

Note, however, that identifying potentially seismically vulnerable conditions during the seismic walkdown serves only as a screening tool for additional licensing basis assessments. The seismic walkdown will identify those items of equipment for which detailed evaluations are to be performed to assess whether such equipment meets the plant seismic licensing basis.

Proposed Change: The Seismic Walkdown Procedure will provide a description of potentially degraded conditions and include examples from EPRI reports and the SQUG earthquake experience database.

13. Nearby Scope of Equipment: The Staff noted that Section 3.c of the Outline includes a description of the types of seismic interaction reviews to be performed. However, the Outline, Section 2, Identify Scope of Equipment, does not discuss the fact that equipment in the vicinity of the equipment being walked down will be assessed for potentially adverse seismic interactions.

    Response: The Seismic Walkdown Procedure will make it clear that the scope of equipment being evaluated during the seismic walkdown will include an evaluation of potential adverse seismic interactions from structures, systems, and components located near the equipment being walked down.

    Proposed Change: The Seismic Walkdown Procedure will include additional discussion of the scope of review to include potential adverse seismic interactions.

14. Makeup Water for SFP: The Staff noted that the Outline does not specifically address the equipment that is designed to provide makeup water to the spent fuel pool (SFP).

    Response: The 50.54(f) letter requests confirmation that the seismic licensing basis is met. However, for most plants the SFP water makeup water system does not have seismic licensing basis commitments. Therefore, the NTTF 2.3 seismic walkdowns is focused on evaluating those systems and equipment that could allow the SFP to rapidly drain.

    Proposed Change: No change is planned to the approach described in the Outline.

15. IPEEE Commitments: The Staff noted that the Outline, Section 2.b, requires the scope of equipment to be evaluated will include those changes made to the plant as a result of the commitments made by the licensee in response to the IPEEE program. However, the Outline, Section 5, Submittal Report, does not require the results of the review of such improvements to be reported.

    Response: The Seismic Walkdown Procedure will include a requirement to describe the results of the changes made to the plant based on the commitments that had been made during the IPEEE program.

Proposed Change: The Seismic Walkdown Procedure will include additional guidance for reporting to the NRC the results of commitments made to SSCs as a result of the IPEEE program.

16. Overall Approach: The Staff indicated that the overall approach and guidelines described in the Outline provide a reasonable basis for addressing the requirements in the 50.54(f) letter for NTTF Recommendation 2.3: Seismic, subject to clarifying certain topics and providing additional details.

    Response: Based on this overall assessment, the industry agreed to use the Outline as the guide for developing the Seismic Walkdown Procedure, which will include additional details of the methods and criteria for conducting the NTTF 2.3 seismic walkdowns and evaluations.