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Comments on Draft Interim Staff Guidance DC/COL –ISG-20 Docket NRC-2009-0457

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The NRC staff should be congratulated for developing this precise set of guidelines on PRA based seismic margin assessment. This is needed to assure consistency in the application over the various DC/COL applications.

I have a few general comments and some edits.

General:

1. For systems analysis and fragility analysis, the guidance is to follow the supporting requirements of ASME/ANS RA-Sa-2009 Part 5 Capability Category I. Most of the supporting requirements in this standard are the same for Capability Categories I and II (except SFR-A2, SFR-F3, SPR –B6, SPR –B9, SPR-E2 and SPR-E5). Since the industry is targeting to meet Capability Category II requirements for existing nuclear power plants, the basis for accepting a lower category for new reactors should be substantiated. Alternatively, the Capability Category II requirements are to be met with a few exceptions noted because plant-specific data is not available at the DC/COL stage.
2. The “min-max” method for calculating the sequence level HCLPF is permitted (page 6). The definition of the terminology is not clear. Does the method pertain to combining the fragilities of components in OR or AND gates or to estimating the HCLPF capacities? The latter approach (see NUREG/CR-4482 by Prassinis, Ravindra and Savy, 1986) has been used in a number of DC applications and it is a deterministic way of calculating the sequence level HCLPF capacity. However, the method cannot satisfactorily handle random failures and operator actions which are to be considered in a PRA based SMA per ISG-20. More specific guidance on this topic is needed.
3. In Sec. 5.1.4 Second Paragraph it is stated that “(3) demonstrate that the design-specific plant-level HCLPF capacity is maintained at the COL stage”. Is this capacity anchored to CSDRS or GMRS?
4. In page 3 it is required that the scope include all plant operating modes (i.e., full power, low power and shutdown). Have the DCs issued or on application done this?
5. Sec. 5.1.2 states “In this procedure, consistent with Ref. 13 of the above EPRI guidance document, the TRS should be specified at the 99-percent confidence level to account for uncertainties in tests”. This requirement is not specifically mentioned in the referenced document. It requires a probabilistic seismic response analysis of the structures to derive the 99-percent confidence floor spectra. Is it feasible at the DC stage?

Editorial:

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1. On Page 2 "Min-Max" method is defined; on Page 6, use of "max-min" method is permitted
2. Sec. 5.2.2 Second Paragraph Second Sentence "In addition....." is not clear.
3. Is the EPRI Seismic Fragility Application Guide (EPRI 1002988) generally available to the public or is it restricted to EPRI members?