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October 10, 2012

Ms. Cindy Bladey, Chief  
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Subject: Comments Concerning Draft Interim Staff Guidance JLD-ISG-2012-04,  
"Guidance on Performing a Seismic Margin Assessment in Response to the  
March 2012 Request for Information Letter" (77FR55510, dated September 10,  
2012, Docket ID NRC-2012-0209)

This letter is being submitted in response to the U.S. Nuclear Regulatory Commission (NRC) request for comments concerning the draft Interim Staff Guidance (ISG) JLD-ISG-2012-04, "Guidance on Performing a Seismic Margin Assessment in Response to the March 2012 Request for Information Letter," published in the *Federal Register* (i.e., 77FR55510, dated September 10, 2012).

The NRC is providing this draft ISG as supplemental guidance to licensees on an acceptable method for performing a Seismic Margin Assessment (SMA) as referred to in the March 12, 2012, letter entitled, "Request for Information Pursuant to Title 10 of the Code of Federal Regulations 50.54(f) Regarding Recommendation 2.1, 2.3, and 9.3, of the Near-Term Task Force Review of Insights from the Fukushima Dai-ichi Accident." The draft ISG presents NRC positions on enhancements to the major elements of the NRC SMA and provides updated references to allow the use of recent advances in both methods and guidance, including guidance in the American Society of Mechanical Engineers/American Nuclear Society, "Standard for Level 1/Large Early Release Frequency Probabilistic Risk Assessment for Nuclear Power Plant Applications", Standard ASME/ANS RA-Sa-2009, and the Screening, Prioritization, and Implementation Document (SPID) currently under development by industry for NRC endorsement.

Exelon appreciates the opportunity to comment on this draft ISG and offers the attached comments for consideration by the NRC. In addition, Exelon supports the comments submitted by the Nuclear Energy Institute (NEI) on behalf of the industry regarding this subject.

SUNSI Review Complete

Template = ADM-013

E-RIDS = ADM-03

Add = C. Gratton  
(ex91)

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If you have any questions or require additional information, please do not hesitate to contact Richard Gropp at (610) 765-5557.

Respectfully,

A handwritten signature in black ink, appearing to read "D. P. Helker". The signature is written in a cursive, flowing style.

David P. Helker  
Manager - Licensing  
Exelon Generation Company, LLC

Comments Concerning Draft Interim Staff Guidance JLD-ISG-2012-04

ISG Section/ Paragraph/Sentence	Comment	Proposed Resolution
Purpose / 2 <sup>nd</sup> Paragraph	The draft ISG references the Screening, Prioritization, and Implementation Document (SPID) currently under development by the industry for NRC endorsement, and explains in footnote 1 that: <i>"The SPID is expected to be finalized before the issuance of the final ISG and the ISG document may be updated if necessary (August 21, 2012 version of the SPID is available at ML12236A362). Public interactions between the NRC and industry on the development of the SPID are ongoing and will continue up to the issuance of the SPID later this year."</i> Exelon believes that this could be considered an open item for the ISG, and additional industry review will be needed when the SPID and ISG are revised.	Exelon recommends that the NRC allow sufficient time after finalization of the SPID and associated changes to the ISG to allow for additional public comment on the revised ISG.
Purpose / 2 <sup>nd</sup> Paragraph	The draft ISG states: <i>"This ISG presents staff positions on enhancements to the major elements of the NRC SMA and provides updated references to allow the use of recent advances in both methods and guidance, including guidance in the American Society of Mechanical Engineers/American Nuclear Society, 'Standard for Level 1/Large Early Release Frequency Probabilistic Risk Assessment for Nuclear Power Plant Applications,' Standard ASME/ANS RA-Sa-2009,...."</i> RA-Sa-2009 does not reflect recent revisions approved by the ASME/ANS PRA Standards committee (designated as "Addendum B" of the PRA Standard and nearing the end of the consensus approval and publications process) to Part 10 (Seismic Margin Assessment (SMA)) and Part 5 (Seismic PRA, which is referenced by Part 10) of the Standard. Exelon believes that this might add some confusion for NRC reviewers if a licensee refers to Addendum B in its submittal of an SMA.	If the PRA Standard is to be referenced in this ISG, Exelon recommends that additional clarification be provided regarding how the NRC will consider submittals referencing Addendum A (i.e., RA-Sa-2009) vs. Addendum B (i.e., RA-Sb-201x) of the PRA Standard.  The NRC has indicated that Addendum B will <u>not</u> be endorsed via a revision to Regulatory Guide 1.200, <i>"An Approach for Determining the Technical Adequacy of Probabilistic Risk Assessment Results for Risk-Informed Activities."</i> Therefore, Exelon recommends that Addendum A be used as a basis for development and review of the proposed SMA method in this ISG.

Comments Concerning Draft Interim Staff Guidance JLD-ISG-2012-04

ISG Section/ Paragraph/Sentence	Comment	Proposed Resolution
Introduction / Last 2 paragraphs on Page 2	The draft ISG states: <i>"In principle, the full PRA-based SMA can be used; however, DC/COL-ISG-020 is structured for use in the licensing of new reactors. In addition, DC/COL-ISG-020 does not address some specific considerations that are pertinent to the 50.54(f) request."</i> The implication is that, because the NRC has not issued guidance for addressing the post-Fukushima issues with the full PRA-based SMA approach in the new reactors ISG (i.e., DC/COL-ISG-020); this approach should not be used for current plants. Exelon believes that the enhancements to the NRC SMA methodology (e.g., as described in Section 3.4 of the Attachment to the draft ISG) should also be largely applicable to the PRA-based SMA approach. However, this option does not seem to be sufficiently addressed other than the statement that use of the NRC SMA methodology is expected.	The draft ISG title clearly states that this document deals with the NRC SMA approach. However, Exelon recommends that the NRC provide further explanation regarding why the full PRA-based SMA approach, modified to address the post-Fukushima enhancements noted in the Attachment, would not be equivalent / acceptable. Further, Exelon suggests that the NRC provide further clarification whether other approaches that address the noted post-Fukushima SMA enhancements will be considered as responsive to the 50.54(f) request.
Introduction / Second to last paragraph on page 2; and Attachment Section 3.1	The draft ISG "Introduction" discusses three SMA methods (i.e., PRA-based SMA, NRC SMA, EPRI SMA), but Attachment Section 3.1, in comparing and contrasting attributes of methods, deals only with the NRC SMA and EPRI SMA. (The discussion in Attachment Section 4.2.1 mentions the three approaches.)	Exelon recommends that the NRC provide additional discussion regarding the three SMA methods in the various parts of the ISG for consistency.
Attachment / Section 3.4, 4 <sup>th</sup> bullet	The bullet states: <i>"The scope should include certain containment and containment systems,...."</i> Exelon is unsure of the intent of the bullet and recommends rewording for clarity purposes.	Exelon suggests that the bullet be reworded as follows to provide additional clarity, if applicable:  <i>"The scope should include containment response and containment systems important to the assessment of large early release,..."</i>

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Attachment / Section 3.4, 5 <sup>th</sup> bullet	<p>The bullet states: <i>"The 'mission time' should extend to either 72 hours or when the plant reaches a stable state, whichever is later (see Section 4.4.2)." Section 4.2.2 states: "To understand the latter type of sequence [sequence that involves the potential for a large release of radioactivity], the SMA analysis should study sequences for as long after the earthquake as is necessary for the reactor to reach a stable state. That stable state might be a 'safe' state, or a state involving extensive damage to the core, or a state involving a large radioactivity release, or somewhere in between."</i> Exelon believes that this is an open-ended requirement and has the effect of blurring the distinction between an SMA and a seismic PRA. The focus of an SMA is on the seismic capability of plant Structures, Systems and Components (SSCs) relative to a review level (or any other specific level) earthquake. Enhanced SMA approaches allow factoring in some measure of non-seismic response in assessing the High Confidence of Low Probability of Failure (HCLPF) for an accident sequence, but the SSC (or plant level) seismic capability is meaningful primarily with regard to the seismic event, not the non-seismic response of the plant and operators. A 72-hour mission time may not always be adequate for some slowly-developing sequences that might ultimately challenge containment response. However, the focus of an extended mission time should be on the impact of the initial seismic event on the functionality of SSCs that may be required to operate later in the event, and not on non-seismic contributors whose random failure contributions might become more important simply due to a long mission time multiplier. Such non-seismic impacts are important considerations in a seismic risk evaluation (i.e., using a seismic PRA approach), but should not be the focus of an SMA.</p>	<p>Exelon recommends that the NRC provide additional guidance with regard to treatment of the mission time requirement.</p> <p>Exelon suggests that the mission time requirement be consistent with the establishment of baseline coping capability as defined in NEI 12-06, <i>"Diverse And Flexible Coping Strategies (FLEX) Implementation Guide."</i></p>

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ISG Section/ Paragraph/Sentence	Comment	Proposed Resolution
Section 4.2.4 / "Technical Issue" heading  Also Section 5.3	The ISG states (emphasis added): <i>"In a typical seismic PRA, an important fraction of all of the accident sequences involve a combination of failures caused by the earthquake and other failures not related to the strong motion. Therefore, the SMA analyst is required to separately determine the HCLPF for the accident sequences containing only seismic failures and the HCLPF for the accident sequences containing both seismic and non-seismic failures."</i> Exelon believes the fact that something that is important in a seismic PRA does not directly translate into a requirement for expanding the scope of an SMA. If an SMA is appropriate for response to the 50.54(f) letter, then there is no reason to expand its scope to match that of a seismic PRA.	Exelon recommends that the NRC provide an additional basis for requiring the expanded scope of the SMA and the reporting of contribution of non-seismic failures. In addition, Exelon suggests that the NRC provide further explanation on how a "HCLPF" that includes human failure events and non-seismic SSC failures will be interpreted relative to the seismic capability of important plant SSCs that would be derived from a true HCLPF based only on seismic parameters.
Section 4.2.5 / "Technical Issue" heading	There appears to be a typographical error, "AMSE" should be "ASME."	Exelon recommends that the typographical error be corrected.
Section 4.3.3 / "Technical Issue" heading	The ISG states: <i>"Realistic ISRS should be calculated using ASME/ANS PRA Standard Part 10 ...."</i> Exelon believes that Part 10 of the ASME/ANS PRA Standard provides little guidance on calculation of in-structure response spectra.	Exelon recommends that the NRC provide further clarification concerning the guidance being referred to.
Section 4.4.2 / "Technical Issue" heading	There appears to be a typographical error, "NUREG-107" should be "NUREG-1407."	Exelon recommends that the typographical error be corrected.
Section 4.4.3 / "Staff Position"	The ISG states: <i>"The starting point for constructing the SEL is the [set of SSCs included in the] internal-events PRA model, to which must be added a number of SSCs ...."</i> Exelon believes that the bracketed text should be added for clarification. More importantly, some PRA-modeled SSCs may be able to be removed from the final SMA seismic equipment list, since the SMA is not required to model plant response to all initiators.	Exelon suggests that the NRC clarify the text as indicated, noting that the final SMA SEL need not include all PRA-modeled SSCs.
Section 4.5.2 / Heading	There appears to be a typographical error in <i>"Screening approach and level for of SSCs."</i> Exelon believes that the "for" or the "of" should be removed.	Exelon recommends that the typographical error be corrected.

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ISG Section/ Paragraph/Sentence	Comment	Proposed Resolution
Section 4.5.3 / "Staff Position"	<p>The ISG states: <i>"Fragility analysis for SSCs should be performed either in accordance with Part 5 of the ASME/ANS PRA Standard or ...."</i></p> <p>Earlier in the ISG, Addendum A of the PRA Standard is referenced. There are differences in the fragility analysis requirements (i.e., the "SFR" requirements) in Part 5 of Addendum A vs. Part 5 of Addendum B of the PRA Standard. Exelon believes the NRC should clarify whether and how the NRC staff will consider such differences in evaluating licensee submittals if a licensee chooses to use Addendum B vs. Addendum A.</p>	<p>Exelon recommends that the NRC clarify how differences in PRA Standard Part 5 requirements in Addendum B vs. Addendum A will be dealt with by NRC reviewers in reviews of licensee submittals, should licensees choose to use the Addendum B requirements.</p>
Section 4.6.2 / "Staff Position"	<p>The ISG states, in the discussion of use of the MIN-MAX method: <i>"...The convolution approach (in section 4.6.1 above) is the preferred approach."</i></p> <p>Exelon believes that this is an unnecessary statement, since it does not seem relevant to the application of the MIN-MAX method. Exelon would consider the MIN-MAX method (with supplemental requirements as stated in this subsection) to be acceptable or not. If the Convolution method is a preferred approach, this should be stated elsewhere in the guidance document and it is.</p>	<p>Exelon recommends that the NRC remove this statement from this section of the ISG to avoid possible confusion in NRC staff and licensee interpretation.</p>
Section 6 / Footnote 5	<p>The footnote indicates that the peer review guidance for SMA <i>"may differ from the endorsed peer review process set forth in the ASME/ANS PRA Standard ...."</i> Exelon does not believe that the guidance in this section differs. To avoid confusion, Exelon suggests that the NRC clearly state that the guidance in Section 6 is to be used in place of that provided in the PRA Standard Parts 1, 5, and 10, or provide additional specific clarification.</p>	<p>Exelon recommends that the NRC clarify the expectations for using the ISG peer review requirements in place of those stated elsewhere.</p> <p>Exelon suggests that the NRC clearly state that the ASME PRA Standard requirements for peer review are not applicable.</p>

Comments Concerning Draft Interim Staff Guidance JLD-ISG-2012-04

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Section 6 / "Staff Position"	The first bullet states: <i>"The peer review should be a participatory peer review, rather than a late-stage review."</i> The term "participatory peer review" does not seem to be defined. To avoid confusion on the part of NRC staff reviewers and licensees, Exelon suggests that the NRC clarify the intent and expectations regarding the process.	Exelon recommends that the NRC provide further clarification concerning what is meant by the term "participatory peer review," or provide an appropriate reference.