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**Docket:** NRC-2016-0201  
Nuclear Power Plant Instrumentation for Earthquakes

**Comment On:** NRC-2016-0201-0001  
Nuclear Power Plant Instrumentation for Earthquakes; Draft Regulatory Guide for Comment

**Document:** NRC-2016-0201-DRAFT-0002  
Comment on FR Doc # 2016-22743

## Submitter Information

9/21/2016  
81 FR 64954

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RULES AND DIRECTIVES  
CHAPTER 1  
SECTION 1.1

## General Comment

See attached file(s)

## Attachments

NL-16-2462

SUNSI Review Complete  
Template = AOM-013

E-RIDS = AOM-03  
Add = S. Tabatabai (SHE1)  
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NL-16-2462

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Comments on Draft Regulatory Guide DG-1332, "Nuclear Power Plant  
Instrumentation for Earthquakes," Docket ID NRC-2016-0201

Dear Ms. Bladey:

The NRC requested comments on a draft regulatory guide as noticed in the Federal Register (81 FR 64954; Docket ID NRC-2016-0201). The draft regulatory guide is DG-1332, "Nuclear Power Plant Instrumentation for Earthquakes."

SNC has reviewed the draft regulatory guide and has comments as detailed in the attachment to this letter.

This letter contains no NRC commitments. If you have any questions, please contact me at 205.992.5998.

Respectfully submitted,

Justin T. Wheat  
Nuclear Licensing Manager

JTW/LKB/lc

cc: Southern Nuclear Operating Company  
Mr. M. D. Meier, Vice President – Regulatory Affairs  
Mr. B. J. Adams, Vice President – Engineering  
SNC Document Services RType: CGA02.001

Comments on Proposed Draft Regulatory Guide DG-1332,  
"Nuclear Power Plant Instrumentation for Earthquakes"  
(Docket ID NRC-2016-0201)

Attachment

SNC Comments on Docket ID NRC-2016-0201

Comments on Draft Regulatory Guide DG-1332, "Nuclear Power Plant Instrumentation for Earthquakes"

(Docket ID NRC-2016-0201)

By Southern Nuclear

#	Identifier (Section, Page, Paragraph)	Comment	Proposed Resolution
1	Section B – <i>Background</i>	The 2 <sup>nd</sup> paragraph, 1 <sup>st</sup> sentence refers to "foundation level." It is not clear if this is intended to mean outside the structure at the foundation level, i.e.: embedded.	Provide clarification of "foundation level."
2	Section B – <i>Background</i> and Section C – <i>Staff Regulatory Guidance, Section 1.2 (1)</i>	<p>Section B provides the purpose for seismic instrumentation at different locations. Free-field instruments are used to compare to design input motion for structures and determination of OBE exceedance. Instrumentation at the foundation level and at elevations in the structure is used for seismic structural response and input to equipment and piping and long-term evaluations.</p> <p>Section/bullet C 1.2 (1) <i>Free-field</i> lists two locations where sensors should be installed. One is to be at the free ground surface and a second at depth. The second sensor, according to the Draft Guide as it is currently proposed, would be downhole seismic instrumentation.</p> <p>The purpose of the downhole instrumentation is not clearly described in section B.</p>	Provide further explanation of the purpose of the downhole instrument in Section B, <i>Discussion</i> .

Attachment to NL-16-2462  
 SNC Comments on Docket ID NRC-2016-0201

#	Identifier (Section, Page, Paragraph)	Comment	Proposed Resolution
3	Section C – Staff Regulatory Guidance, Section 1.2.(1) (a)	The GMRS is characterized by horizontal and vertical response spectra determined as free-field motions on the ground surface or, as provided in RG1.208, as free-field outcrop motions on the uppermost in-situ competent material using performance-based procedures following RG 1.208. Suggest adding "or".	To provide clarity to this sentence, suggest rewording as follows: "At the free ground surface, <u>or</u> the location consistent with the site conditions ...."
4	Section C – Staff Regulatory Guidance, Section 1.2.(1) (b)	This section/bullet is confusing. It would be more clear to define conditions for Category I structures founded on rock vs. soil sites.	Reword the section/bullet to define conditions for Category I structures founded on rock vs. soil sites.
5	Section C – Staff Regulatory Guidance, Section 1.2 (1)(b)	Section/bullet C 1.2 (1) <i>Free-field</i> currently states the sensor should be installed "at a depth corresponding to the top of competent rock, or at foundation level if that is where the certified seismic design response spectra (CSDRS) and GMRS are defined if this depth exceeds 40 ft. below plant grade."  At some sites, "rock" can be at a significant depth below the free ground surface. No definition of "top of competent rock" is provided. The "top of competent rock" could be defined as "the top of the first in-situ layer of competent material." The DG does not indicate what the measured motion at this location be compared to.	Provide clarification or definition of "top of competent rock."  Provide clarification as to the purpose of the sensor and its use.

#	Identifier (Section, Page, Paragraph)	Comment	Proposed Resolution
6	Section C – Staff Regulatory Guidance, Section 1.2 (1)(b)	This section/bullet is describing a “downhole instrument”. The installation and particularly the maintenance of a seismic downhole instrument is problematic. Keeping the instrument dry, and removing and reinstalling the instrument for maintenance are some of the main challenges. These real challenges have to be weighed against the potential benefits of installing this second free-field instrument.	Provide a basis demonstrating that the costs of installing and maintaining a seismic downhole instrument have been shown to be outweighed by the benefit of the information that would be provided, including lower cost alternatives such as a surface array of broad-band sensors. A surface array would be less expensive and easier to install and maintain than a downhole instrument.