

December 7, 2005

MEMORANDUM TO: Eileen M. McKenna, Chief  
Financial, Policy and Rulemaking Branch  
Division of Policy and Rulemaking  
Office of Nuclear Reactor Regulation

FROM: Joseph L. Birmingham, Project Manager */RA/*  
Financial, Policy and Rulemaking Branch  
Division of Policy and Rulemaking  
Office of Nuclear Reactor Regulation

SUBJECT: SUMMARY OF OCTOBER 19-20, 2005 MEETING WITH INDUSTRY ON  
SEISMIC ISSUES RESOLUTION PROGRAM

On October 19-20, 2005, Nuclear Regulatory Commission (NRC) staff met with representatives of the Nuclear Energy Institute (NEI), the Electrical Power Research Institute (EPRI), and industry in a public meeting at NRC headquarters in Rockville, Maryland. The meeting was part of an ongoing effort by industry to propose several new initiatives to improve siting regulations for new reactor facilities. The NRC staff has been working with industry on this effort for the past year. Attachment 1 provides a list of meeting attendees. Attachment 2 is a schedule of industry reports supporting the resolution program. Attachments 3-8 are the meeting handouts industry presented at the meeting. The meeting handouts are available in the NRC Agencywide Document Access and Management System (ADAMS) under ADAMS accession numbers ML052970281, ML052970287, ML052970295, ML052970300, ML052970306, and ML052970317.

At the meeting, industry presented an update of its seismic hazards assessment for a new performance-based methodology and discussed the results of industry efforts to resolve other generic seismic issues and to provide a basis to update the applicable regulatory guidance. Industry organized its efforts into the following tasks:

- Demonstrate generic applicability of ASCE/SEI 43-05, "Seismic Design Criteria for Structures, Systems, and Components in Nuclear Facilities" - Task G1.1
- Update and improve methods for addressing nondamaging high frequency portion of ground motion spectra – Tasks S2.1, S2.2
- Improve seismic hazard estimation methodology to reflect technology advances - Tasks G1.2, G1.3
- Develop proposed revisions to RG 1.165 and NUREG-0800 - Task I1.1

Industry proposed that their efforts should be a basis for a revision of NRC Regulatory Guide 1.165, "Identification and Characterization of Seismic Sources and Determination of Safe

Shutdown Earthquake Ground Motion," and the applicable sections of NUREG-0800, "Standard Review Plan for the Review of Safety Analysis Reports for Nuclear Power Plants."

After industry presented a technical discussion on the status of each task, the NRC discussed the issues with industry. The staff asked industry several questions to clarify points of the discussion or to better understand the technical material presented. In general, the staff had no objection to the proposed approach but indicated that it needed time to review the data and reports carefully.

At the end of the meeting, the NRC caucused and asked industry to consider providing ten items to aid the staff in its review. The ten items are:

1. Provide an alternative performance-based method to determine the safe shutdown earthquake (SSE) ground motion spectra using seismic core damage frequency (SCDF) as a metric. Use an appropriate SCDF metric to arrive at the design response spectra (DRS) close to those derived from the ASCE 43-05 method.
2. The DRS obtained from the SCDF metric approach should have spectral acceleration values at 1 and 2.5 Hz that do not fall below some minimum values.
3. SCDF metric should be used for 1, 2.5, 5 and 10 Hz, rather than the average of 5 and 10 Hz currently indicated in RG 1.165.
4. Use a set of CAV-filtered hazard curves for the above items.
5. Undertake peer review of CAV filtering and input data to provided to NRC.
6. Undertake peer review of incoherency model.
7. NRC requests validation of incoherency effects through some recorded event.
8. NRC requests Dr. Kennedy to make a presentation of the alternative performance-based method using SCDF metric.
9. Conduct peer review of S2.2 results (high frequency knock-down) and underlying assumptions by equipment vendors.
10. List of all NEI scheduled products for inclusion in meeting summary. Facilitate NRC review of the NEI's performance-based seismic design approach with the goal of reaching a common understanding of the approach in an integrated manner.

The staff and industry proposed to meet in February 2006 to discuss the structural tasks and in March 2006 to discuss the ground motion tasks.

After asking for public comments or questions, the meeting was adjourned.

Project No. 689

Attachments: As stated

List of Attendees for New Plant Seismic Issue Program  
October 19-20, 2005

<u>NAME</u>	<u>ORGANIZATION</u>
Norman Abrahamson	PGE
Mostafa Ahmed	Westinghouse
Christian Araguas	NRC/NRR/DRIP/RNRP
Goutam Bagchi	NRC/NRR/DE/EMEB
Richard Barrett	NRC/RES/DET
Joseph Birmingham	NRC/DRIP/RPRP
Michele Evans	NRC/RES/ERAB
Eddie Grant	Exelon/Excel Services
Herman Graves	NRC/RES/DET/ERAB
Orhan Gurbuz	EPRI/Consultant
Greg Hardy	ARES
Adrian Heymer	NEI
Tony Hsia	NRC/RES/DET/ERAB
Abou-Bakr Ibrahim	NRC/NMSS
Gene Imbro	NRC/NRR/DE/EMEB
Banad Jagannath	NRC/NMSS/HLWRS
Cedric Jobe	NEI
James J. Johnson	JJJ & Assoc.
Robert Kassawara	EPRI
Robert Kennedy	RPK Structural Mechanics
Charles Kling	Westinghouse
Ron Knott	Progress Energy
William Lettis	William Lettis & Assoc.
Yong Li	NRC/DE
Sanjeev Malushte	Bechtel Power
Kamal Manoly	NRC/NRR/DE/EMEB
Robin McGuire	Risk Engineering Inc.
Kelly Merz	ARES Corp.
Donald Moore	Southern Nuclear
Cliff Munson	NRC/NRR/DE/EMEB
Andrew Murphy	NRC/RES/DET/ERAB
Mysore Nataraja	NRC/NMSS/HLWRS
Zahira Perez	NRC/NRR/DE/EMEB
John Richards	Duke Power
Robert Rothman	ISL Inc.
Lawrence Salamone	WSRC/DOE
Sujit Samaddar	NRC/NRR/DE/EMEB
Lee Tunon-Sanjur	Westinghouse
William Schmidt	EPRI/MPR
John Segala	NRC/NRR/DRIP/RNRP
Mahendra Shah	NRC/NMSS/HLWRS
Martha Shields	DOE/NP2010
Carl Stepp	EPRI/EHS
Vaughn Thomas	NRC/RES/ERAB
Bob Tripathi	NRC/NMSS/SFPO
Jennie Watson-Lamprey	UC Berkley
Robert Whorton	South Carolina Electric & Gas
George Zinke	Entergy/NUSTART

Schedule for NEI submittal of technical reports to the NRC in support of resolution of the ESP Seismic Issues. (Item 10)

Task	Title	Delivery Status
G1.1	Assessment of a Performance Based Approach for Determining Seismic Ground Motions for New Plant Sites.	Submitted 09/05
G1.2	Use of Minimum CAV in Seismic Hazard Analysis	Target: 02/06
G1.3	Evaluation of Empirical Recordings and Numerical Simulations to Determine Optimal Truncation of Ground Motion Distributions	Target: 02/06
S2.1	Effect of Seismic Wave Incoherence on Foundation and Building Response Spatial Coherency for Soil Structure Interaction	Target: 02/06
S2.2	Effect of Negligible Inelastic behavior on High Frequency Response	Target: 2Qtr/06

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OFFICE	NRR:DPR:PFPB	NRR:DE:EEMB	NRR:DPR:PFPB
NAME	JBirmingham	KManoly	EMcKenna
DATE	11/28/2005	12/05/2005	12/07/2005

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DISTRIBUTION: Meeting with NEI on seismic issues resolution program dated 10/19-20/2005

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