



**EPRI**

ELECTRIC POWER  
RESEARCH INSTITUTE

# New Plant Seismic Issues Resolution Program

Presentation to USNRC

By NEI/EPRI

August 29, 2006

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# Purpose of Meeting

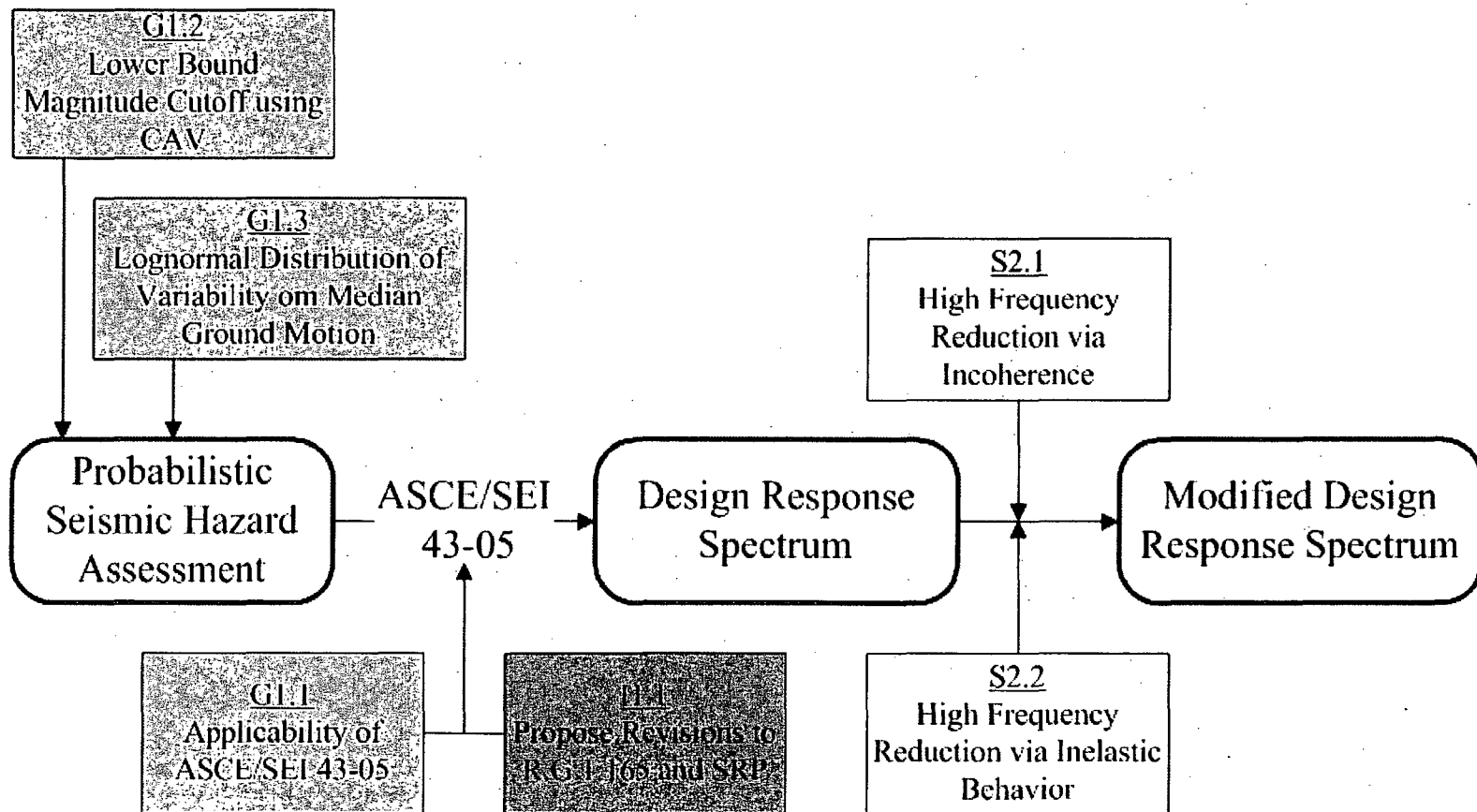
- Discuss NRC comments on G-task reports and responses to NRC RAIs
- Resolve any remaining open issues
- Discuss plans and schedule for completion of:
  - Task S2.1, Effect of incoherency
  - Task I1.1, Integration report

# Topics to be Discussed

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- Activities since NRC meetings on May 11 and 12, 2006
- EPRI Phase II reports and responses to NRC RAIs on:
  - Task G1.1, Risk-informed, performance-based, (RIPB) methodology and results
  - Task G1.2, Use of CAV-filtering to account for low magnitude earthquakes
  - Task G1.3, Truncation of variability on median ground motion
- Plans and schedule for remaining activities

# New Plant Seismic Issues Resolution Program



# ESP Activities in Late 2005

- As a result of technical and management meetings, NRC requested:
  - RIPB method proposed by Industry should be based on CDF, not FOSID
  - New CDF-based DRS for 28 test sites
  - Additional evaluations, independent reviews (RAIs)
  - Lecture/primer for Staff on RIPB method by Project

# Early 2006 Activities

- Issued reports of initial (Ph I) tasks on:
  - G1.1 – RIPB method verification and results
  - G1.2 – CAV-filtering of lower bound magnitude earthquakes
  - G1.3 – Truncation of variability of ground motion
  - S2.1 – Effect of spatial incoherence
  - S2.2 – Effect of negligible inelastic deformation
- Initiated new (Ph II) tasks on:
  - Development of CDF-based RIPB method, recalculation of DRS for 28 test sites
  - Development of integration report (Task I1.1)
  - Performance of evaluations requested by NRC (RAIs)

# Activities and actions since May NRC/Industry meeting

- NEI/EPRI issued response (June 23<sup>rd</sup>) to NRC requests for basis of:
  - Annual probability of unacceptable performance (FOSID)
  - CAV threshold value of 0.16 g-sec
- NRC issued RAIs on all Tasks (June 1<sup>st</sup>):
  - 3 on Task G1.1
  - 15 on Task G1.2
  - 13 on Task G1.3
  - 53 on Task S2.1a (Structure response)
  - 22 on Task S2.1b (Coherency model)
  - 48 on Task S2.2
- NEI/EPRI issued (July 20<sup>th</sup>) Phase II task reports on all 3 G-tasks, with responses to RAIs, and draft I-task (Integration report)
- NRC issued letter to NEI (July 25<sup>th</sup>) agreeing with use of RIPB method at FOSID of 1E-5, and with CAV threshold value of 0.16 g-sec.
- Further work on Task S2.2 placed on “hold”

# Main technical results of G-tasks

- RIPB method based on FOSID results in lower DRS for most of the 28 test sites compared to RG 1.165 method
- CAV-filtering reduces DRS significantly for all sites whose DRS are not controlled by large nearby earthquakes (e.g., Charleston and New Madrid)
- Truncation of variability not supportable, but change in sigma proposed. Minor impact



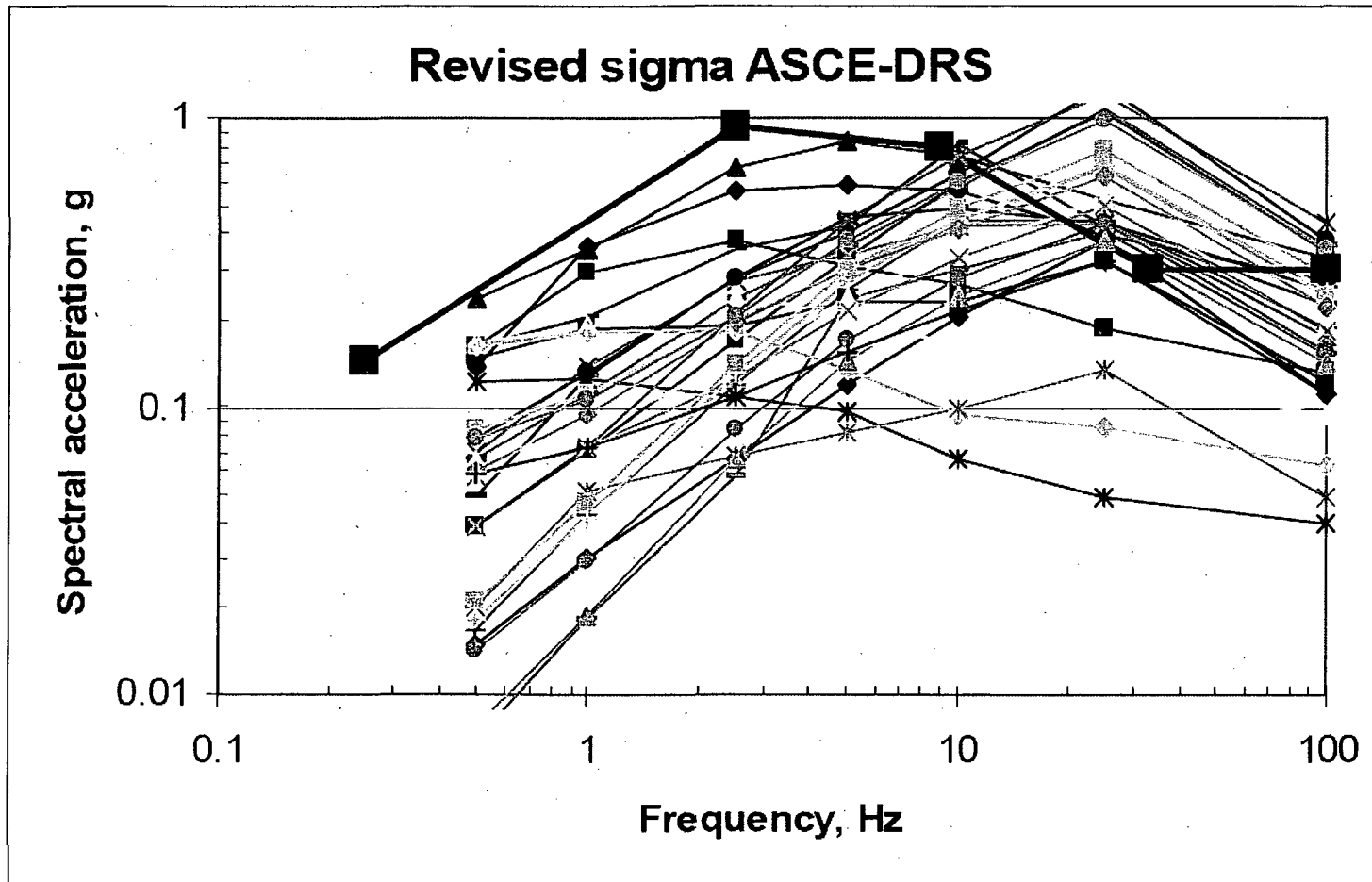


Figure 2-2  
 ASCE-DRS Spectra Using Revised-Sigma Ground Motions, Compared to RG1.60 Spectrum  
 Anchored to 0.3g.

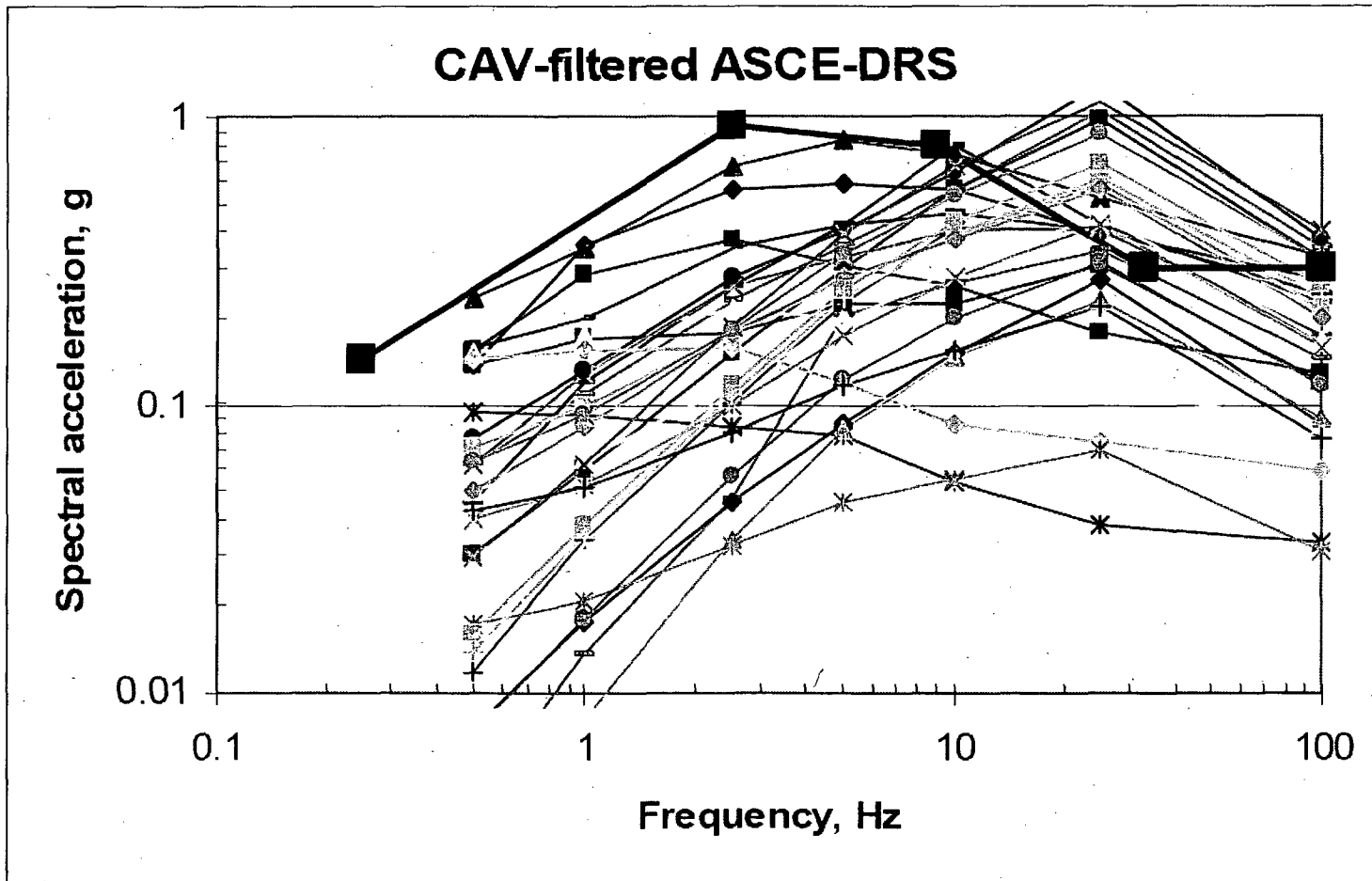


Figure 3-5  
ASCE DRS Calculated With CAV Filter for 28 Sites

# Current status and schedule

- Report of Ph II task S2.1 with responses to all RAIs to be submitted end of September)
- Final Task I1.1 integration report to be issued (date TBD)
- Meetings with NRC on Tasks S2.1 and I1.1 expected in 4<sup>th</sup> quarter of 2006.

**From:** Nadja Isakovic  
**To:** Michele Evans  
**Date:** 09/12/2006 2:44:44 PM  
**Subject:** This is electronic distribution of "Summary of August 29, 2006, Category 2 Public Meeting"

Enclosed, please find electronic version of the memo to Ms. Michele G. Evans from Vaughn Thomas.

Subject: Summary of August 29, 2006, Category 2 Public Meeting with Nuclear Energy Institute (NEI) to Discuss Seismic Issues Related to Future Reactor Siting

The memo with enclosures has been entered into ADAMS (Accession No. Pkg. ML062550314)

**CC:** Abou-Bakr Ibrahim; Andrew Murphy; Angelina Chapeton; Ann Kammerer; Anthony Hsia; Bret Tegeler; Clifford Munson; Donald Harrison; Gene Imbro; Goutam Bagchi; Herman Graves; Mahendra Shah; Mark Cunningham; Michael Mayfield; Nilesch Chokshi; Ramin Assa; Rebecca Karas; Syed Ali; Vaughn Thomas; Yong Li