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# NRC Perspectives on Seismic Issues

Goutam Bagchi
Office of Nuclear Reactor Regulation
U.S. Nuclear Regulatory Commission

# Change in Seismic Hazard

- Main Reasons for Change
  - New models to estimate ground motion
  - Recent update of seismic sources
  - Rigorous accounting of uncertainties

# Effects on Ground Motion

- Increased High Frequency Content
  - Primary effect on chatter prone equipment
- Decreased Low Frequency Content
  - Less seismic load on structures

# Implications

- Existing Plants
  - Potential for higher seismic load is Generic Issue 199 and is currently under study by NRC
  - Previous GI 194 on new response spectra for trial sites Watts Bar and Vogtle using the Senior Seismic Hazard Analysis Committee guidance was closed using a risk informed approach
- New Plants
  - At some sites current certified designs may need reanalysis to determine their acceptability
- Regulatory Guidance
  - Need to update and revise regulatory guidance

# Performance-Based Seismic Design

- Early Site Permit Review Experience
- ASCE Approach
  - Uses structural performance
- NEI Technical Reports under review
- NRC is seeking use of a traditional risk-based plant performance goal – core damage frequency induced by earthquakes
- Performance-based design does not change with change in seismic hazard alone

# New Reactor Reviews

- Use framework of completed ESP reviews
- Site evaluations based on thorough geologic and seismologic studies
- Plant performance (core damage frequency) appropriately considered
- NRC expects to achieve a common understanding with industry on regulatory criteria
- Ensure regulatory stability