



U.S. NRC

UNITED STATES NUCLEAR REGULATORY COMMISSION

Protecting People and the Environment

NRC Perspective on the NGA-East Project

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Data Needs and Critical Issues Workshop
November 2010

US NRC Projects to Assess Seismic Hazard in CEUS

Source
Characterization →

Central and Eastern US Seismic
Source Characterization project for
Nuclear Facilities (CEUS SSC)

Ground motion →
prediction equations

Next Generation Attenuation
Relationships for the Central and
Eastern US (NGA-East)

Framework for large
PSHA studies →

Recommendations for Implementation
of the SSHAC Guidelines for Level 3
and 4 Processes

NRC Needs

- Consistency with the CEUS SSC
- Use of SSHAC framework
- Strong and clear technical basis for new GMPEs
- Transparency, openness, and communication with the public and other stakeholders
- Clear & complete documentation that describes:
 - Project goals, approaches, and participant roles
 - Activities undertaken: purpose and outcome
 - Complete technical basis (including what was not used)

Uncertainties

- Appropriate treatment of uncertainties is a high priority in all NRC activities
- Review of “sigma” related topics early in the NGA-East project to identify necessary research
- Review of technical issues comprehensively
 - Identifying areas where uncertainties can be reduced through targeted research
 - Identifying areas of epistemic uncertainties that may be under-assessed
- Appropriate quantitative characterization of both aleatory and epistemic uncertainties

SSHAC Guidelines

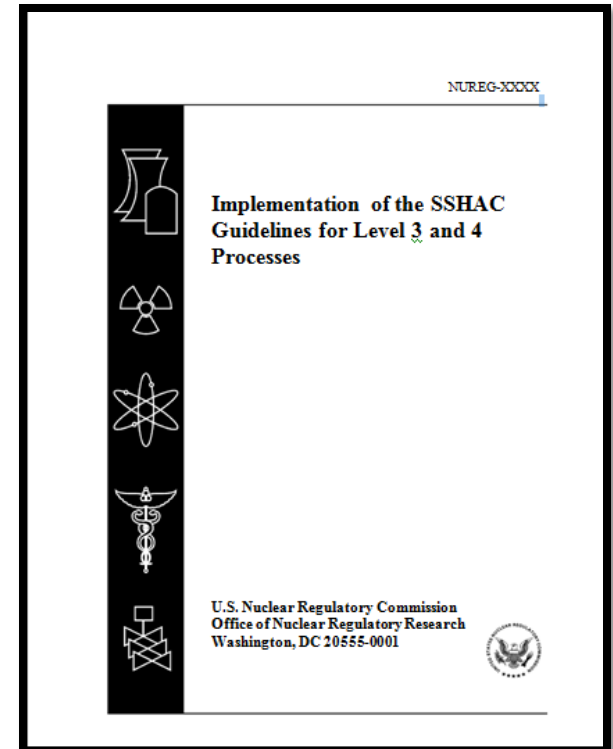
- NUREG/CR-6372, “Recommendations for Probabilistic Seismic Hazard Analysis: Guidance on Uncertainty and Use of Experts”
- SSHAC provides a framework for incorporating experts into scientific assessments through structured processes and interactions
- Fundamental concepts behind guidelines
 - Views of the larger technical community are fundamental inputs
 - Competing scientific hypotheses can be considered and uncertainties captured
 - PSHA is a snapshot in time of our knowledge and uncertainties

Goals of SSHAC

- “To represent the center, the body, and the range of the technical interpretations that the larger informed technical community would have if they were to conduct the study”
 - Increases assurance that uncertainties have been captured
 - Leads to regulatory stability
 - Can be peer reviewed by those with comparable knowledge of the community

SSHAC Guidelines

- NRC Undertaking Program to develop NUREG on “Implementation of SSHAC Guidelines for Level 3 and 4 Processes”
 - NRC Sponsored USGS Workshops resulting in USGS OFR 2009-1093
 - Draft NUREG under development





THANK YOU