



Comments on IAEA Draft Safety Guide DS442-- Evaluation of Seismic Hazards for Nuclear Installations

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Overview

- US NRC's overall views on the IAEA draft Safety Document DS422 are very positive
- We believe that it will certainly achieve its intended objectives
- The US NRC will continue to participate in any follow up activities
- With the resurgence of new nuclear power plant applications in the USA we continue to gain further insights into related regulatory activities and site review processes. We are ready to share our experiences with the IAEA Member States.

US Comments (1/5)

- US recommends that DS422 explicitly state that the Probabilistic Seismic Hazard Assessment is the preferred approach in hazard estimations.
- US recommends that deterministic approaches include:
 - Determinations of multiple scenario earthquakes
 - Uncertainty in earthquake locations, in addition to uncertainty related to ground motion prediction models

US Comments (2/5)

- US recommends that guidance should be given to establish hazard frequency and/or performance criterion to develop design basis motion.
- (9.7) US recommends that additional guidance be provided on procedures for developing the site specific ground motion response spectra. Guidance similar to US Regulatory Guide 1.165 Appendix F may be helpful.

US Comments (3/5)

- (3.6) US recommends specifying a distance range (e.g., 150-300km) rather than a single value for the size of Regional Investigations. Further, DS422 should also state that all major seismic sources impacting the hazard at the site be incorporated regardless of their distance to the site.

US Comments (4/5)

- (3.23) US recommends Seismological databases also include earthquakes identified using historical records and paleoseismological evidence in addition to archeological and instrumental records.
- (4.24) US recommends clarifying the discussion on estimating maximum magnitudes based on its total dimensions.

US Comments (5/5)

- (4.12) US recommends the use of global analogues for sites in regions with low seismicity. It is unlikely that the largest observed earthquake is a good estimate of M_{max} . Uncertainty should be accounted for through appropriate weighting of potential M_{max} distribution.
- (1.4) US recommends modifying the guidance in DS422 to state that vibratory ground motion hazard may be used for existing installations to avoid any conflict with DS383.