NRC NEWS

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NEW SEISMIC MODEL WILL REFINE HAZARD ANALYSIS AT U.S. NUCLEAR PLANTS

The Electric Power Research Institute (EPRI), the U.S. Department of Energy (DOE), and the U.S. Nuclear Regulatory Commission (NRC) released a new seismic study today that will help U.S. nuclear facilities in the central and eastern United States reassess seismic hazards. The *Central and Eastern United States Seismic Source Characterization for Nuclear Facilities* model and report is the culmination of a 4-year effort among the participating organizations and replaces previous seismic source models used by industry and government since the late 1980s.

The NRC is requesting U.S. nuclear power plants to re-evaluate seismic hazards using this information as well as other guidance. This work is part of the agency's implementation of lessons learned from events at the Fukushima Daiichi nuclear power plant following the March 2011 earthquake and tsunami in Japan. The new seismic model will be used by nuclear power plants in the central and eastern United States for these re-evaluations, in addition to being used for licensing of new nuclear facilities.

The project gathered and analyzed an expanded data set – including historical earthquake and geological data for the entire study region from 1568 through 2008 – using a rigorous, peer-reviewed assessment process. National and international experts from industry, government, academia, and various research organizations were engaged to develop the model.

The model can be used to calculate the likelihood of various levels of earthquake-caused ground motions. Calculations with the new model are expected to result in a higher likelihood of a given ground motion compared to calculations done using previous models. These calculations, however, are not equivalent to a nuclear power plant's overall risk. Plant operators must combine the information from the new model with a plant's design and safety features to determine site-specific risks.

As part of the project, the new seismic model was compared to previous models by calculating seismic hazards at seven test sites. The sample calculations indicate that the largest predicted ground motions could occur in the vicinity of repeated large magnitude earthquake sources, such as New Madrid, Mo., and Charleston, S.C.

The report and model are available at http://www.ceus-ssc.com.

The Electric Power Research Institute, Inc. conducts research and development relating to the generation, delivery and use of electricity for the benefit of the public. An independent, nonprofit organization, EPRI brings together its scientists and engineers as well as experts from academia and industry to help address challenges in electricity, including reliability, efficiency, health, safety and the environment. EPRI's members represent more than 90 percent of the electricity generated and delivered in the United States, and international participation extends to 40 countries. EPRI's principal offices and laboratories are located in Palo Alto, Calif.; Charlotte, N.C.; Knoxville, Tenn.; and Lenox, Mass.

The mission of the U.S. Department of Energy is to ensure America's security and prosperity by addressing its energy, environmental and nuclear challenges through transformative science and technology solutions.

The U.S. Nuclear Regulatory Commission was created as an independent agency by Congress in 1974 to ensure the safe use of radioactive materials for beneficial civilian purposes while protecting people and the environment. The NRC regulates commercial nuclear power plants and other uses of nuclear materials, such as in nuclear medicine, through licensing, inspection and enforcement of its requirements.

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