

No: 14-032

May 9, 2014

CONTACT: Scott Burnell, 301-415-8200

NRC Prioritizes Detailed Earthquake Risk Analysis For Central and Eastern U.S. Reactors

The Nuclear Regulatory Commission, following up on work underway when the Fukushima accident highlighted the importance of seismic issues in the nuclear arena, has set a priority list for 21 of 59 nuclear power plant sites in the central and eastern United States to conduct in-depth analyses of the plants' updated earthquake risk.

The agency has reviewed updated earthquake hazard information for the 59 operating reactor sites and one unfinished reactor site east of the Rocky Mountains. The sites submitted this information in March as part of the NRC's [implementation](#) of lessons learned from the 2011 Fukushima nuclear accident. The submittals showed the plants, which have substantial safety margin above their designs' anticipated hazards, are safe for continued operation while more work is done. Should this additional analysis indicate more immediate actions are necessary, the NRC will ensure the plants respond appropriately.

"We've examined this information to see how a plant's new quake hazard compares to the ground movement that the plant's original design process considered," said Eric Leeds, director of the NRC's Office of Nuclear Reactor Regulation. "We're closely following the industry's response and we're confident the plants are safe to continue operating. If a plant's new hazard exceeds the original design, the plant has to do a detailed analysis to determine any changes in accident risk from a quake. Plants must also do shorter-term work to see if they should enhance key safety equipment."

With limited technical expertise available to the industry to complete this effort, the NRC prioritized the follow-on work. The priority list is based on several factors that deal with how a site's quake hazard transmits energy at frequencies that can affect a plant's structures, pipes, pumps and related safety systems. A large change between a plant's original and new hazards at those frequencies was a key consideration in determining a plant's priority. Strong overall ground motions at those frequencies also influenced a plant's priority, as can information from earlier risk evaluations.

The NRC requires these sites to submit their detailed risk analysis by June 30, 2017:

Callaway – Fulton, Mo.; Cook – Bridgman, Mich.; Indian Point – Buchanan, N.Y.; North Anna – Louisa, Va.; Oconee – Seneca, S.C.; Peach Bottom – Delta, Pa.; Pilgrim – Plymouth, Mass.; Robinson – Hartsville, S.C.; Vogtle – Waynesboro, Ga.; Watts Bar – Spring City, Tenn.

The NRC requires these sites to submit their detailed risk analysis by Dec. 31, 2019:

Beaver Valley – Shippingport, Pa.; Browns Ferry – Athens, Ala.; Catawba – York, S.C.; Dresden – Morris, Ill.; Fermi – Newport, Mich.; Hatch – Baxley, Ga.; LaSalle – Marseilles, Ill.; Oyster Creek – Forked River, N.J.; Palisades – Covert, Mich.; Summer – Jenkinsville, S.C.; Sequoyah – Soddy-Daisy, Tenn.

These 21 plants have until December 2014 to complete an “expedited approach” review to evaluate and reinforce key core cooling equipment to ensure plants could safely shutdown if an earthquake in fact were to occur at the higher seismic ground motion. If these reviews show the need to enhance that equipment, the work must be complete by December 2016.

The NRC is still deciding whether another 23 sites, including the Bellefonte unfinished reactor site in Alabama, require the detailed risk evaluation. The NRC has determined these sites must submit the expedited approach assessment by December 2014. If the NRC concludes these sites need the in-depth risk analysis they must submit it by Dec. 31, 2020. The remaining 16 central and eastern U.S. sites have shown their original design accounts for the new hazard and need no further analysis; three of those sites have told the NRC they will provide an expedited approach assessment. The NRC will continue to evaluate the plants’ hazard information while risk analyses are underway.

The full list of central and eastern U.S. plants is included in the NRC’s letter to the 60 sites, which is [available](#) on the agency’s website. The Columbia (Benton County, Wash.), Diablo Canyon (Avila Beach, Calif.) and Palo Verde (Wintersburg, Ariz.) sites must submit their new hazard estimates in March 2015. The NRC will use the same process to determine which of these sites require additional risk analysis. The NRC’s [blog](#) has more information on the seismic re-evaluation process.