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NRC Requires Additional Earthquake Risk Analysis for Two Western U.S. Reactors

The Nuclear Regulatory Commission has set a June 2017 deadline for two of three Western U.S. operating nuclear power plants to conduct in-depth analyses of their updated earthquake risk.

The NRC is requiring Columbia (Benton County, Wash.) and Diablo Canyon (Avila Beach, Calif.) to submit their detailed risk analysis by June 30, 2017. The NRC continues to examine information from Palo Verde (Wintersburg, Ariz.); if the agency concludes the plant needs the in-depth risk analysis it must complete the work by Dec. 31, 2020. The agency established these due dates after reviewing updated earthquake hazard information from the plants.

The seismic submittals showed all three Western plants' engineering and construction methods added safety margin beyond their original designs' anticipated hazards. Should the plants' additional analysis indicate more permanent actions are necessary, the NRC will ensure the plants respond appropriately.

"This information shows us how the plants' new earthquake hazard compares to the ground movement considered in the plants' original designs," said Bill Dean, director of the NRC's Office of Nuclear Reactor Regulation. "The evidence we've seen so far leaves us confident the plants are safe to continue operating while they do more analysis. If a plant's new hazard exceeds the original design, that additional analysis will determine if there are any changes in accident risk from an earthquake. Plants must also do shorter-term work to see if they should enhance key safety equipment while the more substantial analysis is being done."

The sites submitted the earthquake hazard information in March as part of the NRC's [response](#) to the 2011 Fukushima nuclear accident. All three plants are already working to comply with the NRC's March 2012 Orders for [additional safety equipment](#) and enhanced [spent fuel pool monitoring](#). Columbia is working to comply with a third March 2012 Order, [updated in 2013](#), requiring hardened venting systems to safely relieve pressure if an accident occurs.

With limited technical expertise available to the industry to complete this effort, the NRC has prioritized the follow-on work. The priority list is based on several factors that deal with how a site's earthquake 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 seismic hazards at those frequencies was a key consideration in determining a plant's priority. The agency also considered available information from earlier seismic risk evaluations.

Columbia will complete its review of potential short-term enhancements by January 2016. The NRC continues to assess Diablo Canyon's and Palo Verde's existing information to determine if the plants meet the criteria for the short-term review. The NRC's letter to Columbia, Diablo Canyon and Palo Verde is [available](#) on the agency's website. The NRC's [blog](#) has more information on the seismic re-evaluation process.