



# EMERGENCY PLANNING DURING DECOMMISSIONING

Southern California Edison (SCE) submitted a revised emergency plan to the Nuclear Regulatory Commission (NRC) on March 31, 2014 for the San Onofre nuclear plant that reflects the plant's permanent shutdown. The requirements for emergency planning at San Onofre are changing because most potential accidents related to an operating plant are no longer possible at retired nuclear plants that do not have fuel in the reactor.

SCE developed the revised emergency plan based on NRC guidance. The plan includes two license amendments and requests for exemptions from certain emergency planning regulations that apply only to operating plants. SCE's submittal is supported by NRC studies that established the substantially reduced risk to the public at decommissioning reactors compared to operating nuclear plants. SCE has briefed local agencies on the proposed change through the Interjurisdictional Planning Committee, which coordinates emergency planning in the region.

## HISTORY

The NRC began developing rulemaking in the 1990s for operating nuclear reactors transitioning to decommissioning. The rulemaking, however, was not finalized before the 9/11 terrorist attacks on New York and Washington, D.C., and was postponed while the NRC focused its resources on growing security requirements. As a result, the NRC directed that changes to emergency planning requirements for decommissioning reactors would be handled through exemption requests until the agency finalized rulemaking. The NRC has approved such exemptions at 10 decommissioning facilities, concluding that they: were supported by detailed, site-specific safety and technical evaluations; authorized by law; did not present an undue risk to public health and safety; and did not undermine security. The NRC recently issued Interim Staff Guidance to help its staff evaluate emergency plan exemption requests; San Onofre's revised emergency plan and exemption requests were developed based on this guidance.

## SAN ONOFRE'S REVISED EMERGENCY PLAN

San Onofre's Permanently Defueled Emergency Plan concludes that it is no longer credible to have a radiological emergency beyond the San Onofre site boundary that would impact public safety. The plan would eliminate the two highest



of four NRC emergency classifications (Site Area Emergency or General Emergency), and would retain continued NRC oversight for the two lowest emergency classifications: an Unusual Event and Alert. Radiological and environmental monitoring will continue to ensure safety and environmental protection. San Onofre will maintain emergency response staffing and communication, including communication with off-site emergency responders and law enforcement.

Multiple studies by the NRC show that spent fuel pools at shutdown nuclear plants do not pose significant risks to the public and the environment. These studies address the risk of fire in spent fuel

pools at nuclear plants. At San Onofre, used fuel assemblies are stored in steel-lined concrete vaults filled with water; the fuel assemblies are covered by 23 feet of water. A 2013 NRC study, which reaffirmed earlier analyses, concluded the probability of a spent fuel pool fire at an operating nuclear plant, including the hypothesized zirconium fire, would be less than one in 10 million. That already low risk of a spent fuel fire declines as time passes and fuel continues to decay following shutdown of a nuclear plant.

In addition, the 2013 study found that spent fuel pools are robust structures likely to withstand severe earthquakes without leaking, and that they ensure adequate protection of the public health and safety.

### **CONSOLIDATION OF USED FUEL ASSEMBLIES**

Operators of U.S. nuclear power plants began taking steps to expand storage for used nuclear fuel when the U.S. Department of Energy defaulted on its legal obligation to begin storing the spent fuel from commercial reactors in 1998. The industry began using alternative dry cask storage facilities and also sought more efficient ways to store assemblies in the spent fuel pools. The latter effort is known as re-racking, and

involves reconfiguring the assemblies in the spent fuel pool in a way that accommodates storage of additional fuel. This process is licensed, monitored and approved by the NRC to ensure safety. The NRC evaluated and approved the San Onofre spent fuel pool re-racking License Amendment Request, which has facilitated safe storage of additional fuel assemblies, minimizing the cost to customers of dry storage facilities.

### **REGULATORY OVERSIGHT**

The Nuclear Regulatory Commission is required to review and approve SCE's proposed Permanently Defueled Emergency Plan for San Onofre. This review is expected to take about a year and will include opportunities for public comment. To receive NRC approval, SCE must demonstrate that the probability of a spent fuel fire is very low and that off-site radiological consequences of any credible nuclear accident cannot exceed U.S. Environmental Protection Agency protective action limits. Pending NRC approval, SCE continues to adhere to existing emergency plan requirements. The public may view SCE's three-part emergency plan submittal on the NRC website at the following links: Part I, Part II and Part III.