

August 25, 2005

The Honorable John J. Duncan, Jr.
United States House of Representatives
Washington, DC 20515-4202

Dear Congressman Duncan:

On behalf of the U.S. Nuclear Regulatory Commission (NRC), I am responding to your letter to Mr. William Outlaw, Acting Director, Office of Congressional Affairs, dated July 8, 2005, in which you asked for a response to a constituent's concern regarding the safety of nuclear power reactors within the United States. The constituent asked how heat is removed from the primary containment of a nuclear power plant during a station electrical blackout, as required by 10 CFR 50.63 (Rev.12-03-02). The constituent also expressed concerns about the ability to remove heat during a prolonged power failure.

Part 10 of the *Code of Federal Regulations*, Section 50.63, requires that each light-water-cooled reactor provide sufficient capability to ensure that the core is cooled and that appropriate containment integrity is maintained in the event of a station blackout (SBO), the loss of the offsite and emergency alternating current (AC) electrical power, for a specified duration. To demonstrate compliance with this regulatory requirement, a coping evaluation was performed for each reactor then reviewed and approved by the NRC.

Through this evaluation an SBO coping duration for each U.S. nuclear power plant was identified. SBO coping duration is the period of time a plant can be maintained in a safe condition during an SBO. SBO coping durations range from 4 to 8 hours. Plants with an SBO duration less than 4 hours have installed an additional alternating current power source to better cope with an SBO event. The evaluation demonstrated that, during the coping period, steam turbine-driven pumps, together with air or direct current (DC) operated valves, will provide sufficient heat removal from the reactor such that coolant will continue to cover the core and the containment will remain intact without any active AC-powered heat removal. Thus, while there is no active heat removal from the containment for the duration of the coping period, the containment heat-up tends to be limited to passive heat absorption by the containment structures. It is expected that AC power will be restored from either offsite or onsite sources prior to the end of the SBO coping period, even if there may be a prolonged power failure elsewhere on the grid. Site emergency procedures required to be used during response to an SBO event will ensure the licensee takes action to meet this expectation.

I trust this explanation is responsive to your constituent's concern. Please contact me if you have any additional questions on this matter.

Sincerely,

/RA/

Luis A. Reyes
Executive Director
for Operations

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Executive Director
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