



UNITED STATES  
NUCLEAR REGULATORY COMMISSION  
ADVISORY COMMITTEE ON REACTOR SAFEGUARDS  
WASHINGTON, DC 20555 - 0001

November 17, 2003

The Honorable Nils J. Diaz  
Chairman  
U.S. Nuclear Regulatory Commission  
Washington, DC 20555-0001

Dear Chairman Diaz:

SUBJECT: PROPOSED RESOLUTION OF GENERIC SAFETY ISSUE-189,  
"SUSCEPTIBILITY OF ICE CONDENSER AND MARK III CONTAINMENTS TO  
EARLY FAILURE FROM HYDROGEN COMBUSTION DURING A SEVERE  
ACCIDENT"

During the 507<sup>th</sup> meeting of the Advisory Committee on Reactor Safeguards, November 5-7, 2003, we reviewed the recommendation proposed by the Office of Nuclear Reactor Regulation (NRR) to resolve Generic Safety Issue (GSI)-189, "Susceptibility of Ice Condenser and Mark III Containments to Early Failure from Hydrogen Combustion During a Severe Accident." During this review, we had the benefit of discussions with representatives of the NRC staff, the BWR Owners' Group, Duke Energy, and the Union of Concerned Scientists. This matter was previously discussed with the Office of Nuclear Regulatory Research (RES) during our June and November 2002 meetings. We also had the benefit of the documents referenced.

### **Conclusions and Recommendations**

NRR should proceed with rulemaking to require a backup power supply to the hydrogen igniters for PWR Ice Condenser and BWR Mark III plants. The requirement should be for a pre-staged small generator with installed cables, conduit, panels, and breakers, or an equivalent diverse power supply.

### **Discussion**

In our June and November 2002 meetings, the staff had communicated that further action was justified on a defense-in-depth basis and that the preliminary recommended options were for either a small portable generator and cabling or a pre-staged small generator with installed cables, conduit, panels, and breakers. In our report of November 13, 2002, we agreed with the staff that backup power for the hydrogen igniters as a safety enhancement was justified on a defense-in-depth basis, and we suggested that NRR investigate the viability of implementing backup power requirements through plant-specific severe accident management guidelines (SAMGs).

In subsequent public meetings, licensees stated that implementing backup power requirements through SAMGs is not a viable option because power to the igniters will be needed sooner than

could be provided by this option, and that the effort to use portable generators could be a significant distraction from more critical actions required of the operators.

We still agree with the staff's assessment that backup power is an appropriate defense-in-depth safety enhancement and, in light of the industry's assessment of the viability of portable generators, we conclude that the appropriate option is to require a pre-staged small generator with installed cables, conduit, panels and breakers, or an equivalent diverse power supply. We agree with an industry view that the rulemaking should be accompanied by guidance that specifies the design requirements.

Sincerely,

**/RA/**

Mario V. Bonaca  
Chairman

References:

1. Memorandum dated September 30, 2003, from Suzanne C. Black, Division Director, NRR, to John T. Larkins, Executive Director, ACRS, Subject: Background Information for Presentation Regarding Generic Safety Issue-189, Susceptibility of Ice Condenser and Mark III Containments to Early Failure from Hydrogen Combustion During a Severe Accident.
2. Letter dated October 23, 2003, from Kenneth S. Putnam, Chairman, BWR Owners' Group, to Document Control Desk, U.S. Nuclear Regulatory Commission, Subject: BWR Owners' Group Position on Issues Identified In Generic Safety Issue-189 and the Benefits and Cost of the Identified Alternatives To Resolving GSI-189 Concerns.