

UNITED STATES  
NUCLEAR REGULATORY COMMISSION  
OFFICE OF NUCLEAR REACTOR REGULATION  
WASHINGTON, D.C. 20555-0001

June 24, 2003

**NRC REGULATORY ISSUE SUMMARY 2003-12  
CLARIFICATION OF NRC GUIDANCE FOR MODIFYING PROTECTIVE  
ACTIONS**

**ADDRESSEES**

All holders of operating licenses for nuclear power reactors, except those who have permanently ceased operations and have certified that fuel has been permanently removed from the reactor vessel.

**INTENT**

The U.S. Nuclear Regulatory Commission (NRC) is issuing this regulatory issue summary (RIS) to clarify the regulatory requirement that licensees develop and communicate an updated protective action recommendation (PAR) that takes into account previous PARs. This RIS requires no action or written response on the part of addressees.

**BACKGROUND INFORMATION**

The Code of Federal Regulations (CFR) 50.47(b)(10) states in part "...Guidelines for the choice of protective actions during an emergency, consistent with Federal guidance, are developed and in place..." These protective actions are developed and implemented through an emergency plan designed to minimize exposure to the public in the event of a radiological emergency. The licensee makes PARs while offsite officials determine what protective actions will be implemented. These protective actions are specific actions that will be implemented by State and local (offsite) officials to minimize the dose received by the public. These PARs could include a recommendation that members of the public living in the emergency planning zone (EPZ) shelter (stay indoors) and await further instruction or evacuate (leave) the EPZ as directed. Typically, EPZs are divided into several sectors or areas so that specific protective actions can be implemented for specific areas in the EPZ. This allows the offsite officials to prioritize and initiate protective actions, such as evacuation or shelter, in a manner that provides optimum protection to the affected population. The issuance of PARs and the application of the decision that follows is situation dependent. Factors such as weather, road conditions, or available shelter can make a given protective measure more effective than another.

**ML031680611**

## **SUMMARY OF ISSUE**

The NRC staff recently observed an emergency preparedness exercise. Following its emergency procedures, the licensee determined that a PAR to evacuate areas downwind of the (hypothetical) plume was appropriate at that stage of the exercise. The licensee communicated this PAR to the offsite officials who were participating in the exercise. These offsite officials agreed with the PAR and made a protective action decision to commence the simulated evacuation of the recommended areas. Later in the exercise the meteorological conditions changed, which changed the direction of the plume. The licensee, following its procedures, issued another PAR to evacuate an additional area that was now downstream of the plume. The offsite official agreed that evacuating this additional area was appropriate. However, the licensee also revised its previous PAR, to recommend sheltering of an area that had already been directed to evacuate. Offsite officials disagreed with the licensee's recommendation to alter the previous protective action from evacuate to shelter. The offsite officials continued to evacuate the first areas while initiating evacuation of the new area. Because the licensee's emergency plan failed to provide adequate direction concerning changes in PAR development, the optimum protective measure was not implemented. Implementation of a protective action that provides less of a dose savings than other available protective actions is generally not advisable.

The NRC position on PAR revision is found in NUREG-0654, FEMA-REP-1, Rev. 1, Supp. 3 "Criteria for Preparation and Evaluation of Radiological Emergency Response Plans and Preparedness in Support of Nuclear Power Plants," which states " ...the licensee and the State and local officials should continue assessing the situation, including the development of dose projections and performing field monitoring. These assessments should be used to determine if the protective actions should be expanded...to determine if people should be relocated from sheltered areas." Additionally, Figure 1 includes the following statement: "Modify protective actions as necessary. Locate and evacuate hot spots. Do not relax protective actions until the source of the threat is clearly under control." In addition, EPA-400 manual states "Decisions to terminate existing protective actions should include, as a minimum, consideration of the status of the plant and the PAGs for relocation...(Withdrawal of protective actions from areas where they have already been implemented is usually not advisable during the early phase because of the potential for changing conditions and confusion.)"

## **CONCLUSION**

Severe accident studies have led the NRC staff to conclude that prompt evacuation is preferred to sheltering the population near the plant, barring any constraints to evacuation. In the case mentioned, there were no constraints to prompt evacuation, merely a change in the PAR from evacuation to shelter for the one area. For this situation, the recommendation created a situation that decreased the effectiveness of the PAR due to the confusion it could have created. Offsite officials would have had to rescind the Emergency Alert System (EAS) message and issue a new EAS message that conflicted with the previous message. Redirecting traffic flow and emergency resources once evacuation had been initiated would have been difficult. Members of the public may not have felt that sheltering was safe after having been told they should evacuate. Such changes could lead to a lack of confidence in protective action decisions issued by the offsite officials and hamper the orderly implementation of protective actions.

During an emergency, licensees should continue to assess conditions affecting a PAR and make revisions to the PAR that include appropriate consideration of actions taken in response to previous PARs. If appropriate, the assessment should expand the PAR to ensure that adequate protective recommendations are issued. Licensees should not change a PAR until the threat is fully under control. In this example, the changed PAR could have led to confusion that might have hampered the orderly implementation of protective actions.

### **BACKFIT DISCUSSION**

This RIS clarifies the regulatory position that licensees develop and communicate an updated PAR that takes into account previous PAR's. This RIS does not impose new or modified staff requirements or uniquely prescribe a way to comply with the regulations, or require any action or written response. Therefore, this RIS does not constitute a backfit under 10 CFR 50.109 and the staff did not perform a backfit analysis.

### **FEDERAL REGISTER NOTIFICATION**

A notice of opportunity for public comment on this RIS was not published in the *Federal Register* because this RIS is informational and pertains to a staff position that does not represent a departure from current regulatory practice.

### **PAPERWORK REDUCTION ACT STATEMENT**

This RIS does not request any information collection.

If you have any questions about this matter, please telephone or e-mail the technical contact listed below.

**/RA/**

William D. Beckner, Program Director  
Operating Reactor Improvements Program  
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Office of Nuclear Reactor Regulation

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