

**Commissioner Jaczko's Comments on SECY-07-0225  
Revision of NUREG-0654, Supplement 3, "Criteria for Protective Action  
Recommendations for Severe Accidents"**

I approve of the staff's recommendation to revise the protective action recommendation (PAR) guidance contained in NUREG-0654, Supplement 3, to reflect the results of this PAR study. The staff should be commended for the thorough review of work in this area and for the detailed technical analysis included in this new NUREG/CR-6953, Volume 1. I look forward to the second part of this study investigating how the public will receive revised PAR guidance. I also encourage the staff to move as quickly as possible to get input from the public and update the agency's protective action guidance to be used by state and local governments in the unlikely event of a significant accident at a nuclear power plant.

I think it is important to highlight several findings of this report. One of the main themes that emerges is the importance of accurate evacuation time estimates. The lack of a requirement that these protective action recommendation tools be regularly updated and maintained to a high-quality standard has been a concern of mine for years. That is why I have strongly supported the emergency preparedness proposed rulemaking provision that would put in place more stringent maintenance requirements for these evacuation time estimates and triggers for updating them -- including every ten years, when emergency planning zone (EPZ) populations change by 10 percent or more, and when there are major changes to the infrastructure around the plants. Better evacuation time estimates will yield better protective action recommendations.

Another discussion in the report worthy of note involves a review of the research into human behavior during emergencies. It is important to state that documented observed behavior in the face of disaster reveals that emergency workers respond in a selfless manner putting the needs of the community over their personal concerns. That is why we have so much respect for first responders - they do that every day. Additionally, local leaders and the public as a whole do not panic or behave irrationally, but instead help each other out in emergencies. This is not new information, but is important to reemphasize. It also reinforces the importance of having good emergency plans in place for local leaders, first responders, licensees, and the public to be able to implement if necessary.

The report also notes NRC studies which have concluded that shadow evacuation – or people evacuating outside of a designated evacuation area – is a real phenomenon in some disasters but one that has no statistically significant impact on the effectiveness of overall evacuation efforts. In addition, the volume of people over-responding to evacuation orders can be mitigated by better communication with members of the public outside the evacuation area and by implementing traffic control measures.

I believe it is important to highlight several other sections of this study which I believe will be of particular interest to the public. The report concludes that there is more work to do to protect special needs populations around nuclear power plants – both those people in special needs facilities such as schools and hospitals, and those people with special needs who live at home. It notes the difficulties experienced in previous disasters such as Hurricanes Katrina and Rita when it was discovered that multiple special facilities had contracted with the same

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transportation services for evacuations, and those resources were overwhelmed by the need to simultaneously evacuate them all. The study notes that evacuating some of these facilities – such as hospitals – can take up to 20 hours. It also focuses on the challenges and importance of doing additional work to identify in advance those members of the special needs populations who do not reside facilities to ensure they are adequately incorporated into emergency plans. Finally, the report emphasizes the value in some scenarios of taking early protective action for special needs populations – both to ensure there is time to safely evacuate them, and to help spread out any subsequent evacuations that may need to occur.

These conclusions cause me significant additional concern about the Commission's October 26, 2005 denial of a petition for rulemaking to revise 10 CFR Part 50 to require offsite emergency plans to include nursery schools and day care centers (PRM-50-79). The petitioner raised several concerns about the adequacy of evacuation plans for these facilities and argued that they needed to be address in a systematic way. **I believe that this study provides sufficient evidence for accepting this petition and therefore, consistent with the Commission's internal procedures, I formally offer a motion for reconsideration of that Commission decision. The staff should include the content of that petition as part of the rulemaking the staff has initiated to enhance emergency preparedness regulations and guidance. If it is too late to incorporate the petition into that rulemaking without delaying it significantly, the staff should initiate a separate rulemaking. In addition, the staff should ensure that the effort to update the NUREG-0654 guidance specifically addresses these issues.** There are a myriad of ways these issues can be addressed, but we need to consciously do so now based on the findings detailed in this study.

**Along those same lines, the staff should evaluate other findings from this study to determine if there are issues of such importance that they should not only be addressed in the NUREG-0654 guidance, but should also be the subject of rulemaking to enhance existing EP regulatory requirements and ensure sufficient minimum mandates are placed on licensees in a transparent manner.**

There is one protective option that was omitted from this study that I believe should have been included. The conclusion that preferential sheltering - using larger group facilities that may provide better radiation shielding than a normal residence - was unfeasible seems sound. But this is because the benefits are not that great versus the cost, as people sheltering in those facilities could still receive radiation doses since the buildings are not airtight and would have to be ventilated with outside air. Large pressurized sheltering facilities may prevent interior contamination and thereby offer much greater protection, as they do in the U.S. today in chemical stockpile hazard zones. And while the costs and logistics of building, maintaining, and operating them might be significant, this study assumed that pressurized facilities would not be available in nuclear power plant emergency planning zones. By not including them in this study, we do not have the data to know if the benefits they could provide would be worth that additional cost. **The staff should therefore rerun the models developed for this study with the option of access to pressurized sheltering facilities compared against the other strategies studied. This analysis should be straightforward since the models are already developed. The staff can then attach the results of this effort to the forthcoming Volume II of this report.**

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Finally, the study was premised on a scenario that leads to a release of radioactive material 40 minutes from the declaration of a General Emergency. While such a scenario is extremely unlikely, the fact that the NRC studied it and has now formally concluded that in certain emergencies resulting in releases of radiological materials – such as short duration or “puff” releases – it is better for some people to shelter in place before evacuating, is significant. The challenge for the agency now is to explain this dramatic change in protective action recommendations to the public. Because there remains a widespread belief among many members of the public that evacuation is the best option for a radiological emergency, this discussion about sheltering may be seen by some stakeholders as an admission that emergency plans are insufficient. Even though temporarily sheltering-in-place may be the right answer scientifically, we risk losing the confidence of the very people we will need to follow protective action recommendations for these measures to be successful at reducing radiation exposures.

**Ultimately, the best way to address this challenge is to continue to develop a performance based definition of reasonable assurance that focuses on what the standard should be, transparently quantifies the level of protection that emergency preparedness plans and procedures provide, and then codifies these results into regulations that are objective and measurable.** By making clear the overall performance measures we strive to meet, we are more likely to be able to gain the support of the very people that we need to listen, believe, and follow instructions to shelter in place – if in fact that is the safest course of action for a given scenario.

*/RA/*

Gregory B. Jaczko      2/13/08  
Date

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