

# PUBLIC SUBMISSION

<b>As of:</b> August 06, 2010
<b>Received:</b> August 04, 2010
<b>Status:</b> Pending_Post
<b>Tracking No.</b> 80b295e1
<b>Comments Due:</b> August 09, 2010
<b>Submission Type:</b> Web

**Docket:** NRC-2010-0080

Notice of Availability of NUREG-0654/FEMA-REP-1, Revision 1, Supplement 3, Guidance for Protective Action Recommendations for General Emergencies

**Comment On:** NRC-2010-0080-0009

NUREG-0654/FEMA-REP-1, Rev. 1, Supplement 3, Guidance for Protective Action Recommendations for General Emergencies; Draft for Comment

**Document:** NRC-2010-0080-DRAFT-0042

Comment on FR Doc # 2010-11842

## Submitter Information

*3/08/2010*

*75 FR 10524*

*36*

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## General Comment

See attached file(s)

## Attachments

**NRC-2010-0080-DRAFT-0042.1:** Comment on FR Doc # 2010-11842

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2010 AUG -6 AM 10:25

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*SONSI Review Complete  
Template = AD41-013*

*FRIDS = AD41-03  
Add = R. Sullivan (RXS3)*



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August 9, 2010

Mr. Michael T. Lesar, Chief  
Rulemaking and Directives Branch  
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Subject: COMMENTS ON DRAFT NUREG-0654/FEMA-REP-1, REVISION 1,  
SUPPLEMENT 3 [NRC-2010-0080]

References: 1. 75 FR 10524, NUREG-0654/FEMA-REP-1, Rev. 1, Supplement 3,  
Guidance for Protective Action Recommendations for General  
Emergencies; Draft for Comment, dated March 8, 2010  
2. 75 FR 27840, NUREG-0654/FEMA-REP-1, Rev. 1, Supplement 3,  
Guidance for Protective Action Recommendations for General  
Emergencies; Draft for Comment, extension of comment period, dated  
May 18, 2010

EP Consulting, LLC, appreciates the opportunity to comment on Draft NUREG-0654 Supplement 3. EP Consulting is a small company of emergency preparedness specialists for the nuclear industry with the individuals averaging of more than 25 years of experience on both the regulatory and industry side.

EP Consulting recognizes and applauds the significant public outreach conducted by the NRC staff in this comment phase through the series of public meetings. These meetings have clarified significant issues with respect to the draft and have clearly benefitted the rulemaking process. However, they also have brought out significant issues with respect to the utility and offsite agency implementation of the proposed guidance.

This letter will address comments in two manners. Several strategic issues remain to be clarified. These issues will be summarized in the body of this letter. Attachment 1 to the letter will focus on implementation issues assuming the current draft is not modified based on resolution of the strategic issues.

- 10 CFR 50.47(b)(10) requires the industry to provide a full range of protective actions. Draft Supplement 3 identifies a number of decision points in the process. EP Consulting recognizes that the generic flowchart was intended to be modified on a plant specific basis, but additional clarifications are required. Some of these decision points are event

specific and must be reviewed in real time as part of the determination process. Other decision points are plant specific and can be answered on a one time basis for the site and the decision process simplified. The final decision points are intended to be resolved by industry interactions with the offsite partners. It is this third area that continues to cause conflicts to both utility and offsite partners. The parameters associated with these joint decisions are unclear in the current version. For these decision points, the extent of the allowable variations in the final outcome need to be better specified with respect to compliance. A specific example to clarify this point:

- What impediments to evacuation is the utility allowed to exclude from the decision process by State/local agreement and remain within the bounds of the “full range of protective actions?”

Please clarify those decision points that are expected to be resolved by prior agreement with the utility and offsite agencies and clarify the decision options available, consistent with the requirements of 10 CFR 50.47. The proposed guidance can be further enhanced by revising the generic flowchart to more clearly identify which of the three decision making processes (Event based, site specific, and utility/offsite agreement) are intended for the specific decision analyzed.

- The proposed NUREG presents proposed actions based on studies but does not provide conclusive numerical evidence of the dose benefit based on the proposed actions. (NUREG-6953 provides for “Significantly Improved Benefit, Improved Benefit, Baseline [not significantly different than baseline), Less Benefit, and Significantly Less Benefit”. Due to the considerable uncertainties and assumptions involved in dose projections, if the studies do not show a truly “Significantly Improved Benefit,” the present guidance should remain unchanged.
- The implementation guidance should establish whether licensees will be expected to provide a quantification of the dose benefit of its PAR strategies. If the strategies are dose neutral, the implementation guidance and or NUREG should provide the criteria for selecting one strategy over the other. As above, if the strategies are determined to be dose neutral, or not truly significant, consideration should be given to not requiring the change based on the perceived impact on public confidence.
- This draft NUREG involves a significant change in historical public actions in response to protective action decision making/recommendations. The high cost of the change management for this program, with an emphasis on the cost to “re-train” the local populaces and Offsite Response Organizations (OROs) is not supported by a cost benefit analysis considering changing the concepts with respect to dose savings. The public confidence issue with respect to a change in what the public assumed for the last several decades was the “right thing to do” is a related issue more difficult to place a cost estimate on. Please provide a cost benefit analysis with respect to resulting dose savings from the proposed change.

- Supplement 3 uses Evacuation Time Estimate (ETE) data that is based on the proposed rulemaking rather than existing ETE requirements. Neither the implementation schedule for 0654 Supplement 3 nor the ongoing rulemaking is currently available. Additionally, the ongoing census has the potential to require further ETE modifications. All factors should be considered and a consistent and complete implementation schedule developed.
- Emergency Preparedness stakeholders have been informed that, in addition to the ongoing EP rulemaking and revision to NUREG-0654 Supplement 3, NRC and FEMA have committed to revising NUREG-0654 in its entirety with significant future rulemaking anticipated. Piecemeal implementation of significant regulatory changes is neither efficient or improves public confidence in the industry or the regulatory organization. These complex regulatory changes should be coordinated to effectively update the regulations.
- The findings associated with State of the Art Reactor Consequence Analysis (SOARCA) are materially important to the content of the proposed draft document. Because the issuance of the final SOARCA study is anticipated in the foreseeable future, the proposed Supplement should be delayed and incorporate pertinent elements of the SOARCA.

Again, EP Consulting, LLC, appreciates the opportunity to comment on this significant change to protective action strategies around the nuclear power plants. Clarification of the remaining issues is critical to public confidence in the regulator and the nuclear community.

Attachment 1: Implementation Comments

Attachment 1  
NUREG-0654 Supplement 3  
Emergency Preparedness Consulting, LLC  
Implementation Comments

1. The existing terminology for the severe accident is used inconsistently within the document and would be difficult for the licensee to rapidly assess. Given the industry trend to adopt NEI 99-01 Emergency Action Levels (EALs), the decision box could be easily assessed by changing the decision to be "Is EAL FG1 applicable." Specifically, use of the severe accident application could be addressed to the loss of all three fission product barriers using the EAL logic already approved in Regulatory Guide 1.101.
2. The definition of a severe accident introduced in Supplement 3 includes a requirement for "release occurring." The only current definition of release occurring by the Nuclear Regulatory Commission is in RIS 2002-16 and includes any radioactive material associated with the event. The release occurring in Supplement 3 is clearly intended to be much more significant than the published definition. Please clarify the magnitude of the release intended by Supplement 3. This comment becomes unnecessary if comment 1 above is adopted.
3. For the severe reactor accident, no initial consideration is given to impediments preventing an evacuation recommendation/decision. This appears to be inconsistent with the logic for the other General Emergencies. While the dose consequences are different, and the list of impediments to evacuation may be different because of the difference in dose consequences, the guidance should be consistent in philosophy.
4. In the severe accident PAR determination sequence, the initial determination of Shelter-in-Place is followed by direction to consider evacuation when "safer." "Safer" is subjective and fails to provide sufficient guidance as to the parameters to be considered for this determination.
5. In the severe accident PAR determination sequence, the initial determination of Shelter-in-Place is followed by direction to consider evacuation when "safer." "Safer" is subjective and fails to provide sufficient guidance as to the parameters to be considered for this determination.
6. Environmental factors exist (extreme summer heat and humidity or winter cold) that practically limit the time Shelter in Place can be an effective protective action without the action having negative health effects on the complying population. This limit should be considered and addressed in Supplement 3.
7. Specific comments with respect to wind persistence issues include:

- Current industry wind persistence studies are associated with annual dose calculations driven by the Offsite Dose Calculation Manual. Short term wind persistence issues are not only site specific, but time of year specific, time of day specific and environmental stability class specific. What parameters are intended to be used for the wind persistence study considered in Supplement 3? Additionally, while the statement is made in the draft NUREG that the result of the wind persistence studies should not result in a radial evacuation, the extent of the expansion from the "3 sector" baseline is not clearly established and could lead to inconsistent determinations and interpretations.
- The "system accuracy" of wind direction measurements should be considered when developing any offsite Protective Action Recommendations (PAR) beyond a 2 mile radius of the affected site. Per Regulatory Guide 1.23 (1972) (2007) and its 1980 and 1986 draft revisions; the "system accuracy" of wind direction measurements is +/- 5 degrees. Therefore, if a time-averaged wind direction measurement used in an offsite dose projection calculation is within +/- 5 degrees of the border between 2 sectors, both sectors should be viewed as the "downwind sector" for PAR development beyond 2 miles from the site, and an additional sector on either side of these 2 sectors should be added to the PAR. This would not only better account for the "system accuracy" limitation of wind direction measurement, but also provide greater assurance that the PAR will better address plume meander beyond 2 miles from the location of wind direction, wind speed and atmospheric stability measurements as a result of non-uniform downwind terrain.
- With respect to updates of an initial offsite PAR, Supplement 3 should indicate that an acceptable alternative to relying solely on the results of a "wind persistence study" would be to include a short-term (i.e., 4 to 8 hour) meteorological forecast of overall plume pathway EPZ weather conditions, which would include measurements made by the site's meteorological monitoring system as well as existing mesoscale meteorological conditions. A short-term weather forecast of the EPZ's existing weather conditions, as could be provided by a contracted meteorological services provider, should enhance the realism and credibility of a potentially needed PAR revision due to changing plant and/or meteorological conditions.
- Supplement 3 should include acceptance criteria on the data to be used in the expected "wind persistence study" presumably using only representative (validated) data from the site's meteorological monitoring program. Besides specifying the parameters to be included in the study, Supplement 3 should include guidance on such points as the following: whether hourly averaged or 15 minute averaged data may be used; the minimum number of years of data to be used; and whether results would be presented as monthly and/or seasonal analyses. Supplement 3 should also address the issue of whether the "wind persistence study" should be updated as new years of data become available.

8. The use of impediments to evacuation varies from the definition provided in NEI guidance "Range of Protective Actions for Nuclear Power Plant Incidents," dated April 2005 and endorsed in RIS 2005-08. Does this Supplement supersede the guidance in the RIS, and will the RIS be retracted?
9. While no actual Protective Action Recommendations or subsequent Protective Action Decisions have been required, exercise history shows that implemented Protective Action Decisions by the ORO's often differ from the utility recommendations. This has led to issues with subsequent modified recommendations. Current regulatory requirements specify only that the licensee's recommendations be consistent with federal guidance. In reality, a revised recommendation not based on other than Protective Action Decisions already implemented would question the credibility of both the licensee and the ORO. Based on current regulatory wording not impacted by Supplement 3 it is not possible for the utility to make subsequent PARs based on actual PADs but only off the last PAR. While the requirement for a licensee to make Protective Action Recommendations consistent with Federal Guidance is appropriate the determination of a changed PAR should be made assuming the starting point is the implemented PAD.
10. In the PAR determination process for General Emergencies other than those related to severe accidents a decision point in each pathway is "GE Conditions Remain?" Industry practice for flowchart analysis is to continually review the flowchart. NSIR staff presentations in various public meetings indicated that there was an anticipated waiting time to use this block. NSIR staff suggestions were that 60 or 90 minutes might be appropriate. Supplement 3 does not provide the guidance suggested by the staff in public meetings and should be modified so that this decision point is clearly understood and implemented consistently across the community.