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**To:** "CAG@nrc.gov" <CAG@nrc.gov>  
**Date:** 1/25/02 5:58AM  
**Subject:** Regulatory Guide 1.78

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Rules and Directives  
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Dear Sir/Madame,

I have received the Revision 1 of the Regulatory Guide 1.78 'Evaluating the Habitability of a Nuclear Power Plant Control Room During a Postulated Hazardous Chemical Release'. I thank NRC for sending me a copy of this RG.

I have studied the RG and have some suggestions to make, which are given below.

(i) I am of the opinion that this guide should not only apply to the Control Room but should also apply to Back-up Control Room of the plant, Central Alarm Station and Secondary Alarm Stations of the Physical Protection System of the plant.

(ii) I suggest that the staff posted in the above mentioned places should be protected from incapacitating chemicals also, which an adversary may use to gain advantage.

(iii) The metric for use of each chemical is the maximum concentration (toxicity limit) that can be tolerated without physical incapacitation of a control room operator as stated in point 3 of the guide. I am of the opinion that this is inadequate. This limit is right in normal industrial environment. May be, it is right for skill based operations in nuclear power plant too. But it be excessive for nuclear power plant control room and alarm station operator/personnel where he/she has to perform procedure based or knowledge based operations. Under these circumstances, his/her mental abilities should not be impaired in any way. This, in my opinion, should decide the acceptability of the limits. For some hazardous chemicals these limits (for mental performance) may be the same as for physical abilities (as given in the guide) for some other hazardous chemicals it may not be so. It will depend on how the chemical affect the systems of human body.

(iv) On page 11, first paragraph, it is written 'The system response time, which incorporates the detection response time, the valve closure time, and associated instrument delays, should be less than or equal to the isolation time'. It is not very clear to me.

I think the statement in the next paragraph on the same page, 'The detector trip signal should isolate the control room before toxic chemicals arrive at the isolation dampers', is adequate to set the upper limit for response time.

Please accept my appreciation of the good work that you and your organisation is doing to continuously improve the safety of Nuclear Power Plants.

With regards

Sincerely  
A.S. Hunjan,

Template = ADM-013

E-RFDS = ADM-03  
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