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**Doyle, Daniel**

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**From:** Doyle, Daniel  
**Sent:** Wednesday, June 09, 2010 1:20 AM  
**To:** Ghosh, Tina  
**Subject:** RE: Response to comment on solar storm risk

**Categories:** Salem Hope Creek, CGS

Thanks, Tina.

Dan Doyle

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**From:** Ghosh, Tina  
**Sent:** Tuesday, June 08, 2010 3:17 PM  
**To:** Eccleston, Charles; Ennis, Rick; Doyle, Daniel  
**Cc:** Palla, Robert; Pham, Bo  
**Subject:** Response to comment on solar storm risk

Dear all,

Our draft response to the SAMA piece of the solar storm comment has received "wide review" at this point, including from electrical folks in both NRR and RES.

Bob Palla and I have considered the comments, and are inclined to leave our draft response as it is. But for your information, I have included below the 3 comments that we got.

Also, we were thinking that if there are answers being developed for questions 1-7 on the safety/regional side before the DSEIS's are issued, we could take a look at the answers and see whether there is material we should incorporate into the response to the SAMA piece for license renewal.

I have attached the response again to this e-mail – no changes from the previous draft.

Thanks,  
Tina

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Thanks, Tina. I have read Bob's response. I looked for NUREG-1474 but since it was issued in the 'old days' it's not in ADAMS or on the website. I skimmed IN 93-53 Supplement 1, though, "which expanded the scope of lessons learned to other external events and discussed existing regulatory guidance for various external events." When we use this as a comment response for a specific plant, we would probably have to include a remark at the end to say whether or not the sensitivity analysis performed on the SAMA benefit calculation was in fact adjusted for a more explicit consideration of solar storms, right? The last paragraph is speaking in general terms for all plants (*if there is an incompleteness in the current PRAs...*)

Dan Doyle

Handwritten signature and initials in the bottom right corner of the page.

**From:** McConnell, Matthew  
**Sent:** Wednesday, June 02, 2010 1:42 PM  
**To:** Ghosh, Tina  
**Subject:** FW: ACTION: Response to comment on solar storm risk comment

Tina,

I have reviewed the subject document and don't have any further comments to add. However, I forwarded your email to the Branch Chiefs for the Electrical (Tome Koshy) and Electrical Instrumentation & Controls (Russ Sydnor) branches in RES and they have provided their 2 cents below. Tom Koshy's comments aren't anything different from what I basically provided you previously but he thought it might be worthwhile to add to the response. Since you are the lead, I will leave that decision up to you.

Matt

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**From:** Koshy, Thomas  
**Sent:** Wednesday, June 02, 2010 1:33 PM  
**To:** Sydnor, Russell; McConnell, Matthew  
**Subject:** RE: ACTION: Response to comment on solar storm risk comment

The only other point that I would add is that NOAA has collected further data in this area using 2 other satellites and therefore they have better capabilities to predict and provide advance notification to implement mitigating actions. (This study was presented at the Air and Space museum)

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**From:** Sydnor, Russell  
**Sent:** Wednesday, June 02, 2010 1:22 PM  
**To:** Koshy, Thomas  
**Subject:** FW: ACTION: Response to comment on solar storm risk comment

Tom, I have no research info on this (yet). We are thinking of expanding the Sandia EMP study to look at geomagnetic generated pulses, but have not done so yet. We know the step up transformer damage is a potential and the grid going down is a potential so it seems that the risk/SAMA argument is the best at this point.

What do you think?

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**From:** McConnell, Matthew  
**Sent:** Wednesday, June 02, 2010 1:11 PM  
**To:** Koshy, Thomas; Sydnor, Russell  
**Subject:** FW: ACTION: Response to comment on solar storm risk comment

Tom/Russ,

I was forwarded the attached document that is slated to be the NRC's official response to a public comment on a license renewal project and thought that RES may have some additional insight to lend based on past research activities on the effects of Geomagnetic Storms on electrical equipment (specifically a nuclear power plant's response to such an event). If you think you have any comments that would add value to the response please let me know.

Thanks in advance.

Matt

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**From:** Ghosh, Tina

**Sent:** Wednesday, June 02, 2010 11:14 AM

**To:** Harrison, Donnie; Nguyen, Duc; Mazumdar, Subinoy; McConnell, Matthew

**Cc:** Eccleston, Charles; Palla, Robert; Ennis, Rick; Doyle, Daniel; Pham, Bo; Wilson, George

**Subject:** ACTION: Response to comment on solar storm risk comment

Dear all,

Please review attached draft response to John Greenhill's (DHS) comment on solar storm risk, submitted as a comment for several NPP license renewal SEIS's.

Please also forward to anyone else you think would be interested in commenting.

Please e-mail me any comments by this Friday, June 4.

Thank you very much,  
Tina

S. Tina Ghosh, Ph.D.

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