#6 Rodrane

From:	See-Meng Wong / NRA
To:	Salley, Mark
Date:	Tue, Mar 26, 2002 10:05 AM
Subject:	Re: Review of ANO-1 Fire Protection Issue

Mark;

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I have just provided a second package to Naeem that contains the raw information for fire modeling analysis of Fire Zone 98-J (dimensions, celling height, target height, BTU loading, etc.). Fire zone 98-J is the DG room corridor, in addition to fire zone 99-M. I also have a videotape of the two fire zones, with commentaries, for viewing by you and anyone in your section, if anyone is interested.

See-Meng.

>>> Mark Salley 03/26/02 10:33AM >>> See-Meng,

Sounds good ~ Naeem will be performing the analysis ~ I'll be working with him ~ we'll let you know if/when we need additional info.

MHS

>>> See-Meng Wong 03/26/02 10:03AM >>> Mark;

My apologies for being unable to get back to you on this sooner. The licensee's package contains the raw information on the room dimensions and ceiling height, and also specific information on BTU loading, horizontal distance, and target height from ignition source to target cables. Please let me know what additional information is needed to perform your fire modeling analysis using CFAST. I have pointed out to Naeem where this info is located, and he should indicate what is amiss. Thanks.

See-Meng.

>>> Mark Salley 03/22/02 05:47PM >>> See-Meng

Great ~ we're in agreement. To get started, we will need the dimension & layout of the compartment/construction. The location of all the electrical equipment and cable tray sizes and locations would also be needed. It would also help if we had the specifics of the trays, e.g., I assume they used Thermoplastic cables, and which trays are "Power" "Instrument" or "Control", most NPPs broke that info down by voltage level, also, to keep it as realistic as possible, the loading of trays. I would expect the 4160V power cables to be a "driver" and would like to look at them. For some of the more advanced type modeling we will need HVAC info, as well as door sizes & locations.

Rebecca performed the inspection and may have some of this information, or we could contact the licensee. Which ever way you think is best ~ we'll work from there. Please let me know.

MHS

>>> See-Meng Wong 03/22/02 04:45PM >>>

Mark;

Thanks for your comments on the licensee's fire modeling analysis. Yes, I had recommended that we do an independent fire hazard modeling analysis as a counterpoint against the licensee's analysis. I believe the package contains the raw information to do so. If not, please let me know what additional information is needed from the licensee as soon as possible.

See-Meng.

>>> Mark Salley 03/22/02 04:22PM >>>

V See-Meng,

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Eric asked me to take a look at the ANO package. I spent a couple hours on it yesterday and have the following comments.

1. They provide a short dissertation on the problems between the FIVE Method and the"Canned" Excel Spread sheet, in almost a V&V approach. They conclude there are a number of inaccuracies in the two. My answer is ~ So what~ First, FIVE was a screening method to respond to a GL ~ it is not a definitive fire model ~ so why are they even using it for a Phase 3 SDP analysis? ~ surely they can do more than that, and second, If they have V&V issues, they should be addresses with the folks who did the IPEEE reviews ~ not us.

2. Their "realistic" fires are typically an order or two magnitude too small. For example, the HRR used in electrical cabinets were screening values ~ not actual HRR values. This NPP has <u>4160V</u> passing through this area ~ yet w/ their calculations, they would provide answers that are 2 orders of magnitude smaller than we actually saw at SONGS fire last year. The physics don't hold up.

3. They allow an uncontrolled 100 LB transient combustibles through the NPP. I can show you a fire using that value to start a fire in about any area in the NPP. so how do they just screen it away?

4. They are off on the factor for Thermoplastic cables functionality by 25 F (should be 400F), but totally neglect the fact that this is also close to the ignition temp ~ hence Fire Spread ~ and they ignore that. Some of the ANO people were even at Omega Point last year and witnessed the cables remote from the fire igniting in the hot gas layer ~ and they ignore that.

5. They count on the Fire Brigade response in the time frame of 20 minutes to "save the day" but that is so unrealistic from actual experience other than for incipient fires such as trash cans extinguished w/ a single extinguisher. That's part of the normal Defense-in-Depth program we have in Fire Protection ~ its also the reason we typically keep the fires minimal ~ but the SDP Phase 3 analysis has to look beyond that to assess the real risk.

6. They do not acknowledge the fire starting in the cable trays. As you know, this was the prime case at St.Lucie.

I could go on ~ but I think you get the main thoughts about the review.

Where do you suggest we go from here? We (SPLB) could run some simple fire models and produce a much better analytical view of the actual hazard/risk. What would you like to do as the next step?

MHS

CC:

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Connell, Edward; IQBAL, Naeem; Nease, Rebecca; Qualls, Phil; Weiss, Eric