

February 13, 2003

NOTE TO: File

FROM: Paul Lain, Plant Systems Branch, NRR/**RA**

SUBJECT: FIRE PROTECTION SDP REVISION TASK GROUP CONFERENCE CALL
TEAM C: FIXED DETECTION & SUPPRESSION

TEAM B MEMBERS: Paul Lain, NRC
Dan Frumkin, NRC
Ken Sullivan, BNL
Cliff Sinopoli, Exelon
James Oldman, Duke Power

ADDITIONAL ATTENDEES: Steve Nowlen, SNL

On January 17, 2003, I e-mailed the team members with the draft SDP revision, team assignments, and a list of team members. On February 5, 2003, I held a conference call to discuss the team assignment. The author of the draft SDP revision, Steve Nowlen, provided a discussion of the new SDP structure. The fire protection SDP revision task group has seven teams working on separate Phase 2 issues. Team C is assigned to (1) develop a listing of fixed fire detection and suppression, (2) define degradation levels, and (3) estimate detection and suppression delay time each system would cause if degraded. The team will also look at quantifying any credit that should be given to compensatory measures.

Mr. Frumkin noted the attachment 2 of the original SDP provides a good starting point for fixed system degradation. He also noted that a "system not affected" level needed to be added to differentiate between the different detection and suppression systems.

The team decided to work on these tasks individually and schedule a meeting for February 20, 2003 to meet in Rockville to assemble our efforts. The target completion for a draft resolution to the team assignment is March 7th, with submission to SPSB on March 14th.

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415-2346

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Attachment: Team Assignment

Team Assignments

Team C: Fixed Detection & Suppression Team

1/14/03

Lead Coordinator: Paul Lain, 301-415-2346, pwl@nrc.gov

Overview of Assignment

The Fixed Detection and Suppression Team must define how fixed fire suppression systems are to be credited in the analysis. This involves the following activities:

1. Define degradation levels for fixed fire detection or suppression system findings.
2. Define how degradation levels correspond to system credit in the quantification.
3. Define how Compensatory Measures that might make up for a degraded fixed fire protection system are to be credited.

The team activities involve interactions with the following team:

4. **Fire Frequency Team:** The fire frequency has the lead for development of the fire duration versus likelihood curves. The fixed detection and suppression team will need to help in deciding how the generic curves will be adjusted to reflect case specific factors of fixed fire detection and suppression.

Team Task: Define Degradation Levels

The Fixed Fire Detection and Suppression Team must define degradation levels and criteria applicable to such systems. Key questions/issues:

5. How many degradation levels are to be defined (two or three)?
6. What are the criteria/indicators for each degradation level?

Team Task: Define Credits for Degraded Systems

Given a finding that impacts a fixed fire protection system, some degradation in the credit given to that system is appropriate. The team must define how this degradation will be reflected in the quantification. Key questions/issues:

7. Does a finding impact system reliability, system effectiveness, or system timing? Each might be treated differently in an analysis.
8. When is the degradation sufficient to warrant giving no credit to the system?
9. How will the degradation be reflected in quantification if some, but not full, credit is to be taken?
10. Is credit given in quantification dependent on the nature of the fire scenario (e.g., is the system adequate to suppress the postulated fire) or are they independent of the fire scenario?

Team Task: Compensatory Measures

We need a method to adjust non-suppression probabilities or the fire duration curves to reflect compensatory measures that improve detection and/or suppression. Key questions/issues:

11. Various compensatory measures will improve fire detection. The team needs to define what these compensatory measures are, and how they will be credited (e.g., as a replacement for a degraded fire protection system or feature).
12. How do we determine when a fire watch should also be credited for enhancing fire suppression?
13. We need to distinguish between detection and suppression in some manner. The ultimate goal is suppression, but except for fixed automatic systems and self-extinguishing fires, we need to detect before we suppress.