

April 22, 2004

11/4/04

69FR 2165

(4)

Chief, Rules Review and Directives Branch

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U. S. Nuclear Regulatory Commission
Washington, DC 20555-0001

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2004 APR 23 AM 9:56
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COMMENTS ON DRAFT REGULATORY GUIDE DG-1129 (Proposed Revision 3 of RG 1.75)

BACKGROUND

On April 15, 2004, Satish Aggarwal, the contact for the proposed revision of RG 1.75 met with engineers from SPLB and EEIB to discuss the proposed Revision 3. Over the past 5+ years there has been significant activity by SPLB in the area of "Associated Circuits" as pertaining to Post-Fire Safe-Shutdown (e.g., 10 CFR Part 50 Appendix R, Section III.G.2). Just this year NRR has issued Regulatory Information Summary (RIS) 2004-03 "Risk-Informed Approach for Post-Fire Safe-Shutdown Associated Circuit Inspections," (ML040620400) and Draft NUREG-1778 "Knowledge Base for Post-Fire Safe-Shutdown Analysis." The purpose of the meeting with Mr. Aggarwal was to discuss potential confusion between RG 1.75 and requirements of 10 CFR Part 50.48 "Fire Protection." Mr. Aggarwal requested that staff members of SPLB and EEIB document their comments through the public comment process even though the comment period has closed. The following comments and recommendations are noted below per Mr. Aggarwal instructions.

COMMENTS

1. Remove the reference to "General Design Criteria 3, Fire Protection.. ... effects of fires and explosions." And replace it with a statement like, "Criteria for the separation and independence of electrical systems for fire protection and post-fire safe-shutdown can be found in RG 1.189 Fire Protection for Operating Nuclear Power Plants.

2. RG 1.75 and fire protection Regulations/guidance documents both use the term "Associated Circuits" However, both define the term differently based on their unique application, i.e., independence of electrical safety systems vs. post-fire safe-shutdown. We recommend a cautionary statement be added to Revision 3 of RG 1.75 which states something on the order of,

The term "Associated Circuits" is defined differently when it is applied to independence of electrical safety systems as compared to when the term is used in the context of post-fire safe-shutdown. (Appendix R) The fire protection associated circuits (of concern) may, or may not, have any connection to the categories of associated circuits defined in IEEE-384. For "Associated Circuits" as applied to post-fire safe-shutdown, the user should consult RG 1.189 Fire Protection for Operating Nuclear Power Plants"

SPLB will add similar language to the next revision of RG 1.189.

E-RIDS = ADM-03

Att = S. Aggarwal (SKA)

Template = ADM-013

GENERAL RECOMMENDATIONS

1. Section 6.1.1.2 of IEEE 384-1992 recognizes IEEE-383-1974 as the only accepted test method for "fire propagation." The validity of the fire test methods described in IEEE-383-1974 are debated within the Electrical and Fire Protection Engineering community. Since the issuances of IEEE-383, newer, more scientific "flame propagation" test methods have been developed. Also, cable manufactures are hesitant to qualify new cables to the IEEE-383 standard (for the limited clients in nuclear power) when they have already qualified the cables to Nationally Recognized Fire Test Standards such as UL 1666 "Test for Flame Propagation Height of Electrical and Optical-Fiber Cables Installed in Shafts," and UL 1685, "Vertical-Tray Fire Propagation and Smoke-Release Test for Electrical and Optical-Fiber Cables, to name two examples. We recommend RG 1,175 acknowledge the newer, more scientific flame spread tests for cables (electrical and others, e.g., fiber optics).

2. Section 6.1.8 of IEEE 364-1992 "Fire Hazard Areas." We do not understand the need for this section considering the requirements established for fire protection in other NRC documents. Further, we question the validity of the requirements in this section such as.

- Item (2) under 6.1.8.1 identifies 'Solids exhibiting a flame spread classification of 26 or higher per ASTM E84" yet footnote 7 states to exclude cables. This contradicts established NRC Fire Hazard Analysis (FHA) guidance which identifies cables as one of the largest (if not largest) fire hazard in the NPP. The focus is also only on the flame spread which is only one attribute of the FHA. An equal, (or maybe even more important attribute depending on the configuration) would be the Heat Release Rate (HRR) of the combustible.

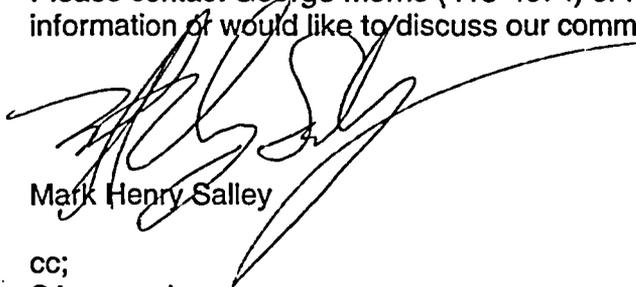
- The scientific basis for the equation $SD + 17B \geq 50$ for adding separation distance to passive fire barriers to determine a minimum level of safety? Was the intent of this equation to imply that 50 feet ($B=0$) is equivalent to a 3 hour fire rated barrier ($SD=0$) ? The two are not equivalent levels of safety. Then the next statement allows exceptions but does not state minimum acceptance criteria for testing or analysis.

- What section 6.1.8.3, Routing Requirements, is attempting to require. It appears this section is attempting to limit fire damage of one train of 1E equipment or associated circuits, to a single fire area. This appears similar to the 10 CFR Part 50 Appendix R, Section III.G regulations. However, its important to recognize that not all equipment relied upon for post-fire safe-shutdown is not necessarily Class 1E.

We recommend that Revision 3 to RG 1.175 not endorse Section 6.1 .8, and reference the fire protection requirements to RG 1.189.

CONTACT

Please contact George Morris (415-4074) or myself (415-2840) if you require any additional information or would like to discuss our comments further.

A large, stylized handwritten signature in black ink, appearing to read 'M. Salley', is written over the text and extends across the page.

Mark Henry Salley

cc;
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