

ACCEPTANCE CRITERIA FOR OPERATOR MANUAL ACTIONS RULEMAKING

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BRIEF HISTORY

- 10CFR Part 50, App. R, Paragraph III.G.2, provides three acceptable methods to protect at least one shutdown train during a fire when redundant trains are located in same fire area
 - (a) 3-hr passive fire barrier
 - With fire detection and automatic suppression:
 - (b) 20-ft separation and no intervening combustibles
 - (c) 1-hr passive fire barrier
- Starting in 2000, the Reactor Oversight Process showed some licensees crediting unapproved operator manual actions for III.G.2 compliance

HISTORY (continued)

- In March 2003, NRC issued *Inspection Criteria for FP Manual Actions*
- In June 2003, NRC issued SECY-03-0100, *Rulemaking Plan on Post-Fire Operator Manual Actions*
- In Sept. 2003, the Commission issued an SRM approving “staff’s recommendation to proceed with rulemaking ... to revise the FP program requirements contained in Appendix R of 10 CFR Part 50 and the associated guidance.”

HISTORY (continued)

- Following several Fall 2003 public meetings and a presentation to the ACRS FP Subcommittee, NRC issued *Post-Fire Safe Shutdown; Criteria for Determining Feasibility of Manual Actions*, in the Federal Register
 - Proposed acceptance criteria for “feasible” (and reliable) operator manual actions during an interim enforcement discretion period

ACCEPTANCE CRITERIA

- Following a 60-day period for public comments, the proposed acceptance criteria have been revised
 - Public (non-industry) comments were exclusively negative toward rulemaking
 - Industry comments felt rulemaking was too restrictive
 - Limited “substantive” comments on the criteria themselves

CRITERIA (continued)

- Operator manual actions – manipulation of components and equipment, typically at their location outside the main control room, to achieve and maintain post-fire safe shutdown.
- As for two of the current III.G.2 options, fire detection and automatic fire suppression shall be installed in the area where the fire occurs in order to credit operator manual actions.

CRITERIA (continued)

- Criteria address both “feasibility” (can it be done) and “reliability” (how well can it be done) of operator manual actions
 - Feasibility established by Demonstration criterion
 - The required operator manual actions shall be demonstrated through time-authenticated walk-downs utilizing a randomly-selected crew and equipment required to perform the actions during a fire. Documentation of the demonstration, as well as periodic operator training, shall be provided.

CRITERIA (continued)

- Reliability established by Time Margin criterion (formerly “Complexity and Number”)
 - The analysis must contain a postulated fire time line assuring sufficient time to travel to action locations and perform actions required to achieve and maintain the plant in a hot shutdown condition. The fire time line shall extend from the time of initial fire detection until the time when the ability to achieve and maintain hot shutdown is reached, and include a time margin that accounts for all variables, including (a) differences between the demonstrated and actual conditions and (b) human performance uncertainties that may be encountered.

CRITERIA (continued)

- Remaining criteria support both feasibility and reliability of operator manual actions
 - Available Indications
 - Environmental Considerations, including Accessibility
 - Staffing and Training
 - Communications
 - Equipment, both Portable (“tools,” e.g., ladders, SCBA) and Plant (“installed/fixed,” e.g., valves)
 - Procedures

PATH FORWARD

- Time Margin to be refined through RES-facilitated expert elicitations among NRC/contractor human factors analysts, NRC inspectors, and human reliability analysts
 - Two elicitations, April and May 2004
 - Results in draft Regulatory Guide, June 2004
- Proposed rule to be published in Federal Register in early 2005, accompanied by final draft Regulatory Guide addressing all criteria