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*Bill
Wilson
Issue*

*Note - This is more than a fire barrier issue.
Want to get some standards for plants
CAGF review.*

RULEMAKING ISSUE NOTATION VOTE

SECY-02-XXXX

FOR: The Commissioners
FROM: William D. Travers
Executive Director for Operations

SUBJECT: RULEMAKING PLAN ON FIRE PROTECTION MANUAL ACTIONS
(REVISION TO APPENDIX R OF 10 CFR PART 50)

PURPOSE:

To obtain the Commission's approval to proceed with rulemaking to revise fire protection program requirements contained in Appendix R of 10 CFR Part 50 to resolve a regulatory compliance issue.

BACKGROUND:

fixed systems and

*provide
alternative
arrangement*

NRC's fire protection requirements prescribe a defense-in-depth approach to protect safe shutdown functions, through (1) fire prevention activities (limits on combustibles through design, construction, and administrative controls); (2) the ability to detect, control, and suppress a fire rapidly (trained fire brigades); and (3) physical separation of redundant safe shutdown trains. Appendix R, Paragraph III.G.2 of 10 CFR Part 50 specifies three approved methods, any one of which is an acceptable method, to ensure that at least one means of achieving and maintaining safe shutdown conditions will remain available during and after any postulated fire in the plant. The three methods of protecting at least one shutdown train during a postulated fire when redundant trains are located in the same fire area are:

1. Separation of the redundant system by a passive barrier able to withstand a fire for at least three hours; or
2. Separation of the redundant system by a distance of twenty feet containing no intervening combustible material, together with fire detectors and an automatic fire suppression system; or
3. Separation of the redundant system by a passive barrier able to withstand a fire for one hour, coupled with fire detectors and an automatic fire suppression system.

If a licensee is unable to satisfy the above requirements, then Appendix R specifies that alternative or dedicated shutdown capability and ~~associated circuits~~ shall be provided.

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protection

As a result of recent fire program inspections of licensees by the regions, the staff has determined that some licensees are not in compliance with Appendix R requirements in Paragraph III.G.2 for fire protection of safe shutdown capability. The nature of the non-compliance only involves some common fire areas in which redundant safe shutdown trains are both located. Specifically, in some instances:

- There are licensees whose safe shutdown trains do not have the physical fire barrier separations specified by the regulations for fire areas where both safe shutdown trains are located; and
- These licensees have not designated an alternate or dedicated shutdown system; and
- These licensees have not received NRC approval of an alternative method of compliance with Appendix R (e.g., an exemption).

Furthermore:

- These non-compliant licensee rely on "manual actions" instead of fire barriers to protect the safe shutdown capability of a redundant train. "Manual actions" refer to those actions needed to maintain functionality of a safe shutdown train during a fire by using operators to perform field manipulations of components that would not ordinarily be necessary if the train were protected by the prescribed fire barrier or separation distance as required by the regulations.
- These non-compliant licensees have taken credit for manual actions as an acceptable alternative to the Appendix R requirements based on a 50.59-like change process. The change process is a standard license condition that allows licensees to change their fire protection program without NRC approval provided that the change has no adverse impact on the ability to achieve or maintain safe shutdown in the event of a fire.
- The staff has provided many exemptions to the fire protection regulations of Appendix R that approved manual actions as an acceptable alternative to the physical fire barrier separation requirements; however, in the case of the non-compliant licensees, no NRC approval was sought or given.
- It is the staff's understanding that most of these non-compliant conditions came about during the resolution of the Thermo-Lag fire barrier material issue in the early 1990's. The staff believes that many licensees utilized manual actions rather than upgrade or replace the Thermo-Lag fire barrier material that was originally used to comply with Appendix R requirements.

The staff sought advice from the Office of General Council (OGC) as to whether Appendix R, Paragraph III.G.2 permits licensees to rely on manual actions in lieu of fire barriers. OGC advised the staff that the regulation cannot be reasonably interpreted to permit reliance upon manual actions with respect to redundant safe shutdown. In the past, the NRC staff had specifically reviewed and approved by exemption licensee's requests to rely upon manual actions in complying with Paragraph III.G.2. However, the staff's approvals were based on consideration of the feasibility of the manual actions involving factors such as complexity, timing, environmental conditions, and training. Many of the licensees identified in recent inspections as being in non-compliance with Paragraph III.G.2, because of their reliance on manual actions, have not considered these criteria.

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licensee from its responsibility to seek an exemption when the configuration does not comply with the applicable technical requirements of Appendix R. Such as the use of manual (act ind.)

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DISCUSSION:

The staff has exchanged correspondence and had meetings with industry representatives from the Nuclear Energy Institute (NEI) on the non-compliance condition. NEI has surveyed licensees on the extent of the non-compliance condition. In a meeting with the staff on June 20, 2002, NEI indicated that the use of unapproved manual actions for maintaining safe shutdown capability ~~during~~ a fire is pervasive throughout the industry and that most licensees have at least some instances where they rely on manual actions without NRC approval. However, the industry does not agree with the staff that this is a compliance issue and has stated numerous times that the use of manual actions to achieve safe shutdown is acceptable, without prior NRC approval, as long as the reliance on manual actions does not adversely affect the ability of a plant to achieve and maintain safe shutdown.

Given the implied extent of the non-compliance condition, the staff is concerned that enforcing the current regulations will result in the expenditure of significant licensee and NRC resources in processing enforcement actions and/or exemption requests. The staff feels that the use of manual actions is not of sufficient safety concern to justify diversion of both licensee and staff resources from more safety significant issues.

However, the staff is concerned that some of the unapproved manual actions may not in all cases be feasible. Specifically, regional inspectors have found some examples of manual actions that were considered unfeasible to perform due to one or more of the following deficiencies:

- Procedures and/or training for the manual actions were inadequate, or
- There was not adequate time, staffing, or diagnostic instrumentation, based on the progression of the fire or the thermal-hydraulic conditions of the plant, to permit feasible use of the manual actions, or
- Manual actions were conducted in locations with environmental conditions ill-suited for the tasks to be performed (e.g., temperature, radiation, lighting, accessibility, or other limiting habitability problems).

Notwithstanding the staff's concern that some ^{can be} unreviewed manual actions may not always be feasible, the staff agrees that manual actions ~~are generally~~ ^{are} generally feasible and have been frequently approved by the staff as an alternative for fire ~~barrier~~ ^{can be} protection of safe shutdown trains that are located in the same fire area. The staff believes that it can develop generic acceptance criteria that, when used in conjunction with detailed regulatory guidance, would provide licensees a way of assessing the acceptability of currently unapproved manual actions in a manner that maintains safety and does not adversely affect the ability to achieve and maintain safe shutdown. *in the event of a fire.*

The staff has evaluated its options in the attached rulemaking plan and recommends that the Appendix R fire protection regulations be revised to permit the use of manual actions, without prior NRC approval, provided the licensee can demonstrate that the manual actions meet certain acceptance criteria. These manual action acceptance criteria will be developed as part of the rulemaking. The staff anticipates that high level manual action acceptance criteria requirements will be placed in the rule language and detailed supportive guidance would be provided in an associated regulatory guide. *ed*

and licensees

performance

The staff can qualitatively justify its recommendation based on an assessment against the agency's strategic performance goals.

- The proposed rulemaking will maintain safety by ensuring that the manual actions currently in place (but not evaluated and approved by the NRC) will be assessed against generic acceptance criteria for manual actions.
- The proposed rulemaking will avoid significant regulatory burden on licensees compared to what would be expended should the NRC elect to enforce the current regulations.
- The proposed rulemaking will avoid significant NRC effort and resource expenditures associated with enforcing the current regulations or processing related exemptions.
- Public confidence may be decreased by the proposed rulemaking because there is an appearance that regulations are being relaxed to resolve a compliance issue. However, the rulemaking process will permit ample opportunity for all stakeholders to comment on the technical criteria governing reliance on manual actions for safe shutdown. Criteria governing the acceptable use of manual actions have been developed by the staff but have not been published for stakeholder input. Rulemaking, by providing an opportunity for stakeholder comment, may offset the reduction in public confidence concerning the staff's resolution of the proposed compliance issue.

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In summary, the proposed rulemaking will provide an alternate method for providing protection of safe shutdown capability from a fire by allowing the use of manual actions in lieu of fire barrier material. Use of this method would not require NRC prior approval when the manual actions are demonstrated to comply with generic acceptance criteria. This course of action will permit a majority of licensees that are non-compliant with current regulations to achieve compliance through appropriate analysis and documentation of their manual actions.

The staff notes that there may be policy concerns related to this recommended course of action. The proposed rulemaking could appear to imply that the staff finds manual actions equivalent to fire barrier protection. This is not the case. The staff would always prefer the use of physical fire barriers over the use of manual actions even if the safe shutdown capability can be adequately achieved and maintained during a fire with manual actions. In addition, there is a policy concern regarding the use of manual actions as a resolution of the Thermo-Lag issue. There is a perception that Thermo-Lag, where found to be deficient, was to be resolved by replacement or upgrade rather than through the use of manual actions. The staff could find no basis for this perception besides a statement made to Congress by Chairman Selin in March 1993 (discussed in the attached rulemaking plan). The staff has no concerns about using manual actions as an alternative to deficient Thermo-Lag where such actions were approved by the staff or where the manual actions have been assessed against generic acceptance criteria.

and, if necessary, revision

fire barrier

ENFORCEMENT CONSIDERATIONS

Until the regulations are formally revised and a final rule issued that permits the use of manual actions without NRC approval, ~~most~~ licensees will be non-compliant with Appendix R, Paragraph III.G.2, to some extent. The staff recommends enforcement discretion regarding existing violations of Appendix R, Paragraph III.G.2, where manual actions are used in lieu of

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fire barrier protection without NRC approval. Contingent on the Commission's approval to resolve this compliance problem via rulemaking, the staff intends to issue an Enforcement Guidance Memorandum (EGM) which would allow feasible manual actions to be considered as minor violations for the interim period prior to a finalized amended rule. The staff will continue the existing practice of evaluating all manual actions used by licensees in lieu of Appendix R, Paragraph III.G.2 barriers to determine if the manual actions are feasible and no enforcement discretion would be exercised for manual actions that were found to not be feasible. The staff also plans to notify licensees of this intended course of action through a Regulatory Information Summary (RIS) upon the Commission's approval of the attached rulemaking plan.

RESOURCES

Resources to conduct the rulemaking are estimated at 2.5 full-time equivalent (FTE) over the period FY 2003-2004 and are currently budgeted.

COORDINATION:

OGC has no legal objection to the rulemaking plan. The Office of the Chief Financial Officer has reviewed this paper for resource implications and has no objection to its content.

The Office of Enforcement (OE) has no objection to the rulemaking plan and concurs in it. OE specifically concurs with the staff recommendation of exercising enforcement discretion regarding existing violations of 10 CFR Part 50, Appendix R, Paragraph III.G.2 related to using manual action in lieu of fire barriers that have not been approved by the NRC.

RECOMMENDATION:

The staff recommends that the Commission approve the attached rulemaking plan to revise 10 CFR Part 50, Appendix R, as recommended in Option 4 of the plan.

The staff also recommends enforcement discretion for those licensees that currently rely on unapproved manual actions.

William D. Travers
Executive Director
for Operations

Attachment: Rulemaking Plan

Forwarded recommendations is ongoing. See sample.

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Attachment: Rulemaking Plan

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