

INSPECTION CRITERIA FOR FIRE PROTECTION MANUAL ACTIONS

BACKGROUND

10 CFR 50 Appendix R, Section III.G.2 requires that circuits that could prevent the operation or cause misoperation of redundant trains of safe shutdown equipment have one of the specified fire protection features. Manual actions to respond to misoperations are not listed as an acceptable method for satisfying this requirement. However, the NRC has previously accepted plant-specific manual actions in formal exemption/deviation requests and in safety evaluation reports (SERs).

Based on inspection results and industry comments the NRC determined that licensees have, without request for exemption/deviation from the code, implemented manual actions where the specified requirements of Section III.G.2 cannot be met. The staff concluded that rulemaking would be required to allow licensees committed to Appendix R to substitute manual actions in lieu of Section III.G.2 compliance. For an interim period, while rulemaking is in progress, the staff determined that manual actions and supporting licensee analysis meeting the below guidelines would provide reasonable assurance of safety. Authority to approve a licensee methodology that does not meet NRC regulations is not delegated to the inspectors. However, inspectors will ensure that plant specific manual actions meet the guidelines of this enclosure. Rulemaking, when completed, will supersede this guidance. Questions may be directed to SPLB/NRR.

APPLICABILITY

This guidance is provided for the assessment of manual actions implemented in conjunction with licensee commitment to Section III.G.2.

Verify that the licensee is committed to meet the requirements of Section III.G.2. Determine whether the requirements are met with or without the use of manual actions. If manual actions are not invoked this guidance is not applicable.

If manual actions were previously approved by the staff and exemption/deviation has been issued, verify that the licensee continues to meet the basis of the staff action.

INSPECTION PLANNING

Identify the number of fire areas where the licensee uses manual actions in lieu of Section III.G.2 requirements. Identify one area for evaluation which appears to be more complex based on the number and type of manual actions, accessibility, and communication needs.

✓ DIAGNOSTIC INSTRUMENTATION

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Determine whether adequate diagnostic instrumentation, unaffected by the postulated fire, is provided for the operator to detect the specific spurious operation that occurred. Some licensees may have protected only those circuits specified in Information Notice 84-09. Additional instrumentation may be needed to properly assess a spurious operation. Annunciators, indicating lights, pressure gages, and flow indicators are among those instruments typically not protected from the effects of a fire. Instrumentation should also be available to verify that the manual action accomplished the intended objective.

✓ ENVIRONMENTAL CONSIDERATIONS

Review environmental conditions the operator may encounter while accessing and performing the manual action. Radiation levels should not exceed normal 10 CFR Part 20 limits. Emergency lighting should be provided as required in Appendix R, Section III.J or by the licensee's approved fire protection program. Temperature and humidity conditions should be reviewed to ensure that temperature and humidity do not affect the capability to perform the manual action. Fire effects should be reviewed to ensure that smoke and toxic gases from the fire do not affect the capability to perform the manual action.

✓ STAFFING

Review licensee staffing to determine whether that adequate qualified personnel are available to perform the required manual actions and to safely operate the reactor.

✓ COMMUNICATIONS

If manual action coordination with other plant operations is required, then communications capability must be protected from effects of a postulated fire.

✓ SPECIAL TOOLS

If special tools are required, determine whether tools are dedicated and available from accessible nearby location.

✓ TRAINING

Determine whether operator training on the manual actions and the procedure is adequate and current.

✓ ACCESSIBILITY

Review accessibility. If a ladder or other special access equipment is needed, verify the availability. Determine whether an operator can reach the required location without personal hazard.

✓ TIMELINE

Review the licensee's thermo-hydraulic timeline and ensure that the manual actions can be accomplished before unrecoverable conditions occur.

PROCEDURES

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Review procedural guidance to ensure that it is adequate and contained in an emergency procedure. Operators should not rely on having time to study normal plant procedures to find a method of operating plant equipment that is seldom used.

✓ VERIFICATION AND VALIDATION

Determine whether the manual actions have been verified and validated by plant walkdowns using the current procedure. Determine whether the walkdowns were timed to assure accomplishment within required time specified in the plant's safe shutdown analysis.

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