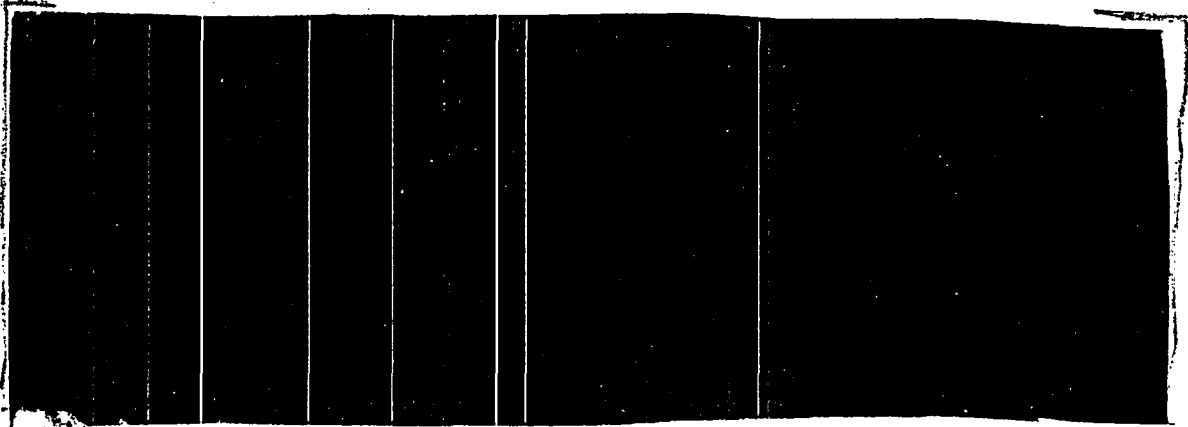


.2 Protection of Safe Shutdown Capabilities

a. Inspection Scope



b. Findings

eks

Introduction. The team identified an unresolved item related to compliance with the technical requirements of Section III.G.2 of 10 CFR Part 50, Appendix R, for the failure to ensure that redundant trains of safe shutdown systems in the same fire area were free of fire damage. [REDACTED]

Description. Wolf Creek License Condition 2.C. (5) (a) and SER Section 9.5.1.7 invoke the technical requirements of 10 CFR 50, Appendix R. Appendix R, Section III.G.2 describes three acceptable methods for protecting at least one safe shutdown train when redundant trains are located in the same fire area. The Section III.G.2 requirements are based on the combination of physical barriers, spacial separation, fire detection and automatic suppression systems. SNUPPS FSAR Appendix 9.5E provided the design comparison between the plant's fire protection program and 10 CFR 50, Appendix R. The comparison to Section III.G, Fire Protection of Safe Shutdown Capability, states, "Redundant trains of systems required to achieve and maintain hot standby are separated by 3-hour-rated fire barriers, or the equivalent provided by III.G.2, or else a diverse means of providing the safe shutdown capability exists that is unaffected by the fire." Wolf Creek has interpreted "diverse means" to mean by any reasonable means including local valve and breaker operations as long as they are within the scope of normal operator duties. The team disagrees with this interpretation. The components being operated are identified as required for operation of safe shutdown systems or are subject to potential spurious operation impacting the shutdown. The local manual actions are being performed due to fire damage to electrical cables related to those components and are meant to compensate for damage or maloperation of safe shutdown equipment caused by fire. Manual actions are not a method of satisfying Appendix R, Section III.G.2 requirements. Plant specific manual actions may be acceptable based on detailed specific exemptions or deviations. The NRC staff does not recognize the use of manual actions as meeting the technical requirements of Appendix R.

Information in this record was deleted
in accordance with the Freedom of Information
Act, exemptions 5 & outside scope
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Analysis. This finding is of greater than minor safety significance because it impacted the mitigating systems cornerstone objective to ensure the availability, reliability, and capability of systems that respond to external events (such as fire) to prevent undesirable consequences. The team reviewed Procedure OFN KC-016, "Fire Response" and stepped through the manual actions directed in the procedure with licensee operations personnel. The team found that the manual operator actions were reasonable (as defined in Enclosure 2 of Inspection Procedure 71111.05T), and could be performed within the analyzed time limits. Since the manual operator actions were considered reasonable, the significance determination process was not entered. The team determined that this finding is of very low safety significance (green) in accordance with the guidance in Enclosure 2 to Inspection Procedure 71111.05T.

Enforcement. The licensee's Fire Hazard Analysis states that it will comply with the technical requirements of Appendix R or utilize a diverse means to do so. Appendix R, Section III.G.2 to 10 CFR Part 50 requires that cables whose fire damage could prevent the operation or cause maloperation of safe shutdown functions be physically protected from fire damage. Contrary to this requirement, the licensee implemented a methodology that utilized manual operator actions as a diverse means to mitigate the effects of fire damage in lieu of providing physical protection from fire damage. This is a violation of 10 CFR Part 50, Appendix R, Section III.G.2.

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.6 Alternative Shutdown Capability

a. Inspection Scope

The team reviewed the licensee's alternative shutdown methodology to determine if the licensee properly identified the components, systems, and instrumentation necessary to achieve and maintain safe shutdown conditions from the auxiliary shutdown panel and alternative shutdown locations. The team focused on the adequacy of the systems selected for reactivity control, reactor coolant makeup, reactor heat removal, process monitoring and support system functions. The team verified that hot and cold shutdown from outside the control room could be achieved and maintained with offsite power available or not available. The team verified that the transfer of control from the control room to the alternative locations was not affected by fire-induced circuit faults by reviewing the provision of separate fuses for alternative shutdown control circuits.

The team also reviewed the operational implementation of the licensee's alternative shutdown methodology. Team members observed a walk-through of the control room evacuation procedures with that day's watchstanders consisting of both licensed reactor and senior reactor operators. The team observed operators simulate performing the steps of Procedure OFN RP-017, "Control Room Evacuation," Revision 21, which provided instructions for performing an alternative shutdown from the auxiliary shutdown panel and for manipulating equipment in the plant. The team verified that the minimum number of available operators, exclusive of those required for the fire brigade, could reasonably be expected to perform the procedural actions within the applicable plant shutdown time requirements and that equipment labeling was consistent with the