

**REFERENCE MATERIAL FOR OCTOBER 27,2004, ACRS  
SUBCOMMITTEE MEETING ON FIRE PROTECTION**

Released October 22, 2004

## DRAFT TEXT - PROPOSED RULE FOR OPERATOR MANUAL ACTIONS FOR FIRE PROTECTION

The following changes would be made to Appendix R to 10 CFR Part 50.

Section III.G. 2. - would be revised to read as follows:

c. Enclosure of cable and equipment and associated non-safety circuits of one redundant train in a fire barrier having a 1-hour rating. In addition, fire detectors and an automatic fire suppression system shall be installed in the fire areas; or

c-1. Operator manual actions that satisfy the acceptance criteria in paragraph III.P. In addition, fire detectors and an automatic fire suppression system shall be installed in the fire area.

New Section III.P would be added to read as follows:

### III.P Operator Manual Actions.

- 1 For purposes of this section, operator manual actions means the integrated set of actions needed to ensure that a redundant train of systems necessary to achieve and maintain hot shutdown conditions located within the same area outside the primary containment is free of fire damage.
- 2 A licensee relying on operator manual actions must meet all of the following requirements:
  - (a) Analysis. The licensee shall prepare an analysis for each operator manual action which demonstrates its feasibility and reliability.
    - (1) The analysis must contain a postulated fire time line showing that there is sufficient time to travel to action locations and perform actions required to achieve and maintain the plant in a hot shutdown condition under the environmental conditions expected to be encountered, including security events, without jeopardizing the health and safety of the operator performing the manual actions. The fire timeline shall extend from the time of initial fire detection until the time when the ability to achieve and maintain hot shutdown is reached, and shall include a time

margin that accounts for all variables, including (i) differences between the demonstrated and actual conditions and (ii) human performance uncertainties that may be encountered.

- (2) The analysis must address the functionality of equipment or cables that could be adversely affected by the fire or its effects but still utilized to achieve and maintain hot shutdown.
  - (3) The analysis must identify all equipment required to accomplish the operator manual action under the postulated timeline, including (but not limited to) (i) all indications necessary to show the need for the operator manual actions, enable their performance, and verify their successful accomplishment, and (ii) any necessary communications, portable, and life support equipment.
- (b) Procedures and training. Plant procedures must include each operator manual action required to achieve and maintain hot shutdown. Each operator must be appropriately trained on those procedures.
- (c) Implementation. The licensee shall ensure that all systems and equipment needed to accomplish each operator manual action are operable and readily accessible consistent with the analysis required by paragraph 2(a). The number of operating shift personnel required to perform the operator manual actions shall be on site at all times.
- (d) Demonstration. Periodically (at intervals not to exceed 12 months), the licensee shall conduct walkdowns using an established crew of operators to demonstrate that each operator manual action required to achieve and maintain the plant in a hot shutdown condition can be accomplished consistent with the analysis in paragraph 2(a) of this section. The licensee may not implement any operator manual actions until they have been demonstrated by a walkdown to be consistent with the analysis. The licensee shall take prompt corrective action if any subsequent periodic walkdown demonstrates that the operator manual actions can no longer be accomplished consistent with the analysis.