

VALUE/IMPACT ASSESSMENT OF PROPOSED
FIRE PROTECTION RULE

NEED

1. Appendix A, "General Design Criteria for Nuclear Power Plants," to 10 CFR Part 50 presents the basic requirements for design and operation of nuclear power plants. It forms the baseline for all NRC licensing decisions with respect to nuclear power plants. Criterion 3, "Fire Protection," reads as follows:

"Criterion 3 - Fire Protection. Structures, systems, and components important to safety shall be designed and located to minimize, consistent with other safety requirements, the probability and effect of fires and explosions. Noncombustible and heat resistant materials shall be used wherever practical throughout the unit, particularly in locations such as the containment and control room. Fire detection and fighting systems of appropriate capacity and capability shall be provided and designed to minimize the adverse effects of fires on structures, systems, and components important to safety. Firefighting systems shall be designed to assure that their rupture or inadvertent operation does not significantly impair the safety capability of these structures, systems, and components."

2. NUREG-0050, "Recommendations Related to Browns Ferry Fire," the report prepared by the Special Review Group chaired by Stephen H. Hanauer, was

published in February 1976. The Review Group's recommendations for NRC are summarized in the second paragraph of Section 1.6.6 on page 7. "The Review Group's evaluation of the events associated with the fire indicates that improvements are needed in NRC licensing, standards development, and inspection programs. NRC action and related Review Group recommendations are discussed in Chapter 6. The Review Group recommends that ongoing efforts to upgrade NRC programs in fire prevention and control and related QA be expanded as needed, and as recommended elsewhere in this report, and coordinated to form a more coherent regulatory program in this area."

The rest of the Review Group's report expanded on the identified needs for:

1. additional fire protection guidance promulgated by NRC;
 2. a review of all operating nuclear power plants, comparing them against the guidance developed by NRC; and
 3. the need for a comprehensive fire protection program at each operating nuclear plant to ensure continued compliance with NRC guidance.
3. Appendix A to Branch Technical Position 9.5-1 was developed to give specific guidance in a number of different areas of fire protection concern for operating nuclear power plants. The NRC requested each operating nuclear plant to submit a revised safety analysis report for fire

protection and has evaluated the fire protection program and procedures at each operating plant against the requirements of Appendix A to BTP 9.5-1.

4. A number of open issues remain at several plants where the licensees have refused to accept the staff's interpretation of the minimum requirements of General Design Criterion 3.
5. Substantial staff and licensee manpower has been expended arguing the need for these items with individual licensees. The viewpoints of each party is documented and well known. Much additional effort by the staff, licensees, and intervenors would be required to again argue the merits of each individual item for each licensee involved if we were to proceed with orders.
6. In the Commission's Memorandum and Order dated April 13, 1978, concerning the Union of Concerned Scientists' Petition, the Commission ordered the staff to use its best efforts to maintain current schedules for implementation of the Fire Protection Action Plan. Those schedules had the goal of implementing all modifications by November 1, 1980, or, for good cause shown, the first refueling outage thereafter. The present staff resources and time available are not sufficient to resolve these issues by order by November 1, 1980.
7. The staff needs this proposed rule to resolve the open generic issues remaining at several plants as a result of the above differences in interpretation of minimum fire protection requirements of General Design Criteria 3.

VALUE

When approved and issued as an effective rule, the provisions of this proposed Appendix R:

1. Will protect the public health and safety during fires at operating nuclear power plants by ensuring the availability to plant operators of at least one means to safely shut down the reactor and to minimize and control release of radioactive materials.
2. Will provide applicants with minimum acceptable fire protection requirements where disagreement exists between the staff and several licensees concerning interpretation of guidance contained in Appendix A to BTP 9.5-1, and will remove possible confusion and uncertainty connected with these interpretations.
3. Will ensure uniform compliance with the staff's interpretation of the fire protection guidance contained in Appendix A to BTP 9.5-1.
4. Will eliminate the need for the staff to defend at public hearings its position on each contested fire protection issue as would be the case if the rule is not adopted and orders are issued instead.
5. Will increase efficiency of the staff in present fire protection review processes for operating plants and future licensing activities.

IMPACT

NRC

No adverse impact is expected for the staff.

LICENSEE

Most licensees already comply with the requirements of the proposed rule, and they will incur no additional costs associated with this rule. Those licensees who have not yet complied with the NRC fire protection guidelines will incur some additional capital and operating costs. Accurate cost estimates are not available at this time and will vary for each plant depending on several parameters. Capital costs will be involved for the following specific requirements:

- A. Fire Water Distribution System
- B. Section Control Valves
- C. Hydrant Block Valves
- D. Manual Fire Suppression (Standpipe and Hose Systems)
- F. Automatic Fire Detection
- G. Protection of Safe Shutdown Capability
- J. Emergency Lighting
- L. Alternate Shutdown Systems
- M. Fire Barriers
- N. Fire Barrier Penetration Seal Qualification
- O. Fire Doors
- P. Reactor Coolant Pump Lubrication System
- Q. Associated Circuits

Operating costs are primarily involved for the other specific requirements. Item E, Hydrostatic Hose Tests, will have only minimal operating costs every three and five years. Item H, Fire Brigade, may require the training of as many as ten extra employees for some plants that have not agreed to the five-man fire brigade. Also Item I, Fire Brigade Training, may increase operating costs owing to more frequent and more detailed fire brigade training, practice, and drills. The various administrative controls specified in Item K will result primarily in increased operating, rather than capital, costs.