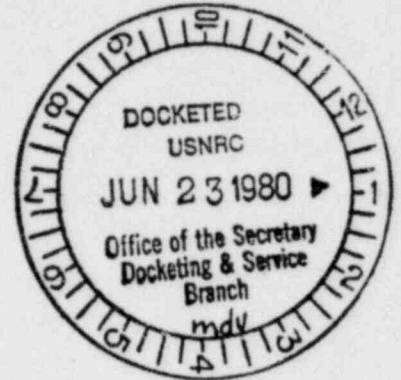


PLC Professional Loss Control, Inc.

Fire Protection, Safety, and Environmental Engineering
P.O. Box 446 • Oak Ridge, Tennessee 37830 • (615) 482-3541

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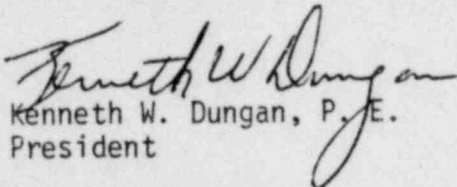
Secretary of the Commission
U. S. Nuclear Regulatory Commission
Washington, D. C. 20555

Attention: Docketing and Service Branch

Dear Sir:

Attached are my comments on the proposed Appendix R of 10 CFR Part 50. Although I agree in principle with the majority of the document, I find it vague and unenforcible. The interest of safety and fire protection and the financial interest of the consumers would be better served by the continued use and updating of existing Regulatory Guides than the implementation of Appendix R.

Very truly yours,


Kenneth W. Dungan, P. E.
President

KWD/k

Attachments: 1

Acknowledged by card. 6/23/80. mdv...

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COMMENTS ON 10 CFR 50 - APPENDIX R

General Comments

1. The wording of the entire document is vague and unenforcible as a law. The Appendix is written partially stating objectives and partially stating specific methods of accomplishment. Court interpretation of this document could be vastly different from the intent of the Commission.
2. There are improperly used and inadequately explained fire protection terms mentioned throughout the Appendix. These make interpretation and implementation of the Appendix difficult.
3. A 30 day comment period is insufficient time.

Specific Comments

1. "50.55 Codes and Standards. (k) Fire Protection" states that Appendix R applies to plants operating prior to January 1, 1979 and requires modification caused by this rule to be completed by November 1, 1980. With the new item which may differ from previous SER requirements, this completion date is unreasonable, especially since the final version of the Appendix will not be available until at least mid July.
2. Paragraph II. A. Fire Protection Program requires the establishment of a fire protection policy for protection of structure, systems, and components important to safety but "safety" is not defined. Past requirements were limited to "safe shutdown". If safety is to mean all nuclear safety related systems, then systems necessary to mitigate accidents would be included. This expansion could make compliance by November 1, 1980 impractical, if not impossible.
3. Paragraph II. A. also requires an "individual...knowledgeable in both fire protection and nuclear safety". No explanation of, or measure for "knowledgeable" is given. No credit is given on anyone who may be expert in one area and supported by experts in the other. There are few, if any, people available either on-site at plants, in utility corporation offices, in consulting and engineering firms or in regulatory agencies that are truly knowledgeable in both fire protection and nuclear safety.

4. Paragraph II.A.1. Fire Prevention states in situ fire hazards shall be minimized by plant design and plant arrangement, yet this document pertains to operating plants where "design and arrangement" are fixed. This could and should be a major consideration for plant modification and should be worded to address plant modification not original design.
5. Paragraph II.1.2. Fire Detection, Suppression and Containment refers on numerous occasions to "large fire hazards" without defining this term. For grouped electrical cables (and to a lesser extent other systems and equipment) little or no consensus exists as to what a "large" hazard is. The concept is good but is not enforceable.
6. Paragraph II.A.2. refers to a rating that "exceeds the duration of the in situ fire load by at least one-half hour. This is a technically incorrect assessment of fire development and growth. Fire duration and intensity are controlled by far more parameters than fire load. Fuel configuration, fuel surface area and room ventilation rate are often more critical in determining the time-temperature history of an enclosure than merely the total amount of fuel.
7. Paragraph II.B. Loss of Offsite Power implies that fire detection and suppression must function either only with offsite power or only without offsite power. The intent is that these systems be reliably powered to work even with the loss of offsite power.
8. Paragraph II.D. Access for Manual Firefighting references "effective functioning of the fire brigade", but nowhere in Appendix R is guidance given on what access is required for "effective" brigade operations. With the emphasis on fixed systems for areas with "poor" access, better definition of "good access" and "effective functioning" should be given.
9. Paragraph II.E. Fire Hazards Analysis states that separation of 50 feet of clear air space or a three-hour rated fire barrier is adequate, but no objective is stated, i.e., adequate for what. Adequacy of fire protection referenced in the first sentence should include physical separation of redundancy and fire detection and suppression as outlined in II.A.2. However, this paragraph implies that regardless of the provision of other protection and regardless of other requirements in this rule, separation of redundant components by 3-hour walls or 50 feet alone is sufficient protection. This is inconsistent and confusing.

10. Paragraph III.A. Fire Water Distribution Systems require two separate redundant suction from a large body of water. This is unrealistic and overly restrictive for plants using one large intake structure on a lake or river for all water requirements. Current Technical Specifications limiting conditions of operation address loss of fire protection water supply in the unlikely event of loss of all pumps or intake structure failure. This current approach is sufficient and is far more cost-effective for us consumers.
11. Paragraph III.A. also limits the means of storage of fire water to dedicated tank or a vertical standpipe in a shared tank. This is overly restrictive since there are numerous other ways to assure a dedicated supply such as weirs, suction location, etc. This should be stated as an objective to assure a dedicated fire water supply leaving the method of accomplishment to competent design engineers.
12. Paragraph III.B. Sectional Control Valves requires indicating valves such as PIV's. This is a good practice but is not always practical. Often valves do not end up in a position where a post sticking out of the ground is possible. This paragraph would require the replacement of key operated valves in the middle of streets or sidewalks to be replaced. This is unnecessary if an adequate impairment outage program and surveillance plan as required by NRC is implemented.
13. Paragraph III.G. Table 1 is vague, confusing, arbitrary and unenforceable. Questions such as what is good or poor accessibility, where did the 10 feet separation come from, what is a large concentration of cables, make this table difficult to interpret.
14. Paragraph III.H. Fire Brigade in the introductory paragraph is excessively restrictive on brigade member qualifications. This requires physicals more frequently than that required for safe shutdown considerations. It also requires at least two brigade members, in addition to the brigade leader be "knowledgeable" of plant safety systems which is later defined as possessing an operator's license. This precludes the use of full time fire departments for multiple unit sites. With the vast amount of surveillance required for fire protection systems and equipment, brigade training requirements and operator training requirements several utilities with multiple unit plants are considering full time fire departments to perform surveillance and act as the primary fire brigade. This should be acceptable with the supervisor of a senior operation during emergencies. It is unrealistic to require these people be operator trained. Such a full time brigade would obviously exceed the capabilities of a part time brigade. It is recognized that the intent is not to have untrained security people serve as the brigade, however, a full time well trained department should not be prohibited.

15. Paragraph III.I.1..a states that non-operations personnel on the brigade need not be informed of firefighting strategies and plant modifications. This carte blanche statement is seriously deficient. All brigade members should review pre-fire plans as a basis for drills and should be informed of modifications affecting those plans, such as new equipment, equipment locations, and hazard changes. It may be more important for these personnel since they in general are not as familiar on a day to day basis with the plant.
16. Paragraph III.I.3.d requires a drill every three years be critiqued by a qualified individual independent of the licensee's staff. No definition of "qualified" is offered. This critique is normally conducted by us as a part of our performance of a Triennial Audit required by the Administrative section of the Technical Specification. There should be no need to submit this written report to the NRC. Such reports are kept onsite for any I & E inspector to review.
17. Paragraph III.K.12.a refers to firefighting procedures. This is an improper term for describing pre-fire plans. These plans are informational training and reference document, not rigid procedures. Rigid procedures would be counterproductive since it would be impossible to include all the decision options and cause-consequence information in a procedure. This section should be changed to pre-fire plans.
18. Paragraph III. L. Alternate Shutdown Capability address the number of operating personnel to be maintained onsite. This is a plant specific item which is addressed in sufficient detail in the Technical Specifications and need not be included here..
19. Paragraph III.M. Fire Barriers requires fire resistance equivalent to metal lath and plaster which is all but extinct in modern construction practices. Materials like concrete and spray-on fibrous or cementitious coverings have proven to be more cost-effective in most cases. It is unclear what the intent of this equivalence is...mechanical stability, wear resistance, fire resistance, free leachable chlorides, etc.
20. Paragraph III.N.2. introduces two problems; 1) worst case configurations and 2) test extrapolation to walls. First, there is no consensus what "worst case" is regarding number and size of cables, penetration size, etc. Much more testing is required to determine these trends. Current ad hoc tests provide too little data to make the qualified judgements. Secondly, although it is common practice at UL to accept a floor test as equally suitable for walls, that assumption is not accurate. The shear stresses and bending moments in a wall penetration with horizontal cable penetration are far greater than those in a floor. It is unsafe to assume that all materials which pass a floor seal test will pass a wall test using the same supporting mechanism!

21. Paragraph III.N.4. states that fire barriers shall be tested in both directions, but should say fire penetration seals.
22. Paragraph III.N.5. states fire barriers shall be tested at positive pressure. It is assumed that this means penetration seals. In any case, this is overly restrictive since no other components in that barrier are tested under positive pressure. Walls, floors, doors and dampers are all tested at slightly negative pressure. The NRC is making far too great a problem of cable penetration seals. Tests around the world (including those at positive pressure in Belgium and Holland) show that virtually any noncombustible material stuffed into the cable opening will prevent the spread of fire. NRC's attention would be better focused on other aspects of testing where greater problems exist.
23. Paragraph III.O. Fire Doors requires surveillance requirements which are counterproductive. The requirements for locking or alarming doors is fine for those vital areas identified by security but not for all plant fire doors. Such a restrictive requirement will inevitably lead to reducing the number of identified surveilled fire doors to an absolute minimum, thereby reducing the effectiveness of the overall fire protection program. This paragraph would require all rated stairway doors to be locked or alarmed which would be counterproductive to both normal plant operations and life safety.
24. Paragraph III.P. Reactor Coolant Pumps require oil collection systems or suppression systems to withstand the Safe Shutdown Earthquake. This is a new requirement for operating plants, which, although good in principle, is not practical to implement by November 1, 1980. This provision also does not consider failure of which parts of the oil collection system would lead to fire. If the failure is limited to a portable or fixed tank a floor level which does not expose any safety related equipment and which is not exposed to ignition sources such as hot reactor coolant lines, the affect on the plant would be negligible. Since this requirement could be very costly, it should be clarified and limited based on fire potentials.