



UNITED STATES  
NUCLEAR REGULATORY COMMISSION  
WASHINGTON, D. C. 20555

SUPPLEMENT TO NOVEMBER 28, 1977 SAFETY EVALUATION  
BY THE OFFICE OF NUCLEAR REACTOR REGULATION

SUPPORTING AMENDMENT NO. 30 TO  
FACILITY OPERATING LICENSE NO. DPR-51

ARKANSAS POWER & LIGHT COMPANY

ARKANSAS NUCLEAR ONE - UNIT NO. 1

DOCKET NO. 50-313

INTRODUCTION

By letter dated November 28, 1977, we forwarded to Arkansas Power & Light Company (AP&L) recommended fire protection Technical Specifications for Arkansas Nuclear One - Unit No. 1. We requested reply within 20 days of this letter, asking that AP&L either accept the technical specifications or delineate specific requirements to which AP&L objected. AP&L's response, by letter dated December 12, 1977, was that the specifications were "unacceptable", with no bases therefor, except to state that any changes would have to be reviewed by applicable committees and that "... reviews and approvals may not be complete before January 15, 1978." Insistent urging by our staff resulted in a January 17, 1978 response by AP&L, received by the NRC staff on January 20, 1978. Our review of this response showed that, for the most part, the proposed specifications were unacceptable. However, subsequent discussions with the AP&L staff led to modification of the specifications in question. Such modification was acceptable to AP&L and the NRC. This Supplement to the Safety Evaluation enclosed in the aforementioned November 28, 1977 letter sets forth the basis for the acceptance or modification of the proposed AP&L specifications. Paragraph numbers cited conform to the technical specifications and the AP&L proposed changes are discussed herein.

DISCUSSION AND EVALUATION

1. Proposed Specification 3.5.5.2 - Deletion of the word "Special" as it applies to the required report is acceptable, because the report is filed in accordance with Specification 6.12.3.1(b) as stated. This applies throughout where a "Special" Report was previously mentioned. Additionally, all detection instrumentation has been included.
2. Proposed Specification 3.17 - The AP&L proposal was unacceptable. The basic NRC safety philosophy requires a "Defense-in-Depth" approach. The AP&L proposal showed a lack of understanding of how this NRC safety approach is applied to fire protection. The report of the NRC's Special Review Group

8004180630

which studied the Browns Ferry fire discusses in great detail the application of defense in depth to fire protection at nuclear plants. Additionally, the staff's requirements as set forth in Branch Technical Position 9.5-1 and Appendix A, which were sent to all licensees, discuss how the NRC staff has developed detailed requirements to implement this safety approach and General Design Criterion 3 of Appendix A to 10 CFR 50.

This specific Technical Specification, 3.17, was inconsistent with NRC requirements that require protection from random single failures; for fire protection this means that automatic equipment should have a manual backup. AP&L would delete this requirement, partly on the assumption that the reactor is safely shutdown when reactor temperature is less than 200°F. The NRC requirement is that the reactor must be maintained in safe shutdown. To meet this requirement, decay heat removal is essential even with the reactor at 200°F. The NRC staff requires that fires be suppressed as soon as practical, even if the initial consequences may appear to be acceptable, as in the case of the reactor at less than 200°F. The NRC staff also did not agree with the AP&L assessment that only redundant safety-related equipment in a common area needs protection. The NRC staff requires that safety-related backup equipment also be protected from fires.

AP&L has agreed to the NRC requirements and Specification 3.17 has been appropriately modified.

3. Proposed Specification 3.18 - This proposed specification was unacceptable in that the 200°F limit has no justification, as noted above. Additionally, we will require continuous manning of a fire watch (or operable fire detection equipment) if any sprinkler system (all sprinkler systems have been incorporated into the specification) is inoperable. We did not accept "on the average" detection within 30 minutes as stated by AP&L. The lessons learned at Brown's Ferry are clearly applicable here, in that immediate suppression by trained personnel could have prevented the chain of events which followed. AP&L has agreed to accept this specification as the staff modified it.

4. Proposed Specification 3.19 - The requested 200°F limit was unacceptable as noted above. However, AP&L's proposal that the continuous fire watch is unnecessary, in the form of a person other than the control room operators, has been reviewed and accepted by the NRC staff. The control room personnel will be able to detect a fire and summon assistance quickly.

5. Proposed Specification 3.20 - The NRC staff did not share AP&L's assumption that the cable spreading room is the only safety-related area for which fire suppression equipment should be included in technical specifications. We have clarified our proposed specification to note that hose stations protecting (rather than located in) areas containing safety-related equipment must be operable. The requested 200° limit was unacceptable as discussed above. AP&L

has agreed to accept the specification as modified by the staff.

6. Proposed Specification 3.21 - We agree with the AP&L assessment that to require a fire barrier to be "functional" could be interpreted as requiring a test to assure it is indeed functional. We have therefore revised the specification to require that the barriers be intact. However, we will not, for reasons stated previously, accept a periodic fire watch upon discovering one or more barriers not intact. Either a continuous watch or fire detection equipment is acceptable. AP&L has agreed to accept this specification.

7. Proposed Specification 4.19 - This proposal was unacceptable in that AP&L evidently relied upon their assumption that few areas need automatic protection or, in this case, detection for fires. As discussed under proposed Specification 3.17, the NRC's basic safety approach requires detection and suppression of fires, even if the initial consequences may appear to be acceptable. Because the fire detectors serve various areas containing safety-related equipment, we consider their operability to be important and therefore require the additional surveillance requirements. AP&L initially proposed to delete these requirements, but has now accepted them.

8. Proposed Specification 4.20 - AP&L provided no basis for extending the interval from 31 days between successive valve position verifications to a 3-month interval. The NRC has required a 31-day interval for other licensees for both fire protection valve positions and those of other safety-related systems. AP&L agreed to accept the Specification modified to limit surveillance to those valves not locked, sealed, or otherwise secured in their correct position. This was acceptable to the NRC on an interim basis. We agree with the AP&L clarification of Specification 4.20.1.c to state that the system main is to be flushed. We have deleted original Specification 4.20.1.d because there are no automatic (testable) valves in the ANO-1 system, and have also changed Specification 4.20.1.d to reflect this fact. As requested by AP&L, we have deleted Specifications 4.20.2.a(2) and 4.20.2.c(2) which are already covered by Specification 4.20.1.a.

9. Proposed Specification 4.21 - We have incorporated all sprinkler systems into this specification. We concur with the AP&L assessment that the cable spreading room sprinkler system is only maintainable by verification of system alignment, since the fusible head sprinkler cannot be tested by other means. Specification 4.21 has been changed accordingly. Requirements for the other sprinkler systems have been added. These requirements reflect the differences in systems.

10. Proposed Specification 4.22 - We have concurred in the AP&L statement that it is impractical to perform a flow test of the Halon systems because the leakage of Halon during such a test will require Halon removal from the

habitable area of the room. There is also no instrumentation on the systems which would allow such a test to be performed.

11. Proposed Specification 4.23 - The proposed specification was unacceptable for the reasons stated above in the discussion of proposed Specification 3.20. However, we again clarified the intent of our requirements by modifying the applicability of the specification to those hose stations protecting (rather than located in) safety-related areas.

12. Proposed Specification 4.24 - We have modified the specification as discussed above under Proposed Specification 3.21.

13. Proposed Specification 6.4.2 - We concur in the interim deletion of responsibility assignment for fire protection training, based upon an AP&L commitment to include this assignment in a separately-issued specification change request.

14. Proposed Table 6.2-1 - We have concurred, during the interim period prior to final resolution of this issue, that the 3-man Fire Brigade proposed by AP&L is acceptable. Should the NRC staff review of this subject result in the requirement for a 5-man Fire Brigade, this specification will be changed.

15. Proposed deletion of NRC Specifications 6.5.2.9.A and B - The proposed deletion of NRC requirements for the use of outside consultants in the performance of Special Inspections and Audits was initially unacceptable. This requirement has been imposed on licensees since the fire at Brown's Ferry. The NRC staff believes that this degree of independence from the pressure of power production is necessary to assure adequate objectivity. Additionally, the expertise of an outside fire consultant is needed to complement that of the licensee's own staff. However, we have concurred for the interim period because the need for such a consultant will be established and the specification appropriately modified at the completion of the final ANO-1 review. Such completion will take place long before the originally specified three years have passed.

#### CONCLUSION

We have concluded, based on the specific items discussed above, that the NRC Technical Specifications set forth in our November 28, 1977 letter, as supplemented by changes discussed above, will assure that the fire protection program at ANO-1 is adequate on an interim basis until such time that our overall review is complete, required equipment is installed and operable, and final specifications have been developed and issued. The discussion, evaluation, and conclusions of the Safety Evaluation enclosed in our November 28, 1977 letter are still valid.

Date: March 3, 1978