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

POOR ORIGINAL

ARKANSAS POWER & LIGHT COMPANY

DOCKET NO. 50-313

ARKANSAS NUCLEAR ONE - UNIT 1

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 17
License No. DPR-51

1. The Nuclear Regulatory Commission (the Commission) has found that:

   A. The application for amendment by Arkansas Power & Light Company (the licensee) dated October 7, 1976, as supplemented by letters dated October 18, November 11, November 16, and November 19, 1976, complies with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act), and the Commission's rules and regulations set forth in 10 CFR Chapter I;

   B. The facility will operate in conformity with the application, the provisions of the Act, and the rules and regulations of the Commission;

   C. There is reasonable assurance (i) that the activities authorized by this amendment can be conducted without endangering the health and safety of the public, and (ii) that such activities will be conducted in compliance with the Commission's regulations;

   D. The issuance of this amendment will not be inimical to the common defense and security or to the health and safety of the public; and

   E. The issuance of this amendment is in accordance with 10 CFR Part 51 of the Commission's regulations and all applicable requirements have been satisfied.

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2. Accordingly, the license is amended by changes to the Technical Specifications as indicated in the attachment to this license amendment, and paragraph 2.b(2) of Facility Operating License No. DPR-51 is hereby amended to read as follows:

   b(2) Pursuant to the Act and 10 CFR Parts 30, 40 and 70, to receive, possess, and use at any time any byproduct, source and special nuclear materials as reactor fuel, sealed neutron sources for reactor startup, sealed sources for reactor instrumentation and radiation monitoring equipment calibration, and as fission detectors, in accordance with the limitations for storage and amounts required for reactor operation as described in the Final Safety Analysis Report, as amended and in the application for license amendment dated October 7, 1976, as supplemented by letters dated October 18, November 11, November 16 and November 19, 1976.

3. This license amendment is effective as of the date of its issuance.

FOR THE NUCLEAR REGULATORY COMMISSION

Original signed by:
Karl R. Goller

Karl R. Goller, Assistant Director
for Operating Reactors
Division of Operating Reactors

Attachment:
Changes to the Technical
Specifications

Date of Issuance: DEC 17 1976

ATTACHMENT TO LICENSE AMENDMENT NO. 17

FACILITY OPERATING LICENSE NO. DPR-51

DOCKET NO. 50-313

Replace existing pages 59, 59a, and 116 of the Appendix A portion of the Technical Specifications with the attached revised pages bearing the same numbers. The changed areas on the revised pages are identified by a marginal line.

3.8.10 The reactor building purge isolation system, including the radiation monitors shall be tested and verified to be operable within 7 days prior to refueling operations.

3.8.11 Irradiated fuel shall not be removed from the reactor until the unit has been subcritical for at least 72 hours.

3.8.12 All fuel handling in the Auxiliary Building shall cease upon notification of the issuance of a tornado watch for Pope, Yell, Johnson, or Logan counties in Arkansas. Fuel handling operations in progress will be completed to the extent necessary to place the fuel handling bridge and crane in their normal parked and locked position.

3.8.13 No loaded spent fuel shipping cask shall be carried above or into the Auxiliary Building equipment shaft unless atmospheric dispersion conditions are equal to or better than those produced by Pasquill type D stability accompanied by a wind velocity of 2 m/sec. In addition, the railroad spur door of the Turbine Building shall be closed and the fuel handling area ventilation system shall be in operation.

3.8.14 For the maximum fuel pool heat load capacity (i.e., seven reload batches (413 assemblies) stored in the pool at the time of discharge of the full core) the full core to be discharged shall be cooled in the reactor vessel a minimum of 175 hours prior to discharge.

3.8.15 Loads in excess of 2000 pounds shall be prohibited from travel over fuel assemblies in the storage pool.

3.8.16 The spent fuel shipping cask shall not be carried by the auxiliary building crane pending the evaluation of the spent fuel cask drop accident and the crane design by AP&L and NRC review and approval.

Bases

Detailed written procedures will be available for use by refueling personnel. These procedures, the above specifications, and the design of the fuel handling equipment as described in Section 9.7 of the FSAR incorporating built-in interlocks and safety features, provide assurance that no incident could occur during the refueling operations that would result in a hazard to public health and safety. If no change is being made in core geometry, one flux monitor is sufficient. This permits maintenance on the instrumentation. Continuous monitoring of radiation levels and neutron flux provides immediate indication of an unsafe condition. The decay heat removal pump is used to maintain a uniform boron concentration.(1) The shutdown margin indicated in Specification 3.8.4 will keep the core subcritical, even with all control rods withdrawn from the core.(2) The boron concentration will be maintained above 1800 ppm. Although this concentration is sufficient to maintain the core $k_{eff} \leq 0.99$ if all the control rods were removed from the core, only a few control rods will be removed at any one time during fuel shuffling and replacement. The k_{eff} with all rods in the core and with refueling boron concentration is approximately 0.9. Specification 3.8.5 allows the control room operator to inform the reactor building personnel of any impending unsafe condition detected from the main control board indicators during fuel movement.

The specification requiring testing reactor building purge termination is to verify that these components will function as required should a fuel handling accident occur which resulted in the release of significant fission products.

Because of physical dimensions of the fuel bridges, it is physically impossible for fuel assemblies to be within 10 feet of each other while being handled.

Specification 3.8.11 is required as the safety analysis for the fuel handling accident was based on the assumption that the reactor had been shutdown for 72 hours.(3)

Specification 3.8.14, which requires cooling of the full core for 175 hours prior to discharge to the spent fuel pool when seven reload batches are already stored in the pool, is necessary to assure that the maximum design heat load of the spent fuel pool cooling system will not be exceeded.

Specification 3.8.15 will assure that damage to fuel in the spent fuel pool will not be caused by dropping heavy objects onto the fuel. Administrative controls will prohibit the storage of fuel in locations adjoining the walls at the north and south ends of the pool, in the vicinity of cask storage area and fuel tilt pool access gates, until the review specified in 3.8.16 is completed.

Specification 3.8.16 assures that the spent fuel cask drop accident cannot occur prior to completion of the NRC staff's review of this potential accident and the completion of any modifications that may be necessary to preclude the accident or mitigate the consequences. Upon satisfactory completion of the NRC's review, Specification 3.8.16 shall be deleted.

REFERENCES

(1) FSAR, Section 9.5

(2) FSAR, Section 14.2.2.3

(3) FSAR, Section 14.2.2.3.3

5.4 NEW AND SPENT FUEL STORAGE FACILITIES

Applicability

Applies to storage facilities for new and spent fuel assemblies.

Objective

To assure that both new and spent fuel assemblies will be stored in such a manner that an inadvertent criticality could not occur.

Specification

5.4.1 New Fuel Storage

1. New fuel will normally be stored in the new fuel storage pool. The fuel assemblies are stored in racks in parallel rows, having a nominal center to center distance of 21 inches in both directions. This spacing is sufficient to maintain a K_{eff} of less than .9 even if flooded with unborated water, based on fuel with an enrichment of 3.5 weight percent U235.

2. New fuel may also be stored in the spent fuel pool or in their shipping containers.

5.4.2 Spent Fuel Storage

1. Irradiated fuel assemblies will be stored, prior to offsite shipment, in the stainless steel lined spent fuel pool, which is located in the auxiliary building. The pool is sized to accommodate a full core of irradiated fuel assemblies in addition to the concurrent storage of two and one-third cores of spent fuel previously discharged.

2. The spent fuel pool is filled with borated water with a minimum concentration of 1800 ppm boron during refueling.

3. One spent fuel storage rack position is designed to accommodate a special container for storage of a leaking fuel assembly.

4. The spent fuel pool and new fuel pool racks are designed as seismic Class 1 equipment.

5. The design is based upon storage of spent fuel containing no more than 45.2 grams of Uranium-235 per longitudinal centimeter of assembly.

REFERENCES

FSAR, Section 9.6