

July 10, 1987

Docket No. 50-313

Mr. T. Gene Campbell
Vice President, Nuclear
Operations
Arkansas Power and Light Company
Post Office Box 551
Little Rock, Arkansas 72203

Dear Mr. Campbell:

SUBJECT: ISSUANCE OF AMENDMENT NO. 107 TO FACILITY OPERATING LICENSE
NO. DPR-51 - ARKANSAS NUCLEAR ONE, UNIT NO. 1

The Commission has issued the enclosed Amendment No. 107 to Facility Operating License No. DPR-51 for the Arkansas Nuclear One, Unit No. 1 (ANO-1). This amendment consists of changes to the Technical Specifications (TSs) in response to your application dated May 6, 1987.

The amendment grants a one time exception from the provisions of Section 3.8.15 of the TS for the period July 13, 1987 thru August 12, 1987. The exception allows the auxiliary building crane to handle a spent fuel shipping cask containing six spent fuel rods. The fuel rods are part of the Department of Energy's Extended Burnup Test Program.

A copy of the Safety Evaluation is also enclosed. Notice of Issuance will be included in the Commission's next Bi-weekly Federal Register notice.

Sincerely,

js/

George F. Dick, Jr., Project Manager
Project Directorate - IV
Division of Reactor Projects - III,
IV, V and Special Projects
Office of Nuclear Reactor Regulation

Enclosures:

- 1. Amendment No. 107 to DPR-51
- 2. Safety Evaluation

cc w/enclosures:

See next page

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Mr. G. Campbell
Arkansas Power & Light Company

Arkansas Nuclear One, Unit 1

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Honorable William Abernathy
County Judge of Pope County
Pope County Courthouse
Russellville, Arkansas 72801



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

ARKANSAS POWER AND LIGHT COMPANY

DOCKET NO. 50-313

ARKANSAS NUCLEAR ONE, UNIT 1

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 107
License No. DPR-51

1. The Nuclear Regulatory Commission (the Commission) has found that:
 - A. The application for amendment by Arkansas Power and Light Company (the licensee) dated May 6, 1987, 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.c.(2) of Facility Operating License No. DPR-51 is hereby amended to read as follows:

(2) Technical Specifications

The Technical Specifications contained in Appendices A and B, as revised through Amendment No. 107, are hereby incorporated in the license. The licensee shall operate the facility in accordance with the Technical Specifications.

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

FOR THE NUCLEAR REGULATORY COMMISSION



Jose A. Calvo, Director
Project Directorate - IV
Division of Reactor Projects - III,
IV, V and Special Projects
Office of Nuclear Reactor Regulation

Attachment:
Changes to the Technical
Specifications

Date of Issuance: July 10, 1987

ATTACHMENT TO LICENSE AMENDMENT NO. 107
TO FACILITY OPERATING LICENSE NO. DPR-51
DOCKET NO. 50-313

Replace the following pages of the Appendix "A" Technical Specifications with the attached pages. The revised pages are identified by Amendment number and contain vertical lines indicating the areas of change.

Remove

59a

Insert

59a

- 3.8.15* 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. The provisions of Specifications 3.0.3 and 3.0.4 are not applicable.
- 3.8.16 Storage in the spent fuel pool shall be restricted to fuel assemblies having initial enrichment less than or equal to 4.1 w/o U-235. The provisions of Specifications 3.0.3 and 3.0.4 are not applicable.
- 3.8.17 Storage in Region 2 (as shown on Figure 3.8.1) of the spent fuel pool shall be further restricted by burnup and enrichment limits specified in Figure 3.8.2. In the event a checkerboard storage configuration is deemed necessary for a portion of Region 2, vacant spaces adjacent to the faces of any fuel assembly which does not meet the Region 2 burnup criteria (Non-Restricted) shall be physically blocked before any such fuel assembly may be placed in Region 2. This will prevent inadvertent fuel assembly insertion into two adjacent storage locations. The provisions of Specifications 3.0.3 and 3.0.4 are not applicable.
- 3.8.18 The boron concentration in the spent fuel pool shall be maintained (at all times) at greater than 1600 parts per million.

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 9.6 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 requirement that at least one decay heat removal loop be in operation ensures that (1) sufficient cooling capacity is available to remove decay heat and maintain the water in the reactor pressure vessel at the refueling temperature (normally 140°F), and (2) sufficient coolant circulation is maintained through the reactor core to minimize the effects of a boron dilution incident and prevent boron stratification. (1)

The requirement to have two decay heat removal loops operable when there is less than 23 feet of water above the core, ensures that a single failure of the operating decay heat removal loop will not result in a complete loss of decay heat removal capability. With the reactor vessel head removed and 23 feet of water above the core, a large heat sink is available for core cooling, thus in the event of a failure of the operating decay heat removal loop, adequate time is provided to initiate emergency procedures to cool the core.

The shutdown margin indicated in Specification 3.8.4 will keep the core subcritical, even with all control rods withdrawn from the core. (2)
Although the refueling boron concentration is sufficient to maintain the core $k_{eff} < 0.99$ 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

Note: *A one time exception to 3.8.15 is granted for the period of July 13, 1987 through August 12, 1987.



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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

SUPPORTING AMENDMENT NO. 107 TO
FACILITY OPERATING LICENSE NO. DPR-51
ARKANSAS POWER AND LIGHT COMPANY
ARKANSAS NUCLEAR ONE, UNIT NO. 1
DOCKET NO. 50-313

INTRODUCTION

By letter dated May 6, 1987, Arkansas Power and Light Company (AP&L or the licensee) requested amendment to the Technical Specifications (TSs) appended to Facility Operating License No. DPR-51 for Arkansas Nuclear One, Unit No. 1 (ANO-1). The proposed amendment would grant to the licensee a one time exception from Section 3.8.15 of the ANO-1 TS to allow the auxiliary building crane to be used to transport, in a spent fuel shipping cask, six spent fuel rods. The fuel rods are part of the Department of Energy's Extended Burnup Test Program. At present Section 3.8.15 prohibits use of the auxiliary building crane for movement of spent fuel casks pending staff review and approval of the licensee's analysis of the spent fuel cask drop accident.

DISCUSSION

Specialized equipment will be transferred to ANO-1 by B&W from the Oconee Nuclear Station as part of the planned cask movement. This equipment will be installed in the cask pit where the selected fuel rods will be removed from the extended burnup test fuel assemblies and stored in a special basket in the spent fuel pool. The specialized equipment will then be disassembled and removed from the cask pit after which the shipping cask will be installed in the cask pit by means of the auxiliary building crane and will be loaded with the special basket containing the extended burnup fuel rods.

The licensee stated in letters dated June 8 and June 23, 1987 that the following provisions will be provided in order to reduce the possibility of a cask drop accident and the potential adverse consequences that may result:

1. An automatic limit switch and a power disconnect from the main contact rails will be provided on the auxiliary building crane to preclude cask travel over the spent fuel storage pool.

2. Interlocks will also be used to limit the height to which the cask is raised above the floor.
3. Further hoist operation will be prevented by an electrical interlock and the crane hoist control circuits will be disabled under administrative controls once the cask has been raised to the proper height. Consequently, changes in cask height will be prevented during horizontal movement.
4. Cask travel within safe load areas is limited by strict administrative controls in combination with interlocks which limit crane travel to within normal crane load handling areas.
5. The auxiliary building crane is rated at 110 tons compared to the cask which weights 25 tons, thus providing a factor of safety of greater than 4.

The staff notes that provisions similar to those above were made previously (Amendment 36, October 5, 1978) in order to allow use of the auxiliary building crane to move a 25 ton cask (NAC-1) on a one-time basis for the purpose of shipping irradiated boron carbide (B_4C) test rods which were stored in the fuel storage pool.

EVALUATION

Based on a review of the above information, the staff finds that the potential for a cask drop accident is a highly unlikely occurrence because of the one time use, particularly in view of the added measures provided to preclude a possible cask drop. The consequences would be minimal because of the small number of fuel rods being transported and because the cask will not travel over stored spent fuel. For that reason, a cask drop accident evaluation is not required. The prohibition on cask movement over the spent fuel pool will be maintained during this operation.

Based on the above, the staff concludes that Technical Specifications 3.8.15 can be suspended temporarily to permit use of the auxiliary building crane to move the DOE cask when empty and when containing six specially irradiated fuel rods. When such actions requiring the use of the auxiliary building crane have been completed, Technical Specification 3.8.15 will again be placed in force.

ENVIRONMENTAL CONSIDERATION

The amendment relates to changes in installation or use of a facility component located within the restricted area as defined in 10 CFR Part 20. The staff has determined that the amendment involves no significant increase in the amounts, and no significant change in the types, of any effluents that may be released offsite and that there is no significant increase in individual or cumulative occupational radiation exposure. The Commission has previously issued a proposed finding that this amendment involves no significant hazards consideration and there has been no public comment

on such finding. Accordingly, this amendment meets the eligibility criteria for categorical exclusion set forth in 10 CFR 51.22(c)(9). Pursuant to 10 CFR 51.22(b), no environmental impact statement or environmental assessment need be prepared in connection with the issuance of this amendment.

CONCLUSION

The staff has concluded, based on the considerations discussed above, that: (1) there is reasonable assurance that the health and safety of the public will not be endangered by operation in the proposed manner, and (2) such activities will be conducted in compliance with the Commission's regulations and the issuance of this amendment will not be inimical to the common defense and security or to the health and safety of the public.

Dated: July 10, 1987

Principal Contributor: N. Wagner