

Docket No. 50-364

September 8, 1983

Mr. F. L. Clayton
Senior Vice President
Alabama Power Company
Post Office Box 2641
Birmingham, Alabama 35291

Dear Mr. Clayton:

The Commission has issued the enclosed Amendment No. 25 to Facility Operating License No. NPF-8 for the Joseph M. Farley Nuclear Plant, Unit No. 2. The amendment consists of changes to the Technical Specifications in response to your application transmitted by letter dated July 8, 1983.

The amendment modifies Technical Specifications on a one-time basis to allow use of the less restrictive pressure isolation valves leak rate criterion of Unit 1 for the startup tests during the second refueling outage on Unit 2.

We issued a similar license amendment for the first refueling outage by Amendment No. 20 dated November 24, 1982. The part of your request relating to deletion of surveillance requirement 4.4.7.3.2 for Unit 1 is denied.

A copy of the related Safety Evaluation is enclosed. The Notice of Issuance will be included in the Commission's next regular monthly Federal Register Notice.

Sincerely,

ES

Edward A. Reeves, Project Manager
Operating Reactors Branch No. 1
Division of Licensing

Enclosures:

1. Amendment No. 25 to NPF-8
2. Safety Evaluation

cc w/enclosures:
See next page

*9/8/83 3:20 PM
Called APOC (Layton for Reeves)
to advise of issuance of this amendment
9/8/83 3:25 PM
Called Reeves, Project Manager
advise of above also. (Control) to
advise of above also. (Control) to
advise of above also. (Control) to*

*Immediately before
signature check
for correct on
Petition. If any
concluded to R.D.*

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PDR ADOCK 05000364
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OFFICE	ORB 1	ORB 1	ORB 1	AD:OR:DL	OELD	B:DL	
SURNAME	CParrish	EReeses/rs	SVarga	Gkasnas	M. VARNISH	DEisenhut	
DATE	8/24/83	8/24/83	8/24/83	8/25/83	8/26/83	8/26/83	

Mr. F. L. Clayton
Alabama Power Company

cc: Mr. W. O. Whitt
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UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D. C. 20555

September 8, 1983

ALABAMA POWER COMPANY

DOCKET NO. 50-364

JOSEPH M. FARLEY NUCLEAR PLANT, UNIT NO. 2

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 25
License No. NPF-8

1. The Nuclear Regulatory Commission (the Commission) has found that:
 - A. The application for amendment by Alabama Power Company (the licensee) dated July 8, 1983, 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.

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. NPF-8 is hereby amended to read as follows:

(2) Technical Specifications

The Technical Specifications contained in Appendices A and B, as revised through Amendment No. 25, 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 the date of its issuance.

FOR THE NUCLEAR REGULATORY COMMISSION,



Steven A. Varga, Chief
Operating Reactors Branch No. 1
Division of Licensing

Attachment:
Changes to the Technical
Specifications

Date of Issuance: September 8, 1983

ATTACHMENT TO LICENSE AMENDMENT

AMENDMENT NO. TO FACILITY OPERATING LICENSE NO. NPF-8

DOCKET NO. 50-364

Revise* Appendix A as follows:

Remove Pages

3/4 4-17

3/4 4-17a

3/4 4-19

Insert Pages

3/4 4-17

3/4 4-17a

3/4 4-19

*Page changes are a temporary one-time event. Existing page 3/4 4-17 (identified as Amendment No. 13) and page 3/4 4-19 (identified as Corrected Page) should be reinserted following testing at the end of the second refueling outage. The second refueling outage will start about September 16, 1983 for about six weeks.

REACTOR COOLANT SYSTEM

OPERATIONAL LEAKAGE

LIMITING CONDITION FOR OPERATION

3.4.7.2 Reactor Coolant System leakage shall be limited to:

- a. No PRESSURE BOUNDARY LEAKAGE,
- b. 1 GPM UNIDENTIFIED LEAKAGE,
- c. 1 GPM total primary-to-secondary leakage through all steam generators and 500 gallons per day through any one steam generator,
- d. 10 GPM IDENTIFIED LEAKAGE from the Reactor Coolant System, and
- e. 31 GPM CONTROLLED LEAKAGE at a Reactor Coolant System pressure of 2235 ± 20 psig.
- *f. 1 GPM leakage from any Reactor Coolant System Pressure Isolation Valve specified in Table 3.4-1 at a Reactor Coolant System pressure of 2235 ± 20 psig.

APPLICABILITY: MODES 1, 2, 3 and 4

ACTION:

- a. With any PRESSURE BOUNDARY LEAKAGE, be in at least HOT STANDBY within 6 hours and in COLD SHUTDOWN within the following 30 hours.
- b. With any Reactor Coolant System leakage greater than any one of the above limits, excluding PRESSURE BOUNDARY LEAKAGE, reduce the leakage rate to within limits within 4 hours or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.
- c. With any Reactor Coolant System Pressure Isolation Valve leakage greater than the above limit, isolate the high pressure portion of the affected system from the low pressure portion within 4 hours by use of at least two closed manual or deactivated automatic valves, or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

SURVEILLANCE REQUIREMENTS

4.4.7.2.1 Reactor Coolant System leakages shall be demonstrated to be within each of the above limits by;

- a. Monitoring the containment atmosphere particulate radioactivity monitor at least once per 12 hours.
- b. Monitoring the containment air cooler condensate level system or containment atmosphere gaseous radioactivity monitor at least once per 12 hours.

REACTOR COOLANT SYSTEM

OPERATIONAL LEAKAGE

LIMITING CONDITION FOR OPERATION

3.4.7.2 Reactor Coolant System leakage shall be limited to:

- a. No PRESSURE BOUNDARY LEAKAGE,
- b. 1 GPM UNIDENTIFIED LEAKAGE,
- c. 1 GPM total primary-to-secondary leakage through all steam generators and 500 gallons per day through any one steam generator,
- d. 10 GPM IDENTIFIED LEAKAGE from the Reactor Coolant System, and
- e. 31 GPM CONTROLLED LEAKAGE at a Reactor Coolant System pressure of 2235 ± 20 psig.
- *f. The maximum allowable leakage of any Reactor Coolant System Pressure Isolation Valve shall be as specified in Table 3.4-1 at a pressure of 2235 ± 20 psig.

APPLICABILITY: MODES 1, 2, 3 and 4

ACTION:

- a. With any PRESSURE BOUNDARY LEAKAGE, be in at least HOT STANDBY within 6 hours and cold shutdown within the following 30 hours.
- b. With any Reactor Coolant System leakage greater than any one of the above limits, excluding PRESSURE BOUNDARY LEAKAGE, reduce the leakage rate to within limits within 4 hours or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.
- c. With any Reactor Coolant System Pressure Isolation Valve leakage greater than the above limit, isolate the high pressure portion of the affected system from the low pressure portion within 4 hours by use of at least two closed manual or deactivated automatic valves, or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

SURVEILLANCE REQUIREMENTS

4.4.7.2.1 Reactor Coolant System leakages shall be demonstrated to be within each of the above limits by;

- a. Monitoring the containment atmosphere particulate radioactivity monitor at least once per 12 hours.
- b. Monitoring the containment air cooler condensate level system or containment atmosphere gaseous radioactivity monitor at least once per 12 hours.

FARLEY - UNIT 2

3/4 4-17a

*These leakage rates apply only to startup tests following the second refueling outage. Allowable leakage rates for this one time exception are contained in Table 3.4-1.

TABLE 3.4-1

REACTOR COOLANT SYSTEM PRESSURE ISOLATION VALVES

VALVE NUMBER	DESCRIPTION	ALLOWABLE LEAKAGE FOR 2ND REFUELING RESTART ADJUSTED TO 2235±20 PSIG
Q2E11V062A, B, & C	2" check	1.625 GPM
Q2E11V051A	6" check	2.645 GPM
Q2E11V066A	2" check	2.000 GPM
Q2E11V021A	6" check	2.500 GPM
Q2E11V042B	10" check	2.500 GPM
Q2E11V051B	6" check	2.575 GPM
Q2E11V066B	2" check	2.000 GPM
Q2E11V021B	6" check	2.500 GPM
Q2E11V051C	6" check	2.685 GPM
Q2E11V021C	6" check	2.500 GPM
Q2E11V066C	2" check	2.000 GPM
Q2E11V042A	10" check	2.500 GPM
Q2E21V077A	6" check	2.575 GPM
Q2E21V077B	6" check	2.575 GPM
Q2E21V077C	6" check	2.775 GPM
Q2E21V078A	2" check	2.000 GPM
Q2E21V079A	2" check	1.800 GPM
Q2E21V076A	6" check	2.500 GPM
Q2E21V078B	2" check	2.000 GPM
Q2E21V079B	2" check	1.950 GPM
Q2E21V076B	6" check	2.500 GPM
Q2E21V078C	2" check	2.000 GPM
Q2E21V079C	2" check	1.575 GPM
Q2E11V016A	12" GATE	2.500 GPM
Q2E11V001A	12" GATE	2.500 GPM
Q2E11V016B	12" GATE	2.500 GPM
Q2E11V001B	12" GATE	2.500 GPM
Q2E21V032A	12" check	2.500 GPM
Q2E21V032B	12" check	2.500 GPM
Q2E21V032C	12" check	2.500 GPM
Q2E21V037A	12" check	2.500 GPM
Q2E21V037B	12" check	2.500 GPM
Q2E21V037C	12" check	2.500 GPM



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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

RELATED TO AMENDMENT NO. 25 TO FACILITY OPERATING LICENSE NO. NPF-8

ALABAMA POWER COMPANY

JOSEPH M. FARLEY NUCLEAR PLANT, UNIT NO. 2

DOCKET NO. 50-364

Introduction

By letter dated August 10, 1982, the licensee requested a Technical Specification change that would permit using a modified Unit 1 Pressure Isolation Valve (PIV) Technical Specification allowable leakage for Unit 2. We advised the licensee that the long term NRC staff review on a generic basis would not be completed in time for the first refueling outage on Unit 2. For this reason, the licensee then proposed a one-time change by letter dated October 11, 1982. License Amendment No. 20, dated November 24, 1982, approved the one-time proposal for the first refueling outage testing.

Subsequently, by letter dated December 23, 1982, the licensee proposed changes to Technical Specifications 4.4.7.2 and 4.4.7.2.2 for Units 1 and 2, respectively. The licensee stated "that the Unit 2 leak test acceptance criteria of 1 gpm versus the Unit 1 criteria of 1 to 5 gpm (with certain limitations) has proven to be excessively restrictive without providing increased assurance of valve operability." We have continued our generic review and have recently developed revised generic leak rate criteria, less stringent than 1 gpm, which vary according to valve size; and is currently in the process of obtaining acceptance to use these criteria from the Committee to Review Generic Requirements (CRGR). After CRGR review it is the NRC staff's intent to permit licensees with recently licensed plants, such as Farley 2, to use the revised criteria in lieu of the original 1 gpm. Because it is anticipated that these criteria will not be accepted by CRGR before the September 1983 Farley 2 refueling outage; these criteria cannot be applied to Farley 2 for the testing to be performed at this outage.

In addition, the licensee proposed deletion of Surveillance Requirement 4.4.7.3.2 stating that it is superseded by Action Statement 3.4.7.3.2 and is, therefore, not necessary. This proposal is identified in licensee letter dated July 8, 1983. Also, the licensee proposed another one-time change for the Unit 2 for the second refueling outage testing. Our evaluation follows.

Discussion and Evaluation

The Unit 1 Technical Specifications allow for leakage rates of 1 to 5 gpm; however, the measured leak rate for any given test cannot reduce the difference between the results of the previous test and 5 gpm by more than 50%. The proposed change restricts the maximum leakage on 2" valves to 3 gpm, but retains this same indexing criteria. The original Unit 2 Technical Specification restricts leakage to 1 gpm for each valve, regardless of size.

Conservative leak test criteria were established by the staff as a result of a concern which was brought to light by the Reactor Safety Study, WASH-1400. The study indicated that the failure of two in-series valves which form the interface between high pressure and low pressure systems would almost surely result in an intersystem loss of coolant accident; and that the probability of such an event was unacceptably high. Frequent independent tests of each valve was considered to be a relatively convenient method of reducing the probability of this type of failure.

The staff originally developed two sets of allowable leakage criteria; one for new plants (1 gpm) and one for older plants (1-5 gpm with certain restriction); as it was felt that the newer valves would more easily meet the more stringent 1 gpm criterion.

The 1 to 5 gpm criterion is included in the Farley Unit 1 Technical Specifications together with the 50% indexing provision noted above. This criterion was ordered by the staff about two years ago to be effective for operating reactors. For these older plants the staff has concluded that these valves had experienced numerous operating cycles and could not be expected to be in the "like new" condition, although the valves would be expected to fulfill their pressure isolation function.

The staff currently is in the process of drafting a proposal for revising the allowable leakage criteria for approval. A consultant, EG&G, Idaho, has completed an initial reevaluation of the existing criteria, both theoretically and through a series of operating plant surveys. EG&G has recommended that the staff consider allowing leak rates of 1/2 gpm per inch of nominal valve size, with a maximum of 5 gpm regardless of valve size. EG&G has also recommended that the same 50 percent indexing provision, as discussed above for Farley Unit 1, be adopted for all plants. Also, the EG&G plant survey results do not appear to support the staff's initial judgement that new plant valves can more easily meet the stringent 1 gpm criteria that has been required for recently licensed plant, such as Farley 2.

The staff has plans to propose the EG&G recommended criteria for approval. Use of these criteria will result in a somewhat reduced frequency of valve maintenance, i.e., lapping of valve seats, with no decrease in assurance that the valves would be expected to fulfill their pressure isolation function.

At the time of the last refueling outage for Farley 2, i.e., the first refueling outage, the licensee requested a one time Technical Specification change to use the modified Unit 1 allowable leakages, discussed above, for the Farley 2 PIVs. Staff approval to use the modified Unit 1 allowable leakages for that outage was given.

At that time the staff approval was based on:

1. An extensive evaluation of actual leakage data accumulated over approximately two years of leak testing PIVs on Units 1 and 2 to the two different criteria. The staff concurred with the licensee conclusion that the Farley plant specific accumulated data indicated that considerably more valve maintenance and related personnel radiation exposure was required to meet the Unit 2 1 gpm leakage rate. In addition the staff accepted licensee statements to the effect that no discernable differences in valve seating surfaces could be found, and no evidence of impending valve failures were found in any of the valves that failed either leakage rate.
2. The Technical Specifications for both Units 1 and 2 require that leakage testing be performed during plant startup so that all valves will be tested after their last disturbance. This licensee routinely leak tests the PIVs during each cooldown to refueling in an effort to determine if any pressure isolation valves may require maintenance. This is a precautionary measure voluntarily utilized by this licensee to increase the probability of successful leak test results during the return to power when the testing is performed on the scheduler "critical path." Valves that pass this test, or are maintained if they do not pass this test, would be expected to pass the Technical Specification test during startup because significant valve degradation would not be expected to occur during the relatively short period of the refueling outage.
3. The EG&G recommended criteria changes discussed above, which at the time of the Farley 2 first refueling outage, were available to the staff in preliminary form.
4. At staff request the licensee provided leak test data measured during the voluntary testing performed during cooldown for the Unit 2 first refueling outage. During this testing only one valve failed its leak tests; 27 of the 35 valves had no leakage and the remaining valves had leak rates of less than 0.5 gpm. Therefore, during this "unofficial" testing only one out of the 35 PIVs failed to meet the original Unit 2 Technical Specification allowable leakage of 1 gpm and, it also failed the modified Unit 1 leakage allowance of 2.5 gpm.

After approval of the staff's proposal, it is the staff's intention to permit licensees with recently licensed plants, such as Farley 2, to use the EG&G recommended allowable leakage in lieu of the original 1 gpm. Since these generic criteria changes are in the process of being made, approval of the licensee request for a permanent Technical Specification change to use the modified Unit 1 allowable leakages is not granted.

Approval of the staff proposal is not expected until sometime after the Farley 2 second refueling outage, scheduled to begin in September 1983.

Although approval of the staff's proposal will not be obtained in time for the PIV testing to be performed during this outage, the staff recognizes the strong technical justification provided by the licensee, summarized above, for the Technical Specification change that was previously approved for the Farley 2 first refueling outage.

In addition, since that outage the licensee has provided by letter dated June 3, 1983 from F. L. Clayton, Jr. to the Director of Nuclear Reactor Regulation; Attention: Mr. S. A. Varga, the results of the PIV leak testing performed during startup from the first refueling outage. In response to the licensee's request for the permanent Technical Specification change, taking into account the additional valve test data provided and the status of the staff's generic criteria revision proposal, we are herein granting approval to extend the modified Unit 1 leakage allowance criteria, previously approved for the Unit 2 first refueling outage, to the second refueling outage testing. It is expected that revised generic criteria will be available for all plants prior to the start of the Farley 2 third refueling outage.

Revised Table 3.4-1 of the Farley 2 Technical Specifications, attached to this Safety Evaluation, specifies the allowable leakages that are applicable for each of the Farley 2 PIVs for testing to be performed during startup after the second refueling outage. The allowable leakages in the revised table were obtained by applying the modified Unit 1 leakage allowance criteria to the actual valve leakages as determined by the licensee during startup from the first refueling outage.

With the exception of the two-inch check valves, the allowable leakages are all within the maximum allowable leakages that are determined by application of the staff's proposed revised generic criteria.

For the two inch check valves, application of the staff proposed revised criteria would limit allowable leakage to 1 gpm. As shown in the attached table, application of the modified Unit 1 criteria results in allowable leakages of 1.575 - 2.0 gpm for these valves depending upon what their tested leakage rate was during the startup from the first refueling outage. Although these leakages are slightly less conservative than would be permitted if the staff proposal is adopted; we have concluded, based on our extensive review of the entire leak testing history of these valves to date, that application of these criteria for the Unit 2 second refueling outage will provide sufficient assurance the valves are capable of performing their pressure isolation function.

Summary

Based on our extensive review of the information provided to date by the licensee for the Unit 1 and Unit 2 PIVs, review of recommendations from the staff consultant for generic leak test criteria revisions and related supporting multi-plant leak test data, the licensee's standard practice of performing the leak tests during both plant shutdown and startup, and our expectation that no significant valve degradation would occur during the short period of the second refueling outage, the staff has concluded that the allowable leak rates specified in attached revised Table 3.4-1 are acceptable for the second refueling outage.

We have also reviewed the licensee's proposal relating to deleting Surveillance Requirement 4.4.7.3.2 for Unit 1. We find that Action Statement 3.4.7.3 and Surveillance Requirement 4.4.7.3.2 are separate and distinct requirements and, therefore, one does not supersede the other. We consider the elimination of Surveillance Requirement 4.4.7.3.2 to have generic significance. It was incorporated in plant Technical Specifications at the time of issuance of the Event V Orders. It does not appear to result in any significant burden for APCo for Farley 1. Therefore, until we can assess the generic implications of the requested deletion, this Technical Specification revision is denied.

Environmental Consideration

We have determined that the amendment does not authorize a change in effluent types or total amounts nor an increase in power level and will not result in any significant environmental impact. Having made this determination, we have further concluded that the amendment involves an action which is insignificant from the standpoint of environmental impact and, pursuant to 10 CFR §51.5(d)(4), that an environmental impact statement or negative declaration and environmental impact appraisal need not be prepared in connection with the issuance of this amendment.

Conclusion

We have 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.

Date: September 8, 1983

Principal Contributors:

G. Hammer

E. A. Reeves