

May 23, 1985

Docket No. 50-364

Mr. R. P. McDonald
Senior Vice President
Alabama Power Company
Post Office Box 2641
Birmingham, Alabama 35291

Dear Mr. McDonald:

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SUBJECT: EVALUATION AND STATUS OF LICENSE CONDITIONS
FOR JOSEPH M. FARLEY UNIT 2

By letters dated February 8 and October 19, 1982, and January 7, 1983, which superseded the October 19, letter, you requested that certain license conditions be formally closed by the NRC. By letter dated October 22, 1982, you noted that another license condition was satisfied. We have completed our reviews of these submittals.

The enclosure to this letter indicates the current evaluation and status of our review of your submittals relating to the identified license conditions for Facility Operating License No. NPF-8 dated March 31, 1981. No response to this letter is required. However, you may contact the NRC Project Manager, Mr. Edward A. Reeves, at 301-492-7386, should you have any questions.

Sincerely,

/s/SVarga

Steven A. Varga, Chief
Operating Reactors Branch #1
Division of Licensing

Enclosure:
As stated

cc w/enclosure:
See next page

*See previous white for concurrences

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The enclosure to this letter indicates the current evaluation and status of our review of your submittals relating to the identified license conditions for Facility Operating License No. NPF-8 dated March 31, 1981. At a future date, along with a routine license amendment, we will annotate the conditions with a reference to this letter and/or any other closeout letter for each specific license condition. Thus, the amended license conditions will provide a record of your compliance with the license conditions and our safety evaluations of each.

No response to this letter is required. However, you may contact the NRC Project Manager, Mr. Edward A. Reeves, at 301-492-7386, should you have any questions.

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Docket Nos. 50-348
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EReeves(2)
ACRS (10)
EJordan

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The enclosure to this letter indicates the current evaluation and status of our review of certain identified license conditions issued with Facility Operating License No. NPF-8 on March 31, 1981. At a future date along with a routine license amendment, we will annotate the conditions with a reference to this letter and/or any closeout letter for the specific license condition.

No response to this letter is required. However, you may contact the NRC Project Manager, Mr. Edward A. Reeves, at 301-492-7386 should you have any

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Ed A. Reeves
11/26/84

Docket Nos. 50-348
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By letter dated February 8 and October 19, 1982, and January 7, 1983, which superceded the October 19 letter, you requested that certain license conditions be formally closed by the NRC. By letter dated October 21, 1982, you also advised us that you met another referenced license condition. We have completed our reviews of these submittals.

The enclosure to this letter indicates the current evaluation and status of our review of certain identified license conditions issued with Facility Operating License No. NPF-8 on March 31, 1981. At a future date along with a routine license amendment, we will annotate the conditions with a reference to this letter and/or any closeout letter for the specific license condition.

No response to this letter is required. However, you may contact the NRC Project Manager, Mr. Edward A. Reeves, at 301-492-7386 should you have any

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SVarga
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AD/RS:DSI
WHouston
10/ /84

*Noted re: RS
involved. RS
to review separately.
EdR*

Mr. R. P. McDonald
Alabama Power Company

Joseph M. Farley Nuclear Plant
Units 1 and 2

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

EVALUATION AND STATUS OF CERTAIN LICENSE CONDITIONS

JOSEPH M. FARLEY NUCLEAR PLANT UNIT 2

DOCKET NO. 50-364

INTRODUCTION

Alabama Power Company (APCo) requested that the NRC formally close out ten license conditions which it considers completed. The requests were by letter dated January 7, 1983, which superseded its letter dated October 19, 1982. Also, APCo by letter dated February 8, 1982, requested deletion of the license condition relating to the main steam turbine rotor replacements. By letter dated October 22, 1982, APCo advised the NRC that PAD 3.3 was applicable to subsequent fuel cycles thus satisfying another license condition. Our evaluation of your submittals and status of each of these license conditions follows:

DISCUSSION AND EVALUATION

1. Environmental Qualification (EQ) of Electrical Equipment - License Condition 2.C.(18)

The license condition required certain remedial actions or alternative actions no later than June 30, 1982. Commission regulation 10 CFR 50.49 negated the June 30, 1982 completion date. By letter dated December 13, 1984, we provided a safety evaluation which concludes that the EQ Program is in compliance with the requirements of 10 CFR 50.49.

Therefore, License Condition 2.C.(18) has been met.

2. Inspection of Main Steam Turbine Rotor Discs for Cracks or Replacement of Rotors - License Condition 2.C.(19)(d)

In February 1980, we informed licensees with Westinghouse turbines that stress corrosion cracks were being observed in the keyway and bore regions of low-pressure turbines. Since the mechanisms associated with the initiation and growth of these types of cracks were not well known at that time and because we believed these cracks would increase the probability of disc failure, we requested APCo to perform ultrasonic inspections of the rotors of Unit 1. This unit was inspected during November and December 1980 and found to have significant disc cracks even though the plant had operated for only two fuel cycles (approximately 17,000 hours).

Because of the similarity of metallurgical and operational characteristics of the turbine discs in Farley Units 1 and 2, we included License Condition 2.C.(19)(d) for Unit 2 to assure that an inspection would be made at the first refueling outage. The inspection

would determine if similar cracks occur at an earlier time in machine life.

Thus, License Condition 2.C.(19)(d) required that the low-pressure turbines be inspected for keyway and bore cracks in the turbine discs during the first refueling outage or the turbine discs be replaced. APCo proposed by letter dated February 8, 1982 that these inspections be made on a schedule recommended by the turbine vendor (Westinghouse) using criteria that have been reviewed and approved by the NRC staff. APCo has followed the Westinghouse inspection schedule and criteria for rotor disc inspections since that date. APCo chose to replace the Unit 2 rotors during its first refueling outage (October 1982). During the fifth refueling outage completed April 24, 1984, Unit 1 rotors were again replaced.

Therefore, APCo has met License Condition 2.C.(19)(d).

3. Schedule for Facility to be in Compliance with Regulatory Guide 1.97 Revision 2 - License Condition 2.C.(20)

The license condition required that prior to April 30, 1981, the licensee shall provide a schedule for bringing Unit 2 into compliance with Revision 2 of R.G. 1.97. By letter dated March 30, 1981 APCo provided such a schedule. Subsequently, APCo withdrew the schedule by letter dated November 16, 1982, pending issuance of further NRC guidance. This guidance became a part of Generic Letter 82-33, Supplement 1 NUREG-0737. APCo provided a schedule to us by letter dated March 30, 1984. Subsequently, a Confirmatory Order dated June 12, 1984 was issued to APCO requiring implementation of installation or upgrade requirements with regard to R.G. 1.97 application to Emergency Response Facilities by October 1987.

Therefore, License Condition 2.C.(20) has been superseded by the Confirmatory Order.

4. Upgrading of Emergency Operating Procedures and Operator Training for Transients and Accident (I.C.1) - License (addition 2.C.(21)(a))

Farley Unit 2 was granted an operating license on March 31, 1981, based in part on a pilot monitoring review of some of the emergency operating procedures. The procedures, based on the draft Westinghouse Owners' Group (WOG) guidelines available at the time, were found to be acceptable for a full power license (see Supplement 5 to the SER, NUREG-0117). The SER recognized that the procedures might have to be upgraded when the WOG guidelines were approved by the NRC staff.

On that basis License Condition 2.C.(21)(a) required an upgrade of the emergency operating procedures and associated operator training per NUREG-0737, Item I.C.1, prior to startup following the first refueling outage. However, Generic Letter 82-33, "Supplement 1 to NUREG-0737 Requirements for Emergency Response Capability," issued on December 17, 1982, changed the schedule for items (including Item I.C.1) from industry-wide implementation dates to plant-specific schedules to be negotiated with each licensee. The licensee responded with a proposed integrated schedule on April 15, 1983, which included a commitment to implement procedures based on NRC approved WOG guidelines.

Subsequently, by letters dated August 5, September 22, and December 15, 1983 and April 6, and April 19, 1984 APCo modified several dates in their integrated schedule as a result of negotiations with the NRC staff. A Confirmatory Order was sent to APCo on June 12, 1984 requiring APCo to implement the upgraded EOP's by APCo's commitment date of July 1984.

The requirements of the License Condition 2.C.(21)(a) are fully contained within the scope of Item I.C.1 of Generic Letter 82-33.

Therefore, License Condition 2.C.(21)(a) has been superseded by the Confirmatory Order.

5. Reactor Coolant System Vents (II.B.1) - License Condition 2.C.(21)(b)

This license condition required submittal of a designed description and operating procedures for the reactor coolant system vents by July 1, 1981, and a complete installation by July 1, 1982. Our letter dated November 7, 1983, advised APCo that the implementation schedule has been superseded by 10 CFR 50.44(c)(3)(iii).

Based on our November 7, 1983, letter to APCo License Condition 2.C.(21)(b) has been superseded by NRC regulations.

6. Inadequate Core Cooling Instruments (II.F.2) - License Condition 2.C.(21)(g)

This license condition required that APCo provide detail design information and test results from tests of Farley Unit 1 reactor water level instruments by July 1, 1981. Also the condition further required a planned program to complete instrument development to determine the feasibility of the proposed neutron detector water level instrument by January 1, 1982.

By letter dated June 24, 1981 APCo provided the EPRI test report (part 2 of license condition) of the non-invasive reactor water level instrument completing that part of the license condition. Generic Letter (GL) 82-28 superseded parts 1 and 3 of the license condition. APCo responded to GL 82-28 by letter dated March 10, 1983, which is under NRC staff review.

Therefore, License Condition 2.C.(21)(g) has been met.

7. Analysis of Thermal Mechanical Conditions (II.K.2.13) - License Condition 2.C.(21)(h)(1)

This condition states that prior to January 1, 1982, the licensee is required to submit a detailed analysis of thermal mechanical conditions in the reactor vessel. License Condition 2.C.(21)(h)(1) involves an extended loss of all feedwater, thus, this condition is related to feed and bleed cooling of the core and hence to Unresolved Safety Issue (USI) A-45, Decay Heat Removal. License Condition 2.C.(21)(h)(1) is also related to USI A-49, Pressurized Thermal Shock. The staff will resolve USI's A-45 and A-49 as schedules allow after FY-84.

The staff finds that License Condition 2.C.(21)(h)(1), which is only one part of TMI Action Plan Item II.K.2.13, has been completed by the licensee as part of the submittals of the generic effort by the Westinghouse Owners Group (WOG). In December 1981 WOG submitted to the NRC WCAP 10019, "Summary Report on Reactor Vessel Integrity for Westinghouse Operating Plants." The NRC staff issued a Safety Evaluation to APCo on June 18, 1984 closing out Item II.K.2.13. However, as stated in the June 18, 1984 letter, should the resolution of USI's A-49 and A-45 result in any changes to the conclusions provided in the Safety Evaluation or require any additional actions related to II.K.2.13, APCo will be notified.

Therefore, License Condition 2.C.(21)(h)(1) has been met.

8. Potential for Voiding in the Reactor Coolant System during Transients (II.K.2.17) - License Condition 2.C.(21)(h)(2)

This condition required that the licensee provided an analysis of the potential for voiding in the reactor coolant system during anticipated transients. Section 22.5 of SER Supplement 5, NUREG-0117 (page 22.5-28) of March 1981 refers to this item in NUREG-0737.

By letter of January 7, 1983, the licensee stated it was in compliance with this requirement by referencing a submittal of April 20, 1981, from the WOG. The staff reviewed that submittal and a supplemental letter from Westinghouse of February 16, 1983. By letter dated January 10, 1984, we advised APCo of acceptance of the Westinghouse transient analysis for Farley Units 1 and 2.

Therefore, License Condition 2.C.(21)(h)(2) is completed.

9. Automatic Trip of Reactor Coolant Pumps (RCP's) (III.K.3) - License Condition 2.C.(21)(i)(2)

This condition related to the B&O Task Force recommendation II.K.3 relating to automatic trip of the RCP's for a small break LOCA. By NRC Generic Letter 83-10d dated February 8, 1983, we established criteria for license considerations based on model comparisons with LOFT test L3-6 results.

In response to this action the licensee provided its plans and schedules in a letter of April 22, 1983, "Generic Letter 83-10d and NUREG-0737 Item II.K.3.5." The plans and schedules include the following:

- (1) a generic submittal to be developed by the WOG, and
- (2) a plant-specific evaluation to be submittal to NRC within 90 days after licensee receipt of the WOG submittal.

Subsequently, by letter dated April 3, 1984, APCo stated that the WOG submittals are complete by letters OG-110, dated December 1, 1983, and OG-117 dated March 12, 1984. Also, APCo advised that the WOG Emergency Response Guidelines for procedure revisions with an appropriate manual trip of the RCP's resolves all issues associated with this generic

issue. The schedules for the plant specific emergency operating procedures is included in Confirmatory Order dated June 12, 1984.

Therefore, License Condition 2.C.(21)(i)(2) has been superseded by the Confirmatory Order relating to schedules for NUREG-0737, Supplement 1 items.

10. Revised Small-Break LOCA Analysis (II.K.3.30) - License Condition 2.C.(21)(i)(4)

This condition required the licensee to respond to another recommendation of the B&O Task Force, item II.K.3. A revised small break LOCA analysis was to be submitted, using the revised model, by January 1, 1982. However, APCo confirmed in letters of March 26 and June 4, 1982 and January 7, 1983 that it is participating in an effort by the WOG to resolve Item II.K.3.30 of NUREG-0737, "Clarification of TMI Action Plan Requirements," November 1980. The WOG has submitted a revised small break LOCA model to the staff which was approved on May 21, 1985. Therefore, the first part of License Condition 2.C.(21)(i)(4) is considered satisfied.

The second part of this license condition required the licensee to submit plant specific calculations, using the NRC approved revised model, by January 1, 1983. However, the NRC revised the schedule to allow all licensees one year after approval of the WOG model to submit specific calculations to the NRC in NUREG-0737, page 3-179 item (4). The staff will determine conformance to 10 CFR 50.46 limits (per NUREG-0737, page 3-180) at that time.

Therefore, License Condition 2.C(21)(i)(4) in its entirety would be considered satisfied upon completion of NUREG-0737 Item II.K.3.31.

11. Fire Protection - License Condition 2.C.(6)

License Condition 2.C.(6) describes the basic elements of the Farley 2 Fire Protection Plan. As a result License Condition 2.C.(6) will be retained in the license.

12. Masonry Walls - License Condition 2.C.(16)

By letter dated November 19, 1982 APCo revised their October 19, 1982 request to delete License Condition 2.C.(16). APCo requested that License Condition 2.C.(16) be revised rather than deleted. Amendment No. 21 to License No. NPF-8 for the Joseph M. Farley Nuclear Plant, Unit No. 2, revised 2.C.(16) to require modifications to Masonry Wall 2 CBW-34 prior to startup following the second refueling.

The licensee advised the NRC staff that the modification was completed during the second refueling outage which was completed on October 22, 1983. Therefore, License Condition 2.C.(16) has been met.

13. Use of PAD 3.3 Fuel Performance Code - License Condition 2.C.(19)(a)

The condition required that APCo provide additional evaluations of the Westinghouse fuel performance code, PAD 3.3, to demonstrate its applicability during successive fuel cycles. PAD 3.3 was used in the safety analysis of Farley 2. This code was approved with four restrictions described in our safety evaluation of February 9, 1979 sent to Westinghouse. Three of these restrictions deal with numerical limits and have been complied with. The fourth restriction relates to the use of the PAD 3.3 code for the analysis of fission gas release from uranium dioxide (UO_2) for power increasing conditions during normal operation. This restricting applies to the safety analysis of Farley 2. However, Westinghouse stated that this restriction did not adversely affect the results of the safety analyses performed for Farley. In addition, Westinghouse prepared and submitted a detailed evaluation of this restriction in Addendum 1 (September 1979) to WCAP-8720.

At the time the Farley Safety Evaluation Report, Supplement 5, was issued, our review of Addendum 1 to WCAP-8720 had not yet been completed. However, because the fission gas inventory in the fuel is low during the first cycle of operation, this restriction was not expected to have a significant impact early in core life. For this reason, the fuel thermal design for Farley Unit 2 was found acceptable for the first fuel cycle, but a condition was placed on the operating license to require resolution of the issue prior to subsequent cycles of operation.

By letter dated July 20, 1982, we informed Westinghouse that our review of Addendum 1 to WCAP-8720 had been completed and the report was found to be acceptable for reference in license applications. Our evaluation also concluded that the restriction related to fission gas release was unnecessary and should be eliminated from applications involving the PAD 3.3 code.

By letter dated October 22, 1982 APCo cited the approved version of Addendum 1 to WCAP-8720 (including responses to NRC requests for information) as a basis for the continued applicability of the PAD 3.3 code to successive fuel cycles at Farley Unit 2. Since our approval of Addendum 1 results in a less severe set of restrictions than those applied previously in the PAD 3.3 analysis of the subsequent fuel cycles, we agree that Addendum 1 satisfies our concerns and that License Condition 2.C.(19)(a) has been met.

SUMMARY

We conclude that the licensee responses and action taken to the license conditions, noted above, indicates compliance with the conditions as noted. Facility Operating License NPF-8 for Farley Unit 2 will be so annotated at a future date as administrative changes.

Date: May 23, 1985

PRINCIPAL CONTRIBUTORS:

E. A. Reeves
D. Langford
W. G. Kennedy
W. J. Ross
W. Hazelton
M. Slosson
J. Voglewede