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Docket No. 50-321

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Mr. Charles F. Whitmer
Vice President - Engineering
Georgia Power Company
P. O. Box 4545
Atlanta, Georgia 30302

Dear Mr. Whitmer:

The Commission has issued the enclosed Amendment No. 66 to Facility Operating License No. DPR-57 for the Edwin I. Hatch Nuclear Plant, Unit No. 1. The amendment consists of changes to the Technical Specifications in partial response to your application dated May 11, 1979. The other portions of your request will be evaluated as part of your reload application dated March 22, 1979.

This amendment revises the Technical Specifications to allow the count rate on the Source Range Monitor channels to drop below 3 counts per second when the entire core is removed or reloaded.

Copies of the Safety Evaluation and the Notice of Issuance are also enclosed.

Sincerely,

Original Signed by
T. A. Ippolito

Thomas A. Ippolito, Chief
Operating Reactors Branch #3
Division of Operating Reactors

Enclosures:
1. Amendment No. 66
2. Safety Evaluation
3. Notice

cc w/enclosures:
see next page

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OFFICE	ORB#3	ORB#3	AD/E&P/DOR	OELD	ORB#3	
SURNAME	PKreutzer	DVerrelli:acr	BGrimes	Karman	TIppolito	
DATE	6/11/79	6/11/79	6/11/79	6/12/79	6/11/79	12 June 79

NRC FORM 318 (9-76) NRCM 0240 ☆ U.S. GOVERNMENT PRINTING OFFICE: 1978 - 265 - 769

Mr. Charles F. Whitmer

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

GEORGIA POWER COMPANY
OGLETHORPE ELECTRIC MEMBERSHIP CORPORATION
MUNICIPAL ELECTRIC ASSOCIATION OF GEORGIA
CITY OF DALTON, GEORGIA

EDWIN I. HATCH NUCLEAR PLANT, UNIT NO. 1

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 66
License No. DPR-57

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

   A. The application for amendment by Georgia Power Company, et al., (the licensee) dated May 11, 1979, 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. DPR-57 is hereby amended to read as follows:

   (2) Technical Specifications

   The Technical Specifications contained in Appendices A and B, as revised through Amendment No. 66, 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

Thomas A. Ippolito, Chief
Operating Reactors Branch #3
Division of Operating Reactors

Attachment:
Changes to the Technical Specifications

Date of Issuance: June 12, 1979

ATTACHMENT TO LICENSE AMENDMENT NO. 66

FACILITY OPERATING LICENSE NO. DPR-57

DOCKET NO. 50-321

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

Remove	Insert
3.10-1*	3.10-1*
3.10-2	3.10-2
3.10-7	3.10-7
3.10-8*	3.10-8*

*Overleaf provided for convenience only.

3.10 REFUELING

Applicability

The Limiting Conditions for Operation apply to the fuel handling and associated core reactivity limitations.

Objective

The objective of the Limiting Conditions for Operation is to assure that core reactivity is within the capability of the control rods and to prevent criticality during refueling.

Specifications

A. Refueling Interlocks

1. Reactor Mode Switch

The Mode Switch shall be locked in the REFUEL position during core alterations and the refueling interlocks shall be operable except as stated in Specification 3.10.E.

2. Fuel Grapple Hoist Load Setting Interlock

The fuel grapple hoist load setting interlock switch shall be set at 485 ± 30 lbs.

3. Auxiliary Hoists Load Setting Interlock

If the frame-mounted auxiliary hoist, the monorail-mounted auxiliary hoist, or the service platform hoist is to be used for handling fuel with the head off the reactor vessel, the load setting interlock on the hoist to be used shall be set at 485 ± 30 lbs.

B. Fuel Loading

Fuel shall not be loaded into the reactor core unless all control rods are fully inserted.

4.10 REFUELING

Applicability

The Surveillance Requirements apply to the periodic testing of those interlocks and instrumentation used during refueling and core alterations.

Objective

The objective of the Surveillance Requirements is to verify the operability of instrumentation and interlocks used in refueling and core alterations.

Specifications

A. Refueling Interlocks

Prior to any fuel handling with the head off the reactor vessel, the refueling interlocks shall be functionally tested. They shall be tested at weekly intervals thereafter until no longer required. They shall also be tested following any repair work associated with the interlocks.

3.10.C Core Monitoring During Core Alterations

1. During normal core alterations, two SRM's shall be operable; one in the core quadrant where fuel or control rods are being moved and one in an adjacent quadrant, except as specified in 2 and 3 below.

For an SRM to be considered operable, it shall be inserted to the normal operating level and shall have a minimum of 3 cps with all rods capable of normal insertion fully inserted.

2. Prior to spiral unloading the SRM's shall be proven operable as stated above, however, during spiral unloading the count rate may drop below 3 cps.

3. Prior to sprial reload, two diagonally adjacent fuel assemblies will be loaded into their previous core positions next to each of the 4 SRM's to obtain the required 3 cps. Until these eight assemblies have been loaded, the 3 cps requirement is not necessary.

D. Spent Fuel Pool Water Level

Whenever irradiated fuel is stored in the spent fuel pool, the pool water level shall be maintained at or above 8.5 feet above the top of the active fuel.

E. Control Rod Drive Maintenance

1. Requirements for Withdrawal of 1 or 2 Control Rods

A maximum of two control rods separated by at least two control cells in all directions may be withdrawn or removed from the core for the purpose of performing control rod drive maintenance provided that:

a. The Mode Switch is locked in the REFUEL position. The refueling interlock which prevents more than one control rod from being withdrawn may be bypassed for one of the control rods on which maintenance is being

4.10.C Core Monitoring During Core Alterations

Prior to making normal alterations to the core the SRM's shall be functionally tested and checked for neutron response. Thereafter, while required to be operable, the SRM's will be checked daily for response.

Use of special moveable, dunking type detectors during initial fuel loading and major core alterations in place of normal detectors is permissible as long as the detector is connected to the normal SRM circuit.

Prior to spiral unloading or reloading the SRM's shall be functionally tested. Prior to spiral unloading the SRM's should also be checked for neutron response.

D. Spent Fuel Pool Water Level

Whenever irradiated fuel is stored in the spent fuel pool, the water level shall be checked and recorded daily.

E. Control Rod Drive Maintenance

1. Requirements for Withdrawal of 1 or 2 Control Rods

a. This surveillance requirement is the same as given in 4.10.A.

3.10.A.2. Fuel Grapple Hoist Load Setting Interlocks

Fuel handling is normally conducted with the fuel grapple hoist. The total load on this hoist when the interlock is required consists of the weight of the fuel grapple and the fuel assembly. This total is approximately 1500 lbs. in comparison to the load setting of 485 ± 30 lbs.

3. Auxiliary Hoists Load Setting Interlock

Provisions have also been made to allow fuel handling with either of the three auxiliary hoists and still maintain the refueling interlocks. The 485 ± 30 lb. load setting of these hoists is adequate to trip the interlock when a fuel bundle is being handled.

B. Fuel Loading

To minimize the possibility of loading fuel into a cell containing no control rod, it is required that all control rods are fully inserted when fuel is being loaded into the reactor core. This requirement assures that during refueling the refueling interlocks, as designed, will prevent inadvertent criticality.

C. Core Monitoring During Core Alterations

The SRM's are provided to monitor the core during periods of Unit shutdown and to guide the operator during refueling operations and Unit startup. Requiring two operable SRM's in or adjacent to any core quadrant where fuel or control rods are being moved assures adequate monitoring of that quadrant during such alterations. The requirements of 3 counts per second provides assurance that neutron flux is being monitored.

During sprial unloading, it is not necessary to maintain 3 cps because core alterations will involve only reactivity removal and will not result in criticality.

The loading of diagonally adjacent bundles around the SRM's before attaining the 3 cps is permissible because these bundles were in a subcritical configuration when they were removed and therefore they will remain subcritical when placed back in their previous positions.

D. Spent Fuel Pool Water Level

The design of the spent fuel storage pool provides a storage location for approximately 150 percent of the full core load of fuel assemblies in the reactor building which ensures adequate shielding, cooling, and reactivity control of irradiated fuel. An analysis has been performed which shows that a water level at or in excess of eight and one-half feet over the top of the active fuel will provide shielding such that the maximum calculated radiological doses do not exceed the limits of 10CFR20. The normal water level provides 14-1/2 feet of additional water shielding. All penetrations of the fuel pool have been installed at such a height that their presence does not provide a possible drainage route that could lower the water level to less than 10 feet above the top of the active fuel. Lines extending below this level are equipped with two check valves in series to prevent inadvertent pool drainage.

E. Control Rod Drive Maintenance

During certain periods, it is desirable to perform maintenance on two control rod drives at the same time.

3.10.E.1. Requirements for Withdrawal of 1 or 2 Control Rods

The maintenance is performed with the Mode Switch in the REFUEL position to provide the refueling interlocks normally available during refueling operations. In order to withdraw a second control rod after withdrawal of the first rod, it is necessary to bypass the refueling interlock on the first control rod which prevents more than one control rod from being withdrawn at the same time.

The requirement that an adequate shutdown margin be demonstrated and that all surrounding control rods have their directional control valves electrically disarmed ensures that inadvertent criticality cannot occur during this main- enance. The adequacy of the shutdown margin is verified by demonstrating that the core is shut down by a margin of 0.38 percent Δk with the strongest avail- able control rod fully withdrawn. The safety design basis (FSAR - Section 3.6.5.2) states that the reactor must remain subcritical under all conditions with the single highest worth control rod fully withdrawn.

2. Requirements for Withdrawal of More Than 2 Control Rods

Specification 3.10.E.2 allows unloading of a significant portion of the reactor core. This operation is performed with the Mode Switch in the REFUEL position to provide the refueling interlocks normally available during refueling operations. In order to withdraw more than one control rod, it is necessary to bypass the refueling interlock on each withdrawn control rod which prevents more than one control rod from being withdrawn at a time. The requirement that the fuel assemblies in the cell controlled by the control rod be removed from the reactor core before the interlock can be bypassed ensures that withdrawal of another control rod does not result in inadvertent criticality. Each control rod provides primary reactivity control for the fuel assemblies in the cell associated with that control rod. Thus, removal of an entire cell (fuel assemblies plus control rod) results in a lower reactivity potential of the core.

F. Reactor Building Cranes

The reactor building crane and monorail hoist are required to be operable for handling the spent fuel cask, new fuel, or spent fuel pool gates. Administratively limiting the height that the spent fuel cask is raised over the refueling floor minimizes the damage that could result from an accident. The design of the reactor building and crane is such that casks of current design cannot be lifted more than two feet above the refueling floor. An analysis has been made which shows that the floor over which the spent fuel cask is handled can satisfactorily sustain a dropped cask from a height of 2 feet. Modifications to the main reactor building crane are being studied in order to increase its ability to withstand a single failure. A spent fuel cask will not be lifted until these modifications have been accepted by the NRC and the NRC has approved the lifting of a cask by the crane, and the appropriate Technical Specifications.

G. Spent Fuel Cask Lifting Trunnions and Yoke

Before lifting a spent fuel cask, the trunnions and yoke shall be in good working condition and properly connected.

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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

SUPPORTING AMENDMENT NO. 66 TO FACILITY OPERATING LICENSE NO. DPR-57

GEORGIA POWER COMPANY
OGLETHORPE ELECTRIC MEMBERSHIP CORPORATION
MUNICIPAL ELECTRIC ASSOCIATION OF GEORGIA
CITY OF DALTON, GEORGIA

EDWIN I. HATCH NUCLEAR PLANT, UNIT NO. 1

DOCKET NO. 50-321

Introduction

By letter dated May 11, 1979,(1) Georgia Power Company (the licensee) has requested an amendment to the Technical Specifications for Edwin I. Hatch Nuclear Plant, Unit No. 1 (Hatch-1). The amendment would allow the count rate on the Source Range Monitor (SRM) channels to drop below 3 counts per second when the entire core is removed or reloaded.

Discussion

The current Specifications require a minimum count rate of 3 cps for the SRMs during core alterations. The minimum count rate requirement serves two purposes. First, it serves as a continuous functional test of the channel. Second, it assures there are a sufficient number of neutrons in the core so that the SRMs are on-scale and will immediately respond to increases in neutron population. These functions are easily satisfied in cores containing exposed fuel, since spontaneous and photon-induced fission in exposed assemblies supply an adequate number of neutrons to obtain 3 cps on the SRMs.

Maintaining 3 cps is no problem during normal refueling due to the presence of exposed fuel. However, at times when the entire core must be removed from the reactor, the SRM count rate will eventually drop below 3 cps. The current specifications permit two alternatives for this special case: (1) load neutron sources to maintain the count rate, or (2) substitute movable "dunking" chambers for the stationary SRM detectors. The licensee has noted in his application that both of these alternatives increase the risk of loose objects being dropped into the vessel. We note also that both alternatives increase personnel exposure. Moreover, experience with dunking chambers indicates problems involving both a relatively high failure rate and "pendulum swing" geometric interference. Therefore, we agree that neutron sources and/or dunking chambers are not desirable if other alternatives exist.

Evaluation

Unloading Sequence

The proposed Technical Specification would be operative only during spiral unloading and reloading of the core. In the unloading sequence, fuel cells on the perimeter of the core are unloaded first. Cells are removed sequentially in a spiral sequence with cells closest to the center of the core removed last. Control rods may be momentarily withdrawn in cells which are being worked on, but all defueled cells will contain inserted control rods. Until all the fuel is removed, all fueled and nonfueled cells are required to contain control blades by Technical Specification 3.10.B.

As fuel is removed, count rate will drop in the SRM channels. Since all SRM detectors but one are located some distance from the core center, it is doubtful that the old requirement of at least 3 cps in at least 2 channels could be met. However, because the proposed spiral unloading does not permit imbedded cavities or major peripheral concavities, and because all control blades will be in place, shutdown margin cannot decrease during defueling. Under such circumstances, and since Technical Specification 4.10.C will require functional testing of the SRMs prior to beginning core alterations, we find the proposed change is adequate to satisfy both purposes of minimum count rate and is acceptable during core unloading.

Loading Sequence

The loading sequence differs from the unloading sequence in that two assemblies will first be loaded adjacent to each SRM. This should increase the count rate above 3 cps and thus allow Specification 4.10.C to be met. After this, spiral reloading from the center outward will proceed in the normal manner.

Such a modified spiral loading can lead to imbedded unfueled cells in the intermediate arrays. However, since Specification 3.10.B requires all rods, fueled and unfueled, to have control blades inserted, inadvertent criticality is precluded. In addition, because all cells start out with control blades in place, inadvertent criticality is unlikely even assuming multiple loading and operator errors.

There are five SRM detectors in the Hatch-1 core. One is located near the center, the other four are approximately half a core radius out. There is no monitoring problem unless the central (24-29) SRM detector is inoperable. Assuming this, the first few intermediate arrays at the beginning of the loading sequence will be as much as 3 fuel cells distant from the nearest SRM detector. This leads to considerable attenuation of neutron flux from the central array before it is counted at the detector. However, because this situation is true for only a limited number of intermediate arrays, an inadvertent criticality in these arrays is extremely improbable as discussed above. Therefore, in view of the above and of the additional requirement for functional testing of the SRMs prior to beginning core alteration, we find the proposed technical specification change to be acceptable for spiral loading.

Environmental Considerations

We have determined that this 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 this amendment involves an action which is insignificant from the standpoint of environmental impact, and pursuant to 10 CFR Section 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 that: (1) because the amendment does not involve a significant increase in the probability or consequences of accidents previously considered and does not involve a significant decrease in a safety margin, the amendment does not involve a significant hazards consideration, (2) there is reasonable assurance that the health and safety of the public will not be endangered by operation in the proposed manner, and (3) 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: June 12, 1979

References

1. Letter, Charles F. Whitmer (Georgia Power Company) to Director of Nuclear Reactor Regulation (NRC), dated May 11, 1979.

UNITED STATES NUCLEAR REGULATORY COMMISSION

DOCKET NO. 50-321

GEORGIA POWER COMPANY, ET AL.

NOTICE OF ISSUANCE OF AMENDMENT TO FACILITY OPERATING LICENSE

The U. S. Nuclear Regulatory Commission (the Commission) has issued Amendment No. 66 to Facility Operating License No. DPR-57 issued to Georgia Power Company, Oglethorpe Electric Membership Corporation, Municipal Electric Association of Georgia, and City of Dalton, Georgia, which revised Technical Specifications for operation of the Edwin I. Hatch Nuclear Plant, Unit No. 1 (the facility) located in Appling County, Georgia. The amendment is effective as of its date of issuance.

This amendment revises the Technical Specifications to allow the count rate on the Source Range Monitor channels to drop below 3 counts per second when the entire core is removed or reloaded.

The application for the amendment complies with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act), and the Commission's rules and regulations. The Commission has made appropriate findings as required by the Act and the Commission's rules and regulations in 10 CFR Chapter I, which are set forth in the license amendment. Prior public notice of this amendment was not required since the amendment does not involve a significant hazards consideration.

The Commission has determined that the issuance of this amendment will not result in any significant environmental impact and that pursuant to 10 CFR Section 51.5(d)(4) an environmental impact statement, or negative declaration and environmental impact appraisal need not be prepared in connection with issuance of this amendment.

For further details with respect to this action, see (1) the application for amendment dated May 11, 1979, (2) Amendment No. 66 to License No. DPR-57, and (3) The Commission's related Safety Evaluation. All of these items are available for public inspection at the Commission's Public Document Room, 1717 H Street, N. W., Washington, D. C. and at the Appling County Public Library, Parker Street, Baxley, Georgia 31513. A copy of items (2) and (3) may be obtained upon request addressed to the U. S. Nuclear Regulatory Commission, Washington, D. C. 20555, Attention: Director, Division of Operating Reactors.

Dated at Bethesda, Maryland, this 12 day of June 1979.

FOR THE NUCLEAR REGULATORY COMMISSION

TAIppolito

Thomas A. Ippolito, Chief
Operating Reactors Branch #3
Division of Operating Reactors