

ADVISORY COMMITTEE ON REACTOR SAFEGUARDS  
UNITED STATES ATOMIC ENERGY COMMISSION  
WASHINGTON, D.C. 20545

January 14, 1974

Honorable Dixy Lee Ray  
Chairman  
U. S. Atomic Energy Commission  
Washington, D. C. 20545

Subject: REPORT ON THE EDWIN I. HATCH NUCLEAR PLANT, UNIT 1

Dear Dr. Ray:

During its 165th meeting, January 10-12, 1974, the Advisory Committee on Reactor Safeguards completed its review of the application by the Georgia Power Company for authorization to operate the Edwin I. Hatch Nuclear Plant, Unit 1. A Subcommittee made a tour of the partially completed plant on February 27, 1973. The project was considered during Subcommittee meetings in Washington, D. C., on May 24, 1973, and December 20, 1973, and at the Committee's 158th meeting, June 7-9, 1973, in Washington, D. C. During its review, the Committee had the benefit of discussions with representatives and consultants of the Georgia Power Company, Southern Services Incorporated, the General Electric Company, and the AEC Regulatory Staff. The Committee also had the benefit of the documents listed. The Committee forwarded an interim report on the operation of this unit to the Commission on June 12, 1973.

Hatch, Unit 1, utilizes a General Electric boiling water reactor similar to those provided for Brunswick Units 1 and 2 and for the Cooper Nuclear Station previously reviewed by the ACRS for operation. The Hatch reactor is designed to produce 2436 MWt.

The applicant, with the General Electric Company, has studied the problem of fuel densification. The analyses indicate that, except in regard to peak clad temperatures in postulated loss of coolant accidents, the effects of expected densification are relatively small. To assure conformance with peak clad temperature and other limits of the Interim Acceptance Criteria, the applicant proposes to operate the Hatch reactor in such manner as to maintain the maximum average planar linear heat generation rate (MAPLHGR) at all times below a specific allowable value. So-called "gamma" curves, developed by the applicant

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and reviewed and approved (to date, only for the first fuel cycle) by the Regulatory Staff, depict the allowable value as a function of fuel exposure. The Committee believes that the approach described is acceptable. However, the ACRS recommends that the Regulatory Staff assure itself that the detailed procedures to be employed by the reactor operator to accomplish and to demonstrate compliance with the proposed limits on core conditions are adequate. Particular emphasis should be given to the procedure to be followed when the computer normally used for core power distribution calculation is inoperable or unavailable. The Committee wishes to be kept informed.

Re-evaluation of core operating limits will be necessary as a result of the recently promulgated Acceptance Criteria for Emergency Core Cooling Systems. The Committee wishes to be kept informed.

Since the Committee's last report, the applicant has made further progress in arrangements for emergency procedures to be followed in case of an accidental release of radioactive materials from the plant. Yet to be confirmed, however, are plans of the state agencies whose actions would be essential in dealing with the population in case of such an event. The Committee recommends that the applicant and the AEC staff continue to collaborate with the State in moving ahead to complete development of an emergency action plan, and that the adequacy of arrangements for implementing such a plan be confirmed prior to initial operation of the plant.

The Advisory Committee on Reactor Safeguards believes that, if due regard is given to the items mentioned above and those mentioned in its June 12, 1973 Interim Report, and subject to satisfactory completion of construction and preoperational testing, there is reasonable assurance that the Edwin I. Hatch Nuclear Plant, Unit 1 can be operated at power levels up to 2436 MWt without undue risk to the health and safety of the public.

Sincerely yours,

*W. R. Stratton*

W. R. Stratton  
Chairman

References attached.

References

1. Amendments 34 through 40 to the License Application
2. Georgia Power Company letter dated October 25, 1973, furnishing information on Control Rod Drop Accident and Core Thermal Power Level
3. Directorate of Licensing Supplement No. 1 to the Safety Evaluation Report, dated December 10, 1973