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

November 13, 1971

Honorable James R. Schlesinger
Chairman
U. S. Atomic Energy Commission
Washington, D. C. 20545

Subject: REPORT ON EDWIN I. HATCH NUCLEAR PLANT UNIT 2

Dear Dr. Schlesinger:

At its 139th meeting, November 11-13, 1971, the Advisory Committee on Reactor Safeguards completed its review of the application by the Georgia Power Company for authorization to construct a second nuclear power reactor, Unit 2, at its Edwin I. Hatch Nuclear Plant. This project was considered at a Subcommittee meeting in Washington, D. C., on October 28, 1971. During its review the Committee had the benefit of discussions with representatives of the Georgia Power Company, Southern Services, Inc., General Electric Company, Bechtel Corporation, the AEC Regulatory Staff and their consultants. The Committee also had the benefit of the documents listed below.

The Edwin I. Hatch Plant is located in a sparsely populated area in southeastern Georgia, approximately 75 miles west of Savannah, Georgia. The Altamaha River flows through the 2,244-acre site with the reactors located on its south bank. The minimum exclusion distance is 4300 feet from the plant buildings to the site boundary. Only 840 persons are located within five miles of the site and no concentrated areas of population of 2,000 or more are within ten miles. Baxley, Georgia, with a 1970 population of 3,500 is eleven miles to the south. The nearest population center is Waycross, Georgia, about 48 miles south with a population of 19,000. A major north-south highway, U. S. Route No. 1, passes through the site near its western boundary.

Hatch Unit 2 utilizing a 2537 MWt General Electric single cycle, forced circulation boiling water reactor, will be almost identical with and located immediately adjacent to Hatch Unit 1. Both units will have separate conventional primary containment and secondary confinement structures and separate closed cycle cooling systems each employing three banks of cooling towers. The principal facilities shared by both units are the

refueling floor, control room, and main stack. Hatch Unit 1 was discussed in the Committee's report dated May 15, 1969, and its construction is now about one-third completed.

The main steam lines up to the turbine stop valves and all branch lines 2-1/2 inches and larger up to the first valve will be designed to Class I seismic requirements in a manner satisfactory to the Regulatory Staff. In addition, a sealing system, designed to standards applicable to engineered safety features, will be provided to minimize leakage through the main steam line isolation valves; this design should be reviewed by the Regulatory Staff before installation of the system.

The applicant's criteria for protection against damage from pipe whip are that there will be no violation of primary containment and that operation of the ECCS will be assured. Several design changes are being made including an increase in drywell neck radius and rearrangement of steam and feedwater piping to make room for restraints, a heavier steel platform, thicker drywell shell, stronger pedestal for the reactor vessel, and ring girders surrounding the biological shield. These provisions should substantially improve the effectiveness of protection against damage from pipe whip.

The applicant has studied design features to make tolerable the consequences of a failure to scram during anticipated transients and has concluded that automatic tripping of the recirculation pumps and injection of boron could provide a suitable backup to the control rod system for this type of event. The Committee believes that this recirculation pump trip represents a substantial improvement and should be provided for the Hatch Unit 2 reactor. However, further evaluation of the sufficiency of this approach and specific means for implementing the proposed pump trip should be made. This matter should be resolved in a manner satisfactory to the Regulatory Staff and the ACRS during construction of the reactor.

Other problems related to large water-cooled and moderated reactors have been identified by the Regulatory Staff and the ACRS and cited in previous ACRS reports. The Committee believes that resolution of these items should apply equally to Hatch Unit 2.

The Committee believes that the items mentioned above can be resolved during construction and that, if due consideration is given to these items, the Edwin I. Hatch Nuclear Plant Unit 2 can be constructed with reasonable assurance that it can be operated without undue risk to the health and safety of the public.

Sincerely yours,

/s/ Spencer H. Bush

Spencer H. Bush
Chairman

References attached.

References - Edwin I. Hatch Nuclear Plant Unit 2

1. Georgia Power Company letter dated September 11, 1970, transmitting Preliminary Safety Analysis Report (PSAR) to the Edwin I. Hatch Nuclear Plant Unit 2, Volumes 1 through 5

2. Amendments No. 1, 2, 4, 6 through 13 to the License Application for the Edwin I. Hatch Nuclear Plant Unit 2, Preliminary Safety Analysis Report