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

December 14, 1966

Honorable Glenn T. Seaborg
Chairman
U. S. Atomic Energy Commission
Washington, D. C.

Subject: REPORT ON QUAD-CITIES STATION, UNITS 1 AND 2

Dear Dr. Seaborg:

At its eightieth meeting, on December 8-10, 1966, the Advisory Committee on Reactor Safeguards reviewed the proposal of the Commonwealth Edison Company to construct two boiling water reactors at its Quad-Cities site near Cordova, Illinois. Each unit would be operated at a power level of 2255 MW(t) and be substantially similar in design to the previously reviewed Dresden Units 2 and 3. The Committee had the benefit of discussion with representatives of the applicant, the General Electric Company, Sargent & Lundy, and the AEC Regulatory Staff, and of the documents listed. An ACRS Subcommittee met to review this project at Chicago, Illinois on September 16, 1966 and on November 17, 1966. The Subcommittee visited the site during the September 16 meeting.

The complex of emergency core cooling systems for Quad-Cities is similar to that proposed for Dresden 3. Each reactor includes:

1. A High Pressure Coolant Injection (HPCI) System.

2. A high-volume, low-pressure coolant injection (LPCI) system.

3. Two core spray systems.

4. A system that will make river water available to the feedwater pumps for emergency cooling.

Considerably more information is now available on these systems and they appear to be adequate for the Quad-Cities Reactors. When additional design details become available, it is recommended that the Regulatory Staff satisfy itself with respect to the analyses of system characteristics, including the analysis related to core flooding, and the effects of blowdown on the reactor internals.

As in the case of Dresden 3, the Committee notes that the applicant has made improvements in the requirements for pressure vessel inspection during fabrication.*

The applicant has outlined a general program for periodic inspection of the pressure vessels and other components in the primary systems during the lifetime of the reactors. The Quad-Cities plants have been designed to permit improved accessibility for purposes of inspection of the regions of high stress, such as nozzles and flanges. The Committee may wish to review further the frequency and extent of inspection of the pressure vessels at the time of the request for the operating license.

Steam line isolation valves are an important safeguard in the event of failure of the steam line external to the containment. The Committee recommends that the applicant develop means of testing these valves under simulated accident conditions. These tests should be discussed with the Regulatory Staff.

The Advisory Committee on Reactor Safeguards believes that the various matters mentioned can be resolved during construction and that the proposed reactors can be constructed at the Quad-Cities site with reasonable assurance that they can be operated without undue risk to the health and safety of the public.

Sincerely yours,

/s/
David Okrent
Chairman

References Attached.

* The Committee believes that the industry should continue to pursue an orderly program leading to further improvement in the quality of pressure vessels and other components of the primary system such as valves, pumps, and piping.

References - Quad-Cities

1. Quad-Cities Station, Unit 1, Plant Design Analysis, Volumes I and II, undated, received June 6, 1966.

2. Commonwealth Edison Company letter dated August 18, 1966 to AEC Division of Reactor Licensing, with attachments: Amendment No. 1.

3. Commonwealth Edison Company letter dated September 9, 1966 to AEC Division of Reactor Licensing, with attachments: Amendment No. 2.

4. Commonwealth Edison Company letter dated October 18, 1966 to AEC Division of Reactor Licensing, with attachments: Amendment No. 3.

5. General Electric Company letter dated November 1, 1966 to Mr. Brian Grimes, AEC, with enclosure.

6. Commonwealth Edison Company letter dated November 25, 1966 to Dr. Peter A. Morris, AEC Division of Reactor Licensing, with attachments: Amendment No. 4.