ADVISORY COMMITTEE ON REACTOR SAFEGUARDS
UNITED STATES ATOMIC ENERGY COMMISSION
WASHINGTON 25, D. C.

May 18, 1959

Honorable John A. McCone
Chairman
U. S. Atomic Energy Commission
Washington 25, D. C.

Subject: COMMONWEALTH EDISON COMPANY - DRESDEN NUCLEAR POWER STATION

Dear Mr. McCone:

At the request of the Atomic Energy Commission, the Advisory Committee on Reactor Safeguards has reviewed the safety aspects of the Dresden Nuclear Power Station in connection with the application of the Commonwealth Edison Company for an operating license. Pertinent information was supplied by the Hazards Summary Reports on the Dresden Plant; by the Hazards Evaluation Branch of the Atomic Energy Commission's Division of Licensing and Regulation; and by staff personnel of both the General Electric Company, the manufacturer, and the Commonwealth Edison Company at various conferences held over the past several months.

The Committee has considered this reactor thoroughly and is of the opinion that it can be started and operated without undue risk to the public. As a result of this review the Committee has the following comments.

(1) Because of the large number of control rods, and their complete dependence on a complex hydraulic system both for normal operation and for scramming, it is essential that frequent and thorough periodic checks be made of the proper functioning of the many parts of this system. If such a program is maintained, the large number of control rods appears to insure safety even though there may be malfunction of some of the rods. The Committee understands that the applicant will provide for such a program in its operating procedure.

(2) Because of the large size of the reactor, both external and internal neutron flux monitors are necessary, at least in the early operation, to insure safe control of the reactor at high power levels. By high power levels is meant operation whenever the reactor power exceeds 315 Mw thermal (which is half the total rated power) and whenever the local power exceeds half the rated local power (as defined in the Technical Specifications, page 14).

It is the Committee's understanding that the applicant, in the early operation of the reactor at high power level, will require in reliable functioning condition at least five external ion chambers and 32 internal ion chambers, properly distributed (as described in Technical Specifications, pages 13 and 14). All of these ion chambers will be connected to the scram circuit and may be paired in coincidence circuits to reduce spurious scrams.

For operation at less than high power level, as defined above, internal ion chambers will not be required provided that a minimum of five external ion chambers are operable and individually capable of scramming the reactor.

The Committee concurs that these requirements are necessary during the initial stages for conservative prudent operation.

(3) In addition to all the other safeguards provided, the containment shell around the reactor, supplemented by a well-designed emergency cooling system, provides adequate protection for the public against possible release of dangerous quantities of fission products.

Sincerely yours,

/s/ C. Rogers McCullough

C. Rogers McCullough
Chairman

References

1. GEAP-1044 - Preliminary Hazards Summary Report for the Dresden Nuclear Power Station, September 3, 1957.
2. GEAP-0878 - Enclosure Section of the Hazards Summary Report for the Dresden Nuclear Power Station (Revised June 3, 1957).
3. GEAP-2071 - Operating Procedures and Emergency Plans for the Dresden Nuclear Power Station, June 5, 1958.
4. GEAP-3082 - Summary and Technical Specifications for the Dresden Nuclear Power Station, January 6, 1959.
5. Amendment No. 1 to Preliminary Hazards Summary Report for the Dresden Nuclear Power Station, May 26, 1958.
6. Amendment No. 2 to Preliminary Hazards Summary Report for the Dresden Nuclear Power Station, August 25, 1958.
7. Amendment No. 3 to Preliminary Hazards Summary Report for the Dresden Nuclear Power Station, December 29, 1958.
8. Amendment No. 4, Parts I and II, to the Preliminary Hazards Summary Report for the Dresden Nuclear Power Station, February 3, 1959.
9. Report to ACRS by Division of Licensing and Regulation, October 3, 1958.
10. Report to ACRS by Division of Licensing and Regulation, October 18, 1957.
11. Report to ACRS by Division of Licensing and Regulation, January 2, 1959.
12. Report to ACRS by Division of Licensing and Regulation, February 19, 1959.