UNITED STATES
NUCLEAR REGULATORY COMMISSION
ADVISORY COMMITTEE ON REACTOR SAFEGUARDS
WASHINGTON, D. C. 20555

March 13, 1979

Honorable Joseph M. Hendrie
Chairman
U.S. Nuclear Regulatory Commission
Washington, DC 20555

SUBJECT: REPORT ON WILLIAM H. ZIMMER NUCLEAR POWER STATION, UNIT 1

Dear Dr. Hendrie:

During its 227th meeting, March 8-10, 1979, the Advisory Committee on Reactor Safeguards completed its review of the application of the Cincinnati Gas and Electric Company (CG&E), the Columbus and Southern Ohio Electric Company, and the Dayton Power and Light Company (hereinafter referred to collectively as the Applicants) for authorization to operate the William H. Zimmer Nuclear Power Station, Unit 1. CG&E will be responsible for operating the plant. A tour of the facility was made by members of the Subcommittee on November 16, 1978 and the application was considered at Subcommittee meetings on November 17, 1978 and February 27, 1979. During its review, the Committee had the benefit of discussions with representatives and consultants of the Applicants, the General Electric Company, Sargent and Lundy Company, Kaiser Engineers Incorporated and the Nuclear Regulatory Commission (NRC) Staff. The Committee also had the benefit of the documents listed. The Committee reported on the application for a construction permit for this plant on September 17, 1971.

The Zimmer Nuclear Power Station is located in Ohio on the Ohio River approximately 24 miles southeast of Cincinnati and one-half mile north of Moscow, Ohio. The plant will utilize a 2436 MWt BWR/5 boiling water reactor which is similar to the BWR/4 used in the Edwin I. Hatch Nuclear Plant, Unit No. 2. A principal difference is the use of recirculation flow control valves to regulate power rather than pump speed control which has been used on plants of the BWR/4 type.

The Zimmer Nuclear Power Station has a Mark II pressure suppression containment and is designated as one of the lead plants for this type containment. The NRC Staff has reviewed the generic aspects of the Mark II containment system and has reported its findings in NUREG-0487. The generic aspects of Mark II load evaluation and acceptance criteria were considered at Subcommittee meetings on July 7-8, 1977, November 30, 1977, May 23, 1978, and November 28-30, 1978. The Committee believes that the acceptance criteria are suitable for the lead Mark II plants.

The Applicants have taken exception to some of the acceptance criteria developed by the NRC Staff. The Staff and the Applicants are continuing to work together to resolve this matter. The Committee wishes to be kept informed.

The Mark II Owners Group and the NRC Staff are continuing to develop information relating to the method of combining loads on the containment structure. However, the Applicants have indicated that they will accept the NRC Staff's current, perhaps overly conservative, methodology, to expedite the licensing action. The Committee considers this acceptable.

The NRC Staff has determined that the present Emergency Core Cooling System analysis contains adequate margins for assessing the performance of the Zimmer Plant. It should be noted that recent tests in the Two Loop Test Apparatus (TLTA) have produced new data on the rate of vaporization of emergency core cooling water. The NRC Staff believes that further analysis of the TLTA test results may require changes in the General Electric model for calculation of this vaporization rate in order to reflect more accurately the observed physical phenomena. The Committee wishes to be kept informed.

In view of the important role of the Operational Review Committee in providing continuing reviews, and in updating and implementing safety measures, the ACRS recommends that the Operational Review Committee include additional experienced personnel from outside the corporate structure as voting members for the first few years of operation.

With regard to the generic items cited in the Committee's report, "Status of Generic Items Relating to Light Water Reactors: Report No. 6," dated November 15, 1977, those items considered relevant to Zimmer are: II-4, 5b, 6, 7, 8, 10; IIA-4; IIB-4; IIC-1, 3A, 3B, 5; IID-2. These items should be dealt with by the NRC Staff and the Applicants as solutions are found.

The Advisory Committee on Reactor Safeguards believes that, if due consideration is given to the items mentioned above, and subject to satisfactory completion of construction and preoperational testing, the William H. Zimmer Nuclear Power Station, Unit 1 can be operated without undue risk to the health and safety of the public.

Sincerely,

Max W. Carbon
Chairman

References:

1. Cincinnati Gas and Electric Company, "Final Safety Analysis Report, William H. Zimmer Nuclear Power Station, Unit 1," with Amendments 23 through 82.

2. U. S. Nuclear Regulatory Commission (USNRC), "Safety Evaluation Report Related to the Operation of William H. Zimmer Nuclear Power Station, Unit 1, Docket No. 50-358," USNRC Report NUREG-0528, dated January 31, 1979.

3. U. S. Nuclear Regulatory Commission, "Mark II Containment Lead Plant Program Load Evaluation and Acceptance Criteria," USNRC Report NUREG-0487, dated October, 1978.