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Mr. James M. Taylor
Executive Director for Operations
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555

Dear Mr. Taylor:

SUBJECT: GENERAL ELECTRIC NUCLEAR ENERGY POWER UPRATE
PROGRAM/FERMI, UNIT 2 POWER INCREASE REQUEST

During the 389th meeting of the Advisory Committee on Reactor Safeguards, September 10-12, 1992, we reviewed the General Electric Nuclear Energy (GE) generic program supporting power uprates for operating boiling water reactors (BWRs), and the associated application of the Detroit Edison Company (DECo) for a power level increase for the Fermi, Unit 2 nuclear power plant. The Committee was initially briefed on this matter during its 384th meeting (April 2-4, 1992). Our Subcommittee on Thermal Hydraulic Phenomena held meetings on March 26 and August 18, 1992, to review this matter. During this review, we had the benefit of discussions with representatives of the NRC staff, GE, and DECo. We also had the benefit of the documents referenced.

DECo has requested an amendment to its technical specifications to increase the licensed thermal power limit from 3293 MWt to 3430 MWt, a 4.2 percent increase. This request is based on the generic BWR power uprate program developed by GE. For this program, the staff has limited the core power increase to no more than 5 percent. Licensees for twenty BWR units have expressed interest in similar power uprates pursuant to this generic program. The DECo uprate request represents the lead plant effort.

Nine U.S. BWR units are licensed to operate at the uprated power and, as a result, there are 229 reactor-years of operational experience. Many BWRs have the capability to increase core power well beyond the 5 percent limit assigned to the GE generic uprate program at this time. Power increases of 15-20 percent have already been accomplished at BWR nuclear power plants located overseas, albeit at some additional hardware expense. The Fermi plant will still have at least an additional 5-10 percent margin in its safety systems (using their design basis) following adoption of this uprate.

We concur with the staff's conclusion that there is reasonable assurance that the health and safety of the public will not be endangered by the proposed power uprates, and that DECo should be issued its requested amendment. We commend the staff, DECo, and GE for a job well done. The detail in the staff's analysis represents a thorough safety evaluation and clearly supports its conclusions. We do, however, offer the following comments for consideration.

During this review, it came to our attention that the design basis for plant equipment is used in analyses supporting determination of

safety margins. This is done in spite of demonstrated substantial equipment performance margins. This is an example of unnecessarily compounded conservatism. Safety margins should be determined using actual data, when available.

During the August 18, 1992 subcommittee meeting, GE presented the results of calculations with a computer code (SHEX) that was not known to us. Had these calculations not been peripheral to the main topic of the meeting, we would have been required to delay the review process. We recommend that whenever the industry or staff plans to discuss the results of calculations performed by a computer code that we have not reviewed, advance notice be given to us and if necessary the computer code documentation be made available to us before the presentation.

We see no need for further Committee review of the present GE power uprate program and associated plant-specific applications for power level increases of no more than 5 percent. The Committee does request, however, that it be afforded the opportunity to review any requests for core power increases in BWRs that go beyond the 5 percent power increase addressed in this letter.

Sincerely,

David A. Ward
Chairman

References:

1. GE Licensing Topical Report, NEDC-31897P-1, "Generic Guidelines for General Electric Boiling Water Reactor Power Uprate," June 1991 (Proprietary Information)
2. GE Licensing Topical Report, NEDC 31984P, "Generic Evaluations of General Electric Boiling Water Reactor Power Uprate," Volumes 1 and 2, July 1991 and Supplement 1 dated October 1991 (Proprietary Information)
3. U.S. Nuclear Regulatory Commission, "Safety Evaluation by the Office of Nuclear Reactor Regulation Related to Amendment No. 87 to Facility Operating License No. NPF-43, Detroit Edison Company Fermi-2, Docket No. 50-341," received September 11, 1992
4. U.S. Nuclear Regulatory Commission, "Safety Evaluation by the Office of Nuclear Reactor Regulation Concerning General Electric Licensing Topical Report NEDC-31984P, Generic Evaluations of General Electric Boiling Water Reactor Power Uprate," Volumes I and II (undated), received August 11, 1992
5. General Electric Company Response to Issues Raised by the ACRS Regarding Generic BWR Power Uprate Program (undated), received August 11, 1992 (Proprietary Information)
6. Memorandum dated July 6, 1992, from Detroit Edison Company for U.S. Nuclear Regulatory Commission, "Detroit Edison Response to Issues Raised by the Advisory Committee on Reactor Safeguards (ACRS) Regarding Fermi 2 Power Uprate Program Submittal (TAC No. M82102)" (Proprietary Information)
7. SECY-91-401, dated December 12, 1991, from James M. Taylor,

Executive Director for Operations, NRC, for the Commissioners,
Subject: Generic Boiling Water Reactor Power Uprate Program