

Official

OCT 11 1988

✓ Georgians Against Nuclear Energy
✓ ATTN: Mr. Charlie Duke
 Ms. Patricia Gibbin
✓ P. O. Box 8574, Station F
Atlanta, Georgia 30306

Gentlemen:

This is in response to your letter to Dr. J. Nelson Grace, dated September 2, 1988, in which you expressed concerns related to the Georgia Tech Research Reactor resuming operations and requested a hearing in this regard. Your request implies a concern regarding the ability of Georgia Tech to operate their reactor safely. The NRC shares your safety interest, and reasonable assurance of safe operation will be obtained by the NRC prior to allowing the Georgia Tech Reactor to restart. It is for this very reason that we issued an Order on January 20, 1988, to cease irradiation experiments and a Confirmatory Order on March 17, 1988, to cease reactor operations until all safety questions had been resolved to the NRC's satisfaction and the NRC approved resumption of operations.

When the NRC issued the Confirmatory Order on March 17, any party adversely affected by that Order was afforded an opportunity within twenty days of the date of the Order to request a public hearing. As no such request was filed within the required time, no hearing is required to be held. More importantly, the safety aspects of operating the reactor were all carefully reviewed at the time of licensing, and none of those considerations have been changed. The thrust of our efforts over the past few months have been to improve certain management and administrative practices that have deteriorated over time, and these issues will be resolved prior to giving our permission for restart. Thus, because of the relatively narrow, well-defined focus of the issues at hand, a hearing would not be useful from a safety standpoint. For these two reasons, we are denying your request.

The following addresses the specific concerns raised in your letter:

1. The phase-out of the use of highly enriched uranium in domestic non-power reactors is a coordinated government program and is being pursued in a planned, discretely phased conversion. The first phase is the conduct of a safety analysis study to assure that the low enriched uranium will perform within the appropriate margins of safety for each particular reactor. The second phase is for NRC review and approval of a licensee's request for conversion. The third phase would be the actual conversion. In terms of priorities, the government considers such things as readiness of the University to undertake the process, relative safeguards and security concerns, the availability of technical support and funding by the government, and the ability of the fabricator to produce the necessary fuel within its current workload and production goals. Thus, I believe that you can appreciate that conversion at Georgia Tech is just a small part of a significantly larger program. A conversion at Georgia Tech will not be a factor in any decision the NRC will to make regarding restart of the reactor.

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2. Even though there is only a very low probability of an accident causing significant consequences outside the containment at Georgia Tech, the NRC requires Georgia Tech to maintain an Emergency Plan to handle such an accident. As part of this Plan, Georgia Tech has established an Emergency Planning Zone (EPZ) of 100 meters for the reactor. The EPZ is the area for which planning is established to assure prompt and effective actions can be taken to protect the public in the event of an accident. In the case of Georgia Tech, this planning includes procedures for evacuation of the research center facility, measurements of radiation in the environment surrounding the facility, and notification of the City of Atlanta, the State of Georgia, and campus police to provide necessary help. The NRC has determined that this level of planning is adequate to respond to an emergency at the GTRR.

The NRC conducted an independent analysis of highly unlikely but credible accidents at the GTRR. This analysis, calculated for locations at 150 meters from the facility, shows that, in the first two hours following such an accident, the whole body radiation dose to a member of the public would be 0.9 Rem and the radiation dose to the thyroid would be 4 Rem. The doses that the Environmental Protection Agency (EPA) has recommended use as action points for evacuation after an accident, 1 to 5 Rem whole body and 5 to 25 Rem thyroid. Thus the staff's calculated doses are well below EPA guidelines. The area within this 150 meter radius is Georgia Tech campus, and the area is principally classroom and laboratory space. Dense populations are well beyond this 150 meter distance.

3. Regarding your concern of the age of the GTRR and the possible weakening or deterioration of components and safety systems, the gradual aging of equipment was considered in the initial licensing of a facility for 30 years. In addition, the NRC routine inspection program is designed to preclude any decrease in the safety margin for operating the facility. This program includes the performance of components, systems and instrumentation not only on the reactor but also on radiological program equipment. With regard to procedures being up-to-date, this is an open issue that we have identified to the University. We will inspect procedures for adequacy prior to any NRC concurrence in restart of the reactor.
4. The GTRR is required by the NRC to provide adequate facilities for controlling and processing liquid and gaseous waste.

All liquid wastes that could contain radioactive material are routed to waste retention tanks. The liquids in the tanks are sampled and treated, utilizing demineralizers and filters as necessary, to ensure the concentrations of radioactive material are within acceptable levels. If licensee measurements indicate acceptable levels, that is, below federal guidelines for release of radioactive materials, the liquids are discharged to the sanitary sewer system.

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Exhaust air from the containment, which could contain radioactive material, is routed through a 12 second delay holdup system to allow for decay of very short lived radioactive materials. It is then passed through roughing and high efficiency filters, and monitored during release through the stack. If the monitor detects higher than normal releases, the release through the stack is automatically stopped.

To further verify that gaseous effluent releases are minimal and below the established federal concentration limits, the licensee has established a network of environmental radiation monitoring devices around the facility. Results of monitoring of radiation levels around the reactor have indicated that there has been negligible impact to the surrounding environs. All measured quarterly doses to surrounding areas have been below the sensitivity, that is, 3 millirem, of the environmental monitors, and far below currently established federal standards.

During our review of the GTRR's readiness for restart, we are evaluating both the liquid and gaseous waste control programs at the GTRR. The licensee will not restart until we are assured the programs meet all NRC requirements.

5. The licensee will be required to safely decommission the reactor prior to license termination. The NRC had provided guidance in the form of Regulatory Guide 1.86 "Termination of Operating Licenses for Nuclear Reactors". Decommissioning of a facility can take a number of forms. A reactor may be completely disassembled and appropriately disposed of, or the fuel might be removed and stored. In either event the Decommissioning Plan must be reviewed and approved by NRC prior to the dismantling operation. Subsequently, the NRC will conduct independent radiation survey measurements to assure that residual radiological conditions are acceptable for uncontrolled access. The ability to safely decommission research reactors has been demonstrated by the several research reactors that have already been decommissioned.

I trust that we have been responsive to your concerns.

Sincerely,

Malcolm L. Ernst
Acting Regional Administrator

cc: ✓ Dr. Ratib A. Karam, Director
Neely Nuclear Research Center
✓ A. P. Sheppard, Acting Vice
President for Research
State of Georgia

bcc: (See page 4)

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