

November 4, 1994

Georgia Institute of Technology
ATTN: Dr. Ratib A. Karam, Director
Neely Nuclear Research Center
225 North Avenue
Atlanta, GA 30332

SUBJECT: REQUEST FOR ADDITIONAL INFORMATION

Gentlemen:

In July 1993, an issue was raised concerning whether a serious rainstorm could cause a sink hole to develop near your office/laboratory and reactor buildings due to a failure of the sewer line that runs nearby and whether this could impact the integrity of these buildings and the safe operation of your research reactor.

In early September 1993, the NRC staff reviewed the location of the sewer line relative to the reactor building on the drawings available in the Technical Specifications and the Final Safety Analysis Report. It was determined that the closest sewer line was the six foot diameter branch line approximately 60 feet away from the reactor building. The NRC staff also contacted you and requested that you evaluate this issue.

By letter dated October 22, 1993, you submitted an evaluation concerning the reactor containment building. The evaluation had been performed by your contractor, Robert and Company. The evaluation indicated that the reactor structure is supported on an 8-foot thick reinforced concrete circular mat and is independent of the rest of the building structure. The bottom of the reactor foundation mat rests on weathered rock or partially decomposed rock. The evaluation also indicated that the reactor structure should not be damaged even if the building adjacent to it should collapse, since the buildings are separated by an expansion joint and not physically attached to each other. In your letter you concluded that the reactor building integrity would be maintained under any scenario of possible sewer collapse.

The NRC subsequently reviewed that evaluation and determined that the conclusions you had reached appeared to be correct. The NRC also concluded that the evaluation should include a review by a soils engineer and should address whether the utility lines for the reactor building entering it from the administrative building would be damaged and the impact this would have on the safe operation on the research reactor. Consequently, you were asked to evaluate this further during a management meeting held at your facility on February 16, 1994, and you agreed to provide Region II with a supplemental response in this regard.

By letter dated March 7, 1994, you addressed the issue of the structural integrity of the office/laboratory building adjacent to the reactor building should a washout of the earth occur (due to failure of the sewer line). This evaluation was performed by the Manager of Facilities Engineering at Georgia

9411300192 941104
PDR ADOCK 05000160
P PDR

110
IE01

Tech. The conclusion was that the foundation footings were placed on weathered rock. Therefore, the foundation structure formed a bridge to support the corner of the building over the existing sewer line. If the earth were eroded from under the office building, the building would still be supported by the foundation footings placed in the weathered rock formations. By letter dated March 21, 1994, you also submitted a memorandum from the Manager of Facilities Engineering which indicated that a problem with the ORME Street trunk sewer line would be unlikely to cause damage to the sewer line under the office/laboratory building.

After reviewing of this documentation, we find that it is not clear as to whether or not an actual physical inspection of the sewer line has been performed to ascertain the current condition of the sewer line.

Therefore, you are requested to determine the current condition of the sewer line and the likelihood of its failure. This will require an inspection of the sewer line. You are requested to provide us with this information by January 16, 1995.

Should you have any questions concerning this letter, please contact Craig Bassett at (404) 331-5570.

Sincerely,

original signed by
J. Philip Stohr

J. Philip Stohr, Director
Division of Radiation Safety
and Safeguards

Docket No. 50-160
License No. R-97

cc: (See Page 3)

cc: Dr. G. Poehlein, Vice President
 for Interdisciplinary Program
 Georgia Institute of Technology
 225 North Avenue
 Atlanta, GA 30332

Dr. William G. Vernetson
 Director of Nuclear Facilities
 Dept. of Nuclear Engineering
 Sciences
 University of Florida
 202 Nuclear Sciences Center
 Gainesville, FL 32611

Pedro B. Perez
 Associate Director
 Nuclear Reactor Program
 North Carolina State University
 P. O. Box 7909
 Raleigh, NC 27695-7909

Dr. R. U. Mulder, Director
 Reactor Facility
 University of Virginia
 Charlottesville, VA 22901

James Setser, Chief
 Program Coordination Branch
 Environmental Protection Div.
 Department of Natural Resources
 Floyd Tower, E-1166
 205 Butler St., SE, Suite 1252
 Atlanta, GA 30334

Mayor of the City of Atlanta
 55 Trinity Avenue, SW
 Suite 2400
 Atlanta, GA 30335

Distribution:

- M. Mendonca, NRR
- S. Richards, NRR
- C. Bassett, RII
- E. McAlpine, RII
- J. Joyner, RI
- C. Pederson, RIII
- B. Murray, RIV
- F. Wenslawski, RIV

PUBLIC

SEND	OFC	RII:DRSS	RII:DRSS	RII:DRSS		
		CHBassett <i>CB</i>	EJMcAlpine <i>EM</i>	DMCollins <i>DM</i>		
PDR?	DATE	10/27/94	10/27/94	10/27/94	1/194	1/194
Yes	No	COPY? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Yes	No	Yes	No