



UNITED STATES •  
NUCLEAR REGULATORY COMMISSION  
REGION II  
101 MARIETTA STREET, N.W.  
ATLANTA, GEORGIA 30323

JUL 05 1985

Report Nos.: 50-276/85-01

Licensee: Georgia Institute of Technology  
225 North Avenue  
Atlanta, GA 30332

Docket No.: 50-276

License No.: R-111

Facility Name: Georgia Institute of Technology (AGN-201)

Inspection Conducted: June 6, 1985

Inspector: R. H. Albright 7-1-85  
R. H. Albright Date Signed

Accompanying Personnel: A. Hardin

Approved by: C. M. Hosey 7/1/85  
C. M. Hosey, Section Chief Date Signed  
Division of Radiation Safety and Safeguards

SUMMARY

Scope: This routine, announced inspection entailed 3 inspector-hours on site in the areas of disposition of radioactive material, confirmatory radiation and contamination surveys and review of records associated with the termination of the operating license.

Results: No violations or deviations were identified.

## REPORT DETAILS

### 1. Persons Contacted

#### Licensee Employees

Dr. Ratib A. Karam, Director, Neely Research Center  
R. Boyd, Radiation Safety Officer

### 2. Exit Interview

The inspection scope and findings were summarized on June 6, 1985, with those persons in paragraph 1 above. The licensee did not identify as proprietary any of the materials provided to or reviewed by the inspector during this inspection.

### 3. Licensee Action on Previous Enforcement Matters

This subject was not addressed in the inspection.

### 4. Disposition of Special Nuclear Material

The fuel from the AGN-201 has been transferred to the Georgia Institute of Technology Research Reactor (GTRR) fuel vault. The License no. for the GTRR is No. R-97. The inspector reviewed Amendment No. 6 to License No. R-97 which allows the licensee to possess, but not to use, the fuel from the AGN-201 reactor. The AGN-201 fuel will be transferred to the Department of Energy as soon as possible.

The inspector reviewed records which indicated that the licensee had accounted for all components containing enriched uranium. A licensee representative stated that all components containing enriched uranium were stored in the GTRR fuel vault. A Radium-Beryllium (Ra-Be) startup source will also be retained by the licensee. The source will be retained under conditions of Georgia Radioactive Material License No. GA-147-1. The inspector reviewed License No. GA-147-1 to ensure that the Ra-Be source could be retained under that license.

### 5. Confirmatory Surveys

The inspector performed direct gamma, beta and alpha radiation surveys of removed internal reactor components and the core areas of the reactor. The removed reactor internal components were taken to an area of low background for the direct alpha, beta, and gamma surveys. The inspector also performed beta and alpha loose surface contamination surveys of the glory hole and reactor components that held the fuel when the reactor was critical. The above components were close to the fuel when the reactor was critical and therefore were the most likely to be activated or contaminated. Due to high radiation background caused by radioactive materials retained on

another license, surveys of the room surrounding the reactor and the outside of the reactor were not performed.

The inspector reviewed and discussed with licensee representatives radiation and contamination surveys of the reactor, components and fuel. No loose surface contamination was found. The fuel and other uranium containing components did exhibit gamma dose rates. The highest dose rate was on the fuel and measured approximately 30 mrem/hr.

Since no loose surface contamination was measured by the licensee or the inspector's surveys, environmental measurements were not performed.

#### 6. Reports and Records

The maximum whole body exposure received by personnel in 1984 due to the AGN-201 was 2 mrem. This exposure was received during fuel removal. This exposure will be reported to the NRC in accordance with 10 CFR 20.407.

#### 7. Conclusions

The inspector verified that the licensee had transferred all special nuclear material and the Ra-Be startup source, held under Operating License R-111, to other reactor or radioactive material licenses. The inspector verified by independent surveys that there was no apparent residual radioactivity in the reactor core area or on components removed from the reactor core area. Due to high radiation background, surfaces of the reactor other than the core area could not be surveyed. The licensee should move the reactor and removed components to a low background area and perform a thorough survey. The licensee should forward the results of this survey to the NRC for evaluation. After the radioactive materials causing the high background are removed, the facility should be surveyed and these results provided to the NRC. Subsequent to receiving the surveys, the NRC will perform an independent confirmatory survey of the facility, reactor and reactor components prior to their release for unrestricted use. The license should remain active until all licensee and NRC surveys are complete.