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U.S. Nuclear Regulatory Commission
Washington, D.C. 20555

Attention: Document Control Desk

Subject: Georgia Institute of Technology License No. R97.
Docket No. 50-160
Replay to Notification of Exercise Weakness
Inspection Report No. 50-160/96-05

Ladies and Gentlemen,

Pursuant to the 10 CFR 2.204 please find Attachment I - A Response to Exercise Weakness, Inspection Report No. 50-160/96-05. Should you have any questions, please call me at 404-894-3620.

Sincerely,

R.A. Karam, Director
Neely Nuclear Research Center

RAK/ars

cc: Mr. Luis A. Reyes, Region II

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Attachment I

Georgia Institute of Technology Reply to Notice of Exercise Weakness, Inspection Report No. 50-160/96-05.

Exercise Weakness as Reported in Inspection Report No. 50-160/96-05.

a. Inspection Scope

Section 10.2 of the licensee's Emergency Plan required that annually drills be conducted to test the adequacy of emergency procedures and to ensure that emergency organization personnel are familiar with their duties. Further, the Emergency Plan required that at least biennially, drills contain provisions for coordination with local offsite emergency organizations for testing communications and notification procedures. The inspector observed the annual exercise conducted on November 26, 1996.

b. Observations and Findings

The scenario was reviewed in advance of the exercise and was discussed with licensee representatives prior to the exercise. No major problems were identified during the review, but inconsistencies became apparent during the exercise. The inconsistencies failed to detract from the overall performance of the licensee's emergency organization.

The exercise involved full participation by the Georgia Department of Natural Resources/Environmental Protection Division (DNR/EPD), and GTP. Participation by the Atlanta/Fulton County Emergency Management Agency (A/FEMA) and Georgia Emergency Management Agency (GEMA) was limited to communications only. The simulated accident conditions commenced at 9:00 a.m. and terminated at 11:15 a.m. The scenario postulated a tornado in the vicinity of the NNRC causing a loss of electrical power and damage to a structure used for storage of low-level radioactive waste. The inspector observed the licensee's actions in the following areas:

- ECC activation and operation
- Notification and communication with offsite authorities
- Interface between the alternate ED and response personnel (DNR/EPD and GTP)
- Facility assembly and accountability
- On-scene response by health physics personnel

◦ Event recognition and classification

In response to the GTP report of a tornado warning due to a tornado sighted one mile WNW of NNRC and moving toward the NNRC, a building PA announcement was made asking personnel to relocate to the basement. Facility staff were directed to the rear of the ECC for assembly and accountability. Accountability was completed within approximately twelve (12) minutes of the announcement to relocate. The deployment of a search team for a missing faculty member followed by a damage assessment team to assess the impact of the tornado on the facility was both timely and appropriate. However, the inspector noted that the emergency classification by the alternate ED was both delayed and incorrect based on postulated conditions as follows (approximate timeline and events):

- 9:03 a.m. Message card two issued indicating the GTP reported a tornado had been sighted one mile WNW of NNRC and moving toward NNRC
- 9:10 a.m. Message card three issued to the alternate ED indicating that the tornado had passed the NNRC and all electrical power was lost (lights were switched off to add realism)
- 9:14 a.m. Message card four issued to the alternate ED indicating that the assessment team reported no damage to reactor, hot cell, or NNRC; containment integrity could be effected
- 9:18 a.m. Team two reported damage to the barn (low-level radioactive waste storage) and possible spread to contaminated material
- 9:32 a.m. Assessment team reported to ECC that contaminated paper and gloves located outside the site boundary
- 9:53 a.m. Alternate ED considering an Alert emergency classification based on radiation levels greater than 20 millirem/hour at site boundary
- 9:57 a.m. Offsite notifications (State/local/NRC) initiated regarding the Alert classification based on radiation levels of 38 millirem/hour
- 10:00 a.m. Controller informed the alternate ED of error in reviewing rad data as millirem rather than microrem
- 10:02 a.m. Alternate ED reassessed emergency action levels based on radiation data and determined the event should be downgraded to a NOUE

Offsite notifications were initiated to indicate that, due to an error in radiation levels reported earlier, rather than an Alert, a NOUE was declared based on offsite contamination.

The event declaration (9:53 a.m.) was delayed more than 30 minutes after the conditions were met (9:14 a.m.) for the NOUE Emergency Action Level (EAL) in 5.9.5 of EP 6100 (Rev. 6) and Table I of the Plan. In addition, the decision to declare an Alert was incorrect due to misinterpretation of radiological units (millirem rather than microrem). Further, the basis for the NOUE at 10:02 a.m. was not consistent with the EALs in the Plan or EP 6100 in that offsite contamination is not included as an EAL. The inspector indicated that an exercise weakness (EW) was identified for failure classify the event timely and correctly in accordance with the Plan and implementing procedures.

EW 50-160/96-05-01: Failure to classify the event in a timely manner and in accordance with the Plan and implementing procedures.

The inspector observed that notification procedures were implemented in accordance with EP 6100 "Emergency Notification." However, the lack of a standard message notification form resulted in insufficient details being provided to offsite authorities during the initial message (e.g. event status, assistance needed, etc.) to assist authorities in assessing conditions (e.g. travel directions, equipment/personnel resources). The inspector noted examples where the alternate ED appeared to lack command and control over the response:

- ° On arrival, State personnel directed areas for conducting rad surveys and assessment rather than the alternate ED directing State resources as the ED desired.
- ° Accident assessment did not take into consideration means to protect the barn or prevent additional material from being dispersed.
- ° Noise levels within the ECC by the facility staff at times was excessive.
- ° Following the loss of power, the alternate ED was observed struggling to operate a flash light while making offsite notifications, when numerous resources were available in the ECC to assist with light and/or phone calls."

"Other observations that were discussed with the licensee included:

- ° During early stages of drill, players failed to preface communications (particularly two-way radio) with "this is a drill."
- ° There was excessive prompting and exercise control problems by controller organization.

- ° There was ineffective use of personnel resources within the ECC by the alternate ED.

In response to the inspector's comments regarding the lack of command and control by the alternate ED, the facility Director attributed the lack of experience as the basis for the performance. The facility Director discussed conducted additional training including a table-top drill for the alternate ED to provide the necessary experience. When questioned regarding the date for such training, the inspector was informed that such training would be completed pending decisions by the University President regarding continued operations of the NNRC. The inspector indicated that the additional training and table-top drill for the alternate ED was considered an Inspector Followup Item (IFI).

IFI 50-160/96-05-02: Provide additional training including table-top drill for personnel designated as alternate ED.

At the conclusion of the exercise, the licensee conducted a critique that included participants from onsite and offsite organizations. Offsite participants provided good candid assessments regarding exercise play and desire to be involved in early stages of planning and scenario development.

c. Conclusions

The licensee's performance to protect the health and safety of facility staff, and students was adequate. Exercise control and excessive prompting by the controller organization continue to pose a challenge for the licensee.

REPLY

The objectives for the Nov. 26, 1996 Emergency Drill were described in the Emergency Drill scenario as follows:

1. To test the NNRC Emergency Organization's response to a "NOUE" emergency event;
2. To demonstrate a new Emergency Director's ability to handle an emergency situation;
3. To demonstrate that NNRC personnel are trained properly and can respond appropriately to an emergency situation;
4. To demonstrate that emergency procedures are adequate and can be followed;

5. To demonstrate that emergency communications systems are functional, and
6. To use the emergency communication system in summoning help from the State of Georgia.

Emergency Drills or any drills are usually conducted for the purpose of teaching and/or testing or measuring the level of skill acquired in performing a required function. The Emergency Preparedness Plan states in paragraph 10.2.

"Onsite emergency drills will be conducted annually to test the adequacy of emergency procedures and to ensure that emergency organization personnel are familiar with their duties."

The drill of Nov. 26, 1996 did indicate clearly that the alternate Emergency Director "trainee" needed additional training in recognizing that "he" is in charge and that he must command and control completely the Emergency situation. To that end, Management of NNRC promise to conduct additional "Table Top" exercises so that all alternate Emergency Directors have better understanding of their responsibilities as emergency directors. This promise is contingent however upon decision by the President of the Institute to continue reactor operation. The President's decision on continued operation is expected in mid to late March 1997. Should the decision to continue operation be made by the President, the retraining of NNRC staff in emergency control will start immediately thereafter and will be concluded by December 1, 1997.

We further recognize that timely classification of an Emergency is important and that additional training on this matter is essential. Additional training on this issue will also be completed Dec. 1, 1997.

NNRC management also recognizes that an Event information worksheet tailored to GTRR operations and GTRR potential emergencies is beneficial. Such a worksheet will be developed and instituted by the Dec. 1, 1997 deadline.