



UNITED STATES
 NUCLEAR REGULATORY COMMISSION
 WASHINGTON, D. C. 20555

March 23, 1990

MEMORANDUM FOR: Chairman Carr
 Commissioner Roberts
 Commissioner Rogers
 Commissioner Curtiss
 Commissioner Remick

FROM: James M. Taylor
 Executive Director
 for Operations

SUBJECT: INVESTIGATION OF MARCH 20, 1990 EVENT AT VOGTLE NUCLEAR
 POWER PLANT, INVOLVING LOSS OF OFFSITE POWER AND
 FAILURE OF ONSITE POWER ON DEMAND AT UNIT 1

On March 20, 1990, at 9:58 a.m. EST, the licensee for the Vogtle Nuclear Power Plant notified the NRC they had declared a Site Area Emergency for Unit 1 due to a loss of offsite power concurrent with a loss of onsite emergency diesel generator (EDG) capability. The loss of offsite power was caused by a truck accident in the switchyard. At the time of the incident Unit 1 was in cold shutdown with the B reserve auxiliary transformer and the B emergency diesel generator out of service for maintenance. The A EDG started as designed but immediately tripped. Thirty-six minutes into the event, the A EDG was manually started, at which time core cooling was reestablished to Unit 1. The Unit 1 reactor coolant temperature peaked at 136° F and stabilized at 100° F after emergency AC power was restored. The licensee downgraded the event to an Alert at 10:15 a.m. EST based on the restoration of onsite power. Unit 2 reactor also tripped from 100 percent power as a result of the truck accident, but did not lose offsite power. At 11:29 a.m. EST the B reserve auxiliary transformer was re-energized, restoring normal power to the engineered safeguards buses.

An Augmented Inspection Team (AIT) was immediately sent to the site by Region II to investigate the event. However, because of the safety significance and the potential regulatory questions the event raises, I have requested AEOD to take the necessary actions to upgrade the current AIT to a seven member NRC Incident Investigation Team (IIT). Arrangements are being made under the provisions of a Memorandum of Agreement with the Institute of Nuclear Power Operations for industry participation. The team is to: (a) fact find as to what happened; (b) identify the probable cause as to why it happened; and (c) make appropriate findings and conclusions which would form the basis for any necessary follow-on actions.

The team will report directly to me and is comprised of: Al Chaffee, (RV) Team Leader; Warren Lyon, (NRR); William Jones, (AEOD); Eugene Trager, (AEOD); Richard Kendall, (NRR); Garmon West, Jr., (NRR); and William Lazarus (RI). Enclosed is the charter for the IIT to use in the review of the event.

The Commissioners

- 2 -

The IIT was selected on the bases of their knowledge and experience in the fields of reactor systems, reactor operations, human factors, and power distribution systems. Team members have no direct involvement with Vogtle. The additional team members and team leader are currently enroute to the site.

The licensee has agreed to preserve the equipment in accordance with the Confirmatory Action Letter which was issued by the Regional Administrator on March 23, 1990. The licensee has also agreed not to take Vogtle Unit 1 critical until concurrence is received from the NRC.

The IIT report will constitute the single NRC fact-finding investigation report. It is expected that the team report will be issued within 45 days from now.

Original signed by:

James M. Taylor
Executive Director
for Operations

cc: SECY
OGC
ARCS
GPA
Regional Administrators

Incident Investigation Team Charter

Loss of Onsite Power and Failure of Onsite Power on Demand at Vogtle Unit 1.

The scope of the IIT investigation should include conditions preceding the event, event chronology, systems response, human factors considerations, equipment performance, precursors to the event, emergency response (NRC, licensee, and Federal and State agencies), safety significance, radiological considerations, and whether the regulatory process and activities preceding the event contributed to it. Within the framework of this scope the IIT should specifically:

With respect to conditions preceding the event: Evaluate the activities and plans which established the initial plant conditions. Identify the initial plant conditions (prior to start of the transient). Identify whether the conditions were prudent and proper. Facts should be obtained regarding the licensee's actions associated with providing assurance of adequate RHR cooling during the outage activities, including planning and coordination of equipment outages, emergency responses to mid-loop operational events, and review of applicable NRC generic communications. Identify any procedural requirements and/or deficiencies associated with the fuel truck's movement in the protected area.

With respect to event chronology: Develop and validate a detailed sequence of events associated with the loss of all AC power transient on Unit 1. Establish the cause of the Unit 2 trip.

With respect to emergency response: Develop and validate a detailed sequence of events associated with implementation of the Emergency Plan Implementing Procedures, including problems associated with the ENN and ERF computer.

With respect to systems response: Evaluate the response of the '1A' Diesel Generator, including equipment performance (Blackout Sequencer and Jacket Water Pressure). Determine whether the Unit 1 switchyard breaker actuations were appropriate and expected.

With respect to human factors considerations: Evaluate personnel performance including local operator actions in response to the '1A' DG failure to start.

With respect to safety significance of the event: Evaluate the potential for long term core damage due to this transient. Include the responses of operations and maintenance personnel, RCS heatup, and potential containment challenges. Evaluate the potential for a truck fuel conflagration in this scenario and whether Fitness for Duty rule was complied with.

With respect to the regulatory process and activities preceding the event: Evaluate the adequacy of plant Technical Specifications for safety system operability/availability during refueling mode and any implications to other modes.

The scope of the investigation does not include:

Assessing variations of NRC rules and requirements; and

Reviewing the design and licensing bases for the facility, except as necessary to assess the cause for the event under investigation.