



UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION II
101 MARIETTA STREET, N.W.
ATLANTA, GEORGIA 30325

Report Nos.: 50-424/90-29 and 50-425/90-29

Licensee: Georgia Power Company
P.O. Box 1295
Birmingham, AL 27602

Docket Nos.: 50-424 and 50-425 License Nos.: NPF-63 and
NPF-81

Facility Name: Vogtle 1 and 2

Inspection Conducted: December 3 - 7, 1990

Inspector: R. Aiello for L. Mellen 12/17/90
L. Mellen, Team Leader Date Signed

NRC Team Members: R. Aiello
D. Starkey

Approved by: L. Watson 12/17/90
L. Watson, Chief Date Signed
Operational Programs Section
Division of Reactor Safety

SUMMARY

Scope:

This was a special announced training inspection. Its purpose was to verify that the training related corrective actions for the March 20, 1990, Loss of Vital AC Power and the Residual Heat Removal System during Mid-Loop Operations event were technically adequate and that changes would preclude the occurrence of similar events.

Results:

The overall assessment concluded that with few exceptions the licensee has aggressively pursued the training aspects related to the March 20, 1990, Loss of Vital AC Power and the Residual Heat Removal System during Mid-Loop Operations event. The licensee went beyond the original commitments and recommendations of NUREG 1410 by including lessons learned in applicable training areas.

One area that was incomplete was the formalization of the methodology required to close the Containment Equipment Hatch during Loss of Offsite Power and the subsequent formalization of the required training. This will be completed prior to the next refueling outage.

REPORT DETAILS

1. Persons Contacted

Licensee Employees

- *H. Beacher, Senior Plant Engineer
- B. Beasley, Manager of Outages and Planning
- *S. Chesnut, Manager Technical Support
- *C. Christiansen, SAER Supervisor
- *S. Driver, Plant Training Supervisor
- *T. Green, Assistant General Manager Plant Support
- H. Handfinger, Manager of Maintenance
- *K. Holmes, Manager of Training and Emergency Preparedness
- D. Huyck, Acting Security Manager
- *E. Kozinsky, Operations Superintendent - Support
- *G. McCarley, ISEG Supervisor
- *R. Odom, NSAC Supervisor
- *J. Roberts, Emergency Preparedness Coordinator
- *D. Scukanec, Operations Training Support
- *J. Swartzwelder, Manager Operations

Other licensee employees contacted included engineers, technicians, operators, trainers, and office personnel.

NRC Resident Inspectors

- *B. Bonser, Senior Resident Inspector
- *P. Balmain, Resident Inspector

*Attended exit interview on December 7, 1990.

Appendix A contains a list of abbreviations used in this report.

2. Training Items Identified in NUREG-1410 (41500, 3c-4)

The inspectors reviewed the licensee's corrective actions for training related deficiencies identified in NUREG-1410, Loss of Vital AC Power and the RHR System During Mid-Loop Operations, at Vogtle Unit 1 on March 20, 1990. The specific items with the licensee's corrective actions or plans as follows:

- a. The NUREG stated the controls over fuel and lubricants trucks conducting routine operations in the switch yard were deficient. In the letter to the NRC dated May 14, 1990, the licensee committed to require the use of flagmen for backing large trucks.

The inspectors verified that GET was revised to include the use of flagmen. Additionally, the licensee committed to revise security officer training to assure safe vehicle operations. The inspectors reviewed revisions to the security training program which defined vehicle escort duties. The scope of this training revision adequately covered the events described in NUREG 1410.

- b. The NUREG stated that industry provided guidance for control and precautions for work on electrical equipment has not been incorporated into Vogtle procedures.

The inspectors reviewed the training department's evaluation process for inclusion of industry guidance on electrical issues in the training program. The training department reviewed and documented their evaluation and disposition of industry electrical guidance. The licensee's review adequately included industry guidance in the training program.

- c. The NUREG stated that the scheduling of safety bus maintenance during mid-loop operations was not properly analyzed.

The licensee revised procedure 18019-C to include various RCS and containment conditions present during either an outage or a LOSP event. The procedure contained two parts. The first part was applicable in Mode 5 and the second part was applicable in Mode 6. The inspectors' review indicated that LOSP conditions were specified only when the plant was in Mode 4 or Mode 5. LOSP conditions were not clearly addressed in Mode 6 with water level above the RV flange. Part "B" (Mode 6) would transition to part "A" (Mode 5) only if water level was at or below the RV flanges. Procedure 18019-C was deficient in that guidance was not specified in part "A" for transition to part "B" when conditions for "B" were satisfied. Furthermore, part "B", paragraph B.15 instructed the operator to establish an RCS feed path from the RWST without the benefit of using attachment "A" (RWST Gravity Drain to RCS). Part "A" step A.21 did not address that the RV head could have been removed due to transition from part "B". Step A.11 lacked explicit detail in defining when the RCS was intact or considered open. When the procedure has been evaluated the licensee indicated that any corrections that result from this evaluation will be reviewed for inclusion in the licensee's requalification program. Additionally, any required change would be disseminated through the operations required reading program.

The inspectors also reviewed SCS letter dated June 15, 1990. This letter addressed REA VG-90 Loss of Decay Heat Removal Phase III. The time-to-boil curves were adjusted to address a less than or equal to 70 degrees F starting point for accidents.

The proposed corrective actions for this item are adequate.

- d. The NUREG stated that the failure of Calcon jacket water temperature trip sensors were not properly evaluated.

The licensee wrote a DCP to bypass the Calcon jacket water temperature trip sensors except during surveillance testing. The inspectors reviewed TLP RQ-HO-61994-001, which discussed the failure mechanisms for the Calcon sensors and the operational effects of the DCP and the resulting TS change. The training for this item was addressed adequately.

- e. The NUREG stated that there was a need to consider further analysis regarding the possibility that reflux cooling may start and stop as a result of thermohydraulic effects. Additionally, the NUREG stated that the potential for misleading instrument indications should be addressed.

TLP RQ-LP-61994-00, Vogtle Loss Of Power - NUREG 1410, Revision 0, discussed the factors that could affect the accuracy of RCS level indicators when operating at mid-loop. The TLP also discussed how and when reflux cooling was available to cool the RCS, and how feed and bleed of the RCS could be used to cool the RCS. The TLP also addressed the possibility that cooling flow could bypass the core during once through cooling if the wrong drain point was used, and other factors that determine the amount of water that could be gravity drained from the RWST to the RCS for cooling flow.

- f. The NUREG stated that the procedures did not address operation without the RHR system in mid-loop conditions with LOSP. This item is addressed in paragraph 3, item s.
- g. The NUREG stated that the procedures did not address the rapid reestablishment of primary containment with equipment or personnel air locks open. This item is addressed in paragraph 3, item s.

- h. The NUREG stated that the closure of the reactor coolant system was not formally addressed in procedures.

The inspectors reviewed Procedure 18019-C, Loss of RHR, Mid-Loop LOCA, and Procedure 12008-C, Mid-Loop Operations. There was no specific guidance for reestablishing RCS integrity in the event a loss of RHR had occurred. However, the procedure directed the operator to establish a stable cooling configuration and to consult the TSC for subsequent recovery actions. The licensee stated the procedure would be revised to reinforce the importance of maintaining an adequate RCS vent path. This procedure revision will be reviewed for inclusion into the licensee's regualification program. This change will also be disseminated through the operations required reading program. Training for this item was adequately addressed.

- i. The NUREG stated that the licensee's procedures did not adequately address communications with LOSP. This item is addressed in paragraph 4.
- j. The NUREG stated that the licensee's procedures did not adequately address maintaining RCS gravity fill capabilities, including the vent path.

The inspectors reviewed Procedure 18019-C, Loss of RHR, Mid-Loop LOCA, and Procedure 12008-C, Mid-Loop Operations. Procedure 18019-C provided guidance for the establishment of an RCS feed and bleed path in the event RCS temperature should rise above 185 degrees F. This procedure also provided guidance for containment closure in Mode 5 when RHR could not be restored in a timely manner and for Mode 6 when directed to transition to part "A". Procedure 12008-C listed specific guidance for maintaining an RCS vent path. Training on this procedure was included in normal regualification training. Training for this item was adequately addressed.

- k. The NUREG stated that procedures did not adequately direct the operators to use existing bus connections and other available sources to restore power to safety buses.

The inspectors reviewed procedure 13417, Main and Unit Auxiliary Transformer Backfeed to the 13.8 kV and 4160 V Busses. This procedure was included in regualification training and adequately accomplished this task.

- l. The NUREG stated that precursor information was available to make the incident preventable.

In the summer of 1990, the licensee provided root cause investigation training to approximately 36 managers/supervisors. The HPES course was a root cause investigation system developed to improve overall plant operations by improving human reliability through the correction of the conditions that cause human performance problems. The HPES system attempted to identify the causes that led to the human error or inappropriate action. Training for this item was adequately addressed.

- m. The NUREG stated that there was inadequate control of personnel and work activities to assure that workers were not removed from safety-related restoration work due to communications errors.

The inspectors conducted a review of Procedure 91002-C, Emergency Notifications. Check list 1 (plant page announcement check list) had been revised from a cumbersome set of responsibilities and immediate and supplementary actions to a streamlined four part check list. This check list had been explicitly outlined to guide the ED through the necessary plant page announcements. The check list also included optional announcements that could be made after plant conditions have been fully accessed. This check list was used and satisfactorily tested during the August 1, 1990 NRC emergency training exercise. Training for this item was adequately addressed.

- n. The NUREG stated that the notification of authorities during events was inadequate. This item is addressed in paragraph 4.
- o. The NUREG stated that there was an incomplete understanding of primary and backup emergency notification systems. This item is addressed in paragraph 4.
- p. The NUREG stated that ambiguous guidance was provided for the classification of events that occur during cold shutdown. This item is addressed in paragraph 3, item f.
- q. The NUREG stated that there was an inadequate technical understanding of the load sequencer and EDG control system.

The inspectors reviewed TLP RQ-HO-61994-001, which addressed the sequencer operation during the Loss of Vital AC Power and the RHR System during Mid-Loop Operations event. The training material addressed the problems encountered with the load sequencer and EDG control system. The appropriate methods for operation were contained in the training material.

- r. The NUREG stated that the annunciator panel reset practices were inadequate.

The inspectors reviewed TLP RQ-HO-61994-001, which addressed the alarms following an EDG trip. Additionally, the inspectors reviewed the training material and determined that it adequately addressed the annunciator panel.

- s. The NUREG stated that TS for cold shutdown and refueling operations were not developed based on a comprehensive safety analysis. Also, the lack of a comprehensive basis provides an opportunity for plant staffs to overlook conditions, such as events that could lead to uncovering the core.

The licensee was evaluating Mode 5 and Mode 6 TS and their basis. This evaluation will include a review by the Westinghouse Owners' Group for potential generic significance. All TS changes were reviewed by the training department for incorporation into operator initial and regualification training and for inclusion in required reading material. Training for this item was adequately addressed.

- t. The NUREG stated progress had been made in implementing improvements in response to Generic Letter 88-17, however, the equipment hatch closure process had not been proceduralized. This item is addressed in paragraph 3, item s.

3. Independent Technical Review of Licensee Identified Deficiencies (41500, 3c-4)

The inspectors reviewed the licensee's internal commitments for the Loss of Vital AC Power and the RHR System during Mid-Loop Operations event and the documentation associated with each commitment. Listed below are the licensee's control numbers for the commitments, a description of the commitments and the associated actions or plans.

- a. Commitment 18752: This commitment stated that procedures addressing LOSP should have directions for restarting a tripped EDG and training on the revised procedures should be provided.

There were no EOP or AOP procedures which specifically discuss LOSP. There were, however, ARPs for both units which contain caution statements concerning restarting a tripped EDG. Procedure 17035-1, ARP for ALB 35 On EAB Panel, contained several examples of these caution statements. These procedures were included in requalification training.

The inspectors also reviewed procedure 19100-C, ECA-0.0 Loss of All AC Power. Although this procedure did not address the case when an EDG tripped and must be restarted, it provided guidance when an EDG did not start on a normal manual start. Procedure 19100-C at that point referred the operator to procedure 13145-1, Diesel Generators, which directed the operator to emergency start the EDG using the Emergency Start Button. Specific training on restarting a tripped EDG was covered in TLP RQ-LP-61994-00, Vogtle Loss of Power-NUREG 1410.

- b. Commitment 18759: This commitment stated that backup communications should be designated in the appropriate plan/procedures to include check-in intervals when no other means are available.

The inspectors reviewed procedure 91002-C, Emergency Notifications, Revision 17. Check list 2, Directions for Communicators, listed the order of priority for voice circuits and stated that notifications must be made within 15 minutes and follow-up notifications every 30 minutes or when there was a significant change in plant conditions. Communicators were trained on the use of procedure 91002-C.

- c. Commitment 18760: This commitment required the site to verify all information for technical accuracy prior to the information being released to the media before the EOF was actuated.

Before the ENC was activated in Waynesboro, news releases would come from the GPC office in Atlanta, GA. GPC would get information from the GOOC. An ENN (per GPC letter dated July 25, 1990 regarding installation of an ENN in the GOOC) and a facsimile (FaxXchange) was added to the corporate office to preclude the site from having to verify the accuracy of technical information. Both the ENN and FaxXchange were used and

tested satisfactorily during the NRC emergency exercise conducted on August 1, 1990. Furthermore, annual retraining was conducted from May 21 - 25 for those personnel assigned to the Vogtle Project ERO. This training consisted of both a Corporate and a Vogtle emergency plan overview. Training for this item was adequately addressed.

- d. Commitment 18761: This commitment required all emergency response personnel at the corporate office to receive training in communications system capabilities when the primary communication was changed/reduced. It also stated that procedures should address various means of communication when capabilities have been degraded.

The inspectors reviewed the interoffice correspondence letter dated May 29, 1990 regarding SAF commitment 18761. Emergency response personnel at the corporate office received retraining in the use of available communication systems. The training was conducted at five different intervals from May 21 - 25, 1990. TLP RE-LP-07001-03 discussed alternative communication methods. Included in this discussion were function, backups, locations, activation, and power supplies. Training for this item was adequately addressed.

- e. Commitment 18762: This commitment required that plant personnel be assigned the responsibility of communicating with offsite agencies prior to their counterpart/representatives arriving at the EOF.

The inspectors reviewed procedure 91101-C, Emergency Response Organization. Table 2 of that procedure identified the NRC Liaison as the individual who would act as SRS, State, and Burke County Liaison representative until arrival of the designated representative. The licensee personnel designated for this position had received training on their responsibilities. Training for this item was adequately addressed.

- f. Commitment 18763: This item required the licensee to review the implementation of emergency plans for action levels based on criteria specified in EIPs with the emergency directors. This item also required the licensee to investigate applicability of NUMARC EALs to VEGP after the NRC review and comments on NUMARC EAL report.

The inspectors reviewed the licensee's proposed plan for this item. The completed retraining of emergency

directors was scheduled to be completed by September 1991. The completion date was based in part on receipt of NRC approval of both the EPIP revisions and the emergency plan. The proposed corrective actions for this item are adequate.

- g. Commitment 18764: This commitment required emergency preparedness to establish a test program for all ERF computer equipment.

The inspectors reviewed procedure 91705-C, Inventory and Testing of Emergency Preparedness Material/Equipment Which Are Not Part Of The Emergency Kits. The procedure required that the testing of the ERF computer shall be performed monthly or more frequently, as deemed necessary by the EPC. Data Sheet Six provided the actual instructions for performing the TSC and EOF ERF computer testing. Personnel designated to perform the testing had received training. Training for this item was adequately addressed.

- h. Commitment 18765: This commitment required the managers for operations, training, and EP to hold joint seminars for all ED's to discuss their roles and responsibilities as ED.

The inspectors reviewed TLP RQ-LP-40901, Loss Of Power-Site Area Emergency. The TLP discussed the major duties and responsibilities of the ED, especially those activities that would occur within the first hour of the event. The inspectors determined that the TLP adequately addressed the commitment.

- i. Commitment 18779: This commitment was for the procurement of material for the dose assessment computer. It was assigned to the training department for followup; however, it was not training related.
- j. Commitment 18780: This commitment required that all ERO personnel keep a detailed log or account of their individual response and major events that occur which will enhance timeline re-creation.

The inspectors reviewed TLP RE-LP-07001-03, Offsite Notifications. This lesson plan included instruction under paragraphs C.1.a and G.3 to maintain a log of events for re-creation of the communication process. Training for this item was adequately addressed.

- k. Commitment 18782: This commitment addressed communication between NRC operations personnel and the licensee. The licensee noted that the NRC operations

center was continuously dropped off the bridge circuit during ENS communications. An effort should be made to coordinate with the NRC to contact AT&T for repair.

The inspectors reviewed the comments for commitment 18782. AT&T repaired the emergency notification system in July of 1990. The system was tested and declared operational on July 7, 1990. This item was assigned to the training department for disposition, however, this was not a training item.

- l. Commitment 18785: This commitment provided hand held viewers for TSC engineering to use as needed when reviewing drawings in the TSC. This item was assigned to the training department for disposition, however, this was not a training item.
- m. Commitment 18788: This commitment provided managers with a list of all fully qualified ERO personnel that may be used in emergency functions.

The General Manager was provided monthly a listing of both qualified and unqualified ERO personnel. An unqualified ERO person was not permitted to participate as a member of the ERO until requalification training was completed. Unqualified ERO personnel were not permitted entry into the PA during an actual emergency or drill. Training for this item was adequately addressed.

- n. Commitment 18789: This commitment required maintenance engineering to develop a plan to increase the size of the OSC. This item was assigned to the training department for disposition, however, this was not a training item.
- o. Commitment 18791: This commitment revised EPIP 91102-C such that the ED was required to consider the need to inform non ERO personnel on the status/update of the emergency using the plant page system.

The inspectors reviewed procedure 91102-C, Duties Of The Emergency Director, Revision 7. This procedure required that the ED make plant page announcements to keep personnel informed of plant conditions. Training for this item was adequately addressed.

- p. Commitment 18940: This commitment required contacting a communications consultant to recommend a reliable simple alerting system to notify offsite agencies.

The licensee purchased a FaxXchange system which permitted simultaneous transmission of the emergency notification to all appropriate offsite agencies. This system was successfully used during the August 1, 1990 emergency drill. Training for this item was adequately addressed.

- q. Commitment 18941: This commitment incorporated the importance of the need to make sure that all directions/instructions are clearly understood and passed through the proper chain of command in the lessons learned program for operators.

The inspectors reviewed TLP RQ-LP-4090-00, Loss of Power-Site Area Emergency. One objective of the TLP described the integrated responsibilities that the Shift Superintendent has during an event requiring implementation of the emergency plan. The TLP also discussed the "dual role" responsibility of the ED with respect to plant/reactor safety, and the need to make offsite notifications and communicate with state and local authorities. Lessons learned from ED communications problems were discussed during licensed operator requalification training. Training for this item was adequately addressed.

- r. Commitment 18945: This commitment generated a root cause analysis to determine why the EDG failed to start.

The cause of the first trip of the EDG was undetermined due to the large number of alarms at the local EDG panel and because the alarms were reset immediately following the trip. Initial indications, based on the annunciators, were that the most probable cause of the second trip, based on the sequence of alarms received, was low jacket water pressure, though pressure indicated normal following the second EDG start. Subsequent evaluations indicated that the second trip was more correctly based upon the high jacket water temperature, with the root cause attributed to calibration techniques. These probable causes were discussed in the event description portion of TLP RQ-LP-61994-00, Vogtle Loss of Power-NUREG 1410. Training for this item was adequately addressed.

- s. Commitment 18959: This commitment provided training for licensed operators on revised procedure(s), i.e., RHR procedure to include the various KCS and containment conditions present during an outage, AOP and COP. Additionally, training was also required for SROs on mid-loop boiling and cooling mechanism.

The inspectors reviewed TLP RQ-LP-63109-01, Requal Current Events. This TLP provided a periodic update of significant plant modifications and procedural changes. In addition, information from selected operating events was provided to reinforce lessons learned from those events. The applicable portions of the TLP described the method used for powering 1E buses from non-1E busses, described the guidance for mitigation of loss of RHR during modes 4, 5, and 6, and described reportability of Vogtle ESF.

The inspectors reviewed TLP RQ-LP-61994-00, Vogtle Loss of Power-NUREG 1410. The following topics were discussed:

1. A description of the sequence of events that occurred
2. EDG operations
3. Emergency load sequencer
4. RHR cooling mechanisms at reduced inventory
5. RHR operation concerns when operating at reduced inventory

The concerns of this commitment were addressed in this training material.

The inspectors reviewed applicable sections of 12008, Mid-Loop Operations. This procedure implemented administrative controls for operation with the RCS level less than 191 feet. The procedure addressed the requirements for the number of operable EDGs and offsite power sources. The lesson plan stated that the requirements for an offsite power source could be provided by backfeeding a 1E bus from a non-1E bus. This was accomplished using procedure 13417, Main and Unit Auxiliary Transformer Backfeed to the 13.8 kV and 4160 V Busses.

Procedure 12008, Step 4.1.1.a, stated that the containment equipment hatch need not remain closed if a method was provided for closure of the containment equipment hatch without the use of electrically operated equipment for blackout concerns. This was accomplished during the recent Unit 2 refueling outage using an uncontrolled "Desk Top" reference instruction. The "Desk Top" instruction will be replaced with a revision to procedure 27505-C, Opening and Closing Containment Equipment Hatch, which will include steps for manual closure. A specific procedural reference to the "Desk Top" instruction or to a formal procedure for performing this non-routine task was not provided in 12008. The licensee stated that the procedure for

emergency closure of the containment equipment hatch would be formalized and included in the training program. The proposed corrective actions for this item are adequate.

During the 1990 Unit 2 refueling outage the licensee incorporated a DCP for manual closure of the equipment hatch. The design change permitted closure by either an electric or air driven hoist or by manual crank. Four dedicated personnel were stationed near the equipment hatch during mid-loop operation. One of the individuals was on a headset with constant communication to the control room. All personnel dedicated to hatch closure were trained and will be trained for future refueling operations. Part of the training included a video presentation of an actual manual closure of the equipment hatch.

The inspectors reviewed AOP 18019-C, Loss of RHR (Mid Loop LOCA). The procedure referenced procedure 14210 to close the containment equipment hatch; however, this did not provide instructions for closure with loss of all AC. The maintenance instruction for this closure was not specifically addressed. The licensee will consider this along with other containment equipment hatch closure concerns.

The inspectors reviewed procedure number 13145-1, Diesel Generators. Section 4.1.4 had been added to the procedure that addressed the local emergency startup of train A (B) EDG. This change was made near the end of the 1990 requalification cycle, and subsequently was not covered in the 1990 requalification training cycle. This was scheduled to be included in the first session of the 1991 training cycle. The proposed corrective actions for this item are adequate.

- t. Commitment 19085: This commitment required an evaluation of the notifications systems, and the recommendation of further improvements.

The inspectors reviewed GPC interoffice correspondence dated May 30, 1990 regarding improvements to the ENS. An evaluation, chaired by the EPC, was performed. A final recommendation to use a simultaneous facsimile (3M FaxXchange) was made. The selection was based on the following criteria:

- 1) Deliver a one page hard copy of the notification form
- 2) Deliver to 8 locations within 5 minutes of starting the process

- 3) Simple to operate
- 4) Capable of being powered by an UPS

This system had been fully implemented and tested satisfactorily during the NRC emergency exercise conducted on August 1, 1990. Training for this item was adequately addressed.

- u. Commitment 19086: This commitment added a corporate extension to the ENN (by July 15, 1990) to provide another means of ensuring the transmittal of accurate information to the corporate office during emergencies.

This item is addressed in paragraph 3, item c.

- v. Commitment 19087: This commitment revised procedure 91602-C, Emergency Drills and Exercises, to include the requirement to conduct a full scale assembly and accountability drill as a periodic emergency drill.

The inspectors reviewed 91602-C which included steps that required the conduct of a full scale assembly and accountability drill that will involve participation of all protected area personnel. Additionally, the inspectors reviewed the records for the last three drills performed at Vogtle. These drills contained a full scale assembly and accountability drill that involved the participation of all protected area personnel. The August 1, 1990 drill successfully demonstrated that improvements had been made in personnel accountability. Training for this item was adequately addressed.

- w. Commitment 19287: This commitment revised general employee training to address the use of flagmen. See paragraph 5.

4. Follow-up on Training Related Deficiencies from IR 90-16

The following commitments are corrective actions which resulted from the notice of violation delineated in NRC IR 50-424,425/90-16.

- a. All Site Emergency Directors had received training on the revised notification procedures, power supplies for emergency telephone communication circuits and the importance of prompt notification of emergencies to offsite government agencies.

The inspectors reviewed TLP RQ-LP-40901-00 and TLP RQ-HO-40901-00. Applicable portions of the TLP included discussions which adequately address the issues

regarding training on the revised notification procedures, communication circuit power supplies and the importance of offsite notification. They are as follows:

- 1) The emergency director duties as described in the emergency plan
 - 2) The actions taken by the state/local governments, and SONOPCO general office for each emergency action level
 - 3) The letter from Burke County EMA to C.K. McCoy to gain an appreciation for the need to conduct timely, complete offsite communications
 - 4) The integrated responsibilities that the shift superintendent has upon an event requiring implementation of the emergency plan
 - 5) The communication systems, their power supplies, and basic method of operation for each emergency communication system
- b. Procedures 91001-C, 91002-C and 91102-C had been revised to bestow priority to Burke County and GEMA for initial notification and to emphasize the responsibility of the ED for notification of offsite agencies.

The inspectors conducted a review of procedures 91001-C, 91002-C, and 91102-C. Procedure 91002-C had been revised to bestow priority to Burke County and GEMA for initial notification. Procedure 91002-C had also been revised to simplify the emergency director notification check list. This procedure had been streamlined to direct the ENN Communicator to establish communications and complete roll call in accordance with step B of check list 2 in procedure 91002-C. This procedure further emphasized that the ED was to be notified immediately should any agency fail to respond. The ED check list in Procedure 91102-C had been revised to emphasize notification of all state/local agencies and the NRC. Data sheet 1 in Procedure 91001-C was revised to ensure adequate logs are maintained to enhance re-creation.

- c. A simultaneous facsimile transmission capability has been installed to increase reliability of emergency notification.

On July 16, 1990, a new simultaneous facsimile transmission system was installed. The machine was satisfactorily tested during the NRC annual emergency training exercise conducted on August 1, 1990. Prior to testing, all shift clerks, TSC communicators, and

the document control staff received training on the system's attributes and usage. This training was never documented. However, standing order C-90-10, Emergency Notifications, was in the MCR and stated that the ED shall direct the ENN communicator to telefax a copy of the Emergency Notification check list 2 of Procedure 91002-C to all emergency notification locations prior to beginning notifications.

Training for these items were adequately addressed.

5. General Employee Training (2b-5)

The inspectors reviewed TLP GE-LP-00116-15-C, Annual Badge Retraining/Self Study Training. The TLP included a section which stated that all vehicles so designed or loaded in such a way as to prevent the driver from clearly seeing conditions at the rear of the vehicle must be flagged while backing. In addition, any vehicle larger than a pick-up shall be flagged when operating in reverse. A similar requirement concerning the use of a flagman was included in the VEGP Site Safety Manual.

The Maintenance Continuing Training program included a presentation on mid-loop operations, with a video tape that primarily addressed Diablo Canyon; however, an updated training film will be added that addresses NUREG 1410.

Informal C&HP training was also provided on the implications of NUREG 1410. This training consisted of a brief overview of the events.

Training for these items were adequately addressed.

6. Additional Training Improvements

The inspectors reviewed additional training materials that had been revised as a result of the Loss of Vital AC Power and the RHR System during Mid-Loop Operations event. These materials were revised through a self initiated program which was outside the commitment tracking program. The specific changes are listed below:

- a. TLP LO-LP-36101-04-C, MCD: Core Cooling Mechanisms, was revised to include a section on Reflux Cooling during mid-loop operations.
- b. TLP LO-LP-34610-04-C, System Response to Selected Accident Conditions, was revised to include a section on Reflux Cooling during mid-loop operations.

- c. TLP LO-LP-16701-04-C, Reactor Vessel Level Indication System, was revised to include a section on RCS level monitoring during mid-loop operations.
- d. TLP LO-LP-12101-22-C, RHR System, (for licensed and non-licensed operators) was revised to include information on suction line vent valves and mid-loop system operating history.
- e. TLP LO-HO-12101-002-C, Loss of RHR - Industry History, included information from GL 87-12 and the draft WOG report on mid-loop operations.
- f. TLP LO-LP-60315-06-C, Loss of RHR, was revised to include lessons learned from NUREG 1410.
- g. TLP LO-IU-60315-001-C, Respond to Loss of RHR, was revised to include lessons learned from NUREG 1410.
- h. TLP LO-LP-11104-06-C, EDG Auxiliaries Lube Oil and Crank Case Ventilation, was revised to include a section on bypassing the low lube oil pressure trip. This revision was included to facilitate post trip operations.
- i. TLP LO-LP-11105-10-C, EDG Auxiliaries Jacket Water Cooling System, was revised to include information from NUREG 1410.
- j. TLP LO-LP-11201-10-C, EDG Engine Control and Protection, was revised to include additional information on EDG trips. The TLP also included a detailed discussion of operation of the annunciators.
- k. TLP NL-LP-11203-10-C, EDG Auxiliaries, (for Outside Area Operators) was revised to include specific information on EDG trips that related to NUREG 1410.
- l. TLP NL-LP-11204-10-C, EDG Engine Control and Protection, (for Outside Area Operators) was revised to include specific information on EDG trips that related to NUREG 1410.
- m. TLP RO-LP-63107-00, Regual Current Events, included information on the Unit 2 trip following faulty differential relay action.
- n. TLP RO-LP-63106-00, Regual Current Events, included information on the manual reset switch for the sequencers.

o. On September 6, 1990, the inspectors observed a segment of PEO refresher training on loss of RHR. The instructor started out by showing a WOG video illustrating RHR vortexing sensitivity with respect to RCS level. This was followed by a discussion on the concept of decay heat and the different methods used for its removal. The instructor then entered a discussion of procedure 18019-C with emphasis placed on RNO local operations from a PEOs perspective. Segments of NUREG 1410 were discussed to enhance PEO awareness regarding the loss of RHR and its subsequent restoration.

7. Action on Previous Inspection Findings (92701, 92702)

(Closed) Unresolved Item 424/88-33-07, Review of Acceptability of the Use of a Single Battery Charger on Class 1E Batteries.

The issue of using a single cell battery charger on safety related batteries was identified at another facility prior to being identified at Plant Vogtle. The licensee has performed evaluations for the use of the chargers and reviewed the use of two safety related breakers to provide separation between the non-safety electrical distribution and the 1E components. The licensee agreed during the previous inspection that the charger would not be used until the evaluation by NRR was completed for the other facility. The evaluation was completed by NRR. The licensee stated that they will either comply with the SER requirements as written or contact NRR for specific exemptions.

8. Exit Interview

The inspection scope and findings were summarized on December 7, 1990, with those persons indicated in paragraph 1. The NRC described the areas inspected and discussed in detail the inspection findings listed below. No proprietary material is contained in this report. No dissenting comments were received from the licensee.

Appendix A

ABBREVIATIONS

AC	Alternating Current
AOP	Abnormal Operating Procedure
ARP	Alarm Response Procedure
DCP	Design Change Package
ED	Emergency Director
EDG	Emergency Diesel Generator
ENC	Emergency Notification Center
ENN	Emergency Notification Network
EOF	Emergency Operations Facility
EOP	Emergency Operating Procedure
EPC	Emergency Preparedness Coordinator
ERF	Emergency Response Facility
ERO	Emergency Response Organization
GET	General Employee Training
GOOC	General Office Operations Center
GPC	Georgia Power Company
HPES	Human Performance Enhancement system
ISEG	Independent Safety Review Group
kV	Kilovolts
LOCA	Loss of Coolant Accident
LOSP	Loss of Off Site Power
NRC	Nuclear Regulatory Commission
NSAC	Nuclear Safety And Compliance
OP	Operational Procedure
OSC	Operations Support Center
RCS	Reactor Coolant System
RHR	Residual Heat Removal
RNO	Response Not Obtained
RWST	Refueling Water Storage Tank
SAE	Site Area Emergency
SAER	Safety Audit And Engineering Review
SCS	Southern Company Services
SRO	Senior Reactor Operator
TLP	Training Lesson Plan
TS	Technical Specifications
TSC	Technical Support Center
UPS	Uninterruptable Power Supply
VEGP	Vogtle Electric Generating Plant
WOG	Westinghouse Owners Group