



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

APR 10 1992

Report Nos.: 50-413/92-05 and 50-414/92-05

Licensee: Duke Power Company
 422 South Church Street
 Charlotte, NC 28242

Docket Nos.: 50-413 and 50-414

License Nos.: NPF-35 and NPF-52

Facility Name: Catawba 1 and 2

Inspection Conducted: March 3-6, 1992

Inspector: *F. M. Wright, Jr.* 4/10/92
 W. M. Sartor, Jr., Team Leader Date Signed

Accompanying Personnel: E. Fox, NRR
 W. Orders, Senior Resident Inspector
 F. Wadsworth, Sonalysts, Inc.
 S. Boynton, NRR
 F. Wright

Approved by: *William E. Clark* 4/10/92
 for W. Rankin, Section Chief Date Signed
 Emergency Preparedness Section
 Radiological and Emergency Preparedness Branch
 Division of Radiation Safety and Safeguards

SUMMARY

Scope:

This routine inspection was conducted to observe and evaluate the annual emergency exercise. This was a full participation exercise for York, Gaston, and Mecklenburg Counties and partial participation for the States of North and South Carolina. The exercise started at 9:20 a.m. and was terminated at approximately 2:00 p.m.

Results:

In the areas inspected, violations or deviations were not identified. The performance of the emergency organization as observed was fully effective for providing for the health and safety of both onsite personnel and those within the emergency planning zone. However, two exercise weaknesses were identified. The first was for lack of procedural adherence (Paragraph 3) and the second was for untimely and incomplete notification messages (Paragraph 6). A significant strength was the changes made to the scenario to better challenge portions of the emergency organization.

REPORT DETAILS

1. Persons Contacted

Licensee Employees

- *E. Beadle, Operations Engineer
- *G. Bell, Corporate Communications
- *J. Forbes, Manager, Engineering
- *M. Greene, Corporate Communications Site Representative
- *B. Hasty, McGuire Emergency Planning Manager
- *K. Jessely, Compliance Engineer
- *J. Lowery, Compliance Engineer
- *W. McCollum, Station Manager
- *P. McNamara, Emergency Planning Manager
- *G. Mitchell, Emergency Planning Engineer
- *D. Simpson, Nuclear Emergency Planning Consultant
- *J. Wylie, Training Manager

Other licensee employees contacted during this inspection included engineers, operators, mechanics, security force members, technicians, and administrative personnel.

NRC

- *W. Orders, Senior Resident Inspector
- *P. Hopkins, Resident Inspector
- *S. Boynton, Resident Inspector
- *R. Martin, NRR

*Attended exit interview

2. Exercise Scenario (82302)

The scenario for the emergency exercise was reviewed to determine that provisions had been made to test an integrated emergency response capability as well as the basic elements existing within the licensee, State and local Emergency Plans and organization as required by 10 CFR 50.47 (b)(14), 10 CFR 50, Appendix E, Paragraph IV.F and specific criteria in NUREG-0654, Section II.N.

The scenario developed for this exercise was provided to the NRC well in advance of the 45 day requirement. The review of the scenario resulted in concerns that significant portions of the emergency response organization would not be challenged with the scenario events as presented. This concern was discussed with the licensee representative identified in the letter which transmitted the scenario. The licensee's representative was responsive to the concerns and committed to scenario enhancements within the parameters that had been established by State and local government participation in the exercise. Revised scenario packages were provided to the exercise team the week of the exercise with the following major items added to the scenario events list and the respective effect shown in parenthesis in some cases:

- Move medical injury to beginning of exercise (required the Control Room/Simulator crew to handle multiple emergency events at the same time)
- Replacement of defective hydrogen bottles (caused use of Fire Brigade)
- Leaking spent fuel cooling system (KF) valve in the Auxiliary Building (caused added activity levels in the Auxiliary Building and included use of a mockup)
- Defective oxygen bottle in outside cage
- Broken fire hydrant in parking lot
- Broken security fence (caused use of extra security resources)
- Fallen down transmission tower (caused use of more security resources and rerouting the ambulance)
- Revised off-site radiological data

The above additions aided the evaluation process significantly. Additionally, player comments during the critique process were laudatory or the increased activity required from the operational support center (OSC) during the exercise.

With the above changes, the scenario was adequate to fully exercise the onsite and offsite organizations of the licensee and provide sufficient emergency information to the state and local governments for their participation in the exercise. Scenario inconsistencies were minimal and did not detract from the overall performance of the licensee's emergency organization. The licensee's controller staff effectively maintained the scenario timeline by interceding on one occasion to prevent an earlier than desired General Emergency classification which was not compatible with the timeline as agreed to with the state and local governments.

No violations or deviations were identified.

3. Assignment of Responsibility 82301)

This area was observed to assure that primary responsibilities for emergency response by the licensee had been specifically established and that adequate staff was available to respond to an emergency as required by 10 CFR 50.47(b)(1), 10 CFR 50, Appendix E, Paragraph IV.A, and specific criteria in NUREG-0654, Section II.A.

The inspector observed that specific emergency assignments had been made for the licensee's emergency response organization and there was adequate staff available to respond to the simulated emergency. The initial response organization was augmented by designated licensee representatives. The scenario did not require long term or continuous staffing of the emergency response organization to be demonstrated.

Although specified responsibilities for emergency response were clearly defined, inspectors observed inconsistencies with the implementation of these responsibilities in some instances. For example:

° The Site Area Emergency Procedure, RP/O/A/5000/04, required as an immediate action in Paragraph 2.5 - "Notify the Nuclear Production Duty Engineer using Enclosure 4.2." The enclosure was very specific and had numerous places where information was to be entered. This form was not completed during the exercise nor did the Control Room log indicate that this specific responsibility of emergency response had been accomplished. The previous example was not an exception to the performance observed for procedure completion verification but rather the general rule. Specifically, although the Site Area Emergency Procedure required the completion of many immediate and subsequent actions, and included lines for date/initial/time entries for many of these actions, no entries were made in the procedure nor were the required actions documented elsewhere such as in the Control Room log.

° The procedure titled, "Conducting a Site Assembly or Evacuation," RP/O/A/5000/10, required a specific plant PA system announcement to be made at 5-minute intervals until the Site Assembly had been completed. The announcements continued some twenty minutes beyond the time the licensee indicated Site Assembly had been completed. Additionally, the site personnel were not informed of the Site Area Emergency declaration by a PA system announcement until 33 minutes after the declaration (This is a subsequent action specified in Paragraph 3.6 of the Site Area Emergency Procedure).

- A specified responsibility for protective action recommendations (PARs) was directed to the Radiological Assessment Manager in Section VII of Crisis Management Implementing Procedure, CMIP-7, Radiological Assessment Group. This procedure provided for a specified figure to be used by the Radiological Assessment Manager and Plant Assessment Manager when presenting their recommendations to the Recovery Manager. Inspector review of the documentation provided for review following exercise termination revealed incomplete forms as well as two forms with initialed approval at the same time with different recommended protective actions. The inspector observed that timely PARs were provided by the Recovery Manager and the PARs adequately provided for the health and safety of the public for the simulated release. The initial PAR failed to include the sheltering of zone A-3 but this omission was corrected with a followup notification. An inspector also noted that PARs displayed in the Technical Support Center (TSC) and OSC differed from those in the Crisis Management Center (CMC).

The above observations were clear examples of inconsistencies with the implementation of specifically assigned emergency response responsibilities. The inspectors also observed that many required emergency response actions were not being documented because most Directors/Managers maintained no logs. During the exit interview the licensee acknowledged an understanding of a need for attention to detail to insure required emergency response actions were not only accomplished but documented as required. The inspector summarized the above observations into an exercise weakness finding as follows:

Exercise Weakness 50-413, 414/92-05-01: Failure to follow and/or provide completion verification for some emergency response requirements in the implementing procedures at both the site and CMC.

No violations or deviations were identified.

4. Onsite Emergency Organization (82301)

The licensee's onsite emergency organization was observed to assure that the following requirements were implemented pursuant to 10 CFR 50.47(b)(2), Paragraph IV.A of Appendix E to 10 CFR 50, and specific guidance promulgated in Section II.3 of NUREG-0654:

- (1) unambiguous definition of responsibilities for emergency response;
- (2) provision of adequate staffing to assure initial facility accident response in key functional areas at all times; and
- (3) specification of onsite and offsite support organization interactions.

The inspector observed that the initial onsite emergency organization was adequately defined and that staff was available to fill key functional positions within the organization. Augmentation of the initial emergency response organizations was accomplished through the mobilization of

additional day-shift personnel. The Shift Supervisor (at the Simulator) assigned to the exercise assumed the duties of Emergency Coordinator promptly upon initiation of the simulated emergency, and directed the response until formally relieved by the Station Manager.

The inspector observed the activation, staffing, and operation of the emergency organization in the Control Room (Simulator), TSC, OSC, and CMC. Staffing and activation were both timely and effective in the TSC and OSC. Although the CMC was staffed and ready to activate, the activation was properly delayed by the Recovery Manager so as not to change responsibility for emergency management during an upgrade in emergency classification. The assignment of responsibility at each of the facilities was consistent with the licensee's Emergency Plan and implementing procedures.

No violations or deviations were identified.

5. Emergency Classification System (82301)

This area was observed to assure that a standard emergency classification and action level scheme was in use by the nuclear facility licensee pursuant to 10 CFR 50.47(b)(4), Paragraph IV.C of Appendix E to 10 CFR 50, specific guidance promulgated in Section II.D of NUREG-0654, and guidance recommended in NRC Information Notice 83-28.

Emergency Plan Implementing Procedure No. RP/O/A/5000/01 titled "Classification of Emergency" was used to identify and classify the scenario simulated events. The Site Area Emergency and General Emergency were timely and correct by procedure. The Emergency Action Level for the Site Area Emergency was reactor system coolant system leakage greater than available emergency core cooling system (ECCS) capacity. The General Emergency classification was based on a loss of coolant accident with failure of ECCS.

No violations or deviations were identified.

6. Notification Methods and Procedures (82301)

This area was observed to determine that procedures had been established for notification by the licensee of State and local response organizations and emergency personnel and that the content of initial and followup messages to response organizations had been established; and means to provide early notification to the populace within the plume exposure pathway had been established as required by 10 CFR 50.47(b)(5), 10 CFR 50, Appendix E, Paragraph IV.D, and specific criteria in NUREG 0654, Section II.E.

Licensee procedures used for this exercise (RP/O/A/5000/04 - Site Area Emergency; RP/O/A/5000/05 - General Emergency; and RP/O/A/5000/06 - Follow-up Notifications) provided for initial and follow-up notifications to individuals and organizations and the content of these messages to the response organizations had been established. For this exercise, a total of 10 messages were transmitted to the State and county government officials. The initial notifications for the Site Area Emergency and General Emergency classifications were provided in a timely manner. However, numerous exceptions to good follow-up notifications were observed during the earlier part of the exercise. For example,

- ° Emergency Notification Message number 2 at 1000 hours (the first follow-up notification message to the Site Area Emergency classification) -
 - .. Item 7 contained incorrect information (message stated "... contaminated individual transported offsite..." whereas the ambulance was on site at 0958 hours and departed with the simulated contaminated injured at 1028 hours)
 - .. Item 14 did not have the meteorological data entered.
 - .. The 1a entry was documentation for a two hour interval extension for follow-up notifications between the States and counties. Although the licensee's request for the extended interval was permitted by the Follow-up Notifications Procedure, the conditions reported in item 7 of message 2, i.e., "emergency core cooling cannot maintain reactor cooling subcooling 0°F" and item 15 "sound sirens inform public of potential later protective actions" contradicted a two hour interval extension request.

Paragraph 3.1.3 of the follow-up Notifications Procedure (RP/O/A/5000/6) also provided for a follow-up notification if there were a significant change to the situation. A review of the Emergency Coordinator's log and inspector observations identified the following changes that were not provided or provided late (as identified) in a follow-up notification:

- ° Nonessential site personnel were evacuated to site Bra beginning at 1038 hours (simulated)
- ° A ground level airborne release began at 1005 hours. At 1046 hours a dose rate reading of 6mR/hr was reported at the site boundary. At 1100 hours an inspector noted that the projected offsite dose board in the Crisis Management Center had been completed as of 1020 hours. The first time item 13, estimate of projected offsite dose, of the Emergency notification Followup Message was completed and transmitted to the government agencies was at 1153 hours with Message Number 5.

- ° The CMC was activated and assumed responsibility for State/county communications at 1059 hours. (Note: This may have been done with a communications check, but it was not documented).

The above exceptions to timely and complete emergency notifications were identified as an exercise weakness for failure to fully meet Emergency Management exercise objective number 3 "Demonstrate proper use of the message format...for messages transmitted to States and Counties."

Exercise Weakness 50-413,414/92-05-02: Emergency Notification Messages to States and Counties were not sufficiently timely and complete to meet exercise objective #3.

The prompt notification system (PNS) for alerting the public within the plume exposure pathway was in place and the systems operability was an offsite objective. The system was activated during this exercise to simulate warning the public of significant events occurring at the reactor site. The evaluation of the siren activation and the Emergency Broadcasting System Message was the responsibility of the Federal Emergency Management Agency (FEMA) and will be included in the FEMA Report.

No violations or deviations were identified.

7. Emergency Communication (82301)

This area was observed to verify that provisions existed for prompt communications among principal response organizations and emergency personnel as required by 10 CFR 50.47(b)(6), 10 CFR 50, Appendix E, Paragraph IV.E., and specific in NUREG-0654, Section II.F.

The inspector observed that adequate communications existed among the licenses's emergency organizations.

8. Emergency Facilities and Equipment (82301)

This area was observed to determine that adequate emergency facilities and equipment to support an emergency response were provided and maintained as required by 10 CFR 50.47(b)(8), 10 CFR 50, Appendix E, Paragraph IV.E, and specific criteria in NUREG-0654, Section II.H.

The inspector observed activation, staffing and operation of selected emergency response facilities. No major equipment deficiencies were observed. Facilities observed by the NRC evaluation team included:

- a. Control Room (Simulator)- The exercise control room was established outside the main Control Room in the simulator at the training center. The exercise operation's shift acted promptly to initiate

required response to the simulated emergencies. The Shift Supervisor assumed the role of the Emergency Coordinator and was effective in keeping the Control Room operators focused on their primary objectives of core cooling and minimizing radioactive releases. Good command and control was apparent as a contaminated injured scenario was managed and then delegated without interfering with the Control Room operators remaining focused on the plant safety objectives.

The inspector also observed that the operators were aggressive and persistent in their attempts to keep the core covered and restore cooling.

- b. TSC - The Station Manager assumed the Emergency Coordinator role and activated the TSC thirty-two minutes after the Situ Area Emergency. The inspector observed that the TSC was promptly staffed with knowledgeable personnel. The emergency Coordinator provided periodic site updates to his staff. The TSC managers appeared to remain cognizant of and understood changing plant conditions.
- c. OSC - Following the announcement to activate the OSC, personnel responded promptly to staff this emergency response facility. Sufficient personnel to include Health Physics (HP) support were available for the fourteen teams that were selected, deployed, and cracked effectively by the facility.
- d. CMC - The CMC was located in the Charlotte General Office. The beeper signal to activate the CMC was initiated at 0927 hours and the Recovery Manager arrived at 1012 hours. CMC facilities and equipment were adequate with the exception of radio communication difficulties between the CMC and the field monitoring teams.

9. Accident Assessment (82301)

This area was observed to assure that adequate methods, systems, and equipment for assessing and monitoring actual or potential offsite consequences of a radiological emergency condition were in use as required by 10 CFR 50.47(b)(9), 10 CFR 50, Appendix E, Paragraph IV.B, and specific criteria in NUREG-0654, Section II.I.

The accident assessment program included both an engineering assessment of plant status and an assessment of radiological hazards to both onsite and offsite personnel resulting from the accident. Both programs appeared effective during this exercise in analyzing the plant status so as to make

recommendations to the Emergency Coordinator concerning mitigating actions to reduce damage to plant equipment, to prevent release of radioactive materials, and to terminate the emergency condition.

No violations or deviations were identified.

10. Protective Responses (82301)

This area was observed to verify that guidelines for protective actions during emergency, consistent with Federal guidance, were developed and in place, and protective actions for emergency workers, including evacuating of nonessential personnel were implemented promptly as required by 10 CFR 50.47(b)(10), and specific criteria in NUREG-0654, Section II.J.

An inspector verified that the licensee had developed and implemented emergency procedures for formulating protective action recommendations (PARs) for offsite population within the 10 mile EPZ. The licensee's PARs were consistent with the Environmental Protection Agency (EPA) and other criteria.

No violations or deviations were identified.

11. Exercise Critique (82301)

The licensee's critique of the emergency exercise was observed to determine that deficiencies identified as a result of the exercise and weaknesses noted in the licensee's emergency response organization were formally presented to licensee management for corrective actions as required by 10 CFR 50.47(b)(14), 10 CFR 50, Appendix E, Paragraph IV.F, and specific criteria in NUREG-0654, Section II.N.

The licensee conducted a series of post-exercise critiques on March 4-5, 1992. Critiques were held with players, controllers, and management. The management critique was attended by exercise controllers, observers, and NRC representatives. Findings identified during the exercise and plans for corrective action were discussed. Licensee action on identified findings will be reviewed during subsequent inspections.

No violations or deviations were identified.

12. Action on Previous Inspector Findings (92701)

(Closed) EW 50-414/91-06-02: Failure to classify, make timely notification to State/local organizations, demonstrate adequate HP practices and first aid techniques during the medical drill.

The medical drill reflected improved HP practices and first aid care. The medical team responded promptly. Prompt classification and prompt notification were not an issue.

13. Exit Interview

The inspection scope and findings were summarized on March 5, 1992, with those persons indicated in Paragraph 1 above. The inspector described the areas inspected and discussed in detail the inspection findings listed below. The licensee did not identify as proprietary any of the material provided to or reviewed by the inspectors during this inspection. Dissenting comments were not received from the licensee.

<u>Item Number</u>	<u>Description and Reference</u>
50-413, 414/92-05-01	Failure to follow and/or provide completion verification of procedural requirements (Paragraph 3).
50-413, 414/92-05-02	Emergency Notification Messages were not sufficiently timely and complete to meet exercise objective (Paragraph 6).

Attachment:
Scope and Objectives and
Catawba Exercise Event Sequence

I. SCOPE AND OBJECTIVES

A. Scope

The Catawba exercise, to be conducted on March 4, 1992 is designed to meet the exercise requirements of 10CFR50, Appendix E, Section IV.F. York, Gaston and Mecklenburg Counties, and the Crisis Management Center will be full participation. The States of North and South Carolina will be partial participation.

A formal critique involving Duke Power and NRC will be held on March 5, 1992 at 3:00 p.m. at Catawba Nuclear Station. This critique will be closed to the public.

B. Exercise Objectives (Duke Power Company Emergency Organisation)

Emergency Management

1. Demonstrate the ability to declare emergency classification in accordance with procedures.
2. Demonstrate the ability to notify the States and the Counties within 15 minutes after declaring an emergency or after changing the emergency classification.
3. Demonstrate proper use of the message format and authentication methodology for messages transmitted to States and Counties.
4. Demonstrate the ability to alert, notify, and staff the TSC and OSC facilities after declaring an Alert or higher emergency class.
5. Demonstrate precise and clear transfer of responsibility from the Shift Supervisor in the Control Room to the Emergency Coordinator in the TSC.
6. Demonstrate the ability to notify NRC not later than 1 hour after declaring one of the emergency classes.
7. Demonstrate assembly of station personnel within 30 minutes in a simulated emergency and provide accountability for any not present at the assembly locations.
8. Demonstrate access control measures to the plant site, CMC, News Center, and Media Center.

9. Test communications equipment among on-site emergency facilities including plant extensions and intercoms.
10. Test off-site communications equipment to the County and State warning points, County and State emergency operations centers and to NRC including the Selective Signaling System and the NRC Emergency Notification System.
11. Test the adequacy and operability of emergency equipment/supplies.
12. Evaluate the adequacy of the following assessment tools, as applicable:
 1. Drawings
 2. Data Display
 3. Maps
13. Demonstrate the ability to alert, notify, and staff the CMC after declaring a Site Area Emergency or higher emergency class (or after a decision by the Recovery Manager during an Alert).
14. Demonstrate precise and clear transfer of responsibility from the Emergency Coordinator in the TSC to the Recovery Manager in the CMC.
15. Demonstrate the ability to provide accurate information to the news media in a timely manner and to provide effective rumor control according to the Crisis Management Implementing Procedures.
16. Demonstrate the ability to coordinate information with State and County public information officers prior to its release.

Accident Assessment

17. Demonstrate the ability to transmit data using the Crisis Management Data Transmittal System in accordance with procedures and to distribute this data throughout the CMC according to the Crisis Management Implementing Procedures.
18. Demonstrate the ability to provide data to the TSC and OSC in accordance with station procedures.
19. Demonstrate the ability to locate a simulated, radioactive plume and to measure the off-site radiation levels.
20. Demonstrate adequate radio communications between the off-site monitoring teams and the TSC/CMC.

21. Demonstrate the ability to develop off-site dose projections in accordance with procedures.
22. Demonstrate the ability to collect soil, water and vegetation samples in accordance with procedures.
23. Demonstrate the ability to continuously monitor and control emergency worker exposure.
24. Demonstrate the ability to determine on-site radiation levels and airborne radioiodine concentrations.

Protective Action Recommendations

25. Demonstrate the ability to provide timely and appropriate protective action recommendations to off-site officials in accordance with station procedures or the Crisis Management Implementing Procedures.

Plant Operations

26. Demonstrate the ability to assess the incident and provide mitigation strategies.

Medical Drill

27. Demonstrate proper response to a simulated medical emergency involving a contaminated patient in accordance with station procedures.

Other

28. Demonstrate resolution of previous exercise findings (weaknesses, deficiencies) identified by evaluators, QA, or NRC, as applicable.

CATAWBA EXERCISE EVENT SEQUENCE
MARCH 4, 1992

TIME
INITIAL
CONDITIONS
AT 0900

- * Unit 1 is at 100% power and .50 effective full power days (EFPD) with a continuous run of 120 days in fuel cycle 6.
 - * Unit 1 E decay heat removal system (ND) inoperable, tagged out for repair of 1B ND pump high vibration. 1B ND pump is expected to be returned to service by 5:00PM March 5, 1992.
 - * Unit 1B containment spray system (NS) inoperable, tagged out for repair of 1B NS pump mechanical seal. 1B NS pump is expected to be returned to service by 3:00PM March 5, 1992.
 - * Unit 1C Hotwell and Booster Pumps OOS for PM's.
 - * Replacement of a defective hydrogen bottle in the outside hydrogen cage in progress.
 - * Unit 2 is operating in Mode 5 performing the Mode 4 checklist after a refueling outage.
- 0900 o Normal full power operations on Unit 1.
- 0915 o A seismic event causes a faulty missile shield to collapse on reactor vessel head which creates a three inch LOCA (initiating event).
- o Control Room receives seismic event alarms. (Seismic event localized to CNS and surrounding counties.
- 0920 o LOCA will cause SI signal on containment pressure.
- o Due to the seismic event, containment integrity will be lost through a pipe penetration in the annulus (2" hole).
- o SR CH.31, IR CH.35, & PR CH.41 fails due to missile shield falling on them.

Predicted Response

- o Operators implement EP/1/A/5500/01 (Reactor trip/safety injection).
- o Operators implement RP/0/A/5000/01 (Classification of Emergency).

- o Operators implement RP/O/A/5000/07 (Natural Disaster and Earthquake)
- o SGDT (Steam Generator Drain Tank) leaking into the yard called into Control Room.
- 0922 o Contaminated medical emergency injury takes place at the SGDT spill.

Predicted Response

- 0930- o SAE should be declared on LOCA with S/I actuated and existing ECCS flow cannot maintain subcooling greater than 0 degrees Fahrenheit.
- 0935 o Operators implement RP/O/A/5000/04 (SAE).
- o Dispatch personnel to investigate damage to plant from the seismic event.

- 0930 o Shift supervisor conducts a site assembly, activates the TSC, OSC, and CMC.

*MOC¹-up
ST¹ EI*

- o KF valve leak starts (5 gpm). EMF41 increasing.
- o Counties activate the EBS and sound the sirens.

Approx.
1000

- o Site Assembly, TSC, OSC activation complete.
- o Leak discovered on KF19

Predicted Response

- 1005 o ECCS pumps are swapped to the recirculation mode. Operators will have to align the system so that NV and NI pumps receive their suction from Train A ND pump only.

Predicted Response

Approx.
1025

- o Contaminated injured transported to PMC.

1120

- o NI-185A closes due to a short in the circuitry. Recirculation mode is lost.

- o LOCA size will increase to greater than 3" (approx. 6" leak) (this is necessary to get core uncovered within one hour from loss of recirc in order to meet the release requirements).

Predicted Response

- o General Emergency should be declared due to LOCA with no safety injection capability.
- 1135 o Operators implement RP/O/A/5000/05 (GE) (may not declare GE until the determination that injection cannot be re-established from the FWST).
- 1145-
1150 o Core begins to uncover.
- o Containment pressure ~ 15 psig

Predicted Response

- 1145 -
1200 o Should recommend evacuation of two mile radius and five miles downwind due to substantial core damage projected. (RP/O/A/5000/05 "GE" PAG's)
- 1205 Core Exit Thermocouples begin to trend upward (inner core temperatures start to reach 2000 degrees Fahrenheit in top portion of the core).
- 1220 o EMF 53 ramped up >2000 R/HR
Containment pressure ~20 psig
2" Hole in containment into annulus (pipe penetration)
Wind is from Northeast @ 10 MPH
- 1230 o Simulator must return operations of the 1A NV pump to keep the simulator operating properly.
- 1400 o When exercise objectives have been met, the exercise will be terminated.