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

NOV 01 1988

Report Nos.: 50-369/88-27 and 50-370/88-27

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

Docket Nos.: 50-369 and 50-370 License Nos.: NPF-9 and NPF-17

Facility Name: McGuire 1 and 2

Inspection Conducted: September 13-16, 1988

Inspector: _____ 10-25-88
A. L. Cunningham Date Signed

Accompanying Personnel: B. R. Bonser
M. Lesser
M. E. Stein

Approved by: _____ 10-28-88
T. R. Decker, Section Chief Date Signed
Division of Radiation Safety and Safeguards

SUMMARY

Scope: This routine, announced inspection involved observation and evaluation of the Annual Radiological Emergency Response Exercise. The small scale exercise commenced at 8:30 a.m. on September 15, 1988. Federal, State and County participation was limited to receipt and acknowledgement of emergency notifications and periodic followups of same. The exercise was terminated at 12:00 p.m. on the above referenced date. Medical emergency and fire drills were performed on September 14, 1988, at 9:00 a.m. and 6:00 p.m. respectively. Offsite support assistance and resources were promptly requested and effectively used by the licensee in each of the referenced drills. Critiques of each drill were conducted immediately following their termination.

Results: No violations or deviations were identified; however, an exercise weakness was identified involving failure of the Control Room Shift Supervisor (Emergency Director) to identify an Emergency Action Level (EAL) and promptly declare the respective Alert emergency classification. Following contingency prompting by a facility controller, the cited declaration was made. The licensee committed to review and correction of this finding, and implementation of required training to preclude recurrence of the event. Notwithstanding the identified weakness, the exercise was considered fully successful based upon development and proficient implementation of a realistic and challenging scenario. Similarly, the scenarios developed for the medical emergency and fire drills were effectively implemented. Licensee and offsite support interaction during the drills demonstrated a high degree of proficiency in performance of assigned tasks and responsibilities.

The Crisis Management Center (CMC) was activated, fully staffed, and operated as part of the subject exercise in partial fulfillment of corrective actions committed to in response to exercise weaknesses identified during the Catawba Nuclear Station Annual Exercise performed February 17-21, 1988 (NRC Inspection Report Nos. 50-413/88-03, 50-414/88-03). The facility was effectively managed in response to required assessment, control, and mitigation of the casualty (Pargraphs 9 and 17).

REPORT DETAILS

1. Persons Contacted

Licensee Employees

*G. Addis, Superintendent of Safety
*N. Atherton, Production Specialist - Compliance
*R. Bowman, Director, Plant Communications/Corporate Communicatins
*S. Deskevich, Associate Engineer
*G. Gilbert, Assistant to Plant Manager
*R. Harris, System Emergency Planner, Nuclear Production Department
*J. Jenkins, Assistant Operating Engineer
*E. Kuhl, Nuclear Production Engineer/Emergency Planning
R. Leonard, Station Emergency Planner
*T. McConnel, Station Manager
*M. McIntosh, General Manager Nuclear Support, Nuclear Production Department
*W. McRee, Emergency Planner, Nuclear Production Department
*J. Reeside, Coordinator, Industrial Safety and Health
*M. Sample, Superintendent of Maintenance
*R. Sharpe, Compliance Engineer
*A. Sipe, Chairman, McGuire Safety Review Group
*B. Travis, Superintendent of Operations

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

NRC Resident Inspector

*R. Croteau

*Attended exit interview

2. Exercise Scenario (82301)

The scenario for the emergency exercise was reviewed to assure that provisions were made to test the integrated capability and a major portion of the basic elements defined in the licensee's emergency plan and organization pursuant to 10 CFR 50.47(b)(14); Paragraph IV.F of Appendix E to 10 CFR 50; and specific guidance promulgated in Section II.N of NUREG-0654, Rev. 1.

The scenario was reviewed in advance of the exercise and discussed in detail with licensee representatives on several occasions. While no major scenario problems were identified, several inconsistencies became apparent during the exercise. The inconsistencies were minor, however, and failed

to detract from the overall performance of the licensee's emergency organization.

The scenario developed for this exercise presented a series of realistic and challenging events which fully exercised the onsite emergency organization. The scenario provided sufficient information to the State, counties, local government and Federal agencies consistent with the scope of their participation in the exercise. The licensee demonstrated a significant commitment to training and personnel through use of controllers, evaluators, and specialists participating in the exercise. The controllers provided adequate guidance throughout the exercise. Neither prompting nor undue interaction between controllers and players was observed.

The scenarios developed for the medical emergency and fire drills adequately exercised the participating groups of the licensee's organization and the respective offsite support agencies. The plant Fire Brigade, Medical Emergency Response Team (MERT) and assigned security demonstrated effective training in their integrated approach to management and control of the simulated fire and medical emergency. Neither prompting nor undue interaction between controllers and players was observed during the drills.

No violations or deviation were identified

3. Assignment of Responsibility (82301)

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

The inspector observed that specific emergency assignments were made for the licensee's emergency response organization, and that adequate staff was available to respond to the simulated emergency. The initial response organization was augmented by designated licensee representatives; however, because of the scenario scope and conditions, long-term or continuous staffing of the emergency response organization was not required. Discussions with licensee representatives and detailed review of the Site Radiological Emergency Plan indicated that a sufficient number of trained technical personnel were available for continuous staffing of the augmented emergency organization, if needed.

The inspector also observed activation, staffing, and operation of the emergency organization in the Technical Support Center (TSC), Operations Support Center (OSC), and the Crisis Management Center (CMC). The CMC was promptly staffed and activated during this exercise. The required staffing and assignment of responsibility at the facilities were consistent with the licensee's Emergency Plan and respective implementing procedures.

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.B of NUREG-0654, Rev. 1: (1) [illegible] 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 organizational 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 organization was accomplished through use of onshift personnel. An assigned Shift Supervisor promptly assumed the duties of Emergency Coordinator following initiation of the simulated emergency, and directed the response until formally relieved by the Station Manager.

Required interactions between the licensee's emergency response organization and State and local support agencies were consistent with the scope and objectives of the exercise. Interaction of the site emergency response organization with offsite support agencies participating in the medical emergency and fire drills was outstanding and indicative of effective training.

No violations or deviations were identified.

5. Emergency Response Support and Resources (82301)

This area was observed to determine that arrangements for requesting and effectively using assistance resources were made, that arrangements to accommodate State and local staff at the licensee's near-site Emergency Operations Facility (EOF) were made, and that other organizations capable of augmenting the planned response were identified as required by 10 CFR 50.47(b)(3), 10 CFR 50, Appendix E; Paragraph IV.A; and specific guidance promulgated in Section II.C to NUREG-0654, Rev. 1.

State, Federal and County involvement in the subject emergency preparedness exercise was limited solely to participation in notification drills consistent with stated exercise objectives.

Licensee contact with offsite organizations was prompt, effective, and consistent with the scope of the exercise. Local assistance resources from offsite support organizations were limited to fire brigades, ambulance services, and receiving hospital facilities. Response of the subject organizations was prompt, effective, and indicative of successful emergency response training.

No violations or deviations were identified.

6. 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, Rev. 1; and guidance recommended in NRC Information Notice 83-28.

An Emergency Action Level (EAL) matrix and respective procedures were used to identify and classify the emergency and escalate the plant status to more severe emergency classifications as the simulated accident sequence progressed. Inspection disclosed, however, that the Shift Supervisor failed to identify an EAL and escalate the emergency classification to an Alert when required. The subject classification was declared following prompting of the Shift Supervisor by a facility controller who issued a contingency message to that effect. The specific EAL involved a plant fire potentially affecting safety systems. Consistent with the simulated casualty, the fire occurred in the turbine driven auxiliary feedwater pump room; therefore satisfing the criterion for the alert. This finding was fully discussed with cognizant licensee representatives prior to and during the exercise critique held on September 16, 1988. The licensee also identified the requirement to issue the shift supervisor a contingency message to assure escalation of the casualty to the Alert classification. Based on the significance of the finding, however, the inspector informed the licensee that the subject finding would be tracked as an exercise weakness. The licensee acknowledged the finding and committed to review of same and implementation of corrective action.

Exercise Weakness: Failure to identify an EAL and promptly escalate the emergency classification to an Alert (50-369/88-27-01, 50-370/88-27-01).

No violations or deviations were identified.

7. Notification Methods and Procedures (82301)

This area was observed to assure that procedures were established for notification of State and local response organizations and emergency personnel by the licensee, and that the content of initial and followup messages to response organizations were established. This area was further observed to assure that means to provide early notification to the populace within the plume exposure pathway were established pursuant to 10 CFR 50.47(b)(5), Paragraph IV.D of Appendix E to 10 CFR 50; and specific guidance promulgated in Section II.E of NUREG-0654, Rev. 1.

The inspector observed that notification methods and procedures were established and available for use in providing information regarding the simulated emergency conditions to Federal, State, and local response organizations, and to alert the licensee's augmented emergency response organization. Notification of the State and designated local offsite

organizations was completed within 15 minutes following declaration of all emergency classifications involved. The prompt notification system (PNS) for alerting the public within the plume exposure pathway emergency planning zone (EPZ) was not actuated during this exercise.

Telephone notification of the State of North Carolina, and local response organizations was promptly followed by transmission of hard copies of the respective notification. The copies included prevailing meteorological information, average release rate (source terms in uCi/sec) where applicable, site boundary integrated dose projections, and recommended protective actions when necessary.

No violations or deviations were identified.

8. Emergency Communications (82301)

This area was observed to assure that provisions existed for prompt communications among principal response organizations and emergency personnel pursuant to 10 CFR 50.47(b)(6); Paragraph IV.E of Appendix E to 10 CFR 50; and specific guidance promulgated in Section II.F of NUREG-0654, Rev. 1.

The inspectors observed communications within and between the licensee's emeregency facilities, the licensee and offsite agencies, and the radiological field monitoring teams and the CMC. Inspectors also observed information flow among the various groups within the licensee's emergency organization. Emergency communications involving notification of the State, local agencies, and the NRC of emergency classifications discussed above, were adequate and consistent with the Radiological Emergency Plan and Implementing Procedures.

Communications between the CMC and radiological field monitoring teams was evaluated and determined to be adequate. Communications, once established with each team, was effective throughout the exercise. In those instances where teams were unable to communicate directly with the CMC due to building structures or topography, information was transmitted via relay to a team close to the CMC.

No violations or deviations were identified.

9. Emergency Facilities and Equipment (82301)

This area was observed to assure that adequate emergency facilities and equipment to support an emergency response were provided and maintained pursuant to 10 CFR 50.47(b)(8), Paragraph IV.E of Appendix E to 10 CFR 50; and specific guidance promulgated in Section II.H of NUREG-0654, Rev. 1.

The inspectors observed activation, staffing, and operation of the emergency response facilities, and use of the equipment therein. Facilities used by the licensee during the exercise included the Control Room TSC, OSC and the CMC.

a. Control Room - The Control Room was used and effectively managed throughout the exercise. The inspector observed that following review and analysis of the sequence of accident events, Control Room operations personnel acted promptly to initiate required responses to the simulated emergency. Emergency procedures were readily available, routinely followed, and factored into accident assessment and mitigation exercises.

Control Room personnel involvement was essentially limited to those personnel assigned routine and special operational duties. Effective management of personnel gaining access to the area designated as the Control Room precluded overcrowding; however, the location and size of the facility was instrumental in causing high ambient noise levels which could interfere with orderly conduct of operations under emergency conditions. This finding was noted by the licensee and documented during the Controller Evaluator Critique.

Control Room personnel were cognizant of their duties responsibilities, and authorities. The staff demonstrated proficient use of routine operating and emergency operating procedures (EOPs) in response to plant transients and emergency conditions. Note, however, the exercise weakness involving identification of the EAL Associated with classification and declaration of the Alert discussed in Paragraph 6, above.

It was observed that data and information provided during the course of the exercise sequence and conditions were readily managed by the Emergency Coordinator and the Control Room staff in implementing appropriate actions in a timely manner, except as noted above. The Control Room staff demonstrated the capability to effectively assess the initial conditions and implement required mitigating actions. It was observed that a bound log was provided and maintained for documenting plant conditions and activities of the Emergency Coordinator and cognizant Shift Supervisor throughout the exercise.

b. Technical Support Center (TSC) - The TSC was activated and promptly staffed following notification by the Emergency Coordinator of the simulated emergency conditions leading to the apparent Alert classification. The facility staff appeared to be cognizant of their emergency duties, authorities, and responsibilities. Required operations at the facility proceeded in an orderly manner. The facility was provided with adequate equipment for support of the assigned staff. TSC security was promptly established and maintained. Security maintained a log or otherwise accounted for all personnel assigned to the facility. Dedicated communicators were assigned to the facility and maintained all status boards current. Effective communications were maintained with the Control Room, OSC, and CMC.

Inspection disclosed the following additional findings, namely: (1) engineering, maintenance, and other technical support functions

were readily implemented and factored into problem solving exercises; (2) assumption of duties by the Emergency Coordinator was definite and firm; (3) transfer of certain emergency responsibilities from the Control Room to the TSC was promptly implemented; (4) briefings of the TSC staff were frequent, and consistent with changes in plant status and related emergency conditions; and (5) accountability, including identifying missing personnel, was readily implemented within the accepted time regime, and was consistent with the scope and objectives of the scenario.

c. Operations Support Center (OSC) - The OSC was promptly staffed following activation of the Emergency Plan by the Emergency Coordinator. An inspector observed that teams were promptly assembled, briefed, and dispatched. The OSC Supervisor appeared to be cognizant of his duties and responsibilities. The OSC staff was frequently updated on plant status and impact of the accident sequence by the OSC Supervisor. Status boards defining the following were maintained and frequently updated: (1) emergency classification and specific plant status; and (2) listings of investigative/repair teams, their respective tasks, time of deployment/reentry, and return to the facility.

d. Crisis Management Center (CMC) - The CMC was promptly staffed and activated following declaration of the Site Area Emergency. This facility was fully activated and operated during the subject exercise in partial fulfillment of corrective actions committed to in response to exercise weaknesses identified during the Catawba Nuclear Station exercise performed on February 17-21, 1988. (NRC Inspection Report Nos. 50-413/88-03 and 50-414/88-03).

CMC security was promptly established and included as a routine requirement for preparation and activation of the facility. Status boards and other related visual aids were strategically located and readily accessible for viewing by the CMC staff. Dedicated communicators were assigned to the facility, and all required notifications and periodic updates thereof were promptly implemented. The following findings were also observed namely: (1) the Recovery Manager's prompt assumption and maintenance of effective command and control of the CMC throughout the duration of the simulated casualty; (2) frequent and effective intercommunications with the Control Room and TSC; (3) effective communications with offsite monitoring teams and direct use of offsite radiological survey data in calculation of offsite dose assessments and projections employing the Class A dose assessment model; (4) timely and effective provision of field data, dose assessments/projections, and resultant protective action recommendations to offsite agencies consistent with procedures and directives; and (5) effective and consistent use of procedures in assessment, management, and mitigation of the casualty. Activation and operation of the CMC during this exercise, fully demonstrated the licensee capability to effectively use the facility, it's equipment

and communication systems in management, assessment and mitigation of the emergency event.

No violations or deviations were identified.

10. 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), Paragraph IV.B of Appendix E to 10 CFR 50; and specific guidance promulgated in Section II.I of NUREG-0654, Rev. 1.

The accident assessment program included an engineering assessment of plant status, and an assessment of radiological hazards to onsite and offsite personnel resulting from the accident. During the exercise, the engineering accident assessment team functioned effectively in analyzing plant status and providing recommendations to the Emergency Director concerning mitigating actions required to reduce damage to plant systems and equipment, prevention and/or control of radioactive releases, and prompt termination of the emergency condition.

Radiological assessment activities involved several groups, An inplant group was effective in projecting the radiological impact within the plant based upon inplant monitoring and onsite measurements. Offsite radiological monitoring teams were dispatched to determine the level of radioactivity in those areas within the influence of the plume. Radiological effluent data were received in the CMC, where dose calculations were computed and factored into the exercise. All resultant data were consistent with projected scenario parameters.

Radiological field monitoring teams were neither observed nor evaluated by the NRC; however, inspectors assigned to the CMC observed dose assessment activities and related coordination and management of field monitoring teams deployed to identify, monitor, and track offsite radiological releases. The Field Team Coordinator frequently updated the teams on current meteorological parameters and status of the casualty.

No violations or deviations were identified.

11. Protective Response (82301)

This area was observed to determine that guidelines established for protective actions were developed and in place, and that protective actions for emergency workers, including evacuation of non-essential personnel, were promptly implemented pursuant to 10 CFR 50.47(b)(10); and specific guidance promulgated in Section II.J of NUREG-0654, Rev. 1.

The protective measures decisionmaking process was observed by the inspector. Recommendations implemented by the TSC and CMC staffs were timely, effective, and consistent with the above criteria and emergency

procedures. Protective measures recommendations were provided by the liensee to the State as part of the exercise. It was noted that the protective actions recommended by the staff were consistent with the emergency plan and respective procedures and directives.

No violations or deviations were identified.

12. Radiological Exposure Control (82301)

This area was observed to determine that methods for controlling radiological exposures in an emergency were established and implemented for emergency workers, and that these methods included exposure guidelines consistent with EPA recommendations pursuant to 10 CFR 50.47(b)(11); and specific guidance promulgated in Section II.K of NUREG-0654, Rev. 1.

An inspector noted that radiological exposures were controlled throughout the exercise by issuance of supplemental dosimeters to emergency workers and by conducting periodic radiological surveys in the emergency response facilities. Exposure guidelines were in place for various categories of emergency actions. Adequate protective clothing and respiratory protection were available for use as required. Consistent with the scope of the exercise, use of respiratory protection equipment by emergency response teams was simulated, except during the fire drill. Health Physics control of radiation exposure, contamination control, and radiation area access appeared adequate. Dosimetry was available and was used. High range dosimeters were also available in case they were needed.

No violations or deviations were identified.

13. Public Education and Information (82301)

This area was observed to assure that information concerning the simulated emergency was made available for dissemination to the public pursuant to 10 CFR 50.47(b)(7), Paragraph IV.D of Appendix E to 10 CFR 50, and specific guidance promulgated in Section II.G of NUREG-0654.

Public information including operation of the News Media Center was evaluated. Inspection disclosed that all News Releases, prior to dissemination to the the Media, were reviewed and thoroughly checked for technical accuracy and approved by Emergency News Center principals. This approach assured the release of accurate information and the elimination of technical errors.

No violations or deviations were identified.

14. Licensee Action of Previously Identified Findings (92701)

a. (Closed) Inspector Followup Item (IFI) 50-369/84-31-05: Required improvement in management of offsite radiation monitoring teams.

Inspection disclosed that the subject teams were briefed in detail regarding monitoring requirements, contamination control and health physics practices addressing exposure control prior to offsite deployment. The CMC offsite team coordinator maintained effective communications with each team throughout the exercise. Teams were periodically briefed regarding plant status and prevailing meteorological conditions.

b. (Closed) IFI 50-369/85-29-01, 50-370/85-28-01: Definition of the Extent of planned special and configuration changes to the TSC and projected completion of same.

Inspection disclosed that the current TSC will continue to be used as an interim emergency response facility until such time that the construction of the new facility is completed. Approved design and construction planning for the permanent TSC was completed and the projected completion date for same has been assigned.

c. (Closed) IFI 50-369/85-29-09, 50-370/88-28-09: Automating the present manual transfer of data from Operator Aid Computer (OAC) to VAX computers, and providing the VAX with continuous access to data, at or near real-time.

Inspection disclosed that automation of transfer of data from the OAC to the VAX computer was in progress. Correspondence received from the licensee, dated September 26, 1988, informed the NRC that the OAC datalink currently in operation will be used to enhance and automate the communication process. Accordingly, a change to the program will convert the datalink format to the Data Transmittal System Format. The system would then be capable of being actuated from any terminal, e.g., from the OAC in the TSC. This system is scheduled to be in place and functional by January 1, 1989. A secondary method utilizing PCs is further planned to provide a backup in the event that the primary method fails. The secondary approach is scheduled to be in place and operational by July 1, 1989. The subject modifications will be compatible with the software package resident in the CMC.

d. (Closed) IFI 50-369/85-29-24, 50-370/85-28-24: Modifying dose assessment Class A Model to include ingestion pathway dose calculations, and making available to the NRC documentation related thereto.

Inspection disclosed that the subject model was completed, evaluated, and placed in use within the TSC and CMC. The dose assessment model provides the capability for dose calculations and projections within the 10 and 50 mile EPZs.

e. (Closed) IFI 50-369/86-27-02, 50-370/86-27-02: Assure that OSC Coordinator appoints a cognizant alternate to act during his absence and to announce same to his staff and the Emergency Coordinator.

Inspection disclosed that the above appointment was implemented by the OSC Coordinator during the subject exercise. Both the OSC staff and Emergency Director were informed of the change.

f. (Open) Bulletin 87-EP-01 50-369, 50-370: Verify Audibility of Alarms in Plant High Noise Areas (79-BU-18).

The inspector, accompanied by a cognizant licensee representative, conducted an inspection of specific areas on the turbine deck and in the vicinity of the feedwater pumps in Units 1 and 2 to verify the audibility of emergency alarms under plant operating conditions. Inspection disclosed that the plant public address systems were inoperative in both Units 1 and 2. As a consequence, the licensee immediately submitted a request for repair/maintenance of the subject systems. Arrangements were promptly made to reevaluate audibility of emergency alarms in the above designated areas of both Units by NRC resident inspectors accompanied by cognizant licensee representatives. Results of the evaluation will be reported in the applicable NRC Resident's Monthly Report.

g. (Closed) IFI 50-369/87-28-01, 50-370/87-28-01: Failure to maintain contamination control and adequate HP practices during emergency medical drill.

Inspection disclosed that effective and acceptable contamination control and health physics practices were implemented throughout the emergency medical drill performed by the licensee on September 14, 1988.

The CMC was activated, fully staffed, and operated during the subject exercise in partial fulfillment of corrective actions in response to exercise weaknesses identified during the Catawba Nuclear Station Annual Emergency Preparedness Exercise performed February 17-21, 1988 (50-413/88-03, 50-414/88-03). The CMC serves the Catawba and McGuire Nuclear Stations during emergency events. Accordingly, observation and evaluation of the CMC during the subject McGuire Exercise disclosed that corrective actions implemented by the licensee were determined to be adequate and the findings listed below were closed.

h. (Closed) Exercise Weaknesses 50-413/88-03-02, 50-414/88-03-02: Failure to demonstrate the ability to declare emergency classification in accordance with procedures.

i. (Closed) Exercise Weaknesses 50-413/88-03-03, 50-414/88-03-03: Dose projections and field data not provided in a timely manner to offsite agencies and protective action recommendations (PARs) did not agree with CMIP-7 Flowchart.

j. (Closed) Exercise Weaknesses 50-413/88-03-04, 50-414/88-03-04: Overall Management of the casualty was hampered by an inadequate flow of information - sometimes between ERF's and sometimes within an ERF.

Inspection disclosed that effective communications with the CMC, and between the CMC and other emergency facilities (CR TSC) were maintained to ensure the required flow of data necessary to mitigate the casualty.

k. (Closed) Exercise Weaknesses 50-413/88-03-05, 50-414/88-03-05: Failure to insure accurate news media information to the public.

Inspection disclosed that all news releases were reviewed and approved prior to dissemination to the Media and therefore preclude the release of erroneous information.

15. Exercise Critique (82301)

The licensee's critique of the emergency was observed to determine that shortcomings identified as part of the exercise were brought to the attention of management and documented for corrective action pursuant to 10 CFR 50.47(b)(14), Paragraph IV.F of Appendix E to 10 CFR 50, and specific guidance promulgated in Section II.N of NUREG-0654, Rev. 1.

The NRC Evaluation Team observed the licensee's Controller/Evaluator critique conducted immediately following the exercise on September 15, 1988. Inspection disclosed that the subject critique was comprehensive, and addressed the following: activation, detailed operation, and required functions of the emergency response facilities; events analysis and mitigation; dose assessment and projections; protective action recommendations; fire and medical emergency drills, and field monitoring. All deficiencies and indicated improvements were fully discussed and documented by licensee representatives, and prepared for presentation at the formal NRC/Licensee critique discussed below. These findings and respective corrective actions will be routinely reviewed by the NRC during the subsequent inspections and radiological emergency preparedness exercises.

A formal licensee/NRC critique was held on September 16, 1988, with those persons indicated in Paragraph 1, above. The inspector described the areas inspected and discussed in detail the inspection findings prior to and during the subject critique. Dissenting comments were not expressed by the licensee. the licensee did not identify as proprietary any materials provided to or reviewed by the inspectors during this inspection.

Item Number	Description and Reference
369, 370/88-27-01	Exercise Weakness - Failure to promptly identify an EAL and declare the respective Alert emergency classification.

16. Exit Interview

The inspection scope and results were summarized on September 16, 1988, with those persons indicated in Paragraph 1. The inspector described the areas inspected and discussed in detail the inspection results. Although reviewed during this inspection, proprietary information is not contained in this report. Dissenting comments were not received from the licensee.

I. SCOPE AND OBJECTIVES

A. Scope

The McGuire exercise, to be conducted on September 15, 1988, is designed to meet the exercise requirements of 10CFR50, Appendix E, Section IV.F. The 1988 exercise will involve partial participation by Cabarrus, Catawba, Gaston, Iredell, Lincoln, and Mecklenburg Counties and the State of North Carolina, to receive communications only. The Duke Power Crisis Management Center will participate as a remedial action to address specific items identified during the February 19-20, 1988 Catawba exercise.

Limited drills will be held on September 14, 1988. A separate medical drill will be held to involve transportation of a contaminated, injured patient to the hospital. A separate fire drill will involve support by the off-site fire department.

A formal critique involving Duke Power and NRC will be held on September 16, 1988 at 9:00 A.M. This critique will be closed to the public and will be held at McGuire Nuclear Station.

B. Exercise Objectives (Duke Power Company Emergency Organization)

Emergency Management

1. Demonstrate the ability to declare emergency classification in accordance with procedures.

2. Demonstrate the ability to notify the state and the counties within 15 minutes after declaring an emergency or after changing the emergency classification.

3. Demonstrate the ability to alert, notify, and staff the TSC and OSC facilities after declaring an Alert or higher emergency class.

4. Demonstrate the ability to notify NRC not later than 1 hour after declaring one of the emergency classes.

5. Demonstrate assembly of station personnel within 30 minutes in a simulated emergency and provide accountability for any not present at the assembly locations.

6. Demonstrate notification to all on-site personnel of major changes in the emergency situation (emergency class, TSC or OSC activation, etc.).

7. Demonstrate access control measures to the plant site, CMC, the Electric Center Phase I Room 230 (News Center) and the O.J. Miller Auditorium (Media Center).

8. Test communications equipment among on-site emergency facilities including plant extensions, the intercoms, and the on-site radio system.

9. 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, outside telephone lines, and the NRC Emergency Notification System.

10. Test the adequacy and operability of emergency equipment/supplies.

11. Demonstrate precise and clear transfer of responsibility from the Shift Supervisor in the Control Room to the Emergency Coordinator in the TSC, and from the Emergency Coordinator in the TSC to the Recovery Manager in the CMC.

12. Demonstrate proper use of the message format and authentication methodology for messages transmitted to states and counties.

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).

Accident Assessment

14. Demonstrate the ability to transmit data using the Crisis Management Data Transmittal System in accordance with station procedures and to distribute this data throughout the CMC according to the Crisis Management Implementing Procedures.

15. Evaluate the adequacy of the following assessment tools:

    1. Drawings
    2. Data Display Boards
    3. Maps

16. Demonstrate the ability to continuously monitor and control emergency worker exposure.

17. Demonstrate the ability to determine on-site radiation levels and airborne radioiodine concentrations.

18. Demonstrate adequate radio communications between the off-site monitoring teams and the TSC/CMC.

19. Demonstrate the ability to collect air, soil, water and vegetation samples in accordance with procedures.

Protective Action Recommendations

20. Demonstrate the ability to provide timely and appropriate protective action recommendations to off-site officials in accordance with station procedures or the Crisis Management Plan (communications to offsite officials may be simulated).

Plant Operations

21. Demonstrate the ability to assess the incident and provide mitigation strategies in accordance with station procedures.

Medical Drill

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

Fire Drill

23. Demonstrate proper response by the on-site fire brigade to a simulated fire in accordance with station procedures.

24. Demonstrate the ability to request and obtain fire-fighting support from the off-site department.

CONFIDENTIAL

MCGUIRE EXERCISE EVENT SEQUENCE

SEPTEMBER 15, 1988

Time
Initial

- o Unit 1 'B' Train RN out of service for 'B' diesel generator (D/G) heat exchanger (Hx) Tube Condition Cleaning and Voltage Regulator nuclear station modification (NSM). ('B' RN essential header drained.)
- o Unit 1 'B' Train CA, NV, NI pumps out of service (OOS) for minor motor modifications and due to RN unavailable.
- o Unit 1 'B' Train RN Pump OOS for Seal Replacement.
- o Unit 1 'B' Train KC Hx OOS for Tube Cleaning.
- o Unit 1 turbine driven (T/D) CA Pump Halon OOS due to Modification for Discharge Line Relocation - Assistant Nuclear Operator Technician (ANOT) fire watch/round being conducted.
- o Unit 1 is at 100% power and 274 effective full power days (EFPD).
- o Unit 2 is at 100% power and 315 EFPD.

0835 ANOT informs U-1 Reactor Operator (RO) that T/D CA pump outboard turbine bearing oil level is 1/2 inch below normal and that he already has proper oil available and will make-up to normal level - U-1 RO agrees and breaks communication.

Predicted Response
U-1 RO will inform control room Senior Reactor Operator (SRO) who may inform Unit Supervisor/Unit Coordinator/Shift Engineer - they may investigate further.

0837 Unit blackout occurs (Reason unknown at this time).

Predicted Response

Plant

- o Transfer trip lockouts 86TTA/1A, 86TTB/1A, 86TTA/1B, 86TTB/1B actuate - all breakers in relaying protection zones 1A & 1B trip.
- o Reactor trip due to 4 of 4 NC pumps UF or UV relays.
- o Turbine trip due to reactor trip.
- o 'A' train blackout sequencer starts 'A' D/G, load sheds 1ETA bus, closes D/G breaker to bus, and loads blackout loads (including 1A CA pump).
- o T/D CA pump starts.

- o Steam generator's (S/G) PORV's and safeties lift (Condenser pumps unavailable.)
- o NC system (NCS) pressure drops initially and recovery to 2080 psig within 30 sec.
- o Unit 600V motor control center's (MCC) aligned to U-1 transfer to U-2 - loads power uninterrupted.
- o Shared 600V MCC's aligned to U-1 transfer to U-2 - loads power interrupted.
- o Partial loss of instrument air occurs.

Players

- o Implement AP/1/A/5500/01 (Reactor Trip).
- o Implement AP/1/A/5500/07 - Case II (Loss of Electrical Power - Unit Blackout).
- o Implement RP/0/A/5700/00 for Notification of Unusual Event.
- o Dispatch personnel to VI compressors to stabilize VI pressure.

0850 Receive EFA zone alarms from T/D CA pump room - ANOT calls control room from T/D CA pump room and reports smoke and flames from T/D CA pump turbine. Also reports oil was spilled on the turbine during oil addition and was being cleaned up when pump started and is probable source of fire. T/D CA pump trips as this is being reported.

Predicted Response

Players

- o Fire brigade is dispatched to U-1 T/D CA pump room.
- o U-1 RO takes action as necessary to maintain S/G levels 1A & 1B @ no-load narrow range level - RO may ask SRO for guidance to prevent 1C & 1D S/G/s dryout (close main steam isolation valves (MSIV) or cross-tie to 1A CA pump).
- o Emergency Coordinator implements RP/0/A/5700/00, initiating condition 4.1.7 (Alert, Item 1) - Fire potentially affecting safety systems.

Note: Any attempts to determine reason for blackout from dispatcher or other means are unsuccessful up to now - All that has been determined so far is that a major fault has occurred on BL1A and BL1B.

0855 Control Room receives report from switchyard substation that a bulldozer has backed into a transmission tower causing a failure of the Jackson Ferry line crossing bus lines 1A & 1B - Dispatcher confirms that off-site power capability won't be available for "at least a day".

Predicted Response

Players

- o Efforts will probably be made to ensure adequate fuel oil supply for 1A D/G and a suggestion may be made to power 1ETA from U-2 via SATA.
  - blocking message may be needed at this time when step is reached to rack in standby incoming breaker on 1ETA (kirk-key interlock problem).
- o Action may be taken to activate S3F
  - This action will be allowed by controller.

0910 Fire is extinguished at the T/D CA pump.

Predicted Response

- o Emergency Coordinator will ask for damage assessment from Instrument and Electrical (I&E) and Mechanical Maintenance (MM) on T/D CA pump.

0920 Damage assessment of T/D CA pump is burned insulation and damaged governor & stop valve linkage. Time estimate for governor replacement and stop valve linkage repair is 1.5 hours.

Predicted Response

- o Emergency Coordinator will ensure maximum efforts to replace governor.

1000 Control Room receives report from 1A D/G Room of a gross fuel oil leak - oil is being atomized due to hi pressure spray at leak - exempt personnel at scene report threat of explosion/fire is imminent in D/G room - personnel evacuating area.

Predicted Response

Players

- o Efforts will intensify to power 1ETA from U-2 via SATA and to activate SSF.
  - use blocking action if necessary.
- o Decision may be made to pre-activate 1A D/G Halon - if this is done, it won't prevent subsequent explosion and resultant damage.

1005 Receive loss of all AC power due to explosion and fire in D/G Room 1A.

Predicted Response

Plant

- o D/G 1A Halon activates.
- o Loss of 1A CA pump, S/G's inventory.
- o Loss of NC pumps seal injection (unless being supplied by SSF) and thermal barrier cooling.

Players

- o Fire Brigade is dispatched to 1A D/G.
- o Implement RP/0/A/5700/00, initiating condition 4.1.6 (Site Area Emergency, Item 1) - Loss of offsite power and loss of onsite AC power for more than 15 minutes.
- o Implement EP/1/A/5000/09 (Loss of All AC Power).
- o May go right to RP/0/A/5700/00, initiating condition 4.1.5 (General Emergency, Item 2) - Since emergency feedwater pumps not running and T/D CA pump capability won't be available for >30 more minutes .
  - blocking action may be necessary to limit the emergency classification to SAE if the Crisis Management Center (CMC) is not yet activated. This will allow emergency classification and protective action decision-making by the CMC after activation.

1020 Fire is reported out at 1A D/G Room - report of massive damage to D/G control panel.

Predicted Response

- o Efforts still being made to power 1ETA from U-2 via SATA - Report on Kirk-key problem is that interlock is being removed - 0.5 hours more before breaker can be racked in.
- o General Emergency should be declared by now.

1055 T/D CA pump governor repairs completed and stop valve linkage repaired.

Predicted Response

- o T/D CA pump started and used to feed all S/G's.

1100 1ETA energized from SATA. EP/1/A/5000/9.1 (Loss of All AC Recovery Without SI Required) or EP/1/A/5000/9.2 (Loss of All AC Recovery with SI Required) implemented.

1200 Exercise ends.