In accordance with 10 CFR 2.790(a), a copy of this letter and the enclosures will be placed in the NRC's Public Document Room unless you notify this office, by telephone, within ten days of the date of this letter and submit written application to withhold information contained therein within thirty days of the date of this letter. Such application must be consistent with the requirements of 10 CFR 2.790(b)(1).

The response directed by this letter and the enclosures are not subject to the clearance procedures of the Office of Management and Budget as required by the Paperwork Reduction Act of 1980, PL 96-511.

Should you have any questions concerning this appraisal, we will be pleased to discuss them with you.

Sincerely,

Martin

James P. O'Reilly
Director

Enclosures:
1. Appendix A, Appraisal Improvement Items
2. Inspection Report No. 50-369/82-06

cc w/encl:
M. D. McIntosh, Plant Manager
J. T. Moore, Project Manager

bcc w/encl:
NRC Resident Inspector
Document Management Branch
State of North Carolina
DEP: OIE

RII RMartin RII Jenkins RII Stohr RII Ignatonis RII HCD Dance
6/22/82 6/22/82 6/25/82 6/24/82 6/24/82

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APPENDIX A

PREPAREDNESS IMPROVEMENT ITEMS

Based on the results of the NRC's appraisal of the McGuire Plant Emergency Preparedness Program conducted March 1-12, 1982, the following items should be considered for improvement: (Parenthetical references are to sections in OIE Report No. 50-369/82-06).

1. Revising Figure B-1, Minimum Staffing Requirements (one Unit operation) to incorporate the details of the referenced letter (2.2) (50-369/82-06-01).

2. Developing lesson plans and objectives for all areas of Emergency Response training to be controlled by the training supervisor (3.1) (50-369/82-06-02).

3. Developing a training program for rescue team operations (3.1) (50-369/82-06-03).

4. Developing a training program for decontamination procedures (3.1) (50-369/82-06-04).

5. Providing emergency training to all employees regardless of employment status or job locations (3.1) (50-369/82-06-05).

6. Providing training for the Offsite Monitoring Teams to ensure they have the capability to make the necessary measurements and calculations (3.1)(50-369/82-06-06).

7. Making available two additional dedicated lines for the NRC (4.1.1.4) (50-369/82-06-07).

8. Evaluating the post-accident sampling system when it is fully operational (4.1.1.5, 4.1.1.6) (50-369/82-06-08).

9. Providing policy for the management and control of evacuated personnel and equipment at the Off-Site Evacuation Assembly Areas (4.1.2.1) (50-369/82-06-09).

10. Providing Personnel Survey and Decontamination Kits at the Offsite Evacuation Assembly Areas (4.1.2.1) (50-369/82-06-10).

11. Making provisions for personnel decontamination kits, solid and liquid waste disposal, and for replacement clothing at the PAP and the designated assembly areas (4.1.2.3) (50-369/82-06-11).

12. Providing personnel decontamination supplies identified in the decontamination procedures at the Auxiliary Building change room (4.1.2.3) (50-369/82-06-12).

13. Including personnel decontamination procedures in the decontamination kits (4.1.2.3) (50-369/82-06-13).

14. Reviewing the emergency kit inventory and maintenance system to assure that contents of kits are maintained as needed (4.2.1.1) (50-369/82-06-14).

15. Providing a system to assure that instrumentation in the kits are functional when needed and that calibration is current (4.2.1.1) (50-369/82-06-15).

16. Providing personnel survey instrumentation in the Environmental Survey kits to permit team members to evaluate their own contamination status (4.2.1.1) (50-369/82-06-16).

17. Providing personnel survey instrumentation in Emergency Kits capable of detecting the stated plant personnel contamination release limits (4.2.1.1) (50-369/82-06-17).

18. Reviewing the supply of iodine sample evaluation instrumentation to assure that adequate iodine monitoring capability is maintained when recalibration and repair is needed (4.2.1.1) (50-369/82-06-18).

19. Performing daily operability checks of meteorological information by Control Room operators (4.2.1.4) (50-369/82-06-19).

20. Preparing written procedures for system calibration and maintaining a complete file of calibration results onsite (4.2.1.4) (50-369/82-06-20).

21. Installing a system to make severe weather information available to Control Room operators and clarifying of procedures to have Control Room personnel aware of severe weather conditions in the interim (4.2.1.4) (50-369/82-06-21).

22. Clarifying the use of backup meteorological information, and of the routine communications checks for accessing this information (4.2.1.4) (50-369/82-06-22).

23. Clarifying the accessibility of upper level meteorological data to Control Room personnel given the placement of the strip chart recorders 7 to 8 feet above the floor (4.2.1.4) (50-369/82-06-23).

24. Reviewing Procedure AP/O/A/5500/28 to allow consistent and easy use of Time-Distance-Dose Curves more closely approximating EPA Protective Action Guides (5.4.2) (50-369/82-06-24).

25. Providing for development and use of trend recording and trend analysis of assessment data (5.4.2) (50-369/82-06-25).

26. Providing in station procedures for use of offsite survey data for verification of dose assessment results (5.4.2) (50-369/82-06-26).

27. Providing for cross checking of offsite dose calculations between the TSC and EOF dose assessment groups to reduce the probability of error (5.4.2) (50-369/82-06-27).

28. Developing specific procedures for relating contamination levels, water and air, to dose rates for key isotopes (5.4.2) (50-369/82-06-28).

29. Providing in the emergency kits for labeling of samples. (5.4.2.1) (50-369/82-06-29).

30. Including operating instructions for the SAM-2 instruments in the emergency kits using this equipment (5.4.2.1) (50-369/82-06-30).

31. Developing specific procedures for the in-plant and onsite but out-of-plant Emergency Survey teams. Guidance should include emergency communications, emergency dosimetry consideration, and emergency exposure controls (5.4.2.2, 5.4.2.3) (50-369/82-06-31).

32. Training and qualifying chemistry technicians on all shifts to operate the post-accident reactor coolant sampling equipment in accordance with procedure OP/O/A/6200/48, "Operating Procedure for the Operation of the Post-Accident Liquid Sample System" (5.4.2.4, 5.4.2.5) (50-369/82-06-32).

33. Including in procedure OP/O/A/6200/48, chloride analysis capability in accordance with NUREG-0737, II.B.3 (5.4.2.4, 5.4.2.5) (50-369/82-06-33).

34. Training and qualifying Health Physics technicians on all shifts to operate the post-accident containment sampling equipment in accordance with procedure HP/O/B/1009/15, "Nuclear Post-Accident Containment Air Sampling Operating Procedure" (5.4.2.6, 5.4.2.7) (50-369/82-06-34).

35. Providing for formal approval and control of emergency implementing procedures (5.4.2.12) (50-369/82-06-35).

36. Revising the emergency environmental monitoring procedure to include provisions for emergency dosimetry for team members, and for assuring turnover of instrumentation, equipment, and vehicles to relieving support teams (5.4.2.12) (50-369/82-06-36).

37. Revising emergency radiation protection implementing procedures to include specific guidance for emergency personnel dosimetry, in-plant monitoring teams, expansion of respiratory protection program to meet increased needs, and consideration of changed or unusual conditions due to the emergency (5.4.3.1) (50-369/82-06-37).

38. Marking primary and secondary evacuation routes. (5.4.3.2) (50-369/82-06-38).

39. Specifying in implementing procedures decontamination capability at or near the monitoring points used during a site evacuation (5.4.3.2) (50-369/82-06-39).

40. Pr .ding procedural guidance pertaining to the manner in which missing persons will be located (5.4.3.3) (50-369/82-06-40).

41. Specifying contamination levels and decontamination actions for skin contamination by radioiodine (5.4.3.4) (50-369/82-06-41).

42. Developing and incorporating procedures into the Emergency Plan and Implementing Procedure for rescue team organization and methodology. (5.4.3.5) (50-369/82-06-42).

43. Providing a consolidated document for Security Measures to be placed into effect during radiological emergencies (5.4.4) (50-369/82-06-43).

44. Developing procedures to govern the emergency functions of repair and action teams including team formation, possible operations in high radiation fields, and radiological safety considerations (5.4.5) (50-369/82-06-44).

45. Clarifying provision for rumor control coordination with the news information function with other organizations. It is not addressed in the Crisis News Center plan under Crisis Management Rumor Control and not clearly specified in the roles of the various crisis information coordinators (5.4.7) (50-369/82-06-45).

46. Implementing a formal, approved inventory and maintenance system for the CMC (EOF) emergency kits. A procedure should include specific inventory kits, frequency of inspection and responsibility for inspection performance (5.5.1) (50-369/82-06-46).

47. Controlling distribution of the Crisis Management Plan Implementing Procedures to assure an optimum and updated interface (5.5.3) (50-369/82-06-47).

48. Clarifying procedure number for the procedure titled "Personnel Monitoring for Emergency Conditions". It appears to have two procedural numbers - Station Health Physics Manual, Section 18.1 (see p. 6 item 4.6.2) and Section 18.2 (5.5.3) (50-369/82-06-48).

49. Clarifying the status of procedure HP/O/B/1009/08, 09, 10, Release of Liquid Radioactive Materials Exceeding Technical Specifications references HP/O/B/1009/04, Environmental Monitoring for Emergency Conditions. This procedure has been replaced by Section 18.2 of the HP Manual (5.5.3) (50-369/82-06-49).

50. Clarifying Section 18.2 of the HP Manual which specifies that emergency TLDs should be in emergency kits; however, inventory lists in procedure PT/O/A/4600/11 do not list any TLDs (5.5.3) (50-369/82-06-50).

51. Including on each page of the Crisis Management Plan Implementing Procedures the date and revision number to assure that the page being used is current. (5.5.3) (50-369/82-06-51).

52. Including call letters and dial or channel designations for area stations in the public information brochure (6.2) (50-369/82-06-52).

53. Reconsidering the brochure suggestions that individuals hearing the sirens call their neighbors to make sure they know of the emergency. It may be best to encourage residents to stay off the telephone unless there is a personal emergency. (6.2) (50-369/82-06-53).

54. Instructing the shift supervisors that "prompt notification" of the State/local offsite authorities is intended to indicate "within about 15 minutes" for an unusual event class and sooner (consistent within the need for other emergency actions) for other classes and that the time is measured from the time at which operators recognize that events have occurred which make declaration of an emergency class appropriate (7.2.1, 7.2.2) (50-369/82-06-54).

55. Clarifying the McGuire Emergency Plan Implementing Procedures EP/O/A/5000/05 to EP/O/A/5000/08 with respect to improvement item number 54 (7.2.1, 7.2.2) (50-369/82-06-55).

UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION II
101 MARIETTA ST., N.W., SUITE 3100
ATLANTA, GEORGIA 30303

Report No. 50-369/82-06

Licensee: Duke Power Company
P. O. Box 2178
Charlotte, NC 28242

Facility Name: McGuire Nuclear Station

Docket No. 50-369

License No. CPPR-83

Inspection at McGuire site near Charlotte, North Carolina

Inspector: R. P. Warnick 6/22/82
for G. E. Simonds Date Signed

Accompanying Personnel: M. J. Gaitanis, W. W. Stansberry, R. K. Roemmich, L. H. Munson, A. L. Smith, J. Fairobent, K. Clark

Approved by: L. R. Jenkins 6/22/82
G. R. Jenkins, Section Chief Date Signed
Emergency Preparedness Section
EPOS Division

SUMMARY

Inspection on March 1 - March 12, 1982

Areas Inspected

This special, announced inspection involved 540 inspector-hours on site in the performance of an Emergency Preparedness Appraisal.

Results

In the area inspected, no violations, deviations or emergency preparedness deficiencies were identified.

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INTRODUCTION

The purpose of this special appraisal was to perform a comprehensive evaluation of the licensee's emergency preparedness program. This appraisal included an evaluation of the adequacy and effectiveness of areas for which explicit regulatory requirements may not currently exist. The appraisal effort was directed towards evaluating the licensee's capability and performance rather than the identification of specific items of noncompliance.

The appraisal scope and findings were summarized on March 12, 1982, with those persons indicated in Section 8.0 of this report.

DETAILS

1.0 Administration (Responsibility, Authority, Coordination, Qualification Criteria)

The responsibility for emergency planning associated with the Duke Power Company nuclear stations has been formally assigned to the Emergency Response Coordinator. This individual reports directly to, and is a staff assistant of, the Manager, Nuclear Production Division. The Emergency Response Coordinator's responsibilities include corporate emergency plans and procedures, interrelationships with Federal and State agencies, coordination of each station's emergency planning, and ensuring that exercises and drills are conducted and documented.

The responsibility for emergency planning at the McGuire Nuclear Station has been formally assigned to the Emergency Preparedness Coordinator, who reports to the Station Manager via the Licensing and Projects Engineer and the Superintendent of Technical Services. The Emergency Preparedness Coordinator's responsibilities include the station emergency plan and implementing procedures, interrelationships with local offsite agencies and organizations, coordination of exercises and drills, and coordination of emergency preparedness training for both station personnel and offsite support agencies/organizations. These responsibilities are delineated in the Emergency Preparedness Coordinator's specific position description. The aspects of emergency planning are the primary duties and responsibilities of this individual. The inspector noted that station management and staff personnel are familiar with the identity and duties and responsibilities of the Emergency Preparedness Coordinator. The inspector noted that the Emergency Preparedness Coordinator does not report directly to the Station Manager, but that the Emergency Preparedness Coordinator does interface directly with the Station Manager in the performance of his duties and responsibilities and does have the full support of the Station Manager.

Discussions with licensee representatives indicated that adequate coordination and cooperation exist between the corporate staff and station staff in the area of emergency planning and that emergency planning receives adequate visibility and management support at both the corporate and station levels. Discussions with individuals of various offsite agencies/organizations indicated that adequate coordination exists with these groups (see Section 6.0).

Both the Emergency Response Coordinator and the Emergency Preparedness Coordinator have been formally selected and designated to provide expertise in various disciplines that the licensee considers important in emergency planning.

The auditor noted that a specific position description existed for the Emergency Preparedness Coordinator and for the Emergency Response Coordinator. The existing position description identified the responsibilities of the position and the criteria for selection.

Discussions with the Emergency Response Coordinator and the Emergency Preparedness Coordinator indicated that the individuals possessed an understanding of the principles involved in developing plans and procedures and had experience in emergency planning. Discussions with licensee management indicated that these

individuals were selected for their positions according to specific criteria established by management.

Based on the above findings, this area of the licensee's program appears to be adequate.

2.0 Emergency Organization

2.1 Onsite Organization

Both an initial onshift and an augmented emergency response organization have been established and are discussed in Section B of the Station Emergency Plan. Figure B-1 of the plan identifies, by position title or area of expertise, the onshift and augmented personnel responsible for the major functional areas of emergency response. Station Directive 3.8.2, Station Emergency Organization, describes the emergency response organization in detail, identifies organizational divisions and the respective responsibilities. The management structure for the functional areas of emergency response is well defined for the various phases of emergency activation, as are lines of authority and the responsibility for decisions during the various phases of activation (i.e., initially before activation of TSC, after activation of TSC and before activation of CMC, and after activation of CMC).

Line of succession (alternates) for the Emergency Coordinator, and other management positions in the emergency organization, is clearly detailed. The specified duties in the emergency organization are quite similar to the normal duties of the assigned individuals.

Discussions with licensee representatives indicated that all aspects of the emergency response organization are understood.

Based on the above findings, this area of the licensee's program appears to be adequate and closes IFI Open Item 80-41-05.

2.2 Augmentation of Onsite Emergency Organization

The onsite (minimum) emergency organization is described, emergency assignments have been made, and the relationship between the emergency organization and the normal staff complement are described. Positions and/or titles and qualifications of shift and plant personnel both onsite and offsite who are assigned major emergency functional duties are listed. Minimum shift manning and shift augmentation are in the Plan, and guidance for timely shift augmentation is provided.

The minimum on-shift staffing levels discussed in the Plan appear to meet the objectives of Table B-1 of NUREG-0654. Duke Power Company letter of 3 April 81 describes the capability to augment the minimum on-shift staff after declaration of an emergency. This capability appears to meet the design objectives of Table B-1 and is prioritized to provide capability within 30 to 45 minutes and 60 to 75 minutes.

The following minimum on-shift expertise will be maintained 24 hours per day: one Shift Supervisor (SRO), one Operating Supervisor (SRO), two Unit Reactor Operators, two Equipment Operators, two Assistant Equipment Operators, one

Radwaste Operator, one Chemistry Tech., and one Shift Technical Advisor. This makes a total of 11 persons on shift capable of performing all necessary major functions called for in Table B-1. A person on shift will be qualified to conduct in-plant radiation surveys. This is maintained 24 hours per day.

Within 30 to 45 minutes, depending on road and weather conditions, a minimum of 11 additional personnel will be available for communications, in-plant protective actions, radiological accident assessment and operational support, and plant system engineering and repair actions. Within 60 to 75 minutes, 14 additional persons will be available to augment the above-mentioned functional area. Table B-1 calls for 15 additional personnel at 60 minutes, but since the plant has one extra individual initially on shift, only 14 augmentees will be required.

The licensee has committed to an extensive Duty Engineer system to strengthen their existing augmentation capability. Further, drills and exercises will be used as a test of the system to ensure the design objective of Table B-1 can be achieved.

The on-shift organization is supported by the Crisis Management Staff at the Crisis Management Center (CMC) (EOF) headed by the Recovery Manager (a senior V.P. in charge of Steam Production). This staff includes the Crisis News Director and Staff of 10, the Administration and Logistics Manager and staff of 8, Scheduling/Planning Manager and staff of 3, Design and Construction Support Manager and staff of 9, Health Physics/Radwaste Manager and staff of 4, Technical Support Manager and staff of 9, and Offsite Radiological Coordinator and staff of 6. Through this staff the Recovery Manager can use the resources of Duke Power Company to assist in controlling the emergency and in effecting recovery.

Inspector Follow-Up Item 50-369/81-09-01 is closed.

Based on the above findings, this portion of the licensee's program appears to be adequate; however, the following is recommended for improvement:

- Revise Figure B-1, Minimum Staffing Requirements (one Unit operation) to incorporate the details of Duke's April 3, 1981 letter (50-369/82-06-01).

3.0 Emergency Plan Training/Retraining

3.1 Program Established

The Emergency Training Program was reviewed with respect to the requirements of 10 CFR 50.47(b)(15) and (16), 10 CFR 50, Appendix E, Paragraph IV.F, and criteria in NUREG-0654, Section II.O.

Duke Power Company training is designed for use in two parts, Company personnel training and non-company personnel training. The Company personnel training program is then broken down into corporate personnel training and specific plant personnel training. Section O of both the Corporate Emergency Plan and of the McGuire Nuclear Station (MNS) Emergency Plan deals with the overall training program.

General training for each MNS employee involves an 8-hour course with 3 hours of the time dedicated to emergency training. Retraining of all general employees is

done on an annual basis with the entire 8-hour course repeated. If any employee feels adequately prepared, a bypass training session and exam can be administered which only requires 3 hours retraining time. If the employee fails to score a passing grade on the bypass exam, the full 8-hour retraining course and exam must then be repeated.

Specific training for separate assignments appears to lack organization. Each specific area, such as Chemistry or Health Physics, receives special training, but this training is not controlled through or by the training supervisor. Records of documentation on who is trained and in what specific areas are maintained as well as the frequency of training; however, those training courses that are not controlled through the plant training center appear to lack such definition. Training documentation includes the course participants' names, date of training, course title, instructor, and department. Lesson plans, scope, and objective are included in some training files; however, these training tools should be developed for all areas of instruction .

Inspector Follow-Up Item 50-369/80-26-10 was discussed with the Emergency Preparedness Coordinator. The formal training documents for law enforcement personnel and the attendee listing of the last presentation was reviewed and found adequate. This closes Open Item 80-26-10.

Provisions exist to train members of the emergency organization in changes to procedures and equipment which occur in the period between training sessions.

Licensee augmentation personnel are trained in emergency procedures if they are to enter the protected or vital areas; however, no in-depth emergency training is provided if access is only to the controlled areas.

The McGuire environmental monitoring teams have a training course which includes sampling and analysis under field conditions and are capable of making rough calculations when required.

There appears to be no specific training directed toward rescue operations or toward decontamination procedures since these areas are either lacking or absent from the plan and are still under development at this time.

Part-time employees that are not issued a McGuire Security Badge do not receive any training in emergency assembly or evacuation procedures. Emergency training should be given to all McGuire employees regardless of employment status or job location such that if the plant goes into an emergency phase all onsite employees know how to respond.

Based on the above findings, this portion of the licensee's program appears to be adequate; however, the following should be considered for improvement:

- Lesson plans and objectives should be developed for all areas of emergency response training to be controlled by the training supervisor (50-369/82-06-02).

- A training program should be developed for rescue team operations (50-369/82-06-03).

- A training program should be developed for all decontamination procedures (50-369/82-06-04).

- Emergency training should be administered to all employees regardless of employment status or job location (50-369/82-06-05).

- Training should be provided for the Offsite Monitoring Teams to ensure they have the capability to make the necessary measurements and calculations (50-369/82-06-06).

3.2 Program Implementation

Training records indicate that all required training has been completed with the exception of part-time employees not issued a McGuire Security Badge (see Section 3.1). Through numerous discussions and interviews with plant employees it appeared that training had actually occurred as recorded and the course content was consistent with lesson plans and objectives where such programs existed (see Section 3.1). Plant personnel demonstrated an understanding of the training course content as related to their duties.

Review of records and drills combined with interviews with plant personnel and instructors showed that weaknesses identified in drills and exercises were followed with modified training programs.

Based on the above findings, this portion of the licensee's program appears to be adequate.

4.0 Emergency Facilities and Equipment

4.1 Emergency Facilities

4.1.1 Assessment Facilities

4.1.1.1 Control Room (CR)

The control room is located in the Service Building at elevation 767. Units 1 and 2 are mirror images in a single control room. A copy of the McGuire Nuclear Station Emergency Plan and the McGuire Nuclear Station Emergency Implementing Procedures along with emergency, normal, and abnormal operating procedures are available in the control room.

Communications between the McGuire control room, Technical Support Center (TSC), Crisis Management Center (CMC), and county and State EOCs is provided by dedicated telephone capability. An emergency radio link is the backup. This emergency radio also provides for communications between the control room or TSC and CMC to the radiological monitoring teams in the field.

Communications between the control room/TSC/CMC to the NRC Operations Center is by the Emergency Notification System (ENS), Bell Telephone, or HP Network (HPN).

Common monitor readouts such as area and process radiation monitors and meteorological information such as wind speed, temperature, and direction are readily available.

There are emergency supplies and respiratory protection equipment available in the control room for the operations personnel. At least 10 self-contained breathing apparatus (SCBA) are available in the CR. Five additional SCBA are dedicated for use in case of fire. Refilling capability for small 30-minute tanks exists for a rate estimated at 20 tanks per hour.

Alternate TSC offices #930 and #931 are available in the control room for about 12 persons. The control room has a dedicated ventilation system that is purified by HEPA and charcoal filters. A recycle capability exists which also provides purification when in operation.

Based on the above findings, this portion of the licensee's program appears to be adequate.

4.1.1.2 Technical Support Center (TSC)

The TSC is located near the control room, on Elevation 767, in the Service Building in rooms 911, 912, 913, and 914. The TSC is well within 2 minutes' walking distance from the control room. Habitability during postulated radiological accidents is the same as the control room.

Space for up to 25 persons plus instrumentation displays is provided. The TSC staff is defined in Station Directive 3.8.2, "Station Emergency Organization," and would consist of the Station Manager, Superintendents, and Section Heads from Health Physics, Chemistry, Performance, Projects and Licensing, Operating Engineers, etc. The individual ventilation system is similar to the control room and contains HEPA and charcoal filters for air purification.

Communications between the TSC, control room, CMC, and the NRC is by the Emergency Notification System (ENS), Health Physics Network (HPN), and the Bell Telephone lines. In the TSC, at least two Bell commercial lines and two plant lines as well as the ENS and the HPN are available for the NRC. A dedicated ring-down telephone system that connects the county warning points and the State EOCs within the 10-mile EPZ is available. The backup for this ring-down system is a radio system which also serves as the primary communications link with the monitoring teams in the field.

There is ready access to as-built plant drawings such as general arrangements, flow diagrams, instrument and electrical drawings, as well as Emergency Plans and Implementing Procedures, an FSAR, Technical Specifications, county emergency plans (5), and fire plan. Other items in the TSC include Sector Maps, status boards, radiation level and dose projection board, and a map of the sirens for the Prompt Notification System.

Based on the above findings, this portion of the licensee's program appears to be adequate.

4.1.1.3 Operations Support Center (OSC)

The OSC is located in the Service Building, Elevation 767 in the Operators' Kitchen, Room 909. The staff shall consist of personnel from Operations, Maintenance, I&E, Health Physics, and others as necessary. The center will be used to brief and prepare the staff for work assignments in support of the

emergency condition. The OSC has a capacity for about 20 persons. Initial supplies include provisions for respiratory protection, protective clothing, portable lighting, portable radiation monitoring equipment, a camera, and an emergency radio transmitter-receiver. The OSC has a plant telephone, a plant page, and an intercom that can be activated by the control room.

Based on the above findings, this portion of the licensee's program appears to be adequate.

4.1.1.4 Emergency Operations Facility (EOF-Interim)

In the McGuire Nuclear Station Emergency Plan, the EOF is known as the Crisis Management Center (CMC). The CMC is located at the nearsite Training and Technology Center about 5/8 mile from the station, with a backup EOF at the Charlotte General Office about 16 miles from the station. The CMC is utilized for direction and control of all emergency and recovery activities, with emphasis on the coordination of offsite activities such as dispatching mobile emergency monitoring teams, communications with local, State, and Federal agencies, and the coordination of corporate and other outside support. Decision makers are at the Training and Technology Center (TTC), and technical support personnel are at the General Office. Supplies including provisions for respiratory protection, protective clothing, portable lighting, and portable radiation monitoring equipment are available.

Provisions for communications between the CMC, the county and State EOCs, and the control room and the TSC is provided by dedicated telephone capability. An emergency radio link is the backup. This radio also provides communications between the CSC, the control room, and the TSC to the radiological monitoring team in the field. Besides the ENS and HPN dedicated lines, the CMC has for the NRC a commercial telephone line and a plant phone which operates through the TTC switchboard. At least two additional commercial lines should be available for NRC use (NUREG-0696).

The CMC is large enough to house 100 persons easily. The Crisis News Center is also located in the Training and Technology Center.

An alternate CMC is located in the Duke Power Co. General Office, Wachovia Center, Charlotte, N.C., less than 20 miles from the plant. This review of the CMC is on the basis of an interim facility.

Based on the above findings, this portion of the licensee's program appears to be adequate; however, the following should be considered for improvement:

- At least two additional commercial telephone lines should be made available for the NRC (50-369/82-06-07).

4.1.1.5 Post-Accident Coolant Sampling and Analysis

4.1.1.6 Post-Accident Containment Air Sampling and Analysis

The post-accident reactor coolant and containment air sampling and analysis program was reviewed. The facilities and equipment available for post-accident

sampling and analysis were evaluated against 10 CFR 50.47(b)(8), 10 CFR 50, Appendix E, Paragraph IV.E, and selected criteria in NUREG-0654, Section II.I.

The inspector interviewed Health Physics Coordinators, Chemistry Coordinators, and associated supervisors concerning post-accident reactor coolant and containment sampling and analysis and related facilities and equipment. The licensee designed and installed a permanent post-accident sampling system capable of remotely collecting both highly radioactive coolant and containment samples. The system appeared to be in accordance with NUREG-0737, Item II.B.3 guidelines. This closes open item 50-369/81-09-10. Plant testing, calibration, and required modifications on the installed sampling equipment were continued during the March 1982 outage; however, the licensee indicated that in the event of an incident, required samples could be collected and analyzed.

The location of the post-accident sampling areas appeared to be accessible during accident conditions and were monitored for high levels of radiation with appropriate remote readouts in the control room. The capability to remotely dilute and separate high-level samples and the minimum amount of time required to collect the samples were such that radiation doses received by the user should not be excessive. Shielding was available and proper handling of liquid sample containers and gas syringes were used in obtaining the samples and transporting them to the hot laboratory facility.

Post-accident laboratory equipment such as shielded hoods, micro pipettes, syringes, sample bottles, instruments and detectors for analysis, etc., were in place. If the sample analysis facility is not accessible during accident conditions, there are provisions to use designated alternate facilities which are readily available.

The sample techniques for the post-accident samples provided for representative samples. Each sample collection and analysis could be performed within 3 hours.

Based on the above findings, this portion of the licensee's program appears to be adequate; however, the NRC will review and evaluate the post-accident sampling system when it is fully operational (50-369/82-06-08).

4.1.1.7 Post-Accident Gas and Particulate Effluent Sampling and Analysis

The post-accident gas and particulate sampling and analysis was reviewed in accordance with the NRC requirements and criteria specified in Sections 4.1.1.5 and 4.1.1.6 above. Discussions were conducted with a Health Physics Coordinator and a Health Physics Supervisor.

The station unit vent provided a release point for measuring radioactive gas and particulate effluent to the atmosphere from station systems having a potential of releasing radioactive materials during a post-accident condition.

The particulate and gaseous effluent sampling system used by the licensee consisted of a 3-channel unit capable of monitoring unit vent particulate, iodine and noble gases with remote readout and recording instruments in the control room. An acceptable isokinetic sample line was in place which connected the unit vent and sampling equipment. A high-high range detector (10^8 R/hr) was recently installed in the unit vent stack. This system appeared to be in accordance with

NUREG-0737, Item II.F.1. This closes open item 50-369/81-09-08. Consequently, the sampling system was capable of monitoring low-level and post-accident type releases.

In the event of a post-accident release, high radiation levels would be monitored and controlled by Health Physics, shielded containers were available for transporting high-level radioactive samples, and required equipment was in place for sample analysis.

The licensee's sampling, collecting, and analysis techniques for handling post-accident samples indicated that sampling results could be completed within 3 hours.

Based on the above findings, this portion of the licensee's program appears to be adequate.

4.1.1.8 Post-Accident Liquid Effluent Sampling and Analysis

The post-accident liquid effluent sampling and analysis was reviewed in accordance with NRC requirements and criteria specified in Sections 4.1.1.5 and 4.1.1.6 above. The inspector discussed post-accident liquid effluent sampling and analysis capability with Health Physics and Chemistry Coordinators and Supervisors.

Continuous liquid process radiation detectors were located on various station liquid systems which had a potential for abnormal radiation liquid releases. Unusual releases of high activity or loss of flow from the monitored system was annunciated in the control room. Certain system signals activated automatic interlocks or operator action was initiated to isolate systems before significant activity was released. Storage tanks and waste holdup ponds were available and could be sampled and analyzed prior to release.

It appeared that post-accident sampling locations were available during post-accident conditions and samples could be collected and analyzed by using the radioactive precautions listed in Section 4.1.1.7 above.

The sample techniques for the post-accident samples provided for representative samples. It also appeared that collection and analysis could be performed within 3 hours.

Based on the above findings, this portion of the licensee's program appears to be adequate.

4.1.1.9 Offsite Laboratory Facilities

Review of this area consisted of discussions with the licensee's personnel regarding laboratory facilities for offsite monitoring and analysis, and a visit to the nearby laboratories. The laboratories are in use and the instrumentation for these facilities are maintained, calibrated, routinely checked, and repaired. The offsite facilities are:

1. Duke Power Environmental Laboratory located about 5/8 of a mile from the McGuire Station.

2. Duke Power Training and Technology Center, also located about 5/8 of a mile from the McGuire Station.

3. Oconee Nuclear Power Station located about 160 miles away which would provide laboratory support within a time period of 1 to 4 hours.

These facilities are also identified in the Emergency Plan, Section C-3.

Based on the above findings, this portion of the licensee's program appears to be adequate.

4.1.2 Protective Facilities

4.1.2.1 Assembly/Reassembly Areas

This area was reviewed with respect to the requirements of 10 CFR 50.47(b)(10) and specific criteria in NUREG-0654, Section II.J.

The assembly/reassembly areas are discussed in the EP, Sections J and K, and Station Directive 3.8.1. There appears to be different assembly areas designated, depending on the type of Evacuations announced by the alarms and on the plant page system. Specific assembly areas are indicated for the Site Assembly alarm. All personnel are to report to their supervisors at the predesignated assembly points within and outside the protected area. At these onsite primary assembly areas, accountability of personnel is accomplished. When the Site Evacuation alarm is initiated, all unnecessary personnel are to proceed to the Training Center and/or Cowans Ford Dam, whichever is designated on the plant page system. These secondary areas are offsite. Visitors are to stay with their escort and report to the Personnel Access Portal (PAP) or Training Room, whichever is appropriate. There are Recovery Kits at the Training Center and Cowans Ford Dam and Personnel Survey Kits at the PAP and Cowans Ford Dam; however, no Personnel Survey Kits are at the Training Center. There appears to be no Medical Decontamination Kits at the offsite evacuation assembly areas. There appears to be adequate space to accommodate the number of persons expected.

The Station Directive did not appear to provide policy on the management, control, and organization of the Site Evacuation Assembly Areas at the Training Center and Cowans Ford Dam.

Based on the above findings, this portion of the licensee's program appears to be adequate; however, the following should be considered for improvement:

- Provide policy for the management and control of evacuated personnel and equipment at the Site Evacuation Assembly Areas (50-369/82-06-09).

- Provide Personnel Survey and Decontamination Kits at the Site Evacuation Assembly Areas (50-369/82-06-10).

4.1.2.2 Medical Treatment Facilities

Section L of the Emergency Plan describes the medical treatment area. The onsite medical facilities include two first aid rooms. One first aid room was located in the Administration Building near the entryway to the Service Building and was

used for injuries not involving radioactive contamination. A nurse was on duty at this facility during normal day shift duty hours. The room was equipped with a treatment table-gurney, treatment chair, and other medical equipment and supplies. During back shifts and on weekends, first aid was provided by trained station personnel using station first aid kits.

A second first aid room was located in the Radiation Control Area (RCA) near the Health Physics operation area and RCA change room. This facility was used for treatment of contaminated injuries. Shower facilities for decontamination with a drain to a holdup tank was available in the change room area. The room was normally unlocked and unoccupied. A normally locked and alarmed door opened directly to the outside for easy access to an ambulance. Equipment located in the room included a frisker for contamination surveys, a regular plant telephone which could be used for onsite or offsite calls plus plant paging, two beds, a basket stretcher, a backboard, miscellaneous medical supplies, and the Medical Decontamination Kit specified in the Plan. Additional stretchers and first aid kits were available at various locations in the Plant. Section 18.1 of the Health Physics manual describes the actions to be taken in the event of personnel injury involving radiation or radioactive material and referenced procedure AP/0/A/5500/27, Care and Transportation of Contaminated Injured Individual(s) from Onsite to Offsite Medical Facility.

A bioassay facility was available for measurement and evaluation of radioactive materials which may have entered the body through inhalation, ingestion, or through the skin from wounds. A whole body counter and a thyroid counter were located in the Administration Building and liquid scintillation counting equipment for tritium analysis was available in the Health Physics Counting Room.

Potassium iodide supplies were stocked at two locations in the plant and at the assembly areas at Cowans Ford Dam and the Training and Technology Center. Formal guidance for issue of potassium iodide was not available.

Based on the above findings, this area of the licensee's program appears to be adequate.

4.1.2.3 Decontamination Facilities

Section L of the Emergency Plan and Section 11.3 of the Health Physics Manual described the decontamination facilities available Onsite. Limited procedures for decontamination of personnel and vehicles during evacuation were provided in the same documentation. Decontamination facilities onsite were located in the contaminated side of the change room area on the 760' level of the Auxiliary Building. The first aid room for contaminated injured was adjacent and also contained a shower for decontamination.

One Medical Decontamination Kit was available onsite at the first aid room in the RCA. Procedure AP/0/A/5500/27, Care and Transportation of Contaminated Injured Individual(s) From Onsite to Offsite Medical Facility, specified that this kit was to accompany the ambulance with contaminated injured individuals to the hospital. Personnel decontamination procedures were not available in the kit.

Personnel decontamination supplies at the contaminated change room were limited to soap, water, and brushes. Discussions with HP supervision at the change room

indicated that he was unaware of other personnel decontamination agents available.

Facilities for disposal of solid and liquid waste and for replacement clothing were available at this location.

Personnel decontamination kits, waste disposal provisions, and replacement clothing were not available at the Personnel Access Portal or at the assembly areas.

Based on the above findings, this portion of the licensee's program appears to be adequate; however, the following items should be considered for improvement:

- Provisions should be made for personnel decontamination kits, solid and liquid waste disposal, and for replacement clothing at the PAP and the designated assembly areas (50-369/82-06-11).

- Personnel decontamination supplies identified in the decontamination procedures should be provided at the Auxiliary Building change room (50-369/82-06-12).

- Personnel decontamination procedures should be included in the decontamination kits (50-369/82-06-13).

4.1.3 Expanded Support Facilities

The parking lot of the Training and Technology Center (TTC) will become the temporary quarters of the non-licensee augmentation personnel. Twenty-five or thirty trailers can be installed with facilities as needed for these personnel.

In discussions with licensee personnel, the TTC (which houses the Crisis Management Center) and the Environmental Laboratory, both of Duke Power, could also be rearranged to provide facilities for corporate, contractor, and non-licensee augmentation personnel.

Based on the above findings, this portion of the licensee's program appears to be adequate.

4.1.4 News Center

Adequate provision for a news media center has been made. Preparation has been made for adequate telephone service, electric supply to carry added TV load, copying, PA systems, audio-visual equipment (including screen, projectors, etc.), and security (such as media badging, crowd control, etc.).

The center is large enough to accommodate the expected number of media representatives. Location of the media center at the training center at the site could result in its being too close to the plant during certain postulated radiological events. However, the licensee has an adequate plan to relocate the media center in its corporate offices at Charlotte, approximately 20 miles away. This appears to be acceptable because of the availability of major interstate highway connections which allow rapid transport between the sites.

Based on the above findings, this portion of the licensee's program appears to be adequate.

4.2 Emergency Equipment

4.2.1 Assessment Equipment

4.2.1.1 Emergency Kits and Emergency Survey Instrumentation

Section H of the Emergency Plan discussed emergency kits and the instrumentation for emergency use to be provided in them. Prepositioned supplies and equipment were located at specified points for use in emergencies.

The Health Physics organization had the responsibility for maintaining emergency kits and supplies. Procedure PT/0/A/4600/11, Function Check of Emergency Vehicle and Equipment, provided identification of kit locations and specific inventory checklists for each kit.

The inspector examined 10 of the 18 emergency kits provided for in the plan. Two kits were found with miscellaneous items missing; one kit was found to have one of the two radiation detection instruments with the switch on and battery depleted, one air sampler was found to be overdue for recalibration and the four self-reading dosimeters in one kit were several months past due for recalibration. Five of the kits, the TSC kit, and the four environmental survey kits, were listed as containing one SAM-2 each. However, none of these instruments were with the kits. Four SAM-2's were in the calibrations lab and one was in the HP lab. Discussions with licensee personnel indicated that five SAM-2 instruments were the total supply onsite, thus no spares were available for replacement during recalibration or repair.

Instrumentation for personnel surveys in the personnel survey kits were the E520 with the HP270 probe. The ability of this detector to detect the stated personnel release limits was questionable. In addition, the environmental survey kits did not contain instruments for personnel survey.

The instruments, sampling systems, and operational procedures were reviewed to ensure the capability of measuring the required minimum detectable activities. The SAM-2 instrument with RD-22 detector was used to determine iodine concentrations and Xetex's, E520's or Victoreen 497's were used for dose rate measurements.

Emergency kits were located at appropriate locations except that no personnel survey kit was provided at the Training & Technology Center, one of the evacuation assembly areas.

Routine monthly inventory of the emergency kits was performed in accordance with procedure PT/0/A/4600/11. Instrumentation and dosimeters were calibrated on prescribed frequencies and adequate procedures for calibration of instruments and air samplers were available.

Based on the above findings, this portion of the licensee's program appears to be adequate; however, the following should be considered for improvement:

- Review the emergency kit inventory and maintenance system and revise to assure that contents of kits are maintained as needed (50-369/82-06-14).

- Provide a system to assure that instrumentation in the kits are functional when needed and that calibration is current (50-369/82-06-15).

- Provide personnel survey instrumentation in the environmental survey kits to permit team members to evaluate their own contamination status (50-369/82-06-16).

- Provide personnel survey instrumentation in emergency kits capable of detecting the stated plant personnel contamination release limits (50-369/82-06-17).

- Review the supply of iodine sample evaluation instrumentation to assure that adequate iodine monitoring capability is maintained when recalibration and repair is needed (50-369/82-01-18).

4.2.1.2 Area and Process Radiation Monitors

Area and Process Radiation Process Monitors are discussed in Sections H and I of the Emergency Plan. All area and process radiation monitor readouts specified in the accident accessment procedures were available in the control room including the high range containment monitors.

Those monitors required by Technical Specifications were calibrated on an 18-month frequency and others on a 12-month frequency. Calibration was performed using electronic pulsing across their respective ranges and radiation sources for those ranges for which sources were available. For the process gas, particulate, and iodine monitors transfer sources from the vendor were used. Routine functional checks using procedure PT/1/A/4600/05 and monthly response checks using procedure IP/0/B/3005/05 were done.

Twenty-four of the area radiation monitors had a range of 10^{-1} to 10^{4} mR/hr, two monitors on the reactor coolant filters ranged to 10^{4} R/hr and the high range containment monitors to 10^{8} R/hr.

The process monitors were scaled in counts per minute and ranged to 10^{7} cpm on low range to 10^{8} cpm on high range.

Backup methods for quantifying release levels if effluent monitors went offscale or were inoperative were established in procedure HP/0/B/1009/06.

Readouts were provided at the back of the control room area so that each control room had ready access to those readouts applicable to its unit and those of the adjacent unit.

Based on the above findings, this portion of the licensee's program appears to be adequate.

4.2.1.3 Non-Radiation Process Monitors

The non-radiation process monitors described in the Emergency Plan as being necessary for emergency detection, classification, and assessment, such as reactor coolant system pressure and temperature, liquid levels, containment pressure and temperature, flow rates, fire detection system, seismic instrumentation, and meteorology instrumentation had readouts located in the control room. All readouts were readily observable from the normal operator work area except the meteorology instrumentation readout which was on a panel behind the normal control room panel. The meteorology instrument readout was in the control room area and easily accessible for direct observation and printed data could be readily called up on computer printout in the control room.

Based on the above findings, this portion of the licensee's program appears to be adequate.

4.2.1.4 Meteorological Instrumentation

Pursuant to the criteria in Regulatory Guides 1.23 and 1.97 and NUREGs -0654, -0696, -0737, the inspector reviewed the current meteorological measurements program. A description of the current program is contained in Section 2.3.3 of the McGuire FSAR.

Meteorological measurements from two towers provide the basic parameters (i.e., wind speed, wind direction, and atmospheric stability) required by the emergency plan and procedures. Wind speed and wind direction are measured atop a 10m mast, and wind speed and wind direction are measured atop a 40m tower. Atmospheric stability is defined by the measurement of vertical temperature gradient between the 10m and 40m levels. Strip charts on standard recorders are used to display the meteorological data in the control room behind the main instrument panels. Information from the 40m level is displayed on recorders accessible to most people only with the use of a ladder or stool. Meteorological information is available directly in the Technical Support Center, and, via floppy disk transfer, available at the CMC.

Calibration of the meteorological measurements system is performed quarterly by personnel from the licensee's office in Charlotte, N.C. Maintenance and emergency replacement of sensors and recorders is also performed by personnel from the Charlotte office. The licensee is considering using onsite personnel for maintenance of the system at some future date. Repair of a damaged component is normally accomplished within 24 to 48 hours of notification. Routine operability checks and replacement of strip charts are performed weekly by corporate staff. Control room operators should check the strip charts daily as an operability check of the system. The weekly strip charts are sent to the Charlotte office where a meteorologist performs a check of the reasonableness of the information. All instruments (sensors and strip charts) were operable and calibrated at the time of the inspection. The calibration and maintenance procedures and operability checks appear adequate; however, the licensee should document the written procedures for system (i.e., sensors, electronics, and recorders) calibration and maintenance and keep a complete file at the plant.

Information about severe weather in the area is apparently monitored by the security staff via NOAA weather radio. Accessibility of this information by Control Room personnel is questionable. The licensee is planning to install the NOAA weather wire to receive information about severe weather information in the

area. The licensee should provide the schedule for installation of this system and indicate who will have access to the information.

If the primary meteorological system is not operable, the licensee obtains meteorological information from the National Weather Service at Douglas Airport, Charlotte, N.C. The use of backup information is somewhat confusing in the emergency procedures, and a clear hierarchy of preference of meteorological information should be established, i.e., lower level (10m) wind speed and direction, followed by upper level (40m) wind speed and direction, followed by use of Douglas Airport information. Procedures for checking communications with Douglas Airport are confusing. Communications should be checked at a frequency not less than monthly, and should alternate by shift. Communication checks should include the time of the check as well as a comparison with concurrent onsite data.

Based on the above findings, this portion of the licensee's program appears to be adequate; however, the following should be considered for improvement:

- Daily operability checks of meteorological information equipment should be done by control room operators (50-369/82-06-19).

- Documentation of written procedures for system calibration and maintenance of a complete file of calibration results should be kept onsite (50-369/82-06-20).

- Expeditious installation of a system to make severe weather information available to control room operators. Clarification of procedures to have control room personnel aware of severe weather conditions in the interim (50-369/82-06-21).

- Clarification of the use of backup meteorological information, and clarification of the routine communications checks for accessing this information (50-369/82-06-22).

- Clarification of the accessibility of upper level meteorological data to control room personnel given the unusual placement of the strip chart recorders 7 to 8 feet above the floor (50-369/82-06-23).

4.2.2 Protective Equipment

4.2.2.1 Respiratory Protection

Self-contained breathing apparatus (SCBA) devices are available in the Control Room, Chemistry Laboratory, Upper Containment, and Lower Containment. In addition, SCBA units kept at the Respiratory Maintenance Area are for Health Physics use, reentry, and for purposes of repair and maintenance of the units. Wall lockers are currently being installed to store five SCBA units in the TSC and installation should be completed by the end of March.

The licensee has approximately three SCBA air bottles available for each SCBA unit and has the capability to refill empty bottles onsite by the use of an air compressor in the truck access corridor. If this area becomes uninhabitable,

there are portable compressed air tanks available which will hold 300 ft^3 and are pressurized at 3000 psi.

Based on the above findings, this portion of the licensee's program appears to be adequate.

4.2.2.2 Protective Clothing

There are adequate bulk stores of protective clothing stored in a warehouse complex located within the protected area of the plant site. Other smaller quantities of clothing are located in the Health Physics office area, the Emergency Kits, and in the numerous emergency supply lockers located throughout the plant.

Based on the above findings, this portion of the licensee's program appears to be adequate.

4.2.3 Communications

This area was reviewed with respect to the requirements of 10 CFR 50.47(b)(6), 10 CFR 50, Appendix E, Paragraph IV.E, and specific criteria in NUREG-0654, Section II.F. The emergency communications equipment is described in the EP Section E, F, and H, PT/0/A/4600/06 and 11, and the Crisis Management Plan.

The licensee has the following separate communication systems available for onsite and offsite communication.

- Commercial Bell telephone
- Plant Alarms
- Plant Public Address System
- Corporate Microwave System
- Plant Telephone System
- Ring-Down Telephone System
- Plant Intercom
- Dispatch Lines
- Pager System
- Radio Transmission/Receiver Networks

The licensee has established in the EP and Crisis Management Plan, administrative and physical means, and the time required for notifying and providing prompt instructions to the public within the plume exposure pathway Emergency Planning Zone. The Emergency Plan Implementation Procedure Telephone List includes organizational titles and alternates for both ends of the communication links. There are reliable primary and backup means of communication for licensees, local and State response organizations. There is 24-hour-per-day capability to notify the NRC, State, and local authorities. There is a telephone link and alternate for these agencies. There are provisions for communications with backup between this facility and the near-site EOF (CMC), State and local emergency operations centers, and radiological monitoring teams; also provisions for alerting or activating emergency personnel in each response organization. The communications with State and local governments within the plume exposure pathway Emergency Planning Zone are tested monthly. Communications with Federal emergency response organizations and States within the ingestion pathway are tested quarterly.

Communications between this facility, state and local emergency operations centers, and field assessment teams are tested annually. Communications drills also include the aspect of understanding the content of messages. The aural and visual alarms in high-noise areas were not appraised because the facility was not in operation at the time of the visit.

The are redundant power sources available for communications systems (standard telephone, intercoms, plant alarms, PA systems, corporate microwave system, and radio network).

The installation of indicator lights on the emergency telephones in the Control Room and the TSC has been completed. This closes Inspector Followup Item 80-41-01. Based on the above findings, this portion of the licensee's program appears to be adequate.

4.2.4 Damage Control/Corrective Action and Maintenance Equipment and Supplies

Specific needs for onsite damage control, corrective action, and maintenance equipment and supplies were not identified in the Emergency Plan but are referenced in the Crisis Management Plan (corporate) in Sections B.7.1 and B.7.7 in relation to the duties and responsibilities of the technical support manager who functions directly under the Recovery Manager.

The damage control/corrective action and maintenance requirements are divided into two parts, which are manpower requirements and materials requirements.

The initial manpower needs will be supplied from the Systems Maintenance Support, a corporate pool of approximately 600 people. If additional manpower is required, or if more diverse expertise is necessary, the Company's construction personnel pool, about 2000 persons, is available. If there are further personnel requirements, the General Engineering Force will be utilized, and then the Design Engineering resources. If manpower needs still exist, the McGuire Plant can draw from other Duke nuclear plants, from the vendor, from the Nuclear Operations Maintenance Information Service (NOMIS) and from Duke Power non-nuclear plants.

Materials for emergency maintenance will be initially supplied from the plant warehouse with designated Unit 1 supplies. If additional materials are required, the equipment stored for Unit 2 is available. Additional supplies can be brought in from the Catawba construction site. If there are further materials requirements, the services of the plant vendor and NOMIS will be utilized.

Based on the above findings, this portion of the licensee's program appears to be adequate.

4 2.5 Reserve Emergency Supplies and Equipment

In the event of an emergency the McGuire Nuclear Station relies upon the normal inventory of Unit 1 supplies and equipment to augment emergency operations. These supplies are readily available in the warehouse and in various predesignated locations throughout the plant. If additional supplies are required they can be requisitioned from the McGuire Unit 2 resources or from the

nearby Catawba plant, both of which are currently under construction. One of the major emergency equipment suppliers, Defense Apparel, is located in Charlotte, N.C. and could be quickly called upon to provide emergency supplies.

The inspector discussed the subject with the Emergency Preparedness Coordinator, the Maintenance Supervisor and warehouse personnel, and toured representative areas of the warehouse and plant. A computerized inventory system is utilized to account for supplies and to support emergency operations.

Based on the above findings, this portion of the licensee's program appears to be adequate.

4.2.6 Transportation

The licensee has four onsite vehicles available and designated for use by emergency response personnel in support of survey team transportation. Both Chemistry and Health Physics are assigned separate four-wheel drive Jeep wagons which, along with two other emergency vehicles, are turned over to the offsite monitoring teams in the event of an emergency. A 17-foot outboard motor boat is dedicated for emergency response to assist in taking environmental samples on Lake Norman as well as assisting in notification/evacuation of other boating personnel.

There is no company-owned ambulance for the evacuation of injured personnel. However, the plant Emergency Plan contains a letter of agreement with the North Mecklenburg Ambulance Service to supply such transportation if required. Ambulance response time ranges from 5-10 minutes to the plant site.

Keys for the emergency vehicles and boat are kept at the Personnel Access Portal. Any health physics key which is carried by all health physics personnel will open the boat house door.

The Chemistry and Health Physics vehicles are each equipped with four-wheel drive, a radio, and a front bumper winch. The standby pickup vehicle and the Health Physics vehicle are equipped with trailer hitches for towing emergency equipment.

Based on the above findings, this portion of the licensee's program appears to be adequate.

5.0 Emergency Implementing Procedures

5.1 General Content and Format

The McGuire Nuclear Station Emergency Plan Implementing Procedures contains the procedures that would govern the licensee's actions during postulated emergency events and are as indicated in the McGuire Radiological Emergency Response Planning Documents. The procedures were arranged in a format with the following general headings: (a) symptoms, (b) immediate actions, (c) subsequent actions, and (d) enclosures. The procedure for each of the four classes of emergency were organized such that all of the actions required of the Emergency Coordinator were described and guided by checklists and notes. Where applicable the user is referred to other procedures already in existence to complete detailed actions.

Except for those specific comments noted in each of the following sections, the form and content of the implementing procedures were considered adequate.

Inspector Follow-Up Item 50-369/78-24-16 was reviewed to ensure that emergency procedures have been approved by appropriate plant agencies. All the procedures reviewed had been appropriately approved as indicated on the cover sheet to each emergency procedure. This closes Open Item 78-24-16.

Based on the above findings, this portion of the licensee's program appears to be adequate.

5.2 Emergency, Alarm, and Abnormal Occurrence Procedures

The facility had Emergency Procedures (EP), Alarm, and Abnormal Procedures (AP). Operator guidance for emergency alarm annunciation was provided in the EPs and APs. A review of the selected EPs and APs showed references to the McGuire Emergency Plan Implementing Procedures (EPIPs) at appropriate locations. Each EPIP contains instructions for classifying the situation.

Based on the above findings, this portion of the licensee's program appears to be adequate.

5.3 Implementing Instructions

There are procedures for each class of emergency specified in the emergency plan and for each emergency center activated. EP/0/A/5000/05 to EP/0/A/5000/08 provides the emergency classification logic specifically needed by the Emergency Coordinator (EC). The scope of the authority and responsibility of the Emergency Coordinator and the onsite emergency organization is located in the McGuire Station Directive 3.8.2 and in the McGuire Nuclear Station Radiological Emergency Response Plan.

Each procedure describes the specification levels and planned response actions required to be considered in response to each class of emergency (e.g., staffing and activation of facilities and centers, initiation of assessment and protective action, etc.). The EALs were based on observable information readily available to the EC and others who are responsible for emergency detection, classification, and assessment.

An emergency classification and emergency action level scheme as set forth in Appendix 1, NUREG-0654 has been established. This closes Inspector Follow-Up Item 50-369/81-09-02.

Based on the above findings, this portion of the licensee's program appears to be acceptable.

5.4 Implementing Procedures

5.4.1 Notifications

Notification procedures were reviewed against the requirements of 10 CFR 50.47(b)(5), 10 CFR 50, Appendix E, Paragraph IV.D, and specific criteria in NUREG-0654, Sections II.E, F, H, and J. The plant notification system is

described in the EP, Sections E, F, H, J, P, and Q, Station Directive 3.8.1 and 3.8.2, PT/0/A/4600/11, EP/0/A/5000/05 through 08, and AP/0/A/5500/29 through 32.

The classification of an emergency is done by the Shift Supervisor according to EP/0/A/5000/05 through 08. Upon deciding which EAL applies, the Shift Supervisor advances to the appropriate implementing procedure for notification instructions. The sequence of notifications of the four emergency conditions are also in the above cited EPs. The notifications in all cases are initiated by the Shift Supervisor until relieved by the Station Manager or one of his alternates. The equipment to be used in the notification is discussed in Section 4.2.3 of this report. Planned messages, announcements, and alarms are used for the initial notifications. Telephone numbers are listed in the call sheets in EP/0/A/5000/05 through 08, Station Directives 3.8.2 and other documents. Inplant notification of emergencies are by the Station alarm system, which includes sirens located in high noise areas.

The means for providing prompt alerting and notification of response organizations and the population are provided in Station EP and the CM Plan. This meets the criteria of Appendix 3, NUREG-0654 and closes Inspection Follow-Up Item 50-369/81-09-07.

Based on the above findings, this portion of the licensee's program appears to be adequate.

5.4.2 Assessment Actions

The assessment program was described in Section I of the Emergency Plan. In the event of an accident or emergency, the station emergency organization would continuously monitor plant parameters necessary for classification of the emergency and for decisions to implement specific emergency measures. The station and area parameters could be monitored by surveillance of control room instrumentation, onsite radiological surveys, and environmental surveys.

Initial evaluation of the accident emergency was done in accordance with procedure EP/1/A/5000/01, Immediate Actions and Diagnostics. This procedure directed attention to EP/1/A/5000/02, -03, or -04 which provided initial classification of the event based upon the conditions, and further referenced procedures EP/1/A/5000/06 through EP/1/A/5000/09. These procedures directed the Emergency Coordinator to assess and respond to the emergency by dispatching onsite and offsite monitoring teams, provide meteorological and dose assessments to offsite authorities for actual releases, and to provide release and dose projections based on available plant condition information and foreseeable contingencies to offsite authorities. These procedures also referenced the specific procedures to use for the offsite dose assessment or projection.

Procedure AP/0/A/5500/28, Release of Reactor Coolant Inside Containment, provided a 4-hour dose projection using the Hi-Hi Containment Monitors, EMF 51A and 51B. Procedure HP/0/B/1009/02 provided an alternate method for determining the dose rate within the reactor building using portable instrument dose rate measurements at the Upper Personnel Hatch. Monitor or instrument readings were used to classify the release to the reactor building atmosphere as a design basis accident, a gap activity release, or a release requiring no offsite protective action. Monitor readings and meteorological data were then applied to select and

correct the appropriate Time-Distance-Dose Curves. Based upon the corrected offsite predicted dose values, protective action recommendations to be made to offsite authorities were specified. Walk-throughs with control room personnel showed that use of the Time-Distance-Dose Curves and the necessary corrections was inconsistent and difficult.

The offsite dose projection and assessment procedures provided for map overlays showing plume direction and width for various meteorology conditions and provided the basis for decisions on locations for offsite monitoring and sampling and for identification of sectors for protective actions. In addition, Station Health Physics Manual, Section 18.2, and Crisis Management Plan Implementing Procedure 5.3.14, provided for field monitoring teams, directed by the Field Monitoring Coordinator, to make radiation measurements, take and evaluate air samples for radioiodine, take smear and water samples, and to place and/or collect environmental TLDs as needed. Field measurement results were required to be transmitted to the Dose Assessment Coordinator.

Airborne radioiodine concentrations were determined inplant by drawing an air sample through an activated charcoal cartridge which was then evaluated on a GeLi counting system. Airborne radioiodine evaluation for field survey teams was accomplished by drawing an air sample through a silver zeolite cartridge and counting on a SAM-2 instrument with RD-22 detector.

Procedure HP/0/B/1009/09, Release of Radioactive Materials through Unit Vent Exceeding Technical Specifications, provided for computer or manual calculation of potential offsite dose based upon releases through the unit vent. Airborne discharge concentration was determined from unit vent airborne monitors (EMF 36, Noble Gas and EMF 37, Iodine) with sample analysis of vent gas as a backup. Other input data required was meteorological data, discharge flow rate, and time since reactor trip.

Procedure HP/0/B/1009/06, Procedure for Quantifying High Level Radioactivity Releases During Accident Conditions, was used to collect samples and take radiation measurements for estimating noble gas and radioiodine release rates if the normal effluent instrument went offscale or failed during accident conditions.

Specific reference to an hourly or more frequent update if wind direction changed greater than 15° was made in offsite dose assessment procedures. However, no provisions were noted which required trend recording or trend analysis of assessment data.

Backup meteorological data was provided from the National Weather Service (NWS) at Douglas Municipal Airport which was approximately 20 miles south of the site. The NWS would provide wind speed and direction only and predesignated dispersion conditions were assumed based upon FSAR data and time of day.

Procedures for offsite dose projections and assessments used area and process monitor data for calculations and evaluations with backup data being provided by sample analysis and portable instrument measurements. However, no provisions were incorporated in station procedures for using inplant surveys or offsite survey data for verification of dose assessment results. However, the Crisis Management Plan, Implementing Procedure 5.3.8, Offsite Radiological Coordination

Group, provided instructions to the Dose Assessment Coordinator (EOF) to use field measurements and laboratory results to confirm his dose calculations

Specific procedures for relating contamination levels, water and air, to dose rates for key isotopes have not been developed. This item was previously identified as Open Item 50-369/81-09-09.

Since the TSC personnel will be independently providing offsite dose calculations when the EOF (CMC) personnel are activated and performing dose assessments, cross-verification of results would appear desirable and readily accomplished. However, no provisions existed for this cross-checking.

The inspector reviewed the use of meteorological information in plant emergency procedures describing radiological assessment actions. The plant emergency procedures reviewed were:

1. AP/0/A/5500/28 "Release of Reactor Coolant Inside Containment" (3/13/81)

2. HP/0/B/1009/08 "Evaluation of a Reactor Coolant Leak Inside Containment" (7/21/81)

3. HP/0/B/1009/09 "Release of Radioactive Material through Unit Vent Exceeding Technical Specifications" (8/30/81)

Review of AP/0/A/5500/28

The use of this procedure is somewhat confusing because it apparently incorporates real-time meteorological conditions for the first hour and "worst case" conditions for the next 3 hours into Time-Distance-Dose Curves. This approach appears very conservative and of questionable appropriateness for emergency planning. Enclosure 4.1 should specify the level of measurement for onsite meteorological data, e.g., ΔT (10-41m); wind speed (10m or 40m); and wind direction (10m or 40m). The use of the plume evaluation nomographs appears somewhat confusing because the sector of interest (or affected areas) is only about 45° centered on the downwind sector determined from wind direction measurements. Because of uncertainties in wind direction measurements sectors of concern are usually at least 67-1/2° in width allowing 22-1/2° on either side of the assumed downwind sector. Also of concern is the criterion for reassessment of protective actions based on a 15° shift in wind direction. Wind direction is a very unsteady parameter, and a criterion of 15° wind shift could require numerous updates which may be easier accounted for by expanding the area of interest to 67-1/2° or 90°. If offsite data are used, wind direction will likely be provided in 10° increments which is not consistent with the 15° criterion for reassessment. Also, provisions are not included for periodically updating information from the National Weather Service.

Review of HP/0/B/1009/08

Enclosure 5.9 should indicate a preference for lower (10m) windspeed but allow for use of upper (40m) windspeed if the 10m is not available. Similarly, if Douglas Airport information is used, an assumed stability class (dependent on time of day and wind speed) must be identified. Similar contingencies need to be included in Enclosure 5.10. The plume evaluation nomographs (Enclosure 5.7) do

not appear to be used in this procedure, and yet HP/0/B/1009/09 refers to this procedure to determine affected areas. See comments on AP/0/A/5500/28 concerning use of the plume evaluation nomographs.

Review of HP/0/B/1009/09

Enclosure 5.2 should be modified as Enclosures 5.9 and 5.10 of HP/0/B/1009/08 to reflect multiple sources of meteorological information which may be used in the assessment. Also, this procedure cross-references HP/0/B/1009/08 to determine affected areas. However, HP/0/B/2009/08 does not appear to allow this determination. Perhaps the plume evaluation nomographs belong with this procedure rather than HP/0/B/1009/08.

Based on the above findings, this portion of the licensee's program appears to be adequate; however, the following should be considered for improvement:

- Review and revise Procedure AP/0/A/5500/28 to allow consistent and easy use of Time-Distance-Dose Curves and to more closely approximate EPA Protective Action Guides (50-369/82-06-24).

- Include provisions for development and use of trend recording and trend analysis of assessment data (50-369/82-06-25).

- Include provisions in station procedures for use of offsite survey data for verification of dose assessment results (50-369/82-06-26).

- Include provisions for cross checking of offsite dose calculations between the TSC and EOF dose assessment groups to reduce the probability of error (50-369/82-06-27).

- Develop specific procedures for relating contamination levels, water and air, to dose rates for key isotopes (50-369/82-06-28).

5.4.2.1 Offsite Radiological Surveys

The facilities and equipment to be used for offsite radiological monitoring were briefly described in the Emergency Plan, Section I, in Section 18.2 of the Station Health Physics Manual and in procedure PT/0/A/4600/11. Additional information was provided in the Duke Power Company's Crisis Management Plan, Section H. The procedure portion of Section 18.2 described the equipment, communications, and general procedures for the offsite monitoring teams. The Plan indicated that initial survey team dispatch was from the TSC under the control of the Field Monitoring Coordinator (FMC). The FMC initially reported to the Station Health Physicist at the TSC and then reported to the offsite Radiological Coordinator at the Crisis Management Center (EOF) once it is activated. The FMC provided direction to the teams as to monitoring points and sampling locations based upon release and meteorological data. Radiation protection clothing and equipment (including potassium iodide) was provided in the Environmental Survey Kits. Team member radiation protection guidance was provided. Provisions for transportation and communications were made.

Predesignated survey points (114) and limnological sample points (3) were provided and maps with points and sectors marked were in each kit. Air survey

forms, smear survey forms, and field monitoring team log sheets were provided. However, labels for the samples were not provided and instructions on labeling were not included. In addition, operating instructions for the SAM-2 instruments were not included.

The Plan provided for four environmental survey teams, one of which may be dispatched to use the emergency boat for measurement in areas over Lake Norman.

Results of surveys were required to be transmitted to the Control Room or the TSC dispatcher. Samples and data sheets were to be retained by the teams and returned to a central collecting point [CMC(EOF)] unless directed otherwise by the dispatcher.

Based on the above findings, this portion of the licensee's program appears adequate; however, the following items should be considered for improvement:

- Provisions for labeling of samples should be included in the emergency kits (50-369/82-06-29).

- Operating instructions for the SAM-2 instruments should be included in the emergency kits using this equipment (50-369/82-06-30).

5.4.2.2 Onsite (Out-of-Plant) Radiological Surveys

5.4.2.3 In-Plant Radiological Surveys

The onsite (out-of-plant) radiological survey was briefly discussed in Section K of the Plan and in Sections 5.3, 18.1, and 18.3 of the Health Physics Manual. No specific procedure was identified for use in conducting emergency onsite surveys. References in the above sections of the Plan and Health Physics Manual and discussions with licensee personnel indicated that existing routine HP procedures and practices would be used including those for air sample collection evaluation and documentation, protective clothing requirements, and exposure control.

Based on the above findings, these portions of the licensee's program appear adequate; however, the following should be considered for improvement:

- Specific procedures should be developed for the in-plant and onsite but out-of-plant Emergency Survey teams. Guidance should include emergency communications, emergency dosimetry considerations, and emergency exposure controls (50-369/82-06-31).

5.4.2.4 Primary Coolant Sampling

5.4.2.5 Primary Coolant Sample Analysis

The post-accident sampling and analysis procedures were reviewed by the inspector and evaluated in accordance with requirements contained in 10 CFR 50, Appendix E, Paragraph IV.E. and selected criteria in NUREG-0654, Section II.I.

The Primary Coolant Sampling and Analysis was implemented under Emergency Procedure OP/0/A/6200/48, "Operating Procedure for the Operation of the Post Accident Liquid Sampling System." The procedure contained guidance to promptly

obtain and analyze reactor coolant samples under post-accident conditions to help determine the extent of reactor damage.

The procedure contained detailed instructions for operating the remote sample panel which included sample dilution, liquid and gas separation, system flushing, panel monitoring and decontamination, sump draining, prepared sample collection, and transfer to the hot laboratory. Chemistry Procedure CP/0/B/8100/31, "Chemistry Procedure for the Analysis of Gases from Reactor Coolant System Gas Mixtures," and Chemistry Procedure CP/0/A/8200/05, "Chemistry Procedure for Radioisotope Analysis," were implemented for sample analysis. CP/0/A/6200/48, referenced above, covers required Health Physics surveillance of highly radioactive samples, shielded containers for transporting samples, sample labeling and recording, analytical equipment, hot sample disposal, and counting capability. It appeared that the samples could be collected within 1 hour and analyzed within 2 hours; however, it was determined by the inspector during the walk-through that only a limited number of Chemistry personnel assigned on days could operate the post-accident reactor coolant sampling equipment and meet the above time requirements. Back-shift Chemistry technicians were not qualified to operate the equipment. The procedure failed to mention or reference the analysis for chloride in accordance with NUREG-0737 II.B.3.

Based on the above findings, this portion of the licensee's program appears to be adequate; however, the following should be considered for improvement:

- Sufficient Chemistry technicians to cover all shifts should be trained and qualified to operate the post-accident reactor coolant sampling equipment in accordance with procedure OP/0/A/6200/48, "Operating Procedure for the Operation of the Post-Accident Liquid Sample System" (50-369/82-06-32).

- Procedure OP/0/A/6200/48 should include chloride analysis capability as specified in NUREG-0737, II.B.3 (50-369/82-06-33).

5.4.2.6 Containment Air Sampling

5.4.2.7 Containment Air Sample Analysis

The post-accident sampling and analysis procedures were reviewed by the inspector and evaluated in accordance with the NRC requirements and criteria specified in Sections 5.4.2.4 and 5.4.2.5 above.

The post-accident containment air sampling and analysis system was implemented under Emergency Procedure HP/0/B/1009/15, "Nuclear Post-Accident Containment Air Sampling System Operating Procedure." The procedure contained guidance to promptly obtain a containment air sample under post-accident conditions to help determine the extent of reactor damage.

The procedure detailed special equipment, time requirements, exposure limits and radiation requirements, sample collection, data sheets and labeling, sample transporting, and analytical procedures and results. Detailed instructions for operating the remote panel for obtaining a representative containment air sample which included dilution and separation, and system purge with N_2. Procedure CP/0/B/8600/19, "Preparation of Thiosulfate Solution for Post-Accident Gas

Sampling," and HP Station Manual, Section 12.1, "Operating Procedure for the Nuclear Data 6600 GeLi System," were implemented to complete the analysis.

Sampling and analytical methods used indicated that the post-accident sampling results could be completed in 3 hours; however, it was determined by the inspector during the walk-through that only a limited number of Health Physics personnel assigned on days could operate the post-accident containment sampling equipment and meet the above time requirements. Shift Health Physics technicians were not fully qualified to operate the equipment.

Based on the above findings, this portion of the licensee's program appears to be adequate; however, the following should be considered for improvement:

- Sufficient Health Physics technicians to cover all shifts should be trained and qualified to operate the post-accident containment sampling equipment in accordance with procedure HP/0/B/1009/15, "Nuclear Post-Accident Containment Air Sampling Operating Procedure" (50-369/82-06-34).

5.4.2.8 Stack Effluent Sampling

5.4.2.9 Stack Effluent Sampling Analysis

The post-accident effluent sampling and analysis procedures were reviewed by the inspector in accordance with NRC requirements and criteria specified in Sections 5.4.2.4 and 5.4.2.5 above.

Stack effluent sampling and analysis is implemented under Emergency Procedure HP/0/B/1009/06, "Procedure for Quantifying High Level Radioactivity Releases During Accident Conditions." The procedure described methods for collecting samples or taking radiation measurements for estimating noble gases and radioiodine release rates if existing effluent instrumentation goes offscale during post-accident conditions. The procedure covered protective factors such as time, distance, shielding, HP monitoring, dosimetry, protective clothing, respiratory protection, exposure limits, and various other safety factors required for sample retrieval, preparation and analysis.

HP/0/B/1009/06, Enclosures 5.1 and 5.3 provided a guide for the analysis of high radioactive samples which could not be counted in the low-level counters. This was accomplished by taking direct radiation readings at predetermined distances and converting R/hr or CPM readings to uCi by the use of graphs and equations.

It was determined that the emergency sampling procedure provided detailed instructions for sample collection, labeling, analysis, recording, and disposal. It also appeared that sample collection and analysis could be completed within 3 hours.

Based on the above findings, this portion of the licensee's program appears to be adequate.

5.4.2.10 Liquid Effluent Sampling

5.4.2.11 Liquid Effluent Sampling Analysis

The post-accident liquid effluent sampling and analysis procedures were reviewed by the inspector in accordance with NRC requirements and criteria specified in Sections 5.4.2.4 and 5.4.2.5 above.

Procedure HP/0/B/1009/10, "Release of Liquid Radiation Materials Exceeding Technical Specifications," described methods for calculating the radionuclide concentrations at the area water supply intakes following a post-accident liquid release, and the subsequent actions to be taken.

In the event of a post-accident situation, procedure HP/0/B/1009/04, Environmental Monitoring for Emergency Conditions, provided guidance for collecting and evaluating samples. The Health Physics group also determined discharge point concentrations from EMF data and/or samples taken.

Procedure HP/0/B/1009/10 listed above, also detailed or referenced special equipment needs, time requirements, exposure limits, radiation precautions sample collection, sample labeling and recording, sample transporting, sample disposal, and analytical results.

Sampling and analytical methods used indicated that the post-accident sample results could be completed in 3 hours.

Based on the above findings, this portion of the licensee's program appeared to be adequate.

5.4.2.12 Radiological and Environmental Monitoring Program

The routine radiological and environmental monitoring program included five offsite continuous air samples, forty thermoluminescent dosimeter locations (one in each sector except on Lake Norman) and environmental samples of vegetation, cow's milk, goat milk, raw and finished potable water, and surface water. Environmental radiation dosimeters were exchanged on a quarterly frequency, and sampling frequency varied from weekly to semiannually. In an emergency, field monitoring teams were equipped to take air, water, vegetation, soil, and milk samples for appropriate analyses.

Procedure 5.3.14, Crisis Management Center, Environmental Monitoring for Emergency Conditions Within the Ten Mile Radius of McGuire Nuclear Station, provided the guidance for interface between the normal environmental program and the emergency environmental monitoring requirements. However, Procedure 5.3.14, was not a formally approved or controlled document. In addition, this procedure did not include provisions for emergency dosimetry (TLDs) for the team members relieving the station personnel or for assuring that instrumentation, equipment, and vehicles are turned over to the relieving teams.

Based on the above findings, this portion of the licensee's program appears to be adequate; however, the following should be considered for improvement:

- Provide formal approval and control of emergency implementing procedures (50-369/82-06-35).

- Review and revise the emergency environmental monitoring procedure to include provisions for emergency dosimetry for team members and for assuring

turnover of instrumentation, equipment, and vehicles to relieving support teams (50-369/82-06-36).

5.4.3 Protective Action

5.4.3.1 Radiation Protection During Emergencies

Sections J and K of the Emergency Plan described the implementation of the radiation protection program during emergencies. Section D, Procedures EP/1/A/5000/01 through EP/1/A/5000/04, and procedures EP/0/A/5000/05 through EP/0/A/5000/09 provided for initial classification of accidents and establishment of Emergency Action Levels. The Plan references sections of the Health Physics Manual for emergency radiation protection implementation guidance. These sections were Sections 5.3, Emergency Response Organization, Section 18.1, Accident and Emergency Response, Section 18.2, Environmental Monitoring for Emergency Conditions, and Section 18.3, Personnel Monitoring for Emergency Conditions.

However, these procedures did not specifically address provision for emergency personnel dosimetry, in-plant monitoring teams, expansion of respiratory protection program, or consideration of changed or unusual conditions due to the emergency. Discussion with licensee personnel indicated that normal plant radiation protection programs and procedures would be maintained during an emergency.

Based on the above findings, this portion of the licensee's program appears to be adequate; however, the following should be considered for improvement:

- Review and revise emergency radiation protection implementing procedures to include specific guidance for emergency personnel dosimetry, in-plant monitoring teams, expansion of the respiratory protection program to meet increased needs, the special requirements of a search and rescue team, and consideration of changed or unusual conditions due to the emergency (50-369/82-06-37).

5.4.3.2 Evacuation of Owner Controlled Areas

This area was reviewed with respects to the requirements of 10 CFR 50.47(b)(10), 10 CFR 50 Appendix E, Paragraph IV.B and the criteria of NUREG-0654, Section II.J.

The evacuation of Owner Controlled Areas is discussed in the EP Section J, Station Directive 3.8.1., EP/0/A/5000/05 through 08 and HP Manual Section 18.3. These documents provide for the evacuation of onsite non-essential personnel in the event of any emergency condition. However, there appear to be no EALs in the plan that require evacuation of specified areas, buildings, and the site. The Shift Supervisor is given the authority to initiate a Site Assembly or Site Evacuation at any time in the course of events during the emergency conditions designated in EP/0/A/5000/05 through 08. Provisions have been made for evacuation routes in Station Directive 3.8.1. Transportation is to be provided by the same transportation means that brought the personnel to the site. The evacuation routes include alternatives for inclement weather, high traffic density, and specific radiological conditions. The primary and secondary

evacuation routes are not clearly marked with conspicuously posted arrows, signs, floor markings, or other readily visible means. Station Directive 3.8.1 provides for concise oral announcements over the facility public address system to describe the immediate actions of non-essential personnel. HP Manual, Section 18.3 provided implementing procedures pertaining to Personnel Monitoring during Site Evacuation. Decontamination capability is available at or near the monitoring points; however, they are not specified in the plan, implementing procedures, directives, or manuals. There is no mention of decontamination capability in the Site Assembly and Evacuation Station Directive.

Based on the above findings, this portion of the licensee's program appears to be adequate; however, the following should be considered for improvement:

- Primary and secondary plant evacuation routes should be marked (50-369/82-06-38).

- Specify in implementing procedures decontamination capability at or near the monitoring points used during a site evacuation (50-369/82-06-39).

5.4.3.3 Personnel Accountability

The Personnel Accountability area was reviewed for the requirements of 10 CFR 50.47(b)(10), 10 CFR 50 Appendix E, Paragraph IV.B, and the criteria of NUREG-0654, Section II.J. This area is discussed in EP Section J and Station Directive 3.8.1.

The licensee has provided for the capability to account for all individuals onsite at the time of an emergency and ascertain the names of missing individuals within 30 minutes of the start of an emergency and account for all onsite individuals continuously thereafter. The Station Directive specifies the individual/position in the emergency organization to whom reports of accountability are to be made. There appears to be no documentation of a means to ascertain the whereabouts of individuals reported missing. There appears to be no reference to a search and rescue procedure (see Section 5.4.3.5 of this report).

Based on the above findings, this portion of the licensee's program appears to be adequate; however, the following should be considered for improvement:

- Provide procedural guidance pertaining to the manner in which missing persons will be located (50-369/82-06-40).

5.4.3.4 Personnel Monitoring and Decontamination

Procedures for personnel monitoring and decontamination were reviewed against the requirements of 10 CFR 50, Appendix E, Paragraph IV.E and the criteria of NUREG-0654, Sections II.J and II.K.

Personnel monitoring and decontamination is the responsibility of the Health Physics organization during an emergency as stated in Sections 11.3 and 18.3 of the Health Physics Manual. Documentation of contaminated personnel is discussed in Section 18.3 of the Health Physics Manual. Information such as date, time, instrument type, instrument number, who performed survey, patient name, TLD badge number, and additional remarks are required on the information sheet.

The licensee has developed contamination levels that require specific decontamination actions, and these actions are detailed in Section 6.1.3 of the Emergency Plan. However, there are no considerations given or procedures given when skin contamination with radioiodine occurs.

Based on the above findings, this portion of the licensee's program appears to be adequate; however, the following should be considered for improvement:

- Contamination levels and decontamination actions should be specified for skin contamination with radioiodine (50-369/82-06-41).

5.4.3.5 Onsite First Aid/Rescue

Procedures for onsite first aid and rescue were reviewed against the requirements of 10 CFR 50, Appendix E, Paragraph IV.E, and the criteria of NUREG-0654, Sections II.K and II.L.

The transporting of injured persons who may be contaminated along with the interface criteria for using the offsite medical facilities are discussed in Section L of the Emergency Plan. Methods for recovering and receiving such persons are not discussed in either the Emergency Plan or implementing procedures at this time. Progress is being made in the formulation of these procedures by utilizing Emergency Medical Technicians (EMT) in tandem with fire brigade personnel for rescue operations; however, such procedures are not yet a part of the plan.

Radiation Protection Guidance for rescue operations and ambulance, first aid, and hospital personnel under emergency conditions is covered in Section K.1 of the Emergency Plan.

Based on the above findings, this portion of the licensee's program appears to be adequate; however, the following should be considered for improvement:

- Procedures should be developed and incorporated into the Emergency Plan and Implementing Procedure for rescue team organization and methodology (50-369/82-06-42).

5.4.4 Security During Emergencies

Procedures for security support during emergencies were reviewed for the requirements of 10 CFR 50.47(a) and (b)(1) through (3), 10 CFR 50, Appendix E, Paragraph IV.A, and the specific criteria in NUREG-0654, Section II.A. The security involvement during a radiological emergency is very briefly described in Station Directive 3.8.1 and the Security Plan. The major source of Security guidance is provided in the Administration and Logistics Plan of the CM Plan. This plan, however, is the Corporate Plan and appears to provide Station as well as Corporate policy.

The Contract Service Coordinator is responsible for coordinating Security for the Station. Security measures to be placed into effect during radiological emergencies are not specified in the Station EP or any of its implementing procedures. The McGuire Nuclear Station Safeguard Contingency Plan and Security Procedures provide minimal specific guidance and policy. There appears to be no documented procedures specifying escort service for offsite emergency personnel

and vehicles to facilitate their expeditious access at the emergency scene. There also appears to be a need for a document that consolidates the security measures to be placed into effect during a radiological emergency.

Based upon the above findings, this portion of the licensee's program appears to be adequate; however, the following should be considered for improvement:

- Provide a consolidated document for Security Measures to be placed into effect during radiological emergencies (50-369/82-06-43).

5.4.5 Repair/Corrective Actions

A specific implementing procedure for repair and corrective actions in an emergency has not been developed by the licensee. As indicated in the McGuire Emergency Plan and confirmed in interviews with licensee personnel, the licensee plans to rely on normal operating procedures and the OSC where briefings and preparation of station personnel for work assignments in support of the emergency condition will be held. The shift supervisor directs the efforts of the OSC staff.

Based on the above findings, this portion of the licensee's program appears to be adequate; however, the following should be considered for improvement:

- Develop procedures to govern the emergency functions of repair and action teams including team formation, possible operations in high radiation fields, and radiological safety considerations (50-369/82-06-44).

5.4.6 Recovery

Recovery procedures were reviewed for the requirements of 10 CFR 50.47(b)(13), 10 CFR 50 Appendix E, Paragraph IV.H, and the criteria of NUREG-0654, Section II.M. This is described in the EP Section M, HP/0/B/1009/03, and Section M of the CM Plan.

HP/0/B/1009/03, and Section M of the CM Plan provides the procedures and organizational authority for the decision-making process of initiating the recovery operation. This procedure also provides for an evaluation of plant operating conditions as well as the in-plant and out-of-plant radiological conditions. The CM Plan contains the position/title, authority and responsibilities of individuals who will fill key positions in the facility recovery organization. The organization appears to include technical personnel with capability to develop, evaluate, and direct recovery and reentry operations. The licensee has specified means for informing members of the Crisis Management Organization, Station Organization, and Offsite Support Agencies that Recovery Operations are being initiated as well as any necessary organizational realignments.

Based upon the above findings, this portion of the licensee's program appears to be adequate.

5.4.7 Public Information

Procedures developed by the licensee adequately identify the organizations involved in news dissemination. Their locations are specified, and adequate ways of contacting them are there. The method for coordinating the internal dissemination of information to the various locations and individuals is clearly specified.

Interim provision for initial dissemination of information to the news media, prior to establishment of the licensee's news center, is adequate.

The utility spokesman, and designated alternates, are clearly identified, and sources of information to be used by this person are adequately specified.

Provisions for coordinating information among the various spokesmen of the various organizations and groups are adequately specified in functions outlined for coordinators to follow during activation of the emergency news center during a crisis.

In the area of rumor control, adequate provision has been made for responding to public inquiries separate from the news media, however, provision for rumor control coordination with the news information function with other organizations is not clear. It is not addressed in the Crisis News Center plan under Crisis Management Rumor Control and not clearly specified in the roles of the various crisis information coordinators.

Based on the above findings, this portion of the licensee's program appears to be adequate; however, the following should be considered for improvement:

- Clearly provide for rumor control coordination with the news media (50-369/82-06-45).

5.5 Supplementary Procedures

5.5.1 Inventory, Operational Check and Calibration of Emergency Equipment, Facilities, and Supplies

Procedure PT/O/A/4600/11, Function Check of Emergency Vehicle and Equipment, provided specific inventory lists for station emergency kits and for routine functional checks of station emergency vehicles, including the boat, and of equipment. Responsibility for performance of this procedure was defined. Inspection of records showed that monthly inventories had been performed each of the last 12 months and noted deficiencies corrected. However, no approved inventory system had been established for the CMC (EOF) emergency kits and supplies. Specific inventory lists had been recently established and some records of past maintenance of kits was available. Responsibility for CMC emergency kit inventory and maintenance was not defined.

Based on the above findings, this portion of the licensee's program appears to be adequate; however, the following should be considered for improvement:

- Implement a formal, approved inventory and maintenance system for the CMC (EOF) emergency kits. The procedure should include specific inventory kits, frequency of inspection, and responsibility for inspection performance (50-369/82-06-46).

5.5.2 Drills and Exercises

The licensee's program for drills and exercises was reviewed with respect to the requirements of 10 CFR 50.47 (b)(14), 10 CFR 50, Appendix E, Paragraph IV.F, and criteria in NUREG-0654, Section II.N.

Plant exercises and drills are administered in accordance with Section N of the plant Emergency Plan and by the plant Emergency Coordinator and in accordance with a scenario developed in advance of the drill. Documentation and evaluation of all observer and participant comments are collected in a critique after the exercise drill, and responsibilities are assigned by management to assure that corrective actions are implemented. Drills and exercises are conducted on such a schedule as to allow all rotating shifts to become involved.

Communication drills are conducted on a monthly basis. Fire brigade drills are conducted at the rate of five drills each 2-month period to involve all five shifts in accordance with technical specifications. Medical drills are conducted annually, and offsite facilities are involved in accordance with the developed scenario. Radiological monitoring and Health Physics drills are conducted every 6 months. The licensee does conduct an annual exercise. News media involvement in drills and exercises is handled at the corporate level and the news media is encouraged to participate or observe whenever a major drill or exercise is conducted. If an actual event occurs, the response to that event is not counted as a drill.

When drills or exercises are conducted there are two classes of plant employees that do not become involved: (1) plant personnel necessary to keep the plant operational and (2) personnel who function as drill/exercise monitors or observers.

Based on the above findings, this portion of the licensee's program appears to be adequate.

5.5.3 Review, Revision, and Distribution

The McGuire Nuclear Station Administrative Policy Manual describes the document control system. The McGuire Emergency Plan and Implementing Procedures have been reviewed, approved, and updated as required. The McGuire Emergency Preparedness Coordinator updates the Plan and Implementing Procedures as needed or at least an annual basis. The revisions include changes resulting from drills or changes in the facility or environs. Changes are distributed in accordance with an approved distribution list. Telephone numbers listed in the McGuire Implementing Procedures are updated quarterly in accordance with McGuire Procedure PT/0/A/4600/11. Several names and telephone numbers were called and shown to be correct.

The Corporate Emergency Response Coordinator updates the Crisis Management Plan and its Implementing Procedures as needed on at least an annual basis. The Plan is a controlled document but the Implementing Procedures document is not.

Based on the above findings, this portion of the licensee's program appears to be adequate; however, the following should be considered for improvement:

- The Crisis Management Plan Implementing Procedures should have controlled distribution to assure an optimum and updated interface (50-369/82-06-47).

- The Procedure titled "Personnel Monitoring for Emergency Conditions" appears to have two procedural numbers - Station Health Physics Manual, Section 18.1 (see p. 6 item 4.6.2) and Section 18.3 (50-369/82-06-48).

- Procedure HP/0/B/1009/08, 09, 10, Release of Liquid Radioactive Materials Exceeding Technical Specifications, references HP/0/B/1009/04, Environmental Monitoring for Emergency Conditions. This procedure has been replaced by Section 18.2 of the HP Manual (50-369/82-06-49).

- Section 18.2 of the HP Manual specifies emergency TLDs should be in emergency kits; however, inventory lists in procedure PT/0/A/4600/11 do not list any TLDs (50-369/82-06-50).

- Each page of the Crisis Management Plan Implementing Procedures should contain the date and revision number to assure that the page being used is current (50-369/82-06-51).

5.5.4 Audit

During the period of December 7, 1981 through January 5, 1982, Duke Power Company Departmental Audit SP-81-13, Crisis Management and Station Emergency Plans, was performed at the Steam Production Department General Offices and McGuire Nuclear Station. This report has been submitted to the licensee's employees for appropriate action in accordance with Section P of the Crisis Management Plan.

Each succeeding year following this audit, the Corporate Emergency Coordinator will arrange for an independent review of Duke Power Company's Emergency Preparedness Program. The review will be conducted by the Company's Quality Assurance Department and will include areas such as:

1. Crisis Management Plan

2. Crisis Management Plan Implementing Procedures

3. McGuire Nuclear Station Emergency Plan

4. McGuire Nuclear Station Emergency Plan Implementing Procedures

5. State/Local Support Agency Training Program

6. Station/Crisis Management Organization Training Program

7. Public Media Training/Awareness

8. Equipment-Communications, Monitoring, Meteorological, Public Alerting

9. State/Local Plan Interface

The review findings will be submitted to the Recovery Manager. The Corporate Emergency Coordinator will assure completion/resolution of each item and make a

final report to the Recovery Manager upon resolution of all listed findings. The review by Quality Assurance, the action item list, and all follow-up documentation will be retained for 5 years.

Based on the above findings, this portion of the licensee's program appears to be adequate.

6.0 Coordination with Offsite Groups

6.1 Offsite Agencies

This area was reviewed with respect to the requirements of 10 CFR 50.47(b)(1), (3), and (12), 10 CFR 50, Appendix E, Paragraph IV.A and E, and the specific criteria of NUREG-0654, Sections A, B, E, and L. This area is described in the EP, Sections A, B, E, L, and Q.

Offsite support agencies were discussed with licensee representatives. The support agreement letters in Appendix 5, Section Q of the EP were reviewed. Agreements have been concluded with various offsite groups to provide assistance in an emergency. Training has been provided for all offsite support groups who may be called on to assist in an emergency.

On 8 and 9 March 1982, the following agencies were visited to discuss emergency response and support to accidents/incidents at the McGuire Nuclear Station:

Charlotte-Mecklenburg Emergency Management Office
Gaston County Department of Emergency Management
Iredell Civil Preparedness Agency
Lincoln County Department of Emergency Management
Catawba County Department of Emergency Management
North Carolina Division of Emergency Management
Charlotte Memorial Hospital
North Mecklenburg Ambulance Service

The individuals contacted at each of the above agencies were cognizant of their expected role in an emergency at the McGuire Nuclear Station, had been provided training relative to their respective roles, and were satisfied that adequate communications concerning emergency response between their organization and McGuire Nuclear Station have been provided.

Based upon the above findings, this portion of the licensee's program appears to be adequate.

6.2 General Public

The utility has provided for dissemination of emergency planning information to the public within the plume exposure EPZ. This includes the transient population. This has been done through the mailing of emergency action brochures to all locatable households within the 10-mile EPZ. For transients, the licensee has provided brochures to hotels, motels, and public establishments in the applicable area. Also, signs have been posted at area marinas to inform boaters of what actions to take should an emergency condition exist.

Emergency action information has been adequately coordinated with State and local agencies. Local civil preparedness or emergency management offices are listed, along with their telephone numbers, in bold-face type on the brochures.

The brochures have been updated and disseminated at least annually. The licensee has distributed a second brochure for McGuire which is a general improvement over the first.

Information provided to the public tells how they will be notified and what their actions should be in the event of an emergency.

The brochures contain accurate, understandable information about radiation.

Dissemination of the information is accomplished through the annual distribution of updated brochures by mail, by placement in area transient facilities, and by the posting of signs at public access areas around Lake Norman.

The information is in a form that is likely to be available in a residence during an emergency. It is also likely to be available and observable in public areas.

The utility provides a contact for additional information on the brochure, both at the corporate and local levels.

Based on the above findings, this portion of the licensee's program appears to be adequate; however the following should be considered for improvement:

- The current brochure instructs individuals hearing the sirens to tune to local radio and television stations for additional information. Call letters and dial or channel designations for area stations should be included in the brochure and prominently displayed (50-369/82-06-52).

- Also, the brochure suggests that individuals hearing the sirens call their neighbors to make sure they know of the emergency. This suggestion is questionable. It is best to encourage residents to stay off the telephone unless there is a personal emergency. Should everyone attempt to utilize the phone system simultaneously, the system, and some vital emergency communication capabilities, could be rapidly overwhelmed and be rendered temporarily useless (50-369/82-06-53).

6.3 News Media

The utility is committed to, and has conducted, a program for familiarizing the news media with emergency plans, points of contact for release of public information, space allocated for their use, information about radiation, plant operations, and accident sequences.

The program is conducted annually and has been conducted at least once.

Based on the above findings, this portion of the licensee's program appears to be adequate.

7.0 Drills, Exercises, and Walk-Throughs

7.1 Program Implementation

The licensee's implementation of drills and exercises was reviewed with respect to the requirements of 10 CFR 50.47(b)(14), 10 CFR 50, Appendix E, Paragraph IV.F, and criteria in NUREG-0654, Section II.N.

It appears that the drills and exercises required by the Emergency Plan and Procedures have been conducted. Critiques of exercises and drills were written and improvement items identified have been resolved. Some drills had no improvement items.

Offsite agencies are invited or included in most of the drills and exercises. Their comments appear to be considered in formulating new scenarios and as improvement items.

Based on the above findings, this portion of the licensee's program appears to be adequate.

7.2 Walk-Through Observation

7.2.1 Emergency Detection

7.2.2 Emergency Classification

The inspectors conducted interviews and walk-throughs in emergency detection and accident classification. The shift supervisor is the senior operations person on shift and, in the event of an emergency, is the Emergency Coordinator until relieved by the Station Manager. Implementing procedures and other procedures referred to by the Shift Supervisor in an emergency are cross-referenced. The operations in the Control Room during an emergency and the interface with the OSC were discussed.

In reviewing the notification of the State/local authorities following the declaration of an emergency class, it was found that this notification may not have been conducted "within about 15 minutes" called for in Appendix 1 of NUREG-0654.

Based on the above findings, this portion of the licensee's program appears to be adequate; however, the following should be considered for improvement:

- The shift supervisors should be made aware that "prompt notification" of the State/local offsite authorities is intended to indicate "within about 15 minutes" for an unusual event class and sooner (consistent within the need for other emergency actions) for other classes. Also that the time is measured from the time at which operators recognize that events have occurred which make declaration of an emergency class appropriate (50-369/82-06-54).

- The McGuire Emergency Plan Implementing Procedures EP/0/A/5000/05 to EP/0/A/5000/08 should be more clearly stated with respect to the above improvement item (50-369/82-06-55).

7.2.4 Dose Assessment

Walk-throughs on use of offsite dose assessment procedures were conducted with six operations shift supervisors or assistant shift supervisors. The same radiation levels, meteorological parameters, and time since reactor trip values were given to each of the individuals with the request to determine the protective action recommendations to be provided to responsible offsite authorities. Each participant had difficulty in using the Time-Distance-Dose Curves, correcting with the Scale factor and determining projected dose commitments at predetermined distances. Thus, protective action recommendations made by the participants varied from no evacuation to total evacuation to 1-1/2 miles downwind and partial evacuation to 5-1/2 miles. Improvements needed in this area have been discussed in Section 5.4.2 of this report.

Based on the above findings, this portion of the licensee's program appears to be adequate.

7.2.5 Post-Accident Sampling Analysis

7.2.6 Containment Air Sampling and Analysis

The inspector conducted interviews and walk-throughs with personnel involved in post-accident sampling and analysis. The walk-throughs were directed toward each individual's training, operation of equipment, sample handling and analysis, counting techniques, procedure familiarity, exposure control, and performance of their assigned tasks.

Each individual observed appeared to be capable of responding to the above tasks except for Health Physics and Chemistry technicians who were not sufficiently trained to operate the recently installed post-accident primary coolant and containment sampling equipment. Details for improvement are discussed in Sections 5.4.2.4, 5.4.2.5, 5.4.2.6, and 5.4.2.7.

Based on the above findings, this portion of the licensee's program appears to be adequate.

7.2.8 Offsite Surveys

An offsite survey team was assembled and requested to proceed as if an emergency had occurred, and to accomplish the actions necessary to proceed to an offsite point and take an iodine sample. Keys were procured from Security for vehicle and storage room of emergency kits. Team members had HP keys to boat house. However, no key was procured for offsite air sample areas or environmental TLD locations.

The team checked kit contents but did not use a checklist. Upon leaving the site, no functional check of communications equipment was made. In addition, no TLDs were procured for the team members and pencil dosimeters were not distributed to team members until team arrived at sample point offsite. Dose rate instrument was checked when kit was looked at but was not used by team until arrival at survey point.

The team initiated air sampling using a silver zeolite cartridge and a particulate filter. The SAM-2 was turned on for warmup. No standard counting geometry was used for background or sample counting and no source was available to verify

function of the instrument. Procedure for setup and use of SAM-2 was not available. When air sampling was completed, cartridge and filter were removed from sampler and placed in a plastic bag. Neither sample nor bag was labeled. Difficulty was experienced in removing filter requiring picking up the filter by hand. Tweezers were not available and gloves were not worn. A contamination survey instrument was not available for determination of team member's contamination status or to determine when to don protective clothing.

The silver zeolite cartridge was counted and data was available for transmission to Field Monitoring Coordinator. Cartridge measurement was to be reported in counts per minute and concentration calculation was not made. However, instructions to team members in the procedure for use of respiratory protection and KI require concentration values for both particulate and radioiodine. Team members were asked if they were aware of the approximate count per minute value from a SAM-2 measurement of a silver zeolite cartridge which represented the concentration values stated in the procedure, and they were not.

Upon completion of the walk-through, team members were asked about the training they had received. They indicated that, for one, the last training on offsite monitoring was over a year ago. They also indicated that most of the weaknesses discussed above were not covered in the training provided.

Details for improvement are discussed in Section 3.1, 4.2.1.1 and 5.4.2.1.

8.0 Persons Contacted

8.1 Licensee Personnel

Randy Leonard	H. P. Supervisor
Dave Mobley	Safety Supervisor
Tom Parker	Training Supervisor
Vivian Spearman	Administrative Coordinator
*M. S. Glover	Emergency Preparedness Coordinator, McGuire
R. M. Glover	Emergency Response Coordinator, Duke Power
Pete Huntley	H. P. Supervisor
Scott Foreman	Technical Associate
Linda Baker	Registered Nurse
Jill Issacson	Enviro-Lab
Marlin Kriss	Training Center Lab
*Terry Keane	Station Health Phyicist
Bob Sorber	Enviro-Lab
*Dudley Harrington	Training & Safety Coordinator
Harry Sloan	Training Instructor-Health Physics and Performance Training
Terry McGee	Health Physics Supervisor S&C
Mary L. Birch	Health Physics - General Office
Brad McRee	Staff Health Physicist
Anna Deak	Chemistry Supervisor
Bill Byrum	H. P. Counting Room
Todd Ramseur	H. P. Supervisor
Jane Reeside	Chemistry Supervisor
*Dan Rains	Maintenance Supervisor
Joe House	Fire Brigade Supervisor
Bob Simril	CMC - Resource Coordinator
Greg Rowland	CMC - Design & Construction Support Group
Bob Smith	CMC - Asst. Manager Administration and Logistics
Lionel Lewis	CMC - System H. P. Manager
Mike Tuckman	CMC - Tech. Services Supervisor
Phillip Deal	CMC - Station H. P. Supervisor
Ken Canady	CMC - Tech. Support Manager
Bob Koehler	CMC - Alter. Recovery Manager
Hal Tucker	CMC - Recovery Manager
*Maurice McIntosh	Plant Manager
Morris Sample	Projects & Licensing Engineer
George Cage	Superintendent of Operations
Anita Hager	H. P. Clerk
Tony McConnell	Superintendent of Tech. Services
Jerry Culp	Shift Supervisor
Juanita Little	K-Mac
Jack Smith	Security
Mel Mills	Maintenance Coordinator Planning
Joe Overcash	Materials Supervisor Procurement
Al Lindsay	Control Room Operator
*Rick Wilkinson	Superintendent of Administration
Marvin Johnson	Nuclear Control Operator

Glen Singletary	Associate Engineer - I&E
Robert Delonis	Assistant Health Physicist
Phillip Thompson	Assistant Shift Supervisor
John Zelm	Shift Supervisor
Richard McDaniel	Shift Supervisor
Al Beaver	Assistant Shift Supervisor
Gary Harrison	H. P. Technician
Stan Wilson	H. P. Technician
Gerald Massey	Shift Supervisor
Jerry Rumfelt	Control Room Operator
Jerry Pressley	Assistant Shift Supervisor
Robert Sorber	Assistant H. P.
*Craig Fish	Contract Service Coordinator
*D. B. Lampke	Licensing-MNS
*R. P. Michael	Chemistry

8.2 Outside Agencies

Bill Root	Charlotte Memorial Hospital
William Wilson	N. Mecklenburg Ambulance Service
Kenneth D. Williams	Director Charlotte-Mecklenburg Emergency Management Office
Robert Phillips	Coordinator, Gaston County Department of Emergency Management
Jim R. Barnes	Supervisor Comm. Center, Iredell Civil Preparedness Agency
Robert J. Willis	Coordinator, Lincoln County Dept. of Emergency Management
David A. Yount	Coordinator, Catawba County Dept. of Emergency Management
Wayne Broome	Operations, Charlotte-Mecklenburg Emergency Management Office
Hugh Womack	Adminstration Office, Charlotte-Mecklenburg Emergency Management Office
Joseph F. Myers	Coordinator, N.C. Division of Emergency Management

8.3 NRC

*P. R. Bemis	Senior Resident Inspector

*Attended exit meeting

ATTACHMENT TO OIE REPORT NO. 50-369/82-06

EMERGENCY PREPAREDNESS EVALUATION REPORT BY THE

DIVISION OF EMERGENCY PREPAREDNESS OFFICE OF INSPECTION AND ENFORCEMENT

IN THE MATTER OF WILLIAM B. MCGUIRE NUCLEAR STATION

DOCKET NOS. 50-369, 50-370

MARCH 1982

INTRODUCTION

The Nuclear Regulatory Commission's (NRC) evaluation of the state of emergency preparedness associated with the McGuire Nuclear Station involves review of the licensee's onsite emergency preparedness plus review of the Federal Emergency Management Agency (FEMA) findings and determinations pertaining to State and local emergency preparedness.

The Duke Power Company (licensee) filed with NRC a complete revision to the McGuire Nuclear Station Emergency Plan in November 1981 and again in February 1982. Discussions on specific aspects of the plan were held with the licensee during the appraisal period, March 1-12, 1982. The staff has reviewed these revisions and information.

The Plan was reviewed against the sixteen planning standards in 10 CFR 50.47, the requirements of 10 CFR 50, Appendix E, and the specific criteria of NUREG-0654/FEMA-REP-1 entitled "Criteria for Preparation and Evaluation of Radiological Emergency Response Plans and Preparedness in Support of Nuclear Power Plants," Rev. 1, November 1980.

This evaluation report follows the format of Part II of NUREG-0654 in that each of the Planning Standards is listed and is followed by a summary of applicable portions of the Plan that relate principally to that specific standard. The conclusions of the staff review are provided in Part II of this Report. The findings of FEMA on State and local emergency preparedness are provided in Appendix E to the SER supplement.

EVALUATION OF LICENSEE EMERGENCY PLAN

I. EVALUATION

A. Assignment of Responsibility (Organization Control)

Standard

Primary responsibilities for emergency response by the nuclear facility licensee and by State and local organizations within the Emergency Planning Zones (EPZ) have been assigned, the emergency responsibilities of the various supporting organizations have been specifically established, and each principal response organization has staff to respond to and to augment its initial response on a continuous basis.

Licensee Emergency Plan Evaluation

When an emergency condition arises, the shift supervisor is designated as the Emergency Coordinator and it is his responsibility to evaluate the situation. If, in his judgment, conditions meet or exceed any of the emergency classification action levels, it is his responsibility to implement the Plan. There is 24-hour per day communication linkage capability between the station and Federal, State and local response agencies and organizations to ensure rapid transmittal of accurate notification information and emergency assessment data.

The Plan clearly defines the authority, responsibility, and duties of station staff personnel for coping with emergencies, both the normal operating staff and the augmented staff. The operational relationships between the onsite emergency centers and offsite agencies are identified. The Duke Power Company Crisis Management Plan details the corporate organization for coping with emergencies, including the corporate augmentation of the station organization. The individual responsible for assuring continuity of licensee resources and overall management of the emergency and recovery operation is the Recovery Manager.

The Plan describes the functions and responsibilities of each State and local organization with a response role. The principal State organization with responsibility for planning and for mobilization of State resources to cope with an emergency is the Emergency Management Division within the Department of Crime Control and Public Safety. This organization is supported by the Radiation Protection Branch of the Department of Human Resources, for radiological assessment and protection functions, and by other State agencies. For an emergency situation, the State organizations mobilize as the State Emergency Response Team (SERT) at Charlotte, N.C. The SERT is the primary response authority for the State. The principal local agency having planning and action responsibilities for emergencies is the Charlotte-Mecklenburg Department of Emergency Management. The Catawba County Department of Emergency Management, Gaston County Department of Emergency Management, Iredell County Civil Preparedness Agency, and Lincoln County Department of Emergency Management are responsible for implementing protective actions within their respective counties.

The McGuire Station, in the event of an emergency, will contact by telephone the State warning point and the warning points for Catawba, Gaston, Iredell, Lincoln,

and Mecklenburg counties. These facilities are manned on a 24-hour per day basis. Arrangements have been made for the counties to accomplish protective actions based upon licensee protective action recommendations.

Updated written agreements have been executed with appropriate Federal, State and local agencies and organizations to provide for radiological support, medical assistance, medical transportation, and fire protection during an emergency. The emergency plans of the five surrounding counties provide for law enforcement, social services, medical services and emergency protective actions.

B. Onsite Emergency Organization

Standard

On-shift facility licensee responsibilities for emergency responses are unambiguously defined, adequate staffing to provide initial facility accident response in key functional areas is maintained at all times, timely augmentation of response capabilites is available, and the interfaces among various onsite response activities and offsite support and response activities are specified.

Licensee Emergency Plan Evaluation

In an emergency situation, the Shift Supervisor assumes the function of Emergency Coordinator and, as such, has the authority and responsibility to implement the Plan and initiate any necessary emergency actions, including notification of and recommendation of protective actions to local authorities. The Station Manager, or his designee, assumes the position of Emergency Coordinator upon his arrival at the Technical Support Center. The functional responsibilities of the Emergency Coordinator are established and the Plan clearly specifies that he may not delegate the responsibility to notify and make protective action recommendations to offsite authorities.

Station staff emergency assignments have been made and the relationship between the emergency organization and normal staff complement are specified in the Plan. Positions and/or titles of shift and plant staff personnel, both onsite and offsite, assigned emergency functional duties are listed. Minimum shift manning requirements are in the Plan and provisions for timely shift augmentation are provided. The specified shift staffing for single unit operation satisfies the criteria in Table B-1 of NUREG-0654. The augmentation capability, meets the design objectives of Table B-1, and is prioritized to provide augmentation within 30-45 minutes and 60-70 minutes.

The Plan, together with the Duke Power Company Crisis Management Plan, establishes the framework for a long-term augmented licensee emergency organization. This organization, under the Recovery Manager, is utilized for the direction and control of all emergency and recovery activities and is located at the near-site Crisis Management Center (i.e., Emergency Operations Facility). Actuation of the Crisis Management Center occurs for an Alert, Site Area Emergency, or General Emergency. Interfaces between and among the Crisis Management Center staff, the station staff, governmental and private sector organizations, and technical and/or engineering contractor groups have been clearly specified.

C. Emergency Response Support and Resources

Standard

Arrangements for requesting and effectively using assistance resources have been made, arrangements to accommodate State and local staff at the licensee's near-site Emergency Operations Facility have been made, and other organizations capable of augmenting the planned response have been identified.

Licensee Emergency Plan Evaluation

Arrangements for requesting and utilizing outside resources have been made including authority to request implementation of the Federal Radiological Monitoring and Assessment Plan by either the Emergency Coordinator or Recovery Manager. Technical and administrative assistance, in addition to the Crisis Management Center organization, is available from the corporate organization. Arrangements have been made for assistance from the plant contractors.

The Plan describes the radiological laboratories and the associated capabilities and expected response times. Fixed laboratory facilities exist at the station, the Crisis Management Center, and the near-site Duke Power Environmental Laboratory. Backup licensee facilities are available at the Catawba Nuclear Station (45 miles) and Oconee Nuclear Station (160 miles).

The Crisis Management Center organization provides for dispatching licensee representatives to the principal governmental emergency operations centers. The Crisis Management Center is designed to accommodate representatives from Federal, State, and local governmental agencies, as well as representatives from contractor and other support groups. The Crisis Management Center is within one mile of the station and is the central data collection point for providing information needed by primary response agencies for implementation of protective actions.

D. Emergency Classification System

Standard

A standard emergency classification and action level scheme, the basis of which include facility system and effluent parameters is in use by the nuclear facility licensee, and State and local response plans call for reliance on information provided by facility licensees for determinations of minimum initial response measures.

Licensee Emergency Plan Evaluation

The four standard emergency classes (i.e., Unusual Event, Alert, Site Area Emergency, and General Emergency) have been established by the licensee. Emergency Action Levels (EALs) are established based upon onsite and offsite radiation monitoring information and upon readings from various reactor sensors.

These EALs are used for rapid classification of emergency situations. The EALs are observable and measurable and, in general, are identified using specific instrumentation, parameters, and equipment status. The emergency classification and action level scheme is consistent with the criteria of Appendix 1 to NUREG-0654.

Station implementing procedures contain specific information and guidance for evaluating an emergency situation and the appropriate actions to be taken.

E. Notification Methods and Procedures

Standard

Procedures have been established for notification by the licensee, of State and local response organizations and for notification of emergency personnel by all response organizations; the content of initial and followup messages to response organizations and the public has been established; and means to provide early notification and clear instructions to the populace within the plume exposure pathway Emergency Planning Zone have been established.

Licensee Emergency Plan Evaluation

Procedures have been established for notification of State and local response organizations in case of emergency. The Emergency Coordinator has been given the authority and responsibility to make prompt notification to these agencies and to initiate activation of the Carolina Radiological Emergency Response Plan in Support of Fixed Nuclear Facilities and the emergency plans of the local counties. The Plan has established procedures which described mutually agreeable bases for notification of offsite response organizations consistent with the standard emergency classification and action scheme set forth in Appendix 1 to NUREG-0654.

The Plan has established procedures for notifying, alerting, and mobilizing licensee emergency response personnel, including both station and corporate staff.

The information to be reported to the offsite agencies in the event of an emergency has been predetermined in accordance with the recommendations in NUREG-0654 and the format of the notification messages is included in the Plan. A means for verification of the messages has been provided. The Plan specifies the supporting information to be provided for inclusion in written messages intended for release to the public, including recommended protective actions.

The licensee has an alert and notification system to be used to promptly inform the public within the plume exposure pathway Emergency Planning Zone.

F. Emergency Communications

Standard

Provisions exist for prompt communications among principal response organizations to emergency personnel and to the public.

Licensee Emergency Plan Evaluation

The station communication system is designed to provide secure, redundant and diverse communications to all essential onsite and offsite locations during normal operations and under accident conditions. Within-station systems are comprised of a commercial telephone system, station telephone system, public-

address system, radio networks, and intercom systems. Offsite systems are comprised of a commercial telephone system, a microwave system, and two-way radio systems. Two separate commercial telephone lines are dedicated to NRC communications.

These communications systems are located in plant areas manned 24 hours per day. The Emergency Coordinator will, in emergency situations, communicate directly with the State Warning Point at Raleigh, North Carolina, the dispatchers at each of the five surrounding counties, and the NRC. These governmental offices are manned 24 hours a day. Communications between the Control Room, the Technical Support Center, and the Crisis Management Center are established utilizing the radio system frequency. In addition, radio communications are established between the Technical Support Center, Crisis Management Center, and local and State agencies, including the State Emergency Response Team.

G. Public Information

Standard

Information is made available to the public on a periodic basis on how they will be notified and what their initial actions should be in an emergency; the principal points of contact with the news media for dissemination of information during an emergency (including physical location or locations) are established in advance; and procedures for coordinated dissemination of information to the public are established

Licensee Emergency Plan Evaluation

The Plan provides for the dissemination of information to the public regarding how they will be notifed and what their actions should be during an emergency. This information includes: (1) educational information on radiation, (2) methods of notification during an emergency, (3) planned protective actions, (4) location and description of predesignated shelters and evacuation routes, (5) a detailed map, and (6) who to contact for additional information The information will be disseminated approximately annually in a brochure format to the permanent and transient adult population within the plume exposure pathway EPZ. The brochure will be mass-mailed and also distributed to motels, hotels, gas stations, and marinas and signs will be posted at boating areas. The licensee has provided this brochure to the NRC for review.

In an emergency, the Crisis Management Center will serve as the principal point of interaction between the station, governmental authorities, and corporate management for the exchange of information. The Crisis News Center, co-located with the Crisis Management Center will be utilized for all news media briefings and interviews. The Crisis News Director and his staff collect, verify, and disseminate information to the news media and coordinate the release of information with local, State and Federal public information officials.

The licensee will conduct annual training for personnel of the news media which will acquaint these persons with the Plan, information concerning radiation, and points of contact for release of public information during an emergency.

H. Emergency Facilities and Equipment

Standard

Adequate emergency facilities and equipment to support the emergency response are provided and maintained.

Licensee Emergency Plan Evaluation

Emergency facilities needed to support an emergency response have been provided including a Technical Support Center, Emergency Operations Facility (entitled the Crisis Management Center), and an Operations Support Center. Each will be activated for an Alert or higher emergency classification.

The Technical Support Center has been established in the same building as, and in close proximity to, the Control Room. The Technical Support Center will be used by plant management and technical and engineering support personnel directly involved in assessment of plant accident response and mitigation. It contains equipment to display plant status and diagnostic information necessary to support the emergency organization.

The Crisis Management Center will be utilized to evaluate and coordinate emergency and reentry/recovery operations on a continuing basis by the licensee, Federal and State officials. It will also be the center for receipt and analysis of field monitoring information. The Crisis Management Center is located at the licensee's Training and Technology Center within one mile of the site. The licensee has made provisions for an alternate Emergency Operations Facility at the corporate headquarters in Charlotte, N. C.

The Operations Support Center (assembly area) is located adjacent to the Control Room and will be the assembly point for unassigned support personnel. Emergency equipment and supplies are readily available.

The licensee's emergency facilities satisfy the interim staff criteria but not the final staff criteria for the permanent facilities contained in NUREG-0696, February 1981.

The Plan contains a listing of emergency equipment and supplies. The Plan provides for the inspection, inventory, and operational check of the equipment in accordance with station procedures.

Onsite monitoring systems and instrumentation used to initiate emergency measures and/or provide continuing assessment are identified. These include meteorological and seismic instrumentation, radiological monitors, process monitors, fire detection systems, and portable dose rate and radiation detection instruments.

The licensee has made provisions for offsite monitoring equipment which includes an extensive TLD network, in accordance with the staff's position, and portable radiation monitoring instruments for use by the offsite field assessment teams. Mobile monitoring capabilities, in addition to the licensee's, are available through the North Carolina Department of Human Resources, Radiation Protection Branch and the DOE Radiological Assistance Team. Offsite meteorological data is available from both the National Weather Service and the North Carolina Air National Guard.

The licensee's capabilities pertaining to meteorology presently do not meet the criteria identified in Appendix 2 to NUREG-0654.

License conditions were imposed to upgrade the emergency response facilities as follows:

1. The licensee shall submit by June 1, 1981, the conceptual design description of emergency response facilities in sufficient detail to describe how the criteria of NUREG-0696 will be met, including specifically, the provisions for data acquisition and transmission and the Safety Parameter Display System.

   By Duke Power Company letter to H. Denton, NRR, dated July 1, 1981, the appropriate information was provided.

2. The licensee shall provide meteorological and dose assessment remote interrogation capability to meet the criteria of Appendix 2, NUREG-0654, Rev. 1 as follows: (1) a functional description of upgraded capabilities by January 1, 1982, (2) installation of hardware and software by July 1, 1982 and (3) full operational capability by October 1, 1982.

   The licensee has installed and is testing a system for remote interrogation of the meteorology data bank for read-out and/or display in the TSC and the CMC. The system was described in a Duke Power Company letter to H. Denton, NRR, dated December 21, 1981.

3. The licensee shall revise, within 30 days, the emergency plan implementing procedures to incorporate the following in dose projections:

   (1) actual source terms, rather than design basis accident source terms
   (2) realistic meteorological conditions over the dose time period
   (3) actual containment pressures.

   By Duke Power Company letter to H. Denton, NRR, dated June 15, 1981, revised procedures and amplifying information were provided. These revisions and subsequent revised procedures dated March 16, 1982, adequately incorporate the above listed items.

I. Accident Assessment

Standards

Adequate methods, systems, and equipment for assessing and monitoring actual or potential offsite consequences of a radiological emergency condition are in use.

Licensee Emergency Plan Evaluation

The Plan and procedures contain system and radiological effluent parameter values characteristic of a spectrum of off-normal conditions and accidents. These parameter values and other reliable information are tabulated to cross-reference initiating conditions for each of the Emergency Classes. Specific alarm set-points, both visual and audio, are in the Control Room to alert the operator.

The onsite radiation monitoring and sampling system consists of (1) a process radiological monitoring and sampling system, (2) an effluent radiological monitoring and sampling system, (3) an airborne radioactive monitoring system, (4) an area radiation monitoring system, and (5) portable survey and counting equipment.

The Plan provides the methodology for determining the magnitude of a release or potential release by utilizing: (1) evaluation of plant conditions, (2) dose projections offsite, and (3) offsite radiological measurements. Station procedures provide the details of the methodology. The licensee has established a methodology to be used for estimating offsite doses in the unlikely event that assessment instrumentation is offscale or out of service. The details for such projected dose calculations are provided in the station procedures.

In addition to projecting offsite consequences from measured inplant parameters, the licensee has also established a field monitoring capability. Four field monitoring teams are dispatched at the Site Emergency and General Emergency levels. The teams are provided with radiological monitoring and sampling equipment and radio communication equipment. A single team can be deployed within ten minutes and all teams can be operational within one hour.

The licensee has procedures for relating measured field contamination levels to dose rate and for estimating integrated dose to the population at risk.

J. Protective Response

Standard

A range of protective actions has been developed for the plume exposure pathway EPZ for emergency workers and the public. Guidelines for the choice of protective actions during an emergency, consistent with Federal guidance, are developed and in place, and protective actions for the ingestion exposure pathway EPZ appropriate to the locale have been developed.

License Emergency Plan Evaluation

The licensee has established an onsite protective response for employees, contractor personnel, and members of the general public who may be onsite at the time of an emergency. This response consists of warning and notification, relocation and accountability, and protective actions. Onsite warning and notification will be by means of various alarm systems, station public address system, and an electric signal-horn system. In the case of a Site or General Emergency, personnel onsite will be relocated to designated shelter areas and an initial accountability completed within thirty minutes. Evacuation of non-essential personnel is by designated preplanned routes to offsite reassembly locations. The reassembly locations have provisions for radiological monitoring and decontamination of personnel. Additional onsite protective measures include the use of individual respiratory protection, protective clothing, and radioprotective drugs.

The Plan provides for recommending offsite protective measures depending on the projected dose to environs. The particular recommendation may be sheltering or evacuation depending on the magnitude of the projected dose, the meteorological conditions, the nature of the release, and the predetermined

evacuation time estimates for the sector(s) affected. The Plan contains maps and information regarding evacuation routes, and areas, shelters, preselected sampling and monitoring points, and the population distribution around the facility.

The Plan contains time estimates for evacuation within the plume exposure EPZ. These time estimates are generally in accordance with Appendix 4 of NUREG-0654. The licensee revised the evacuation time estimates in accordance with the criteria in a report dated July 1981.

K. Radiological Exposure Control

Standard

Means for controlling radiological exposures, in an emergency, are established for emergency workers. The means for controlling radiological exposures shall include exposure guidelines consistent with EPA Emergency Workers and Lifesaving Activity Protective Action Guides.

Licensee Emergency Plan Evaluation

The licensee has established a radiation protection program for controlling radiological exposures in the event of an emergency. Emergency exposure guidelines have been provided for the various categories of radiation workers. These guidelines are consistent with the EPA Emergency Worker and Life-Saving Activity Protective Action Guides. Emergency procedures specify the persons authorized to permit emergency exposures in excess of 10 CFR Part 20 limits.

The Station Health Physics Manual defines the radiation protection program for normal and emergency conditions. It provides for 24-hour per day dose determination for emergency personnel and for maintenance of dose records to ensure that exposure history is current.

Onsite contamination control measures for personnel, equipment, and access control are provided. The criteria for decontamination of personnel and equipment are specified in the Plan. Procedures have been developed for permitting the return of areas and items to normal use.

Provisions have been established for decontaminating relocated onsite personnel including provisions for extra clothing and decontaminants suitable for the type of contamination expected.

L. Medical and Public Health Support

Standard

Arrangements are made for medical services for contaminated and injured individuals.

Licensee Emergency Plan Evaluation

The licensee has made arrangements by written agreement with the Charlotte Memorial Hospital to provide medical assistance to injured personnel including

injuries involving radiological material. In addition, written agreements provide for Oak Ridge National Laboratories to act as a consultative and referral facility. Charlotte Memorial Hospital is a large general hospital with complete emergency-treatment capabilities and Oak Ridge has extensive radiological care facilities and expertise.

The station has two first aid facilities located in the Administration Building for providing medical assistance to injured personnel. The facilities can provide first aid treatment for minor injuries and emergency aid for more serious injuries. One facility has decontamination capability. Arrangements have been made with local physicians for onsite medical assistance.

Written agreements have been made with the North Mecklenburg Ambulance Service and the North Mecklenburg Rescue Squad for the transportation of injured personnel who may also be contaminated.

M. Recovery and Reentry Planning and Postaccident Operations

Standard

General plans for recovery and reentry are developed.

Licensee Emergency Plan Evaluation

The Duke Power Company Crisis Management Plan (CMP) is designed to support the McGuire Nuclear Station in the execution of its Plan. The CMP describes an extensive recovery organization which is activated upon actuation of the Crisis Management Center. The organization consists of experienced corporate management and supervisory personnel who have the authority to assure the best available use of corporate resources to assist in rapid recovery. The CMP organization will provide:

1. Technical and operational support planning for recovery operation

2. Radiological field monitoring and data assesment

3. Logistics support for emergency personnel

4. Management level interface with local, State, and Federal government authorities

5. Release of information to news media coordinated with governmental authorities

Any decision on the part of Duke Power Company to relax protective measures will be made by the Recovery Manager in coordination with NRC, North Carolina and local officials. Whenever a recovery operation is to be initiated or any change is to be made in the organizational structure, the Recovery Manager will notify representatives of the response organizations.

N. Exercises and Drills

Standard

Periodic exercises are (will be) conducted to evaluate major portions of emergency response capabilities, periodic drills are (will be) conducted to develop and maintain key skills, and deficiencies identified as a result of exercises or drills are (will be) corrected.

Licensee Emergency Plan Evaluation

Annual exercises will be conducted to test the integrated capability and a major portion of the basic elements existing within the Plan. Offsite, as well as licensee, response organizations will be involved. Although the State Plan will be exercised annually, it may be done separate from the licensee in some years due to the existence of other nuclear power reactor facilities within the State's jurisdiction. At least once every six years exercises will be started between 6:00 P.M. and midnight and another between midnight and 6:00 A.M. The scenario used for the various exercises will contain at least the essential elements as set forth in NUREG-0654. Arrangements will be made for qualified observers and a critique will be held after the exercise. The critique will provide a formal evaluation of the exercise. Management control has been established to ensure that any necessary corrective actions are implemented.

In addition to the exercises, various drills will be conducted covering communications, fires, medical emergencies, health physics and radiological monitoring. Depending on the particular drill, the frequency varies from monthly to annually in accordance with that set forth in NUREG-0654. Minimum requirements have been established for each of the drills. Management control is established such that necessary corrective actions are implemented.

O. Radiological Emergency Response Training

Standard

Radiological emergency response training is provided to those who may be called upon to assist in an emergency.

Licensee Emergency Plan Evaluation

The licensee provides training in the Emergency Plan and procedures to all permanent plant personnel. This includes assignment of duties and responsibilities, location and use of assembly areas, and familiarization with alarms and communications systems. In addition, those personnel having specific response roles as part of the onsite emergency organization are given specialized training in accordance with their expected duties. These areas include emergency response coordination and direction, accident assessment, radiological monitoring, repair and damage control, rescue, and first aid. The licensee will provide training and annual retraining for those offsite organizations whose services may be required in an emergency, such as fire, police, medical support, and rescue personnel. The training will be consistent with the organization's emergency functions.

The training program for members of the licensee's emergency organization will include practical drills as discussed in section N above.

P. Responsibility for the Planning Effort: Development, Periodic Review and Distribution of Emergency Plans

Standard

Responsibilities for plan development and review and distribution of emergency plans are established, and planners are properly trained.

Licensee Emergency Plan Evaluation

The Recovery Manager has the overall authority and responsibility for radiological emergency response planning at the corporate level. The Emergency Planning Coordinator has responsibility for the development and updating of station emergency plans and coordination of these plans with other response organizations.

The Plan, as well as any changes thereto, are provided to the organizations and individuals having a responsibility for implementation of the Plan. Provisions exist for an annual review of the Plan and for the incorporation of necessary revisions.

An independent review of the emergency preparedness program will be conducted at least every year. The review will include the Plan, the Crisis Management Plan, the implementing procedures and practices, training, readiness testing and equipment.

CONCLUSIONS ON LICENSEE EMERGENCY PLAN

Based on our review against the criteria in "Criteria for Preparation and Evaluation of Radiological Emergency Response Plans and Preparedness in Support of Nuclear Power Plants", NUREG-0654, Revision 1, November 1980, we conclude that, providing the items identified as requiring completion on or before October 1, 1982 are adequately accomplished the McGuire Nuclear Station Emergency Plan will provide an adequate planning basis for an acceptable state of emergency preparedness and meets the requirements of 10 CFR 50 and Appendix E thereto.

The Federal Emergency Management Agency (FEMA) has provided final findings dated June 4, 1981, on the State and local emergency response plans. FEMA concludes that State and local preparedness is adequate to cope with an accident at McGuire.

Based upon our review of the licensee's plans and procedures, the NRC and FEMA evaluation of the joint exercise, and our review of the FEMA findings, we find that the state of onsite and offsite emergency preparedness provides reasonable assurance that adequate protective measures can and will be taken in the event of a radiological emergency.