TENNESSEE VALLEY AUTHORITY
CHATTANOOGA, TENNESSEE 37401

400 Chestnut Street Tower II

September 24, 1981

Mr. James P. O'Reilly, Director
Office of Inspection and Enforcement
U.S. Nuclear Regulatory Commission
Region II - Suite 3100
101 Marietta Street
Atlanta, Georgia 30303

Dear Mr. O'Reilly:

SEQUOYAH NUCLEAR PLANT UNITS 1 AND 2 - NRC-OIE REGION II EMERGENCY PREPAREDNESS APPRAISAL - 50-327,50-328 - RESPONSE TO VIOLATION AND DEFICIENCIES

The subject appraisal dated August 20, 1981 cited TVA with one Severity Level IV Violation and four deficiencies. Enclosure 1 contains our response to the violation. The response to the deficiencies is contained in Enclosure 2. This matter was discussed with Inspector R. V. Crlenjak on September 21 and 23, 1981 and with Director P. Store on September 23, 1981.

If you have any questions, please get in touch with D. L. Lambert at FTS 857-2581.

To the best of my knowledge, I declare the statements contained herein are complete and true.

Very truly yours,

TENNESSEE VALLEY AUTHORITY

L. M. Mills, Manager
Nuclear Regulation and Safety

Enclosures
cc: Mr. Victor Stello, Director (Enclosures)
Office of Inspection and Enforcement
U.S. Nuclear Regulatory Commission
Washington, DC 20555

ENCLOSURE 1
SEQUOYAH NUCLEAR PLANT UNITS 1 AND 2
RESPONSE TO VOLATION

Violation

Technical Specification 6.8.1 requires that written procedures be established, implemented, and maintained covering Site Radiological Emergency Plan implementation.

Contrary to the above, the Technical Specification requirement for written procedures that implement the Site Radiological Emergency Plan was not met in that:

a. There was no written procedure covering the activation, staffing, and operation of the Interim Emergency Operations Facility defined in Section 3.1.2.5 of the Sequoyah Site Emergency Plan.

b. Sequoyah Technical Instruction TI-66, Post Accident Sampling and Analysis Methods, was not implemented in that equipment required by TI-66 to reduce personnel exposure during post accident sampling was not available; also TI-66 was found to be inadequate in that it did not address post accident sampling of high activity liquid effluents.

c. There was no written procedure for use by the Plant's Emergency Offsite Monitoring Team to provide initial offsite environmental assessment following an accident as required by Section 6.2.2.1 of the Sequoyah Site Emergency Plan.

d. There was no written procedure addressing implementation of exercises and drills required by Section 9.2.2 and 9.2.3 of the Sequoyah Site Emergency Plan.

This is a Severity Level IV Violation (Supplement I).

Admission or Denial of the Alleged Violation

Item a. TVA admits the violation occurred as stated.

Item b. TVA denies the violation.

Item c. TVA admits the violation occurred as stated.

Item d. TVA admits the violation occurred as stated.

Reasons for the Violation

Item a. An operating procedure for activation, staffing, and operation of the interim emergency operations facility was in draft form at the time of the emergency preparedness appraisal but had not been submitted as a formal change to the Sequoyah Implementing Procedures Document.

Item b. There are two distinct issues in item b. The first issue deals with equipment used solely for obtaining postaccident samples for analysis. As discussed in item 4.1.1.7 of the report, all equipment required by the procedure was available except a transport cart for which we believe an acceptable alternative could be made available. The second issue deals with providing procedures for postaccident sampling of liquid effluents in plant systems before release to the environment. (See section 4.1.1.8 of the report.)

Concerning the issue of providing 'sole use' equipment, TVA denies the violation occurred as stated.

TVA disagrees with the finding that implies that because 'sole use' equipment was not available a violation exists. TVA contends that the equipment would be available as discussed with the auditor.

Concerning the issue of postaccident liquid effluent sampling procedures, TVA denies the violation occurred as stated.

TVA disagrees with the report's finding concerning inadequate postaccident sampling procedures for high activity liquid effluents. Liquid effluents in this violation are those other than in the Reactor Coolant System. TVA cannot find any requirement relating to postaccident sampling of liquid effluents in systems other than the Reactor Coolant System in the regulations or guidance previously supplied by the Commission. Should an incident occur in which auxiliary systems become highly contaminated, any possible release of liquid effluents would be very deliberate and require coordination between TVA and other State and Federal agencies. Since there would be no need to release these liquid effluents to the environment immediately, this planning process may take several days and even months. Procedures specific to the situation would be developed at that time in conjunction with other authorities before release of the liquid.

Item c. It was TVA's intent that offsite monitoring teams would all use the same procedure provided in the Muscle Shoals Emergency Control Center (MSECC) implementing procedures. The procedures were not included in the emergency response kits for the plant teams as intended.

Item d. A procedure to provide internal tracking for this and other Radiological Emergency Plan (REP) commitments was in draft form at the time of the emergency preparedness appraisal but had not been formally implemented.

Corrective Steps Which Have Been Taken and Results Achieved

Item a. As a result of the letter dated March 19, 1981, from D. G. Eisenhut to H. G. Parris, the interim emergency operations facility is being replaced by the local recovery center as described in our submittal to H. R. Denton dated June 2, 1981. The Sequoyah Radiological Emergency Plan is being revised to reflect this change.

Item b. TVA intends to provide 'sole use' equipment as recommended by the auditor. This will be provided by November 15, 1981.

Item c. The procedure (MSECC-IPD, IP-9) has been placed in each emergency response kit at Sequoyah.

Item d. A procedure for informing each plant of commitments and required performance dates has been developed. The tracking form was provided for NRC inspection. TVA contends that this tracking system will provide adequate notice to the plant of necessary drills and exercises. The radiological emergency planning coordinator has been designated at each plant to provide coordination for commitments involving the plant.

Corrective Steps Which Will Be Taken To Avoid Further Violations

Item a. The local recovery center will not be staffed by TVA as part of the emergency response and therefore requires no procedures.

Item c. The MSECC-IPD, IP-9, will be identified on the emergency response kit inventory list, and training will be provided users. Additional equipment required by IP-9 will be provided in the Sequoyah emergency response kits. An additional plant specific procedure will be developed for plant team use for site boundary monitoring and will also be included in the emergency response kits. Training will be provided on this procedure.

Item d. The procedure has been issued for information and has been brought up to date on commitments. For every commitment made in the REP, the tracking system will alert the responsible organization 6-12 weeks in advance of the required performance date. If performance is not verified, automatic followups are made until verification is received.

Date When Full Compliance Will Be Achieved

Item a. TVA will be in full compliance by November 15, 1981.

Item c. The date by which full compliance will be achieved, including incorporation of the new procedure and necessary training, is December 1, 1981.

Item d. The commitment tracking system will be fully implemented on October 2, 1981.

ENCLOSURE 2
SEQUOYAH NUCLEAR PLANT UNITS 1 AND 2
RESPONSE TO DEFICIENCIES

1. Assessment Actions

Deficiency 50-327/81-20-12,328/81-24-12

The planning standard in 10 CFR 50.47(b)(4) requires that a standard classification and emergency action level scheme, which includes facility and effluent parameters, be in use by the licensee.

The Sequoyah classification and emergency action level scheme was determined to be deficient in that there were no procedures available to relate radiation effluent monitor parameters to site boundary exposure rates in order to properly classify an accident condition in accordance with Procedure IP-1.

Deficiency 50-327/81-20-10,328/81-24-10

The planning standard in 10 CFR 50.47(b)(9) requires that adequate methods, systems, and equipment for assessing and monitoring actual or potential offsite consequences of a radiological emergency condition are in use by the licensee.

The Sequoyah methods and equipment for assessing and monitoring release of radioactive materials to the environment were determined to be deficient in that there was no procedure available to relate the Unit 1 high range Shield Building Vent Monitor to release rates of radioactive materials in order to assess offsite consequences of such releases, and there was no high range Shield Building Vent Monitor, nor procedure, provided for Unit 2 to assess releases of radioactive materials in an accident.

2. Emergency Organization

Deficiencies 50-327/81-20-01,02;328/81-24-01,02

The planning standard of 10 CFR 50.47(b)(2) requires, in part, that the onshift facility licensee responsibilities for emergency response be unambiguously defined; 10 CFR 50, Appendix E, paragraph IV.A. requires, in part, that the onsite plant staff emergency response assignment be described in detail; and, the planning standard of 10 CFR 50.47(b)(15) requires that radiological emergency response training be provided to those expected to assist in an emergency.

The Sequoyah onsite organization for coping with emergencies is described in Section 4.0 of the Radiological Emergency Plan and Implementing Procedures IP-6 and IP-7. Training for the onsite emergency organization is addressed in Section 9.0 of the Radiological Emergency Plan.

The Sequoyah onsite emergency organization was determined to be deficient in that the organization had not been specified, in detail, down to the working level and the functional responsibilities of onsite personnel were not well defined below the supervisory level. Due to the lack of specific functional responsibility assignments, specific training in radiological response had not been provided to all emergency organization personnel.

Steps Which Have Been Taken

Item 1. The SQN-IPD, I-1, Emergency Classification Logic, has been changed to provide for the classification of emergencies based upon radiological effluents. The procedure also provides the capability to estimate site boundary exposure rates based upon radiological effluents and worst case meteorology. The procedure utilizes the high- and low-range shield building vent monitors for both units. The unit 2 high-range shield building vent monitor has been installed and is fully operational.

Item 2. TVA is comparing Sequoyah REP, Table 1, with NUREG 0654, Section IIB, Table B-1, to determine which specific functional responsibilities should be delegated down to the working level.

Steps Which Will Be Taken

Item 1. This is a completed item.

Item 2. Upon determination of specific responsibilities that should be delegated, TVA will make appropriate changes to the Sequoyah REP and plant procedures. Training in the specific responsibilities will be provided to assigned personnel.

Schedule for Completion of Actions for Each Item

Item 1. This is a completed item.

Item 2. Required changes to the Sequoyah REP and plant procedures as well as additional training will be completed by January 1, 1982.

YELLOW

AUG 20 1981

Docket Nos. 50-327, 50-328

Tennessee Valley Authority
ATTN: Mr. H. G. Parris
Manager of Power
500A Chestnut Street Tower II
Chattanooga, TN 37401

Gentlemen:

Subject: Emergency Preparedness Appraisal

To verify that licensees have attained an adequate state of onsite emergency preparedness the Office of Inspection and Enforcement is conducting special appraisals at each operating power reactor site. The objectives of the appraisal at each facility are to evaluate the overall adequacy and effectiveness of emergency preparedness and to identify areas of weakness that need to be strengthened. We will use the findings from these appraisals as a basis not only for requesting individual licensee action to correct deficiencies but also for effecting improvements in NRC requirements and guidance.

The NRC conducted an appraisal of the emergency preparedness program at the Sequoyah Nuclear Plant from May 6 to May 15, 1981. This appraisal was performed in lieu of certain routine inspections normally conducted in the area of emergency preparedness. Areas examined during this appraisal are described in the enclosed report (50-327/81-20, 50-328/81-24). Within these areas, the appraisal team reviewed selected procedures and representative records, inspected emergency facilities and equipment, observed work practices, and interviewed personnel.

Certain activities under your license appear not to have been conducted in full compliance with NRC requirements. These items and references to the pertinent requirements are listed in the Notice of Violation enclosed herewith as Appendix A. Elements to be included in your response to these items are delineated in the Notice of Violation. Also, the findings of this emergency preparedness appraisal indicate that certain deficiencies exist in your emergency preparedness program. These deficiencies are addressed in Appendix B, "Emergency Preparedness Deficiencies".

The findings of this appraisal also indicate that there are other areas that you should evaluate and consider for improvement in your emergency preparedness program. These additional areas are addressed in the body of the enclosed report.

We recognize that an explicit regulatory requirement pertaining to each item identified in Appendix B and in the body of the enclosed report may not currently

exist. Notwithstanding this; you are requested to submit a written statement within thirty (30) days of the date of this letter, describing your planned actions for improving each of the deficiencies identified in Appendix B and the results of your consideration of the additional items identified in the enclosed report. This description is to include (1) steps which have been taken, (2) steps which will be taken, and (3) a schedule for completion of actions for each item. This request is made pursuant to Section 50.54(f) of Part 50, Title 10, Code of Federal Regulations. Your corrective actions are to be incorporated into the site emergency plan and procedures as appropriate.

With respect to the deficiency identified in item 1. of Appendix B, and in reference to a telephone conversation on June 26 between Mr. W. T. Cottle of your staff and Mr. D. R. Quick of this office, it is our understanding that the following corrective actions have been or will be taken as indicated:

a. Develop and implement a procedure to relate high range Shield Building Vent monitor (1-RM-90-260) readings to source term release rates. This was completed June 18, 1981.

b. Develop and provide to the Control Room, a procedure which relates radiation effluent monitor parameters to site boundary exposure rates, by August 21, 1981.

c. Complete the installation of high range monitoring capability on the Unit 2 Shield Building Vent, and provide a procedure which relates monitor readings to source term release rates, prior to exceeding 5% power on the Unit 2 reactor.

Please inform this office immediately if your understanding of this matter is different from that stated above.

In accordance with 10 CFR 2.790 of the Commission's regulations, a copy of this letter and the enclosures will be placed in the NRC's Public Document Room. If the report contains any information that you believe to be exempt from disclosure under 10 CFR 9.5(a)(4), it is necessary that you: (a) notify this office by telephone within ten days from the date of this letter of your intention to file a request for withholding; and (b) submit within twenty-five days from the date of this letter a written application to this office to withhold such information. If your receipt of this letter has been delayed such that less than seven days are available for your review, please notify this office promptly so that a new due date may be established. Consistent with section 2.790(b)(1), such application must be acompanied by an affidavit executed by the owner of the information which identifies the document or part thereof sought to be withheld, and a full statement of the reasons on the basis of which it is claimed that the information should be withheld from public disclosure. This section further requires the statement to address with specificity the considerations listed in 10 CFR 2.790(b)(4). The information sought to be withheld shall be incorporated as far as possible into a separate part of the affidavit. If we do not hear from you in this regard within the specified periods noted above, the report will be placed in the Public Document Room.

AUG 2 0 1981

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

Sincerely,

/S/

James P. O'Reilly
Director

Enclosures:
1. Appendix A, Notice of Violation
2. Appendix B, Emergency Preparedness Deficiencies
3. Office of Inspection and Enforcement Inspection Report No. 50-327/81-20; 50-328/81-24

cc w/encl:
H. J. Green, Director of Nuclear Power
G. G. Stack, Project Manager
J. M. Ballentine, Plant Superintendent
J. F. Cox, Supervisor, Nuclear Licensing Section
M. J. Burzynski, Project Engineer
H. N. Culver, Chief, Nuclear Safety Review Staff

bcc w/encl:
Document Management Branch
State of Tennessee
Division of Emergency Preparedness, IE:HQ

RII	RII	IE:HQ	RII	RII
DLAndrews:ejw	GRJenkins	FGPagano	JPStohr	RCLewis
8/10/81	8/10/81	8/10/81	8/10/81	8/10/81

Received HQ Concurrence 8/18 from R. VanNiel/B. Grimes

APPENDIX A
NOTICE OF VIOLATION

Tennessee Valley Authority
Sequoyah 1, 2

Docket Nos. 50-327, 50-328
License Nos. DPR-77, DPR-79

As a result of the inspection conducted on May 6 to May 15, 1981, and in accordance with the Interim Enforcement Policy, 45 FR 66754 (October 7, 1980), the following violation was identified.

Technical Specification 6.8.1 requires that written procedures be established, implemented and maintained covering Site Radiological Emergency Plan implementation.

Contrary to the above, the Technical Specification requirement for written procedures that implement the Site Radiological Emergency Plan was not met in that:

a. There was no written procedure covering the activation, staffing and operation of the Interim Emergency Operations Facility defined in Section 3.1.2.5 of the Sequoyah Site Emergency Plan.

b. Sequoyah Technical Instruction TI-66, Post Accident Sampling and Analysis Methods, was not implemented in that equipment required by TI-66 to reduce personnel exposure during post-accident sampling was not available; also TI-66 was found to be inadequate in that it did not address post-accident sampling of high activity liquid effluents.

c. There was no written procedure for use by the Plant's Emergency Offsite Monitoring Team to provide initial offsite environmental assessment following an accident as required by Section 6.2.2.1 of the Sequoyah Site Emergency Plan.

d. This was no written procedure addressing implementation of exercises and drills required by Section 9.2.2 and 9.2.3 of the Sequoyah Site Emergency Plan.

This is a Severity Level IV Violation (Supplement I).

Pursuant to the provisions of 10 CFR 2.201, you are hereby required to submit to this office within thirty days of the date of this Notice, a written statement or explanation in reply, including: (1) admission or denial of the alleged violation; (2) the reasons for the violation if admitted; (3) the corrective steps which have been taken and the results achieved; (4) corrective steps which will be taken to avoid further violations; and (5) the date when full compliance will be achieved. Consideration may be given to extending your response time for good cause shown. Under the authority of Section 182 of the Atomic Energy Act of 1954, as amended, this response shall be submitted under oath or affirmation.

Date: _____

APPENDIX B
EMERGENCY PREPAREDNESS DEFICIENCIES

Based on the results of the NRC's appraisal of the Sequoyah Nuclear Plant Emergency Preparedness Program, conducted May 6-15, 1981, the following deficiencies were identified: (References are to Sections in OIE Report Nos. 50-327/80-20; 50-328/81-24)

1. Assessment Actions

   a. The planning standard in 10 CFR 50.47(b)(4) requires that a standard classification and emergency action level scheme, which includes facility system and effluent parameters, be in use by the licensee.

      The classification and action level scheme at Sequoyah is contained in Section 5.0 of the Radiological Emergency Plan and Implementing Procedure IP-1.

      The Sequoyah classification and emergency action level scheme was determined to be deficient in that there were no procedures available to relate radiation effluent monitor parameters to site boundary exposure rates in order to properly classify an accident condition in accordance with Procedure IP-1. This deficiency is discussed in paragraph 5.4.2 of the enclosed report.

   b. The planning standard in 10 CFR 50.47(b)(9) requires that adequate methods, systems and equipment for assessing and monitoring actual or potential offsite consequences of a radiological emergency condition are in use by the licensee.

      At the Sequoyah plant releases of radioactive materials to the environment are monitored by low range and high range effluent radiation monitors on the Shield Building Vent of Unit 1 and a low range monitor on the Shield Building Vent of Unit 2. Implementing Procedure IP-18 provides a method of determining the magnitude of radioactive material releases using the installed monitoring equipment. The offsite consequences of releases are assessed by the Muscle Shoals Facility utilizing information provided by IP-18 and meteorological information for the site.

      The Sequoyah methods and equipment for assessing and monitoring release of radioactive materials to the environment were determined to be deficient in that there was no procedure available to relate the Unit 1 high range Shield Building Vent Monitor to release rates of radioactive materials in order to assess offsite consequences of such releases, and there was no high range Shield Building Vent Monitor, nor procedure, provided for Unit 2 to assess releases of radioactive materials in an accident. This deficiency is discussed in paragraphs 4.2.1 2 and 5.4.2 of the enclosed report.

2. Emergency Organization

The planning standard of 10 CFR 50.47(b)(2) requires, in part, that the on-shift facility licensee responsibilities for emergency response be unambigously defined; 10 CFR 50, Appendix E, paragraph IV.A. requires, in part, that the onsite plant staff emergency response assignments be described in detail; and, the planning standard of 10 CFR 50.47(b)(15) requires that radiological emergency response training be provided to those expected to assist in an emergency.

The Sequoyah onsite organization for coping with emergencies is described in Section 4.0 of the Radiological Emergency Plan and Implementing Procedures IP-6 and IP-7. Training for the on-site emergency organization is addressed in Section 9.0 of the Radiological Emergency Plan.

The Sequoyah on-site emergency organization was determined to be deficient in that the organization had not been specified, in detail, down to the working level and the functional responsibilities of on-site personnel were not well-defined below the supervisory level. Due to the lack of specific functional responsibility assignments, specific training in radiological response had not been provided to all emergency organization personnel. This deficiency is discussed in paragraph 2.1 and 3.1 of the enclosed report.

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

Report Nos. 50-327/81-20 and 50-328/81-24

Licensee: Tennessee Valley Authority
500A Chestnut Street
Chattanooga, TN 37401

Facility Name: Sequoyah Nuclear Plant

Docket Nos. 50-327 and 50-328

License Nos. DPR-77 and CPPR-73

Appraisal at the Sequoyah site near Chattanooga, Tennessee

Inspectors: D. L. Andrews — 8/10/81
D. L. Andrews (Team Leader) — Date Signed

D. L. Andrews — 8/10/81
D. J. Perrotti — Date Signed

D. L. Andrews — 8/10/81
M. J. Gaitanis — Date Signed

Accompanying Personnel: L. H. Munson, B. D. Pickett, J. Lewis, G. Gibson

Approved by: G. R. Jenkins — 8/10/81
G. R. Jenkins, Section Chief, EPPS Branch — Date Signed

SUMMARY

Inspection on May 6-15, 1981

Areas Inspected

This special announced appraisal involved 410 inspector-hours on site in the performance of an Emergency Preparedness Appraisal.

Results

In the areas inspected, an apparent violation was identified in one area: Failure to establish, implement and maintain procedures to implement the Emergency Plan - paragraphs 4.1.1.4, 4.1.1.7, 4.1.1.8, 5.4.2.1, 5.4.2.4 and 5.5.2. Appraisal deficiencies were identified in the following areas: Emergency Organization - paragraphs 2.1 and 3.1; and, Assessment Actions - paragraphs 4.2.1.2 and 5.4.2.

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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 violations or deviations.

The appraisal scope and findings were summarized on May 15, 1981, with those persons indicated in the attachment to this report. Additional discussions regarding the findings, including the violation, were held by telephone with W. T. Cottle, on August 10, 1981.

DETAILS

1.0 Administration

The overall responsibility for emergency response planning at Sequoyah has been delegated to the Radiological Emergency Planning (REP) group which reports through the Reactor Engineering Branch to the Assistant Director for Engineering and ultimately to the TVA Director, Division of Nuclear Power. The REP group is assisted by the onsite Emergency Planning Coordinator and by other emergency planning groups at the TVA Muscle Shoals Facility and the Knoxville Facility. The Sequoyah Plant Operating Review Committee (PORC) reviews and approves all changes to the emergency plan and implementing procedures document for the Sequoyah Facility. The Muscle Shoals Facility has the responsibility of coordinating the review of emergency plan development and revision, including the implementing procedures, by all TVA emergency planning groups and is also responsible for maintaining files of emergency planning documents and distributing revised plans and procedures to all TVA Facilities.

The REP group has been selected and formally designated by position description to provide expertise in various disciplines that TVA considers important in emergency planning. The individuals responsible for emergency planning at the Muscle Shoals and Knoxville Facilities have been selected to provide additional capability to overall emergency planning for areas not included in the responsibilities of the REP Group, such as health physics, media and long term engineering support. The onsite Emergency Planning Coordinator, although not formally appointed to that position, maintains a close working relationship with the REP Group and provides direct input to emergency planning for the Sequoyah Facility.

Discussion with those individuals responsible for the planning effort within the Licensee's organization indicated that the individuals possessed an understanding of the principles involved in developing plans and procedures, that these individuals have been selected according to criteria established by Licensee's management, and that these individuals have been provided knowledge of the emergency planning area through professional development training and seminars.

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

2.0 Emergency Organization

2.1 Onsite Organization

A site Emergency Director has been designated, who is available onsite at all times and has the authority and responsibility to initiate any emergency actions within the provisions of the emergency plan,

including the exchange of information with authorities responsible for coordinating and implementing offsite emergency measures. There are adequate personnel onsite at all times to provide initial emergency response capability in all key functional areas delineated in specific criteria of NUREG 0654, Section IIB, table B-1, related to the planning standard of 10 CFR 50.47(b)(2). The authority, responsibilities and duties of the individuals who will take charge in an emergency have been described; however, a detailed discussion of plant staff emergency assignments has not been included in the Emergency Plan nor in the Implementing Procedures Document as required by 10 CFR 50, Appendix E, paragraph A.2.b. Discussions with licensee representatives indicate that plant staff members are familiar with the Emergency Plan and procedures and have an understanding of the general functional areas in which they would be expected to perform but few, below the supervisory level, were aware of specific tasks which they would be responsible for during the initial response to an emergency. This lack of specific staff assignments was reflected in the training program for onsite emergency response personnel. (See section 3.1).

Based on the above findings, the following deficiency was identified:

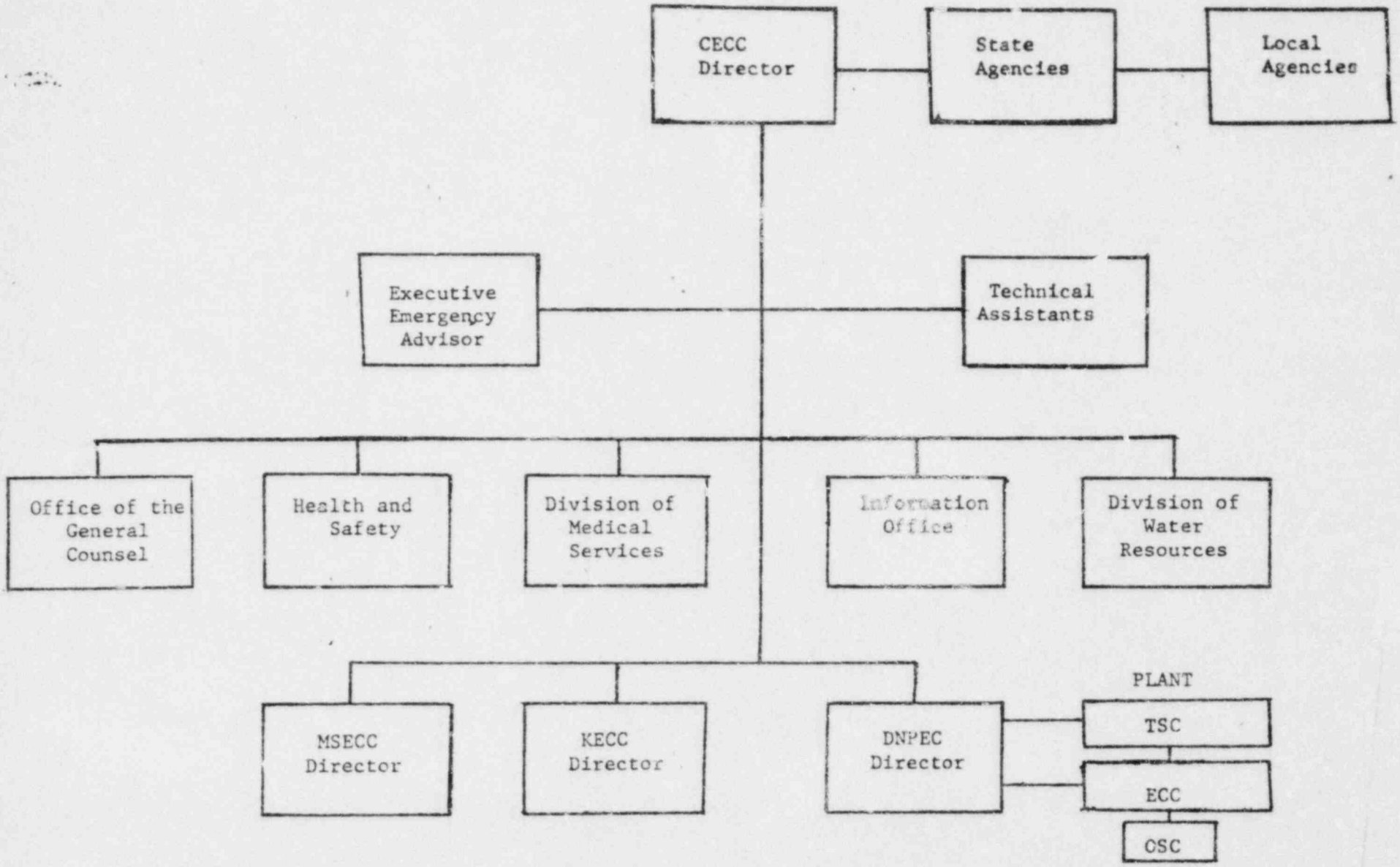
- Onshift personnel were not assigned specific functional responsibilities in the initial emergency response organization down to the working level and an organization chart which delineates functional responsibilities and interfaces among all levels of the onsite emergency organization was not included in the Emergency Plan. (50-327/81-20-01; 50-328/81-24-01)

2.2 Augmentation Organization

The onsite organization is augmented by assigned personnel from the normal onsite plant complement. These additional personnel are alerted by the Plant Duty Supervisor, who is contacted by the Interim Site Emergency Director, and it appears that a timely augmentation of the onshift organization can be accomplished. In some instances the Plant Duty Supervisor's responsibility may be assigned to the Plant Superintendent who is also designated to respond and relieve the Shift Engineer as site Emergency Director in accordance with Section 4.0 of the Emergency Plan. It does not appear that the Plant Superintendent can make the approximately 15 telephone calls to initiate the augmentation organization and still respond to the site in a timely manner during normal off duty hours. It is noted that the Plant Superintendent is not required to respond within 30 minutes as indicated by Section 4.0, table 1 of the Emergency Plan

Additional assistance in coping with an emergency is provided by various offsite TVA organizations. These organizations are described in appendices to the Sequoyah Emergency Plan. Briefly, the Interim

Figure 1


CECC Director
State Agencies
Local Agencies
Executive Emergency Advisor
Technical Assistants
Office of the General Counsel
Health and Safety
Division of Medical Services
Information Office
Division of Water Resources
MSECC Director
KECC Director
DNPEC Director
PLANT
TSC
ECC
OSC

Site Emergency Director contacts the Operations Duty Specialist at the Central Emergency Control Center (CECC) in Chattanooga. This individual is on duty 24 hours a day and is contacted by a direct phone line from the plant control room. The Operations Duty Specialist is responsible for alerting the various TVA organizations, who provide direct support to the Sequoyah facility during an emergency, and for providing initial notification and recommended protective actions, as determined by the Site Emergency Director, to State and local emergency organizations. The offsite centers, which will be staffed and subsequently provide direct support to the Sequoyah Emergency Organization, are the Division of Nuclear Power Emergency Center (DNPEC), the Muscle Shoals Emergency Control Center (MSECC), the Knoxville Emergency Control Center (KECC) and the CECC staff. The interfaces among the various TVA organizations and offsite agencies are shown in figure 1. The CECC Director is responsible for coordinating all TVA activities during an emergency.

An interim Emergency Operation Facility (IEOF) has been established at the Power Operations Training Center near the Sequoyah site. Upon activation of the IEOF, the CECC Director will transfer the CECC functions to that facility; however, the CECC in Chattanooga will remain staffed with adequate personnel to fulfill the functional responsibilities of that facility. Additional information concerning the IEOF is included in Section 4.1.1.4 of this report.

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

3.0 Training and Retraining

3.1 Emergency Plan Training/Retraining Program

The licensee's emergency preparedness training and retraining program was outlined in Section 9.0 of the Radiological Emergency Plan - Sequoyah Nuclear Plant, Rev. 0 dated January 2, 1981 and implemented by the Implementing Procedures Document in procedures SQN, IP 19, Radiological Plan Training and KECC-IP5, Training Procedures. The plan and implementing procedures provided for annual training and retraining of those individuals or position classification that had specific duties outlined in the Radiological Emergency Plan (REP) and specified that each division had responsibility for its own REP training. The Office of Health and Safety was responsible for the overall coordination and implementation. Training and retraining of offsite agencies was the responsibility of the Office of Health and Safety.

Specific qualification criteria for individuals assigned to various functional areas of emergency activities was not established except as implemented by attaining the particular position.

Training for emergency preparedness was provided to all employees by inclusion in the General Employee Training program. This training was provided on a two year frequency and instructed employees on identification of emergency signals and to proceed to designated assembly points.

Specific REP training was developed for designated response personnel and was included in the operations licensed reactor operator qualification and requalification program. Lesson plans were developed as appropriate.

Formal REP training for health physics personnel at the working level was not provided for in the REP, REP Implementing Procedure 9, Radiological Emergency Plan Training, or in SQNP-Administrative Instruction 14, Plant Training Program. The program did provide for a routing and sign off of REP-Implementing Procedures to health physics personnel to indicate review and understanding of the REP procedures.

The emergency response training program for the Public Safety staff (security force) was incorporated in the Testing and Qualification program. The program included lesson plans, training outlines, written scenarios and practices with critiques and written examinations. The program appeared to be adequate.

Fire Brigade and First Aid training programs were developed and lesson plans, schedules and demonstration provided. This program appeared to be adequate.

The program for training of offsite agencies such as fire department, police, ambulance and hospital personnel were the responsibility of Office of Health and Safety and assigned to the Muscle Shoals facility. The documented program for their REP training was not reviewed. (Section 3.2.)

The training program for the Central Emergency Control Center (CECC) and MSECC were reviewed. The programs included lesson plans and outlines, demonstrations and walk through, although no written testing was required.

Based on the above findings, the following deficiency was identified:

- A specialized emergency plan and procedure training program for all personnel assigned to the onsite emergency response organization down to the working level had not been developed nor implemented. (50-327/81-20-02; 50-328/81-24-02)

3.2 Program Implementation

The emergency preparedness training programs as provided by the REP and procedures was reviewed for implementation.

The General Employee Training program was in place and functioning. The program provided the information indicated and was conducted on a two year frequency. Attendance was documented and written examinations given. Computerized records of this training were maintained and provided the individual's name, identification number, type of training given, date given and date due for retaining. Review of records of selected personnel showed that training was current.

REP training for designated response personnel was documented on the computer training records and on TVA Form 1453, "Report on Individual Participation in an Educational Activity." Lesson plans used for the training and signed attendance rosters were on file. It was noted that Administrative Instruction 14, Plant Training Program, which designates the training required of plant personnel, was not current in that training was not identified as being required for some positions specified in the REP as Technical Support Personnel. This discrepancy was recognized by the Plant Training Officer and revision of the instruction was in progress. A review of field training folders of selected designated personnel showed that training had been given and documentation completed.

Training records of health physics technicians and chemistry technicians indicated that, except for one course called Mitigating Core Damage, no specific emergency preparedness training had been given. Discussions with health physics personnel supported the finding and further indicated that training in related areas such as expected radiation levels under unusual plant conditions and adjustment of air sampling times in areas of high radionuclide concentration, was not covered. Licensee representatives stated that the routine work activities in the plant and normal administrative instructions, which would still be in effect during an emergency, provided adequate training and guidance for health physics personnel in an emergency or would direct the health physics technician to a responsible level of management who would provide that guidance. The inspector reiterated that specific training in emergency preparedness and related radiological surveillance, monitoring and sampling would provide more effective health physics support.

The Public Safety staff training program appeared to be in place and appropriate. Records showed that, in addition to the annual written test of all personnel, at least five simulated emergency drills had been conducted in the first quarter of 1981. Documentation of the scenario, the response, and critique were on file.

Training in the Radiological Emergency Plan and Implementing Procedures for the licensed reactor operator personnel was in place, well documented and appeared appropriate.

The implementation of the Fire Brigade and First Aid personnel training program appeared to be adequate. Records of selected designated personnel were reviewed and training was current.

While the formal program for offsite agency training was not reviewed, agreement letters were in place and records of special training, including attendance sheets, given to 24 local fire fighting personnel, were on file. Discussions with other offsite support agencies indicated that training had beer conducted (see Section 6.1).

The training program for the Central Emergency Control Center was reviewed. Lesson plans were written for CECC technical assistant, DNPEC staff, duty specialists, and clerical support personnel. While written tests were not given, at least ten demonstrations were documented as conducted since December 1, 1980. These demonstrations included notification and staffing, message logging, and communication drills including contacts with other TVA emergency centers. The training conducted appeared to be adequate.

Discussions with MSECC personnel indicated that lesson plans had been developed for most emergency response team position training including clerical and field monitoring teams. Demonstrations and practices had been held approximately weekly this year and included joint participation with other emergency support centers.

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

4.1 Emergency Facilities

4.1.1 Assessment Facilities

4.1.1.1 Control Room

The main control room consists of Units 1 and 2 control rooms and is located in the control bay at elevation 732.0. The existing emergency communication facilities include the Plant Automatic Exchange (PAX) telephone, sound powered telephones, radios, and separate ring down phones to the Operations Duty Specialist in Chattanooga, Tennessee and to the NRC in Bethesda, MD.

During an emergency, access to the control room is controlled by Public Safety Officers at the direction of the Site Emergency Director (SED).

Habitability provisions and supplies appear adequate. Space for about 15 persons appeared to be available. An auxiliary control room for both Units, to be used for Unit shutdown when the main control room is uninhabitable, is located adjacent to the main control room.

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 relay room, adjacent to the Main Control Room on elevation 732.0, is designated the Technical Support Center and is supervised by the Results Supervisor. This center meets the same habitability requirements as the main control room. There is sufficient space available to accommodate up to 25 persons.

The TSC communications include PAX telephones, Bell Telephones with speaker phones, and a ring down phone system. NRC, ENS and HPN have not been installed in the TSC. Should all communications to the Control Room be lost, the close proximity of the two areas allows for continued effective emergency response management.

The TSC upon activation will be staffed in accordance with the Radiological Emergency Plan (REP). In the event that the plan is activated during normal day shift hours for the plant staff, the following employees will report and make up the technical support center staff:

Reactor Engineer
Lead Mechanical Test and Studies Engineer
Chemical Engineer
Lead Instrument Maintenance Engineer
Lead Mechanical Maintenance Engineer
Lead Electrical Maintenance Engineer

In the event that the plan is activated during normal off duty hours, the SED will make arrangements to staff the TSC with available onsite

personnel or call in offsite personnel (paging system in use). The TSC will be manned until the SED determines that it is no longer necessary.

Reference materials, including the REP and the Implementing Procedure; auxiliary equipment such as microfiche reader; and supplies are present as described in SQN. IP-6. Respiratory protective devices are available, if needed.

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

4.1.1.3 Operations Support Center (OSC)

The locker room and lunchroom space in the control building at the 732.0 foot elevation is designated for use as the Operations Support Center. The structural and habitability support is the same as the control room and the TSC. An estimated 15-20 persons can readily be accommodated. The OSC is supplied with PAX telephone communications to the control room; however, the shift engineer's office is also located in this area and has intercom, PAX, Bell Telephone, security (PSO) radio, and a Health Physics Network (HPN) ring down phone available for use by the OSC supervisor.

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

4.1.1.4 Emergency Operations Facility (EOF)

The interim EOF (IEOF) is located in the Power Operations Training Center. The IEOF will be activated by the CECC Director when an emergency is classified as a Site or General Emergency. Upon activation, the CECC Director will transfer the CECC function to the IEOF. This transfer will include the CECC Director, CECC staff, and the Occupational Health and Safety representative. The Director, Division of Nuclear Power, will also proceed to the IEOF. The CECC will continue to be staffed after this transition and will retain some of the CECC functions. Communications equipment available in the IEOF include Bell Telephones and PAX system which has a microwave capability for offsite communications links to other TVA facilities.

The specific area assigned to the IEOF is small but additional space is readily available for expansion during an emergency. Although the IEOF was described in the REP, no implementing procedures for activating and operating the IEOF were available.

The failure to provide detailed procedures in the REP-IPD for the activation and operation of the IEOF, including staff assignments, supplies and equipment availability, and functional areas to be transferred from the CECC is an apparent violation of Technical Specification 6.8.1 (50-327/81-20-03; 50-328/81-24-03).

4.1.1.5 Post Accident Coolant Sampling and Analysis

4.1.1.6 Post Accident Containment Air Sampling and Analysis

4.1.1.7 Post Accident Gas and Particulate Effluent Sampling and Analysis

The TVA Radiological Emergency Plan (REP) does not address the Post-Accident Sampling Program; however, under correspondence dated July 3, 1980, TVA submitted to the NRC their response to NUREG-0578, item 2.1.8a, Improved Post Accident Sampling Capability. Until the design modifications are complete (estimated to be January 1982) Sequoyah Nuclear Plant (SNP) has established an interim procedure, Technical Instruction, TI-66 "Post Accident Sampling and Analysis Methods", to evaluate primary coolant activity under emergency conditions utilizing the existing sampling points and sampling equipment (except for emergency tongs and shielded cart) that is used in the day-to-day, routine radio chemistry operations.

Review of the interim post accident sampling facilities and equipment consisted of examination of equipment and sample point locations, interviews with shift chemistry analysts and discussions with Chemical Engineers and their supervisors. The hot sample room which includes the primary coolant

sample point has no shielding such that obtaining a sample would not be possible without incurring a radiation dose to an analyst that would not conform to "as low as reasonably achievable" (ALARA). Radiation levels are postulated to be very high, and in fact, TI-66 specifies that, at a contact reading of 500R/hr, the analyst is to leave the area immediately and contact the supervisor. The auditors were informed by the Results Supervisor that post-accident sampling of primary coolant would have to be reevaluated under the interim procedure if the contact radiation level were 500R/hr due to the high dose levels that would be received by personnel in the sampling and analysis of primary coolant. The equipment identified in TI-66 to be used during the sampling included high-range cutie pie or teletector, valve manipulating tools and a transport cart with shielding and survey instruments, which were not available at the sampling apparatus storage locker outside the chemistry lab. The auditors were informed by a licensee representative that the radiation survey instrument would be provided by the HP department and that the shielded transport cart could be fabricated from material available onsite. The auditors verified the availability of the high range survey instruments from the HP group. However, the auditors informed the licensee that the shielded cart should be fabricated and maintained in a state of readiness for any emergency and should be kept with the other post-accident sampling apparatus near the chemistry lab. The licensee stated that it was felt that use of a remote handling tool was a better way to reduce personnel exposure, taking into consideration reduction in the transport time of the sample.

Sections 5.4.2.4 through 5.4.2.9 of this report cover the procedural aspects of the post-accident sampling system. The liquid effluent sampling facilities and equipment are discussed in paragraph 4.1.1.8 below, and procedures are discussed in sections 5.4.2.10 and 5.4.2.11.

The failure to provide special sampling equipment, including remote tongs and shielded transport cart, and install shielding as required by TI-66 at the primary coolant sample point to facilitate the sampling and transport of reactor coolant during an emergency while maintaining radiation exposures as low as reasonable achievable is an apparent violation of Technical Specification 6.8.1. (50-327/81-20-03; 50-328/81-24-03).

4.1.1.8 Liquid Effluent Sampling Facilities and Equipment

The auditors discussed liquid effluent sampling with the Results Supervisor with respect to potential high activitiy in plant liquid systems that must be sampled by chemistry analysts prior to transfer of the liquid or release to the environment. The Results Supervisor stated that in the event of a serious accident the containment would isolate and thereby eliminate the possibility of high activity in plant systems outside containment. The auditor pointed out that contamination of other systems could occur through leakage or inadvertent valve manipulation and that facilities and equipment should be established and maintained to provide for sampling and analysis of high activity liquid effluent.

The failure to provide for high activity liquid effluent sampling in TI-66 constitutes an inadequate procedure which implements the Radiological Emergency Plan and is an apparent violation of Technical Specification 6.8.1. (50-327/81-20-03; 50-328/81-24-03).

4.1.1.9 Offsite Laboratory Facilities

Section 6.2.2.1 of the SQN-REP describes a van equipped to monitor the terrestrial environment for radioactivity. The equipment for the van, listed in the Implementing Procedure, includes an air sampler, generator, radio and radiation measuring instruments. Initially the van would be dispatched with an HP team from the plant for environmental radiation assessment. At least one additional van can be at SNP within one hour of notification.

A third team, arriving from Muscle Shoals within 4 hours, will take over one of the vans so that plant personnel can return to inplant HP duties.

Review of this area consisted of examination of equipment in the van and discussions with licensee representatives regarding additional laboratory counting systems located in the TVA Training Center which is near the plant site. Licensee representatives at the plant were not sure whether the Training Center lab equiment would be available for use during an emergency at the site.

The auditor informed the licensee that due to the proximity and capability of the Training Center lab facility it should be considered for use during an emergency, and that the REP and IPD be changed accordingly.

Based on the above findings, this portion of the licensee's program appears to be acceptable, but the above matter should be considered for improvement. (50-327/81-20-04, 50-328/81-24-04).

4.1.2 Protective Facilities

4.1.2.1 Assembly/Reassembly Areas

Upon hearing the emergency siren, all persons are instructed to go to their assigned assembly area. Cards showing the location of these areas are provided to persons permitted unescorted access. For nonemergency related personnel, assembly areas are located in the Office Building, the Machine Shop and the Electric Shop, both in the Service Building. For emergency related personnel, the OSC, the HP lab, TSC and the Public Safety Service area are to be used as assembly areas as instructed. Emergency supplies are located in and near these areas as indicated in SQN IP-17.

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

4.1.2.2 Medical Treatment Facilities

Section 7.1.7.2 of the REP describes the medical treatment area and supplies available onsite. The auditors examined the medical treatment area, equipment and supplies, including supplies of KI for thyroid blocking of emergency workers, and the

onsite ambulance. The auditors discussed emergency medical treatment with the head nurse and the provisions for coverage on the back shift (midnight to 7:00 a.m.) when a Nurse is not on duty. The auditors were informed that the Public Safety Department provided qualified Emergency Medical Technicians (EMT's) 24 hour-per-day, since state law required at least 2 EMT's to accompany the ambulance when transporting a patient to the hospital. The auditors had no further questions or comments in this area.

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

4.1.2.3 Decontamination Facilities

Section 6.5.2.3 and 7.1.7.1 of the REP described the decontamination facilities available on site. The auditors examined the decontamination room just inside the regulated area and noted that supplies were available and that a deep sink with water was operable. A nearby shower was not yet installed. It was explained that this room was relatively new and the shower was on schedule to be completed. The normal decontamination room, established near the medical area, was also examined. Decontamination procedures and reagents were available for use.

It was explained to the auditors that once the new decontamination room was completed, the medical decon area would be used for injured, contaminated personnel.

Both decon rooms were locked and when questioned by the auditors, a licensee representative stated that it was routine practice to keep the doors locked with a key in the possession of each qualified HP technician. The auditor asked the first available HP technician to produce a key for the decon room. This technician did not have a key and mentioned that it was on another key ring. The next HP that was asked produced a key. This matter was discussed with the HP supervisor who stated that all qualified HP technicians have a master key to gain entry into all HP offices, decontamination rooms,

etc, and that at least one HP technician was available in the immediate area at all times. The auditors pointed out that anyone requiring personnel decontamination should have immediate access to the decon room, and the policy of maintaining the doors to these rooms locked should be reviewed and revised as necessary so that decontamination of individuals can be completed as rapidly as possible.

Based on the above findings, this portion of the licensee's program appears to be acceptable, however, the above matter should be considered for improvement. (50-327/81-20-05, 50-328/81-24-05)

4.1.3 Expanded Support Facilities

The licensee has permanent buildings and temporary housing for Westinghouse (NSSS Vendor) and refueling personnel. Additional space is available if needed. Normal Bell Telephone lines are or can be available in these areas.

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

4.1.4 News Centers

News Centers have been established at the Operation Training Center, near the Sequoyah site, and at the CECC in Chattanooga. The auditor toured the news center, observed equipment and facilities available and discussed news center capabilities with licensee representatives. Adequate space, communication and other equipment are available for news media use.

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

4.2 Emergency Equipment

4.2.1 Assessment Equipment

4.2.1.1 Emergency Kits and Emergency Survey Instruments.

REP Implementing Procedure 17 defined the location and content of emergency equipment cabinets and other site emergency supplies. Emergency equipment cabinets were located in the main control room

corridor, the communications room, the gatehouse, the meteorology tower building, the Technical Support Center, and the Erlanger Medical Center. Additional emergency supplies available for an emergency were located in the health physics emergency van, the medical treatment area, the Health Physics laboratory and near the breathing air compressor in the Service Building. Most portable radiation monitoring instruments designated for emergency use were retained in the Health Physics Laboratory for normal plant use. However, portable dose rate survey meters were located in the Emergency Equipment Cabinets in the Control Room and the Erlanger Medical Center. Procedure IP-17 provided a listing of portable radiation measuring and sampling equipment to be transported to the health physics emergency van if the use of the van was required.

Emergency equipment cabinets in the main control room, Technical Support Center, Communications room, gate house, and the meteorology tower building were opened and inventoried. Inventories were correct, radiation monitoring instruments were operational and calibration current. It was noted that plant personnel rosters were not all current, and some of the tape supplies were deteriorated by heat.

Portable dose rate measuring instruments were calibrated offsite at a central TVA facility. Records of dates when instruments were received and due to be returned for recalibration were maintained by Health Physics. Portable dose rate instruments were scheduled for recalibration on a quarterly or monthly frequency. Adequate numbers and types of instruments were available for measurement of alpha, beta, gamma and neutron radiation.

The maximum measurement range for gamma radiation was 100 R/hr. One instrument, an Eberline RO7, was capable of measuring 20,000 R/hr but was not in use because of lack of adequate calibration. Availability of these instruments in an emergency situation assumes accessibility to the Health Physic Laboratory in the Service Building. Also,

the availability of extremity dosimeters for repair teams and post accident sampling requires access to the Health Physics Laboratory in the Service Building. If access is not possible, backup supplies of both instruments and dosimeters are available from the central calibration facility and other TVA reactor sites.

Specific procedures for reentry and recovery from an accident situation were not provided; however, REP-IP 16, Recovery Procedure, provides general guidelines for recovery procedure development for reentry and recovery operations. The auditor stated that the criteria for NUREG 0654 appeared to be satisfied.

Emergency cabinets were not locked, but an indicator seal was used to verify integrity between inspections. Quarterly inspections were scheduled and records indicated compliance to the schedule.

Portable instrumentation used for normal plant surveillance and designated for emergency use included ion chamber dose rate instruments with beta/gamma distinguishing capability and radiation detection instruments capable of detecting alpha, beta and gamma radiation for contamination surveys.

A single channel analyzer, with a sodium iodide scintillation detector, was identified as the measuring device for air sample filters, charcoal cartridges and zeolite cartridges in an emergency, high background situation. The detector was housed in a steel and lead shield with interchangeable sample holders. Procedures and instructions were developed for its use; however, review of the calibration and detector efficiency documentation showed that these parameters had been developed in a low background condition with low activity sources. Considerations of the effect of high external background radiation, of high levels of radionuclides on the sample and of geometry and self shielding differences between the electroplated calibration sources and charcoal or zeolite cartridges were not done.

The MS2 (S/N 747) to be used with the shielded detector was routinely used by the health physics staff at the exit from the auxiliary building. The

shielded detector and the interchangable sample holders were, however, normally stored on a shelf in the health physics technician's office. Since the detecto and shield housing had no unique identifica ion and was stored separate from its instrument readout, a system for assuring that the detector and correct analyzer instrument are transported to the health physics emergency van, if needed, should be provided.

A physical inspection of selected perimeter environmental monitoring stations was made. Air sampling equipment was in place and operating. Thermoluminescent dosimeters, rainwater collectors and particulate contamination collectors were in place. It was noted that some of the environmental monitoring stations were in locked enclosures. IP 17, Emergency Equipment and Supplies, did not provide instructions to plant personnel that keys were needed for access to the enclosures or identify what keys to procure. Procedures should be revised so that access to necessary equipment is assured.

Discussions with health physics personnel indicated that silver zeolite cartridges were to be used for post accident air sampling and cartridges were included in emergency kits in the health physics van; however, no procedu s were found which provide health physics pe onnel with instructions as to when they were to be used, sample collection times or other guidance that would be necessary for use.

Based on the above findings, this portion of the licensee's program appears to be acceptable, but the following matters should be considered for improvement.

- Review the calibration and calculational methods for use of the MS-2 and sodium iodide emergency sample counter with consideration given to the effect of high external background radiation, the effect of high levels of radionuclides in the sample and the effect of self shielding of the radionuclide of interest in the charcoal or silver zeolite cartridges. (50-327/81-20-06; 50-328/81-24-06)

- Consider a system for assuring that the appropriate NaI detector and the MS-2 with which it was calibrated are transported to the health physics van. (50-327/81-20-07; 50-328/81-24-07)

- Revise procedures and instructions to health physics personnel to assure that necessary keys are available for vehicles and sampling stations. (50-327/81-20-08; 50-328/81-24-08)

- Provide procedures and instructions to emergency response teams on the use of silver zeolite cartridges. (50-327/81-20-09; 50-328/81-24-09)

4.2.1.2 Area and Process Radiation Monitors

Readouts for area and process radiation monitors, described in the REP as being relied upon for emergency detection, classification, and assessment, were located in the control room (except for the Containment Purge Air Exhaust Monitor) and were operable. Monitors were identified by location and function with those specific to Unit 1 code numbered with a one prefix, and those specific to Unit 2 with a two and those common to both units with a zero prefix. Color coding was also used for guides in identification.

The area monitors used GM type detectors, with ranges of 10E-1 to 10E4 mR/hr and 10E-1 to 10E4 R/hr. Readouts were positioned locally and in the control room. Electronic calibration of the instruments were performed over the entire range. A radiation response check was performed at one point on the high range monitors and at several points on the low range monitors.

Process monitors for measurement of radioactivity in gaseous and liquid effluents were in place and operable as required by Technical Specification and were identified in the REP. Surveillance requirements are specified in the Tech Specs and include source check, usually daily, functional check, monthly to quarterly, and channel calibration, 18 months or refueling outage. Procedures and docu-

mentation forms for performance of calibration and functional tests were contained in Surveillance Instructions, SI 83, SI 204 and SI 205. Procedures appeared to be adequate and a review of selected records indicated that surveillance requirements were current.

Inspection of the area and process radiation monitor panel board in the control room showed an additional readout, identified as 1RM-90-260, Shield Building Vent Post Accident, to be installed and functional. Discussions with the Shift Engineer and on-duty operators revealed that no instructions or procedures were available to them to use in interpreting information from this monitor. The sensor was positioned a few inches from the Shield Building Exhaust sample lines near the Shield Building Exhaust Process monitor. This monitor was included in the Surveillance Instructions for routine calibration and functional testing.

Based on the above findings, the following deficiency was identified:

- A procedure for use by operating personnel in evaluating and assessing information provided by the Shield Building Vent Post Accident Monitor (1RM-90-260), had not been provided for Unit 1 and a high range monitor and procedure had not been provided for the Unit 2 Shield Building Vent. (50-327/81-20-10; 50-328/81-24-10)

4.2.1.3 Non-Radiation Process Monitors

The non-radiation process monitors described in the REP 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 equipment and meteorology instrumentation, had readouts located in the control room and were operable. The seismic monitor had annunciators in the control room with the monitor equipment located in the Auxiliary Instrument Room. Assessment of the magnitude of a

seismic event would require access to the equipment room. The Auxiliary Instrument Room was in the control building and would be accessible.

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

4.2.1.4 Meteorological Instrumentation

The meteorological instruments located on the Sequoyah meteorological measurements tower provide the basic parameters required by the emergency plan and procedures (10 meter wind speed, 41 meter wind direction, 10-91 meter temperature difference). The control room has strip chart recorders providing one minute averages of these data centrally located between the Unit 1 and Unit 2 control areas. The Meteorological Forecast Center (MFC) in Muscle Shoals, Alabama receives 15 minute averages of these data on teletypes from the Sequoyah meteorological tower site. These data can also be transmitted to offsite authorities through ringdown telephones, dedicated telephones, and CRT terminals on dedicated telephone lines. When the Sequoyah onsite meteorological system is inoperable, the meteorologists at the MFC (available 24 hours per day, seven days a week) combine the Watts Bar meteorological data (available as 15 minute averages on teletypes), National Weather Service (NWS) information, and their knowledge of the area to provide meteorological parameters to be used in dose projections. The NWS data available in the MFC also provides notification of severe weather events (tornadoes, etc.) which may affect the plant.

The personnel responsible for the maintenance and operation of the meteorological measurements system have duty stations at the tower site. The system is checked Monday through Friday for proper operation and personnel are available for any necessary weekend maintenance. The control room and MFC staffs notify the tower personnel of any questionable data they receive which may indicate a malfunction. The instrumentation is calibrated every 60 days and inoperable equipment is repaired or replaced whenever it is detected. Written

calibration procedures are readily available in the meteorological tower site office. It appears that the data availability goals can be met. The meteorological data available are appropriately integrated into the transport and diffusion portion of the radiological assessment. These findings were made as a result of NRC staff discussions with TVA personnel and visits to the facilities discussed.

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

4.2.2 Protective Equipment

4.2.2.1 Respiratory Protection

Emergency equipment and supplies are located as listed in the attachments to IP-17 of the implementing procedures. Self contained breathing (SCBA) apparatus are reserved for emergency use in a number of places as described in IP-17 such as HP Lab, Service Bldg. EL-690, TSC and Control Room. The SCBA number about 40. Additional refillable air cylinders number about 20. Air cylinders are refilled in the Service Building at elevation 690 near the breathing air compressor. This equipment is useable in high airborne activity area. Additional respiratory protection is available from the normal Service Bldg. air system which is breathable.

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

4.2.2.2 Protective Clothing

The auditors observed the storeroom and reviewed the procedures which insure an adequate stock of protective clothing is available onsite at all times. Minimum stocking levels are maintained equal to the stock levels considered adequate for major outages. Stock levels, inventories and requisition are maintained by the Power Stores Office and were found to be up-to-date and adequate. The auditor stated that the minimum stock levels of protective clothing maintained

should be adequate for initial and continuing response to an accident. Clothing stocks are maintained outside the main plant building and should be available during an emergency.

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

4.2.3. Emergency Communications Equipment

The communications equipment specified in the emergency plan and implementing procedures were not complete; however, the licensee is in the process of completing installation of several communications systems and these additions should exceed the criteria of NUREG-0654.

The licensee has many separate communications systems: plant security radio system; TVA RF emergency radio system; commercial telephones; plant alarm and PA system; TVA emergency ringdown telephone system; NRC Emergency Notification System (ENS); and NRC Health Physics Network (HPN). The commercial telephone system and TVA RF emergency radio system comprise the backup system for the dedicated TVA emergency ringdown telephone system and NRC ENS system. Plant alarms and the NRC ENS are vitally powered with redundant power systems.

The auditor noted that the Technical Support Center contained the requisite number of telephones per NUREG-0654; however, the NRC ENS/HPN systems were not complete. At the TVA support facilities at the Central Emergency Command Center (CECC), Muscle Shoals Emergency Control Center (MSECC), and Knoxville Emergency Control Center (KECC), the NRC HPN has not yet been installed, pending resolution and clarification by TVA of adequate NRC work areas within these Centers.

The auditor examined several emergency alarm sirens both onsite and offsite used for notifying plant employees and the public, respectively. The onsite sirens and alarms have not been demonstrated to be fully audible throughout the plant (ref. IE Report 50-328/81-21-04). The offsite notification sirens were in the process of being installed.

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

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 REP. However, general statements were made indicating support to the facility from DNPEC with "required manpower and resources to recover from the emergency." Functional positions at DNP were delegated responsibility for providing adequate supplies of spare parts, equipment and supplies and authority for utilizing all of the necessary manpower and equipment under the control of the division.

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

4.2.5 Reserve Emergency Supplies and Equipment

Adequate quantities of reserve supplies and equipment appeared to be available on site or readily accessible from TVA central stores facilities and other TVA reactor sites. An onsite Power Stores facility maintained reserve supplies of protective clothing, respirators, smears and miscellaneous equipment with minimum stock levels identified. Back up reserve supplies were available from a similar central stores facility at Muscle Shoals, also having a minimum stock level system and from TVA reactor facilities at Browns Ferry and Watts Bar. Coordination of purchasing of instrumentation and centralization of portable radiation measuring instrument calibration services provided assurance of compatibility of backup instrumentation.

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

4.2.6 Transportation

At the site, an ambulance and a health physics emergency van were designated as emergency equipment. Additional equipment, including boats and towing vechicles, were designated from other emergency support organizations. (Division of Water Resources, Air Resources Program, Watts Bar Nuclear Plant) Additional vehicles were available if needed from support agencies. It was determined that of the two designated emergency vehicles at the site, one, the health physics emergency van, was under the control of MSECC personnel in an emergency and thus, could leave the site

health physics personnel with no dedicated emergency transportation. Plant and MSECC personnel agreed that clarification of availability of emergency transportation for plant health physics use was needed. SQN-IP 18 instructs health physics personnel to transport specific equipment from the Health Physics Laboratory to the van if the van is to be used; however, if the manning of the emergency van was transferred to MSECC monitoring teams, the equipment would not be available to the plant. The scheduled NaI detector and MS-2 analyzer was the only one of its kind available to the plant. Procedures should be revised to assure needed equipment in both the plant and the van.

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

- Clarify procedures SQN IP-17 and MSECC-IP6 to assure appropriate monitoring and sampling equipment is provided to both plant emergency teams and offsite emergency teams. (50-327/81-20-11; 50-328/81-24-11)

5.0 Emergency Implementing Procedures

5.1 General Content and Format

The auditors reviewed the procedures which implement the Sequoyah Emergency Plan with respect to their content and format and discussed procedures with licensee representatives. Overall, the implementing procedures were found to be adequate regarding the assigned responsibility for each area, prerequisites and conditions modifying specified actions, and guidelines for specific actions to be taken relative to the emergency action levels and accident classification. Sign-off or checklists have been included in those procedures where they are applicable. Except for those specific comments noted in each of the following sections, the form and content of the implementing procedures were considered adequate.

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

5.2 Emergency, Alarm and Abnormal Occurrence Procedures

The facility had annunciator response procedures, Emergency Operating Instructions (EOI) and Abnormal Occurrence Instructions (AOI). The annunciator response procedures, according to control room personnel, were effectively not used for response to emergency alarm annunciators but for the general panel alarms only. Operator guidance for emergency

alarm annunciation was provided in the EOI's and AOI's. A review of selected EOI's and AOI's showed references to the REP-IP's at appropriate locations.

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

5.3 Implementing Instructions

There are procedures for each class of emergency specified in the emergency plan and for each emergency center activated. SQN-IP-1 provides the emergency classification logic specifically needed by the Site Emergency Director (SED). The scope of the authority and responsibility rested in the SED is located in the REP. 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 SED and others who are responsible for emergency detection, classification and assessment.

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

5.4 Implementing Procedures

5.4.1 For each class of emergency, there is specified a sequence of notification to alert, mobilize, or augment the onsite emergency organization and supporting agencies. Immediate notifications that are the responsibility of SED are incorporated into the "immediate action steps" of the Implementing Procedures. The equipment to be used in the notification, such as ring-down phones and pagers, are specified. Planned messages, announcements, and alarms are used for initial notifications. Telephone numbers are listed in a call sheet. Muscle Shoals, when notified by the Operations Duty Specialist that an emergency exists, verifies that the State agencies have been notified.

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

5.4.2 Assessment Actions

There is an adequate procedure which orchestrates the implementation of the accident assessment scheme. The procedure is written for use by the SED who is responsible for directing the overall radiological program. The procedure

identifies the priority system and sources of information available. The action levels and protective action guides are specified which will be used by assessment personnel as a basis for considering the actual or projected consequences determined from the assessment process.

There is no means, based on installed control room instrumentation, for initially classify an accident using site boundary exposure rates as required by Implementing Procedure IP-1..

There are provisions for determining the containment source term using the containment monitor and containment air sampling. There are provisions for making initial dose projections in the event installed control room instrumentation is offscale or inoperable. Provisions are available for immediate notification of State and local agencies in the event initial assessment actions indicate an actual or potential exposure to the whole body or thyroid of persons in the plume exposure EPZ in excess of the lower limits of the EPA protective action guides (applicable guides are available for a child).

There are provisions for trend analysis of assessment data. Provisions for continuous update of assessment information to offsite agencies are available.

The atmospheric transport and diffusion portion of the radiological assessment is a straight line Gaussian model. The Meteorological Forecast Center provides the appropriate meterological input parameters. The meterologists at the MFC provide a subjective interpretation of the potential transport characteristics within the emergency planning zone. The numerical model coupled with the site specific interpretation of experienced meteorologists meet the NUREG-0654, Appendix 2 criteria for a Class A model.

Based on the above findings the following deficiency was identified:

- A procedure to provide means based on instrumentation available in the control room, to properly classify an accident condition using projected site boundary exposure rates and the classification scheme of Implementing Procedure IP-1 was not developed nor implemented. (50-327/81-20-12; 50-328/328/81-24-12).

5.4.2.1 Offsite Radiological Surveys

Emergency offsite radiological surveys were designated the responsibility of the MSECC. The MSECC implementing procedures defined the methods and equipment to be used and were clear and concise. Prepositioned environmental monitoring stations were provided by direction of the Environs Emergency Site Coordinator by radio communications. Monitoring and sampling locations would be determined by the coordinator from information provided to him such as release points, meterological conditions, and type of release. Provisions were included for coordination directly with State monitoring requirements.

Instructions and supplies for collecting samples, labeling samples, communication systems and transportation of teams were outlined; however, no provisions were included for a central collection point for all environmental samples. MSECC personnel stated that they recognized this problem and that available options were under discussions.

The offsite monitoring procedures and instructions were not readily available to onsite personnel who may be required to provide initial offsite monitoring until the Muscle Shoals Team arrives at the site.

The failure to provide offsite monitoring procedures, instructions and training to those personnel onsite who would be expected to perform initial offsite monitoring is an apparent violation of Technical Specification 6.8.1. (50-327/81-20-03; 50-328/81-24-03).

5.4.2.2 On site (out of plant) Radiological Surveys

The licensee's procedure system does not include procedures for onsite, but out-of-plant, emergency surveys. Discussions with licensee personnel indicated that

routine procedures for monitoring, surveying, and controlling personnel exposure and movement were in effect and would be used in an emergency. Existing administrative requirements for documenting surveys and samples would be used. Survey forms used did not require the type and serial number of instruments used on the survey to be identified. Forms were being revised to include this information and instructions had been issued for technicians to write in instrument type and serial number as an interim fix.

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

- Provide emergency procedures and instructions for Health Physics personnel defining methods, equipment, communications and radiation protection guidance for emergency onsite (out-of-plant) radiological surveys. (50-327/81-20-13; 50-328/81-24-13)

5.4.2.3 The licensee's procedure system does not include procedures for inplant emergency surveys for reasons outlined in Section 5.4.2.2 above.

Based on the above findings, the following matter should be considered for improvement:

- Provide emergency procedures and instructions for Health Physics personnel defining methods, equipment, communications, radiation protection and dose control guidance for emergency inplant surveys. (50-327/81-20-14; 50-328/81-24-14)

5.4.2.4 thru 5.4.2.9 Procedures for Post Accident Sampling and Analysis

The licensee has established an interim procedure, TI-66 "Post Accident Sampling and Analysis Methods" to evaluate primary coolant, containment air and effluent gas activity under accident conditions. Technical Instruction 66 is one of several technical instructions used for the post accident sampling and analysis requirements. Supplemental instructions, referenced in TI-66, include the following:

TI-11 Chemical Analytical Methods
TI-12 Radiological Analytical Methods
TI-16 Sample Points and Sampling Methods
TI-30 Manual Calculation of Plant Gas, Iodine and Particulate Release Rates
TI-37 Chemical Laboratory Log Sheets
SIL-C19 General Laboratory Safety

Review of the interim post accident procedure TI-66 involved a review of TI-66 and supporting instructions, interviews with shift chemistry personnel, discussions with Chemical Engineers and their supervisors and talk - through of TI-66 by shift A, B and D personnel. The procedure does not appear to meet the ALARA principle. Appendix B to TI-66 specifies that its purpose is to provide the capability for personnel to obtain (within less than one hour) a sample under accident conditions without incurring a radiation exposure to any individual in excess of 3 Rem whole body or 18 3/4 Rem to the extremities. The procedure, however, employs a calculation of stay time based on the extremity exposure, rather than a comparison of stay times (whole body vs. extremities) to determine which exposure is limiting. The procedure cautions that plant personnel shall follow radiological safety precautions stated in SIL-C19 and recommendations supplied by the Health Physics Section, rather than specifying the job is to be done under a Special Work Permit (SWP). Appendix C to TI-66 provides for Health Physics to approve the maximum allowable exposure; however, it is not clear by the procedure who has the authority to approve this emergency exposure. In addition, Appendix B to TI-66 (Primary Coolant Sampling) does not provide for an approval signature for the maximum allowable dose. There are currently no HP instructions which cover the radiation safety support for TI-66. The transport of high activity samples to the analysis area under all accident conditions is not addressed. No specialized personnel dosimetry (i.e. finger or wrist TLD, hi-range pocket dosimeters) is stipulated by TI-66. There is no provision in TI-66 for temporary shielding in the Hot Sample Room during the sample collection operation to further reduce personnel exposure.

The procedure does not designate the primary counting facility, nor the alternate facility in the event of high background in the primary counting area. The labeling and storage of the high activity samples is not addressed. The procedure does not include a data sheet for recording high activity sample results, nor the disposition of data. The currently used data sheets from TI-37, do not relate sample results to the EAL's.

Training of chemistry analysts in TI-66 has been minimal. Initial training for some personnel has not been completed. Intitial training that has been completed consisted of about 3 hrs. of discussion on the procedure. There has been no dry run of TI-66 in order to provide the analysts with hands-on training. From a discussion with the Results Supervisor the auditors determined that the post accident sampling methods and analysis had not been incorporated into the over-all training program for the Chemistry Department; however, the Results Supervisor agreed to incorporate this area into the training program and to establish a schedule for initial training and retraining for shift chem analysts.

The following items are related to the apparent violation identified in paragraph 4.1.1.7.

- Revise TI-66 to provide more explicit guidance and health physics support in exposure assessment and designation of individuals authorized to approve emergency exposures.

- Provide for the use of specialized dosimetry and temporary shielding in the collection of post accident reactor coolant samples.

- Designate primary and alternate counting facilities and include sample transportation and identification procedures.

5.4.2.10 Liquid Effluent Sampling and Analysis
5.4.2.11

The licensee's program assumes that there will be no unplanned releases of liquid effluent and that all sources of liquid effluent will be contained and sampled by normal procedures prior to the decision to release such to the environment. The sampling and analysis of all liquids, except the reactor coolant, is performed under the normal procedures and is deficient in several areas.

The procedures do not provide for limiting exposure to sampling personnel other than to request that they contact Health Physics for requirements on protection in a radiation zone. The transportation of samples to the analysis area under all accident conditions is not addressed. Analysis of samples when the primary counting area has a high background is not addressed. The normal log sheets on which data is recorded do not key the EAL's. The disposition of the data and the samples themselves are not addressed. The procedures do not indicate that the sampling can be completed within one hour or that the analysis can be completed in two hours.

Training in the use of the procedures under accident conditions has not been provided.

Based on the above findings, the following is related to the apparent violation stated in paragraph 4.1.1.8 above:

- Develop a procedure or include in TI-66 provisions, for liquid effluent sampling under accident conditions to include personnel protective measures, handling high activity samples, relationship between sample results and EAL's, disposition of samples, records and reporting results, and appropriate time constraints for sample evaluation.

5.4.2.12 Radiological and Environment Monitoring Program

The licensee had provided for a radiological and environmental program to be implemented during emergencies from the Muscle Shoals Emergency Control Center. Implementing procedures provided for management, directions and assessment and coordination with other supporting agencies. Adequate resources were available to implement the program.

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

5.4.3 Protective Action

5.4.3.1 Radiation Protection During Emergencies

SQN - Implementing Procedure 14, Health Physics Procedures, outlined the actions to be followed by Health Physics personnel during a plant emergency. General guidance, but no specific procedures, was provided.

Emergency exposure guidelines were defined in SQN IP-15 and the responsibility for determining the amount of exposure that would be permitted in order to perform emergency work was assigned to the Site Emergency Director.

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

5.4.3.2 Evacuation of Owner Controlled Areas

Implementing Procedure IP-8 provides for evacuation of specified areas or the site at the discretion of the SED or if the assembly area exposure rate becomes 100 mr/hr. Evacuation routes are clearly marked with conspicuously posted arrows, signs, floor markings and other readily visible means. Assembly areas are specified. Oral announcements

over the public address system are used for additional guidance to personnel. Security, accountability and HP procedures appear adequate.

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

5.4.3.3 Personnel Accountability

Upon hearing the emergency siren, all persons report to assembly areas or supervisors, as previously instructed (see section 4.1.2.1), where an accounting of all personnel is made and reported to the Site Emergency Director. When all assembly areas have reported, a comparison is made with the accounting provided by the Public Safety Department. The personnel accountability is made in about 30 minutes. A similar accounting is accomplished outside the restricted area for the construction personnel located there. The implementing procedure for this activity is SQN, IP-8.

Personnel accountability is performed at the discretion of the SED in an alert emergency and automatically in a site or general emergency.

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

5.4.3.4 Personnel Monitoring and Decontamination

Normal plant health physics procedures require all personnel to monitor themselves or be monitored upon leaving Contamination Area and prior to exiting the Regulated Area. The REP Implementing Procedures require health physics representatives to be sent to assembly areas to monitor individuals who are suspected to have been in contaminated areas. Monitoring surveys are to be recorded. The emergency implementing procedures require contaminated individuals to be separated from others and to be decontaminated to limits specified in both the REP and in the normal health physics procedures before being released by TVA. General personnel decontamination is provided for in normal health physics procedures, but these are not specific for

various levels and types of contamination, including skin contaminated with radioiodine. All findings are to be reported to the emergency control center.

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

- The implementing procedures should be clarified to indicate where personnel shall be decontaminated and what nonstandard decontamination techniques may be necessary for specific levels and types of contamination. (50-327/81-20-15, 50-328/81-24-15).

5.4.3.5 Onsite First-Aid/Rescue

The REP-Implementing Procedures cover the methods for receiving, recovering and handling injured persons who may also be contaminated, and provide for the lead medically trained person (i.e., physician, nurse, emergency medical technician, emergency response team or fire brigade leader) to make the decision for transport to offsite medical facilities. The procedures require that the Medical Emergency Response Teams be assigned a health physics representative (preferably medically trained).

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

5.4.4 Security During Emergency

Security measures to be placed in effect during emergencies are specified in the station security procedures. They are as follows:

PSS-SIL-33.0	Radiological Emergency Plan Procedures
PSS-SIL-41.0	Visitor Processing
PSS-SIL-42	REP Accountability

These procedures are developed in accordance with the requirements of Appendix C to 10 CFR Part 73 and complement the Radiation Emergency Plan.

Based on the above findings, this portion of the licensees program appears to be acceptable.

5.4.5 Repair/Corrective Actions

The REP and its implementing procedures recognized the potential need for repair and corrective actions to correct or mitigate an emergency condition. While specific procedures for repair/corrective actions in an emergency were not provided, responsibilities were assigned and controls were designated to assure adequate safety for repair/corrective action responses.

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

5.4.6 Recovery

The Site Emergency Director through the CECC Director was identified as having the organizational authority to declare that a recovery phase was to be entered. Provisions were included for his decision based on consultation with plant technical and operating staffs, CECC Director and review of existing and potential plant system parameters. Lines of communication and notification of various individuals and agencies were identified. The REP included a specific TVA Recovery Organization chart with identification of key positions.

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

5.4.7 Public Information

The auditors discussed the area of public information with licensee representatives and observed facilities to be used to disseminate information to the news media and the public during an emergency. Through their ongoing public information program there has been wide area coverage of the public through television and radio spot announcements and newspaper publications. Information is provided as to whom to contact for additional information on emergency preparedness around the Sequoyah site. A "Citizen Action Line" is in place and is staffed with personnel who have been trained in dealing with the public in crisis situations.

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

5.5 Supplementary Procedures

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

The auditor reviewed inventories, inspected emergency kits and equipment, and discussed emergency facilities and equipment with licensee representatives. Monitoring equipment is calibrated at the Muscle Shoals facility on a scheduled basis. Operational checks of emergency equipment are performed onsite quarterly. Complete inventories of emergency equipment contained in the various emergency kits and facilities are inventoried and checked on a quarterly basis.

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

5.5.2 Drills and Exercises

Medical and fire drills have been conducted periodically during the past year in accordance with written procedures; however, no specific procedure was available which addressed the drills and exercises specified in criteria of NUREG-0654 Section II-N and required by the planning standards of 10 CFR 50.47(b)(14). There is evidence that the required drills are being performed.

> The failure to provide a procedure to implement all required drills and exercises and institute a mechanism to ensure that drills and exercises are conducted in accordance with applicable criteria is an apparent violation of Technical Specification 6.8.1. (50-327/81-20-03; 50-328/81-24-03).

5.5.3 Review, Revision and Distribution

The Sequoyah REP contains the only documentation relative to REP and IPD document control. Section 10 of the REP calls for a quarterly review of the telephone call lists and an annual review of the implementation procedures, and it delineates the responsibility for such, but procedures for performing reviews and verifying that changes are incorporated into the documents are not specified. A licensee representative from the TVA Radiological Emergency Planning

and Preparedness Group indicated that there is a procedure documented in REPP-5 which provides control over documentation, but this procedure was unavailable for review.

The REP and IPD had been reviewed, approved and updated as required and changes had been distributed according to the approved distribution list. The IPD call lists were correct.

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

- Procedures should specify how the documentation control is to work. The responsibility for each review and the means of assuring that each is done on schedule should be specified. (50-327/81-20-16, 50-328/81-24-16)

5.5.4 Audits

Section 10.5 of the Sequoyah REP specifies that the QA staff, Radiological Hygiene Branch, and Office of Power, QA and Audit Staff, audits the REP yearly for compliance with existing regulations.

The auditors reviewed the last biennial audit (OPQAA-SQ-79-03) of the REP performed by Office of Power Quality Assurance on May 16-22, 1979. The audit consisted of an examination in the areas of emergency equipment cabinets located at the plant, Erlanger Hospital and the site meterological station, REP drills and training requirments, emergency sampling equipment at the Power Service Center and emergency communications. Only one unsatisfacory condition was identified: emergency sampling equipment at the Water Quality and Ecology Branch was not identified in accordance with the REP. The auditors contacted the lead QA auditor to determine the status of the one unsatisfactory item and was informed that the item had been closed out September 11, 1980. In addition the auditor was informed that the Office of Power QA had just completed an audit of the REP on April 23, 1981; however, the report was not yet available. The auditor asked a TVA employee from the Division of Power Production to furnish a copy of this audit to the NRC Region II office when it was issued. The employee stated that this request would be met.

A licensee representative furnished the auditor with the most recent audit of the Sequoyah REP, conducted 4/6-21/81, on May 15, 1981. Audit No. RHB/QA-81-4 was reviewed subsequent

to this appraisal and was found to be a Comprehensive audit of the Sequoyah Emergency Preparedness program.

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

- The REP is not clear that areas other than the plan itself will be audited, the REP should be revised accordingly. (50-327/81-20-17, 50-328/81-24-17)

6.0 Coordination with Offsite Groups

6.1 Offsite Agencies

The auditor discussed offsite support agencies with licensee representatives and reviewed support agreement letters contained in Appendix E of the Sequoyah REP. Agreements have been concluded with various offsite groups to provide assistance in an emergency and the letters of agreement were current. Training has been provided for all offsite support groups and a plant orientation tour has been held to familiarize those individuals from offsite agencies who may need to respond to the site with the general plant layout and access procedures. In general, all offsite groups responding to the site will be accompanied by Public Safety Officers while inside the protected area boundary.

On May 20, 1981, the auditor and licensee representatives visited the Soddy-Daisy Ambulance Service, Hamilton County Sheriff's office, Erlanger Hospital and the Chattanooga Fire Department to discuss emergency response to an accident at the Sequoyah site with representatives of those agencies. The individuals contacted at each of the above agencies were cognizant of their role in an emergency at the Sequoyah site, had been provided training and orientations relative to their respective roles in emergency response, and were satisfied that adequate communications and interface between their organizations and TVA have been provided.

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

6.2 General Public

The auditor reviewed public information brochures, radio and television spot announcements and discussed public information with licensee representatives. TVA, in cooperation with the State of Tennessee, has developed brochures for residents within the 10 mile EPZ, tourists and transient persons who may be present within the 10 mile EPZ and a

special brochure for farmers within the 50 mile ingestion pathway EPZ. Brochures have been mailed to all permanent residents within the 10 mile EPZ, farmers within the 50 mile EPZ and have been provided to motels, hotels and other public facilities within the 10 mile EPZ. These mailings have been followed by radio and TV spot announcements describing the brochure and giving information on how to obtain additional information on emergency planning within the EPZ. There are provisions in the TVA information action plan for annual dissemination and updating of this material.

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

6.3 News Media

The auditor reviewed TVA's media information program and discussed news media familiarization with licensee representatives. Brochures have been developed to provide information to news media representatives concerning normal plant operation and accident conditions. These brochures have been distributed at seminars, conducted over the past year, for news media representatives near the Sequoyah site. There are provisions to conduct seminars and update information distributed to news media representatives on an annual basis.

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

7.1 Program Implementation

Drills and exercises required by the Radiological Emergency Plan have been conducted at least once within the year but not necessarily on the periodic schedule specified. Ad hoc procedures were used in these drills. Drill-identified improvement items have or are being resolved. Offsite agencies and groups and their comments were included in drills. The major problem in this area is the establishment of a unified procedure which implements the drill and exercise requirements of 10 CFR Part 50, Appendix E, Section F and NUREG-0654, Section II-N. To ensure a cohesive program in this area, a single onsite person for the Sequoyah Plant should be appointed to coordinate the drill and exercise activity.

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

- Designate an individual onsite who has overall responsibility for coordinating drills and exercises required by the REP and applicable criteria. (50-327/81-20-18; 50-328/81-24-18)

7.2 Walk-through Observations

The auditors observed performance and walk-through operations in the areas of emergency detection and classification, notifications, post accident sampling and protective action decision making. Offsite environmental sampling and analysis, dose calculations based on monitors and field surveys and some of the protective action decision making were not observed.

Offsite environmental sampling and analysis is assigned to a response group from the Muscle Shoals facility. The Sequoyah plant has a commitment to provide initial offsite sampling and analysis; however, there are no procedures onsite for performing this function and no training in environmental sampling has been provided to onsite personnel. These deficiencies have been identified in previous sections of this report. The offsite dose calculations are also performed by the Muscle Shoals facility; however, there are no provisions for the Shift Engineer to make initial projections based on effluent monitor readings in the control room. This deficiency has been identified in a previous section of this report. Protective action decision making has been standardized so that the interim onsite Emergency Director makes recommendations only when the accident is classed as a General Emergency. In that case, he provides the initial standard protective action recommendation to local authorities, i.e. activate early warning system and advise public to close windows and doors, stay inside and turn on radio or T.V. for further instructions. More detailed protective actions are provided through accident assessment at the Muscle Shoals facility and are reported to the Central Emergency Control Center at Chattanooga. Subsequent advisories are issued on the basis of the Muscle Shoals analysis. The above three areas will be investigated in more depth during the Brown's Ferry appraisal.

Individuals responsible for accident detection and classification had a good knowledge of procedures and performed well except for the use of effluent monitors to classify an accident, which has been outlined in procedure IP-1, but a specific procedure has not been provided. This deficiency was identified in a previous section of this report.

Post accident sampling procedures were not adequate and personnel who would be responsible for this area were not familiar with the procedure. In general these personnel were knowledgeable and appeared to have a good concept of sampling difficulties under accident conditions. The auditor concluded that the personnel could perform effectively if provided an adequate procedure and appropriate equipment.

All personnel interviewed during this portion of the appraisal were found to be knowledgeable and interested in their respective areas. They discussed their areas of responsibility and performed in a professional manner.

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

ATTACHMENT 1 TO REPORT NO.

50-327/81-20; 50-328/81-24

Persons Contacted

*J. W. Hufham, Assistant to the Director, Division of Nuclear Power
*D. L. Lambert, Supervisor PWR Licensing
*J. M. Ballentine, Plant Superintendent
C. E. Cantrell, Assistant Plant Superintendent
*J. M. McGriff, Assistant Plant Superintendent
*W. T. Cottle, Assistant Plant Superintendent
*E. K. Sliger, Supervisor REP Staff
*J. L. Ingwerson, Supervisor, REPP Group
*M. R. Harding, Compliance Supervisor
*R. J. Kitt, Health Physics Supervisor
*W. E. Webb, Project Engineer, REP Staff
*B. K. Marks, Project Engineer, REP Staff
*W. H. Kinsey, Engineering Supervisor
*B. M. Patterson, Instrument Maintenance Supervisor
*C. E. Kent, Jr., REPP Group Health Physicist
*D. C. Crawley, Health Physics Shift Supervisor
*A. I. McLeod, Information Officer SNP
L. M. McCloud, QA Supervisor
T. E. White, Project Engineer
C. T. Benton, Shift Engineer
J. T. Everett, Supervisor, Special Health Services
C. A. Doughtry, Soddy-Daisy Ambulance Service
J. L. Lassiter, Erlanger Hospital
Lt. C. L. Hawkins, Hamilton County Sheriff's Office
Chief R. Day, Chattanooga Fire Department
*E. J. Ford, NRC Senior Resident Inspector
*S. L. Butler, NRC Resident Inspector

In addition to the above persons 20 operations personnel, 15 technicans and 15 craftspersons were contacted.

*Attended exit meeting.

ATTACHMENT 2 TO REPORT NO.

50-327/81-20; 50-328/81-24

List of Weaknesses of Lesser Significance

Tracking Number	Item	Reference Section
(81-20-04/ 81-24-04)	Offsite Laboratory Facilities	4.1.1.9
(81-20-05/ 81-24-05)	Access to Decontamination Facilities	4.1.2.3
(81-20-06/ 81-24-06)	Calibration and Use of Sodium Iodide Counter	4.2.1.1
(81-20-07/ 81-24-07)	NaI Detector Equipment Availability	4.2.1.1
(81-20-08/ 81-24-08)	Keys for Vehicle & Sampling Stations	4.2.1.1
(81-20-09/ 81-24-09)	Use of Silver Zeolite Cartridges	4.2.1.1
(81-20-11/ 81-24-11)	Monitoring and Sampling Equipment	4.2.6
(81-20-13/ 81-24-13)	Improve In Plant Survey Procedures	5.4.2.2
(81-20-14/ 81-24-14)	Improve In Plant Survey Procedures	5.4.2.3
(81-20-15/ 81-24-15)	Personnel Monitoring and Decon Procedure Clarification	5.4.3.4
(81-20-16/ 81-24-16)	Document Control Procedures	5.5.3
(81-20-17/ 81-24-17)	Audits of Emergency Preparedness	5.5.4
(81-20-18/ 81-24-18)	Coordinator for Drills and Exercises	7.1