



830 Power Building  
TENNESSEE VALLEY AUTHORITY  
CHATTANOOGA, TENNESSEE 37401

*Central File*  
*50-259*  
*50-260*

June 23, 1976

Mr. Norman C. Moseley, Director  
Office of Inspection and Enforcement  
U.S. Nuclear Regulatory Commission  
Region II - Suite 818  
230 Peachtree Street, NW.  
Atlanta, Georgia 30303

Dear Mr. Moseley:

This is in response to F. J. Long's June 3, 1976, letter,  
IE:II:RFS 50-259/76-9, 50-260/76-9, which transmitted  
for our review an IE Inspection Report (same number).  
We have reviewed that report and do not consider any  
part of it to be proprietary.

Very truly yours,

J. E. Gilleland  
Assistant Manager of Power

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UNITED STATES  
NUCLEAR REGULATORY COMMISSION  
REGION II  
230 PEACHTREE STREET, N. W. SUITE 818  
ATLANTA, GEORGIA 30303

JUN 3 1976

In Reply Refer To:  
IE:II:RFS  
50-259/76-9  
50-260/76-9

Tennessee Valley Authority  
ATTN: Mr. Godwin Williams, Jr.  
Manager of Power  
830 Power Building  
Chattanooga, Tennessee 37401

Gentlemen:

This refers to the inspection conducted by Mr. J. W. Hufham of this office on April 14-16, 19-23, 27-30, 1976, of activities authorized by NRC Operating License Nos. DPR-33 and DPR-52 for the Browns Ferry 1 and 2 facilities, and to the discussion of our findings held with Mr. H. J. Green at the conclusion of the inspection.

Areas examined during the inspection and our findings are discussed in the enclosed inspection report. Within these areas, the inspection consisted of selective examination of procedures and representative records, interviews with personnel, and observations by the inspector.

Within the scope of this inspection, no items of noncompliance were disclosed.

We have examined actions you have taken with regard to previously identified enforcement matters. These are identified in Section II of the summary of the enclosed report.

In accordance with Section 2.790 of the NRC's "Rules of Practice," Part 2, Title 10, Code of Federal Regulations, a copy of this letter and the enclosed inspection report will be placed in the NRC's Public Document Room. If this report contains any information that you believe to be proprietary, it is necessary that you submit a written application to this office requesting that such information be withheld from public disclosure. If no proprietary information is identified, a written statement to that effect should be submitted. If an application is submitted, it must fully identify the bases for which information is claimed to be proprietary. The application should be prepared so that information sought to be withheld is incorporated in a separate paper



JUN 3 1978

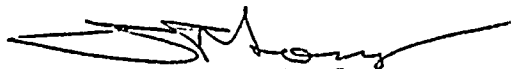
Tennessee Valley Authority

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and referenced in the application since the application will be placed in the Public Document Room. Your application, or written statement, should be submitted to us within 20 days. If we are not contacted as specified, the enclosed report and this letter may then be placed in the Public Document Room.

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

Very truly yours,



F. J. Long, Chief  
Reactor Operations and Nuclear  
Support Branch

Enclosure:

IE Inspection Report Nos.

50-259/76-9 and 50-260/76-9





UNITED STATES  
NUCLEAR REGULATORY COMMISSION  
REGION II  
230 PEACHTREE STREET, N. W. SUITE 818  
ATLANTA, GEORGIA 30303

IE Inspection Report Nos. 50-259/76-9 and 50-260/76-9

Licensee: Tennessee Valley Authority  
830 Power Building  
Chattanooga, Tennessee 37401

Facility Name: Browns Ferry 1 and 2  
Docket Nos.: 50-259 and 50-260  
License Nos.: DPR-33, DPR-52

Location: Limestone County, Alabama

Type of License: 3293 Mwt, BWR (GE)

Type of Inspection: Special, Unannounced

Dates of Inspection: April 14-16, 19-23, 27-30, 1976

Dates of Previous Inspection: April 6-9, 21-23, 27-30, 1976

Inspector-in-Charge: J. W. Hufham, Radiation Specialist  
Environmental and Special Projects Section  
Fuel Facility and Materials Safety Branch

Accompanying Inspector: D. M. Collins, Radiation Specialist  
Radiation Support Section  
Fuel Facility and Materials Safety Branch

Principal Inspector: *R. F. Sullivan*  
R. F. Sullivan, Reactor Inspector  
Reactor Projects Section No. 1  
Reactor Operations and Nuclear Support Branch

6/3/76  
Date

Reviewed by: *W. C. Seidle*  
W. C. Seidle, Chief  
Reactor Projects Section No. 1  
Reactor Operations and Nuclear Support Branch

6/3/76  
Date





## SUMMARY OF FINDINGS

### I. Enforcement Items

None

### II. Licensee Action on Previously Identified Enforcement Matters

#### Infractions

Investigation, Rpt. Failure To Comply With Technical Specifications  
50-259/75-1  
50-260/75-1

Item 2.B.(2)            Corrective action completed. This item is closed.  
                              (Details, paragraph 4.c)

Item 2.B.(3)            Corrective action completed. This item is closed.  
                              (Details, paragraph 4.a.(3))

### III. New Unresolved Items

None

### IV. Status of Previously Reported Unresolved Items

Not inspected.

### V. Unusual Occurrences

None

### VI. Other Significant Findings

None

### VII. Management Interview

The results of the inspection were discussed with Mr. Green on  
April 22, 1976.

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DETAILS

Prepared by:

*[Signature]*  
D. M. Collins, Radiation Specialist  
Radiation Support Section  
Fuel Facility and Materials Safety Branch

5/21/76  
Date

*[Signature]*  
J. W. Hufham, Radiation Specialist  
Environmental and Special Projects  
Section  
Fuel Facility and Materials Safety Branch

5/21/76  
Date

*[Signature]*  
G. L. Troup, Radiation Specialist  
Radiation Support Section  
Fuel Facility and Materials Safety Branch

5/21/76  
Date

Dates of Inspection: April 14-16, 19-23, 27-30, 1976

Reviewed by:

*[Signature]*  
R. L. Bangart, Chief  
Environmental and Special Projects  
Section  
Fuel Facility and Materials Safety Branch

5/21/76  
Date

*[Signature]*  
A. F. Gibson, Chief  
Radiation Support Section  
Fuel Facility and Materials Safety Branch

5/21/76  
Date

1. Scope of Inspection

A special inspection to determine the corrective action taken by TVA relating to the non-hardware deficiencies defined in the Browns Ferry Nuclear Plant Fire Investigation Report. The inspection also includes reviews of the action taken by the State of Alabama and local offsite support agencies to improve the implementation of the State of Alabama Radiation Emergency Plan.



2. Individuals Contacted

a. Individuals Contacted Through Meetings

(1) Tennessee Valley Authority

(a) Division of Power Production

J. R. Calhoun - Chief, Nuclear Generation Branch

(b) Division of Engineering Services

J. L. Currie - Supervisor, Safety Engineering Services

(c) Browns Ferry Nuclear Plant (BFNP)

1 BFNP Operations

H. J. Green - Plant Superintendent  
J. G. DeWease - Assistant Plant Superintendent  
T. P. Bragg - Quality Assurance Supervisor  
W. A. Roberts - Power Plant Maintenance Supervisor  
L. J. Politte - Health Physics Supervisor  
J. D. Glover - Shift Engineer (Assigned to Operations Training)  
W. C. Thomason - Plant Chemical Engineer  
V. C. Clark - Assistant Unit Operator  
D. M. Jackson - Health Physics Foreman  
C. B. Banon - Nurse  
J. Butler - Quality Control Representative  
D. Whitehead - Quality Control Representative

2 BFNP Construction

R. Summers - Engineer  
B. Dean - Safety Supervisor  
R. Jackson - Fire Fighter  
C. Spry - Nurse

(2) State of Alabama

A. V. Godwin - Director, Division of Radiological Health

(3) Morgan County

H. Proctor - Civil Defense Coordinator





(4) Limestone County

S. Black - Civil Defense Coordinator

(5) Athens Fire Department

C. E. Bumpus - Chief, Athens Fire Department

b. Individuals Contacted by Telephone

(1) R. Hunkapillar - Assistant Operations Supervisor, BFNP

(2) N. C. Hendrix, Jr. - Engineer, Division of Engineering  
Design (DED), TVA

(3) L. Wood - Lawrence County Civil Defense Coordinator

(4) M. M. Evans - Limestone County Sheriff

(5) R. Henson - Sgt., Morgan County Sheriff's Office

(6) H. L. White - Public Safety Supervisor, BFNP

3. Coordination of the TVA - BFNP Radiological Emergency Plan (REP)  
with Offsite Support Agencies

a. Confirmation of Agreements with Offsite Agencies

The inspector verified through discussions with representatives of the licensee that emergency agreements had been established with local support agencies and that the agreements had been appropriately maintained. The inspector verified through discussions with state and local officials that the agreements had been established with the following support agencies:

(1) State of Alabama

State of Alabama Division of Radiological Health  
State of Alabama Civil Defense Department

(2) Lawrence County

Lawrence County Civil Defense  
Lawrence County Sheriff



(3) Limestone County

Limestone County Civil Defense  
Limestone County Sheriff

(4) Morgan County

Morgan County Civil Defense  
Morgan County Sheriff

To complete the verification that emergency agreements had been established and coordinated in accordance with 10 CFR 50, Appendix E, paragraph B, written agreements were reviewed for other support agencies. The letters of agreement that were reviewed by the inspector referenced agreements with the following support agencies:

- (1) U. S. Energy Research and Development Administration - Savannah River Operations Office
- (2) NASA - Marshall Space Flight Center
- (3) State of Alabama - Department of Public Health
- (4) Memorandum of Understanding Between the Alabama Department of Public Health and the Alabama Civil Defense Department

b. Meetings and Telephone Contacts with Offsite Support Agencies

The inspector met with or held telephone conversations with offsite support agencies to discuss the agreements that had been established relative to the BFNP or items which had been defined in the BFNP Fire Investigation Report.

(1) Meeting with Director, State of Alabama Division of Radiological Health

The inspector met with the Director, State of Alabama Division of Radiological Health on April 28, 1976, to discuss the State of Alabama Radiation Emergency Plan as it related to BFNP and to discuss the training of local officials. The BFNP Fire Investigation report identified that the State of Alabama equipment for downwind air sampling was not operational on March 22, 1975. The Director informed the inspector that the state had purchased two new environmental air sampling systems and that one of these systems was available for use as a

backup if an air sampling station near the BFNP were to become inoperable. He stated that two additional air sampling systems were on order but had not yet been received.

The BFNP Fire Investigation Report identified that the state plan was out of date or not available to certain responsible local officials. The Director stated that to his knowledge all copies of the State Radiation Emergency Plan held by local officials were up-to-date. He stated that supplements to the plan include a receipt verifying that the supplement had been received. This receipt is to be signed by the local official and returned to the Division of Radiological Health. The Director stated that if he does not receive a receipt promptly, he calls the local official to determine if the supplement has been received and to request a copy of the signed receipt.

The investigation report indicated that it might be necessary to add a "standby" classification to the State plan. The Director stated that this suggestion had been adopted and that one of the amendments to the plan created a standby classification for conditions that might develop into emergencies.

The investigation report identified that some responsible local officials could not be contacted during the fire. The Director stated that the system for notification of local officials had been changed to assure that phones would be answered 24 hours a day, 7 days a week.

The investigation report identified that many responsible local officials expressed a desire for additional training in the plan. The Director stated that he had held training meetings with the following local officials on the dates listed below:

- (a) September 18, 1975, with Lawrence, Limestone and Morgan County officials to discuss county plans as part of the State Emergency Preparedness Plan.
- (b) February 28, 1976, with Morgan Civil Defense Coordinator after the drill held on February 28, 1976, to discuss the plan.

- (c) March 24, 1976, with officials of the Lawrence County Department of Pensions and Security and Department of Education to discuss the principles of radiation protection and their actions as specified in emergency plan.
- (d) April 1, 1976, with Limestone County Civil Defense Coordinator to discuss the emergency plan.

The Director stated that the state had conducted a radiological emergency drill on February 28, 1976. The drill proposed both accidental gaseous and liquid releases of radioactivity. He stated that the drill consisted of implementation of the plan, with local officials performing their functions as specified in the plan. He stated that instead of evacuating people, the local personnel delivered leaflets containing instructions to be followed in case of an actual emergency. He stated that the drill went smoothly and identified a few areas where improvements could be made. He stated that his critique of the drill had not yet been written, but that it was essentially the same as the TVA critique. He stated that his critique would recommend a better system for identification of environmental samples. He stated that some sample stations may have been known by one name to local personnel but identified by another name in the emergency plan. He stated that the confusing terminology had been resolved with one identifier for each location.

The inspector reviewed a copy of the Director's critique of the drill after receipt. This critique contained the information related verbally by the Director.

(2) Meeting with Limestone County Civil Defense Office

The inspector met on April 23, 1976, with the Limestone County Civil Defense Coordinator to discuss the state emergency plan and items identified in the BFNP Fire Investigation Report.

The fire investigation report identified that this agency could not be contacted on the day of the fire and the copy of the State of Alabama Radiation Emergency Plan, which defined the responsibilities of this agency in the event of an emergency at the BFNP, had not been updated. The Coordinator explained to the inspector that this agency was now equipped with a communication system

by which the Coordinator could be reached 24 hours a day. The Coordinator also explained that arrangements had been established to contact a responsible alternate representative to act as Coordinator in the event that the Coordinator could not be contacted. The Coordinator also outlined the training that he had received on April 1, 1976, from the State of Alabama specific for an emergency at the BFNP. The inspectors verified that this agency had actively participated in an emergency exercise that was sponsored by the State of Alabama on February 28, 1976. The scope of this emergency exercise is discussed in Section 3.b(1) of this report.

The Coordinator informed the inspector that he was confident that the agency could fulfill the required emergency responsibilities in the event of an emergency at BFNP.

(3) Telephone Conversation with Limestone County Sheriff's Office

The inspector spoke with the Limestone County Sheriff on the phone on April 26, 1976, to discuss the state emergency plan and items identified in the BFNP Fire Investigation Report. The Sheriff stated that he had been receiving supplements to the State Radiation Emergency Plan. He stated that he was satisfied with the results of the drill held February 28, 1976. He stated that based on the drill, assignments of areas for notification of persons for evacuation had been changed to more equally distribute the work. He stated that he was confident that his office could fulfill its responsibilities in the event of an emergency at BFNP.

(4) Meeting with Morgan County Civil Defense Office

The inspector met on April 23, 1976, with the Morgan County Civil Defense Coordinator to discuss the state emergency plan and items identified in the BFNP Fire Investigation Report.

The Coordinator stated that he had been receiving supplements to the State Radiation Emergency Plan. He stated that the civil defense phone was being answered by the fire department at times other than weekdays. He stated that he was satisfied with the results of the drill conducted on February 28, 1976.



The coordinator informed the inspector that he was confident that the agency could fulfill the required emergency responsibilities in the event of an emergency at the BFNP.

(5) Telephone Conversation with Morgan County Sheriff's Office

The inspector spoke on the phone with a representative of the Morgan County Sheriff's Office on April 30, 1976, to discuss the state emergency plan and items identified in the BFNP Fire Investigation Report. He stated that he had been receiving supplements to the State Radiation Emergency Plan. He stated that the Sheriff's Office was not notified by the County Civil Defense Office at the start of the drill conducted on February 28, 1976, until approximately one hour after the County Civil Defense Office was notified. He stated that after receiving notification, the Sheriff's Office put their part of the plan into effect. He stated that because of the delay in notification, the Sheriff's Office did not deliver the leaflets to houses as originally planned, but set up road blocks as planned and patrolled the designated areas. He stated that he was confident that the office could fulfill its responsibilities in the event of an emergency at BFNP.

(6) Telephone Conversation with Lawrence County Civil Defense Office

The inspector spoke on the phone to the Lawrence County Civil Defense Coordinator on April 30, 1976, to discuss the state emergency plan and items identified in the BFNP Investigation Report. The Coordinator stated that he had been receiving supplements to the State Radiation Emergency Plan. He stated that he was satisfied with the results of the drill held on February 28, 1976, and as a result of the drill notification assignments had been altered to more equally distribute the work. He stated that as a result of these assignments he estimated that the time for evacuation would be reduced from 2 hours and 10 minutes to 1 hour and 30 minutes. He stated that the civil defense phone rings in the civil defense office and at his house. In addition, the Sheriff's phone (listed as an alternate in the plan) is answered 24 hours a day, and that he can be notified through a 2-way radio in his car. He stated that the Sheriff was receiving supplements to the State Radiation Emergency Plan since he had frequently discussed the plan with the Sheriff, whose





office is next door to his. He stated that he was confident that his office could fulfill its responsibilities in the event of an emergency at BFNP.

(7) Telephone Conversation with Lawrence County Sheriff's Office

The inspector was not able to contact the Sheriff by telephone. The phone was answered upon each call, but the Sheriff was not at the office.

(8) Meeting with the Athens Fire Department

The inspector met with the Fire Chief of the Athens Fire Department on April 15, 1976, and again on April 23, 1976. The purpose of the first meeting was to discuss the agreement between TVA and the Athens Fire Department, the fire protection capability of the department and the training of the Athens Fire Department personnel. The inspectors were accompanied on the first meeting by an NRC fire consultant, who desired to verify the equipment of the department and the interface with the BFNP equipment. At the meeting on April 23, 1976, the inspectors discussed the nozzle compatibility of the department's fire equipment with the equipment at the plant. The nozzle compatibility between the Athens Fire Department and the BFNP is discussed in Section 4.1. of this report. The inspectors also discussed with the Fire Chief the fire training that had been provided by the plant personnel to his men during the past year. In accordance with the "BFNP Fire Explosion, and Natural Disaster Plan," the training provided to the Athens Fire Department personnel includes a plant orientation, basic principles of radiation, and hazards unique to the plant. The plan defines that the training sessions will be held prior to plant operation and at least annually thereafter. The inspector verified the training in this April 23, 1976, meeting. The Fire Chief provided training correspondence for the inspectors that verified that the plant personnel had provided training to the Athens Fire Department on January 6, 1976, and January 20, 1976. The training session held on January 20, 1976, was attended by twenty men from the Athens Fire Department and consisted of a tour of the BFNP plant. The training session that was sponsored on January 20, 1976, was attended by twenty-three men from the Athens Fire Department and this training consisted of a lecture and slide presentation on radiation protection.

and possible hazards at the plant. This training was presented by the Health Physics Supervisor from the plant.

c. Role of the U. S. Nuclear Regulatory Commission - Office of International and State Programs

The inspector informed representatives of the licensee that the NRC - Office of Inspection and Enforcement has the responsibility of assuring that the licensee provides emergency planning for the BFNP and establishes and coordinates agreements with offsite support agencies. The inspector also explained that any inadequacies with the State of Alabama Radiation Emergency Plan should be coordinated with the NRC - Office of International and State Programs in Bethesda, Maryland.

4. BFNP Fire Protection Organization

In order to evaluate the adequacy and effectiveness of the fire protection program at the BFNP, the inspector reviewed the fire organization emphasizing the structure, procedures, and fire training of the BFNP operations fire organization as well as the BFNP construction fire organization.

a. Operations Fire Brigade Organization (In Plant)

The inspector reviewed the "Browns Ferry Nuclear Plant Fire, Explosion and Natural Disaster Plan" and discussed the plan with the Plant Superintendent to determine the make-up of the fire brigade within the BFNP. The procedure specifies that the fire brigade consists of the unit 2 assistant shift engineer who acts as the initial fire brigade chief, unit operators except those assigned to a unit control board, and all available assistant unit operators. The inspector noted that the revised procedure lists 299 as the only number to call to report a fire. The BFNP Fire Investigation Report had identified that an earlier edition of the procedure had contained two phone numbers. The procedure specifies that a health physics technician will report to the fire to provide radiation protection advice. When available, all supervisors or assistant supervisors, foremen and job stewards (for a powerhouse fire) and available public safety service (PSS) officers, will report to a fire. Licensee representatives stated that the minimum number of people to report to a fire (eg. midnight shift) would be 1 assistant shift engineer, 6 assistant unit operators, 1 health physics technician and 2 PSS officers. They stated that during the normal 40 hour work week that, in



addition to those above, 4 maintenance supervisors, 6 maintenance foremen, and 5 PSS officers could respond to the fire. A licensee representative stated that the supervisors and foremen would be available for aid, but not to fight the fire directly. A second licensee representative stated that there are no firm plans designating the number of PSS officers to remain onsite when construction is completed. He stated that based on present plans, there would be 1-2 officers able to respond to a fire after construction is completed.

(1) Changes in the Fire Brigade Organization since the BFNP Fire on March 22, 1975

The inspector discussed with the BFNP Plant Superintendent the BFNP fire brigade organization that existed prior to the March 22, 1975, fire and the changes that had been made since that date. The inspector was informed that the fire organization had undergone only minor changes. The most significant change that had been made since the fire was as follows:

The unit 2 assistant shift engineer was designated as the fire brigade chief with the responsibility of remaining at the scene of the fire. Prior to this change the duty shift engineer had been designated as the fire brigade chief, but he could delegate on-scene responsibility to an assistant shift engineer. The inspector reviewed the "Browns Ferry Nuclear Plant Fire, Explosion, and Natural Disaster Plan" which existed prior to the fire and the present plan. The inspector confirmed that only minor modifications had been made.

(2) Notification of the Fire Brigade (In Plant)

The inspector reviewed the procedure "Browns Ferry Nuclear Plant Fire, Explosion, and Natural Disaster Plan." This procedure specifies that if an individual discovers a fire in the plant, he is to dial 299 on the PAX phone and report the location of the fire. This call automatically triggers a fire alarm in the plant and rings a phone in the units 1 and 2 control room. The alarm will ring 25 times and will cease unless extended by the control room operator. The control room operator then announces the location of the fire on the PA system. The individual reporting the fire is then to return to the scene and take corrective action if he is sure of the correct action to take. The



fire brigade will report to the fire and attempt to extinguish it. The shift engineer will contact the Athens Fire Department for additional help if necessary. The inspector reviewed the "Emergency Procedures" notice posted at various locations throughout the plant. The procedures specify that an individual is to dial 299 to report a fire and then to take corrective action if he is sure of the correct action to take.

(3) Leadership of the Fire Brigade

The BFNP Fire Investigation Report identified that the TVA leadership for fire fighting activities was ineffective and that the correct delegation of authority for fire fighting activities was not adhered to by the fire brigade chief. To assure that TVA had considered effective leadership at the BFNP, the inspector reviewed the "Browns Ferry Nuclear Plant Fire Explosion, and Natural Disaster Plan" that specifies the leadership of the fire brigade and delegation of authority for the leadership. The original plan was approved on February 20, 1973, but it has received a minor change since the BFNP fire on March 22, 1975. The modification relating to the fire brigade leadership is as follows:

The unit 2 assistant shift engineer is designated as the initial fire brigade chief. He is responsible for proceeding to the scene of the fire and appraising the situation. He must decide on and implement a plan and corrective action and, if needed, request outside assistance in the form of fire fighters, medical personnel, rescue, and off-duty employees. He will be responsible for the removal from service of any equipment that will aid the corrective action or that may be in serious danger from the event. The plan explains that in all events where water is used, the fire brigade chief will be responsible for starting pumps and laying hose. In the event water is not used, the assistant shift engineer will be responsible for obtaining and using wheeled and portable fire extinguishers. The plan requires that the fire brigade chief remain at the scene of the fire and supervise all activities; however, during the course of events he may designate another assistant shift engineer as fire brigade chief. With the





complete designation of supervision for the fire brigade in the plan, effective leadership of the fire brigade should exist in the event of future fires.

(4) Training of the Fire Brigade

In order to evaluate the fire protection training that the various components of the fire brigade had received, the inspector met with a representative of the Division of Engineering Services who is responsible for the fire training. The representative provided information in order to explain the fire protection training of the fire brigade at BFPN.

The representative thoroughly discussed the total fire training program, presented slides of the simulator fire training included in the Fire Brigade Leader Training Course, and provided a copy of the course contents for the Fire Brigade Leader Training Course and the Fire Brigade Member Course.

(a) Fire Protection Training for Members of the Student Operator Training Program

The representative explained to the inspector that any candidate enrolled in the Student Generating Plant Operators Training Program would receive approximately sixteen (16) hours of training in the operability of the fixed fire protection systems within the plant. In addition to this training an individual would receive the following training:

1. Eight (8) hours - Health and Safety Training
2. Fifteen (15) hours - First Aid Training
3. One (1) hour - Plant Fire Procedure for Reporting Fires
4. Sixteen (16) hours - Fire Brigade Member Course

The inspector requested that the Fire Brigade Member Course be explained. The representative informed the inspector that the course is divided into classroom work and practical exercises relating to fire control. He stated that the students extinguish open pit fires, structure fires, and staircase



fires. The course has in the past been presented to the students at the plant site, but beginning this year the students will receive the course at the Tennessee State Fire School at Murfreesboro, Tennessee, where all of the fire simulators used for the Fire Brigade Leader Training Course can be utilized in this Fire Brigade Member Course. The inspector reviewed the course contents of the Fire Brigade Member Course for verification of the information presented to the inspector.

(b) Assistant Unit Operator Fire Protection Training

When a student operator has satisfactorily completed the two year Student Generating Plant Operators Training Program, he is promoted to the position of assistant unit operator. At this operating level he will receive, at intervals not exceeding two years, a Fire Brigade Member Refresher Training Course. This course is presented at the plant site and includes two hours of classroom training in fire protection as well as six hours of practical training using fire hoses and different types of fire extinguishers. In addition to the assistant unit operators attending this course, the inspector was informed that chemistry laboratory personnel and health physics personnel receive the refresher course every two years.

(c) Unit Operator Fire Protection Training

When an individual advances from the position of assistant unit operator to unit operator, he receives the same refresher course training that he received as an assistant unit operator.

(d) Assistant Shift Engineer and Shift Engineer Fire Protection Training

As explained in Section 4.a.(3) the unit 2 assistant shift engineer is designated in the "Browns Ferry Nuclear Plant Fire, Explosion, and Natural Disaster Plan" as the fire brigade chief. Since all of the assistant shift engineers rotate on operating shifts through unit 2, it is necessary that these individuals receive more advanced fire training than the fire



training received in the assistant unit operator or unit operator positions. At this level of operations, all assistant shift engineers and shift engineers attend the Fire Brigade Leader Training Course given at the Tennessee State Fire School at Murfreesboro, Tennessee. The course content was reviewed for the inspectors as well as an NRC fire consultant. The individuals were informed that the course is given to the assistant shift engineers and shift engineers at intervals not to exceed five years and is offered approximately twice a year. The representative from the Division of Engineering Services explained that a unit operator could be promoted to a position of assistant shift engineer, and these individuals may be at this position for several months before he attends this leadership course because the course is scheduled only twice a year. However, this individual would have received the Fire Brigade Member Training Course and the Fire Brigade Member Refresher Course. The inspector reviewed records of training and verified that all shift engineers and assistant shift engineers onsite had completed the Fire Brigade Leader Training Course.

In reviewing the leadership course the representative stated that the course was a twenty hour course, including classroom training and practical fire fighting. The practical fire fighting would include the use of the following fire simulators:

- 1     Open Trench Fire - Extinguishing a fire in a long open trench to simulate the trenches in the plant
- 2     Dip-Tank Fire - Extinguishing a fire in a dip-tank to simulate cleaning vats at the plant.
- 3     Stairway Fire - Extinguishing an oil fire at the top of a staircase with a continuous flow of oil during the fire.



- 4 Barrel Fires - Barrels stacked horizontally and vertically to simulate stacking fires.
- 5 Impinging Gas Fire - Experience in gas fire.
- 6 Paint Lockers.
- 7 Open Pit.

In addition to the simulators used during the practical training, the students also received the following training:

- 1 Hose Evolutions - Proper way to lay and carry hose
- 2 Ladder Evolutions - Use of ladders
- 3 Smokehouse - Practical experience using self-contained breathing equipment as well as the experience of working in dark surroundings using life lines.
- 4 Competitive Fire Drills

The inspectors and the consultant discussed the practical fire fighting with the safety representative to determine if practical training emphasized the use of water on electrical fires and fires in trays. The representative confirmed that at the present time this type of practical training was not included in the Fire Brigade Leader Training Course but that he hoped to make this addition to the training soon. The status of this proposed modification will be reviewed in a future inspection.

(e) Future Training of the Fire Brigade

The inspector asked the Division of Engineering Service to explain the plans for future fire training. The only addition will be that the students in the student operating training program will receive the Fire Brigade Member Course at the Tennessee State Fire School at Murfreesboro, Tennessee, instead of receiving the training at the plant. By providing the training at the Tennessee State Fire School, the students can use all of the fire simulators available at that facility.





b. Construction Fire Brigade Organization

A licensee representative stated that at present there are two PSS officers assigned to the fire hall with the fire truck 24 hours a day. He stated that in addition there are 4 other PSS officers available 24 hours a day to report to a fire if necessary. He stated that on day shift there are 3 additional PSS officers and a firefighter available. He stated that when construction is complete the number of PSS officers would be reduced.

(1) Changes in the Fire Brigade Organization since the BFNP Fire on March 22, 1975

A licensee representative stated that the construction fire brigade organization is essentially the same as that on March 22, 1975.

(2) Notification of the Construction Fire Brigade

A licensee representative stated that construction employees are instructed to dial 344 on PAX or the Bell phone to report a fire in a construction area. He stated that the construction employee is to report the location of the fire and then to take appropriate action to contain the fire if he is sure of appropriate action. The call is answered by PSS personnel in the gatehouse. If the caller reports a fire in the plant, the PSS officer dials 299 and reports the fire to the control room. If the caller reports a fire in the construction area, the fire truck and PSS officers assigned to the firehouse are dispatched to the fire location. Additional PSS officers can be dispatched from their posts if necessary.

The licensee representative stated that when construction is complete, most of the PSS officers would be transferred to other sites, and those remaining would be transferred to operations control.

(3) Construction Fire Brigade Training

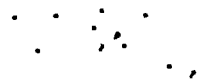
A licensee representative stated that PSS personnel are given an initial orientation in firefighting and equipment upon employment and that the individual then attends



a one week course in firefighting at Murfreesboro, Tennessee. The inspector reviewed an outline of a recent course which included instruction in the use of pumpers, portable extinguishers, breathing apparatus, electrical fires and ladders, and included the fighting of fires with extinguishers and the fighting of pit fires. The licensee representative stated that this training is repeated every 5-6 years. He stated that fire drills, lasting 2-4 hours each, are held at least quarterly. He stated that fires fought during these drills are pit industrial petroleum, staircase, or structure and that PSS personnel use portable extinguishers and breathing equipment. In addition to this training, he stated that some PSS personnel receive additional formal training such as the Texas A and M Petroleum Fire Fighting School, the University of Maryland Breathing Apparatus School, the Norfolk Naval Fire Fighting School or the Nashville Metro Fire Academy. He stated that these courses cover fire prevention and supervision, fire inspection, ladders, etc. He stated that the fire training now provided PSS personnel is essentially the same as that provided prior to March 22, 1975.

c. General Employee Fire Training

The BFNP Fire Investigation report identified that persons discovering the fire did not follow the provisions of the Emergency Procedure in that they did not initiate the fire alarm. The inspector determined from discussions what steps had been taken by the licensee to assure that employees know to report fires promptly. A licensee representative stated that new operations employees receive a one hour class in fire and natural disaster procedures. He stated that this class covers fire reporting procedures. He stated that employees repeat the course every three years. A second licensee representative stated that new construction employees are given a 2 hour familiarization class that includes fire reporting and evacuation procedures. He stated that construction foremen and supervisors receive periodic classes in the use of fire extinguishers and that the weekly safety bulletin periodically contains items on fire safety. In addition, a third licensee representative stated that fire drills are held at least yearly. He stated that during the last two drills, held August 7, 1975 and September 9, 1975, instruction concerning fire reporting procedures were reviewed



over the plant PA system. A fourth licensee representative stated that all employees who enter a restricted area receive an 8 hour course in basic radiation protection. The inspector reviewed an outline of the Radiation Hygiene Course 30 which contains a section on protection against internal deposition of radionuclides. The licensee representative stated that this section of the course includes a demonstration in the use of a self-contained breathing apparatus.

d. Licensee Commitments to Fire Protection Training

The inspector verified the status of the fire training commitments in the BFNP Recovery Plan.

Section A, Part X, paragraph 5.5.3 of the BFNP Recovery Plan defines that operational guidelines will be developed and incorporated in fire brigade training activities for the use of manually activated fire protection systems in fire fighting efforts. The inspector inquired as to the status of the operational guidelines, and he was informed at the time of this inspection that the guidelines were not completed. These guidelines are scheduled to be completed prior to startup. The status of these guidelines will be reviewed in a future inspection.

Section A, Part X, paragraph 5.4.2.4. of the BFNP Recovery Plan, defines that the fire brigade personnel will be trained in the proper selection and use of hand-held extinguishers. The inspectors confirmed by reviewing the training course outlines and through discussions with training representatives that this training had been provided.

e. Use of Water on Electrical Fires

The BFNP Fire Investigation Report defined that there was a delay in the application of water in fighting the fire on March 22, 1975. The inspector was informed by the Plant Superintendent that TVA will reemphasize the use of water as a safe, acceptable extinguishing agent for Class C fires after due consideration by responsible plant management for reactor safety and through the revision of published division procedures and plant standard practices. Additionally, TVA presented a special training session to BFNP operators on the use of water in Class C fire situations. The two hour special training sessions were held on May 20-23, 1975. The inspector reviewed Division Provision N74S2, "Fire Fighting and Fire



Protection," that incorporated guidelines on the use of water on electrical fires. At the time of this inspection the standard procedure for the plant had not been written or approved. The status of this procedure will be reviewed in a future inspection.

f. Use of Elevators during a Fire

The BFNP Fire Investigation Report defined that plant procedures did not restrict the use of elevators during fires and that both operations and construction personnel used the plant elevator while the March 22, 1975, fire was in progress. The inspector discussed this item with the Plant Superintendent to determine what action had been taken in this area. The inspector was informed that TVA management had considered the use of elevators during fires and had used fire consultants to provide advice concerning this issue. However, the TVA management and the consultants established that the use of elevators would be allowed during fires unless a fire occurs in the immediate area of the elevator. The decision was made after considering the fire resistant construction of the elevator shaft, the elevator cable, and the elevator cabin. The inspector confirmed that all elevator escape hatches would be checked and modified if necessary to insure that the hatches could be opened from the inside of the elevator cabin. The inspector verified that the escape hatches had not been checked at the time of this inspection, but the inspector was informed that the hatches would be checked and modification performed before the startup of units 1, 2, and 3.

g. Fire Protection Audits

The BFNP Fire Investigation Report states that TVA did not have outside agencies inspect the fire protection equipment and systems. The inspector verified the following fire audit program that will be initiated for the BFNP.

(1) Plant Fire Safety Inspection

The inspector verified the internal fire inspection program by discussing the program with the Plant Superintendent and by a review of the procedure "Plant Fire Safety Inspection," BFS32 that defines the program. The inspector was informed that an internal inspection team had been organized and that the team would consist of one



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representative from each section of the BFNP and the Plant Superintendent or the Assistant Plant Superintendent. The procedure defines that the inspection team would conduct the fire inspections of the plant at least once every six months and as appropriate during heavy outages, maintenance, or modification activities. In reviewing the procedure the inspector verified that the inspection program would include an inspection of fire safety equipment as well as primary areas within the plant. The procedure also requires that the fire safety inspections be documented and retained by Quality Assurance for a period of six years. The inspector was informed that the total plant fire safety inspection program would be reviewed by Quality Assurance.

(2) Proposed Technical Specification for Fire Audits

In addition to verifying the internal fire safety inspection program, the inspector reviewed the proposed BFNP Fire Technical Specifications that include surveillance requirements for fire protection inspections. The proposed Technical Specifications, when approved, will require an independent fire protection and loss prevention inspection to be performed annually utilizing either qualified TVA personnel or an outside fire protection firm. The proposed Technical Specifications will also include requirements for an inspection and audit by an outside qualified fire consultant. In accordance with the proposed Technical Specifications the outside audit will be performed at intervals not to exceed three years. The inspector inquired as to the scope of these inspections, and he was informed that the audits will review and evaluate the effectiveness of fire prevention and protection by a physical inspection of the plant facilities, systems, and equipment related to fire safety. The inspector was informed that the audits will make evaluations of, but not necessarily be limited to, administrative control, maintenance of fire related records, plant physical inspection, related historical research and application, and management interviews.

(3) Failure of Internal Fire Inspection to Reveal the Presence of Metal Plates over the Manual Fire Protection System

The BFNP Fire Investigation Report defined that the internal fire inspection should have revealed the presence of metal plates over the manual fire protection system.



The inspector was informed that the metal plates were purposely placed over on the system during construction to prevent the accidental initiation of the system. With the internal fire inspection program and the inspections required by the proposed Technical Specification, any abnormal conditions or equipment which could jeopardize a fire safety program should be acknowledged and corrected.

h. Supervision of Offsite Fire Fighting Personnel

The BFNP Fire Investigation Report defined that the plant management was not receptive to the recommendation made by the Athens Fire Chief that water be used on the fire. The inspector requested explanation of the supervision of the offsite fire agency, and he was informed that no change had resulted in the supervision of this group. The inspector was referenced to the "Browns Ferry Nuclear Plant Fire, Explosion, and Natural Disaster Plan," Section VIII, that establishes that the shift engineer will meet with the senior Athens fireman upon his arrival at the plant and determine the participation needed by the Athens Fire Department. The inspector was informed that the shift engineer would outline to the senior fireman potential radiation hazards and potential surrounding equipment danger and that he may ask immediate help from the Athens Fire Department or keep them in reserve in close proximity to the fire. In any event the line of supervision and authority for the Athens Fire Department still remains with the plant management, and recommendations from the offsite support group would have to be considered by the plant supervisor before implementation.

i. Fire Equipment Compatibility

The BFNP investigation report defined that a nozzle on the Athens Fire Department truck was not compatible with BFNP fire hoses. The Plant Superintendent stated that all nozzles on the 1-1/2 inch fire hoses had been changed to American National Standard Fire Hose Threads (NS) No. 9. The Chief of the Athens, Alabama Fire Department stated that the thread on his 1-1/2 inch fire hose was NS No. 9. He stated that the truck that would respond to a fire at BFNP would have 2000 feet of 2-1/2 inch hose and 600 feet of 1-1/2 inch hose. He stated that the fire department had available light water and foam for use if necessary. He stated that this material would not be on the truck, but that this equipment, as well as additional trucks, could be sent from the fire station if requested. He



stated that his truck could draw from a water reservoir from a height up to 20 feet from the reservoir. The Plant Superintendent stated that the truck could draw water from a drop of less than 20 feet from the canal near the cooling towers. The inspector checked fire hose nozzles and standpipes at the following locations: units 1, 2 and 3 main turbine oil tanks; unit 1 reactor building below cable spreading room exit; unit 2 reactor building below cable spreading exit; unit 3 reactor building below cable spreading room exit; and two hoses each on the south walls of reactor buildings 1, 2 and 3. The inspector verified that the female fittings on hoses, nozzles and the standpipes in the unit 1 and 2 turbine buildings were marked NS. The other fittings on the hoses and nozzles were not marked NS. The inspector verified that the fittings in the reactor building were NS by checking fittings with an NS cap. The inspector verified from markings on the nozzles in the reactor building that they were for use in fighting electrical fires.

5. Self-Contained Breathing Apparatus

In order to determine the actions taken by TVA under the Browns Ferry Nuclear Plant Recovery Plan in the areas of recharging air systems for portable breathing apparatus and deficiencies in self-contained breathing apparatus, the inspector reviewed records and documents, performed spot checks on implementation of actions, inspected the installed equipment and held discussions with cognizant individuals.

a. Recharging Air Systems for Portable Breathing Apparatus

- (1) Part X, Section A, paragraph 7.0 of the Recovery Plan states, in part, "This modification provides for air compressor (sic) and purification equipment." This paragraph further states "there will be a reservoir of approximately 1,200 standard cubic feet (scf) that can be called upon immediately." Part XII, Section B of the Recovery Plan states "the compressor has a capacity of 20 standard cubic feet per minute at pressures between 2500-3000 psi," and that "the amount of air available for recharging has been increased from eight 800-cubic foot supply cylinders to 16 cylinders."
- (2) The air compression and purification equipment and the air reservoir have been installed and were inspected and found to have the capacity and service pressure range as stated in the Recovery Plan. A licensee representative

informed the inspector that installation was complete except for wiring the carbon monoxide monitor and that Industrial Hygiene had accepted the unit for the quality of air produced but that testing was not complete. A second licensee representative informed the inspector that a design change had been issued for the system to install a two-bottle charging station on the system discharge. This work had not been accomplished. The status of the system will be reviewed in a future inspection.

- (3) The eight air cylinders for recharging were observed in the shop area of the service building. However, the eight additional cylinders were not observed. A licensee representative advised the inspector that the additional cylinders were not on site but that they would be procured as specified in the Recovery Plan. The status of these eight additional cylinders will be reviewed in a future inspection.
- (4) Operating instructions for the eight air cylinder recharging system are contained in procedure BFS-26, "Self-Contained Breathing Apparatus - Procedure for Recharging Air Cylinders." A licensee representative informed the inspector that operating procedures for the compressor and reservoir system had not been prepared and that maintenance procedures for the equipment were in the draft stage. No training on the operation of the system had been conducted. Part X, Section A, paragraph 7.0 of the Recovery Plan states, in part, "The equipment will be installed prior to reloading fuel in the first unit to return to power." Licensee management reaffirmed this position. The status of the procedures and training will be reviewed in a future inspection.

b. Self-Contained Breathing Apparatus Supplies

- (1) Part XII, Section B of the Recovery Plan states, in part, "Browns Ferry has added additional breathing apparatus to its inventory which now includes the following: 39 MSA Pressure Demand Air Masks, 6 MSA Chemox, 57 Extra Air Mask Cylinders." This section further states "a total of 10 air mask units and 15 extra cylinders are maintained in the control room for emergency use only."



- (2) The inspector reviewed the monthly inventory logs for calendar year 1976 for the masks and air cylinders. The logs showed a total of 37 pressure demand air masks and 94 air cylinders (37 with the masks, 57 spares) on site. A licensee representative informed the inspector that there were 39 masks and 96 air cylinders on the health physics inventory but that two masks with the associated air cylinders could not be located and were being carried on the inventory as "lost". However, the licensee representative also informed the inspector that replacements for the two masks and cylinders had been ordered. The inspector also reviewed the quarterly inventory logs and verified that six MSA Chemox were available in the emergency kits.
- (3) On April 22, 1976, the inspector toured the control room and verified that there were 10 air mask units and 15 extra cylinders at that location. Five masks and fifteen extra cylinders were observed in the units 1 and 2 control room area and five masks were in the unit 3 control room area. The inspector also observed that 42 spare cylinders were on hand in the shop area.

c. Maintenance of Emergency Breathing Apparatus

- (1) The BFPN Fire Investigation Report identified that emergency breathing apparatus appeared not to have been properly maintained. The TVA response contained in a letter dated September 2, 1975, stated that the emergency breathing apparatus were well maintained in accordance with plant procedures.
- (2) Browns Ferry Nuclear Plant Radiological Control Instruction 3, "Respiratory Protection Program," contains procedures for the inspection and maintenance of respiratory protection equipment, including the self-contained breathing apparatus. RCI-4 "Periodic Inspection and Maintenance of Radiological Emergency Plan Equipment and Supplies" contains procedures for periodic inspection and correction of discrepancies for the Chemox respirators. RCI-3 refers to manufacturer's instructions for repair or adjustment instructions and requires that regulators and reducing valves be returned to the manufacturer or a trained technician for adjustment or repair.
- (3) On April 22 and 23, 1976, the inspector inspected two emergency breathing apparatus units selected at random and determined from the inspection log sheets in the





storage box that the units had been inspected as required by RCI-3 and observed that the masks were packaged as required by RCI-3 after cleaning and survey. Log sheets in the containers covered inspections performed monthly since December 1975. The inspector also reviewed the emergency plan equipment inspection data sheets for the 4th calendar quarter 1975 and the 1st and 2nd quarters of 1976 and observed that the Chemox masks had been inspected and signed-off per RCI-4.

- (4) A licensee representative informed the inspector that plant personnel (one health physics technician and one maintenance mechanic) had been sent to the manufacturer's school for the repair and maintenance of the valves associated with self-contained breathing apparatus and that an individual at the Muscle Shoals facility who is sometimes utilized at Browns Ferry as a health physics technician also went to the training. As a result of this training, those persons were qualified to perform maintenance and repair on the valves. The inspector discussed the training received with one of the individuals concerned and also observed the training certificate which he had received.
- (5) Based on the review of the procedures and records as well as discussions with cognizant personnel the inspector had no further questions on the inspection and maintenance of emergency breathing apparatus.

6. Central Emergency Control Center (CECC)

The inspector met with the Superintendent of Nuclear Power Generation in Chattanooga, Tennessee on April 27, 1976, to discuss deficiencies involving the Central Emergency Control Center (CECC) in Chattanooga, Tennessee, that were defined in the BFNPP Fire Investigation Report.

a. Fire Consultation for the CECC

The inspector questioned if any fire expertise was available to the CECC management during the Browns Ferry Nuclear Plant fire on March 22, 1975. The investigation report relating to the fire defined that no attempt was made by the CECC management to obtain expert advice on methods for fighting fires. The inspector was informed that on the date of the fire the Division of Power Production Emergency Control Center, which is a decentralized section of the CECC, did have fire expertise from the Superintendent of Electrical Engineering and a fire



specialist from the Safety Services Section of the Division of Power Production. The Superintendent informed the inspector that since the fire a Fire Protection and Prevention Board had been formed with representatives from the Division of Engineering Design, Division of Power Production and the Division of Construction. This panel would provide coordination between each division for plans and policies concerning fire protection at all TVA power plants and would assist the CECC in emergency conditions as fire consultants. The inspector was also informed that the outside consultant who will provide the fire audits required by the proposed Technical Specifications would also be available as a fire consultant to the CECC.

b. Methods for Providing Current Emergency Information to the Director of the CECC

The BFNP Fire Investigation Report defined deficiencies relative to the Director of the CECC not having the most current information concerning the status of the fire and that the documentary logs maintained by the CECC divisions did not always indicate the times of the events. The Superintendent of Nuclear Power Generation informed the inspector that the Division of Power Production Emergency Control Center (DPPECC) within the CECC would be the major division that would receive the most current information concerning an emergency at the Browns Ferry Plant. The Superintendent verified that an individual within the DPPECC would be designated to assist the Director of the DPPECC with the primary responsibility of providing the Director of the CECC with the most current status concerning the emergency.

c. Communication by the Director of the CECC with Offsite Support Agencies

The inspector discussed with the Superintendent of Nuclear Power Generation the experience and training of the individual who would be designated as the Director of the CECC in an emergency. The inspector was informed that one individual had been assigned as the Director of the CECC with two designated alternates. All of these individuals have received training in health physics and have a working knowledge of the interface between the CECC and offsite support agencies. Any information that the Director would need specific to the design of systems in the plant could be immediately obtained from the DPPECC within the organization of the CECC.



The BFP Fire Investigation Report defined that the communications by the CECC with state and local agencies focused on plant operating status rather than offsite radiological releases which is the prime responsibility of these agencies. In confirming the corrective action for this deficiency, the inspector was informed that a procedure had not been written to cover this issue but the scope and depth of the information provided to the offsite agencies would depend upon the judgment of the CECC Director.

7. Procedures Referenced in the Safety Evaluation Report (SER)

In the Recovery Plan the licensee committed to the revision or development of procedures to correct or prevent conditions that could result in a fire potential. The scopes of these procedures are listed in Section 6.2 of the Safety Evaluation Report. The inspector checked the status of development of these procedures. A licensee representative stated that the status of the procedures was as follows:

- a. Cutting, welding and open flame complete, BFM8.
- b. Control of fire related testing - complete, BFS3
- c. Procedures for fire related testing - complete, BFS3
- d. Valve supervision - under development, revision of OI26
- e. Fire stop breach - complete, BFS3
- f. Reduction of combustibles - complete, BFA68
- g. Roving fire watch - complete, BFS28
- h. Flammable liquid storage - complete, BFS31
- i. Self-inspection program - under development
- j. Assessment of transient fire loads - under development
- k. Independent fire inspection - under development
- l. Maintenance of fire stops - under development
- m. Reestablishing high pressure fire water - under development



- n. Use of existing ventilation systems for smoke control - under development
- o. Pre-fire plans - under development
- p. Chemical treatment of fire water system - under development
- q. Update procedures for supplemental fire protection - under development

The status of these procedures will be reviewed in a future inspection.

#### 8. Fire Protection Procedures

The licensee has developed and implemented several procedures to reduce the potential for fire at BFNPP. The inspector reviewed several of the completed procedures, which will be reviewed by an NRC fire consultant.

##### a. Work Permits

The BFNPP Fire Investigation Report identified that there were no specific precautions or requirements for the presence of a fire fighter during the open-flame work.

The inspector reviewed the procedure "Cutting, Welding and Open-Flame Work Permit," BFM8. The inspector noted that this procedure requires that work using heat-producing devices be authorized by a work permit that specifies precautions to be taken during the work. The procedure requires that, prior to the issuance of the permit, the supervisor or foreman must physically survey the area where the work is to be performed to establish fire prevention safeguards. The procedure lists as examples of safeguards: removing of combustible materials, covering of floor or wall openings, providing additional firefighting equipment, providing a fire watch, and providing breathing air equipment as necessary. The procedure specifies that the permit is valid for one job at one location for one shift. The welding permit is assigned a welding permit number and a date of issuance by the shift engineer and is posted by the foreman in the area where the work is to be performed. In addition to this requirement for the work permit the inspector reviewed the procedure "Instruction for Work Performance," BFA62, which requires that all work plans be reviewed in the Division of Power Production daily coordinating meeting and authorized by the Plant Superintendent by his signature on the Daily Activity Sheet. These procedures are under review by an NRC fire consultant.





b. Fire Attendants

The inspector reviewed the procedure "Fire Attendants," BFS28, that establishes procedures for fire attendants. Examples of activities that attendants visually review are housekeeping, proper use of work permits, no smoking in designated areas, improper use of flammable liquids and conditions symptomatic of inoperable fire detection and suppression equipment. The fire attendants have the authority to eliminate conditions that could lead to fire initiation and propagation. A licensee representative stated that fire attendants receive the eight hour training course in fire protection. This procedure is being reviewed by an NRC fire consultant.

c. Storage

The inspector reviewed the procedure "Storage, Use and Handling of Flammable Liquids Inside the Plant," BFS31. This procedure sets specifications on use, dispensing, transfer and storage of flammable liquids. This procedure is being reviewed by an NRC fire consultant.

d. Housekeeping

The inspector reviewed the procedure "Plant Cleanliness," BFA68. This procedure specifies that materials be stored only in designated areas, designates the Operations Supervisor as responsible for daily inspections of all plant areas for disorderly arrays and designates the Assistant Plant Superintendent as responsible for conducting an inspection of plant areas at least every six months to assess the adequacy of housekeeping. This procedure is being reviewed by an NRC fire consultant.

e. Fire Protection

The inspector reviewed the procedure "Fire Protection and Prevention," BFS3. This procedure specifies plant responsibilities and procedures for fire inspection, training, testing and maintenance. This procedure is being reviewed by an NRC fire consultant.

9. Emergency Facilities and Equipment

In the "TVA Radiological Plan" (REP) the licensee has specified the facilities and equipment available in emergency cabinets and equip-



ment and personnel available at a first aid station. The inspector reviewed a cabinet and the first aid station to assure that equipment and personnel were as described in the REP.

a. Emergency Kits

The inspector visually inspected the availability of the emergency equipment stored in the cabinet in the units 1 and 2 control room corridor. The inspector noted that the cabinet was locked and sealed with a lead seal. A licensee representative obtained the key to the padlock from the shift engineer and opened the cabinet. The inspector checked the inventory of the cabinet against the inventory list posted on the cabinet door and the inventory list C.1 of Annex II, Part 2 of the REP. All items of list C.1 were in the locker. The inspector reviewed records of the quarterly inventory of the locker from 1973-1976. The records showed that some small tools, gloves, etc., had been replaced as necessary after inventory. A licensee representative stated that three two-way radios had been ordered and would be placed in the locker when received. The REP specifies that emergency radiation detection instrumentation be kept in the Health Physics Laboratory.

A licensee representative stated that emergency radiation detection instruments were calibrated and records of calibration are maintained at the TVA Muscle Shoals facility. These records will be reviewed in a future inspection.

b. Emergency Medical Facilities and Equipment

The inspector visually inspected the availability of first aid equipment in the plant first aid room. The inspector checked approximately 1/3 of the items listed in List C.7 of Annex II, Part 2 of the REP. All items checked were in the first aid room. A licensee representative stated that a nurse is on duty at the plant first aid room during day shift. The inspector visually inspected the availability of first aid equipment in the construction first aid complex. This complex contains medical supplies, x-ray equipment and facilities for minor surgery. A licensee representative stated that a nurse is on duty around the clock at the construction facility and a physician is on duty weekdays. The inspector observed that an ambulance is available at the gatehouse.

c. Additional Emergency Equipment

A licensee representative stated that 12 hand-held lanterns had been purchased and placed in the emergency storage cabinet. The inspector reviewed procedure RCI-4 which requires functional checks of the lights quarterly and requires battery replacement every 9 months. A licensee representative stated that three hand-held two-way radios had been ordered for communication in case of emergencies. He stated that a more advanced system, with a fixed-station radio in the control room and repeaters throughout the plant would be installed for testing and evaluation. The inspector verified that the lanterns were stored in the emergency storage cabinet. The status of the two-way radios will be reviewed in a future inspection.

