

DOCKET NUMBER  
56-313/368

NRC DISTRIBUTION FOR PART 50 DOCKET MATERIAL

TO: Mr. R. W. Reid  
Mr. J. F. Stolz

FROM: AP&L  
Little Rock, AK 72203  
Daniel H. Williams

DATE OF DOCUMENT  
02/28/78  
DATE RECEIVED  
03/02/78

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DESCRIPTION

PLANT NAME: ARKANSAS UNITS 1 & 2

DISTRIBUTION OF FIRE PROTECTION INFO ON ALL CASES ASSIGNED TO VASSALLO PER H. SMITH 10-5-76  
jcm 03/03/78

1p

ENCLOSURE Response to NRC's ltr dtd 11/17/77  
...Furnishing info in the form of a Fire Protection Plan to Item 1, addressing items att to NRC's ltr of 08/29/77, with the exception of Quality Assurance...

12p

60 ENCL

SAFETY FOR ACTION/INFORMATION

BRANCH CHIEF:	STOLZ
PROJECT MANAGER:	MARTIN
LIC. ASST:	HYLTON ZIEMANN(3)

INTERNAL DISTRIBUTION

REC FILE	F. ROSA
NRC PDR	MATTSON
OELD	BUTLER(5)
I & E (3)	INAMBACH
BOYD (LTR)	EISENHUT
DE JUNG (LTR)	
CROCKER (LTR)	
VASSALLO (LTR)	
J. MILLER (LTR)	
TEDESCO	
BENAROYA (2)	
IPPOLITO	
SKOVHOLT (LTR)	
HELTEMES	
HOUSTON	
R. MURAKA	
HANAUER	

EXTERNAL DISTRIBUTION

CONTROL NUMBER

LPDR: <i>Russellville ARK</i>	MA 4
TIC:	
NSIC:	
ACRS /6 CYS - HOLDING/ SENT TO CAT B	8004220944

REGULATORY DEPARTMENT FILE COPY



HELPING BUILD ARKANSAS

ARKANSAS POWER & LIGHT COMPANY

PO BOX 551 LITTLE ROCK, ARKANSAS 72203 • (501) 371-4000

February 28, 1978

1-028-6  
2-028-11

Director of Nuclear Reactor Regulation  
ATTN: Mr. R. W. Reid, Chief  
Operating Reactor Branch #4  
Mr. J. F. Stolz, Chief  
Light Water Reactors Branch #1  
U. S. Nuclear Regulatory Commission  
Washington, D. C. 20555



Subject: Arkansas Power & Light Company  
Arkansas Nuclear One-Unit 1 & 2  
Docket No. 50-313 & 50-368  
License No. DPR-51  
ANO-Fire Protection Administrative  
Controls and Procedures  
(File: 1510, 2040, 2-1510, 2-2040)

Gentlemen:

Please find attached our response (in the form of a Fire Protection Plan) to Item 1 of your letter of November 17, 1977. This response addresses those items attached to your letter of August 29, 1977, with the exception of Quality Assurance.

As stated in our letters of September 17, 1976 and May 17, 1977, it is our position that Quality Assurance is not applicable to ANO since ANO's fire protection system and equipment were not built to "Q" requirements. Quality Assurance cannot be "backfit" on systems already installed and in use.

We would appreciate a schedule from you as soon as possible outlining what time frame will be acceptable for developing and implementing procedures upon approval of this submittal.

Should your review of this submittal require assistance from us, please contact us as we will be glad to work with you to whatever extent is necessary to effect an expedient and efficient resolution of this matter.

Very truly yours,  
*Daniel H. Williams*  
Daniel H. Williams  
Manager, Licensing

DHW:JTE:nf

Attachment

TAX PAYING, INVESTOR OWNED



MEMBER MIDDLE SOUTH UTILITIES SYSTEM

~~75002017~~

## ONSITE ORGANIZATIONAL RESPONSIBILITIES

a. Plant Manager

The Plant Manager is responsible for the overall administration of the plant operations in the Fire Protection Plan.

b. Plant Fire Chief

The Plant Fire Chief is the onsite person (s) directly responsible for implementing, maintaining and assessing the Fire Protection Plan. His function is mainly administrative and he is not normally, although he can be, a member of the Fire Brigade.

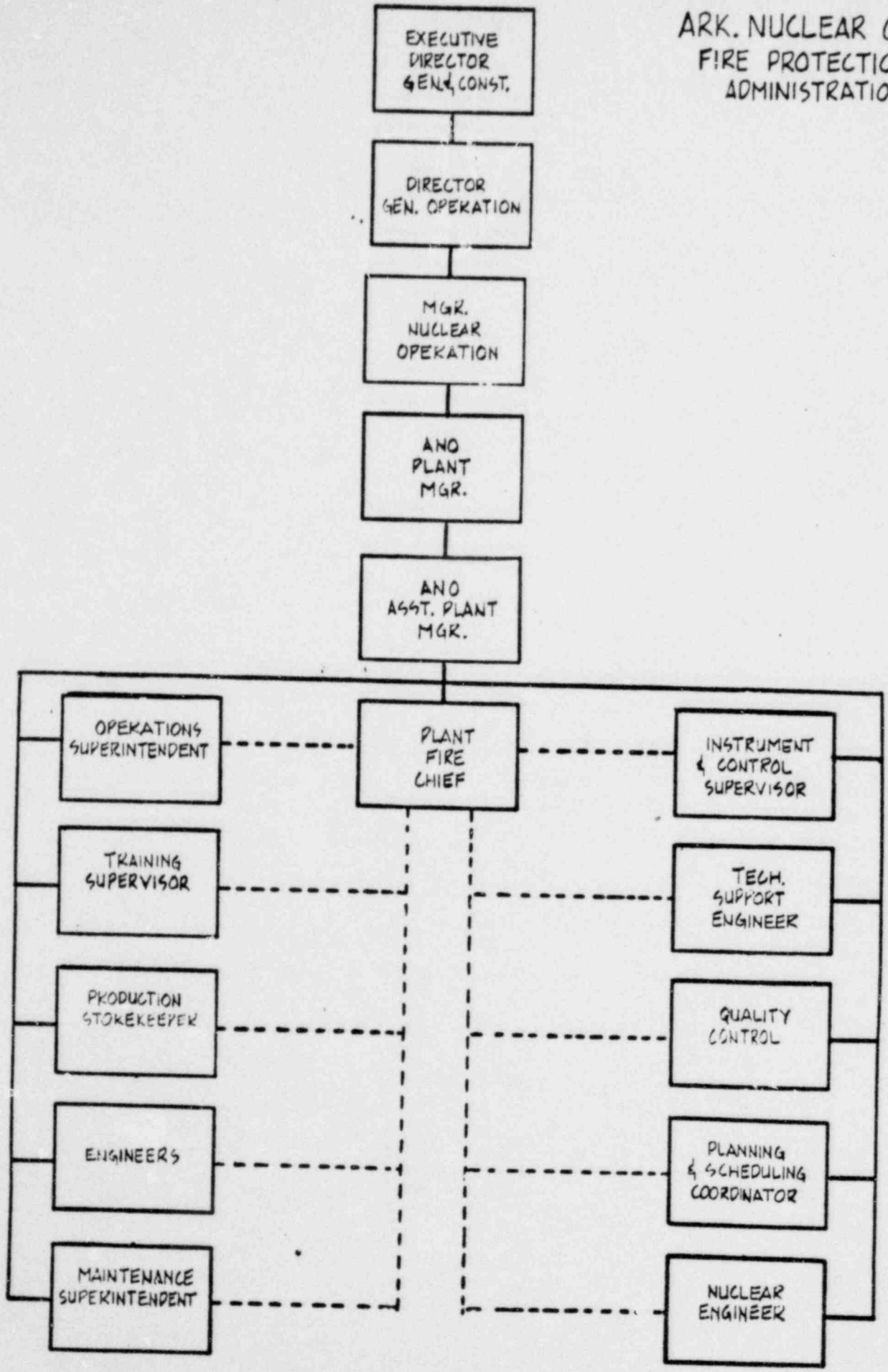
The Plant Fire Chief is the onsite person with knowledge of all areas of fire protection/prevention within the plant. He is responsible for fire protection training and fire protection impact on maintenance activities, etc. through the appropriate supervisor (s), as shown on the organizational chart. In matters of fire protection/prevention, the Plant Fire Chief has the final authority with the exception of the Plant Manager and Shift Supervisor.

c. Fire Brigade

The ANO Fire Brigade is considered "First Aid". The Emergency Fire Team outlined in the Emergency Plan is the primary fire fighting unit.

The Fire Brigade consists of three (3) members, the Fire Brigade Leader and two (2) brigade members. The Fire Brigade Leader is in complete control at the scene of a fire and has final authority subject only to the Plant Manager and Shift Supervisor. Upon arrival of the Emergency Fire Team, he relinquishes his command to the Emergency Fire Team Leader.

ARK. NUCLEAR ONE  
FIRE PROTECTION  
ADMINISTRATION



## FIRE BRIGADE TRAINING

The Arkansas Nuclear One Fire Brigade Training Course assures that the capability to fight potential fires is establishing and maintained. The program consists of initial classroom instruction outlined in the Plant Procedures and periodic instruction in the form of classroom sessions, fire drills and practice in fire fighting.

### 1.0 Classroom Instruction

- a. The initial classroom instruction includes the following:
  1. The course identifies the various classes of fires and types of combustibles involved citing examples of specific materials in each class. The identification and location of all such hazards cannot be realistically covered in the initial classroom training. The training does cover some specific hazard locations but its thrust is to generate an awareness in the training of what types of materials constitute a hazard. The trainee can then relate this information to materials he sees in the plant during his normal work.
  2. The course covers the types of fire fighting equipment utilized on site and explains the use of each type. The general locations of the equipment are also discussed. Familiarization of the trainees with plant layout including access and egress routes to each area are discussed.
  3. The course discusses or demonstrates the use of available fire fighting equipment and where feasible each trainee has the opportunity to utilize the equipment. The curriculum includes training in fighting structural fires and flammable liquid fires. The principles utilized in planning a fire attack are discussed also. The instruction includes a discussion of utilizing water in combating electrical fires. The proper extinguishing methods and agents to be utilized in combating all four classes of fires are covered and specific examples are cited where appropriate to illustrate techniques.
  4. The course discusses in detail the action to be taken when a fire is discovered, the reporting requirements for fires, the actions to be taken by the individuals or groups on site at the time and provides information on contacting appropriate outside fire fighting organizations, as outlined in the Plant Procedures.

5. The proper use of the installed communication equipment is either common knowledge (e.g., telephone use), or is covered during the new employee's initial orientation (e.g., public address system use). The installed plant lightning system is normally on and in the event it is lost, the emergency lights activate automatically. The installed ventilation system is operated by qualified operators.

The initial training addresses the principles of ventilation in the fire fighting. The discussion includes vertical and horizontal ventilation, where to ventilate and distribution of personnel when ventilating.

If the trainee does not routinely receive instruction outside the fire protection course, the following will be presented in the fire protection course:

- (a) Hands-On Training in the use of self-contained breathing equipment.
- (b) Nomenclature, normal use, emergency use, donning, and storage of the breathing equipment.
- (c) Changing out of air bottles on breathing equipment.

The course discusses methods of escaping from a fire zone should the air supply become expended.

6. The initial training course discusses the need for organization and coordination in fire fighting operations. More effectual leadership is developed through presentations on the tactics utilized in fire fighting. This is done by discussing several different fire scenarios with the trainees once the concepts and considerations of making a fire attack have been covered.
7. One part of the course consists of a discussion regarding smoke and toxic products of combustion. The use of self-contained breathing apparatus is emphasized.

8. One part of the presentation includes the principles and techniques involved in structural fire fighting. This includes types of fires--incipient, free burning, smoldering; thermal balance; heat and smoke movements; types of attack; visibility; need for breathing apparatus; and tactics. Utilizing the principles learned in this part of the course, the brigade members can apply them to an actual fire inside a structure.
9. The course covers in detail the provisions of the procedure on fire brigade organization and training in the general fire plan. The provisions of those procedures not related to fire fighting are not discussed nor are the various pre-fire plans. The periodic training program is the form utilized for familiarization with the pre-fire plan.
10. The initial fire brigade training course is maintained up to date with regard to modifications to the fire fighting equipment provided and to the installed fire protection systems. Changes in pre-fire plans are covered in the periodic training course.
  - b. The instruction is provided by individuals who are knowledgeable, experienced and trained in the subject matter presented.
  - c. The initial training course is intended for all fire brigade members. In reality something less than 100% of the members are trained. This is due to considerations and conflicts such as availability of instructors, turnover of personnel and work schedules. A goal of 80% training level has been set.
  - d. Training will be conducted in accordance with Technical Specifications and will repeat the content of the Fire Brigade Training Course over a two year period.

## 2.0 Practice

Practice sessions are held for fire brigade members on the proper method of fighting various types of fires similar to those which could occur in Arkansas Nuclear One. These sessions provide fire brigade members with experience in actual fire extinguishment and the use of emergency breathing apparatus under strenuous conditions. These practice sessions will be provided at intervals not to exceed one year for each fire brigade member. In reality, something less than 100% of the members will be trained due to scheduling problems, availability of instructors, and personnel turnover. A goal of 80% has been set.

## 3.0 Drills

Fire brigade drills are performed at the plant.

- a. Each drill is assessed for effectiveness by the Plant Fire Chief. Among items considered are:
  1. Time elapse from start of drill to announcing of fire, as appropriate.
  2. Time required for minimum expected fire brigade members to respond.
  3. Time required for full fire brigade response.
  4. What equipment was broken out for use at the fire scene.
- b. The drills also include observation of the brigade's performance in a discussion with the brigade members. The observation and discussions serve to provide the evaluator (Plant Fire Chief) with an indication of each brigade member's knowledge in his role in a fire, conformance with plant procedures, and use of equipment.
- c. The drills include simulated use of appropriate equipment in the areas and types of fires or conditions are varied from drill to drill.
- d. Assessment of the Fire Brigade Leader's direction of the fire fighting effort is performed as described in (b) above.
- e. Fire drills are performed at varying intervals with a minimum yearly average of one every three months. At least one drill per year is scheduled to be performed on a "back shift". At least one drill per year will be unannounced.
- f. The drills conducted at Arkansas Nuclear One are pre-planned to accomplish certain objectives. A critique of each drill is generated by the Plant Fire Chief and copies are distributed to appropriate management personnel. Drills are normally observed by the Chief with the assistance of other selected personnel as required.

## 4.0 Records

Records of all formal training provided to each fire brigade member are maintained and are available for review.



## CONTROL OF COMBUSTIBLES

- 1.0 Administrative controls minimize the amount of combustibles that a safety-related area may be exposed to. The following discussion describes the controls developed.
  - a. Plant Procedures govern the use of combustibles in the plant. They specify the quantities of flammable and combustible liquids which may be stored in various buildings and set requirements regarding the type and size of containers for such liquids. They also provide detailed guidance regarding the handling and storage of all combustible materials.
  - b. The Plant Procedures contain guidance regarding location, allowable quantities, types of materials allowed, and other factors affecting the transit fire loading in the safety-related zones of the plant. All work in safety-related zones will be reviewed to assess the impact of fire protection by the cognizant supervisor and/or shift supervisor. Where any questions arise regarding additional fire protection measures needed, the suitability of materials, storage arrangement, etc., the Plant Fire Chief will be consulted. If the cognizant supervisor, shift supervisor or Plant Fire Chief deem the transit fire load causes the total fire load to exceed the capabilities of the installed protection systems or equipment, the cognizant supervisor will assure that sufficient additional protection capability will be provided.
  - c. The Plant Procedures contain specific requirements to minimize the fire hazard associated with waste, debris, scrap, rags, oil spills, or combustibles resulting from work activity in safety-related zones. These requirements will consider the type of hazards involved and specify one or more of the following actions as appropriate:
    - (a) Timely removal of particular combustibles.
    - (b) Properly storing the material to minimize the hazard.
    - (c) Insuring that the zone is continually manned or frequently inspected while the hazard is present.
    - (d) Periodic surveillance will be made throughout the plant in an effort to control the accumulation of combustibles.
    - (e) All wood used in the safety related zones of the plant will be treated with a fire retardant.

## CONTROL OF IGNITION SOURCES

### 1.0 Administrative Controls

Administrative Controls are instituted to protect safety-related equipment from fire damage or loss resulting from work involving ignition sources, such as welding, cutting, grinding or open flame work. Controls prohibit the use of open flame or combustion smoke for leak testing. Smoking is prohibited in several zones of the plant.

### 2.0 Control of Welding, Cutting, Grinding and Open Flame Work

- a. The Plant Procedures control all cutting, welding, grinding, and other open flame operations. Prior to beginning any cutting, welding, burning, or other open flame operations, the workers shall have a Welding and Cutting Permit issued by the cognizant supervisor and/or shift supervisor.
- b. The Plant Procedures require the cognizant supervisor and/or Plant Fire Chief to inspect the work site prior to work commencement and determine the precautions necessary for the safe performance of the work. Where any questions arise in regard to the fire protection, the Plant Fire Chief should be contacted.

The Plant Procedures assure that the following precautions are accomplished:

1. The cognizant supervisor and/or shift supervisor will assure that all movable combustible material below and within a thirty-five foot radius of the cutting, welding, grinding, or open flame work will be removed if feasible to do so.
2. Where the above requirements cannot be met, the cognizant supervisor and/or shift supervisor will assure that all combustible materials within a radius of thirty-five feet and below the cutting, welding, grinding, or open flamed work will be protected in accordance with NFPA51B, Item 422.

The cognizant supervisor has the option of requiring a fire watch if needed to meet the requirements of NFPA51B or to satisfy himself that the job can be accomplished without undue hazard to equipment or personnel.

In the event the cognizant supervisor determines a fire watch is not needed, concurrence must be obtained from the shift supervisor or Plant Fire Chief.

If the fire watch is deemed necessary by the above paragraph, the duties of that person(s) are defined in accordance with NFPA51B.

4. In accordance with the provisions of NFPA51B, the cognizant supervisor shall assure himself that the cutting and welding equipment to be used is in satisfactory operating condition and in good repair.
5. Welding, cutting, grinding and open-flame work to be performed on any pressurized system or any tank, vessel, or piping which may contain residual combustible vapors will be performed in accordance with NFPA51B, Section 41B. Where appropriate, the use of suitable instrumentation in verifying a safe atmosphere will be required.

### 3.0 Leak Testing

The Plant Procedures provide for the strict control of open flame work, regardless of the purpose. Thus, no special procedure for a specific application is needed.

### 4.0 Smoking and Ignition Source Restrictions

The Plant Procedures list those areas in the plant in which smoking is prohibited. In general, smoking is prohibited in safety related areas and various areas that have high potential for fire. No smoking signs are provided to delineate the boundary of these areas.

PLANT PROCEDURES  
(Fire Fighting)

The Plant Procedures cover such items as notification of the fire, fire emergency procedures, and coordination of fire fighting activities with off site fire departments. The Plant Procedures identify:

- a. Actions to be taken by individuals discovering the fire, such as, notification of control room, attempt to extinguish fire and actuation of local fire protection systems.
- b. The specific actions required of the control room operator when a fire is reported.
- c. The people required to report to the scene of the fire when a fire is announced.

A set of pre-fire plans is available which provide the Fire Brigade Leader with information, which with his training, will allow him to make intelligent fire ground decisions and specify the responsibilities to the fire brigade members for the selection of fire fighting equipment and transportation to the scene of the fire.

The operation of all installed fire protection systems is covered in the Fire Brigade Training Course. Pre-planned strategies for fighting fires in specific areas are available to the fire brigade. Copies of the pre-fire plans are provided in the control room and in the security office.

d. Pre-fire plans

1. Each plan identifies any hazardous combustibles located in the zone concerned or any combustibles of an unusual nature which might be encountered.
2. The plan lists all fire fighting equipment available in the vicinity of the fire zone and a plan of the area is incorporated to identify their location. No attempt is made to identify such extinguishers thus fitted for the particular material in the area, unless a material with unique extinguishing requirements is present. The fire brigade members receive training in the selection of extinguishing agents for various types of fires. The pre-fire plan should contain no more information than is absolutely necessary. To load it with information with which the plant personnel are quite familiar detracts from the usability of the document.
3. The pre-fire plans provide guidance in selecting the most favorable direction from which to attack fires in the particular zone. Specific instructions as to which way to attack from are not provided, due to the many different types of fire situations which may occur in a given zone.

Many factors are considered when providing guidance regarding directions from which to attack the fire. Among these are accessibility, protection of personnel, drainage, ventilation, availability of equipment, potential fire configurations within the zone, etc.

Each pre-fire plan will include a planned view of the fire area on which all means of access and egress are marked. Fire fighting equipment locations are identified, major items of equipment are shown, and other significant features are depicted.

Where locked doors are involved, they are specifically identified in the pre-fire plans and means of accessing them is specified.

4. The pre-fire plans include the location of the various systems and equipment controls which might be of value during a fire attack.
  5. The plant pre-fire plans include a listing of all exposures which may need to be protected or they are shown on attached arrangement drawings. In addition, the plan discusses hazards which might be present, such as drums of combustible liquids, and states what action is required to negate or minimize the hazards. For example, solvent drums should be kept cool to prevent over-pressure rupture or an internal vapor air explosion.
  6. The plant pre-fire plans provide the Fire Brigade Leader with the type of radiological hazards present. Any personnel hazards of a toxic nature not included in the combustion gases of ordinary materials are either listed in the pre-fire plans or shown on attached drawings. In addition, the plant utilizes the hazardous materials identification system developed by NFPA, and as described in the NFPA code 704M, where significant quantities of toxic materials are normally present.
  7. The pre-fire plans discuss the means available for ventilating the zones concerned.
- e. General instructions for operators and general plant personnel are set forth in the Plant Procedures.

Instructions for the control room operators have been discussed in Item (a) above. General plant personnel are required to report to their work center, or if that area is involved, to a alternate assembly area.

- f. The validity of the pre-fire plans is tested by drills and at such drills all aspects of the plan are reviewed with the fire brigade and the discussion of the plan is concluded.

- g. The plant fire procedures authorize the plant manager and selected members of his staff to relieve the Fire Brigade Leader or the Plant Fire Chief (whichever is in command at the scene of the fire). No additional guidance is provided for these personnel, as they need the freedom to assess the impact of the situation and to make appropriate judgement regarding its resolution. Response of security personnel to a fire is depicted by the ANO security plan.
- h. The Fire Brigade Leader or the Plant Fire Chief (whichever is in command at the scene of the fire) will relinquish his command to the Emergency Fire Team Leader upon his arrival.
- i. The Plant Procedures define the organization and outline coordination with outside fire departments.
- j. The Plant Fire Chief maintains listing of each local fire department's personnel and equipment resources, estimated response time and the officer's name. Utilizing this information, the chief provides plant personnel with guidance regarding who to call for a given type of emergency.