



UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D. C. 20555

SUPPLEMENT NO. 1

TO THE

SAFETY EVALUATION OF THE PEACH BOTTOM ATOMIC POWER STATION

FIRE PROTECTION PROGRAM

PHILADELPHIA ELECTRIC COMPANY

DOCKETS NOS. 50-277 AND 50-278

I. INTRODUCTION

On May 23, 1979 we issued a Safety Evaluation Report of the Fire Protection Program at the Peach Bottom Atomic Power Station, Units Nos. 2 and 3. The report contained a number of items which required staff approval prior to implementation and a number of items which were still under staff review. The purpose of this supplement is to report the staff's findings to resolve certain of the outstanding issues based on submittals by the Philadelphia Electric Company (licensee).

The acceptability of the issues described herein is based on a review by the Brookhaven National Laboratory, under contract to the USNRC. We have reviewed their findings and concur with their basis for acceptance and conclusions as stated below. Each matter discussed in this supplement is identified by the same Section number as was used in the Safety Evaluation.

II. EVALUATION

Item 3.1.1. - Fire Detection Systems

Item 3.1.1 of the Peach Bottom Safety Evaluation Report lists the areas in which the licensee proposes to install fire detectors as follows:

1. Residual Heat Removal Pump Rooms
2. Reactor Core Isolation Cooling Pump Rooms
3. Core Spray Pump Rooms
4. Refueling Floor of the Reactor Buildings
5. Enclosed Rooms within the Control Room Complex
6. Cable Spreading Room
7. Diesel Generator Rooms
8. Diesel Generator Auxiliary Room
9. High Pressure Service Water Pump Room to replace the existing heat detectors
10. Battery Rooms

Under their cover letter dated February 21, 1980, the licensee included their attachment 1 which described the general criteria used in designing the detection systems and the specific factors considered for each area. The general criteria considered included: combustible loading, ventilation characteristics, room size/geometry and room congestion.

Based on a review of the design information and drawings submitted, the licensee's proposed modification of installing ionization type fire detectors in the following areas is considered acceptable:

1. Residual Heat Removal Pump Rooms
2. Reactor Core Isolation Cooling Pump Rooms
3. Core Spray Pump Rooms
5. Enclosed Rooms within the Control Room Complex
8. Diesel Generator Auxiliary Room
9. High Pressure Service Water Pump Room to replace the existing heat detectors
10. Battery Rooms.

Items 4, 6 and 7 are still under review and the staff's findings will be reported in a future supplement.

Item 3.1.2A (1, 2 and 3) - Water Suppression Systems

Item 3.1.2A of the Peach Bottom Safety Evaluation Report indicates that the licensee will install fire suppression systems at:

1. Elevation 116' of the Turbine Building for protection of anti-contamination clothing stored in this area. An acceptable alternative is to permanently relocate the anti-contamination clothing to an area separated from safe shutdown equipment by a 3-hour fire barrier.
2. Recirculation pump motor generator set lube oil pump rooms.
3. Baling area of the radwaste building.

Attachment 2 of the licensee's February 21, 1980 submittal, responds to this item. They indicated that they chose the alternative listed in Item 1 and permanently removed the anti-contamination clothing from the area indicated in the Safety Evaluation Report item. They also intend to install early warning fire detectors in this area.

The licensee's proposed resolution for Item 3.1.2A(1) is acceptable.

The licensee's submittal indicated that Item 2 would be implemented by the installation of a pre-action sprinkler system having a design density of 0.3 gpm/sq. ft. over the diked area of the recirculation pump motor generator set lube oil pump rooms. The system will be actuated by two smoke detectors located over each diked area. The licensee also submitted preliminary drawing M-1341-0 which gives further design information. We discussed this item with the licensee. During these discussions the licensee indicated that manual action of the pre-action sprinkler system would be provided from outside the protected rooms. We find the licensee's proposed actions to be acceptable.

Item 3 calls for the installation of a suppression system to protect the Rad-waste Baling area. The licensee's submittal indicates that this has already been provided. A wet-pipe automatic sprinkler system with a design density of approximately 0.20 gpm/sq. ft. was installed. Operation of the system will annunciate an alarm via the station fire alarm system. Drawing M-572, M45-82-2 showing details of the installation were included with the submittal. We consider this item resolved.

Item 3.1.11(1) - Control of Combustibles

Item 3.1.11(1) of the Peach Bottom Safety Evaluation Report indicates the licensee's proposal of providing a curb to prevent the flow of combustible liquids under the doors between the diesel generator rooms. In attachment 4 of the licensee's submittal of February 21, 1980 they provided information pertaining to this modification including drawing no. M-35G. The proposed curb will be of 2-inch steel angle with appropriate caulking for oil retention.

Based on the description and drawing of the proposed modification, the submittal for Safety Evaluation Report Item 3.1.11(1) is satisfactory.

Item 3.2.4(2) - Water Suppression Systems

Item 3.2.4(2) of the Peach Bottom Safety Evaluation Report requires that the licensee evaluate the adequacy of fire protection in fire zones 4C and 12C which contain the motor-generator sets for the recirculation pumps.

Attachment 5 of the licensee's submittal of February 21, 1980 responded to this item. It indicates that the M-G set fluid drives contain approximately 1100 gallons of hydraulic fluid. Dikes will be placed around the fluid pipes to contain any hydraulic fluid associated with a pipe rupture or leak. A pre-action water spray system will be installed with directional nozzles to protect the diked area. The system will be actuated by the existing ionization type fire detectors located above the M-G sets.

The licensee's submittal on this item is acceptable based on discussions which indicated that the design density is at least 0.30 gpm/sq. ft., the installation conforms to NFPA 13 and 15, and actuation of the system transmits an alarm signal in the control room.

Item 3.2.5 - Gas Suppression System

Item 3.2.5 of the Peach Bottom Safety Evaluation Report requires the licensee to evaluate the practicality and need for automatic actuation of the CO₂ system in the cable spreading room.

In their February 1980 submittal, the licensee agreed to convert the existing system from manual to automatic action. The licensee's proposed modification for converting the existing CO₂ system in the cable spreading room to automatic actuation is acceptable provided that the applicable provisions of NFPA 12 are followed. This was confirmed by discussions with the licensee.

Item 3.2.6 - Fire Doors

Part 1 of Item 3.2.6 of the Peach Bottom Safety Evaluation Report states the licensee will evaluate the modifications which are necessary to insure that fire doors are electrically supervised or otherwise maintained closed.

The licensee responded to this item in their submittal dated February 16, 1980 in which they indicate that all fire doors at the plant are electrically supervised except for 29 doors. The licensee evaluated the consequences of a fire in the vicinity of these unsupervised doors and proposed actions for upgrading the status of doors. These proposed actions to upgrade the status of the presently unsupervised fire doors consist of:

- a. installing self closing mechanism on the 4 conventional fire doors lacking this equipment,
- b. providing administration controls to maintain watertight doors in the closed position with the exception of doors #230 and 233 between the turbine building and the radwaste building. These two doors will be provided with electrical supervision or doors with self closing mechanisms will be installed,
- c. posting all 29 fire doors listed with signs stating: "Fire Door - Keep Closed",
- d. providing instructions to maintain fire doors in the closed position except when required to accommodate the movement of personnel and equipment. Instructions will be provided in the General Employee Training Program and administrative procedures, and
- e. inspecting fire doors semi-annually to verify that self closing mechanism and latches are in good working order.

The licensee's proposed modifications for upgrading the status of the unsupervised fire doors is acceptable. Attached is Table 1 which lists the locations of the doors along with the proposed actions for each door.

Item 3.2.7 - Interior Hose Stations

Item 3.2.7 of the Peach Bottom Safety Evaluation Report states that the licensee will evaluate:

1. The need for additional hose stations and access ladders in the torus compartments.
2. The feasibility of installing variable gallonage nozzles at stations servicing the control room complex, cable spreading room, and emergency switchgear rooms.

In their submittal dated February 16, 1979 the licensee responded to Item 1 by stating:

"Portable fire extinguishers are mounted in the torus compartment and adjacent pump rooms. Considering the low combustible levels, accessibility of the cables, and additional fire protection proposed for the cable trays, we believe that more than sufficient fire fighting capabilities presently exist".

During our discussions with the licensee, he agreed to provide sufficient hose length from a hose station outside the torus compartment such that water coverage of this area will be assured. We find the licensee's actions to be acceptable to resolve this item.

In their submittal dated December 20, 1978 the licensee responded to Item 2 by stating:

"All of the Peach Bottom hose stations are equipped with Alfco Fog nozzles. It is our considered opinion that this type represents the best industrial type nozzle available for use in the use of a variable gallonage nozzle, use of this type of nozzle would reduce the fire fighting effectiveness of the fire brigade, and would pose a serious personnel safety hazard. Many years of experience with Alfco Fog nozzle has demonstrated it to be very effective in fighting many types of fires. We agree that the installation of a ball type shutoff valve has merit, and such a device will be added to each hose nozzle".

The licensee's proposal to install ball shutoff valves in front of their existing Alfco Fog nozzles is an acceptable modification for this item.

Dated: August 14, 1980

TABLE 1

Fire Doors Without Electrical Supervision

Elev.	Door No.	Beam Coordinates	Unit	Location	Proposed Action
91'6"	9	18-H	2	Core spray rm, sump pp. rm	V
91'6"	48	23-H	3	Core spray rm, sump pp. rm	V
91'6"	7	19-G	2	HPCI to RCIC	V
91'6"	50	22-G	3	HPCI to RCIC	V
91'6"	23	20-C	-	Chem. Waste tank room	III
91'6"	26	20-C	-	Stairwell to radwaste	II
91'6"	32	20-J	-	Turb. bldg to radwaste bldg	VI
116'	65	8-B	2	RHR to RHR	III
116'	142	33-B	3	RHR to RHR	III
116'	130	20-C	-	Stairwell to radwaste	II
116'	134	20-J	-	Turb. bldg to radwaste bldg	VI
116'	135	20-F	-	Cond. tank to cond. pp	II
116'	136	20-J	-	Cond. tank to cond. pp	II
135'	230	20-C	-	Stairwell to radwaste	II
135'	233	20-J	-	Turb. bldg to radwaste bldg	II
135'	228	21-J	-	Decontam. to filter rm	III
135'	229	21-H	-	Decontam. to filter rm	II
135'	217	19-L	2	Batt. rm to Batt. rm	I
135'	256	22-L	3	Batt. rm to Batt. rm	I
135'	216	19-L	2	E bus to E bus rm	II
135'	223	20-L	2	E bus to E bus rm	II
135'	258	20-L	3	E bus to E bus rm	II
135'	262	21-L	3	E bus to E bus rm	II
165'	305	18-G	2	MG fan rm	II
165'	356	23-G	3	MG fan rm	II
116'	9	-	-	Pump structure	IV
127'	31	-	-	D-G bldg	II
127'	32	-	-	D-G bldg	II
127'	33	-	-	D-G bldg	II

Proposed Action

- I. Electrical supervision under security system.
- II. Self closing mechanism presently installed. Establish additional administrative controls (see note 1).
- III. Self closing mechanism will be installed. Establish additional administrative controls (see note 1).
- IV. Water tight doors. Present administrative controls effective in maintaining door in closed position.
- V. Water tight doors. Install electrical supervision, or provide fire door with self closing mechanism.

Note 1: Procedural controls, GET training, label doors, semi-annual inspection program.