



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

SUPPLEMENT NO. 3

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 (SER) 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. By letters dated August 14 and September 15, 1980, we issued Supplements Nos. 1 and 2 to the SER which resolved certain of the outstanding items. The purpose of this supplement is to report the staff's findings of additional issues based on submittals by the Philadelphia Electric Company (licensee). Each matter discussed in this supplement is identified by the same Section number as was used in the SER.

II. EVALUATION

1. Item 3.1.1.(7). Smoke Detectors - Diesel Generator Rooms

In the SER, it was our concern that the fire detection system in the diesel generator rooms was inadequate.

By letter dated February 21, 1980, the licensee informed us that four heat detectors are located in each diesel generator room instead of two as previously indicated. The heat detectors are combination rate of rise and fixed temperature. The licensee claimed that the existing fire detectors provide adequate protection.

A fire involving diesel fuel would produce a fast developing, high heat output fire that would probably be quickly detected by the existing heat detectors.

Therefore, it is our opinion that heat detectors provide adequate fire detection capability for the diesel generator rooms since the significant combustible loading in this area would result in a fast developing fire.

The licensee's present fire detector system in the diesel generator room meets Section F.9 of BTP APCS 9.5-1 and, therefore, is acceptable.

2. Item 3.2.3.(2). Fire Detection Systems

In the SER, it was our concern that the placement and sensitivity of existing and proposed fire detectors may not be adequate to provide an early warning alarm for the various areas being monitored. We recommend that the licensee verify that the detectors are adequate either by in-situ testing or by inspection by a qualified fire protection engineer.

By letters dated December 20, 1978, February 16, 1979 and February 21, 1980, the licensee provided a description of their basis for location of detectors. The number and location of smoke detectors are based on the following criteria:

- (1) combustible loading;
- (2) ventilation characteristics;
- (3) room size and geometry;
- (r) room congestion.

In addition, the licensee verified that an operational and calibration test will be performed on each detector following installation to ensure its design sensitivity.

The required methodology for an in-situ smoke detector test is beyond the current state-of-the-art and, therefore, an in-situ test cannot be performed at this time.

We find that with acceptable bench testing of smoke detectors, and considering that the smoke detection systems meet appropriate NFPA codes and are designed by experienced personnel, the existing smoke detector systems are acceptable.

3. Item 3.2.9. Ventilation Ducts

In the SER, it was our concern that the ventilation system in the control room complex may not be adequate to prevent smoke from a fire in a peripheral room from entering the main control room.

By letter dated February 16, 1979, the licensee indicates that, in the event of a fire in the control room complex, the control HVAC can be changed over to 100% exhaust to the outside and clear the control room of smoke. The control room complex ventilation system can be manually isolated to prevent smoke from entering the area as a result of fires in other areas of the plant. Early warning fire detectors are being provided in the peripheral rooms. Openings in walls separating the main control room and peripheral rooms will be closed. All doors to enclosed rooms within the control room complex will be provided with self-closing mechanisms.

In the event a fire in the control room complex forced an evacuation of the main control room, the plant can be shut down using remote shutdown panels located outside the control room.

Based on the above evaluation, we conclude that the control room ventilation system meets Section F.2 of Appendix A to BTP APCS 9.5-1 and, therefore, is acceptable.

4. Item 3.2.10.(1) Control of Combustibles - Reactor Feed Pump

In the SER, it was our concern that the curbs for the reactor feed pump turbine lube oil reservoirs may not be adequate to contain the full contents of the reservoir plus an added margin for fire suppression water.

By letter dated December 20, 1978, the licensee verified that the curbs installed at the 150 foot elevation are sufficient to contain the full contents of the reactor feed pump turbine lube oil reservoir and 19 minutes of sprinkler flow. Additionally, the licensee proposed to raise the curbs at the 135 foot elevation to contain the entire contents of the reactor feed pump turbine lube oil reservoirs and a 20 minute sprinkler flow.

Based on the licensee's verification and proposed modification, we conclude that the proposed curbing for the reactor feed pump turbine lube oil reservoir are sufficient to contain the entire contents of the reservoir plus a suitable margin for fire suppression water and therefore, are acceptable.

5. Item 3.2.10.(2) Diesel Fire Pump Room

In the SER, it was our concern that a fire in the diesel fire pump room could spread to the adjacent high pressure service water pump area by diesel fuel passing under the door.

By letter dated December 20, 1978, the licensee proposed to provide a curbing at the door of the diesel fire pump room. The curbing will be of sufficient height to contain the volume of the diesel fuel day tank and a suitable sprinkler flow.

The diesel fire pump and fuel day tank are enclosed within a 3-hour fire rated masonry block room. Openings through the walls are protected by a 3-hour fire door and a 3-hour damper. The room is protected by a wet pipe automatic sprinkler system. The proposed curbing will confine an oil spill to this room and prevent a potential fire from affecting safe shutdown.

Based on our review, we conclude that the licensee's proposed curbing will be of sufficient height to contain the volume of the diesel fuel oil day tank plus a suitable margin for fire suppression water and, therefore, is acceptable.

6. Item 3.2.10.(3) Main Turbine Lube Oil Storage Tank Room

In the SER, it was our concern that the dikes in the main turbine lube oil storage tank rooms were not of sufficient height to contain the full contents of all tanks in the room plus the quantity of fire water needed to suppress a postulated fire.

By letter dated December 20, 1978, the licensee indicated that the area is protected by a sprinkler system. In addition, the licensee indicates that the existing dikes meet the recommendations of NFPA 30. Therefore, the volumetric capacity of the diked area should not be less than the greatest amount of liquid that can be released from the largest tank within the diked area, assuming a full tank.

Based on the information that the design meets the recommendations of NFPA 30, we find that the existing dikes in the main turbine lube oil storage tank rooms are acceptable.

7. Item 3.2.10.(4) Control of Combustibles - Recirculation Pump Motor-Generator Set Room and Motor-Generator Set Oil Equipment Rooms

In the SER, it was our concern that an oil leak at the oil reservoirs or oil lines within the motor-generator set rooms and motor-generator set oil equipment rooms could spread to adjacent areas.

By letters dated February 16, 1979 and February 21, 1980, the licensee proposed to provide dikes around the motor-generator set fluid drives to contain any hydraulic fluid associated with a pipe rupture or leak. A preaction water spray system will be installed, with directional nozzles, to protect the diked area. The flow control valve for this system will be actuated by the existing ionization smoke detectors located above the motor-generator sets.

Based on our review, we conclude that the modifications will provide an adequate level of fire protection and, therefore, we find them acceptable.

8. Item 3.2.11 Forcible Entry Tool

In the SER, it was our concern that the manual fire fighting equipment provided for the fire brigade was inadequate since the licensee had not provided a forcible entry tool.

By letters dated December 20, 1978 and February 16, 1979, the licensee stated that the availability of forcible entry tools on site may present a potential internal security problem. In order to minimize the potential security problem, the licensee proposes to provide forcible entry tools to be stored in the guard structure under the control of security personnel.

We find that the licensee's proposal to provide a forcible entry tool stored in the guard structure is adequate to provide this tool to the fire brigade, and therefore find the licensee's commitment acceptable.

9. Item 3.2.13 Hose Houses

In the SER, it was our concern that there are no hose houses with connected hose along the east side of the plant at the hydrants nearest the northeast and southeast corners of the turbine building. A fire on this side of the plant would require moving a hose cart from its house to a hydrant on the east side and then connecting the hose.

By letter dated December 20, 1978, the licensee informed us there are hose carts located at the north, south and southeast areas adjacent to the turbine building. The licensee proposed to provide an additional hose cart at the yard west of the reactor building. Each house contains all the additional equipment we recommended with the exception of the forcible entry tool (refer to our evaluation of 3.2.11).

We conclude that the licensee's proposed hose houses are adequate to meet our guidelines and, therefore, are acceptable.

Dated: October 10, 1980