

THE CINCINNATI GAS & ELECTRIC COMPANY



E. A. BORGMANN
VICE PRESIDENT

Docket No. 50-358

August 31, 1979

Mr. Harold Denton, Director
Office of Nuclear Reactor Regulation
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555


RE: WM. H. ZIMMER NUCLEAR POWER STATION -
UNIT 1 - AMENDMENT 97 - SUBMITTAL OF
REVISION 14 TO THE FIRE PROTECTION
EVALUATION REPORT

Dear Mr. Denton:

The Cincinnati Gas & Electric Company on behalf of itself and as agent for Columbus and Southern Ohio Electric Company and The Dayton Power and Light Company hereby submits forty (40) copies of Revision 14 to the Fire Protection Evaluation Report for the Wm. H. Zimmer Nuclear Power Station - Unit 1 (ZPS-1).

Very truly yours,

THE CINCINNATI GAS & ELECTRIC COMPANY

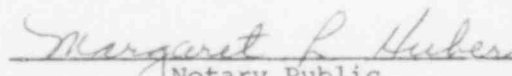
By 
E. A. BORGMANN
Senior Vice President

EAB:dew

cc: Charles Bechhoefer
Glenn O. Bright
Frank F. Hooper
Troy B. Conner, Jr.
James P. Fenstermaker
Steven G. Smith
William J. Moran
J. Robert Newlin
William G. Porter, Jr.
James D. Flynn
Thomas A. Luebbers
Leah S. Kosik
John D. Woliver

State of Ohio)
County of Hamilton) ss

Sworn to and subscribed before me
this 27th day of August, 1979.


Notary Public

MARGARET L. HUBER
Notary Public, State Of Ohio

301326 My Commission Expires Aug. 13, 1983

7909040 222

F

THE CINCINNATI GAS & ELECTRIC COMPANY



E. A. BORGMANN
VICE PRESIDENT

Docket No. 50-358

August 31, 1979

Mr. Harold Denton, Director
Office of Nuclear Reactor Regulation
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555

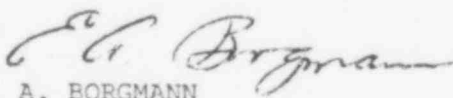
RE: WM. H. ZIMMER NUCLEAR POWER STATION -
UNIT 1 - AMENDMENT 97 - SUBMITTAL OF
REVISION 14 TO THE FIRE PROTECTION
EVALUATION REPORT

Dear Mr. Denton:

The Cincinnati Gas & Electric Company on behalf of itself and as agent for Columbus and Southern Ohio Electric Company and The Dayton Power and Light Company hereby submits forty (40) copies of Revision 14 to the Fire Protection Evaluation Report for the Wm. H. Zimmer Nuclear Power Station - Unit 1 (ZPS-1).

Very truly yours,

THE CINCINNATI GAS & ELECTRIC COMPANY

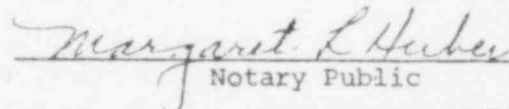
By 
E. A. BORGMANN
Senior Vice President

EAB:dew

cc: Charles Bechhoefer
Glenn O. Bright
Frank F. Hooper
Troy B. Conner, Jr.
James P. Fenstermaker
Steven G. Smith
William J. Moran
J. Robert Newlin
William G. Porter, Jr.
James D. Flynn
Thomas A. Luebbers
Leah S. Kosik
John D. Woliver

State of Ohio)
County of Hamilton) ss

Sworn to and subscribed before me
this 27th day of August, 1979.


Notary Public

MARGARET L. HUBER
Notary Public, State Of Ohio
My Commission Expires Aug. 13, 1983

301327

WM. H. ZIMMER POWER STATIONINSTRUCTIONS FOR UPDATING YOUR FIRE
PROTECTION EVALUATION REPORT

To update your copy of the ZPS-1 Fire Protection Evaluation Report, remove and destroy the following pages and insert pages and figures as indicated.

Remove

Pages 10.0-1 and 10.0-1a

Questions and Answers

Page Q6-1
Page Q12-1
Page Q27-1

Insert

Pages 10.0-1 and 10.0-1a

Page Q6-1
Page Q12-1 and Figure Q12-1
Page Q27-1

301328

10.0 ADMINISTRATIVE PROCEDURES, CONTROLS, AND FIRE BRIGADE

10.1 Organization

As described in FSAR Chapter 13.0, the Manager, Electric Production Department, is responsible for managing all operation and maintenance activities of CG&E's electric power generating system, including such activities associated with ZPS-1. In this capacity, he is responsible for the formulation, implementation and assessment of the Wm. H. Zimmer Station fire protection programs.

The Electric Production Department Staff Safety Supervisor, as directed by the Department Manager, is responsible for periodically assessing the effectiveness of the fire protection program. The results of the above assessments, including recommendations for improvements or corrective action, are reported to the Manager for his review and action as required.

The Electric Production Department Manager delegates the direct responsibility for all phases of ZPS-1 operation, maintenance, and quality assurance to the Station Superintendent. Included in this responsibility is the administration of the total emergency planning effort, of which the fire protection and prevention program is an integral part.

An engineer from the Station Technical Staff is assigned the responsibilities of fire protection engineer by the Station Superintendent and is delegated onsite responsibility for assuring that appropriate fire protection/prevention provisions are incorporated in administrative documents and that fire-fighting procedures are prepared covering items specified in Section 10.3. Direct liaison with other cognizant-second-line supervisors assures that fire protection/prevention measures such as maintenance and training are incorporated into the areas within their purview.

Fire brigades are established consisting of appropriately trained station personnel from each major work group. This training is an integral part of the overall station training program, and includes classroom instruction and practice in the actual use of station fire fighting equipment. Periodic fire drills and retraining presentations are conducted to ensure that a high level of expertise is maintained in the fire brigades.

Assignment of personnel to fire brigades considers the need for total shift coverage.

During all shift operation a five (5) man fire brigade team consists of two (2) security personnel, two (2) plant operators, and the shift Rad-Chem technician. One of the plant operators responds as brigade team leader during these periods.

During the normal working day, when the majority of activities are scheduled which have the potential for causing fire hazards, additional qualified fire brigade supernumeraries will be available to supplement the fire brigade. These personnel will include first-line supervisors such as

maintenance foremen, I & C foremen, Rad-Chem foremen, or extra shift supervisors.

A total of twenty-five to thirty station employees will be trained to serve as fire brigade members. Additionally, selected security personnel will receive fire brigade training, bringing the total complement of qualified fire brigade personnel to about forty-five.

14

Added assurance that inadvertent accumulation of combustibles or hazardous materials does not occur and that appropriate control of ignition sources is maintained, are covered in approved administrative documents.

QUESTION 6 (SECTION 8.4.1, CONTROL ROOM)

"We noted that a large amount of safety related divisional cable is routed in the ceiling space of the control room. Describe:

- (1) How a fire in the ceiling space would be detected and its location pinpointed, considering placement and sensitivity of detectors.
- (2) How the fire would be retarded and extinguished, considering access and smoke removal problems."

RESPONSE

1. A fire in the ceiling space would be detected by the ionization fire detectors which are located throughout the control room ceiling space. The detectors are located at the highest point above the cables. The detectors are on essential power supplies and are redundant to provide single-failure capability. Actuation of any detector will be displayed on a graphic annunciator panel in the control room. The indicating lights on the graphic display panel show the physical location of each detector in the ceiling space for pinpointing a potential fire.
2. All cables in trays above the control panels have IEEE 383 qualification. In addition, cables in horizontal trays above the control panels will be covered with a ceramic fiber blanket (Kaowool) laid on the cables to inhibit propagation in the cable trays.

The alarm on the fire protection annunciator panel will identify the area in the tray system that has an incipient fire. Both Halon 1211 and water portable extinguishers will be available in the control room for quick response and extinguishment of the postulated fire.

| 14

7

QUESTION 12 (SECTION 8.4.9, LIFT TRUCK ROUTE INTO AUXILIARY BUILDING)

- "a. Provide the results of an analysis of the effects on the redundant safety related cables and their associated systems of an exposure fire occurring in this area. Assume that the exposure fire is fueled by combustibles that are normally carried through this area by the lift trucks. If a fire should occur in this area that could not be extinguished by the sprinkler system or should the sprinkler system fail to operate, what are the consequences as they affect safe shutdown.
- "b. Provide the design criteria for the sprinkler system to be provided for this area.
- "c. This area is separated from the turbine building by a rated fire wall. A large opening is provided in this wall for the lift trucks to move between the turbine building and the reactor building. Describe the bulkhead type door, including the automatic or self-closing hardware to be provided and the fire rating of the door."

RESPONSE

- a. Cable trays and cable bus for Division 2 (blue) which cross this area will be protected by a 1-hour passive fire barrier in addition to the automatic sprinkler system. The cable trays will be protected by Kaowool blanket material (see Question 7) which has been qualified by test.*

7

13

The Division 2 cable bus will be enclosed in a fire rated corridor which will connect the Division 2 diesel-generator room with its associated switchgear room on the opposite side of the lift truck route. Located in this corridor, the cable bus will be segregated from the lift truck route. The cable bus corridor is shown in Figure Q12-1.

14

- b. This area is protected by an automatic wet-pipe sprinkler system based on a design density of 0.30 gpm/ft^2 for a total flow of 484 gpm.

The sprinkler water for this system is a separate supply from the auxiliary building fire water supply header.

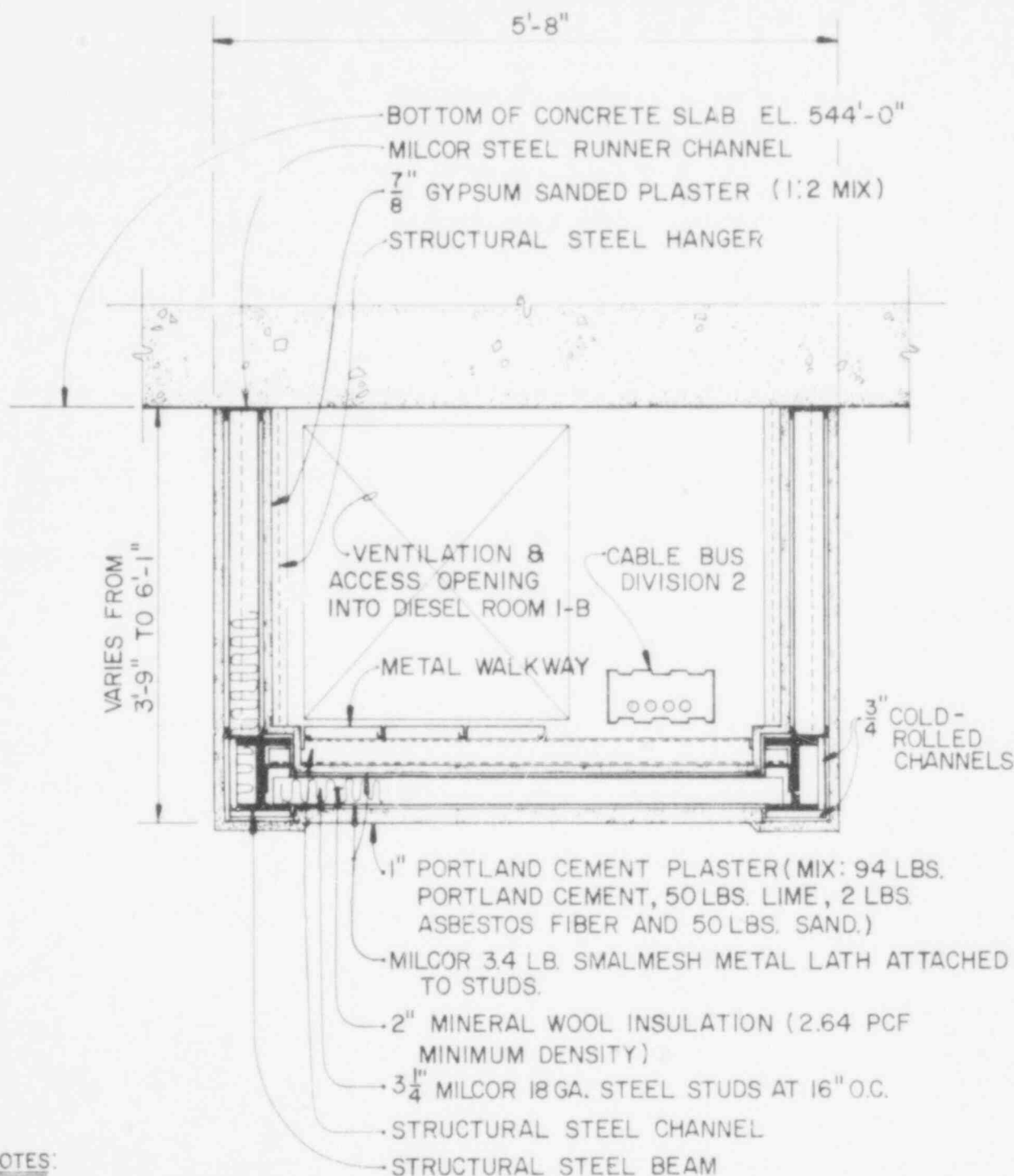
7

*The test titled, "Fire Protective Cable Tray Fire Test, September 1978 Through January 1979, for Wm. H. Zimmer Nuclear Station," (Engineering Report Number 78-9-FP-1) was submitted in Fire Protection Revision 12.

11

A supplementary test titled, "Fire Protective Cable Tray Fire Test," by M. S. Abrams of Construction Technology Laboratories, a division of Portland Cement Association, June 1979, is submitted in Revision 13.

13



NOTES:

1. STRUCTURAL STEEL IS PROTECTED TO 1-HOUR FIRE RATING AS FOLLOWS:
INTERIOR: AS PER NBS REPORT NO. 92
EXTERIOR: AS PER TABLE 43A UBC (1976)
2. PARTITION WALL IS 2-HOUR FIRE RATED AS PER OSU TEST T-4410

POOR
ORIGINAL

WM. H. ZIMMER NUCLEAR POWER STATION, UNIT 1
FIRE PROTECTION REPORT

FIGURE Q12-1
DIVISION 2 CABLE BUS ENCLOSURE
301333

QUESTION 27 (GENERAL PLANT AREAS)

"Describe the methods that will be employed for heat, smoke and toxic gas removal using either fixed or portable air handling equipment for each fire area. Where portable ducts are utilized, describe the route that would be used to reach the outside, considering the reduction of rated fan capacity because of the duct length, time required to place units in operation, and the ability of the equipment to handle fire temperature gases. For areas where the installed ventilation system will be used, describe the access to and location of the controls."

RESPONSE

The control room and service building areas are served by HVAC systems which normally have recirculation mode of operation, but they can be controlled to provide 100% outside air, whereupon all return air is exhausted from the space.

Areas within the reactor building, turbine building, radwaste building, auxiliary building HVAC equipment rooms, and diesel-generator building can be purged of smoke, since the normal ventilation systems which serve these areas are of a once through design for both the supply and exhaust systems.

The capability to purge is maintained as long as (1) the temperature of ventilation exhaust air is not sufficiently high to cause vane axial fan motor burnout, and (2) the fire dampers in exhaust ducts penetrating fire walls either have not tripped (low-temperature fire) or have been manually reset locally.

Areas within the primary containment can be purged by the primary containment and suppression pool purge system. Divisions 1, 2, and 3 switchgear rooms will be purged by their respective battery room exhaust fans.

The time needed to place installed HVAC systems into the purging mode of operation is relatively short, since all essential and many non-essential control switches are located on the main control board. The control switches for non-safety-related HVAC systems such as the service building, circulating water pump structure, machine shop, and laboratory are located on local panels that are in close proximity to their respective HVAC equipment.

Two portable smoke-removal units will be provided that can operate without offsite a-c power. Included in the operating and emergency respirator protection equipment inventory are sufficient self-contained breathing apparatus (SCBA) using full-face, NIOSH-approved, positive-pressure masks, each with a nominal 30-minute air supply to fully equip a five-man damage control/fire brigade. Extra bottles or complete SCBA units are available to provide at least two nominal 30-minute changes. An additional 6-hour supply of reserve air, consisting of a cascade bank of air bottles that would be used to recharge spent cylinders, is available for use by these emergency personnel.

301334