


Jersey Central Power & Light Company



MADISON AVENUE AT PUNCH BOWL ROAD • MORRISTOWN, N. J. 07960 • 201-539-6111

MEMBER OF THE
General  Public Utilities Corporation
SYSTEM

July 3, 1974



Mr. Dennis L. Ziemann, Chief
Operating Reactors Branch #2
Directorate of Licensing
United States Atomic Energy Commission
Washington, D. C. 20545

Dear Mr. Ziemann:

Subject: Oyster Creek Station
Docket No. 50-219
Bearing Oil Drain Pipe Rupture in 4160V Switchgear Room

Re: Letter dated March 13, 1974 from Mr. Ivan R. Finrock, Jr.
to Mr. Dennis L. Ziemann

As indicated in the referenced letter, the pipe rupture analysis for the Condenser Room, Condensate Pump Room, and the Switchgear Room at the Oyster Creek Station was extended to encompass the effects of rupture of the subject oil drain piping of the Turbine Shaft Sealing System on the emergency switchgear. The following presents the results of this investigation.

The oil piping in question is a drain line and air detraining section with oil service temperature at 120°F-140°F, and pressure less than 275 psig. It is, therefore, a low energy line as specified in the Commission's "General Information Required for Consideration of the Effects of a Piping System Break Outside Containment". Pipe whip, then, is not a factor.

If a break occurred in this piping near the ceiling of the 4160V Switchgear Room, oil could spray on both "C" and "D" emergency buses. However, the bus cabinets are drip proof, and no operation effect from the spray is foreseen. A break in the piping that passes closest to the "C" switchgear could spray oil through the ventilating louvers at the top and rear of this bus cabinet. Design of the internal mechanism and barriers, however, is such as to make it unlikely that oil would enter the breaker itself. Even if the spray entered the breaker, the possibility of a fire is very small since a spark would have to exist (i.e., opening or closing breaker) in the presence of the spray to initiate

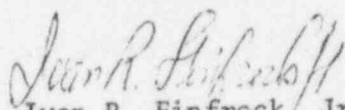
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a fire. Also, the physical separation of the "C" and "D" buses and the partial firewall between them make the possibility of oil spray entering the "D" bus from a rupture in this portion of the piping extremely remote. At least one of the emergency buses will, therefore, remain operational in the event of oil spray from rupture of the subject piping.

The oil inventory is 15,000 gallons. If this entire inventory was to pour into the 4160 Switchgear Room and if none of the drainage paths discussed in the March 13 reference letter are considered, the oil depth in the room would be no greater than 9.7 inches. This depth is derived from the 2,500 square feet of floor space in the Switchgear Room, and is extremely conservative since several drainage paths exist in the room (i.e., five holes in the floor varying in size from 26" x 6" to 50" x 41", two 16-inch wide holes in the wall 4 inches above the floor, one 6-inch drain, and two doors, one of which is normally open). Since the primary bus and secondary terminal boards are located approximately 56 and 12 inches, respectively, above the floor and the base of the power circuit breaker is 11 inches above the floor, no operational effect upon these components is foreseen from oil flooding. The heaters used to insure low humidity in cubicles are 4 inches above the floor and could, under conservative assumptions, become inoperative. These heaters, however, are not essential for proper operation of short duration. The flash point of this DTE 797 oil is 330°F 350°F, and the probability of a fire from the vapor contact with the heater seems improbable due to the 120°F-140°F oil operating temperature.

Based on the above, it appears highly unlikely that deleterious effects from the rupture of the subject piping would preclude the safe shutdown of the plant.

Very truly yours,


Ivan R. Finfrock, Jr.
Vice President

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