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Jersey Central Power & Light Company

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MEMBER OF THE General Public Utilities Corporation SYSTEM

March 22, 1974

Mr. A. Giambusso
Deputy Director for Reactor Projects
Directorate of Licensing
United States Atomic Energy Commission
Washington, D. C. 20545

Dear Mr. Giambusso:

Subject: Oyster Creek Station
Docket No. 50-219
Abnormal Occurrence Report No. 50-219/74/22

The purpose of this letter is to forward to you the attached Abnormal Occurrence Report in compliance with paragraph 6.6.2.a of the Technical Specifications.

Enclosed are forty copies of this submittal.

Very truly yours,

Donald A. Ross

Donald A. Ross
Manager, Nuclear Generating Stations

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Enclosures

cc: Mr. J. P. O'Reilly, Director
Directorate of Regulatory Operations, Region I

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OYSTER CREEK NUCLEAR GENERATING STATION
FORKED RIVER, NEW JERSEY 08731

Abnormal Occurrence
Report No. 50-219/74/22

Report Date

March 22, 1974

Occurrence Date

March 15, 1974

Identification of Occurrence

Violation of the Technical Specifications, paragraph 2.3.7, low pressure main steam line pressure switch RE23D was found to trip at a pressure less than the minimum required value of 860 psig. This event is considered to be an abnormal occurrence as defined in the Technical Specifications, paragraph 1.15A.

Conditions Prior to Occurrence

The plant was operating at steady-state power.

The major plant parameters at the time of the event were as follows:

Power:	Reactor, 1902 MWt
	Electric, 661 MWe
Flow:	Recirculation, 15.3×10^4 gpm
	Feedwater, 7.10×10^6 lb/hr
Reactor Pressure:	1020 psig
Stack Gas:	40,600 µCi/sec

Description of Occurrence

On Friday, March 15, 1974, at 1550, while performing a routine surveillance test on the four main steam line low pressure switches, it was discovered that RE23D tripped at 850 psig. This value is below the minimum required trip point of 860 psig which is derived by adding to the Technical Specification limit of 850 psig a 10 psig head correction factor.

The "as found" and "as left" switch settings were:

	"As Found" Settings	"As Left" Settings
RE23A	865 psig	861 psig
RE23B	864 psig	864 psig
RE23C	865 psig	865 psig
RE23D	850 psig	860 psig

Pressure switch RE23D was immediately recalibrated and rechecked to actuate at 860 psig.

Apparent Cause of Occurrence

Design is considered to be a major factor contributing to this event. Switch repeatability is a recognized problem and work is in progress to formulate a final solution.

Analysis of Occurrence

As indicated in the bases of the Technical Specifications, "The low pressure isolation of the Main Steam Lines at 850 psig was provided to give protection against fast reactor depressurization and the resultant rapid cool-down of the vessel. Advantage was taken of the scram feature which occurs when the main steam isolation valves are closed to provide for reactor shutdown so that high power operation at low reactor pressure does not occur, thus providing protection for the fuel cladding integrity safety limit."

The adverse consequences of reactor isolation occurring at reactor pressure approximately 10 psig below the specified minimum value of 860 psig is limited to those effects attendant to a greater than normal reactor cool-down rate. The fuel cladding integrity safety limit only comes into effect for power operation at reactor pressures less than 600 psig or for power operation greater than 354 MWt with less than 10% recirculation flow. Therefore, the consequences of a 10 psig lower than normal reactor isolation and scram set point has no threatening effect whatsoever on the fuel cladding integrity.

The effects of a too rapid cool-down due to the lower isolation pressure are inconsequential since there is less than 2°F difference between the saturation temperature for 860 psig and 850 psig.

Corrective Action

Continuing corrective actions being taken at this time are as follows:

1. Investigation is being conducted into the basis for the steam line low pressure setting of 850 psig. Development of a Technical Specification change to lower the set point will follow if results of transient analyses indicate this possibility.

2. Recommendations to possibly reduce or eliminate the sensor set point change problem have been received. It was reported that General Electric tests on a pulsating line to simulate plant conditions show that pre-cycled Barksdale switches show improvement but that the switches still do not meet 1% repeatability. General Electric, therefore, recommended an Ashcroft switch as it is more accurate. The Ashcroft catalog number is 61 S 6080 BN20-06L-1028.

As a result, one switch of each type (pre-cycled Barksdale and Ashcroft) has been purchased for test and evaluation at Oyster Creek. An Ashcroft switch is currently on hand and undergoing evaluation.

Failure Data

Manufacturer data pertinent to these switches are as follows:

Meletron Corporation (Subsidiary of Barksdale)
Los Angeles, California
Pressure Actuated Switch
Model 372
Catalog No. 372-6SS49A-293
Range 20-1400 psig
Proof Psi 1750 G

Previous Abnormal Occurrence Reports involving these switches are:

1. Letter to Mr. A. Giambusso from Mr. D. A. Ross dated December 24, 1973.
2. Abnormal Occurrence Report No. 50-219/74/1
3. Abnormal Occurrence Report No. 50-219/74/9
4. Abnormal Occurrence Report No. 50-219/74/10
5. Abnormal Occurrence Report No. 50-219/74/12