

NORTHEAST UTILITIES



THE CONNECTICUT LIGHT AND POWER COMPANY
THE HARTFORD ELECTRIC COMPANY
WESTERN MASSACHUSETTS ELECTRIC COMPANY
NEW YORK WATERPOWER COMPANY
NORTHEAST UTILITIES SERVICE COMPANY
NORTHEAST NUCLEAR ENERGY COMPANY

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August 29, 1979

Docket Nos. 50-213
50-245

Director of Nuclear Reactor Regulation
Attn: Mr. D. L. Ziemann, Chief
Operating Reactors Branch #2
U. S. Nuclear Regulatory Commission
Washington, D. C. 20555

- References: (1) D. L. Ziemann letter to W. G. Council dated June 18, 1979,
Docket No. 50-213.
(2) D. L. Ziemann letter to W. G. Council dated June 18, 1979,
Docket No. 50-245.

Gentlemen:

Haddam Neck Plant
Millstone Nuclear Power Station, Unit No. 1
SEP Topic VIII-3.B, DC Power System
Bus Voltage Monitoring and Annunciation

In References (1) and (2), Connecticut Yankee Atomic Power Company (CYAPCO) and Northeast Nuclear Energy Company (NNECO) respectively were requested to provide a listing of all alarms and voltage monitoring devices available for Class 1E direct current power systems to facilitate Staff review of SEP Topic VIII-3.B. In response to References (1) and (2), Attachments (1) (Haddam Neck) and (2) (Millstone Unit No. 1) are provided.

As noted in previous discussions between the NRC Staff and NUSCO, we trust that the logistics of handling this SEP request are not indicative of future efforts and that subsequent topic reviews will be conducted in accordance with the SEP guidelines originally established.

Very truly yours,

CONNECTICUT YANKEE ATOMIC POWER COMPANY
NORTHEAST NUCLEAR ENERGY COMPANY

W. G. Council
Vice President

Attachments

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ATTACHMENT 1

HADDAM NECK PLANT

903265

AUGUST, 1979

HADDAM NECK PLANT
DC POWER SYSTEM BUS VOLTAGE MONITORING AND ANNUNCIATION

Control Room Annunciation

- (1) Low Voltage - A Battery, B Battery

Indicates Bus voltage has dropped due to a problem with the batteries or charger.

- (2) Battery Charger Off - Unit A, Unit B

Actuated on a loss of AC voltage supply.

- (3) Circuit Ground - D.C. Bus 1A, D.C. Bus 1B

Actuated when a ground is sensed on the D.C. side of a battery charger.

Control Room Monitoring

- (1) Voltage Meters for A and B batteries mounted on control board below annunciators.

Switchgear Room Monitoring

The following information is available at each battery charger.

- (1) Neutral to Ground Voltage
- (2) Charger D.C. Amps
- (3) Charger D.C. Volts
- (4) Positive to Ground Voltage
- (5) Ground indicating lamp.

ATTACHMENT 2

MILLSTONE NUCLEAR POWER STATION, UNIT NO. 1

903267

AUGUST, 1979

MILLSTONE UNIT NO. 1
DC POWER SYSTEM BUS VOLTAGE MONITORING AND ANNUNCIATION

At Millstone Unit No. 1, there are two (2) D.C. Supply Systems for station power consisting of 2 - 125VDC batteries and busses with three battery chargers. The third charger is a swing or alternate standby unit.

In addition, the neutron monitoring system is powered from two (2) D.C. Systems consisting of 4 - 24V batteries and chargers supplying 2 - 24 VDC busses.

125V D.C. System DC-1

(1) Control Room Annunciators

- a. Battery Charger Trouble Alarm
- b. D.C. System Ground Detection Alarm
- c. Bus Voltmeter
- d. Battery/Bus Undervoltage Alarm
- e. Bus Parallel to DC-1A Alarm

(2) Charger Monitoring Equipment

- a. Trouble Alarm monitoring lights for A.C. supply power failure (three phases), High and Low D.C. output voltage and AC/DC internal failure.
- b. Output Ammeter and Voltmeter
- c. Ground detection monitor light

(3) D.C. Switchboard

- a. Battery/Bus Ammeter and Voltmeter
- b. Bus Undervoltage Relays
- c. Bus parallel monitor light.

(4) Bus Ground Indication Panel

- a. Positive and Negative ground voltmeters
- b. Positive and Negative ground monitor lights

125V D.C. System DC-1A

(1) Control Room

This system utilizes the alarms of DC-1.

(2) Charger Monitoring Equipment

This charger is the same as DC-1.

(3) D.C. Switchboard

This board is the same as DC-1 less the bus parallel monitoring light.

(4) Bus Ground Indication Panel

This system utilizes the equipment of DC-1.

125V D.C. Charger DC-11A (Standby-Charger)

- (1) The control room is alarmed via the alarm of DC-1.
- (2) The charger monitoring devices are the same as those found on DC-1 and DC-1A.

24V D.C. Neutron Monitoring System 1A and 1B

- (1) Control Room Annunciators
 - a. Battery/Charger 1A Trouble Alarm
 - b. Battery/Charger 1B Trouble Alarm
- (2) Charger Monitoring Equipment
 - a. Low Voltage relays
 - b. Loss of Power (A.C.) relays
 - c. DC Ammeter and Voltmeter
 - d. AC/DC power monitor lights

24V D.C. Neutron Monitoring System 2A and 2B

All equipment for this system is the same as 1A and 1B.

In addition, for the 125VDC systems, all the feeders to the D.C. Distribution Busses DC-11A-1, 2, and 3; the control room D.C. distribution panels; the 4KV A.C. Busses; the 480V Emergency Load Center Busses, and vital equipment are individually alarmed for loss of D.C. power in the control room.

Further alarming in the control room as well as local monitor lights are provided to indicate a transfer of power from the normal D.C. Switchboard source for the D.C. distribution Busses DC-11A-1, 2, and 3 to the emergency or alternate source.