



Northern States Power Company

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Senior Vice President,  
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US NRC  
OPERATION SERVICES  
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December 23, 1980

REGULATORY DOCKET FILE COPY

Mr. James G. Keppler  
Director, Region III  
Office of Inspection and Enforcement  
U. S. Nuclear Regulatory Commission  
799 Roosevelt Road  
Glen Ellyn, IL 60137

Dear Mr. Keppler:

MONTICELLO NUCLEAR GENERATING PLANT

Docket No. 50-263 License No. DPR-22

The following information is submitted in response to Supplement 4 to IE Bulletin No. 80-17 which we received December 22, 1980:

The bulletin supplement appears to have been prepared assuming a pulse-echo type of ultrasonic detector and the ability to perform operability tests during plant operation. We deliberately chose a different type of system which we feel is less complex, less confusing to the operator, and more reliable. Operability testing with our system would require a plant shutdown.

Our response to items 1, 2, 3 and 5 of the supplement follows. Items 4 and 6 will be addressed in a separate response.

1. a. Two model 621S Sensall transducer units are attached to each scram discharge header as near to the header low point as is practical. Each transducer is connected to a Sensall Model 360 C control unit. These units represent the best that was available to meet the September 1, 1980 installation deadline. The schematic and instruction manual will be submitted under separate cover.

The system utilizes a "pitch-catch" ultrasonic technique. A strong signal from the transmitter transducer will not be conducted to the receiver transducer until the space between them is filled with liquid. The signal from the transducers is amplified in the control unit and a relay with two sets of contacts is energized. One set of contacts on each unit actuates an annunciator in the control room (Discharge Volume Not Drained). The second set of contacts is wired to the computer sequence of events monitor which prints out a permanent record of system actuations. On a loss of power these units will actuate an alarm.

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Mr. James G. Keppler

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- b. The sensing device is as described in 1. a. The specification sheet for these units is Attachment 1. The sensor is designed for 0°F to 250°F. Pipe temperature measurements following scrams with the reactor at full temperature indicated that the pipes do not exceed 150°F. This system is not dependent on pipe or water temperature.
  - c. The system was installed and calibrated in accordance with the vendor instruction manual. The system is not susceptible to transmission losses since the control unit that contains the actuation relay is located within a short distance (15 feet) of the transducers.
  - d. Personnel installing and calibrating the system used the vendor instruction manual. The simplicity of this "on-off" system makes the system relatively insensitive to minor calibration errors. Actual plant scrams have shown that the system is adequately calibrated.
2. Two unplanned scrams have occurred since the UT instrumentation described in part 1 was installed on August 29, 1980. The first scram occurred on September 4, 1980. The two sensors installed at that time performed as designed. Subsequently on September 8, 1980, redundant sensors were installed on each scram discharge header. On November 13, 1980, the second unplanned scram occurred. Three out of four of the alarms were activated as expected. One alarm did not activate due to a failure of the control unit. This unit was replaced and calibrated with the transducer connected to a test volume. A surveillance procedure is being developed which will verify control unit operability.

It is felt that these plant scrams meet the requirement for operability test. No further testing is planned.

3. As stated in part 2, we feel that the two scrams have satisfied the operability test requirement. Therefore, no interim manual surveillance is required.
5. Procedures and operating instructions have been revised to include the specified manual check and operability requirements.

Surveillance tests to demonstrate operability and criteria for repair or replacement of instrumentation are being developed.

Yours truly,



D. E. Gilberts  
Senior Vice President  
Power Supply

cc: Mr. C. H. Brown  
Mr. G. Charnoff  
Director, Office of Inspection and Enforcement  
U. S. Nuclear Regulatory Commission  
Washington, D. C. 20555

Enclosures

## SPECIFICATIONS

SENSOR	MODEL 601S	MODEL 621S
Repeatability	0.02 inch (0.51 mm)	
Measurement Technique	Ultrasonic	
Power Consumption	Less than 10 Milliwatts	
Pressure	Sight gauge rating	Vessel rating
Temperature	0°F to + 250°F (-18°C to + 121°C)	
Weight	6 oz. per pair	6 oz.
Housing Material	Glass reinforced epoxy	Epoxy casting
Cable and Connector	Six feet *Teflon coaxial, 50 OHM cable terminated with shielded plug. (Longer lengths can be supplied.)	Six feet *Teflon double coaxial, 50 OHM cable each terminated with shielded plug. (Longer lengths can be supplied.)

CONTROL UNIT	MODEL 400C-1/300C-1
Input Voltage	Standard 117 volts A. C. 60 Hz (50Hz supplied on special order) (Other voltages supplied on special order)
Power Consumption	Less than 6 watts
Standard Relay	DPDT - 10 amp, 28 VDC resistive or 240 VAC, 80% PF
Response Time	Standard 0.5 seconds. Shorter or longer response times supplied on special order.
Temperature	-30°F to +150°F (-34°C to +65°C)
Housing	JIC (NEMA 12) enclosure standard, NEMA 4 (watertight) and NEMA 7 (explosion proof) supplied on special order.
Size and Weight	6" X 6" X 4", 5½ lbs.

\*Dupont Trademark

UNITED STATES NUCLEAR REGULATORY COMMISSION

NORTHERN STATES POWER COMPANY

MONTICELLO NUCLEAR GENERATING PLANT

Docket No. 50-263

LETTER DATED DECEMBER 23, 1980  
RESPONDING TO NRC REQUEST  
FOR INFORMATION IN IE BULLETIN NO. 80-17

Northern States Power Company, a Minnesota corporation, by this letter dated December 23, 1980, hereby submits information in response to NRC request for information concerning IE Bulletin No. 80-17.

This request contains no restricted or other defense information.

NORTHERN STATES POWER COMPANY

By: *D. E. Gilberts*  
D. E. Gilberts  
Senior Vice President  
Power Supply

On this 23 rd day of December, 1980, before me a notary public in and for said County, personally appeared D. E. Gilberts, Senior Vice President, Power Supply, and being first duly sworn acknowledged that he is authorized to execute this document on behalf of Northern States Power Company, that he knows the contents thereof and that to the best of his knowledge, information and belief, the statements made in it are true and that it is not interposed for delay.

*Jeanne M. Hacker*

