NORTHEAST UTILITIES

THE CONNECTICUT LIGHT AND POWER COMPANY
WESTERN MASSACHUSETTS ELECTRIC COMPANY
HOLYOKE WATER POWER COMPANY
NORTHEAST UTILITIES SERVICE COMPANY
NORTHEAST NUCLEAR ENERGY COMPANY

General Offices • Selden Street, Berlin, Connecticut

P.O. BOX 270
HARTFORD, CONNECTICUT 06141-0270
(203) 665-5000

October 17, 1989

Docket No. 50-423
B13358

Re: 10CFR50.90

U.S. Nuclear Regulatory Commission
Attention: Document Control Desk
Washington, DC 20555

Gentlemen:

Millstone Nuclear Power Station, Unit No. 3
Proposed Revision to Technical Specifications
Reactor Trip System Instrumentation

Pursuant to 10CFR50.90, Northeast Nuclear Energy Company (NNECO) hereby proposes to amend operating license NPF-49 by incorporating the changes identified in Attachment I into the Technical Specifications of Millstone Unit No. 3.

Description of Proposed Changes

The proposed changes to the Millstone Unit No. 3 Technical Specifications will require both input relay trains of any reactor protection system (RPS) or engineered safety features (ESF) channel to be included in the response time testing of that channel. Therefore, when the plant performs a test on Channel 1, the input relays on both trains will be tested along with the channel to determine operability. Testing both trains provides greater assurance that the channels will actuate as assumed in the design basis.

Discussion

Excore nuclear instrumentation and systems within the plant process instrumentation continuously monitor various plant parameters. Bistables monitor the magnitude of the sensed variable and send trip signals when parameters exceed specification levels. These trip signals are sent to both trains of the protection system. It is within the protection trains that the solid state protection system (SSPS) decides if a sufficient degree of coincidence between redundant instrumentation exists to initiate a reactor trip or other safeguards actuation.

If signals are received for a reactor trip, the protection train opens its respective reactor trip breaker; i.e., Train A operates trip breaker A. Train A will initiate actions such as pump starting and valve respositioning for components in Train A only, likewise, Train B components will be started by Train B only.

8910260087 891017
PDR ADOCK 05000423
P PNU

A001
/1

If either train opens its reactor trip breakers, power to the rod drive motor generator sets is interrupted and causes all control rod mechanisms to release their rod assemblies.

Solid State Protection System (Figure 1)

Two independent but redundant protection trains, A and B, receive identical information on plant conditions. Either train can trip the reactor or actuate ESF systems to adequately protect the plant. Instrument channels and protection trains are physically, as well as electrically, separated to achieve independence. This separation starts at the detectors, continues through the cable trays and instrument racks, to the solid state protection cabinets, and to the ESF systems.

Components Description (Figure 1)

The solid state protection system consists of the following major components:

1. Two four-bay cabinets,
2. Five auxiliary relay cabinets,
3. Two reactor trip breakers,
4. Two reactor trip bypass breakers,
5. Two safeguards test cabinets,
6. A control board demultiplexer,
7. A computer demultiplexer.

Four-Bay Cabinets

Each of the four-bay cabinets contain an input relay bay, a logic bay, and two output relay bays.

Input Relay Bay

Each train input relay bay is divided into four compartments. Each of the compartments serves one of the four redundant channels (I, II, III, IV). The input relay bays serve as the interface between the protection train and incoming signals from the nuclear instrumentation and plant process cabinets. Bistables in the process cabinets sense unacceptable conditions. The input relays will be electrically energized when their associated bistables sense that the process parameter measured is within limits. A trip signal from the bistable, whether due to a variable exceeding its setpoint or the bistable inadvertently losing control power, will interrupt the input relay power. When input relay power is interrupted, the input relay bay contacts close to signal an out of specification condition to logic cabinets for the affected channel.

Logic Bay

The logic bay houses the circuitry to make logic decisions. Logic circuitry receives signals from the input bay, and if appropriate signals are received it will initiate a reactor trip or actuate the ESF systems. In addition to logic decision making, information is collected, stored, and transmitted to the plant computer and control board.

Output Relay Bays

The two output relay bays per train (4 total) contain the master relays, slave relays, and fuses necessary to implement required safeguards outputs and/or train associated circuitry. The master relay contacts apply power to a number of slave relays. The slave relay contacts in turn apply power to plant process equipment (e.g., pumps, solenoid valves, drive motors, power relay coils, etc.).

The existing surveillance requirements (Sections 4.3.1.2 and 4.3.2.2) identifies the frequency of testing between trains and channels that are related to the reactor trip system (RTS) and ESF. Both trains (Solid State logic protection cabinets) are tested at least once per 36 months. Therefore, each train is tested every other outage. The channels (7300 protection cabinets) are tested at least once every N times 18 months where N is the total number of redundant channels with a function. Therefore, for a four channel protection system, each channel is tested every fourth outage. The following is an example of testing over four outages.

Outage	Test	Test
1	Train A	Channel 1
2	Train B	Channel 2
3	Train A	Channel 3
4	Train B	Channel 4

With this type of testing frequency, the input relays (both train) of SSPS are not tested as a channel. Therefore, no complete overlap of testing between trains and channels exist. The proposed change is to include the input relays (both trains) of SSPS as a channel. Therefore, when the plant performs a test on Channel 1, the input relays on both trains will be tested along with the channel to determine operability.

Significant Hazards Consideration

NNECO has reviewed the proposed changes in accordance with 10CFR50.92 and has concluded that the changes do not involve a significant hazards consideration. The basis for this conclusion is that the three criteria of 10CFR50.92(c) are not compromised. The proposed changes do not involve a significant hazards consideration because the changes would not:

1. Involve a significant increase in the probability or consequences of an accident previously analyzed. The changes provide assurance that the RPS and ESF will operate as assumed in the design basis analysis. Incorporation of both input trains to channel response time testing requirements

is consistent with current plant practices. For these reasons the change does not increase the probability or consequences of any event.

2. Create the possibility of a new or different kind of accident from that previously analyzed. The proposed changes do not have the potential to initiate any event nor are any plant operations altered by the proposed changes. No new failures are introduced. Thus, the changes do not have the potential to create a new or different kind of accident.

3. Involve a significant reduction in the margin of safety. The changes do not impact any of the protective boundaries, nor are the consequences of any event increased. There is no negative impact on any of the safety systems. Therefore, there is no reduction in the margin of safety.

Moreover, the Commission has provided guidance concerning the application of standards in 10CFR50.92 by providing certain examples (March 6, 1986, 51FR7751) of amendments that are considered not likely to involve a significant hazards consideration. The proposed changes to the reactor trip system are enveloped by example (ii) a change that constitutes an additional limitation, restriction or control not presently included in the technical specifications, e.g., a more stringent surveillance requirement. The proposed change will require both input relay trains of any RPS or ESF Channel to be included in the response time testing of that channel. Present requirements do not address the input relays associated with the opposite train. This change will ensure an overlap between the trains and channels to provide a more conservative approach to testing.

Based upon the information contained in this submittal and the environmental assessment for Millstone Unit No. 3, there are no radiological or nonradiological impacts associated with the proposed change and the proposed license amendment will not have a significant effect on the quality of the human environment.

The Millstone Unit No. 3 Nuclear Review Board has reviewed and approved the attached proposed revisions and has concurred with the above determinations.

In accordance with 10CFR50.91(b), we are providing the State of Connecticut with a copy of this proposed amendment.

Very truly yours,

NORTHEAST NUCLEAR ENERGY COMPANY

E. J. Mroczka
Senior Vice President

cc: W. T. Russell, Region I Administrator
D. H. Jaffe, NRC Project Manager, Millstone Unit No. 3
W. J. Raymond, Senior Resident Inspector, Millstone Unit Nos. 1, 2, and 3

Mr. Kevin McCarthy
Director, Radiation Control Unit
Department of Environmental Protection
Hartford, Connecticut 06116

STATE OF CONNECTICUT)
) ss. Berlin
COUNTY OF HARTFORD)

Then personally appeared before me, E. J. Mroczka, who being duly sworn, did state that he is Senior Vice President of Northeast Nuclear Energy Company, a Licensee herein, that he is authorized to execute and file the foregoing information in the name and on behalf of the Licensees herein, and that the statements contained in said information are true and correct to the best of his knowledge and belief.

Lorraine J. D'Amico
Notary Public

My Commission Expires March 31, 1993

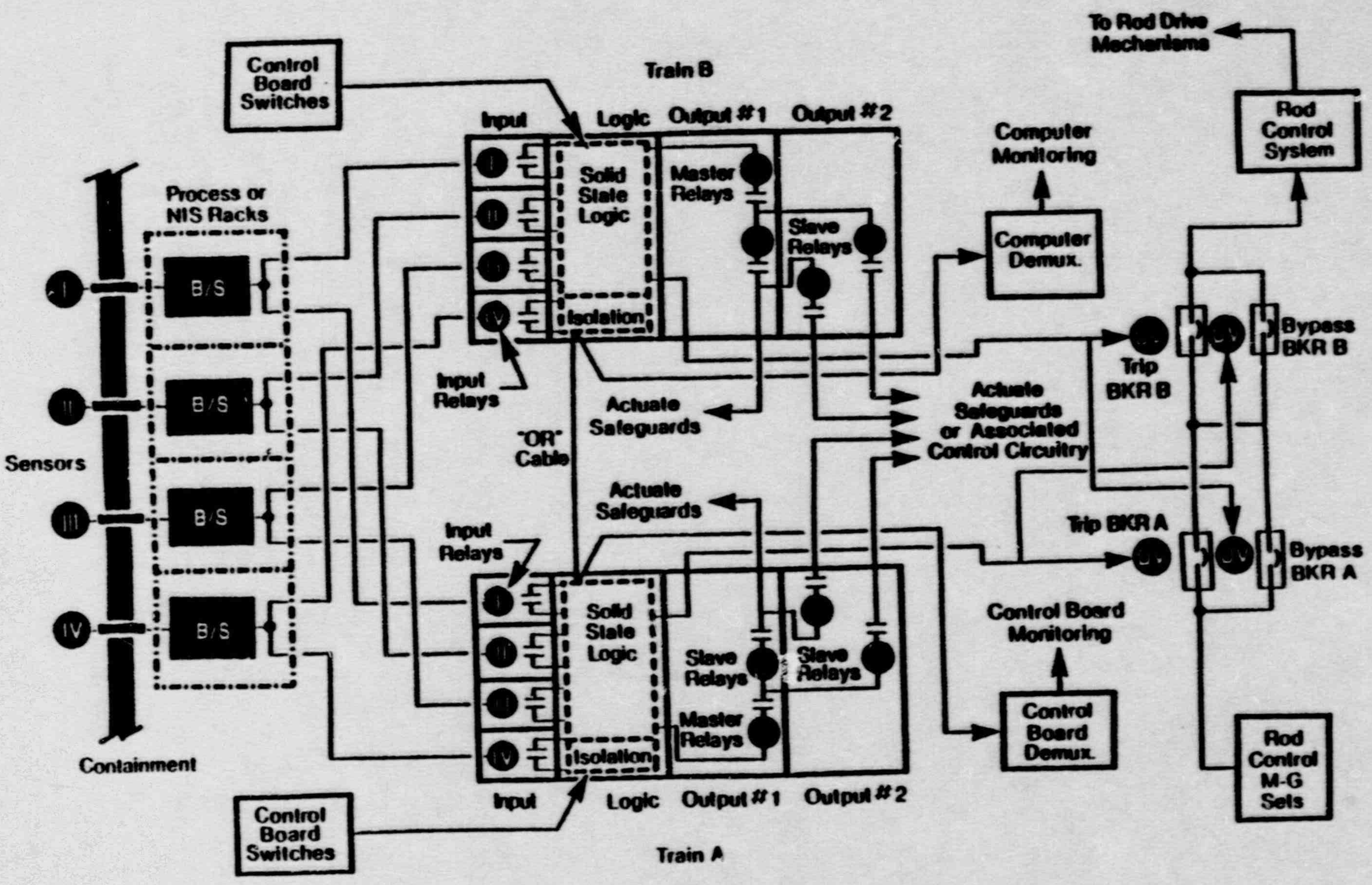

Figure 1 SOLID STATE PROTECTION SYSTEM