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

September 6, 1985

Docket No. 50-245
B11665

Director of Nuclear Reactor Regulation
Attn: Mr. Christopher I. Grimes, Chief
Systematic Evaluation Program Branch
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555

Gentlemen:

Millstone Nuclear Power Station, Unit No. 1
Integrated Safety Assessment Program

In a letter dated July 31, 1985,(1) Northeast Nuclear Energy Company (NNECO) was requested to provide the Staff with reviews of the planned NNECO plant improvement projects.

In response to this request, and in accordance with our understanding of the ISAP process, we are providing the Staff with reviews of the following projects:

1) ISAP Topic No. 2.03 - "Process Computer Replacement"

2) ISAP Topic No. 2.20 - "RWCU System Isolation Setpoint Reduction"

3) ISAP Topic No. 2.25 - "Drywell Temperature Monitoring System Upgrade"

4) ISAP Topic No. 2.27 - "Spare Recirculation Pump Motor"

As further reviews are completed, we will promptly forward them to the Staff for review.

---

(1) H. L. Thompson letter to J. F. Opeka, "Integrated Safety Assessment Program," July 31, 1985.

A055
1/1

If you have any questions on this material, please feel free to contact my staff.

Very truly yours,

NORTHEAST NUCLEAR ENERGY COMPANY

J. F. Opeka
Senior Vice President

cc: J. A. Zwolinski

ISAP TOPIC NO. 2.03

PROCESS COMPUTER REPLACEMENT

ISAP Topic No. 2.03
Process Computer Replacement

Background

Replacement of the process computer is a one-for-one plant hardware exchange. The present process computer is more than 15 years old, although some of its hardware was upgraded during the 1977 - 1978 refueling outage. However, the computer system is considered to be nearing the end of its useful life (typically the useful life of a computer is 10 to 15 years). The new process computer will have a completely redundant processor with built-in diagnostics capability which could automatically switch over to the redundant processor if the operating processor should fail, and at the same time inform the operator of the failed processor. In addition, the new process computer will be equipped with state-of-the-art computer technology and its software applications will be extensively tested.

At present the Millstone 1 process computer is necessary during startup (for Rod Worth Minimizer System operation) and for monitoring and performing NSSS calculations during power ramp-up and power ramp-down conditions. During normal operation (above 25% power) the process computer is utilized for daily fuel surveillance, however, its failure does not affect the power generation of the plant. In addition, there is no Technical Specification limitations on the number of hours the process computer could be out of service.

Additionally, in 1979, the NRC issued its position as part of the post-TMI action plan (NUREG-0660) I.D.2 that all licensees and applicants for operating licenses install a Safety Parameter Display System (SPDS) that will display to operating personnel a minimum set of parameters which define the safety status of the plant. In subsequent clarifications of the TMI action plans, the NRC published several reports which specify the implementation criteria for installing an SPDS (NUREG-0737, NUREG-0696 and NUREG-0835).

As part of the proposed SPDS implementation for Millstone Unit 1, it is necessary to replace the present process computer. The existing plant process computer has a limited storage capacity and is incapable of meeting the functional capability of the SPDS requirements.

NNECO Evaluation

Replacement of the process computer is expected to result in an increase in the reliability of the plant as the existing process computer is becoming less reliable due to aging. Additionally, the existing process computer maintenance costs have begun to show dramatic increases in man-hours as well as parts support.

An additional benefit provided by a new process computer will be the capability to integrate a SPDS which the existing process computer would be unable to support.

ISAP TOPIC NO. 2.20

REACTOR WATER CLEANUP SYSTEM ISOLATION SETPOINT REDUCTION

ISAP Topic No. 2.20
Reactor Water Clean-Up System Isolation Setpoint Reduction

Background

The Reactor Water Clean-Up System (RWCU) is important in minimizing the amount of radioactivity released to the environment, in the unlikely event of an accident, and in keeping occupational doses low by purifying the reactor coolant during normal operation. Presently, the RWCU system is set to isolate on a low reactor vessel water level signal to prevent draining the reactor and uncovering fuel during a LOCA event. A low reactor vessel water level will also generate a reactor scram.

Plant operations personnel have expressed the desire to lower the RWCU isolation setpoint to the low-low water level, in order to have the RWCU system available for decay heat removal and reactor water clean-up following a reactor scram. Following a MSIV closure transient with a reactor scram, reactor water level may reach the low water level as reactor pressure may experience a significant increase for a short period of time. This increase in pressure could lead to the collapsing of the steam in the core and compression of the reactor water level down to the low water level. Upon reaching low water level the RWCU system would be isolated and unavailable for decay heat removal. The proposed change in the isolation setpoint would allow the RWCU system to operate until low-low water level is reached, at which time the RWCU system will isolate and Emergency Core Cooling System's (ECCS) equipment will begin to operate.

NNECO Evaluation

This project will evaluate the feasibility of lowering the isolation setpoint. All potential radiological consequences and adverse EEQ impacts following a break in the RWCU piping with the reduced isolation setpoint will be evaluated. A feasibility study will be performed to evaluate alternate methods for detecting leakage from the RWCU system.

ISAP TOPIC NO. 2.25

DRYWELL TEMPERATURE MONITORING SYSTEM UPGRADE

ISAP Topic No. 2.25
Drywell Temperature Monitoring System Upgrade

Background

The scope of this project is to upgrade the existing drywell temperature monitoring system in order to more accurately measure the drywell bulk air temperature. Drywell bulk air temperature is an input into various containment response analyses (including environmental qualification and design basis calculations) which must be verified on a periodic basis.

Project Description

The drywell bulk air temperature will be measured at several points in the drywell, commensurate with the specific needs of the plant (e.g., monitoring of specific components located in the drywell). Additional thermocouples, cables and conduits are to be installed as part of the existing drywell temperature system. The bulk air temperature will be calculated utilizing a data logger or a personal computer to be installed in the control room.

The system will not be a Category 1E system and thus need not be seismically qualified. However, equipment mounted in the proximity of safety-related equipment or systems will be seismically supported. The major safety-related equipment to be monitored includes:

a) MSIVs and related equipment

b) High-range radiation monitors

c) SRVs and related equipment

d) Acoustic monitors

e) Selected MOVs (1-IC-1)

f) Electrical penetrations

g) Selected snubbers in high temperature regions

h) Selected cable runs in high temperature regions

NNECO Evaluation

It is anticipated that implementation of this project will have a positive effect on public safety as well as plant performance by aiding in the monitoring of safety-related equipment in the drywell. Implementation of the project is expected to facilitate verification of compliance with 10CFR50.49, and may allow NNECO to eliminate some unnecessary conservatism in aging calculations. This could possibly lengthen the service life of the affected 50.49 equipment.

ISAP TOPIC NO. 2.27

SPARE RECIRCULATION PUMP MOTOR

ISAP Topic No. 2.27
Spare Recirculation Pump Motor

Background

This project consists of the engineering services to repair the damaged recirculation pump motor stator and to rebuild and provide a spare rotor for the recirculation pump motor for Millstone Unit No. 1. Presently, the stator has been rebuilt and procurement of additional parts to rebuild the rotor is being investigated.

Implementation of this project will enable NUSCO to expedite replacement, if conditions warrant, of a recirculation pump motor. As a side benefit, the experience gained in rebuilding the damaged recirculation pump motor will benefit the personnel involved in maintenance of the recirculation pumps.