**NORTHEAST UTILITIES**

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

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September 26, 1985

Docket No. 50-245
B11715

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. 2.02 - "Drywell Humidity Instrumentation"

2) ISAP Topic No. 2.16 - "Reactor Protection Trip System"

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

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

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



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ISAP TOPIC NO. 2.02

# DRYWELL HUMIDITY INSTRUMENTATION

# ISAP Topic No. 2.02
# Drywell Humidity Instrument

## Background

One pressure boundary leakage detection system installed at Millstone Unit No. 1 consists of a humidity sensor, an airborne particulate radiation monitor and an airborne noble gas radiation monitor. The system was originally designed to monitor for a steam line break in the drywell. At present, the system is not fully operable.

Presently, Millstone Unit No. 1 employs two methods for detecting primary system leakage in the drywell:

a) The inventory of both the drywell equipment and drywell floor drain sumps is pumped out once every four hours. Based on the amount of liquid that is pumped to radwaste, an average leak flow rate through the reactor coolant pressure boundary (RCPB) can be calculated.

b) During venting of the drywell, an air sample is analyzed to determine the degree of airborne contamination. An increase in RCPB leakage over the normal value is detected by a corresponding increase in contaminant activity in the air sample. The drywell is vented and the air is sampled twice a week at the minimum.

## Project Description

The proposed project is to perform an engineering evaluation to determine the best method for continuous monitoring of the humidity, and airborne, gaseous, and particulate contamination in the drywell. The scope of the project does not include implementation of the study recommendations.

## NNECO Evaluation

Neither of the two methods for leak detection presently being utilized at Millstone Unit No. 1 provide for continuous leak detection monitoring. Due to the lack of a continuous monitoring system, there is a possibility that piping cracks might propagate to a greater degree before detection, as compared to the leakage detection sensitivity associated with a continuous monitoring system. Thus, implementation of continuous leak detection could result in a decrease in the probability of a LOCA, yielding a decrease in risk to the public.

ISAP TOPIC NO. 2.16

REACTOR PROTECTION TRIP SYSTEM

ISAP Topic No. 2.16
Reactor Protection Trip System

## Background

Historically, the Reactor Protection Trip System (RPS) has demonstrated setpoint drift problems which have led to difficulties in maintaining setpoint calibration and accuracy. NUSCO Project Assignment No. 83-072 will investigate the following two areas of concern related to RPS:

a) The 120 second Automatic Depressurization System (ADS) timer has an accuracy of ±10%. Setpoint drift could lead to uncertainties in ADS operation if called upon during a transient event or could lead to ADS operation outside of standard operating guidelines.

b) Currently, for loss of inventory events that do not pressurize the drywell (e.g., stuck open relief valve or loss of feedwater) the ECCS pump start logic sequence may not allow for automatic ADS actuation.

## Project Description

The proposed project consists of :

a) Investigation of the possible replacement of the 120 second ADS timer with a current state-of-the-art timer circuit, to alleviate the RPS setpoint drift problem.

b) Removal of two pressure switches, PS 54A and B, (low reactor pressure permissive) from the ECCS pump start logic to allow ECCS pump start on either high drywell pressure or low-low water level, and automatic ADS actuation when required.

## NNECO Evaluation

Implementation of this project will alleviate a portion of the RPS setpoint drift problem at Millstone Unit No. 1. Replacement of the present 120 second ADS timer with a more accurate state-of-the-art timer circuit will reduce the risk of operation of the ADS outside of operating setpoint guidelines.

Removal of the low reactor pressure permissive switches PS 54A and B would alleviate potential safety impact problems due to their ±20 psig drift. Additionally, removal of these switches will make manual depressurization of the reactor (per the EOPs) easier in that the ECCS pumps will already be running when the EOPs direct the operator to manually depressurize the RCS.