

**Constellation Energy**

Nine Mile Point Nuclear Station

P.O. Box 63  
Lycoming, New York 13093

October 15, 2004  
NMPIL 1874

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

**SUBJECT:** Nine Mile Point Unit 1  
Docket No. 50-220  
License Amendment Request Pursuant to 10 CFR 50.90:  
Clarification of Instrument Channel Calibration Definition

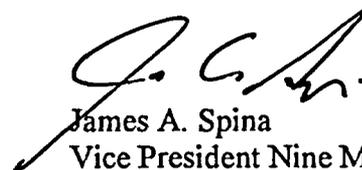
Pursuant to 10 CFR 50.90, the Nine Mile Point Nuclear Station, LLC, (NMPNS) hereby requests an amendment to Nine Mile Point Unit 1 (NMP1) Operating License DPR-63. The proposed changes to the Technical Specifications contained herein would revise the definition of Instrument Channel Calibration to incorporate the provisions for channels with resistance temperature detector (RTD) or thermocouple sensors provided by the CHANNEL CALIBRATION definition contained in NUREG-1433, Rev. 3, "Standard Technical Specifications, General Electric Plants, BWR/4 Specifications."

The proposed change has been evaluated in accordance with 10 CFR 50.91(a)(1) using criteria in 10 CFR 50.92(c) and it has been determined that the changes involve no significant hazards considerations.

NMPNS requests approval of this application by March 1, 2005, with 30 days allowed for implementation to allow usage during Refueling Outage 18.

There are no regulatory commitments associated with this submittal. Pursuant to 10 CFR 50.91(b)(1), NMPNS has provided a copy of this license amendment request and the associated analyses regarding no significant hazards considerations to the appropriate state representative.

Very truly yours,



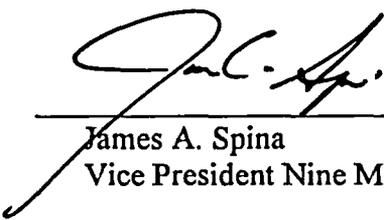
James A. Spina  
Vice President Nine Mile Point

JAS/JRH/jm

ADD

STATE OF NEW YORK :  
: TO WIT:  
COUNTY OF OSWEGO :

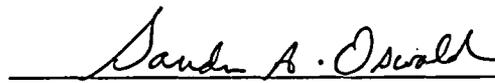
I, James A. Spina, being duly sworn, state that I am Vice President Nine Mile Point, and that I am duly authorized to execute and file this request on behalf of Nine Mile Point Nuclear Station, LLC. To the best of my knowledge and belief, the statements contained in this document are true and correct. To the extent that these statements are not based on my personal knowledge, they are based upon information provided by other Nine Mile Point employees and/or consultants. Such information has been reviewed in accordance with company practice and I believe it to be reliable.

  
James A. Spina  
Vice President Nine Mile Point

Subscribed and sworn before me, a Notary Public in and for the State of New York and County of Oswego, this 15<sup>th</sup> day of October, 2004.

WITNESS my Hand and Notarial Seal:

SANDRA A. OSWALD  
Notary Public, State of New York  
No. 01OS6032276  
Qualified in Oswego County  
Commission Expires 10/25/05

  
Notary Public

My Commission Expires:

10/15/04  
Date

SANDRA A. OSWALD  
Notary Public, State of New York  
No. 01OS6032276  
Qualified in Oswego County  
Commission Expires 10/25/05

Attachments:

1. Evaluation of Proposed Technical Specification Changes
2. Proposed Technical Specification Changes (Mark-up)

cc: Mr. S. J. Collins, NRC Regional Administrator, Region I  
Mr. G. K. Hunegs, NRC Senior Resident Inspector  
Mr. P. S. Tam, Senior Project Manager, NRR (2 copies)  
Mr. John P. Spath, NYSERDA

**ATTACHMENT 1**

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**EVALUATION OF PROPOSED TECHNICAL SPECIFICATION CHANGES**

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Subject: License Amendment Request Pursuant to 10 CFR 50.90: Clarification of Instrument Channel Calibration Definition

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## 1. DESCRIPTION

This letter is a request to amend Operating License DPR-63 for Nine Mile Point Unit 1 (NMP1). The current NMP1 Technical Specifications do not adequately address Instrument Channel Calibration in cases where the instrument channel contains a non-adjustable sensor with fixed input/output characteristics such as a resistance temperature detector (RTD) or thermocouple. The proposed change to the Technical Specifications would revise the definition of Instrument Channel Calibration to incorporate the additional guidance for instrument channels containing RTD and thermocouple sensors provided by the CHANNEL CALIBRATION definition contained in NUREG-1433, Rev. 3, "Standard Technical Specifications, General Electric Plants, BWR/4 Specifications."

## 2. PROPOSED CHANGE

The proposed change to the Instrument Channel Calibration definition is underlined below.

### 1.7 Instrument Channel Calibration

Instrument channel calibration means adjustment of channel output such that it responds, with acceptable range and accuracy, to known values of the parameter which the channel measures. Calibration shall encompass the entire channel, including equipment actuation, alarm, or trip. Calibration of instrument channels with resistance temperature detector (RTD) or thermocouple sensors may consist of an in-place qualitative assessment of sensor behavior and normal calibration of the remaining adjustable devices in the channel. The channel calibration may be performed by means of any series of sequential, overlapping, or total channel steps.

## 3. BACKGROUND

The current definition of Instrument Channel Calibration at NMP1 states:

Instrument channel calibration means adjustment of channel output such that it responds, with acceptable range and accuracy, to known values of the parameter which the channel measures. Calibration shall encompass the entire channel, including equipment actuation, alarm, or trip.

Most instrument channels contain an adjustable transmitter (sensor) which is subject to drift. For most channels, an Instrument Channel Calibration includes adjustments to the sensor to establish proper input/output relationships. Certain types of sensing elements, however, by their design, construction, and application have an inherent resistance to drift. These types of sensors are designed such that they have a fixed input/output response which cannot be adjusted or changed once installed. If a credible mechanism that can cause change or drift in these non-adjustable sensors does not exist, it is unnecessary to test them in the same manner as the other remaining devices in the channel to demonstrate proper instrument channel operation. RTDs and thermocouples are sensing elements that fall into such a category.

The current Technical Specification definition of Instrument Channel Calibration does not reflect the presence of instrument channels with non-adjustable sensors like RTDs and thermocouples. Instrument Channel Calibration under the current Technical Specification requires the physical removal of RTDs and thermocouples for comparison against external calibration standards. This results in man-power expenditure, personnel radiation exposure, and potential damage to the sensor. Over the past two refueling outages for example, RTD removal for suppression chamber water temperature instrument channel calibration has resulted in damage to 13 RTDs with attendant material costs of approximately \$85,000.00 exclusive of associated manpower expenditure. These costs are incurred with no commensurate benefit since comparison with a standard only verifies functionality of the non-adjustable sensor, a verification easily accomplished in place on a qualitative basis without sensor removal.

For instrument channels containing RTD and thermocouple sensors, the proposed change would allow an exception to the provision that Instrument Channel Calibration encompass all devices in the channel required for channel operability. The proposed definition would allow an in place qualitative assessment of sensor behavior and would allow a signal to be injected down stream of the sensor to calibrate the remainder of the channel without including the RTD or thermocouple in the calibration.

#### **4. TECHNICAL ANALYSIS**

The purpose of an Instrument Channel Calibration is to verify that an instrument channel responds as predicted over the range of conditions for which the instrument channel is assumed to function. An Instrument Channel Calibration is typically performed by manipulating the input sensor to provide values over the expected range and adjusting the channel devices such that the output of the channel responds appropriately to the sensor input. However, RTD and thermocouple sensors cannot be adjusted to provide a range of outputs. The only method of using an RTD or thermocouple to provide a range of values is to remove the RTD or thermocouple from the system and place it in a controlled temperature bath. This is not practicable, for example, for the temperatures experienced in Reactor Coolant System environments. Moreover, the characteristics of an RTD or thermocouple are such that these types of sensors have a fixed input/output response which is inherently resistant to drift. For RTDs and thermocouples, an in place qualitative assessment provides adequate assessment of sensor behavior. Accordingly, it is proposed to alter the Technical Specifications definition of Instrument Channel Calibration for instrument channels containing RTD or thermocouple sensors to permit an in place qualitative assessment of the sensor behavior and to allow for a signal to be injected downstream of the sensor for the purpose of calibrating the remainder of the channel.

#### **5.0 REGULATORY SAFETY ANALYSIS**

##### **5.1 No Significant Hazards Consideration Analysis**

The proposed change to the Technical Specifications would revise the definition of Instrument Channel Calibration to incorporate the provisions for instrument channels with RTD or thermocouple sensors provided by the CHANNEL CALIBRATION

definition contained in NUREG-1433, Rev. 3, "Standard Technical Specifications, General Electric Plants, BWR/4 Specifications."

Nine Mile Point Nuclear Station, LLC (NMPNS) has evaluated whether or not a significant hazards consideration is involved with the proposed amendment by focusing on the three standards set forth in 10 CFR 50.92, "Issuance of amendment," as discussed below:

1. Does the proposed change involve a significant increase in the probability or consequences of an accident previously evaluated?

Response: No.

The proposed change revises the definition of Instrument Channel Calibration to allow RTD and thermocouple sensors to be qualitatively assessed with the remainder of the channel being calibrated normally. Instrument channel calibration is not an initiator of any accident previously evaluated. Furthermore, the proposed change will not affect the ability of the channel being calibrated to respond as assumed in any accident previously evaluated. The qualitative evaluation of sensor behavior for non-adjustable sensors will provide an accurate indication of sensor operation and will assure that portion of the channel is operating properly, ensuring that the consequences of an accident will remain as previously evaluated. Therefore, the proposed Technical Specification changes do not involve a significant increase in the probability or consequences of an accident previously evaluated.

2. Does the proposed change create the possibility of a new or different kind of accident from any accident previously evaluated?

Response: No.

The proposed change revises the definition of Instrument Channel Calibration to allow RTD and thermocouple sensors to be qualitatively assessed with the remainder of the channel being calibrated as at present. The proposed change does not involve a physical alteration of the plant (no new or different type of equipment will be installed) or a change in the methods governing normal plant operation. The proposed change also does not adversely affect the operation or operability of existing plant equipment. Therefore, operation of the facility in accordance with the proposed amendment would not create the possibility of a new or different kind of accident from any accident previously evaluated.

3. Does the proposed change involve a significant reduction in a margin of safety?

Response: No.

The proposed change revises the definition of Instrument Channel Calibration to allow RTD and thermocouple sensors to be qualitatively assessed with the remainder of the channel being calibrated normally. The proposed change to the Instrument Channel Calibration definition does not alter the ability of a channel to

respond as designed or as assumed in the safety analyses. Therefore, this change does not involve a significant reduction in a margin of safety.

Based on the discussion presented above and on the supporting Evaluation of Proposed Technical Specifications Changes, NMPNS concludes that the proposed license amendment presents no significant hazards considerations under the standards set forth in 10 CFR 50.92(c), and, accordingly, a finding of “no significant hazards consideration” is justified.

## **5.2 Applicable Regulatory Requirements/Criteria**

The following documents contain the regulatory requirements and guidance criteria used to evaluate the applicability of this proposed license amendment:

- 10 CFR 50.36, “Technical Specifications”
- NUREG-1433, “Standard Technical Specifications, General Electric Plants, BWR/4 Specifications,” Revision 3
- NRC “Final Policy Statement on Technical Specifications Improvements for Nuclear Power Reactors.” [58 FR 39132 (07/22/93)]

The proposed change does not affect the application of any regulatory requirement. The proposed change clarifies the intent of existing requirements. Therefore, based on the considerations discussed above, there is reasonable assurance that the health and safety of the public will not be endangered by operation in the proposed manner, such activities will be conducted in compliance with the Commission’s regulations, and the approval of the proposed change will not be inimical to the common defense and security or to the health and safety of the public.

## **6. ENVIRONMENTAL CONSIDERATION**

A review has determined that the proposed amendment would change a requirement with respect to installation or use of a facility component located within the restricted area, as defined in 10 CFR 20, or would change an inspection or surveillance requirement. However, the proposed amendment does not involve (i) a significant hazards consideration, (ii) a significant change in the types or significant increase in the amounts of any effluent that may be released offsite, or (iii) a significant increase in individual or cumulative occupational radiation exposure. Accordingly, the proposed amendment meets the eligibility criterion for categorical exclusion set forth in 10 CFR 51.22(c)(9). Therefore, pursuant to 10 CFR 51.22(b), no environmental impact statement or environmental assessment need be prepared in connection with the proposed amendment.

**ATTACHMENT 2**

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**PROPOSED TECHNICAL SPECIFICATION  
CHANGES (MARK-UP)**

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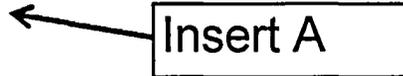
The current version of Technical Specification page 4 has been marked-up to reflect the proposed changes.

1.6 Instrument Channel Test

Instrument channel test means injection of a simulated signal into the channel to verify its proper response including, where applicable, alarm and/or trip initiating action.

1.7 Instrument Channel Calibration

Instrument channel calibration means adjustment of channel output such that it responds, with acceptable range and accuracy, to known values of the parameter which the channel measures. Calibration shall encompass the entire channel, including equipment actuation, alarm, or trip.



1.8 Major Refueling Outage

For the purpose of designating frequency of testing and surveillance, a major refueling outage shall mean a regularly scheduled refueling outage; however, where such outages occur within 8 months of the end of the previous refueling outage, the test or surveillance need not be performed until the next regularly scheduled outage.

1.9 Operating Cycle

An operating cycle is that portion of Station operation between reactor startups following each major refueling outage.

1.10 Test Intervals

The test intervals specified are only valid during periods of power operation and do not apply in the event of extended Station shutdown.

1.11 Primary Containment Integrity

Primary containment integrity means that the drywell and absorption chamber are closed and all of the following conditions are satisfied:

- a. All non-automatic primary containment isolation valves which are not required to be open for plant operation are closed.
- b. At least one door in the airlock is closed and sealed.

## **Insert A**

Calibration of instrument channels with resistance temperature detector (RTD) or thermocouple sensors may consist of an in-place qualitative assessment of sensor behavior and normal calibration of the remaining adjustable devices in the channel. The channel calibration may be performed by means of any series of sequential, overlapping, or total channel steps.