

November 1, 1990

Docket No. 50-298

Mr. George A. Trevors
Senior Staff Advisor - Nuclear Power Group
Nebraska Public Power District
Post Office Box 499
Columbus, Nebraska 68602-0499

Dear Mr. Trevors:

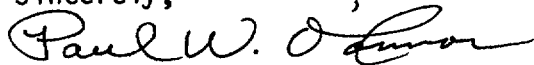
SUBJECT: COOPER NUCLEAR STATION - AMENDMENT NO. 135 TO FACILITY
OPERATING LICENSE NO. DPR-46 (TAC NO. 76489)

The Commission has issued the enclosed Amendment No. 135 to Facility Operating License No. DPR-46 for the Cooper Nuclear Station. The amendment consists of changes to the Technical Specifications in response to your application dated April 3, 1990 (Proposed Change No. 87), as supplemented August 17, 1990.

The amendment changes the Technical Specifications to clarify that the definition of the term "Instrument Calibration" in Specification 1.I.2 involves only the verification of the operability for resistance temperature detectors and thermocouples used as sensors in instrument channels rather than removal and calibration of these sensors.

A copy of our related Safety Evaluation is also enclosed. A Notice of Issuance will be included in the Commission's next biweekly Federal Register notice.

Sincerely,



Paul W. O'Connor, Project Manager
Project Directorate IV-1
Division of Reactor Projects - III,
IV, V and Special Projects
Office of Nuclear Reactor Regulation

Enclosures:

1. Amendment No. 135 to License No. DPR-46
2. Safety Evaluation

cc w/enclosures:
See next page

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DATE : 10/17/90 : 10/17/90 : 10/17/90 : 11/1/90 :

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UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D. C. 20555

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Sincerely,

A handwritten signature in cursive script, reading "Paul W. O'Connor", is positioned above the typed name.

Paul W. O'Connor, Project Manager
Project Directorate IV-1
Division of Reactor Projects - III,
IV, V and Special Projects
Office of Nuclear Reactor Regulation

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See next page

Mr. George A. Trevors
Nebraska Public Power District

Cooper Nuclear Station

cc:

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UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D. C. 20555

NEBRASKA PUBLIC POWER DISTRICT

DOCKET NO. 50-298

COOPER NUCLEAR STATION

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 135
License No. DPR-46

1. The Nuclear Regulatory Commission (the Commission) has found that:
 - A. The application for amendment by Nebraska Public Power District (the licensee) dated April 3, 1990, as supplemented on August 17, 1990, complies with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act), and the Commission's rules and regulations set forth in 10 CFR Chapter I;
 - B. The facility will operate in conformity with the application, the provisions of the Act, and the rules and regulations of the Commission;
 - C. There is reasonable assurance: (i) that the activities authorized by this amendment can be conducted without endangering the health and safety of the public, and (ii) that such activities will be conducted in compliance with the Commission's regulations;
 - D. The issuance of this license amendment will not be inimical to the common defense and security or to the health and safety of the public; and
 - E. The issuance of this amendment is in accordance with 10 CFR Part 51 of the Commission's regulations and all applicable requirements have been satisfied.

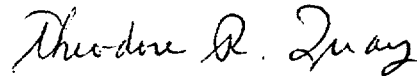
2. Accordingly, the license is amended by changes to the Technical Specifications as indicated in the attachment to this license amendment and Paragraph 2.C.(2) of Facility Operating License No. DPR-46 is hereby amended to read as follows:

2. Technical Specifications

The Technical Specifications contained in Appendix A, as revised through Amendment No. 135, are hereby incorporated in the license. The licensee shall operate the facility in accordance with the Technical Specifications.

3. The license amendment is effective as of its date of issuance.

FOR THE NUCLEAR REGULATORY COMMISSION



Theodore R. Quay, Acting Director
Project Directorate IV-1
Division of Reactor Projects - III,
IV, V and Special Projects
Office of Nuclear Reactor Regulation

Attachment:
Changes to the Technical
Specifications

Date of Issuance: November 1, 1990

ATTACHMENT TO LICENSE AMENDMENT NO.135

FACILITY OPERATING LICENSE NO. DPR-46

DOCKET NO. 50-298

Replace the following page of the Appendix A Technical Specifications with the enclosed page. The revised page is identified by Amendment number and contains vertical lines indicating the area of change.

REMOVE PAGE

2

INSERT PAGE

2

- F. Functional Test - A functional test is the manual operation or initiation of a system, subsystem or component to verify that it functions within design tolerances (e.g. the manual start of a core spray pump to verify that it runs and that it pumps the required volume of water).
- F.A Gaseous Radwaste Treatment System - A GASEOUS RADWASTE TREATMENT SYSTEM is any system designed and installed to reduce radioactive gaseous effluents by collecting primary coolant system offgases from the primary system and providing for delay or holdup for the purpose of reducing the total radioactivity prior to release to the environment.
- G. Hot Standby Condition - Hot standby condition means operation with coolant temperature greater than 212°F, system pressure less than 1000 psig, and the mode switch in "Startup/Hot Standby".
- H. Immediate - Immediate means that the required action will be initiated as soon as practicable considering the safe operation of the unit and the importance of the required action.
- I. Instrumentation
1. Instrument Functional Test - Analog instrument functional test means the injection of a simulated signal into the instrument as close to the sensor as practical to verify the proper instrument channel response, alarm and/or initiating action. Bistable channels - the injection of a simulated signal into the sensor to verify OPERABILITY including alarm and/or trip functions.
 2. Instrument Calibration - An instrument calibration means the adjustment, as necessary, of an instrument signal output so that it corresponds, within acceptable range, and accuracy, to a known value(s) of the parameter which the instrument monitors. Calibration shall encompass the entire instrument including sensor, alarm/or trip functions and shall include the functional test. The calibration may be performed by any series of sequential, overlapping or total channel steps such that the entire channel is calibrated. Calibration of instrument channels with resistance temperature detector (RTD) or thermocouple sensors shall consist of verification of operability of the sensing element, and normal calibration, of the remaining adjustable devices in the channel.
 3. Instrument Channel - An instrument channel means an arrangement of a sensor and auxiliary equipment required to generate and transmit a signal related to the plant parameter monitored by that instrument channel.
 4. Instrument Check - An instrument check is the qualitative determination of acceptable operability by observation of instrument behavior during operation. This determination shall include, where possible, comparison of the instrument with other independent instruments measuring the same variable.
 5. Logic System Functional Test - A logic system functional test means a test of relays and contacts of a logic circuit from sensor to activated device to ensure components are operable per design intent. Where practicable, action will go to completion; i.e., pumps will be started and valves operated.
 6. Protective Action - An action initiated by the protection system when a limiting safety system setting is reached. A protective action can be at a channel or system level.
 7. Protective Function - A system protective action which results from the protective action of the channels monitoring a particular plant condition.



UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D. C. 20555

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION
RELATED TO AMENDMENT NO. 135 TO FACILITY OPERATING LICENSE NO. DPR-46
NEBRASKA PUBLIC POWER DISTRICT
COOPER NUCLEAR STATION
DOCKET NO. 50-298

1.0 INTRODUCTION

By letter dated April 3, 1990, as supplemented by letter dated August 17, 1990, Nebraska Public Power District (NPPD) requested an amendment to the Technical Specifications (TSS) appended to Facility Operating License No. DPR-46 for the Cooper Nuclear Station (CNS). The proposed amendment would change the Technical Specifications to clarify that the definition of the term "Instrument Calibration" in Specification 1.I.2 involves only the verification of the operability for resistance temperature detectors and thermocouples used as sensors in instrument channels rather than removal and calibration of these sensors.

2.0 DISCUSSION

This proposed change was triggered by a concern which was initially raised during a regional inspection of the licensee's compliance to Regulatory Guide 1.97. During that inspection, the NRC inspection team questioned the adequacy of the licensee's instrument channel calibration procedures which were developed for measuring systems that use non-adjustable Resistance Temperature Detectors (RTDs) or Thermocouples (TCs) as the sensing device.

According to the licensee, they maintain that since non-adjustable sensing devices such as RTDs and TCs have fixed outputs to given input responses, the sensors cannot be adjusted, and replacement of the sensor is the only corrective measure to take when a channel measurement becomes suspect. An instrument channel becomes suspect when its output reading deviates more than an acceptable margin from other instrument channel output readings that correlate to the channel in question. For this reason, the licensee concludes that calibration of these non-adjustable sensors is neither warranted, required, nor possible. Confronted with the definition of the term "Instrument Calibration" in the Technical Specifications for CNS at the time, which stated that "calibration shall encompass the entire instrument including sensor, ---," the regional inspection team challenged the licensee's calibration procedures which did not include the sensor portion of the measuring system when performing required periodic surveillance tests on RTD or TC measuring systems.

In their attempt to clarify the above calibration issue, the licensee submitted a proposed modification of the definition of "Instrument Calibration" to the NRC for acceptance by their April 3, 1990 letter.

During the staff's review of the licensee's proposed change, two concerns were raised by the staff and later discussed with representatives of NPPD during a telephone conversation on August 10, 1990. The first concern deals with the ambiguity of statement "adjustment as necessary of the remaining adjustable devices in the [instrument] channel," and the second concern deals with the methodology the licensee is implementing to achieve 'verification of operability' of the sensing element [i.e., RTD or TC]." In response to these concerns, the licensee submitted a revised version of the definition for "Instrument Calibration" for staff review and acceptance by letter dated August 17, 1990.

The revised definition for Technical Specification 1.1.2. states in part:

Instrument Calibration -Calibration of instrument channels with resistance temperature detector (RTD) or thermocouple sensors shall consist of verification of operability of the sensing element, and normal calibration of the remaining adjustable devices in the channel.

The staff has reviewed the revised Technical Specification 1.1.2 for CNS and finds the definition as written to be acceptable. However, the staff believes that since it is impractical to detail the methodology the licensee intends to implement when "verifying the operability" of the sensor devices in the technical specification, a discussion on this verification of RTDs and TCs is included herein to document the mutual understanding between this licensee and the staff. During a telephone conversation on September 11, 1990, the licensee and the staff agreed that the non-adjustable sensing devices such as those installed RTDs at CNS being used to monitor Drywell ambient temperature conditions and suppression water temperature will be subjected to cross calibration checks at least once each refueling cycle. Cross calibration is a method for in-situ/on-line testing to verify accuracy of the installed RTDs. However, this cross calibration check must always be conducted such that the outputs measured from the RTDs under test are compared to at least one independently calibrated (to known accepted standards) and carefully installed RTD. Additionally, since the full operating range of RTDs in service monitoring Drywell and suppression pool conditions is relatively narrow (90 to 150°F, and 90 to 135°F, respectively), at least two point cross calibration checks will be conducted during each refueling cycle that utilize at least two temperature points to cross calibrate the the sensor. One point may be measured during shutdown and the other during plant operations. This can be accomplished by employing the independently calibrated RTD discussed above as one point and thereafter a cross calibration check between similar RTDs during steady state plant conditions. Their data should be recorded and used as "as left" versus "as found" data for future sensor drift information.

Known standards such as ice baths, boiling water, and other known isothermal conditions are considered acceptable calibration standards for RTDs but are not encouraged because the RTD under test cannot be tested in its normal installation configuration. Past experience has shown that many errors

(response time, temperature errors, etc.) have arisen because of poor post installation controls after removing RTDs for test. Rigid and careful post installation procedures for verification of RTD operability is both time consuming and not at all conclusive in returning the RTD to the previous service after test.

The staff has reviewed both the April 3, 1990 proposed change and the supplement dated August 17, 1990. Discussions have been held with the licensee representatives and the regional inspectors from Region IV, and the staff has concluded that the amendment to Technical Specification 1.1.2 for CNS as discussed above, is acceptable subject to the discussion herein.

3.0 ENVIRONMENTAL CONSIDERATION

The amendment involves a change in a requirement with respect to the installation or use of a facility component located within the restricted area as defined in 10 CFR Part 20 and changes in surveillance requirements. The staff has determined that the amendment involves no significant increase in the amounts, and no significant change in the types, of any effluents that may be released offsite, and that there is no significant increase in individual or cumulative occupational radiation exposures. The Commission has previously issued a proposed finding that the amendment involves no significant hazards consideration and there has been no public comment on such finding. Accordingly, the amendment meets the eligibility criteria for categorical exclusion set forth in 10 CFR Section 51.22(c)(9). Pursuant to 10 CFR 51.22(b), no environmental impact statement or environmental assessment need be prepared in connection with the issuance of the amendment.

4.0 CONCLUSION

The staff has concluded, based on the considerations discussed above, that: (1) there is reasonable assurance that the health and safety of the public will not be endangered by operation in the proposed manner, and (2) such activities will be conducted in compliance with the Commission's regulations, and the issuance of the amendment will not be inimical to the common defense and security or to the health and safety of the public.

Dated: November 1, 1990

Principal Contributor: Vincent Thomas