



UNION ELECTRIC COMPANY

1901 Gratiot Street, St. Louis

Donald F. Schnell
Vice President

November 27, 1984

Mr. Harold R. Denton, Director
Office of Nuclear Regulation
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555

Dear Mr. Denton:

ULNRC-986

DOCKET NUMBER 50-483
CALLAWAY PLANT, UNIT 1
FSAR CHAPTER 14 ABSTRACT CHANGE
Attachment: Revised FSAR Abstract Page

In accordance with the Callaway Operating License, the attached proposed change to FSAR Abstract 14.2.12.3.30, Operational Alignment of Process Temperature Instrumentation, Test Method, Item (a), is submitted for NRC review and approval prior to implementation.

The change reflected in this abstract and discussed in the telecon between members of the NRC and Union Electric on November 27, 1984, does not represent a reduction of test program commitments or plant safety, but significantly improves the test flexibility and results. The overall purpose of this test is to correct initial overtemperature and overpower delta-T loop scaling with Callaway specific values. Presently these loops are scaled using predetermined conservative values providing approximately 10 percent additional trip margin. As written the test abstract would require replacement of this conservative scaling with a less restrictive Callaway specific interim scaling at approximately 75 percent power. It is our intention to delay this replacement until a higher power level is attained in order to collect additional data. This permits improvement in the extrapolation methodology by providing additional data points and reducing extrapolation error.

Union Electric has evaluated this change for impact upon the FSAR and plant safety. Existing safety margins, as described in the FSAR, are maintained due to the following:

1. The existing loop scaling provides approximately an additional 10 percent margin not described in the FSAR. The new interim scaling would reduce that margin by a significant amount. Therefore, retention of this additional margin by maintaining present scaling during power ascension above 75 percent is conservative.

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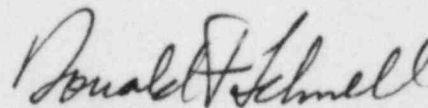
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2. The scaling process effects only the ΔT inputs to the overpower and overtemperature delta-T loops, and not to the setpoints. The setpoints are per Technical Specifications and will not be modified by this change. Therefore, all setpoint responses due to pressure and flux imbalance are retained, and with the present scaling, assure conservative system response.
3. Union Electric has evaluated response of the overtemperature and overpower delta-T loops as part of the test program. This includes both system wide and sensor response time evaluations. Based upon existing test data, loop response times are within limits specified within the Technical Specifications; and since this change will not modify loop time constants or circuitry, sensor response time will not be adversely impacted.
4. To prevent any inadvertent trips, due to the conservative setpoint, Union Electric is requiring rescaling at approximately 90 percent power. This will provide margin against inadvertent trips approximately equivalent to the margin designed into these loops, if correctly scaled and operating at 100 percent power (approximately 10 percent margin).
5. Since our intention is to collect as much data as possible to permit a valid extrapolation, Union Electric intends to keep the data collected at 50 and 75 percent power. This will augment the data above 75 percent power.

The above provides a detailed discussion of the change to the Test Method. In addition, Prerequisite Item (a) is revised to reflect only the test prerequisites and to exclude a repeat of descriptions given under Test Method.

In conclusion, these changes do not violate test program commitments or commitments to Regulatory Guide 1.68, and do not diminish plant safety. The revised abstract, as approved, will be formally incorporated into the next revision of the FSAR.

Very truly yours,



Donald F. Schnell

DJW/lae

Attachment

STATE OF MISSOURI)
) S S
CITY OF ST. LOUIS)

Donald F. Schnell, of lawful age, being first duly sworn upon oath says that he is Vice President-Nuclear and an officer of Union Electric Company; that he has read the foregoing document and knows the content thereof; that he has executed the same for and on behalf of said company with full power and authority to do so; and that the facts therein stated are true and correct to the best of his knowledge, information and belief.

By Donald F. Schnell
Donald F. Schnell
Vice President
Nuclear

SUBSCRIBED and sworn to before me this *27th* day of *November*, 1984.

Barbara J. Pfeiff
BARBARA J. PFAFF
NOTARY PUBLIC, STATE OF MISSOURI
MY COMMISSION EXPIRES APRIL 22, 1985
ST. LOUIS COUNTY.

14.2.12.3.30 Operational Alignment of Process Temperature Instrumentation (S-07SF06)

14.2.12.3.30.1 Objectives

To align ΔT and T_{avg} process instrumentation under isothermal conditions, prior to criticality and at power.

14.2.12.3.30.2 Prerequisites

- a. This alignment will be performed prior to initial criticality. ~~and again at 75 percent power. Alignment will be checked at 100 percent power.~~
- b. All reactor coolant pumps shall be operating.

14.2.12.3.30.3 Test Method

- a. ~~Align ΔT and T_{avg} as per test instructions under isothermal conditions prior to criticality and at approximately 75 percent power. Extrapolate the 75 percent power data to determine ΔT and T_{avg} values for the 100 percent power plateau.~~
- b. At or near full power, check the alignment of the ΔT and T_{avg} channels for agreement with the results of thermal power measurement. Realign any channels, as necessary, to meet test specifications.

14.2.12.3.30.4 Acceptance Criteria

The 100 percent power indications for ΔT and T_{avg} channels must be within the maximum design values as specified in vendor design documents.

→ As per test instructions, obtain values for ΔT and T_{avg} under isothermal conditions prior to criticality and as a minimum at the 50, 75, and 90 per cent power levels. Extrapolate this data to determine ΔT and T_{AVG} values for 100 per cent power. Align ΔT and T_{AVG} at 90 per cent power.

cc: Gerald Charnoff, Esq.
Shaw, Pittman, Potts & Trowbridge
1800 M. Street, N W.
Washington, D.C. 20036

Nicholas A. Petrick
Executive Director
SNUPPS
5 Choke Cherry Road
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John H. Neisler
Callaway Resident Office
U.S. Nuclear Regulatory Commission
RR#1
Steedman, Missouri 65077

William Forney
Division of Projects and
Resident Programs, Chief, Section 1A
U.S. Nuclear Regulatory Commission
Region III
799 Roosevelt Road
Glen Ellyn, Illinois 60137

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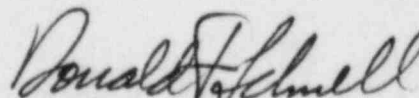
1. The existing loop scaling provides approximately an additional 10 percent margin not described in the FSAR. The new interim scaling would reduce that margin by a significant amount. Therefore, retention of this additional margin by maintaining present scaling during power ascension above 75 percent is conservative.

2. The scaling process effects only the ΔT inputs to the overpower and overtemperature delta-T loops, and not to the setpoints. The setpoints are per Technical Specifications and will not be modified by this change. Therefore, all setpoint responses due to pressure and flux imbalance are retained, and with the present scaling, assure conservative system response.
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4. To prevent any inadvertent trips, due to the conservative setpoint, Union Electric is requiring rescaling at approximately 90 percent power. This will provide margin against inadvertent trips approximately equivalent to the margin designed into these loops, if correctly scaled and operating at 100 percent power (approximately 10 percent margin).
5. Since our intention is to collect as much data as possible to permit a valid extrapolation, Union Electric intends to keep the data collected at 50 and 75 percent power. This will augment the data above 75 percent power.

The above provides a detailed discussion of the change to the Test Method. In addition, Prerequisite Item (a) is revised to reflect only the test prerequisites and to exclude a repeat of descriptions given under Test Method.

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SNUPPS

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14.2.12.3.30.2 Prerequisites

- a. This alignment will be performed prior to initial criticality, ~~and again at 75 percent power. Alignment will be checked at 100 percent power.~~
- b. All reactor coolant pumps shall be operating.

14.2.12.3.30.3 Test Method

- a. ~~Align ΔT and T_{avg} as per test instructions, under isothermal conditions prior to criticality and at approximately 75 percent power. Extrapolate the 75-percent power data to determine ΔT and T_{avg} values for the 100-percent power plateau.~~
- b. At or near full power, check the alignment of the ΔT and T_{avg} channels for agreement with the results of thermal power measurement. Realign any channels, as necessary, to meet test specifications.

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The 100 percent power indications for ΔT and T_{avg} channels must be within the maximum design values as specified in vendor design documents.

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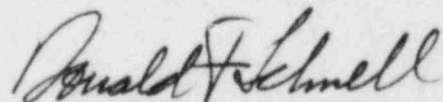
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