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**DUKE POWER**

August 25, 1994

U.S. Nuclear Regulatory Commission  
ATTN: Document Control Desk  
Washington, D.C. 20555

Subject: Catawba Nuclear Station, Units 1 and 2  
Docket Nos. 50-413 and 50-414  
Proposed Technical Specifications Changes (TS Table 3.3-4)  
4 kV Bus Undervoltage Trip Setpoint and Allowable Value Changes

Gentlemen:

Pursuant to 10CFR50.4 and 10CFR50.90, attached are license amendment requests to Appendix A, Technical Specifications, of Facility Operating Licenses NPF-35 and NPF-52 for Catawba Nuclear Station Units 1 and 2, respectively. The requested amendments modify the trip setpoint and allowable value for the 4 kV bus undervoltage grid degraded voltage relay and the allowable value for the loss of offsite power/4 kV bus undervoltage loss of voltage relay. This amendment request is being made as a resolution to a concern identified in Duke Power Company's Self-Initiated Technical Audit (SITA) for the electrical distribution system and documented in the report for the NRC's Electrical Distribution System Functional Inspection (EDSFI) for Catawba.

Attachment 1 contains a background and description of the enclosed amendment request. Attachment 2 contains the required justification and safety evaluation. Pursuant to 10CFR50.91, Attachment 3 provides the analysis performed in accordance with the standards contained in 10CFR50.92 which concludes that the requested amendments do not involve a significant hazards consideration. Attachment 3 also contains an environmental impact analysis for the requested amendments. Attachment 4 contains the marked-up Technical Specification amendment pages for Catawba. Duke Power Company is forwarding a copy of this amendment request package to the appropriate South Carolina state official.

Should there be any questions concerning this amendment request or should additional information be required, please call L.J. Rudy at (803) 831-3084.

50-413

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Very truly yours,

A handwritten signature in dark ink, appearing to read 'D.L. Rehn', with a stylized, flowing script.

D.L. Rehn

LJR/s

Attachments

xc (W/Attachments):

S.D. Ebnetter, Regional Administrator  
Region II

R.J. Freudenberger, Senior Resident Inspector

R.E. Martin, Senior Project Manager  
ONRR

Max Batavia, Chief  
Bureau of Radiological Health, SC

American Nuclear Insurers

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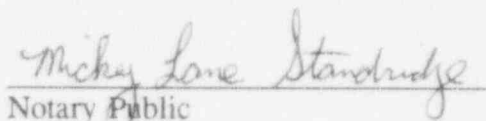
August 25, 1994

D.L. Rehn, being duly sworn, states that he is Vice President of Duke Power Company; that he is authorized on the part of said Company to sign and file with the Nuclear Regulatory Commission this revision to the Catawba Nuclear Station License Nos. NPF-35 and NPF-52 and that all statements and matters set forth therein are true and correct to the best of his knowledge.

A handwritten signature in cursive script, appearing to read 'D.L. Rehn', written over a horizontal line.

D.L. Rehn, Vice President

Subscribed and sworn to before me this 25th day of August, 1994.

A handwritten signature in cursive script, appearing to read 'Mickey Lane Standridge', written over a horizontal line.

Notary Public

My commission expires:

June 26th, 2002

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bxc (W/Attachments):

A.V. Carr

Z.L. Taylor

L.J. Rudy

C.L. Hartzell

J.E. Herrington

S.L. Bradshaw

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NCMPA-1

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PMPA

SREC

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Group File CN-801.01

ELL-EC050

**ATTACHMENT 1**

**BACKGROUND AND DESCRIPTION OF AMENDMENT REQUEST**

## Background

The 4160VAC Essential Auxiliary Power System supplies power to those Class 1E loads required to safely shut down the unit following a design basis accident. The system is divided into two completely redundant and independent trains, designated A and B.

Each of the redundant 4160V essential buses is provided with two levels of undervoltage protection to monitor bus voltage. Each level is provided with a separate set of three undervoltage relays which are utilized in a two-out-of-three logic scheme.

The first level of undervoltage relays detect a loss of voltage on the 4160VAC essential bus. Relay setting calculations call for the relay to drop out if voltage falls below 3500 volts (84.1 % of normal bus voltage) and remains there for approximately ten cycles. The ten-cycle time delay prevents false diesel starting due to power system transients. The voltage setpoint was selected such that relay operation will not be initiated during normal motor starting; however, these relays will detect loss of voltage and initiate action in a time consistent with the accident analysis.

The second level provides degraded voltage protection. Relay setting calculations specify a dropout greater than or equal to 3766 volts (approximately 90.5 % of normal bus voltage). This second level employs two time delays: the first (five seconds) establishes the existence of a sustained degraded voltage condition and provides an annunciator alarm in the control room; the second (ten minutes) permits corrective operator action prior to separating the Class 1E and offsite power systems. The occurrence of a safety injection signal subsequent to the first time delay will immediately separate the Class 1E and offsite power systems.

In 1991, Duke Power Company conducted a Self-Initiated Technical Audit (SITA) of Catawba's electrical distribution system. One of the findings of the SITA involved the then-existing settings of the loss of voltage and grid degraded voltage relays. Specifically, the audit found that no objective evidence existed to support the selection of the previous trip setpoint for the grid degraded voltage relay ( $\geq 3685$  volts) or the previous allowable values for the loss of voltage and grid degraded voltage relays ( $\geq 3200$  volts and  $\geq 3611$  volts, respectively). In addition, no objective evidence was found that all possible errors, as well as drift, were included in the determination of the settings. The error calculation is required in order to determine the minimum acceptable value and the relay trip setpoint.

In 1992, the NRC conducted an Electrical Distribution System Functional Inspection (EDSFI) at Catawba. This inspection assessed the design, implementation and technical support of the electrical distribution system and was documented in NRC Inspection Report Nos. 50-413/92-01 and 50-414/92-01. During the EDSFI, the NRC noted that concerns regarding the adequacy of the loss of voltage and grid degraded voltage protection had been raised and were documented in the SITA. The EDSFI primarily addressed Catawba's response to operability concerns raised by the SITA finding.

The purpose of this amendment request is to change the current technical specification trip setpoint for the grid degraded voltage relay and the current technical specification allowable

values for the loss of offsite power/loss of voltage and grid degraded voltage relays to more conservative values which are properly supported by calculations. No actual changes to the currently existing plant settings are being proposed, since the current settings of the affected relays are already at these proposed values.

#### **Description of Amendment Request**

In Technical Specification Table 3.3-4, Engineered Safety Features Actuation System Instrumentation Trip Setpoints, the trip setpoint for functional unit 10b (4 kV bus undervoltage - grid degraded voltage) is changed from  $\geq 3685$  V to  $\geq 3766$  V. The allowable values for functional units 8e, 11b, 14c, and 15c (loss of offsite power) are changed from  $\geq 3200$  V to  $\geq 3242$  V. The allowable value for functional unit 10a (4 kV bus undervoltage - loss of voltage) is changed from  $\geq 3200$  V to  $\geq 3242$  V. The allowable value for functional unit 10b (4 kV bus undervoltage - grid degraded voltage) is changed from  $\geq 3611$  V to  $\geq 3738$  V.

No changes to the Bases section of the Catawba Technical Specifications are required.

**ATTACHMENT 2**

**JUSTIFICATION AND SAFETY EVALUATION**



### Justification and Safety Evaluation

The requested changes to the grid degraded voltage relay setpoint and the loss of voltage relay and grid degraded voltage relay allowable values result in values that are more conservative than existing technical specification values. The basis for the requested change to the grid degraded voltage relay setpoint is the minimum required steady state voltage (reflected at the 4160 volt AC essential buses) which ensures adequate voltage is available at all essential AC voltage levels. This minimum voltage established the analytical limit for the essential power system. The previous setpoint considered only the 4160 volt AC essential level. Setpoint and allowable values determination now includes possible errors (calculation, calibration, potential transformer, relay), tolerances, and drift considerations to more closely monitor the parameters and provide protection for either a degraded or loss of voltage condition on the 4160 volt AC essential bus. The setpoint and allowable values determination is contained in fully documented calculations and is available for NRC review.

There are therefore no adverse safety impacts resulting from these proposed changes, since they result in the Catawba Technical Specifications being made more conservative. No actual changes to the plant are being proposed; the actual settings of the affected relays are already at these more conservative values.

**ATTACHMENT 3**

**NO SIGNIFICANT HAZARDS CONSIDERATION DETERMINATION  
AND ENVIRONMENTAL IMPACT ANALYSIS**

### No Significant Hazards Consideration Determination

As required by 10CFR50.91, this analysis is provided concerning whether the requested amendments involve significant hazards considerations, as defined by 10CFR50.92. Standards for determination that an amendment request involves no significant hazards considerations are if operation of the facility in accordance with the requested amendment would not: 1) Involve a significant increase in the probability or consequences of an accident previously evaluated; or 2) Create the possibility of a new or different kind of accident from any accident previously evaluated; or 3) Involve a significant reduction in a margin of safety.

The requested amendments change the current technical specification values for the trip setpoint and allowable value for the grid degraded voltage relay and the allowable value for the loss of offsite power/loss of voltage relay to more conservative values.

In 48FR14870, the Commission has set forth examples of amendments that are considered not likely to involve significant hazards considerations. Example ii describes a change that constitutes an additional limitation, restriction, or control not presently included in the technical specifications. In this case, the proposed change is similar to example ii in that it makes the technical specifications more conservative.

#### Criterion 1

The requested amendments will not involve a significant increase in the probability or consequences of an accident previously evaluated. The amendments will not affect either the probability or the consequences of an accident, since no physical changes to the plant are being proposed. The amendments merely change the existing technical specification settings for the above relays to more conservative values. Current field settings for these relays are already at these more conservative values. (They had been previously changed from their less conservative values via the provisions of 10CFR50.59.) No changes to the manner in which the plant is operated are being proposed.

#### Criterion 2

The requested amendments will not create the possibility of a new or different kind of accident from any accident previously evaluated. As stated above, no actual changes to the physical plant are being proposed. No effect on plant operation will occur, therefore the possibility of new accident types is not created.

#### Criterion 3

The requested amendments will not involve a significant reduction in a margin of safety. Plant safety margins will be unaffected, since no changes to the plant are being made. The proposed technical specification values are more conservative and are intended to make the technical specifications correspond with the actual plant relay settings.

Based upon the preceding analyses, Duke Power Company concludes that the requested amendments do not involve a significant hazards consideration.

### Environmental Impact Analysis

The proposed technical specification amendment has been reviewed against the criteria of 10CFR51.22 for environmental considerations. The proposed amendment does not involve a significant hazards consideration, nor increase the types and amounts of effluents that may be released offsite, nor increase individual or cumulative occupational radiation exposures. Therefore, the proposed amendment meets the criteria given in 10CFR51.22(c)(9) for a categorical exclusion from the requirement for an Environmental Impact Statement.