Duke Power Company
Catawba Nuclear Generation Department
4800 Concord Road
York, SC 29745

M.S. Tuckman
Vice President
(803)831-3205 Office
(803)831-3426 Fax

DUKE POWER

April 16, 1992

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

Subject: Catawba Nuclear Station
Docket Nos. 50-413/92-01 and 50-414/92-01
Reply to a Notice of Violation and Notice of Deviation
Electrical Distribution System Functional Inspection

Attached is Duke Power's response to the five (5) Level IV violations cited in the Notice of Violation and the deviation cited in the Notice of Deviation by subject Inspection Report dated March 18, 1992.

The five (5) violations involved a failure to maintain configuration control of as-installed fuses and thermal overload heaters in safety and non-safety components, failure to test batteries as specified in the Technical Specifications, failure to adequately secure potential missile hazards in the 4160 Volt switchgear room, failure to perform engineering evaluations for out-of-tolerance measuring and test equipment (M&TE) within the required time period, and failure to correct errors in the Final Safety Analysis Report.

The deviation involved a failure to meet a commitment in that protective devices may not limit the degradation of 600 Volt Motor Control Centers, nor the 125 VDC Vital Instrumentation and Control Power System distribution center.

A subsequent reply to the twelve (12) findings issued under IFI 413/414, 92-01-07 will be forwarded for your review by May 17, 1992.

Very truly yours,

M.S. Tuckman

M.S. Tuckman

JLL/EDSFI

Attachments

xc: S.D. Ebneter
Regional Administrator, Region II

R.E. Martin, ONRR

W.T. Orders
Senior Resident Inspector

DUKE POWER COMPANY
REPLY TO NOTICE OF VIOLATION
413, 414/92-01-01

10 CFR 50 Appendix B, Criterion III and the licensee's accepted Topical Quality Assurance (QA) Program, Chapter 17, Section 17.2.3, collectively require that measures shall be established to assure that appropriate quality standards are specified and included in design documents and that deviations from such standards are controlled. Additionally, 10 CFR 50 Appendix B, Criterion V and the licensee's Topical QA Program, Chapter 17, Section 17.2.5, collectively require that procedures will be established and followed for safety related activities.

Contrary to these requirements, the licensee failed to maintain configuration control of safety related fuses and thermal overload relays as described in the licensee's Bill of Material and Drawing Load List. The team identified the following discrepancies during the walk-through inspection in control power circuits for Motor Operated Valves.

FUSE TYPE ERRORS

a. 1EMXB-F01C (1NI184B) (FLQ installed, BAF specified)

b. 1EMXG-F01A (1RN63A) (BAN installed, BAF specified)
1EMXG-F01B (1RN57A) (BAN installed, BAF specified)
1EMXG-F01C (1RN54A) (BAN installed, BAF specified)
2EMXH-F08C (1RN53B) (BAN installed, BAF specified)

c. 2EMXB-F01B (2FW55B) (BAN installed, BAF specified)

d. 2ETB4 (Limitron KTN-R-30 installed, Gould OT30 specified)

e. No Licensee Design Document was available to provide Fuse Type Data for Essential 600V Load Center Fuses.

MOTOR THERMAL OVERLOAD HEATER SIZE ERRORS

a. 1EMXA-F01C (1ND32A) (2425 installed, 2435 specified)
b. 1EMXB-R02D (1BB21B) (2432 installed, 2435 specified)
c. 2EMXB-R02D (2BB21B) (2435 installed, 2432 specified)

DRAWING ERRORS

1EMXQ-F01C (1RN11A) (Load List=0.24hp, Elementary dwg=0.67hp)
1EMXR-F01C (1RN20B) (Load List=0.24hp, Elementary dwg=0.67hp)
2EMXQ-F01C (2RN11A) (Load List=0.24hp, Elementary dwg=0.67hp)
2EMXR-F01C (1RN20B) (Load List=0.24hp, Elementary dwg=0.67hp)

DUKE POWER COMPANY
REPLY TO NOTICE OF VIOLATION
413, 414/92-01-01

This is a Level IV violation.

RESPONSE:

1. **Reason For Violation**

FUSE TYPE ERRORS

a. In 1986, an inspection was performed to ensure that the correct fuse was installed in each safety related application. The documentation of this inspection was reviewed due to an incorrect fuse type found during the EDSFI. The documentation showed that during the 1986 inspection, the correct fuse type was installed. It can be concluded that the incorrect fuse was installed because personnel failed to follow the established program for verification of replacement fuses per design documents.

b. The above four Motor Control Center Compartments were originally noted as having BAN type fuses installed rather than BAF type fuses. Subsequently, follow-up inspection by Duke Power Company and discussion with the NRC Inspector has determined this discrepancy to be in error. Design document CNBM-1752-01.07 and CNBM-2752-01.07 specify BAN type fuses to be installed in position (S-FU2) per CNM-1314.01-0133. No corrective action is required since the correct type (BAN) fuse is installed.

c. The discrepancies in regard to BAN/BAF fuse problems is attributed to document discrepancies between the vendor manual and the Duke designed/generated individual motor control center-specific Bill of Materials, and lack of adequate reference to other applicable documents.

d. The discrepancy found pertaining to the KTN-R-30 fuse located in the 4KV switchgear is attributed to the lack of adequate control of installation practices during construction. At the time of the installation of the fuse, a documented program did not exist that verified the correct fuse was installed as specified by the appropriate design document or revisions to design documents.

e. Although an inspection was performed by the NRC-EDSFI Audit Team of the Essential Load Centers, fuse verification could not be performed for in-service breaker fuses due to the fuses being installed in Pull Out Fuse Blocks (POFB). Design documents could not be located which specified the fuse type. This

discrepancy is considered a Design Engineering oversight in not identifying applicable fuse information in the associated manufacturer's document.

MOTOR THERMAL OVERLOAD HEAT[illegible]E ERRORS

a. The cause of the discrepancies found pertaining to the motor control center overload heater elements is attributed to the lack of adequate control of installation practices during construction. At the time of the installation of the overload heater elements, a documented program did not exist that verified the correct overload heater elements were installed as specified by the appropriate design document or revisions to design documents.

b. Valve 1BB21B was modified under Nuclear Station Modification (NSM) CN-11216. This modification changed the size of the motor requirements which resulted in a change to the overload heater elements. The overload heater elements were changed in accordance with the modification. During the implementation of the modification, the motor failed and a work order was written to repair the starter cubicle. The maintenance technicians obtained the "As-Built" overload heater element document from Document Control and replaced the overload heater elements in accordance with the controlled document. The technicians were not alerted to the fact that a modification was in progress that affected the "As-Built" document. This error is attributed to a document deficiency in identifying the documents as work is in progress prior to the Interim "As-Built" of the completed modification being issued. All other past modifications performed against the documents specifying overload heater element sizes, have been "As-Built" inspected and no other discrepancies have been noted.

c. Valve 2BB21B had the correct overload installed. At the time of the EDSFI, the drawing had not been updated in Document Control.

DRAWING ERRORS

The drawing discrepancies involving the incorrect horsepower for Rotork 11NA1 actuators on the Electrical Elementary Diagram is attributed to a failure to correct all affected documents when a motor change was made. The correct horsepower of 0.24hp is noted on the applicable Load List provided by the Power System Engineer.

2. Corrective Actions Taken and Results Achieved

FUSE TYPE ERRORS

Duke Power Company has inspected all Essential Motor Control Centers for proper "As Built" configuration. A total of 33 fuse discrepancies were discovered as a result of the "As-Built" configuration inspection. None of the 33 discrepancies were of present or past Operability concern. All 33 fuse discrepancies have been corrected.

a. The installed FLQ fuse was replaced with a type BAF fuse per vendor manual CNM-1314.01-0140.

b. No corrective actions were necessary because the correct fuses were installed.

c. The installed BAN fuse was replaced with a type BAF fuse per vendor manual CNM-1314-01.0140.

d. The installed KTN-R-30 fuse was replaced with a Gould OT-30 fuse as per design documents CNM-2312.02.26 and CNBM-2751.05.25.

e. A revision to the vendor manual applicable to the 600V Essential Load Centers stipulating the proper fuse requirements has been initiated.

Duke Power Company has inspected the "Spare" Essential 600V Load Center breakers and confirmed that type OT-30 fuses are installed.

MOTOR THERMAL OVERLOAD HEATER SIZE ERRORS

Duke Power Company has inspected all Essential Motor Control Center overloads for proper As Built" configuration. A total of 22 overload discrepancies were discovered as a result of the "As-Built" configuration inspection.

a. The installed 2425 overload was replaced with a 2435 overload as per design document CNLT-1752-01.01.

b. A work request was written to replace the installed 2432 overload with a 2435 overload.

c. The drawing has been updated in Document Control.

DRAWING ERRORS

Duke Power Company confirmed that 0.24hp was the correct value.

3. **Corrective Actions to be Taken to Avoid Further Violations**

FUSE TYPE ERRORS

a, c, & d

To prevent fuse discrepancies from occurring, the specific Duke Bill of Materials will be revised to delete the type BAN fuse. The vendor manual for motor control centers (CNM-1314.01-0140) will be used as the only document specifying what type of fuses are installed in motor control centers. This change will correct the confusion between documents and provide the proper guidance for determining fuse types.

The motor control center Load Lists will be revised to include the vendor manual (CNM-1314.01-0140) as a reference document.

All fuse types will be removed from the Essential Motor Control Center spare cubicles to prevent the possibility of someone obtaining a fuse other than those which should be procured from QA warehoused inventory.

All applicable Component Engineering Personnel, System Engineers and IAE Technicians will be instructed in the NRC-EDSFI Inspection Report to further heighten their awareness of the importance of proper documentation requirements and procedure adherence.

b. No further corrective actions are necessary.

e. Fuses in the 4.16KV Essential Switchgear are identified on the manufacturer's Bill of Material (B/M) drawing, CNM-1312.02-0009-002 as "...Shawmut 'One Time' 250V with current ratings as indicated on connection diagrams, or any class K5 (ANSI/UL 198D-1982,ANSI C97.1-1972)". Design Engineering will provide a similar note on the Essential Load Center manufacturer B/M for both Unit 1 and Unit 2 (CNM-1312.06-35 and CNM-2312.06-02, respectively) and will also insert a copy of the Shawmut Advisor Bulletin for ONE-TIME-Class K-5 General Purpose Fuses OT/OTS in both the 4.16KV Essential Switchgear Instruction Book, CNM-

1312.02-54, and the Essential 600V Load Center Instruction Book, CNM-1312.06-40. In addition, there will be a single page Instruction Book insert stating which type fuse will be used, similar to that for Control Power Transformer secondary fuses that was inserted in the Essential Motor Control Center Instruction Book.

RMAL OVERLOAD HEATER SIZE ERRORS

a. No further corrective actions are necessary.

b.

All applicable Component Engineering Personnel, System Engineers and IAE Technicians will be instructed in the NRC-EDSFI Inspection Report to further heighten their awareness of the importance of proper documentation requirements and procedure adherence.

A program will be developed and implemented to identify that "As-Built" drawings alone should not be relied upon when plant modification work is in progress. Identification of the affected documents prior to the issuance of the Interim "As-Built" drawings will alert personnel of an impending change to the documents.

DRAWING ERRORS

Duke Power Company will editorially revise the Electrical Elementaries to reflect 0.24hp instead of 0.67hp.

4. Date of Full Compliance

Duke Power will be in full compliance by the end of the Unit 2 Cycle 5 refueling outage.

DUKE POWER COMPANY
REPLY TO NOTICE OF VIOLATION
413,414/92-01-02

Technical Specification surveillance requirement 4.8.2.1.1.f states that the battery service test shall be performed each 18 months during shutdown.

Contrary to the above, on the following dates, the licensee conducted service testing while at power:

Battery	Date	Battery	Date
1EBC	November 14, 1990	2EBB	June 21, 1989
1EBD	July 8, 1991	2EBA	May 29, 1990
1EBA	August 12, 1991	2EBD	October 3, 1990
1EBB	August 27, 1991	2EBC	February 5, 1991

This is a Severity Level IV violation.

RESPONSE:

NOTE: The above referenced violation states that Technical Specification surveillance 4.8.2.1.1.f was violated. This surveillance requires a Performance (Capacity) Test be performed every 18 months if a battery shows signs of degradation or has reached 85% of the service life. Degradation and/or 85% of the service life has not been achieved: therefore, this surveillance requirement has never been performed. The actual violation occurred while performing a Service Test on the batteries at power. Battery service testing is addressed in Technical Specification surveillance 4.8.2.1.1.d.2.

1. Reason For Violation

The reason for the violation is that due to a misinterpretation of Technical Specification 4.8.2.1.1.d.2., Catawba Nuclear Station believed that the Service Test could be performed at power if the Limiting Conditions for Operation (LCO) were not violated. During a Battery Service test, the Vital Battery 125VDC busses EDA, EDB, EDC, EDD, EDE, and EDF were never inoperable. When performing a Service Test on a specific battery (ie. EBA) the associated train related bus (EDC) would be crossed tied and the spare charger (ECS) would be placed on the affected bus (EDA). Therefore, the bus (EDA) would have a charger (ECS) and a battery (EBC) feeding the bus prior to the associated battery (EBA) and charger (ECA) being removed from the bus (EDA). During this configuration LCO action statements 3.8.2.1c or 3.8.2.1d would apply depending on the affected bus. Both

of these action statements allow 10 days in this configuration. The average number of days per service test in this configuration was four days.

2. Corrective Actions Taken and Results Achieved

As of 3-16-92, all Battery Service Tests will be performed during an outage. In addition, all Technical Specifications related to the DC systems were reviewed to verify the required testing is performed as specified.

3. Corrective Actions to be Taken to Avoid Further Violations

Procedures IP/1/A/3710/10 and IP/2/A/3710/10, 125 VDC Vital Instrumentation and Control Power System Battery Service Test, for Units 1 and 2, respectively, will be revised to explicitly require that the test be conducted only during outages.

4. Date of Full Compliance

Duke Power is now in full compliance.

DUKE POWER COMPANY
REPLY TO NOTICE OF VIOLATION
413, 414/92-01-03

Technical Specification 6.8.1 states in part that procedures will be implemented covering safety-related activities. Operations Management Procedure 2-12, Revision 10, March 22, 1991, states that material expected to be left in place greater than 24 hours and weighing more than five pounds, will have Attachment 3 completed. Attachment 3 assesses seismic impact and delineates actions to be taken.

Contrary to the above, on January 14, 1992, components weighing more than five pounds in 2ETB 4160 switchgear room were unattended and not adequately secured. Attachment 3 was not completed for the below listed components:

1. Portable battery charger (Propel Charger CCC-50-180)
2. 4 KV Breaker lift handtruck
3. Housekeeping cart with desk & chair
4. Battery discharge test set

This is a Level IV violation.

RESPONSE:

1. **Reason For Violation**

The reason for the violation is attributed to the lack of encompassing administrative control of equipment/material that could possibly become missiles during a seismic event.

The Operations Management Procedure (OMP) was the only control in place to cover this requirement. This OMP does not govern the actions of the personnel in charge of the Battery Discharge Test Set, Portable battery charger, 4 KV Breaker lift truck or the housekeeping cart with desk and chair.

2. **Corrective Actions Taken and Results Achieved**

Corrective work request 001359MES has been completed which provides storage locations and methods to secure the Battery Discharge Test Set in the Unit 1 and 2 4KV Switchgear Rooms.

The Portable battery charger has been removed from the area and is now stored in the Unit 1 Turbine Building Storage Cage.

The 4KV Breaker lift trucks have been placed within the handrails surrounding the rooms equipment hatch covers. In addition, the lift trucks have been chained and locked to the handrails.

The housekeeping cart with desk and chair has been removed from the area.

Duke Power Company has revised the Catawba Nuclear Station Material Condition Directive 3.11.3 Rev.11 to ensure that movable equipment placed in the vicinity of safety-related equipment will be restrained to prevent potential inoperability of safety-related equipment during a seismic event.

3. **Corrective Actions to be Taken to Avoid Further Violations**

A training package has been developed to instruct Catawba Nuclear Station personnel on Station Directive 3.11.3 Rev.11 concerning seismic concerns.

4. **Date of Full Compliance**

Duke Power is now in full compliance.

DUKE POWER COMPANY
REPLY TO NOTICE OF VIOLATION
413, 414/92-01-04

Technical Specification 6.8.1 states in part that procedures will be implemented covering safety-related activities. Catawba Station Directive 2.3.1, "Maintenance and Testing Equipment (M&TE)", Revision 14, paragraph 3.7.D. requires an engineering evaluation of the use of out of tolerance M&TE within 15 days where maintenance work on safety related components was accomplished.

Contrary to the above, on January 28, 1992, the licensee failed to complete engineering evaluations within the 15 day requirement. Twenty six out of tolerance notices (several dating back to the second quarter of 1989) involving 185 Work Order Tasks comprised the backlog of required engineering evaluations.

This is a Severity Level IV violation.

RESPONSE:

1. **Reason for Violation**

The backlog resulted from a lack of understanding of the 15 day requirement in Station Directive 2.3.1.

2. **Corrective Actions Taken and Results Achieved**

1. The 15 day requirement was emphasized to all personnel involved with the identification and evaluation process.

2. All of the backlogged Out Of Tolerance notices were reviewed by engineering personnel. One work request was written to recheck a fastener for a potential low torque. No movement was observed during the recheck. All other work reviewed was determined to be satisfactory.

3. The calibration personnel have developed a new Out Of Tolerance notice flowpath which ensures a timely resolution for any future Out Of Tolerance notices.

3. Corrective Actions To Be Taken To Avoid Further Violations

No further corrective actions are necessary.

4. Date of Full Compliance

Duke Power is now in full compliance.

10 CFR 50.71(e), states that subsequent revisions to the Final Safety Analysis Report (FSAR) shall be submitted annually and reflect all changes up to a maximum of six months prior to date of filing. Station Directive 2.1.7, "FSAR Technical Specification Amendments and Technical Specification Interpretations", Revision 7, states in part that annual updates will be submitted to reflect changes and/or corrections.

a. Contrary to the above, on January 28, 1992, Diesel Generator loading values listed in FSAR Table 8-6, were incorrect. The licensee identified correct loading values in April 1988 and subsequent years, but had not updated the FSAR.

b. Contrary to the above, battery loads in FSAR Table 8-9, did not match the battery duty cycle given by FSAR Figure 8-25. Table 8-9 showed 339 A in the first minute which when corrected for temperature and design margin would be 395 A, while the duty cycle shows 373 A. Additionally, on FSAR page 8-69, the reference to Channels, I, II, III, and IV should be A, B, C, and D respectively.

This is a Level IV violation.

RESPONSE:

1. **Reason For Violation**

a. In response to the concerns raised by NRC Generic Letter 88-15, the licensee initiated a project, using the existing Load Data Base, to develop a means to calculate connected diesel generator load as well as loading requirements for LOCA and/or Blackout conditions for each of the four emergency diesel generators.

When the necessary data fields were added for LOCA and Blackout loading requirements, data input revealed that loading requirements were undocumented and that FSAR Table 8-6 values differed from a December 17, 1985 letter concerning duty cycles for large 1E motors. A review was initiated to resolve the differences. Concurrently, test runs on the data base load summation computer program used data from the 1985 letter, when available, but otherwise the data for LOCA and/or Blackout loading came from FSAR Table 8-6 (then numbered 8.3.1-1).

Subsequent work on this project has dealt with verification of the loading summation computer program as required prior to establishing it as a formal calculation. The FSAR was not updated during this cycle because the

formal calculation was not complete.

b. The data reflected in Table 8-9 was intended to provide an overview of the types and magnitudes of the loads that could be supplied from a single 125VDC Vital Instrumentation and Control Battery. This table summarizes approximately 150 individual loads into 21 broad, typical load categories, and it was never intended to provide a precise loading summation. Engineering recognized that the information contained in Table 8-9 might cause some confusion, consequently, Engineering submitted a revision to delete the table for the 1991 FSAR update (due to be issued in April 1992). At the time of the EDSFI (January and February 1992), the revised FSAR reflecting the deletion of Table 8-9 was not yet available.

The designation of the load channels of the 125VDC Vital Instrumentation and Control Power (EPL) System as Channels I,II, III, and IV on page 8-69 of the FSAR was an oversight. This reference most likely resulted from the fact that each EPL System load channel feeds an associated channel of such systems as the Nuclear Instrumentation System and Solid State Protection System. The channels of these systems are designated as Channel I, Channel II, Channel III and Channel IV. As a result, Channel A of the EPL System feeds Channel I of the Nuclear Instrumentation System and Solid State Protection System; Channel B of the EPL System feeds Channel II of the Nuclear Instrumentation System and Solid State Protection Systems, and so forth.

2. <u>Corrective Actions Taken and Results Achieved</u>:

a. No immediate corrective actions were taken.

b. Engineering submitted a revision in October 1991 to delete FSAR Table 8-9, "125VDC Vital Instrumentation and Control Power System Class 1E Loads" for the 1991 FSAR update which was issued on April 1, 1992.

3. Corrective Actions to be Taken To Avoid Further Violations:

a. The load data verification as well as the data base load summation documents will be calculations required to be reviewed/updated by the Station Modification Process and on a pre-determined review frequency. Both of these calculations will include statements concerning the interdependence of the two calculations and the FSAR loading table.

An FSAR update will be submitted to revise Table 8-6 in the 1992 update.

b. An FSAR update will be submitted to change I-IV to A-D in the 1992 update.

4. Date of Full Compliance

Full compliance will be achieved when the 1992 FSAR update is issued.

DUKE POWER COMPANY
REPLY TO NOTICE OF DEVIATION
413 414/92-01-06

NUREG-0800, Standard Review Plan, states on page 8.3.2-5 that acceptance (of a design) is based on meeting the specific guidelines in Regulatory Guide 1.32, which endorses the Institute of Electrical and Electronic Engineers (IEEE) standard 308. IEEE Standard 308-1974, "Standard Criteria for Class 1E Power Systems for Nuclear Power Generating Stations", states in Section 5.3.1 that protective devices shall be provided to limit the degradation of Class 1E power systems. The licensee's Final Safety Analysis Report (FSAR), on page 8-75, states that the system meets the requirements of this standard. The FSAR, Section 8.3.1.1.2.2 states in part, that protective devices on the 600 VAC Essential Auxiliary Power System are set to achieve a selective tripping scheme so that a minimal amount of equipment is isolated for an adverse condition such as a fault.

1. Contrary to the above, the licensee deviated from the above commitment in that protective devices may not limit the degradation of the 125VDC Vital Instrumentation and Control Power System distribution center and other main feeder circuit breakers. The licensee's prepared analysis showed that coordination did not exist for fault currents above 3,500 amperes (A) to the maximum fault current of 9,500 A. A fault on the battery charger feeder cable could cause both the charger and battery to be isolated from the remainder of the distribution system and loads.

2. Contrary to the above, all 600 VAC Motor Control Centers' (MCC) outgoing feeder breakers had thermal elements. The incoming MCC breaker had an instantaneous element and hence the two breakers were not coordinated for maximum expected short circuit current. A fault on any MCC outgoing feeder could cause the MCC incoming breaker to trip resulting in a complete loss of the MCC.

RESPONSE:

1. Reason For Deviation

1. The 125VDC Vital Instrumentation and Control Power (EPL) System at Catawba primarily utilizes molded case circuit breakers in the distribution centers and power panelboards for protection. The battery, main, and tie breakers are equipped only with adjustable magnetic trip units. The battery charger breaker is the thermal magnetic type with an adjustable magnetic trip setting. The balance of the breakers are non-adjustable thermal magnetic type. This design was deemed acceptable for the following reasons:

1) The EPL System is not a shared system between the two units at Catawba. A postulated fault in the EPL System of one unit will not

affect the opposite unit;

2) The EPL System for each unit is composed of two completely redundant and separate trains each consisting of two load channels (for a total of four load channels per unit). Therefore, a postulated fault would, at worst, disable two load channels of the same train; yet the redundant train would remain unaffected;

3) Selected loads such as the Diesel Load Sequencer, Essential Switchgear and Load Center Controls, and Auxiliary Feedwater Pump Turbine Controls are not only fed by the EPL System, but are auctioneered with the 125VDC Diesel Auxiliary Power (EPQ) System. Consequently, should the EPL System become unable to feed these loads, the EPQ System will supply them without interruption. A fault on the EPL System will not affect the EPQ System or visa versa.

After this design was finalized, it was a design oversight not to formally justify the deviation from IEEE Standard 308-1974.

2. The incoming breakers were added to provide a means of local isolation for Class 1E motor control centers. Engineering determined that non-automatic breakers had insufficient interrupt capacity. The use of instantaneous breakers with a continuous rating equal to the motor control center incoming rating and their instantaneous setting at maximum, ten times their continuous rating, was deemed to be acceptable. By using an instantaneous breaker no coordination problems were anticipated since all motor control center feeder breakers are thermal magnetic and the load center feeder breaker is provided with a solid-state trip device with long time and short time characteristics. (The solid state trip device's ground characteristic is jumpered for coordination.)

2. Corrective Actions to be Taken to Avoid Further Deviations

1. Duke Power will complete a detailed study to identify acceptable methods of achieving improved protective device coordination within the 125VDC Vital Instrumentation and Control Power System.

2. Duke Power is actively searching for a replacement breaker/switch that is

qualified for 1E use and meets the following criteria:

a) has an interrupt rating which equals or exceeds the motor control center interrupt rating;

b) has an instantaneous setpoint greater than the available fault duty; and

c) will fit in existing motor control center compartment.

Duke Power is also evaluating the feasibility of eliminating the incoming breaker in regards to maintenance and GDC-17 separation considerations.

Based on the results of these efforts, Duke Power will either update the FSAR to justify the deviation from the IEEE standard or modify the system to meet the IEEE standard.

3. Date When Corrective Actions Will Be Completed

1. The study will be completed by 10/30/92.