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Ref. # 10CFR50.90
10CFR50.91
10CFR50.92

William J. Cahill, Jr.
Executive Vice President

December 5, 1990

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

SUBJECT: COMANCHE PEAK STEAM ELECTRIC STATION (CPSES)
DOCKET NO. 50-445
OPERATING LICENSE NPF-87
LICENSE AMENDMENT REQUEST 90-003, REVISION TO THE
UNIT 1 TECHNICAL SPECIFICATIONS
SECTION 4.8.1.1.2a(4)(b) AND (c)

Gentlemen:

Pursuant to 10CFR50.90 Texas Utilities Electric Company (TU Electric) hereby requests an amendment to its Operating License NPF-87 by incorporating the attached proposed changes to the Technical Specifications for the Comanche Peak Steam Electric Station (CPSES) Unit 1.

The proposed changes affect the startup transformer secondary winding undervoltage and loss of preferred offsite power source diesel generator start signals. The changes delete these two start signals options from the Technical Specification diesel generator start surveillance since the plant is being modified to prevent these signals from unnecessarily challenging/starting the diesel when the alternate offsite power source is available.

TU Electric has reviewed the attached proposed amendment pursuant to 10CFR50.92 and determined that it does not involve a significant hazards consideration. The basis for this determination is provided in Attachment 2.

The CPSES Station Operation Review Committee (SORC) and Operations Review Committee (ORC) have reviewed and approved the proposed changes.

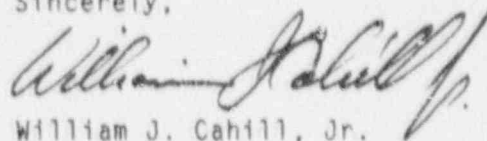
TU Electric requests approval of the proposed Amendment by April 1, 1991, with an effective date of seven days after approval. Currently, the design modification associated with the proposed changes is scheduled to be completed during the Spring 1991 Unit 1 mid-cycle outage. Since the existing surveillance provides optional diesel generator start signals, NRC approval of these changes is not a prerequisite to implementation of the design modification, even though a Technical Specification change is necessary to be consistent with the plant as modified. CPSES will continue to meet its Technical Specification surveillance requirements with the remaining four diesel generator start signal options.

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In accordance with 10CFR50.91(b), Tu Electric is providing the State of Texas a copy of this proposed amendment.

Sincerely,



William J. Cahill, Jr.

VPC/cld

Attachments:

1. Affidavit.
2. Proposed Technical Specification Change and Significant Hazards Consideration (10CFR50.92) Evaluation for Diesel Generator Start Signal Surveillance Requirements.
3. Revised Technical Specification Pages for Section 4.8.1.1.2a(4).
4. Descriptions for the proposed Technical Specification changes.

c - Mr. R. D. Martin, Region IV
Resident Inspectors, CPSES (3)

Mr. J. W. Clifford, Project Manager
U. S. NRC, Office of Special Projects (CPSES)
Washington, DC 20555

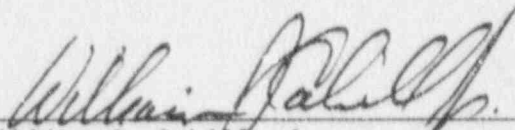
D. K. Lacker
Bureau of Radiation Control
Texas Department of Health
1100 West 49th Street
Austin, Texas 78704

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

In the Matter of)
)
Texas Utilities Electric Company) Docket Nos. 50-445
)
(Comanche Peak Steam Electric)
Station, Unit 1))

AFFIDAVIT

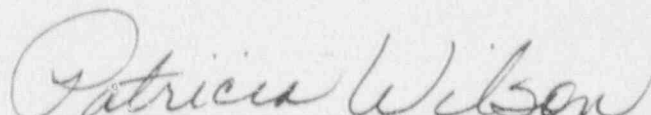
William J. Cahill, Jr. being duly sworn, hereby deposes and says that he is Executive Vice President, Nuclear of TU Electric, that he is duly authorized to sign and file with the Nuclear Regulatory Commission the attached proposed changes to the Comanche Peak Steam Electric Station Unit 1 Technical Specifications, Section 4.8.1.1.2a(4); that he is familiar with the content thereof; and that the matters set forth therein are true and correct to the best of his knowledge, information and belief.



William J. Cahill, Jr.
Executive Vice President, Nuclear

STATE OF TEXAS)
)
COUNTY OF SOMERVELL)

Subscribed and sworn to before me, a Notary Public, on this 4TH day of
DECEMBER, 1990.



Notary Public



PROPOSED CPSES UNIT 1 TECHNICAL SPECIFICATION CHANGES
DIESEL GENERATOR START SIGNALS SURVEILLANCE REQUIREMENTS

I. BACKGROUND

CPSES Unit 1 Technical Specification section 4.8.1.1.2a.4 currently allows the diesel generators to be started by one of six start signals for surveillance purposes. Presently, when the preferred offsite power source is lost, the alternate source breaker will close to repower the Class 1E 6.9kV switchgear and the diesel generators will start and run in a standby mode. The plant is being modified to prevent the loss of the preferred offsite power source signal from unnecessarily challenging/starting the diesel when the alternate offsite power source is available.

II. DESCRIPTION OF TECHNICAL SPECIFICATION CHANGE REQUEST

It is proposed to revise the Comanche Peak Steam Electric Station (CPSES) Unit 1 Technical Specification to delete sections 4.8.1.1.2a.4)b) and 4.8.1.1.2a.4)c). These sections represent two start signals out of six that can be used to demonstrate that the diesel generators (DG's) are operable for surveillance purposes.

Section 4.8.1.1.2a.4)b) states that the diesel generators can be started by start-up transformer secondary winding undervoltage. Section 4.8.1.1.2a.4)c) states that the diesel generators can be started by simulated loss of preferred offsite power. These two start signals will no longer be available upon implementation of the proposed modification.

With the proposed modification, the diesel generators will start only if the alternate offsite power source fails to repower the switchgear. The modification removes two (2) of the options for obtaining a diesel generator start signal as given in the Technical Specifications section 4.8.1.1.2a.4) for surveillance purposes. In addition, the proposed design modification will eliminate unnecessary starts of the diesel generators when the alternate offsite power source is available.

III. SAFETY EVALUATION

The relay logic that is being modified is shown on Figure 1 (FSAR Figure 040.109-1). The Figure represents the undervoltage/overvoltage relaying for the 6.9kV and 480V Class 1E switchgear. The circuitry modifications being made are contained within 6.9kV switchgear, 1EA1 and 1EA2, and in the sequencers cabinets. The changes consist of:

- 1) removing time delay relays 27AX2/ST2 and 27BX2/ST2 which give the diesels a start signal on loss of the preferred offsite power source;
- 2) removing the start signal from time delay relays 27-2X/1EA1 and 27-2X/1EA2 and adding the start signal to a new time delay relay which is controlled by the bus undervoltage relays 27-2/1EA1 and 27-2/1EA2; and
- 3) changing the time delays for relays 27AX1/ST2, 27BX1/ST2, 27-2X/1EA1, 27-2X/1EA2, and sequencer time delay relay TD/PU.

When the DG's start logic is modified, the Class 1E power system will respond as follows:

During normal operations, the plant receives power from the preferred offsite power source, and the alternate offsite power source is available. When the preferred source is lost, the sequencer undervoltage relays dropout which enable the sequencer; then the undervoltage relays that sense voltage on the preferred source dropout which sends a trip signal, after a time delay, to the preferred source breakers 1EA1-1 and 1EA2-1. Next, the bus undervoltage relays dropout and the 6.9kV motors are tripped off the bus after a time delay. When the motors trip, the alternate source breaker receives a permissive to close. When the breaker closes, power and voltage is restored to the 6.9kV bus. Upon restoration of voltage to the bus, the bus undervoltage relays pick up stopping the time delay relays that send the start signal to the DG's and the sequencer loads the motors back onto the bus. If the alternate source is not available or the alternate source breaker is unable to close, the time delay relay triggered by the bus undervoltage relay would time out and a start signal would be sent to the DG's. After the DG breaker closes, the sequencer loads the motors back onto the bus.

The settings for the relay time delays are based on several design considerations. One consideration is how long it takes for the alternate feed to re-energize the bus. Relay tolerances have been added to better represent the possible field conditions. Due to motor backfeed, a residual voltage remains on the 6.9kV bus for approximately 0.5 seconds (30 cycles). When the residual voltage drops to 30% of 6.9kV, the bus undervoltage relays (27-2A/1EA1 and 27-2B/1EA2) drop out and activate two time delay relays.

The existing time delay relays (27-2X/1EA1 and 27-2X/1EA2) will have a time delay of 0.3 seconds, activate three auxiliary relays that load sheds all motors on the 6.9kV switchgear and gives the alternate source breaker a permissive to close. The total time duration for the alternate offsite source to return power to the 6.9kV switchgear is approximately 1.05 seconds after the loss of the preferred offsite source (see attached time line in Figure 2).

The other time delay relays that are activated by the bus undervoltage relays will be new relays (27-2X1/1EA1 and 27-2X1/1EA2) that will send a start signal to the diesel generators if the alternate source does not return power to the switchgear. The time delay chosen for the relays is 1 second. With this time delay, the diesels would receive a start signal in approximately 1.55 seconds. The margin to the 2 second Technical Requirements Manual specification is about 0.45 seconds. All other time delay relays (i.e., those which enable the blackout sequencer and shed the motors on the 480V switchgear) time out before the alternate source re-energizes the 6.9kV switchgear.

Another consideration for the relay setting is the requirement specified in the Technical Requirements Manual (TRM) section 1.2, Table 1.2.1 Item 13.C. Item 13.C states that a response time of less than or equal to 2 seconds is required for the 6.9kV undervoltage relay. The response time is measured to the output of the undervoltage channel only. It can be seen on the time line that the maximum time will not exceed the 2 seconds allowed. The response time based on the redefined relay settings will provide adequate margin to meet the 2 second response time.

Modifying the times on the time delay relays (27-2X/1EA1, 27-2X/1EA2, 27AX1/ST2, 27BX1/ST2 and the sequencer time delay TD/PU) is acceptable since a fault is cleared in approximately 0.12 seconds. This time is well below the 0.3, 0.5, and 0.4 second time delays that will be used for each of the relays listed above. Also, the sequencer will always be enabled before the alternate breaker is closed since the preferred breaker opening is a permissive to closing the alternate breaker and the fact that a time delay of 0.4 seconds for TD/PU (the relay that enables the sequencer) is less than the time delay of 0.5 seconds for the preferred breaker trip relays (27AX1/ST2 and 27BX1/ST2).

The modification to the diesel generator start logic does not have a failure mode associated with it that can be considered an initiating event. The response times assumed in the Accident Analysis, Section 15.2 and as specified in the Technical Requirements Manual have not been reduced for all credible events.

The modification complies with GDC 17 which states that "One of these circuits shall be designed to be available within a few seconds following a loss-of-coolant accident ..." CPSES provides two physically independent and redundant sources of offsite power which are available on an immediate basis for the safe shutdown of either unit.

The following describes how the loss of preferred offsite power source and low voltage on the secondary of the start-up transformers are duplicate start signals:

The potential transformers (PT) which sense a loss of voltage are located on the high side of the preferred source breakers (1EA1-1 and 1EA2-1) in the 6.9kV switchgear. These PT's in turn feed undervoltage relays (27A-1/ST2-Y and 27A-2/ST2-Y) which dropout when the voltage on the high side of the preferred source breaker falls below approximately 75% of 6.6kV. When the voltage falls below 75%, two time delay relays are activated (27AX-1/ST2 and 27AX-2/ST2). The time delay relays will then send a trip signal to the preferred source breaker in the 6.9kV switchgear and a start signal to the diesel generators. Therefore, whenever the preferred offsite power source is lost or the secondary voltage of the start-up transformer falls below 75% of 6.6kV, the same circuitry is used to send a start signal to the diesel generators. See Figure 1 for more details.

IV. DETAILED DISCUSSION OF PROPOSED TECHNICAL SPECIFICATION CHANGES

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- 1) The proposed deletion of item 4.8.1.1.2a.4)b) is one of six start signals that the diesel generator can receive for surveillance requirement 4.8.1.1.2a.4).
- 2) The proposed deletion of item 4.8.1.1.2a.4)c) is also one of six start signals that the diesel generator can receive for surveillance requirement 4.8.1.1.2a.4).

V. NO SIGNIFICANT HAZARDS CONSIDERATION DETERMINATION

TU Electric has evaluated the no significant hazards consideration is involved with the proposed changes by focusing on the three standards set forth in 10CFR50.92(c) as discussed below:

Does the proposed change:

- (1) Involve a significant increase in the probability or consequences of an accident previously evaluated?

Presently, surveillance 4.8.1.1.2a.4 starts the diesel generators using any one of six start signals. The proposed deletion of items 4.8.1.1.2a.4)b) and 4.8.1.1.2a.4)c) does not alter any of the assumptions used in the safety analysis for CPSES Unit 1 because the diesels will still receive a start signal from any one of the remaining four signals which would still demonstrate the operability of the diesels to start. Also, the diesels or the alternate source will provide power within the time required by Technical Requirements Manual; thus the Accident Analysis remains valid.

Therefore, the proposed change has no effect on the probability or consequences of any accident previously evaluated for CPSES Unit 1.

- (2) Create the possibility of a new or different kind of accident from any accident previously evaluated?

The proposed deletion of items 4.8.1.1.2a.4)b) and c) does not create a new failure mode nor does it alter the probability of the diesel generator failing to start upon receipt of a start signal. The surveillance is still being properly performed using any one of the remaining four optional start signals.

Therefore, the proposed change does not create the possibility of a new or different kind of accident from those previously analyzed.

(3) Involve a significant reduction in the margin of safety?

The proposed deletion of items 4.8.1.1.2a.4)b) and c) does not significantly reduce the margin of safety when the single failure criterion is considered. This is due to the fact that the diesels still receive a start signal on a 6.9kV switchgear dead bus signal, a safety injection signal, or a manual start. The proposed deletion of the two items still satisfies General Design Criterion 17. The subject surveillance, as changed, will still demonstrate the operability of the diesel generators as designed.

Therefore, there is no significant reduction in the margin of safety.

Based on the above evaluation, TU Electric concludes that the activities associated with the above described changes satisfy the no significant hazards consideration standards of 10CFR50.92(c) and accordingly, a no significant hazards consideration finding is justified.

VI. ENVIRONMENTAL EVALUATION

TU Electric has evaluated the proposed changes and has determined that the changes do 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 changes meet the eligibility criterion for categorical exclusion set forth in 10CFR51.22(c)(9). Therefore, pursuant to 10CFR51.22(b), an environmental assessment of the proposed changes is not required.

VII. REFERENCE

NUREG-1399, "Technical Specifications, CPSES Unit 1", April 1990

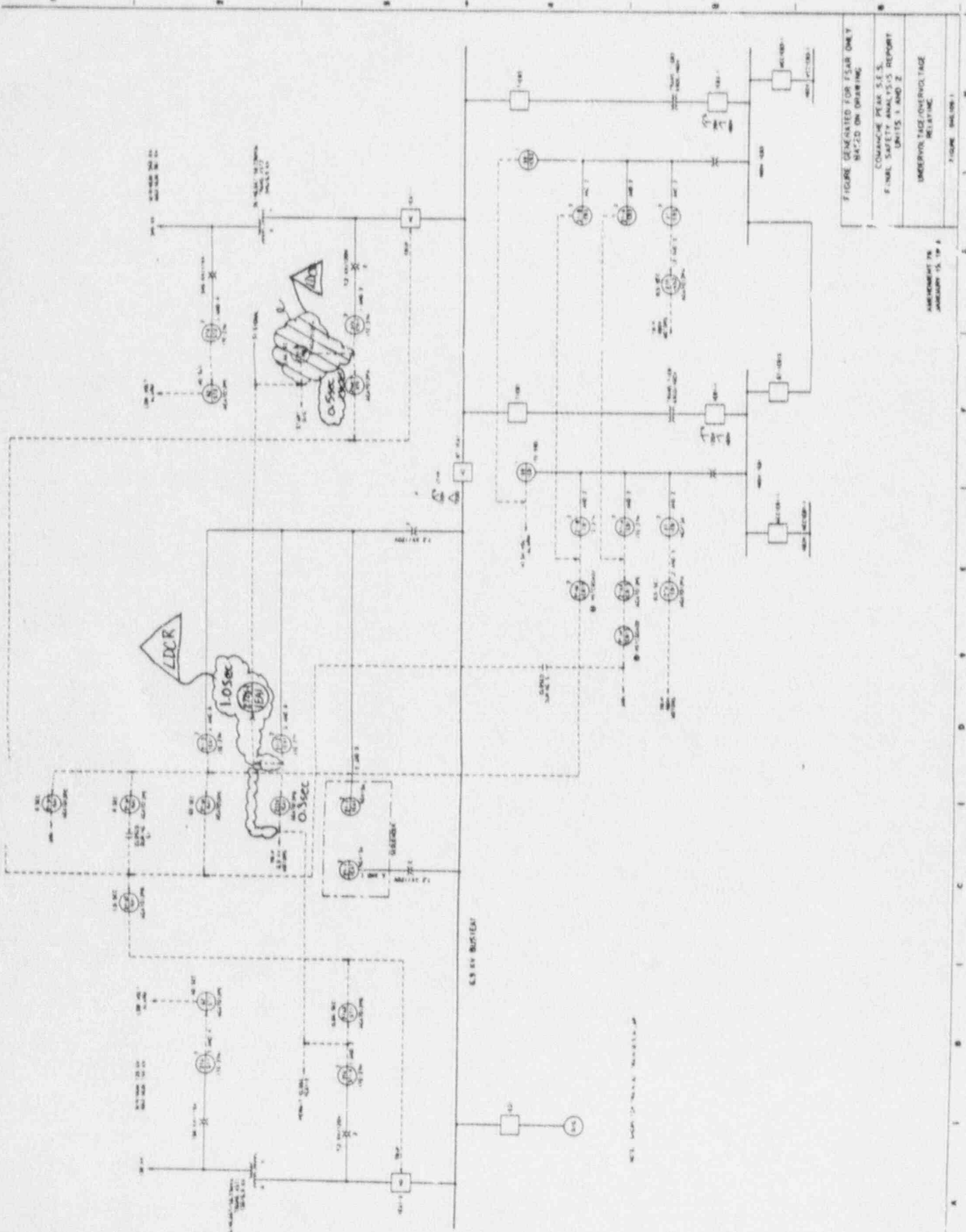


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 COMANCHE PEAK S.E.S.
 FINAL SAFETY ANALYSIS REPORT
 UNITS 1 AND 2
 UNDERSTANDING/INTERLOCKAGE
 RELAYING

ATTACHMENT 2X
 JANUARY 15, 1984

FIGURE 940.008.1

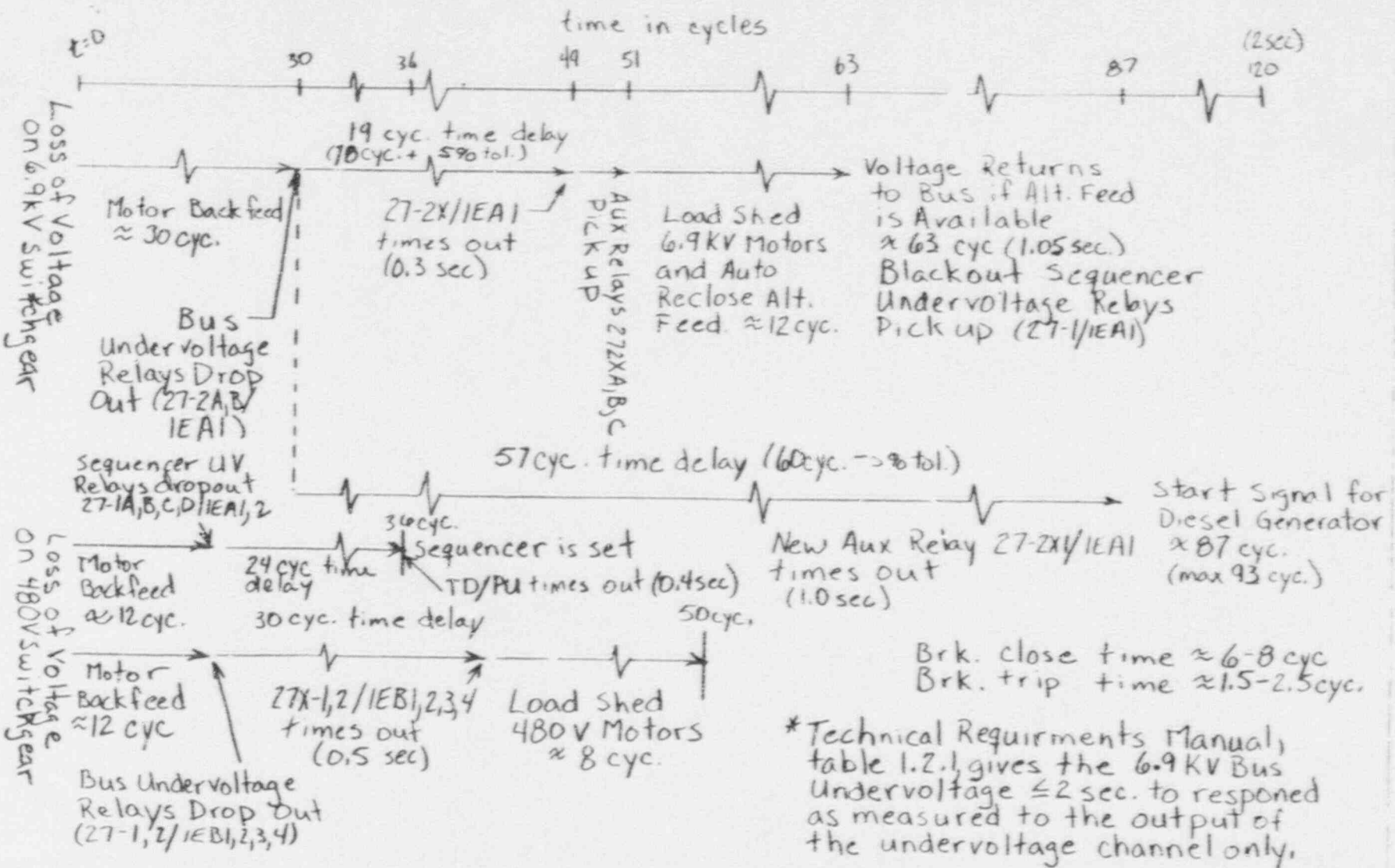


Figure 2