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AUTH.NAME AUTHOR AFFILIATION
MANGAN,C.V. Niagara Mohawk Power Corp.
RECIP.NAME RECIPIENT AFFILIATION
VASSALO,D.B. Operating Reactors Branch 2

SUBJECT: Forwards proposed mod to existing logic for automatic initiation of diesel generators upon loss of voltage & degraded voltage. Proposed mod involves physical changes to undervoltage relaying circuits for Powerboards 102 & 103.

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Date: 03/25/2021 Doc. Number: 03/25/2021 Page 1

Subject: Quarterly Financial Report (Q1 2021)

To: Board of Directors

From: Finance Department

Please find attached the quarterly financial report for the first quarter of 2021. Revenue increased by 12% compared to the same period last year, driven primarily by strong performance in the Northeast region.

Operating expenses remained within budget, with a slight variance in marketing due to the timing of campaign launches. Net income for the quarter was $1.2 million.

Cash flow from operations was positive, and the company ended the quarter with a healthy balance sheet. No material changes are expected for the remainder of the year.

Sincerely,

Finance Department

NIAGARA MOHAWK

NIAGARA MOHAWK POWER CORPORATION/300 ERIE BOULEVARD WEST, SYRACUSE, N.Y. 13202/TELEPHONE (315) 474-1511

March 27, 1984

Director of Nuclear Reactor Regulation
Attention: Mr. Domenic B. Vassallo, Chief
Operating Reactors Branch No. 2
Division of Licensing
U. S. Nuclear Regulatory Commission
Washington, D.C. 20555

Re: Nine Mile Point Unit 1
Docket No. 50-220
DPR-63

Dear Mr. Vassallo:

Our submittal of July 18, 1977 provided a Technical Specification amendment request addressing the automatic initiation of the diesel generators on loss of voltage and degraded voltage. These proposed technical specifications were modeled after those provided by your June 2, 1977 letter, and reflected the currently installed protective relay package. Niagara Mohawk now intends to modify the existing logic for automatic initiation of the diesel generators upon loss of voltage and degraded voltage, therefore, necessitating a change in our previously proposed technical specifications.

Attached is a description of our proposed modification to the initiating scheme. This modification is currently scheduled to be implemented during our 1984 refueling and maintenance outage. Revisions, superseding our previously proposed technical specifications, are being forwarded under a separate cover letter.

Sincerely,

NIAGARA MOHAWK POWER CORPORATION

C. V. Mangan
Vice President
Nuclear Engineering and Licensing

TEL/AJP:slw
Attachment

A051
1/1

Modification of Bus Undervoltage Protective Relaying Circuits for Powerboards 102 and 103

A. Present Design

(Refer to Figures 1, 2 & 5)

The existing undervoltage protective relaying circuits monitor phase-to-phase voltage (phase 1-2 and phase 2-3). There are two (2) sets of undervoltage relays, two (2) induction disk type relays for loss-of-voltage detection (27-1 & 27-2) and a second set of two (2) solid state inverse time relays for detecting a degraded system condition (27-1A & 27-2A).

These relays are fail safe. The two relays of each set are connected in series in a two-out-of-two logic, i.e. both relays in one set must operate to initiate a transfer to on site diesel generator power and to initiate the emergency powerboard's load shedding feature.

In addition to the condition stated above, to initiate a transfer to on site diesel generator power and to initiate the emergency powerboard's load shedding feature, the control switch for power circuit breaker (R1012/R1013) must be in the normal after closed position and one of the following conditions must exist:

1. The power circuit breaker (R1012/R1013) located near Powerboard 101 feeding off site power to the emergency Powerboard 102/103 must be closed.

2. The diesel generator output power circuit breaker must be open.

3. Any safeguard pump motor power circuit breaker must be closed.

B. Proposed Design

(Refer to Figures 3, 4 & 5)

As presently designed, a deficiency exists in the undervoltage protective relaying circuits for Powerboards 102 and 103. With the present design, if an open occurs on phase 1 or 3, an alarm will operate. If an open occurs on phase 2, the undervoltage relays would initiate a transfer to on site power. A problem arises if the open on phase 2 is in the bus or in the potential transformer primary such as a blown fuse or an open primary winding. This condition would not allow the undervoltage relays to reset when the bus is reenergized from the diesel generator. Each of the safeguard pump motor breakers will continue to close and trip as soon as its timer initiates the first closure.

The purpose of this modification is to design and install an undervoltage protective relaying scheme that will alarm for an open phase condition on phases 1, 2, or 3. This scheme would protect against possible damage to safeguard equipment (such as core spray and containment spray pump motors) as a result of breakers tripping and closing.

The modified undervoltage relaying circuits will monitor phase-to-neutral voltage on all three phases instead of phase-to-phase voltage on two phases. The logic for initiation of transfer and load shedding would be changed from a two-out-of-two to a two-out-of-three circuit for both the loss-of-voltage and degraded system monitoring relays. To initiate a transfer to on site diesel generator power and to initiate the emergency powerboard's load shedding feature, the following conditions must be satisfied: the control switch for power circuit breaker (R1012/R1013) must be in the normal (after closed) position, a loss of voltage or degraded system condition must exist of emergency Powerboard 102/103 and one of the following:

1. the power circuit breaker (R1012/R1013) located near Powerboard 101 feeding off site power to the emergency Powerboard 102/103 must be closed, or

2. the diesel generator output power circuit breaker must be open.

Changing the conditions required to initiate transfer and load shedding will ensure that these features are disabled when the emergency powerboards are connected to the on site diesel generator and are enabled when the diesel generator output power circuit breaker is open. This will ensure that the protective relaying scheme is in compliance with paragraphs 5.1.5.2 and 5.1.5.3 of proposed IEEE Standard P741, "Standard on Protection of Class 1E Power Systems and Equipment." In addition, this design will meet the design criteria as outlined in Staff Position 2 of the June 2, 1977 Nuclear Regulatory Commission's correspondence.

C. Analysis

The undervoltage protective relaying circuits for Powerboards 102 and 103 are safety related. Where possible, applicable regulatory requirements will be applied to all Class 1E equipment purchased for this modification. In the cases where equipment cannot be purchased safety related, the equipment will be dedicated for Class 1E use in accordance with Section 7.2.2.1 of the Niagara Mohawk Quality Assurance Program for Nine Mile Point Unit 1.

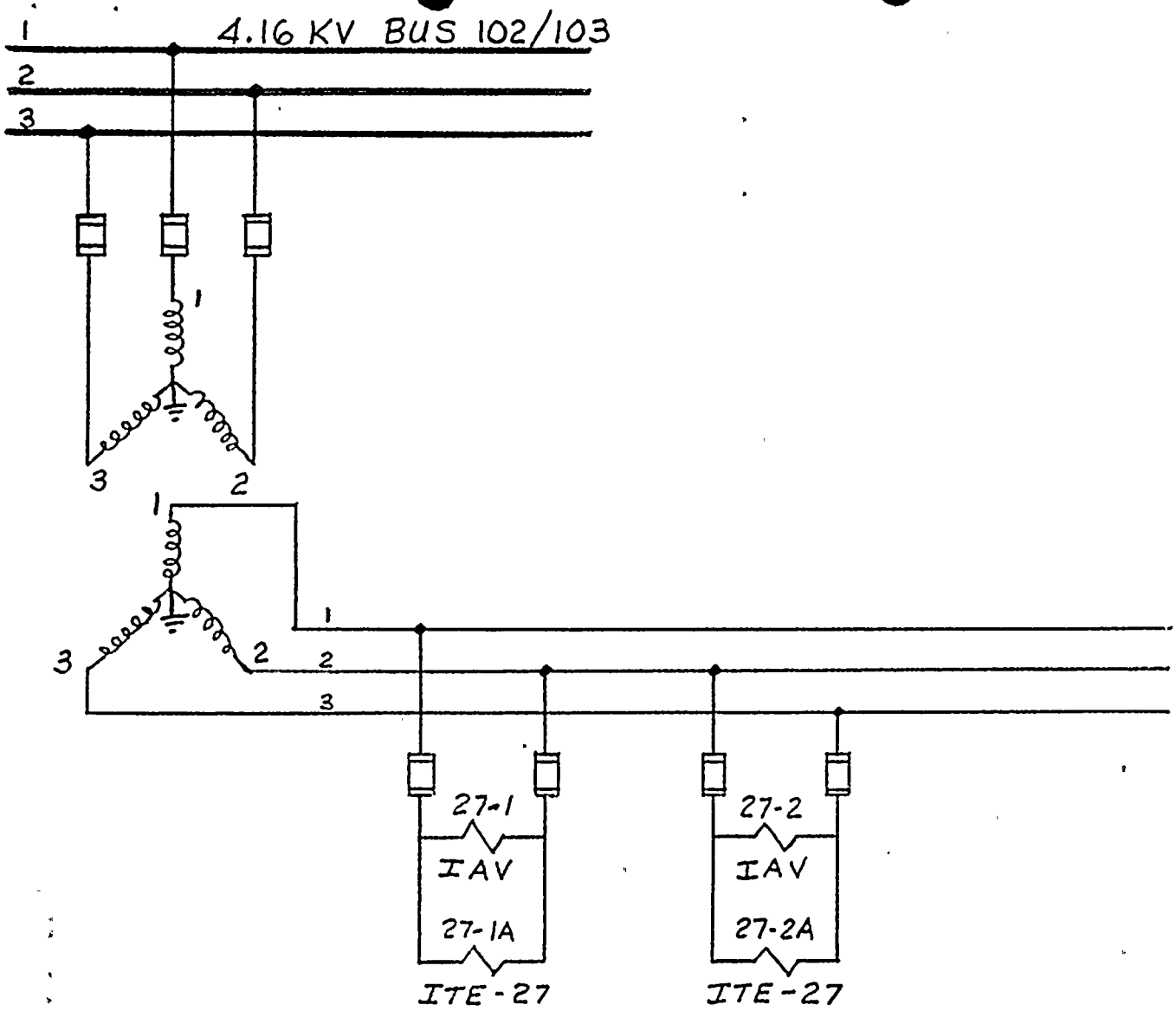
The proposed modification involves physical changes to the undervoltage protective relaying circuits for Powerboards 102 and 103. However, the function of these circuits remains the same. That function is to initiate transfer from off site to on site power upon loss of voltage on Powerboard 102/103 or upon detecting a degraded 115 KV system condition.

The installation of this modification will enhance the capability of the undervoltage protective relaying circuits to perform their function. In addition, the modification will reduce the possibility of damage to safeguard equipment (such as core spray and containment spray spray pump motors) as a result of breakers tripping and closing.

All cable routing will be in accordance with Appendix R separation requirements.

The proposed modification does not alter the operational and safety requirements of designs previously analyzed in the Final Safety Analysis Report and does not constitute an unreviewed safety question.

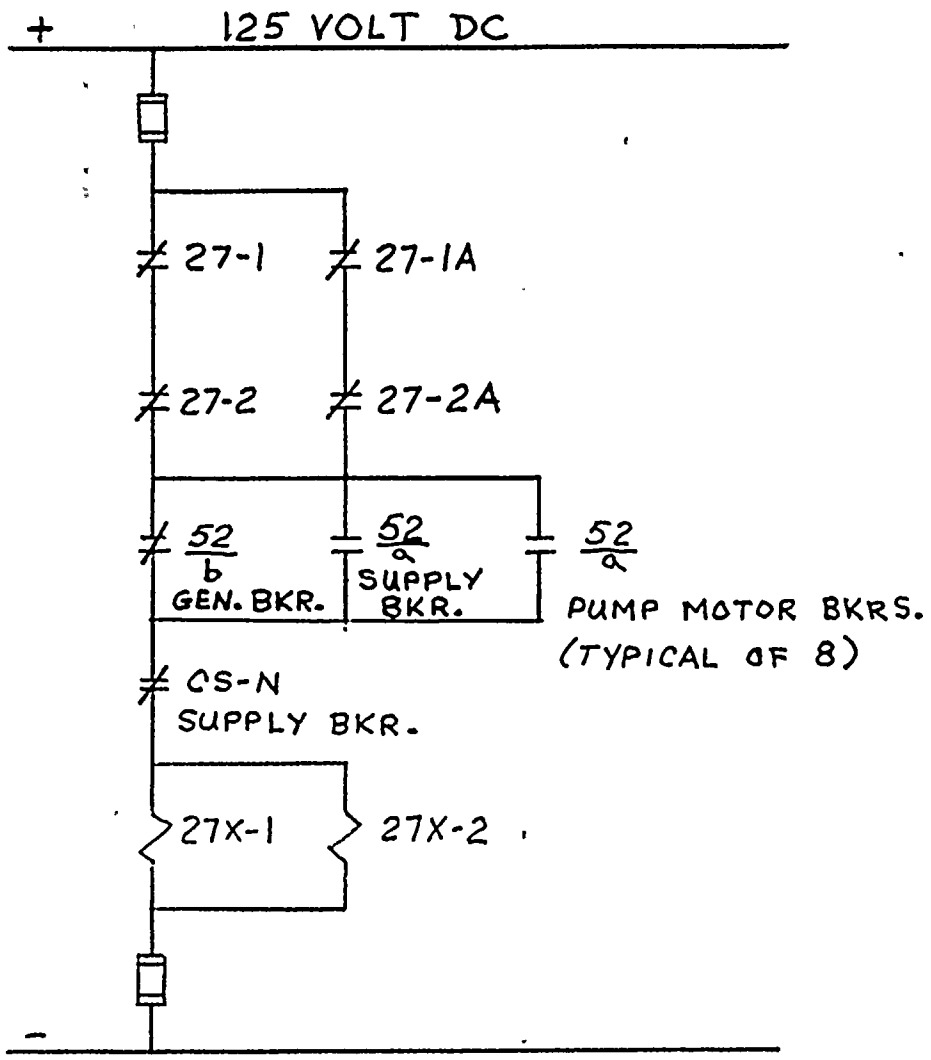
Based on the above, this modification will improve the reliability and performance of the undervoltage protective relaying circuits for Powerboards 102/103, reduce the possibility of damage to safeguard equipment (such as core spray and containment spray pump motors), and will not adversely effect the safe operation or shutdown of Nine Mile Point Unit 1.



UNDERVOLTAGE
RELAYS

FIGURE 1

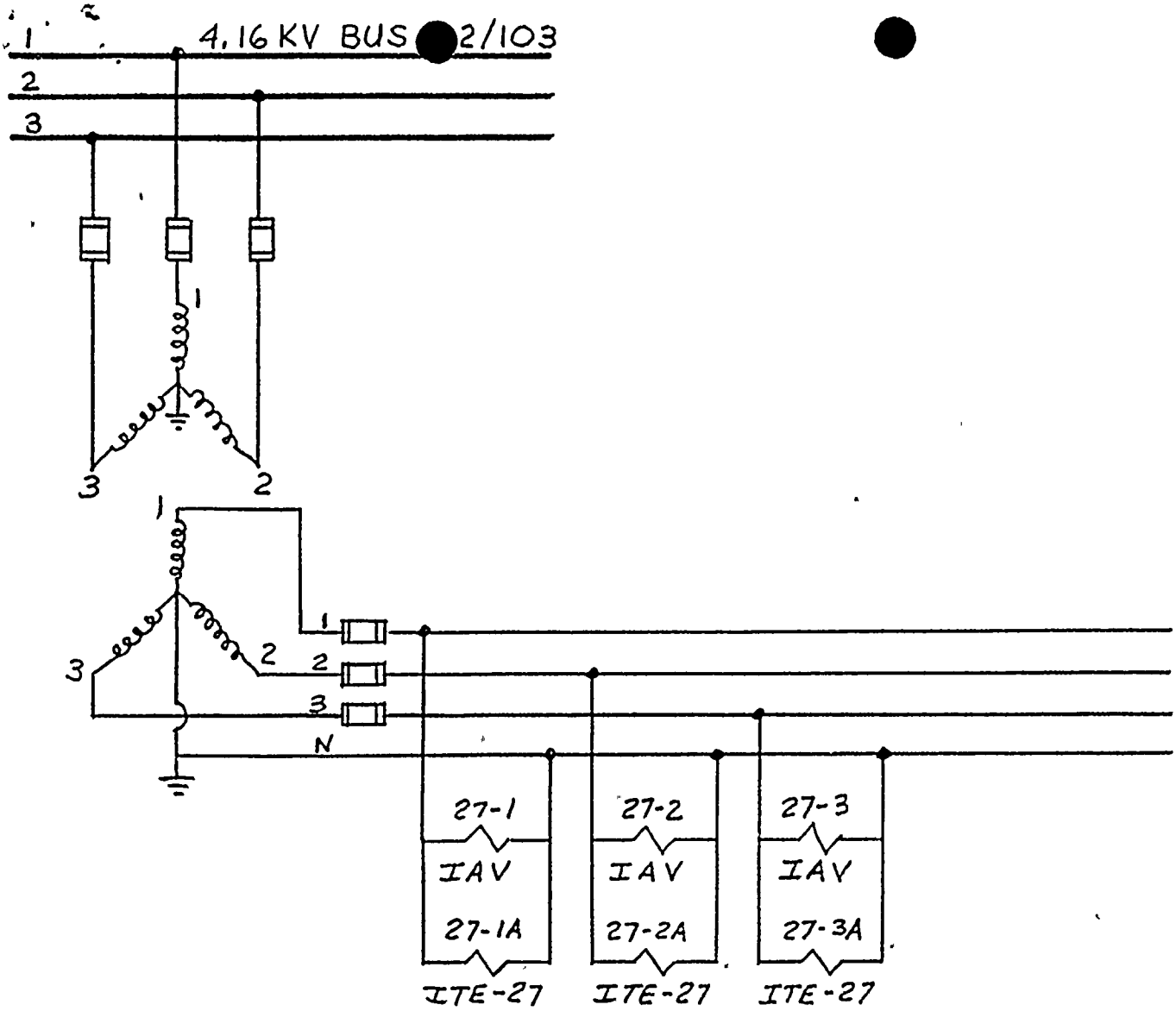
REV. 0



27X-1 AND 27X-2 INITIATE TRANSFER TO ON SITE DIESEL GENERATOR POWER

FIGURE 2

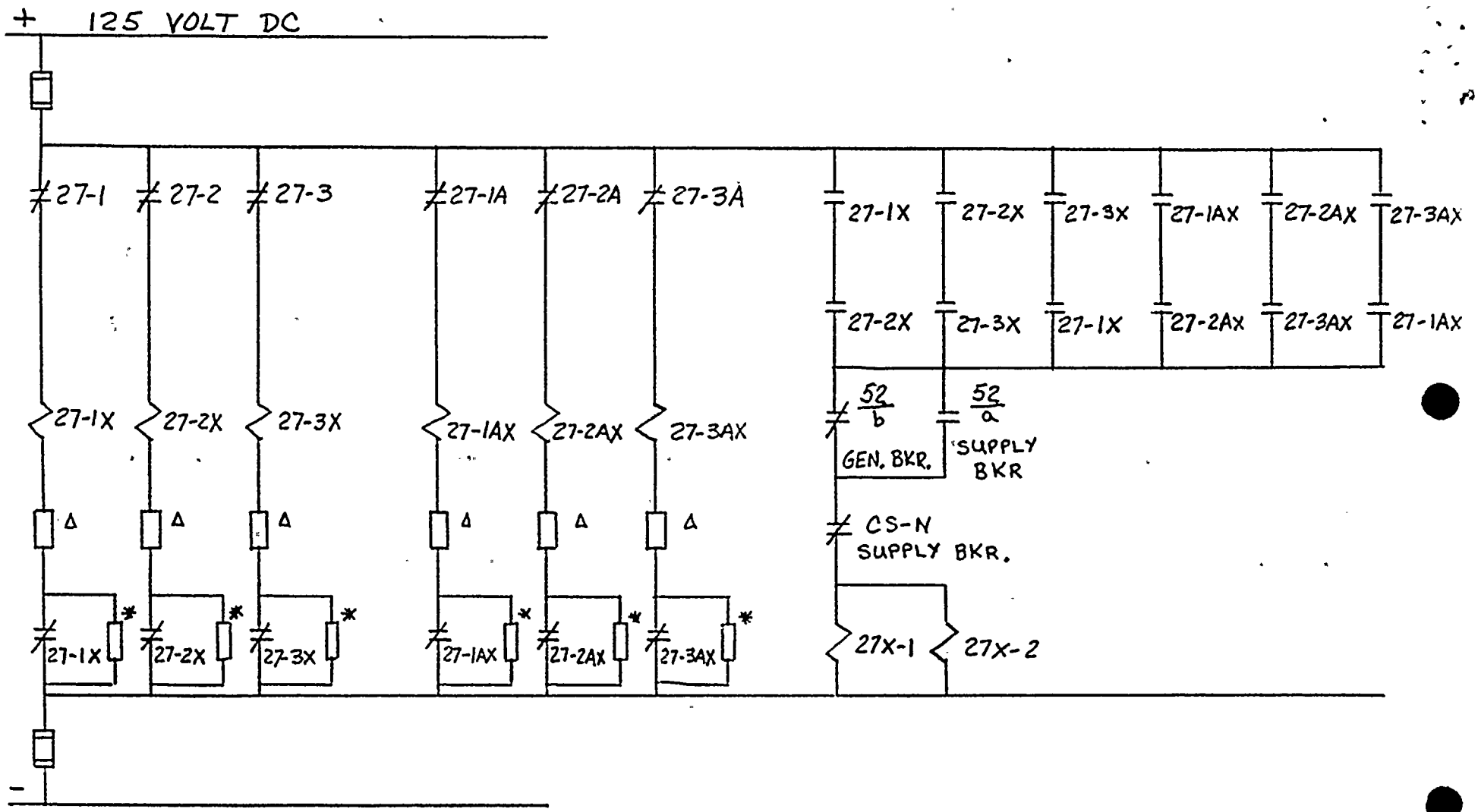
REV. 0



UNDERVOLTAGE RELAYS

FIGURE 3

REV. 0



Δ - 50 OHM RESISTOR

* - 125 OHM RESISTOR

27X-1 AND 27X-2 INITIATE TRANSFER TO ON SITE DIESEL GENERATOR POWER

REV. 0

FIGURE 4

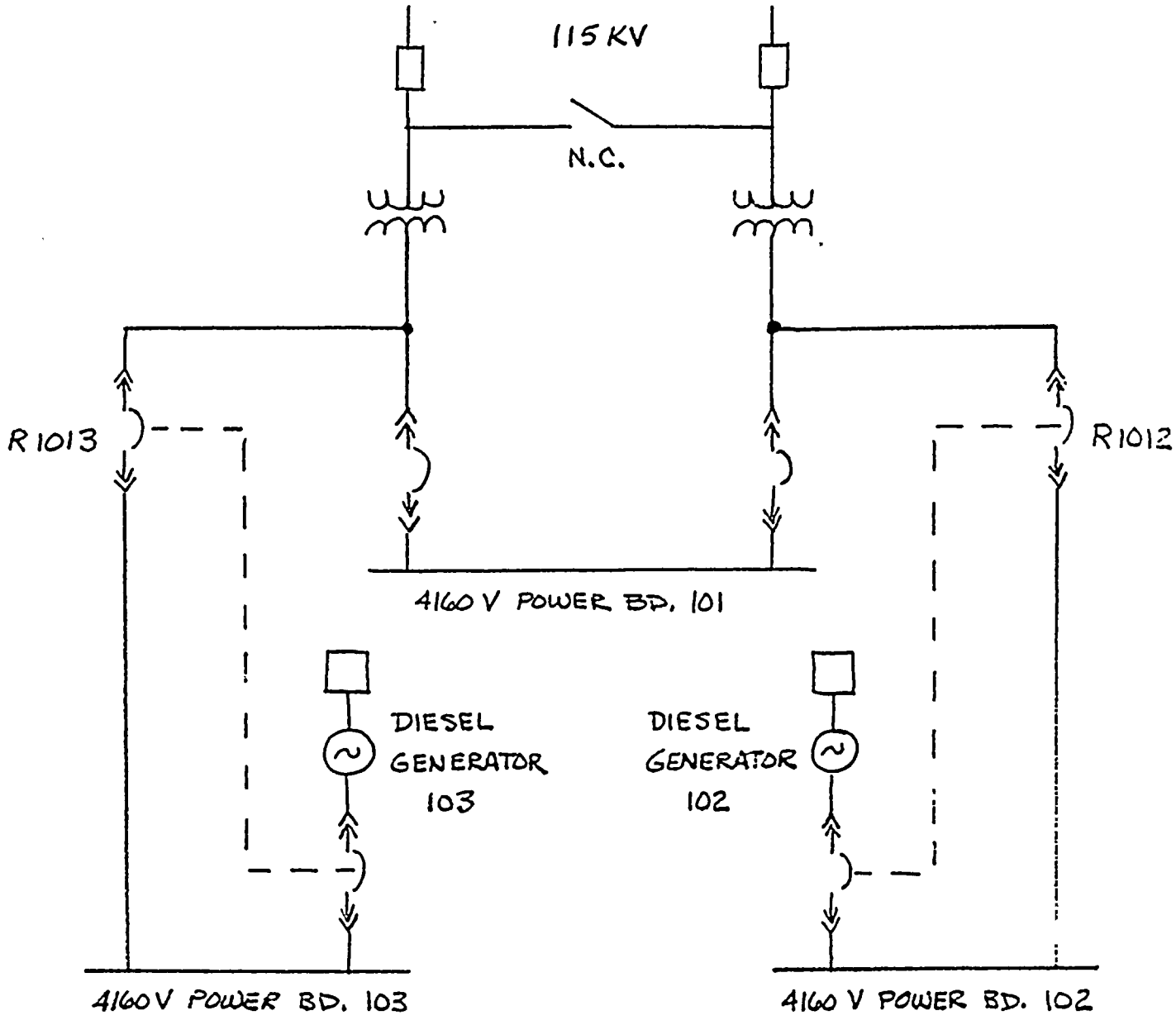


FIGURE 5

REV. 0