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1400 Opus Place
Downers Grove, Illinois 60515

November 1, 1991

Mr. A. Bert Davis
Regional Administrator, Region III
U.S. Nuclear Regulatory Commission
799 Roosevelt Road
Glen Ellyn, IL 60137

Subject: Dresden Nuclear Power Station Unit 2
Request for Regional Temporary Waiver of Compliance to
Facility Operating License DPR-19, Appendix A,
Technical Specification Section 3.9.B
NRC Docket No. 50-237

- References: (a) M. Richter (CECo) letter to A. Bert Davis (NRC)
dated October 31, 1991.
- (b) CECo (E. Eenigenburg, et al.) - Region III (E. Greenman,
et al.) teleconference on October 31, 1991.

Dear Mr. Davis

Reference (a) submitted a Regional Temporary Waiver of Compliance (TWOC) from Technical Specification 3.9.B for Dresden Unit 2. The waiver would allow the Unit 2 reactor mode switch to be placed in the 'REFUEL' position with the reactor head on, while the 250 volt batteries for Units 2 and 3 are declared inoperable, in order to replace a control rod drive during the current Unit 2 forced outage. As a result of teleconferences held with your staff on October 31, 1991, Commonwealth Edison Company (CECo) has amended the TWOC to include additional information. Based on the Reference (b) teleconference, it is CECo's understanding that the TWOC (which has a duration of 5 days) was granted as of 1700 hours on October 31, 1991. As indicated in Reference (a), if the 250 volt batteries are not declared operable within the five (5) day duration of this waiver (1700 hours on November 5, 1991), the Unit 2 mode switch will be returned to the 'SHUTDOWN' position.

Attachment 'A' to this letter presents the amended Temporary Waiver of Compliance Request and Attachment 'B' presents a summary of recent Unit 3 250 Volt Battery Testing.

The basis for the request is provided in Attachment 'A' and includes:

- A discussion of the requirements for which a temporary waiver is requested.
- A discussion of the circumstances surrounding the situation, including the need for prompt action and a description of why the situation could not have been avoided.

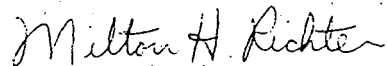
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- A discussion of compensatory actions.
- An evaluation of the safety significance and potential consequences of the proposed change.
- A discussion which justifies the duration of the request.
- The basis for concluding that the request does not involve a significant hazards consideration.
- The basis for concluding that the request does not involve irreversible environmental consequences.

This request for a Regional Temporary Waiver of Compliance has been reviewed and approved by CECO Senior Management, as well as the Dresden On-site Review Committee in accordance with company procedures.

CECO appreciates the NRC staff's efforts and participation in review of this temporary waiver of compliance. Please direct any questions or comments regarding this submittal to this office.

Respectfully,



Milton H. Richter
Nuclear Licensing Administrator

Attachments: A - Temporary Waiver of Compliance Request
B - Summary of Recent Unit 3 250 Volt Battery Testing

cc: B. L. Siegel, Project Manager - NRR
W. D. Shafer, Branch Chief - RIII
W. G. Rogers, Senior Resident Inspector - Dresden
NRC Document Control Desk

ATTACHMENT 'A'

TEMPORARY WAIVER OF COMPLIANCE REQUEST

1. THE REQUIREMENTS FOR WHICH A TEMPORARY WAIVER IS REQUESTED

Dresden Unit 2 Technical Specification Section 3.9.B provides the following limiting condition for operation for the station's auxiliary electrical systems:

3.9.B "Except when the reactor is in the Cold shutdown or Refueling modes with the head off, the availability of electric power shall be as specified in 3.9.A, except as specified in 3.9.B.1, 3.9.B.2, and 3.9.B.3."

With respect to the station's batteries, Technical Specification 3.9.A requires:

3.9.A.5 "The unit 24/48 volt batteries, the two station 125 volt batteries and the two station 250 volt batteries and a battery charger for each required battery are operable."

Commonwealth Edison Company (CECo) requests to place the Unit 2 reactor mode switch in the REFUEL position WITH THE REACTOR HEAD ON in order to replace Control Rod Drive (CRD) R-10, concurrent with the Unit 2 and 3 250 volt batteries being declared inoperable.

2. CIRCUMSTANCES SURROUNDING THE SITUATION

At this time both units at Dresden Station are shutdown. Unit 3 is defueled and in a refueling outage while Unit 2 is in a forced outage as a result of recent Unit 3 250 volt battery testing (see Attachment B). The 250 volt batteries for Units 2 and 3 are currently considered inoperable pending the performance of a successful Service Test on the Unit 3 battery (scheduled for November 1, 1991). Additionally, the Unit 2 and Unit 3 250 volt DC distribution systems are currently isolated from each other, with the Unit 2 loads (Turbine and Reactor Building loads) being fed by the Unit 2 battery and charger (see Attachment B).

During the current forced outage for Unit 2, Control Rod Drive (CRD) R-10 is scheduled for replacement. As recently reported in Licensee Event Report 91-031, Docket 50-237, CRD R-10 would not latch at any position except 00 (fully inserted). The cause of the CRD latching problem is believed to be binding of the CRD collet piston. CRD R-10 was subsequently taken out-of-service at position 00 and electrically disarmed as allowed by Technical Specification 3.3.A.1.c to facilitate continued operation. Replacement of CRD R-10 will eliminate the drift concerns, facilitate identification of the cause for the latching problem, and allow the reactor core to be operated in a symmetrical manner.

In order to replace CRD R-10, the control rod must first be withdrawn to position 48 (fully withdrawn) to allow the control rod to be uncoupled from the CRD. The reactor mode switch must be taken to the REFUEL position to withdraw a single control rod. Withdrawal of additional control rods is prevented by the ONE ROD PERMISSIVE interlock which is enabled in the REFUEL mode. However, Technical Specification 3.9.B will only allow the reactor to be in the Refueling mode with the reactor head off the reactor vessel, unless both the Unit 2 and 3 250 volt batteries are operable.

Delaying replacement of CRD R-10 until the 250 volt batteries are declared operable is estimated to extend the current forced Unit 2 outage by three days. This outage extension will potentially cause a radioactive water inventory storage problem. In order to purify and reprocess contaminated water, nuclear steam is required. With both units not operating, nuclear steam is not available. Normally, plant heating system steam is used as a backup; however, the heating boilers are being replaced and are not operational. A temporary boiler is being installed, but will not be available for several weeks. The station has attempted a filtering/demineralizing process as an interim measure, but the resultant water quality does not allow for discharging to the river. In lieu of processing water, it is stored until processing can take place. The current storage capacity is over 86% filled and the station is currently developing alternate plans to transfer water to rarely utilized storage locations, such as the Unit 1 condenser hotwell. Because these alternate locations are rarely utilized, precautions and inspections would need to be performed to assure their integrity.

In addition to the radioactive water storage concern, it is projected that the available nuclear generating capacity will be substantially reduced by Monday, November 4, 1991. It is expected that only four or five CECO nuclear units will be available for service (excluding Dresden Unit 2). The projected demand will require all other available generating stations to be in operation and power purchases are anticipated.

CECO believes the current situation could not have been reasonably avoided, given that the forced outage which provides an opportunity to replace CRD R-10 was a result of the unforeseen failure of the Service Test for the Unit 3 250 volt battery.

3. COMPENSATORY ACTIONS

- a. Unit 3 250 volt loads will continue to remain isolated from the Unit 2 battery until the Unit 3 battery is returned to service.
- b. The Unit 2 and 2/3 250 volt battery chargers will not be made inoperable during the duration of the waiver. (Note, only one battery charger is required by Technical Specifications.)
- c. Activities which have the potential to degrade the Unit 2 250 volt DC power distribution system will be minimized during the duration of the waiver.
 - Access to the Unit 2 and 2/3 250 volt battery chargers will continue to be limited to authorized personnel.
 - Surveillances will be performed on those Unit 2 systems having DC loads (Reactor Water Cleanup, Shutdown Cooling, Isolation Condenser, High Pressure Coolant Injection) only as authorized by the Operating Engineer.
 - Preventive maintenance activities will be suspended on the Unit 2 and 2/3 250 volt battery chargers, and equipment associated with the 24-1 to 34-1 4160 volt emergency bus cross-tie.

- d. In the event a DC ground is found to exist on the 250 volt DC distribution system, ground checking will only be performed by a team consisting of at least Operations, Electrical Maintenance, and Technical Staff (cognizant electrical engineer) personnel. This activity will be preceded by a Heightened Level of Awareness briefing.
- e. Equipment associated with the 24-1 to 34-1 4160 volt emergency bus cross-tie, and either the Unit 2 or the Unit 2/3 Diesel Generator will be operable for Unit 2 for the duration of the waiver.
- f. To minimize loads on the Unit 2 250 volt battery, the Unit 2 HPCI system will be put in a configuration that will not draw power from the 250 volt DC power system in the event of a spurious initiation or isolation signal for the duration of the waiver.
- g. The Reactor Coolant System will be vented to preclude the possibility of system pressurization for the duration of the waiver.
- h. Currently, all six (6) low pressure Emergency Core Coolant System (ECCS) pumps are operable. Technical Specifications require only two pumps to be operable. No ECCS pumps will be made inoperable for the duration on the waiver.

4. EVALUATION OF SAFETY SIGNIFICANCE AND POTENTIAL CONSEQUENCES

Discussion in this section will consider the operational impacts of a failure of the station's 250 volt DC power system. As discussed in Attachment B, although the Unit 3 250 volt battery did not pass the 1017 ampere 1 minute Service Test, it is expected to pass a 910 ampere 1 minute Service Test. The Unit 2 250 volt battery was administratively declared inoperable (but remains in service) because its ability to adequately meet the 1 minute service test load profile could not be assured. Based on the results of the previous Unit 3 Service Tests and the results of the last Performance Test for the Unit 2 battery (113% of rated capacity during the Fall 1990 refueling outage), there is assurance that the capacity of the Unit 2 250 volt battery will meet the demands of the remaining loads while Unit 2 is in either the Cold Shutdown or Refueling modes of operation should the battery be required to function without a charger.

The loading of the 250 volt DC power system for events which could occur during the duration of this waiver request is discussed below. The compensatory actions discussed in Section 3 of this waiver request will provide increased assurance in the availability of adequate 250 volt DC power capacity in that both the Unit 2 and 2/3 250 volt battery chargers will be available to augment the capacity of the Unit 2 250 volt battery. This increased assurance is provided by requiring an emergency diesel generator as well as the bus 24-1 to 34-1 cross-tie breakers, to be available to supply emergency power to 250 volt battery chargers.

The adverse consequences of potential accidents with a loss of the 250 volt DC power system were examined. In addition, any further system performance degradation as a result of having the head on the reactor vessel versus off the reactor vessel was also evaluated. Two categories of adverse impact were assessed:

a. Failure of 250 volt DC Motor Operated Valves (MOVs) to close when needed to isolate a line break having the potential of draining the reactor vessel. It should be noted that with the reactor coolant system depressurized, the rate of coolant inventory loss is greatly reduced and the probability of a line rupture is also reduced. Low Pressure Emergency Core Cooling Systems and non-safety related systems are also available to maintain coolant inventory. All systems having 250 volt DC MOVs were evaluated. Furthermore, there was no impact on system performance of having the head on the reactor vessel as compared to having the head off the reactor vessel. The following systems have the potential to drain the vessel:

- i. Shutdown Cooling Inlet and Outlet Lines (2-1001-2A, 2B, 2C, 4A, 4B, and 4C 250 volt DC valves)

Currently, the 2-1001-2A, 2B, 4A, and 4B valves are open to allow operation of Shutdown Cooling. In the event of a line break in the Shutdown Cooling System with any of the 2-1001-2A, 2B, 2C, 4A, 4B, or 4C valves open, concurrent with a failure of the 250 volt DC power system, the 480 volt AC 2-1001-1A, 1B, 5A and 5B MOVs would be available to isolate the break.

- ii. Reactor Water Cleanup Supply Line (2-1201-2 and 2-1201-3 250 volt DC valves)

Currently, the 2-1201-3 valve is open to allow operation of the Reactor Cleanup System. In the event of a line break in the Reactor Water Cleanup System with either the 2-1201-2 or 3 valves open, concurrent with a failure of the 250 volt DC power system, the 480 volt AC 2-1201-1 and 1A MOVs would be available to isolate the break.

- iii. Isolation Condenser Condensate Return Line (2-1301-3 250 volt DC valve).

Currently, the 2-1301-3 valve is closed. In the event of a line break in the Isolation Condenser return line with the 2-1301-3 valve open, concurrent with a failure of the 250 volt DC power system, the 480 volt AC 2-1301-4 MOV would be available to isolate the break.

- b. Loss of a backup power source to the Essential Service Uninterruptible Power Supply (UPS).

The Essential Service (ESS) Bus provides logic power to the Standby Gas Treatment System. The ESS Bus receives power from various sources via an UPS. 480 volt A/C from each electrical division provides primary power and one source of backup power to the UPS. An additional source of backup power to the UPS is the 250 volt battery. With the loss of the 250 volt battery, 2 sources of power will be available to the ESS Bus UPS.

It should be noted that none of the above consequences are impacted by the reactor being in the Cold Shutdown mode versus the reactor being in the Refueling mode. Furthermore, if the reactor is in the Refueling mode, none of the above consequences are impacted by the reactor head being on versus off of the reactor vessel.

In evaluating the potential safety consequences of control rod R-10 drifting from position 00 to position 48, the fuel vendor evaluated the available shutdown margin associated with having R-10 at position 48, the next strongest control rod (C-11) at position 48 and all other control rods at position 02. It was determined that the Shutdown Margin required by Technical Specifications was maintained; thus, there is no possibility of the replacement of CRD R-10 causing the reactor to go critical.

A search for the origin of the Technical Specification 3.9.B requirement to have the reactor vessel head off of the reactor vessel was conducted. The original Unit 2 Technical Specifications did not include this requirement. The original Unit 3 Technical Specifications did include the requirement for the head to be off. After the Unit 3 Technical Specifications were issued, the Unit 2 Technical Specifications were revised for the purposes of consistency. A review of the Standard Technical Specifications revealed that there is no requirement which ties the availability of the electrical power systems with the status of the reactor vessel head. A Technical Specification request which removes the vessel head requirement from LCO 3.9.B was submitted to the NRC for consideration on August 9, 1991.

The compensatory actions discussed in Section 3 will provide increased assurance in the availability of the Unit 2 250 volt DC power distribution system. By not making the Unit 2 and Unit 2/3 250 volt battery chargers inoperable during the duration of the waiver, there exists greater assurance of a source of 250 volt DC power to 250 volt DC equipment. By isolating the Unit 3 reactor and turbine buildings from the Unit 2 250 volt batteries, potential faults caused by maintenance activities on Unit 3 will be eliminated. Additionally, activities on Unit 2 which have the potential to degrade the Unit 2 250 volt DC power distribution system will be minimized.

5. JUSTIFICATION FOR THE DURATION OF THE REQUEST

The duration of the requested waiver is for five (5) days. This will allow the reactor mode switch to remain in the REFUEL position until the 250 volt batteries are declared operable, thus avoiding the reactor scram which would result from returning the reactor mode switch to SHUTDOWN. It is expected that the Unit 3 250 volt battery Service Test will be performed on November 1, 1991. Following Staff approval of the revised 250 volt battery load profile,

Unit 3 250 volt battery testing and subsequent battery recharging, the 250 volt batteries for Units 2 and 3 will be declared operable (see Attachment B). It is excepted that this battery testing and subsequent recharging will take approximately 3 days. This waiver request will allow the replacement of CRD R-10 to begin immediately, rather than waiting until the 250 volt batteries to be declared operable. If the 250 volt batteries are not declared operable within the five (5) day duration of this waiver, the mode switch will be returned to the SHUTDOWN position.

The current schedule indicates that the actual CRD replacement activity will be completed on November 2, 1991. Associated maintenance activities (such as the replacement of drywell interferences) and testing will be completed by November 4, 1991. If required, the reactor mode switch could be taken back to SHUTDOWN at the completion of November 2, 1991 activities. The five day waiver will expire on November 5, 1991; thus, there is sufficient time available for contingencies should delays be encountered in the CRD replacement and the 250 volt batteries have not been declared operable.

6. EVALUATION OF SIGNIFICANT HAZARDS CONSIDERATION

CECo has reviewed the proposed temporary waiver of compliance request in accordance with the criteria delineated in 10 CFR 50.91 and has determined that the waiver of compliance does not present a Significant Hazards Consideration. The basis for this determination is as follows:

- a. The proposed change does not involve a significant increase in the probability or consequences of an accident.

Having the head on the reactor vessel versus off the reactor vessel will not increase the probability of any accident analyzed in the FSAR. Having the head on the reactor vessel versus off the reactor vessel will not increase the consequences of an accident analyzed in the FSAR. The evolution which will be occurring during the time this waiver is in effect has two possible negative consequences: an inadvertent criticality and providing a path to drain the reactor vessel during the CRD replacement. The consequences of either of these eventualities do not relate to having the head on the reactor vessel.

- b. The proposed change does not create the possibility of a new or different kind of accident from any accident previously evaluated.

Failure of the 250 volt DC power system, loss of reactor coolant inventory and inadvertent criticality have all been considered in the FSAR. Having the head on the reactor vessel instead of off the reactor vessel will not create a new combination of circumstances which could lead to a different kind of accident from any accident previously evaluated.

- c. The proposed waiver of compliance does not involve a significant reduction in the margin of safety.

The only difference in the Reactor Protection Response between the Shutdown and Refueling modes of operation is to allow a single control rod to be withdrawn when the mode switch is in REFUEL. Section 4 of this waiver request discusses the safety significance and design margins available in the plant in the event of a failure of the 250 volt power system. The margins to safety are not significantly reduced by allowing the reactor to be in the Refueling mode with the head on the reactor vessel versus requiring that the head be off the reactor vessel.

7. ENVIRONMENTAL CONSEQUENCES ASSESSMENT

This waiver of compliance request does not involve a change in the installation or use of the facilities or components located within the restricted areas as defined in 10 CFR 20. This waiver does not adversely affect the operation of the reactor or core cooling mechanism following a postulated accidents beyond that previously reviewed and approved by the NRC and, therefore, will not increase the fission product source term. CECO has determined that this waiver request does not involve an increase in the amount, or a change in the types of any effluents that may be released off-site; therefore, there is no increase in individual or cumulative occupational radiation exposure. Accordingly, this Temporary Waiver of Compliance meets the eligibility criteria for categorical exclusion as defined in 10 CFR 51.22(c)(9). Pursuant to 10 CFR 51.22(b), no environmental impact statement or environmental assessment need be prepared in connection with granting of the Temporary Waiver of Compliance.

ATTACHMENT 'B'

**SUMMARY OF RECENT UNIT 3
250 VOLT BATTERY TESTING**

ATTACHMENT B

There are two (2) 250 volt DC batteries (with an associated charger), one per unit, at Dresden Station Units 2 and 3. Additionally, there is a third battery charger (Unit 2/3 battery charger) which has the capability to be connected to either battery bus (see Figure 1). The normal 250 volt DC distribution system configuration has the Unit 2 battery (and associated charger) supplying power to the Unit 2 Turbine Building 250 volt DC loads and the Unit 3 Reactor Building 250 volt DC loads; while the Unit 3 battery (and associated charger) supplies the Unit 3 Turbine Building 250 volt DC loads and the Unit 2 Reactor Building 250 volt DC loads.

At 1042 hours on October 14, 1991, with Unit 3 in a refueling outage, the Unit 3 250 volt battery was removed from service in preparation for the discharge test required by Surveillance Requirement 4.9.A.3. Unit 2 Reactor Building 250 volt DC loads, which are normally fed by the Unit 3 battery, were transferred to the Unit 2 battery. Additionally, Unit 3 250 volt Motor Control Centers (MCCs) were completely isolated from the Unit 2 250 volt battery.

A Service Test was performed on the Unit 3 250 volt battery in accordance with station procedure DES 8300-15, "Unit 3 250 Volt Station Battery Service Test." This was the first Service Test performed on the Unit 3 250 volt battery (previous surveillance testing consisted of a Performance Test). The 4-hour test demonstrates the ability of the 250 volt battery to supply the expected loads during a postulated Loss of Coolant Accident (LOCA).

During the first minute of the Service Test, battery voltage decreased below the established acceptance criterion of 210 volts. It should be noted that the test was completed in its entirety (4 hour 15 minute duration), with the acceptance criteria being met for the remainder of the test.

The seven (7) day out-of-service period allowed by Technical Specification 3.9.B.4.a expired on October 21, 1991 and an orderly shutdown of Unit 2 was begun at 1040 hours. Maintenance activities were subsequently performed on the Unit 3 250 volt battery to lower battery inter-tier resistances.

An abbreviated Service Test with a first minute loading of approximately 1017 amperes was performed on October 27, 1991. During the course of the first minute, battery voltage decreased below 210 volts, but at all times remained above 209 volts. Based upon the Unit 3 250 volt battery test results, it could not be assured that the Unit 2 250 volt battery would be able to meet its design basis load profile, so the Unit 2 250 volt battery was declared inoperable.

A meeting was held between CECO and NRC personnel on October 28, 1991 to discuss the load profile for Service Testing of the 250 volt batteries. Based upon the results of those discussions, CECO will be submitting a load profile with a first minute loading of 910 amperes. Based upon the results of the previous Service Tests, it is expected that both the Unit 2 and 3 250 volt batteries will be able to pass the revised profile. CECO will be submitting the revised load profile for NRC approval by November 1, 1991. Upon staff approval of the load profile, CECO will perform the Unit 3 250 volt battery Service Test. Following successful completion of that Service Test, the 250 volt batteries will be declared operable.

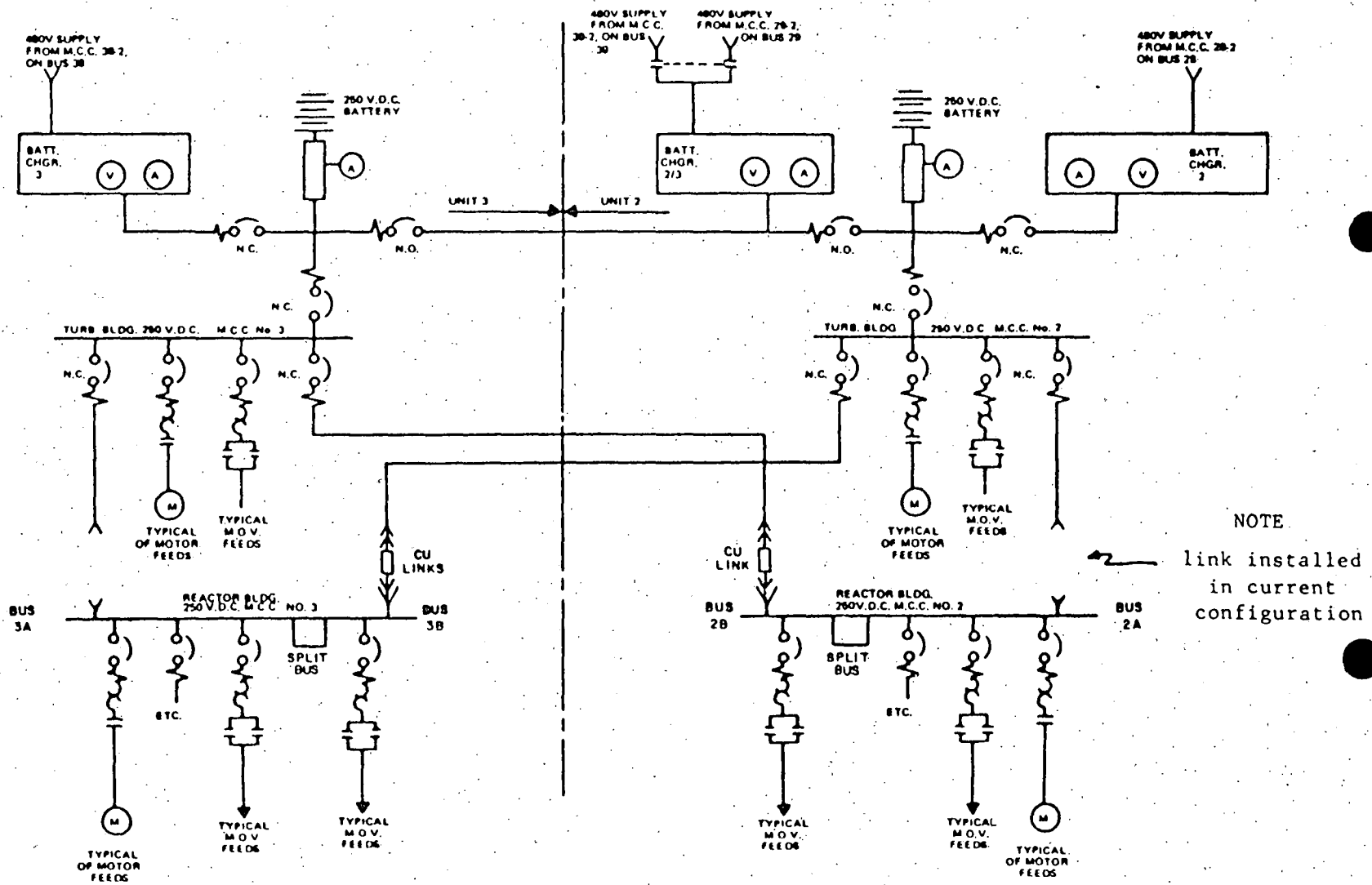


FIGURE 1 250 V DC STATION BATTERY SYSTEM