

NORTHEAST UTILITIES



THE CONNECTICUT LIGHT AND POWER COMPANY
WESTERN MASSACHUSETTS ELECTRIC COMPANY
HOLYOKE WATER POWER COMPANY
NORTHEAST UTILITIES SERVICE COMPANY
NORTHEAST NUCLEAR ENERGY COMPANY

General Offices • Selden Street, Berlin, Connecticut

P.O. BOX 270
HARTFORD, CONNECTICUT 06141-0270
(203) 666-6911

July 2, 1984

Docket No. 50-423
B11255

Director of Nuclear Reactor Regulation
Attn: Mr. B. J. Youngblood, Chief
Licensing Branch No. 1
Division of Licensing
U. S. Nuclear Regulatory Commission
Washington, D. C. 20555

- Reference: (1) B. J. Youngblood letter to W. G. Council, Additional Draft SER Sections for Millstone Nuclear Power Station, Unit No. 3, dated February 24, 1984.
- (2) W. G. Council letter to B. J. Youngblood, Millstone Nuclear Power Station, Unit No. 3, Summary/Submittal of Responses to PSB Electrical Draft SER Items, dated June 12, 1984.

Gentlemen:

Millstone Nuclear Power Station, Unit No. 3
Submittal of Revised Responses to PSB Electrical Draft SER Items

Reference (1) included the PSB Electrical Draft SER write-up which identified several open items with regard to information provided within our OL application.

Reference (2) provided responses to these open items. We are now providing two revised responses as a result of a June 21, 1984 meeting with the NRC. Included in Attachment 1 is a revised response to:

- o Item 220, SER Section 8.3.3.3.14, Separation of Cables at Entry, Exit and Crossing of Raceways.
- o Item 218, Q430.38, SER Section 8.3.3.3.10, Transformers Used as Isolation Devices (note: Only revised pages to the question response are being provided).

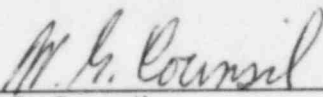
Boo

If you have any questions, please contact our Licensing representative directly.

Very truly yours,

NORTHEAST NUCLEAR ENERGY COMPANY
et. al.

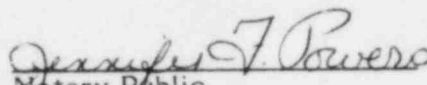
BY NORTHEAST NUCLEAR ENERGY COMPANY
Their Agent



W. G. Counsil
Senior Vice President

STATE OF CONNECTICUT)
) ss. Berlin
COUNTY OF HARTFORD)

Then personally appeared before me W. G. Counsil, who being duly sworn, did state that he is Senior Vice President of Northeast Nuclear Energy Company, an Applicant herein, that he is authorized to execute and file the foregoing information in the name and on behalf of the Applicants herein and that the statements contained in said information are true and correct to the best of his knowledge and belief.



Notary Public

My Commission Expires March 31, 1989

Attachment 1

Millstone Nuclear Power Station, Unit No. 3

Open Items

Power Systems Branch (Electrical)

PSB30 (220)

SEPARATION OF CABLES AT ENTRY, EXIT & CROSSING
OF RACEWAYS (8.3.3.3.14)

In Section 1.8 of amendment 3 of the FSAR, the applicant has indicated with respect to clarification of the guidelines of Regulatory Guide 1.75, that separation at cable entry/exit from cable trays is equivalent to perpendicular cable tray crossing. Further clarification of the separation will be pursued with the applicant and the results will be reported in a supplement to this report.

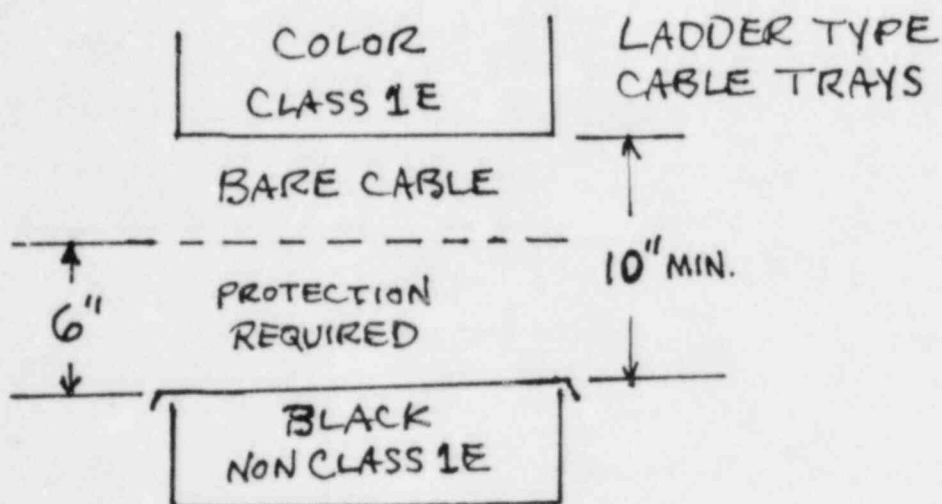
Response:

Refer to revised section 1.8, R. G. 1.75 and new Figure 8.3-8.

MILLSTONE UNIT No. 3
CABLE DROPOUT SEPARATION

BARE CABLES EXITING A CABLE TRAY SHALL REMAIN SIX (6) INCHES OR GREATER ABOVE A COVERED CABLE TRAY BELOW.

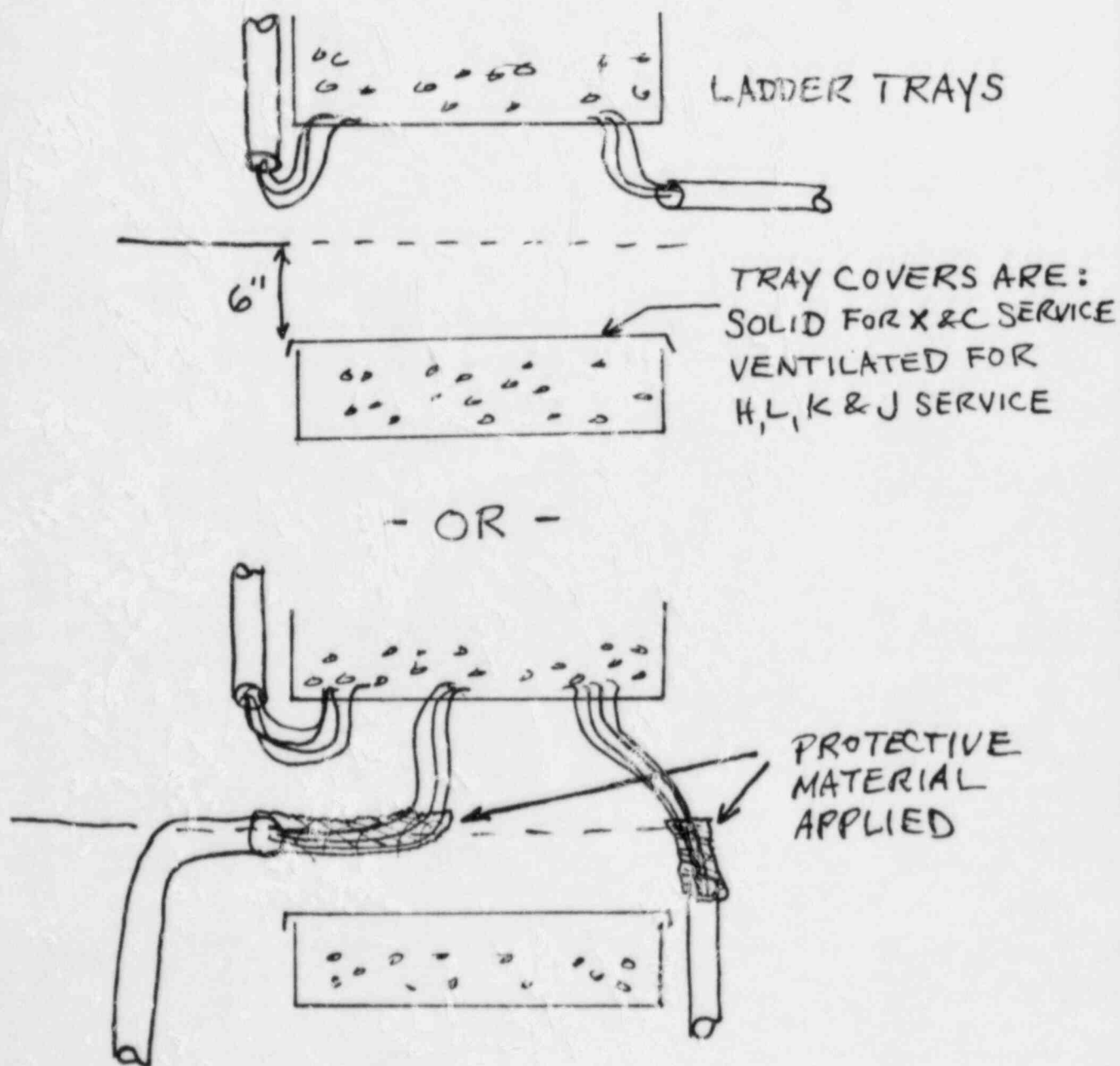
A PROTECTIVE MATERIAL SHALL BE APPLIED TO THAT PORTION OF A CABLE DROPOUT WHICH IS LESS THAN SIX (6) INCHES ABOVE THE TRAY COVER.



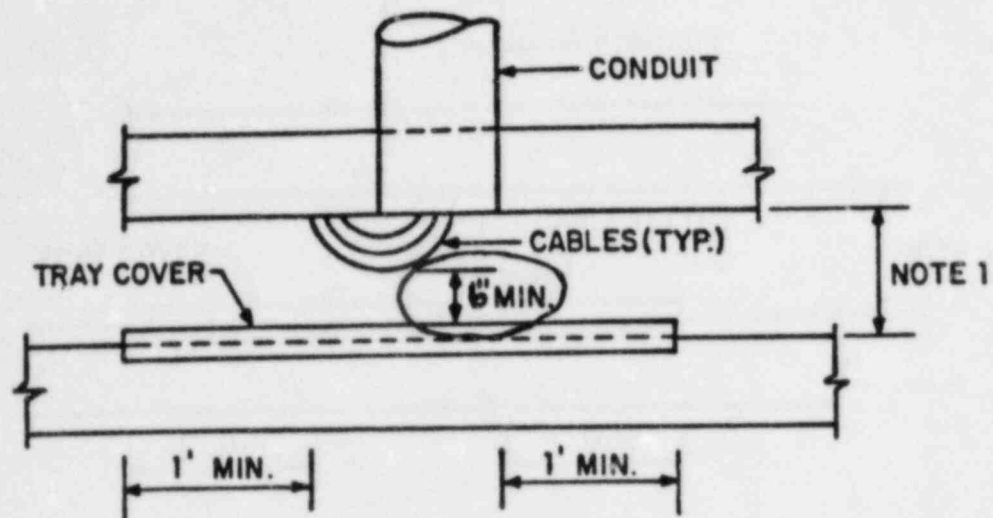
Sheet 1 of 4
Fig. 8.3-8

SKJMC 061484 SH1

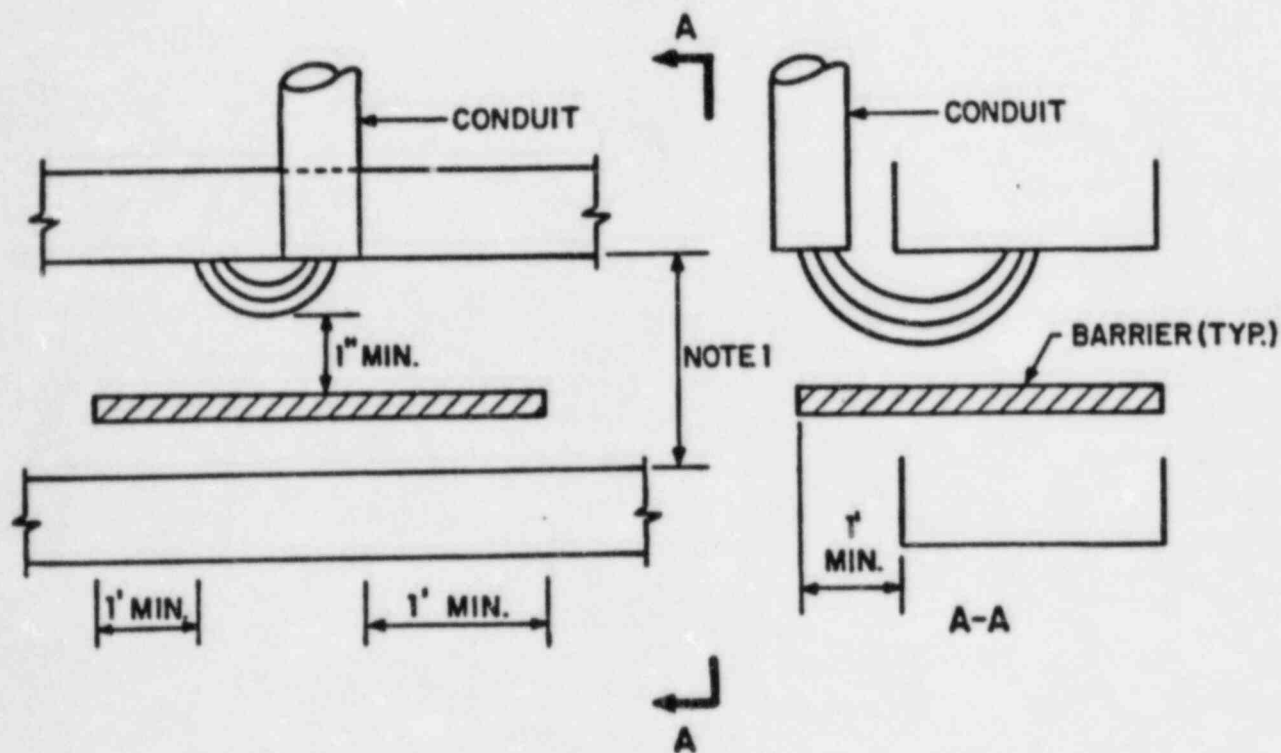
CABLE DROPOUTS FROM CABLE TRAY
 WHERE MINIMUM VERTICAL SEPARATION IS NOT
 MAINTAINED. CLASS 1E (COLOR) TO NONCLASS 1E
 (BLACK) CABLES CROSSING THE OTHER TRAY



Sheet 2 of 4
 Fig. 8.3-8
 8KJME061484 SH2



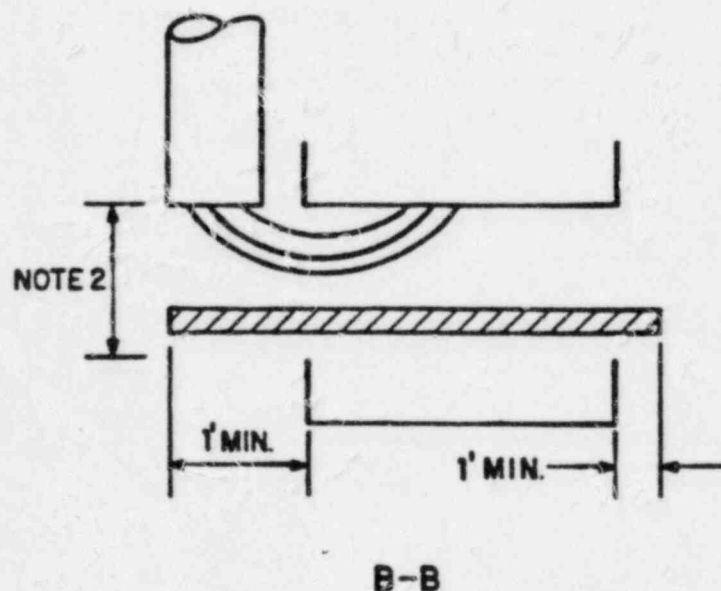
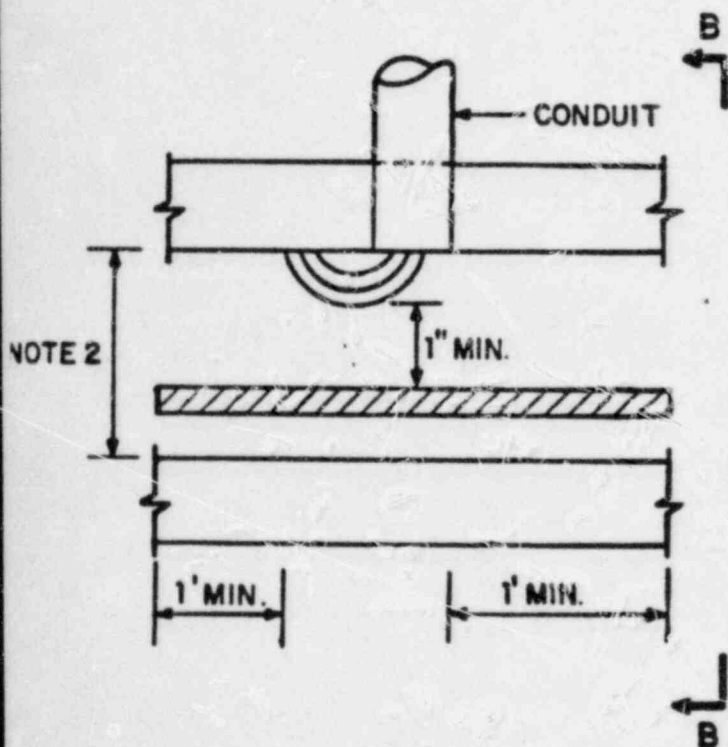
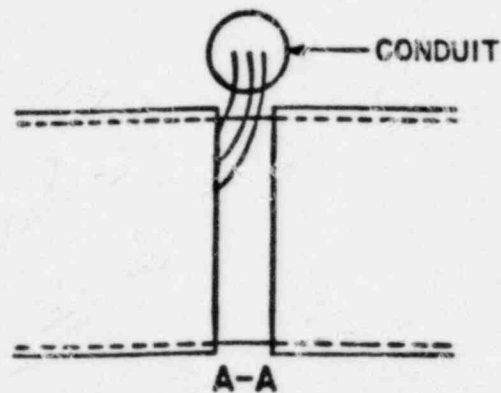
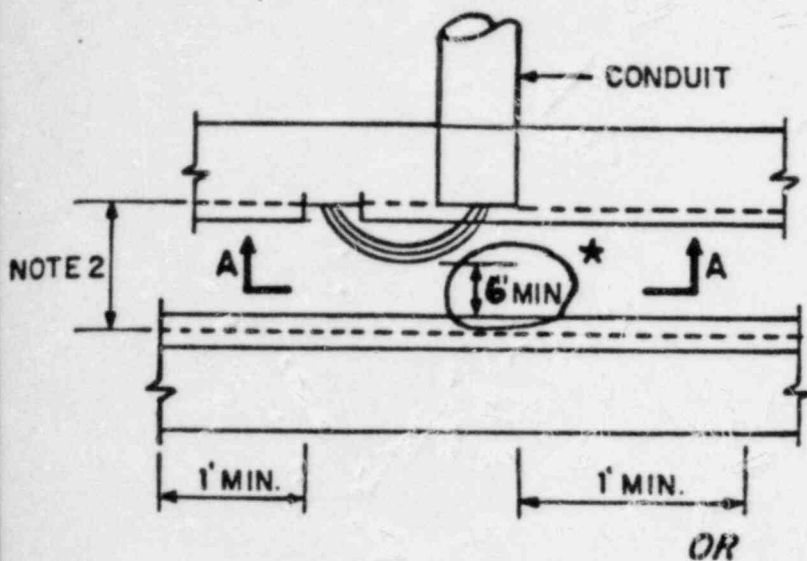
OR



see sheet 4 for
notes

NOTES:
1. MIN.
MAIN
2. LESS
SEPA

Sheet 3 of 4



* For Cable dropouts closer than 6" above the tray cover, refer to SKUMC 061404 Sls 1 & 2

MINIMUM VERTICAL SEPARATION
MAINTAINED BETWEEN TRAYS
HIGHER THAN MINIMUM VERTICAL
SEPARATION BETWEEN TRAYS

Notes: 1. Minimum Vertical
Separation maintained
Between Trays
2. Less than
Minimum Vertical Separation
Between Trays

FIGURE B.3-B Rev 1 6-15-84
CABLE TRAY
CABLE ENTRY/EXIT
MILLSTONE NUCLEAR POWER STATION
UNIT 3
FINAL SAFETY ANALYSIS REPORT
Sheet 4 of 7

Millstone Nuclear Power Station, Unit No. 3

Open Items

Power Systems Branch (Electrical)

PSB28 (218) 430.38 TRANSFORMERS USED AS ISOLATION DEVICES
(8.3.3.3.10)

As indicated in Section 8.3.1.1.2 (item 3) and Figure 8.3-3 of the FSAR, Non-Class IE NSS loads are connected to the Class IE 120V vital ac buses through transformers that are qualified as isolation devices.

By amendment 3 to the FSAR the applicant provided results of tests and design provisions that are being implemented to assure that non-Class IE circuits are sufficiently isolated and will not caused unacceptable influence on any Class IE circuit.

Clarification of these design provisions will be pursued with the applicant and the result of the staff review will be reported in a supplement to this report.

Response:

Refer to the revised response to question no. 430.38.

Question No. Q430.38 (SRP Sections 8.3.1 and 8.3.2)

Non-Class 1E NSSS loads are connected to the Class 1E 120 V vital ac buses through transformers. You have stated that these transformers are qualified as isolation devices. Provide test results and/or analysis that demonstrates that any failure or combination of failures (including hot short) in the non-safety circuits will not cause unacceptable influence on any Class 1E circuits. In addition, provide a description of the non-Class 1E load with respect to its size and the capacity and capability of the Class 1E system to supply the non-Class 1E load.

Response:

Testing was performed to demonstrate the adequacy of the transformers as isolation devices in accordance with the requirements of Regulatory Guide 1.75, Position 1.⁽¹⁾ This testing was performed with the station inverter as the power source for the isolation transformer. A short circuit was applied to the output of the isolation transformer. The failure criteria for this testing was either shutdown of the inverter, or unacceptable deviation from the specified inverter output requirements. The inverter exhibited no unacceptable deviation from required output and did not current-limit or shutdown. These isolation transformers are protected by Class 1E fuses located in the Class 1E 120 V ac vital buses (refer to FSAR Figure 8.3-3). In addition, these isolation transformers are Class 1E and equipped with ac input circuit breakers. As indicated, two series connected and physically separated Class 1E interrupting devices (fuse, circuit breaker) have been provided.

The output circuits of these transformers is run in dedicated conduit up to the non-vital 120 V ac buses. The non-vital bus is equipped with feeder circuit fuses. The output of the isolation transformers is also fused. These features minimize the possibilities of an uncleared fault or hot short from challenging the isolation transformers. In any case, the design features of the isolation transformers, as demonstrated in the above referenced testing, precludes unacceptable influence on the Class 1E system.

The non-Class 1E loads are limited to control and instrument application only and are included in the design of the Class 1E system. The capacity and capability of the Class 1E system is discussed in Sections 8.3.1.1.2 and 8.3.1.1.3.

A field test will be performed to fault 120 V ac black circuits supplied from Class 1E vital ac busses via isolation transformers to demonstrate no adverse affect to Class 1E loads connected to the vital bus busses. A hot short test with a 125 V dc circuit sharing the same "C" cable tray section will also be performed to show acceptable isolation exists to protect Class 1E loads from faults or hot shorts of non-Class 1E circuits.

Note:

1. The test results demonstrating the adequacy of the isolation transformers as isolation devices are contained in the following:
 - a) Notes of Conference, Purchase Order No. 2421.500-608, isolation tests, issue dated January 22, 1982.
 - b) Notes of Conference, Purchase Order No. 2421.500-608, Testing with Inverter, issue date February 2, 1982.
 - c) Power Conversion Products Inc., letter dated September 12, 1982.