

Docket No. 50-213  
B14710

Attachment 2  
Haddam Neck Plant  
Relay Evaluation Report

January 1994

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TRANSMITTAL RECORD

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Company Name

DATE: December 20, 1993

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**RELAY EVALUATION REPORT  
FOR CONNECTICUT YANKEE**

IN RESPONSE TO:

NRC GENERIC LETTER 87-02/USI A-46

VERIFICATION OF SEISMIC ADEQUACY OF MECHANICAL AND ELECTRICAL  
EQUIPMENT IN OPERATING REACTORS

PREPARED FOR:

NORTHEAST UTILITIES SERVICE COMPANY  
P.O. BOX 270  
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|                |              |
|----------------|--------------|
| REPORT NUMBER: | 03-0240-1352 |
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RELAY EVALUATION REPORT FOR CONNECTICUT YANKEE

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## 1.0 INTRODUCTION

Seismic qualification of equipment in operating nuclear plants was identified as a potential safety concern in USNRC Unresolved Safety Issue (USI) A-46, "Seismic Qualification of Equipment in Operating Nuclear Power Plants". The specific NRC plan for demonstrating the seismic adequacy of equipment in operating nuclear plants is presented in NRC Generic Letter 87-02.

As part of the resolution of GL 87-02, it is necessary to perform a relay seismic functionality review. The purpose of this review is to determine if the plant's safe shutdown systems could be adversely affected by relay malfunction in the event of a Safe Shutdown Earthquake (SSE).

Basic technical guidance for this effort was obtained from the Generic Implementation Procedure (GIP) (Reference 5.1) and from the Electric Power Research Institute (EPRI) report EPRI NP-7148-SI (Reference 5.2). The methodology used to perform the relay evaluation is specified in ABB Impell Project Instructions (References 5.3 and 5.4).

## 2.0 SCOPE/METHOD

The process begins with obtaining a list of electrically operated USI A-46 components that require relay reviews from the Safe Shutdown Equipment List (SSEL) database. This list must not only include equipment that must change position or start to perform a safe shutdown function, it also must consider equipment whose inadvertent actuation due to contact chatter may compromise a safe shutdown function or provide misleading indications in the Control Room. This list of equipment will be a subset of the SSEL obtained by sorting the database using the "Evaluation Required" field. Components coded BR, SR and R will be included on the relay review list. The relay review SSEL is included as Attachment A. The subsequent steps are described in the following paragraphs.

Identify and obtain the associated electrical schematics and/or any other applicable drawings that will be required to identify relays associated with the selected electrical component. Review the circuit to identify those portions of the circuit which will affect the operation of the component. In completing the process of identifying associated relays, it may be necessary to review other schematics which contain other relays and contacts which may affect the subject component.

Evaluate the associated relays for each electrically operated component. Identify contacts that are inherently rugged or solid state which are considered not vulnerable to contact chatter and mark an "NV" in the Satisfactory (SAT) column on the relay tabulation sheet. The mechanically actuated limit and torque switches on motor operated valves are considered not seismically vulnerable. Therefore, these contacts were not listed on the relay tabulation sheets. Also identify the normal and required states of the component as indicated on the Relay Review List, and consider the required state of the component for a safe shutdown. Screen those relays whose contact chatter are acceptable; that is, relay chatter does not result in an unacceptable consequence or prevent the affected system from carrying out its required function. These relays are identified with a "CA" in the SAT column. Determine, along with Systems Engineers and Plant Operations, if operator action is an acceptable way of screening out the relay and

mark an "OA" in the SAT column. Add a note to the Relay Tabulation Sheets which will describe what operation action is to be taken. Relays whose SAT column remains blank after this evaluation are classified as "essential" and will have their seismic capacity compared to their seismic demand.

For essential relays, identify relay manufacturer, type and model number and also determine if the relay contact is normally open or normally closed, while de-energized, and if the relay coil is energized or not, by using the associated electrical schematics. Compare the essential relay's manufacturer, type and model number found with those identified in Appendix E of Document EPRI NP-7148-SL. Determine if there are any Seismically Sensitive Relays ("Bad Actors").

Identify the main and control power supplies and electrical distribution equipment for active electrically operated components so that this equipment can be included on the SSEL. When component relay reviews are complete, identify and highlight electrical distribution equipment on single line diagrams by tracing back from the electrical scheme power source to the preferred power supply.

Using the list of essential relays and associated data, identified in the above described process, the Seismic Capacity Engineers compare the capacity to the relays to the seismic demand. The methods used for this step are in accordance with the instructions of Reference 5.4 which requires compliance with Section 6 of the GIP and the referenced EPRI relay reports.

### 3.0 ASSUMPTIONS/LIMITATIONS

In accordance with the relay evaluation methodology outlined in the GIP (Ref. 5.1) and in EPRI NP-7148-SL (Ref. 5.2), the following assumptions were made.

1. Relays/contact devices will be exposed to a 30-second earthquake.
2. Relays/contact devices will not be permanently damaged, with the exception of two specific models: the GE IJD (non IE) and the English Electric YCG, as listed in Appendix E of EPRI NP-7148-SL (Ref. 5.2).
3. "Chatter" is the inadvertent opening or closing of a contact with a sustained output of 2 milliseconds (Ref. 5.2).
4. Relay/contact device failure modes are: a) contact chatter causes inadvertent and undesired equipment actuation, and b) contact chatter causes failure of equipment to actuate as desired.

### 4.0 RESULTS

A total of 1303 contacts were identified as associated relays and are listed in Attachment B.

A total of 453 contacts were identified as essential relays and are listed in Attachment C.

A total of 10 contacts were identified as seismically sensitive relays ("Bad Actors") and are

listed in Attachment D.

The Westinghouse COM-5 overcurrent (50/51) relays are all associated with pump breaker controls. The normally open contacts of the 50/51 relay are in series with the breaker lock-out (86) relay. Chatter of any of the normally open 50/51 contacts when the respective pump is running will energize the 86 relay. Energizing the 86 relays will trip open the breaker, stop the pump, and lock-out the breaker until the 86 relay is manually reset. In all cases, an operator action would be required to restart the pump or make the pump ready to start.

According to EPRI NP-7148-SL, all contacts on the Westinghouse SV (59) relays may chatter. These relay contacts are used in the diesel generator "ready to load" voltage permissive (52X) relay. One contact of the SV relay is in series with the "ready to load" permissive portion of the diesel breaker control circuit. Chattering of these relay contacts may prevent or delay the closing of the diesel generator output breaker.

All essential relays with known make and model and available capacities based on GERS were evaluated. All were shown to have higher capacity than demand. The results of these comparisons are included as Attachment F. Each unique make and model within a particular cabinet is documented on a SEWS; contact with identical make and model are then summarized as acceptable without an individual SEWS for each contact (since the SEWS will all be identical).

A listing and description of outliers is provided in Attachment G. Currently, these include the seismically sensitive relays listed in Attachment D, and relays with unknown make and models or with unknown seismic capacities

## 5.0 REFERENCES

- 5.1 "Generic Implementation Procedure (GIP) for Seismic Qualification of Nuclear Plant Equipment", Revision 2, Corrected February 1992.
- 5.2 EPRI NP-7148-SL, Project 2925-8 Final Report, December, 1990 "Procedure for Evaluating Nuclear Power Plant Relay Seismic Functionality".
- 5.3 ABB Impell Project Instruction 0240-099-002, "Identification of USI A-46 Safe Shutdown Equipment Relays", latest revision.
- 5.4 ABB Impell Project Instruction 0240-099-004, "Verification of Seismic Adequacy of Mechanical and Electrical Equipment at the Haddam Neck Plant", latest revision.
- 5.5 Connecticut Yankee Safe Shutdown Equipment List, Doc. No. 03-0240-1351, Revision 2, December 3, 1993.



**ATTACHMENT A**

**CONNECTICUT YANKEE - RELAY REVIEW SAFE SHUTDOWN  
EQUIPMENT LIST**

(14 Pages)

ATTACHMENT A  
CONNECTICUT YANKEE -RELAY REVIEW  
SAFE SHUTDOWN EQUIPMENT LIST (SSEL)

| TRAIN | EQ CL | EQUIPMENT ID NUMBER | SYSTEM  | EQUIPMENT DESCRIPTION             | 16100-DRAWING NUMBER | BUILDING FLOOR EL ROOM/GRID | EVAL NOTES | NORM STATE REQD STATE EQ FUNCTION | POWER REED. CONTROL PWR | SUPPORTING SYSTEM DRAWINGS | REQUIRED SUPPORT SYSTEMS AND COMPONENTS |
|-------|-------|---------------------|---------|-----------------------------------|----------------------|-----------------------------|------------|-----------------------------------|-------------------------|----------------------------|---|
| 1     | 10    | AC-23-1A            | HVAC    | SWITCHGEAR RM B AIR HANDLING UNIT |                      | SB<br>436"<br>SWGR FL3      | SR         | ON<br>ON<br>ACTIVE                | MCC12-11                |                            |   |
| 1     | 8     | BA-MOV-32           | CVCS    | RWST TO CHARGING PUMPS            | 26018 (4)            | AB<br>156"<br>PP 1A CUB     | SR         | CLOSED<br>OPEN<br>ACTIVE          | MCC5-5                  |                            |   |
| 3     | 8     | BA-MOV-349          | BA      | BAMT TO METERING PUMP             | 26018 (3)            | AB<br>216"<br>2208          | SR         | CLOSED<br>CLOP<br>ACTIVE          | MCC5-5                  |                            |   |
| 10P   | 8     | BA-MOV-373          | CVCS    | RWST TO CHARGING PUMPS            | 26018 (4)            | AB<br>156"<br>PP 1A CUB     | SR         | CLOSED<br>OPEN<br>ACTIVE          | MCC12-11                |                            |   |
| 30P   | 8     | BA-MOV-386          | CVCS    | RWST TO CHARGING PUMPS            | 26018 (3)            | AB<br>216"<br>BOR AC TK     | SR         | CLOSED<br>OPEN<br>ACTIVE          | MCC5-5                  |                            |   |
| 2     |       | BKR 11-3B           | ELEC AC | FEEDER BREAKER TO MCC12-11        | 30001                |                             | R          | CLOSED<br>CLOSED<br>ACTIVE        | DC-BUS-B                | 30008 (2)                  |   |
| 1     |       | BKR 4-3C            | ELEC AC | FEEDER BREAKER TO MCC13-4         | 30001                |                             | R          | CLOSED<br>CLOSED<br>ACTIVE        | DC-BUS-A                | 30008 (1)                  |   |
| 1     |       | BKR 4-4A            | ELEC AC | FEEDER BREAKER TO MCC9-4          | 30001                |                             | R          | CLOSED<br>CLOSED<br>ACTIVE        | DC-BUS-A                | 30008 (1)                  |   |
| 1     |       | BKR 4850            | ELEC AC | FEEDER BREAKER TO T485/BUS 1-5    | 30001                |                             | R          | CLOSED<br>CLOSED<br>ACTIVE        | DC-BUS-A                | 30008 (1)                  |   |
| 1     |       | BKR 4851            | ELEC AC | FEEDER BREAKER TO BUS 1-5         | 30001                |                             | R          | CLOSED<br>CLOSED<br>ACTIVE        | DC-BUS-A                | 30008 (1)                  |   |

CERTIFICATION:

The information identifying the equipment required to bring the plant to a safe shutdown condition on this Safe Shutdown Equipment List (SSEL) is, to the best of my knowledge and belief, correct and accurate. (One or more signatures of Systems or Operations Engineers)

S. Reichle / Technical Manager

12/3/93

Print or Type Name/Title

Signature

Date

Print or Type Name/Title

Signature

Date

ATTACHMENT A  
CONNECTICUT YANKEE -RELAY REVIEW  
SAFE SHUTDOWN EQUIPMENT LIST (SSEL)

| TRAIN | EQ CL | EQUIPMENT ID NUMBER | SYSTEM  | EQUIPMENT DESCRIPTION            | 16103-DRAWING NUMBER | BUILDING FLOOR EL. ROOM/GRID | EVAL NOTES | NORM STATE REQD STATE EQ FUNCTION | POWER REQD. CONTROL PWR | SUPPORTING SYSTEM DRAWINGS | REQUIRED SUPPORT SYSTEMS AND COMPONENTS |
|-------|-------|---------------------|---------|----------------------------------|----------------------|------------------------------|------------|-----------------------------------|-------------------------|----------------------------|---|
| 2     |       | BKR49110            | ELEC AC | FEEDER BREAKER TO T4911/BUS 11   | 30001                |                              | R          | CLOSED<br>CLOSED<br>ACTIVE        | DC-BUS-B                | 30008 (2)                  |   |
| 2     |       | BKR49111            | ELEC AC | FEEDER BREAKER TO BUS 11         | 30001                |                              | R          | CLOSED<br>CLOSED<br>ACTIVE        | DC-BUS-B                | 30008 (2)                  |   |
| 2     |       | BKR4960             | ELEC AC | FEEDER BREAKER TO T496/BUS 1-8   | 30001                |                              | R          | CLOSED<br>CLOSED<br>ACTIVE        | DC-BUS-B                | 30008 (2)                  |   |
| 2     |       | BKR4961             | ELEC AC | FEEDER BREAKER TO BUS 1-8        | 30001                |                              | R          | CLOSED<br>CLOSED<br>ACTIVE        | DC-BUS-BX               | 30008 (1)                  |   |
|       |       | BKR4T5              | ELEC AC | CROSS TIE BREAKER BUS 1-5 TO 1-4 |                      |                              | R          | OPEN<br>CLOP<br>ACTIVE            |                         |                            |   |
| 1     |       | BKR 5-5C            | ELEC AC | FEEDER BREAKER TO MCC10-5        | 30001                |                              | R          | CLOSED<br>CLOSED<br>ACTIVE        | DC-BUS-A                | 30008 (1)                  |   |
| 1     |       | BKR 5-8D            | ELEC AC | FEEDER BREAKER TO MCC-8-5        | 30001                |                              | R          | CLOSED<br>CLOSED<br>ACTIVE        | DC-BUS-A                |                            |   |
| 1     |       | BKR 5-9C            | ELEC AC | FEEDER BREAKER TO MCC5-5         | 30001                |                              | R          | CLOP<br>CLOP<br>ACTIVE            | DC-BUS-A                | 30008 (1)                  |   |
| 2     |       | BKR 6-11C           | ELEC AC | FEEDER BREAKER TO MCC5-8         | 30001                |                              | R          | OP/CL<br>OP/CL<br>ACTIVE          | DC-BUS-BX               | 30008 (1)                  |   |
| 2     |       | BKR 6-12D           | ELEC AC | FEEDER BREAKER TO MCC8-8         | 30001                |                              | R          | CLOSED<br>CLOSED<br>ACTIVE        | DC-BUS-BX               | 30008 (1)                  |   |

CERTIFICATION:

The information identifying the equipment required to bring the plant to a safe shutdown condition on this Safe Shutdown Equipment List (SSEL) is, to the best of my knowledge and belief, correct and accurate. (One or more signatures of Systems or Operations Engineers)

S. Reichle / Technical Manager

12/3/93

Print or Type Name/Title

Signature

Date

Print or Type Name/Title

Signature

Date

ATTACHMENT A  
CONNECTICUT YANKEE -RELAY REVIEW  
SAFE SHUTDOWN EQUIPMENT LIST (SSEL)

| TRAIN | EO CL | EQUIPMENT ID NUMBER | SYSTEM  | EQUIPMENT DESCRIPTION  | 16103-DRAWING NUMBER | BUILDING FLOOR EL. ROOM/GRID | EVAL NOTES | NORM STATE REQD STATE EO FUNCTION | POWER REQD. CONTROL PWR | SUPPORTING SYSTEM DRAWINGS | REQUIRED SUPPORT SYSTEMS AND COMPONENTS |
|-------|-------|---------------------|---------|--|----------------------|------------------------------|------------|-----------------------------------|-------------------------|----------------------------|---|
| 2     |       | BKR 6-14C           | ELEC AC | FEEDER BREAKER TO MCC7-6 & 8-6                                   | 30001                |                              | R          | CLOSED<br>CLOSED<br>ACTIVE        | DC-BUS-BX               | 30008 (1)                  |   |
|       |       | BKR 6T7             | ELEC AC | CROSS TIE BREAKER BUS 1-6 TO 1-7                                 |                      |                              | R          | OPEN<br>CLOP<br>ACTIVE            |                         |                            |   |
| 1     |       | BKR 8-1             | ELEC AC | FEEDER BREAKER FROM EG-2A  | 30001                |                              | R          | OPEN<br>CLOSED<br>ACTIVE          | DC-BUS-A                | 30008 (1)                  |   |
| 2     |       | BKR 9-1             | ELEC AC | FEEDER BREAKER 1 FROM EG-2B                                      | 30001                |                              | R          | OPEN<br>CLOSED<br>ACTIVE          | DC-BUS-B                | 30008 (2)                  |   |
| 3     | 7     | CC-FCV-608          | CCW     | RCP THERMAL BARRIER COOLING SUPPLY                               | 26008 (5)            | AB<br>216"<br>BLOWDOWN       | SR         | OPEN<br>OPEN<br>PASSIVE           |                         |                            |   |
| 3     | 8     | CC-SOV-912          | CCW     | SOLENOID VALVE FOR RCP THERMAL BARRIER COOLING SUPPLY VLV TV-912 | 26008 (5)            |                              | R          |                                   | DCP-1D                  |                            | PASSIVE                                 |
| 3     | 8     | CC-SOV-913          | CCW     | SOLENOID VALVE FOR RCP THERMAL BARRIER COOLING SUPPLY VLV TV-913 | 26008 (5)            |                              | R          |                                   | DCP-1C                  |                            | PASSIVE                                 |
| 1     | 8     | CH-MOV-257          | CVCS    | VCT OUTLET   | 26018 (1)            | AB<br>156"<br>PP 18 CUB      | SR         | OPEN<br>CLOSED<br>ACTIVE          | MCC5-6                  |                            |   |
| 2     | 8     | CH-MOV-257B         | CVCS    | VCT OUTLET   | 26018 (1)            | AB<br>156"<br>PP 18 CUB      | SR         | OPEN<br>CLOSED<br>ACTIVE          | MCC12-11                |                            |   |
| 1     | 8     | CH-MOV-792B         | CVCS    | CHARGING VALVE LOOP 2  | 26018 (6)            | CE<br>16"<br>LP2 LLOA        | SR         | CLOSED<br>CLOSED<br>PASSIVE       | MCC5-6                  |                            |   |

CERTIFICATION:

The information identifying the equipment required to bring the plant to a safe shutdown condition on this Safe Shutdown Equipment List (SSEL) is, to the best of my knowledge and belief, correct and accurate. (One or more signatures of Systems or Operations Engineers)

S. Reichle / Technical Manager

12/3/93

Print or Type Name/Title

Signature

Date

Print or Type Name/Title

Signature

Date

ATTACHMENT A  
CONNECTICUT YANKEE -RELAY REVIEW  
SAFE SHUTDOWN EQUIPMENT LIST (SSEL)

| TRAIN | EQ CL | EQUIPMENT ID NUMBER | SYSTEM | EQUIPMENT DESCRIPTION   | 16103-DRAWING NUMBER | BUILDING FLOOR EL. ROOM/GRID | EVAL NOTES | NORM REQD STATE<br>EQ FUNCTION | POWER REQD. CONTROL PWR | SUPPORTING SYSTEM DRAWINGS | REQUIRED SUPPORT SYSTEMS AND COMPONENTS |
|-------|-------|---------------------|--------|-------------------------|----------------------|------------------------------|------------|--------------------------------|-------------------------|----------------------------|---|
| 1     | 8     | CH-MOV-292C         | CVCS   | CHARGING VALVE LOOP 2   | 26018 (6)            | CE<br>1'6"<br>LP2 LLOA       | SR         | CLOSED<br>CLOSED<br>PASSIVE    | MCC5-5                  |                            |   |
| 1     | 8     | CH-MOV-298          | CVCS   | PZR AUX SPRAY           | 26018 (6)            | CE<br>1'6"<br>LP4 LLOA       | SR         | CLOSED<br>OP/CL<br>ACTIVE      | MCC5-5                  |                            |   |
| 3     | 8     | CH-MOV-311          | CVCS   | RCP SEAL LEAKOFF VALVES | 26018 (5)            | CE<br>16'0"<br>RCP MEZZ      | SR         | OPEN<br>CLOSED<br>ACTIVE       | MCC-5 (4FJ)             |                            |   |
| 3     | 8     | CH-MOV-312          | CVCS   | RCP SEAL LEAKOFF VALVES | 26018 (5)            | CE<br>16'0"<br>RCP MEZZ      | SR         | OPEN<br>CLOSED<br>ACTIVE       | MCC-5 (6FJ)             |                            |   |
| 3     | 8     | CH-MOV-313          | CVCS   | RCP SEAL LEAKOFF VALVES | 26018 (5)            | CE<br>16'0"<br>RCP MEZZ      | SR         | OPEN<br>CLOSED<br>ACTIVE       | MCC-5 (10FJ)            |                            |   |
| 3     | 8     | CH-MOV-314          | CVCS   | RCP SEAL LEAKOFF VALVES | 26018 (5)            | CE<br>16'0"<br>RCP MEZZ      | SR         | OPEN<br>CLOSED<br>ACTIVE       | MCC-5 (12FJ)            |                            |   |
| 1     | 8     | CH-SOV-110-S1       | CVCS   | SOV FOR CH-FCV-110      | 26018 (6)            |                              | BR         |                                | VAC-PNL-D               |                            |   |
|       |       |                     |        |                         |                      |                              |            | ACTIVE                         |                         |                            |   |
| 1     | 8     | CH-SOV-110-S2       | CVCS   | SOV FOR CH-FCV-110      | 26018 (6)            |                              | BR         |                                | SVAC-PNL-1              |                            |   |
|       |       |                     |        |                         |                      |                              |            | ACTIVE                         |                         |                            |   |
| 10P   | 8     | CH-SOV-110A-S1      | CVCS   | SOV FOR CH-FCV-110A     | 26018 (6)            |                              | BR         |                                | VAC-PNL-B               |                            |   |
|       |       |                     |        |                         |                      |                              |            | ACTIVE                         |                         |                            |   |
| 10P   | 8     | CH-SOV-110A-S2      | CVCS   | SOV FOR CH-FCV-110A     | 26018 (6)            |                              | BR         |                                | SVAC-PNL-2              |                            |   |
|       |       |                     |        |                         |                      |                              |            | ACTIVE                         |                         |                            |   |

CERTIFICATION:

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S. Reichle / Technical Manager

12/3/93

Print o: Type Name/Title

Signature

Date

Print or Type Name/Title

Signature

Date

ATTACHMENT A  
CONNECTICUT YANKEE -RELAY REVIEW  
SAFE SHUTDOWN EQUIPMENT LIST (SSEL)

| TRAIN | EQ CL | EQUIPMENT ID NUMBER | SYSTEM | EQUIPMENT DESCRIPTION          | 16103-DRAWING NUMBER | BUILDING FLOOR EL ROOM/GRID | EVAL NCTES | NORM STATE REQD STATE EQ FUNCTION | POWER REQD. CONTROL PWR | SUPPORTING SYSTEM DRAWINGS | REQUIRED SUPPORT SYSTEMS AND COMPONENTS |
|-------|-------|---------------------|--------|--------------------------------|----------------------|-----------------------------|------------|-----------------------------------|-------------------------|----------------------------|---|
| 1     | 8     | CH-SOV-242          | CVCS   | CHARGING PUMP SUCTION TO VCT   | 26018 (1)            | AB<br>15"6"<br>CHG PMP1B    | SR         | OPEN<br>CLOSED<br>ACTIVE          | MCC5-6                  |                            |   |
| 2     | 8     | CH-SOV-242B         | CVCS   | CHARGING PUMP SUCTION TO VCT   | 26018 (1)            | AB<br>15"6"<br>CHG PMP      | SR         | OPEN<br>CLOSED<br>ACTIVE          | MCC12-11                |                            |   |
| 1     | 8     | CH-SOV-278          | CVCS   | CHARGING METERING PUMP SUCTION | 26018 (4)            | AB<br>15"6"<br>MET PMP CUB  | BR         | OPEN<br>OPEN<br>PASSIVE           | SVAC-PNL-1              |                            |   |
| 1     | 8     | DH-MOV-507          | RC     | RCS LOOP #4 DRAIN              | 26007 (2)            | CE<br>1"6"<br>LP4 LL        | R<br>29    | CLOSED<br>CLOSED<br>PASSIVE       | MCC5-6                  |                            |   |
| 1     | 8     | DH-MOV-521          | RC     | RCS LOOP #3 DRAIN              | 26007 (2)            | CE<br>1"6"<br>LP3 LL        | R          | CLOSED<br>CLOSED<br>PASSIVE       | MCC5-6                  |                            |   |
| 1     | 8     | DH-MOV-534          | RC     | RCS LOOP #1 DRAIN              | 26007 (1)            | CE<br>6"0"<br>LP2 AREA      | R          | CLOSED<br>CLOSED<br>PASSIVE       | MCC5-5                  |                            |   |
| 1     | 8     | DH-MOV-544          | RC     | RCS LOOP #2 DRAIN              | 26007 (1)            | CE<br>1"6"<br>LP1 AREA      | R          | CLOSED<br>CLOSED<br>PASSIVE       | MCC5-5                  |                            |   |
| 1     | 8     | DH-MOV-562          | RC     | PRESSURIZER DRAIN              | 26007 (3)            | CE<br>1"6"<br>LP3/4 LL      | R          | CLOSED<br>CLOSED<br>PASSIVE       | MCC5-6                  |                            |   |
| 1     | 17    | EG-2A               | DG     | DIESEL ENGINE                  | 26020 (2)            | DG<br>21"6"<br>A DIESEL     | SR         | OFF<br>ON<br>ACTIVE               | AIR                     |                            | DA SOV-133,-134                         |
| 2     | 17    | EG-2B               | DG     | DIESEL ENGINE                  | 26020 (2)            | DG<br>21"6"<br>B DIESEL     | SR         | OFF<br>ON<br>ACTIVE               | AIR                     |                            | DA SOV-135,-136                         |

CERTIFICATION:

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S. Reichle / Technical Manager

12/3/93

Print or Type Name/Title

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ATTACHMENT A  
CONNECTICUT YANKEE -RELAY REVIEW  
SAFE SHUTDOWN EQUIPMENT LIST (SSEL)

| TRAIN | EQ CL ID NUMBER  | SYSTEM | EQUIPMENT DESCRIPTION                           | 16103 DRAWING NUMBER | BUILDING FLOOR EL ROOM/GRID | EVAL NOTES | NORM STATE            | POWER REOD CONTROL PWR SYSTEM | SUPPORTING SYSTEM DRAWINGS | REQUIRED SUPPORT SYSTEMS AND COMPONENTS |
|-------|------------------|--------|---|----------------------|-----------------------------|------------|-----------------------|-------------------------------|----------------------------|---|
| 2     | 21 F-89-1A       | CVCS   | AUXILIARY LUBE OIL COOLER FOR CVCS PUMP P-18-1A | 26018 (4)            | AB 15'6" CH PP CUBE         | SR         | OFF ON ACTIVE         | MCC-12-11                     |                            |   |
| 20P   | 21 F-89-1B       | CVCS   | AUXILIARY LUBE OIL COOLER FOR CVCS PUMP P-18-1B | 26018 (4)            | AB 15'6" CH PP CUBE         | SR         | OFF ON ACTIVE         | MCC-13-4                      |                            |   |
| 3     | 6 FH-MOV-344     | CVCS   | RCS FILL HEADER FCV BYPASS                      | 26018 (6)            | AB 13'3" PP TR SAM          | R          | CLOSED CLOSED PASSIVE | MCCS-5                        |                            |   |
| 3     | 6 FW-FCV-1301-1  | FW     | FEEDWATER REGULATING VALVE                      | 26013 (9)            | TB 376" S EAST              | SR 2       | OPEN CLOSED ACTIVE    | SVAC-PNL-1                    |                            | SV-1-1, 2-1, 3-1                        |
| 3     | 6 FW-FCV-1301-2  | FW     | FEEDWATER REGULATING VALVE                      | 26013 (9)            | TB 376" S EAST              | SR 2       | OPEN CLOSED ACTIVE    | SVAC-PNL-1                    |                            | SV-1-2, 2-2, 3-2                        |
| 3     | 6 FW-FCV-1301-3  | FW     | FEEDWATER REGULATING VALVE                      | 26013 (9)            | TB 376" S EAST              | SR 2       | OPEN CLOSED ACTIVE    | SVAC-PNL-1                    |                            | SV-1-3, 2-3, 3-3                        |
| 3     | 6 FW-FCV-1301-4  | FW     | FEEDWATER REGULATING VALVE                      | 26013 (9)            | TB 376" S EAST              | SR 2       | OPEN CLOSED ACTIVE    | SVAC-PNL-1                    |                            | SV-1-4, 2-4, 3-4                        |
| 3     | 6 FW-HICV-1301-1 | AFW    | AFW REGULATING VALVE                            | 26013 (9)            | TB 376" S EAST              | SR 1       | CLOSED OPEN ACTIVE    | VAC-PNL-A                     |                            | FW-SOV-1301-1                           |
| 3     | 6 FW-HICV-1301-2 | AFW    | AFW REGULATING VALVE                            | 26013 (9)            | TB 376" S EAST              | SR 1       | CLOSED OPEN ACTIVE    | VAC-PNL-B                     |                            | FW-SOV-1301-2                           |
| 3     | 6 FW-HICV-1301-3 | AFW    | AFW REGULATING VALVE                            | 26013 (9)            | TB 376" S EAST              | SR 1       | CLOSED OPEN ACTIVE    | VAC-PNL-C                     |                            | FW-SOV-1301-3                           |

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12/3/93

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ATTACHMENT A  
CONNECTICUT YANKEE -RELAY REVIEW  
SAFE SHUTDOWN EQUIPMENT LIST (SSEL)

| TRAIN | EQ CL | EQUIPMENT ID NUMBER | SYSTEM | EQUIPMENT DESCRIPTION               | 16103-DRAWING NUMBER | BUILDING FLOOR EL ROOM/GRID | EVAL NOTES | NORM STATE REOD STATE EQ FUNCTION | POWER REOD. CONTROL PWR | SUPPORTING SYSTEM DRAWINGS | REQUIRED SUPPORT SYSTEMS AND COMPONENTS |
|-------|-------|---------------------|--------|-------------------------------------|----------------------|-----------------------------|------------|-----------------------------------|-------------------------|----------------------------|---|
| 3     | 8     | FW-HICV-1301-4      | AFW    | AFW REGULATING VALVE                | 26013 (9)            | TB<br>376"<br>S EAST        | SR<br>1    | CLOSED<br>OPEN<br>ACTIVE          | VAC-PNL-D               |                            | FW-SOV-1301-4                           |
| 2     | 8     | FW-MOV-11           | FW     | FEEDWATER REG BLOCK VALVE           | 26013 (9)            | TB<br>376"<br>4210          | SR         | OPEN<br>CLOSED<br>ACTIVE          | MCC5-5                  |                            |   |
| 2     | 8     | FW-MOV-12           | FW     | FEEDWATER REG BLOCK VALVE           | 26013 (9)            | TB<br>376"<br>4210          | SR         | OPEN<br>CLOSED<br>ACTIVE          | MCC5-5                  |                            |   |
| 2     | 8     | FW-MOV-13           | FW     | FEEDWATER REG BLOCK VALVE           | 26013 (9)            | TB<br>376"<br>4210          | SR         | OPEN<br>CLOSED<br>ACTIVE          | MCC5-6                  |                            |   |
| 2     | 8     | FW-MOV-14           | FW     | FEEDWATER REG BLOCK VALVE           | 26013 (9)            | TB<br>376"<br>4210          | SR         | OPEN<br>CLOSED<br>ACTIVE          | MCC5-6                  |                            |   |
| 1     | 8     | FW-MOV-160          | FW     | AFW PUMP DISCHARGE DIV VALVE        | 26013 (12)           | TT<br>216"<br>TERRY TRB     | R          | OPEN<br>OPEN<br>PASSIVE           | MCC7-6                  |                            |   |
| 3     | 8     | FW-MOV-35           | FW     | AFW PUMP DISCHARGE TO CTMT          | 26013 (12)           | TT<br>216"<br>TERRY TRB     | SR         | CLOSED<br>CLOP<br>ACTIVE          | MCC7-6                  |                            |   |
| 1     |       | N/A HEATER A, PZR   | RCS    | PRESSURIZER HEATERS, BACKUP GROUP A | 26007 (3)            | CE                          | R          | ON/OFF<br>ON<br>ACTIVE            | BUS 4                   |                            |   |
| 1     |       | N/A HEATER B, PZR   | RCS    | PRESSURIZER HEATERS, BACKUP GROUP B | 26007 (3)            | CE                          | R          | ON/OFF<br>ON<br>ACTIVE            | BUS 5                   |                            |   |
| 2     |       | N/A HEATER D, PZR   | RCS    | PRESSURIZER HEATERS, BACKUP GROUP D | 26007 (3)            | CE                          | R          | ON/OFF<br>ON<br>ACTIVE            | BUS 6                   |                            |   |

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S. Reichle / Technical Manager

12/3/93

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ATTACHMENT A  
CONNECTICUT YANKEE -RELAY REVIEW  
SAFE SHUTDOWN EQUIPMENT LIST (SSEL)

| TRAIN | EQ CL | EQUIPMENT ID NUMBER | SYSTEM | EQUIPMENT DESCRIPTION               | 16103-DRAWING NUMBER | BUILDING FLOOR EL ROOM/GRID | EVAL NOTES | NORM STATE REQD STATE EQ FUNCTION | POWER REQD. CONTROL PWR | SUPPORTING SYSTEM DRAWINGS | REQUIRED SUPPORT SYSTEMS AND COMPONENTS |
|-------|-------|---------------------|--------|-------------------------------------|----------------------|-----------------------------|------------|-----------------------------------|-------------------------|----------------------------|---|
| 2     | N/A   | HEATER E, PZR       | RCS    | PRESSURIZER HEATERS, BACKUP GROUP E | 26007 (3)            | CE                          | R          | ON/OFF<br>ON<br>ACTIVE            | BUS 7                   |                            |   |
| 1     | 8     | LD-MOV-200          | RC     | LETDOWN ISOLATION                   | 26018 (6)            | CE<br>167"<br>RCP MEZZ      | SR         | OPEN<br>CLOSED<br>ACTIVE          | MCC5-6                  |                            |   |
| 2     | 8     | LD-SOV-230          | RC     | SOV FOR LD-TV-230                   | 26018 (5)            | CE<br>226"<br>OUT ANNUL     | BR         | OPEN<br>CLOSED<br>ACTIVE          | (Not Req'd)             |                            |   |
| 1     | 8     | MS-TV-1211-1        | MS     | MAIN STEAM TRIP VALVE               | 26012 (1)            | TT<br>596"<br>UL NORTH      | SR         | OPEN<br>CLOSED<br>ACTIVE          | DC-PNL-A                |                            |   |
| 1     | 8     | MS-TV-1211-2        | MS     | MAIN STEAM TRIP VALVE               | 26012 (1)            | TT<br>596"<br>UL NORTH      | SR         | OPEN<br>CLOSED<br>ACTIVE          | DC-PNL-A                |                            |   |
| 1     | 8     | MS-TV-1211-3        | MS     | MAIN STEAM TRIP VALVE               | 26012 (1)            | TT<br>596"<br>UL SOUTH      | SR         | OPEN<br>CLOSED<br>ACTIVE          | DC-PNL-A                |                            |   |
| 1     | 8     | MS-TV-1211-4        | MS     | MAIN STEAM TRIP VALVE               | 26012 (1)            | TT<br>596"<br>UL SOUTH      | SR         | OPEN<br>CLOSED<br>ACTIVE          | DC-PNL-A                |                            |   |
| 2     | 5     | P-10-1A             | CVCS   | CHARGING PUMP AUX L.O. PUMP A       | 26018 (4)            | AB<br>156"<br>A PMP CUB     | BR         | OFF<br>ON<br>ACTIVE               | MCC8-6                  |                            |   |
| ZOP   | 5     | P-10-1B             | CVCS   | CHARGING PUMP AUX L.O. PUMP B       | 26018 (4)            | AB<br>156"<br>B PMP CUB     | BR         | OFF<br>ON<br>ACTIVE               | MCC8-5                  |                            |   |
| 1     | 5     | P-109-1A            | DG     | EDG FUEL OIL TRANSFER PUMP          | 26020 (1)            | DG<br>216"<br>A DIESEL      | SR<br>18   | OFF<br>ON/OFF<br>ACTIVE           | EGG-2A                  |                            |   |

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S. Reichle / Technical Manager

12/3/93

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ATTACHMENT A  
CONNECTICUT YANKEE -RELAY REVIEW  
SAFE SHUTDOWN EQUIPMENT LIST (SSEL)

| TRAIN | EQ CL | EQUIPMENT ID NUMBER | SYSTEM | EQUIPMENT DESCRIPTION           | 16103-DRAWING NUMBER | BUILDING FLOOR EL ROOM/GRID | EVAL NOTES | NORM STATE REQD STATE EQ FUNCTION | POWER REQD CONTROL PWR     | SUPPORTING SYSTEM DRAWINGS | REQUIRED SUPPORT SYSTEMS AND COMPONENTS |
|-------|-------|---------------------|--------|---------------------------------|----------------------|-----------------------------|------------|-----------------------------------|----------------------------|----------------------------|---|
| 2     | 5     | P-109-1B            | DG     | EDG FUEL OIL TRANSFER PUMP      | 26020 (1)            | DG 216" B DIESEL            | SR 18      | OFF ON/OFF ACTIVE                 | EGG-2B                     |                            |   |
| 1     | 5     | P-11-1A             | CVCS   | CHARGING METERING PUMP          | 26018 (4)            | AB 156" MT PP CUB           | SR         | OFF ON ACTIVE                     | BUS 11 DC-BUS-B            | 30008 (2)                  |   |
| 3     | 5     | P-118-1A            | PWS    | RECYCLED PRIMARY WTR TRANS PUMP | 26046 (1)            | AB 216" LWLVL SEC           | SR         | OFF ON/OFF ACTIVE                 | MCC9-4                     |                            |   |
| 3OP   | 5     | P-118-1B            | PWS    | RECYCLED PRIMARY WTR TRANS PUMP | 26046 (1)            | AB 216" LWLVL SEC           | SR         | OFF ON/OFF ACTIVE                 | MCC10-5                    |                            |   |
| 1     | 5     | P-13-1A             | CC     | COMPONENT COOLING PUMP          | 26008 (3)            | AB 216" WEST HALL           | SR 24      | ON/OFF ON ACTIVE                  | BUS 1-4 DC-BUS-A DC-PNL-A  | 30008 (1)                  |   |
| 1     | 5     | P-13-1B             | CC     | COMPONENT COOLING PUMP          | 26008 (3)            | AB 216" WEST HALL           | SR 24      | ON/OFF ON ACTIVE                  | BUS 1-6 DC-BUS-BX DC-PNL-B | 30008 (1)                  |   |
| 1     | 5     | P-13-1C             | CC     | COMPONENT COOLING PUMP          | 26008 (3)            | AB 216" WEST HALL           | SR 24      | ON/OFF ON ACTIVE                  | BUS 11 DC-BUS-B            | 30008 (1)                  |   |
| 2     | 5     | P-149-1A            | CVCS   | CHARGING PUMP MAIN L.O. PUMP    | 26018 (4)            | AB 156" CH PP CUB           | BR         | OFF OFF/ON ACTIVE                 | MCC5-6                     |                            |   |
| 2OP   | 5     | P-149-1B            | CVCS   | CHARGING PUMP MAIN L.O. PUMP    | 26018 (4)            | AB 156" CH PP CUB           | BR         | OFF OFF/ON ACTIVE                 | MCC5-6                     |                            |   |
| 2     | 5     | P-18-1A             | CVCS   | CHARGING PUMP                   | 26018 (4)            | AB 156" CH PP CUB           | SR 6       | OFF/OFF/ON OFF/ON ACTIVE          | BUS 9 DC-BUS-B             | 30008 (2)                  | P-149-1A, P-10-1A                       |

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12/3/93

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ATTACHMENT A  
CONNECTICUT YANKEE RELAY REVIEW  
SAFE SHUTDOWN EQUIPMENT LIST (SSEL)

| TRAIN | EQ CL | EQUIPMENT ID NUMBER | SYSTEM | EQUIPMENT DESCRIPTION   | 16103-DRAWING NUMBER | BUILDING FLOOR EL ROOM/GRID | EVAL NOTES | NORM STATE REEQD STATE EQ FUNCTION | POWER REQD. CONTROL PWR | SUPPORTING SYSTEM DRAWINGS | REQUIRED SUPPORT SYSTEMS AND COMPONENTS |
|-------|-------|---------------------|--------|-------------------------|----------------------|-----------------------------|------------|------------------------------------|-------------------------|----------------------------|---|
| 20P   | 5     | P-18-1B             | CVCS   | CHARGING PUMP           | 26018 (4)            | AB<br>15'6"<br>CH PP CUB    | SR<br>6    | OFF/ON<br>OFF/ON<br>ACTIVE         | BUS 8<br>DC-BUS-A       | 30008 (1)                  | P-149-1B, P-10-1B                       |
| 3     | 5     | P-29-1A             | PWS    | PW TRANSFER PUMP        | 26046 (1)            | AB<br>21'6"<br>LL SE COR    | SR         | OFF<br>OFF/ON<br>ACTIVE            | MCC8-5                  |                            |   |
| 30P   | 5     | P-29-1B             | PWS    | PW TRANSFER PUMP        | 26046 (1)            | AB<br>21'6"<br>LL SE COR    | SR         | OFF<br>OFF/ON<br>ACTIVE            | MCC8-6                  |                            |   |
| 1     | 6     | P-37-1A             | SW     | SERVICE WATER PUMP      | 26014 (2)            | CW<br>8'0"<br>LL-7102       | SR         | OFF/ON<br>ON<br>ACTIVE             | BUS 1-4<br>DC-BUS-A     |                            |   |
| 1     | 6     | P-37-1B             | SW     | SERVICE WATER PUMP      | 26014 (2)            | CW<br>8'-0"<br>LL-7102      | SR         | OFF/ON<br>ON<br>ACTIVE             | BUS 1-5<br>DC-BUS-A     |                            |   |
| 2     | 6     | P-37-1C             | SW     | SERVICE WATER PUMP      | 26014 (2)            | CW<br>8'-0"<br>LL-7104      | SR         | OFF/ON<br>ON<br>ACTIVE             | BUS 1-6<br>DC-BUS-B     |                            |   |
| 2     | 6     | P-37-1D             | SW     | SERVICE WATER PUMP      | 26014 (2)            | CW<br>8'-0"<br>LL-7104      | SR         | OFF/ON<br>ON<br>ACTIVE             | BUS 11<br>DC-BUS-B      |                            |   |
| 2     | 6     | P-4-1A              | FP     | ELEC DRIVEN FIRE PMP    | 26056 (1)            | CW<br>21'6"<br>UL NW        | SR         | OFF<br>ON<br>ACTIVE                | BUS 1-4<br>DC-BUS-A     |                            |   |
| 1     | 6     | P-5-1A              | FP     | DIESEL DRIVEN FIRE PUMP | 26056 (1)            | CW<br>21'6"<br>UL SOUTH     | SR         | OFF<br>ON<br>ACTIVE                |                         |                            |   |
| 1     | 8     | PR-AOV-573          | RC     | PRESSURIZER SPRAY VALVE | 26007 (3)            |                             | R          | OPEN<br>CLOSED<br>ACTIVE           |                         |                            |   |

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ATTACHMENT A  
CONNECTICUT YANKEE -RELAY REVIEW  
SAFE SHUTDOWN EQUIPMENT LIST (SSEL)

| TRAIN | EQ CL | EQUIPMENT ID NUMBER | SYSTEM | EQUIPMENT DESCRIPTION       | 16103-DRAWING NUMBER | BUILDING FLOOR EL ROOM/GRID | EVAL NOTES | NORM STATE REQD STATE EQ FUNCTION | POWER REQD. CONTROL PWR | SUPPORTING SYSTEM DRAWINGS | REQUIRED SUPPORT SYSTEMS AND COMPONENTS |
|-------|-------|---------------------|--------|-----------------------------|----------------------|-----------------------------|------------|-----------------------------------|-------------------------|----------------------------|---|
| 1     | 8     | PR-AOV-574          | RC     | PRESSURIZER SPRAY VALVE     | 26007 (3)            |                             | R          | OPEN<br>CLOSED<br>ACTIVE          |                         |                            |   |
| 1     | 8     | PR-MOV-567          | RC     | PZR PORV BLOCK VALVE        | 26007 (3)            | CE<br>486"<br>CHG FLR       | R          | CLOSED<br>CLOSED<br>PASSIVE       | MCC5-5                  |                            |   |
| 2     | 8     | PR-MOV-567          | RC     | PZR PORV BLOCK VALVE        | 26007 (3)            | CE<br>486"<br>CHG FLR       | SR         | CLOSED<br>OPEN<br>ACTIVE          | MCC5-5                  |                            |   |
| 1     | 8     | PR-MOV-569          | RC     | PZR PORV BLOCK VALVE        | 26007 (3)            | CE<br>486"<br>PRESS TOP     | R          | CLOSED<br>CLOSED<br>PASSIVE       | MCC5-6                  |                            |   |
| 2     | 8     | PR-MOV-569          | RC     | PZR PORV BLOCK VALVE        | 26007 (3)            | CE<br>486"<br>PRESS TOP     | SR         | CLOSED<br>OPEN<br>ACTIVE          | MCC5-6                  |                            |   |
| 1     | 8     | PR-MOV-596          | RC     | LTOP RELIEF ISOLATION       | 26007 (3)            | CE<br>486"<br>PRESS TOP     | R<br>7     | CLOSED<br>CLOSED<br>PASSIVE       | MCC5-6                  |                            |   |
| 1     | 8     | PR-MOV-597          | RC     | LTOP RELIEF ISOLATION       | 26007 (3)            | CE<br>486"<br>PRESS TOP     | R<br>7     | CLOSED<br>CLOSED<br>PASSIVE       | MCC5-5                  |                            |   |
| 2     | 8     | PR-SOV-568          | RC     | SOV FOR PR-AOV-568          | 26007 (3)            |                             | BR         | CLOSED<br>OP/CL<br>ACTIVE         | SVAC-PNL-2              |                            |   |
| 2     | 8     | PR-SOV-570          | RC     | SOV FOR PR-AOV-570          | 26007 (3)            |                             | BR         | CLOSED<br>OP/CL<br>ACTIVE         | SVAC-PNL-2              |                            |   |
| 3     | 8     | RC-MOV-501          | RC     | RC LOOP 4 HOT LEG ISOLATION | 26007 (2)            |                             | R          | OPEN<br>OPEN<br>PASSIVE           | MCC5-6                  |                            |   |

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ATTACHMENT A  
CONNECTICUT YANKEE -RELAY REVIEW  
SAFE SHUTDOWN EQUIPMENT LIST (SSEL)

| TRAIN | EQ CL | EQUIPMENT ID NUMBER | SYSTEM | EQUIPMENT DESCRIPTION        | 16103-DRAWING NUMBER | BUILDING FLOOR EL. ROOM/GRID | EVAL NOTES | NORM STATE REQD STATE EQ FUNCTION | POWER REQD. CONTROL PWR | SUPPORTING SYSTEM DRAWINGS | REQUIRED SUPPORT SYSTEMS AND COMPONENTS |
|-------|-------|---------------------|--------|------------------------------|----------------------|------------------------------|------------|-----------------------------------|-------------------------|----------------------------|---|
| 3     | 8     | RC-MOV-512          | RC     | RC LOOP 4 COLD LEG ISOLATION | 26007 (2)            |                              | R          | OPEN<br>OPEN<br>PASSIVE           |                         |                            | MCC5-5                                  |
| 3     | 8     | RC-MOV-513          | RC     | RC LOOP 3 HOT LEG ISOLATION  | 26007 (2)            |                              | R          | OPEN<br>OPEN<br>PASSIVE           |                         |                            | MCC5-6                                  |
| 3     | 8     | RC-MOV-524          | RC     | RC LOOP 3 COLD LEG ISOLATION | 26007 (2)            |                              | R          | OPEN<br>OPEN<br>PASSIVE           |                         |                            | MCC5-6                                  |
| 3     | 8     | RC-MOV-528          | RC     | RC LOOP 2 HOT LEG ISOLATION  | 26007 (1)            |                              | R          | OPEN<br>OPEN<br>PASSIVE           |                         |                            | MCC5-5                                  |
| 3     | 8     | RC-MOV-537          | RC     | RC LOOP 2 COLD LEG ISOLATION | 26007 (1)            |                              | R          | OPEN<br>OPEN<br>PASSIVE           |                         |                            | MCC5-5                                  |
| 3     | 8     | RC-MOV-538          | RC     | RC LOOP 1 HOT LEG ISOLATION  | 26007 (1)            |                              | R          | OPEN<br>OPEN<br>PASSIVE           |                         |                            | MCC5-5                                  |
| 3     | 8     | RC-MOV-546          | RC     | RC LOOP 1 COLD LEG ISOLATION | 26007 (1)            |                              | R          | OPEN<br>OPEN<br>PASSIVE           |                         |                            | MCC5-5                                  |
| 3     | 8     | SI-MOV-24           | SI     | RWST OUTLET ISOLATION        | 26010 (1)            | YD<br>24B*<br>YD-RWST        | R<br>3     | OPEN<br>OPEN<br>PASSIVE           |                         |                            | MCC5-5                                  |
| 1     | 8     | SW-MOV-1            | SW     | EAST SW HEADER SUPPLY        | 26014 (2)            | TB<br>21B*<br>NO EAST        | SR         | OPEN<br>CLOSED<br>ACTIVE          |                         |                            | MCC5-5                                  |
| 1     | 8     | SW-MOV-2            | SW     | WEST SW HEADER SUPPLY        | 23014 (2)            | TB<br>21B*<br>NO EAST        | SR         | OPEN<br>CLOSED<br>ACTIVE          |                         |                            | MCC5-5                                  |

CERTIFICATION:

The information identifying the equipment required to bring the plant to a safe shutdown condition on this Safe Shutdown Equipment List (SSEL) is, to the best of my knowledge and belief, correct and accurate. (One or more signatures of Systems or Operations Engineers)

S. Reichle / Technical Manager

12/3/93

Print or Type Name/Title

Signature

Date

Print or Type Name/Title

Signature

Date

ATTACHMENT A  
CONNECTICUT YANKEE -RELAY REVIEW  
SAFE SHUTDOWN EQUIPMENT LIST (SSEL)

| TRAIN | EQ CL | EQUIPMENT ID NUMBER | SYSTEM | EQUIPMENT DESCRIPTION          | 16103-DRAWING NUMBER | BUILDING FLOOR EL ROOM/GRID | EVAL NOTES | NORM STATE RECD STATE EQ FUNCTION | POWER REQD. CONTROL PWR           | SUPPORTING SYSTEM DRAWINGS | REQUIRED SUPPORT SYSTEMS AND COMPONENTS |
|-------|-------|---------------------|--------|--------------------------------|----------------------|-----------------------------|------------|-----------------------------------|-----------------------------------|----------------------------|---|
| 3     | 8     | SW-MOV-3            | SW     | COMPONENT COOLING Hx 1A OUTLET | 26014 (5)            | AB<br>21'6"<br>LL CC Hx     | SR<br>16   | OPEN<br>OP/CL<br>ACTIVE           | MCC5-6                            |                            |   |
| 3     | 8     | SW-MOV-4            | SW     | COMPONENT COOLING Hx 1B OUTLET | 26014 (5)            | AB<br>21'6"<br>LL CC Hx     | SR<br>16   | OPEN<br>OP/CL<br>ACTIVE           | MCC5-6                            |                            |   |
| 2     | 8     | SW-MOV-5            | SW     | SW SUPPLY TO 1A RHR Hx         | 26014 (6)            | AB<br>21'6"<br>AB           | SR<br>16   | CLOSED<br>OP/CL<br>ACTIVE         | MCC5-5                            |                            |   |
| 1     | 8     | SW-MOV-6            | SW     | SW SUPPLY TO 1B RHR Hx         | 26014 (6)            | AB<br>21'6"<br>AB           | SR<br>16   | CLOSED<br>OP/CL<br>ACTIVE         | MCC5-6                            |                            |   |
| 2     | 8     | SW-MOV-837A         | SW     | ADAMS FILTER 1A BYPASS         | 26014 (6)            | AB<br>35'6"<br>SE PAB       | R<br>21    | CLOSED<br>CLOSED<br>PASSIVE       | MCC12-11                          |                            |   |
| 1     | 8     | SW-MOV-837B         | SW     | ADAMS FILTER 1B BYPASS         | 26014 (6)            | AB<br>35'6"<br>SE PAB       | R<br>21    | CLOSED<br>CLOSED<br>PASSIVE       | MCC13-4                           |                            |   |
| 1     | 8     | SW-SOV-129          | SW     | SOV FOR SW-FCV-129             | 26014 (8)            | DG<br>21'6"<br>A DIESEL     | BR         | OPEN<br>CLOSED<br>ACTIVE          | LP-D1                             |                            |   |
| 2     | 8     | SW-SOV-130          | SW     | SOV FOR SW-FCV-130             | 26014 (8)            | DG<br>21'6"<br>B DIESEL     | BR         | OPEN<br>CLOSED<br>ACTIVE          | LP-D2                             |                            |   |
| 1     | 8     | SW-SOV-2210         | SW     | SOV FOR SW-TV-2210             | 26014 (5)            | AB<br>35'6"<br>2ND FLOOR    | BR         | OPEN<br>CLOSED<br>ACTIVE          | VAC-PNL-A<br>DC-PNL-A<br>DC-PNL-B | 32001 (5E)                 |   |
| 1     | 8     | SW-SOV-2365A        | SW     | CONTROL VALVE FOR SW-TV-2365A  | 26014 (5)            | AB                          | R          | ACTIVE                            |                                   |                            |   |

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S. Reichle / Technical Manager

12/3/93

Print or Type Name/Title

Signature

Date

Print or Type Name/Title

Signature

Date

PAGE No. 14  
DATE 12/6/93

ATTACHMENT A  
CONNECTICUT YANKEE -RELAY REVIEW  
SAFE SHUTDOWN EQUIPMENT LIST (SSEL)

REPORT 03-0240-1351  
REVISION 2

| TRAIN | EQ CL | EQUIPMENT ID NUMBER | SYSTEM | EQUIPMENT DESCRIPTION         | 16103-DRAWING NUMBER | BUILDING FLOOR EL ROOM/GRID | EVAL NOTES | NORM STATE REQD STATE EQ FUNCTION | POWER REQD. CONTROL PWR | SUPPORTING SYSTEM DRAWINGS | REQUIRED SUPPORT SYSTEMS AND COMPONENTS |
|-------|-------|---------------------|--------|-------------------------------|----------------------|-----------------------------|------------|-----------------------------------|-------------------------|----------------------------|---|
| 1     | 8     | SW-SOV-2365B        | SW     | CONTROL VALVE FOR SW-TV-2365B | 26014 (5)            | AB                          | R          |                                   |                         |                            |   |
|       |       |                     |        |                               |                      |                             |            | ACTIVE                            |                         |                            |   |
| 2     | 8     | SW-SOV-606          | SW     | SOV FOR SW-PCV-606            | 26014 (1)            | CW                          | BR         | OP/CL<br>CLOSED<br>PASSIVE        |                         |                            |   |

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S. Reichle / Technical Manager

12/3/93

Print or Type Name/Title

Signature

Date

Print or Type Name/Title

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Date

**ATTACHMENT C**

**CONNECTICUT YANKEE -  
RELAY SCREENING AND EVALAUTION TABULATION  
"ESSENTIAL RELAYS"**

(99 Pages)



ATTACHMENT C - CONNECTICUT YANKEE  
 RELAY SCREENING AND EVALUATION TABULATION  
 DOCUMENT NO. 0240-099-001  
 "ESSENTIAL RELAYS"

PAGE 1  
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Equipment ID No. : BA-MOV-32

| Relay Mfg. & Type | Relay Model No. | Contact | ENERG<br>Y/N | NO/NC | Ref. Drawings(s) | Panel | Bldg. | Elev. SAT. * |
|-------------------|-----------------|---------|--------------|-------|------------------|-------|-------|--------------|
| W                 | A211K1JA        | 42/C    |              |       | 32112 SH 28EE    | MCC-5 | SB    | 41'6"        |
| W                 | AA13A J         | 49      |              |       | 32112 SH 28EE    | MCC-5 | SB    | 41'6"        |

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- OA - Operator action.
- - No entry necessary.

Prepared by: Joseph M. Pescatore Date: 12/7/93

Reviewed by: James J. Buckley Date: 12/7/93

ATTACHMENT C - CONNECTICUT YANKEE  
 RELAY SCREENING AND EVALUATION TABULATION  
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 "ESSENTIAL RELAYS"

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Equipment ID No. : BA-MOV-349

| Relay Mfg. & Type | Relay Model No. | Contact | ENERG<br>Y/N | NO/NC | Ref. Drawings(s) | Panel | Bldg. | Elev. SAT. * |
|-------------------|-----------------|---------|--------------|-------|------------------|-------|-------|--------------|
| <u>W</u>          | A211K1JA        | 42/O    |              |       | 32112 SH 28AA    | MCC-5 | SB    | 41'6"        |

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Reviewed by: James J. Buckley Date: 12/7/93

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Equipment ID No. : BA-MOV-373

| Relay Mfg. & Type | Relay Model No. | Contact | ENERG<br>Y/N | NO/NC | Ref. Drawings(s) | Panel  | Bldg. | Elev. SAT. * |
|-------------------|-----------------|---------|--------------|-------|------------------|--------|-------|--------------|
| W                 | A211K1JA        | 42/C    |              |       | 32112 SH 29P     | MCC-12 | SB    | 41'6"        |
| W                 | A211K1JA        | 42/O    |              |       | 32112 SH 29P     | MCC-12 | SB    | 41'6"        |
| W                 | AA13A J         | 49      |              |       | 32112 SH 29P     | MCC-12 | SB    | 41'6"        |

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Equipment ID No. : BA-MOV-386

| Relay Mfg. & Type | Relay Model No. | Contact | ENERG<br>Y/N | NO/NC | Ref. Drawings(s) | Panel | Bldg. | Elev. SAT. * |
|-------------------|-----------------|---------|--------------|-------|------------------|-------|-------|--------------|
| W                 | A211K1JA        | 42/C    |              |       | 32112 SH 28CC    | MCC-5 | SB    | 41'6"        |
| W                 | A211K1JA        | 42/O    |              |       | 32112 SH 28CC    | MCC-5 | SB    | 41'6"        |
| W                 | AA13A J         | 49      |              |       | 32112 SH 28CC    | MCC-5 | SB    | 41'6"        |

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Equipment ID No. : BKR 4850

| Relay Mfg. & Type | Relay Model No. | Contact | ENERG<br>Y/N | NO/NC | Ref. Drawings(s) | Panel | Bldg. | Elev. SAT. * |
|-------------------|-----------------|---------|--------------|-------|------------------|-------|-------|--------------|
| <u>W</u> CO-8     | 1875276A        | 50/51   | NO           | NO    | 32001 SH 5Q      | BUS 8 | DG    | 216*         |

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Prepared by: Joseph M. Pescatore Date: 12/7/93  
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ATTACHMENT - CONNECTICUT YANKEE  
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Equipment ID No. : BKR 49110

| Relay Mfg. & Type | Relay Model No. | Contact | ENERG<br>Y/N | NO/NC | Ref. Drawings(s) | Panel | Bldg. | Elev. SAT. * |
|-------------------|-----------------|---------|--------------|-------|------------------|-------|-------|--------------|
| W CO-8            | 1456C05R21      | 50/51   | NO           | NO    | 32001 SH 50B     | BUS 9 | DG    | 21'6"        |

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Equipment ID No. : BKR 4960

| Relay Mfg. & Type | Relay Model No. | Contact | ENERG<br>Y/N | NO/NC | Ref. Drawings(s) | Panel | Bldg. | Elev. SAT. * |
|-------------------|-----------------|---------|--------------|-------|------------------|-------|-------|--------------|
| W CO-8            | 1875276A        | 50/51   | NO           | NO    | 32001 SH 50A     | BUS 9 | DG    | 21'6"        |

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Equipment ID No. : BKR 4T5

| Relay Mfg. & Type | Relay Model No. | Contact | ENERG<br>Y/N | NO/NC | Ref. Drawings(s) | Panel   | Bldg. | Elev. SAT. * |
|-------------------|-----------------|---------|--------------|-------|------------------|---------|-------|--------------|
|                   |                 | 52X     | NO           | NO    | 32001 SH 6AK     | BUS 1-5 | SB    | 41'6"        |

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ATTACHMENT C - CONNECTICUT YANKEE  
 RELAY SCREENING AND EVALUATION TABULATION  
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 "ESSENTIAL RELAYS"

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Equipment ID No. : BKR 5-8D

| Relay Mfg. & Type | Relay Model No. | Contact              | ENERG<br>Y/N | NO/NC | Ref. Drawings(s) | Panel    | Bldg. | Elev. SAT. * |
|-------------------|-----------------|----------------------|--------------|-------|------------------|----------|-------|--------------|
| W CV-7            |                 | # 27-5               | YES          | NC    | 32001 SH 6J      | AB/4     | SB    | 59'6"        |
| 12 MG-6           |                 | # 27X-5              | NO           | NO    | 32001 SH 6G      | BUS 1-5  | SB    | 41'6"        |
| SG                | Ser. # 1342925A | # 27X1-5             | NO           | NO    | 32001 SH 6J      | AB/4     | SB    | 59'6"        |
| GE - HFA          | 12HFA151A2H     | # 94LS/1-8 (Note 13) | NO           | NO    | 32001 SH 6J      | CB/8DB1A | SB    | 59'6"        |

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Reviewed by: James J. Buckley Date: 12/7/93

ATTACHMENT C - CONNECTICUT YANKEE  
 RELAY SCREENING AND EVALUATION TABULATION

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Equipment ID No. : BKR 5-9C

DOCUMENT NO. 0240-099-001

"ESSENTIAL RELAYS"

| Relay Mfg. & Type | Relay Model No. | Contact | ENERG<br>Y/N | NO/NC | Ref. Drawings(s) | Panel   | Bldg. | Elev. SAT. * |
|-------------------|-----------------|---------|--------------|-------|------------------|---------|-------|--------------|
| W MG-6            | 289B363A11      | 52X     | NO           | NO    | 32001 SH 6AP     | BUS 1-5 | SB    | 41'6"        |
| AGA E7000         | E7022           | # 62-5A | YES          | NC    | 32001 SH 6AP     | BUS 1-5 | SB    | 41'6"        |
| AGA E7000         | E7012           | 62-5B   | YES          | NO    | 32001 SH 6AP     | BUS 1-5 | SB    | 41'6"        |

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Reviewed by: James J. Buckley Date: 12/7/93

ATTACHMENT C - CONNECTICUT YANKEE  
 RELAY SCREENING AND EVALUATION TABULATION  
 DOCUMENT NO. 0240-099-001  
 "ESSENTIAL RELAYS"

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Equipment ID No. : BKR 6-11C

| Relay Mfg. & Type | Relay Model No. | Contact | ENERG<br>Y/N | NO/NC | Ref. Drawings(s) | Panel   | Bldg. | Elev. SAT. * |
|-------------------|-----------------|---------|--------------|-------|------------------|---------|-------|--------------|
| <u>W</u> MG-6     | 289B363A11      | 52X     | NO           | NO    | 32001 SH 6AQ     | BUS 1-6 | SB    | 41'6"        |
| AGA E7000         | E7022           | # 62-5A | NO           | NO    | 32001 SH 6AQ     | BUS 1-5 | SB    | 41'6"        |
| AGA E7000         | E7022           | # 62-6A | YES          | NO/NC | 32001 SH 6AQ     | BUS 1-5 | SB    | 41'6"        |

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Prepared by: Joseph M. Pescatore Date: 12/7/93

Reviewed by: James J. Buckley Date: 12/7/93

ATTACHMENT C - CONNECTICUT YANKEE  
 RELAY SCREENING AND EVALUATION TABULATION  
 DOCUMENT NO. 0240-099-001  
 "ESSENTIAL RELAYS"

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Equipment ID No. : BKR 6-12D

| Relay Mfg. & Type | Relay Model No. | Contact              | ENERG<br>Y/N | NO/NC | Ref. Drawings(s) | Panel    | Bldg. | Elev. SAT. * |
|-------------------|-----------------|----------------------|--------------|-------|------------------|----------|-------|--------------|
| <u>W</u> CV-7     |                 | # 27-6               | YES          | NC    | 32001 SH 6X      | AB/4     | SB    | 59'6"        |
| <u>W</u> MG-6     |                 | # 27X-6              | NO           | NO    | 32001 SH 6G      | AB/4     | SB    | 59'6"        |
| <u>W</u> SG       | Ser. # 1342925A | # 27X1-6             | NO           | NO    | 32001 SH 6X      | AB/4     | SB    | 59'6"        |
| GE - HFA          | 12HFA151A2H     | # 94LS/1-9 (Note 14) | NO           | NO    | 32001 SH 6X      | CB/9DB1A | SB    | 59'6"        |

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Prepared by: Joseph M. Pescatore Date: 12/7/93

Reviewed by: James J. Buckley Date: 12/7/93

ATTACHMENT 2 - CONNECTICUT YANKEE  
 RELAY SCREENING AND EVALUATION TABULATION  
 DOCUMENT NO. 0240-099-001  
 "ESSENTIAL RELAYS"

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Equipment ID No. : BKR 6-14C

| Relay Mfg. & Type | Relay Model No. | Contact              | ENERG<br>Y/N | NO/NC | Ref. Drawings(s) | Panel    | Bldg. | Elev. SAT. * |
|-------------------|-----------------|----------------------|--------------|-------|------------------|----------|-------|--------------|
| W CV-7            |                 | # 27-6               | YES          | NC    | 32001 SH 6X      | AB/4     | SB    | 59'6"        |
| W SG              | Ser. # 1342925A | # 27X1-6             | NO           | NO    | 32001 SH 6X      | AB/4     | SB    | 59'6"        |
| GE - HEA          | 12HEA61C239     | # 27Y-6              | NO           | NO    | 32001 SH 6GA     | AB/4     | SB    | 59'6"        |
| GE - HFA          | 12HFA151A2H     | # 94LS/1-9 (Note 14) | NO           | NO    | 32001 SH 6X      | CB/9DB1A | SB    | 59'6"        |

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Reviewed by: James J. Buckley Date: 12/7/93

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 RELAY SCREENING AND EVALUATION TABULATION  
 DOCUMENT NO. 0240-099-001  
 "ESSENTIAL RELAYS"

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Equipment ID No. : BKR 6T7

| Relay Mfg. & Type Relay Model No. | Contact | ENERG<br>Y/N | NO/NC | Ref. Drawings(s) | Panel   | Bldg. | Elev. SAT. * |
|-----------------------------------|---------|--------------|-------|------------------|---------|-------|--------------|
|                                   | 52X     | NO           | NO    | 32001 SH 6AL     | BUS 1-6 | SB    | 41'6"        |

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- - No entry necessary.

Prepared by: Joseph M. Pescatore Date: 12/7/93

Reviewed by: James I. Buckley Date: 12/7/93

ATTACHMENT C - CONNECTICUT YANKEE  
 RELAY SCREENING AND EVALUATION TABULATION  
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 "ESSENTIAL RELAYS"

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Equipment ID No. : BKR 8-1

| Relay Mfg. & Type | Relay Model No.   | Contact            | ENERG<br>Y/N | NO/NC | Ref. Drawings(s) | Panel    | Bldg. | Elev. SAT. * |
|-------------------|-------------------|--------------------|--------------|-------|------------------|----------|-------|--------------|
| GE - HEA          | 12HEA61C239       | # 27Y/1-8 (Note 9) | NO           | NO    | 32001 SH 5M      | CB/8DB1  | SB    | 59'6"        |
| W CRN-1           | 290B038A09        | 32/CRN-1           | NO           | NO    | 32001 SH 5MA     | BUS 8    | DG    | 21'6"        |
| W WL              |                   | # 4/EG2A           | NO           | NO    | 31099 SH 3       | CB/8DB1A | SB    | 59'6"        |
| SQ D 1933         | 1933G2            | 40T                |              |       | 31099 SH 2       | EGP2A    | DG    | 21'6"        |
| W AV              | 160087GH          | 40V                |              |       | 31099 SH 2       | EGP2A    | DG    | 21'6"        |
| W SERIES C        | FDB14K            | 41                 |              |       | 32001 SH 5M      | EGP2A    | DG    | 21'6"        |
| W CO-8            | 1875276A          | 50/51-A            | NO           | NO    | 32001 SH 5MA     | BUS 8    | DG    | 21'6"        |
| W CO-8            | 1875276A          | 50/51-B            | NO           | NO    | 32001 SH 5MA     | BUS 8    | DG    | 21'6"        |
| W CO-8            | 1875276A          | 50/51-C            | NO           | NO    | 32001 SH 5MA     | BUS 8    | DG    | 21'6"        |
| SQ D EQ1933       | EQ1933G2          | # 52V (A)          |              |       | 31099 SH 3       | EGP2A    | DG    | 21'6"        |
|                   |                   | 52X                |              |       | 32001 SH 5M      | BUS 8    | DG    | 21'6"        |
| W SV              |                   | 59A/1-8            | YES          | NO    | 32001 SH 5M      | CB/8DB1  | SB    | 59'6"        |
| W SV              |                   | 59B/1-8            | YES          | NO    | 32001 SH 5M      | CB/8DB1  | SB    | 59'6"        |
| W MG-6            | Ser. # 289B360A16 | # 86 (A)           | NO           | NO    | 32001 SH 5MA     | BUS 8    | DG    | 21'6"        |
| W CA              | 290B892A09        | 87-A               | NO           | NO    | 32001 SH 5MA     | BUS 8    | DG    | 21'6"        |
| W CA              | 290B892A09        | 87-B               | NO           | NO    | 32001 SH 5MA     | BUS 8    | DG    | 21'6"        |
| W CA              | 290B892A09        | 87-C               | NO           | NO    | 32001 SH 5MA     | BUS 8    | DG    | 21'6"        |
| GE HEA            | 12HEA61C238X2     | # 87X              | NO           | NO    | 32001 SH 5M, 5MA | BUS 8    | DG    | 21'6"        |
| SQ D 7001         | 7001 PO453        | # ESR1 (A)         |              |       | 31099 SH 3       | EGP2A    | DG    | 21'6"        |
| SQ D 7001         | 7001 PO453        | # ESR2 (A)         |              |       | 31099 SH 3       | EGP2A    | DG    | 21'6"        |

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Prepared by: Joseph M. Pescatore Date: 12/7/93

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ATTACHMENT 2 - CONNECTICUT YANKEE  
RELAY SCREENING AND EVALUATION TABULATION  
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Equipment ID No. : BKR 8-1

"ESSENTIAL RELAYS"

| Relay Mfg. & Type | Relay Model No. | Contact     | ENERG<br>Y/N | NO/NC | Ref. Drawings(s) | Panel    | Bldg. | Elev. SAT. * |
|-------------------|-----------------|-------------|--------------|-------|------------------|----------|-------|--------------|
| SQ D 7001         | 7001 PO453      | # ESTR (A)  |              |       | 32001 SH 5MA     | EGP2A    | DG    | 21'6"        |
|                   |                 | # FFC (A)   | YES          | NO    | 31099 SH 4       | EGP2A    | DG    | 21'6"        |
| W SV              | 292B402A0       | # FFCO (A)  | NO           | NC    | 31099 SH 3       | EGP2A    | DG    | 21'6"        |
| SQ D 7001         | 7001 PO453      | # FSR1 (A)  |              |       | 32001 SH 5M      | EGP2A    | DG    | 21'6"        |
| SQ D 7001         | 7001 PO453      | # FSR2 (A)  |              |       | 32001 SH 5M      | EGP2A    | DG    | 21'6"        |
| AGA               | EGPD002         | # IOPLR (A) |              |       | 31099 SH 3       | AUX EG2A | DG    | 21'6"        |
| AGA               | EGPD002         | NFLD        | NO           | NO    | 32001 SH 5MA     | ECP2A    | DG    | 21'6"        |
| AGA               | EGPD002         | # NFLDA (A) |              |       | 32001 SH 5M      | ECP2A    | DG    | 21'6"        |
|                   |                 | OT          |              |       | 32001 SH 5M      | ECP2A    | DG    | 21'6"        |
| SQ D 7001         | 7001 PO453      | # OTR (A)   |              |       | 32001 SH 5MA     | EGP2A    | DG    | 21'6"        |
| GE - HFA          | 12HFA154B22H    | # R1 (A)    | NO           | NO    | 31099 SH 3       | AUX EG2A | DG    | 21'6"        |
| AGA               | EGPD002         | # ROPLR (A) |              |       | 31099 SH 3       | AUX EG2A | DG    | 21'6"        |
| BARBER            | COLEMAN-68      | # SSP1 (A)  |              |       | 31099 SH 3       | EGP2A    | DG    | 21'6"        |
| BARBER            | COLEMAN-68      | # SSP2 (A)  |              |       | 31099 SH 3       | EGP2A    | DG    | 21'6"        |
| SQ D EQ1933       | EQ1933G2        | # STLO1 (A) |              |       | 31099 SH 3       | EGP2A    | DG    | 21'6"        |
| SQ D EQ1933       | EQ1933G2        | # STLO2 (A) |              |       | 31099 SH 3       | EGP2A    | DG    | 21'6"        |
| AGA E7000         | E7024PE         | # T1 (A)    |              |       | 31099 SH 3       | AUX EG2A | DG    | 21'6"        |
| AGA E7000         | E7014PA         | # T1A (A)   |              |       | 31099 SH 3       | AUX EG2A | DG    | 21'6"        |
| AGA E7000         | E7014PA002      | # T1B (A)   |              |       | 31099 SH 3       | AUX EG2A | DG    | 21'6"        |
| SQ D 7001         | 7001 PO453      | # VSR1 (A)  |              |       | 32001 SH 5M      | EGP2A    | DG    | 21'6"        |

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Reviewed by: James J. Buckley Date: 12/7/93



ATTACHMENT - CONNECTICUT YANKEE  
 RELAY SCREENING AND EVALUATION TABULATION  
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Equipment ID No. : BKR 8-1

| Relay Mfg. & Type | Relay Model No. | Contact    | ENERG<br>Y/N | NO/NC | Ref. Drawings(s) | Panel | Bldg. | Elev. SAT. * |
|-------------------|-----------------|------------|--------------|-------|------------------|-------|-------|--------------|
| SQ D 7001         | 7001 PO453      | # VSR2 (A) |              |       | 32001 SH 5M      | EGP2A | DG    | 21'6"        |

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ATTACHMENT - CONNECTICUT YANKEE  
RELAY SCREENING AND EVALUATION TABULATION

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DATE 12/7/93  
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Equipment ID No. : **BKR 9-1**

DOCUMENT NO. 0240-099-001

"ESSENTIAL RELAYS"

| Relay Mfg. & Type | Relay Model No.   | Contact             | ENERG<br>Y/N | NO/NC | Ref. Drawings(s) | Panel    | Bldg. | Elev. SAT. * |
|-------------------|-------------------|---------------------|--------------|-------|------------------|----------|-------|--------------|
| GE - HEA          | 12HEA61C239       | # 27Y/1-9 (Note 11) | NO           | NO    | 32001 SH 5N      | CB/9DB1  | SB    | 59'6"        |
| <u>W</u> CRN-1    | 290B038A09        | 32/CRN-1            | NO           | NO    | 32001 SH 5NA     | BUS 9    | DG    | 21'6"        |
| <u>W</u> WL       |                   | # 4/EG2B            | NO           | NO    | 31099 SH 3       | CB/9DB1A | SB    | 59'6"        |
| SQ D 1933         | 1933G2            | 40T                 |              |       | 31099 SH 2       | EGP2B    | DG    | 21'6"        |
| <u>W</u> AV       | 160087GH          | 40V                 |              |       | 31099 SH 2       | EGP2B    | DG    | 21'6"        |
|                   |                   | 41                  |              |       | 32001 SH 5N      | EGP2B    | DG    | 21'6"        |
| <u>W</u> CO-8     | 1875276A          | 50/51-A             | NO           | NO    | 32001 SH 5NA     | BUS 9    | DG    | 21'6"        |
| <u>W</u> CO-8     | 1875276A          | 50/51-B             | NO           | NO    | 32001 SH 5NA     | BUS 9    | DG    | 21'6"        |
| <u>W</u> CO-8     | 1875276A          | 50/51-C             | NO           | NO    | 32001 SH 5NA     | BUS 9    | DG    | 21'6"        |
| SQ D EQ1933       | EQ1933G2          | # 52V (B)           |              |       | 31099 SH 3       | EGP2B    | DG    | 21'6"        |
|                   |                   | 52X                 |              |       | 32001 SH 5N      | BUS 9    | DG    | 21'6"        |
| <u>W</u> SV       |                   | 59A/1-9             | YES          | NO    | 32001 SH 5N      | CB/9DB1  | SB    | 59'6"        |
| <u>W</u> SV       |                   | 59B/1-9             | YES          | NO    | 32001 SH 5N      | CB/9DB1  | SB    | 59'6"        |
| <u>W</u> MG-6     | Ser. # 289B360A16 | # 86 (B)            | NO           | NO    | 32001 SH 5N      | BUS 9    | DG    | 21'6"        |
| <u>W</u> CA       | 290B892A09        | 87-A                | NO           | NO    | 32001 SH 5NA     | BUS 9    | DG    | 21'6"        |
| <u>W</u> CA       | 290B892A09        | 87-B                | NO           | NO    | 32001 SH 5NA     | BUS 9    | DG    | 21'6"        |
| <u>W</u> CA       | 290B892A09        | 87-C                | NO           | NO    | 32001 SH 5NA     | BUS 9    | DG    | 21'6"        |
| GE HEA            | 12HEA61C238X2     | # 87X               | NO           | NO    | 32001 SH 5N, NA  | BUS 9    | DG    | 21'6"        |
| SQ D 7001         | 7001 PO453        | # ESR1 (B)          |              |       | 31099 SH 3       | EGP2B    | DG    | 21'6"        |
| SQ D 7001         | 7001 PO453        | # ESR2 (B)          |              |       | 31099 SH 3       | EGP2B    | DG    | 21'6"        |

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Prepared by: Joseph M. Pescatore Date: 12/7/93

Reviewed by: James J. Buckley Date: 12/7/93

ATTACHMENT - CONNECTICUT YANKEE  
RELAY SCREENING AND EVALUATION TABULATION

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DATE 12/7/93  
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Equipment ID No. : BKR 9-1

DOCUMENT NO. 0240-099-001

"ESSENTIAL RELAYS"

| Relay Mfg. & Type | Relay Model No. | Contact     | ENERG<br>Y/N | NO/NC | Ref. Drawings(s) | Panel    | Bldg. | Elev. SAT. * |
|-------------------|-----------------|-------------|--------------|-------|------------------|----------|-------|--------------|
| SQ D 7001         | 7001 PO453      | # ESTR (B)  |              |       | 32001 SH 5N      | EGP2B    | DG    | 21'6"        |
|                   |                 | # FFC (B)   | YES          | NO    | 31099 SH 4       | EGP2B    | DG    | 21'6"        |
| W SV              | 292B402A0       | # FFCO (B)  | NO           | NC    | 31099 SH 3       | EGP2B    | DG    | 21'6"        |
| SQ D 7001         | 7001 PO453      | # FSR1 (B)  |              |       | 32001 SH 5N      | EGP2B    | DG    | 21'6"        |
| SQ D 7001         | 7001 PO453      | # FSR2 (B)  |              |       | 32001 SH 5N      | EGP2B    | DG    | 21'6"        |
| AGA               | EGPD002         | # IOPLR (B) |              |       | 31099 SH 3       | AUX EG2B | DG    | 21'6"        |
| AGA               | EGPD002         | NFLD        | NO           | NO    | 32001 SH 5NA     | ECP2B    | DG    | 21'6"        |
| AGA               | EGPD002         | # NFLDA (B) |              |       | 32001 SH 5N      | ECP2B    | DG    | 21'6"        |
|                   |                 | OT          |              |       | 32001 SH 5NA     | ECP2B    | DG    | 21'6"        |
| SQ D 7001         | 7001 PO453      | # OTR (B)   |              |       | 32001 SH 5N      | EGP2B    | DG    | 21'6"        |
| GE - HFA          | 12HFA154B22H    | # R1 (B)    | NO           | NO    | 31099 SH 3       | AUX EG2B | DG    | 21'6"        |
| AGA               | EGPD002         | # ROPLR (B) |              |       | 31099 SH 3       | AUX EG2B | DG    | 21'6"        |
| BARBER            | COLEMAN-68      | # SSP1 (B)  |              |       | 31099 SH 3       | EGP2B    | DG    | 21'6"        |
| BARBER            | COLEMAN-68      | # SSP2 (B)  |              |       | 31099 SH 3       | EGP2B    | DG    | 21'6"        |
| SQ D EQ1933       | EQ1933G2        | # STLO1 (B) |              |       | 31099 SH 3       | EGP2B    | DG    | 21'6"        |
| SQ D EQ1933       | EQ1933G2        | # STLO2 (B) |              |       | 31099 SH 3       | ECP2B    | DG    | 21'6"        |
| AGA E7000         | E7024PE002      | # T1 (B)    |              |       | 31099 SH 3       | AUX EG2B | DG    | 21'6"        |
| AGA E7000         | E7014PA002      | # T1A (B)   |              |       | 31099 SH 3       | AUX EG2B | DG    | 21'6"        |
| AGA E7000         | E7014PA002      | # T1B (B)   |              |       | 31099 SH 3       | AUX EG2B | DG    | 21'6"        |
| SQ D 7001         | 7001 PO453      | # VSRI (B)  |              |       | 32001 SH 5N      | EGP2B    | DG    | 21'6"        |

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ATTACHMEN - CONNECTICUT YANKEE  
 RELAY SCREENING AND EVALUATION TABULATION

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"ESSENTIAL RELAYS"

| Relay Mfg. & Type | Relay Model No. | Contact    | ENERG<br>Y/N | NO/NC | Ref. Drawings(s) | Panel | Bldg. | Elev. SAT. * |
|-------------------|-----------------|------------|--------------|-------|------------------|-------|-------|--------------|
| SQ D 7001         | 7001 PO453      | # VSR2 (B) |              |       | 32001 SH 5N      | EGP2B | DG    | 21'6"        |

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ATTACHMENT - CONNECTICUT YANKEE  
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Equipment ID No. : CH-MOV-257

| Relay Mfg. & Type | Relay Model No. | Contact | ENERG<br>Y/N | NO/NC | Ref. Drawings(s) | Panel | Bldg. | Elev. SAT. * |
|-------------------|-----------------|---------|--------------|-------|------------------|-------|-------|--------------|
| <u>W</u>          | A251K1CA        | 42/C    |              |       | 32112 SH 29N     | MCC-5 | SB    | 41'6"        |
| <u>W</u>          | A251K1CA        | 42/O    |              |       | 32112 SH 29N     | MCC-5 | SB    | 41'6"        |
| <u>W</u>          | AA13A           | 49      |              |       | 32112 SH 29N     | MCC-5 | SB    | 41'6"        |

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Equipment ID No. : CH-MOV-257B

| Relay Mfg. & Type | Relay Model No. | Contact | ENERG<br>Y/N | NO/NC | Ref. Drawings(s) | Panel  | Bldg. | Elev. SAT. * |
|-------------------|-----------------|---------|--------------|-------|------------------|--------|-------|--------------|
| <u>W</u>          | A251K1CA        | 42/C    |              |       | 32112 SH 29Q     | MCC-12 | SB    | 41'6"        |
| <u>W</u>          | A251K1CA        | 42/O    |              |       | 32112 SH 29Q     | MCC-12 | SB    | 41'6"        |
| CT-HM C300        | C300CN3         | 49      |              |       | 32112 SH 29Q     | MCC-12 | SB    | 41'6"        |

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Reviewed by: James J. Buckley Date: 12/7/93

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Equipment ID No. : CH-MOV-292B

| Relay Mfg. & Type | Relay Model No. | Contact       | ENERG<br>Y/N | NO/NC | Ref. Drawings(s) | Panel | Bldg. | Elev. SAT. * |
|-------------------|-----------------|---------------|--------------|-------|------------------|-------|-------|--------------|
| <u>Y</u>          | A211K1JA        | 42/O          |              |       | 32112 SH 29A     | MCC-5 | SB    | 41'6"        |
| <u>Y</u> WL       |                 | # 4A (Note 1) | NO           | NO    | 32112 SH 29A     | CB/B  | SB    | 59'6"        |
| <u>Y</u> WL       |                 | # 4B (Note 5) | NO           | NO    | 32112 SH 29A     | CB/B  | SB    | 59'6"        |

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Equipment ID No. : CH-MOV-292C

| Relay Mfg. & Type | Relay Model No. | Contact       | ENERG<br>Y/N | NO/NC | Ref. Drawings(s) | Panel | Bldg. | Elev. SAT. * |
|-------------------|-----------------|---------------|--------------|-------|------------------|-------|-------|--------------|
| <u>W</u>          | A211K1JA        | 42/O          |              |       | 32112 SH 29D     | MCC-5 | SB    | 41'6"        |
| <u>W</u> WL       |                 | # 4A (Note 1) | NO           | NO    | 32112 SH 29D     | CB/B  | SB    | 59'6"        |
| <u>W</u> WL       |                 | # 4B (Note 5) | NO           | NO    | 32112 SH 29D     | CB/B  | SB    | 59'6"        |

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Equipment ID No. : CH-MOV-298

| Relay Mfg. & Type | Relay Model No. | Contact | ENERG<br>V/M | NO/NC | Ref. Drawings(s) | Panel | Bldg. | Elev. SAT. * |
|-------------------|-----------------|---------|--------------|-------|------------------|-------|-------|--------------|
| W                 | A211K1JA        | 42/C    |              |       | 32112 SH 28U     | MCC-5 | SB    | 41'6"        |
| W                 | A211K1JA        | 42/O    |              |       | 32112 SH 28U     | MCC-5 | SB    | 41'6"        |
| W                 | AA13A J         | 49      |              |       | 32112 SH 28U     | MCC-5 | SB    | 41'6"        |

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- NV - Not vulnerable (mechanically actuated contacts or solid state relays).
- GERS - Seismically adequate based on GERS; include GERS number.
- NA - Component not affected by relays.
- CR - Corrective action required.
- OA - Operator action.
- - No entry necessary.

Prepared by: Joseph M. Pescatore Date: 12/7/93

Reviewed by: James J. Buckley Date: 12/7/93

ATTACHMENT C - CONNECTICUT YANKEE  
RELAY SCREENING AND EVALUATION TABULATION  
DOCUMENT NO. 0240-099-001  
"ESSENTIAL RELAYS"

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Equipment ID No. : CH-SOV-242

| Relay Mfg. & Type | Relay Model No. | Contact | ENERG<br>Y/N | NO/NC | Ref. Drawings(s) | Panel | Bldg. | Elev. SAT. * |
|-------------------|-----------------|---------|--------------|-------|------------------|-------|-------|--------------|
|                   |                 | Note 15 |              |       |                  |       |       |              |

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Prepared by: Joseph M. Pescatore Date: 12/7/93

Reviewed by: James J. Buckley Date: 12/7/93

ATTACHMENT 1 - CONNECTICUT YANKEE  
 RELAY SCREENING AND EVALUATION TABULATION  
 DOCUMENT NO. 0240-099-001  
 "ESSENTIAL RELAYS"

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Equipment ID No. : DH-MOV-507

| Relay Mfg. & Type | Relay Model No. | Contact | ENERG<br>Y/N | NO/NC | Ref. Drawings(s) | Panel | Bldg. | Elev. SAT. * |
|-------------------|-----------------|---------|--------------|-------|------------------|-------|-------|--------------|
|                   |                 | 42/O    |              |       | 32112 SH 28W     | MCC-5 | SB    | 41'6"        |

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- OA - Operator action.
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Prepared by: Joseph M. Pescatore Date: 12/7/93

Reviewed by: James J. Buckley Date: 12/7/93

ATTACHMENT C - CONNECTICUT YANKEE  
 RELAY SCREENING AND EVALUATION TABULATION  
 DOCUMENT NO. 0240-099-001  
 "ESSENTIAL RELAYS"

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Equipment ID No. : DH-MOV-521

| Relay Mfg. & Type Relay Model No. | Contact | ENERG<br>Y/N | NO/NC | Ref. Drawings(s) | Panel | Bldg. | Elev. SAT. * |
|-----------------------------------|---------|--------------|-------|------------------|-------|-------|--------------|
|                                   | 42/O    |              |       | 32112 SH 28Y     | MCC-5 | SB    | 41'8"        |

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- NA - Component not affected by relays.
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- OA - Operator action.
- - No entry necessary.

Prepared by: Joseph M. Pescatore Date: 12/7/93

Reviewed by: James J. Buckley Date: 12/7/93

ATTACHMENT - CONNECTICUT YANKEE  
 RELAY SCREENING AND EVALUATION TABULATION  
 DOCUMENT NO. 0240-099-001  
 "ESSENTIAL RELAYS"

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Equipment ID No. : DH-MOV-534

| Relay Mfg. & Type Relay Model No. | Contact | ENERG<br>Y/N | NO/NC | Ref. Drawings(s) | Panel | Bldg. | Elev. SAT. * |
|-----------------------------------|---------|--------------|-------|------------------|-------|-------|--------------|
|                                   | 42/O    |              |       | 32112 SH 28N     | MCC-5 | SB    | 41'6"        |

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- NA - Component not affected by relays.
- CR - Corrective action required.
- OA - Operator action.
- - No entry necessary.

Prepared by: Joseph M. Pescatore Date: 12/7/93  
 Reviewed by: James J. Buckley Date: 12/7/93

ATTACHMENT - - CONNECTICUT YANKEE  
 RELAY SCREENING AND EVALUATION TABULATION  
 DOCUMENT NO. 0240-099-001  
 "ESSENTIAL RELAYS"

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Equipment ID No. : DH-MOV-544

| Relay Mfg. & Type Relay Model No. | Contact | ENERG<br>Y/N | NO/NC | Ref. Drawings(s) | Panel | Bldg. | Elev. SAT. * |
|-----------------------------------|---------|--------------|-------|------------------|-------|-------|--------------|
|                                   | 42/O    |              |       | 32112 SH 28P     | MCC-5 | SB    | 41'6"        |

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- OA - Operator action.
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Prepared by: Joseph M. Pescatore Date: 12/7/93

Reviewed by: James J. Buckley Date: 12/7/93

ATTACHMENT - CONNECTICUT YANKEE  
 RELAY SCREENING AND EVALUATION TABULATION  
 DOCUMENT NO. 0240-099-001  
 "ESSENTIAL RELAYS"

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Equipment ID No. : DH-MOV-562

| Relay Mfg. & Type | Relay Model No. | Contact | ENERG<br>Y/N | NO/NC | Ref. Drawings(s) | Panel | Bldg. | Elev. SAT. * |
|-------------------|-----------------|---------|--------------|-------|------------------|-------|-------|--------------|
|                   |                 | 42/O    |              |       | 32112 SH 28Z     | MCC-5 | SB    | 41'6"        |

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- OA - Operator action.
- - No entry necessary.

Prepared by: Joseph M. Pescatore Date: 12/7/93

Reviewed by: James J. Buckley Date: 12/7/93

ATTACHMEN - CONNECTICUT YANKEE  
 RELAY SCREENING AND EVALUATION TABULATION  
 DOCUMENT NO. 0240-099-001  
 "ESSENTIAL RELAYS"

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Equipment ID No. : EG-2A

| Relay Mfg. & Type | Relay Model No.   | Contact     | ENERG<br>Y/N | NO/NC | Ref. Drawings(s) | Panel    | Bldg. | Elev. SAT. * |
|-------------------|-------------------|-------------|--------------|-------|------------------|----------|-------|--------------|
| W WL              |                   | # 4/EG2A    | NO           | NO    | 31099 SH 3       | CB/8DB1A | S8    | 59'6"        |
| SQ D EQ1933       | EQ1933G2          | # 52V (A)   |              |       | 31099 SH 3       | EGP2A    | DG    | 21'6"        |
| W MG-6            | Ser. # 289B380A16 | # 86 (A)    | NO           | NO    | 31099 SH 3       | BUS 8    | DG    | 21'6"        |
| GE - HEA          | 12HEA61C238X2     | # 87X       | NO           | NO    | 31099 SH 3       | BUS 8    | DG    | 21'6"        |
| AGA 2400          | 2412PGE           | ECR         |              |       | 31099 SH 3       | EGP2A    | DG    | 21'6"        |
| SQ D 8501         | 8501 FSD022-55    | ECRA        |              |       | 31099 SH 3       | EGP2A    | DG    | 21'6"        |
| SQ D 7001         | 7001 PO453        | # ESR1 (A)  |              |       | 31099 SH 3       | EGP2A    | DG    | 21'6"        |
| SQ D 7001         | 7001 PO453        | # ESR2 (A)  |              |       | 31099 SH 3       | EGP2A    | DG    | 21'6"        |
| AGA 2422          | 2422 PGE          | # ESTD (A)  | NO           | NO    | 31099 SH 3       | EGP2A    | DG    | 21'6"        |
| SQ D 7001         | 7001 PO453        | # ESTR (A)  |              |       | 31099 SH 3       | EGP2A    | DG    | 21'6"        |
| SQD CLASS 8504    | EQ1985-G13        | # FFC (A)   | YES          | NO    | 31099 SH 3       | EGP2A    | DG    | 21'6"        |
| W SV              | 292B402A0         | # FFCO (A)  | NO           | NC    | 31099 SH 3       | EGP2A    | DG    | 21'6"        |
| VAPOR CORP        | (not Identified)  | FPR         |              |       | 31099 SH 3       | EGP2A    | DG    | 21'6"        |
| SQ D 7001         | 7001 PO453        | # FSR1 (A)  |              |       | 31099 SH 3       | EGP2A    | DG    | 21'6"        |
| SQ D 7001         | 7001 PO453        | # FSR2 (A)  |              |       | 31099 SH 3       | EGP2A    | DG    | 21'6"        |
| VAPOR CORP        | (not Identified)  | GS          |              |       | 31099 SH 3       | EGP2A    | DG    | 21'6"        |
|                   |                   | HS          |              | NC    | 31099 SH 3       | EG2A     | DG    | 21'6"        |
| AGA               | EGPD002           | # IOPLR (A) |              |       | 31099 SH 3       | AUX EG2A | DG    | 21'6"        |
| SQD 8411520       | AOW23             | MB1         |              | NC    | 31099 SH 3       | ECP2A    | DG    | 21'6"        |
| SQD 8411520       | AOW23             | MB3         |              |       | 31099 SH 3       | ECP2A    | DG    | 21'6"        |

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ATTACHMENT - CONNECTICUT YANKEE  
RELAY SCREENING AND EVALUATION TABULATION

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Equipment ID No. : EG-2A

DOCUMENT NO. 0240-099-001

"ESSENTIAL RELAYS"

| Relay Mfg. & Type | Relay Model No. | Contact     | ENERG<br>Y/N | NO/NC | Ref. Drawings(s) | Panel    | Bldg. | Elev. SAT. * |
|-------------------|-----------------|-------------|--------------|-------|------------------|----------|-------|--------------|
| SQ D 7001         | 7001 PO453      | MSR1 (A)    |              |       | 31099 SH 3       | EGP2A    | DG    | 21'6"        |
| SQ D 7001         | 7001 PO453      | MSR2 (A)    |              |       | 31099 SH 3       | EGP2A    | DG    | 21'6"        |
| AGA               | EGPD002         | # NFLDA (A) | NO           | NC    | 31099 SH 3       | EGP2A    | DG    | 21'6"        |
| SQ D 7001         | 7001 PO453      | # OTR (A)   |              |       | 31099 SH 3       | EGP2A    | DG    | 21'6"        |
| SQ D 1933         | 1933G2          | PFD1        |              |       | 31099 SH 3       | EGP2A    | DG    | 21'6"        |
| SQ D 1933         | 1933G2          | PFD2        |              |       | 31099 SH 3       | EGP2A    | DG    | 21'6"        |
| SO D 1933         | 1933G2          | PFDA1 (A)   |              |       | 31099 SH 3       | EGP2A    | DG    | 21'6"        |
| SQ D 1933         | 1933G2          | PFDA2 (A)   |              |       | 31099 SH 3       | EGP2A    | DG    | 21'6"        |
| GE - HFA          | 12HFA154B22H    | # R1 (A)    |              |       | 31099 SH 3       | AUX EG2A | DG    | 21'6"        |
| AGA               | EGPD002         | # ROPLR (A) |              |       | 31099 SH 3       | AUX EG2A | DG    | 21'6"        |
| SQ D 1933         | 1933G2          | SFD1 (A)    |              |       | 31099 SH 3       | EGP2A    | DG    | 21'6"        |
| SQ D 1933         | 1933G2          | SFD2 (A)    |              |       | 31099 SH 3       | EGP2A    | DG    | 21'6"        |
| BARBER            | COLEMAN-68      | # SSP1 (A)  |              |       | 31099 SH 3       | EGP2A    | DG    | 21'6"        |
| BARBER            | COLEMAN-68      | # SSP2 (A)  |              |       | 31099 SH 3       | EGP2A    | DG    | 21'6"        |
| SQ D EQ1933       | EQ1933G2        | # STLO1 (A) |              |       | 31099 SH 3       | EGP2A    | DG    | 21'6"        |
| SQ D EQ1933       | EQ1933G2        | # STLO2 (A) |              |       | 31099 SH 3       | EGP2A    | DG    | 21'6"        |
| SQ D 7001         | 7001 PO453      | STR1 (A)    |              |       | 31099 SH 3       | EGP2A    | DG    | 21'6"        |
| SQ D 7001         | 7001 PO453      | STR2 (A)    |              |       | 31099 SH 3       | EGP2A    | DG    | 21'6"        |
| AGA E7000         | E7024PE         | # T1 (A)    |              |       | 31099 SH 3       | AUX EG2A | DG    | 21'6"        |
| AGA E7000         | E7014PA         | # T1A (A)   |              |       | 31099 SH 3       | AUX EG2A | DG    | 21'6"        |

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Prepared by: Joseph M. Pescatore Date: 12/7/93

Reviewed by: James J. Buckley Date: 12/7/93

ATTACHMENT - CONNECTICUT YANKEE  
 RELAY SCREENING AND EVALUATION TABULATION

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Equipment ID No. : EG-2A

DOCUMENT NO. 0240-099-001  
 "ESSENTIAL RELAYS"

| Relay Mfg. & Type | Relay Model No. | Contact   | ENERG<br>Y/N | NO/NC | Ref. Drawings(s) | Panel    | Bldg. | Elev. SAT. * |
|-------------------|-----------------|-----------|--------------|-------|------------------|----------|-------|--------------|
| AGA E7000         | E7014PA002      | # T1B (A) |              |       | 31099 SH 3       | AUX EG2A | DG    | 21'6"        |
| AGA E7000         | E7024PH         | # T2 (A)  |              |       | 31099 SH 3       | AUX EG2A | DG    | 21'6"        |
| SQ D 7001         | 7001 PO453      | ZSR1 (A)  |              |       | 31099 SH 3       | EGP2A    | DG    | 21'6"        |
| SQ D 7001         | 7001 PO453      | ZSR2 (A)  |              |       | 31099 SH 3       | EGP2A    | DG    | 21'6"        |

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- CR - Corrective action required.
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- - No entry necessary.

Prepared by: Joseph M. Pescatore Date: 12/7/93

Reviewed by: James J. Buckley Date: 12/7/93

ATTACHMENT - 2 - CONNECTICUT YANKEE  
 RELAY SCREENING AND EVALUATION TABULATION  
 DOCUMENT NO. 0240-099-001  
 "ESSENTIAL RELAYS"

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Equipment ID No. : EG-2B

| Relay Mfg. & Type | Relay Model No.   | Contact     | ENERG<br>Y/N | NO/NC | Ref. Drawings(s) | Panel    | Bldg. | Elev. SAT. * |
|-------------------|-------------------|-------------|--------------|-------|------------------|----------|-------|--------------|
| W WL              |                   | # 4/EG2B    | NO           | NO    | 31099 SH 3       | CB/9DB1A | SB    | 59'6"        |
| SQ D EQ1933       | EQ1933G2          | # 52V (B)   |              |       | 31099 SH 3       | EGP2B    | DG    | 21'6"        |
| W MG-6            | Ser. # 289B360A16 | # 86 (B)    | NO           | NO    | 31099 SH 3       | BUS 9    | DG    | 21'6"        |
| GE - HEA          | 12HEA61C238X2     | # 87X       | NO           | NO    | 31099 SH 3       | BUS 9    | DG    | 21'6"        |
| AGA 2400          | 2412PGE           | ECR         |              |       | 31099 SH 3       | EGP2B    | DG    | 21'6"        |
| SQ D 8501         | 8501 FSD022-55    | ECRA        |              |       | 31099 SH 3       | EGP2B    | DG    | 21'6"        |
| SQ D 7001         | 7001 PO453        | # ESR1 (B)  |              |       | 31099 SH 3       | EGP2B    | DG    | 21'6"        |
| SQ D 7001         | 7001 PO453        | # ESR2 (B)  |              |       | 31099 SH 3       | EGP2B    | DG    | 21'6"        |
| AGA 2422          | 2422 PGE          | # ESTD (B)  | NO           | NO    | 31099 SH 3       | EGP2B    | DG    | 21'6"        |
| SQ D 7001         | 7001 PO453        | # ESTR (B)  |              |       | 31099 SH 3       | EGP2B    | DG    | 21'6"        |
| SQD CLASS 8504    | EQ1965-G13        | # FFC (B)   | YES          | NO    | 31099 SH 3       | EGP2B    | DG    | 21'6"        |
| W SV              | 292B402A0         | # FFCO (B)  | NO           | NC    | 31099 SH 3       | EGP2B    | DG    | 21'6"        |
| VAPOR CORP        | (not identified)  | FPR         |              |       | 31099 SH 3       | EGP2B    | DG    | 21'6"        |
| SQ D 7001         | 7001 PO453        | # FSR1 (B)  |              |       | 31099 SH 3       | EGP2B    | DG    | 21'6"        |
| SQ D 7001         | 7001 PO453        | # FSR2 (B)  |              |       | 31099 SH 3       | EGP2B    | DG    | 21'6"        |
| VAPOR CORP        | (not identified)  | GS          |              |       | 31099 SH 3       | EGP2B    | DG    | 21'6"        |
|                   |                   | HS          |              | NC    | 31099 SH 3       | EG2B     | DG    | 21'6"        |
| AGA               | EGPD002           | # IOPLR (B) |              |       | 31099 SH 3       | AUX EG2B | DG    | 21'6"        |
| SQD 8411520       | AOW23             | MB1         |              | NC    | 31099 SH 3       | ECP2B    | DG    | 21'6"        |
| SQD 8411520       | AOW23             | MB3         |              |       | 31099 SH 3       | ECP2B    | DG    | 21'6"        |

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ATTACHMENT - CONNECTICUT YANKEE  
RELAY SCREENING AND EVALUATION TABULATION

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Equipment ID No. : EG-2B

DOCUMENT NO. 0240-099-001

"ESSENTIAL RELAYS"

| Relay Mfg. & Type | Relay Model No. | Contact     | ENERG<br>Y/N | NO/NC | Ref. Drawings(s) | Panel    | Bldg. | Elev. SAT. * |
|-------------------|-----------------|-------------|--------------|-------|------------------|----------|-------|--------------|
| SQ D 7001         | 7001 PO453      | MSR1 (B)    |              |       | 31099 SH 3       | EGP2B    | DG    | 21'6"        |
| SQ D 7001         | 7001 PO453      | MSR2 (B)    |              |       | 31099 SH 3       | EGP2B    | DG    | 21'6"        |
| AGA               | EGPD002         | # NFLDA (B) | NO           | NC    | 31099 SH 3       | EGP2B    | DG    | 21'6"        |
| SQ D 7001         | 7001 PO453      | # OTR (B)   |              |       | 31099 SH 3       | EGP2B    | DG    | 21'6"        |
| SQ D 1933         | 1933G2          | PFD1        |              |       | 31099 SH 3       | EGP2B    | DG    | 21'6"        |
| SQ D 1933         | 1933G2          | PFD2        |              |       | 31099 SH 3       | EGP2B    | DG    | 21'6"        |
| SQ D 1933         | 1933G2          | PFDA1 (B)   |              |       | 31099 SH 3       | EGP2B    | DG    | 21'6"        |
| SQ D 1933         | 1933G2          | PFDA2 (B)   |              |       | 31099 SH 3       | EGP2B    | DG    | 21'6"        |
| GE - HFA          | 12HFA154B22H    | # R1 (B)    |              |       | 31099 SH 3       | AUX EG2B | DG    | 21'6"        |
| AGA               | EGPD002         | # ROPLR (B) |              |       | 31099 SH 3       | AUX EG2B | DG    | 21'6"        |
| SQ D 1933         | 1933G2          | SFD1 (B)    |              |       | 31099 SH 3       | EGP2B    | DG    | 21'6"        |
| SQ D 1933         | 1933G2          | SFD2 (B)    |              |       | 31099 SH 3       | EGP2B    | DG    | 21'6"        |
| BARBER            | COLEMAN-68      | # SSP1 (B)  |              |       | 31099 SH 3       | EGP2B    | DG    | 21'6"        |
| BARBER            | COLEMAN-68      | # SSP2 (B)  |              |       | 31099 SH 3       | EGP2B    | DG    | 21'6"        |
| SQ D EQ1933       | EQ1933G2        | # STLO1 (B) |              |       | 31099 SH 3       | EGP2B    | DG    | 21'6"        |
| SQ D EQ1933       | EQ1933G2        | # STLO2 (B) |              |       | 31099 SH 3       | EGP2B    | DG    | 21'6"        |
| SQ D 7001         | 7001 PO453      | STR1 (B)    |              |       | 31099 SH 3       | EGP2B    | DG    | 21'6"        |
| SQ D 7001         | 7001 PO453      | STR2 (B)    |              |       | 31099 SH 3       | EGP2B    | DG    | 21'6"        |
| AGA E7000         | E7024PE002      | # T1 (B)    |              |       | 31099 SH 3       | AUX EG2B | DG    | 21'6"        |
| AGA E7000         | E7014PA002      | # T1A (B)   |              |       | 31099 SH 3       | AUX EG2B | DG    | 21'6"        |

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Prepared by: Joseph M. Pescatore Date: 12/7/93

Reviewed by: James J. Buckley Date: 12/7/93

ATTACHMENT - CONNECTICUT YANKEE  
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Equipment ID No. : EG-2B

| Relay Mfg. & Type | Relay Model No. | Contact   | ENERG<br>Y/N | NO/NC | Ref. Drawings(s) | Panel    | Bldg. | Elev. SAT. * |
|-------------------|-----------------|-----------|--------------|-------|------------------|----------|-------|--------------|
| AGA E7000         | E7014PA002      | # T1B (B) |              |       | 31099 SH 3       | AUX EG2B | DG    | 21'6"        |
| AGA E7000         | E7024PH002      | # T2 (B)  |              |       | 31099 SH 3       | AUX EG2B | DG    | 21'6"        |
| SQ D 7001         | 7001 PO453      | ZSR1 (B)  |              |       | 31099 SH 3       | EGP2B    | DG    | 21'6"        |
| SQ D 7001         | 7001 PO453      | ZSR2 (B)  |              |       | 31099 SH 3       | EGP2B    | DG    | 21'6"        |

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- NV - Not vulnerable (mechanically actuated contacts or solid state relays).
- GERS - Seismically adequate based on GERS; include GERS number.
- NA - Component not affected by relays.
- CR - Corrective action required.
- OA - Operator action.
- - No entry necessary.

Prepared by: Joseph M. Pescatore Date: 12/7/93

Reviewed by: James J. Buckley Date: 12/7/93

ATTACHMENT C - CONNECTICUT YANKEE  
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Equipment ID No. : FH-MOV-344

| Relay Mfg. & Type | Relay Model No. | Contact | ENERG<br>Y/N | NO/NC | Ref. Drawings(s) | Panel | Bldg. | Elev. SAT. * |
|-------------------|-----------------|---------|--------------|-------|------------------|-------|-------|--------------|
| <u>Y</u>          | A211K1JA        | 42/O    |              |       | 32001 SH 6ST     | MCC-5 | 3     | 41'6"        |

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ATTACHMENT C - CONNECTICUT YANKEE  
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Equipment ID No. : FW-MOV-11

| Relay Mfg. & Type | Relay Model No. | Contact | ENERG<br>Y/N | NO/NC | Ref. Drawings(s) | Panel | Bldg. | Elev. SAT. * |
|-------------------|-----------------|---------|--------------|-------|------------------|-------|-------|--------------|
| W                 | A250M1CAC       | 42/C    |              |       | 32001 SH 6SL     | MCC-5 | SB    | 41'6"        |
| W                 | A250M1CAC       | 42/O    |              |       | 32001 SH 6SL     | MCC-5 | SB    | 41'6"        |
| W                 | AA13A J         | 49      |              |       | 32001 SH 6SL     | MCC-5 | SB    | 41'6"        |

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Equipment ID No. : FW-MOV-12

| Relay Mfg. & Type | Relay Model No. | Contact | ENERG<br>Y/N | NO/NC | Ref. Drawings(s) | Panel | Bldg. | Elev. SAT. * |
|-------------------|-----------------|---------|--------------|-------|------------------|-------|-------|--------------|
| W                 | A250M1CAC       | 42/C    |              |       | 32112 SH 6SM     | MCC-5 | SB    | 41'6"        |
| W                 | A250M1CAC       | 42/O    |              |       | 32112 SH 6SM     | MCC-5 | SB    | 41'6"        |
| W                 | AA13A J         | 49      |              |       | 32112 SH 6SM     | MCC-5 | SB    | 41'6"        |

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Reviewed by: James J. Buckley Date: 12/7/93



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Equipment ID No. : FW-MOV-13

| Relay Mfg. & Type | Relay Model No. | Contact | ENERG<br>Y/N | NO/NC | Ref. Drawings(s) | Panel | Bldg. | Elev. SAT. * |
|-------------------|-----------------|---------|--------------|-------|------------------|-------|-------|--------------|
| <u>W</u>          | A250M1CAC       | 42/C    |              |       | 32001 SH 6SN     | MCC-5 | SB    | 41'6"        |
| <u>W</u>          | A250M1CAC       | 42/O    |              |       | 32001 SH 6SN     | MCC-5 | SB    | 41'6"        |
| <u>W</u>          | AA13A J         | 49      |              |       | 32001 SH 6SN     | MCC-5 | SB    | 41'6"        |

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Equipment ID No. : FW-MOV-14

| Relay Mfg. & Type | Relay Model No. | Contact | ENERG<br>Y/N | NO/NC | Ref. Drawings(s) | Panel | Bldg. | Elev. SAT. * |
|-------------------|-----------------|---------|--------------|-------|------------------|-------|-------|--------------|
| W                 | A250M1CAC       | 42/C    |              |       | 32001 SH 6SP     | MCC-5 | SB    | 41'6"        |
| W                 | A250M1CAC       | 42/O    |              |       | 32001 SH 6SP     | MCC-5 | SB    | 41'6"        |
| W                 | AA13A J         | 49      |              |       | 32001 SH 6SP     | MCC-5 | SB    | 41'6"        |

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ATTACHMEN. - CONNECTICUT YANKEE  
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Equipment ID No. : FW-MOV-160

| Relay Mfg. & Type | Relay Model No. | Contact | ENERG<br>Y/N | NO/NC | Ref. Drawings(s) | Panel | Bldg. | Elev. SAT. * |
|-------------------|-----------------|---------|--------------|-------|------------------|-------|-------|--------------|
|                   |                 | 42/C    |              |       | 32112 SH 97      | MCC-7 | CV    | 21'6"        |

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- OA - Operator action.
- - No entry necessary.

Prepared by: Joseph M. Pescatore Date: 12/7/93

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ATTACHMEN. - CONNECTICUT YANKEE  
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Equipment ID No. : FW-MOV-35

| Relay Mfg. & Type Relay Model No. | Contact | ENERG<br>Y/N | NO/NC | Ref. Drawings(s) | Panel | Bldg. | Elev. SAT. * |
|-----------------------------------|---------|--------------|-------|------------------|-------|-------|--------------|
|                                   | 42/C    |              |       | 32112 SH 30G     | MCC-7 | CV    | 21'6"        |
|                                   | 42/O    |              |       | 32112 SH 30G     | MCC-7 | CV    | 21'6"        |
|                                   | 49      |              |       | 32112 SH 30G     | MCC-7 | CV    | 21'6"        |

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ATTACHMENT - CONNECTICUT YANKEE  
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Equipment ID No. : LD-MOV-200

| Relay Mfg. & Type | Relay Model No. | Contact | ENERG<br>Y/N | NO/NC | Ref. Drawings(s) | Panel | Bldg. | Elev. SAT. * |
|-------------------|-----------------|---------|--------------|-------|------------------|-------|-------|--------------|
| W                 | A211K1JA        | 42/O    |              |       | 32112 SH 28L     | MCC-5 | SB    | 41'6"        |
| W                 | AA13A J         | 49      |              |       | 32112 SH 28L     | MCC-5 | SB    | 41'6"        |

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Equipment ID No. : P-118-1A

| Relay Mfg. & Type | Relay Model No. | Contact | ENERG<br>Y/N | NO/NC | Ref. Drawings(s) | Panel | Bldg. | Elev. SAT. * |
|-------------------|-----------------|---------|--------------|-------|------------------|-------|-------|--------------|
|                   |                 | 42      |              |       | 32137 SH 7A      | MCC-9 | WD    | 21'6"        |
| <u>W</u>          | AN43A           | 49      |              |       | 32137 SH 7A      | MCC-9 | WD    | 21'6"        |

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Prepared by: Joseph M. Pescatore Date: 12/7/93

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ATTACHMENT 2 - CONNECTICUT YANKEE  
 RELAY SCREENING / ND EVALUATION TABULATION  
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Equipment ID No. : P-118-1B

| Relay Mfg. & Type | Relay Model No. | Contact | ENERG<br>Y/N | NO/NC | Ref. Drawings(s) | Panel  | Bldg. | Elev. SAT. * |
|-------------------|-----------------|---------|--------------|-------|------------------|--------|-------|--------------|
|                   |                 | 42      |              |       | 32137 SH 7B      | MCC-10 | WD    | 21'6"        |
| W                 | AN43A           | 49      |              |       | 32137 SH 7B      | MCC-10 | WD    | 21'6"        |

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ATTACHMENT - - CONNECTICUT YANKEE  
 RELAY SCREENING AND EVALUATION TABULATION  
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Equipment ID No. : P-13-1A

"ESSENTIAL RELAYS"

| Relay Mfg. & Type | Relay Model No. | Contact              | ENERG<br>Y/N | NO/NC | Ref. Drawings(s) | Panel    | Bldg. | Elev. SAT. * |
|-------------------|-----------------|----------------------|--------------|-------|------------------|----------|-------|--------------|
| W CV-7            | #               | 27-4                 | YES          | NC    | 32001 SH 6J      | AB/4     | SB    | 59'6"        |
| W MG-6            | #               | 27X-4                | NO           | NO    | 32112 SH 14A     | AB/4     | SB    | 59'6"        |
|                   |                 | 74                   |              |       | 32112 SH 14A     | BUS 1-4  | SB    | 41'6"        |
| GE - HFA          | 12HFA151A2H     | # 94LS/1-8 (Note 13) | NO           | NO    | 32001 SH 6J      | CB/6DB1A | SB    | 59'6"        |

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ATTACHMENT C - CONNECTICUT YANKEE  
 RELAY SCREENING AND EVALUATION TABULATION  
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Equipment ID No. : P-13-1B

| Relay Mfg. & Type | Relay Model No. | Contact              | ENERG<br>Y/N | NO/NC | Ref. Drawings(s) | Panel    | Bldg. | Elev. SAT. * |
|-------------------|-----------------|----------------------|--------------|-------|------------------|----------|-------|--------------|
| <u>W</u> CV-7     |                 | # 27-6               | YES          | NC    | 32001 SH 6X      | AB/4     | SB    | 59'6"        |
| <u>W</u> MG-6     |                 | # 27X-6              | NO           | NO    | 32112 SH 14B     | AB/4     | SB    | 59'6"        |
| <u>W</u> SG       | Ser. # 1342925A | # 27X1-6             | NO           | NO    | 32112 SH 6X      | AB/4     | SB    | 59'6"        |
|                   |                 | 74                   |              |       | 32112 SH 14B     | BUS 1-6  | SB    | 41'6"        |
| GE - HFA          | 12HFA151A2H     | # 94LS/1-9 (Note 14) | NO           | NO    | 32001 SH 6X      | CB/9DB1A | SB    | 59'6"        |

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ATTACHMENT - CONNECTICUT YANKEE  
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Equipment ID No. : P-13-1C

| Relay Mfg. & Type | Relay Model No. | Contact      | ENERG<br>Y/N | NO/NC | Ref. Drawings(s) | Panel    | Bldg. | Elev. SAT. * |
|-------------------|-----------------|--------------|--------------|-------|------------------|----------|-------|--------------|
| BBC Type ITE-27   | 211R1175        | # 27-11      | YES          | NC    | 30004 SH 1A      | BUS 11   | SB    | 41'6"        |
|                   |                 | # 27X1/11    | NO           | NO    | 32001 SH 6XB     | BUS 11   | SB    | 41'6"        |
|                   |                 | 74           |              |       | 32112 SH 14C     | BUS 11   | SB    | 41'6"        |
|                   |                 | # 94LS-1/1-9 |              |       | 32001 SH 6XB     | CB/9DB1A | SB    | 59'6"        |

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Equipment ID No. : P-149-1A

| Relay Mfg. & Type | Relay Model No. | Contact | ENERG<br>Y/N | NO/NC | Ref. Drawings(s) | Panel | Bldg. | Elev. SAT. * |
|-------------------|-----------------|---------|--------------|-------|------------------|-------|-------|--------------|
| <u>W</u>          | A200M1CAC       | 42      |              |       | 32112 SH 24C     | MCC-5 | SB    | 41'6"        |
| <u>W</u>          | AN13A           | 49      |              |       | 32112 SH 24C     | MCC-5 | SB    | 41'6"        |

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ATTACHMENT - CONNECTICUT YANKEE  
 RELAY SCREENING AND EVALUATION TABULATION  
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Equipment ID No. : P-149-1B

| Relay Mfg. & Type | Relay Model No. | Contact | ENERG<br>Y/N | NO/NC | Ref. Drawings(s) | Panel | Bldg. | Elev. SAT. * |
|-------------------|-----------------|---------|--------------|-------|------------------|-------|-------|--------------|
|                   |                 | 42      |              |       | 32112 SH 24C     | MCC-5 | SB    | 41'6"        |
| <u>W</u>          | AN13A           | 49      |              |       | 32112 SH 24C     | MCC-5 | SB    | 41'6"        |

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Equipment ID No. : P-18-1A

| Relay Mfg. & Type | Relay Model No.   | Contact              | ENERG<br>Y/N | NO/NC | Ref. Drawings(s) | Panel   | Bldg. | Elev. SAT. * |
|-------------------|-------------------|----------------------|--------------|-------|------------------|---------|-------|--------------|
| <u>W</u> MG-6     | Ser. # 289B360A20 | # 27Y1/1-9 (Note 11) | NO           | NO    | 32112 SH 8A      | CB/9DB1 | SB    | 59'6"        |
| <u>W</u> COM-5    | 289B456A19        | 50/51                | NO           | NO    | 32112 SH 8A      | BUS 9   | DG    | 21'6"        |
| AGA 7000          | 7022PC            | 62/P18-1A            | NO           | NO    | 32112 SH 8A      | BUS 9   | DG    | 21'6"        |
| <u>W</u> MG-6     | Ser. # 289B360A16 | 86                   | NO           | NO    | 32112 SH 8A      | BUS 9   | DG    | 21'6"        |
| GE - HFA          | 12HFA151A2H       | # 94LS/1-9 (Note 14) | NO           | NO    | 32112 SH 8A      | CB/9BD1 | SB    | 59'6"        |

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Prepared by: Joseph M. Pescatore Date: 12/7/93

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ATTACHMENT - CONNECTICUT YANKEE  
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Equipment ID No. : P-18-1B

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| Relay Mfg. & Type | Relay Model No.   | Contact              | ENERG<br>Y/N | NO/NC | Ref. Drawings(s) | Panel   | Bldg. | Elev. SAT. * |
|-------------------|-------------------|----------------------|--------------|-------|------------------|---------|-------|--------------|
| <u>W</u> MG-6     | Ser. # 289B360A20 | # 27Y1/1-8 (Note 9)  | NO           | NO    | 32112 SH 8B      | CB/8DB1 | SB    | 59'6"        |
| <u>W</u> COM-5    | 289B456A19        | 50/51                | NO           | NO    | 32112 SH 8B      | BUS 8   | DG    | 21'6"        |
| AGA 2400          | 2422PC            | 62/P18-1B            | NO           | NO    | 32112 SH 8B      | BUS 8   | DG    | 21'6"        |
| <u>W</u> MG-6     | Ser. # 289B360A16 | 86                   | NO           | NO    | 32112 SH 8B      | BUS 8   | DG    | 21'6"        |
| GE - HFA          | 12HFA151A2H       | # 94LS/1-8 (Note 13) | NO           | NO    | 32112 SH 8B      | CB/8DB1 | SB    | 59'6"        |

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- CR - Corrective action required.
- OA - Operator action.
- - No entry necessary.

Prepared by: Joseph M. Pescatore Date: 12/7/93

Reviewed by: James J. Buckley Date: 12/7/93

ATTACHMENT - CONNECTICUT YANKEE  
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Equipment ID No. : P-29-1A

| Relay Mfg. & Type Relay Model No. | Contact | ENERG<br>Y/N | NO/NC | Ref. Drawings(s) | Panel | Bldg. | Elev. SAT. * |
|-----------------------------------|---------|--------------|-------|------------------|-------|-------|--------------|
|                                   | 42      |              |       | 32001 SH 6MT     | MCC-8 | AB    | 21'6"        |
| <u>W</u> AN33A                    | 49      |              |       | 32001 SH 6MT     | MCC-8 | AB    | 21'6"        |

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Prepared by: Joseph M. Pescatore Date: 12/7/93

Reviewed by: James J. Buckley Date: 12/7/93

ATTACHMEN - CONNECTICUT YANKEE  
 RELAY SCREENING AND EVALUATION TABULATION  
 DOCUMENT NO. 0240-099-001  
 "ESSENTIAL RELAYS"

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Equipment ID No. : P-29-1B

| Relay Mfg. & Type | Relay Model No. | Contact | ENERG<br>Y/N | NO/NC | Ref. Drawings(s) | Panel | Buildg. | Elev. SAT. * |
|-------------------|-----------------|---------|--------------|-------|------------------|-------|---------|--------------|
|                   |                 | 42      |              |       | 32001 SH 6MU     | MCC-8 | AB      | 21'6"        |
| <u>W</u>          | AN33A           | 49      |              |       | 32001 SH 6MU     | MCC-8 | AB      | 21'6"        |

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- OA - Operator action.
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Prepared by: Joseph M. Pescatore Date: 12/7/93

Reviewed by: James J. Buckley Date: 12/7/93



ATTACHMENT - CONNECTICUT YANKEE  
 RELAY SCREENING AND EVALUATION TABULATION  
 DOCUMENT NO. 0240-099-001  
 "ESSENTIAL RELAYS"

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Equipment ID No. : P-37-1A

| Relay Mfg. & Type | Relay Model No. | Contact              | ENERG<br>Y/N | NO/NC | Ref. Drawings(s) | Panel    | Bldg. | Elev. SAT. * |
|-------------------|-----------------|----------------------|--------------|-------|------------------|----------|-------|--------------|
| W CV-7            |                 | # 27-4               | YES          | NC    | 32001 SH 6J      | AB/4     | SB    | 59'6"        |
| W MG-6            |                 | # 27X-4              | NO           | NO    | 32001 SH 6E      | AB/4     | SB    | 59'6"        |
| GE - HFA          | 12HFA151A2H     | # 94LS/1-8 (Note 13) | NO           | NO    | 32001 SH 6J      | CB/8DB1A | SB    | 59'6"        |

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Prepared by: Joseph M. Pescatore Date: 12/7/93

Reviewed by: James J. Buckley Date: 12/7/93

ATTACHMEN - CONNECTICUT YANKEE  
 RELAY SCREENING AND EVALUATION TABULATION  
 DOCUMENT NO. 0240-099-001  
 "ESSENTIAL RELAYS"

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Equipment ID No. : P-37-1B

| Relay Mfg. & Type | Relay Model No. | Contact             | ENERG<br>Y/N | NO/NC | Ref. Drawings(s) | Panel    | Bldg. | Elev. SAT. * |
|-------------------|-----------------|---------------------|--------------|-------|------------------|----------|-------|--------------|
| W CV-7            |                 | # 27-5              | YES          | NC    | 32001 SH 6J      | AB/4     | SB    | 59'6"        |
| W MG-6            |                 | # 27X-5             | NO           | NO    | 32001 SH 6EA     | AB/4     | SB    | 59'6"        |
| W SG              | Ser. # 1342925A | # 27X1-5            | NO           | NO    | 32001 SH 6J      | AB/4     | SB    | 59'6"        |
| GE - HFA          | 12HFA151A2H     | # 94LS/1-8(Note 13) | NO           | NO    | 32001 SH 6J      | CB/8DB1A | SB    | 59'6"        |

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Prepared by: Joseph M. Pescatore Date: 12/7/93

Reviewed by: James I. Buckley Date: 12/7/93

ATTACHMENT C - CONNECTICUT YANKEE  
 RELAY SCREENING AND EVALUATION TABULATION  
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 "ESSENTIAL RELAYS"

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Equipment ID No. : P-37-1C

| Relay Mfg. & Type | Relay Model No. | Contact             | ENERG<br>Y/N | NO/NC | Ref. Drawings(s) | Panel    | Bldg. | Elev. SAT. * |
|-------------------|-----------------|---------------------|--------------|-------|------------------|----------|-------|--------------|
| W CV-7            |                 | # 27-6              | YES          | NC    | 32001 SH 6X      | AB/4     | SB    | 59'6"        |
| W SG              | Ser. # 1342925A | # 27X1-6            | NO           | NO    | 32001 SH 6X      | AB/4     | SB    | 59'6"        |
| GE - HFA          | 12HFA151A2H     | # 94LS/1-9(Note 14) | NO           | NO    | 32001 SH 6X      | CB/9DB1A | SB    | 59'6"        |

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- OA - Operator action.
- - No entry necessary.

Prepared by: Joseph M. Pescatore Date: 12/7/93  
 Reviewed by: James J. Buckley Date: 12/7/93

ATTACHMENT - CONNECTICUT YANKEE  
 RELAY SCREENING AND EVALUATION TABULATION  
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Equipment ID No. : P-37-1D

| Relay Mfg. & Type | Relay Model No. | Contact              | ENERG<br>Y/N | NO/NC | Ref. Drawings(s) | Panel    | Bldg. | Elev. SAT. * |
|-------------------|-----------------|----------------------|--------------|-------|------------------|----------|-------|--------------|
| BBC Type ITE-27   | 211R1175        | # 27-11              | YES          | NO    | 32001 SH 6XB     | BUS 11   | SB    | 41'6"        |
|                   |                 | # 27X1/11            | NO           | NO    | 32001 SH 6EC     | BUS 11   | SB    | 41'6"        |
| GE - HFA          | 12HFA151A2H     | # 94LS/1-9 (Note 14) | NO           | NO    | 32001 SH 6EC     | CB/9DB1A | SB    | 59'6"        |

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Prepared by: Joseph M. Pescatore Date: 12/7/93

Reviewed by: James J. Buckley Date: 12/7/93

ATTACHMENT - CONNECTICUT YANKEE  
 RELAY SCREENING AND EVALUATION TABULATION  
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Equipment ID No. : PR-MOV-567

"ESSENTIAL RELAYS"

| Relay Mfg. & Type | Relay Model No. | Contact       | ENERG<br>Y/N | NO/NC | Ref. Drawings(s) | Panel | Bldg. | Elev. SAT. * |
|-------------------|-----------------|---------------|--------------|-------|------------------|-------|-------|--------------|
| W                 | A211K1JA        | 42/O          |              |       | 32112 SH 28S     | MCC-5 | SB    | 41'6"        |
| W                 | AR440A          | # 63Y/PCV 568 | NO           | NO    | 32112 SH 28S     | CB/C  | SB    | 59'6"        |

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- OA - Operator action.
- - No entry necessary.

Prepared by: Joseph M. Pescatore Date: 12/7/93

Reviewed by: James J. Buckley Date: 12/7/93

ATTACHMENT C - CONNECTICUT YANKEE  
 RELAY SCREENING AND EVALUATION TABULATION

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Equipment ID No. : PR-MOV-569

DOCUMENT NO. 0240-099-001  
 "ESSENTIAL RELAYS"

| Relay Mfg. & Type | Relay Model No. | Contact       | ENERG<br>Y/N | NO/NC | Ref. Drawings(s) | Panel | Bldg. | Elev. SAT. * |
|-------------------|-----------------|---------------|--------------|-------|------------------|-------|-------|--------------|
| W                 | A211K1JA        | 42/O          |              |       | 32112 SH 28T     | MCC-5 | SB    | 41'6"        |
| W                 | AR440A          | # 63Y/PCV 570 | NO           | NO    | 32112 SH 28T     | CB/C  | SB    | 59'6"        |

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Prepared by: Joseph M. Pescatore Date: 12/7/93

Reviewed by: James J. Buckley Date: 12/7/93

ATTACHMENT - CONNECTICUT YANKEE  
 RELAY SCREENING AND EVALUATION TABULATION  
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Equipment ID No. : PR-MOV-596

| Relay Idg. & Type | Relay Model No. | Contact | ENERG<br>Y/N | NO/NC | Ref. Drawings(s) | Panel | Bldg. | Elev. SAT. * |
|-------------------|-----------------|---------|--------------|-------|------------------|-------|-------|--------------|
| <u>W</u>          | Unknown         | 42/O    |              |       | 32112 SH 74      | LOCAL | SB    | 41'6"        |

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Prepared by: Joseph M. Pescatore Date: 12/7/93

Reviewed by: James J. Buckley Date: 12/7/93

ATTACHMENT - CONNECTICUT YANKEE  
 RELAY SCREENING AND EVALUATION TABULATION  
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Equipment ID No. : PR-MOV-597

| Relay Mfg. & Type | Relay Model No. | Contact | ENERG<br>Y/N | NO/NC | Ref. Drawings(s) | Panel | Bldg. | Elev. SAT. * |
|-------------------|-----------------|---------|--------------|-------|------------------|-------|-------|--------------|
| W                 | Unknown         | 42/O    |              |       | 32112 SH 75      | LOCAL | SB    | 41'6"        |

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Prepared by: Joseph M. Pescatore Date: 12/7/93

Reviewed by: James J. Buckley Date: 12/7/93



ATTACHMENT - CONNECTICUT YANKEE  
 RELAY SCREENING AND EVALUATION TABULATION  
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Equipment ID No. : PR-SOV-568

| Relay Mfg. & Type | Relay Model No. | Contact       | ENERG<br>Y/N | NO/NC | Ref. Drawings(s) | Panel | Bldg. | Elev. SAT. * |
|-------------------|-----------------|---------------|--------------|-------|------------------|-------|-------|--------------|
| Y                 | AR440A          | 63X/568       |              |       | 32112 SH 70      | CB/B  | SB    | 59'6"        |
| Y                 | AR440A          | # 63Y/PCV 568 | NO           | NO    | 32112 SH 70      | CB/C  | SB    | 59'6"        |

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Prepared by: Joseph M. Pescatore Date: 12/7/93

Reviewed by: James J. Buckley Date: 12/7/93

ATTACHMEN - CONNECTICUT YANKEE  
 RELAY SCREENING AND EVALUATION TABULATION

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Equipment ID No. : PR-SOV-570

DOCUMENT NO. 0240-099-001

"ESSENTIAL RELAYS"

| Relay Mfg. & Type | Relay Model No. | Contact       | ENERG<br>Y/N | NO/NC | Ref. Drawings(s) | Panel | Bldg. | Elev. SAT. * |
|-------------------|-----------------|---------------|--------------|-------|------------------|-------|-------|--------------|
| <u>W</u>          | AR440A          | 63X/570       |              |       | 32112 SH 70A     | CB/B  | SB    | 59'6"        |
| <u>W</u>          | AR440A          | # 63Y/PCV 570 | NO           | NO    | 32112 SH 70A     | CB/C  | SB    | 59'6"        |

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Prepared by: Joseph M. Pescatore Date: 12/7/93

Reviewed by: James J. Buckley Date: 12/7/93

ATTACHMENT - CONNECTICUT YANKEE  
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Equipment ID No. : RC-MOV-501

| Relay Mfg. & Type | Relay Model No. | Contact | ENERG<br>Y/N | NO/NC | Ref. Drawings(s) | Panel | Bldg. | Elev. SAT. * |
|-------------------|-----------------|---------|--------------|-------|------------------|-------|-------|--------------|
| W                 | A211K1JA        | 42/C    |              |       | 32112 SH 27A     | MCC-5 | SB    | 41'6"        |

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Reviewed by: James J. Buckley Date: 12/7/93

ATTACHMEN . - CONNECTICUT YANKEE  
 RELAY SCREENING AND EVALUATION TABULATION

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Equipment ID No. : RC-MOV-512

DOCUMENT NO. 0240-099-001

"ESSENTIAL RELAYS"

| Relay Mfg. & Type | Relay Model No. | Contact | ENERG<br>Y/N | NO/NC | Ref. Drawings(s) | Panel | Bldg. | Elev. SAT. * |
|-------------------|-----------------|---------|--------------|-------|------------------|-------|-------|--------------|
| <u>Y</u>          | A211K1JA        | 42/C    |              |       | 32112 SH 27B     | MCC-5 | SB    | 41'6"        |

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Prepared by: Joseph M. Pescatore Date: 12/7/93

Reviewed by: James J. Buckley Date: 12/7/93

ATTACHMENT CONNECTICUT YANKEE  
 RELAY SCREENING AND EVALUATION TABULATION  
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Equipment ID No. : RC-MOV-513

| Relay Mfg. & Type | Relay Model No. | Contact | ENERG<br>Y/N | NO/NC | Ref. Drawings(s) | Panel | Bldg. | Elev. SAT. * |
|-------------------|-----------------|---------|--------------|-------|------------------|-------|-------|--------------|
| <u>W</u>          | A211K1JA        | 42/C    |              |       | 32112 SH 27C     | MCC-5 | SB    | 41'6"        |

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Prepared by: Joseph M. Pescatore Date: 12/7/93

Reviewed by: James J. Buckley Date: 12/7/93

ATTACHMENT - CONNECTICUT YANKEE  
 RELAY SCREENING AND EVALUATION TABULATION  
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Equipment ID No. : RC-MOV-524

| Relay Mfg. & Type | Relay Model No. | Contact | ENERG<br>Y/N | NO/NC | Ref. Drawings(s) | Panel | Bldg. | Elev. SAT. * |
|-------------------|-----------------|---------|--------------|-------|------------------|-------|-------|--------------|
| 1Y                | A211K1JA        | 42/C    |              |       | 32112 SH 27D     | MCC-5 | SB    | 41'6"        |

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Prepared by: Joseph M. Pescatore Date: 12/7/93

Reviewed by: James J. Buckley Date: 12/7/93

ATTACHMENT - CONNECTICUT YANKEE  
 RELAY SCREENING AND EVALUATION TABULATION

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Equipment ID No. : RC-MOV-526

DOCUMENT NO. 0240-099-001

"ESSENTIAL RELAYS"

| Relay Mfg. & Type | Relay Model No. | Contact | ENERG<br>Y/N | NO/NC | Ref. Drawings(s) | Panel | Bldg. | Elev. SAT. * |
|-------------------|-----------------|---------|--------------|-------|------------------|-------|-------|--------------|
| W                 | A251K1CA        | 42/C    |              |       | 32112 SH 27E     | MCC-5 | SB    | 41'6"        |

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Reviewed by: James J. Buckley Date: 12/7/93

ATTACHMENT - CONNECTICUT YANKEE  
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 "ESSENTIAL RELAYS"

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Equipment ID No. : RC-MOV-537

| Relay Mfg. & Type | Relay Model No. | Contact | ENERG<br>Y/N | NO/NC | Ref. Drawings(s) | Panel | Bldg. | Elev. SAT. * |
|-------------------|-----------------|---------|--------------|-------|------------------|-------|-------|--------------|
| W                 | A211K1JA        | 42/C    |              |       | 32112 SH 27F     | MCC-5 | SB    | 41'6"        |

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Prepared by: Joseph M. Pescatore Date: 12/7/93

Reviewed by: James J. Buckley Date: 12/7/93



ATTACHMENT C - CONNECTICUT YANKEE  
 RELAY SCREENING AND EVALUATION TABULATION  
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 "ESSENTIAL RELAYS"

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Equipment ID No. : RC-MOV-538

| Relay Mfg. & Type | Relay Model No. | Contact | ENERG<br>Y/N | NO/NC | Ref. Drawings(s) | Panel | Bldg. | Elev. SAT. * |
|-------------------|-----------------|---------|--------------|-------|------------------|-------|-------|--------------|
| <u>W</u>          | A211K1JA        | 42/C    |              |       | 32112 SH 27G     | MCC-5 | SB    | 41'6"        |

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- GERS - Seismically adequate based on GERS; include GERS number.
- NA - Component not affected by relays.
- CR - Corrective action required.
- OA - Operator action.
- - No entry necessary.

Prepared by: Joseph M. Pescatore Date: 12/7/93

Reviewed by: James J. Buckley Date: 12/7/93

ATTACHMENT C - CONNECTICUT YANKEE  
 RELAY SCREENING AND EVALUATION TABULATION

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 DATE 12/7/93  
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Equipment ID No. : RC-MOV-546

DOCUMENT NO. 0240-099-001  
 "ESSENTIAL RELAYS"

| Relay Mfg. & Type | Relay Model No. | Contact | ENERG<br>Y/N | NO/NC | Ref. Drawings(s) | Panel | Bldg. | Elev. SAT. * |
|-------------------|-----------------|---------|--------------|-------|------------------|-------|-------|--------------|
| W                 | A211K1JA        | 42/C    |              |       | 32112 SH 27H     | MCC-5 | SB    | 41'6"        |

A "#" indicates that this relay has multiple occurrences (i.e. may be found associated with other equipment) in the "Relay Tabulation".

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Prepared by: Joseph M. Pescatore Date: 12/7/93

Reviewed by: James J. Buckley Date: 12/7/93

ATTACHMENT - CONNECTICUT YANKEE  
 RELAY SCREENING AND EVALUATION TABULATION  
 DOCUMENT NO. 0240-099-001  
 "ESSENTIAL RELAYS"

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Equipment ID No. : RELAY 27Y/1-8

| Relay Mfg. & Type | Relay Model No. | Contact       | ENERG<br>Y/N | NO/NC | Ref. Drawings(s) | Panel    | Bldg. | Elev. SAT. * |
|-------------------|-----------------|---------------|--------------|-------|------------------|----------|-------|--------------|
| <u>W</u> CV-7     | 1875524A        | # 27A/1-8     | YES          | NC    | 32001 SH 5F      | CB/8DB1  | SB    | 59'6"        |
| GE - HFA          | 12HFA151A2H     | # 27AX/1-8    | NO           | NO    | 32001 SH 5F      | CB/8DB1A | SB    | 59'6"        |
| <u>W</u> CV-7     |                 | # 27B/1-8     | YES          | NC    | 32001 SH 5F      | CB/8DB1  | SB    | 59'6"        |
| GE - HFA          | 12HFA151A2H     | # 27BX/1-8    | NO           | NO    | 32001 SH 5F      | CB/8DB1A | SB    | 59'6"        |
| <u>W</u> CV-7     |                 | # 27C/1-8     | NO           | NC    | 32001 SH 5F      | CB/8DB1  | SB    | 59'6"        |
| GE - HFA          | 12HFA151A2H     | # 27CX/1-8    | NO           | NO    | 32001 SH 5F      | CB/8DB1A | SB    | 59'6"        |
| DEVAR             | 18-114          | # 27K/1-8     | YES          | NO    | 32001 SH 5FB     | CB/8DB1A | SB    | 59'6"        |
| DEVAR             | 18-114          | # 27L/1-8     | YES          | NO    | 32001 SH 5FB     | CB/8DB1A | SB    | 59'6"        |
| DEVAR             | 18-114          | # 27M/1-8     | YES          | NO    | 32001 SH 5FB     | CB/8DB1A | SB    | 59'6"        |
| DEVAR             | 18-114          | # 27R/1-8     | YES          | NO    | 32001 SH 5FB     | CB/8DB1A | SB    | 59'6"        |
| DEVAR             | 18-114          | # 27S/1-8     | YES          | NO    | 32001 SH 5FB     | CB/8DB1A | SB    | 59'6"        |
| DEVAR             | 18-114          | # 27T/1-8     | YES          | NO    | 32001 SH 5FB     | CB/8DB1A | SB    | 59'6"        |
| <u>W</u> MG-6     |                 | # 27X/1-8     | NO           | NO    | 32001 SH 5F      | CB/8DB1  | SB    | 59'6"        |
| <u>W</u> WL       |                 | # 4A (Note 1) | NO           | NO    | 32001 SH 5FA     | CB/B     | SB    | 59'6"        |
| <u>W</u> WL       |                 | # 4B (Note 5) | NO           | NO    | 32001 SH 5FA     | CB/B     | SB    | 59'6"        |
| GE - NGV          | 12NVG15A21      | # 59/B        | YES          | NO    | 32001 SH 5F      | CB/8DB1  | SB    | 59'6"        |
| AGA E7000         | E7022PC003      | # 62B/1-8     | YES          | NC    | 32001 SH 5FA     | CB/8DB1A | SB    | 59'6"        |
| AGA E7000         | E7024PC001      | # 62C/1-8     | YES          | NC    | 32001 SH 5FA     | CB/8DB1A | SB    | 59'6"        |
| AGA E7000         | E7012PD         | # 62E8-2      | YES          | NC    | 32001 SH 5FA     | CB/8DB1  | SB    | 59'6"        |
| GE - HEA          | 12HEA61A223     | # 86/1-8      | NO           | NO    | 32001 SH 5F      | CB/8DB1A | SB    | 59'6"        |

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- OA - Operator action.
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Prepared by: Joseph M. Pescatore Date: 12/7/93

Reviewed by: James J. Buckley Date: 12/7/93

ATTACHMEN - CONNECTICUT YANKEE  
 RELAY SCREENING AND EVALUATION TABULATION  
 DOCUMENT NO. 0240-099-001  
 "ESSENTIAL RELAYS"

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Equipment ID No. : RELAY 27Y/1-8

| Relay Mfg. & Type | Relay Model No.   | Contact   | ENERG<br>Y/N | NO/NC | Ref. Drawings(s) | Panel | Bldg. | Elev. SAT. * |
|-------------------|-------------------|-----------|--------------|-------|------------------|-------|-------|--------------|
| W CA              | Ser. # 290B892A09 | # 87A/8T2 | NO           | NO    | 32001 SH 5J      | BUS 8 | DG    | 21'6"        |
| W CA              | Ser. # 290B892A09 | # 87B/8T2 | NO           | NO    | 32001 SH 5J      | BUS 8 | DG    | 21'6"        |
| W CA              | Ser. # 290B892A09 | # 87C/8T2 | NO           | NO    | 32001 SH 5J      | BUS 8 | DG    | 21'6"        |
| W WL              | 300P762G01        | # 87X/8T2 | NO           | NO    | 32001 SH 5F      | BUS 8 | DG    | 21'6"        |

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Prepared by: Joseph M. Pescatore Date: 12/7/93

Reviewed by: James J. Buckley Date: 12/7/93

ATTACHMENT 2 - CONNECTICUT YANKEE  
RELAY SCREENING AND EVALUATION TABULATION

PAGE 77  
DATE 12/7/93  
REV. 0

Equipment ID No. : RELAY 27Y/1-9

DOCUMENT NO. 0240-099-001

"ESSENTIAL RELAYS"

| Relay Mfg. & Type | Relay Model No. | Contact         | ENERG<br>Y/N | NO/NC | Ref. Drawings(s) | Panel    | Bldg. | Elev. SAT. * |
|-------------------|-----------------|-----------------|--------------|-------|------------------|----------|-------|--------------|
| W CV-7            |                 | # 27A/1-9       | YES          | NC    | 32001 SH 5G      | CB/9DB1  | SB    | 59'6"        |
| GE - HFA          | 12HFA151A2H     | # 27AX/1-9      | NO           | NO    | 32001 SH 5G      | CB/9DB1A | SB    | 59'6"        |
| W CV-7            |                 | # 27B/1-9       | YES          | NC    | 32001 SH 5G      | CB/9DB1  | SB    | 59'6"        |
| GE - HFA          | 12HFA151A2H     | # 27BX/1-9      | NO           | NO    | 32001 SH 5G      | CB/9DB1A | SB    | 59'6"        |
| W CV-7            |                 | # 27C/1-9       | YES          | NC    | 32001 SH 5G      | CB/9DB1  | SB    | 59'6"        |
| GE - HFA          | 12HFA151A2H     | # 27CX/1-9      | NO           | NO    | 32001 SH 5G      | CB/9DB1A | SB    | 59'6"        |
| DEVAR             | 18-114          | # 27K/1-9       | YES          | NO    | 32001 SH 5GB     | CB/9DB1A | SB    | 59'6"        |
| DEVAR             | 18-114          | # 27L/1-9       | YES          | NO    | 32001 SH 5GB     | CB/9DB1A | SB    | 59'6"        |
| DEVAR             | 18-114          | # 27M/1-9       | YES          | NO    | 32001 SH 5GB     | CB/9DB1A | SB    | 59'6"        |
| DEVAR             | 18-114          | # 27R/1-9       | YES          | NO    | 32001 SH 5GB     | CB/9DB1A | SB    | 59'6"        |
| DEVAR             | 18-114          | # 27S/1-9       | YES          | NO    | 32001 SH 5GB     | CB/9DB1A | SB    | 59'6"        |
| DEVAR             | 18-114          | # 27T/1-9       | YES          | NO    | 32001 SH 5GB     | CB/9DB1A | SB    | 59'6"        |
| W MG-6            |                 | # 27X/1-9       | NO           | NO    | 32001 SH 5G      | CB/9DB1  | SB    | 59'6"        |
| GE - HFA          | 12HFA151A2H     | # 4AX1 (Note 3) | NO           | NO    | 32001 SH 5GA     | CB/F     | SB    | 59'6"        |
| W MG-6            | 289B360A20      | # 4BX1 (Note 7) | NO           | NO    | 32001 SH 5GA     | CB/F     | SB    | 59'6"        |
| GE - NGV          | 12NGV15A21      | # 59-9          | YES          | NO    | 32001 SH 5G      | CB/9DB1  | SB    | 59'6"        |
| AGA E7000         | E7022PC003      | # 62B/1-9       | YES          | NC    | 32001 SH 5GA     | CB/9DB1A | SB    | 59'6"        |
| AGA E7000         | E7024PC001      | # 62C/1-9       | YES          | NC    | 32001 SH 5GA     | CB/9DB1A | SB    | 59'6"        |
| AGA E7000         | E7012PD         | # 62E9-2        | YES          | NC    | 32001 SH 5GA     | CB/9DB1  | SB    | 59'6"        |
| GE - HEA          | 12HEA51A223     | # 86/1-9        | NO           | NO    | 32001 SH 5G      | CB/9DB1A | SB    | 59'6"        |

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Prepared by: Joseph M. Pescatore Date: 12/7/93

Reviewed by: James J. Buckley Date: 12/7/93

ATTACHMENT - CONNECTICUT YANKEE  
 RELAY SCREENING AND EVALUATION TABULATION  
 DOCUMENT NO. 0240-099-001  
 "ESSENTIAL RELAYS"

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Equipment ID No. : RELAY 27Y/1-9

| Relay Mfg. & Type | Relay Model No.   | Contact   | ENERG<br>Y/N | NO/NC | Ref. Drawings(s) | Panel | Bldg. | Elev. SAT. * |
|-------------------|-------------------|-----------|--------------|-------|------------------|-------|-------|--------------|
| <u>W</u> CA       | Ser. # 290B892A09 | # 87A/9T3 | NO           | NO    | 32001 SH 5L      | BUS 9 | DG    | 21'6"        |
| <u>W</u> CA       | Ser. # 290B892A09 | # 87B/9T3 | NO           | NO    | 32001 SH 5L      | BUS 9 | DG    | 21'6"        |
| <u>W</u> CA       | Ser. # 290B892A09 | # 87C/9T3 | NO           | NO    | 32001 SH 5L      | BUS 9 | DG    | 21'6"        |
| <u>W</u> WL       |                   | # 87X/9T3 | NO           | NO    | 32001 SH 5G      | BUS 9 | DG    | 21'6"        |

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ATTACHMENT - CONNECTICUT YANKEE  
 RELAY SCREENING AND EVALUATION TABULATION  
 DOCUMENT NO. 0240-099-001  
 "ESSENTIAL RELAYS"

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 DATE 12/7/93  
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Equipment ID No. : RELAY 27Y2/1-8

| Relay Mfg. & Type | Relay Model No. | Contact       | ENERG<br>Y/N | NO/NC | Ref. Drawings(s) | Panel    | Bldg. | Elev. SAT. * |
|-------------------|-----------------|---------------|--------------|-------|------------------|----------|-------|--------------|
| <u>W</u> CV-7     | 1875524A        | # 27A/1-8     | YES          | NC    | 32001 SH 5F      | CB/8DB1  | SB    | 59'6"        |
| GE - HFA          | 12HFA151A2H     | # 27AX/1-8    | NO           | NO    | 32001 SH 5F      | CB/8DB1A | SB    | 59'6"        |
| <u>W</u> CV-7     |                 | # 27B/1-8     | YES          | NC    | 32001 SH 5F      | CB/8DB1  | SB    | 59'6"        |
| GE - HFA          | 12HFA151A2H     | # 27BX/1-8    | NO           | NO    | 32001 SH 5F      | CB/8DB1A | SB    | 59'6"        |
| <u>W</u> CV-7     |                 | # 27C/1-8     | NO           | NC    | 32001 SH 5F      | CB/8DB1  | SB    | 59'6"        |
| GE - HFA          | 12HFA151A2H     | # 27CX/1-8    | NO           | NO    | 32001 SH 5F      | CB/8DB1A | SB    | 59'6"        |
| DEVAR             | 18-114          | # 27K/1-8     | YES          | NO    | 32001 SH 5FB     | CB/8DB1A | SB    | 59'6"        |
| DEVAR             | 18-114          | # 27L/1-8     | YES          | NO    | 32001 SH 5FB     | CB/8DB1A | SB    | 59'6"        |
| DEVAR             | 18-114          | # 27M/1-8     | YES          | NO    | 32001 SH 5FB     | CB/8DB1A | SB    | 59'6"        |
| DEVAR             | 18-114          | # 27R/1-8     | YES          | NO    | 32001 SH 5FB     | CB/8DB1A | SB    | 59'6"        |
| DEVAR             | 18-114          | # 27S/1-8     | YES          | NO    | 32001 SH 5FB     | CB/8DB1A | SB    | 59'6"        |
| DEVAR             | 18-114          | # 27T/1-8     | YES          | NO    | 32001 SH 5FB     | CB/8DB1A | SB    | 59'6"        |
| <u>W</u> MG-6     |                 | # 27X/1-8     | NO           | NO    | 32001 SH 5F      | CB/8DB1  | SB    | 59'6"        |
| <u>W</u> WL       |                 | # 4A (Note 1) | NO           | NO    | 32001 SH 5FA     | CB/B     | SB    | 59'6"        |
| <u>W</u> WL       |                 | # 4B (Note 5) | NO           | NO    | 32001 SH 5FA     | CB/B     | SB    | 59'6"        |
| GE - NGV          | 12NVG15A21      | # 59/8        | YES          | NO    | 32001 SH 5F      | CB/8DB1  | SB    | 59'6"        |
| AGA E7000         | E7022PC003      | # 82B/1-8     | YES          | NC    | 32001 SH 5FA     | CB/8DB1A | SB    | 59'6"        |
| AGA E7000         | E7024PC001      | # 82C/1-8     | YES          | NC    | 32001 SH 5FA     | CB/8DB1A | SB    | 59'6"        |
| AGA E7000         | E7012PD         | # 82E8-2      | YES          | NC    | 32001 SH 5FA     | CB/8DB1  | SB    | 59'6"        |
| GE - HEA          | 12HEA61A223     | # 86/1-8      | NO           | NO    | 32001 SH 5F      | CB/8DB1A | SB    | 59'6"        |

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Reviewed by: James J. Buckley Date: 12/7/93

ATTACHMENT - CONNECTICUT YANKEE  
 RELAY SCREENING AND EVALUATION TABULATION  
 DOCUMENT NO. 0240-099-001  
 "ESSENTIAL RELAYS"

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Equipment ID No. : RELAY 27Y2/1-8

| Relay Mfg. & Type | Relay Model No.   | Contact   | ENERG<br>Y/N | NO/NC | Ref. Drawings(s) | Panel | Bldg. | Elev. SAT. * |
|-------------------|-------------------|-----------|--------------|-------|------------------|-------|-------|--------------|
| W CA              | Ser. # 290B892A09 | # 87A/8T2 | NO           | NO    | 32001 SH 5J      | BUS 8 | DG    | 216"         |
| W CA              | Ser. # 290B892A09 | # 87B/8T2 | NO           | NO    | 32001 SH 5J      | BUS 8 | DG    | 216"         |
| W CA              | Ser. # 290B892A09 | # 87C/8T2 | NO           | NO    | 32001 SH 5J      | BUS 8 | DG    | 216"         |
| W WL              | 300P762G01        | # 87X/8T2 | NO           | NO    | 32001 SH 5F      | BUS 8 | DG    | 216"         |

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Prepared by: Joseph M. Pescatore Date: 12/7/93

Reviewed by: James J. Buckley Date: 12/7/93



ATTACHMENT - CONNECTICUT YANKEE  
RELAY SCREENING AND EVALUATION TABULATION  
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"ESSENTIAL RELAYS"

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Equipment ID No. : RELAY 27Y2/1-9

| Relay Mfg. & Type | Relay Model No. | Contact         | ENERG<br>Y/N | NO/NC | Ref. Drawings(s) | Panel    | Bldg. | Elev. SAT. * |
|-------------------|-----------------|-----------------|--------------|-------|------------------|----------|-------|--------------|
| <u>W</u> CV-7     |                 | # 27A/1-9       | YES          | NC    | 32001 SH 5G      | CB/9DB1  | SB    | 59'6"        |
| GE - HFA          | 12HFA151A2H     | # 27AX/1-9      | NO           | NO    | 32001 SH 5G      | CB/9DB1A | SB    | 59'6"        |
| <u>W</u> CV-7     |                 | # 27B/1-9       | YES          | NC    | 32001 SH 5G      | CB/9DB1  | SB    | 59'6"        |
| GE - HFA          | 12HFA151A2H     | # 27BX/1-9      | NO           | NO    | 32001 SH 5G      | CB/9DB1A | SB    | 59'6"        |
| <u>W</u> CV-7     |                 | # 27C/1-9       | YES          | NC    | 32001 SH 5G      | CB/9DB1  | SB    | 59'6"        |
| GE - HFA          | 12HFA151A2H     | # 27CX/1-9      | NO           | NO    | 32001 SH 5G      | CB/9DB1A | SB    | 59'6"        |
| DEVAR             | 18-114          | # 27K/1-9       | YES          | NO    | 32001 SH 5GB     | CB/9DB1A | SB    | 59'6"        |
| DEVAR             | 18-114          | # 27L/1-9       | YES          | NO    | 32001 SH 5GB     | CB/9DB1A | SB    | 59'6"        |
| DEVAR             | 18-114          | # 27M/1-9       | YES          | NO    | 32001 SH 5GB     | CB/9DB1A | SB    | 59'6"        |
| DEVAR             | 18-114          | # 27R/1-9       | YES          | NO    | 32001 SH 5GB     | CB/9DB1A | SB    | 59'6"        |
| DEVAR             | 18-114          | # 27S/1-9       | YES          | NO    | 32001 SH 5GB     | CB/9DB1A | SB    | 59'6"        |
| DEVAR             | 18-114          | # 27T/1-9       | YES          | NO    | 32001 SH 5GB     | CB/9DB1A | SB    | 59'6"        |
| <u>W</u> MG-6     |                 | # 27X/1-9       | NO           | NO    | 32001 SH 5G      | CB/9DB1  | SB    | 59'6"        |
| GE - HFA          | 12HFA151A2H     | # 4AX1 (Note 3) | NO           | NO    | 32001 SH 5GA     | CB/F     | SB    | 59'6"        |
| <u>W</u> MG-6     | 289B360A20      | # 4BX1 (Note 7) | NO           | NO    | 32001 SH 5GA     | CB/F     | SB    | 59'6"        |
| GE - NGV          | 12NGV15A21      | # 59-9          | YES          | NO    | 32001 SH 5G      | CB/9DB1  | SB    | 59'6"        |
| AGA E7000         | E7022PC003      | # 62B/1-9       | YES          | NC    | 32001 SH 5GA     | CB/9DB1A | SB    | 59'6"        |
| AGA E7000         | E7024PC001      | # 62C/1-9       | YES          | NC    | 32001 SH 5GA     | CB/9DB1A | SB    | 59'6"        |
| AGA E7000         | E7012PD         | # 62E9-2        | YES          | NC    | 32001 SH 5GA     | CB/9DB1  | SB    | 59'6"        |
| GE - HEA          | 12HEA61A223     | # 86/1-9        | NO           | NO    | 32001 SH 5G      | CB/9DB1A | SB    | 59'6"        |

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ATTACHMENT - CONNECTICUT YANKEE  
 RELAY SCREENING AND EVALUATION TABULATION

PAGE 82  
 DATE 12/7/93  
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Equipment ID No. : RELAY 27Y2/1-9

DOCUMENT NO. 0240-099-001  
 "ESSENTIAL RELAYS"

| Relay Mfg. & Type | Relay Model No.   | Contact   | ENERG<br>Y/N | NO/NC | Ref. Drawings(s) | Panel | Bldg. | Elev. SAT. * |
|-------------------|-------------------|-----------|--------------|-------|------------------|-------|-------|--------------|
| <u>W</u> CA       | Ser. # 290B892A09 | # 87A/9T3 | NO           | NO    | 32001 SH 5L      | BUS 9 | DG    | 21'6"        |
| <u>W</u> CA       | Ser. # 290B892A09 | # 87B/9T3 | NO           | NO    | 32001 SH 5L      | BUS 9 | DG    | 21'6"        |
| <u>W</u> CA       | Ser. # 290B892A09 | # 87C/9T3 | NO           | NO    | 32001 SH 5L      | BUS 9 | DG    | 21'6"        |
| <u>W</u> WL       |                   | # 87X/9T3 | NO           | NO    | 32001 SH 5G      | BUS 9 | DG    | 21'6"        |

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- OA - Operator action.
- - No entry necessary.

Prepared by: Joseph M. Pescatore Date: 12/7/93

Reviewed by: James J. Buckley Date: 12/7/93

ATTACHMENT - CONNECTICUT YANKEE  
 RELAY SCREENING AND EVALUATION TABULATION  
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Equipment ID No. : RELAY 4A

| Relay Mfg. & Type | Relay Model No.   | Contact          | ENERG<br>Y/N | NO/NC | Ref. Drawings(s) | Panel | Bldg. | Elev. SAT. * |
|-------------------|-------------------|------------------|--------------|-------|------------------|-------|-------|--------------|
| W WL              | Ser. # 780A542G01 | # HCP/A (Note 4) | NO           | NO    | 32112 SH 32A     | CB/F  | SB    | 59'6"        |

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Equipment ID No. : RELAY 4AX

| Relay Mfg. & Type | Relay Model No. | Contact       | ENERG<br>Y/N | NO/NC | Ref. Drawings(s) | Panel | Bldg. | Elev. SAT. * |
|-------------------|-----------------|---------------|--------------|-------|------------------|-------|-------|--------------|
| W                 | WL              | # 4A (Note 1) | NO           | NO    | 32112 SH 32A     | CB/B  | SB    | 59'6"        |

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Equipment ID No. : RELAY 4AX1

| Relay Mfg. & Type | Relay Model No. | Contact       | ENERG<br>Y/N | NO/NC | Ref. Drawings(s) | Panel | Bldg. | Elev. SAT. * |
|-------------------|-----------------|---------------|--------------|-------|------------------|-------|-------|--------------|
| W WL              |                 | # 4A (Note 1) | NO           | NO    | 32112 SH 32A     | CB/B  | SB    | 59'6"        |

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Prepared by: Joseph M. Pescatore Date: 12/7/93

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Equipment ID No. : RELAY 4B

DOCUMENT NO. 0240-099-001  
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| Relay Mfg. & Type | Relay Model No.   | Contact          | ENERG<br>Y/N | NO/NC | Ref. Drawings(s) | Panel | Bldg. | Elev. SAT. * |
|-------------------|-------------------|------------------|--------------|-------|------------------|-------|-------|--------------|
| W WL              | Ser. # 785A839G01 | # HCP/B (Note 8) | NO           | NO    | 32112 SH 32B     | CB/F  | SB    | 59'6"        |

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Equipment ID No. : RELAY 4BX

| Relay Mfg. & Type | Relay Model No. | Contact       | ENERG<br>Y/N | NO/NC | Ref. Drawings(s) | Panel | Bldg. | Elev. SAT. * |
|-------------------|-----------------|---------------|--------------|-------|------------------|-------|-------|--------------|
| W WL              |                 | # 4B (Note 5) | NO           | NO    | 32112 SH 32B     | CB/B  | SB    | 59'6"        |

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Equipment ID No. : RELAY 4BX1

| Relay Mfg. & Type | Relay Model No. | Contact       | ENERG<br>Y/N | NO/NC | Ref. Drawings(s) | Panel | Bldg. | Elev. SAT. * |
|-------------------|-----------------|---------------|--------------|-------|------------------|-------|-------|--------------|
| <u>Y</u> WL       |                 | # 4B (Note 5) | NO           | NO    | 32112 SH 32B     | CB/B  | SB    | 59'6"        |

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Equipment ID No. : RELAY 94LS/1-8

| Relay Mfg. & Type | Relay Model No. | Contact            | ENERG<br>Y/N | NO/NC | Ref. Drawings(s) | Panel   | Bldg. | Elev. SAT. * |
|-------------------|-----------------|--------------------|--------------|-------|------------------|---------|-------|--------------|
| GE - HEA          | 12HEA61C239     | # 27Y/1-8 (Note 9) | NO           | NO    | 32001 SH 5FA     | CB/8DB1 | SB    | 59'6"        |
| GE - HFA          | 12HFA151A2H     | # 4AX1 (Note 3)    | NO           | NO    | 32001 SH 5FA     | CB/F    | SB    | 59'6"        |
| W MG-6            | 289B360A20      | # 4BX1 (Note 7)    | NO           | NO    | 32001 SH 5FA     | CB/F    | SB    | 59'6"        |

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ATTACHMENT - CONNECTICUT YANKEE  
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Equipment ID No. : RELAY 94LS/1-9

| Relay Mfg. & Type | Relay Model No. | Contact             | ENERG<br>Y/N | NO/NC | Ref. Drawings(s) | Panel    | Bldg. | Elev. SAT. * |
|-------------------|-----------------|---------------------|--------------|-------|------------------|----------|-------|--------------|
| GE - HEA          | 12HEA61C239     | # 27Y/1-9 (Note 11) | NO           | NO    | 32001 SH 5GA     | CB/9DB1A | SB    | 59'6"        |
| GE - HFA          | 12HFA151A2H     | # 4AX1 (Note 3)     | NO           | NO    | 32001 SH 5GA     | CB/F     | SB    | 59'6"        |
| <u>W</u> MG-6     | 289B360A20      | # 4BX1 (Note 7)     | NO           | NO    | 32001 SH 5GA     | CB/F     | SB    | 59'6"        |

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Equipment ID No. : RELAY HCP/A

DOCUMENT NO. 0240-099-001

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| Relay Mfg. & Type | Relay Model No. | Contact       | ENERG<br>Y/N | NO/NC | Ref. Drawings(s) | Panel | Bldg. | Elev. SAT. * |
|-------------------|-----------------|---------------|--------------|-------|------------------|-------|-------|--------------|
| W                 | ARD440S         | 43AX          | NO           | NO    | 32001 SH 11BA    | CB/F  | SB    | 59'6"        |
| W                 | ARD440S         | 43AY          | NO           | NC    | 32001 SH 11BA    | CB/F  | SB    | 59'6"        |
| W WL              |                 | # 4A (Note 1) | NO           | NO    | 32001 SH 11BA    | CB/B  | SB    | 59'6"        |

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Equipment ID No. : RELAY HCP/B

| Relay Mfg. & Type | Relay Model No. | Contact       | ENERG<br>Y/N | NO/NC | Ref. Drawings(s) | Panel | Bldg. | Elev. SAT. * |
|-------------------|-----------------|---------------|--------------|-------|------------------|-------|-------|--------------|
| W                 | ARD440S         | 43BX          | NO           | NO    | 32001 SH 11F     | CB/F  | SB    | 59'6"        |
| W                 | ARD440S         | 43BY          | NO           | NO    | 32001 SH 11F     | CB/F  | SB    | 59'6"        |
| W WL              |                 | # 4B (Note 5) | NO           | NO    | 32001 SH 11F     | CB/B  | SB    | 59'6"        |

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ATTACHMENT - - CONNECTICUT YANKEE  
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Equipment ID No. : SI-MOV-24

| Relay Mfg. & Type | Relay Model No. | Contact | ENERG<br>Y/N | NO/NC | Ref. Drawings(s) | Panel | Bldg. | Elev. SAT. * |
|-------------------|-----------------|---------|--------------|-------|------------------|-------|-------|--------------|
|                   |                 | 42/C    |              |       | 32001 SH 6SG     | MCC-5 | SB    | 41'6"        |

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Prepared by: Joseph M. Pascatore Date: 12/7/93

Reviewed by: James J. Buckley Date: 12/7/93

ATTACHMENT 2 - CONNECTICUT YANKEE  
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Equipment ID No. : SW-MOV-3

DOCUMENT NO. 0240-099-001

"ESSENTIAL RELAYS"

| Relay Mfg. & Type | Relay Model No. | Contact    | ENERG<br>Y/N | NO/NC | Ref. Drawings(s) | Panel  | Bldg. | Elev. SAT. * |
|-------------------|-----------------|------------|--------------|-------|------------------|--------|-------|--------------|
|                   |                 | # 27/X2-11 |              |       | 32001 SH 6KB     | BUS 11 | SB    | 41'6"        |
| GE-HGA            |                 | # 27/X2-4  | YES          | NC    | 32001 SH 6KB     | AB/4   | SB    | 59'6"        |
| GE-HGA            |                 | # 27/X2-5  | YES          | NC    | 32001 SH 6KB     | AB/4   | SB    | 59'6"        |
| GE-HGA            |                 | # 27/X2-6  | YES          | NC    | 32001 SH 6KB     | AB/4   | SB    | 59'6"        |
|                   |                 | # 27/X3-11 |              |       | 32001 SH 6KA     | BUS 11 | SB    | 41'6"        |
| GE-HGA            |                 | # 27/X3-4  | YES          | NC    | 32001 SH 6KA     | AB/4   | SB    | 59'6"        |
| GE-HGA            |                 | # 27/X3-5  | YES          | NC    | 32001 SH 6KA     | AB/4   | SB    | 59'6"        |
| GE-HGA            |                 | # 27/X3-6  | YES          | NC    | 32001 SH 6KA     | AB/4   | SB    | 59'6"        |
| GE - HEA          | 12HEA61B236X2   | # 27/X4    | NO           | NO    | 32001 SH 6SC     | AB/5   | SB    | 59'6"        |
| GE - HEA          | 12HEA61B236X2   | # 27/X5    | NO           | NO    | 32001 SH 6SC     | AB/5   | SB    | 59'6"        |
| W                 | A211K1JA        | 42/C       |              |       | 32001 SH 6SC     | MCC-5  | SB    | 41'6"        |

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Equipment ID No. : SW-MOV-4

| Relay Mfg. & Type | Relay Model No. | Contact    | ENERG<br>Y/N | NO/NC | Ref. Drawings(s) | Panel  | Bldg. | Elev. SAT. * |
|-------------------|-----------------|------------|--------------|-------|------------------|--------|-------|--------------|
|                   |                 | # 27/X2-11 |              |       | 32001 SH 6KB     | BUS 11 | SB    | 41'6"        |
| GE-HGA            |                 | # 27/X2-4  | YES          | NC    | 32001 SH 6KB     | AB/4   | SB    | 59'6"        |
| GE-HGA            |                 | # 27/X2-5  | YES          | NC    | 32001 SH 6KB     | AB/4   | SB    | 59'6"        |
| GE-HGA            |                 | # 27/X2-6  | YES          | NC    | 32001 SH 6KB     | AB/4   | SB    | 59'6"        |
|                   |                 | # 27/X3-1  |              |       | 32001 SH 6KA     | BUS 11 | SB    | 41'6"        |
| GE-HGA            |                 | # 27/X3-4  | YES          | NC    | 32001 SH 6KA     | AB/4   | SB    | 59'6"        |
| GE-HGA            |                 | # 27/X3-5  | YES          | NC    | 32001 SH 6KA     | AB/4   | SB    | 59'6"        |
| GE-HGA            |                 | # 27/X3-6  | YES          | NC    | 32001 SH 6KA     | AB/4   | SB    | 59'6"        |
| GE - HEA          | 12HEA61B236X2   | # 27/X4    | NO           | NO    | 32001 SH 6SD     | AB/5   | SB    | 59'6"        |
| GE - HEA          | 12HEA61B236X2   | # 27/X5    | NO           | NO    | 32001 SH 6SD     | AB/5   | SB    | 59'6"        |
| <u>W</u>          | A211K1JA        | 42/C       |              |       | 32001 SH 6SD     | MCC-5  | SB    | 41'6"        |

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Equipment ID No. : SW-MOV-5

| Relay Mfg. & Type | Relay Model No. | Contact | ENERG<br>Y/N | NO/NC | Ref. Drawings(s) | Panel | Bldg. | Elev. SAT. * |
|-------------------|-----------------|---------|--------------|-------|------------------|-------|-------|--------------|
| W                 | A211K1JA        | 42/C    |              |       | 32001 SH 6SJ     | MCC-5 | SB    | 41'6"        |
| W                 | A211K1JA        | 42/O    |              |       | 32001 SH 6SJ     | MCC-5 | SB    | 41'6"        |
| W                 | AA13A J         | 49      |              |       | 32001 SH 6SJ     | MCC-5 | SB    | 41'6"        |

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Prepared by: Joseph M. Pescatore Date: 12/7/93

Reviewed by: James J. Buckley Date: 12/7/93



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Equipment ID No. : SW-MOV-6

| Relay Mfg. & Type | Relay Model No. | Contact | ENERG<br>Y/N | NO/NC | Ref. Drawings(s) | Panel | Bldg. | Elev. SAT. * |
|-------------------|-----------------|---------|--------------|-------|------------------|-------|-------|--------------|
| W                 | A211K1JA        | 42/C    |              |       | 32001 SH 6SK     | MCC-5 | SB    | 41'6"        |
| W                 | A211K1JA        | 42/O    |              |       | 32001 SH 6SK     | MCC-5 | SB    | 41'6"        |
| W                 | AA13A J         | 49      |              |       | 32001 SH 6SK     | MCC-5 | SB    | 41'6"        |

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Equipment ID No. : SW-MOV-837A

| Relay Mfg. & Type Relay Model No. | Contact | ENERG<br>Y/N | NO/NC | Ref. Drawings(s) | Panel  | Bldg. | Elev. SAT. * |
|-----------------------------------|---------|--------------|-------|------------------|--------|-------|--------------|
|                                   | 42/O    |              |       | 32001 SH 37A     | MCC-12 | SB    | 41'6"        |

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ATTACHMENT - CONNECTICUT YANKEE  
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 "ESSENTIAL RELAYS"

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Equipment ID No. : SW-MOV-837B

| Relay Mfg. & Type | Relay Model No. | Contact | ENERG<br>Y/N | NO/NC | Ref. Drawings(s) | Panel  | Bldg. | Elev. SAT. * |
|-------------------|-----------------|---------|--------------|-------|------------------|--------|-------|--------------|
|                   |                 | 42/O    |              |       | 32001 SH 37B     | MCC-13 | SB    | 41'6"        |

A "#" indicates that this relay has multiple occurrences (i.e. may be found associated with other equipment) in the "Relay Tabulation".

\* Identify reason for Contact/Contact Group being satisfactory or unsatisfactory.

- CA - Chatter acceptable.
- NV - Not vulnerable (mechanically actuated contacts or solid state relays).
- GERS - Seismically adequate based on GERS; include GERS number.
- NA - Component not affected by relays.
- CR - Corrective action required.
- OA - Operator action.
- - No entry necessary.

Prepared by: Joseph M. Pescatore Date: 12/7/93

Reviewed by: James I. Buckley Date: 12/7/93

**ATTACHMENT D**

**CONNECTICUT YANKEE -  
RELAY SCREENING AND EVALAUTION TABULATION  
"BAD ACTORS"**

(6 Pages)

ATTACHMENT J - CONNECTICUT YANKEE  
 RELAY SCREENING AND EVALUATION TABULATION  
 DOCUMENT NO. 0240-099-001  
 "BAD ACTORS"

PAGE 1  
 DATE 12/7/93  
 REV. 0

Equipment ID No. : BKR 8-1

| Relay Mfg. & Type | Relay Model No. | Contact    | ENERG<br>Y/N | NO/NC | Ref. Drawings(s) | Panel   | Bldg. | Elev. SAT. * |
|-------------------|-----------------|------------|--------------|-------|------------------|---------|-------|--------------|
| W SV              |                 | 59A/1-8    | YES          | NO    | 32001 SH 5M      | CB/8DB1 | SB    | 59'6"        |
| W SV              |                 | 59B/1-8    | YES          | NO    | 32001 SH 5M      | CB/8DB1 | SB    | 59'6"        |
| W SV              | 292B402A0       | # FFCO (A) | NO           | NC    | 31099 SH 3       | EGP2A   | DG    | 21'6"        |

A "#" indicates that this relay has multiple occurrences (i.e. may be found associated with other equipment) in the "Relay Tabulation".

\* Identify reason for Contact/Contact Group being satisfactory or unsatisfactory.

- CA - Chatter acceptable.
- NV - Not vulnerable (mechanically actuated contacts or solid state relays).
- GERS - Seismically adequate based on GERS; include GERS number.
- NA - Component not affected by relays.
- CR - Corrective action required.
- OA - Operator action.
- - No entry necessary.

Prepared by: Joseph M. Pescatore Date: 12/7/93

Reviewed by: James J. Buckley Date: 12/7/93

ATTACHMENT - CONNECTICUT YANKEE  
 RELAY SCREENING AND EVALUATION TABULATION  
 DOCUMENT NO. 0240-099-001  
 "BAD ACTORS"

PAGE 2  
 DATE 12/7/93  
 REV. 0

Equipment ID No. : BKR 9-1

| Relay Mfg. & Type | Relay Model No. | Contact    | ENERG<br>Y/N | NO/NC | Ref. Drawings(s) | Panel   | Bldg. | Elev. SAT. * |
|-------------------|-----------------|------------|--------------|-------|------------------|---------|-------|--------------|
| W SV              |                 | 59A/1-9    | YES          | NO    | 32001 SH 5N      | CB/9DB1 | SB    | 59'6"        |
| W SV              |                 | 59B/1-9    | YES          | NO    | 32001 SH 5N      | CB/9DB1 | SB    | 59'6"        |
| W SV              | 292B402A0       | # FFCO (B) | NO           | NC    | 31099 SH 3       | EGP2B   | DG    | 21'6"        |

A "#" indicates that this relay has multiple occurrences (i.e. may be found associated with other equipment) in the "Relay Tabulation".

\* Identify reason for Contact/Contact Group being satisfactory or unsatisfactory.

- CA - Chatter acceptable.
- NV - Not vulnerable (mechanically actuated contacts or solid state relays).
- GERS - Seismically adequate based on GERS; include GERS number.
- NA - Component not affected by relays.
- CR - Corrective action required.
- OA - Operator action.
- - No entry necessary.

Prepared by: Joseph M. Pescatore Date: 12/7/93

Reviewed by: James J. Buckley Date: 12/7/93

ATTACHMENT J - CONNECTICUT YANKEE  
 RELAY SCREENING AND EVALUATION TABULATION  
 DOCUMENT NO. 0240-099-001  
 "BAD ACTORS"

PAGE 3  
 DATE 12/7/93  
 REV. 0

Equipment ID No.: EG-2A

| Relay Mfg. & Type | Relay Model No. | Contact    | ENERG<br>Y/N | NO/NC | Ref. Drawings(s) | Panel | Bldg. | Elev. SAT. * |
|-------------------|-----------------|------------|--------------|-------|------------------|-------|-------|--------------|
| W SV              | 292B402A0       | # FFCO (A) | NO           | NC    | 31099 SH 3       | EGP2A | DG    | 21'6"        |

A "#" indicates that this relay has multiple occurrences (i.e. may be found associated with other equipment) in the "Relay Tabulation".

\* Identify reason for Contact/Contact Group being satisfactory or unsatisfactory.

- CA - Chatter acceptable.
- NV - Not vulnerable (mechanically actuated contacts or solid state relays).
- GERS - Seismically adequate based on GERS; include GERS number.
- NA - Component not affected by relays.
- CR - Corrective action required.
- OA - Operator action.
- - No entry necessary.

Prepared by: Joseph M. Pescatore Date: 12/7/93

Reviewed by: James J. Buckley Date: 12/7/93

ATTACHMENT - CONNECTICUT YANKEE  
 RELAY SCREENING AND EVALUATION TABULATION  
 DOCUMENT NO. 0240-099-001  
 "BAD ACTORS"

PAGE 4  
 DATE 12/7/93  
 REV. 0

Equipment ID No. : EG-2B

| Relay Mfg. & Type | Relay Model No. | Contact    | ENERG<br>Y/N | NO/NC | Ref. Drawings(s) | Panel | Bldg. | Elev. SAT. * |
|-------------------|-----------------|------------|--------------|-------|------------------|-------|-------|--------------|
| <u>W</u> SV       | 292B402A0       | # FFCO (B) | NO           | NC    | 31099 SH 3       | EGP2B | DG    | 21'6"        |

A "#" indicates that this relay has multiple occurrences (i.e. may be found associated with other equipment) in the "Relay Tabulation".

\* Identify reason for Contact/Contact Group being satisfactory or unsatisfactory.

- CA - Chatter acceptable.
- NV - Not vulnerable (mechanically actuated contacts or solid state relays).
- GERS - Seismically adequate based on GERS; include GERS number.
- NA - Component not affected by relays.
- CR - Corrective action required.
- OA - Operator action.
- - No entry necessary.

Prepared by: Joseph M. Pescatore Date: 12/7/93

Reviewed by: James J. Buckley Date: 12/7/93



ATTACHMENT - CONNECTICUT YANKEE  
 RELAY SCREENING AND EVALUATION TABULATION  
 DOCUMENT NO. 0240-099-001  
 "BAD ACTORS"

PAGE 5  
 DATE 12/7/93  
 REV. 0

Equipment ID No. : P-18-1A

| Relay Mfg. & Type | Relay Model No. | Contact | ENERG<br>Y/N | NO/NC | Ref. Drawings(s) | Panel | Bldg. | Elev. SAT. * |
|-------------------|-----------------|---------|--------------|-------|------------------|-------|-------|--------------|
| <u>W</u> COM-5    | 289B456A19      | 50/51   | NO           | NO    | 32112 SH 8A      | BUS 9 | DG    | 21'6"        |

A "#" indicates that this relay has multiple occurrences (i.e. may be found associated with other equipment) in the "Relay Tabulation".

\* Identify reason for Contact/Contact Group being satisfactory or unsatisfactory.

- CA - Chatter acceptable.
- NV - Not vulnerable (mechanically actuated contacts or solid state relays).
- GERS - Seismically adequate based on GERS; include GERS number.
- NA - Component not affected by relays.
- CR - Corrective action required.
- OA - Operator action.
- - No entry necessary.

Prepared by: Joseph M. Pescatore Date: 12/7/93

Reviewed by: James J. Buckley Date: 12/7/93

ATTACHMENT J - CONNECTICUT YANKEE  
 RELAY SCREENING AND EVALUATION TABULATION  
 DOCUMENT NO. 0240-099-001  
 "BAD ACTORS"

PAGE 6  
 DATE 12/7/93  
 REV. 0

Equipment ID No. : P-18-1B

| Relay Mfg. & Type | Relay Model No. | Contact | ENERG<br>Y/N | NO/NC | Ref. Drawings(s) | Panel | Bldg. | Elev. SAT. * |
|-------------------|-----------------|---------|--------------|-------|------------------|-------|-------|--------------|
| W COM-5           | 289B456A19      | 50/51   | NO           | NO    | 32112 SH 8B      | BUS 8 | DG    | 21'6"        |

A "#" indicates that this relay has multiple occurrences (i.e. may be found associated with other equipment) in the "Relay Tabulation".

\* Identify reason for Contact/Contact Group being satisfactory or unsatisfactory.

- CA - Chatter acceptable.
- NV - Not vulnerable (mechanically actuated contacts or solid state relays).
- GERS - Seismically adequate based on GERS; include GERS number.
- NA - Component not affected by relays.
- CR - Corrective action required.
- OA - Operator action.
- - No entry necessary.

Prepared by: Joseph M. Pescatore Date: 12/7/93

Reviewed by: James J. Buckley Date: 12/7/93

**ATTACHMENT E**

**RESUME OF LEAD RELAY REVIEWER**

(3 Pages)

## JAMES J. BUCKLEY

### SPECIALTIES

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ELECTRICAL ENGINEERING AND DESIGN

### PROFESSIONAL EXPERIENCE

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Mr. Buckley is the Supervisor of Design and Drafting for ABB Impell's Boston office Design/Engineering Section of the Electrical Systems Division. He has over 23 years of experience in the engineering, design and installation of electrical systems for power generation and various industrial facilities including pulp and paper projects and water/sewerage treatment plants.

Mr. Buckley has attended the SQUG training course for Safe Shutdown Equipment Selection and Relay Screening and Evaluation which qualifies him as a Lead Relay Reviewer. Presently, Mr. Buckley is the Lead Relay Reviewer for the identification of USI A-46 Safe Shutdown Equipment and Relays for Northeast Utilities Service Company (NUSCO) projects for Connecticut Yankee and Millstone Units 1 and 2 Stations. The overall project scope is to retrieve each electrical component from the Safe Shutdown List for Relay Evaluation and review schematics, wiring diagrams, cable schedules, and raceway schedules associated with each component to identify relays and raceways required to be verified as seismically adequate per the requirements of the SQUG Generic Implementation Procedure (GIP). He has also been the Lead Relay Reviewer for the Philadelphia Electric Company (PECo) Peach Bottom Atomic Power Station Units 2 and 3 and the Public Service Electric & Gas Company (PSE&G) Salem Generating Station Units 1 and 2.

Recently, Mr. Buckley served as Lead Engineer for the Electric Load Management System project, a data collection effort for NUSCO's Millstone Unit 1 Station. He also held the same position for an identical project at NUSCO's Connecticut Yankee Station.

Prior to this assignment, Mr. Buckley was assigned to the Carolina Power and Light, Brunswick Plant, Appendix R separation analysis documentation review. He also supported the Niagara Mohawk, Nine Mile Unit 1, project which consisted of 125VDC system modifications, fuse and molded-case switch additions to the 125VDC distribution boards and addition of battery monitoring systems for 125VDC batteries.

EXPERIENCE (Cont.)

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In a previous assignment, he was a Project Engineer on the Commonwealth Edison, Dresden Unit 2 Annunciator Modifications Project. This modification addressed the human engineering deficiencies associated with the plant annunciator system. Changes to the system included auditory coding, ringback and flashrate adjustment and reflash. These changes resulted in extensive revisions to the plant's wiring and schematic drawings.

Previously, he was the Lead Electrical Design/Engineer for the No. 4 Chemical Recovery Boiler Project for Miramichi Pulp and Paper. His responsibilities included checking electrical specifications and calculations, development of the wiring design for connection of field cables as well as the design of raceways, grounding, lighting, etc.

His earlier assignments at ABB Impell included experience in an as-built verification of wiring diagrams for control panels and the development of design change packages required to resolve any deficiencies and updating all affected drawings for Boston Edison's Pilgrim Station. Other activities at Pilgrim Station included lighting design of the Computer Room, answering Engineering Service Requests (ESR), issuing and resolving Potential Conditions Adverse to Quality (PCAQ), writing and implementing Maintenance Work Request (MWR), evaluating plant conditions for circuit isolations and the preparing Appendix R Plant Design Change Packages. These packages included cable rerouting, and the installation of fire detection and suppression systems.

His previous assignments include a staff position on the Equipment Qualification Program team for Northeast Utilities and at the Seabrook Station which also included walkdown assignments. Earlier assignments with ABB Impell include the electrical design of the Appendix R Emergency Lighting System for Connecticut Yankee.

In an assignment at the NYPA Fitzpatrick plant, Mr. Buckley was responsible for coordinating the installation of electrical modifications in accordance with 10 CFR 50, Appendix R. His responsibilities included the layout of equipment, conduit routing and design of conduit supports.

Mr. Buckley previously worked with the C.T. Main Corporation Pulp and Paper Division where he was responsible for the electrical design of recovery boiler systems including precipitators, evaporators, and air compressors for the Ngodwana Mill Expansion Program in South Africa. In connection with this work, he was also responsible for raceway layout and design, and field engineering support. He prepared the secondary electrical power drawings, motor control center arrangements, computerized cable schedules, and related PLC drawings. He was assigned to the site for four months for

EXPERIENCE (Cont)

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the checkout and start-up of the recovery boiler, and the review of the electrical subcontractor's work. Other projects included the design of paper machines, power boilers, coal and wood yards and turbine generators.

With Metcalf & Eddy, Mr. Buckley was involved in the electrical design of various water and sewerage treatment plants. His work included a three month field assignment to determine the sources of computer analog and digital inputs associated with the computerization of an existing sewage treatment plant in St. Paul, Minnesota. In an earlier assignment, he spent three months overseas providing engineering support for the construction of military air base facilities in the Kingdom of Saudi Arabia.

EDUCATION

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Attended Northeastern University's Lincoln College

**ATTACHMENT F**

**CONNECTICUT YANKEE - SEISMIC CAPACITY  
EVALUATIONS OF ESSENTIAL RELAYS**

(185 Pages)

Relay Evaluation Report for Connecticut Yankee  
Attachment F - Seismic Capacity Evaluations of Essential Relays

## Table of Contents:

| CAB ID    | No. of Pages of Summary List | No. of Relay Functional Review | Total No. of pages |
|-----------|------------------------------|--------------------------------|--------------------|
| AB/4      | 3                            | 5                              | 18                 |
| AB/5      | 1                            | 1                              | 4                  |
| AUX-EG2A  | 2                            | 4                              | 14                 |
| AUX-EG2B  | 2                            | 0                              | 2                  |
| BUS 1-5   | 1                            | 3                              | 10                 |
| BUS 1-6   | 1                            | 1                              | 4                  |
| BUS 11    | 1                            | 1                              | 3                  |
| BUS 8     | 2                            | 6                              | 20                 |
| BUS 9     | 3                            | 0                              | 3                  |
| CB/8DB1   | 2                            | 4                              | 14                 |
| CB/8DB1A  | 3                            | 5                              | 18                 |
| CB/9DB1   | 2                            | 0                              | 2                  |
| CB/9DB1A  | 3                            | 1                              | 6                  |
| CB/B      | 2                            | 2                              | 8                  |
| CB/C      | 1                            | 1                              | 4                  |
| CB/F      | 2                            | 5                              | 17                 |
| ECP-2A    | 1                            | 1                              | 4                  |
| ECP-2B    | 1                            | 0                              | 1                  |
| EG-2A     | 1                            | 0                              | 1                  |
| EG-2B     | 1                            | 0                              | 1                  |
| EGP-2A    | 5                            | 3                              | 14                 |
| EGP-2B    | 4                            | 0                              | 4                  |
| LOCAL     | 1                            | 0                              | 1                  |
| MCC5-5    | 5                            | 0                              | 5                  |
| MCC7-6    | 1                            | 0                              | 1                  |
| MCC8-6    | 1                            | 0                              | 1                  |
| MCC9-4    | 1                            | 0                              | 1                  |
| MCC10-5   | 1                            | 0                              | 1                  |
| MCC12-1   | 1                            | 0                              | 1                  |
| MCC13-4   | 1                            | 0                              | 1                  |
| TOTAL > > |                              |                                | 184                |



Connecticut Yankee A-46  
Essential Relays  
Relay functional Review  
List

CAB\_ID AB/4

BUILDING SB  
ELEVATION 59.50  
LOCATION CONTROL AUX

| CONTACT ID       | MAKE     | MODEL       | CONT_COND | ENERGIZE | REMARK          |
|------------------|----------|-------------|-----------|----------|-----------------|
| 27Y-6-BKR 6-14C  | GE - HEA | 12HEA61C239 | NO        | NO       | RLY_FUNC_REVIEW |
| 27/X2-4-SW-MOV-3 | GE-HGA   |             | NC        | YES      | RLY_FUNC_REVIEW |
| 27/X2-4-SW-MOV-4 | GE-HGA   |             | NC        | YES      | OK              |
| 27/X2-5-SW-MOV-3 | GE-HGA   |             | NC        | YES      | OK              |
| 27/X2-5-SW-MOV-4 | GE-HGA   |             | NC        | YES      | OK              |
| 27/X2-6-SW-MOV-3 | GE-HGA   |             | NC        | YES      | OK              |
| 27/X2-6-SW-MOV-4 | GE-HGA   |             | NC        | YES      | OK              |
| 27/X3-4-SW-MOV-3 | GE-HGA   |             | NC        | YES      | OK              |
| 27/X3-4-SW-MOV-4 | GE-HGA   |             | NC        | YES      | OK              |
| 27/X3-5-SW-MOV-3 | GE-HGA   |             | NC        | YES      | OK              |
| 27/X3-5-SW-MOV-4 | GE-HGA   |             | NC        | YES      | OK              |
| 27/X3-6-SW-MOV-3 | GE-HGA   |             | NC        | YES      | OK              |

Connecticut Yankee A-46  
 Essential Relays  
 Relay functional Review  
 List

CAB\_ID AB/4

BUILDING SB  
 ELEVATION 59.50  
 LOCATION CONTROL AUX

| CONTACT ID       | MAKE   | MODEL | CONT_COND | ENERGIZE | REMARK          |
|------------------|--------|-------|-----------|----------|-----------------|
| 27/X3-6-SW-MOV-4 | GE-HGA |       | NC        | YES      | OK              |
| 27-4-P-13-1A     | W CV-7 |       | NC        | YES      | RLY_FUNC_REVIEW |
| 27-4-P-37-1A     | W CV-7 |       | NC        | YES      | OK              |
| 27-5-P-37-1B     | W CV-7 |       | NC        | YES      | OK              |
| 27-6-BKR 6-12D   | W CV-7 |       | NC        | YES      | OK              |
| 27-6-BKR 6-14C   | W CV-7 |       | NC        | YES      | OK              |
| 27-6-P-13-1B     | W CV-7 |       | NC        | YES      | OK              |
| 27-6-P-37-1C     | W CV-7 |       | NC        | YES      | OK              |
| 27X-4-P-13-1A    | W MG-6 |       | NO        | NO       | RLY_FUNC_REVIEW |
| 27X-4-P-37-1A    | W MG-6 |       | NO        | NO       | OK              |
| 27X-5-P-37-1B    | W MG-6 |       | NO        | NO       | OK              |
| 27X-6-BKR 6-12D  | W MG-6 |       | NO        | NO       | OK              |

Connecticut Yankee A-46  
Essential Relays  
Relay functional Review  
List

CAB\_ID AB/4

BUILDING SB  
ELEVATION 59.50  
LOCATION CONTROL AUX

| CONTACT ID       | MAKE   | MODEL           | CONT_COND | ENERGIZE | REMARK          |
|------------------|--------|-----------------|-----------|----------|-----------------|
| 27X-6-P-13-1B    | W MG-6 |                 | NO        | NO       | OK              |
| 27X1-5-BKR 5-8D  | W SG   | Ser. # 1342925A | NO        | NO       | RLY_FUNC_REVIEW |
| 27X1-5-P-37-1B   | W SG   | Ser. # 1342925A | NO        | NO       | OK              |
| 27X1-6-BKR 6-12D | W SG   | Ser. # 1342925A | NO        | NO       | OK              |
| 27X1-6-BKR 6-14C | W SG   | Ser. # 1342925A | NO        | NO       | OK              |
| 27X1-6-P-13-1B   | W SG   | Ser. # 1342925A | NO        | NO       | OK              |
| 27X1-6-P-37-1C   | W SG   | Ser. # 1342925A | NO        | NO       | OK              |
| 27X1-7-BKR 7-16C | W SG   | Ser. # 1342925A | NO        | NO       | OK              |

|  |                 |  |
|--|-----------------|--|
| <b>RELAY FUNCTIONALITY REVIEW REPORT</b> |                 | GIP Rev 2, Corrected, 2/14/92<br>Status: Yes<br>Sheet 1 of 3 |
| ID : 27Y-6-BKR 6-14C (Rev. 0)            | Make : GE - HEA | Drawing : 32001 SH 6GA                                       |
| System : ELEC                            |                 | Subsystem/Component :  |
| Description : 12HEA61C239                |                 |  |
| Location : CONTROL AUX                   |                 |  |

**SCREENING BASIS : RELAY GERS OR SPECIFIC QUALIFICATION**

**Low Ruggedness**

Is relay not a low ruggedness relay?

LRR

**Relay Capacity Level**

|                                       |   |
|---------------------------------------|---|
| Class : Auxiliary Relay               | SubClass : Lockout                          |
| Relay Model : GE HEA61A,-B,-C (AC/DC) | Operating Mode : Non-operate, normally open |
| Required Settings :                   |   |

Capacity GERS Level : 10.00

**Cabinet Seismic Capacity vs Demand  
Demand Amplification Factor**

Cabinet Type : High Amplification (large, flexible panels)

Demand Amplification Factor : 7

|                                      |  |                             |
|--------------------------------------|--|-----------------------------|
| Cabinet ID : AB/4 (Rev. 0)           | Cabinet Class : 20 - Instrumentation and Control Panels and Cabinets |                             |
| Cabinet Description : 480V BUS PANEL |  |                             |
| Building : SB                        | Floor El. : 59.5   | Room, Row/Col : CONTROL AUX |

Is cabinet seismically adequate?

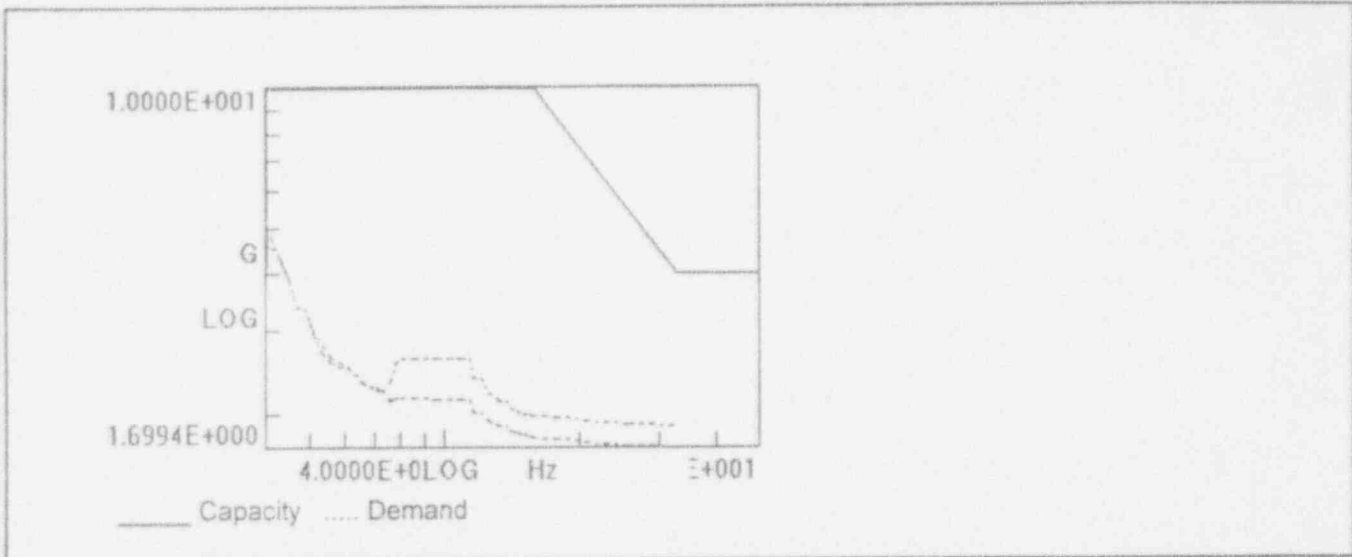
Yes

**Cabinet Frequency**

Cabinet fundamental frequency greater than 8 Hz

|  |                       |  |
|--|-----------------------|--|
| <b>RELAY FUNCTIONALITY REVIEW REPORT</b> |                       | GIP Rev 2, Corrected, 2/14/92<br>Status: Yes<br>Sheet 2 of 3 |
| ID : 27Y-6-BKR 6-14C (Rev. 0)            | Make : GE - HEA       | Drawing : 32001 SH 6GA                                       |
| System : ELEC                            | Subsystem/Component : |  |
| Description : 12HEA61C239                |                       |  |
| Location : CONTROL AUX                   |                       |  |

**Relay Seismic Capacity vs Demand**



|          | File                        | Record   |
|----------|-----------------------------|--|
| Capacity | C:\GIP\GIP\spectra.des      | Label\ANSI C37.98  |
| Demand 1 | C:\GIP\PROJ0024\spectra.des | UNIT\CY\BLDG\Turbine\Service\ELEV\59.50\LOC\L9\DIR\N\S\ID\TB059L9N |
| Demand 2 | C:\GIP\PROJ0024\spectra.des | UNIT\CY\BLDG\Turbine\Service\ELEV\59.50\LOC\L9\DIR\EW\ID\TB059L9E  |

Does relay capacity exceed demand?

SRT

GERS BASIS : LEVEL 2: GERS/TRS V. CONSERVATIVE FRS \* AMP FACTOR

**IS RELAY SEISMICALLY ADEQUATE?**

Yes

COMMENTS

Evaluated by:

*Sig. C. O. W.*  
*C. M. Abu-Parwez*

Date:

*12/16/93*  
*12-16-93*

RELAY FUNCTIONALITY REVIEW REPORT

GIP Rev 2, Corrected, 2/14/92  
Status: Yes  
Sheet 3 of 3

ID : 27Y-6-BKR 6-  
14C (Rev. 0)

Make : GE - HEA

Drawing : 32001 SH 6GA

System : ELEC

Subsystem/Component :

Description : 12HEA61C239

Location : CONTROL AUX

|  |               |  |
|--|---------------|--|
| <b>RELAY FUNCTIONALITY REVIEW REPORT</b> |               | GIP Rev 2, Corrected, 2/14/92<br>Status: Yes<br>Sheet 1 of 3 |
| ID : 27/X2-4-SW-MOV-3 (Rev. 0)           | Make : GE-HGA | Drawing : 32001 SH 6KB                                       |
| System :                                 |               | Subsystem/Component :  |
| Description :                            |               |  |
| Location : CONTROL AUX                   |               |  |

**SCREENING BASIS : RELAY GERS OR SPECIFIC QUALIFICATION**

**Low Ruggedness**

Is relay not a low ruggedness relay?

LRR

**Relay Capacity Level**

|   |   |
|---|---|
| Class : Auxiliary Relay                         | SubClass : Double-Pole, Double-Throw      |
| Relay Model : HGA 11 (AC)                       | Operating Mode : Operate, normally closed |
| Required Settings : high tension spring setting |   |

Capacity GERS Level : 10.00

**Cabinet Seismic Capacity vs Demand  
Demand Amplification Factor**

Cabinet Type : High Amplification (large, flexible panels)

Demand Amplification Factor : 7

|                                      |  |                             |
|--------------------------------------|--|-----------------------------|
| Cabinet ID : AB/4 (Rev. 0)           | Cabinet Class : 20 - Instrumentation and Control Panels and Cabinets |                             |
| Cabinet Description : 480V BUS PANEL |  |                             |
| Building : SB                        | Floor El. : 59.5   | Room, Row/Col : CONTROL AUX |

Is cabinet seismically adequate?

Yes

**Cabinet Frequency**

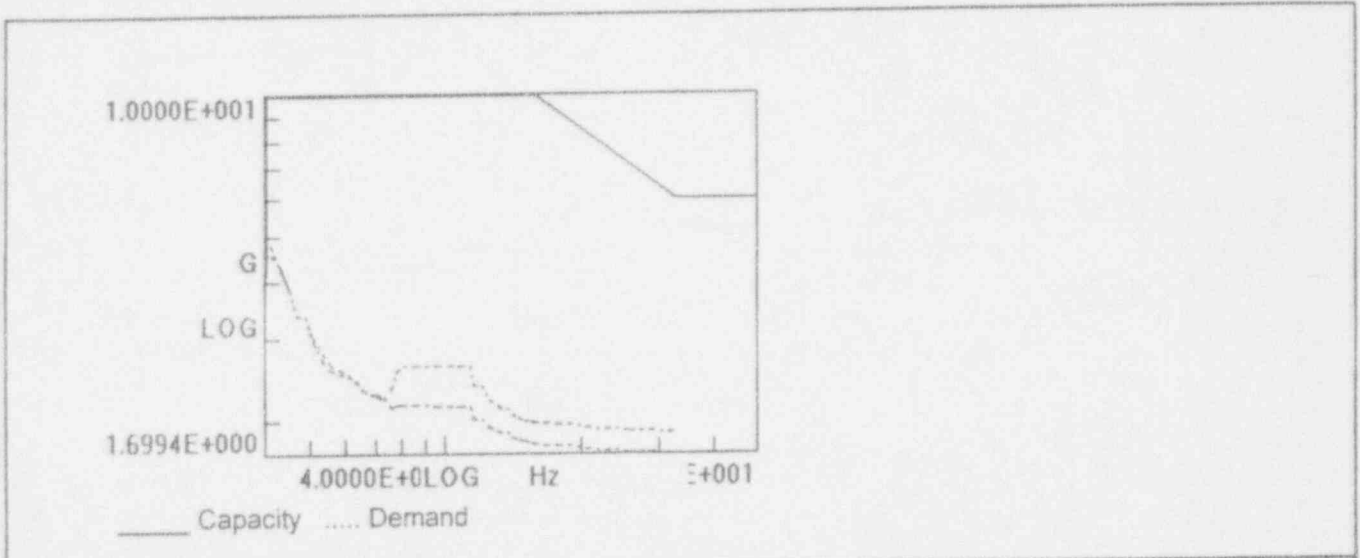
Cabinet fundamental frequency greater than 8 Hz

# RELAY FUNCTIONALITY REVIEW REPORT

GIP Rev 2, Corrected, 2/14/92  
Status: Yes  
Sheet 2 of 3

|                                |                       |                        |
|--------------------------------|-----------------------|------------------------|
| ID : 27/X2-4-SW-MOV-3 (Rev. 0) | Make : GE-HGA         | Drawing : 32001 SH 6KB |
| System :                       | Subsystem/Component : |                        |
| Description :                  |                       |                        |
| Location : CONTROL AUX         |                       |                        |

## Relay Seismic Capacity vs Demand



|          | File                        | Record   |
|----------|-----------------------------|--|
| Capacity | C:\GIP\GIP\spectra.des      | Label Modified Relay GERS  |
| Demand 1 | C:\GIP\PROJ0024\spectra.des | UNIT CY BLDG Turbine/Service ELEV 59.50 LOC L9 DIR N/S ID TB059L9N |
| Demand 2 | C:\GIP\PROJ0024\spectra.des | UNIT CY BLDG Turbine/Service ELEV 59.50 LOC L9 DIR E/W ID TB059L9E |

Does relay capacity exceed demand? SRI

GERS BASIS : LEVEL 2: GERS/TRS V. CONSERVATIVE FRS \* AMP FACTOR

IS RELAY SEISMICALLY ADEQUATE? Yes

### COMMENTS

Evaluated by: *Sing Chen* Date: 12/16/93  
*C.M. Peter Powell* 12-16-93



# RELAY FUNCTIONALITY REVIEW REPORT

GIP Rev 2, Corrected, 2/14/92  
Status: Yes  
Sheet 3 of 3

ID : 27/X2-4-SW-  
MOV-3 (Rev. 0)

Make : GE-HGA

Drawing : 32001 SH 6KB

System :

Subsystem/Component :

Description :

Location : CONTROL AUX

|  |               |  |
|--|---------------|--|
| <b>RELAY FUNCTIONALITY REVIEW REPORT</b> |               | GIP Rev 2, Corrected, 2/14/92<br>Status: Yes<br>Sheet 1 of 3 |
| ID : 27-4-P-13-1A<br>(Rev. 0)            | Make : W CV-7 | Drawing : 32001 SH 6J  |
| System : ELEC                            |               | Subsystem/Component :  |
| Description :                            |               |  |
| Location : CONTROL AUX                   |               |  |

**SCREENING BASIS : RELAY GERS OR SPECIFIC QUALIFICATION**

**Low Ruggedness**

Is relay not a low ruggedness relay?

LRR

**Relay Capacity Level**

|   |   |
|---|---|
| Class : Protective Relay  | SubClass : Induction Disk - Westinghouse Class 1E |
| Relay Model : CV-2, -4, -6, -7, -8; Style<br>1454C77 __, 1482B97 __ | Operating Mode : Operate, normally closed         |
| Required Settings :   |   |

Capacity GERS Level : 14.20

**Cabinet Seismic Capacity vs Demand  
Demand Amplification Factor**

Cabinet Type : High Amplification (large, flexible panels)

Demand Amplification Factor : 7

|                                      |  |                             |
|--------------------------------------|--|-----------------------------|
| Cabinet ID : AB/4 (Rev. 0)           | Cabinet Class : 20 - Instrumentation and Control Panels and Cabinets |                             |
| Cabinet Description : 480V BUS PANEL |  |                             |
| Building : SB                        | Floor El. : 59.5   | Room, Row/Col : CONTROL AUX |

Is cabinet seismically adequate?

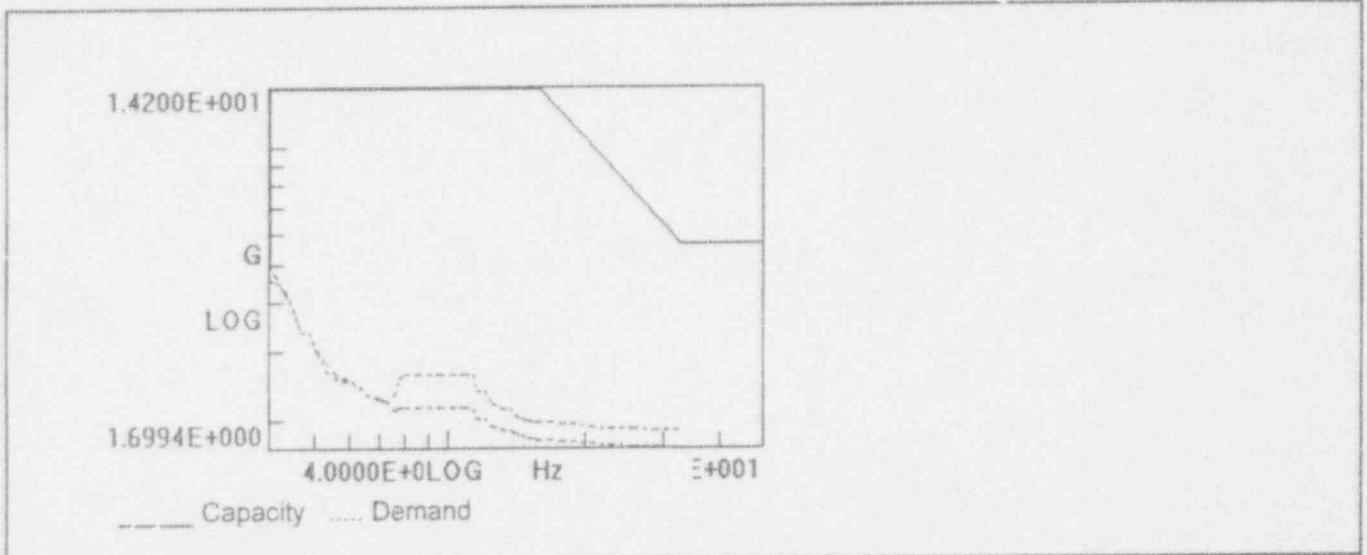
Yes

**Cabinet Frequency**

Cabinet fundamental frequency greater than 8 Hz

|  |                       |  |
|--|-----------------------|--|
| <b>RELAY FUNCTIONALITY REVIEW REPORT</b> |                       | GIP Rev 2, Corrected, 2/14/92<br>Status: Yes<br>Sheet 2 of 3 |
| ID : 27-4-P-13-1A<br>(Rev. 0)            | Make : W CV-7         | Drawing : 32001 SH 6J  |
| System : ELEC                            | Subsystem/Component : |  |
| Description :                            |                       |  |
| Location : CONTROL AUX                   |                       |  |

**Relay Seismic Capacity vs Demand**



|          | File                        | Record   |
|----------|-----------------------------|--|
| Capacity | C:\GIP\GIP\spectra.des      | Label\ANSI C37.98  |
| Demand 1 | C:\GIP\PROJ0024\spectra.des | UNIT\CY\BLDG\Turbine\Service\ELEV\59.50\LOC\L9\DIR\N\S\ID\TB059L9N |
| Demand 2 | C:\GIP\PROJ0024\spectra.des | UNIT\CY\BLDG\Turbine\Service\ELEV\59.50\LOC\L9\DIR\E\W\ID\TB059L9E |

Does relay capacity exceed demand?

SRI

GERS BASIS : LEVEL 2: GERS/TRS V. CONSERVATIVE FRS \* AMP FACTOR

**IS RELAY SEISMICALLY ADEQUATE?**

Yes

**COMMENTS**

Evaluated by:

*C. M. Ober*  
C. M. Ober

Date:

12/16/93  
12-16-93

**RELAY FUNCTIONALITY REVIEW REPORT**

GIP Rev 2, Corrected, 2/14/92

Status: Yes

Sheet 3 of 3

ID : 27-4-P-13-1A  
(Rev. 0)

Make : W CV-7

Drawing : 32001 SH 6J

System : ELEC

Subsystem/Component :

Description :

Location : CONTROL AUX

|  |               |  |
|--|---------------|--|
| <b>RELAY FUNCTIONALITY REVIEW REPORT</b> |               | GIP Rev 2, Corrected, 2/14/92<br>Status: Yes<br>Sheet 1 of 3 |
| ID : 27X-4-P-13-1A<br>(Rev. 0)           | Make : W MG-6 | Drawing : 32112 SH 14A                                       |
| System : ELEC                            |               | Subsystem/Component :  |
| Description :                            |               |  |
| Location : CONTROL AUX                   |               |  |

**SCREENING BASIS : RELAY GERS OR SPECIFIC QUALIFICATION**

**Low Ruggedness**

Is relay not a low ruggedness relay?

LRR

**Relay Capacity Level**

|  |   |
|--|---|
| Class : Auxiliary Relay                  | SubClass : Hinged Armature Multi-contact    |
| Relay Model : Westinghouse MG-6 (DC)     | Operating Mode : Non-operate, normally open |
| Required Settings : 80 ms operation time |   |

Capacity GERS Level : 10.00

**Cabinet Seismic Capacity vs Demand  
Demand Amplification Factor**

Cabinet Type : High Amplification (large, flexible panels)

Demand Amplification Factor : 7

|                                      |  |                             |
|--------------------------------------|--|-----------------------------|
| Cabinet ID : AB/4 (Rev. 0)           | Cabinet Class : 20 - Instrumentation and Control Panels and Cabinets |                             |
| Cabinet Description : 480V BUS PANEL |  |                             |
| Building : SB                        | Floor El. : 59.5   | Room, Row/Col : CONTROL AUX |

Is cabinet seismically adequate?

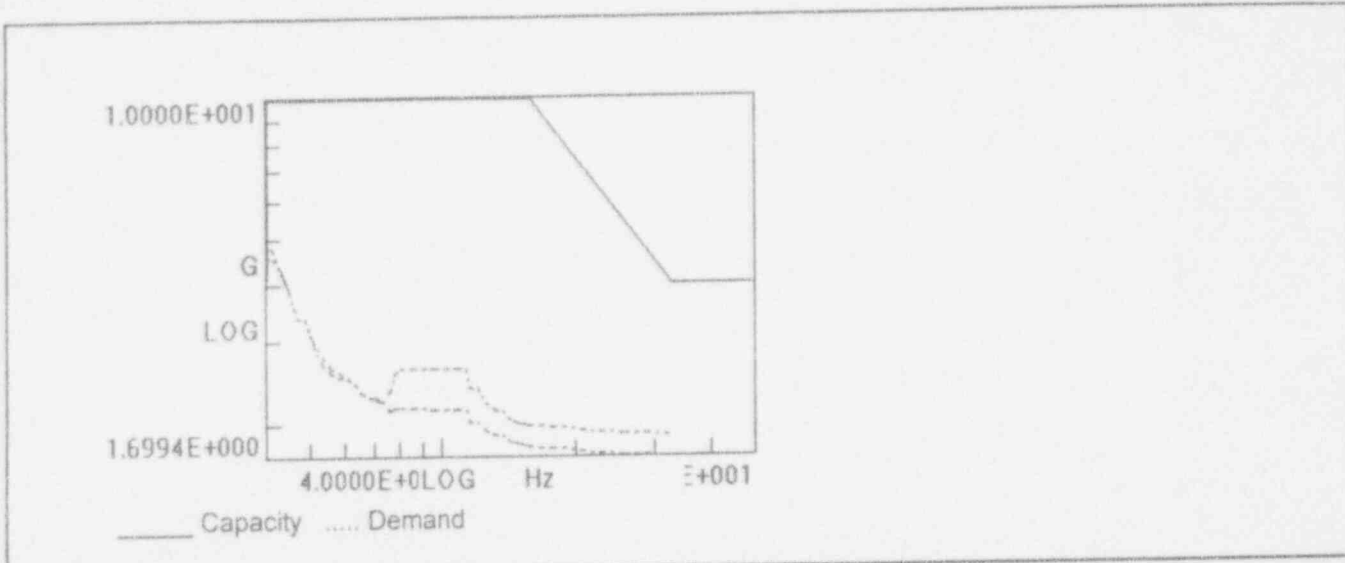
Yes

**Cabinet Frequency**

Cabinet fundamental frequency greater than 8 Hz

|  |               |  |
|--|---------------|--|
| <b>RELAY FUNCTIONALITY REVIEW REPORT</b> |               | GIP Rev 2, Corrected, 2/14/92<br>Status: Yes<br>Sheet 2 of 3 |
| ID : 27X-4-P-13-1A<br>(Rev. C)           | Make : W MG-6 | Drawing : 32112 SH 14A                                       |
| System : ELEC                            |               | Subsystem/Component :  |
| Description :                            |               |  |
| Location : CONTROL AUX                   |               |  |

**Relay Seismic Capacity vs Demand**



|          | File                        | Record   |
|----------|-----------------------------|--|
| Capacity | C:\GIP\GIP\spectra.des      | Label ANSI C37.98  |
| Demand 1 | C:\GIP\PROJ0024\spectra.des | UNIT CY BLDG Turbine/Service ELEV 59.50 LOC L9 DIR N/S ID TB059L9N |
| Demand 2 | C:\GIP\PROJ0024\spectra.des | UNIT CY BLDG Turbine/Service ELEV 59.50 LOC L9 DIR E/W ID TB059L9E |

Does relay capacity exceed demand?

SRI

GERS BASIS : LEVEL 2: GERS/TRS V. CONSERVATIVE FRS \* AMP FACTOR

IS RELAY SEISMICALLY ADEQUATE?

Yes

COMMENTS

Evaluated by:

*[Signature]*  
C. M. [Signature]

Date:

12/16/93

12-16-93

**RELAY FUNCTIONALITY REVIEW REPORT**

GIP Rev 2, Corrected, 2/14/92  
Status: Yes  
Sheet 3 of 3

ID : 27X-4-P-13-1A    Make : W MG-6  
(Rev. 0)

Drawing : 32112 SH 14A

System : ELEC

Subsystem/Component :

Description :

Location : CONTROL AUX

|  |                       |  |
|--|-----------------------|--|
| <b>RELAY FUNCTIONALITY REVIEW REPORT</b> |                       | GIP Rev 2, Corrected, 2/14/92<br>Status: Yes<br>Sheet 1 of 3 |
| ID : 27X1-5-BKR<br>5-6C (Rev. 0)         | Make : W SG           | Drawing : 32001 SH 6J  |
| System : ELEC                            | Subsystem/Component : |  |
| Description : Ser. # 1342925A            |                       |  |
| Location : CONTROL AUX                   |                       |  |

**SCREENING BASIS : RELAY GERS OR SPECIFIC QUALIFICATION**

**Low Ruggedness**

Is relay not a low ruggedness relay?

LRR

**Relay Capacity Level**

|                               |   |
|-------------------------------|---|
| Class : Auxiliary Relay       | SubClass : Double-Pole, Double-Throw        |
| Relay Model : SG (DC voltage) | Operating Mode : Non-operate, normally open |
| Required Settings :           |   |

|                            |
|----------------------------|
| Capacity GERS Level : 9.00 |
|----------------------------|

**Cabinet Seismic Capacity vs Demand  
Demand Amplification Factor**

|  |
|--|
| Cabinet Type : High Amplification (large, flexible panels) |
|--|

|                                 |
|---------------------------------|
| Demand Amplification Factor : 7 |
|---------------------------------|

|                                      |  |                             |
|--------------------------------------|--|-----------------------------|
| Cabinet ID : AB/4 (Rev. 0)           | Cabinet Class : 20 - Instrumentation and Control Panels and Cabinets |                             |
| Cabinet Description : 480V BUS PANEL |  |                             |
| Building : SB                        | Floor El. : 59.5   | Room, Row/Col : CONTROL AUX |

Is cabinet seismically adequate?

Yes

**Cabinet Frequency**

Cabinet fundamental frequency greater than 8 Hz

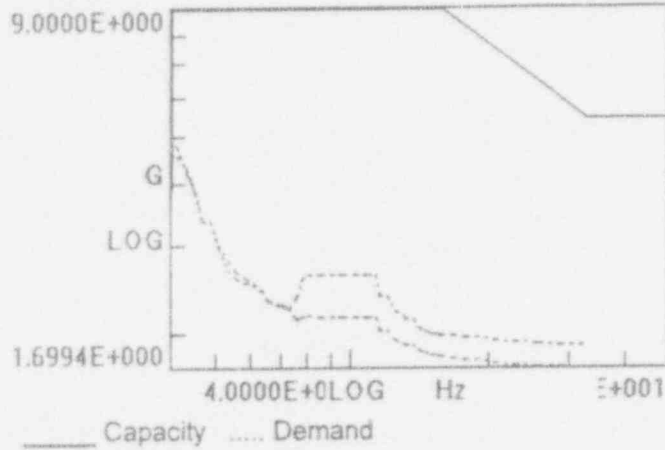


# RELAY FUNCTIONALITY REVIEW REPORT

GIP Rev 2, Corrected, 2/14/92  
 Status: Yes  
 Sheet 2 of 3

|                                  |             |                       |
|----------------------------------|-------------|-----------------------|
| ID : 27X1-5-BKR<br>5-6C (Rev. 0) | Make : W SG | Drawing : 32001 SH 6J |
| System : ELEC                    |             | Subsystem/Component : |
| Description : Ser. # 1342925A    |             |                       |
| Location : CONTROL AUX           |             |                       |

## Relay Seismic Capacity vs Demand



|          | File                        | Record   |
|----------|-----------------------------|--|
| Capacity | C:\GIP\GIP\spectra.des      | Label Modified Relay GERS  |
| Demand 1 | C:\GIP\PROJ0024\spectra.des | UNIT CY BLDG Turbine/Service ELEV 59.50 LOC L9 DIR N/S ID TB059L9N |
| Demand 2 | C:\GIP\PROJ0024\spectra.des | UNIT CY BLDG Turbine/Service ELEV 59.50 LOC L9 DIR E/W ID TB059L9E |

Does relay capacity exceed demand?

SRI

GERS BASIS : LEVEL 2: GERS/TRS V. CONSERVATIVE FRS \* AMP FACTOR

IS RELAY SEISMICALLY ADEQUATE?

Yes

### COMMENTS

Evaluated by:

C. M. Alon Pineda

Date:

12/16/93  
12-16-93

RELAY FUNCTIONALITY REVIEW REPORT

GIP Rev 2, Corrected, 2/14/92  
Status: Yes  
Sheet 3 of 3

ID : 27X1-5-BKR  
5-6C (Rev. 0)

Make : W SG

Drawing : 32001 SH 6J

System : ELEC

Subsystem/Component :

Description : Ser. # 1342925A

Location : CONTROL AUX

Connecticut Yankee A-46  
Essential Relays  
Relay functional Review  
List

CAB\_ID AB/5

BUILDING SB  
ELEVATION 59.50  
LOCATION CONTROL AUX

| CONTACT ID     | MAKE     | MODEL         | CONT_COND | ENERGIZE | REMARK          |
|----------------|----------|---------------|-----------|----------|-----------------|
| 27/X4-SW-MOV-3 | GE - HEA | 12HEA61B236X2 | NO        | NO       | RLY_FUNC_REVIEW |
| 27/X4-SW-MOV-4 | GE - HEA | 12HEA61B236X2 | NO        | NO       | OK              |
| 27/X5-SW-MOV-3 | GE - HEA | 12HEA61B236X2 | NO        | NO       | OK              |
| 27/X5-SW-MOV-4 | GE - HEA | 12HEA61B236X2 | NO        | NO       | OK              |

|  |                       |  |
|--|-----------------------|--|
| <b>RELAY FUNCTIONALITY REVIEW REPORT</b> |                       | GIP Rev 2, Corrected, 2/14/92<br>Status: Yes<br>Sheet 1 of 3 |
| ID : 27/X4-SW-<br>MOV-3 (Rev. 0)         | Make : GE - HEA       | Drawing : 32001 SH 6SC                                       |
| System :                                 | Subsystem/Component : |  |
| Description : 12HEA61B236X2              |                       |  |
| Location : CONTROL AUX                   |                       |  |

**SCREENING BASIS : RELAY GERS OR SPECIFIC QUALIFICATION**

**Low Ruggedness**

Is relay not a low ruggedness relay?

LRR

**Relay Capacity Level**

|                                       |   |
|---------------------------------------|---|
| Class : Auxiliary Relay               | SubClass : Lockout                          |
| Relay Model : GE HEA61A,-B,-C (AC/DC) | Operating Mode : Non-operate, normally open |
| Required Settings :                   |   |

Capacity GERS Level : 10.00

**Cabinet Seismic Capacity vs Demand  
Demand Amplification Factor**

Cabinet Type : High Amplification (large, flexible panels)

Demand Amplification Factor : 7

|   |  |                             |
|---|--|-----------------------------|
| Cabinet ID : AB/5 (Rev. 0)                  | Cabinet Class : 20 - Instrumentation and Control Panels and Cabinets |                             |
| Cabinet Description : EMERGENCY POWER PANEL |  |                             |
| Building : SB                               | Floor El. : 59.5   | Room, Row/Col : CONTROL AUX |

Is cabinet seismically adequate?

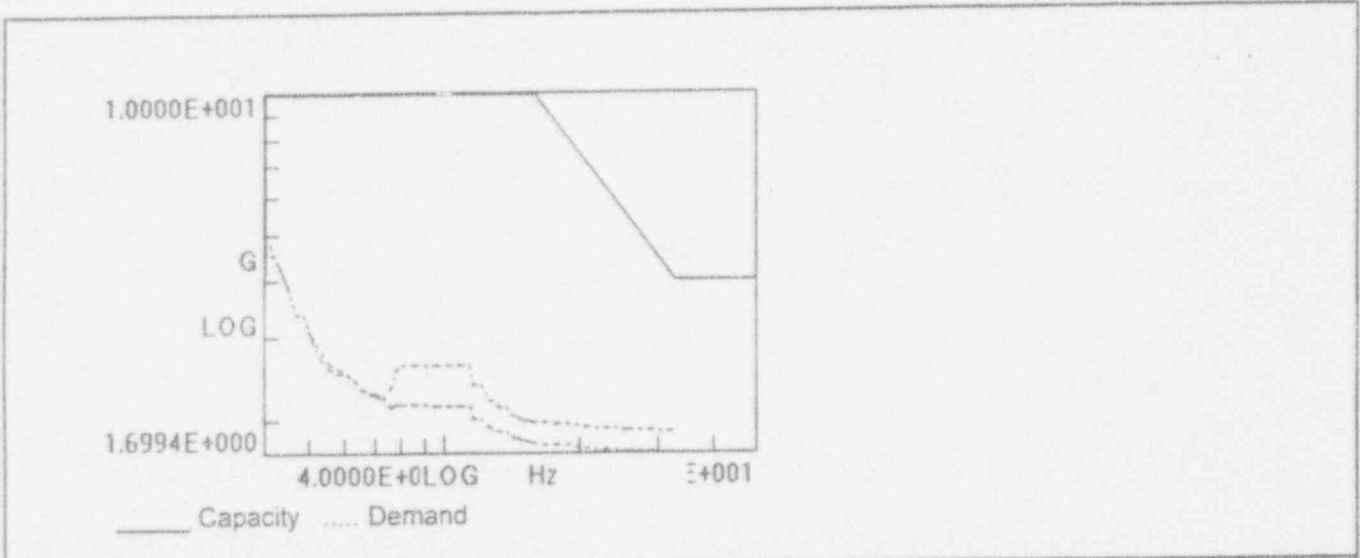
Yes

**Cabinet Frequency**

Cabinet fundamental frequency greater than 8 Hz

|                                   |                 |                               |  |
|-----------------------------------|-----------------|-------------------------------|--|
| RELAY FUNCTIONALITY REVIEW REPORT |                 | GIP Rev 2, Corrected, 2/14/92 |  |
|                                   |                 | Status: Yes<br>Sheet 2 of 3   |  |
| ID : 27/X4-SW-<br>MOV-3 (Rev. 0)  | Make : GE - HEA | Drawing : 32001 SH 6SC        |  |
| System :                          |                 | Subsystem/Component :         |  |
| Description : 12HEA61B236X2       |                 |                               |  |
| Location : CONTROL AUX            |                 |                               |  |

**Relay Seismic Capacity vs Demand**



|          | File                        | Record   |
|----------|-----------------------------|--|
| Capacity | C:\GIP\GIP\spectra.des      | Label ANSI C37.98  |
| Demand 1 | C:\GIP\PROJ0024\spectra.des | UNIT CY BLDG Turbine/Service ELEV 59.50 LOC L9 DIR N/S ID TB059L9N |
| Demand 2 | C:\GIP\PROJ0024\spectra.des | UNIT CY BLDG Turbine/Service ELEV 59.50 LOC L9 DIR E/W ID TB059L9E |

Does relay capacity exceed demand?

SRT

GERS BASIS : LEVEL 2: GERS/TRS V. CONSERVATIVE FRS \* AMP FACTOR

IS RELAY SEISMICALLY ADEQUATE?

Yes

COMMENTS

Evaluated by:

*[Signature]*

Date:

12/16/93

C. M. [Signature]

12.16.93

RELAY FUNCTIONALITY REVIEW REPORT

GIP Rev 2, Corrected, 2/14/92  
Status: Yes  
Sheet 3 of 3

|                                  |                       |                        |
|----------------------------------|-----------------------|------------------------|
| ID : 27/X4-SW-<br>MOV-3 (Rev. 0) | Make : GE - HEA       | Drawing : 32001 SH 6SC |
| System :                         | Subsystem/Component : |                        |
| Description : 12HEA61B236X2      |                       |                        |
| Location : CONTROL AUX           |                       |                        |

Connecticut Yankee A-46  
 Essential Relays  
 Relay functional Review  
 List

CAB\_ID **AUX-EG2A**

BUILDING DG  
 ELEVATION 21.50  
 LOCATION A DIESEL

| CONTACT ID        | MAKE     | MODEL            | CONT_COND | ENERGIZE | REMARK          |
|-------------------|----------|------------------|-----------|----------|-----------------|
| T1A (A)-BKR 8-1   | AGASTAT  | E7000 E7014PA    |           |          | RLY_FUNC_REVIEW |
| T1A (A)-EG-2A     | AGASTAT  | E7000 E7014PA    |           |          | OK              |
| T1B (A)-BKR 8-1   | AGASTAT  | E7000 E7014PA002 |           |          | OK              |
| T1B (A)-EG-2A     | AGASTAT  | E7000 E7014PA002 |           |          | OK              |
| T1 (A)-BKR 8-1    | AGASTAT  | E7000 E7024PE    |           |          | RLY_FUNC_REVIEW |
| T1 (A)-EG-2A      | AGASTAT  | E7000 E7024PE    |           |          | OK              |
| T2 (A)-EG-2A      | AGASTAT  | E7000 E7024PH    |           |          | OK              |
| IOPLR (A)-BKR 8-1 | AGASTAT  | EGPD00 EGPD002   |           |          | RLY_FUNC_REVIEW |
| IOPLR (A)-EG-2A   | AGASTAT  | EGPD00 EGPD002   |           |          | OK              |
| ROPLR (A)-BKR 8-1 | AGASTAT  | EGPD00 EGPD002   |           |          | OK              |
| ROPLR (A)-EG-2A   | AGASTAT  | EGPD00 EGPD002   |           |          | OK              |
| R1 (A)-BKR 8-1    | GE - HFA | 12HFA154B22H     | NO        | NO       | RLY_FUNC_REVIEW |

Connecticut Yankee A-46  
Essential Relays  
Relay functional Review  
List

CAB\_ID **AUX-EG2A**

BUILDING DG  
ELEVATION 21.50  
LOCATION A DIESEL

| CONTACT ID   | MAKE     | MODEL        | CONT_COND | ENERGIZE | REMARK |
|--------------|----------|--------------|-----------|----------|--------|
| R1 (A)-EG-2A | GE - HFA | 12HFA154B22H | NO        | NO       | OK     |



|  |                      |  |
|--|----------------------|--|
| <b>RELAY FUNCTIONALITY REVIEW REPORT</b> |                      | GIP Rev 2, Corrected, 2/14/92<br>Status: Yes<br>Sheet 1 of 3 |
| ID : T1A (A)-BKR<br>8-1 (Rev. 0)         | Make : AGASTAT E7000 | Drawing : 31099 SH 3   |
| System : ELEC                            |                      | Subsystem/Component :  |
| Description : E7014PA                    |                      |  |
| Location : A DIESEL                      |                      |  |

**SCREENING BASIS : RELAY GERS OR SPECIFIC QUALIFICATION**

**Low Ruggedness**

Is relay not a low ruggedness relay?

LRR

**Relay Capacity Level**

|   |   |
|---|---|
| Class : Auxiliary Relay                 | SubClass : Pneumatic Timing Relays          |
| Relay Model : Agastat E7014, 7014, 2414 | Operating Mode : Non-operate, normally open |
| Required Settings :                     |   |

Capacity GERS Level : 10.00

**Cabinet Seismic Capacity vs Demand  
Demand Amplification Factor**

Cabinet Type : Low Amplification (MCC-like cabinets)

Demand Amplification Factor : 6.75

|  |  |                          |
|--|--|--------------------------|
| Cabinet ID : AUX-EG2A (Rev. 0)                             | Cabinet Class : 20 - Instrumentation and Control Panels and Cabinets |                          |
| Cabinet Description : EMERGENCY STOP/TRIP/BYPASS AUX PANEL |  |                          |
| Building : DG  | Floor El. : 21.5   | Room, Row/Col : A DIESEL |

Is cabinet seismically adequate?

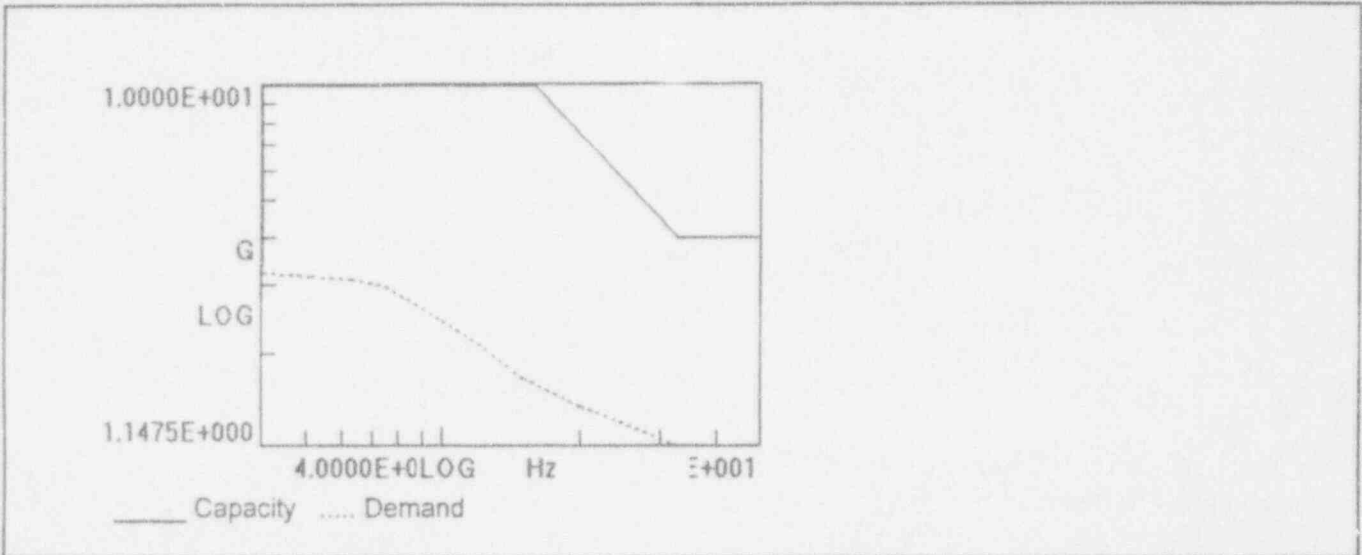
Yes

**Cabinet Frequency**

Cabinet fundamental frequency greater than 8 Hz

|  |                      |  |
|--|----------------------|--|
| <b>RELAY FUNCTIONALITY REVIEW REPORT</b> |                      | GIP Rev 2, Corrected, 2/14/92<br>Status: Yes<br>Sheet 2 of 3 |
| ID : T1A (A)-BKR<br>8-1 (Rev. 0)         | Make : AGASTAT E7000 | Drawing : 31099 SH 3   |
| System : ELEC                            |                      | Subsystem/Component :  |
| Description : E7014PA                    |                      |  |
| Location : A DIESEL                      |                      |  |

**Relay Seismic Capacity vs Demand**



|          | File                        | Record   |
|----------|-----------------------------|--|
| Capacity | C:\GIP\GIP\spectra.des      | Label\ANSI C37.98                                      |
| Demand 1 | C:\GIP\PROJ0024\spectra.des | UNIT CY BLDG SITEROCK ELEV 21.5 LOC na DIR HORI ID SSE |
| Demand 2 | C:\GIP\PROJ0024\spectra.des | UNIT CY BLDG SITEROCK ELEV 21.5 LOC na DIR HORI ID SSE |

Does relay capacity exceed demand?

SRI

**GERS BASIS : LEVEL 2: GERS/TRS V. 2.25\*SSE \* AMP FACTOR**

**Elevation Above Grade**

Elevation of cabinet below about 40' from grade

Yes

**Cabinet Frequency**

Cabinet fundamental frequency greater than 8 Hz

Yes

**IS RELAY SEISMICALLY ADEQUATE?**

Yes

**COMMENTS**

Operating mode and contact condition is unknown, used lowest GERS.

Evaluated by: *C. M. Abu Jawadeh*

Date: 12/16/93  
12.16.93

RELAY FUNCTIONALITY REVIEW REPORT

GIP Rev 2, Corrected, 2/14/92

Status: Yes

Sheet 3 of 3

ID : T1A (A)-BKR  
8-1 (Rev. 0)

Make : AGASTAT E7000

Drawing : 31099 SH 3

System : ELEC

Subsytem/Component :

Description : E7014PA

Location : A DIESEL

|  |                      |  |
|--|----------------------|--|
| <b>RELAY FUNCTIONALITY REVIEW REPORT</b> |                      | GIP Rev 2, Corrected, 2/14/92<br>Status: Yes<br>Sheet 1 of 3 |
| ID: T1 (A)-EKR 8-1 (Rev. 0)              | Make: AGASTAT E7000  | Drawing: 31099 SH 3  |
| System: ELEC                             | Subsystem/Component: |  |
| Description: E7024PE                     |                      |  |
| Location: A DIESEL                       |                      |  |

**SCREENING BASIS : RELAY GERS OR SPECIFIC QUALIFICATION**

**Low Ruggedness**

Is relay not a low ruggedness relay?

LRR

**Relay Capacity Level**

|  |   |
|--|---|
| Class: Auxiliary Relay                 | SubClass: Pneumatic Timing Relays         |
| Relay Model: Agastat E7024, 7024, 2424 | Operating Mode: Transition, normally open |
| Required Settings:                     |   |

Capacity GERS Level: 5.00

**Cabinet Seismic Capacity vs Demand  
Demand Amplification Factor**

Cabinet Type: Low Amplification (MCC-like cabinets)

Demand Amplification Factor: 6.75

|   |   |                         |
|---|---|-------------------------|
| Cabinet ID: AUX-EG2A (Rev. 0)                             | Cabinet Class: 20 - Instrumentation and Control Panels and Cabinets |                         |
| Cabinet Description: EMERGENCY STOP/TRIP/BYPASS AUX PANEL |   |                         |
| Building: DG  | Floor El: 21.5  | Room, Row/Col: A DIESEL |

Is cabinet seismically adequate?

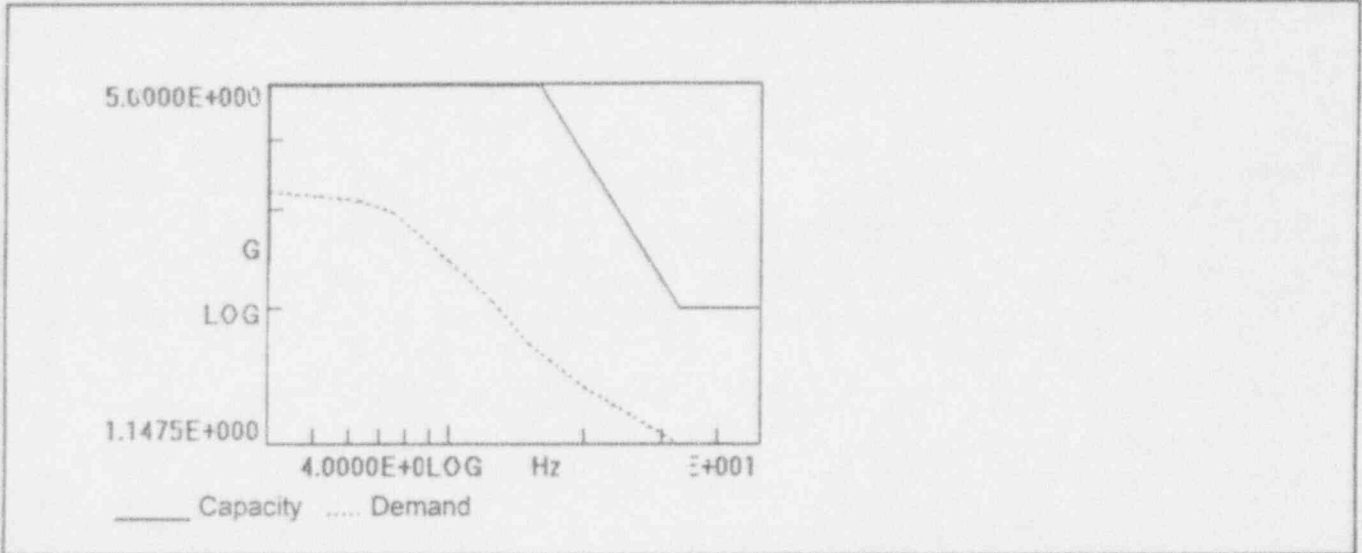
Yes

**Cabinet Frequency**

Cabinet fundamental frequency greater than 8 Hz

|  |                       |  |
|--|-----------------------|--|
| <b>RELAY FUNCTIONALITY REVIEW REPORT</b> |                       | GIP Rev 2, Corrected, 2/14/92<br>Status: Yes<br>Sheet 2 of 3 |
| ID : T1 (A)-BKR 8-1 (Rev. 0)             | Make : AGASTAT E7000  | Drawing : 31099 SH 3   |
| System : ELEC                            | Subsystem/Component : |  |
| Description : E7024PE                    |                       |  |
| Location : A DIESEL                      |                       |  |

**Relay Seismic Capacity vs Demand**



|          | File                        | Record   |
|----------|-----------------------------|--|
| Capacity | C:\GIP\GIP\spectra.des      | Label\ANSI C37.98                                      |
| Demand 1 | C:\GIP\PROJ0024\spectra.des | UNIT CY BLDG SITEROCK ELEV 21.5 LOC na DIR HORI ID SSE |
| Demand 2 | C:\GIP\PROJ0024\spectra.des | UNIT CY BLDG SITEROCK ELEV 21.5 LOC na DIR HORI ID SSE |

Does relay capacity exceed demand? SRI

**GERS BASIS : LEVEL 2: GERS/TRS V. 2.25\*SSE \* AMP FACTOR**

**Elevation Above Grade**

Elevation of cabinet below about 40' from grade Yes

**Cabinet Frequency**

Cabinet fundamental frequency greater than 8 Hz Yes

**IS RELAY SEISMICALLY ADEQUATE?** Yes

**COMMENTS**

Operating mode and contact condition is unknown, used lowest GERS.

Evaluated by: *C. M. Abu Sawah* Date: 12/16/93  
C. M. Abu Sawah 12.16.93

RELAY FUNCTIONALITY REVIEW REPORT

GIP Rev 2, Corrected, 2/14/92  
Status: Yes  
Sheet 3 of 3

ID: T1 (A)-BKR 8-  
1 (Rev. 0)

Make: AGASTAT E700U

Drawing: 31099 SH 3

System: ELEC

Subsystem/Component:

Description: E7024PE

Location: A DIESEL

|  |                        |  |
|--|------------------------|--|
| <b>RELAY FUNCTIONALITY REVIEW REPORT</b> |                        | GIP Rev 2, Corrected, 2/14/92<br>Status: Yes<br>Sheet 1 of 3 |
| ID : IOPLR (A)-<br>BKR 8-1 (Rev. 0)      | Make : AGASTAT EGPD002 | Drawing : 31099 SH 3   |
| System : ELEC                            |                        | Subsystem/Component :  |
| Description : EGPD002                    |                        |  |
| Location : A DIESEL                      |                        |  |

**SCREENING BASIS : RELAY GERS OR SPECIFIC QUALIFICATION**

**Low Ruggedness**

Is relay not a low ruggedness relay?

LRR

**Relay Capacity Level**

|                          |   |
|--------------------------|---|
| Class : Auxiliary Relay  | SubClass : Socket Type                      |
| Relay Model : Agastat GP | Operating Mode : Non-operate, normally open |
| Required Settings :      |   |

Capacity GERS Level : 3.30

**Cabinet Seismic Capacity vs Demand  
Demand Amplification Factor**

Cabinet Type : Low Amplification (MCC-like cabinets)

Demand Amplification Factor : 6.75

|  |  |                          |
|--|--|--------------------------|
| Cabinet ID : AUX-EG2A (Rev. 0)                             | Cabinet Class : 20 - Instrumentation and Control Panels and Cabinets |                          |
| Cabinet Description : EMERGENCY STOP/TRIP/BYPASS AUX PANEL |  |                          |
| Building : DG  | Floor El. : 21.5   | Room, Row/Col : A DIESEL |

Is cabinet seismically adequate?

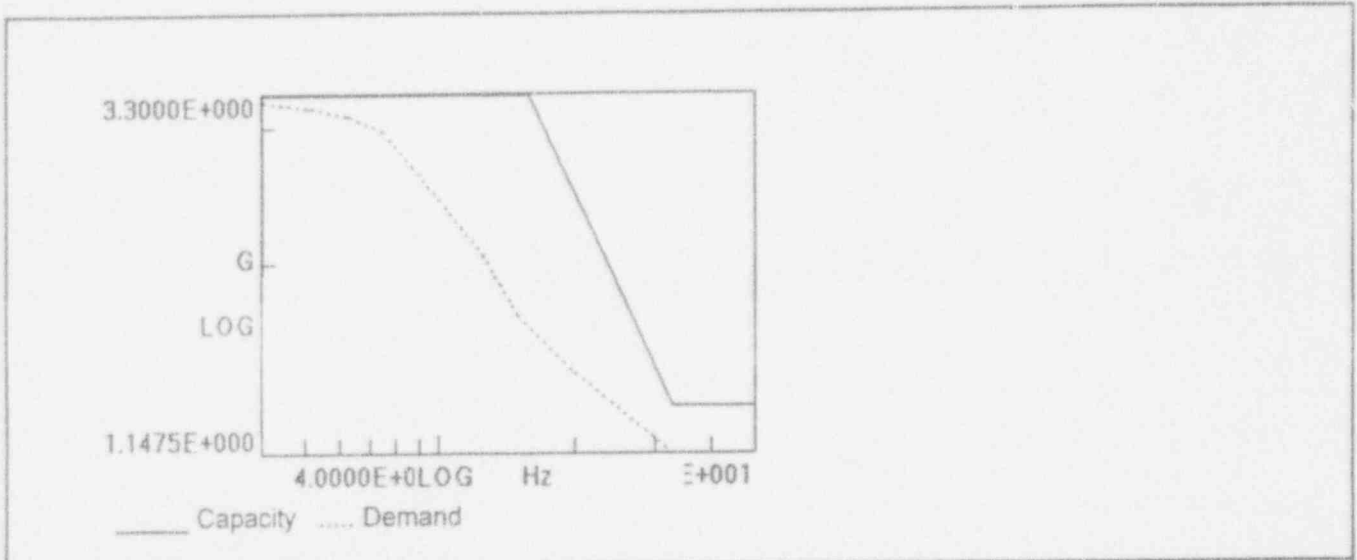
Yes

**Cabinet Frequency**

Cabinet fundamental frequency greater than 8 Hz

|  |                       |  |
|--|-----------------------|--|
| <b>RELAY FUNCTIONALITY REVIEW REPORT</b> |                       | GIP Rev 2, Corrected, 2/14/92<br>Status: Yes<br>Sheet 2 of 3 |
| ID : IOPLR (A)-<br>BKR 8-1 (Rev. 0)      | Make : AGASTAT EGP002 | Drawing : 31099 SH 3   |
| System : ELEC                            |                       | Subsystem/Component :  |
| Description : EGP002                     |                       |  |
| Location : A DIESEL                      |                       |  |

**Relay Seismic Capacity vs Demand**



|          | File                        | Record   |
|----------|-----------------------------|--|
| Capacity | C:\GIP\GIP\spectra.des      | Label ANSI C37.98                                      |
| Demand 1 | C:\GIP\PROJ0024\spectra.des | UNIT CY BLDG S TEROCK ELEV 21.5 LOC na DIR HORI ID SSE |
| Demand 2 | C:\GIP\PROJ0024\spectra.des | UNIT CY BLDG S TEROCK ELEV 21.5 LOC na DIR HORI ID SSE |

Does relay capacity exceed demand?

SRI

**GERS BASIS : LEVEL 2: GERS/TRS V. 2.25\*SSE \* AMP FACTOR**

**Elevation Above Grade**

Elevation of cabinet below about 40' from grade

Yes

**Cabinet Frequency**

Cabinet fundamental frequency greater than 8 Hz

Yes

**IS RELAY SEISMICALLY ADEQUATE?**

Yes

**COMMENTS**

Operating mode and contact condition is unknown, used lowest GERS.  
If mode is Operated than the GER level will be 10g.



RELAY FUNCTIONALITY REVIEW REPORT

GIP Rev 2, Corrected, 2/14/92  
Status: Yes  
Sheet 3 of 3

|                                     |                        |                      |
|-------------------------------------|------------------------|----------------------|
| ID : IOPLR (A)-<br>BKR 8-1 (Rev. 0) | Make : AGASTAT EGPD002 | Drawing : 31099 SH 3 |
| System : ELEC                       | Subsystem/Component :  |                      |
| Description : EGPD002               |                        |                      |
| Location : A DIESEL                 |                        |                      |

Evaluated by:

*[Signature]*

*C. M. Al-Rawdh*

Date:

*12/16/93*

*12.16.93*

|  |                       |  |
|--|-----------------------|--|
| <b>RELAY FUNCTIONALITY REVIEW REPORT</b> |                       | GIP Rev 2, Corrected, 2/14/92<br>Status: Yes<br>Sheet 1 of 3 |
| ID : R1 (A)-BKR 8-1 (Rev. 0)             | Make : GE - HFA       | Drawing : 31099 SH 3   |
| System : ELEC                            | Subsystem/Component : |  |
| Description : 12HFA154B22H               |                       |  |
| Location : A DIESEL                      |                       |  |

**SCREENING BASIS : RELAY GERS OR SPECIFIC QUALIFICATION**

**Low Ruggedness**

Is relay not a low ruggedness relay?

LRR

**Relay Capacity Level**

|  |   |
|--|---|
| Class : Auxiliary Relay                  | SubClass : Hinged Armature Multi-contact    |
| Relay Model : GE HFA151 (DC) (1E)        | Operating Mode : Non-operate, normally open |
| Required Settings : 80 ms operation time |   |

|                            |
|----------------------------|
| Capacity GERS Level : 7.50 |
|----------------------------|

**Cabinet Seismic Capacity vs Demand  
Demand Amplification Factor**

|  |
|--|
| Cabinet Type : Low Amplification (MCC-like cabinets) |
|--|

|                                    |
|------------------------------------|
| Demand Amplification Factor : 6.75 |
|------------------------------------|

|  |  |                          |
|--|--|--------------------------|
| Cabinet ID : AUX-EG2A (Rev. 0)                             | Cabinet Class : 20 - Instrumentation and Control Panels and Cabinets |                          |
| Cabinet Description : EMERGENCY STOP/TRIP/BYPASS AUX PANEL |  |                          |
| Building : DG  | Floor El. : 21.5   | Room, Row/Col : A DIESEL |

Is cabinet seismically adequate?

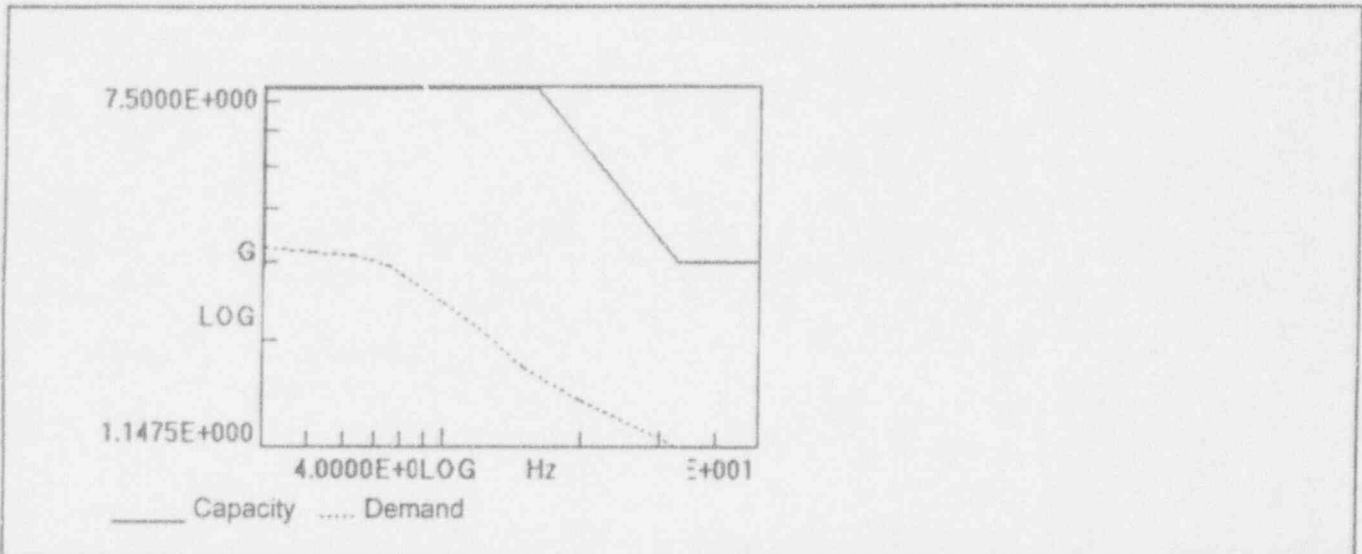
Yes

**Cabinet Frequency**

Cabinet fundamental frequency greater than 8 Hz

|  |                 |  |
|--|-----------------|--|
| <b>RELAY FUNCTIONALITY REVIEW REPORT</b> |                 | GIP Rev 2, Corrected, 2/14/92<br>Status: Yes<br>Sheet 2 of 3 |
| ID : R1 (A)-BKR 8-1 (Rev. 0)             | Make : GE - HFA | Drawing : 31099 SH 3   |
| System : ELEC                            |                 | Subsystem/Component :  |
| Description : 2HFA154B22H                |                 |  |
| Location : A DIESEL                      |                 |  |

**Relay Seismic Capacity vs Demand**



|          | File                        | Record   |
|----------|-----------------------------|--|
| Capacity | C:\GIP\GIP\spectra.des      | Label ANSI C37.98                                      |
| Demand 1 | C:\GIP\PROJ0024\spectra.des | UNIT CY BLDG SITEROCK ELEV 21.5 LOC na DIR HORI ID SSE |
| Demand 2 | C:\GIP\PROJ0024\spectra.des | UNIT CY BLDG SITEROCK ELEV 21.5 LOC na DIR HORI ID SSE |

Does relay capacity exceed demand?

SRT

**GERS BASIS : LEVEL 2: GERS/TRS V. 2.25\*SSE \* AMP FACTOR**

Elevation Above Grade

Elevation of cabinet below about 40' from grade

Yes

Cabinet Frequency

Cabinet fundamental frequency greater than 8 Hz

Yes

**IS RELAY SEISMICALLY ADEQUATE?**

Yes

**COMMENTS**

Actual relay is HFA154, its construction and overall size is similar to GE HFA 151, the HFA154 has electrical or manual reset. Both relays have the same weight and mounting configuration. GERS for GE HFA151 is used.

RELAY FUNCTIONALITY REVIEW REPORT

GIP Rev 2, Corrected, 2/14/92  
Status: Yes  
Sheet 3 of 3

ID : R1 (A)-BKR 8-  
1 (Rev. 0)

Make : GE - HFA

Drawing : 31099 SH 3

System : ELEC

Subsystem/Component :

Description : 12HFA154B22H

Location : A DIESEL

Evaluated by:

S. J. Cole  
C. M. Alan Vandie

Date:

12/16/93  
12-16-93

Connecticut Yankee A-46  
Essential Relays  
Relay functional Review  
List

CAB\_ID

AUX-EG2B

BUILDING DG  
ELEVATION 21.50  
LOCATION B DIESEL

| CONTACT ID        | MAKE     | MODEL        | CONT_COND  | ENERGIZE | REMARK |
|-------------------|----------|--------------|------------|----------|--------|
| T1A (B)-BKR 9-1   | AGASTAT  | E7000        | E7014PA002 |          | OK     |
| T1A (B)-EG-2B     | AGASTAT  | E7000        | E7014PA002 |          | OK     |
| T1B (B)-BKR 9-1   | AGASTAT  | E7000        | E7014PA002 |          | OK     |
| T1B (B)-EG-2B     | AGASTAT  | E7000        | E7014PA002 |          | OK     |
| T1 (B)-BKR 9-1    | AGASTAT  | E7000        | E7024PE002 |          | OK     |
| T1 (B)-EG-2B      | AGASTAT  | E7000        | E7024PE002 |          | OK     |
| T2 (B)-EG-2B      | AGASTAT  | E7000        | E7024PH002 |          | OK     |
| IOPLR (B)-BKR 9-1 | AGASTAT  | EGPD00       | EGPD002    |          | OK     |
| IOPLR (B)-EG-2B   | AGASTAT  | EGPD00       | EGPD002    |          | OK     |
| ROPLR (B)-BKR 9-1 | AGASTAT  | EGPD00       | EGPD002    |          | OK     |
| ROPLR (B)-EG-2B   | AGASTAT  | EGPD00       | EGPD002    |          | OK     |
| R1 (B)-BKR 9-1    | GE - HFA | 12HFA154B22H | NO         | NO       | OK     |

Connecticut Yankee A-46  
Essential Relays  
Relay functional Review  
List

CAB\_ID AUX-EG2B

BUILDING DG  
ELEVATION 21.50  
LOCATION B DIESEL

| CONTACT ID   | MAKE     | MODEL        | CONT_COND | ENERGIZE | REMARK |
|--------------|----------|--------------|-----------|----------|--------|
| R1 (B)-EG-2B | GE - HFA | 12HFA154B22H | NO        | NO       | OK     |

Connecticut Yankee A-46  
Essential Relays  
Relay functional Review  
List

CAB\_ID **BUS 1-5**

BUILDING SB  
ELEVATION 41.50  
LOCATION A SWGR

| CONTACT ID      | MAKE      | MODEL      | CONT_COND | ENERGIZE | REMARK          |
|-----------------|-----------|------------|-----------|----------|-----------------|
| 62-5B-BKR 5-9C  | AGA E7000 | E7012      | NO        | YES      | RLY_FUNC_REVIEW |
| 62-5A-BKR 5-9C  | AGA E7000 | E7022      | NC        | YES      | RLY_FUNC_REVIEW |
| 62-5A-BKR 6-11C | AGA E7000 | E7022      | NO        | NO       | OK              |
| 62-6A-BKR 6-11C | AGA E7000 | E7022      | NO/NC     | YES      | OK              |
| 27X-5-BKR 5-8D  | W MG-6    |            | NO        | NO       | RLY_FUNC_REVIEW |
| 52X-BKR 4T5     | W MG-6    | 289B363A11 | NO        | NO       | OK              |
| 52X-BKR 5-9C    | W MG-6    | 289B363A11 | NO        | NO       | OK              |

|  |                     |  |
|--|---------------------|--|
| <b>RELAY FUNCTIONALITY REVIEW REPORT</b> |                     | GIP Rev 2, Corrected, 2/14/92<br>Status: Yes<br>Sheet 1 of 3 |
| ID : 62-5B-BKR 5-9C (Rev. 0)             | Make : AGASTAT 7000 | Drawing : 32001 SH 6AP                                       |
| System : ELEC                            |                     | Subsystem/Component :  |
| Description : E7012                      |                     |  |
| Location : A SWGR                        |                     |  |

**SCREENING BASIS : RELAY GERS OR SPECIFIC QUALIFICATION**

**Low Ruggedness**

Is relay not a low ruggedness relay?

LRR

**Relay Capacity Level**

|   |   |
|---|---|
| Class : Auxiliary Relay                 | SubClass : Pneumatic Timing Relays      |
| Relay Model : Agastat E7012, 7012, 2412 | Operating Mode : Operate, normally open |
| Required Settings :                     |   |

Capacity GERS Level : 12.50

**Cabinet Seismic Capacity vs Demand  
Demand Amplification Factor**

Cabinet Type : Low Amplification (MCC-like cabinets)

Demand Amplification Factor : 3

|                                    |  |                        |
|------------------------------------|--|------------------------|
| Cabinet ID : BUS 1-5 (Rev. 0)      | Cabinet Class : 2 - Low Voltage Switchgear |                        |
| Cabinet Description : 480V BUS 1-5 |  |                        |
| Building : SB                      | Floor El. : 41.5                           | Room, Row/Col : A SWGR |

Is cabinet seismically adequate?

Yes

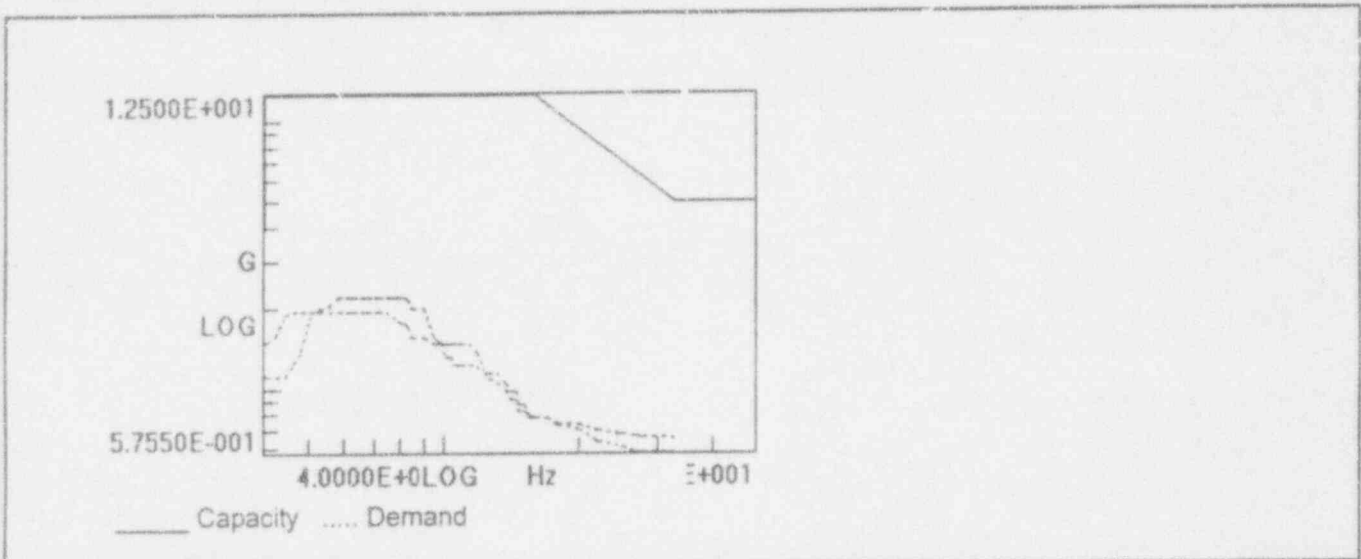
**Cabinet Frequency**

Cabinet fundamental frequency greater than 8 Hz



|  |                     |  |
|--|---------------------|--|
| <b>RELAY FUNCTIONALITY REVIEW REPORT</b> |                     | GIP Rev 2, Corrected, 2/14/92<br>Status: Yes<br>Sheet 2 of 3 |
| ID : 62-5B-BKR 5-9C (Rev. 0)             | Make : AGASTAT 7000 | Drawing : 32001 SH 6AP                                       |
| System : ELEC                            |                     | Subsystem/Component :  |
| Description : E7012                      |                     |  |
| Location : A SWGR                        |                     |  |

**Relay Seismic Capacity vs Demand**



|          | File                        | Record   |
|----------|-----------------------------|--|
| Capacity | C:\GIP\GIP\spectra.des      | Label ANSI C37.98  |
| Demand 1 | C:\GIP\PROJ0024\spectra.des | UNIT CY BLDG Turbine/Service ELEV 41.00 LOC L4 DIR N/S ID TB041L4N |
| Demand 2 | C:\GIP\PROJ0024\spectra.des | UNIT CY BLDG Turbine/Service ELEV 41.00 LOC L4 DIR E/W ID TB041L4E |

Does relay capacity exceed demand?

**SRI**

**GERS BASIS : LEVEL 2: GERS/TRS V. CONSERVATIVE FRS \* AMP FACTOR**

**IS RELAY SEISMICALLY ADEQUATE?**

**Yes**

**COMMENTS**

Evaluated by: *C. M. P. Powell* Date: *12/16/93*  
*C. M. P. Powell* *12.16.93*

**RELAY FUNCTIONALITY REVIEW REPORT**

GIP Rev 2, Corrected, 2/14/92  
Status: Yes  
Sheet 3 of 3

ID : 62-58-BKR 5-  
9C (Rev. 0)

Make : AGASTAT 7000

Drawing : 32001 SH 6AP

System : ELEC

Subsystem/Component :

Description : E7012

Location : A SWGR

|  |                       |  |
|--|-----------------------|--|
| <b>RELAY FUNCTIONALITY REVIEW REPORT</b> |                       | GIP Rev 2, Corrected, 2/14/92<br>Status: Yes<br>Sheet 1 of 3 |
| ID : 62-5A-BKR 5-9C (Rev. 0)             | Make : AGASTAT 7000   | Drawing : 32001 SH 6AP                                       |
| System : ELEC                            | Subsystem/Component : |  |
| Description : E7022                      |                       |  |
| Location : A SWGR                        |                       |  |

**SCREENING BASIS : RELAY GERS OR SPECIFIC QUALIFICATION**

**Low Ruggedness**

Is relay not a low ruggedness relay?

LRR

**Relay Capacity Level**

|   |   |
|---|---|
| Class : Auxiliary Relay                 | SubClass : Pneumatic Timing Relays        |
| Relay Model : Agastat E7022, 7022, 2422 | Operating Mode : Operate, normally closed |
| Required Settings :                     |   |

|                             |
|-----------------------------|
| Capacity GERS Level : 10.00 |
|-----------------------------|

**Cabinet Seismic Capacity vs Demand  
Demand Amplification Factor**

|  |
|--|
| Cabinet Type : Low Amplification (MCC-like cabinets) |
|--|

|                                 |
|---------------------------------|
| Demand Amplification Factor : 3 |
|---------------------------------|

|                                    |  |                        |
|------------------------------------|--|------------------------|
| Cabinet ID : BUS 1-5 (Rev. 0)      | Cabinet Class : 2 - Low Voltage Switchgear |                        |
| Cabinet Description : 480V BUS 1-5 |  |                        |
| Building : SB                      | Floor El. : 41.5                           | Room, Row/Col : A SWGR |

Is cabinet seismically adequate?

Yes

**Cabinet Frequency**

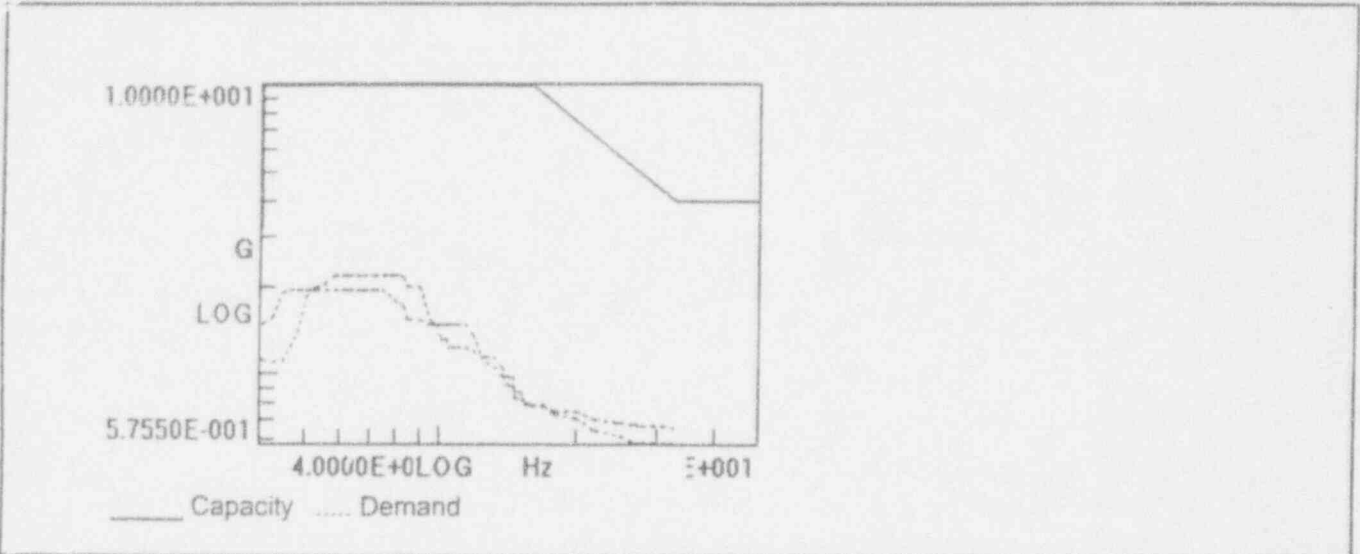
Cabinet fundamental frequency greater than 8 Hz

# RELAY FUNCTIONALITY REVIEW REPORT

GIP Rev 2, Corrected, 2/14/92  
 Status: Yes  
 Sheet 2 of 3

|                              |                       |                        |
|------------------------------|-----------------------|------------------------|
| ID : 62-5A-BKR 5-9C (Rev. 0) | Make : AGASTAT 7000   | Drawing : 32001 SH 6AP |
| System : ELEC                | Subsystem/Component : |                        |
| Description : E7022          |                       |                        |
| Location : A SWGR            |                       |                        |

## Relay Seismic Capacity vs Demand



|          | File                        | Record   |
|----------|-----------------------------|--|
| Capacity | C:\GIP\GIP\spectra.des      | Label\ANSI C37.98  |
| Demand 1 | C:\GIP\PROJ0024\spectra.des | UNIT\CY\BLDG\Turbine\Service\ELEV\41.00\LOC\L4\DIR\N\S\ID\TB041L4N |
| Demand 2 | C:\GIP\PROJ0024\spectra.des | UNIT\CY\BLDG\Turbine\Service\ELEV\41.00\LOC\L4\DIR\E\W\ID\TB041L4E |

Does relay capacity exceed demand?

SRI

GERS BASIS : LEVEL 2: GERS/TRS V. CONSERVATIVE FRS \* AMP FACTOR

**IS RELAY SEISMICALLY ADEQUATE?**

**Yes**

### COMMENTS

Evaluated by:

*[Signature]*  
C. M. Abu-Taw

Date:

12/16/93  
12.16.93

**RELAY FUNCTIONALITY REVIEW REPORT**

GIP Rev 2, Corrected, 2/14/92

Status: Yes

Sheet 3 of 3

ID : 62-5A-BKR 5-  
9C (Rev. 0)

Make : AGASTAT 7000

Drawing : 32001 SH 6AP

System : ELEC

Subsystem/Component :

Description : E7022

Location : A SWGR

|  |                       |  |
|--|-----------------------|--|
| <b>RELAY FUNCTIONALITY REVIEW REPORT</b> |                       | GIP Rev 2, Corrected, 2/14/92<br>Status: Yes<br>Sheet 1 of 3 |
| ID : 27X-5-BKR 5-8D (Rev. 0)             | Make : W MG-6         | Drawing : 32001 SH 6G  |
| System : ELEC                            | Subsystem/Component : |  |
| Description :                            |                       |  |
| Location : A SWGR                        |                       |  |

**SCREENING BASIS : RELAY GERS OR SPECIFIC QUALIFICATION**

**Low Ruggedness**

Is relay not a low ruggedness relay?

LRR

**Relay Capacity Level**

|  |   |
|--|---|
| Class : Auxiliary Relay                  | SubClass : Hinged Armature Multi-contact    |
| Relay Model : Westinghouse MG-6 (DC)     | Operating Mode : Non-operate, normally open |
| Required Settings : 80 ms operation time |   |

|                             |
|-----------------------------|
| Capacity GERS Level : 10.00 |
|-----------------------------|

**Cabinet Seismic Capacity vs Demand  
Demand Amplification Factor**

|  |
|--|
| Cabinet Type : Low Amplification (MCC-like cabinets) |
|--|

|                                 |
|---------------------------------|
| Demand Amplification Factor : 3 |
|---------------------------------|

|                                    |  |                        |
|------------------------------------|--|------------------------|
| Cabinet ID : BUS 1-5 (Rev. 0)      | Cabinet Class : 2 - Low Voltage Switchgear |                        |
| Cabinet Description : 480V BUS 1-5 |  |                        |
| Building : SB                      | Floor El. : 41.5                           | Room, Row/Col : A SWGR |

Is cabinet seismically adequate?

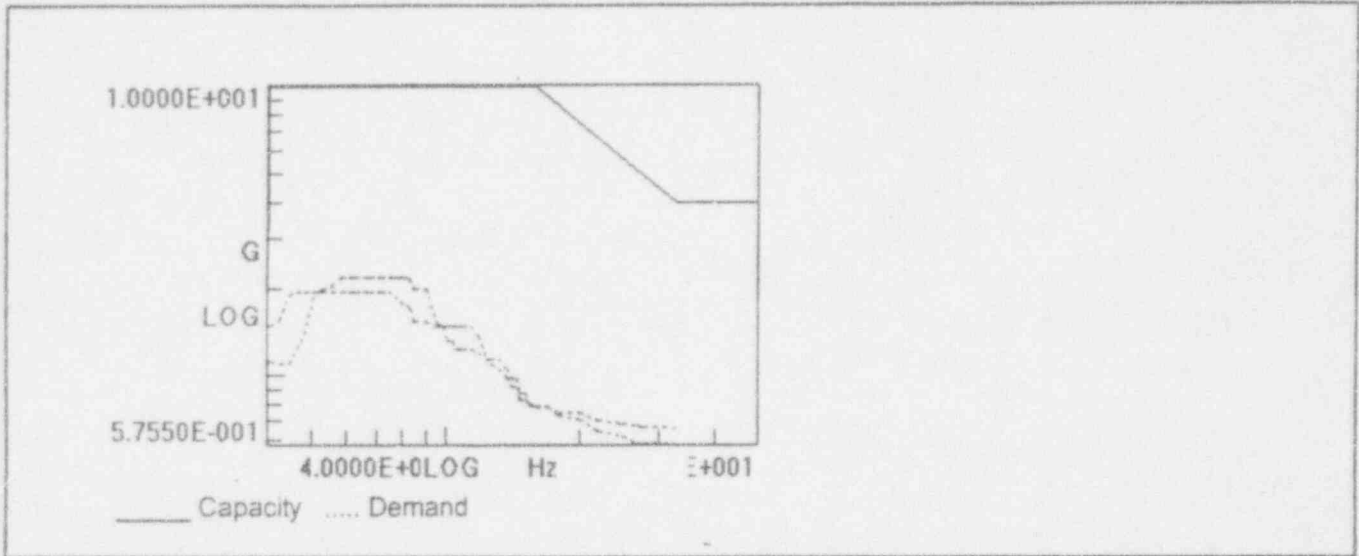
Yes

**Cabinet Frequency**

Cabinet fundamental frequency greater than 8 Hz

|  |               |  |
|--|---------------|--|
| <b>RELAY FUNCTIONALITY REVIEW REPORT</b> |               | GIP Rev 2, Corrected, 2/14/92<br>Status: Yes<br>Sheet 2 of 3 |
| ID : 27X-5-BKR 5-8D (Rev. 0)             | Make : W MG-6 | Drawing : 32001 SH 6G  |
| System : ELEC                            |               | Subsystem/Component :  |
| Description :                            |               |  |
| Location : A SWGR                        |               |  |

**Relay Seismic Capacity vs Demand**



|          | File                        | Record   |
|----------|-----------------------------|--|
| Capacity | C:\GIP\GIP\spectra.des      | Label\ANSI C37.98  |
| Demand 1 | C:\GIP\PROJ0024\spectra.des | UNIT\CY\BLDG\Turbine\Service\ELEV\41.00\LOC\L4\DIR\N\S\ID\TB041L4N |
| Demand 2 | C:\GIP\PROJ0024\spectra.des | UNIT\CY\BLDG\Turbine\Service\ELEV\41.00\LOC\L4\DIR\EW\ID\TB041L4E  |

Does relay capacity exceed demand?

SRT

GERS BASIS : LEVEL 2: GERS/TRS V. CONSERVATIVE FRS \* AMP FACTOR

**IS RELAY SEISMICALLY ADEQUATE?**

**Yes**

COMMENTS

Evaluated by:

*[Signature]*

C. M. Abu-Jawad

Date:

12/16/93

12.16.93

RELAY FUNCTIONALITY REVIEW REPORT

GIP Rev 2, Corrected, 2/14/92  
Status: Yes  
Sheet 3 of 3

ID : 27X-5-BKR 5-  
8D (Rev. 0)

Make : W MG-6

Drawing : 32001 SH 6G

System : ELEC

Subsystem/Component :

Description :

Location : A SWGR



Connecticut Yankee A-46  
Essential Relays  
Relay functional Review List

CAB\_ID BUS 1-6

BUILDING SB  
ELEVATION 41.50  
LOCATION A SWGR

| CONTACT ID    | MAKE   | MODEL      | CONT_COND | ENERGIZE | REMARK          |
|---------------|--------|------------|-----------|----------|-----------------|
| 52X-BKR 6-11C | W MG-6 | 289B363A11 | NO        | NO       | RLY_FUNC_REVIEW |
| 52X-BKR 6T7   | W MG-6 | 289B363A11 | NO        | NO       | OK              |

|  |                       |  |
|--|-----------------------|--|
| <b>RELAY FUNCTIONALITY REVIEW REPORT</b> |                       | GIP Rev 2, Corrected, 2/14/92<br>Status: Yes<br>Sheet 1 of 3 |
| ID : 52X-BKR 6-11C (Rev. 0)              | Make : W MG-6         | Drawing : 32001 SH 6AQ                                       |
| System : ELEC                            | Subsystem/Component : |  |
| Description : 289B363A11                 |                       |  |
| Location : A SWGR                        |                       |  |

**SCREENING BASIS : RELAY GERS OR SPECIFIC QUALIFICATION**

**Low Ruggedness**

Is relay not a low ruggedness relay?

LRR

**Relay Capacity Level**

|  |   |
|--|---|
| Class : Auxiliary Relay                  | SubClass : Hinged Armature Multi-contact    |
| Relay Model : Westinghouse MG-6 (LC)     | Operating Mode : Non-operate, normally open |
| Required Settings : 80 ms operation time |   |

|                             |
|-----------------------------|
| Capacity GERS Level : 10.00 |
|-----------------------------|

**Cabinet Seismic Capacity vs Demand  
Demand Amplification Factor**

|  |
|--|
| Cabinet Type : Low Amplification (MCC-like cabinets) |
|--|

|                                 |
|---------------------------------|
| Demand Amplification Factor : 3 |
|---------------------------------|

|                                    |  |                        |
|------------------------------------|--|------------------------|
| Cabinet ID : BUS 1-6 (Rev. 0)      | Cabinet Class : 2 - Low Voltage Switchgear |                        |
| Cabinet Description : 480V BUS 1-6 |  |                        |
| Building : SB                      | Floor El. : 41.5                           | Room, Row/Col : A SWGR |

Is cabinet seismically adequate?

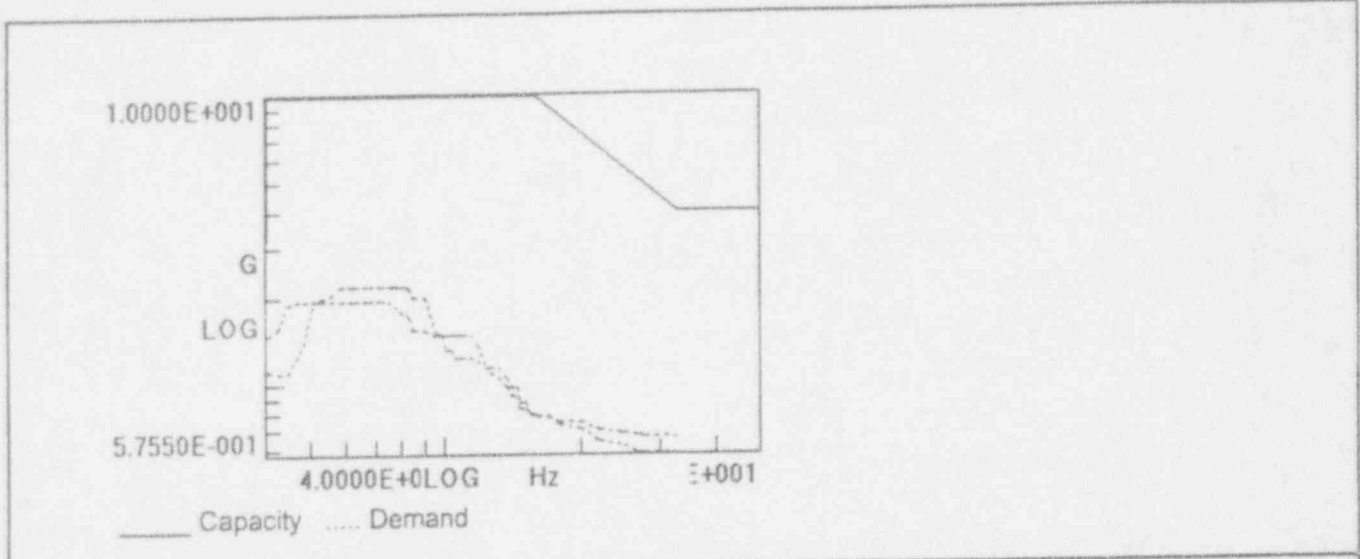
Yes

**Cabinet Frequency**

Cabinet fundamental frequency greater than 8 Hz

|  |                       |                               |
|--|-----------------------|-------------------------------|
| <b>RELAY FUNCTIONALITY REVIEW REPORT</b> |                       | GIP Rev 2, Corrected, 2/14/92 |
|  |                       | Status: Yes<br>Sheet 2 of 3   |
| ID : 52X-BKR 6-11C (Rev. 0)              | Make : W MG-6         | Drawing : 32001 SH 6AQ        |
| System : ELEC                            | Subsystem/Component : |                               |
| Description : 289B363A11                 |                       |                               |
| Location : A SWGR                        |                       |                               |

**Relay Seismic Capacity vs Demand**



|          | File                        | Record   |
|----------|-----------------------------|--|
| Capacity | C:\GIP\GIP\spectra.des      | Label ANSI C37.98  |
| Demand 1 | C:\GIP\PROJ0024\spectra.des | UNIT CY BLDG Turbine/Service ELEV 41.00 LOC L4 DIR N/S ID TB041L4N |
| Demand 2 | C:\GIP\PROJ0024\spectra.des | UNIT CY BLDG Turbine/Service ELEV 41.00 LOC L4 DIR E/W ID TB041L4E |

Does relay capacity exceed demand?

SRI

GERS BASIS : LEVEL 2: GERS/TRS V. CONSERVATIVE FRS \* AMP FACTOR

IS RELAY SEISMICALLY ADEQUATE?

Yes

COMMENTS

Evaluated by: *C. M. Al-Faraj*  
*C. M. Al-Faraj*

Date: *12/16/93*  
*12.16.93*

**RELAY FUNCTIONALITY REVIEW REPORT**GIP Rev 2, Corrected, 2/14/92  
Status: Yes  
Sheet 3 of 3ID : 52X-BKR 6-  
11C (Rev. 0)

Make : W MG-6

Drawing : 32001 SH 6AQ

System : ELEC

Subsystem/Component :

Description : 289B363A11

Location : A SWGR

Connecticut Yankee A-46  
Essential Relays  
Relay functional Review  
List

CAB\_ID **BUS 11**

BUILDING SB  
ELEVATION 41.50  
LOCATION B SWGR

| CONTACT ID        | MAKE            | MODEL    | CONT_COND | ENERGIZE | REMARK          |
|-------------------|-----------------|----------|-----------|----------|-----------------|
| 27/X2-11-SW-MOV-3 |                 |          |           |          | UNKNOWN         |
| 27/X2-11-SW-MOV-4 |                 |          |           |          | UNKNOWN         |
| 27/X3-11-SW-MOV-3 |                 |          |           |          | UNKNOWN         |
| 27/X3-11-SW-MOV-4 |                 |          |           |          | UNKNOWN         |
| 27X1/11-P-37-1D   |                 |          | NO        | NO       | UNKNOWN         |
| 27X1/11-P-13-1C   | BBC Type ITE-27 |          | NO        | NO       | OK              |
| 27-11-P-13-1C     | BBC Type ITE-27 | 211R1175 | NC        | YES      | RLY_FUNC_REVIEW |
| 27-11-P-37-1D     | BBC Type ITE-27 | 211R1175 | NO        | YES      | OK              |

|  |                        |  |
|--|------------------------|--|
| <b>RELAY FUNCTIONALITY REVIEW REPORT</b> |                        | GIP Rev 2, Corrected, 2/14/92<br>Status: Yes<br>Sheet 1 of 2 |
| ID : 27-11-P-13-1C<br>(Rev. 0)           | Make : BBC Type ITE-27 | Drawing : 30004 SH 1A  |
| System : ELEC                            |                        | Subsystem/Component :  |
| Description : 211R1175                   |                        |  |
| Location : B SWGR                        |                        |  |

**SCREENING BASIS : RELAY GERS OR SPECIFIC QUALIFICATION**

**Low Ruggedness**

Is relay not a low ruggedness relay?

LRR

**Relay Capacity Level**

|                          |   |
|--------------------------|---|
| Class : Protective Relay | SubClass : Miscellaneous Types            |
| Relay Model : ITE 27     | Operating Mode : Operate, normally closed |
| Required Settings :      |   |

Capacity GERS Level : 15.00

**Cabinet Seismic Capacity vs Demand  
Demand Amplification Factor**

Cabinet Type : High Amplification (large, flexible panels)

Demand Amplification Factor : 7

|                                   |  |                        |
|-----------------------------------|--|------------------------|
| Cabinet ID : BUS 11 (Rev. 0)      | Cabinet Class : 2 - Low Voltage Switchgear |                        |
| Cabinet Description : 480V BUS 11 |  |                        |
| Building : SB                     | Floor El. : 41.5                           | Room, Row/Col : B SWGR |

Is cabinet seismically adequate?

Yes

**Cabinet Frequency**

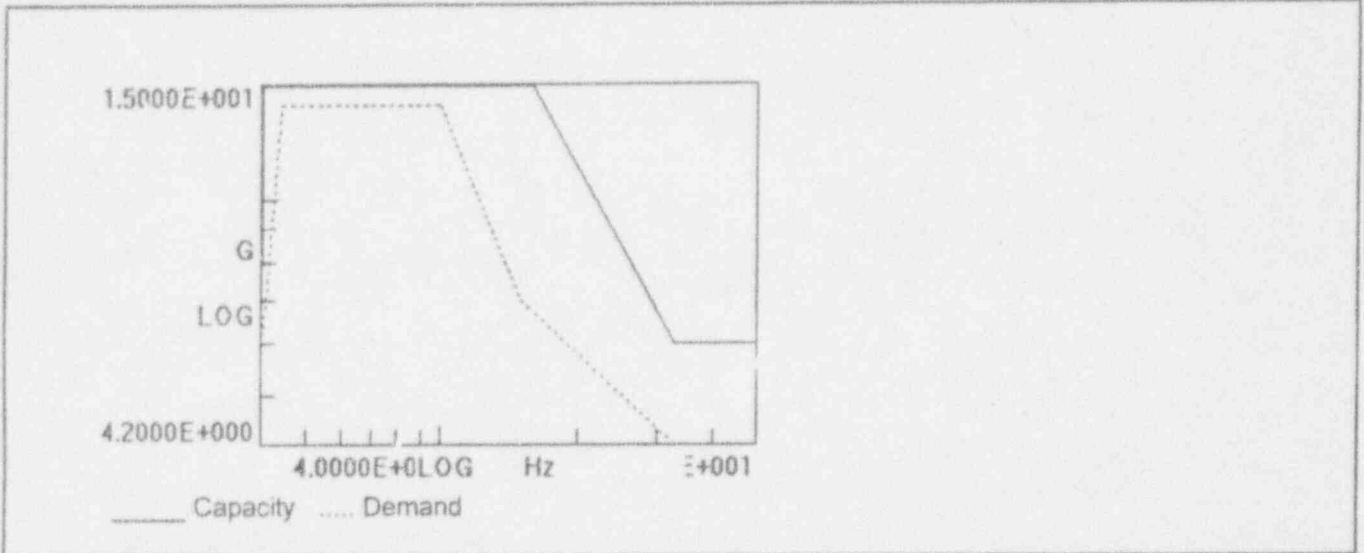
Cabinet fundamental frequency greater than 8 Hz

# RELAY FUNCTIONALITY REVIEW REPORT

GIP Rev 2, Corrected, 2/14/92  
 Status: Yes  
 Sheet 2 of 2

|                                |                        |                       |
|--------------------------------|------------------------|-----------------------|
| ID : 27-11-P-13-1C<br>(Rev. 0) | Make : BBC Type ITE-27 | Drawing : 30004 SH 1A |
| System : ELEC                  | Subsystem/Component :  |                       |
| Description : 211R1175         |                        |                       |
| Location : B SWGR              |                        |                       |

## Relay Seismic Capacity vs Demand



|          | File                        | Record   |
|----------|-----------------------------|--|
| Capacity | C:\GIP\GIP\spectra.des      | Label\ANSI C37.98  |
| Demand 1 | C:\GIP\PROJ0024\spectra.des | UNIT CY BLDG NEWSWGR ELEV 41.50 LOC SWGRB DIR E W ID S<br>WGRB41EW |
| Demand 2 | C:\GIP\PROJ0024\spectra.des | UNIT CY BLDG NEWSWGR ELEV 41.50 LOC SWGRB DIR E W ID S<br>WGRB41EW |

Does relay capacity exceed demand?

SRI

TERS BASIS : LEVEL 2: GERS/TRS V. CONSERVATIVE FRS \* AMP FACTOR

IS RELAY SEISMICALLY ADEQUATE?

Yes

### COMMENTS

Evaluated by: *[Signature]* Date: 12/16/93  
C. M. Abu-Radda 12.16.93

Connecticut Yankee A-46  
Essential Relays  
Relay functional Review List

CAB\_ID BUS 8

BUILDING DG  
ELEVATION 21.50  
LOCATION A DIESEL

| CONTACT ID             | MAKE     | MODEL             | CONT_COND | ENERGIZE | REMARK          |
|------------------------|----------|-------------------|-----------|----------|-----------------|
| 52X-BKR 8-1            |          |                   |           |          | BKR CAP         |
| 62/P18-1B-P-18-1B      | AGA 2400 | 2422PC            | NO        | NO       | RLY_FUNC_REVIEW |
| 87X-BKR 8-1            | GE HEA   | 12HEA61C238X2     | NO        | NO       | RLY_FUNC_REVIEW |
| 87X-EG-2A              | GE - HEA | 12HEA61C238X2     | NO        | NO       | OK              |
| 87-A-BKR 8-1           | W CA     | 290B892A09        | NO        | NO       | RLY_FUNC_REVIEW |
| 87-B-BKR 8-1           | W CA     | 290B892A09        | NO        | NO       | OK              |
| 87-C-BKR 8-1           | W CA     | 290B892A09        | NO        | NO       | OK              |
| 87A/8T2-RELAY 27Y/1-8  | W CA     | Ser. # 290B892A09 | NO        | NO       | OK              |
| 87A/8T2-RELAY 27Y2/1-8 | W CA     | Ser. # 290B892A09 | NO        | NO       | OK              |
| 87B/8T2-RELAY 27Y/1-8  | W CA     | Ser. # 290B892A09 | NO        | NO       | OK              |
| 87B/8T2-RELAY 27Y2/1-8 | W CA     | Ser. # 290B892A09 | NO        | NO       | OK              |
| 87C/8T2-RELAY 27Y/1-8  | W CA     | Ser. # 290B892A09 | NO        | NO       | OK              |



Connecticut Yankee A-46  
 Essential Relays  
 Relay functional Review List

CAB\_ID BUS 8

BUILDING DG  
 ELEVATION 21.50  
 LOCATION A DIESEL

| CONTACT ID             | MAKE    | MODEL             | CONT_COND | ENERGIZE | REMARK          |
|------------------------|---------|-------------------|-----------|----------|-----------------|
| 87C/8T2-RELAY 27Y2/1-8 | W CA    | Ser. # 290B892A09 | NO        | NO       | OK              |
| 50/51-A-BKR 8-1        | W CO-8  | 1875276A          | NO        | NO       | RLY_FUNC_REVIEW |
| 50/51-B-BKR 8-1        | W CO-8  | 1875276A          | NO        | NO       | OK              |
| 50/51-BKR 4850         | W CO-8  | 1875276A          | NO        | NO       | OK              |
| 50/51-C-BKR 8-1        | W CO-8  | 1875276A          | NO        | NO       | OK              |
| 50/51-P-18-1B          | W COM-5 | 289B456A19        | NO        | NO       | BAD ACTOR       |
| 32/CRN-1-BKR 8-1       | W CRN-1 | 290B038A09        | NO        | NO       | NO GERS         |
| 86 (A)-BKR 8-1         | W MG-6  | Ser. # 289B360A16 | NO        | NO       | RLY_FUNC_REVIEW |
| 86 (A)-EG-2A           | W MG-6  | Ser. # 289B360A16 | NO        | NO       | OK              |
| 86-P-18-1B             | W MG-6  | Ser. # 289B360A16 | NO        | NO       | OK              |
| 87X/8T2-RELAY 27Y/1-8  | W WL    | 300P762G01        | NO        | NO       | RLY_FUNC_REVIEW |
| 87X/8T2-RELAY 27Y2/1-8 | W WL    | 300P762G01        | NO        | NO       | OK              |

|  |                       |  |
|--|-----------------------|--|
| <b>RELAY FUNCTIONALITY REVIEW REPORT</b> |                       | GIP Rev 2, Corrected, 2/14/92<br>Status: Yes<br>Sheet 1 of 3 |
| ID : 62/P18-1B-P-18-1B (Rev. 0)          | Make : AGASTAT 2400   | Drawing : 32112 SH 8B  |
| System : ELEC                            | Subsystem/Component : |  |
| Description : 2422PC                     |                       |  |
| Location : A DIESEL                      |                       |  |

**SCREENING BASIS : RELAY GERS OR SPECIFIC QUALIFICATION**

**Low Ruggedness**

Is relay not a low ruggedness relay?

LRR

**Relay Capacity Level**

|   |   |
|---|---|
| Class : Auxiliary Relay                 | SubClass : Pneumatic Timing Relays          |
| Relay Model : Agastat E7022, 7022, 2422 | Operating Mode : Non-operate, normally open |
| Required Settings :                     |   |

Capacity GERS Level : 6.00

**Cabinet Seismic Capacity vs Demand  
Demand Amplification Factor**

Cabinet Type : High Amplification (large, flexible panels)

Demand Amplification Factor : 7

|   |   |                          |
|---|---|--------------------------|
| Cabinet ID : BUS 8 (Rev. 0)                 | Cabinet Class : 3 - Medium Voltage Switchgear |                          |
| Cabinet Description : 4160V EMERGENCY BUS 8 |   |                          |
| Building : DG                               | Floor El. : 21.5                              | Room, Row/Col : A DIESEL |

Is cabinet seismically adequate?

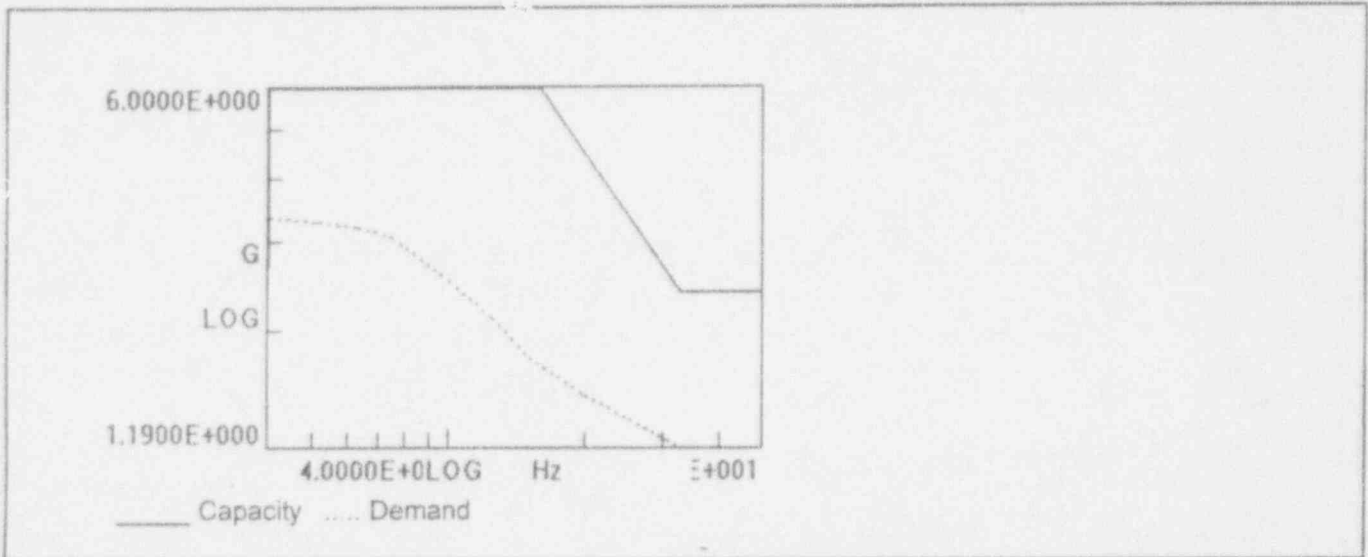
Yes

**Cabinet Frequency**

Cabinet fundamental frequency greater than 8 Hz

|  |                       |  |
|--|-----------------------|--|
| <b>RELAY FUNCTIONALITY REVIEW REPORT</b> |                       | GIP Rev 2, Corrected, 2/14/92<br>Status: Yes<br>Sheet 2 of 3 |
| ID : 62/P18-1B-P-18-1B (Rev. 0)          | Make : AGASTAT 2400   | Drawing : 32112 SH 8B  |
| System : ELEC                            | Subsystem/Component : |  |
| Description : 2422PC                     |                       |  |
| Location : A DIESEL                      |                       |  |

**Relay Seismic Capacity vs Demand**



|          | File                        | Record   |
|----------|-----------------------------|--|
| Capacity | C:\GIP\GIP\spectra.des      | Label\ANSI C37.98                                      |
| Demand 1 | C:\GIP\PROJ0024\spectra.des | UNIT CY BLDG SITEROCK ELEV 21.5 LOC na DIR HORI ID SSE |
| Demand 2 | C:\GIP\PROJ0024\spectra.des | UNIT CY BLDG SITEROCK ELEV 21.5 LOC na DIR HORI ID SSE |

Does relay capacity exceed demand?

SRI

**GERS BASIS : LEVEL 2: GERS/TRS V. SSE \* AMP FACTOR (NOTE 1)**

**Elevation Above Grade**

Elevation of cabinet below about 40' from grade

Yes

**Cabinet Frequency**

Cabinet fundamental frequency greater than 8 Hz

Yes

**IS RELAY SEISMICALLY ADEQUATE?**

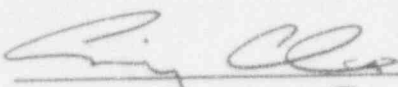
Yes

**COMMENTS**

NOTE 1: For GERS Basis Level 2 screening, the 2.25 factor was taken out since the cabinet is located in the Diesel Building which is a one story structure founded on compacted back-fill (Grade); therefore the ground SSE is considered to be a conservative design spectra (The excessively conservative floor spectra was not used). In addition, the relay was mounted on the side panel of Bus 8 and its location will not experience high amplification such as on the door panel. The side to side motion of the switchgear is also considerably less than the front to back motion.

|                                     |                       |                               |
|-------------------------------------|-----------------------|-------------------------------|
| RELAY FUNCTIONALITY REVIEW REPORT   |                       | GIP Rev 2, Corrected, 2/14/92 |
|                                     |                       | Status: Yes<br>Sheet 3 of 3   |
| ID : 62/P18-1B-P-<br>18-1B (Rev. 0) | Make : AGASTAT 2400   | Drawing : 32112 SH 8B         |
| System : ELEC                       | Subsystem/Component : |                               |
| Description : 2422PC                |                       |                               |
| Location : A DIESEL                 |                       |                               |

Bus 8 is braced at top and is shown to have a fundamental frequency greater than 8 Hz.

Evaluated by:  Date: 12/16/93  
C. M. Albrecht 12-16-93

|  |                 |  |
|--|-----------------|--|
| <b>RELAY FUNCTIONALITY REVIEW REPORT</b> |                 | GIP Rev 2, Corrected, 2/14/92<br>Status: Yes<br>Sheet 1 of 3 |
| ID : 77/X-BKR 8-1<br>(Rev. J)            | Make : GE - HEA | Drawing : 32001 SH 5M, 5MA                                   |
| System : ELEC                            |                 | Subsystem/Component :  |
| Description : 12HEA61C238X2              |                 |  |
| Location : A DIESEL                      |                 |  |

**SCREENING BASIS : RELAY GERS OR SPECIFIC QUALIFICATION**

**Low Ruggedness**

Is relay not a low ruggedness relay?

LRR

**Relay Capacity Level**

|   |   |
|---|---|
| Class : Auxiliary Relay                 | SubClass : Lockout                          |
| Relay Model : GE HEA61A, -B, -C (AC/DC) | Operating Mode : Non-operate, normally open |
| Required Settings :                     |   |

Capacity GERS Level : 10.00

**Cabinet Seismic Capacity vs Demand  
Demand Amplification Factor**

Cabinet Type : High Amplification (large, flexible panels)

Demand Amplification Factor : 15.75

|   |   |                          |
|---|---|--------------------------|
| Cabinet ID : BUS 8 (Rev. 0)                 | Cabinet Class : 3 - Medium Voltage Switchgear |                          |
| Cabinet Description : 4160V EMERGENCY BUS 8 |   |                          |
| Building : DG                               | Floor El. : 21.5                              | Room, Row/Col : A DIESEL |

Is cabinet seismically adequate?

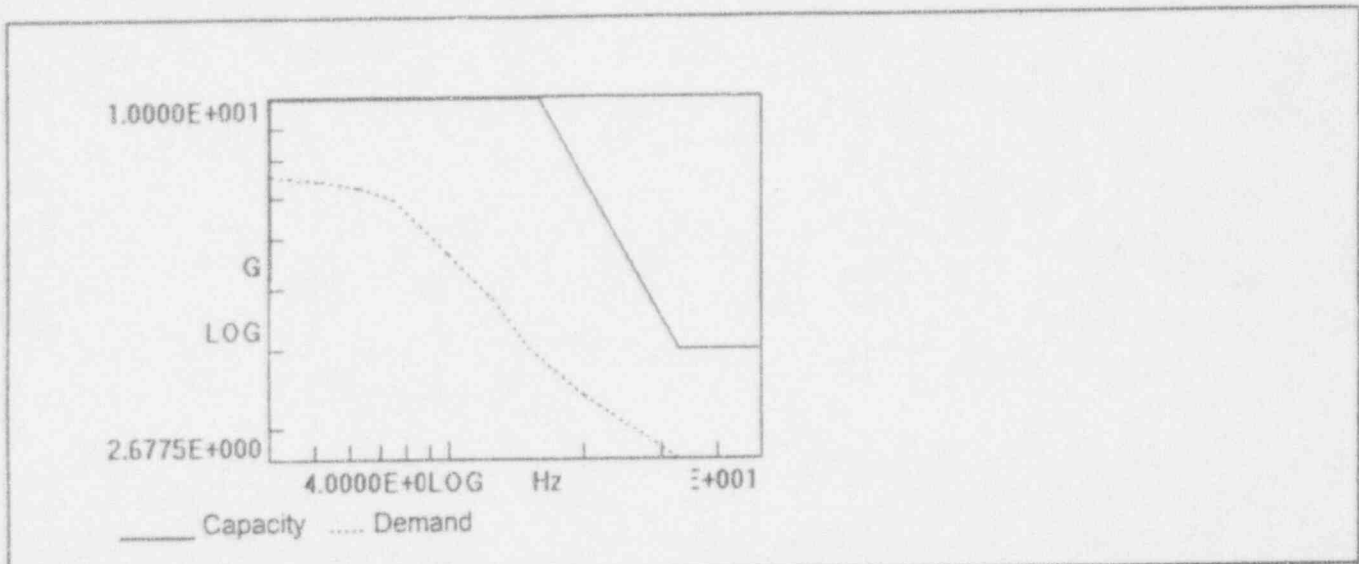
Yes

**Cabinet Frequency**

Cabinet fundamental frequency greater than 8 Hz

|  |                 |  |
|--|-----------------|--|
| <b>RELAY FUNCTIONALITY REVIEW REPORT</b> |                 | GIP Rev 2, Corrected, 2/14/92<br>Status: Yes<br>Sheet 2 of 3 |
| ID : 87/X-BKR 8-1<br>(Rev. 0)            | Make : GE - HEA | Drawing : 32001 SH 5M, 5MA                                   |
| System : ELEC                            |                 | Subsystem/Component :  |
| Description : 12HEA61C238X2              |                 |  |
| Location : A DIESEL                      |                 |  |

**Relay Seismic Capacity vs Demand**



|          | File                        | Record   |
|----------|-----------------------------|--|
| Capacity | C:\GIP\GIP\spectra.des      | Label\ANSI C37.98                                      |
| Demand 1 | C:\GIP\PROJ0024\spectra.des | UNIT CY BLDG SITEROCK ELEV 21.5 LOC na DIR HORI ID SSE |
| Demand 2 | C:\GIP\PROJ0024\spectra.des | UNIT CY BLDG SITEROCK ELEV 21.5 LOC na DIR HORI ID SSE |

Does relay capacity exceed demand?

SRT

**GERS BASIS : LEVEL 2: GERS/TRS V. 2.25\*SSE \* AMP FACTOR**

Elevation Above Grade

Elevation of cabinet below about 40' from grade  
Cabinet Frequency

Yes

Cabinet fundamental frequency greater than 8 Hz

Yes

**IS RELAY SEISMICALLY ADEQUATE?**

Yes

**COMMENTS**

Evaluated by:

*Siang Chen*  
C. M. John Fowler

Date:

12/16/93

12-16-93

RELAY FUNCTIONALITY REVIEW REPORT

GIP Rev 2, Corrected, 2/14/92  
Status: Yes  
Sheet 3 of 3

ID : 87/X-BKR 8-1  
(Rev. 0)

Make : GE - HEA

Drawing : 32001 SH 5M, 5MA

System : ELEC

Subsystem/Component :

Description : 12HEA61C238X2

Location : A DIESEL

|  |             |  |
|--|-------------|--|
| <b>RELAY FUNCTIONALITY REVIEW REPORT</b> |             | GIP Rev 2, Corrected, 2/14/92<br>Status: Yes<br>Sheet 1 of 3 |
| ID : 87-A-BKR 8-1<br>(Rev. 0)            | Make : W CA | Drawing : 32001 SH 5MA                                       |
| System : ELEC                            |             | Subsystem/Component :  |
| Description : 290B892A09                 |             |  |
| Location : A DIESEL                      |             |  |

**SCREENING BASIS : RELAY GERS OR SPECIFIC QUALIFICATION**

**Low Ruggedness**

Is relay not a low ruggedness relay?

LRR

**Relay Capacity Level**

|                                   |   |
|-----------------------------------|---|
| Class : Protective Relay          | SubClass : Induction Disk - Westinghouse Class 1E |
| Relay Model : CA-16 Style 1330D93 | Operating Mode : Non-operate, normally open       |
| Required Settings :               |   |

Capacity GERS Level : 14.20

**Cabinet Seismic Capacity vs Demand  
Demand Amplification Factor**

Cabinet Type : High Amplification (large, flexible panels)

Demand Amplification Factor : 7

|   |   |                          |
|---|---|--------------------------|
| Cabinet ID : BUS 8 (Rev. 0)                 | Cabinet Class : 3 - Medium Voltage Switchgear |                          |
| Cabinet Description : 4160V EMERGENCY BUS 8 |   |                          |
| Building : DG                               | Floor El. : 21.5                              | Room, Row/Col : A DIESEL |

Is cabinet seismically adequate?

Yes

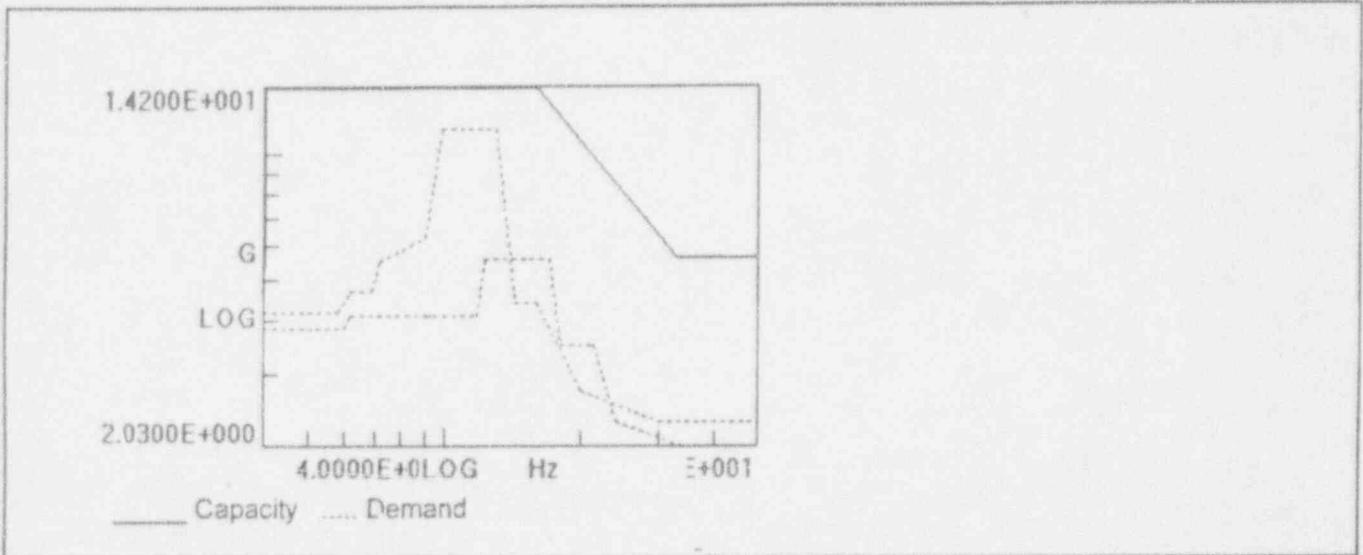
**Cabinet Frequency**

Cabinet fundamental frequency greater than 8 Hz



|  |             |  |
|--|-------------|--|
| <b>RELAY FUNCTIONALITY REVIEW REPORT</b> |             | GIP Rev 2, Corrected, 2/14/92<br>Status: Yes<br>Sheet 2 of 3 |
| ID : 87-A-BK/R 8-1<br>(Rev. 0)           | Make : W CA | Drawing : 32001 SH 5MA                                       |
| System : ELEC                            |             | Subsystem/Component :  |
| Description : 290B892A09                 |             |  |
| Location : A DIESEL                      |             |  |

**Relay Seismic Capacity vs Demand**



|          | File                        | Record  |
|----------|-----------------------------|---|
| Capacity | C:\GIP\GIP\spectra.des      | Label ANSI C37.98   |
| Demand 1 | C:\GIP\PROJ0024\spectra.des | UNIT CY BLDG Diesel_Generator ELEV 21.50 LOC  DIR N/S ID DGB 021N |
| Demand 2 | C:\GIP\PROJ0024\spectra.des | UNIT CY BLDG Diesel_Generator ELEV 21.50 LOC  DIR E/W ID DG B021E |

Does relay capacity exceed demand?

SRT

GERS BASIS : LEVEL 2: GERS/TRS V. CONSERVATIVE FRS \* AMP FACTOR

IS RELAY SEISMICALLY ADEQUATE?

Yes

COMMENTS

Operating mode and contact condition is unknown, used lowest GERS.

Evaluated by:

*C. M. Abu Tawdeh*  
C. M. Abu Tawdeh

Date:

12/16/93

12.16.93

# RELAY FUNCTIONALITY REVIEW REPORT

GIP Rev 2, Corrected, 2/14/92  
Status: Yes  
Sheet 3 of 3

ID : 87-A-BKR 8-1  
(Rev. 0)

Make : W CA

Drawing : 32001 SH 5MA

System : ELEC

Subsystem/Component :

Description : 290B892A09

Location : A DIESEL

|  |                       |  |
|--|-----------------------|--|
| <b>RELAY FUNCTIONALITY REVIEW REPORT</b> |                       | GIP Rev 2, Corrected, 2/14/92<br>Status: Yes<br>Sheet 1 of 3 |
| ID : 50/51-A-BKR<br>8-1 (Rev. 0)         | Make : W CO-8         | Drawing : 32001 SH 5MA                                       |
| System : ELEC                            | Subsystem/Component : |  |
| Description : 1875276A                   |                       |  |
| Location : A DIESEL                      |                       |  |

**SCREENING BASIS : RELAY GERS OR SPECIFIC QUALIFICATION**

**Low Ruggedness**

Is relay not a low ruggedness relay?

LRR

**Relay Capacity Level**

|   |   |
|---|---|
| Class : Protective Relay  | SubClass : Induction Disk - Westinghouse Class 1E |
| Relay Model : CO-2, -5, -6, -7, -8, -9, -11;<br>HILO Style 1456CO5, 1472C25 | Operating Mode : Non-operate, normally open       |
| Required Settings :   |   |

Capacity GERS Level : 14.20

**Cabinet Seismic Capacity vs Demand  
Demand Amplification Factor**

Cabinet Type : High Amplification (large, flexible panels)

Demand Amplification Factor : 7

|   |   |                          |
|---|---|--------------------------|
| Cabinet ID : BUS 8 (Rev. 0)                 | Cabinet Class : 3 - Medium Voltage Switchgear |                          |
| Cabinet Description : 4160V EMERGENCY BUS 8 |   |                          |
| Building : DG                               | Floor El. : 21.5                              | Room, Row/Col : A DIESEL |

Is cabinet seismically adequate?

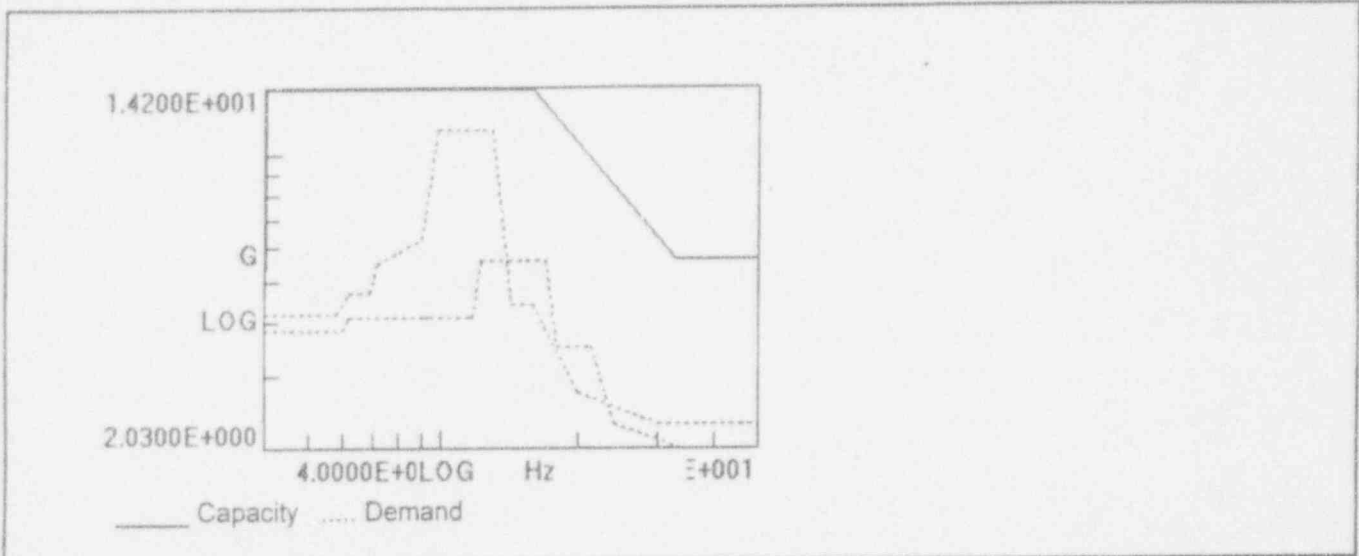
Yes

**Cabinet Frequency**

Cabinet fundamental frequency greater than 8 Hz

|  |                       |  |
|--|-----------------------|--|
| <b>RELAY FUNCTIONALITY REVIEW REPORT</b> |                       | GIP Rev 2, Corrected, 2/14/92<br>Status: Yes<br>Sheet 2 of 3 |
| ID : 50/51-A-BKR<br>8-1 (Rev. 0)         | Make : W CO-8         | Drawing : 32001 SH 5MA                                       |
| System : ELEC                            | Subsystem/Component : |  |
| Description : 1875276A                   |                       |  |
| Location : A DIESEL                      |                       |  |

**Relay Seismic Capacity vs Demand**



|          | File                        | Record   |
|----------|-----------------------------|--|
| Capacity | C:\GIP\GIP\spectra.des      | Label ANSI C37.98  |
| Demand 1 | C:\GIP\PROJ0024\spectra.des | UNIT CY BLDG Diesel_Generator ELEV 21.50 LOC  DIR N/S ID DGB<br>021N |
| Demand 2 | C:\GIP\PROJ0024\spectra.des | UNIT CY BLDG Diesel_Generator ELEV 21.50 LOC  DIR E/W ID DG<br>B021E |

Does relay capacity exceed demand?

SRT

GERS BASIS : LEVEL 2: GERS/TRS V. CONSERVATIVE FRS \* AMP FACTOR

**IS RELAY SEISMICALLY ADEQUATE?**

Yes

**COMMENTS**

Evaluated by:

*C. M. Abu Jwara*  
C. M. Abu Jwara

Date:

12/16/93  
12.16.93

# RELAY FUNCTIONALITY REVIEW REPORT

GIP Rev 2, Corrected, 2/14/92  
Status: Yes  
Sheet 3 of 3

ID : 50/51-A-BKR  
8-1 (Rev. 0)

Make : W CO-8

Drawing : 32001 SH 5MA

System : ELEC

Subsystem/Component :

Description : 1875276A

Location : A DIESEL

|  |               |  |
|--|---------------|--|
| <b>RELAY FUNCTIONALITY REVIEW REPORT</b> |               | GIP Rev 2, Corrected, 2/14/92<br>Status: Yes<br>Sheet 1 of 3 |
| ID : 86 (A)-BKR 8-1 (Rev. 0)             | Make : W MG-6 | Drawing : 32001 SH 5MA                                       |
| System : ELEC                            |               | Subsystem/Component :  |
| Description : Ser. # 289B360A16          |               |  |
| Location : A DIESEL                      |               |  |

**SCREENING BASIS : RELAY GERS OR SPECIFIC QUALIFICATION**

**Low Ruggedness**

Is relay not a low ruggedness relay?

LRR

**Relay Capacity Level**

|  |   |
|--|---|
| Class : Auxiliary Relay                  | SubClass : Hinged Armature Multi-contact    |
| Relay Model : Westinghouse MG-6 (DC)     | Operating Mode : Non-operate, normally open |
| Required Settings : 80 ms operation time |   |

Capacity GERS Level : 10.00

**Cabinet Seismic Capacity vs Demand  
Demand Amplification Factor**

Cabinet Type : High Amplification (large, flexible panels)

Demand Amplification Factor : 15.75

|   |   |                          |
|---|---|--------------------------|
| Cabinet ID : BUS 8 (Rev. 0)                 | Cabinet Class : 3 - Medium Voltage Switchgear |                          |
| Cabinet Description : 4160V EMERGENCY BUS 8 |   |                          |
| Building : DG                               | Floor El. : 21.5                              | Room, Row/Col : A DIESEL |

Is cabinet seismically adequate?

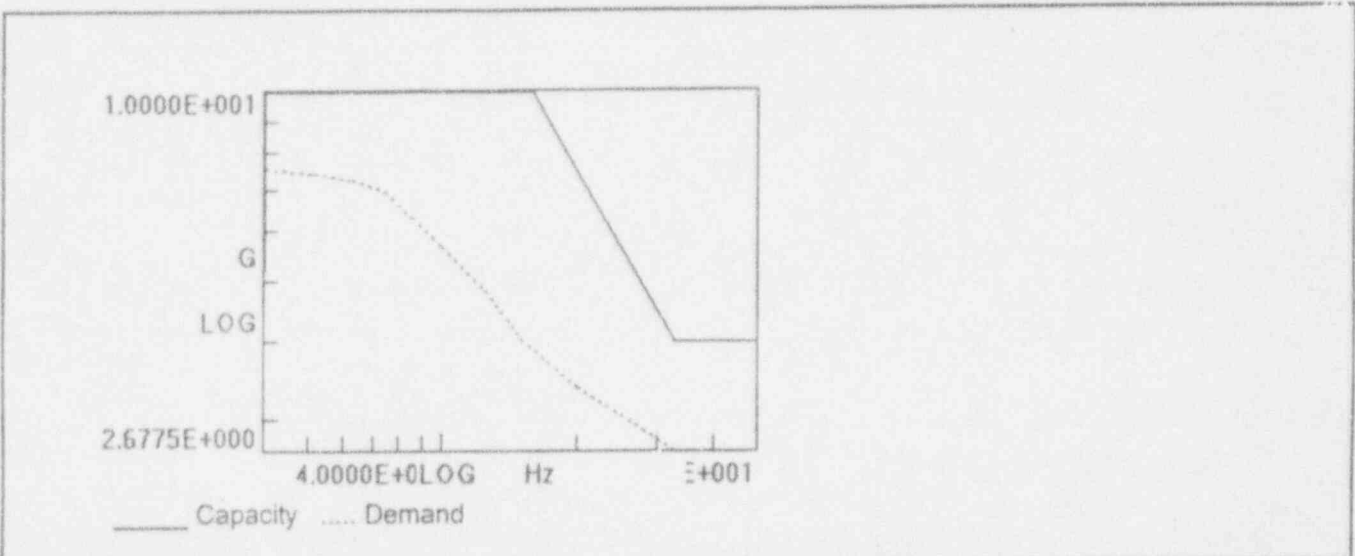
Yes

**Cabinet Frequency**

Cabinet fundamental frequency greater than 8 Hz

|  |               |  |
|--|---------------|--|
| <b>RELAY FUNCTIONALITY REVIEW REPORT</b> |               | GIP Rev 2, Corrected, 2/14/92<br>Status: Yes<br>Sheet 2 of 3 |
| ID : 86 (A)-BKR 8-1 (Rev 0)              | Make : W MG-6 | Drawing : 32001 SH 5MA                                       |
| System : ELEC                            |               | Subsystem/Component :  |
| Description : Ser. # 289B360A16          |               |  |
| Location : A DIESEL                      |               |  |

**Relay Seismic Capacity vs Demand**



|          | File                        | Record   |
|----------|-----------------------------|--|
| Capacity | C:\GIP\GIP\spectra.des      | Label ANSI C37.98                                      |
| Demand 1 | C:\GIP\PROJ0024\spectra.des | UNIT CY BLDG SITEROCK ELEV 21.5 LOC na DIR HORI ID SSE |
| Demand 2 | C:\GIP\PROJ0024\spectra.des | UNIT CY BLDG SITEROCK ELEV 21.5 LOC na DIR HORI ID SSE |

Does relay capacity exceed demand?

SRI

**GERS BASIS : LEVEL 2: GERS/TRS V. 2.25\*SSE \* AMP FACTOR**

**Elevation Above Grade**

Elevation of cabinet below about 40' from grade

Yes

**Cabinet Frequency**

Cabinet fundamental frequency greater than 8 Hz

Yes

**IS RELAY SEISMICALLY ADEQUATE?**

Yes

**COMMENTS**

Evaluated by:

*C. M. Abner*  
C. M. Abner

Date:

12/16/93

12.16.93

RELAY FUNCTIONALITY REVIEW REPORT

GIP Rev 2, Corrected, 2/14/92  
Status: Yes  
Sheet 3 of 3

ID : 86 (A)-BKR 8-  
1 (Rev. 0)

Make : W MG-6

Drawing : 32001 SH 5MA

System : ELEC

Subsystem/Component :

Description : Ser. # 289B360A16

Location : A DIESEL



|  |             |  |
|--|-------------|--|
| <b>RELAY FUNCTIONALITY REVIEW REPORT</b>   |             | GIP Rev 2, Corrected, 2/14/92<br>Status: Yes<br>Sheet 1 of 3 |
| ID : 87X/8T2-<br>RELAY 27Y/1-8<br>(Rev. 0) | Make : W WL | Drawing : 32001 SH 5F  |
| System : ELEC                              |             | Subsystem/Component :  |
| Description : 300P762G01                   |             |  |
| Location : A DIESEL                        |             |  |

**SCREENING BASIS : RELAY GERS OR SPECIFIC QUALIFICATION**

**Low Ruggedness**

Is relay not a low ruggedness relay?

LRR

**Relay Capacity Level**

|                                    |   |
|------------------------------------|---|
| Class : Auxiliary Relay            | SubClass : Lockout                          |
| Relay Model : Westinghouse WL (DC) | Operating Mode : Non-operate, normally open |
| Required Settings :                |   |

Capacity GERS Level : 10.00

**Cabinet Seismic Capacity vs Demand  
Demand Amplification Factor**

Cabinet Type : High Amplification (large, flexible panels)

Demand Amplification Factor : 15.75

|   |   |                          |
|---|---|--------------------------|
| Cabinet ID : BUS 8 (Rev. 0)                 | Cabinet Class : 3 - Medium Voltage Switchgear |                          |
| Cabinet Description : 4160V EMERGENCY BUS 8 |   |                          |
| Building : DG                               | Floor El. : 21.5                              | Room, Row/Col : A DIESEL |

Is cabinet seismically adequate?

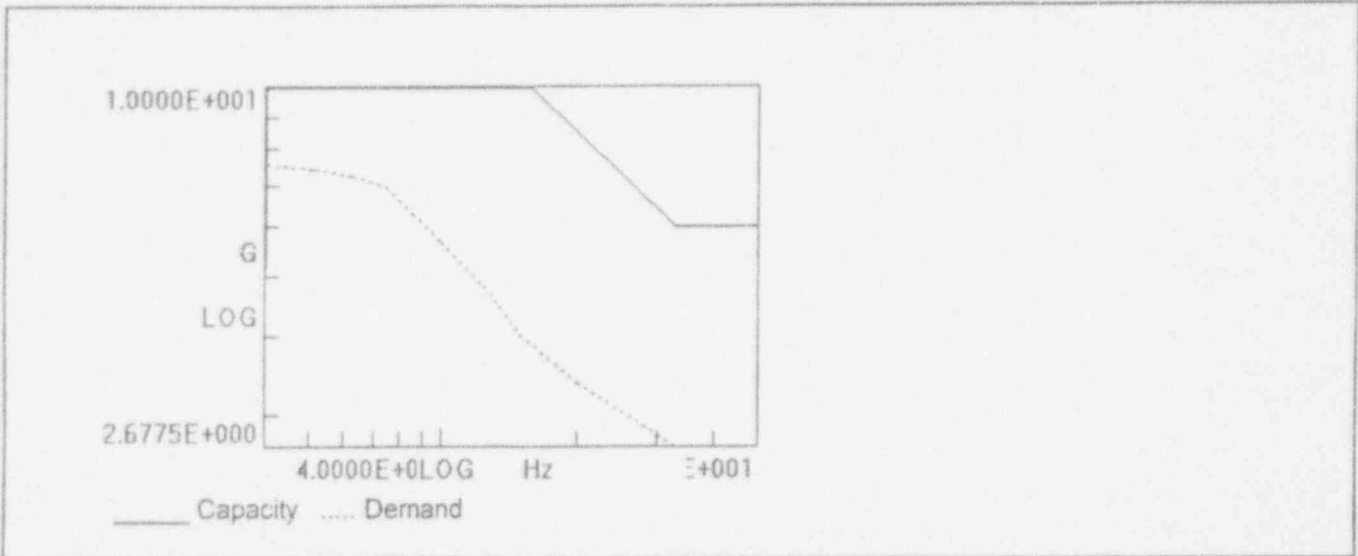
Yes

**Cabinet Frequency**

Cabinet fundamental frequency greater than 8 Hz

|  |             |  |
|--|-------------|--|
| <b>RELAY FUNCTIONALITY REVIEW REPORT</b>   |             | GIP Rev 2, Corrected, 2/14/92<br>Status: Yes<br>Sheet 2 of 3 |
| ID : 87X/8T2-<br>RELAY 27Y/1-8<br>(Rev. 0) | Make : W WL | Drawing : 32001 SH 5F  |
| System : ELEC                              |             | Subsystem/Component :  |
| Description : 300P762G01                   |             |  |
| Location : A DIESEL                        |             |  |

**Relay Seismic Capacity vs Demand**



|          | File                        | Record   |
|----------|-----------------------------|--|
| Capacity | C:\GIP\GIP\spectra.des      | Label Modified Relay GERS                              |
| Demand 1 | C:\GIP\PROJ0024\spectra.des | UNIT CY BLDG SITEROCK ELEV 21.5 LOC na DIR HORI ID SSE |
| Demand 2 | C:\GIP\PROJ0024\spectra.des | UNIT CY BLDG SITEROCK ELEV 21.5 LOC na DIR HORI ID SSE |

Does relay capacity exceed demand?

SRI

**GERS BASIS : LEVEL 2: GERS/TRS V. 2.25\*SSE \* AMP FACTOR**

**Elevation Above Grade**

Elevation of cabinet below about 40' from grade  
Cabinet Frequency

Yes

Cabinet fundamental frequency greater than 8 Hz

Yes

**IS RELAY SEISMICALLY ADEQUATE?**

Yes

**COMMENTS**

|  |             |                               |
|--|-------------|-------------------------------|
| RELAY FUNCTIONALITY REVIEW REPORT          |             | GIP Rev 2, Corrected, 2/14/92 |
|  |             | Status: Yes<br>Sheet 3 of 3   |
| ID : 87X/8T2-<br>RELAY 27Y/1-8<br>(Rev. 0) | Make : W WL | Drawing : 32001 SH 5F         |
| System : ELEC                              |             | Subsystem/Component :         |
| Description : 300P762G01                   |             |                               |
| Location : A DIESEL                        |             |                               |

Evaluated by:

*[Signature]*  
C. M. Abu Tawil

Date:

12/16/93  
12.16.93

Connecticut Yankee A-46  
Essential Relays  
Relay functional Review List

CAB\_ID BUS 9

BUILDING DG  
ELEVATION 21.50  
LOCATION B DIESEL

| CONTACT ID             | MAKE     | MODEL             | CONT_COND | ENERGIZE | REMARK  |
|------------------------|----------|-------------------|-----------|----------|---------|
| 52X-BKR 9-1            |          |                   |           |          | BKR CAP |
| 62/P18-1A-P-18-1A      | AGA 7000 | 7022PC            | NO        | NO       | OK      |
| 87X-BKR 9-1            | GE HEA   | 12HEA61C238X2     | NO        | NO       | OK      |
| 87X-EG-2B              | GE - HEA | 12HEA61C238X2     | NO        | NO       | OK      |
| 87-A-BKR 9-1           | W CA     | 290B892A09        | NO        | NO       | OK      |
| 87-B-BKR 9-1           | W CA     | 290B892A09        | NO        | NO       | OK      |
| 87-C-BKR 9-1           | W CA     | 290B892A09        | NO        | NO       | OK      |
| 87A/9T3-RELAY 27Y/1-9  | W CA     | Ser. # 290B892A09 | NO        | NO       | OK      |
| 87A/9T3-RELAY 27Y2/1-9 | W CA     | Ser. # 290B892A09 | NO        | NO       | OK      |
| 87B/9T3-RELAY 27Y/1-9  | W CA     | Ser. # 290B892A09 | NO        | NO       | OK      |
| 87B/9T3-RELAY 27Y2/1-9 | W CA     | Ser. # 290B892A09 | NO        | NO       | OK      |
| 87C/9T3-RELAY 27Y/1-9  | W CA     | Ser. # 290B892A09 | NO        | NO       | OK      |

Connecticut Yankee A-46  
Essential Relays  
Relay functional Review List

CAB\_ID BUS 9

BUILDING DG  
ELEVATION 21.50  
LOCATION B DIESEL

| CONTACT ID             | MAKE    | MODEL             | CONT_COND | ENERGIZE | REMARK    |
|------------------------|---------|-------------------|-----------|----------|-----------|
| 87C/9T3-RELAY 27Y2/1-9 | W CA    | Ser. # 290B892A09 | NO        | NO       | OK        |
| 50/51-BKR 49110        | W CO-8  | 1456C05R21        | NO        | NO       | OK        |
| 50/51-A-BKR 9-1        | W CO-8  | 1875276A          | NO        | NO       | OK        |
| 50/51-B-BKR 9-1        | W CO-8  | 1875276A          | NO        | NO       | OK        |
| 50/51-BKR 4960         | W CO-8  | 1875276A          | NO        | NO       | OK        |
| 50/51-C-BKR 9-1        | W CO-8  | 1875276A          | NO        | NO       | OK        |
| 50/51-P-18-1A          | W COM-5 | 289B456A19        | NO        | NO       | BAD ACTOR |
| 32/CRN-1-BKR 9-1       | W CRN-1 | 290B038A09        | NO        | NO       | NO GERS   |
| 86 (B)-BKR 9-1         | W MG-6  | Ser. # 289B360A16 | NO        | NO       | OK        |
| 86 (B)-EG-2B           | W MG-6  | Ser. # 289B360A16 | NO        | NO       | OK        |
| 86-P-18-1A             | W MG-6  | Ser. # 289B360A16 | NO        | NO       | OK        |
| 87X/9T3-RELAY 27Y/1-9  | W WL    |                   | NO        | NO       | OK        |

Connecticut Yankee A-46  
Essential Relays  
Relay functional Review List

CAB\_ID BUS 9

BUILDING DG  
ELEVATION 21.50  
LOCATION B DIESEL

| CONTACT ID             | MAKE | MODEL | CONT_COND | ENERGIZE | REMARK |
|------------------------|------|-------|-----------|----------|--------|
| 87X/9T3-RELAY 27Y2/1-9 | W WL |       | NO        | NO       | OK     |

Connecticut Yankee A-46  
 Essential Relays  
 Relay functional Review  
 List

CAB\_ID **CB/8DB1**

BUILDING SB  
 ELEVATION 59.50  
 LOCATION CONTROL AUX

| CONTACT ID                | MAKE      | MODEL       | CONT_COND | ENERGIZE | REMARK          |
|---------------------------|-----------|-------------|-----------|----------|-----------------|
| 62E8-2-RELAY 27Y1/1-8     | AGA E7000 | E7012PD     | NC        | YES      | RLY_FUNC_REVIEW |
| 62E8-2-RELAY 27Y2/1-8     | AGA E7000 | E7012PD     | NC        | YES      | OK              |
| 27Y1/1-8 (Note 9)-BKR 8-1 | GE - HEA  | 12HEA61C239 | NO        | NO       | RLY_FUNC_REVIEW |
| 27Y1/1-8 (Note 9)-RELAY 9 | GE - HEA  | 12HEA61C239 | NO        | NO       | OK              |
| 59/8-RELAY 27Y1/1-8       | GE - NGV  | 12NGV15A21  | NO        | YES      | NO GERS         |
| 59/8-RELAY 27Y2/1-8       | GE - NGV  | 12NGV15A21  | NO        | YES      | NO GERS         |
| 27B/1-8-RELAY 27Y1/1-8    | W CV-7    |             | NC        | YES      | OK              |
| 27B/1-8-RELAY 27Y2/1-8    | W CV-7    |             | NC        | YES      | OK              |
| 27C/1-8-RELAY 27Y1/1-8    | W CV-7    |             | NC        | NO       | OK              |
| 27C/1-8-RELAY 27Y2/1-8    | W CV-7    |             | NC        | NO       | OK              |
| 27A/1-8-RELAY 27Y1/1-8    | W CV-7    | 1875524A    | NC        | YES      | RLY_FUNC_REVIEW |
| 27A/1-8-RELAY 27Y2/1-8    | W CV-7    | 1875524A    | NC        | YES      | OK              |

Connecticut Yankee A-46  
Essential Relays  
Relay functional Review  
List

CAB\_ID CB/8DB1

BUILDING SB  
ELEVATION 59.50  
LOCATION CONTROL AUX

| CONTACT ID               | MAKE   | MODEL             | CONT_COND | ENERGIZE | REMARK          |
|--------------------------|--------|-------------------|-----------|----------|-----------------|
| 27X/1-8-RELAY 27Y/1-8    | W MG-6 |                   | NO        | NO       | RLY_FUNC_REVIEW |
| 27X/1-8-RELAY 27Y2/1-8   | W MG-6 |                   | NO        | NO       | OK              |
| 27Y1/1-8 (Note 9)-P-18-1 | W MG-6 | Ser. # 289B360A20 | NO        | NO       | OK              |
| 59A/1-8-BKR 8-1          | W SV   |                   | NO        | YES      | BAD ACTOR       |
| 59B/1-8-BKR 8-1          | W SV   |                   | NO        | YES      | BAD ACTOR       |



|   |                      |  |
|---|----------------------|--|
| <b>RELAY FUNCTIONALITY REVIEW REPORT</b>  |                      | GIP Rev 2, Corrected, 2/14/92<br>Status: Yes<br>Sheet 1 of 3 |
| ID : 62E8-2-<br>RELAY 27Y/1-8<br>(Rev. 0) | Make : AGASTAT E7000 | Drawing : 32001 SH 5FA                                       |
| System : ELEC                             |                      | Subsystem/Component :  |
| Description : E7012PD                     |                      |  |
| Location : CONTROL AUX                    |                      |  |

**SCREENING BASIS : RELAY GERS OR SPECIFIC QUALIFICATION**

**Low Ruggedness**

Is relay not a low ruggedness relay?

LRR

**Relay Capacity Level**

|   |   |
|---|---|
| Class : Auxiliary Relay                 | SubClass : Pneumatic Timing Relays        |
| Relay Model : Agastat E7012, 7012, 2412 | Operating Mode : Operate, normally closed |
| Required Settings :                     |   |

Capacity GERS Level : 12.50

**Cabinet Seismic Capacity vs Demand  
Demand Amplification Factor**

Cabinet Type : High Amplification (large, flexible panels)

Demand Amplification Factor : 7

|  |  |                             |
|--|--|-----------------------------|
| Cabinet ID : CB/8DB1 (Rev. 0)                    | Cabinet Class : 20 - Instrumentation and Control Panels and Cabinets |                             |
| Cabinet Description : AUX CONTROL PANEL (EG-2 \) |  |                             |
| Building : SB                                    | Floor El. : 59.5   | Room, Row/Col : CONTROL AUX |

Is cabinet seismically adequate?

Yes

**Cabinet Frequency**

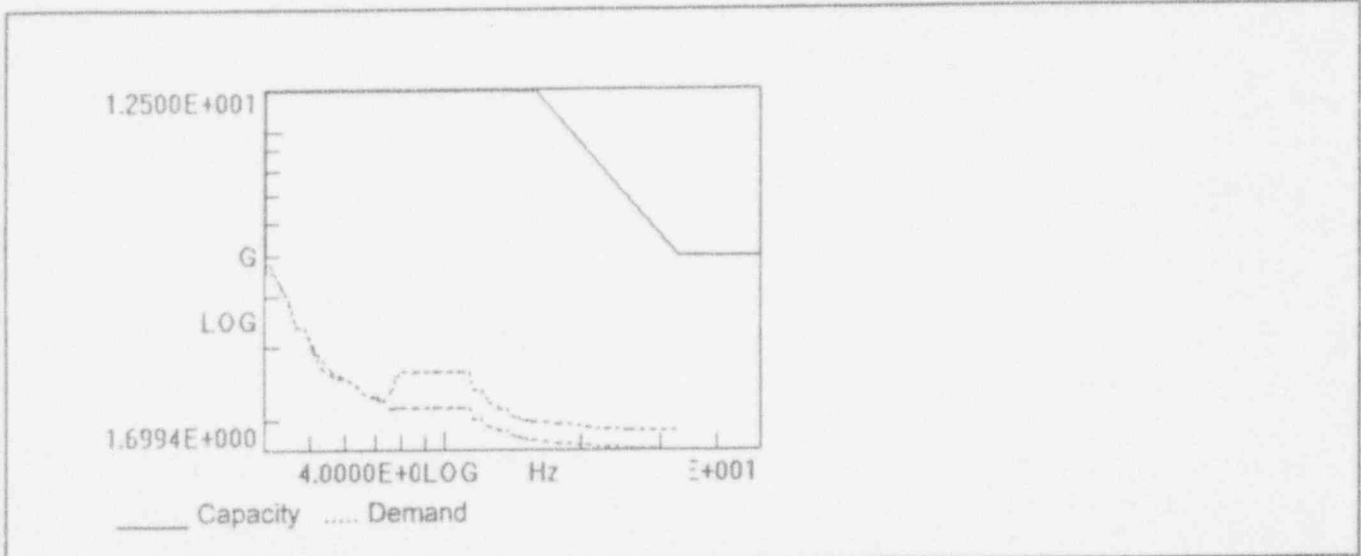
Cabinet fundamental frequency greater than 8 Hz

# RELAY FUNCTIONALITY REVIEW REPORT

GIP Rev 2, Corrected, 2/14/92  
 Status: Yes  
 Sheet 2 of 3

|   |                      |                        |
|---|----------------------|------------------------|
| ID : 62E8-2-<br>RELAY 27Y/1-8<br>(Rev. 0) | Make : AGASTAT E7000 | Drawing : 32001 SH 5FA |
| System : ELEC                             |                      | Subsystem/Component :  |
| Description : E7012PD                     |                      |                        |
| Location : CONTROL AUX                    |                      |                        |

## Relay Seismic Capacity vs Demand



|          | File                        | Record   |
|----------|-----------------------------|--|
| Capacity | C:\GIP\GIP\spectra.des      | Label ANSI C37.98  |
| Demand 1 | C:\GIP\PROJ0024\spectra.des | UNIT CY BLDG Turbine/Service ELEV 59.50 LOC L9 DIR N/S ID TB059L9N |
| Demand 2 | C:\GIP\PROJ0024\spectra.des | UNIT CY BLDG Turbine/Service ELEV 59.50 LOC L9 DIR E/W ID TB059L9E |

Does relay capacity exceed demand?

SRI


GERS BASIS : LEVEL 2: GERS/TRS V. CONSERVATIVE FRS \* AMP FACTOR

IS RELAY SEISMICALLY ADEQUATE?

Yes

### COMMENTS

Evaluated by:

  
 \_\_\_\_\_  
 C. M. Abu-Raddad

Date:

\_\_\_\_\_  
 12/16/93  
 \_\_\_\_\_  
 12-16-93

RELAY FUNCTIONALITY REVIEW REPORT

GIP Rev 2, Corrected, 2/14/92  
Status: Yes  
Sheet 3 of 3

ID: 62E8-2-  
RELAY 27Y/1-8  
(Rev. 0)

Make: AGASTAT E7000

Drawing: 32001 SH 5FA

System: ELEC

Subsystem/Component:

Description: E7012PD

Location: CONTROL AUX

|  |                 |                               |  |
|--|-----------------|-------------------------------|--|
| RELAY FUNCTIONALITY REVIEW REPORT      |                 | GIP Rev 2, Corrected, 2/14/92 |  |
|  |                 | Status: Yes<br>Sheet 1 of 3   |  |
| ID : 27Y/1-8 (Note 9)-BKR 8-1 (Rev. 0) | Make : GE - HEA | Drawing : 32001 SH 5M         |  |
| System : ELEC                          |                 | Subsystem/Component :         |  |
| Description : 12HEA61C239              |                 |                               |  |
| Location : CONTROL AUX                 |                 |                               |  |

**SCREENING BASIS : RELAY GERS OR SPECIFIC QUALIFICATION**

**Low Ruggedness**

Is relay not a low ruggedness relay?

LRR

**Relay Capacity Level**

|                                       |   |
|---------------------------------------|---|
| Class : Auxiliary Relay               | SubClass : Lockout                          |
| Relay Model : GE HEA61A,-B,-C (AC/DC) | Operating Mode : Non-operate, normally open |
| Required Settings :                   |   |

Capacity GERS Level : 10.00

**Cabinet Seismic Capacity vs Demand Amplification Factor**

Cabinet Type : High Amplification (large, flexible panels)

Demand Amplification Factor : 7

|   |  |                             |
|---|--|-----------------------------|
| Cabinet ID : CB/8DB1 (Rev. 0)                   | Cabinet Class : 20 - Instrumentation and Control Panels and Cabinets |                             |
| Cabinet Description : AUX CONTROL PANEL (EG-2A) |  |                             |
| Building : SB                                   | Floor El. : 59.5   | Room, Row/Col : CONTROL AUX |

Is cabinet seismically adequate?

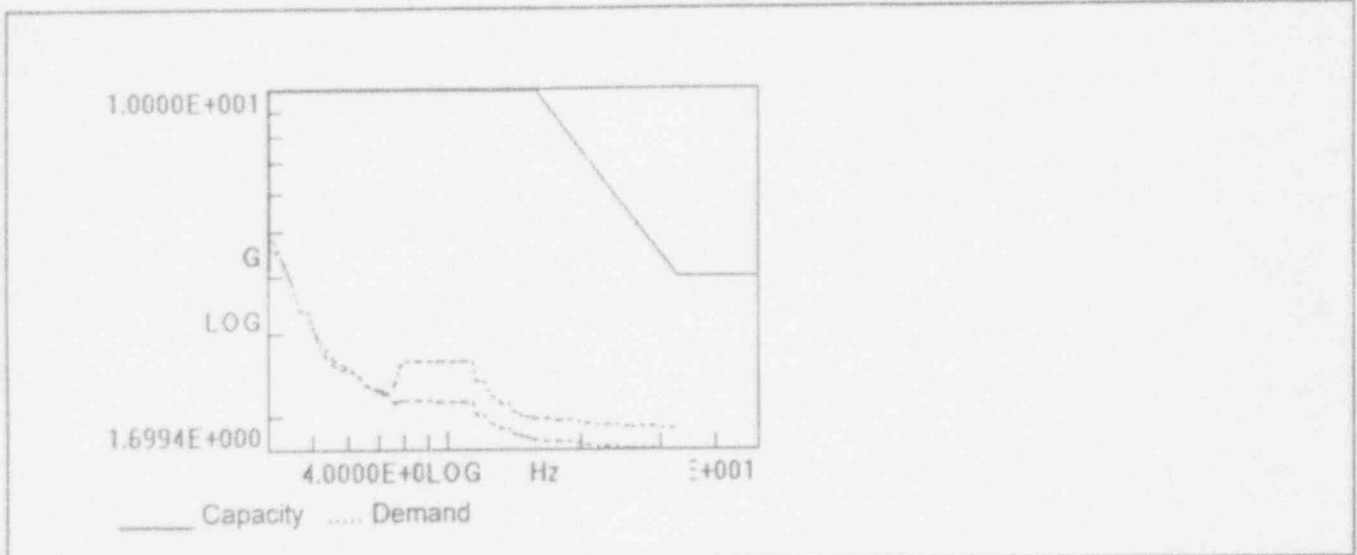
Yes

**Cabinet Frequency**

Cabinet fundamental frequency greater than 8 Hz

|  |                       |  |
|--|-----------------------|--|
| <b>RELAY FUNCTIONALITY REVIEW REPORT</b> |                       | GIP Rev 2, Corrected, 2/14/92<br>Status: Yes<br>Sheet 2 of 3 |
| ID : 27Y/1-8 (Note 9)-BKR 8-1 (Rev. 0)   | Make : GE - HEA       | Drawing : 32001 SH 5M  |
| System : ELEC                            | Subsystem/Component : |  |
| Description : 12HEA61C239                |                       |  |
| Location : CONTROL AUX                   |                       |  |

**Relay Seismic Capacity vs Demand**



|          | File                        | Record   |
|----------|-----------------------------|--|
| Capacity | C:\GIP\GIP\spectra.des      | Label ANSI C37 98  |
| Demand 1 | C:\GIP\PROJ0024\spectra.des | UNIT CY BLDG Turbine/Service ELEV 59.50 LOC L9 DIR N/S ID TB059L9N |
| Demand 2 | C:\GIP\PROJ0024\spectra.des | UNIT CY BLDG Turbine/Service ELEV 59.50 LOC L9 DIR E/W ID TB059L9E |

Does relay capacity exceed demand?

SRI

GERS BASIS : LEVEL 2: GERS/TRS V. CONSERVATIVE FRS \* AMP FACTOR

IS RELAY SEISMICALLY ADEQUATE?

Yes

**COMMENTS**

Evaluated by

*[Signature]*  
C. M. Abu Jawad

Date:

12/16/93  
12-14-93

**RELAY FUNCTIONALITY REVIEW REPORT**GIP Rev 2, Corrected, 2/14/92  
Status: Yes  
Sheet 3 of 3ID : 27Y/1-8 (Note  
9)-BKR 8-1 (Rev.  
0)

Make : GE - HEA

Drawing : 32001 SH 5M

System : ELEC

Subsystem/Component :

Description : 12HEA61C239

Location : CONTROL AUX

|  |               |  |
|--|---------------|--|
| <b>RELAY FUNCTIONALITY REVIEW REPORT</b>   |               | GIP Rev 2, Corrected, 2/14/92<br>Status: Yes<br>Sheet 1 of 3 |
| ID : 27A/1-8-<br>RELAY 27Y/1-8<br>(Rev. 0) | Make : W CV-7 | Drawing : 32001 SH 5F  |
| System : ELEC                              |               | Subsystem/Component :  |
| Description : 1875524A                     |               |  |
| Location : CONTROL AUX                     |               |  |

**SCREENING BASIS : RELAY GERS OR SPECIFIC QUALIFICATION**

**Low Ruggedness**

Is relay not a low ruggedness relay?

LRR

**Relay Capacity Level**

|   |   |
|---|---|
| Class : Protective Relay                                      | SubClass : Induction Disk - Westinghouse Class 1E |
| Relay Model : CV-2, -4, -6, -7, -8; Style<br>1454C77, 1482B97 | Operating Mode : Operate, normally closed         |
| Required Settings :   |   |

|                             |
|-----------------------------|
| Capacity GERS Level : 14.20 |
|-----------------------------|

**Cabinet Seismic Capacity vs Demand  
Demand Amplification Factor**

|  |
|--|
| Cabinet Type : High Amplification (large, flexible panels) |
|--|

|                                 |
|---------------------------------|
| Demand Amplification Factor : 7 |
|---------------------------------|

|   |  |                             |
|---|--|-----------------------------|
| Cabinet ID : CB/8DB1 (Rev. 0)                   | Cabinet Class : 20 - Instrumentation and Control Panels and Cabinets |                             |
| Cabinet Description : AUX CONTROL PANEL (EG-2A) |  |                             |
| Building : SB                                   | Floor El. : 59.5   | Room, Row/Col : CONTROL AUX |

Is cabinet seismically adequate?

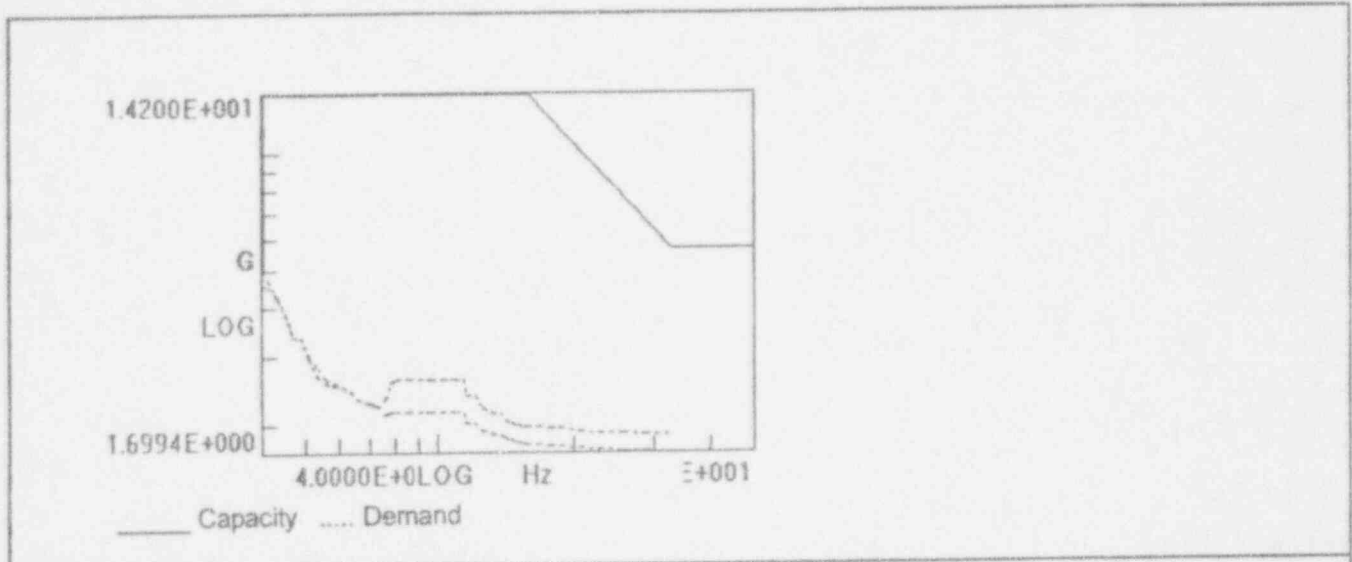
Yes

**Cabinet Frequency**

Cabinet fundamental frequency greater than 8 Hz

|  |               |  |
|--|---------------|--|
| <b>RELAY FUNCTIONALITY REVIEW REPORT</b>   |               | GIP Rev 2, Corrected, 2/14/92<br>Status: Yes<br>Sheet 2 of 3 |
| ID : 27A/1-8-<br>RELAY 27Y/1-8<br>(Rev. 0) | Make : W CV-7 | Drawing : 32001 SH 5F  |
| System : ELEC                              |               | Subsystem/Component :  |
| Description : 1875524A                     |               |  |
| Location : CONTROL AUX                     |               |  |

**Relay Seismic Capacity vs Demand**



|          | File                        | Record   |
|----------|-----------------------------|--|
| Capacity | C:\GIP\GIP\spectra.des      | Label\ANSI C37.98  |
| Demand 1 | C:\GIP\PROJ0024\spectra.des | UNIT\CY\BLDG\Turbine\Service\ELEV\59.50\LOC\L9\DIR\N\S\ID\TB059L9N |
| Demand 2 | C:\GIP\PROJ0024\spectra.des | UNIT\CY\BLDG\Turbine\Service\ELEV\59.50\LOC\L9\DIR\E\W\ID\TB059L9E |

Does relay capacity exceed demand?

SRT

GERS BASIS : LEVEL 2: GERS/TRS V. CONSERVATIVE FRS \* AMP FACTOR

IS RELAY SEISMICALLY ADEQUATE?

Yes

COMMENTS

Evaluated by: *S. C. [Signature]*  
*C. M. Abu [Signature]*

Date: *12/16/93*  
*12.16.93*



**RELAY FUNCTIONALITY REVIEW REPORT**GIP Rev 2, Corrected, 2/14/92  
Status: Yes  
Sheet 3 of 3ID : 27A/1-8-  
RELAY 27Y/1-8  
(Rev. 0)

Make : W CV-7

Drawing : 32001 SH 5F

System : ELEC

Subsystem/Component :

Description : 1875524A

Location : CONTROL AUX

|  |               |  |
|--|---------------|--|
| <b>RELAY FUNCTIONALITY REVIEW REPORT</b>   |               | GiP Rev 2, Corrected, 2/14/92<br>Status: Yes<br>Sheet 1 of 3 |
| ID : 27X/1-8-<br>RELAY 27Y/1-8<br>(Rev. 0) | Make : W MG-6 | Drawing : 32001 SH 5F  |
| System : ELEC                              |               | Subsystem/Component :  |
| Description :                              |               |  |
| Location : CONTROL AUX                     |               |  |

**SCREENING BASIS : RELAY GERS OR SPECIFIC QUALIFICATION**

**Low Ruggedness**

Is relay not a low ruggedness relay?

LRR

**Relay Capacity Level**

|  |   |
|--|---|
| Class : Auxiliary Relay                  | SubClass : Hinged Armature Multi-contact    |
| Relay Model : Westinghouse MG-6 (DC)     | Operating Mode : Non-operate, normally open |
| Required Settings : 80 ms operation time |   |

Capacity GERS Level : 10.00

**Cabinet Seismic Capacity vs Demand  
Demand Amplification Factor**

Cabinet Type : High Amplification (large, flexible panels)

Demand Amplification Factor : 7

|   |  |                             |
|---|--|-----------------------------|
| Cabinet ID : CB/8DB1 (Rev. 0)                   | Cabinet Class : 20 - Instrumentation and Control Panels and Cabinets |                             |
| Cabinet Description : AUX CONTROL PANEL (EG-2A) |  |                             |
| Building : SB                                   | Floor El. : 59.5   | Room, Row/Col : CONTROL AUX |

Is cabinet seismically adequate?

Yes

**Cabinet Frequency**

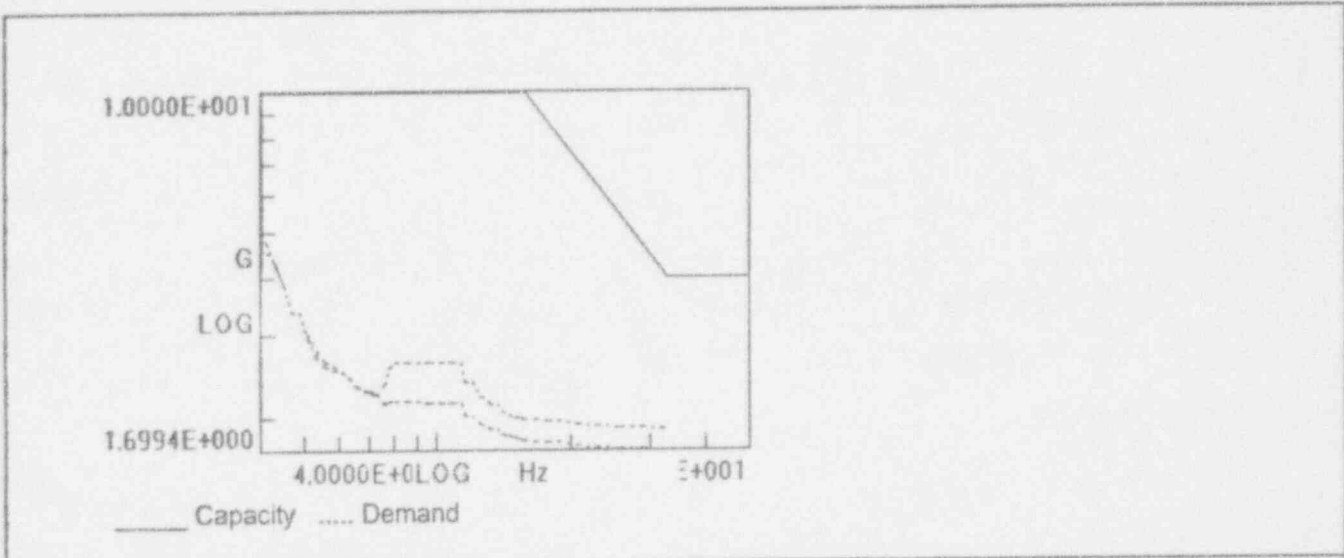
Cabinet fundamental frequency greater than 8 Hz

# RELAY FUNCTIONALITY REVIEW REPORT

GIP Rev 2, Corrected, 2/14/92  
 Status: Yes  
 Sheet 2 of 3

|  |               |                       |
|--|---------------|-----------------------|
| ID : 27X/1-8-<br>RELAY 27Y/1-8<br>(Rev. 0) | Make : W MG-6 | Drawing : 32001 SH 5F |
| System : ELEC                              |               | Subsystem/Component : |
| Description :                              |               |                       |
| Location : CONTROL AUX                     |               |                       |

## Relay Seismic Capacity vs Demand



|          | File                        | Record   |
|----------|-----------------------------|--|
| Capacity | C:\GIP\GIP\spectra.des      | Label\ANSI C37.98  |
| Demand 1 | C:\GIP\PROJ0024\spectra.des | UNIT\CY\BLDG\Turbine\Service\ELEV\59.50\LOC\L9\DIR\N\S\ID\TB059L9N |
| Demand 2 | C:\GIP\PROJ0024\spectra.des | UNIT\CY\BLDG\Turbine\Service\ELEV\59.50\LOC\L9\DIR\E\W\ID\TB059L9E |

Does relay capacity exceed demand?

SRT

GERS BASIS : LEVEL 2: GERS/TRS V. CONSERVATIVE FRS \* AMP FACTOR

IS RELAY SEISMICALLY ADEQUATE?

Yes

### COMMENTS

Evaluated by:

*S. J. Chou*  
*C. M. Albrecht*

Date:

*12/16/93*  
*12.16.93*

RELAY FUNCTIONALITY REVIEW REPORT

GIP Rev 2, Corrected, 2/14/92  
Status: Yes  
Sheet 3 of 3

ID : 27X/1-8-  
RELAY 27Y/1-8  
(Rev. 0)

Make : W MG-6

Drawing : 32001 SH 5F

System : ELEC

Subsystem/Component :

Description :

Location : CONTROL AUX

Connecticut Yankee A-46  
 Essential Relays  
 Relay functional Review List

CAB\_ID CB/8DB1A

BUILDING SB  
 ELEVATION 59.50  
 LOCATION CONTROL AUX

| CONTACT ID             | MAKE      | MODEL      | CONT_COND | ENERGIZE | REMARK          |
|------------------------|-----------|------------|-----------|----------|-----------------|
| 62B/1-8-RELAY 27Y/1-8  | AGA E7000 | E7022PC003 | NC        | YES      | RLY_FUNC_REVIEW |
| 62B/1-8-RELAY 27Y2/1-8 | AGA E7000 | E7022PC003 | NC        | YES      | OK              |
| 62C/1-8-RELAY 27Y/1-8  | AGA E7000 | E7024PC001 | NC        | YES      | RLY_FUNC_REVIEW |
| 62C/1-8-RELAY 27Y2/1-8 | AGA E7000 | E7024PC001 | NC        | YES      | OK              |
| 27K/1-8-RELAY 27Y/1-8  | DEVAR     | 18-114     | NO        | YES      | NO GERS         |
| 27K/1-8-RELAY 27Y2/1-8 | DEVAR     | 18-114     | NO        | YES      | NO GERS         |
| 27L/1-8-RELAY 27Y/1-8  | DEVAR     | 18-114     | NO        | YES      | NO GERS         |
| 27L/1-8-RELAY 27Y2/1-8 | DEVAR     | 18-114     | NO        | YES      | NO GERS         |
| 27M/1-8-RELAY 27Y/1-8  | DEVAR     | 18-114     | NO        | YES      | NO GERS         |
| 27M/1-8-RELAY 27Y2/1-8 | DEVAR     | 18-114     | NO        | YES      | NO GERS         |
| 27R/1-8-RELAY 27Y/1-8  | DEVAR     | 18-114     | NO        | YES      | NO GERS         |
| 27R/1-8-RELAY 27Y2/1-8 | DEVAR     | 18-114     | NO        | YES      | NO GERS         |

Connecticut Yankee A-46  
 Essential Relays  
 Relay functional Review List

CAB\_ID CB/8DB1A

BUILDING SB  
 ELEVATION 59.50  
 LOCATION CONTROL AUX

| CONTACT ID              | MAKE     | MODEL       | CONT_COND | ENERGIZE | REMARK          |
|-------------------------|----------|-------------|-----------|----------|-----------------|
| 27S/1-8-RELAY 27Y/1-8   | DEVAR    | 18-114      | NO        | YES      | NO GERS         |
| 27S/1-8-RELAY 27Y2/1-8  | DEVAR    | 18-114      | NO        | YES      | NO GERS         |
| 27T/1-8-RELAY 27Y/1-8   | DEVAR    | 18-114      | NO        | YES      | NO GERS         |
| 27T/1-8-RELAY 27Y2/1-8  | DEVAR    | 18-114      | NO        | YES      | NO GERS         |
| 86/1-8-RELAY 27Y/1-8    | GE - HEA | 12HEA61A223 | NO        | NO       | RLY_FUNC_REVIEW |
| 86/1-8-RELAY 27Y2/1-8   | GE - HEA | 12HEA61A223 | NO        | NO       | OK              |
| 27AX/1-8-RELAY 27Y/1-8  | GE - HFA | 12HFA151A2H | NO        | NO       | RLY_FUNC_REVIEW |
| 27AX/1-8-RELAY 27Y2/1-8 | GE - HFA | 12HFA151A2H | NO        | NO       | OK              |
| 27BX/1-8-RELAY 27Y/1-8  | GE - HFA | 12HFA151A2H | NO        | NO       | OK              |
| 27BX/1-8-RELAY 27Y2/1-8 | GE - HFA | 12HFA151A2H | NO        | NO       | OK              |
| 27CX/1-8-RELAY 27Y/1-8  | GE - HFA | 12HFA151A2H | NO        | NO       | OK              |
| 27CX/1-8-RELAY 27Y2/1-8 | GE - HFA | 12HFA151A2H | NO        | NO       | OK              |

Connecticut Yankee A-46  
Essential Relays  
Relay functional Review List

CAB\_ID CB/8DB1A

BUILDING SB  
ELEVATION 59.50  
LOCATION CONTROL AUX

| CONTACT ID               | MAKE     | MODEL       | CONT_COND | ENERGIZE | REMARK          |
|--------------------------|----------|-------------|-----------|----------|-----------------|
| 94LS/1-8 (Note 13)-BKR 5 | GE - HFA | 12HFA151A2H | NO        | NO       | OK              |
| 94LS/1-8 (Note 13)-BKR 5 | GE - HFA | 12HFA151A2H | NO        | NO       | OK              |
| 94LS/1-8 (Note 13)-P-13- | GE - HFA | 12HFA151A2H | NO        | NO       | OK              |
| 94LS/1-8 (Note 13)-P-18- | GE - HFA | 12HFA151A2H | NO        | NO       | OK              |
| 94LS/1-8 (Note 13)-P-37- | GE - HFA | 12HFA151A2H | NO        | NO       | OK              |
| 94LS/1-8(Note 13)-P-37-1 | GE - HFA | 12HFA151A2H | NO        | NO       | OK              |
| 4/EG2A-BKR 8-1           | W WL     |             | NO        | NO       | RLY_FUNC_REVIEW |
| 4/EG2A-EG-2A             | W WL     |             | NO        | NO       | OK              |

|  |                      |  |
|--|----------------------|--|
| <b>RELIABILITY FUNCTIONALITY REVIEW REPORT</b> |                      | GIP Rev 2, Corrected, 2/14/92<br>Status: Yes<br>Sheet 1 of 3 |
| ID : 62B/1-8-<br>RELAY 27Y/1-8<br>(Rev. 0)     | Make : AGASTAT E7000 | Drawing : 32001 SH 5FA                                       |
| System : ELEC                                  |                      | Subsystem/Component :  |
| Description : E7022PC003                       |                      |  |
| Location : CONTROL AUX                         |                      |  |

**SCREENING BASIS : RELAY GERS OR SPECIFIC QUALIFICATION**

**Low Ruggedness**

Is relay not a low ruggedness relay?

LRR

**Relay Capacity Level**

|   |   |
|---|---|
| Class : Auxiliary Relay                 | SubClass : Pneumatic Timing Relays        |
| Relay Model : Agastat E7022, 7022, 2422 | Operating Mode : Operate, normally closed |
| Required Settings :                     |   |

Capacity GERS Level : 10.00

**Cabinet Seismic Capacity vs Demand  
Demand Amplification Factor**

Cabinet Type : High Amplification (large, flexible panels)

Demand Amplification Factor : 7

|   |  |                             |
|---|--|-----------------------------|
| Cabinet ID : CB/8DB1A (Rev. 0)                  | Cabinet Class : 20 - Instrumentation and Control Panels and Cabinets |                             |
| Cabinet Description : AUX CONTROL PANEL (EG-2A) |  |                             |
| Building : SB                                   | Floor El. : 59.5   | Room, Row/Col : CONTROL AUX |

Is cabinet seismically adequate?

No

**Cabinet Frequency**

Cabinet fundamental frequency greater than 8 Hz

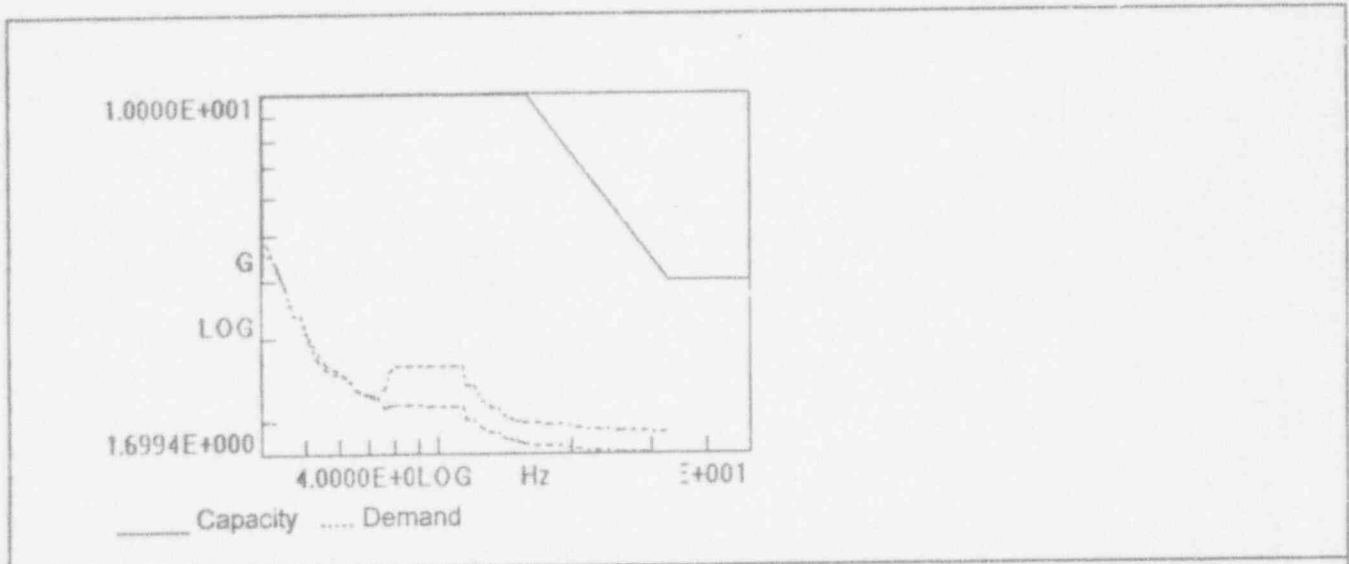


# RELAY FUNCTIONALITY REVIEW REPORT

GIP Rev 2, Corrected, 2/14/92  
 Status: Yes  
 Sheet 2 of 3

|  |                      |                        |
|--|----------------------|------------------------|
| ID : 62B/1-8-<br>RELAY 27Y/1-8<br>(Rev. 0) | Make : AGASTAT E7000 | Drawing : 32001 SH 5FA |
| System : ELEC                              |                      | Subsystem/Component :  |
| Description : E7022PC003                   |                      |                        |
| Location : CONTROL AUX                     |                      |                        |

## Relay Seismic Capacity vs Demand



|          | File                        | Record   |
|----------|-----------------------------|--|
| Capacity | C:\GIP\GIP\spectra.des      | Label\ANSI C37.98  |
| Demand 1 | C:\GIP\PROJ0024\spectra.des | UNIT\CY\BLDG\Turbine\Service\ELEV\59.50\LOC\L9\DIR\N\S\ID\TB059L9N |
| Demand 2 | C:\GIP\PROJ0024\spectra.des | UNIT\CY\BLDG\Turbine\Service\ELEV\59.50\LOC\L9\DIR\E\W\ID\TB059L9E |

Does relay capacity exceed demand?

SRT

GERS BASIS : LEVEL 2: GERS/TRS V. CONSERVATIVE FRS \* AMP FACTOR

IS RELAY SEISMICALLY ADEQUATE?

Yes

### COMMENTS

Currently the cabinet which the relay reside is an outlier, this will not cause an adverse effect to the integrity of the relay since its capacity is very high. The resolution of the outlier is being track with the cabinet.

Evaluated by:

C. M. Alwan  
 C. M. Alwan

Date:

12/16/93

12.16.93

**RELAY FUNCTIONALITY REVIEW REPORT**GIP Rev 2, Corrected, 2/14/92  
Status: Yes  
Sheet 3 of 3ID : 62B/1-8-  
RELAY 27Y/1-8  
(Rev. 0)

Make : AGASTAT E7000

Drawing : 32001 SH 5FA

System : ELEC

Subsystem/Component :

Description : E7022PC003

Location : CONTROL AUX

|  |                      |  |
|--|----------------------|--|
| <b>RELAY FUNCTIONALITY REVIEW REPORT</b>   |                      | GIP Rev 2, Corrected, 2/14/92<br>Status: Yes<br>Sheet 1 of 3 |
| ID : 62C/1-8-<br>RELAY 27Y/1-8<br>(Rev. 0) | Make : AGASTAT E7000 | Drawing : 32001 SH 5FA                                       |
| System : ELEC                              |                      | Subsystem/Component :  |
| Description : E7024PC001                   |                      |  |
| Location : CONTROL AUX                     |                      |  |

**SCREENING BASIS : RELAY GERS OR SPECIFIC QUALIFICATION**

**Low Ruggedness**

Is relay not a low ruggedness relay?

LRR

**Relay Capacity Level**

|   |   |
|---|---|
| Class : Auxiliary Relay                 | SubClass : Pneumatic Timing Relays        |
| Relay Model : Agastat E7024, 7024, 2424 | Operating Mode : Operate, normally closed |
| Required Settings :                     |   |

Capacity GERS Level : 10.00

**Cabinet Seismic Capacity vs Demand  
Demand Amplification Factor**

Cabinet Type : High Amplification (large, flexible panels)

Demand Amplification Factor : 7

|   |  |                             |
|---|--|-----------------------------|
| Cabinet ID : CB/8DB1A (Rev. 0)                  | Cabinet Class : 20 - Instrumentation and Control Panels and Cabinets |                             |
| Cabinet Description : AUX CONTROL PANEL (EG-2A) |  |                             |
| Building : SB                                   | Floor El. : 59.5   | Room, Row/Col : CONTROL AUX |

Is cabinet seismically adequate?

No

**Cabinet Frequency**

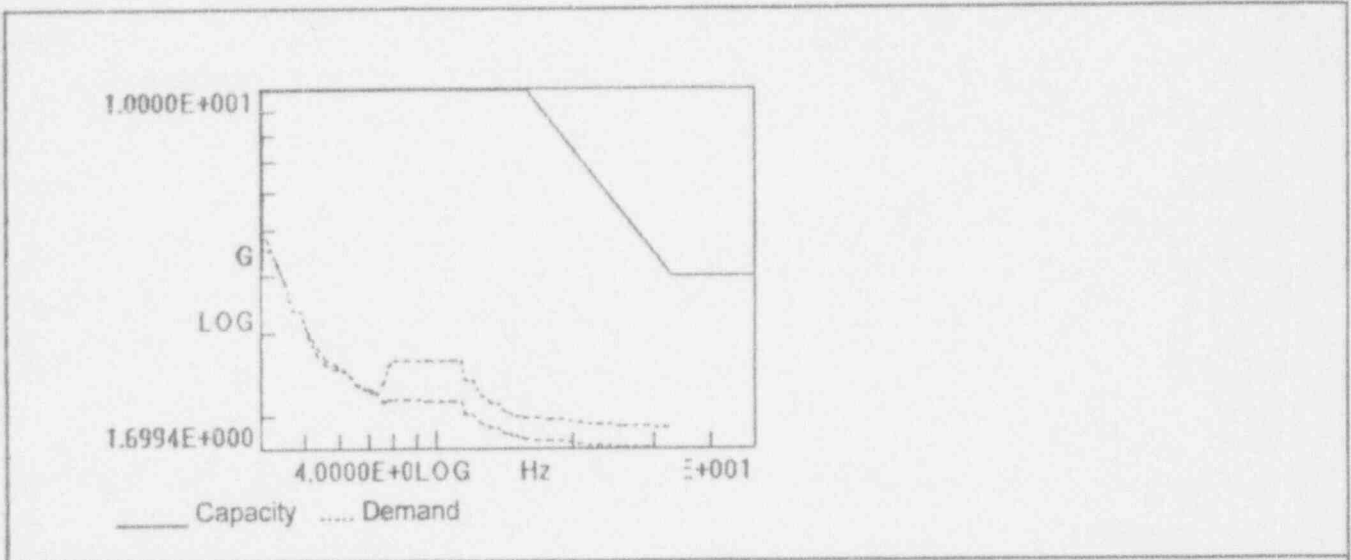
Cabinet fundamental frequency greater than 8 Hz

# RELAY FUNCTIONALITY REVIEW REPORT

GIP Rev 2, Corrected, 2/14/92  
 Status: Yes  
 Sheet 2 of 3

|  |                      |                        |
|--|----------------------|------------------------|
| ID : 62C/1-8-<br>RELAY 27Y/1-8<br>(Rev. 0) | Make : AGASTAT E7000 | Drawing : 32001 SH 5FA |
| System : ELEC                              |                      | Subsystem/Component :  |
| Description : E7024PC001                   |                      |                        |
| Location : CONTROL AUX                     |                      |                        |

## Relay Seismic Capacity vs Demand



|          | File                        | Record   |
|----------|-----------------------------|--|
| Capacity | C:\GIP\GIP\spectra.des      | Label ANSI C37.98  |
| Demand 1 | C:\GIP\PROJ0024\spectra.des | UNIT CY BLDG Turbine/Service ELEV 59.50 LOC L9 DIR N/S ID TB059L9N |
| Demand 2 | C:\GIP\PROJ0024\spectra.des | UNIT CY BLDG Turbine/Service ELEV 59.50 LOC L9 DIR E/W ID TB059L9C |

Does relay capacity exceed demand?

SRT

GERS BASIS : LEVEL 2: GERS/TRS V. CONSERVATIVE FRS \* AMP FACTOR

IS RELAY SEISMICALLY ADEQUATE?

Yes

### COMMENTS

Currently the cabinet which the relay reside is an outlier, this will not cause an adverse effect to the integrity of the relay since its capacity is very high. The resolution of the outlier is being track with the cabinet.

Evaluated by:

*[Signature]*  
C. M. Abu Rowe

Date:

12/16/93  
12-16-93

RELAY FUNCTIONALITY REVIEW REPORT

GIP Rev 2, Corrected, 2/14/92  
Status: Yes  
Sheet 3 of 3

ID : 62C/1-8-  
RELAY 27Y/1-8  
(Rev. 0)

Make : AGASTAT E7000

Drawing : 32001 SH 5FA

System : ELEC

Subsystem/Component :

Description : E7024PC001

Location : CONTROL AUX

|  |                       |  |
|--|-----------------------|--|
| <b>RELAY FUNCTIONALITY REVIEW REPORT</b> |                       | GIP Rev 2, Corrected, 2/14/92<br>Status: Yes<br>Sheet 1 of 3 |
| ID : 86/1-8-RELAY<br>27Y/1-8 (Rev. 0)    | Make : GE - HEA       | Drawing : 32001 SH 5F  |
| System : ELEC                            | Subsystem/Component : |  |
| Description : 12HEA61A223                |                       |  |
| Location : CONTROL AUX                   |                       |  |

**SCREENING BASIS : RELAY GERS OR SPECIFIC QUALIFICATION**

**Low Ruggedness**

Is relay not a low ruggedness relay?

**LRR**

**Relay Capacity Level**

|   |   |
|---|---|
| Class : Auxiliary Relay                 | SubClass : Lockout                          |
| Relay Model : GE HEA61A, -B, -C (AC/DC) | Operating Mode : Non-operate, normally open |
| Required Settings :                     |   |

Capacity GERS Level : 10.00

**Cabinet Seismic Capacity vs Demand  
Demand Amplification Factor**

Cabinet Type : High Amplification (large, flexible panels)

Demand Amplification Factor : 7

|   |  |                             |
|---|--|-----------------------------|
| Cabinet ID : CB/8DB1A (Rev. 0)                  | Cabinet Class : 20 - Instrumentation and Control Panels and Cabinets |                             |
| Cabinet Description : AUX CONTROL PANEL (EG-2A) |  |                             |
| Building : SB                                   | Floor El. : 59.5   | Room, Row/Col : CONTROL AUX |

Is cabinet seismically adequate?

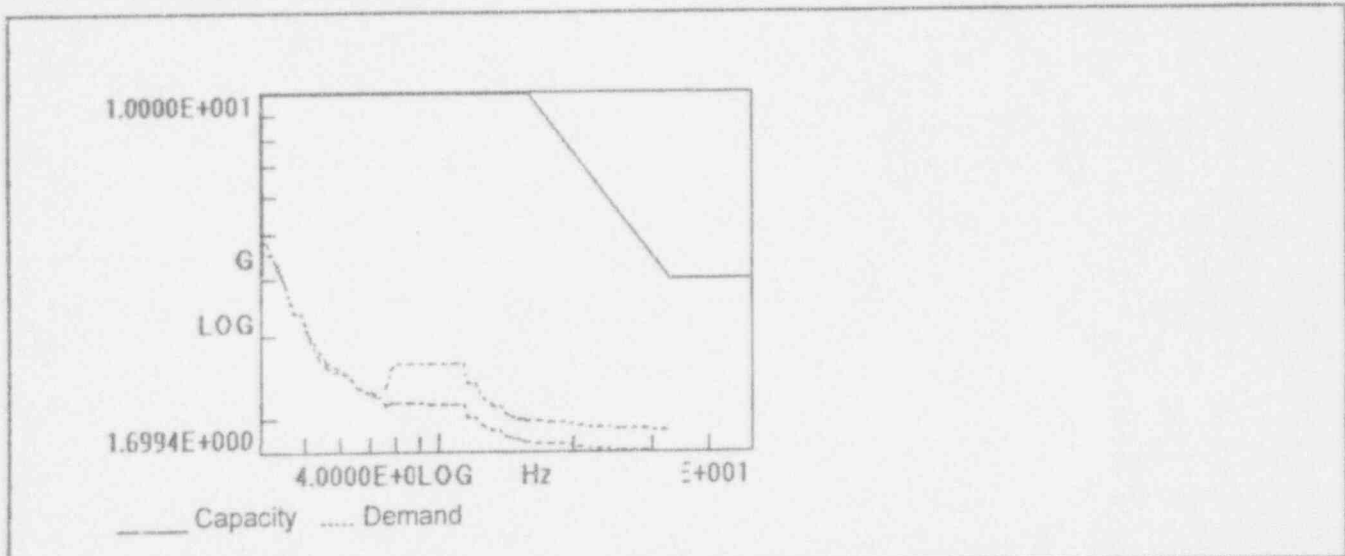
**No**

**Cabinet Frequency**

Cabinet fundamental frequency greater than 8 Hz

|  |                       |  |
|--|-----------------------|--|
| <b>RELAY FUNCTIONALITY REVIEW REPORT</b> |                       | GIP Rev 2, Corrected, 2/14/92<br>Status: Yes<br>Sheet 2 of 3 |
| ID : 86/1-8-RELAY<br>27Y/1-8 (Rev. 0)    | Make : GE - HEA       | Drawing : 32001 SH 5F  |
| System : ELEC                            | Subsystem/Component : |  |
| Description : 12HEA61A223                |                       |  |
| Location : CONTROL AUX                   |                       |  |

**Relay Seismic Capacity vs Demand**



|          | File                        | Record   |
|----------|-----------------------------|--|
| Capacity | C:\GIP\GIP\spectra.des      | Label ANSI C37.98  |
| Demand 1 | C:\GIP\PROJ0024\spectra.des | UNIT CY BLDG Turbine/Service ELEV 59.50 LOC L9 DIR N/S ID TB059L9N |
| Demand 2 | C:\GIP\PROJ0024\spectra.des | UNIT CY BLDG Turbine/Service ELEV 59.50 LOC L9 DIR E/W ID TB059L9E |

Does relay capacity exceed demand?

SRT

**GERS BASIS : LEVEL 2: GERS/TRS V. CONSERVATIVE FRS \* AMP FACTOR**

**IS RELAY SEISMICALLY ADEQUATE?**

Yes

**COMMENTS**

Currently the cabinet which the relay reside is an outlier, this will not cause an adverse effect to the integrity of the relay since its capacity is very high. The resolution of the outlier is being track with the cabinet.

Evaluated by:

*[Signature]*  
C. M. Alon Rende

Date:

12/16/93  
12-16-93

**RELAY FUNCTIONALITY REVIEW REPORT**

GIP Rev 2, Corrected, 2/14/92

Status: Yes

Sheet 3 of 3

ID : 86/1-8-RELAY  
27Y/1-8 (Rev. 0)

Make : GE - HEA

Drawing : 32001 SH 5F

System : ELEC

Subsystem/Component :

Description : 12HEA61A223

Location : CONTROL AUX



|   |                 |  |
|---|-----------------|--|
| <b>RELAY FUNCTIONALITY REVIEW REPORT</b>    |                 | GIP Rev 2, Corrected, 2/14/92<br>Status: Yes<br>Sheet 1 of 3 |
| ID : 27AX/1-8-<br>RELAY 27Y/1-8<br>(Rev. 0) | Make : GE - HFA | Drawing : 32001 SH 5F  |
| System : ELEC                               |                 | Subsytem/Component :   |
| Description : 12HFA151A2H                   |                 |  |
| Location : CONTROL AUX                      |                 |  |

**SCREENING BASIS : RELAY GERS OR SPECIFIC QUALIFICATION**

**Low Ruggedness**

Is relay not a low ruggedness relay?

LRR

**Relay Capacity Level**

|  |   |
|--|---|
| Class : Auxiliary Relay                  | SubClass : Hinged Armature Multi-contact    |
| Relay Model : GE HFA151 (AC) (1E)        | Operating Mode : Non-operate, normally open |
| Required Settings : 30 ms operation time |   |

|                            |
|----------------------------|
| Capacity GERS Level : 7.50 |
|----------------------------|

**Cabinet Seismic Capacity vs Demand  
Demand Amplification Factor**

|  |
|--|
| Cabinet Type : High Amplification (large, flexible panels) |
|--|

|                                 |
|---------------------------------|
| Demand Amplification Factor : 7 |
|---------------------------------|

|   |  |                             |
|---|--|-----------------------------|
| Cabinet ID : CB/8DB1A (Rev. 0)                  | Cabinet Class : 20 - Instrumentation and Control Panels and Cabinets |                             |
| Cabinet Description : AUX CONTROL PANEL (EG-2A) |  |                             |
| Building : SB                                   | Floor El. : 59.5   | Room, Row/Col : CONTROL AUX |

Is cabinet seismically adequate?

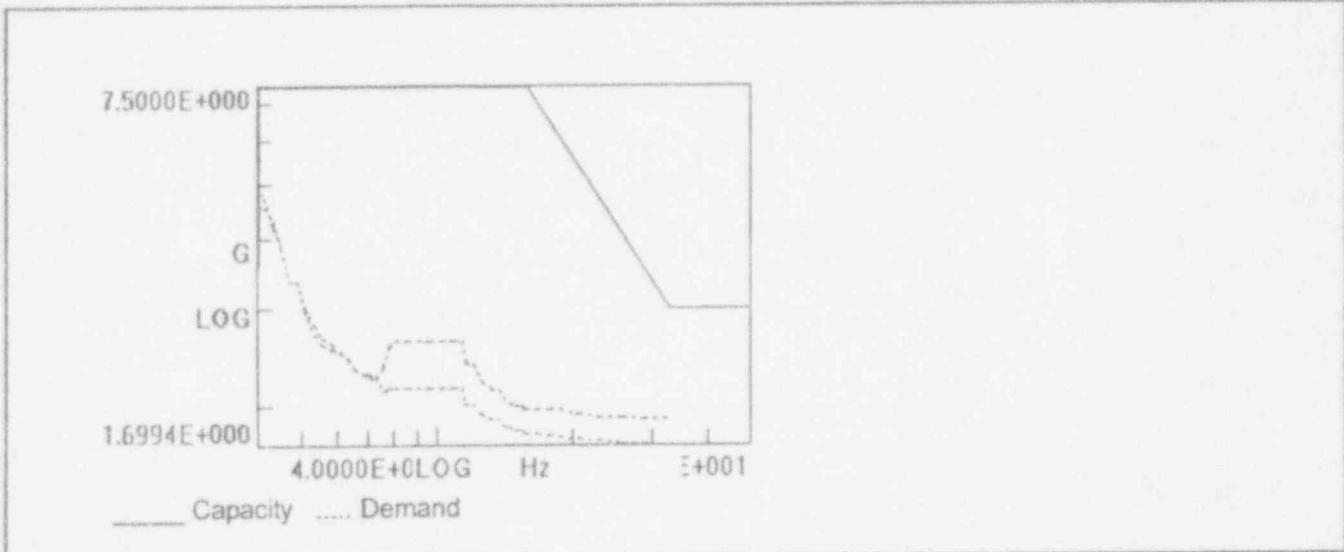
No

**Cabinet Frequency**

Cabinet fundamental frequency greater than 8 Hz

|   |                       |  |
|---|-----------------------|--|
| <b>RELAY FUNCTIONALITY REVIEW REPORT</b>    |                       | GIP Rev 2, Corrected, 2/14/92<br>Status: Yes<br>Sheet 2 of 3 |
| ID : 27AX/1-8-<br>RELAY 27Y/1-8<br>(Rev. 0) | Make : GE - HFA       | Drawing : 32001 SH 5F  |
| System : ELEC                               | Subsystem/Component : |  |
| Description : 12HFA151A2H                   |                       |  |
| Location : CONTROL AUX                      |                       |  |

**Relay Seismic Capacity vs Demand**



|          | File                        | Record   |
|----------|-----------------------------|--|
| Capacity | C:\GIP\GIP\spectra.des      | Label\ANSI C37.98  |
| Demand 1 | C:\GIP\PROJ0024\spectra.des | UNIT\CY\BLDG\Turbine/Service\ELEV\59.50\LOC\L9\DIR\N\S\ID\TB059L9N |
| Demand 2 | C:\GIP\PROJ0024\spectra.des | UNIT\CY\BLDG\Turbine/Service\ELEV\59.50\LOC\L9\DIR\E\W\ID\TB059L9E |

Does relay capacity exceed demand?

SRT

**GERS BASIS : LEVEL 2: GERS/TRS V. CONSERVATIVE FRS \* AMP FACTOR**

**IS RELAY SEISMICALLY ADEQUATE?**

Yes

**COMMENTS**

Currently the cabinet which the relay reside is an outlier, this will not cause an adverse effect to the integrity of the relay since its capacity is very high. The resolution of the outlier is being track with the cabinet.

Evaluated by: *C. M. Abdel-Tawdel*  
*C. M. Abdel-Tawdel*

Date: 12/16/93  
12.16.93

RELAY FUNCTIONALITY REVIEW REPORT

GIP Rev 2, Corrected, 2/14/92

Status: Yes

Sheet 3 of 3

ID : 27AX/1-8-  
RELAY 27Y/1-8  
(Rev. 0)

Make : GE - HFA

Drawing : 32001 SH 5F

System : ELEC

Subsystem/Component :

Description : 12HFA151A2H

Location : CONTROL AUX

|  |             |  |
|--|-------------|--|
| <b>RELAY FUNCTIONALITY REVIEW REPORT</b> |             | GIP Rev 2, Corrected, 2/14/92<br>Status: Yes<br>Sheet 1 of 3 |
| ID : 4/EG2A-BKR<br>8-1 (Rev. 0)          | Make : W WL | Drawing : 31099 SH 3   |
| System : ELEC                            |             | Subsystem/Component :  |
| Description :                            |             |  |
| Location : CONTROL AUX                   |             |  |

**SCREENING BASIS : RELAY GERS OR SPECIFIC QUALIFICATION**

**Low Ruggedness**

Is relay not a low ruggedness relay?

LRR

**Relay Capacity Level**

|                                    |   |
|------------------------------------|---|
| Class : Auxiliary Relay            | SubClass : Lockout                          |
| Relay Model : Westinghouse WL (DC) | Operating Mode : Non-operate, normally open |
| Required Settings :                |   |

Capacity GERS Level : 10.00

**Cabinet Seismic Capacity vs Demand  
Demand Amplification Factor**

Cabinet Type : High Amplification (large, flexible panels)

Demand Amplification Factor : 7

|   |  |                             |
|---|--|-----------------------------|
| Cabinet ID : CB/8DB1A (Rev. 0)                  | Cabinet Class : 20 - Instrumentation and Control Panels and Cabinets |                             |
| Cabinet Description : AUX CONTROL PANEL (EG-2A) |  |                             |
| Building : SB                                   | Floor El. : 59.5   | Room, Row/Col : CONTROL AUX |

Is cabinet seismically adequate?

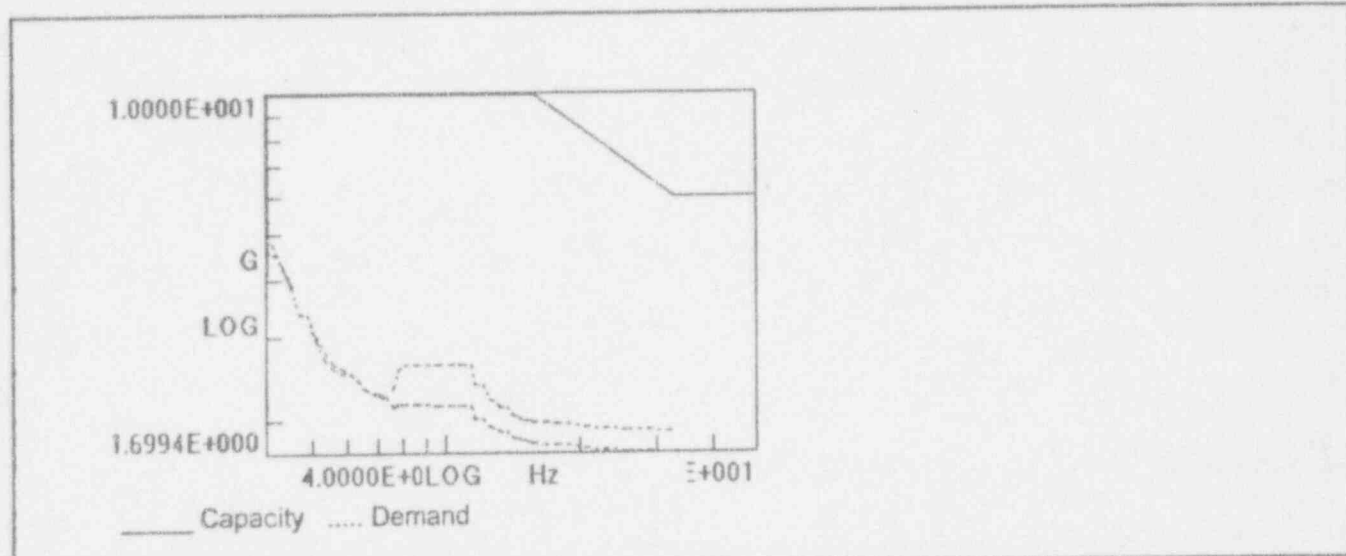
No

**Cabinet Frequency**

Cabinet fundamental frequency greater than 8 Hz

|  |            |  |
|--|------------|--|
| <b>RELAY FUNCTIONALITY REVIEW REPORT</b> |            | GIP Rev 2, Corrected, 2/14/92<br>Status: Yes<br>Sheet 2 of 3 |
| ID: 4/EG2A-BKR<br>8-1 (Rev. 0)           | Make: W WL | Drawing: 31099 SH 3  |
| System: ELEC                             |            | Subsystem/Component:   |
| Description:                             |            |  |
| Location: CONTROL AUX                    |            |  |

**Relay Seismic Capacity vs Demand**



|          | File                        | Record   |
|----------|-----------------------------|--|
| Capacity | C:\GIP\GIP\spectra.des      | Label: Modified Relay GERS   |
| Demand 1 | C:\GIP\PROJ0024\spectra.des | UNIT CY BLDG Turbine/Service ELEV 59.50 LOC L9 DIR N/S ID TB059L9N |
| Demand 2 | C:\GIP\PROJ0024\spectra.des | UNIT CY BLDG Turbine/Service ELEV 59.50 LOC L9 DIR E/W ID TB059L9E |

Does relay capacity exceed demand?

SRT

GERS BASIS : LEVEL 2: GERS/TRS V. CONSERVATIVE FRS \* AMP FACTOR

**IS RELAY SEISMICALLY ADEQUATE?**

Yes

**COMMENTS**

Currently the cabinet which the relay reside is an outlier, this will not cause an adverse effect to the integrity of the relay since its capacity is very high. The resolution of the outlier is being track with the cabinet.

Evaluated by:

*C. M. San Jose*  
C. M. San Jose

Date:

12/16/93  
12.16.93

RELAY FUNCTIONALITY REVIEW REPORT

GIP Rev 2, Corrected, 2/14/92  
Status: Yes  
Sheet 3 of 3

ID : 4/EG2A-BKR  
8-1 (Rev. 0)

Make : W WL

Drawing : 31099 SH 3

System : ELEC

Subsystem/Component :

Description :

Location : CONTROL AUX

Connecticut Yankee A-46  
Essential Relays  
Relay functional Review  
List

CAB\_ID CB/9DB1

BUILDING SB  
ELEVATION 59.50  
LOCATION CONTROL AUX

| CONTACT ID             | MAKE      | MODEL      | CONT_COND | ENERGIZE | REMARK  |
|------------------------|-----------|------------|-----------|----------|---------|
| 62E9-2-RELAY 27Y/1-9   | AGA E7000 | E7012PD    | NC        | YES      | OK      |
| 62E9-2-RELAY 27Y2/1-9  | AGA E7000 | E7012PD    | NC        | YES      | OK      |
| 59-9-RELAY 27Y/1-9     | GE - NGV  | 12NGV15A21 | NO        | YES      | NO GERS |
| 59-9-RELAY 27Y2/1-9    | GE - NGV  | 12NGV15A21 | NO        | YES      | NO GERS |
| 27A/1-9-RELAY 27Y/1-9  | W CV-7    |            | NC        | YES      | OK      |
| 27A/1-9-RELAY 27Y2/1-9 | W CV-7    |            | NC        | YES      | OK      |
| 27B/1-9-RELAY 27Y/1-9  | W CV-7    |            | NC        | YES      | OK      |
| 27B/1-9-RELAY 27Y2/1-9 | W CV-7    |            | NC        | YES      | OK      |
| 27C/1-9-RELAY 27Y/1-9  | W CV-7    |            | NC        | YES      | OK      |
| 27C/1-9-RELAY 27Y2/1-9 | W CV-7    |            | NC        | YES      | OK      |
| 27X/1-9-RELAY 27Y/1-9  | W MG-6    |            | NO        | NO       | OK      |
| 27X/1-9-RELAY 27Y2/1-9 | W MG-6    |            | NO        | NO       | OK      |

Connecticut Yankee A-46  
Essential Relays  
Relay functional Review  
List

CAB\_ID CB/9DB1

BUILDING SB  
ELEVATION 59.50  
LOCATION CONTROL AUX

| CONTACT ID               | MAKE   | MODEL             | CONT_COND | ENERGIZE | REMARK    |
|--------------------------|--------|-------------------|-----------|----------|-----------|
| 27Y1/1-9 (Note 11)-P-18- | W MG-6 | Ser. # 289B360A20 | NO        | NO       | OK        |
| 59A/1-9-BKR 9-1          | W SV   |                   | NO        | YES      | BAD ACTOR |
| 59B/1-9-BKR 9-1          | W SV   |                   | NO        | YES      | BAD ACTOR |



Connecticut Yankee A-46  
 Essential Relays  
 Relay functional Review List

CAB\_ID CB/9DB1A

BUILDING SB  
 ELEVATION 59.50  
 LOCATION CONTROL AUX

| CONTACT ID             | MAKE      | MODEL      | CONT_COND | ENERGIZE | REMARK          |
|------------------------|-----------|------------|-----------|----------|-----------------|
| 62B/1-9-RELAY 27Y/1-9  | AGA E7000 | E7022PC003 | NC        | YES      | OK              |
| 62B/1-9-RELAY 27Y2/1-9 | AGA E7000 | E7022PC003 | NC        | YES      | OK              |
| 62C/1-9-RELAY 27Y/1-9  | AGA E7000 | 024PC001   | NC        | YES      | OK              |
| 62C/1-9-RELAY 27Y2/1-9 | AGA E7000 | E7024PC001 | NC        | YES      | OK              |
| 94LS-1/1-9-P-13-1C     | AGASTAT   | EGPD003    | NO        | NO       | RLY_FUNC_REVIEW |
| 27K/1-9-RELAY 27Y/1-9  | DEVAR     | 18-114     | NO        | YES      | NO GERS         |
| 27K/1-9-RELAY 27Y2/1-9 | DEVAR     | 18-114     | NO        | YES      | NO GERS         |
| 27L/1-9-RELAY 27Y/1-9  | DEVAR     | 18-114     | NO        | YES      | NO GERS         |
| 27L/1-9-RELAY 27Y2/1-9 | DEVAR     | 18-114     | NO        | YES      | NO GERS         |
| 27M/1-9-RELAY 27Y/1-9  | DEVAR     | 18-114     | NO        | YES      | NO GERS         |
| 27M/1-9-RELAY 27Y2/1-9 | DEVAR     | 18-114     | NO        | YES      | NO GERS         |
| 27R/1-9-RELAY 27Y/1-9  | DEVAR     | 18-114     | NO        | YES      | NO GERS         |

Connecticut Yankee A-45  
 Essential Relays  
 Relay functional Review List

CAB\_ID CB/9DB1A

BUILDING SB  
 ELEVATION 59.50  
 LOCATION CONTROL AUX

| CONTACT ID               | MAKE     | MODEL       | CONT_COND | ENERGIZE | REMARK  |
|--------------------------|----------|-------------|-----------|----------|---------|
| 27R/1-9-RELAY 27Y2/1-9   | DEVAR    | 18-114      | NO        | YES      | NO GERS |
| 27S/1-9-RELAY 27Y/1-9    | DEVAR    | 18-114      | NO        | YES      | NO GERS |
| 27S/1-9-RELAY 27Y2/1-9   | DEVAR    | 18-114      | NO        | YES      | NO GERS |
| 27T/1-9-RELAY 27Y/1-9    | DEVAR    | 18-114      | NO        | YES      | NO GERS |
| 27T/1-9-RELAY 27Y2/1-9   | DEVAR    | 18-114      | NO        | YES      | NO GERS |
| 8E/1-9-RELAY 27Y/1-9     | GE - HEA | 12HEA61A223 | NO        | NO       | OK      |
| 86/1-9-RELAY 27Y2/1-9    | GE - HEA | 12HEA61A223 | NO        | NO       | OK      |
| 27Y/1-9 (Note 11)-BKR 9- | GE - HEA | 12HEA61C239 | NO        | NO       | OK      |
| 27Y/1-9 (Ncte 11)-RELAY  | GE - HEA | 12HEA61C239 | NO        | NO       | OK      |
| 27AX/1-9-RELAY 27Y/1-9   | GE - HFA | 12HFA151A2H | NO        | NO       | OK      |
| 27AX/1-9-RELAY 27Y2/1-9  | GE - HFA | 12HFA151A2H | NO        | NO       | OK      |
| 27BX/1-9-RELAY 27Y/1-9   | GE - HFA | 12HFA151A2H | NO        | NO       | OK      |

Connecticut Yankee A-46  
Essential Relays  
Relay functional Review List

CAB\_ID **CB/9DB1A**

BUILDING SB  
ELEVATION 59.50  
LOCATION CONTROL AUX

| CONTACT ID               | MAKE     | MODEL       | CONT_COND | ENERGIZE | REMARK |
|--------------------------|----------|-------------|-----------|----------|--------|
| 27BX/1-9-RELAY 27Y2/1-9  | GE - HFA | 12HFA151A2H | NO        | NO       | OK     |
| 27CX/1-9-RELAY 27Y/1-9   | GE - HFA | 12HFA151A2H | NO        | NO       | OK     |
| 27CX/1-9-RELAY 27Y2/1-9  | GE - HFA | 12HFA151A2H | NO        | NO       | OK     |
| 94LS/1-9 (Note 14)-BKR 6 | GE - HFA | 12HFA151A2H | NO        | NO       | OK     |
| 94LS/1-9 (Note 14)-BKR 6 | GE - HFA | 12HFA151A2H | NO        | NO       | OK     |
| 94LS/1-9 (Note 14)-BKR 7 | GE - HFA | 12HFA151A2H | NO        | NO       | OK     |
| 94LS/1-9 (Note 14)-P-13- | GE - HFA | 12HFA151A2H | NO        | NO       | OK     |
| 94LS/1-9 (Note 14)-P-37- | GE - HFA | 12HFA151A2H | NO        | NO       | OK     |
| 94LS/1-9(Note 14)-P-37-1 | GE - HFA | 12HFA151A2H | IO        | NO       | OK     |
| 4/EG2B-BKR 9-1           | W WL     |             | NO        | NO       | OK     |
| 4/EG2B-EG-2B             | W WL     |             | NO        | NO       | OK     |

|  |  |   |
|--|--|---|
| <b>RELAY FUNCTIONALITY REVIEW REPORT</b> |  | GIP Rev 2, Corrected, 2/14/92<br>Status: Yes<br>Sheet 1 of 3              |
|  |  | ID: 94LS-1/1-9-P-13-1C (Rev. 0)    Make: AGASTAT    Drawing: 32001 SH 6XB |
| System: ELEC                             |  | Subsystem/Component:  |
| Description: EGPD003                     |  |   |
| Location: CONTROL AUX                    |  |   |

**SCREENING BASIS : RELAY GERS OR SPECIFIC QUALIFICATION**

**Low Ruggedness**

Is relay not a low ruggedness relay?

LRR

**Relay Capacity Level**

|                         |  |
|-------------------------|--|
| Class: Auxiliary Relay  | SubClass: Socket Type                      |
| Relay Model: Agastat GP | Operating Mode: Non-operate, normally open |
| Required Settings:      |  |

Capacity GERS Level: 3.30

**Cabinet Seismic Capacity vs Demand  
Demand Amplification Factor**

Cabinet Type: High Amplification (large, flexible panels)

Demand Amplification Factor: 7

|  |   |                            |
|--|---|----------------------------|
| Cabinet ID: CB/9DB1A (Rev. 0)                  | Cabinet Class: 20 - Instrumentation and Control Panels and Cabinets |                            |
| Cabinet Description: AUX CONTROL PANEL (EG-2B) |   |                            |
| Building: SB                                   | Floor El.: 59.5   | Room, Row/Col: CONTROL AUX |

Is cabinet seismically adequate?

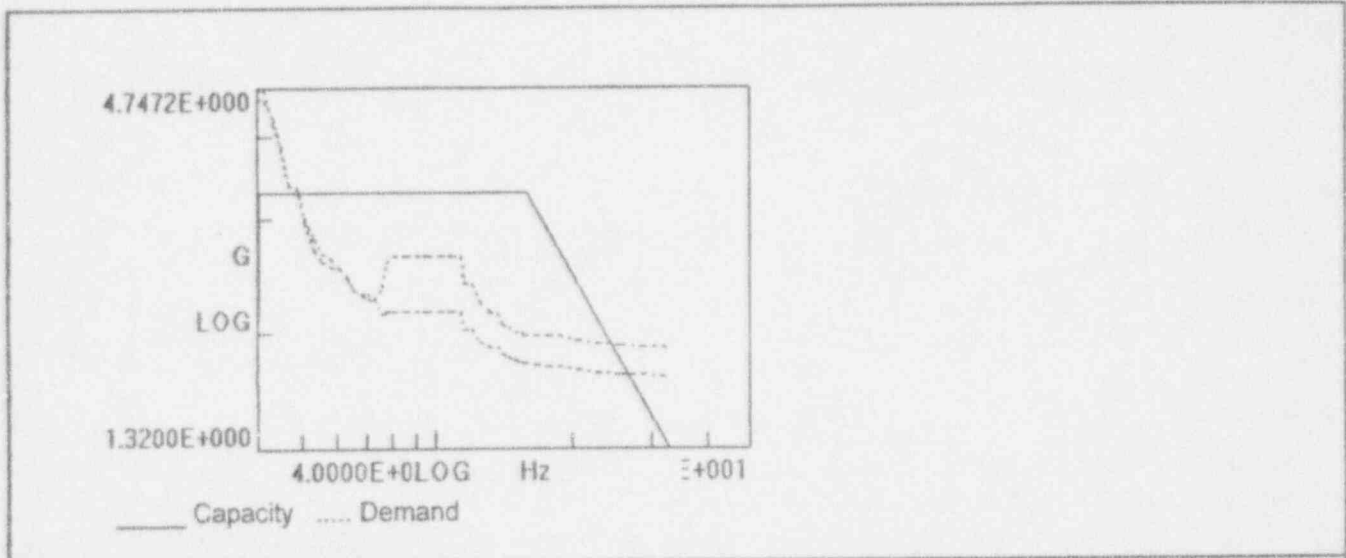
No

**Cabinet Frequency**

Cabinet fundamental frequency greater than 8 Hz

|  |                |  |
|--|----------------|--|
| <b>RELAY FUNCTIONALITY REVIEW REPORT</b> |                | GIP Rev 2, Corrected, 2/14/92<br>Status: Yes<br>Sheet 2 of 3 |
| ID : 94LS-1/1-9-P-13-1C (Rev. 0)         | Make : AGASTAT | Drawing : 32001 SH 6XB                                       |
| System : ELEC                            |                | Subsystem/Component :  |
| Description : EGP003                     |                |  |
| Location : CONTROL AUX                   |                |  |

**Relay Seismic Capacity vs Demand**



|          | File                        | Record   |
|----------|-----------------------------|--|
| Capacity | C:\GIP\GIP\spectra.des      | Label\ANSI C37.98  |
| Demand 1 | C:\GIP\PROJ0024\spectra.des | UNIT\CY\BLDG\Turbine\Service\ELEV\59.50\LOC\L9\DIR\N\S\ID\TB059L9N |
| Demand 2 | C:\GIP\PROJ0024\spectra.des | UNIT\CY\BLDG\Turbine\Service\ELEV\59.50\LOC\L9\DIR\E\W\ID\TB059L9E |

Does relay capacity exceed demand?

SRT

**GERs BASIS : LEVEL 2: GERS/TRS V. CONSERVATIVE FRS \* AMP FACTOR**

**IS RELAY SEISMICALLY ADEQUATE?**

Yes

**COMMENTS**


The non-enveloping region (up to 5 Hz) on the Capacity vs. Demand plot is not a concern because at a frequency this low the relay will not experience high spectral acceleration causing relay chatter. (At 5 Hz the amplification factor is much lower than 7)

Similarly, the non-enveloping region (beyond 22 Hz) on the Capacity vs. Demand plot is not a concern because the realistic ZPA of the demand curve is approximately 1.5 X peak of spectral acceleration of Conservative Floor Response; 1.5 X 0.374g (N/S dir of Main Control Room El. 59.5) = 0.561g which is considerably less than relay ZPA of 1.32g.

CB/9DB1A is shown to have a fundamental frequency in the range of 10 - 12 Hz.

|  |                       |  |
|--|-----------------------|--|
| <b>RELAY FUNCTIONALITY REVIEW REPORT</b> |                       | GIP Rev 2, Corrected, 2/14/92<br>Status: Yes<br>Sheet 3 of 3 |
| ID : 94LS-1/1-9-P-13-1C (Rev. 0)         | Make : AGASTAT        | Drawing : 32001 SH 6XB                                       |
| System : ELEC                            | Subsystem/Component : |  |
| Description : EGPD003                    |                       |  |
| Location : CONTROL AUX                   |                       |  |

Currently the cabinet which the relay reside is an outlier, this will not change the results of this screening evaluation. However, the resolution of the outlier is being tracked with the cabinet.

Evaluated by:  Date: 12/17/93  
C. M. Abu-Bawda 12-17-95

Connecticut Yankee A-46  
 Essential Relays  
 Relay functional Review List

CAB\_ID CB/B

BUILDING SB  
 ELEVATION 59.50  
 LOCATION MCB

| CONTACT ID                | MAKE | MODEL  | CONT_COND | ENERGIZE | REMARK          |
|---------------------------|------|--------|-----------|----------|-----------------|
| 63X/568-PR-SOV-568        | W    | AR440A |           |          | RLY_FUNC_REVIEW |
| 63X/570-PR-SOV-570        | W    | AR440A |           |          | OK              |
| 63X/570-PR-SOV-570        | W    | AR440A |           |          | OK              |
| 4A (Note 1)-CH-MOV-292B   | W WL |        | NO        | NO       | RLY_FUNC_REVIEW |
| 4A (Note 1)-CH-MOV-292C   | W WL |        | NO        | NO       | OK              |
| 4A (Note 1)-RELAY 27Y1/1- | W WL |        | NO        | NO       | OK              |
| 4A (Note 1)-RELAY 27Y2/1  | W WL |        | NO        | NO       | OK              |
| 4A (Note 1)-RELAY 27Y2/1  | W WL |        | NO        | NO       | OK              |
| 4A (Note 1)-RELAY 4AX     | W WL |        | NO        | NO       | OK              |
| 4A (Note 1)-RELAY 4AX1    | W WL |        | NO        | NO       | OK              |
| 4A (Note 1)-RELAY HCP/A   | W WL |        | NO        | NO       | OK              |
| 4B (Note 5)-CH-MOV-292B   | W WL |        | NO        | NO       | OK              |

Connecticut Yankee A-46  
Essential Relays  
Relay functional Review List

CAB\_ID CB/B

BUILDING SB  
ELEVATION 59.50  
LOCATION MCB

| CONTACT ID               | MAKE | MODEL | CONT_COND | ENERGIZE | REMARK |
|--------------------------|------|-------|-----------|----------|--------|
| 4B (Note 5)-CH-MOV-292C  | W WL |       | NO        | NO       | OK     |
| 4B (Note 5)-RELAY 27Y11- | W WL |       | NO        | NO       | OK     |
| 4B (Note 5)-RELAY 27Y2/1 | W WL |       | NO        | NO       | OK     |
| 4B (Note 5)-RELAY 27Y2/1 | W WL |       | NO        | NO       | OK     |
| 4B (Note 5)-RELAY 4BX    | W WL |       | NO        | NO       | OK     |
| 4B (Note 5)-RELAY 4BX1   | W WL |       | NO        | NO       | OK     |
| 4B (Note 5)-RELAY HCP/B  | W WL |       | NO        | NO       | OK     |



|  |          |  |
|--|----------|--|
| <b>RELAY FUNCTIONALITY REVIEW REPORT</b> |          | GIP Rev 2, Corrected, 2/14/92<br>Status: Yes<br>Sheet 1 of 3 |
| ID : 63X/568-PR-<br>SOV-568 (Rev. 0)     | Make : W | Drawing : 32112 SH 70  |
| System : ELEC                            |          | Subsystem/Component :  |
| Description : AR440A                     |          |  |
| Location : MCB                           |          |  |

**SCREENING BASIS : RELAY GERS OR SPECIFIC QUALIFICATION**

**Low Ruggedness**

Is relay not a low ruggedness relay?

LRR

**Relay Capacity Level**

|                               |   |
|-------------------------------|---|
| Class : Auxiliary Relay       | SubClass : Industrial Type 1 (600 V)          |
| Relay Model : Westinghouse AR | Operating Mode : Non-operate, normally closed |
| Required Settings :           |   |

Capacity GERS Level : 7.50

**Cabinet Seismic Capacity vs Demand  
Demand Amplification Factor**

Cabinet Type : Medium Amplification (control panels)

Demand Amplification Factor : 4.5

|  |  |                     |
|--|--|---------------------|
| Cabinet ID : CB/B (Rev. 0)                         | Cabinet Class : 20 - Instrumentation and Control Panels and Cabinets |                     |
| Cabinet Description : MAIN CONTROL BOARD SECTION B |  |                     |
| Building : SB                                      | Floor El. : 59.5   | Room, Row/Col : MCB |

Is cabinet seismically adequate?

Yes

**Cabinet Frequency**

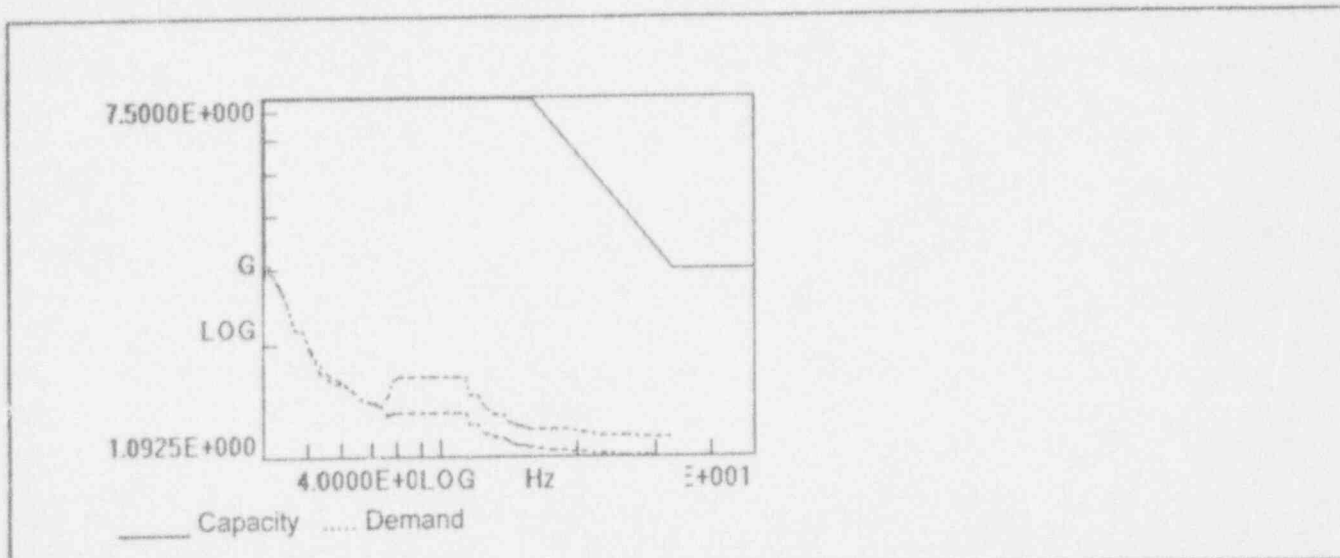
Cabinet fundamental frequency greater than 8 Hz

# RELAY FUNCTIONALITY REVIEW REPORT

GIP Rev 2, Corrected, 2/14/92  
Status: Yes  
Sheet 2 of 3

|                      |          |                       |
|----------------------|----------|-----------------------|
| ID : 63X/568-PF      | Make : W | Drawing : 32112 SH 70 |
| SOV-568 (Rev. _____) |          |                       |
| System : ELEC        |          | Subsystem/Componer... |
| Description : AR440A |          |                       |
| Location : MCB       |          |                       |

## Relay Seismic Capacity vs Demand



|          | File                        | Record   |
|----------|-----------------------------|--|
| Capacity | C:\GIP\GIP\spectra.des      | Label\ANSI C37.98  |
| Demand 1 | C:\GIP\PROJ0024\spectra.des | UNIT\CY\BLDG\Turbine\Service\ELEV\59.50\LOC\L9\DIR\N/S\ID\TB059L9N |
| Demand 2 | C:\GIP\PROJ0024\spectra.des | UNIT\CY\BLDG\Turbine\Service\ELEV\59.50\LOC\L9\DIR\E/W\ID\TB059L9E |

Does relay capacity exceed demand?

SRT

**TERS BASIS : LEVEL 2: GERS/TRS V. CONSERVATIVE FRS \* AMP FACTOR**

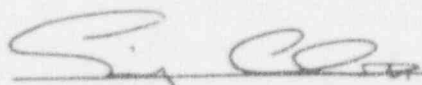
**IS RELAY SEISMICALLY ADEQUATE?**

Yes

### COMMENTS

Operating mode and contact condition is unknown, used lowest GERS.

Evaluated by:

  
 \_\_\_\_\_  
 C. M. Abu Jaudel

Date:

12/16/93  
 \_\_\_\_\_  
 12.16.93

**RELAY FUNCTIONALITY REVIEW REPORT**

GIP Rev 2, Corrected, 2/14/92

Status: Yes

Sheet 3 of 3

ID : 63X/568-PR-  
SOV-568 (Rev. 0)

Make : W

Drawing : 32112 SH 70

System : ELEC

Subsystem/Component :

Description : AR440A

Location : MCB

|  |             |  |
|--|-------------|--|
| <b>RELAY FUNCTIONALITY REVIEW REPORT</b>     |             | GIP Rev 2, Corrected, 2/14/92<br>Status: Yes<br>Sheet 1 of 3 |
| ID : 4A (Note 1)-<br>CH-MOV-292B<br>(Rev. 0) | Make : W WL | Drawing : 32112 SH 29A                                       |
| System : ELEC                                |             | Subsystem/Component :  |
| Description :                                |             |  |
| Location : MCB                               |             |  |

**SCREENING BASIS : RELAY GERS OR SPECIFIC QUALIFICATION**

**Low Ruggedness**

Is relay not a low ruggedness relay?

LRR

**Relay Capacity Level**

|                                    |   |
|------------------------------------|---|
| Class : Auxiliary Relay            | SubClass : Lockout                          |
| Relay Model : Westinghouse WL (DC) | Operating Mode : Non-operate, normally open |
| Required Settings :                |   |

Capacity GERS Level : 10.00

**Cabinet Seismic Capacity vs Demand  
Demand Amplification Factor**

Cabinet Type : High Amplification (large, flexible panels)

Demand Amplification Factor : 7

|  |  |                     |
|--|--|---------------------|
| Cabinet ID : CB/B (Rev. 0)                         | Cabinet Class : 20 - Instrumentation and Control Panels and Cabinets |                     |
| Cabinet Description : MAIN CONTROL BOARD SECTION B |  |                     |
| Building : SB                                      | Floor El. : 59.5   | Room, Row/Col : MCB |

Is cabinet seismically adequate?

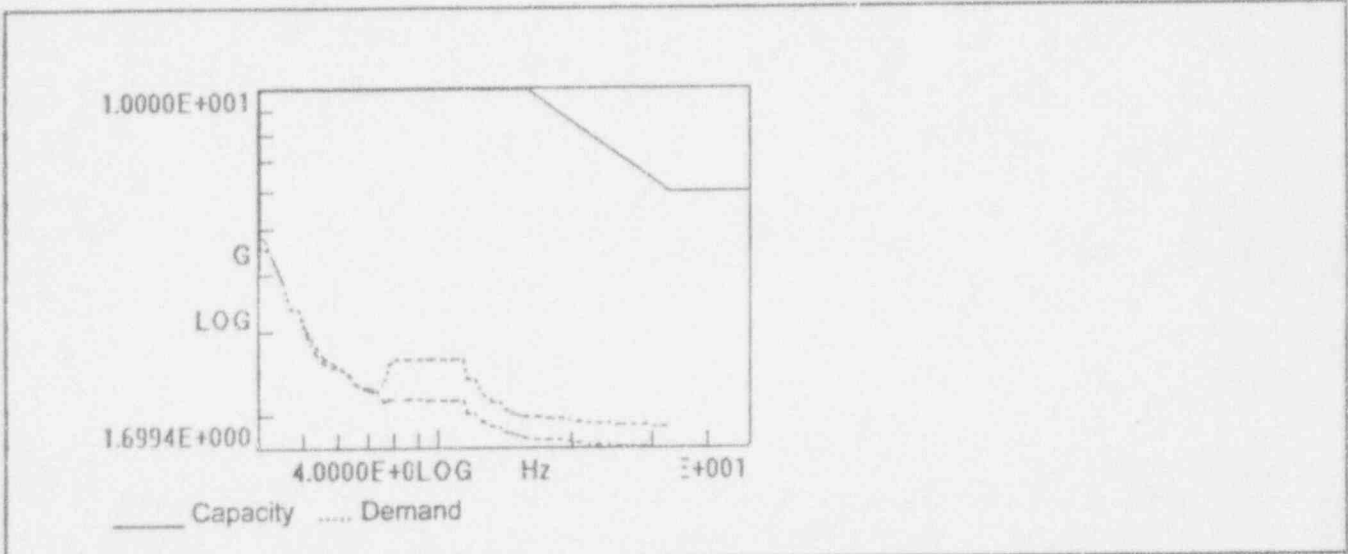
Yes

**Cabinet Frequency**

Cabinet fundamental frequency greater than 8 Hz

|  |             |  |
|--|-------------|--|
| <b>RELAY FUNCTIONALITY REVIEW REPORT</b>     |             | GIP Rev 2, Corrected, 2/14/92<br>Status: Yes<br>Sheet 2 of 3 |
| ID : 4A (Note 1)-<br>CH-MOV-292B<br>(Rev. 0) | Make : W WL | Drawing : 32112 SH 29A                                       |
| System : ELEC                                |             | Subsystem/Component :  |
| Description :                                |             |  |
| Location : MCB                               |             |  |

**Relay Seismic Capacity vs Demand**



|          | File                        | Record   |
|----------|-----------------------------|--|
| Capacity | C:\GIP\GIP\spectra.des      | Label Modified Relay GERS  |
| Demand 1 | C:\GIP\PROJ0024\spectra.des | UNIT CY BLDG Turbine/Service ELEV 59.50 LOC L9 DIR N/S ID TB059L9N |
| Demand 2 | C:\GIP\PROJ0024\spectra.des | UNIT CY BLDG Turbine/Service ELEV 59.50 LOC L9 DIR E/W ID TB059L9E |

Does relay capacity exceed demand?

SRT

**GERS BASIS : LEVEL 2: GERS/TRS V. CONSERVATIVE FRS \* AMP FACTOR**

**IS RELAY SEISMICALLY ADEQUATE?**

Yes

**COMMENTS**

Evaluated by:

*C. M. Abu Saud*  
C. M. Abu Saud

Date:

12/16/93  
12.16.93

**RELAY FUNCTIONALITY REVIEW REPORT**

GIP Rev 2, Corrected, 2/14/92

Status: Yes

Sheet 3 of 3

ID : 4A (Note 1)-  
CH-MOV-292B  
(Rev. 0)

Make : W WL

Drawing : 32112 SH 29A

System : ELEC

Subsystem/Component :

Description :

Location : MCB

Connecticut Yankee A-46  
Essential Relays  
Relay functional Review List

CAB\_ID CB/C

BUILDING SB  
ELEVATION 59.50  
LOCATION MCB

| CONTACT ID             | MAKE | MODEL  | CONT_COND | ENERGIZE | REMARK          |
|------------------------|------|--------|-----------|----------|-----------------|
| 63Y/PCV 568-PR-MOV-567 | W    | AR440A | NO        | NO       | RLY_FUNC_REVIEW |
| 63Y/PCV 570-PR-MOV-569 | W    | AR440A | NO        | NO       | OK              |
| 63Y/PCV 570-PR-SOV-570 | W    | AR440A | NO        | NO       | OK              |

|   |          |  |
|---|----------|--|
| <b>RELAY FUNCTIONALITY REVIEW REPORT</b>    |          | GIP Rev 2, Corrected, 2/14/92<br>Status: Yes<br>Sheet 1 of 3 |
| ID : 63Y/PCV 568-<br>PR-MOV-567<br>(Rev. 0) | Make : W | Drawing : 32112 SH 28S                                       |
| System : ELEC                               |          | Subsystem/Component :  |
| Description : AR440A                        |          |  |
| Location : MCB                              |          |  |

**SCREENING BASIS : RELAY GERS OR SPECIFIC QUALIFICATION**

**Low Ruggedness**

Is relay not a low ruggedness relay?

LRR

**Relay Capacity Level**

|                               |   |
|-------------------------------|---|
| Class : Auxiliary Relay       | SubClass : Industrial Type 1 (600 V)          |
| Relay Model : Westinghouse AR | Operating Mode : Non-operate, normally closed |
| Required Settings :           |   |

Capacity GERS Level : 7.50

**Cabinet Seismic Capacity vs Demand  
Demand Amplification Factor**

Cabinet Type : High Amplification (large, flexible panels)

Demand Amplification Factor : 7

|  |  |                     |
|--|--|---------------------|
| Cabinet ID : CB/C (Rev. 0)                         | Cabinet Class : 20 - Instrumentation and Control Panels and Cabinets |                     |
| Cabinet Description : MAIN CONTROL BOARD SECTION C |  |                     |
| Building : SB                                      | Floor El. : 59.5   | Room, Row/Col : MCB |

Is cabinet seismically adequate?

Yes

**Cabinet Frequency**

Cabinet fundamental frequency greater than 8 Hz

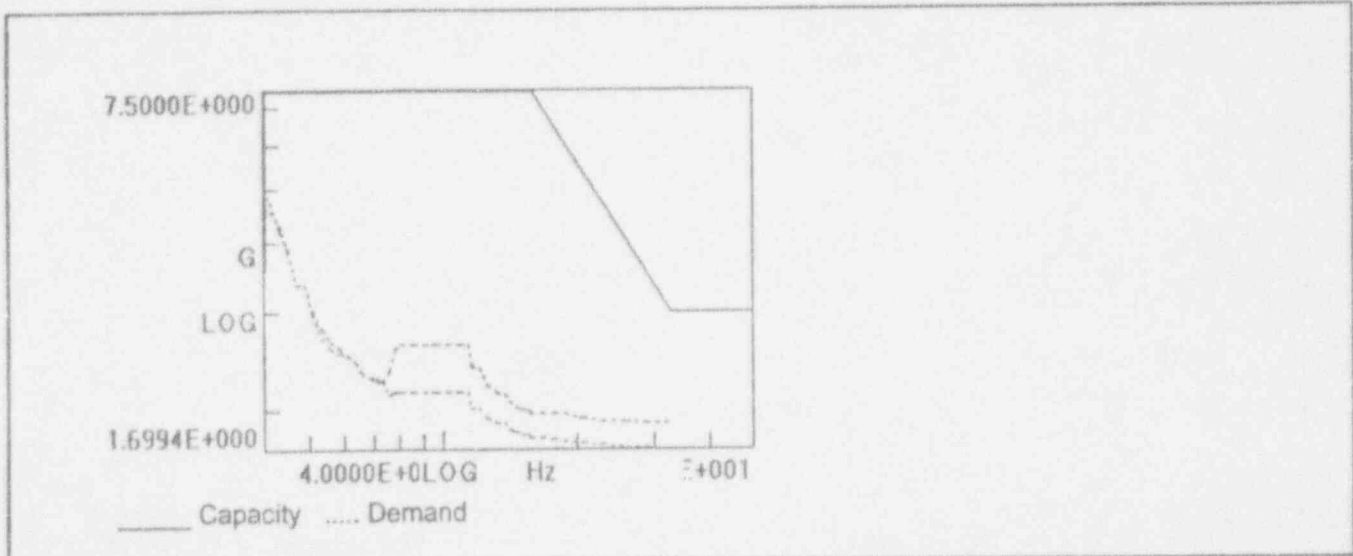


# RELAY FUNCTIONALITY REVIEW REPORT

GIP Rev 2, Corrected, 2/14/92  
 Status: Yes  
 Sheet 2 of 3

|   |                       |                        |
|---|-----------------------|------------------------|
| ID : 63Y/PCV 568-<br>PR-MOV-567<br>(Rev. 0) | Make : W              | Drawing : 32112 SH 28S |
| System : ELEC                               | Subsystem/Component : |                        |
| Description : AR440A                        |                       |                        |
| Location : MCB                              |                       |                        |

## Relay Seismic Capacity vs Demand



|          | File                        | Record   |
|----------|-----------------------------|--|
| Capacity | C:\GIP\GIP\spectra.des      | Label\ANSI C37 98  |
| Demand 1 | C:\GIP\PROJ0024\spectra.des | UNIT\CY\BLDG\Turbine/Service\ELEV\59.50\LOC\L9\DIR\N\S\ID\TB059L9N |
| Demand 2 | C:\GIP\PROJ0024\spectra.des | UNIT\CY\BLDG\Turbine/Service\ELEV\59.50\LOC\L9\DIR\E\W\ID\TB059L9E |

Does relay capacity exceed demand?

SRT

GERS BASIS : LEVEL 2: GERS/TRS V. CONSERVATIVE FRS \* AMP FACTOR

IS RELAY SEISMICALLY ADEQUATE?

Yes

### COMMENTS

Evaluated by:

*C. M. Oberlander*  
C. M. Oberlander

Date:

12/16/93  
12.16.93

**RELAY FUNCTIONALITY REVIEW REPORT**

GIP Rev 2, Corrected, 2/14/92  
Status: Yes  
Sheet 3 of 3

ID : 63Y/PCV 568-  
PR-MOV-567  
(Rev. 0)

Make : W

Drawing : 32112 SH 28S

System : ELEC

Subsystem/Component :

Description : AR440A

Location : MCB

Connecticut Yankee A-46  
 Essential Relays  
 Relay functional Review List

CAB\_ID CB/F

BUILDING SB  
 ELEVATION 59.50  
 LOCATION MCB

| CONTACT ID               | MAKE     | MODEL       | CONT_COND | ENERGIZE | REMARK          |
|--------------------------|----------|-------------|-----------|----------|-----------------|
| 4AX1 (Note 3)-RELAY 27Y1 | GE - HFA | 12HFA151A2H | NO        | NO       | RLY_FUNC_REVIEW |
| 4AX1 (Note 3)-RELAY 27Y2 | GE - HFA | 12HFA151A2H | NO        | NO       | OK              |
| 4AX1 (Note 3)-RELAY 94LS | GE - HFA | 12HFA151A2H | NO        | NO       | OK              |
| 4AX1 (Note 3)-RELAY 94LS | GE - HFA | 12HFA151A2H | NO        | NO       | OK              |
| 43AX-RELAY HCP/A         | W        | ARD440S     | NC        | NO       | RLY_FUNC_REVIEW |
| 43AY-RELAY HCP/A         | W        | ARD440S     | NO        | NO       | RLY_FUNC_REVIEW |
| 43BX-RELAY HCP/B         | W        | ARD440S     | NC        | NO       | OK              |
| 43BY-RELAY HCP/B         | W        | ARD440S     | NO        | NO       | OK              |
| 4BX1 (Note 7)-RELAY 27Y1 | W MG-6   | 289B360A20  | NO        | NO       | RLY_FUNC_REVIEW |
| 4BX1 (Note 7)-RELAY 27Y2 | W MG-6   | 289B360A20  | NO        | NO       | OK              |
| 4BX1 (Note 7)-RELAY 94LS | W MG-6   | 289B360A20  | NO        | NO       | OK              |
| 4BX1 (Note 7)-RELAY 94LS | W MG-6   | 289B360A20  | NO        | NO       | OK              |

Connecticut Yankee A-46  
Essential Relays  
Relay functional Review List

CAB\_ID CB/F

BUILDING SB  
ELEVATION 59.50  
LOCATION MCB

| CONTACT ID              | MAKE | MODEL             | CONT_COND | ENERGIZE | REMARK          |
|-------------------------|------|-------------------|-----------|----------|-----------------|
| HCP/A (Note 4)-RELAY 4A | W WL | Ser. # 780A542G01 | NO        | NO       | RLY_FUNC_REVIEW |
| HCP/B (Note 8)-RELAY 4B | W WL | Ser. # 785A839G01 | NO        | NO       | OK              |

|  |                 |  |
|--|-----------------|--|
| <b>RELAY FUNCTIONALITY REVIEW REPORT</b>         |                 | GIP Rev 2, Corrected, 2/14/92<br>Status: Yes<br>Sheet 1 of 3 |
| ID : 4AX1 (Note 3)-<br>RELAY 27Y/1-9<br>(Rev. 0) | Make : GE - HFA | Drawing : 32001 SH 5GA                                       |
| System : ELEC                                    |                 | Subsystem/Component :  |
| Description : 12HFA151A2H                        |                 |  |
| Location : MCB                                   |                 |  |

**SCREENING BASIS : RELAY GERS OR SPECIFIC QUALIFICATION**

**Low Ruggedness**

Is relay not a low ruggedness relay?

LRR

**Relay Capacity Level**

|  |   |
|--|---|
| Class : Auxiliary Relay                  | Subclass : Hinged Armature Multi-contact    |
| Relay Model : GE HFA151 (AC) (1E)        | Operating Mode : Non-operate, normally open |
| Required Settings : 30 ms operation time |   |

Capacity GERS Level : 7.50

**Cabinet Seismic Capacity vs Demand  
Demand Amplification Factor**

Cabinet Type : High Amplification (large, flexible panels)

Demand Amplification Factor : 7

|  |  |                     |
|--|--|---------------------|
| Cabinet ID : CB/F (Rev. 0)                         | Cabinet Class : 20 - Instrumentation and Control Panels and Cabinets |                     |
| Cabinet Description : MAIN CONTROL BOARD SECTION F |  |                     |
| Building : SB                                      | Floor El. : 59.5   | Room, Row/Col : MCB |

Is cabinet seismically adequate?

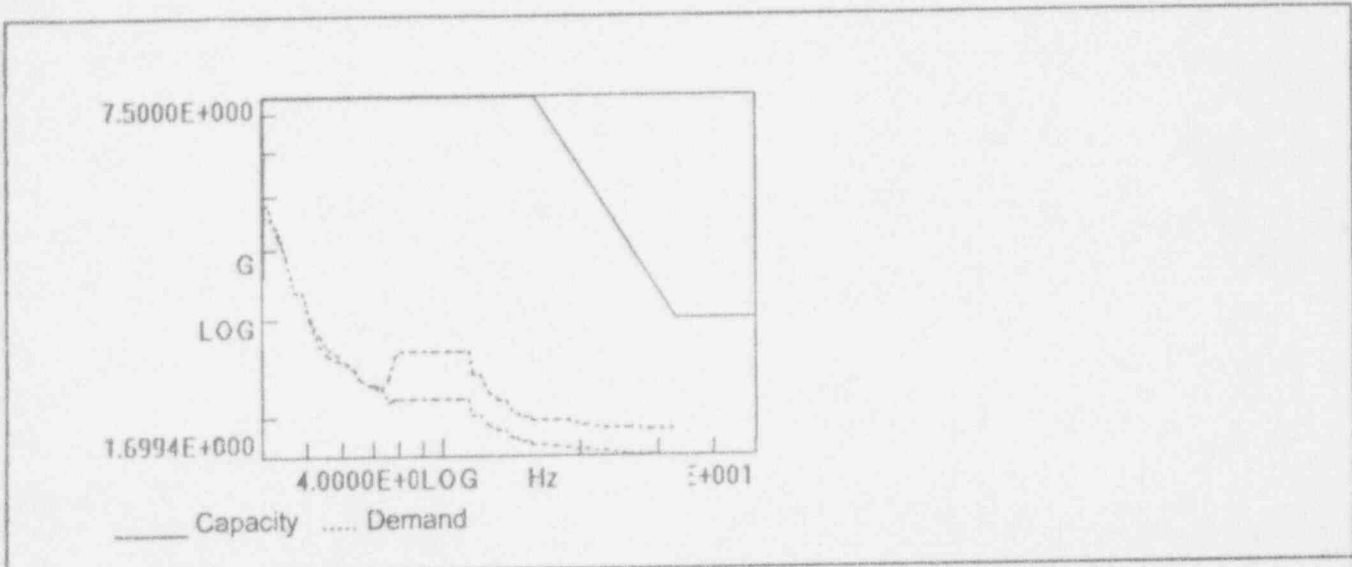
Yes

**Cabinet Frequency**

Cabinet fundamental frequency greater than 8 Hz

|  |                       |  |
|--|-----------------------|--|
| <b>RELAY FUNCTIONALITY REVIEW REPORT</b>         |                       | GIP Rev 2, Corrected, 2/14/92<br>Status: Yes<br>Sheet 2 of 3 |
| ID : 4AX1 (Note 3)-<br>RELAY 27Y/1-9<br>(Rev. 0) | Make : GE - HFA       | Drawing : 32001 SH 5GA                                       |
| System : ELEC                                    | Subsystem/Component : |  |
| Description : 12HFA151A2H                        |                       |  |
| Location : MCB                                   |                       |  |

**Relay Seismic Capacity vs Demand**



|          | File                        | Record   |
|----------|-----------------------------|--|
| Capacity | C:\GIP\GIP\spectra.des      | Label ANSI C37.98  |
| Demand 1 | C:\GIP\PROJ0024\spectra.des | UNIT CY BLDG Turbine/Service ELEV 59.50 LOC L9 DIR N/S ID TB059L9N |
| Demand 2 | C:\GIP\PROJ0024\spectra.des | UNIT CY BLDG Turbine/Service ELEV 59.50 LOC L9 DIR E/W ID TB059L9E |

Does relay capacity exceed demand?

SRT

**GERS BASIS : LEVEL 2: GERS/TRS V. CONSERVATIVE FRS \* AMP FACTOR**

**IS RELAY SEISMICALLY ADEQUATE?**

Yes

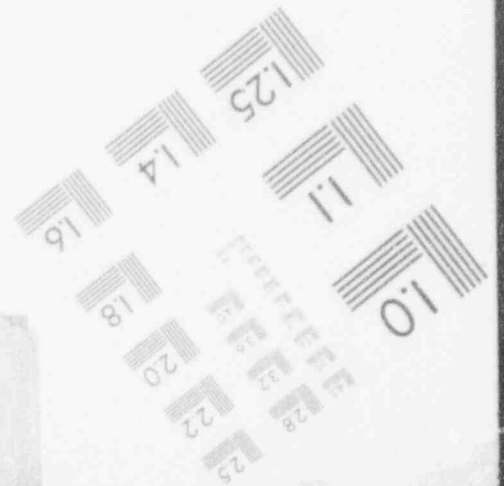
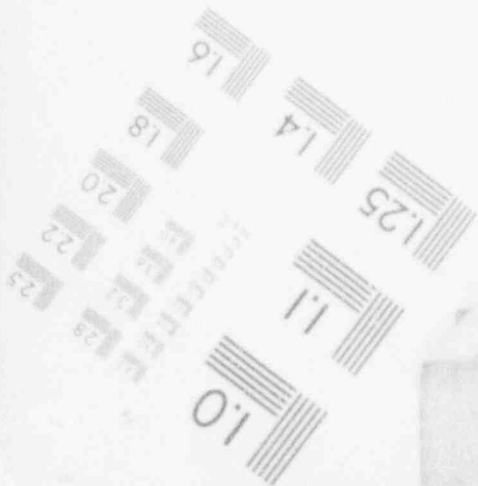
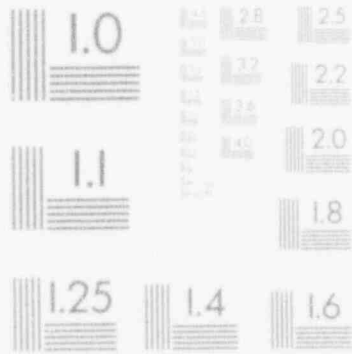
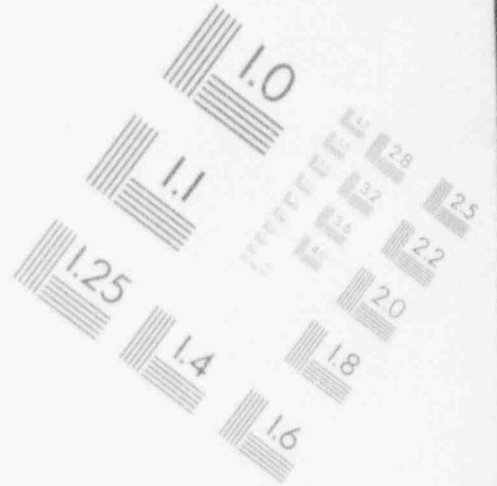
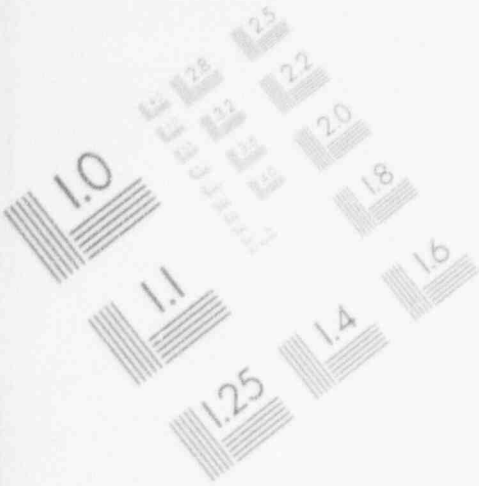
**COMMENTS**

Evaluated by: *Sig Cho*  
*C. M. Abu*

Date: *12/16/93*  
*12.16.93*

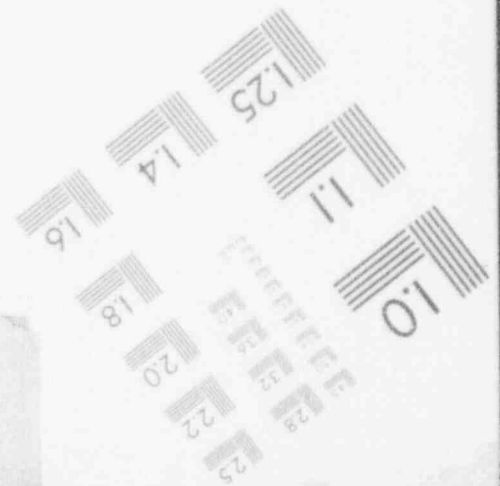
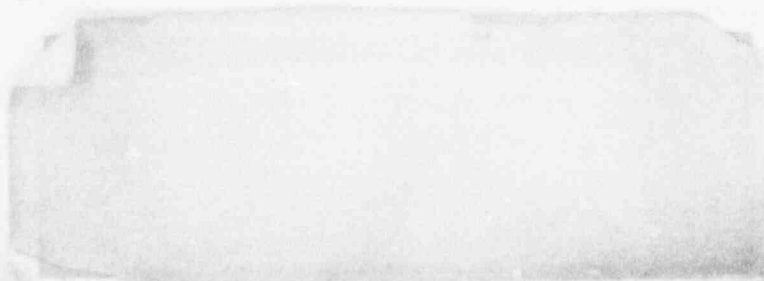
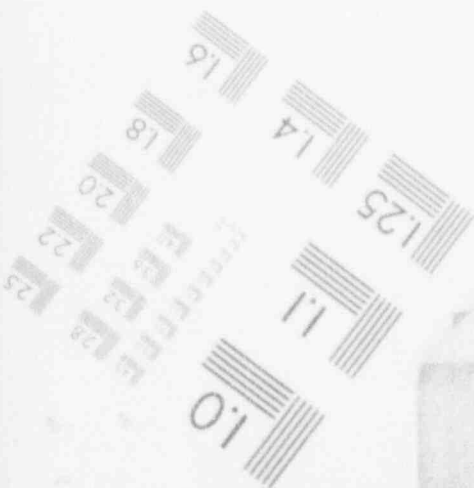
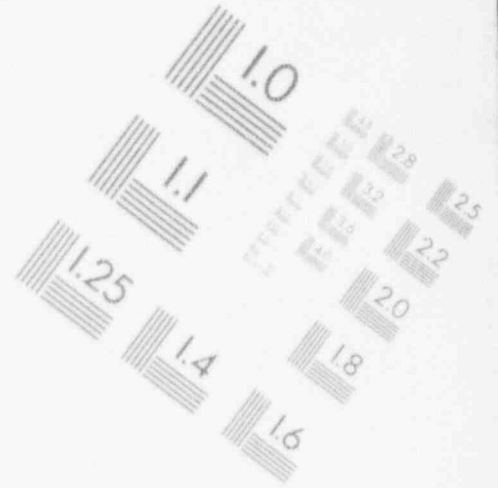
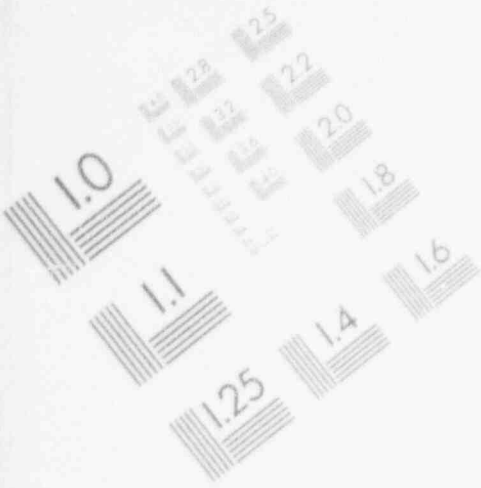
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## IMAGE EVALUATION TEST TARGET (MT-3)



# 1

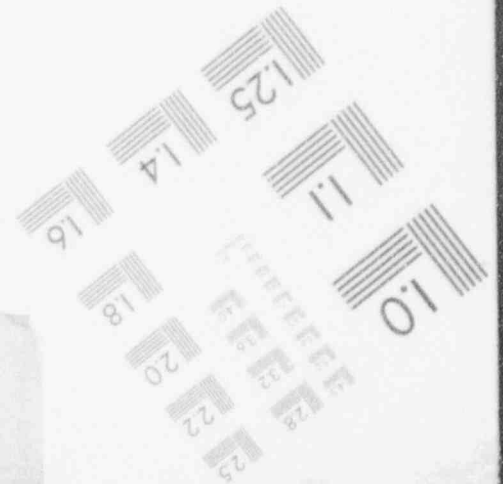
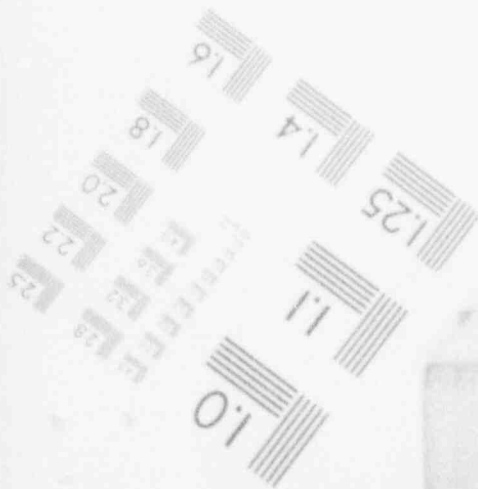
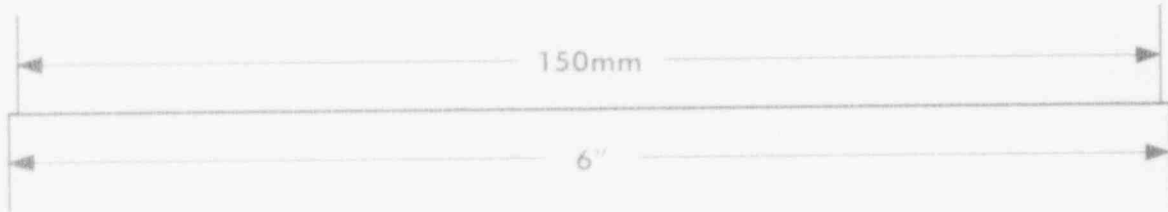
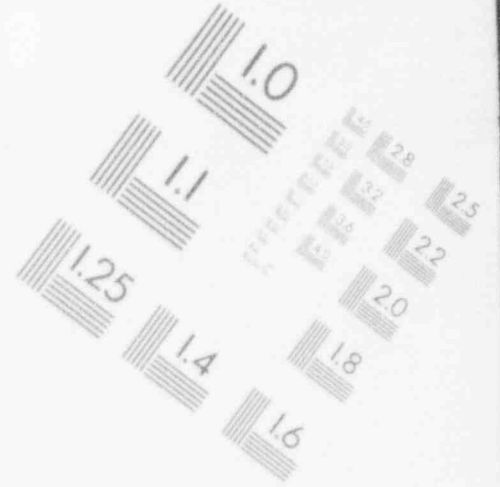
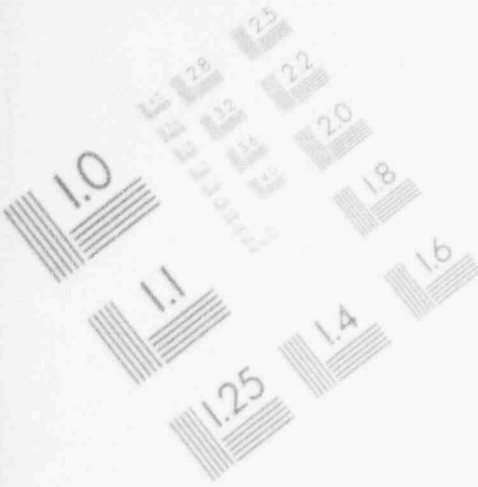
## IMAGE EVALUATION TEST TARGET (MT-3)





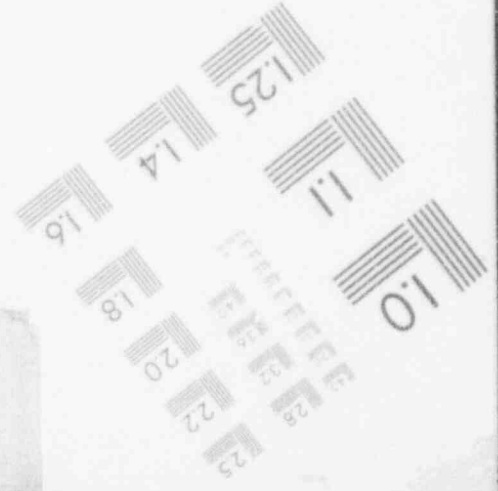
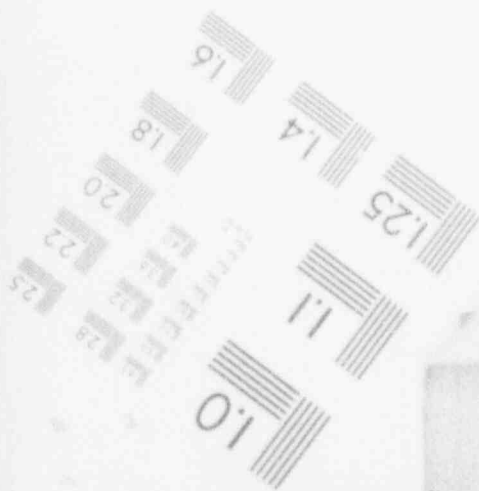
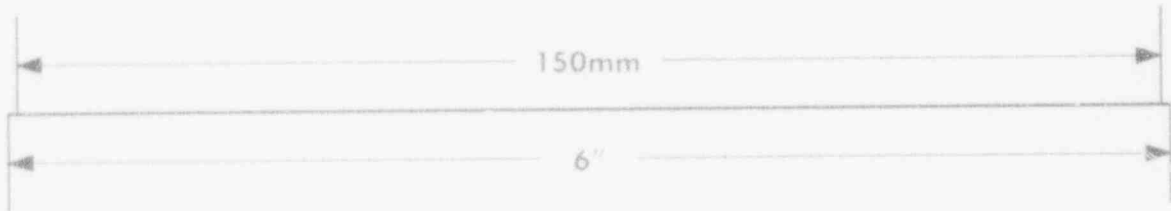
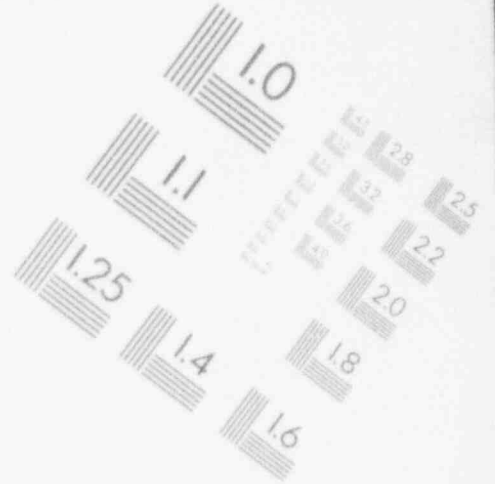
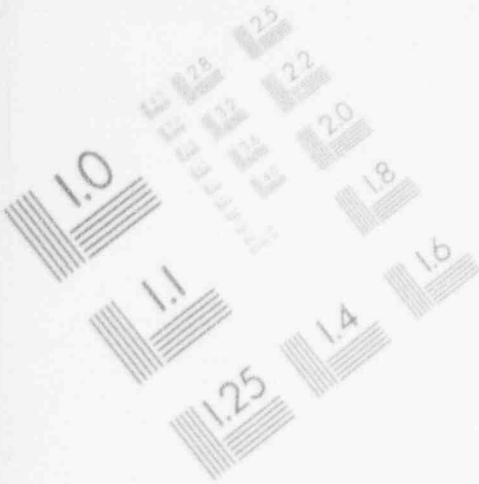
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## IMAGE EVALUATION TEST TARGET (MT-3)



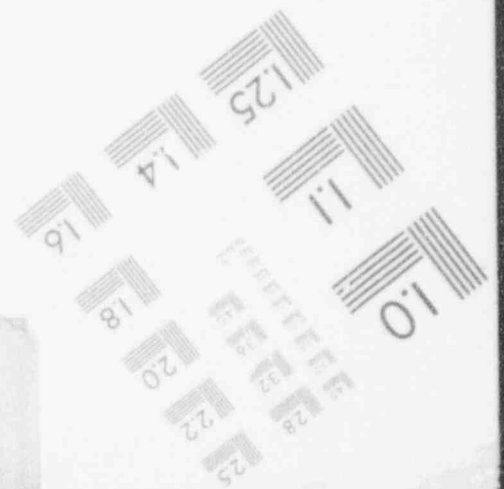
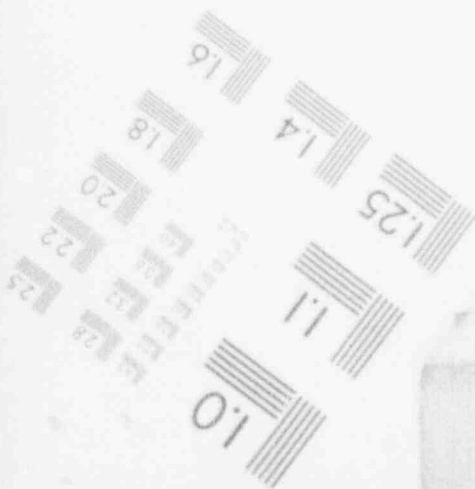
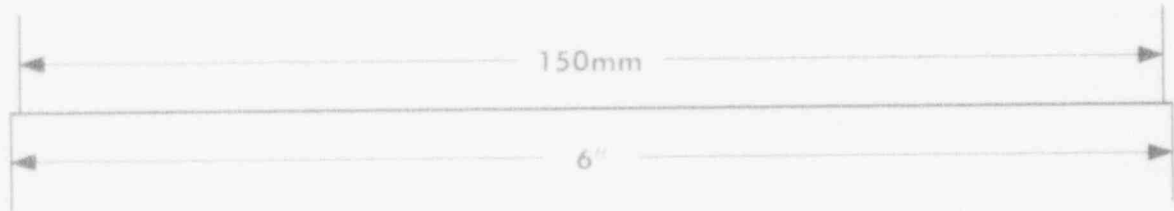
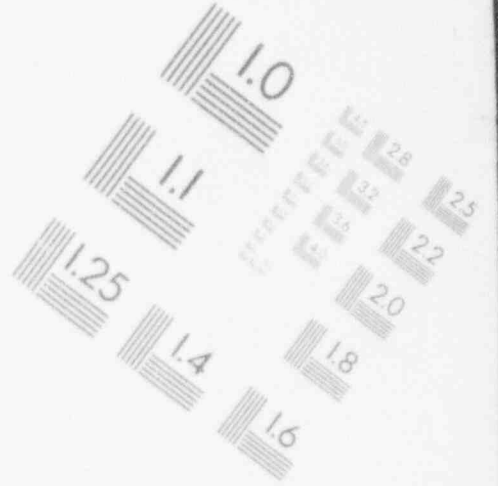
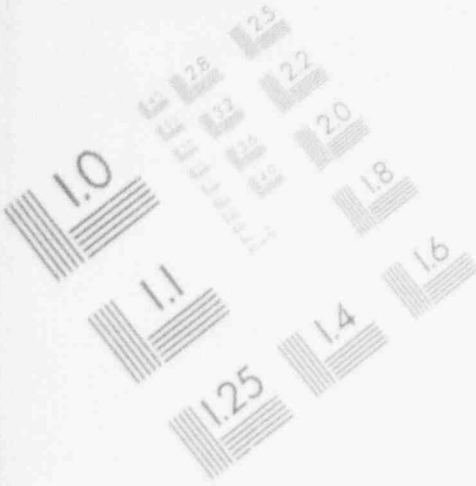
# 1

## IMAGE EVALUATION TEST TARGET (MT-3)



# 1

## IMAGE EVALUATION TEST TARGET (MT-3)



**RELAY FUNCTIONALITY REVIEW REPORT**GIP Rev 2, Corrected, 2/14/92  
Status: Yes  
Sheet 3 of 3ID : 4AX1 (Note 3)-  
RELAY 27Y/1-9  
(Rev. 0)

Make : GE - HFA

Drawing : 32001 SH 5GA

System : ELEC

Subsystem/Component :

Description : 12HFA151A2H

Location : MCB

|  |          |  |
|--|----------|--|
| <b>RELAY FUNCTIONALITY REVIEW REPORT</b> |          | GIP Rev 2, Corrected, 2/14/92<br>Status: Yes<br>Sheet 1 of 3 |
| ID : 43AX-RELAY<br>HCP/A (Rev. 0)        | Make : W | Drawing : 32001 SH 11BA                                      |
| System : ELEC                            |          | Subsystem/Component :  |
| Description : ARD440S                    |          |  |
| Location : MCB                           |          |  |

**SCREENING BASIS : RELAY GERS OR SPECIFIC QUALIFICATION**

**Low Ruggedness**

Is relay not a low ruggedness relay?

LRR

**Relay Capacity Level**

|                                |   |
|--------------------------------|---|
| Class : Auxiliary Relay        | SubClass : Industrial Type 1 (600 V)          |
| Relay Model : Westinghouse ARD | Operating Mode : Non-operate, normally closed |
| Required Settings :            |   |

|                            |
|----------------------------|
| Capacity GERS Level : 4.50 |
|----------------------------|

**Cabinet Seismic Capacity vs Demand  
Demand Amplification Factor:**

|  |
|--|
| Cabinet Type : High Amplification (large, flexible panels) |
|--|

|                                 |
|---------------------------------|
| Demand Amplification Factor : 7 |
|---------------------------------|

|  |  |                     |
|--|--|---------------------|
| Cabinet ID : CB/F (Rev. 0)                         | Cabinet Class : 20 - Instrumentation and Control Panels and Cabinets |                     |
| Cabinet Description : MAIN CONTROL BOARD SECTION F |  |                     |
| Building : SB                                      | Floor El. : 59.5   | Room, Row/Col : MCB |

Is cabinet seismically adequate?

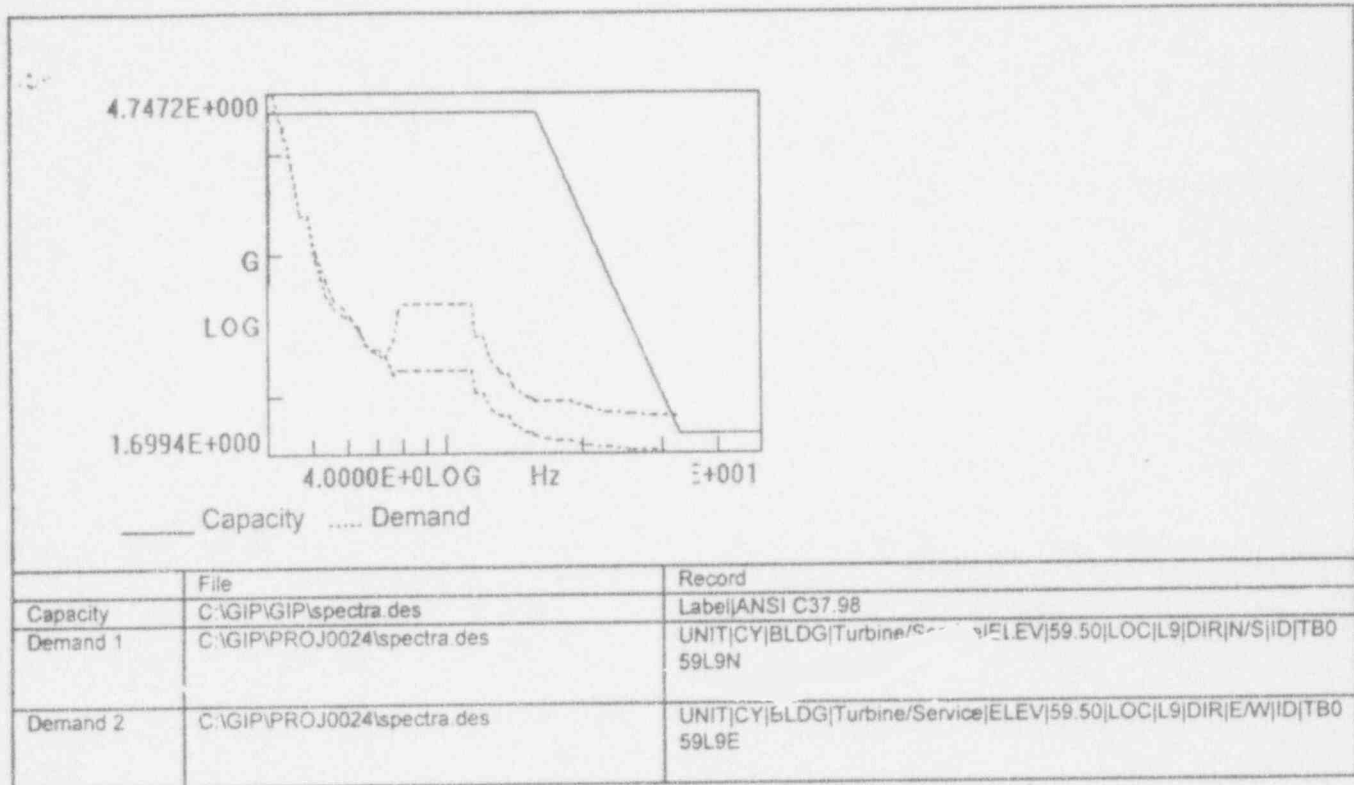
Yes

**Cabinet Frequency**

Cabinet fundamental frequency greater than 8 Hz

|  |          |  |
|--|----------|--|
| <b>RELAY FUNCTIONALITY REVIEW REPORT</b> |          | GIP Rev 2, Corrected, 2/14/92<br>Status: Yes<br>Sheet 2 of 3 |
| ID : 43AX-RELAY<br>HCP/A (Rev. 0)        | Make : W | Drawing : 32001 SH 11BA                                      |
| System : ELEC                            |          | Subsystem/Component :  |
| Description : ARD440S                    |          |  |
| Location : MCB                           |          |  |

**Relay Seismic Capacity vs Demand**



Does relay capacity exceed demand?

SRT

**GERS BASIS : LEVEL 2: GERS/TRS V. CONSERVATIVE FRS \* AMP FACTOR**

**IS RELAY SEISMICALLY ADEQUATE?**

**Yes**

**COMMENTS**

The non-enveloping region (up to 5 Hz) on the Capacity vs. Demand plot is not a concern because at a frequency this low the relay will not experience high spectral acceleration causing relay chatter. (At 5 Hz the amplification factor is much lower than 7)

The MCB frequency is greater than 8 Hz and the ARD relays were mounted on a relatively stiff subpanel attached directly to the main framing members of section F of the MCB.

RELAY FUNCTIONALITY REVIEW REPORT

GIP Rev 2, Corrected, 2/14/92  
Status: Yes  
Sheet 3 of 3

ID : 43AX-RELAY  
HCP/A (Rev. 0)

Make : W

Drawing : 32001 SH 11BA

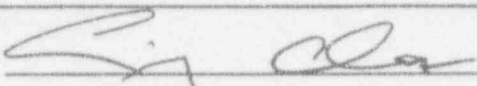
System : ELEC

Subsystem/Component :

Description : ARD440S

Location : MCB

Evaluated by:



Date:

12/16/93

C. M. San Pedro

12.16.93

|  |          |  |
|--|----------|--|
| <b>RELAY FUNCTIONALITY REVIEW REPORT</b> |          | GIP Rev 2, Corrected, 2/14/92<br>Status: Yes<br>Sheet 1 of 3 |
| ID : 43AY-RELAY<br>HCP/A (Rev. 0)        | Make : W | Drawing : 32001 SH 113A                                      |
| System : ELEC                            |          | Subsystem/Component :  |
| Description : ARD440S                    |          |  |
| Location : MCB                           |          |  |

**SCREENING BASIS : RELAY GERS OR SPECIFIC QUALIFICATION**

**Low Ruggedness**

Is relay not a low ruggedness relay?

LRR

**Relay Capacity Level**

|                                |   |
|--------------------------------|---|
| Class : Auxiliary Relay        | SubClass : Industrial Type 1 (600 V)        |
| Relay Model : Westinghouse ARD | Operating Mode : Non-operate, normally open |
| Required Settings :            |   |

|                             |
|-----------------------------|
| Capacity GERS Level : 10.00 |
|-----------------------------|

**Cabinet Seismic Capacity vs Demand  
Demand Amplification Factor**

|  |
|--|
| Cabinet Type : High Amplification (large, flexible panels) |
|--|

|                                 |
|---------------------------------|
| Demand Amplification Factor : 7 |
|---------------------------------|

|  |  |                     |
|--|--|---------------------|
| Cabinet ID : CB/F (Rev. 0)                         | Cabinet Class : 20 - Instrumentation and Control Panels and Cabinets |                     |
| Cabinet Description : MAIN CONTROL BOARD SECTION F |  |                     |
| Building : SB                                      | Floor El. : 59.5   | Room, Row/Col : MCB |

Is cabinet seismically adequate?

Yes

**Cabinet Frequency**

Cabinet fundamental frequency greater than 8 Hz

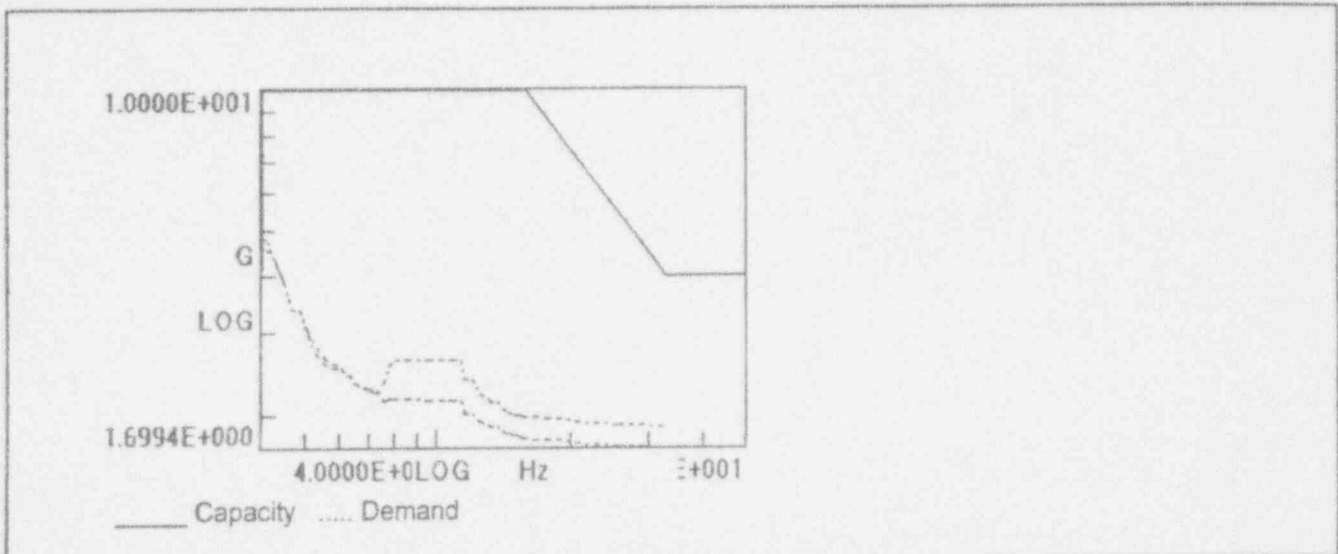


# RELAY FUNCTIONALITY REVIEW REPORT

GIP Rev 2, Corrected, 2/14/92  
 Status: Yes  
 Sheet 2 of 3

|                                   |                       |                         |
|-----------------------------------|-----------------------|-------------------------|
| ID : 43AY-RELAY<br>HCP/A (Rev. 0) | Make : W              | Drawing : 32001 SH 11BA |
| System : ELEC                     | Subsystem/Component : |                         |
| Description : ARD440S             |                       |                         |
| Location : MCB                    |                       |                         |

## Relay Seismic Capacity vs Demand



|          | File                        | Record   |
|----------|-----------------------------|--|
| Capacity | C:\GIP\GIP\spectra.des      | Label ANSI C37.98  |
| Demand 1 | C:\GIP\PROJ0024\spectra.des | UNIT CY BLDG Turbine/Service ELEV 59.50 LOC L9 DIR N/S ID TB059L9N |
| Demand 2 | C:\GIP\PROJ0024\spectra.des | UNIT CY BLDG Turbine/Service ELEV 59.50 LOC L9 DIR E/W ID TB059L9E |

Does relay capacity exceed demand?

SRI

GERS BASIS : LEVEL 2: GERS/TRS V. CONSERVATIVE FRS \* AMP FACTOR

IS RELAY SEISMICALLY ADEQUATE?

Yes

### COMMENTS

Evaluated by:

*[Signature]*  
C. M. Abu Jaber

Date:

12/14/93  
12.16.93

**RELAY FUNCTIONALITY REVIEW REPORT**

GIP Rev 2, Corrected, 2/14/92

Status: Yes

Sheet 3 of 3

ID : 43AY-RELAY  
HCP/A (Rev. 0)

Make : W

Drawing : 32001 SH 11BA

System : ELEC

Subsystem/Component :

Description : ARD440S

Location : MCB

|  |               |  |
|--|---------------|--|
| <b>RELAY FUNCTIONALITY REVIEW REPORT</b>         |               | GIP Rev 2, Corrected, 2/14/92<br>Status: Yes<br>Sheet 1 of 3 |
| ID : 4BX1 (Note 7)-<br>RELAY 27Y/1-9<br>(Rev: 0) | Make : W MG-6 | Drawing : 32001 SH 5GA                                       |
| System : ELEC                                    |               | Subsystem/Component :  |
| Description : 289B360A20                         |               |  |
| Location : MCB                                   |               |  |

**SCREENING BASIS : RELAY GERS OR SPECIFIC QUALIFICATION**

**Low Ruggedness**

Is relay not a low ruggedness relay?

LRR

**Relay Capacity Level**

|  |   |
|--|---|
| Class : Auxiliary Relay                  | SubClass : Hinged Armature Multi-contact    |
| Relay Model : Westinghouse MG-6 (DC)     | Operating Mode : Non-operate, normally open |
| Required Settings : 80 ms operation time |   |

Capacity GERS Level : 10.00

**Cabinet Seismic Capacity vs Demand  
Demand Amplification Factor**

Cabinet Type : High Amplification (large, flexible panels)

Demand Amplification Factor : 7

|  |  |                     |
|--|--|---------------------|
| Cabinet ID : CB/F (Rev. 0)                         | Cabinet Class : 20 - Instrumentation and Control Panels and Cabinets |                     |
| Cabinet Description : MAIN CONTROL BOARD SECTION F |  |                     |
| Building : SB                                      | Floor El. : 59.5   | Room, Row/Col : MCB |

Is cabinet seismically adequate?

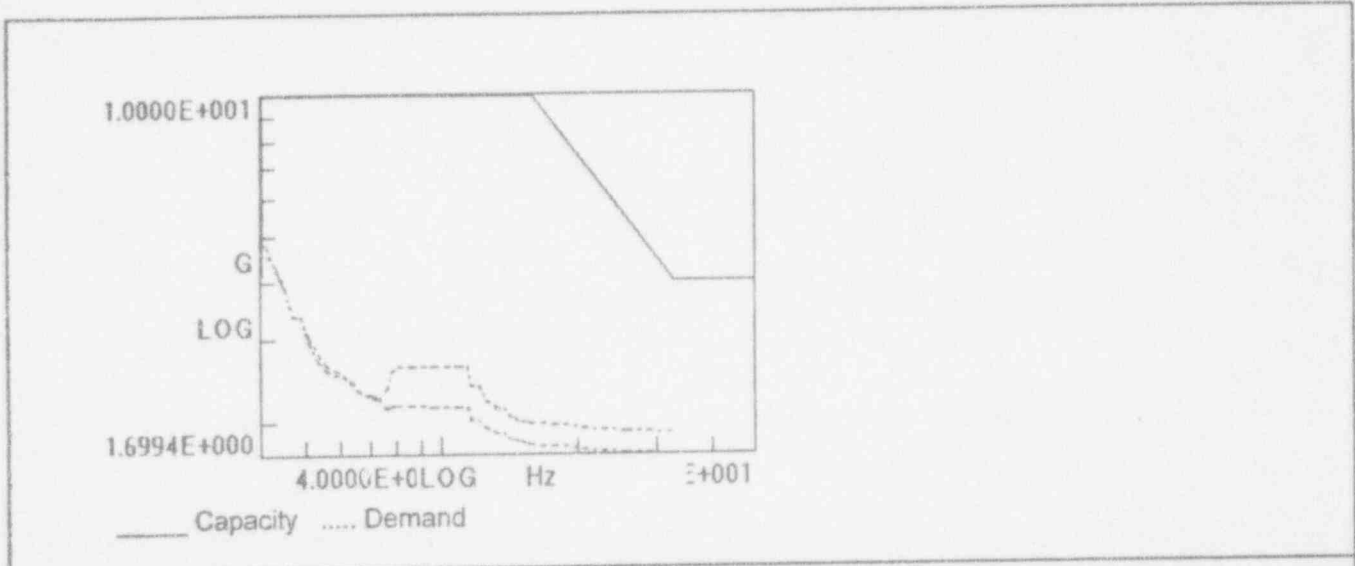
Yes

**Cabinet Frequency**

Cabinet fundamental frequency greater than 8 Hz

|   |                      |  |
|---|----------------------|--|
| <b>RELAY FUNCTIONALITY REVIEW REPORT</b>        |                      | GIP Rev 2, Corrected, 2/14/92<br>Status: Yes<br>Sheet 2 of 3 |
| ID: 4BX1 (Note 7)-<br>RELAY 27Y/1-9<br>(Rev. 0) | Make: W MG-6         | Drawing: 32001 SH 5GA  |
| System: ELEC                                    | Subsystem/Component: |  |
| Description: 289B360A20                         |                      |  |
| Location: MCB                                   |                      |  |

**Relay Seismic Capacity vs Demand**



|          | File                        | Record   |
|----------|-----------------------------|--|
| Capacity | C:\GIP\3IP\spectra.des      | Label ANSI C37.98  |
| Demand 1 | C:\GIP\PROJ0024\spectra.des | UNIT CY BLDG Turbine/Service ELEV 59.50 LOC L9 DIR N/S ID TB059L9N |
| Demand 2 | C:\GIP\PROJ0024\spectra.des | UNIT CY BLDG Turbine/Service ELEV 59.50 LOC L9 DIR E/W ID TB059L9E |

Does relay capacity exceed demand?

SRT

**GERS BASIS : LEVEL 2: GERS/TRS V. CONSERVATIVE FRS \* AMP FACTOR**

**IS RELAY SEISMICALLY ADEQUATE?**

Yes

COMMENTS

Evaluated by:

*C. M. Abu Jaber*

Date:

12/16/93  
12-16-93

**RELAY FUNCTIONALITY REVIEW REPORT**

GIP Rev 2, Corrected, 2/14/92

Status: Yes

Sheet 3 of 3

ID : 4BX1 (Note 7)-  
RELAY 27Y/1-9  
(Rev. 0)

Make : W MG-6

Drawing : 32001 SH 5GA

System : ELEC

Subsystem/Component :

Description : 289B360A20

Location : MCB

|  |             |  |
|--|-------------|--|
| <b>RELAY FUNCTIONALITY REVIEW REPORT</b> |             | GIP Rev 2, Corrected, 2/14/92<br>Status: Yes<br>Sheet 1 of 3 |
| ID : HCP/A (Note 4)-RELAY 4A (Rev. 0)    | Make : W WL | Drawing : 32112 SH 32A                                       |
| System : ELEC                            |             | Subsystem/Component :  |
| Description : Ser. # 780A542G01          |             |  |
| Location : MCB                           |             |  |

**SCREENING BASIS : RELAY GERS OR SPECIFIC QUALIFICATION**

**Low Ruggedness**

Is relay not a low ruggedness relay?

LRR

**Relay Capacity Level**

|                                    |   |
|------------------------------------|---|
| Class : Auxiliary Relay            | SubClass : Lockout                          |
| Relay Model : Westinghouse WL (DC) | Operating Mode : Non-operate, normally open |
| Required Settings :                |   |

Capacity GERS Level : 10.00

**Cabinet Seismic Capacity vs Demand  
Demand Amplification Factor**

Cabinet Type : Medium Amplification (control panels)

Demand Amplification Factor : 4.5

|  |  |                     |
|--|--|---------------------|
| Cabinet ID : CB/F (Rev. 0)                         | Cabinet Class : 20 - Instrumentation and Control Panels and Cabinets |                     |
| Cabinet Description : MAIN CONTROL BOARD SECTION F |  |                     |
| Building : SB                                      | Floor El. : 59.5   | Room, Row/Col : MCB |

Is cabinet seismically adequate?

Yes

**Cabinet Frequency**

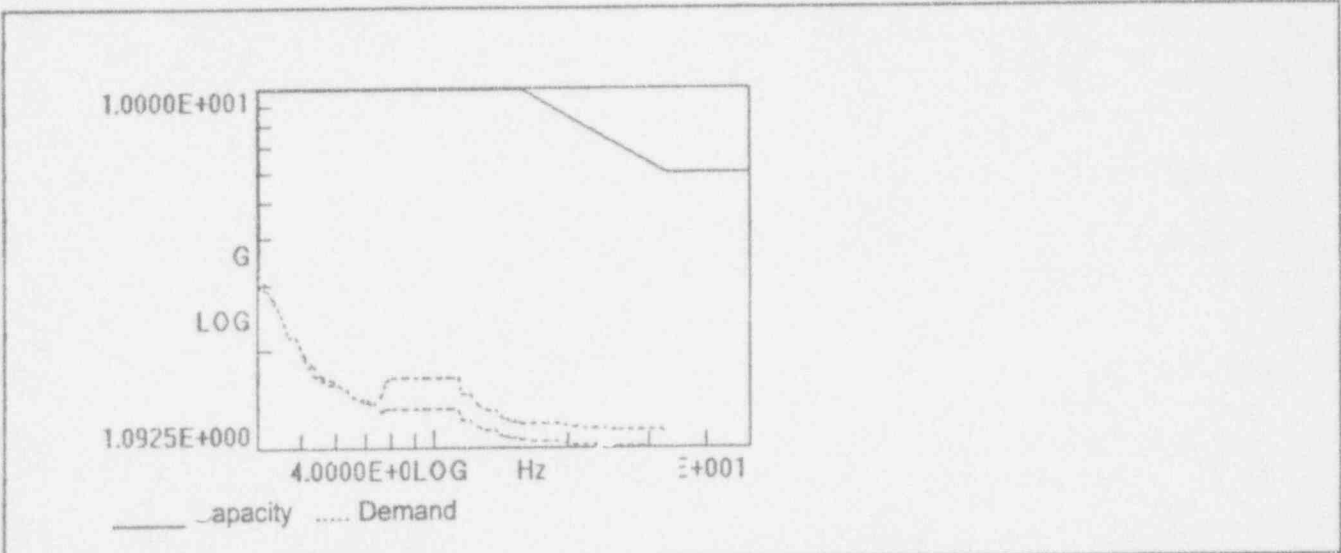
Cabinet fundamental frequency greater than 8 Hz

# RELAY FUNCTIONALITY REVIEW REPORT

GIP Rev 2, Corrected, 2/14/92  
 Status: Yes  
 Sheet 2 of 3

|                                       |                       |                        |
|---------------------------------------|-----------------------|------------------------|
| ID : HCP/A (Note 4)-RELAY 4A (Rev. 0) | Make : W WL           | Drawing : 32112 SH 32A |
| System : ELEC                         | Subsystem/Component : |                        |
| Description : Ser. # 780A542G01       |                       |                        |
| Location : MCB                        |                       |                        |

## Relay Seismic Capacity vs Demand



|          | File                        | Record   |
|----------|-----------------------------|--|
| Capacity | C:\GIP\GIP\spectra des      | Label Modified Relay GERS  |
| Demand 1 | C:\GIP\PROJ0024\spectra des | UNIT CY BLDG Turbine/Service ELEV 59.50 LOC L9 DIR N/S ID TB059L9N |
| Demand 2 | C:\GIP\PROJ0024\spectra des | UNIT CY BLDG Turbine/Service ELEV 59.50 LOC L9 DIR E/W ID TB059L9E |

Does relay capacity exceed demand?

SRI

GERS BASIS : LEVEL 2: GERS/TRS V. CONSERVATIVE FRS \* AMP FACTOR

IS RELAY SEISMICALLY ADEQUATE?

Yes

### COMMENTS

Evaluated by:

*[Signature]*  
 C. M. Abu Rashed

Date:

12/16/93

12.16.93

**RELAY FUNCTIONALITY REVIEW REPORT**

GIP Rev 2, Corrected, 2/14/92  
Status: Yes  
Sheet 3 of 3

ID : HCP/A (Note  
4)-RELAY 4A  
(Rev. 0)

Make : W WL

Drawing : 32112 SH 32A

System : ELEC

Subsystem/Component :

Description : Ser. # 780A542G01

Location : MCB



Connecticut Yankee A-46  
Essential Relays  
Relay functional Review List

CAB\_ID ECP-2A

BUILDING DG  
ELEVATION 21.50  
LOCATION A DIESEL

| CONTACT ID        | MAKE              | MODEL           | CONT_COND | ENERGIZE | REMARK          |
|-------------------|-------------------|-----------------|-----------|----------|-----------------|
| OT-BKR 8-1        |                   | Overspeed Trip  |           |          | UNKNOWN         |
| NFLD-BKR 8-1      | AGASTAT           | EGPD00 EGPD002  | NO        | NO       | RLY_FUNC_REVIEW |
| NFLDA (A)-BKR 8-1 | AGASTAT           | EGPD00 EGPD002  |           |          | OK              |
| MB1-EG-2A         | SQD 8411520 aow23 | PRESSURE SWITCH | NC        |          | NO GERS         |
| MB3-EG-2A         | SQD 8411520 aow23 | PRESSURE SWITCH |           |          | NO GERS         |

|  |                        |  |
|--|------------------------|--|
| <b>RELAY FUNCTIONALITY REVIEW REPORT</b> |                        | GIP Rev 2, Corrected, 2/14/92<br>Status: Yes<br>Sheet 1 of 3 |
| ID : NFLD-BKR 8-1 (Rev. 0)               | Make : AGASTAT EGPD002 | Drawing : 32001 SH 5MA, 31099 SH 2, 3                        |
| System : ELEC                            |                        | Subsystem/Component :  |
| Description : EGPD002                    |                        |  |
| Location : A DIESEL                      |                        |  |

**SCREENING BASIS : RELAY GERS OR SPECIFIC QUALIFICATION**

**Low Ruggedness**

Is relay not a low ruggedness relay?

LRR

**Relay Capacity Level**

|                          |   |
|--------------------------|---|
| Class : Auxiliary Relay  | SubClass : Socket Type                      |
| Relay Model : Agastat GP | Operating Mode : Non-operate, normally open |
| Required Settings :      |   |

Capacity GERS Level : 3.30

**Cabinet Seismic Capacity vs Demand  
Demand Amplification Factor**

Cabinet Type : Medium Amplification (control panels)

Demand Amplification Factor : 4.5

|  |  |                          |
|--|--|--------------------------|
| Cabinet ID : ECP-2A (Rev. 0)               | Cabinet Class : 20 - Instrumentation and Control Panels and Cabinets |                          |
| Cabinet Description : ENGINE CONTROL PANEL |  |                          |
| Building : DG                              | Floor El. : 21.5   | Room, Row/Col : A DIESEL |

Is cabinet seismically adequate?

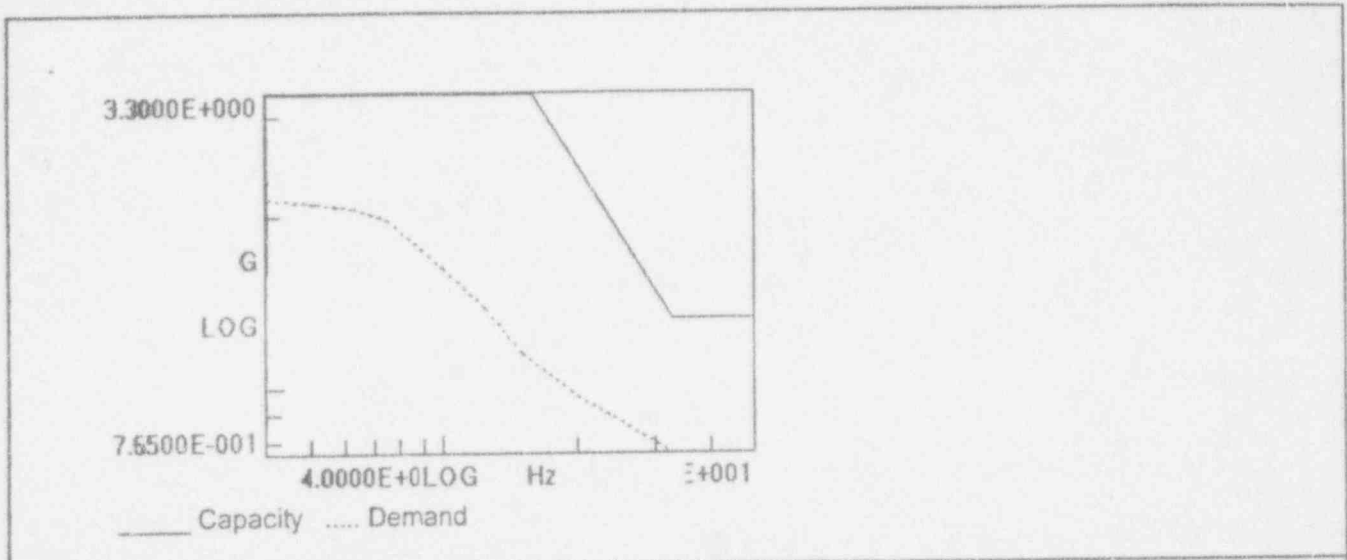
Yes

**Cabinet Frequency**

Cabinet fundamental frequency greater than 8 Hz

|  |                        |  |
|--|------------------------|--|
| <b>RELAY FUNCTIONALITY REVIEW REPORT</b> |                        | GIP Rev 2, Corrected, 2/14/92<br>Status: Yes<br>Sheet 2 of 3 |
| ID : NFLD-BKR 8-1 (Rev. 0)               | Make : AGASTAT EGPD002 | Drawing : 32001 SH 5MA, 31099 SH 2, 3                        |
| System : ELEC                            |                        | Subsystem/Component :  |
| Description : EGPD002                    |                        |  |
| Location : A DIESEL                      |                        |  |

**Relay Seismic Capacity vs Demand**



|          | File                        | Record   |
|----------|-----------------------------|--|
| Capacity | C:\GIP\GIP\spectra.des      | Label ANSI C37.98                                      |
| Demand 1 | C:\GIP\PROJ0024\spectra.des | UNIT CY BLDG SITEROCK ELEV 21.5 LOC na DIR HORI ID SSE |
| Demand 2 | C:\GIP\PROJ0024\spectra.des | UNIT CY BLDG SITEROCK ELEV 21.5 LOC na DIR HORI ID SSE |

Does relay capacity exceed demand? SRI

**GERS BASIS : LEVEL 2: GERS/TRS V. SSE \* AMP FACTOR (NOTE 1)**

**Elevation Above Grade**

Elevation of cabinet below about 40' from grade Yes  
**Cabinet Frequency**

Cabinet fundamental frequency greater than 8 Hz Yes

**IS RELAY SEISMICALLY ADEQUATE?** Yes

**COMMENTS**

NOTE 1: For GERS Basis Level 2 screening, the 2.25 factor was taken out since the cabinet is located in the Diesel Building which is a one story structure founded on compacted back-fill (Grade); therefore the ground SSE is considered to be a conservative design spectra (The excessively conservative floor spectra was not used).

RELAY FUNCTIONALITY REVIEW REPORT

GIP Rev 2, Corrected, 2/14/92  
Status: Yes  
Sheet 3 of 3

ID: NFLD-BKR 8-1 (Rev. 0)

Make: AGASTAT EGPD002

Drawing: 32001 SH 5MA, 31099 SH 2, 3

System: ELEC

Subsystem/Component:

Description: EGPD002

Location: A DIESEL

Evaluated by:

*[Handwritten Signature]*

Date:

12/16/93

C. M. Abu Rweire

12-16-93

Connecticut Yankee A-46  
Essential Relays  
Relay functional Review List

CAB\_ID ECP-2B

BUILDING DG  
ELEVATION 21.50  
LOCATION B DIESEL

| CONTACT ID        | MAKE              | MODEL                | CONT_COND | ENERGIZE | REMARK  |
|-------------------|-------------------|----------------------|-----------|----------|---------|
| OT-BKR 9-1        |                   | Overspeed Trip       |           |          | UNKNOWN |
| NFLD-BKR 9-1      | AGASTAT           | EGPD00 EGPD002       | NO        | NO       | OK      |
| NFLDA (B)-BKR 9-1 | AGASTAT           | EGPD00 EGPD002       |           |          | OK      |
| STLO2 (B)-BKR 9-1 | GM-EMD            | 8253244 SQD EQ1933G2 |           |          | NO GERS |
| MB1-EG-2B         | SQD 8411520 aow23 | PRESSURE SWITCH      | NC        |          | NO GERS |
| MB3-EG-2B         | SQD 8411520 aow23 | PRESSURE SWITCH      |           |          | NO GERS |

Connecticut Yankee A-46  
Essential Relays  
Relay functional Review  
List

CAB\_ID EG-2A

BUILDING DG  
ELEVATION 21.50  
LOCATION A DIESEL

| CONTACT ID | MAKE | MODEL                   | CONT_COND | ENERGIZE | REMARK  |
|------------|------|-------------------------|-----------|----------|---------|
| HS-EG-2A   |      | GOV HIGH SPEED LIMIT SW | NC        |          | UNKNOWN |

Connecticut Yankee A-46  
Essential Relays  
Relay functional Review  
List

CAB\_ID EG-2B

BUILDING DG  
ELEVATION 21.50  
LOCATION B DIESEL

| CONTACT ID | MAKE | MODEL                   | CONT_COND | ENERGIZE | REMARK  |
|------------|------|-------------------------|-----------|----------|---------|
| HS-EG-2B   |      | GOV HIGH SPEED LIMIT SW | NC        |          | UNKNOWN |

Connecticut Yankee A-46  
 Essential Relays  
 Relay functional Review List

CAB\_ID EGP-2A

BUILDING DG  
 ELEVATION 21.50  
 LOCATION A DIESEL

| CONTACT ID        | MAKE    | MODEL                | CONT_COND | ENERGIZE | REMARK          |
|-------------------|---------|----------------------|-----------|----------|-----------------|
| ECR-EG-2A         | AGASTAT | 2400 2412PGE         |           |          | RLY_FUNC_REVIEW |
| NFLDA (A)-EG-2A   | AGASTAT | EGPD00 EGPD002       | NO        | NO       | RLY_FUNC_REVIEW |
| 52V (A)-BKR 8-1   | GM-EMD  | 8253244 SQD EQ1933G2 |           |          | NO GERS         |
| 52V (A)-EG-2A     | GM-EMD  | 8253244 SQD EQ1933G2 |           |          | NO GERS         |
| STLO1 (A)-BKR 8-1 | GM-EMD  | 8253244 SQD EQ1933G2 |           |          | NO GERS         |
| STLO1 (A)-EG-2A   | GM-EMD  | 8253244 SQD EQ1933G2 |           |          | NO GERS         |
| STLO2 (A)-BKR 8-1 | GM-EMD  | 8253244 SQD EQ1933G2 |           |          | NO GERS         |
| STLO2 (A)-EG-2A   | GM-EMD  | 8253244 SQD EQ1933G2 |           |          | NO GERS         |
| 40T-BKR 8-1       | GM-EMD  | 8253246 SQD 1933G2   |           |          | NO GERS         |
| PFD1-EG-2A        | GM-EMD  | 8253246 SQD 1933G2   |           |          | NO GERS         |
| PFD2-EG-2A        | GM-EMD  | 8253246 SQD 1933G2   |           |          | NO GERS         |
| SFD1 (A)-EG-2A    | GM-EMD  | 8253246 SQD 1933G2   |           |          | NO GERS         |



Connecticut Yankee A-46  
Essential Relays  
Relay functional Review List

CAB\_ID **EGP-2A**

BUILDING DG  
ELEVATION 21.50  
LOCATION A DIESEL

| CONTACT ID       | MAKE           | MODEL          | CONT_COND | ENERGIZE | REMARK  |
|------------------|----------------|----------------|-----------|----------|---------|
| SFD2 (A)-EG-2A   | GM-EMD 8253246 | SQD 1933G2     |           |          | NO GERS |
| MSR1 (A)-EG-2A   | GM-EMD 8263337 | SQD 7001 PO453 |           |          | NO GERS |
| MSR2 (A)-EG-2A   | GM-EMD 8263337 | SQD 7001 PO453 |           |          | NO GERS |
| VSR1 (A)-BKR 8-1 | GM-EMD 8263337 | SQD 7001 PO453 |           |          | NO GERS |
| VSR2 (A)-BKR 8-1 | GM-EMD 8263337 | SQD 7001 PO453 |           |          | NO GERS |
| ZSR1 (A)-EG-2A   | GM-EMD 8263337 | SQD 7001 PO453 |           |          | NO GERS |
| ZSR2 (A)-EG-2A   | GM-EMD 8263337 | SQD 7001 PO453 |           |          | NO GERS |
| ESR1 (A)-BKR 8-1 | GM-EMD 8269705 | SQD 7001 PO453 |           |          | NO GERS |
| ESR1 (A)-EG-2A   | GM-EMD 8269705 | SQD 7001 PO453 |           |          | NO GERS |
| ESR2 (A)-BKR 8-1 | GM-EMD 8269705 | SQD 7001 PO453 |           |          | NO GERS |
| ESR2 (A)-EG-2A   | GM-EMD 8269705 | SQD 7001 PO453 |           |          | NO GERS |
| ESTR (A)-BKR 8-1 | GM-EMD 8269705 | SQD 7001 PO453 |           |          | NO GERS |

Connecticut Yankee A-46  
 Essential Relays  
 Relay functional Review List

CAB\_ID EGP-2A

BUILDING DG  
 ELEVATION 21.50  
 LOCATION A DIESEL

| CONTACT ID       | MAKE   | MODEL                      | CONT_COND | ENERGIZE | REMARK          |
|------------------|--------|----------------------------|-----------|----------|-----------------|
| ESTR (A)-EG-2A   | GM-EMD | 8269705 SQD 7001 PO453     |           |          | NO GERS         |
| FSR1 (A)-BKR 8-1 | GM-EMD | 8269705 SQD 7001 PO453     |           |          | NO GERS         |
| FSR1 (A)-EG-2A   | GM-EMD | 8269705 SQD 7001 PO453     |           |          | NO GERS         |
| FSR2 (A)-BKR 8-1 | GM-EMD | 8269705 SQD 7001 PO453     |           |          | NO GERS         |
| FSR2 (A)-EG-2A   | GM-EMD | 8269705 SQD 7001 PO453     |           |          | NO GERS         |
| OTR (A)-BKR 8-1  | GM-EMD | 8269705 SQD 7001 PO453     |           |          | NO GERS         |
| OTR (A)-EG-2A    | GM-EMD | 8269705 SQD 7001 PO453     |           |          | NO GERS         |
| STR1 (A)-EG-2A   | GM-EMD | 8299025 SQD 7001 PO453     |           |          | NO GERS         |
| STR2 (A)-EG-2A   | GM-EMD | 8299025 SQD 7001 PO453     |           |          | NO GERS         |
| FPR-EG-2A        | GM-EMD | 8299025 VAPOR CORP         |           |          | NO GERS         |
| ECRA-EG-2A       | GM-EMD | 8317487 SQD 8501 FSD022-55 |           |          | NO GERS         |
| ESTD (A)-EG-2A   | GM-EMD | 8365352 AGASTAT 2422 PGE   | NO        | NO       | RLY_FUNC_REVIEW |

Connecticut Yankee A-46  
 Essential Relays  
 Relay functional Review List

CAB\_ID **EGP-2A**

BUILDING DG  
 ELEVATION 21.50  
 LOCATION A DIESEL

| CONTACT ID       | MAKE                        | MODEL                       | CONT_COND | ENERGIZE | REMARK    |
|------------------|-----------------------------|-----------------------------|-----------|----------|-----------|
| GS-EG-2A         | GM-EMD                      | 8370794 VAPOR CORP          |           |          | NO GERS   |
| SSP1 (A)-BKR 8-1 | GM-EMD                      | 8409614 BARBER COLEMAN 6884 |           |          | NO GERS   |
| SSP1 (A)-EG-2A   | GM-EMD                      | 8409614 BARBER COLEMAN 6884 |           |          | NO GERS   |
| SSP2 (A)-BKR 8-1 | GM-EMD                      | 8409614 BARBER COLEMAN 6884 |           |          | NO GERS   |
| SSP2 (A)-EG-2A   | GM-EMD                      | 8409614 BARBER COLEMAN 6884 |           |          | NO GERS   |
| 40V-BKR 8-1      | GM-EMD                      | 8411911 West AV 160087GH    |           |          | NO GERS   |
| FFCO (A)-BKR 8-1 | GM-EMD                      | 8412411 West SV 292B402A0   | NC        | NO       | BAD ACTOR |
| FFCO (A)-EG-2A   | GM-EMD                      | 8412411 West SV 292B402A0   | NC        | NO       | BAD ACTOR |
| PFDA1 (A)-EG-2A  | GM-EMD                      | 8418210 SQD 1933G2          |           |          | NO GERS   |
| PFDA2 (A)-EG-2A  | GM-EMD                      | 8418210 SQD 1933G2          |           |          | NO GERS   |
| FFC (A)-BKR 8-1  | SQD Class 8504<br>Type EQ19 | Field Flashing              | NO        | YES      | NO GERS   |
| FFC (A)-EG-2A    | SQD Class 8504<br>Type EQ19 | Field Flashing              | NO        | YES      | NO GERS   |

Connecticut Yankee A-46  
Essential Relays  
Relay functional Review List

CAB\_ID EGP-2A

BUILDING DG  
ELEVATION 21.50  
LOCATION A DIESEL

| CONTACT ID | MAKE                     | MODEL    | CONT_COND | ENERGIZE | REMARK  |
|------------|--------------------------|----------|-----------|----------|---------|
| 41-BKR 8-1 | WEST Series C<br>FD8B14K | NP28095E |           |          | NO GERS |

# RELAY FUNCTIONALITY REVIEW REPORT

GIP Rev 2, Corrected, 2/14/92  
 Status: Yes  
 Sheet 1 of 3

|                            |                       |                      |
|----------------------------|-----------------------|----------------------|
| ID : ECR-EG-2A<br>(Rev. 0) | Make : AGASTAT 2400   | Drawing : 31099 SH 3 |
| System : ELEC              | Subsystem/Component : |                      |
| Description : 2412PGE      |                       |                      |
| Location : A DIESEL        |                       |                      |

## SCREENING BASIS : RELAY GERS OR SPECIFIC QUALIFICATION

### Low Ruggedness

Is relay not a low ruggedness relay?

LRR

### Relay Capacity Level

|   |   |
|---|---|
| Class : Auxiliary Relay                 | SubClass : Pneumatic Timing Relays      |
| Relay Model : Agastat E7012, 7012, 2412 | Operating Mode : Operate, normally open |
| Required Settings :                     |   |

Capacity GERS Level : 12.50

### Cabinet Seismic Capacity vs Demand Demand Amplification Factor

Cabinet Type : High Amplification (large, flexible panels)

Demand Amplification Factor : 7

|  |  |                          |
|--|--|--------------------------|
| Cabinet ID : EGP-2A (Rev. 0)                   | Cabinet Class : 20 - Instrumentation and Control Panels and Cabinets |                          |
| Cabinet Description : EXCITATION CONTROL PANEL |  |                          |
| Building : DG                                  | Floor El. : 21.5   | Room, Row/Col : A DIESEL |

Is cabinet seismically adequate?

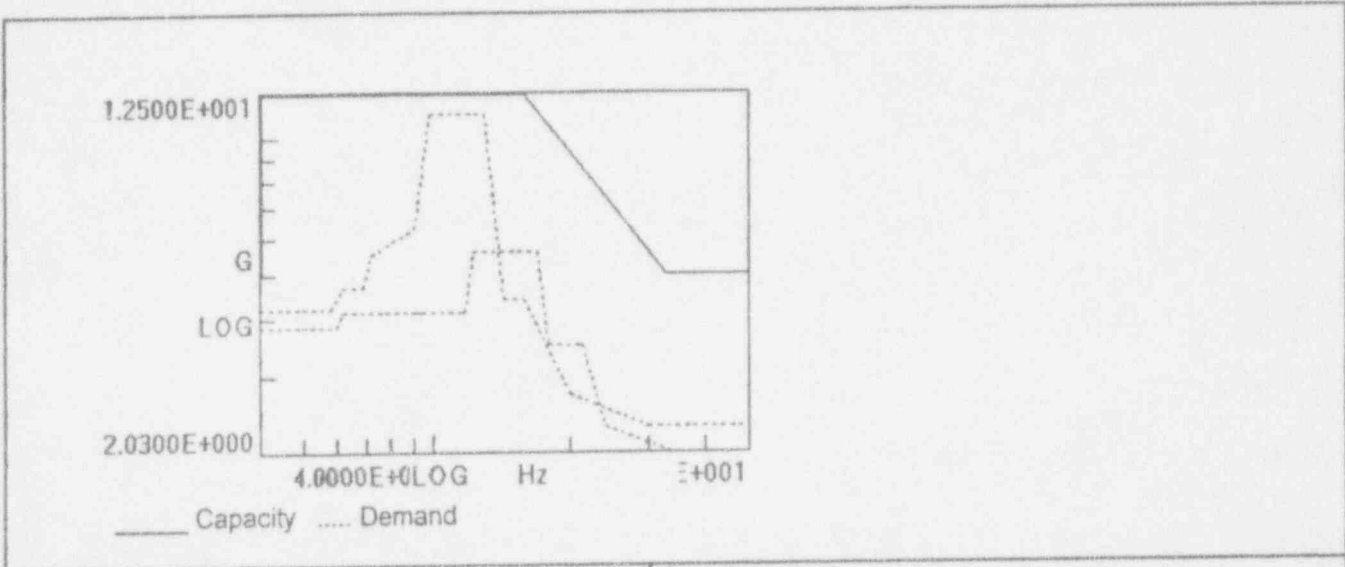
Yes

### Cabinet Frequency

Cabinet fundamental frequency greater than 8 Hz

|  |                     |  |
|--|---------------------|--|
| <b>RELAY FUNCTIONALITY REVIEW REPORT</b> |                     | GIP Rev 2, Corrected, 2/14/92<br>Status: Yes<br>Sheet 2 of 3 |
| ID : ECR-EG-2A<br>(Rev. 0)               | Make : AGASTAT 2400 | Drawing : 31099 SH 3   |
| System : ELEC                            |                     | Subsystem/Component :  |
| Description : 2412PGE                    |                     |  |
| Location : A DIESEL                      |                     |  |

**Relay Seismic Capacity vs Demand**



|          | File                        | Record   |
|----------|-----------------------------|--|
| Capacity | C:\GIP\GIP\spectra.des      | Label ANSI C37.98  |
| Demand 1 | C:\GIP\PROJ0024\spectra.des | UNIT CY BLDG Diesel_Generator ELEV 21.50 LOC  DIR N/S ID DGB021N |
| Demand 2 | C:\GIP\PROJ0024\spectra.des | UNIT CY BLDG Diesel_Generator ELEV 21.50 LOC  DIR E/W ID DGB021E |

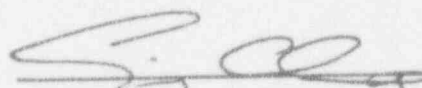
Does relay capacity exceed demand? SRI

GERS BASIS : LEVEL 2: GERS/TRS V. CONSERVATIVE FRS \* AMP FACTOR

**IS RELAY SEISMICALLY ADEQUATE?** Yes

**COMMENTS**

Operating mode and contact condition is unknown, used lowest GERS.

Evaluated by:  Date: 12/16/93  
C. M. Abu-Radda 12.16.93

**RELAY FUNCTIONALITY REVIEW REPORT**

GIP Rev 2, Corrected, 2/14/92  
Status: Yes  
Sheet 3 of 3

ID : ECR-EG-2A  
(Rev. 0)

Make : AGASTAT 2400

Drawing : 31099 SH 3

System : ELEC

Subsystem/Component :

Description : 2412PGE

Location : A DIESEL

|  |                       |  |
|--|-----------------------|--|
| <b>RELAY FUNCTIONALITY REVIEW REPORT</b> |                       | GIP Rev 2, Corrected, 2/14/92<br>Status: Yes<br>Sheet 1 of 3 |
| ID : ESTD (A)-EG-2A (Rev. 0)             | Make : GM-EMD 8365352 | Drawing : 31099 SH 3   |
| System : ELEC                            |                       | Subsystem/Component :  |
| Description : AGASTAT 2422 PGE           |                       |  |
| Location : A DIESEL                      |                       |  |

**SCREENING BASIS : RELAY GERS OR SPECIFIC QUALIFICATION**

**Low Ruggedness**

Is relay not a low ruggedness relay? LRR

**Relay Capacity Level**

|   |   |
|---|---|
| Class : Auxiliary Relay                 | SubClass : Pneumatic Timing Relays          |
| Relay Model : Agastat E7022, 7022, 2422 | Operating Mode : Non-operate, normally open |
| Required Settings :                     |   |

Capacity GERS Level : 6.00

**Cabinet Seismic Capacity vs Demand  
Demand Amplification Factor**

Cabinet type : High Amplification (large, flexible panels)

Demand Amplification Factor : 7

|  |  |                          |
|--|--|--------------------------|
| Cabinet ID : EGP-2A (Rev. 0)                   | Cabinet Class : 20 - Instrumentation and Control Panels and Cabinets |                          |
| Cabinet Description : EXCITATION CONTROL PANEL |  |                          |
| Building : DG                                  | Floor El. : 21.5   | Room, Row/Col : A DIESEL |

Is cabinet seismically adequate? Yes

**Cabinet Frequency**

Cabinet fundamental frequency greater than 8 Hz

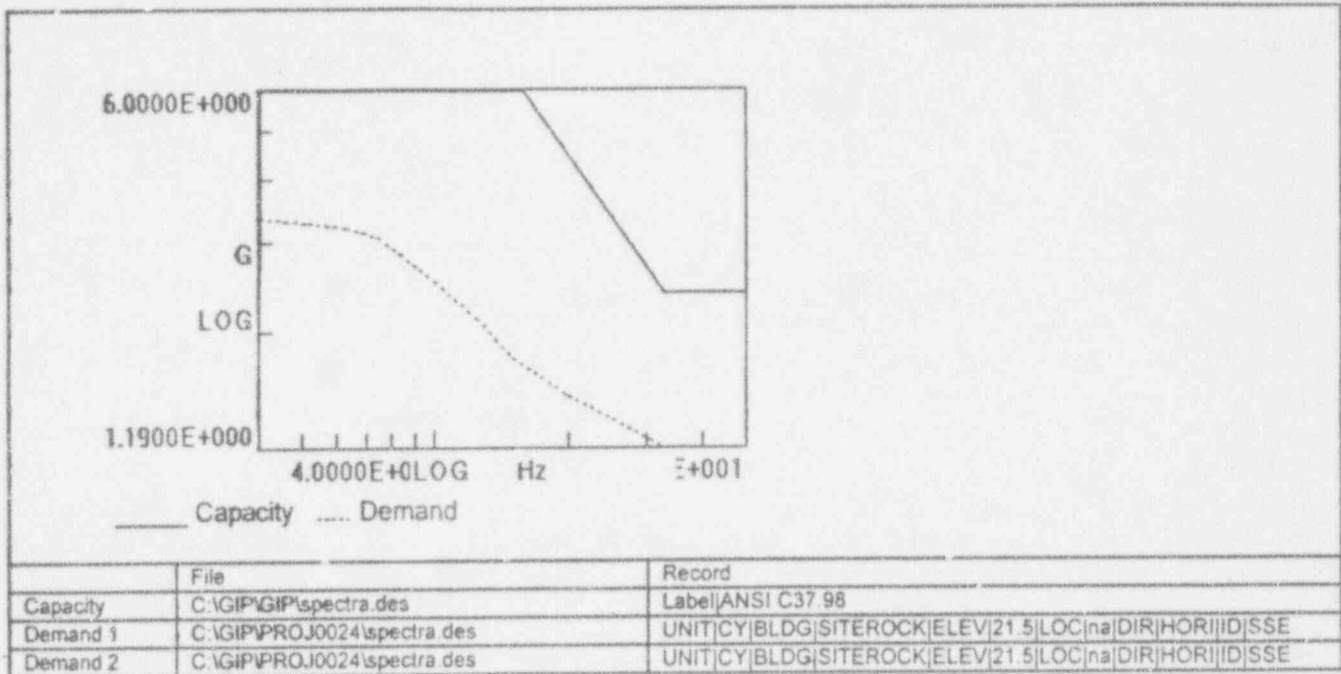


# RELAY FUNCTIONALITY REVIEW REPORT

GIP Rev 2, Corrected, 2/14/92  
 Status: Yes  
 Sheet 2 of 3

|                                 |                       |                      |
|---------------------------------|-----------------------|----------------------|
| ID : ESTD (A)-EG-2A (Rev. 0)    | Make : GM-EMD 8365352 | Drawing : 31099 SH 3 |
| System : ELEC                   | Subsystem/Component : |                      |
| Description : AGASTAT 2422 PGE. |                       |                      |
| Location : A DIESEL             |                       |                      |

## Relay Seismic Capacity vs Demand



Does relay capacity exceed demand?

SRI

GERS BASIS : LEVEL 2: GERS/TRS V. SSE \* AMP FACTOR (NOTE 1)

### Elevation Above Grade

Elevation of cabinet below about 40' from grade

Yes

### Cabinet Frequency

Cabinet fundamental frequency greater than 8 Hz

Yes

**IS RELAY SEISMICALLY ADEQUATE?**

Yes

### COMMENTS

NOTE 1: For GERS Basis Level 2 screening, the 2.25 factor was taken out since the cabinet is located in the Diesel Building which is a one story structure founded on compacted back-fill (Grade); therefore the ground SSE is considered to be a conservative design spectra (The excessively conservative floor spectra was not used). In addition, the relay is mounted on the back panel with stiffener tacked on the backside and its location will not experience high amplification such as on the door panel.

EGP-2A is braced at top and is shown to have a fundamental frequency of greater than 8 Hz.

|                                   |                       |                               |  |
|-----------------------------------|-----------------------|-------------------------------|--|
| RELAY FUNCTIONALITY REVIEW REPORT |                       | GIP Rev 2, Corrected, 2/14/92 |  |
|                                   |                       | Status: Yes<br>Sheet 3 of 3   |  |
| ID : ESTD (A)-EG-<br>2A (Rev. 0)  | Make : GM-EMD 8365352 | Drawing : 31099 SH 3          |  |
| System : ELEC                     |                       | Subsystem/Component :         |  |
| Description : AGASTAT 2422 PGE    |                       |                               |  |
| Location : A DIESEL               |                       |                               |  |

Evaluated by: S. C. Co  
C. M. Abu Radda

Date: 12/17/93  
12/17/93

|  |                        |  |
|--|------------------------|--|
| <b>RELAY FUNCTIONALITY REVIEW REPORT</b> |                        | GIP Rev 2, Corrected, 1/14/92<br>Status: Yes<br>Sheet 1 of 3 |
| ID : NFLDA (A)-<br>EG-2A (Rev. 0)        | Make : AGASTAT EGPD002 | Drawing : 31099 SH 3   |
| System : ELEC                            |                        | Subsystem/Component :  |
| Description : EGPD002                    |                        |  |
| Location : A DIESEL                      |                        |  |

**SCREENING BASIS : RELAY GERS OR SPECIFIC QUALIFICATION**

**Low Ruggedness**

Is relay not a low ruggedness relay?

LRR

**Relay Capacity Level**

|                          |   |
|--------------------------|---|
| Class : Auxiliary Relay  | SubClass : Socket Type                      |
| Relay Model : Agastat GP | Operating Mode : Non-operate, normally open |
| Required Settings :      |   |

Capacity GERS Level : 3.30

**Cabinet Seismic Capacity vs Demand  
Demand Amplification Factor**

Cabinet Type : High Amplification (large, flexible panels)

Demand Amplification Factor : 7

|  |  |                          |
|--|--|--------------------------|
| Cabinet ID : EGP-2A (Rev. 0)                   | Cabinet Class : 20 - Instrumentation and Control Panels and Cabinets |                          |
| Cabinet Description : EXCITATION CONTROL PANEL |  |                          |
| Building : DG                                  | Floor El. : 21.5   | Room, Row/Col : A DIESEL |

Is cabinet seismically adequate?

Yes

**Cabinet Frequency**

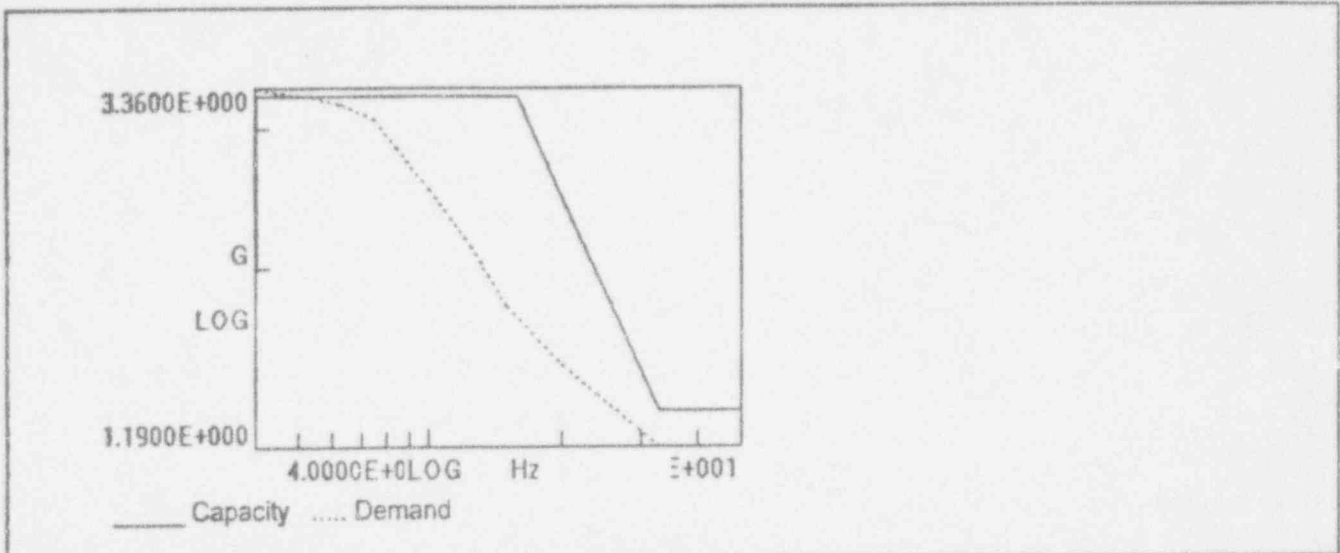
Cabinet fundamental frequency greater than 8 Hz

# RELAY FUNCTIONALITY REVIEW REPORT

GIP Rev 2, Corrected, 2/14/92  
 Status: Yes  
 Sheet 2 of 3

|                                   |                        |                      |
|-----------------------------------|------------------------|----------------------|
| ID : NFLDA (A)-<br>EG-2A (Rev. 0) | Make : AGASTAT EGPD002 | Drawing : 31099 SH 3 |
| System : ELEC                     | Subsystem/Component :  |                      |
| Description : EGPD002             |                        |                      |
| Location : A DIESEL               |                        |                      |

## Relay Seismic Capacity vs Demand



|          | File                        | Record   |
|----------|-----------------------------|--|
| Capacity | C:\GIP\GIP\spectra.des      | Label\ANSI C37.98                                      |
| Demand 1 | C:\GIP\PROJ0024\spectra.des | UNIT CY BLDG SITEROCK ELEV 21.5 LOC na DIR HORI ID SSE |
| Demand 2 | C:\GIP\PROJ0024\spectra.des | UNIT CY BLDG SITEROCK ELEV 21.5 LOC na DIR HORI ID SSE |

Does relay capacity exceed demand?

SRT

**GERs BASIS : LEVEL 2: GERS/TRS V. SSE \* AMP FACTOR (NOTE 1)**

Elevation Above Grade

Elevation of cabinet below about 40' from grade  
 Cabinet Frequency

Yes

Cabinet fundamental frequency greater than 8 Hz

Yes

**IS RELAY SEISMICALLY ADEQUATE?**

Yes


### COMMENTS

NOTE 1: For GERS Basis Level 2 screening, the 2.25 factor was taken out since the cabinet is located in the Diesel Building which is a one story structure founded on compacted back-fill (Grade); therefore the ground SSE is considered to be a conservative design spectra (The excessively conservative floor spectra was not used). In addition, the relay is mounted on the back panel with stiffener tacked on the backside and its location will not experience high amplification such as on the door panel.

EGP-2A is braced at top and is shown to have a fundamental frequency of greater than 8 Hz.

|                                   |                        |                               |
|-----------------------------------|------------------------|-------------------------------|
| RELAY FUNCTIONALITY REVIEW REPORT |                        | GIP Rev 2, Corrected, 2/14/92 |
|                                   |                        | Status: Yes<br>Sheet 3 of 3   |
| ID : NFLDA (A)-<br>EG-2A (Rev. 0) | Make : AGASTAT EGPD002 | Drawing : 31099 SH 3          |
| System : ELEC                     |                        | Subsystem/Component :         |
| Description : EGPD002             |                        |                               |
| Location : A DIESEL               |                        |                               |

The non-enveloping region (up to 5 Hz) on the Capacity vs. Demand plot is not a concern because at frequency this low the relay will not experience high spectral acceleration causing relay chatter. (At 5 Hz the amplification factor is much lower than 7)

Evaluated by:  Date: 12/16/93  
C. M. Alvarado 12-16-93

Connecticut Yankee A-48  
Essential Relays  
Relay functional Review List

CAB\_ID EGP-2B

BUILDING DG  
ELEVATION 21.50  
LOCATION B DIESEL

| CONTACT ID        | MAKE    | MODEL                | CONT_COND | ENERGIZE | REMARK  |
|-------------------|---------|----------------------|-----------|----------|---------|
| ECR-EG-2B         | AGASTAT | 2400 2412PGE         |           |          | OK      |
| NFLDA (B)-EG-2B   | AGASTAT | EGPD00 EGPD002       | NO        | NO       | OK      |
| 52V (B)-BKR 9-1   | GM-EMD  | 8253244 SQD EQ1933G2 |           |          | NO GERS |
| 52V (B)-EG-2B     | GM-EMD  | 8253244 SQD EQ1933G2 |           |          | NO GERS |
| STLO1 (B)-BKR 9-1 | GM-EMD  | 8253244 SQD EQ1933G2 |           |          | NO GERS |
| STLO1 (B)-EG-2B   | GM-EMD  | 8253244 SQD EQ1933G2 |           |          | NO GERS |
| STLO2 (B)-EG-2B   | GM-EMD  | 8253244 SQD EQ1933G2 |           |          | NO GERS |
| 40T-BKR 9-1       | GM-EMD  | 8253246 SQD 1933G2   |           |          | NO GERS |
| PFD1-EG-2B        | GM-EMD  | 8253246 SQD 1933G2   |           |          | NO GERS |
| PFD2-EG-2B        | GM-EMD  | 8253246 SQD 1933G2   |           |          | NO GERS |
| SFD1 (B)-EG-2B    | GM-EMD  | 8253246 SQD 1933G2   |           |          | NO GERS |
| SFD2 (B)-EG-2B    | GM-EMD  | 8253246 SQD 1933G2   |           |          | NO GERS |

Connecticut Yankee A-46  
Essential Relays  
Relay functional Review List

CAB\_ID **EGP-2B**

BUILDING DG  
ELEVATION 21.50  
LOCATION B DIESEL

| CONTACT ID       | MAKE   | MODEL                  | CONT_COND | ENERGIZE | REMARK  |
|------------------|--------|------------------------|-----------|----------|---------|
| MSR1 (B)-EG-2B   | GM-EMD | 8263337 SQD 7001 PO453 |           |          | NO GERS |
| MSR2 (B)-EG-2B   | GM-EMD | 8263337 SQD 7001 PO453 |           |          | NO GERS |
| VSR1 (B)-BKR 9-1 | GM-EMD | 8263337 SQD 7001 PO453 |           |          | NO GERS |
| VSR2 (B)-BKR 9-1 | GM-EMD | 8263337 SQD 7001 PO453 |           |          | NO GERS |
| ZSR1 (B)-EG-2B   | GM-EMD | 8263337 SQD 7001 PO453 |           |          | NO GERS |
| ZSR2 (B)-EG-2B   | GM-EMD | 8263337 SQD 7001 PO453 |           |          | NO GERS |
| ESR1 (B)-BKR 9-1 | GM-EMD | 8269705 SQD 7001 PO453 |           |          | NO GERS |
| ESR1 (B)-EG-2B   | GM-EMD | 8269705 SQD 7001 PO453 |           |          | NO GERS |
| ESR2 (B)-BKR 9-1 | GM-EMD | 8269705 SQD 7001 PO453 |           |          | NO GERS |
| ESR2 (B)-EG-2B   | GM-EMD | 8269705 SQD 7001 PO453 |           |          | NO GERS |
| ESTR (B)-BKR 9-1 | GM-EMD | 8269705 SQD 7001 PO453 |           |          | NO GERS |
| ESTR (B)-EG-2B   | GM-EMD | 8269705 SQD 7001 PO453 |           |          | NO GERS |

Connecticut Yankee A-46  
 Essential Relays  
 Relay functional Review List

CAB\_ID EGP-2B

BUILDING DG  
 ELEVATION 21.50  
 LOCATION B DIESEL

| CONTACT ID       | MAKE   | MODEL                      | CONT_COND | ENERGIZE | REMARK  |
|------------------|--------|----------------------------|-----------|----------|---------|
| FSR1 (B)-BKR 9-1 | GM-EMD | 8269705 SQD 7001 PO453     |           |          | NO GERS |
| FSR1 (B)-EG-2B   | GM-EMD | 8269705 SQD 7001 PO453     |           |          | NO GERS |
| FSR2 (B)-BKR 9-1 | GM-EMD | 8269705 SQD 7001 PO453     |           |          | NO GERS |
| FSR2 (B)-EG-2B   | GM-EMD | 8269705 SQD 7001 PO453     |           |          | NO GERS |
| OTR (B)-BKR 9-1  | GM-EMD | 8269705 SQD 7001 PO453     |           |          | NO GERS |
| OTR (B)-EG-2B    | GM-EMD | 8269705 SQD 7001 PO453     |           |          | NO GERS |
| STR1 (B)-EG-2B   | GM-EMD | 8299025 SQD 7001 PO453     |           |          | NO GERS |
| STR2 (B)-EG-2B   | GM-EMD | 8299025 SQD 7001 PO453     |           |          | NO GERS |
| FPR-EG-2B        | GM-EMD | 8299025 VAPOR CORP         |           |          | NO GERS |
| ECRA-EG-2B       | GM-EMD | 8317487 SQD 8501 FSD022-55 |           |          | NO GERS |
| ESTD (B)-EG-2B   | GM-EMD | 8365352 AGASTAT 2422 PGE   | NO        | NO       | OK      |
| GS-EG-2B         | GM-EMD | 8370794 VAPOR CORP         |           |          | NO GERS |



Connecticut Yankee A-46  
 Essential Relays  
 Relay functional Review List

CAB\_ID EGP-2B

BUILDING DG  
 ELEVATION 21.50  
 LOCATION B DIESEL

| CONTACT ID       | MAKE                        | MODEL                       | CONT_COND | ENERGIZE | REMARK    |
|------------------|-----------------------------|-----------------------------|-----------|----------|-----------|
| SSP1 (B)-BKR 9-1 | GM-EMD                      | 8409614 BARBER COLEMAN 6884 |           |          | NO GERS   |
| SSP1 (B)-EG-2B   | GM-EMD                      | 8409614 BARBER COLEMAN 6884 |           |          | NO GERS   |
| SSP2 (B)-BKR 9-1 | GM-EMD                      | 8409614 BARBER COLEMAN 6884 |           |          | NO GERS   |
| SSP2 (B)-EG-2B   | GM-EMD                      | 8409614 BARBER COLEMAN 6884 |           |          | NO GERS   |
| 40V-BKR 9-1      | GM-EMD                      | 8411911 West AV 160087GH    |           |          | NO GERS   |
| FFCO (B)-BKR 9-1 | GM-EMD                      | 8412411 West SV 292B402A0   | NC        | NO       | BAD ACTOR |
| FFCO (B)-EG-2B   | GM-EMD                      | 8412411 West SV 292B402A0   | NC        | NO       | BAD ACTOR |
| PFDA1 (B)-EG-2B  | GM-EMD                      | 8418210 SQD 1933G2          |           |          | NO GERS   |
| PFDA2 (B)-EG-2B  | GM-EMD                      | 8418210 SQD 1933G2          |           |          | NO GERS   |
| FFC (B)-BKR 9-1  | SQD Class 8504<br>Type EC19 | Field Flashing              | NO        | YES      | NO GERS   |
| FFC (B)-EG-2B    | SQD Class 8504<br>Type EC19 | Field Flashing              | NO        | YES      | NO GERS   |
| 41-BKR 9-1       | WEST Series C<br>FD2B14K    | NP28095E                    |           |          | NO GERS   |

Connecticut Yankee A-46  
Essential Relays  
Relay functional Review  
List

CAB\_ID LOCAL

BUILDING SB  
ELEVATION 21.50  
LOCATION LOCAL

| CONTACT ID      | MAKE | MODEL   | CONT_COND | ENERGIZE | REMARK  |
|-----------------|------|---------|-----------|----------|---------|
| 42/O-PR-MOV-596 | W    | Unknown |           |          | BKR CAP |
| 42/O-PR-MOV-597 | W    | Unknown |           |          | BKR CAP |

Connecticut Yankee A-48  
Essential Relays  
Relay functional Review  
List

CAB\_ID MCC5-5

BUILDING SB  
ELEVATION 41.50  
LOCATION A SWGR

| CONTACT ID      | MAKE | MODEL     | CONT_COND | ENERGIZE | REMARK  |
|-----------------|------|-----------|-----------|----------|---------|
| 42-P-149-1B     |      |           |           |          | BKR CAP |
| 42/C-SI-MOV-24  |      |           |           |          | BKR CAP |
| 42/O-DH-MOV-310 |      |           |           |          | BKR CAP |
| 42/O-DH-MOV-507 |      |           |           |          | BKR CAP |
| 42/O-DH-MOV-521 |      |           |           |          | BKR CAP |
| 42/O-DH-MOV-534 |      |           |           |          | BKR CAP |
| 42/O-DH-MOV-544 |      |           |           |          | BKR CAP |
| 42/O-DH-MOV-562 |      |           |           |          | BKR CAP |
| 42-P-149-1A     | W    | A200M1CAC |           |          | BKR CAP |
| 42/C-BA-MOV-32  | W    | A211K1JA  |           |          | BKR CAP |
| 42/C-BA-MOV-386 | W    | A211K1JA  |           |          | BKR CAP |
| 42/C-CH-MOV-298 | W    | A211K1JA  |           |          | BKR CAP |

Connecticut Yankee A-46  
Essential Relays  
Relay functional Review  
List

CAB\_ID MCC5-5

BUILDING SB  
ELEVATION 41.50  
LOCATION A SWGR

| CONTACT ID      | MAKE | MODEL    | CONT_COND | ENERGIZE | REMARK  |
|-----------------|------|----------|-----------|----------|---------|
| 42/C-RC-MOV-501 | W    | A211K1JA |           |          | BKR CAP |
| 42/C-RC-MOV-512 | W    | A211K1JA |           |          | BKR CAP |
| 42/C-RC-MOV-513 | W    | A211K1JA |           |          | BKR CAP |
| 42/C-RC-MOV-524 | W    | A211K1JA |           |          | BKR CAP |
| 42/C-RC-MOV-537 | W    | A211K1JA |           |          | BKR CAP |
| 42/C-RC-MOV-538 | W    | A211K1JA |           |          | BKR CAP |
| 42/C-RC-MOV-546 | W    | A211K1JA |           |          | BKR CAP |
| 42/C-SW-MOV-3   | W    | A211K1JA |           |          | BKR CAP |
| 42/C-SW-MOV-4   | W    | A211K1JA |           |          | BKR CAP |
| 42/C-SW-MOV-5   | W    | A211K1JA |           |          | BKR CAP |
| 42/C-SW-MOV-6   | W    | A211K1JA |           |          | BKR CAP |
| 42/O-BA-MOV-349 | W    | A211K1JA |           |          | BKR CAP |

Connecticut Yankee A-46  
Essential Relays  
Relay functional Review  
List

CAB\_ID **MCC5-5**

BUILDING SB  
ELEVATION 41.50  
LOCATION A SWGR

| CONTACT ID       | MAKE | MODEL     | CONT_COND | ENERGIZE | REMARK  |
|------------------|------|-----------|-----------|----------|---------|
| 42/O-BA-MOV-386  | W    | A211K1JA  |           |          | BKR CAP |
| 42/O-CH-MOV-292B | W    | A211K1JA  |           |          | BKR CAP |
| 42/O-CH-MOV-292C | W    | A211K1JA  |           |          | BKR CAP |
| 42/O-CH-MOV-298  | W    | A211K1JA  |           |          | BKR CAP |
| 42/O-FH-MOV-344  | W    | A211K1JA  |           |          | BKR CAP |
| 42/O-FH-MOV-508  | W    | A211K1JA  |           |          | BKR CAP |
| 42/O-LD-MOV-200  | W    | A211K1JA  |           |          | BKR CAP |
| 42/O-PR-MOV-567  | W    | A211K1JA  |           |          | BKR CAP |
| 42/O-PR-MOV-569  | W    | A211K1JA  |           |          | BKR CAP |
| 42/O-SW-MOV-5    | W    | A211K1JA  |           |          | BKR CAP |
| 42/O-SW-MOV-6    | W    | A211K1JA  |           |          | BKR CAP |
| 42/C-FW-MOV-11   | W    | A250M1CAC |           |          | BKR CAP |

Connecticut Yankee A-46  
Essential Relays  
Relay functional Review  
List

CAB\_ID MCC5-5

BUILDING SB  
ELEVATION 41.50  
LOCATION A SWGR

| CONTACT ID      | MAKE | MODEL     | CONT_COND | ENERGIZE | REMARK  |
|-----------------|------|-----------|-----------|----------|---------|
| 42/C-FW-MOV-12  | W    | A250M1CAC |           |          | BKR CAP |
| 42/C-FW-MOV-13  | W    | A250M1CAC |           |          | BKR CAP |
| 42/C-FW-MOV-14  | W    | A250M1CAC |           |          | BKR CAP |
| 42/O-FW-MOV-11  | W    | A250M1CAC |           |          | BKR CAP |
| 42/O-FW-MOV-12  | W    | A250M1CAC |           |          | BKR CAP |
| 42/O-FW-MOV-13  | W    | A250M1CAC |           |          | BKR CAP |
| 42/O-FW-MOV-14  | W    | A250M1CAC |           |          | BKR CAP |
| 42/C-CH-MOV-257 | W    | A251K1CA  |           |          | BKR CAP |
| 42/C-RC-MOV-526 | W    | A251K1CA  |           |          | BKR CAP |
| 42/O-CH-MOV-257 | W    | A251K1CA  |           |          | BKR CAP |
| 49-CH-MOV-257   | W    | AA13A     |           |          | BKR CAP |
| 49-BA-MOV-32    | W    | AA13A J   |           |          | BKR CAP |

Connecticut Yankee A-46  
Essential Relays  
Relay functional Review  
List

CAB\_ID MCC5-5

BUILDING SB  
ELEVATION 41.50  
LOCATION A SWGR

| CONTACT ID    | MAKE | MODEL   | CONT_COND | ENERGIZE | REMARK  |
|---------------|------|---------|-----------|----------|---------|
| 49-BA-MOV-386 | W    | AA13A J |           |          | BKR CAP |
| 49-CH-MOV-298 | W    | AA13A J |           |          | BKR CAP |
| 49-FW-MOV-11  | W    | AA13A J |           |          | BKR CAP |
| 49-FW-MOV-12  | W    | AA13A J |           |          | BKR CAP |
| 49-FW-MOV-13  | W    | AA13A J |           |          | BKR CAP |
| 49-FW-MOV-14  | W    | AA13A J |           |          | BKR CAP |
| 49-LD-MOV-200 | W    | AA13A J |           |          | BKR CAP |
| 49-SW-MOV-5   | W    | AA13A J |           |          | BKR CAP |
| 49-SW-MOV-6   | W    | AA13A J |           |          | BKR CAP |
| 49-P-149-1A   | W    | AN13A   |           |          | BKR CAP |
| 49-P-149-1B   | W    | AN13A   |           |          | BKR CAP |

Connecticut Yankee A-48  
Essential Relays  
Relay functional Review  
List

CAB\_ID MCC7-6

BUILDING CV  
ELEVATION 21.50  
LOCATION CABL VAUT

| CONTACT ID      | MAKE | MODEL | CONT_COND | ENERGIZE | REMARK  |
|-----------------|------|-------|-----------|----------|---------|
| 42/C-FW-MOV-160 |      |       |           |          | BKR CAP |
| 42/C-FW-MOV-35  |      |       |           |          | BKR CAP |
| 42/O-FW-MOV-35  |      |       |           |          | BKR CAP |
| 49-FW-MOV-35    |      |       |           |          | BKR CAP |



Connecticut Yankee A-46  
Essential Relays  
Relay functional Review  
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CAB\_ID MCC8-6

BUILDING AB  
ELEVATION 21.50  
LOCATION PAB 1FLMD

| CONTACT ID | MAKE | MODEL | CONT_COND | ENERGIZE | REMARK  |
|------------|------|-------|-----------|----------|---------|
| 42-P-29-1A |      |       |           |          | BKR CAP |
| 42-P-29-1B |      |       |           |          | BKR CAP |
| 49-P-29-1A | W    | AN33A |           |          | BKR CAP |
| 49-P-29-1B | W    | AN33A |           |          | BKR CAP |

Connecticut Yankee A-46  
Essential Relays  
Relay functional Review  
List

CAB\_ID MCC9-4

BUILDING WD  
ELEVATION 21.50  
LOCATION HALL

| CONTACT ID  | MAKE | MODEL | CONT_COND | ENERGIZE | REMARK  |
|-------------|------|-------|-----------|----------|---------|
| 42-P-118-1A |      |       |           |          | BKR CAP |
| 49-P-118-1A | W    | AN43A |           |          | BKR CAP |

Connecticut Yankee A-46  
Essential Relays  
Relay functional Review  
List

CAB\_ID MCC10-5

BUILDING WD  
ELEVATION 21.50  
LOCATION HALL

| CONTACT ID  | MAKE | MODEL | CONT_COND | ENERGIZE | REMARK  |
|-------------|------|-------|-----------|----------|---------|
| 42-P-118-1B |      |       |           |          | BKR CAP |
| 49-P-118-1B | W    | AN43A |           |          | BKR CAP |

Connecticut Yankee A-46  
Essential Relays  
Relay functional Review  
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CAB\_ID MCC12-11

BUILDING SB  
ELEVATION 41.50  
LOCATION B SWGR

| CGNTACT ID       | MAKE       | MODEL    | CONT_COND | ENERGIZE | REMARK  |
|------------------|------------|----------|-----------|----------|---------|
| 42/O-SW-MOV-837A |            |          |           |          | BKR CAP |
| 49-CH-MOV-257B   | CT-HM C300 | C300CN3  |           |          | BKR CAP |
| 42/C-BA-MOV-373  | W          | A211K1JA |           |          | BKR CAP |
| 42/O-BA-MOV-373  | W          | A211K1JA |           |          | BKR CAP |
| 42/C-CH-MOV-257B | W          | A251K1CA |           |          | BKR CAP |
| 42/O-CH-MOV-257B | W          | A251K1CA |           |          | BKR CAP |
| 49-BA-MOV-373    | W          | AA13A J  |           |          | BKR CAP |

Connecticut Yankee A-46  
Essential Relays  
Relay functional Review  
List

CAB\_ID MCC13-4

BUILDING SB  
ELEVATION 41.50  
LOCATION A SWGR

| CONTACT ID       | MAKE | MODEL | CONT_COND | ENERGIZE | REMARK  |
|------------------|------|-------|-----------|----------|---------|
| 42/O-SW-MOV-837B |      |       |           |          | BKR CAP |

**ATTACHMENT G**

**CONNECTICUT YANKEE - LIST AND DESCRIPTION  
OF UNRESOLVED RELAY OUTLIERS**

(14 Pages)

**Relay Evaluation Report for Connecticut Yankee  
Attachment G - List and Description of Unresolved Relay Outliers**

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| Title   | Total No. of pages |
|---|--------------------|
| CY Outlier Relays Summary List                              | 4                  |
| Outlier Seismic Verification Sheet (OSVS) - Bad Actors      | 2                  |
| Outlier Seismic Verification Sheet (OSVS) - Relays w/o GERS | 5                  |
| Outlier Seismic Verification Sheet (OSVS) - Unknown Make    | 2                  |
| TOTAL > >   | 13                 |

CY A-48 OUTLIER RELAY CONTACTS

OUT\_RLY.XLS

12/15/93

| #0 | CONTACT_ID               | MAKE           | DRAWING      | DESC              | CAB_ID   | BLDG | ELEV  | LOCATION    | DUP_RLY | REASON FOR OUTLIER | REQUIRED |
|----|--------------------------|----------------|--------------|-------------------|----------|------|-------|-------------|---------|--------------------|----------|
|    | <b>BAD ACTORS</b>        |                |              |                   |          |      |       |             |         |                    |          |
| 1  | 5051-P-1B-1B             | W COM-4        | 32112 SH 8B  | 289B456A1B        | BUS 8    | DG   | 21 50 | A DIESEL    |         | Bad Actor          | A-48     |
| 2  | 5081-P-1B-1A             | W COM-5        | 32112 SH 8A  | 289B456A1B        | BUS 9    | DG   | 21 50 | B DIESEL    |         | Bad Actor          | A-48     |
| 3  | 59A/1-B-BKR 8-1          | W SV           | 32001 SH 5M  |                   | CB/8DB1  | SB   | 59 50 | CONTROL AUX |         | Bad Actor          | A-48     |
| 4  | 59B/1-B-BKR 8-1          | W SV           | 32001 SH 5M  |                   | CB/8DB1  | SB   | 59 50 | CONTROL AUX |         | Bad Actor          | A-48     |
| 5  | 59A/1-B-BKR 9-1          | W SV           | 32001 SH 5N  |                   | CB/8DB1  | SB   | 59 50 | CONTROL AUX |         | Bad Actor          | A-48     |
| 6  | 59B/1-B-BKR 9-1          | W SV           | 32001 SH 5N  |                   | CB/8DB1  | SB   | 59 50 | CONTROL AUX |         | Bad Actor          | A-48     |
| 7  | FFCO (A)-BKR 8-1         | GM-EMD 8412411 | 31099 SH 3   | West SV 292B402A0 | EGP-2A   | DG   | 21 50 | A DIESEL    | Y       | Bad Actor          | A-48     |
| 8  | FFCO (A)-EG-2A           | GM-EMD 8412411 | 31099 SH 3   | West SV 292B402A0 | EGP-2A   | DG   | 21 50 | A DIESEL    | Y       | Bad Actor          | A-48     |
| 9  | FFCO (B)-BKR 9-1         | GM-EMD 8412411 | 31099 SH 3   | West SV 292B402A0 | EGP-2B   | DG   | 21 50 | B DIESEL    | Y       | Bad Actor          | A-48     |
| 10 | FFCO (B)-EG-2B           | GM-EMD 8412411 | 31099 SH 3   | West SV 292B402A0 | EGP-2B   | DG   | 21 50 | B DIESEL    | Y       | Bad Actor          | A-48     |
|    | <b>No GERS AVAILABLE</b> |                |              |                   |          |      |       |             |         |                    |          |
| 1  | 32/CRN-1-BKR 8-1         | W CRN-1        | 32001 SH 5MA | 290B038A09        | BUS 8    | DG   | 21 50 | A DIESEL    |         | No GERS            | A-48     |
| 2  | 32/CRN-1-BKR 9-1         | W CRN-1        | 32001 SH 5MA | 290B038A09        | BUS 9    | DG   | 21 50 | A DIESEL    |         | No GERS            | A-48     |
| 3  | 59/8-RELAY 27Y/1-8       | GE - NGV       | 32001 SH 5F  | 12NGV15A21        | CB/8DB1  | SB   | 59 50 | CONTROL AUX | Y       | No GERS            | A-48     |
| 4  | 59/8-RELAY 27Y2/1-8      | GE - NGV       | 32001 SH 5F  | 12NGV15A21        | CB/8DB1  | SB   | 59 50 | CONTROL AUX | Y       | No GERS            | A-48     |
| 5  | 27K/1-8-RELAY 27Y/1-8    | DEVAR          | 32001 SH 5FB | 18-114            | CB/8DB1A | SB   | 59 50 | CONTROL AUX | Y       | No GERS            | A-48     |
| 6  | 27K/1-8-RELAY 27Y2/1-8   | DEVAR          | 32001 SH 5FB | 18-114            | CB/8DB1A | SB   | 59 50 | CONTROL AUX | Y       | No GERS            | A-48     |
| 7  | 27L/1-8-RELAY 27Y/1-8    | DEVAR          | 32001 SH 5FB | 18-114            | CB/8DB1A | SB   | 59 50 | CONTROL AUX | Y       | No GERS            | A-48     |
| 8  | 27L/1-8-RELAY 27Y2/1-8   | DEVAR          | 32001 SH 5FB | 18-114            | CB/8DB1A | SB   | 59 50 | CONTROL AUX | Y       | No GERS            | A-48     |
| 9  | 27M/1-8-RELAY 27Y/1-8    | DEVAR          | 32001 SH 5FB | 18-114            | CB/8DB1A | SB   | 59 50 | CONTROL AUX | Y       | No GERS            | A-48     |
| 10 | 27M/1-8-RELAY 27Y2/1-8   | DEVAR          | 32001 SH 5FB | 18-114            | CB/8DB1A | SB   | 59 50 | CONTROL AUX | Y       | No GERS            | A-48     |
| 11 | 27R/1-8-RELAY 27Y/1-8    | DEVAR          | 32001 SH 5FB | 18-114            | CB/8DB1A | SB   | 59 50 | CONTROL AUX | Y       | No GERS            | A-48     |
| 12 | 27R/1-8-RELAY 27Y2/1-8   | DEVAR          | 32001 SH 5FB | 18-114            | CB/8DB1A | SB   | 59 50 | CONTROL AUX | Y       | No GERS            | A-48     |
| 13 | 27S/1-8-RELAY 27Y/1-8    | DEVAR          | 32001 SH 5FB | 18-114            | CB/8DB1A | SB   | 59 50 | CONTROL AUX | Y       | No GERS            | A-48     |
| 14 | 27S/1-8-RELAY 27Y2/1-8   | DEVAR          | 32001 SH 5FB | 18-114            | CB/8DB1A | SB   | 59 50 | CONTROL AUX | Y       | No GERS            | A-48     |
| 15 | 27T/1-8-RELAY 27Y/1-8    | DEVAR          | 32001 SH 5FB | 18-114            | CB/8DB1A | SB   | 59 50 | CONTROL AUX | Y       | No GERS            | A-48     |
| 16 | 27T/1-8-RELAY 27Y2/1-8   | DEVAR          | 32001 SH 5FB | 18-114            | CB/8DB1A | SB   | 59 50 | CONTROL AUX | Y       | No GERS            | A-48     |
| 17 | 59-9-RELAY 27Y/1-8       | GE - NGV       | 32001 SH 5G  | 12NGV15A21        | CB/8DB1  | SB   | 59 50 | CONTROL AUX | Y       | No GERS            | A-48     |
| 18 | 59-9-RELAY 27Y2/1-8      | GE - NGV       | 32001 SH 5G  | 12NGV15A21        | CB/8DB1  | SB   | 59 50 | CONTROL AUX | Y       | No GERS            | A-48     |
| 19 | 27K/1-9-RELAY 27Y/1-9    | DEVAR          | 32001 SH 5GB | 18-114            | CB/8DB1A | SB   | 59 50 | CONTROL AUX | Y       | No GERS            | A-48     |
| 20 | 27K/1-9-RELAY 27Y2/1-9   | DEVAR          | 32001 SH 5GB | 18-114            | CB/8DB1A | SB   | 59 50 | CONTROL AUX | Y       | No GERS            | A-48     |
| 21 | 27L/1-9-RELAY 27Y/1-9    | DEVAR          | 32001 SH 5GB | 18-114            | CB/8DB1A | SB   | 59 50 | CONTROL AUX | Y       | No GERS            | A-48     |
| 22 | 27L/1-9-RELAY 27Y2/1-9   | DEVAR          | 32001 SH 5GB | 18-114            | CB/8DB1A | SB   | 59 50 | CONTROL AUX | Y       | No GERS            | A-48     |
| 23 | 27M/1-9-RELAY 27Y/1-9    | DEVAR          | 32001 SH 5GB | 18-114            | CB/8DB1A | SB   | 59 50 | CONTROL AUX | Y       | No GERS            | A-48     |
| 24 | 27M/1-9-RELAY 27Y2/1-9   | DEVAR          | 32001 SH 5GB | 18-114            | CB/8DB1A | SB   | 59 50 | CONTROL AUX | Y       | No GERS            | A-48     |
| 25 | 27R/1-9-RELAY 27Y/1-9    | DEVAR          | 32001 SH 5GB | 18-114            | CB/8DB1A | SB   | 59 50 | CONTROL AUX | Y       | No GERS            | A-48     |
| 26 | 27R/1-9-RELAY 27Y2/1-9   | DEVAR          | 32001 SH 5GB | 18-114            | CB/8DB1A | SB   | 59 50 | CONTROL AUX | Y       | No GERS            | A-48     |
| 27 | 27S/1-9-RELAY 27Y/1-9    | DEVAR          | 32001 SH 5GB | 18-114            | CB/8DB1A | SB   | 59 50 | CONTROL AUX | Y       | No GERS            | A-48     |



| NO. | CONTACT_ID           | MAKE              | DRAWING                     | DESC                | CAB_ID  | BLDG | ELEV  | LOCATION    | DUP_RLY | REASON FOR OUTLIER | REQUIRED |
|-----|----------------------|-------------------|-----------------------------|---------------------|---------|------|-------|-------------|---------|--------------------|----------|
| 28  | 27Y1-B-RELAY 27Y21-B | DEVAR             | 32001 SH 5GB                | 18-114              | CB9DB1A | SB   | 59.50 | CONTROL AUX | Y       | No GERS            | A-46     |
| 29  | 27Y1-B-RELAY 27Y1-B  | DEVAR             | 32001 SH 5GB                | 18-114              | CB9DB1A | SB   | 59.50 | CONTROL AUX | Y       | No GERS            | A-46     |
| 30  | 27Y1-B-RELAY 27Y21-B | DEVAR             | 32001 SH 5GB                | 18-114              | CB9DB1A | SB   | 59.50 | CONTROL AUX | Y       | No GERS            | A-46     |
| 31  | MC-1-EG-2A           | SOD 8411520 AOW23 | 31099 SH 3                  | PRESSURE SWITCH     | EGP-2A  | DG   | 21.50 | A DIESEL    | Y       | No GERS            | A-46     |
| 32  | MB3-EG-2A            | SOD 8411520 AOW23 | 31099 SH 3                  | PRESSURE SWITCH     | EGP-2A  | DG   | 21.50 | A DIESEL    | Y       | No GERS            | A-46     |
| 33  | STL02 (B)-BKR 8-1    | GM-EMD 8253244    | 31099 SH 3                  | SOD EQ1833G2        | EGP-2B  | DG   | 21.50 | B DIESEL    | Y       | No GERS            | A-46     |
| 34  | MB 1-EG-2B           | SOD 8411520 AOW23 | 31099 SH 3                  | PRESSURE SWITCH     | EGP-2B  | DG   | 21.50 | B DIESEL    | Y       | No GERS            | A-46     |
| 35  | MB 3-EG-2B           | SOD 8411520 AOW23 | 31099 SH 3                  | PRESSURE SWITCH     | EGP-2B  | DG   | 21.50 | B DIESEL    | Y       | No GERS            | A-46     |
| 36  | SRV (A)-BKR 8-1      | GM-EMD 8253244    | 31099 SH 3                  | SOD EQ1833G2        | EGP-2A  | DG   | 21.50 | A DIESEL    | Y       | No GERS            | A-46     |
| 37  | SRV (A)-EG-2A        | GM-EMD 8253244    | 31099 SH 3                  | SOD EQ1833G2        | EGP-2A  | DG   | 21.50 | A DIESEL    | Y       | No GERS            | A-46     |
| 38  | STL01 (A)-BKR 8-1    | GM-EMD 8253244    | 31099 SH 3                  | SOD EQ1833G2        | EGP-2A  | DG   | 21.50 | A DIESEL    | Y       | No GERS            | A-46     |
| 39  | STL01 (A)-EG-2A      | GM-EMD 8253244    | 31099 SH 3                  | SOD EQ1833G2        | EGP-2A  | DG   | 21.50 | A DIESEL    | Y       | No GERS            | A-46     |
| 40  | STL02 (A)-BKR 8-1    | GM-EMD 8253244    | 31099 SH 3                  | SOD EQ1833G2        | EGP-2A  | DG   | 21.50 | A DIESEL    | Y       | No GERS            | A-46     |
| 41  | STL02 (A)-EG-2A      | GM-EMD 8253244    | 31099 SH 3                  | SOD EQ1833G2        | EGP-2A  | DG   | 21.50 | A DIESEL    | Y       | No GERS            | A-46     |
| 42  | MSR1 (A)-EG-2A       | GM-EMD 8283337    | 31099 SH 3                  | SOD 7001 P0453      | EGP-2A  | DG   | 21.50 | A DIESEL    | Y       | No GERS            | A-46     |
| 43  | MSR2 (A)-EG-2A       | GM-EMD 8283337    | 31099 SH 3                  | SOD 7001 P0453      | EGP-2A  | DG   | 21.50 | A DIESEL    | Y       | No GERS            | A-46     |
| 44  | MSR1 (A)-BKR 8-1     | GM-EMD 8283337    | 32001 SH 5MA, 31099 SH 2    | SOD 7001 P0453      | EGP-2A  | DG   | 21.50 | A DIESEL    | Y       | No GERS            | A-46     |
| 45  | MSR2 (A)-BKR 8-1     | GM-EMD 8283337    | 32001 SH 5MA, 31099 SH 2    | SOD 7001 P0453      | EGP-2A  | DG   | 21.50 | A DIESEL    | Y       | No GERS            | A-46     |
| 46  | ZSR1 (A)-EG-2A       | GM-EMD 8283337    | 31099 SH 3                  | SOD 7001 P0453      | EGP-2A  | DG   | 21.50 | A DIESEL    | Y       | No GERS            | A-46     |
| 47  | ZSR2 (A)-EG-2A       | GM-EMD 8283337    | 31099 SH 3                  | SOD 7001 P0453      | EGP-2A  | DG   | 21.50 | A DIESEL    | Y       | No GERS            | A-46     |
| 48  | ESR1 (A)-BKR 8-1     | GM-EMD 8288705    | 31099 SH 3                  | SOD 7001 P0453      | EGP-2A  | DG   | 21.50 | A DIESEL    | Y       | No GERS            | A-46     |
| 49  | ESR1 (A)-EG-2A       | GM-EMD 8288705    | 31099 SH 3                  | SOD 7001 P0453      | EGP-2A  | DG   | 21.50 | A DIESEL    | Y       | No GERS            | A-46     |
| 50  | ESR2 (A)-BKR 8-1     | GM-EMD 8288705    | 31099 SH 3                  | SOD 7001 P0453      | EGP-2A  | DG   | 21.50 | A DIESEL    | Y       | No GERS            | A-46     |
| 51  | ESR2 (A)-EG-2A       | GM-EMD 8288705    | 31099 SH 3                  | SOD 7001 P0453      | EGP-2A  | DG   | 21.50 | A DIESEL    | Y       | No GERS            | A-46     |
| 52  | ESTR (A)-BKR 8-1     | GM-EMD 8288705    | 32001 SH 5MA, 31099 SH 3    | SOD 7001 P0453      | EGP-2A  | DG   | 21.50 | A DIESEL    | Y       | No GERS            | A-46     |
| 53  | ESTR (A)-EG-2A       | GM-EMD 8288705    | 31099 SH 3                  | SOD 7001 P0453      | EGP-2A  | DG   | 21.50 | A DIESEL    | Y       | No GERS            | A-46     |
| 54  | FSR1 (A)-BKR 8-1     | GM-EMD 8288705    | 32001 SH 5MA, 31099 SH 2, 3 | SOD 7001 P0453      | EGP-2A  | DG   | 21.50 | A DIESEL    | Y       | No GERS            | A-46     |
| 55  | FSR1 (A)-EG-2A       | GM-EMD 8288705    | 31099 SH 3                  | SOD 7001 P0453      | EGP-2A  | DG   | 21.50 | A DIESEL    | Y       | No GERS            | A-46     |
| 56  | FSR2 (A)-BKR 8-1     | GM-EMD 8288705    | 32001 SH 5MA, 31099 SH 2, 3 | SOD 7001 P0453      | EGP-2A  | DG   | 21.50 | A DIESEL    | Y       | No GERS            | A-46     |
| 57  | FSR2 (A)-EG-2A       | GM-EMD 8288705    | 31099 SH 3                  | SOD 7001 P0453      | EGP-2A  | DG   | 21.50 | A DIESEL    | Y       | No GERS            | A-46     |
| 58  | OTR (A)-BKR 8-1      | GM-EMD 8288705    | 32001 SH 5MA, 31099 SH 2, 3 | SOD 7001 P0453      | EGP-2A  | DG   | 21.50 | A DIESEL    | Y       | No GERS            | A-46     |
| 59  | OTR (A)-EG-2A        | GM-EMD 8288705    | 31099 SH 3                  | SOD 7001 P0453      | EGP-2A  | DG   | 21.50 | A DIESEL    | Y       | No GERS            | A-46     |
| 60  | FPR-EG-2A            | GM-EMD 8299025    | 31099 SH 3                  | VAPOR CORP          | EGP-2A  | DG   | 21.50 | A DIESEL    | Y       | No GERS            | A-46     |
| 61  | STR1 (A)-EG-2A       | GM-EMD 8299025    | 31099 SH 3                  | SOD 7001 P0453      | EGP-2A  | DG   | 21.50 | A DIESEL    | Y       | No GERS            | A-46     |
| 62  | STR2 (A)-EG-2A       | GM-EMD 8299025    | 31099 SH 3                  | SOD 7001 P0453      | EGP-2A  | DG   | 21.50 | A DIESEL    | Y       | No GERS            | A-46     |
| 63  | ECRA-EG-2A           | GM-EMD 8317487    | 31099 SH 3                  | SOD 8461 FSD022-85  | EGP-2A  | DG   | 21.50 | A DIESEL    | Y       | No GERS            | A-46     |
| 64  | GS-EG-2A             | GM-EMD 8370794    | 31099 SH 3                  | VAPOR CORP          | EGP-2A  | DG   | 21.50 | A DIESEL    | Y       | No GERS            | A-46     |
| 65  | SSP1 (A)-BKR 8-1     | GM-EMD 8409814    | 31099 SH 3                  | BARBER COLEMAN 8884 | EGP-2A  | DG   | 21.50 | A DIESEL    | Y       | No GERS            | A-46     |
| 66  | SSP1 (A)-EG-2A       | GM-EMD 8409814    | 31099 SH 3                  | BARBER COLEMAN 8884 | EGP-2A  | DG   | 21.50 | A DIESEL    | Y       | No GERS            | A-46     |

| NO. | CONTACT_ID        | MAKE                           | DRAWING     | DESC                 | CAB_ID | BLDG | ELEV  | LOCATION | DUP_RLY | REASON FOR OUTLIER | REQUIRED |
|-----|-------------------|--------------------------------|-------------|----------------------|--------|------|-------|----------|---------|--------------------|----------|
| 67  | SSP2 (A)-BKR 8-1  | GM-EMD 8409814                 | 31099 SH 3  | BARBER COL EMAN 8884 | EGP-2A | DG   | 21 50 | A DIESEL | Y       | No GERS            | A-46     |
| 68  | SSP2 (A)-EG-2A    | GM-EMD 8409814                 | 31099 SH 3  | BARBER COL EMAN 8884 | EGP-2A | DG   | 21 50 | A DIESEL | Y       | No GERS            | A-46     |
| 69  | 40V-BKR 8-1       | GM-EMD 8411811                 | 31099 SH 2  | West AV 1600870H     | EGP-2A | DG   | 21 50 | A DIESEL | Y       | No GERS            | A-46     |
| 70  | PFD01 (A)-EG-2A   | GM-EMD 8418210                 | 31099 SH 3  | SOD 1933G2           | EGP-2A | DG   | 21 50 | A DIESEL | Y       | No GERS            | A-46     |
| 71  | PFD02 (A)-EG-2A   | GM-EMD 8418210                 | 31099 SH 3  | SOD 1933G2           | EGP-2A | DG   | 21 50 | A DIESEL | Y       | No GERS            | A-46     |
| 72  | 40V-BKR 8-1       | GM-EMD 8253248                 | 31099 SH 2  | SOD 1933G2           | EGP-2A | DG   | 21 50 | A DIESEL | Y       | No GERS            | A-46     |
| 73  | PFD1-EG-2A        | GM-EMD 8253248                 | 31099 SH 3  | SOD 1933G2           | EGP-2A | DG   | 21 50 | A DIESEL | Y       | No GERS            | A-46     |
| 74  | PFD2-EG-2A        | GM-EMD 8253248                 | 31099 SH 3  | SOD 1933G2           | EGP-2A | DG   | 21 50 | A DIESEL | Y       | No GERS            | A-46     |
| 75  | SFD1 (A)-EG-2A    | GM-EMD 8253248                 | 31099 SH 3  | SOD 1933G2           | EGP-2A | DG   | 21 50 | A DIESEL | Y       | No GERS            | A-46     |
| 76  | SFD2 (A)-EG-2A    | GM-EMD 8253248                 | 31099 SH 3  | SOD 1933G2           | EGP-2A | DG   | 21 50 | A DIESEL | Y       | No GERS            | A-46     |
| 77  | FFC (A)-BKR 8-1   | SOD Class 8504 Type EQ1948-G13 | 31099 SH 4  | Field Flushing       | EGP-2A | DG   | 21 50 | A DIESEL | Y       | No GERS            | A-46     |
| 78  | FFC (A)-EG-2A     | SOD Class 8504 Type EQ1948-G13 | 31099 SH 3  | Field Flushing       | EGP-2A | DG   | 21 50 | A DIESEL | Y       | No GERS            | A-46     |
| 79  | 41-BKR 8-1        | WEST Series C FDB814K          | 32001 SH 5M | NP28085E             | EGP-2A | DG   | 21 50 | A DIESEL | Y       | No GERS            | A-46     |
| 80  | 5ZV (B)-BKR 8-1   | GM-EMD 8253244                 | 31099 SH 3  | SOD EQ1933G2         | EGP-2B | DG   | 21 50 | B DIESEL | Y       | No GERS            | A-46     |
| 81  | 5ZV (B)-EG-2B     | GM-EMD 8253244                 | 31099 SH 3  | SOD EQ1933G2         | EGP-2B | DG   | 21 50 | B DIESEL | Y       | No GERS            | A-46     |
| 82  | STL01 (B)-BKR 8-1 | GM-EMD 8253244                 | 31099 SH 3  | SOD EQ1933G2         | EGP-2B | DG   | 21 50 | B DIESEL | Y       | No GERS            | A-46     |
| 83  | STL01 (B)-EG-2B   | GM-EMD 8253244                 | 31099 SH 3  | SOD EQ1933G2         | EGP-2B | DG   | 21 50 | B DIESEL | Y       | No GERS            | A-46     |
| 84  | STL02 (B)-EG-2B   | GM-EMD 8253244                 | 31099 SH 3  | SOD EQ1933G2         | EGP-2B | DG   | 21 50 | B DIESEL | Y       | No GERS            | A-46     |
| 85  | WSR1 (B)-EG-2B    | GM-EMD 8263337                 | 31099 SH 3  | SOD 7001 P0453       | EGP-2B | DG   | 21 50 | B DIESEL | Y       | No GERS            | A-46     |
| 86  | WSR2 (B)-EG-2B    | GM-EMD 8263337                 | 31099 SH 3  | SOD 7001 P0453       | EGP-2B | DG   | 21 50 | B DIESEL | Y       | No GERS            | A-46     |
| 87  | VSR1 (B)-BKR 8-1  | GM-EMD 8263337                 | 32001 SH 5N | SOD 7001 P0453       | EGP-2B | DG   | 21 50 | B DIESEL | Y       | No GERS            | A-46     |
| 88  | VSR2 (B)-BKR 8-1  | GM-EMD 8263337                 | 32001 SH 5N | SOD 7001 P0453       | EGP-2B | DG   | 21 50 | B DIESEL | Y       | No GERS            | A-46     |
| 89  | ZSR1 (B)-EG-2B    | GM-EMD 8263337                 | 31099 SH 3  | SOD 7001 P0453       | EGP-2B | DG   | 21 50 | B DIESEL | Y       | No GERS            | A-46     |
| 90  | ZSR2 (B)-EG-2B    | GM-EMD 8263337                 | 31099 SH 3  | SOD 7001 P0453       | EGP-2B | DG   | 21 50 | B DIESEL | Y       | No GERS            | A-46     |
| 91  | ESR1 (B)-BKR 8-1  | GM-EMD 8268705                 | 31099 SH 3  | SOD 7001 P0453       | EGP-2B | DG   | 21 50 | B DIESEL | Y       | No GERS            | A-46     |
| 92  | ESR1 (B)-EG-2B    | GM-EMD 8268705                 | 31099 SH 3  | SOD 7001 P0453       | EGP-2B | DG   | 21 50 | B DIESEL | Y       | No GERS            | A-46     |
| 93  | ESR2 (B)-BKR 8-1  | GM-EMD 8268705                 | 31099 SH 3  | SOD 7001 P0453       | EGP-2B | DG   | 21 50 | B DIESEL | Y       | No GERS            | A-46     |
| 94  | ESR2 (B)-EG-2B    | GM-EMD 8268705                 | 31099 SH 3  | SOD 7001 P0453       | EGP-2B | DG   | 21 50 | B DIESEL | Y       | No GERS            | A-46     |
| 95  | ESTR (B)-BKR 8-1  | GM-EMD 8268705                 | 32001 SH 5N | SOD 7001 P0453       | EGP-2B | DG   | 21 50 | B DIESEL | Y       | No GERS            | A-46     |
| 96  | ESTR (B)-EG-2B    | GM-EMD 8268705                 | 31099 SH 3  | SOD 7001 P0453       | EGP-2B | DG   | 21 50 | B DIESEL | Y       | No GERS            | A-46     |
| 97  | FSR1 (B)-BKR 8-1  | GM-EMD 8268705                 | 32001 SH 5N | SOD 7001 P0453       | EGP-2B | DG   | 21 50 | B DIESEL | Y       | No GERS            | A-46     |
| 98  | FSR1 (B)-EG-2B    | GM-EMD 8268705                 | 31099 SH 3  | SOD 7001 P0453       | EGP-2B | DG   | 21 50 | B DIESEL | Y       | No GERS            | A-46     |
| 99  | FSR2 (B)-BKR 8-1  | GM-EMD 8268705                 | 32001 SH 5N | SOD 7001 P0453       | EGP-2B | DG   | 21 50 | B DIESEL | Y       | No GERS            | A-46     |
| 100 | FSR2 (B)-EG-2B    | GM-EMD 8268705                 | 31099 SH 3  | SOD 7001 P0453       | EGP-2B | DG   | 21 50 | B DIESEL | Y       | No GERS            | A-46     |
| 101 | OTR (B)-BKR 8-1   | GM-EMD 8268705                 | 32001 SH 5N | SOD 7001 P0453       | EGP-2B | DG   | 21 50 | B DIESEL | Y       | No GERS            | A-46     |
| 102 | OTR (B)-EG-2B     | GM-EMD 8268705                 | 31099 SH 3  | SOD 7001 P0453       | EGP-2B | DG   | 21 50 | B DIESEL | Y       | No GERS            | A-46     |
| 103 | FPR-EG-2B         | GM-EMD 8296628                 | 31099 SH 3  | VAPOR CORP           | EGP-2B | DG   | 21 50 | B DIESEL | Y       | No GERS            | A-46     |
| 104 | STR1 (B)-EG-2B    | GM-EMD 8296625                 | 31099 SH 3  | SOD 7001 P0453       | EGP-2B | DG   | 21 50 | B DIESEL | Y       | No GERS            | A-46     |
| 105 | STR2 (B)-EG-2B    | GM-EMD 8296625                 | 31099 SH 3  | SOD 7001 P0453       | EGP-2B | DG   | 21 50 | B DIESEL | Y       | No GERS            | A-46     |

CY A-46 OUTLIER RELAY CONTACTS

OUT\_RLY.XLS

12/15/93

| NO. | CONTACT_ID                      | MAKE                           | DRAWING                 | DESC                        | CAB_ID | BLDG | ELEV  | LOCATION | DUP_RLY | REASON FOR OUTLIER | REQUIRED |
|-----|---------------------------------|--------------------------------|-------------------------|-----------------------------|--------|------|-------|----------|---------|--------------------|----------|
| 106 | ECRA-EG-2B                      | GM-EMD 8317487                 | 31099 SH 3              | SQD 8591 FSD022-55          | EGP-2B | DG   | 21 50 | B DIESEL |         | No GERS            | A-45     |
| 107 | GS-EG-2B                        | GM-EMD 8370794                 | 31099 SH 3              | VAPOR CORP                  | EGP-2B | DG   | 21 50 | B DIESEL |         | No GERS            | A-45     |
| 108 | SSP1 (B)-BKR 8-1                | GM-EMD 8409614                 | 31099 SH 3              | BARBER COLEMAN 8884         | EGP-2B | DG   | 21 50 | B DIESEL | Y       | No GERS            | A-45     |
| 109 | SSP1 (B)-EG-2B                  | GM-EMD 8409614                 | 31099 SH 3              | BARBER COLEMAN 8884         | EGP-2B | DG   | 21 50 | B DIESEL | Y       | No GERS            | A-45     |
| 110 | SSP2 (B)-BKR 8-1                | GM-EMD 8409614                 | 31099 SH 3              | BARBER COLEMAN 8884         | EGP-2B | DG   | 21 50 | B DIESEL | Y       | No GERS            | A-45     |
| 111 | SSP2 (B)-EG-2B                  | GM-EMD 8409614                 | 31099 SH 3              | BARBER COLEMAN 8884         | EGP-2B | DG   | 21 50 | B DIESEL | Y       | No GERS            | A-45     |
| 112 | 40V-BKR 8-1                     | GM-EMD 8411911                 | 31099 SH 2              | West AV 180037QH            | EGP-2B | DG   | 21 50 | B DIESEL |         | No GERS            | A-45     |
| 113 | PFDA1 (B)-EG-2B                 | GM-EMD 8418210                 | 31099 SH 3              | SQD 1933G2                  | EGP-2B | DG   | 21 50 | B DIESEL | Y       | No GERS            | A-45     |
| 114 | PFDA2 (B)-EG-2B                 | GM-EMD 8418210                 | 31099 SH 3              | SQD 1933G2                  | EGP-2B | DG   | 21 50 | B DIESEL | Y       | No GERS            | A-45     |
| 115 | 40T-BKR 8-1                     | GM-EMD 8253248                 | 31099 SH 2              | SQD 1933G2                  | EGP-2B | DG   | 21 50 | B DIESEL |         | No GERS            | A-45     |
| 116 | PFD1-EG-2B                      | GM-EMD 8253248                 | 31099 SH 3              | SQD 1933G2                  | EGP-2B | DG   | 21 50 | B DIESEL |         | No GERS            | A-45     |
| 117 | PFD2-EG-2B                      | GM-EMD 8253248                 | 31099 SH 3              | SQD 1933G2                  | EGP-2B | DG   | 21 50 | B DIESEL |         | No GERS            | A-45     |
| 118 | SFD1 (B)-EG-2B                  | GM-EMD 8253248                 | 31099 SH 3              | SQD 1933G2                  | EGP-2B | DG   | 21 50 | B DIESEL |         | No GERS            | A-45     |
| 119 | SFD2 (B)-EG-2B                  | GM-EMD 8253248                 | 31099 SH 3              | SQD 1933G2                  | EGP-2B | DG   | 21 50 | B DIESEL |         | No GERS            | A-45     |
| 120 | FFC (B)-BKR 8-1                 | SQD Class 8504 Type EQ1985-G13 | 31099 SH 4              | Field Flashing              | EGP-2B | DG   | 21 50 | B DIESEL | Y       | No GERS            | A-45     |
| 121 | FFC (B)-EG-2B                   | SQD Class 8504 Type EQ1985-G13 | 31099 SH 3              | Field Flashing              | EGP-2B | DG   | 21 50 | B DIESEL | Y       | No GERS            | A-45     |
| 122 | 41-BKR 8-1                      | WEST Series C FDBB14K          | 32001 SH 5N             | NP28095E                    | EGP-2B | DG   | 21 50 | B DIESEL |         | No GERS            | A-45     |
|     | <u>UNKNOWN MAKE &amp; MODEL</u> |                                |                         |                             |        |      |       |          |         |                    |          |
| 1   | 27/X2-11-SW-MOV-3               |                                | 32001 SH 6KB            | Undervoltage Aux            | BUS 11 | SB   | 41 50 | B SWGR   | Y       | Unknown Model      | A-45     |
| 2   | 27/X2-11-SW-MOV-4               |                                | 32001 SH 6KB            | Undervoltage Aux            | BUS 11 | SB   | 41 50 | B SWGR   | Y       | Unknown Model      | A-45     |
| 3   | 27/X3-11-SW-MOV-3               |                                | 32001 SH 6KA            | Undervoltage Aux            | BUS 11 | SB   | 41 50 | B SWGR   | Y       | Unknown Model      | A-45     |
| 4   | 27/X3-11-SW-MOV-4               |                                | 32001 SH 6KA            | Undervoltage Aux            | BUS 11 | SB   | 41 50 | B SWGR   | Y       | Unknown Model      | A-45     |
| 5   | 27X1/11-P-37-1D                 |                                | 32001 SH 6EC            | Undervoltage Aux            | BUS 11 | SB   | 41 50 | B SWGR   | Y       | Unknown Model      | A-45     |
| 6   | OT-BKR 8-1                      |                                | 32001 SH 5M, 31099 SH 2 | Overspeed Trip              | ECP-2A | DG   | 21 50 | A DIESEL |         | Unknown Model      | A-45     |
| 7   | OT-BKR 8-1                      |                                | 32001 SH 5NA            | Overspeed Trip              | ECP-2B | DG   | 21 50 | B DIESEL |         | Unknown Model      | A-45     |
| 8   | HS-EG-2A                        |                                | 31099 SH 3              | GOV HIGH SPEED LIMIT SWITCH | EG-2A  | DG   | 21 50 | A DIESEL |         | Unknown Model      | A-45     |
| 9   | HS-EC-2B                        |                                | 31099 SH 3              | GOV HIGH SPEED LIMIT SWITCH | EG-2B  | DG   | 21 50 | B DIESEL |         | Unknown Model      | A-45     |

|  |                   |  |
|--|-------------------|--|
| <b>OUTLIER SEISMIC VERIFICATION SHEET (OSVS)</b> |                   | GIP Rev 2, Corrected 2/14/92<br>Sheet 1 of 2 |
| ID : 50/51-P-18-1B (Rev. 0)                      | Class : RELAY     |  |
| Description : 289B456A19                         |                   |  |
| Building : DG                                    | Floor El. : 21.50 | Room, Row/Col : A DIESEL                     |

### 1. OUTLIER ISSUE DEFINITION - Essential Relays

- a. Identify all the screening guidelines which are not met. (Check more than one if several guidelines could not be satisfied.)

|                          |   |
|--------------------------|---|
| Capacity vs. Demand      |   |
| Mounting, Type, Location | X |
| Other                    |   |

- b. Describe all the reasons for the outlier (i.e., if all the listed outlier issues were resolved, then the signatories would consider this item of equipment to be verified for seismic adequacy).

Bad Actor

### 2. PROPOSED METHOD OF OUTLIER RESOLUTION (Optional)

- a. Define proposed method(s) for resolving outlier.

Recommend replacing relays or perform system review to evaluate acceptability of operator action to recover from the impact of relay chatter.

- b. Provide information needed to implement proposed method(s) for resolving outlier (e.g., estimate of fundamental frequency).

NUSCO to initiate OPS review and if replacement is recommended, then include relays into ISAP Program. See attached listing for additional Bad Actor relay contacts.

### 3. COMMENTS

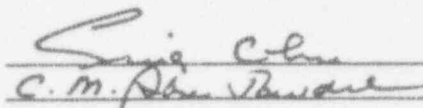
This OSVS is also applicable to all relay contacts listed below.

| CONTACT_ID        | MAKE           | DESC              | CAB_ID  |
|-------------------|----------------|-------------------|---------|
| <u>BAD ACTORS</u> |                |                   |         |
| 50/51-P-18-1B     | W COM-5        | 289B456A19        | BUS 8   |
| 50/51-P-18-1A     | W COM-5        | 289B456A19        | BUS 9   |
| 59A/1-8-BKR 8-1   | W SV           |                   | CB/8DB1 |
| 59B/1-8-BKR 8-1   | W SV           |                   | CB/8DB1 |
| 59A/1-9-BKR 9-1   | W SV           |                   | CB/9DB1 |
| 59B/1-9-BKR 9-1   | W SV           |                   | CB/9DB1 |
| FFCO (A)-BKR 8-1  | GM-EMD 8412411 | West SV 292B402A0 | EGP-2A  |
| FFCO (A)-EG-2A    | GM-EMD 8412411 | West SV 292B402A0 | EGP-2A  |
| FFCO (B)-BKR 9-1  | GM-EMD 8412411 | West SV 292B402A0 | EGP-2B  |
| FFCO (B)-EG-2B    | GM-EMD 8412411 | West SV 292B402A0 | EGP-2B  |

|   |                   |  |
|---|-------------------|--|
| OUTLIER SEISMIC VERIFICATION SHEET (OSVS) |                   | GIP Rev 2, Corrected 2/14/92<br>Sheet 2 of 2 |
| ID : 50/51-P-18-1B (Rev. 0)               | Class : RELAY     |  |
| Description : 289B456A19                  |                   |  |
| Building : DG                             | Floor El. : 21.50 | Room, Row/Col : A DIESEL                     |

**4. CERTIFICATION:**

The information on this OSVS is, to the best of our knowledge and belief, correct and accurate, and resolution of the outlier issues listed on the previous page will satisfy the requirements for this item of equipment to be verified for seismic adequacy:

Approved by:  Date: 12/16/93  
C. M. Abu-Basma 12-16-93

|  |                   |  |
|--|-------------------|--|
| <b>OUTLIER SEISMIC VERIFICATION SHEET (OSVS)</b> |                   | GIP Rev 2, Corrected 2/14/92<br>Sheet 1 of 5 |
| ID : 32/CRN-1-BKR 8-1 (Rev. 0)                   | Class : RELAY     |  |
| Description : 290B038A09                         |                   |  |
| Building : DG                                    | Floor El. : 21.50 | Room, Row/Col : A DIESEL                     |

### 1. OUTLIER ISSUE DEFINITION - Essential Relays

- a. Identify all the screening guidelines which are not met. (Check more than one if several guidelines could not be satisfied.)

|                          |   |
|--------------------------|---|
| Capacity vs. Demand      |   |
| Mounting, Type, Location | X |
| Other                    |   |

- b. Describe all the reasons for the outlier (i.e., if all the listed outlier issues were resolved, then the signatories would consider this item of equipment to be verified for seismic adequacy).

No GERS or TRS available for this type relay.

### 2. PROPOSED METHOD OF OUTLIER RESOLUTION (Optional)

- a. Defined proposed method(s) for resolving outlier.

Pursue seismic capacity through testing or vendor data.

- b. Provide information needed to implement proposed method(s) for resolving outlier (e.g., estimate of fundamental frequency).

See types of relays and model numbers on attached listing

### 3. COMMENTS

This OSVS is also applicable to all relay contacts listed below.

| CONTACT_ID               | MAKE     | DESC       | CAB_ID   |
|--------------------------|----------|------------|----------|
| <u>No GERS AVAILABLE</u> |          |            |          |
| 32/CRN-1-BKR 8-1         | W CRN-1  | 290B038A09 | BUS 8    |
| 32/CRN-1-BKR 9-1         | W CRN-1  | 290B038A09 | BUS 9    |
| 59/8-RELAY 27Y/1-8       | GE - NGV | 12NGV15A21 | CB/8DB1  |
| 59/8-RELAY 27Y2/1-8      | GE NGV   | 12NGV15A21 | CB/8DB1  |
| 27K/1-8-RELAY 27Y/1-8    | DEVAR    | 18-114     | CB/8DB1A |
| 27K/1-8-RELAY 27Y2/1-8   | DEVAR    | 18-114     | CB/8DB1A |
| 27L/1-8-RELAY 27Y/1-8    | DEVAR    | 18-114     | CB/8DB1A |
| 27L/1-8-RELAY 27Y2/1-8   | DEVAR    | 18-114     | CB/8DB1A |
| 27M/1-8-RELAY 27Y/1-8    | DEVAR    | 18-114     | CB/8DB1A |
| 27M/1-8-RELAY 27Y2/1-8   | DEVAR    | 18-114     | CB/8DB1A |
| 27R/1-8-RELAY 27Y/1-8    | DEVAR    | 18-114     | CB/8DB1A |
| 27R/1-8-RELAY 27Y2/1-8   | DEVAR    | 18-114     | CB/8DB1A |

|   |  |  |                          |
|---|--|--|--------------------------|
| OUTLIER SEISMIC VERIFICATION SHEET (OSVS) |  | GIP Rev 2, Corrected 2/14/92<br>Sheet 2 of 5 |                          |
| ID : 32/CRN-1-BKR 8-1 (Rev. 0)            |  | Class : RELAY                                |                          |
| Description : 290B038A09                  |  |  |                          |
| Building : DG                             |  | Floor El. : 21.50                            | Room, Row/Col : A DIESEL |

|                        |                   |                 |          |
|------------------------|-------------------|-----------------|----------|
| 27S/1-8-RELAY 27Y/1-8  | DEVAR             | 18-114          | CB/8DB1A |
| 27S/1-8-RELAY 27Y2/1-8 | DEVAR             | 18-114          | CB/8DB1A |
| 27T/1-8-RELAY 27Y/1-8  | DEVAR             | 18-114          | CB/8DB1A |
| 27T/1-8-RELAY 27Y2/1-8 | DEVAR             | 18-114          | CB/8DB1A |
| 59-9-RELAY 27Y/1-9     | GE - NGV          | 12NGV15A21      | CB/9DB1  |
| 59-9-RELAY 27Y2/1-9    | GE - NGV          | 12NGV15A21      | CB/9DB1  |
| 27K/1-9-RELAY 27Y/1-9  | DEVAR             | 18-114          | CB/9DB1A |
| 27K/1-9-RELAY 27Y2/1-9 | DEVAR             | 18-114          | CB/9DB1A |
| 27L/1-9-RELAY 27Y/1-9  | DEVAR             | 18-114          | CB/9DB1A |
| 27L/1-9-RELAY 27Y2/1-9 | DEVAR             | 18-114          | CB/9DB1A |
| 27M/1-9-RELAY 27Y/1-9  | DEVAR             | 18-114          | CB/9DB1A |
| 27M/1-9-RELAY 27Y2/1-9 | DEVAR             | 18-114          | CB/9DB1A |
| 27R/1-9-RELAY 27Y/1-9  | DEVAR             | 18-114          | CB/9DB1A |
| 27R/1-9-RELAY 27Y2/1-9 | DEVAR             | 18-114          | CB/9DB1A |
| 27S/1-9-RELAY 27Y/1-9  | DEVAR             | 18-114          | CB/9DB1A |
| 27S/1-9-RELAY 27Y2/1-9 | DEVAR             | 18-114          | CB/9DB1A |
| 27T/1-9-RELAY 27Y/1-9  | DEVAR             | 18-114          | CB/9DB1A |
| 27T/1-9-RELAY 27Y2/1-9 | DEVAR             | 18-114          | CB/9DB1A |
| MB1-EG-2A              | SQD 8411520 AOW23 | PRESSURE SWITCH | ECP-2A   |
| MB3-EG-2A              | SQD 8411520 AOW23 | PRESSURE SWITCH | ECP-2A   |
| STLO2 (B)-BKR 9-1      | GM-EMD 8253244    | SQD EQ1933G2    | ECP-2B   |
| MB 1-EG-2B             | SQD 8411520 AOW23 | PRESSURE SWITCH | ECP-2B   |
| MB 3-EG-2B             | SQD 8411520 AOW23 | PRESSURE SWITCH | ECP-2B   |
| 52V (A)-BKR 8-1        | GM-EMD 8253244    | SQD EQ1933G2    | EGP-2A   |
| 52V (A)-EG-2A          | GM-EMD 8253244    | SQD EQ1933G2    | EGP-2A   |
| STLO1 (A)-BKR 8-1      | GM-EMD 8253244    | SQD EQ1933G2    | EGP-2A   |
| STLO1 (A)-EG-2A        | GM-EMD 8253244    | SQD EQ1933G2    | EGP-2A   |
| STLO2 (A)-BKR 8-1      | GM-EMD 8253244    | SQD EQ1933G2    | EGP-2A   |
| STLO2 (A)-EG-2A        | GM-EMD 8253244    | SQD EQ1933G2    | EGP-2A   |
| MSR1 (A)-EG-2A         | GM-EMD 8263337    | SQD 7001 PO453  | EGP-2A   |
| MSR2 (A)-EG-2A         | GM-EMD 8263337    | SQD 7001 PO453  | EGP-2A   |
| VSR1 (A)-BKR 8-1       | GM-EMD 8263337    | SQD 7001 PO453  | EGP-2A   |
| VSR2 (A)-BKR 8-1       | GM-EMD 8263337    | SQD 7001 PO453  | EGP-2A   |
| ZSR1 (A)-EG-2A         | GM-EMD 8263337    | SQD 7001 PO453  | EGP-2A   |
| ZSR2 (A)-EG-2A         | GM-EMD 8263337    | SQD 7001 PO453  | EGP-2A   |
| ESR1 (A)-BKR 8-1       | GM-EMD 8269705    | SQD 7001 PO453  | EGP-2A   |

OUTLIER SEISMIC VERIFICATION SHEET (OSVS)

GIP Rev 2, Corrected 2/14/92  
Sheet 3 of 5

ID : 32/CRN-1-BKR 8-1 (Rev. 0)

Class : RELAY

Description : 290B038A09

Building : DG

Floor El. : 21.50

Room, Row/Col : A DIESEL

|                   |                                   |                     |        |
|-------------------|-----------------------------------|---------------------|--------|
| ESR1 (A)-EG-2A    | GM-EMD 8269705                    | SQD 7001 PO453      | EGP-2A |
| ESR2 (A)-BKR 8-1  | GM-EMD 8269705                    | SQD 7001 PO453      | EGP-2A |
| ESR2 (A)-EG-2A    | GM-EMD 8269705                    | SQD 7001 PO453      | EGP-2A |
| ESTR (A)-BKR 8-1  | GM-EMD 8269705                    | SQD 7001 PO453      | EGP-2A |
| ESTR (A)-EG-2A    | GM-EMD 8269705                    | SQD 7001 PO453      | EGP-2A |
| FSR1 (A)-BKR 8-1  | GM-EMD 8269705                    | SQD 7001 PO453      | EGP-2A |
| FSR1 (A)-EG-2A    | GM-EMD 8269705                    | SQD 7001 PO453      | EGP-2A |
| FSR2 (A)-BKR 8-1  | GM-EMD 8269705                    | SQD 7001 PO453      | EGP-2A |
| FSR2 (A)-EG-2A    | GM-EMD 8269705                    | SQD 7001 PO453      | EGP-2A |
| OTR (A)-BKR 8-1   | GM-EMD 8269705                    | SQD 7001 PO453      | EGP-2A |
| OTR (A)-EG-2A     | GM-EMD 8269705                    | SQD 7001 PO453      | EGP-2A |
| FPR-EG-2A         | GM-EMD 8299025                    | VAPOR CORP          | EGP-2A |
| STR1 (A)-EG-2A    | GM-EMD 8299025                    | SQD 7001 PO453      | EGP-2A |
| STR2 (A)-EG-2A    | GM-EMD 8299025                    | SQD 7001 PO453      | EGP-2A |
| ECRA-EG-2A        | GM-EMD 8317487                    | SQD 8501 FSD022-55  | EGP-2A |
| GS-EG-2A          | GM-EMD 8370794                    | VAPOR CORP          | EGP-2A |
| SSP1 (A)-BKR 8-1  | GM-EMD 8409614                    | BARBER COLEMAN 6884 | EGP-2A |
| SSP1 (A)-EG-2A    | GM-EMD 8409614                    | BARBER COLEMAN 6884 | EGP-2A |
| SSP2 (A)-BKR 8-1  | GM-EMD 8409614                    | BARBER COLEMAN 6884 | EGP-2A |
| SSP2 (A)-EG-2A    | GM-EMD 8409614                    | BARBER COLEMAN 6884 | EGP-2A |
| 40V-BKR 8-1       | GM-EMD 8411911                    | West AV 160087GH    | EGP-2A |
| PFDA1 (A)-EG-2A   | GM-EMD 8418210                    | SQD 1933G2          | EGP-2A |
| PFDA2 (A)-EG-2A   | GM-EMD 8418210                    | SQD 1933G2          | EGP-2A |
| 40T-BKR 8-1       | GM-EMD 8253246                    | SQD 1933G2          | EGP-2A |
| PFD1-EG-2A        | GM-EMD 8253246                    | SQD 1933G2          | EGP-2A |
| PFD2-EG-2A        | GM-EMD 8253246                    | SQD 1933G2          | EGP-2A |
| SFD1 (A)-EG-2A    | GM-EMD 8253246                    | SQD 1933G2          | EGP-2A |
| SFD2 (A)-EG-2A    | GM-EMD 8253246                    | SQD 1933G2          | EGP-2A |
| FFC (A)-BKR 8-1   | SQD Class 8504 Type<br>EQ1965-G13 | Field Flashing      | EGP-2A |
| FFC (A)-EG-2A     | SQD Class 8504 Type<br>EQ1965-G13 | Field Flashing      | EGP-2A |
| 41-BKR 8-1        | WEST Series C<br>FDBB14K          | NP28095E            | EGP-2A |
| 52V (B)-BKR 9-1   | GM-EMD 8253244                    | SQD EQ1933G2        | EGP-2B |
| 52V (B)-EG-2B     | GM-EMD 8253244                    | SQD EQ1933G2        | EGP-2B |
| STLO1 (B)-BKR 9-1 | GM-EMD 8253244                    | SQD EQ1933G2        | EGP-2B |
| STLO1 (B)-EG-2B   | GM-EMD 8253244                    | SQD EQ1933G2        | EGP-2B |
| STLO2 (B)-EG-2B   | GM-EMD 8253244                    | SQD EQ1933G2        | EGP-2B |



OUTLIER SEISMIC VERIFICATION SHEET (OSVS)

GIP Rev 2, Corrected 2/14/92  
Sheet 4 of 5

ID : 32/CRN-1-BKR 8-1 (Rev. 0)

Class : RELAY

Description : 290B038A09

Building : DG

Floor El. : 21.50

Room, Row/Col : A DIESEL

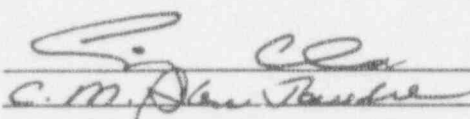
|                  |                                   |                     |        |
|------------------|-----------------------------------|---------------------|--------|
| MSR1 (B)-EG-2B   | GM-EMD 8263337                    | SQD 7001 PO453      | EGP-2B |
| MSR2 (B)-EG-2B   | GM-EMD 8263337                    | SQD 7001 PO453      | EGP-2B |
| VSR1 (B)-BKR 9-1 | GM-EMD 8263337                    | SQD 7001 PO453      | EGP-2B |
| VSR2 (B)-BKR 9-1 | GM-EMD 8263337                    | SQD 7001 PO453      | EGP-2B |
| ZSR1 (B)-EG-2B   | GM-EMD 8263337                    | SQD 7001 PO453      | EGP-2B |
| ZSR2 (B)-EG-2B   | GM-EMD 8263337                    | SQD 7001 PO453      | EGP-2B |
| ESR1 (B)-BKR 9-1 | GM-EMD 8269705                    | SQD 7001 PO453      | EGP-2B |
| ESR1 (B)-EG-2B   | GM-EMD 8269705                    | SQD 7001 PO453      | EGP-2B |
| ESR2 (B)-BKR 9-1 | GM-EMD 8269705                    | SQD 7001 PO453      | EGP-2B |
| ESR2 (B)-EG-2B   | GM-EMD 8269705                    | SQD 7001 PO453      | EGP-2B |
| ESTR (B)-BKR 9-1 | GM-EMD 8269705                    | SQD 7001 PO453      | EGP-2B |
| ESTR (B)-EG-2B   | GM-EMD 8269705                    | SQD 7001 PO453      | EGP-2B |
| FSR1 (B)-BKR 9-1 | GM-EMD 8269705                    | SQD 7001 PO453      | EGP-2B |
| FSR1 (B)-EG-2B   | GM-EMD 8269705                    | SQD 7001 PO453      | EGP-2B |
| FSR2 (B)-BKR 9-1 | GM-EMD 8269705                    | SQD 7001 PO453      | EGP-2B |
| FSR2 (B)-EG-2B   | GM-EMD 8269705                    | SQD 7001 PO453      | EGP-2B |
| OTR (B)-BKR 9-1  | GM-EMD 8269705                    | SQD 7001 PO453      | EGP-2B |
| OTR (B)-EG-2B    | GM-EMD 8269705                    | SQD 7001 PO453      | EGP-2B |
| FPR-EG-2B        | GM-EMD 8299025                    | VAPOR CORP          | EGP-2B |
| STR1 (B)-EG-2B   | GM-EMD 8299025                    | SQD 7001 PO453      | EGP-2B |
| STR2 (B)-EG-2B   | GM-EMD 8299025                    | SQD 7001 PO453      | EGP-2B |
| ECRA-EG-2B       | GM-EMD 8317487                    | SQD 8501 FSD022-55  | EGP-2B |
| GS-EG-2B         | GM-EMD 8370794                    | VAPOR CORP          | EGP-2B |
| SSP1 (B)-BKR 9-1 | GM-EMD 8409614                    | BARBER COLEMAN 6884 | EGP-2B |
| SSP1 (B)-EG-2B   | GM-EMD 8409614                    | BARBER COLEMAN 6884 | EGP-2B |
| SSP2 (B)-BKR 9-1 | GM-EMD 8409614                    | BARBER COLEMAN 6884 | EGP-2B |
| SSP2 (B)-EG-2B   | GM-EMD 8409614                    | BARBER COLEMAN 6884 | EGP-2B |
| 40V-BKR 9-1      | GM-EMD 8411911                    | West AV 160087GH    | EGP-2B |
| PFDA1 (B)-EG-2B  | GM-EMD 8418210                    | SQD 1933G2          | EGP-2B |
| PFDA2 (B)-EG-2B  | GM-EMD 8418210                    | SQD 1933G2          | EGP-2B |
| 40T-BKR 9-1      | GM-EMD 8253246                    | SQD 1933G2          | EGP-2B |
| PFD1-EG-2B       | GM-EMD 8253246                    | SQD 1933G2          | EGP-2B |
| PFD2-EG-2B       | GM-EMD 8253246                    | SQD 1933G2          | EGP-2B |
| SFD1 (B)-EG-2B   | GM-EMD 8253246                    | SQD 1933G2          | EGP-2B |
| SFD2 (B)-EG-2B   | GM-EMD 8253246                    | SQD 1933G2          | EGP-2B |
| FFC (B)-BKR 9-1  | SQD Class 8504 Type<br>EQ1965-G13 | Field Flashing      | EGP-2B |

|  |                   |  |
|--|-------------------|--|
| <b>OUTLIER SEISMIC VERIFICATION SHEET (OSVS)</b> |                   | GIP Rev 2, Corrected 2/14/92<br>Sheet 5 of 5 |
| ID : 32/CRN-1-BKR 8-1 (Rev. 0)                   | Class : RELAY     |  |
| Description : 290B038A09                         |                   |  |
| Building : DG                                    | Floor El. : 21.50 | Room, Row/Col : A DIESEL                     |

|               |                     |                |        |
|---------------|---------------------|----------------|--------|
| FFC (B)-EG-2B | SQD Class 8504 Type | Field Flashing | EGP-2B |
| 41-BKR 9-1    | EQ1965-G13          | NP28095E       | EGP-2B |
|               | WEST Series C       |                |        |
|               | FDBB14K             |                |        |

**4. CERTIFICATION:**

The information on this OSVS is, to the best of our knowledge and belief, correct and accurate, and resolution of the outlier issues listed on the previous page will satisfy the requirements for this item of equipment to be verified for seismic adequacy:

Approved by:  Date: 12/16/93  
12.16.93

|  |                   |  |
|--|-------------------|--|
| <b>OUTLIER SEISMIC VERIFICATION SHEET (OSVS)</b> |                   | GIP Rev 2, Corrected 2/14/92<br>Sheet 1 of 2 |
| ID : 27/X2-11-SW-MOV-3 (Rev. 0)                  | Class : RELAY     |  |
| Description :                                    |                   |  |
| Building : SB                                    | Floor El. : 41.50 | Room, Row/Col : B SWGR                       |

### 1. OUTLIER ISSUE DEFINITION - Essential Relays

- a. Identify all the screening guidelines which are not met. (Check more than one if several guidelines could not be satisfied.)

|                          |   |
|--------------------------|---|
| Capacity vs. Demand      |   |
| Mounting, Type, Location |   |
| Other                    | X |

- b. Describe all the reasons for the outlier (i.e., if all the listed outlier issues were resolved, then the signatories would consider this item of equipment to be verified for seismic adequacy).

Unknown make and model, unable to locate relay during walkdown.

### 2. PROPOSED METHOD OF OUTLIER RESOLUTION (Optional)

- a. Defined proposed method(s) for resolving outlier.

MUSCO Elec Dept to determine make and model.

- b. Provide information needed to implement proposed method(s) for resolving outlier (e.g., estimate of fundamental frequency).

For relay contact IDs, see attached listing.

### 3. COMMENTS

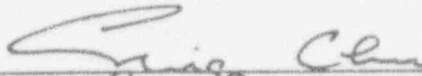
This OSVS is also applicable to all relay contacts listed below.

| CONTACT_ID                      | MAKE | DESC                        | CAB_ID |
|---------------------------------|------|-----------------------------|--------|
| <u>UNKNOWN MAKE &amp; MODEL</u> |      |                             |        |
| 27/X2-11-SW-MOV-3               |      | Undervoltage Aux            | BUS 11 |
| 27/X2-11-SW-MOV-4               |      | Undervoltage Aux            | BUS 11 |
| 27/X3-11-SW-MOV-3               |      | Undervoltage Aux            | BUS 11 |
| 27/X3-11-SW-MOV-4               |      | Undervoltage Aux            | BUS 11 |
| 27X1/11-P-37-1D                 |      | Undervoltage Aux            | BUS 11 |
| OT-BKR 8-1                      |      | Overspeed Trip              | ECP-2A |
| OT-BKR 9-1                      |      | Overspeed Trip              | ECP-2B |
| HS-EG-2A                        |      | GOV HIGH SPEED LIMIT SWITCH | EG-2A  |
| HS-EG-2B                        |      | GOV HIGH SPEED LIMIT SWITCH | EG-2B  |

### 4. CERTIFICATION:

|   |                   |  |
|---|-------------------|--|
| OUTLIER SEISMIC VERIFICATION SHEET (OSVS) |                   | GIP Rev 2, Corrected 2/14/92<br>Sheet 2 of 2 |
| ID : 27/X2-11-SW-MOV-3 (Rev. 0)           | Class : RELAY     |  |
| Description :                             |                   |  |
| Building : SB                             | Floor El. : 41.50 | Room, Row/Col : B SWGR                       |

The information on this OSVS is, to the best of our knowledge and belief, correct and accurate, and resolution of the outlier issues listed on the previous page will satisfy the requirements for this item of equipment to be verified for seismic adequacy:

Approved by:  Date: 12/16/93  
C. M. Alan ... 12-16-93