**Project Administration Data Sheet**

**Project No.** E-26-681*  
**Date:** 8/31/81

**Project Director:** Dr. John L. Russell  
**School/Unit:** Nuclear Engineering

**Sponsor:** Georgia Power Company

**Type Agreement:** Purchase Order No. PEHA-189 dated 8/6/81

**Award Period:** From 8/6/81 to 3/31/83 (Performance)  
**Sponsor Amount:** $640,071 (E-26-681) & $1,262,023 (A-3026)  
**Contracted through:** Contractors

**Total Sponsor Amount:** Not to exceed $1,902,094  
**GTRI/AFATD**

**Title:** Plant Hatch Safety Parameter Display and Emergency Response Computer Systems

---

**Administrative Data**

<table>
<thead>
<tr>
<th>OCA Contact</th>
<th>William F. Brown x4820</th>
</tr>
</thead>
</table>

1) **Sponsor Technical Contact:** J. R. Jordan, Georgia Power Company, 333 Piedmont Ave., Atlanta, GA 30341

2) **Sponsor Admin./Contractual Contact:** L. B. Dover, Georgia Power Company  
P. O. Box 4545, Atlanta, GA 30332. (404) 526-6306

**Reports:** See Deliverable Schedule  
**Security Classification:** N/A  
**Defense Priority Rating:** N/A

---

**Restrictions**

See Attached  
**Supplemental Information Sheet for Additional Requirements**

**Travel:** Foreign travel must have prior approval - Contact OCA in each case. Domestic travel requires sponsor approval where total will exceed greater of $500 or 125% of approved proposal budget category.

**Equipment:** Title vests with sponsor

---

**Comments:** *Subproject is A-3026/J. A. Mahaffey/ECSL/CTAD*

---

**Copies To:**

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- Research Security Services
- Reports Coordinator (OCA)
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- Project File (OCA)
- Other:
Sub Project No. A-3026*

Sub Project Director: Mr. James A. Mahaffey

Sponsor: Georgia Power Company

Type Agreement: Purchase Order No. PEHA-189 dated 8/6/81

Award Period: From 8/6/81 To 3/31/83 (Performance) 3/31/83 (Reports)

Sponsor Amount: $640,071 (E-26-681) & $1,262,023 (A-3026)

Contracted through: GTRI/NPP

Title: Plant Hatch Safety Parameter Display and Emergency Response Computer Systems

ADMINISTRATIVE DATA

   Atlanta, GA 30341

2) Sponsor Admin./Contractual Contact: L. B. Dover, Georgia Power Company
   P. O. Box 4545, Atlanta, GA 30332

Reports: See Deliverable Schedule Security Classification: N/A

Defense Priority Rating: N/A

REstrictions

See Attached N/A Supplemental Information Sheet for Additional Requirement

Travel: Foreign travel must have prior approval - Contact OCA in each case. Domestic travel requires sponsor approval where total will exceed greater of $500 or 125% of approved proposal budget category.

Equipment: Title vests with sponsor

COMMENTS: *A-3026 is subproject under E-26-681/J. L. Russell/Nuclear Engineering

COPIES TO:

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Project File (OCA)
Other:
Date August 8, 1985

Project No. E-25-683 R5295-0A2
     (FORMERLY E-26-681)

Includes Subproject No(s) A-3026

Project Director(s) Dr. Roger W. Carlson

Sponsor Georgia Power Company Atlanta, Georgia 30302

Title Plant Hatch Safety Parameter Display and Emergency Response Computer Systems

Effective Completion Date: 8/1/85

(Performance) N/A (Reports)

Grant/Contract Closeout Actions Remaining:

☐ None
☑ Final Invoice or Final Fiscal Report
☐ Closing Documents
☐ Final Report of Inventions
☐ Govt. Property Inventory & Related Certificate
☐ Classified Material Certificate
☐ Other

Continues Project No. Continued by Project No.

REPORTS COORDINATOR (OCA)

Library

GTRC

Research Communications (2)

Heyser, Jones

Accounting

Procurement/GTRI Supply Services

Research Security Services

FORM OCA 69.285
# SPDS/ERF

**FUNCTIONAL TEST PROCEDURES**

**FOR**

**GEORGIA POWER COMPANY**

**E.I. HATCH UNIT 2**

(VOL. 2)

---

<table>
<thead>
<tr>
<th>APPLICATION</th>
<th>REVISIONS</th>
</tr>
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<tbody>
<tr>
<td>NEXT ASSY</td>
<td>USED ON</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

---

**ALL DIMENSIONS ARE IN INCHES UNLESS OTHERWISE SPECIFIED**

- **TOLERANCES**
  - 3 PLACE DECIMALS ± .005
  - 2 PLACE DECIMALS ± .02
  - 1 PLACE DECIMAL ± .1

- **FRACTIONS ± ANGLES ± 0°30'**

- **MAX SURFACE ROUGHNESS 125 MAX**

- **ALL MACHINED SURFACES EXCEPT AS NOTED**

- **BREAK SHARP EDGES AND CORNERS .010 MAX FINISH**

**CONTRACT NO.**

A3026

**ENGINEERING EXPERIMENT STATION**

**OF THE GEORGIA INSTITUTE OF TECHNOLOGY**

**ATLANTA, GEORGIA**

**FUNCTIONAL TEST PROCEDURES, SPDS/ERF**

**SIZE**

A 07101

**CODE IDENT NO.**

114-A3026-5100-U2

**DRAWING NO.**

A 07101

**SCALE**

APVD

**REV**

APVD

**SHEET**

APVD
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16. ISOLATION DIAGNOSTIC DISPLAY TESTS

This section tests the logic that governs the primary and secondary containment isolation diagnostic displays.
16.1. GROUP 1 ISOLATION

STEP 1

ACTION:

a. Call up the PCIS Group 1, 3, 4, 5 Diagnostic display and call the reference test data.

b. Close all the main steam line valves as shown in the following table.

Table 16.1.1

<table>
<thead>
<tr>
<th>SIGNAL DESCRIPTION</th>
<th>INPUT</th>
<th>OUTPUT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Q2B21-AOV F022A</td>
<td>0561</td>
<td>0560</td>
</tr>
<tr>
<td>Q2B21-AOV F022B</td>
<td>0563</td>
<td>0562</td>
</tr>
<tr>
<td>Q2B21-AOV F022C</td>
<td>0565</td>
<td>0564</td>
</tr>
<tr>
<td>Q2B21-AOV F022D</td>
<td>0567</td>
<td>0566</td>
</tr>
<tr>
<td>Q2B21-AOV F028A</td>
<td>0571</td>
<td>0570</td>
</tr>
<tr>
<td>Q2B21-AOV F028B</td>
<td>0573</td>
<td>0572</td>
</tr>
<tr>
<td>Q2B21-AOV F028C</td>
<td>0575</td>
<td>0574</td>
</tr>
<tr>
<td>Q2B21-AOV F028D</td>
<td>0577</td>
<td>0576</td>
</tr>
</tbody>
</table>

OUTPUT:

Diagnostic Display

a. Check that the symbols for the valves in Table 16.1.1 are green.

b. Check that the valve numbers listed in Table 16.1.1 are white.

APPROVAL: 8-2-81
STEP 2:

ACTION:

Actuate the relays as shown in the following table.

**TABLE 16.1.2**

<table>
<thead>
<tr>
<th>TRIP CHANNEL</th>
<th>SIGNAL DESCRIPTION</th>
<th>GIT SIGNAL ADDRESS</th>
<th>INPUT</th>
</tr>
</thead>
<tbody>
<tr>
<td>A1</td>
<td>Q2A71B-K7A</td>
<td>1025</td>
<td>1</td>
</tr>
<tr>
<td>B1</td>
<td>Q2A71B-K7B</td>
<td>1040</td>
<td>0</td>
</tr>
<tr>
<td>A2</td>
<td>Q2A71B-K7C</td>
<td>1026</td>
<td>0</td>
</tr>
<tr>
<td>B2</td>
<td>Q2A71B-K7D</td>
<td>1041</td>
<td>1</td>
</tr>
</tbody>
</table>

OUTPUT:

Primary Display:

a. Check that the word "PART" appears on an orange background on the group number 1 block.
b. Check that number 1 in the menu block turns orange.
c. Check that the orange background on the group number 1 block changes to green after approximately 5 seconds.
d. Check that group number 1 in the menu block remains orange.

Diagnostic Display:

a. Check that the numbers for the valves listed in Table 16.1.1 turn and remain orange.
b. Check that the group number 1 block matches that of the primary display.

APPROVAL: 

301
STEP 3:

ACTION:

De-energize Al (address 1025), i.e., set bit value to 0.

OUTPUT

Primary Display:

a. Check that the number 1 in the menu block turns green.
b. Check that the word "PART" disappears from the group number block, leaving a green blank.

Diagnostic Display:

a. Check that the numbers for the valves listed in Table 16.1.1 turn white.
b. Check that the word "PART" disappears from the group number 1 block, leaving a green blank.

APPROVAL: \[\text{Date} 6-2-87\]
STEP 4:

ACTION:

a. Open the F022A valve by setting 0560 to 1.
b. Energize Al (address 1025).

OUTPUT:

Primary Display:

a. Check that the word "PART" appears on a red background on the group number 1 block after approximately 5 seconds.
b. Check that the number 1 in the menu block turns red after approximately 5 seconds.

Diagnostic Display:

a. Check that the Group Number 1 block matches that of the Primary display.

ACTION:

a. Close the F022A valve by setting 0560 to 0.
b. Set bit values of all relays (Al, B1, A2, B2) to 0.

APPROVAL: [Signature] 18-2-84
STEP 5:

ACTION:

Close the valves listed in the following table.

### TABLE 16.1.3

<table>
<thead>
<tr>
<th>TRIP CHANNEL</th>
<th>SIGNAL DESCRIPTION</th>
<th>GIT SIGNAL ADDRESS</th>
<th>INPUT</th>
</tr>
</thead>
<tbody>
<tr>
<td>A1</td>
<td>Q2A71B-K7A</td>
<td>1025</td>
<td>0</td>
</tr>
<tr>
<td>B1</td>
<td>Q2A71B-K7B</td>
<td>1040</td>
<td>1</td>
</tr>
<tr>
<td>B2</td>
<td>Q2A71B-K7D</td>
<td>1041</td>
<td>0</td>
</tr>
<tr>
<td>A2</td>
<td>Q2A71B-K7C</td>
<td>1026</td>
<td>1</td>
</tr>
</tbody>
</table>

OUTPUT:

Primary Display:

a. Check that the word "PART" appears on an orange background on the group number 1 block.
b. Check that number 1 in the menu block turns orange.
c. Check that the orange background on the group number 1 block changes to green after approximately 5 seconds.
d. Check that group number 1 in the menu block remains orange.

Diagnostic Display:

a. Check that the numbers for the valves listed in Table 16.1.1 turn and remain orange.
b. Check that the group number 1 block matches that of the primary display.
STEP 6:

ACTION:

De-energize A2 (address 1026).

OUTPUT:

Primary Display:

a. Check that the number 1 in the menu block turns green.
b. Check that the word "PART" disappears from the group number block, leaving a green blank.

Diagnostic Display:

a. Check that the numbers for the valves listed in Table 16.1.1 turn white.
b. Check that the word "PART" disappears from the group number 1 block, leaving a green blank.

APPROVAL: 8-2-84
STEP 7:

ACTION:

a. Open the F022A valve by setting 0560 to 1.

b. Energize A2 (address 1026).

OUTPUT:

Primary Display:

a. Check that the word "PART" appears on a red background on the group number 1 block after approximately 5 seconds.

b. Check that the number 1 in the menu block turns red after approximately 5 seconds.

Diagnostic Display:

a. Check that the Group Number 1 block matches that of the Primary display.

ACTION:

a. Close the F022A valve by setting 0560 to 0.

b. Set bit values of all relays (A1, B1, A2, B2) to 0.

APPROVAL: 90-2-8
STEP 8:

ACTION:

Close the valves listed in the following table:

TABLE 16.1.4

<table>
<thead>
<tr>
<th>SIGNAL DESCRIPTION</th>
<th>INPUT</th>
<th>OUTPUT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Q2B21—MOV F016</td>
<td>0102</td>
<td>Closed (G)</td>
</tr>
<tr>
<td>Q2B31—AOV F019</td>
<td>0106 0105</td>
<td>1 0 Closed (G)</td>
</tr>
</tbody>
</table>

OUTPUT:

Diagnostic Display

a. Check that the symbols for the valves in Table 16.1.4 are green.
b. Check that the valve numbers listed in Table 16.1.4 are white.
STEP 9:

ACTION:

Actuate the relays as shown in the following table.

TABLE 16.1.5

<table>
<thead>
<tr>
<th>TRIP CHANNEL</th>
<th>SIGNAL DESCRIPTION</th>
<th>GIT SIGNAL ADDRESS</th>
<th>INPUT</th>
</tr>
</thead>
<tbody>
<tr>
<td>A1</td>
<td>Q2A71B-K7A</td>
<td>1025</td>
<td>1</td>
</tr>
<tr>
<td>A2</td>
<td>Q2A71B-K7C</td>
<td>1026</td>
<td>0</td>
</tr>
<tr>
<td>B2</td>
<td>Q2A71B-K7D</td>
<td>1041</td>
<td>0</td>
</tr>
<tr>
<td>B1</td>
<td>Q2A71B-K7B</td>
<td>1040</td>
<td>1</td>
</tr>
</tbody>
</table>

OUTPUT:

Primary Display:

a. Check that the word "PART" appears on an orange background on the Group Number 1 block.

b. Check that the number 1 in the menu block turns orange.

c. Check that the orange background on the Group Number 1 block changes to green after approximately 15 seconds.

d. Check that the number 1 in the menu block remains orange.

Diagnostic Display:

a. Check that the numbers for the valves listed in Tables 16.1.1 and 16.1.4 turn and remain orange.

b. Check that the Group Number 1 block matches that of the primary display.

APPROVAL: 8-2-8-1
STEP 10:

ACTION:

De-energize Al (address 1025), i.e., set bit value to 0.

OUTPUT:

Primary Display

a. Check that the number 1 in the menu block turns green.
b. Check that the word "PART" disappears from the group number block, leaving a green blank.

Diagnostic Display:

a. Check that the numbers for the valves listed in Table 16.1.1 and 16.1.4 turn white.
b. Check that the word "PART" disappears from the group number 1 block, leaving a green blank.

APPROVAL: 8-2-87
STEP II:

ACTION:

a. Open the F016 valve by setting 0102 to 1.
b. Energize A1 (address 1025).

OUTPUT:

Primary Display:

a. Check that the word "PART" appears on a red background on the group number 1 block after approximately 15 seconds.
b. Check that the number 1 in the menu block turns red after approximately 15 seconds.

Diagnostic Display:

a. Check that the group number 1 block matches that of the Primary display.

ACTION:

a. Close the F016 valve by setting 0102 to 0.
b. Set bit values of all relays (A1, A2, B1, B2) to 0.
STEP 12:

ACTION:

Actuate the relays as shown in the following table.

TABLE 16.1.6

<table>
<thead>
<tr>
<th>TRIP CHANNEL</th>
<th>SIGNAL DESCRIPTION</th>
<th>GIT SIGNAL ADDRESS</th>
<th>INPUT</th>
</tr>
</thead>
<tbody>
<tr>
<td>A1</td>
<td>Q2A71B-K7A</td>
<td>1025</td>
<td>1</td>
</tr>
<tr>
<td>A2</td>
<td>Q2A71B-K7C</td>
<td>1026</td>
<td>1</td>
</tr>
<tr>
<td>B2</td>
<td>Q2A71B-K7D</td>
<td>1041</td>
<td>0</td>
</tr>
<tr>
<td>B1</td>
<td>Q2A71B-K7B</td>
<td>1040</td>
<td>1</td>
</tr>
</tbody>
</table>

OUTPUT:

Primary Display:

a. Check that the word "PART" appears on an orange background on the Group Number 1 block.

b. Check that the number 1 in the menu block turns orange.

c. Check that the orange background on the Group Number 1 block changes to green after approximately 15 seconds.

d. Check that the number 1 in the menu block remains orange.

Diagnostic Display:

a. Check that the numbers for the valves listed in Tables 16.1.1 and 16.1.4 turn and remain orange.

b. Check that the Group Number 1 block matches that of the primary display.

APPROVAL: [Signature] 2-89
STEP 13:

ACTION:

De-energize Bl (address 1040).

OUTPUT:

Primary Display

a. Check that the number 1 in the menu block turns green.
b. Check that the word "PART" disappears from the group number block, leaving a green blank.

Diagnostic Display:

a. Check that the numbers for the valves listed in Table 16.1.1 and 16.1.4 turn white.
b. Check that the word "PART" disappears from the group number 1 block, leaving a green blank.

APPROVAL: 8-2-84
STEP 14:

ACTION:

a. Open the F016 valve by setting 0102 to 1.
   b. Energize B1 (address 1040).

OUTPUT:

Primary Display:

a. Check that the word "PART" appears on a red background on the group number 1 block after approximately 15 seconds.
   b. Check that the number 1 in the menu block turns red after approximately 15 seconds.

Diagnostic Display:

a. Check that the group number 1 block matches that of the Primary display.

ACTION:

a. Close the F016 valve by setting 0102 to 0.
   b. Set bit values of all relays (A1, A2, B1, B2) to 0.

APPROVAL: [Signature] 8-2-87
STEP 15:

ACTION:

Actuate the relays as shown in the following table.

**TABLE 16.1.7**

<table>
<thead>
<tr>
<th>TRIP CHANNEL</th>
<th>SIGNAL DESCRIPTION</th>
<th>GIT SIGNAL ADDRESS</th>
<th>INPUT</th>
</tr>
</thead>
<tbody>
<tr>
<td>B1</td>
<td>Q2A71B-K7B</td>
<td>1040</td>
<td>1</td>
</tr>
<tr>
<td>B2</td>
<td>Q2A71B-K7D</td>
<td>1041</td>
<td>1</td>
</tr>
<tr>
<td>A2</td>
<td>Q2A71B-K7C</td>
<td>1026</td>
<td>0</td>
</tr>
<tr>
<td>A1</td>
<td>Q2A71B-K7A</td>
<td>1025</td>
<td>1</td>
</tr>
</tbody>
</table>

OUTPUT:

Primary Display:

a. Check that the word "PART" appears on an orange background on the Group Number 1 block.

b. Check that the number 1 in the menu block turns orange.

c. Check that the orange background on the Group Number 1 block changes to green after approximately 15 seconds.

d. Check that the number 1 in the menu block remains orange.

Diagnostic Display:

a. Check that the numbers for the valves listed in Tables 16.1.1 and 16.1.4 turn and remain orange.

b. Check that the Group Number 1 block matches that of the primary display.

APPROVAL: 8-2-81
STEP 16:

ACTION:

De-energize Al (address 1025).

OUTPUT:

Primary Display

a. Check that the number 1 in the menu block turns green.
b. Check that the word "PART" disappears from the group number block, leaving a green blank.

Diagnostic Display:

a. Check that the numbers for the valves listed in Table 16.1.1 and 16.1.4 turn white.
b. Check that the word "PART" disappears from the group number 1 block, leaving a green blank.

APPROVAL: 315
STEP 17:

ACTION:

a. Open the F016 valve by setting 0102 to 1.
b. Energize BK (address 1040).

OUTPUT:

Primary Display:

a. Check that the word "PART" appears on a red background on the group number 1 block after approximately 15 seconds.
b. Check that the number 1 in the menu block turns red after approximately 15 seconds.

Diagnostic Display:

a. Check that the group number 1 block matches that of the Primary display.

ACTION:

a. Close the F016 valve by setting 0102 to 0.
b. Set bit values of all relays (A1, A2, B1, B2) to 0.

APPROVAL: [Signature]

316
STEP 18:

ACTION:

Close the valves listed in the following table:

**TABLE 16.1.8**

<table>
<thead>
<tr>
<th>SIGNAL DESCRIPTION</th>
<th>INPUT</th>
<th>OUTPUT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Q2B21-MOV F019</td>
<td>0637</td>
<td>0</td>
</tr>
<tr>
<td>Q2B31-AOV F020</td>
<td>0301</td>
<td>0300</td>
</tr>
</tbody>
</table>

OUTPUT:

Diagnostic Display

a. Check that the symbols for the valves listed in Table 16.1.8 are green.

b. Check that the valve numbers listed in Table 16.1.8 are white.

APPROVAL: [Signature]

E-2-84
STEP 19:

ACTION:

Actuate the relays as shown in the following table:

**TABLE 16.1.9**

<table>
<thead>
<tr>
<th>TRIP CHANNEL</th>
<th>SIGNAL DESCRIPTION</th>
<th>GIT SIGNAL ADDRESS</th>
<th>INPUT</th>
</tr>
</thead>
<tbody>
<tr>
<td>A1</td>
<td>Q2A71B-K7A</td>
<td>1025</td>
<td>0</td>
</tr>
<tr>
<td>B1</td>
<td>Q2A71B-K7B</td>
<td>1040</td>
<td>0</td>
</tr>
<tr>
<td>A2</td>
<td>Q2A71B-K7C</td>
<td>1026</td>
<td>1</td>
</tr>
<tr>
<td>B2</td>
<td>Q2A71B-K7D</td>
<td>1041</td>
<td>1</td>
</tr>
</tbody>
</table>

OUTPUT:

Primary Display:

a. Check that the word "PART" appears on an orange background on the group number 1 block.

b. Check that the number 1 in the menu block turns orange.

c. Check that the orange background on the Group Number 1 block changes to green after approximately 15 seconds.

d. Check that the number 1 in the menu block remains orange.

Diagnostic Display:

a. Check that the numbers for the valves listed in Tables 16.1.1 and 16.1.8 turn and remain orange.

b. Check that the Group Number 1 block matches that of the primary display.

APPROVAL: [Signature]

318
STEP 20:

ACTION:

De-energize A2 (address 1026), i.e., set bit value to 0.

OUTPUT:

Primary Display:

a. Check that the number 1 in the menu block turns green.

b. Check that the word "PART" disappears from the group number block, leaving a green blank.

Diagnostic Display:

a. Check that the numbers for the valves listed in Tables 16.1.1 and 16.1.8 turn white.

b. Check that the word "PART" disappears from the group number 1 block, leaving a green blank.

APPROVAL: [Signature] 82-84
STEP 21: ACTION:

a. Open the F019 valve by setting 0637 to 1.
b. Energize A2 (address 1026).

OUTPUT:

Primary Display:

a. Check that the word "PART" appears on a red background on the group number 1 block after approximately 15 seconds.
b. Check that the number 1 in the menu block turns red after approximately 15 seconds.

Diagnostic Display:

a. Check that the group number 1 block matches that of the Primary display.

ACTION:

a. Close the F019 valve by setting 0637 to 0.
b. Set bit values of all relays (A1, B1, A2, B2) to 0.

APPROVAL: [Signature] 2-8-7
STEP 22:

ACTION:

Actuate the relays as shown in the following table:

**TABLE 16.1.10**

<table>
<thead>
<tr>
<th>TRIP CHANNEL</th>
<th>SIGNAL DESCRIPTION</th>
<th>GIT SIGNAL ADDRESS</th>
<th>INPUT</th>
</tr>
</thead>
<tbody>
<tr>
<td>A1</td>
<td>Q2A71B-K7A</td>
<td>1025</td>
<td>1</td>
</tr>
<tr>
<td>A2</td>
<td>Q2A71B-K7C</td>
<td>1026</td>
<td>1</td>
</tr>
<tr>
<td>B1</td>
<td>Q2A71B-K7B</td>
<td>1040</td>
<td>0</td>
</tr>
<tr>
<td>B2</td>
<td>Q2A71B-K7D</td>
<td>1041</td>
<td>1</td>
</tr>
</tbody>
</table>

OUTPUT:

Primary Display:

a. Check that the word "PART" appears on an orange background on the group number 1 block.

b. Check that the number 1 in the menu block turns orange.

c. Check that the orange background on the Group Number 1 block changes to green after approximately 15 seconds.

d. Check that the number 1 in the menu block remains orange.

Diagnostic Display:

a. Check that the numbers for the valves listed in Tables 16.1.1 and 16.1.8 turn and remain orange.

b. Check that the Group Number 1 block matches that of the primary display.

APPROVAL: [Signature]
STEP 23

ACTION:

De-energize B2 (address 1041).

OUTPUT:

Primary Display:

a. Check that the number 1 in the menu block turns green.
b. Check that the word "PART" disappears from the group number block, leaving a green blank.

Diagnostic Display:

a. Check that the numbers for the valves listed in Tables 16.1.1 and 16.1.8 turn white.
b. Check that the word "PART" disappears from the group number 1 block, leaving a green blank.

APPROVAL: 16-2-84
STEP 24:

ACTION:

a. Open the F019 valve by setting 0637 to 1.
b. Energize B2 (address 1041).

OUTPUT:

Primary Display:

a. Check that the word "PART" appears on a red background on the group number 1 block after approximately 15 seconds.
b. Check that the number 1 in the menu block turns red after approximately 15 seconds.

Diagnostic Display:

a. Check that the group number 1 block matches that of the Primary display.

ACTION:

a. Close the F019 valve by setting 0637 to 0.
b. Set bit values of all relays (A1, B1, A2, B2) to 0.

APPROVAL: [Signature] 8/2/6
STEP 25:

ACTION:

Actuate the relays as shown in the following table:

**TABLE 16.1.11**

<table>
<thead>
<tr>
<th>TRIP CHANNEL</th>
<th>SIGNAL DESCRIPTION</th>
<th>GIT SIGNAL ADDRESS</th>
<th>INPUT</th>
</tr>
</thead>
<tbody>
<tr>
<td>B1</td>
<td>Q2A71B-K7B</td>
<td>1040</td>
<td>1</td>
</tr>
<tr>
<td>B2</td>
<td>Q2A71B-K7D</td>
<td>1041</td>
<td>1</td>
</tr>
<tr>
<td>A1</td>
<td>Q2A71B-K7A</td>
<td>1025</td>
<td>0</td>
</tr>
<tr>
<td>A2</td>
<td>Q2A71B-K7C</td>
<td>1026</td>
<td>1</td>
</tr>
</tbody>
</table>

OUTPUT:

Primary Display:

a. Check that the word "PART" appears on an orange background on the group number 1 block.

b. Check that the number 1 in the menu block turns orange.

c. Check that the orange background on the group number 1 block changes to green after approximately 15 seconds.

d. Check that the number 1 in the menu block remains orange.

Diagnostic Display:

a. Check that the numbers for the valves listed in Tables 16.1.1 and 16.1.8 turn and remain orange.

b. Check that the Group Number 1 block matches that of the primary display.

APPROVAL: 8-2-84
STEP 26

ACTION:

De-energize 2

OUTPUT:

Primary Display

a. Check that the number 1 in the menu block turns green.
b. Check that the word "PART" disappears from the group number block, leaving a green blank.

Diagnostic Display

a. Check that the numbers for the valves listed in Tables 16.1.1 and 16.1.8 turn white.
b. Check that the word "PART" disappears from the group number 1 block, leaving a green blank.

APPROVAL: 8-2-81
STEP 27:

ACTION:

a. Open the F019 valve by setting 0637 to 1.
b. Energize BZ (address 1047).

OUTPUT:

Primary Display:

a. Check that the word "ALL" appears on a red background on the group number 1 block after approximately 15 seconds.
b. Check that the number 1 in the menu block turns red after approximately 15 seconds.

Diagnostic Display:

a. Check that the group number 1 block matches that of the primary display.

ACTION:

a. Close the F019 valve by setting 0637 to 0.
b. Set bit values of all relays (Al, B1, A2, B2) to 0.

APPROVAL: [Signature]
STEP 28:

ACTION:

Actuate the relays as shown in the following table:

<table>
<thead>
<tr>
<th>TRIP CHANNEL</th>
<th>SIGNAL DESCRIPTION</th>
<th>GIT SIGNAL ADDRESS</th>
<th>INPUT</th>
</tr>
</thead>
<tbody>
<tr>
<td>A1</td>
<td>Q2A71B-K7A</td>
<td>1025</td>
<td>1</td>
</tr>
<tr>
<td>A2</td>
<td>Q2A71B-K7C</td>
<td>1026</td>
<td>1</td>
</tr>
<tr>
<td>B1</td>
<td>Q2A71B-K7B</td>
<td>1040</td>
<td>1</td>
</tr>
<tr>
<td>B2</td>
<td>Q2A71B-K7D</td>
<td>1041</td>
<td>1</td>
</tr>
</tbody>
</table>

OUTPUT:

Primary Display:

a. Check that the word "ALL" appears on an orange background on the group number 1 block.
b. Check that the number 1 in the menu block turns orange.
c. Check that the orange background on the group number 1 block changes to green after approximately 15 seconds.
d. Check that the number 1 in the menu block remains orange.

Diagnostic Display:

a. Check that the numbers for the valves listed in Tables 16.1.1, 16.1.4 and 16.1.8 turn and remain orange.
b. Check that the Group Number 1 block matches that of the primary display.
STEP 29:

ACTION:

De-energize A1 and A2 (addresses 1025 and 1026), i.e. set bit values to 0.

OUTPUT:

Primary Display

a. Check that the number 1 in the menu block turns green.
b. Check that the word "PART" disappears from the group number block, leaving a green blank.

Diagnostic Display

a. Check that the numbers for the valves listed in Tables 16.1.1, 16.1.4 and 16.1.8 turn white.
b. Check that the word "PART" disappears from the group number 1 block, leaving a green blank.

APPROVAL: 9-2-87
STEP 30:

ACTION:

a. Open the F019 valve by setting 0637 to 1.
b. Energize A1 and A2 (addresses 1025 and 1026).

OUTPUT:

Primary Display:

a. Check that the word "ALL" appears on a red background on the group number 1 block after approximately 15 seconds.
b. Check that the number 1 in the menu block turns red after approximately 15 seconds.

Diagnostic Display:

a. Check that the group number 1 block matches that of the primary display.

APPROVAL: 8-2-87
16.2. GROUP 2A ISOLATION - RHR

STEP 1

ACTION:

a. Call up the PCIS Group 2A Diagnostic display and call the reference test data.

b. Close the valves listed in the following table.

TABLE 16.2.1

<table>
<thead>
<tr>
<th>SIGNAL DESCRIPTION</th>
<th>INPUT</th>
<th>OUTPUT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Q2E11-SV F079A</td>
<td>0111</td>
<td>Closed (G)</td>
</tr>
<tr>
<td>Q2E11-SV F079B</td>
<td>0112</td>
<td>Closed (G)</td>
</tr>
<tr>
<td>Q2E11-MOV F022</td>
<td>0055_0054</td>
<td>Closed (G)</td>
</tr>
<tr>
<td>Q2E11-AOV F122A</td>
<td>0110</td>
<td>Closed (G)</td>
</tr>
<tr>
<td>Q2E11-MOV F040</td>
<td>0107</td>
<td>Closed (G)</td>
</tr>
</tbody>
</table>

OUTPUT:

Diagnostic Display:

a. Check that the symbols for the valves listed in Table 16.2.1 are green.

b. Check that the valve numbers listed in Table 16.2.1 are white.

APPROVAL: \[\text{Signature}\]
STEP 2

ACTION:

Set the relays as shown in the following table.

**TABLE 16.2.2**

<table>
<thead>
<tr>
<th>SIGNAL DESCRIPTION</th>
<th>GIT SIGNAL ADDRESS</th>
<th>INPUT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Q2A71B-K6A</td>
<td>1031</td>
<td>0</td>
</tr>
<tr>
<td>Q2A71B-K5C</td>
<td>1030</td>
<td>0</td>
</tr>
<tr>
<td>Q2A71B-K6C</td>
<td>1032</td>
<td>0</td>
</tr>
<tr>
<td>Q2A71B-K6B</td>
<td>1044</td>
<td>0</td>
</tr>
<tr>
<td>Q2A71B-K5D</td>
<td>1043</td>
<td>0</td>
</tr>
<tr>
<td>Q2A71B-K6D</td>
<td>1045</td>
<td>0</td>
</tr>
<tr>
<td>Q2E11-K9A</td>
<td>1047</td>
<td>0</td>
</tr>
<tr>
<td>Q2E11-K9B</td>
<td>1051</td>
<td>0</td>
</tr>
<tr>
<td>Q2E11A-K73A</td>
<td>1050</td>
<td>0</td>
</tr>
<tr>
<td>Q2E11A-K73B</td>
<td>1052</td>
<td>0</td>
</tr>
<tr>
<td>Q2A71B-K5A</td>
<td>1027</td>
<td>1</td>
</tr>
<tr>
<td>Q2A71B-K5B</td>
<td>1042</td>
<td>1</td>
</tr>
</tbody>
</table>

OUTPUT:

**Primary Display:**

a. Check that the word "PART" appears on an orange background on the group number 2 block and the Unit 2 secondary isolation block.
b. Check that 2A, 2B, 2C, 2D, 2E and SEC in the menu block turn orange.
c. Check that the orange background on the group number 2 block turns red after approximately 5 seconds.
d. Check that the 2A in the menu block remains orange and that 2B, 2C, 2D, 2E and SEC turn red within approximately 30 seconds.
e. Check that the background on the Unit 2 secondary isolation block turns red after approximately 30 seconds.

**Diagnostic Display:**

a. Check that the numbers for the valves listed in Table 16.2.1 turn orange.
b. Check that the word "PART" appears on a red background on the group number 2 block.
c. Check that the word "PART" appears on an orange background on the RHR block and that this background turns green after approximately 25 seconds.

APPROVAL: 331
STEP 3

ACTION:

De-energize the K5A relay, i.e., set bit value to 0 (address 1027).

OUTPUT:

Primary Display:

a. Check that 2A, 2B, 2C, 2D, 2E and SEC in the menu block turn green.
b. Check that the word "PART" disappears from the group number 2 block and the Unit 2 secondary isolation block, leaving green blanks.

Diagnostic Display:

a. Check that the valve numbers listed in Table 16.2.1 turn white.
b. Check that the word "PART" disappears from the group number 2 and RHR blocks, leaving green blanks.

APPROVAL: Y C-2-84
STEP 4

ACTION:

a. Open the SV-F079A valve by setting 0111 to 1.
b. Energize the K5A relay (address 1027).

OUTPUT:

Primary Display:

a. Check that the word "PART" appears on a red background on the group number 2 block after approximately 5 seconds and on the Unit 2 secondary isolation block after approximately 30 seconds.
b. Check that 2A in the menu block turns red after approximately 25 seconds and that 2B, 2C, 2D, 2E and SEC turn red within approximately 30 seconds.

Diagnostic Display:

a. Check that the word "PART" appears on a red background on the group number 2 block.
b. Check that the word "PART" appears on an orange background on the RHR block and that this background turns red after approximately 25 seconds.

ACTION:

a. Close the SV-F079A valve by setting 0111 to 0.
b. De-energize the K5A and K5B relays (addresses 1027 and 1042).

APPROVAL: 8-2-84
STEP 5

ACTION:

Close the valves listed in the following table.

TABLE 16.2.3

<table>
<thead>
<tr>
<th>SIGNAL DESCRIPTION</th>
<th>INPUT</th>
<th>OUTPUT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Q2E11-AOV F122B</td>
<td>0306</td>
<td>0 Closed (G)</td>
</tr>
<tr>
<td>Q2E11-MOV F023</td>
<td>0447</td>
<td>0446 0 Closed (G)</td>
</tr>
<tr>
<td>Q2E11-MOV F049</td>
<td>0546</td>
<td>0 Closed (G)</td>
</tr>
<tr>
<td>Q2E11-SV F080A</td>
<td>0307</td>
<td>0 Closed (G)</td>
</tr>
<tr>
<td>Q2E11-SV F080B</td>
<td>0310</td>
<td>0 Closed (G)</td>
</tr>
</tbody>
</table>

OUTPUT:

Diagnostic Display:

a. Check that the symbols for the valves listed in Table 16.2.3 are green.
b. Check that the valve numbers listed in Table 16.2.3 are white.

APPROVAL: [Signature] 2-04
STEP 6

ACTION:

Energize the K5C and K5D relays (GIT signal addresses 1030 and 1043, respectively).

OUTPUT:

Primary Display:

a. Check that the word "PART" appears on an orange background on the group number 2 block and the Unit 2 secondary isolation block.
b. Check that 2A, 2B, 2C, 2D, 2E and SEC in the menu block turn orange.
c. Check that the orange background on the group number 2 block turns red after approximately 5 seconds.
d. Check that 2A in the menu block remains orange and that 2B, 2C, 2D, 2E and SEC turn red within approximately 30 seconds.
e. Check that the background on the Unit 2 secondary isolation block turns red after approximately 30 seconds.

Diagnostic Display:

a. Check that the numbers for the valves listed in Table 16.2.3 turn orange.
b. Check that the word "PART" appears on a red background on the group number 2 block.
c. Check that the word "PART" appears on an orange background on the RHR block and that this background turns green after approximately 20 seconds.

APPROVAL: [Signature]
STEP 7

ACTION:

De-energize the K5C relay (address 1030).

OUTPUT:

Primary Display:

a. Check that 2A, 2B, 2C, 2D, 2E, and SEC in the menu block turn green.

b. Check that the word "PART" disappears from the group number 2 block and the Unit 2 secondary isolation block, leaving green blanks.

Diagnostic Display:

a. Check that the valve numbers listed in Table 16.2.3 turn white.

b. Check that the word "PART" disappears from the group number 2 and RHR blocks, leaving green blanks.

APPROVAL: [Signature]
STEP 8

ACTION:

a. Open the AOV F122B valve by setting 0306 to 1.

b. Energize the K5C relay (address 1030).

OUTPUT:

Primary Display:

a. Check that the word "PART" appears on an red background on the group number 2 block after approximately 5 seconds and on the Unit 2 secondary isolation block after approximately 30 seconds.

b. Check that 2A in the menu block turns red after approximately 20 seconds and that 2B, 2C, 2D, 2E and SEC turn red within approximately 30 seconds.

Diagnostic Display:

a. Check that the word "PART" appears on a red background on the group number 2 block.

b. Check that the word "PART" appears on an orange background on the RHR block and that this background turns red after approximately 20 seconds.

ACTION:

a. Close the AOV F122B valve by setting 0306 to 0.

b. De-energize the K5C and K5D relays (addresses 1030 and 1043).

APPROVAL: 8-2-84
STEP 9

ACTION:

Close the valves listed in the following table.

Table 16.2.4

<table>
<thead>
<tr>
<th>SIGNAL DESCRIPTION</th>
<th>INPUT</th>
<th>OUTPUT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Q2E11-MOV F009</td>
<td>0021</td>
<td>0020</td>
</tr>
<tr>
<td></td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>Q2E11-MOV F008</td>
<td>0445</td>
<td>0444</td>
</tr>
<tr>
<td></td>
<td>1</td>
<td>0</td>
</tr>
</tbody>
</table>

OUTPUT:

Diagnostic Display:

a. Check that the symbols for the valves listed in Table 16.2.4 are green.

b. Check that the valve numbers listed in Table 16.2.4 are white.
STEP 10

ACTION:

Energize the K6A and K6B relays (addresses 1031 and 1044).

OUTPUT:

Primary Display:

a. Check that the word "PART" appears on an orange background on the group number 2 block.
b. Check that 2A, 2B, 2C, 2D and 2E in the menu block turn orange.
c. Check that the orange background on the group number 2 block turns red after approximately 5 seconds.
d. Check that 2A in the menu block remains orange and that 2B, 2C, 2D and 2E turn red within approximately 20 seconds.

Diagnostic Display:

a. Check that the numbers for the valves listed in Table 16.2.1 and the F009 valve turn orange.
b. Check that the word "PART" appears on a red background on the group number 2 block.
c. Check that the word "PART" appears on an orange background on the RHR block and that background turns green after approximately 26 seconds.

APPROVAL: 5-2-8 /
STEP 11

ACTION:

De-energize the K6A relay (address 1031).

OUTPUT:

Primary Display:

a. Check that 2A, 2B, 2C, 2D and 2E in the menu block turn green.
b. Check that the word "PART" disappears from the group number 2 block, leaving a green blank.

Diagnostic Display:

a. Check that the numbers for the valves listed in Table 16.2.1 and the F009 valve turn white.
b. Check that the word "PART" disappears from the group number 2 and RHR blocks, leaving green blanks.

APPROVAL: 8-2-84
STEP 12

ACTION:

a. Open the F009 valve by setting 0020 to 1.
b. Energize the K6A relay (address 1031).

OUTPUT:

Primary Display:

a. Check that the word "PART" appears on an red background on the group number 2 block after approximately 5 seconds.
b. Check that 2A in the menu block turns red after approximately 26 seconds and that 2B, 2C, 2D and 2E turn red within approximately 20 seconds.

Diagnostic Display:

a. Check that the word "PART" appears on a red background on the group number 2 block.
b. Check that the word "PART" appears on an orange background on the RHR block and that this background turns red after approximately 26 seconds.

ACTION:

a. Close the F009 valve by setting 0020 to 0.
b. De-energize the K6A and K6B relays (addresses 1031 and 1044).

APPROVAL: 8-2-84
STEP 13

ACTION:

Energize the K6C and K6D relays (addresses 1032 and 1045).

OUTPUT:

Primary Display:

a. Check that the word "PART" appears on an orange background on the group number 2 block.
b. Check that 2A, 2B, 2C, 2D and 2E in the menu block turn orange.
c. Check that the orange background on the group number 2 block turns red after approximately 5 seconds.
d. Check that 2A in the menu block remains orange and that 2B, 2C, 2D and 2E turn red within approximately 20 seconds.

Diagnostic Display:

a. Check that the numbers for the valves listed in Table 16.2.3 and the F008 valve turn orange.
b. Check that the word "PART" appears on a red background on the group number 2 block after approximately 5 seconds.
c. Check that the word "PART" appears on an orange background on the RHR block and that background turns green after approximately 24 seconds.

APPROVAL: [Signature]
STEP 14

ACTION:

De-energize the K6C relay (address 1032).

OUTPUT:

Primary Display:

a. Check that 2A, 2B, 2C, 2D and 2E in the menu block turn green.
b. Check that the word "PART" disappears from the group number 2 block, leaving a green blank.

Diagnostic Display:

a. Check that the numbers for the valves listed in Table 16.2.3 and the F008 valve turn white.
b. Check that the word "PART" disappears from the group number 2 and RHR blocks, leaving green blanks.

APPROVAL: ___2.8ef
STEP 15

ACTION:

a. Open the F008 valve by setting 0444 to 1.

b. Energize the K6C relay (address 1032).

OUTPUT:

Primary Display:

a. Check that the word "PART" appears on an red background on the group number 2 block after approximately 5 seconds.

b. Check that 2A in the menu block turns red after approximately 24 seconds and that 2B, 2C, 2D and 2E turn red within approximately 20 seconds.

Diagnostic Display:

a. Check that the word "PART" appears on a red background on the group number 2 block.

b. Check that the word "PART" appears on an orange background on the RHR block and that this background turns red after approximately 24 seconds.

ACTION:

a. Close the F008 valve by setting 0444 to 0.

b. De-energize the K6C and K6D relays (addresses 1032 and 1045).

APPROVAL: [Signature] 2-81
STEP 16

ACTION:

Close the valves listed in the following table.

TABLE 16.2.5

<table>
<thead>
<tr>
<th>SIGNAL DESCRIPTION</th>
<th>INPUT</th>
<th>OUTPUT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Q2E11-MOV F016A</td>
<td>0041</td>
<td>0040</td>
</tr>
<tr>
<td></td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>Q2E11-MOV F028A</td>
<td>0045</td>
<td>0044</td>
</tr>
<tr>
<td></td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>Q2E11-MOV F021A</td>
<td>0025</td>
<td>0024</td>
</tr>
<tr>
<td></td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>Q2E11-MOV F024A</td>
<td>0027</td>
<td>0026</td>
</tr>
<tr>
<td></td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>Q2E11-MOV F027A</td>
<td>0031</td>
<td>0030</td>
</tr>
<tr>
<td></td>
<td>1</td>
<td>0</td>
</tr>
</tbody>
</table>

OUTPUT:

Diagnostic Display:

a. Check that the symbols for the valves listed in Table 16.2.5 are green.

b. Check that the valve numbers listed in Table 16.2.5 are white.

APPROVAL: 2-84
STEP 17

ACTION:

Energize the K9A relay (GIT signal address 1047).

OUTPUT:

Primary Display:

a. Check that the word "PART" appears on an orange background on the group number 2 block.
b. Check that the Number 2A in the menu block turns orange.
c. Check that the orange background on the group number 2 block changes to green after approximately 122 seconds.
d. Check that the number 2A in the menu block remains orange.

Diagnostic Display:

a. Check that the numbers for the valves listed in Table 16.2.5 turn orange.
b. Check that the word "PART" appears on an orange background on the group number 2 block.
c. Check that the word "PART" appears on an orange background on the RHR block.
d. Check that the orange backgrounds of the blocks in (b) and (c) above turn green after approximately 122 seconds.

APPROVAL: [Signature] 8-2-84
STEP 18

ACTION:

De-energize the K9A relay (address 1047).

OUTPUT:

Primary Display:

a. Check that 2A in the menu block turns green.
b. Check that the word "PART" disappears from the group number 2 block, leaving a green blank.

Diagnostic Display:

a. Check that the numbers for the valves in Table 16.2.5 turn white.
b. Check that the word "PART" disappears from the group number 2 and RHR blocks, leaving green blanks.

APPROVAL: [Signature]
STEP 19

ACTION:

a. Open the MOV F016A valve by setting 0040 to 1.

b. Energize the K9A relay (address 1047).

OUTPUT:

Primary Display:

a. Check that the word "PART" appears on a red background on the group number 2 block after approximately 122 seconds.

b. Check that the Number 2A in the menu block turns red after approximately 122 seconds.

Diagnostic Display:

a. Check that the word "PART" appears on a red background on both the Group Number 2 and RHR blocks after approximately 122 seconds.

ACTION:

a. Close the MOV F016A valve by setting 0040 to 0.

b. De-energize the K9A relay (address 1047).

APPROVAL: 8-2-87
STEP 20

ACTION:

Close the valves listed in the following table.

**TABLE 16.2.6**

<table>
<thead>
<tr>
<th>SIGNAL DESCRIPTION</th>
<th>INPUT</th>
<th>OUTPUT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Q2E11-MOV F016B</td>
<td>0215</td>
<td>0214</td>
</tr>
<tr>
<td></td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>Q2E11-MOV F028B</td>
<td>0221</td>
<td>0220</td>
</tr>
<tr>
<td></td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>Q2E11-MOV F021B</td>
<td>0231</td>
<td>0230</td>
</tr>
<tr>
<td></td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>Q2E11-MOV F024B</td>
<td>0233</td>
<td>0232</td>
</tr>
<tr>
<td></td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>Q2E11-MOV F027B</td>
<td>0235</td>
<td>0234</td>
</tr>
<tr>
<td></td>
<td>1</td>
<td>0</td>
</tr>
</tbody>
</table>

OUTPUT:

Diagnostic Display:

a. Check that the symbols for the valves listed in Table 16.2.6 are green.

b. Check that the valve numbers listed in Table 16.2.6 are white.

APPROVAL: [Signature] 8/28/87
STEP 21

ACTION:

Energize the K9B relay (GIT signal address 1051).

OUTPUT:

Primary Display:

a. Check that the word "PART" appears on an orange background on the group number 2 block.

b. Check that the Number 2A in the menu block turns orange.

c. Check that the orange background on the group number 2 block changes to green after approximately 122 seconds.

d. Check that the number 2A in the menu block remains orange.

Diagnostic Display:

a. Check that the numbers for the valves listed in Table 16.2.6 turn orange.

b. Check that the word "PART" appears on an orange background on the group number 2 block.

c. Check that the word "PART" appears on an orange background on the RHR block.

d. Check that the orange backgrounds of the blocks in (b) and (c) above turn green after approximately 122 seconds.

APPROVAL: 9-2-84
STEP 22

ACTION:

De-energize the K9B relay (address 1051).

OUTPUT:

Primary Display:

a. Check that 2A in the menu block turns green.
b. Check that the word "PART" disappears from the group number 2 block, leaving a green blank.

Diagnostic Display:

a. Check that the numbers for the valves in Table 16.2.6 turn white.
b. Check that the word "PART" disappears from the group number 2 and RHR blocks, leaving green blanks.

APPROVAL: [Signature]
STEP 23

ACTION:

a. Open the MOV F016B valve by setting 0214 to 1.

b. Energize the K9B relay (address 1051).

OUTPUT:

Primary Display:

a. Check that the word "PART" appears on a red background on the group number 2 block after approximately 122 seconds.

b. Check that the Number 2A in the menu block turns red after approximately 122 seconds.

Diagnostic Display:

a. Check that the word "PART" appears on a red background on both the Group Number 2 and RHR blocks after approximately 122 seconds.

ACTION:

a. Close the MOV F016B valve by setting 0214 to 0.

b. De-energize the K9B relay (address 1051).

APPROVAL: E-2-84
STEP 24

ACTION:

Close the valves listed in the following table.

TABLE 16.2.7

<table>
<thead>
<tr>
<th>SIGNAL DESCRIPTION</th>
<th>INPUT</th>
<th>OUTPUT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Q2E11-MOV F011A</td>
<td>0023</td>
<td>0022</td>
</tr>
<tr>
<td></td>
<td>\frac{1}{1}</td>
<td>0</td>
</tr>
<tr>
<td>Q2E11-MOV F026A</td>
<td>0043</td>
<td>0042</td>
</tr>
<tr>
<td></td>
<td>\frac{1}{1}</td>
<td>0</td>
</tr>
</tbody>
</table>

OUTPUT:

Diagnostic Display:

a. Check that the symbols for the valves listed in Table 16.2.7 are green.
b. Check that the valve numbers listed in Table 16.2.7 are white.

APPROVAL: \[ \text{Signature} \]
STEP 25

ACTION:

Energize the K73A relay (GIT signal address 1050).

OUTPUT:

Primary Display:

a. Check that the word "PART" appears on an orange background on the group number 2 block.

b. Check that the Number 2A in the menu block turns orange.

c. Check that the orange background on the group number 2 block changes to green after approximately 20 seconds.

d. Check that the number 2A in the menu block remains orange.

Diagnostic Display:

a. Check that the numbers for the valves listed in Table 16.2.7 turn orange.

b. Check that the word "PART" appears on an orange background on the group number 2 block.

c. Check that the word "PART" appears on an orange background on the RHR block.

d. Check that the orange backgrounds of the blocks in (b) and (c) above turn green after approximately 20 seconds.

APPROVAL: 

[Signature]

[Date: 8-2-87]
STEP 26

ACTION:

De-energize the K73A relay (address 1050).

OUTPUT:

Primary Display:

a. Check that 2A in the menu block turns green.
b. Check that the word "PART" disappears from the group number 2 block, leaving a green blank.

Diagnostic Display:

a. Check that the numbers for the valves in Table 16.2.7 turn white.
b. Check that the word "PART" disappears from the group number 2 and RHR blocks, leaving green blanks.

APPROVAL: 8-2-84
STEP 27

ACTION:

a. Open the F011A valve by setting 0022 to 1.
b. Energize the K73A relay (address 1050).

OUTPUT:

Primary Display:

a. Check that the word "PART" appears on a red background on the group number 2 block after approximately 20 seconds.
b. Check that the Number 2A in the menu block turns red after approximately 20 seconds.

Diagnostic Display:

a. Check that the word "PART" appears on a red background on both the Group Number 2 and RHR blocks after approximately 20 seconds.

ACTION:

a. Close the F011A valve by setting 0022 to 0.
b. De-energize the K73A relay (address 1050).

APPROVAL: A E-2 Ef
STEP 28

ACTION:

Close the valves listed in the following table.

TABLE 16.2.8.

<table>
<thead>
<tr>
<th>SIGNAL DESCRIPTION</th>
<th>INPUT</th>
<th>OUTPUT</th>
<th>ACTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>Q2E11-MOV F011B</td>
<td>0227</td>
<td>0226</td>
<td>0</td>
</tr>
<tr>
<td>Q2E11-MOV F026B</td>
<td>0217</td>
<td>0216</td>
<td>0</td>
</tr>
</tbody>
</table>

OUTPUT:

Diagnostic Display:

a. Check that the symbols for the valves listed in Table 16.2.8 are green.

b. Check that the valve numbers listed in Table 16.2.8 are white.

APPROVAL: 8-2-87
STEP 29

ACTION:

Energize the K73B relay (GIT signal address 1052).

OUTPUT:

Primary Display:

a. Check that the word "PART" appears on an orange background on the group number 2 block.

b. Check that the Number 2A in the menu block turns orange.

c. Check that the orange background on the group number 2 block changes to green after approximately 20 seconds.

d. Check that the number 2A in the menu block remains orange.

Diagnostic Display:

a. Check that the numbers for the valves listed in Table 16.2.8 turn orange.

b. Check that the word "PART" appears on an orange background on the group number 2 block.

c. Check that the word "PART" appears on an orange background on the RHR block.

d. Check that the orange backgrounds of the blocks in (b) and (c) above turn green after approximately 20 seconds.

APPROVAL: [Signature]
STEP 30

ACTION:

De-energize the K73B relay (address 1052).

OUTPUT:

Primary Display:

a. Check that 2A in the menu block turns green.
b. Check that the word "PART" disappears from the group number 2 block, leaving a green blank.

Diagnostic Display:

a. Check that the numbers for the valves in Table 16.2.8 turn white.
b. Check that the word "PART" disappears from the group number 2 and RHR blocks, leaving green blanks.

APPROVAL:  

359
STEP 31

ACTION:

a. Open the F011B valve by setting 0226 to 1.

b. Energize the K73B relay (address 1052).

OUTPUT:

Primary Display:

a. Check that the word "PART" appears on a red background on the group number 2 block after approximately 20 seconds.

b. Check that the Number 2A in the menu block turns red after approximately 20 seconds.

Diagnostic Display:

a. Check that the word "PART" appears on a red background on both the Group Number 2 and RHR blocks after approximately 20 seconds.

ACTION:

a. Close the F011B valve by setting 0226 to 0.

b. De-energize the K73B relay (address 1052).

APPROVAL: [Signature] 8-2-04
STEP 32

ACTION:

a. Disable buffer transfer.
b. Energize the relays listed in the following table.
c. Enable buffer transfer.

TABLE 16.2.9

<table>
<thead>
<tr>
<th>SIGNAL DESCRIPTION</th>
<th>GIT SIGNAL ADDRESS</th>
<th>INPUT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Q2A71B-K5A</td>
<td>1027</td>
<td>1</td>
</tr>
<tr>
<td>Q2A71B-K6A</td>
<td>1031</td>
<td>1</td>
</tr>
<tr>
<td>Q2A71B-K5C</td>
<td>1030</td>
<td>1</td>
</tr>
<tr>
<td>Q2A71B-K6C</td>
<td>1032</td>
<td>1</td>
</tr>
<tr>
<td>Q2A71B-K5B</td>
<td>1042</td>
<td>1</td>
</tr>
<tr>
<td>Q2A71B-K6B</td>
<td>1044</td>
<td>1</td>
</tr>
<tr>
<td>Q2A71B-K5D</td>
<td>1043</td>
<td>1</td>
</tr>
<tr>
<td>Q2A71B-K6D</td>
<td>1045</td>
<td>1</td>
</tr>
<tr>
<td>Q2E11-K9A</td>
<td>1047</td>
<td>1</td>
</tr>
<tr>
<td>Q2E11-K9B</td>
<td>1051</td>
<td>1</td>
</tr>
<tr>
<td>Q2E11A-K73A</td>
<td>1050</td>
<td>1</td>
</tr>
<tr>
<td>Q2E11A-K73B</td>
<td>1052</td>
<td>1</td>
</tr>
</tbody>
</table>

OUTPUT:

Primary Display:

a. Check that the word "PART" appears on an orange background on the group number 2 block and on the Unit 2 secondary isolation block.
b. Check that 2A, 2B, 2C, 2D, 2E and SEC in the menu block turns orange.
c. Check that the orange background on the group number 2 block turns red after approximately 5 seconds.
d. Check that 2A in the menu block remains orange and that 2B, 2C, 2D, 2E and SEC turn red within approximately 30 seconds.
e. Check that the background of the Unit 2 secondary isolation block turns red after approximately 30 seconds.

Diagnostic Display:

a. Check that the numbers for the valves listed in Tables 16.2.1, 16.2.3, 16.2.4, 16.2.5, 16.2.6, 16.2.7 and 16.2.8 turn orange.
b. Check that the word "PART" appears on a red background on the group number 2 block.
c. Check that the word "ALL" appears on an orange background on the RHR block and that this background turns green after approximately 122 seconds.

APPROVAL: 172 2 611
STEP 33

ACTION:

De-energize the relays listed in Table 16.2.9.

OUTPUT:

Primary Display:

a. Check that 2A, 2B, 2C, 2D, 2E and SEC in the menu block turn green.
b. Check that the word "PART" disappears from the group number 2 block and
   the Unit 2 secondary isolation block, leaving green blanks.

Diagnostic Display:

a. Check that the valve numbers listed in Tables 16.2.1, 16.2.3, 16.2.4,
   16.2.5, 16.2.6, 16.2.7 and 16.2.8 turn white.
b. Check that the words "PART" and "ALL" disappear from the group number 2 and
   RHR blocks, respectively, leaving green blanks.

APPROVAL: [Signature]
STEP 34

ACTION:

a. Open the MOV-F011B valve by setting 0226 to 1.

b. Disable buffer transfer.

c. Energize the relays listed in Table 16.2.9.

d. Enable buffer transfer.

OUTPUT:

Primary Display:

a. Check that the word "PART" appears on an red background on the group number 2 block after approximately 5 seconds and the Unit 2 secondary isolation block after approximately 30 seconds.

b. Check that 2A in the menu block turns red after approximately 122 seconds and that 2B, 2C, 2D, 2E and SEC turn red within approximately 30 seconds.

Diagnostic Display:

a. Check that the word "PART" appears on a red background on the group number 2 block.

b. Check that the word "ALL" appears on an orange background on the RHR block and that this background turns red after approximately 122 seconds.

APPROVAL: [Signature] 8-2-94
16.3 GROUP 2B ISOLATION - MISC

STEP 1

ACTION:

a. Call up the PCIS Group 2B Diagnostic display and the reference test data.
b. Close the valves listed in the following table.

TABLE 16.3.1.

<table>
<thead>
<tr>
<th>SIGNAL DESCRIPTION</th>
<th>INPUT</th>
<th>OUTPUT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Q2G11-AOV F003</td>
<td>0124</td>
<td>0</td>
</tr>
<tr>
<td>Q2G11-AOV F019</td>
<td>0125</td>
<td>0</td>
</tr>
<tr>
<td>Q2G51-AOV F011</td>
<td>0126</td>
<td>0</td>
</tr>
<tr>
<td>Q2G51-AOV F017</td>
<td>0405</td>
<td>0404</td>
</tr>
</tbody>
</table>

OUTPUT:

Diagnostic Display:

a. Check that the symbols for the valves listed in Table 16.3.1 are green.
b. Check that the valve numbers listed in Table 16.3.1 are white.

APPROVAL: [Signature]

364
STEP 2

ACTION:

Set the relays as shown in the following table.

**TABLE 16.3.2**

<table>
<thead>
<tr>
<th>SIGNAL DESCRIPTION</th>
<th>GIT SIGNAL ADDRESS</th>
<th>INPUT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Q2A71B-K6A</td>
<td>1031</td>
<td>0</td>
</tr>
<tr>
<td>Q2A71B-K5C</td>
<td>1030</td>
<td>0</td>
</tr>
<tr>
<td>Q2A71B-K6C</td>
<td>1032</td>
<td>0</td>
</tr>
<tr>
<td>Q2A71B-K6B</td>
<td>1044</td>
<td>0</td>
</tr>
<tr>
<td>Q2A71B-K5D</td>
<td>1043</td>
<td>0</td>
</tr>
<tr>
<td>Q2A71B-K6D</td>
<td>1045</td>
<td>0</td>
</tr>
<tr>
<td>Q2E21A-K5A</td>
<td>1061</td>
<td>0</td>
</tr>
<tr>
<td>Q2E21A-K5B</td>
<td>1064</td>
<td>0</td>
</tr>
<tr>
<td>Q2E41A-K56</td>
<td>1062</td>
<td>0</td>
</tr>
<tr>
<td>Q2E41A-K57</td>
<td>1065</td>
<td>0</td>
</tr>
<tr>
<td>Q2E21A-K10A</td>
<td>1063</td>
<td>0</td>
</tr>
<tr>
<td>Q2E21A-K10B</td>
<td>1066</td>
<td>0</td>
</tr>
<tr>
<td>Q2A71B-K5A</td>
<td>1027</td>
<td>1</td>
</tr>
<tr>
<td>Q2A71B-K5B</td>
<td>1042</td>
<td>1</td>
</tr>
</tbody>
</table>

OUTPUT:

Primary Display:

a. Check that the word "PART" appears on an orange background on the group number 2 block and the Unit 2 secondary isolation block.
b. Check that 2A, 2B, 2C, 2D, 2E and SEC in the menu block turn orange.
c. Check that the orange background on the group number 2 block turns red after approximately 5 seconds.
d. Check that 2B in the menu block remains orange and that 2A, 2C, 2D, 2E and SEC turn red within approximately 30 seconds.
e. Check that the background on the Unit 2 secondary isolation block turns red after approximately 30 seconds.

Diagnostic Display:

a. Check that the numbers for the valves listed in Table 16.3.1 turn orange.
b. Check that the word "PART" appears on a red background on the group number 2 block.
c. Check that the word "PART" appears on an orange background on the MISC block and that this background turns green after approximately 20 seconds.

APPROVAL: [Signature] 2 - CF
STEP 3

ACTION:

De-energize the Q2A71B-K5A relay (address 1027).

OUTPUT:

Primary Display:

a. Check that 2A, 2B, 2C, 2D, 2E and SEC in the menu block turn green.
b. Check that the word "PART" disappears from the group number 2 block and the Unit 2 secondary isolation block, leaving green blanks.

Diagnostic Display:

a. Check that the valve numbers listed in Table 16.3.1 turn white.
b. Check that the word "PART" disappears from the group number 2 and MISC blocks, leaving green blanks.

APPROVAL: 8-2-84
STEP 4

ACTION:

a. Open the F003 valve by setting 0124 to 1.
b. Energize the Q2A71B-K5A relay (address 1027).

OUTPUT:

Primary Display:

a. Check that the word "PART" appears on an red background on the group number 2 block after approximately 5 seconds and on the Unit 2 secondary isolation block within approximately 30 seconds.
b. Check that 2B in the menu block turns red after approximately 20 seconds and that 2A, 2C, 2D, 2E and SEC turn red within approximately 30 seconds.

Diagnostic Display:

a. Check that the word "PART" appears on an red background on the group number 2 block.
b. Check that the word "PART" appears on an orange background on the MISC block and that this background turns red after approximately 20 seconds.

ACTION:

a. Close the F003 valve by setting 0124 to 0.
b. De-energize the Q2A71B-K5A and Q2A71B-K5B relays (addresses 1027 and 1042).

APPROVAL:  

367
STEP 5

ACTION:

Energize the K6A and K6B relays (addresses 1031 and 1044).

OUTPUT:

Primary Display:

a. Check that the word "PART" appears on an orange background on the group number 2 block.
b. Check that 2A, 2B, 2C, 2D and 2E in the menu block turn orange.
c. Check that the orange background on the group number 2 block changes to red after approximately 5 seconds.
d. Check that 2B in the menu block remains orange and that 2A, 2C, 2D and 2E turn red within approximately 25 seconds.

Diagnostic Display:

a. Check that the numbers for the valves listed in Table 16.3.1 turn orange.
b. Check that the word "PART" appears on an red background on the group number 2 block.
c. Check that the word "PART" appears on an orange background on the MISC block, and that this background turns green after approximately 20 seconds.

APPROVAL: 8-2-84
STEP 6

ACTION:

De-energize the K6A relay (address 1031).

OUTPUT:

Primary Display:

a. Check that 2A, 2B, 2C, 2D and 2E in the menu block turn green.
b. Check that the word "PART" disappears from the group number 2 block, leaving a green blank.

Diagnostic Display:

a. Check that the valve numbers listed in Table 16.3.1 turn white.
b. Check that the word "PART" disappears from the group number 2 and MISC blocks, leaving green blanks.

APPROVAL: [Signature]
STEP 7

ACTION:

a. Open the F003 valve by setting 0124 to 1.
b. Energize the K6A relay (address 1031).

OUTPUT:

Primary Display:

a. Check that the word "PART" appears on an red background on the group number 2 block after approximately 5 seconds.
b. Check that 2B in the menu block turns red after approximately 20 seconds and that 2A, 2C, 2D and 2E turn red within approximately 25 seconds.

Diagnostic Display:

a. Check that the word "PART" appears on an red background on the group number 2 block.
b. Check that the word "PART" appears on an orange background on the MISC block and that this background turns red after approximately 20 seconds.

ACTION:

a. Close the F003 valve by setting 0124 to 0.
b. De-energize the K6A and K6B relays (addresses 1031 and 1044).

APPROVAL: \[
\begin{array}{c}
\text{A} \\
\text{E-2} \\
\text{E-2f}
\end{array}
\]
STEP 8

ACTION:

Close the valves listed in the following table.

TABLE 16.3.3

<table>
<thead>
<tr>
<th>SIGNAL DESCRIPTION</th>
<th>INPUT</th>
<th>OUTPUT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Q2G11-AOV F004</td>
<td>0322</td>
<td>Closed (G)</td>
</tr>
<tr>
<td>Q2G11-AOV F020</td>
<td>0323</td>
<td>Closed (G)</td>
</tr>
<tr>
<td>Q2G51-AOV F013</td>
<td>0443</td>
<td>0442</td>
</tr>
<tr>
<td>Q2G51-AOV F012</td>
<td>0324</td>
<td>0</td>
</tr>
</tbody>
</table>

OUTPUT:

Diagnostic Display:

a. Check that the symbols for the valves listed in Table 16.3.3 are green.
b. Check that the valve numbers listed in Table 16.3.3 are white.
STEP 9

ACTION:

Energize the K5C and K5D relays (addresses 1030 and 1043).

OUTPUT:

Primary Display:

a. Check that the word "PART" appears on an orange background on the group number 2 block and the Unit 2 secondary isolation block.
b. Check that 2A, 2B, 2C, 2D, 2E and SEC in the menu block turn orange.
c. Check that the orange background on the group number 2 block turns red after approximately 5 seconds.
d. Check that 2B in the menu block remains orange and that 2A, 2C, 2D, 2E and SEC turn red within approximately 30 seconds.
e. Check that the background on the Unit 2 secondary isolation block turns red after approximately 30 seconds.

Diagnostic Display:

a. Check that the numbers for the valves listed in Table 16.3.3 turn orange.
b. Check that the word "PART" appears on a red background on the group number 2 block.
c. Check that the word "PART" appears on an orange background on the MISC block and that this background turns green after approximately 20 seconds.

APPROVAL: 8-2-84
STEP 10

ACTION:

De-energize the K5C relay (address 1030).

OUTPUT:

Primary Display:

a. Check that 2A, 2B, 2C, 2D, 2E and SEC in the menu block turn green.
b. Check that the word "PART" disappears from the group number 2 block and the Unit 2 secondary isolation block, leaving green blanks.

Diagnostic Display:

a. Check that the valve numbers listed in Table 16.3.3 turn white.
b. Check that the word "PART" disappears from the group number 2 and MISC blocks, leaving green blanks.

APPROVAL: \[\text{Signature}\]
STEP 11

ACTION:

a. Open the F004 valve by setting 0322 to 1.

b. Energize the K5C relay (address 1030).

OUTPUT:

Primary Display:

a. Check that the word "PART" appears on a red background on the group number 2 block within approximately 5 seconds and on the Unit 2 secondary isolation block within approximately 30 seconds.

b. Check that 2B in the menu block turns red within approximately 50 seconds and that 2A, 2C, 2D, 2E and SEC turn red within approximately 122 seconds.

Diagnostic Display:

a. Check that the word "PART" appears on a red background on the group number 2 block.

b. Check that the word "PART" appears on a red background on the MISC block within approximately 20 seconds.

ACTION:

a. Close the F004 valve by setting 0322 to 0.

b. De-energize the K5C and K5D relays (addresses 1030 and 1043).

APPROVAL: [Signature] 8-2-84
STEP 12

ACTION

Energize the K6C and K6D relays (addresses 1032 and 1045).

OUTPUT:

Primary Display:

a. Check that the word "PART" appears on an orange background on the group number 2 block.

b. Check that 2A, 2B, 2C, 2D and 2E in the menu block turn orange.

c. Check that the orange background on the group number 2 block changes to red after approximately 5 seconds.

d. Check that 2B in the menu block remains orange and that 2A, 2C, 2D and 2E turn red within approximately 25 seconds.

Diagnostic Display:

a. Check that the numbers for the valves listed in Table 16.3.3 turn orange.

b. Check that the word "PART" appears on an red background on the group number 2 block.

c. Check that the word "PART" appears on an orange background on the MISC block, and that this background turns green after approximately 20 seconds.

APPROVAL: kkl 8-2-34
STEP 13

ACTION:

De-energize the K6C relay (address 1032).

OUTPUT:

Primary Display:

a. Check that 2A, 2B, 2C, 2D and 2E in the menu block turn green.
b. Check that the word "PART" disappears from the group number 2 block, leaving a green blank.

Diagnostic Display:

a. Check that the valve numbers listed in Table 16.3.3 turn white.
b. Check that the word "PART" disappears from the group number 2 and MISC blocks, leaving green blanks.

APPROVAL: HCL 8·2·84
STEP 14

ACTION:

a. Open the F004 valve by setting 0322 to 1.

b. Energize the K6C relay (address 1032).

OUTPUT:

Primary Display:

a. Check that the word "PART" appears on an red background on the group number 2 block after approximately 5 seconds.

b. Check that 2B in the menu block turns red after approximately 20 seconds and that 2A, 2C, 2D and 2E turn red within approximately 25 seconds.

Diagnostic Display:

a. Check that the word "PART" appears on an red background on the group number 2 block.

b. Check that the word "PART" appears on an orange background on the MISC block and that this background turns red after approximately 20 seconds.

ACTION:

a. Close the F004 valve by setting 0322 to 0.

b. De-energize the K6C and K6D relays (addresses 1032 and 1045).

APPROVAL: [Signature] 8-2-87
STEP 15

ACTION:

Close the valves listed in the following table.

Table 16.3.4

<table>
<thead>
<tr>
<th>SIGNAL DESCRIPTION</th>
<th>INPUT</th>
<th>OUTPUT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Q2E51—MOV F104</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>Q2E51—MOV F105</td>
<td>321</td>
<td>320</td>
</tr>
<tr>
<td>Q2E41—MOV F104</td>
<td>117</td>
<td>116</td>
</tr>
<tr>
<td>Q2E41—MOV F111</td>
<td>315</td>
<td>314</td>
</tr>
<tr>
<td>Q2E21—MOV F015B</td>
<td>313</td>
<td>312</td>
</tr>
<tr>
<td>Q2E21—MOV F015A</td>
<td>114</td>
<td>113</td>
</tr>
</tbody>
</table>

OUTPUT:

Diagnostic Display:

a. Check that the symbols for the valves listed in Table 16.3.4 are green.
b. Check that the valve numbers listed in Table 16.3.4 are white.

APPROVAL: [Signature] 8-2-94
STEP 16

ACTION:

Energize the Q2E21A-K5A relay (address 1061).

OUTPUT:

Primary Display:

a. Check that the word "PART" appears on an orange background on the group number 2 block.

b. Check that the Number 2B in the menu block turns orange.

c. Check that the orange background on the group number 2 block changes to green after approximately 15 seconds.

d. Check that the number 2B in the menu block remains orange.

Diagnostic Display:

a. Check that the number for the Q2E51-MOV F104 valve listed in Table 16.3.4 turn orange.

b. Check that the word "PART" appears on an orange background on the group number 2 block.

c. Check that the word "PART" appears on an orange background on the MISC block.

d. Check that the orange backgrounds of the blocks in (b) and (c) above turn green after approximately 15 seconds.

APPROVAL: 8-284
STEP 17

ACTION:

De-energize the Q2E21A-K5A relay (address 1061).

OUTPUT:

Primary Display:

a. Check that 2B in the menu block turns green.
b. Check that the word "PART" disappears from the group number 2 block, leaving a green blank.

Diagnostic Display:

a. Check that the number for the Q2E51-MOV F104 valve turns white.
b. Check that the word "PART" disappears from the group number 2 and MISC blocks, leaving green blanks.

APPROVAL: \[\text{Signature}\]
STEP 18

ACTION:

a. Open the Q2E51-MOV F104 valve by setting 0122 to 1.

b. Energize the Q2E21A-K5A relay (address 1061).

OUTPUT:

Primary Display:

a. Check that the word "PART" appears on a red background on the group number 2 block after approximately 15 seconds.

b. Check that the Number 2B in the menu block turns red after approximately 15 seconds.

Diagnostic Display:

a. Check that the word "PART" appears on a red background on both the Group Number 2 and MISC blocks after approximately 15 seconds.

ACTION:

a. Close the Q2E51-MOV F104 valve by setting 0122 to 0.

b. De-energize the Q2E21A-K5A relay (address 1061).

APPROVAL: [Signature]
STEP 19

ACTION:

Energize the Q2E21A-K5B relay (GIT signal address 1064).

OUTPUT:

Primary Display:

a. Check that the word "PART" appears on an orange background on the group number 2 block.

b. Check that the Number 2B in the menu block turns orange.

c. Check that the orange background on the group number 2 block changes to green after approximately 15 seconds.

d. Check that the number 2B in the menu block remains orange.

Diagnostic Display:

a. Check that the number for the F105 valve turns orange.

b. Check that the word "PART" appears on an orange background on the group number 2 block.

c. Check that the word "PART" appears on an orange background on the MISC block.

d. Check that the orange backgrounds of the blocks in (b) and (c) above turn green after approximately 15 seconds.

APPROVAL: \[\text{Signature}\]
STEP 20

ACTION:

De-energize the Q2E21A-K5B relay (address 1064).

OUTPUT:

Primary Display:

a. Check that 2B in the menu block turns green.
b. Check that the word "PART" disappears from the group number 2 block, leaving a green blank.

Diagnostic Display:

a. Check that the number for the Q2E51-MOV F105 valve turns white.
b. Check that the word "PART" disappears from the group number 2 and MISC blocks, leaving green blanks.

APPROVAL:
STEP 21

ACTION:

a. Open the F105 valve by setting 0320 to 1.

b. Energize the Q2E21A-K5B relay (address 1064).

OUTPUT:

Primary Display:

a. Check that the word "PART" appears on a red background on the group number 2 block after approximately 15 seconds.

b. Check that the Number 2B in the menu block turns red after approximately 15 seconds.

Diagnostic Display:

a. Check that the word "PART" appears on a red background on both the Group Number 2 and MISC blocks after approximately 15 seconds.

ACTION:

a. Close the F105 valve by setting 0320 to 0.

b. De-energize the Q2E21A-K5B relay (address 1064).

APPROVAL: 2 - 89
STEP 22

ACTION:

Energize the K56 relay (GIT signal address 1062).

OUTPUT:

Primary Display:

a. Check that the word "PART" appears on an orange background on the group number 2 block.

b. Check that the Number 2B in the menu block turns orange.

c. Check that the orange background on the group number 2 block changes to green after approximately 15 seconds.

d. Check that the number 2B in the menu block remains orange.

Diagnostic Display:

a. Check that the number for the Q2E41-MOV F104 valve turns orange.

b. Check that the word "PART" appears on an orange background on the group number 2 block.

c. Check that the word "PART" appears on an orange background on the MISC block.

d. Check that the orange backgrounds of the blocks in (b) and (c) above turn green after approximately 15 seconds.

APPROVAL: HCA 8-2-84
STEP 23

ACTION:

De-energize the K56 relay (address 1062).

OUTPUT:

Primary Display:

a. Check that 2B in the menu block turns green.
b. Check that the word "PART" disappears from the group number 2 block, leaving a green blank.

Diagnostic Display:

a. Check that the number for the Q2E41-MOV F104 valve turns white.
b. Check that the word "PART" disappears from the group number 2 and MISC blocks, leaving green blanks.

APPROVAL: /386
STEP 24

ACTION:

a. Open the Q2E41-MOV F104 valve by setting 0116 to 1.
b. Energize the K56 relay (address 1062).

OUTPUT:

Primary Display:

a. Check that the word "PART" appears on a red background on the group number 2 block after approximately 15 seconds.
b. Check that the Number 2B in the menu block turns red after approximately 15 seconds.

Diagnostic Display:

a. Check that the word "PART" appears on a red background on both the Group Number 2 and MISC blocks after approximately 15 seconds.

ACTION:

a. Close the Q2E41-MOV F104 valve by setting 0116 to 0.
b. De-energize the K56 relay (address 1062).

APPROVAL: LCA 8-2-84
STEP 25

ACTION:
Energize the K57 relay (GIT signal address 1065).

OUTPUT:
Primary Display:
   a. Check that the word "PART" appears on an orange background on the group number 2 block.
   b. Check that the Number 2B in the menu block turns orange.
   c. Check that the orange background on the group number 2 block changes to green after approximately 15 seconds.
   d. Check that the number 2B in the menu block remains orange.

Diagnostic Display:
   a. Check that the number for the F111 valve turns orange.
   b. Check that the word "PART" appears on an orange background on the group number 2 block.
   c. Check that the word "PART" appears on an orange background on the MISC block.
   d. Check that the orange backgrounds of the blocks in (b) and (c) above turn green after approximately 15 seconds.

APPROVAL: 388
STEP 26

ACTION:

De-energize the K57 relay (address 1065).

OUTPUT:

Primary Display:

a. Check that 2B in the menu block turns green.
b. Check that the word "PART" disappears from the group number 2 block, leaving a green blank.

Diagnostic Display:

a. Check that the number for the Q2E41-MOV F11 valve turns white.
b. Check that the word "PART" disappears from the group number 2 and MISC blocks, leaving green blanks.

APPROVAL: [Signature]
STEP 27

ACTION:

a. Open the F111 valve by setting 0314 to 1.

b. Energize the K57 relay (address 1065).

OUTPUT:

Primary Display:

a. Check that the word "PART" appears on a red background on the group number 2 block after approximately 15 seconds.

b. Check that the Number 23 in the menu block turns red after approximately 15 seconds.

Diagnostic Display:

a. Check that the word "PART" appears on a red background on both the Group Number 2 and MISC blocks after approximately 15 seconds.

ACTION:

a. Close the F111 valve by setting 0314 to 0.

b. De-energize the K57 relay (address 1065).

APPROVAL: [Signature] 8-7-84
STEP 28

ACTION:

Energize the K10A relay (GIT signal address 1063).

OUTPUT:

Primary Display:

a. Check that the word "PART" appears on an orange background on the group number 2 block.

b. Check that the Number 2B in the menu block turns orange.

c. Check that the orange background on the group number 2 block changes to green after approximately 50 seconds.

d. Check that the number 2B in the menu block remains orange.

Diagnostic Display:

a. Check that the number for the F015A valve turns orange.

b. Check that the word "PART" appears on an orange background on the group number 2 block.

c. Check that the word "PART" appears on an orange background on the MISC block.

d. Check that the orange backgrounds of the blocks in (b) and (c) above turn green after approximately 50 seconds.

APPROVAL: [signature] 8-2-94
STEP 29

ACTION:

De-energize the K10A relay (address 1063).

OUTPUT:

Primary Display:

a. Check that 2B in the menu block turns green.
b. Check that the word "PART" disappears from the group number 2 block, leaving a green blank.

Diagnostic Display:

a. Check that the number for the Q2E21-MOV F015A valve turns white.
b. Check that the word "PART" disappears from the group number 2 and MISC blocks, leaving green blanks.

APPROVAL: 

32-2-32
STEP 30

ACTION:

a. Open the F015A valve by setting 0113 to 1.

b. Energize the K10A relay (address 1063).

OUTPUT:

Primary Display:

a. Check that the word "PART" appears on a red background on the group number 2 block after approximately 50 seconds.

b. Check that the Number 28 in the menu block turns red after approximately 50 seconds.

Diagnostic Display:

a. Check that the word "PART" appears on a red background on both the Group Number 2 and MISC blocks after approximately 50 seconds.

ACTION:

a. Close the F015A valve by setting 0113 to 0.

b. De-energize the K10A relay (address 1063).

APPROVAL: \[\text{Signature}\] 1-2-84
STEP 31

ACTION:

Energize the K10B relay (GIT signal address 1066).

OUTPUT:

Primary Display:

a. Check that the word "PART" appears on an orange background on the group number 2 block.
b. Check that the Number 2B in the menu block turns orange.
c. Check that the orange background on the group number 2 block changes to green after approximately 50 seconds.
d. Check that the number 2B in the menu block remains orange.

Diagnostic Display:

a. Check that the number for the F015B valve turns orange.
b. Check that the word "PART" appears on an orange background on the group number 2 block.
c. Check that the word "PART" appears on an orange background on the MISC block.
d. Check that the orange backgrounds of the blocks in (b) and (c) above turn green after approximately 50 seconds.

APPROVAL: 8-2-87
STEP 32

ACTION:

De-energize the K10B relay (address 1066).

OUTPUT:

Primary Display:

a. Check that 2B in the menu block turns green.
b. Check that the word "PART" disappears from the group number 2 block, leaving a green blank.

Diagnostic Display:

a. Check that the number for the Q2E21-MOV F015B valve turns white.
b. Check that the word "PART" disappears from the group number 2 and MISC blocks, leaving green blanks.

APPROVAL: 2/8/84
STEP 33

ACTION:

a. Open the F015B valve by setting 0312 to 1.

b. Energize the K10B relay (address 1066).

OUTPUT:

Primary Display:

a. Check that the word "PART" appears on an RED background on the group number 2 block after approximately 50 seconds.

b. Check that the Number 2B in the menu block turns red after approximately 50 seconds.

Diagnostic Display:

a. Check that the word "PART" appears on a red background on both the Group Number 2 and MISC blocks after approximately 50 seconds.

ACTION:

a. Close the F015B valve by setting 0312 to 0.

b. De-energize the K10B relay (address 1066).

APPROVAL: [Signature]
STEP 34

ACTION:

a. Disable buffer transfer.
b. Energize the relays listed in the following table.
c. Enable buffer transfer.

TABLE 16.3.5

<table>
<thead>
<tr>
<th>SIGNAL DESCRIPTION</th>
<th>GIT SIGNAL ADDRESS</th>
<th>INPUT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Q2A71B-K5A</td>
<td>1027</td>
<td>1</td>
</tr>
<tr>
<td>Q2A71B-K6A</td>
<td>1031</td>
<td>1</td>
</tr>
<tr>
<td>Q2A71B-K5C</td>
<td>1030</td>
<td>1</td>
</tr>
<tr>
<td>Q2A71B-K6C</td>
<td>1032</td>
<td>1</td>
</tr>
<tr>
<td>Q2A71B-K5B</td>
<td>1042</td>
<td>1</td>
</tr>
<tr>
<td>Q2A71B-K6B</td>
<td>1044</td>
<td>1</td>
</tr>
<tr>
<td>Q2A71B-K5D</td>
<td>1043</td>
<td>1</td>
</tr>
<tr>
<td>Q2A71B-K6D</td>
<td>1045</td>
<td>1</td>
</tr>
<tr>
<td>Q2E21A-K5A</td>
<td>1061</td>
<td>1</td>
</tr>
<tr>
<td>Q2E21A-K5B</td>
<td>1064</td>
<td>1</td>
</tr>
<tr>
<td>Q2E41A-K56</td>
<td>1062</td>
<td>1</td>
</tr>
<tr>
<td>Q2E41A-K57</td>
<td>1065</td>
<td>1</td>
</tr>
<tr>
<td>Q2E21A-K10A</td>
<td>1063</td>
<td>1</td>
</tr>
<tr>
<td>Q2E21A-K10B</td>
<td>1066</td>
<td>1</td>
</tr>
</tbody>
</table>

OUTPUT:

Primary Display:

a. Check that the word "PART" appears on an orange background on the group number 2 block and on the Unit 2 secondary isolation block.
b. Check that 2A, 2B, 2C, 2D, 2E and SEC in the menu block turn orange.
c. Check that the orange background on the group number 2 block turns red after approximately 5 seconds.
d. Check that 2B in the menu block remains orange and that 2A, 2C, 2D, 2E and SEC turn red within approximately 30 seconds.
e. Check that the background of the Unit 2 secondary isolation block turns red after approximately 30 seconds.

Diagnostic Display:

a. Check that the numbers for the valves listed in Tables 16.3.1, 16.3.3 and 16.3.4 turn orange.
b. Check that the word "PART" appears on an red background on the group number 2 block.
c. Check that the word "ALL" appears on an orange background on the MISC block and that this background turns green after approximately 50 seconds.

APPROVAL: G. J. 84
STEP 35

ACTION:

De-energize the relays listed in Table 16.3.5.

OUTPUT:

Primary Display:

a. Check that 2A, 2B, 2C, 2D, 2E and SEC in the menu block turn green.

b. Check that the word "PART" disappears from the group number 2 block and the Unit 2 secondary isolation block, leaving green blanks.

Diagnostic Display:

a. Check that the valve numbers listed in Tables 16.3.1, 16.3.3 and 16.3.4 turn white.

b. Check that the words "PART" and "ALL" disappear from the group number 2 and MISC blocks, leaving green blanks.

APPROVAL: [Signature]
STEP 36

ACTION:

a. Open the Q2E51-MOV F104 valve by setting 0122 to 1.

b. Disable buffer transfer.

c. Energize the relays listed in Table 16.3.5.

d. Enable buffer transfer.

OUTPUT:

Primary Display:

a. Check that the word "PART" appears on a red background on the group number 2 block after approximately 5 seconds and on the Unit 2 secondary isolation block after approximately 30 seconds.

b. Check that 2B in the menu block turns red after approximately 50 seconds and that 2A, 2C, 2D, 2E and SEC turn red within approximately 30 seconds.

Diagnostic Display:

a. Check that the word "PART" appears on a red background on the group number 2 block.

b. Check that the word "ALL" appears on an orange background on the MISC block and that this background turns red after approximately 50 seconds.

APPROVAL: 8-2-81

* VARIANCE #5
STEP 1

ACTION:

a. Call up the PCIS Group 2C Diagnostic display and call the reference test data.

b. Close the valves listed in the following table.

**TABLE 16.4.1**

<table>
<thead>
<tr>
<th>SIGNAL DESCRIPTION</th>
<th>INPUT</th>
<th>OUTPUT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Q2T48-AOV F118A</td>
<td>0642</td>
<td>Closed (G)</td>
</tr>
<tr>
<td>Q2T48-AOV F118B</td>
<td>0643</td>
<td>Closed (G)</td>
</tr>
<tr>
<td>Q2T48-AOV F307</td>
<td>0644</td>
<td>Closed (G)</td>
</tr>
<tr>
<td>Q2T48-AOV F309</td>
<td>0645</td>
<td>Closed (G)</td>
</tr>
<tr>
<td>Q2T48-AOV F318</td>
<td>0646</td>
<td>Closed (G)</td>
</tr>
<tr>
<td>Q2T48-AOV F319</td>
<td>0647</td>
<td>Closed (G)</td>
</tr>
<tr>
<td>Q2T48-AOV F333A</td>
<td>0147</td>
<td>0146</td>
</tr>
<tr>
<td></td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>Q2T48-AOV F333B</td>
<td>0536</td>
<td>0535</td>
</tr>
<tr>
<td></td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>Q2T48-AOV F335A</td>
<td>0641</td>
<td>0640</td>
</tr>
<tr>
<td></td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>Q2T48-AOV F335B</td>
<td>0543</td>
<td>0542</td>
</tr>
<tr>
<td></td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>Q2T48-AOV F339</td>
<td>0650</td>
<td>0</td>
</tr>
<tr>
<td>Q2T48-AOV F341</td>
<td>0651</td>
<td>0</td>
</tr>
</tbody>
</table>

OUTPUT:

Diagnostic Display:

a. Check that the symbols for the valves listed in Table 16.4.1 are green.

b. Check that the valve numbers listed in Table 16.4.1 are white.

APPROVAL: 

400
STEP 2

ACTION:

Set the relays as shown in the following table.

TABLE 16.4.2

<table>
<thead>
<tr>
<th>SIGNAL DESCRIPTION</th>
<th>GIT SIGNAL ADDRESS</th>
<th>INPUT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Q2A71B-K6A</td>
<td>1031</td>
<td>0</td>
</tr>
<tr>
<td>Q2A71B-K5C</td>
<td>1030</td>
<td>0</td>
</tr>
<tr>
<td>Q2A71B-K6C</td>
<td>1032</td>
<td>0</td>
</tr>
<tr>
<td>Q2A71B-K6B</td>
<td>1044</td>
<td>0</td>
</tr>
<tr>
<td>Q2A71B-K5D</td>
<td>1043</td>
<td>0</td>
</tr>
<tr>
<td>Q2A71B-K6D</td>
<td>1045</td>
<td>0</td>
</tr>
<tr>
<td>Q2A71B-K5A</td>
<td>1027</td>
<td>1</td>
</tr>
<tr>
<td>Q2A71B-K5B</td>
<td>1042</td>
<td>1</td>
</tr>
</tbody>
</table>

OUTPUT:

Primary Display:

a. Check that the word "PART" appears on an orange background on the group number 2 block and on the Unit 2 secondary isolation block.
b. Check that 2A, 2B, 2C, 2D, 2E and SEC in the menu block turn orange.
c. Check that the orange background on the group number 2 block turns red after approximately 5 seconds.
d. Check that 2C in the menu block remains orange and that 2A, 2B, 2D, 2E and SEC turn red within approximately 30 seconds.
e. Check that the background of the Unit 2 secondary isolation block turns red after approximately 30 seconds.

Diagnostic Display:

a. Check that the numbers for the valves listed in Table 16.4.1 turn orange.
b. Check that the word "PART" appears on an red background on the group number 2 block.
c. Check that the word "PART" appears on an orange background on the N2 block and that this background turns green after approximately 10 seconds.
d. Check that the word "PART" appears on an orange background on the SEC block and that this background turns red after approximately 30 seconds.

APPROVAL: A 5-84
STEP 3

ACTION:

De-energize the K5A relay (address 1027).

OUTPUT:

Primary Display:

a. Check that 2A, 2B, 2C, 2D, 2E and SEC in the menu block turn green.
b. Check that the "PART" disappears from the group number 2 block and the Unit 2 secondary isolation block, leaving green backgrounds.

Diagnostic Display:

a. Check that the numbers for the valves listed in Table 16.4.1 turn white.
b. Check that the word "PART" disappears from the group number 2, N2, and SEC blocks, leaving green backgrounds.

APPROVAL: 8-3-84
STEP 4

ACTION:

a. Open the F118A valve by setting 0642 to 1.
b. Energize the K5A relay (address 1027).

OUTPUT:

Primary Display:

a. Check that the word "PART" appears on a red background on the group number 2 block after approximately 5 seconds and on the Unit 2 secondary isolation block after approximately 30 seconds.
b. Check that 2C in the menu block turns red after approximately 10 seconds and that 2A, 2B, 2D, 2E and SEC turn red within approximately 30 seconds.

Diagnostic Display:

a. Check that the word "PART" appears on a red background on the group number 2 block.
b. Check that the word "PART" appears on an orange background on the N2 block and that this background turns red after approximately 10 seconds.
c. Check that the word "PART" appears on an orange background on the SEC block and that this background turns red after approximately 30 seconds.

ACTION:

a. Close the F118A valve by setting 0642 to 0.
b. De-energize the K5A and K5B relays (addresses 1027 and 1042).

APPROVAL: 

[Signature]

E.3.84
STEP 5

ACTION:

Energize the K6A and K6B relays (GIT signal addresses 1031 and 1044, respectively.)

OUTPUT:

Primary Display:

a. Check that the word "PART" appears on an orange background on the group number 2 block.
b. Check that 2A, 2B, 2C, 2D and 2E in the menu block turn orange.
c. Check that the orange background on the group number 2 block turns red after approximately 5 seconds.
d. Check that 2C in the menu block remains orange and that 2A, 2B, 2D and 2E turn red within approximately 26 seconds.

Diagnostic Display:

a. Check that the numbers for the valves listed in Table 16.4.1 turn orange.
b. Check that the word "PART" appears on an red background on the group number 2 block.
c. Check that the word "PART" appears on an orange background on the N2 block and that this background turns green after approximately 10 seconds.

APPROVAL: [Signature] 8-3-8
STEP 6

ACTION:
De-energize the K6A relay (address 1031).

OUTPUT:
Primary Display:
   a. Check that 2A, 2B, 2C, 2D, 2E and SEC in the menu block turn green.
   b. Check that the "PART" disappears from the group number 2 block, leaving a green background.

Diagnostic Display:
   a. Check that the numbers for the valves listed in Table 16.4.1 turn white.
   b. Check that the word "PART" disappears from the group number 2 and N2 blocks, leaving green backgrounds.

APPROVAL:  

405
STEP 7

ACTION:

a. Open the F118A valve by setting 0642 to 1.

b. Energize the K6A relay (address 1031).

OUTPUT:

Primary Display:

a. Check that the word "PART" appears on a red background on the group number 2 block after approximately 5 seconds.

b. Check that 2C in the menu block turns red after approximately 10 seconds and that 2A, 2B, 2D and 2E turn red within approximately 26 seconds.

Diagnostic Display:

a. Check that the word "PART" appears on a red background on the group number 2 block.

b. Check that the word "PART" appears on an orange background on the N2 block and that this background turns red after approximately 10 seconds.

ACTION:

a. Close the F118A valve by setting 0642 to 0.

b. De-energize the K6A and K6B relays (addresses 1031 and 1044).

APPROVAL:
STEP 8
ACTION:

Close the valves listed in the following table.

Table 16.4.3

<table>
<thead>
<tr>
<th>SIGNAL DESCRIPTION</th>
<th>INPUT</th>
<th>OUTPUT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Q2T48-A0V F308</td>
<td>0515</td>
<td>0</td>
</tr>
<tr>
<td>Q2T48-A0V F320</td>
<td>0516</td>
<td>0</td>
</tr>
<tr>
<td>Q2T48-A0V F324</td>
<td>0517</td>
<td>0</td>
</tr>
<tr>
<td>Q2T48-A0V F326</td>
<td>0520</td>
<td>0</td>
</tr>
<tr>
<td>Q2T48-A0V F332A</td>
<td>0145</td>
<td>0</td>
</tr>
<tr>
<td>Q2T48-A0V F332B</td>
<td>0534</td>
<td>0</td>
</tr>
<tr>
<td>Q2T48-A0V F334A</td>
<td>0636</td>
<td>0</td>
</tr>
<tr>
<td>Q2T48-A0V F334B</td>
<td>0541</td>
<td>0</td>
</tr>
<tr>
<td>Q2T48-A0V F338</td>
<td>0521</td>
<td>0</td>
</tr>
<tr>
<td>Q2T48-A0V F340</td>
<td>0522</td>
<td>0</td>
</tr>
<tr>
<td>Q2T48-A0V F103</td>
<td>0746</td>
<td>0</td>
</tr>
<tr>
<td>Q2T48-A0V F104</td>
<td>0747</td>
<td>0</td>
</tr>
</tbody>
</table>

OUTPUT:

Diagnostic Display:

a. Check that the symbols for the valves listed in Table 16.4.3 are green.

b. Check that the valve numbers listed in Table 16.4.3 are white.

APPROVAL: 8-3-84
STEP 9

ACTION:

Energize the K5C and K5D relays (GIT signal addresses 1030 and 1043, respectively).

OUTPUT:

Primary Display:

a. Check that the word "PART" appears on an orange background on the group number 2 block and on the Unit 2 secondary isolation block.

b. Check that 2A, 2B, 2C, 2D, 2E and SEC in the menu block turn orange.

c. Check that the orange background on the group number 2 block turns red after approximately 5 seconds.

d. Check that 2C in the menu block remains orange and that 2A, 2B, 2D, 2E and SEC turn red within approximately 30 seconds.

e. Check that the background of the Unit 2 secondary isolation block turns red within approximately 30 seconds.

Diagnostic Display:

a. Check that the numbers for the valves listed in Table 16.4.3 turn orange.

b. Check that the word "PART" appears on an red background on the group number 2 block.

c. Check that the word "PART" appears on an orange background on the N2 block and that this background turns green after approximately 10 seconds.

d. Check that the word "PART" appears on an orange background on the SEC block and that this background turns red after approximately 30 seconds.

APPROVAL: 8-3-84
STEP 10

ACTION:

De-energize the K5C relay (address 1030).

OUTPUT:

Primary Display:

a. Check that 2A, 2B, 2C, 2D, 2E and SEC in the menu block turn green.
b. Check that the "PART" disappears from the group number 2 block and the Unit 2 secondary isolation block, leaving green backgrounds.

Diagnostic Display:

a. Check that the numbers for the valves listed in Table 16.4.3 turn white.
b. Check that the word "PART" disappears from the group number 2, N2, and SEC blocks, leaving green backgrounds.

APPROVAL: [Signature]
STEP 11

ACTION:

a. Open the F308 valve by setting 0515 to 1.

b. Energize the K5C relay (address 1030).

OUTPUT:

Primary Display:

a. Check that the word "PART" appears on a red background on the group number 2 block after approximately 5 seconds and on the Unit 2 secondary isolation block after approximately 30 seconds.

b. Check that 2C in the menu block turns red after approximately 10 seconds and that 2A, 2B, 2D, 2E and SEC turn red within approximately 30 seconds.

Diagnostic Display:

a. Check that the word "PART" appears on a red background on the group number 2 block.

b. Check that the word "PART" appears on an orange background on the N2 block and that this background turns red after approximately 10 seconds.

c. Check that the word "PART" appears on an orange background on the SEC block and that this background turns red after approximately 30 seconds.

ACTION:

a. Close the F308 valve by setting 0515 to 0.

b. De-energize the K5C and K5D relays.

APPROVAL: [Signature] 8-3-87
STEP 12

ACTION:

Energize the K6C and K6D relays (GIT signal address 1032 and 1045, respectively).

OUTPUT:

Primary Display:

a. Check that the word "PART" appears on an orange background on the group number 2 block.
b. Check that 2A, 2B, 2C, 2D and 2E in the menu block turn orange.
c. Check that the orange background on the group number 2 block turns red after approximately 5 seconds.
d. Check that 2C in the menu block remains orange and that 2A, 2B, 2D and 2E turn red within approximately 26 seconds.

Diagnostic Display:

a. Check that the numbers for the valves listed in Table 16.4.3 turn orange.
b. Check that the word "PART" appears on an red background on the group number 2 block.
c. Check that the word "PART" appears on an orange background on the N2 block and that this background turns green after approximately 10 seconds.

APPROVAL:

[Signature]

8-3-89
**STEP 13**

**ACTION:**

De-energize the K6C relay (address 1032).

**OUTPUT:**

**Primary Display:**

a. Check that 2A, 2B, 2C, 2D, 2E and SEC in the menu block turn green.

b. Check that the "PART" disappears from the group number 2 block, leaving a green background.

**Diagnostic Display:**

a. Check that the numbers for the valves listed in Table 16.4.3 turn white.

b. Check that the word "PART" disappears from the group number 2 and N2 blocks, leaving green backgrounds.

**APPROVAL:**

[Signature]

83.34
STEP 14

ACTION:

a. Open the F308 valve by setting 0515 to 1.

b. Energize the K6C relay (address 1032).

OUTPUT:

Primary Display:

a. Check that the word "PART" appears on a red background on the group number 2 block after approximately 5 seconds.

b. Check that 2C in the menu block turns red after approximately 10 seconds and that 2A, 2B, 2D and 2E turn red within approximately 26 seconds.

Diagnostic Display:

a. Check that the word "PART" appears on a red background on the group number 2 block.

b. Check that the word "PART" appears on an orange background on the N2 block and that this background turns red after approximately 10 seconds.

ACTION:

a. Close the F308 valve by setting 0515 to 0.

b. De-energize the K6C and K6D relays (addresses 1032 and 1045).

APPROVAL: [Signature] G. E. S.
STEP 15

ACTION:

a. Disable buffer transfer.
b. Energize the relays listed in the following table.
c. Enable buffer transfer.

**TABLE 16.4.4**

<table>
<thead>
<tr>
<th>SIGNAL DESCRIPTION</th>
<th>GIT SIGNAL ADDRESS</th>
<th>INPUT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Q2A71B-K5A</td>
<td>1027</td>
<td>1</td>
</tr>
<tr>
<td>Q2A71B-K6A</td>
<td>1031</td>
<td>1</td>
</tr>
<tr>
<td>Q2A71B-K5C</td>
<td>1030</td>
<td>1</td>
</tr>
<tr>
<td>Q2A71B-K6C</td>
<td>1032</td>
<td>1</td>
</tr>
<tr>
<td>Q2A71B-K5B</td>
<td>1042</td>
<td>1</td>
</tr>
<tr>
<td>Q2A71B-K6B</td>
<td>1044</td>
<td>1</td>
</tr>
<tr>
<td>Q2A71B-K5D</td>
<td>1043</td>
<td>1</td>
</tr>
<tr>
<td>Q2A71B-K6D</td>
<td>1045</td>
<td>1</td>
</tr>
</tbody>
</table>

OUTPUT:

**Primary Display:**

a. Check that the word "PART" appears on an orange background on the group number 2 block and on the Unit 2 secondary isolation block.
b. Check that 2A, 2B, 2C, 2D, 2E and SEC in the menu block turn orange.
c. Check that the orange background on the group number 2 block turns red after approximately 5 seconds.
d. Check that 2C in the menu block remains orange and that 2A, 2B, 2D, 2E and SEC turn red within approximately 30 seconds.
e. Check that the background of the Unit 2 secondary isolation block turns red after approximately 30 seconds.

**Diagnostic Display:**

a. Check that the numbers for the valves listed in Tables 16.4.1 and 16.4.3 turn orange.
b. Check that the word "PART" appears on a red background on the group number 2 block.
c. Check that the word "ALL" appears on an orange background on the N2 block and that this background turns green after approximately 10 seconds.
d. Check that the word "PART" appears on an orange background on the SEC block and that this background turns red after approximately 30 seconds.

APPROVAL: [Signature] 6·3-0'4
STEP 16

ACTION:

De-energize the relays listed in Table 16.4.4.

OUTPUT:

Primary Display:

a. Check that 2A, 2B, 2C, 2D, 2E and SEC in the menu block turn green.
b. Check that the "PART" disappears from the group number 2 block and the Unit 2 secondary isolation block, leaving green backgrounds.

Diagnostic Display:

a. Check that the numbers for the valves listed in Tables 16.4.1 and 16.4.3 turn white.
b. Check that the word "PART", "ALL", and "PART" disappear from the group number 2, N2, and SEC blocks, respectively, leaving green backgrounds.

APPROVAL: [Signature]
STEP 17

ACTION:

a. Open the F308 valve by setting 0515 to 1.
b. Disable buffer transfer.
c. Energize the relays listed in Table 16.4.4.
d. Enable buffer transfer.

OUTPUT:

Primary Display:

a. Check that the word "PART" appears on a red background on the group number 2 block after approximately 5 seconds and on the Unit 2 secondary isolation block after approximately 30 seconds.
b. Check that 2C in the menu block turns red after approximately 10 seconds and that 2A, 2B, 2D, 2E and SEC turn red within approximately 30 seconds.

Diagnostic Display:

a. Check that the word "PART" appears on a red background on the group number 2 block.
b. Check that the word "ALL" appears on an orange background on the N2 block and that this background turns red after approximately 10 seconds.
c. Check that the word "PART" appears on an orange background on the SEC block and that this background turns red after approximately 30 seconds.

ACTION:

a. Close the F308 valve by setting 0515 to 0.
b. De-energize the relays listed in Table 16.4.4.

APPROVAL: 8-3-84
STEP 18

ACTION:

a. Disable buffer transfer.
b. Energize the relays listed in the following table.
c. Enable buffer transfer.

<table>
<thead>
<tr>
<th>SIGNAL DESCRIPTION</th>
<th>GIT SIGNAL</th>
<th>ADDRESS</th>
<th>INPUT</th>
</tr>
</thead>
<tbody>
<tr>
<td>QC51A-Z2A</td>
<td>1011</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>QC51A-Z2C</td>
<td>1013</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>QC51A-Z2B</td>
<td>1012</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>QC51A-Z2D</td>
<td>1014</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Q2C51A-Z2A</td>
<td>1015</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Q2C51A-Z2C</td>
<td>1017</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Q2C51A-Z2B</td>
<td>1016</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Q2C51A-Z2D</td>
<td>1020</td>
<td>1</td>
<td></td>
</tr>
</tbody>
</table>

OUTPUT:

Primary Display:

a. Check that the word "PART" appears on an orange background on the group number 2 block. The color changes to red after approximately 5 seconds.
b. Check that 2C in the menu block turns and remains orange.
c. Check that 2D, 2E and SEC turn orange and that the color changes to red within approximately 30 seconds.
d. Check that the word "ALL" appears on an orange background on both Unit 1 and Unit 2 secondary isolation blocks. The color changes to red after approximately 30 seconds.

Diagnostic Display:

a. Check that the numbers for the valves listed in Tables 16.4.1 and 16.4.3 turn orange.
b. Check that the word "PART" appears on a red background on the group number 2 block.
c. Check that the word "ALL" appears on a green background on the N2 block after approximately 10 seconds.
d. Check that the word "ALL" appears on an orange background on the SEC block. The color changes to red after approximately 30 seconds.

APPROVAL: [Signature] 8.3-84
STEP 19

ACTION:

De-energize the relays listed in Table 16.4.5.

OUTPUT:

Primary Display:

a. Check that 2C, 2D, 2E and "SEC" in the menu block turn green.
b. Check that the word "PART" disappears from the group number 2 block, leaving a green background.
c. Check that the word "ALL" disappears from the secondary isolation blocks, leaving green backgrounds.

Diagnostic Display:

a. Check that the numbers for the valves listed in Tables 16.4.1 and 16.4.3 turn white.
b. Check that the word "PART", "ALL", and "ALL" disappear from the group number 2, N2 and SEC blocks, respectively, leaving green backgrounds.

APPROVAL: [Signature] 8-3-84
STEP 20

ACTION:

a. Open the F308 valve by setting 0515 to 1.
b. Disable buffer transfer.
c. Energize the relays listed in Table 16.4.5.
d. Enable buffer transfer.

OUTPUT:

Primary Display:

a. Check that the word "PART" appears on an orange background on the group number 2 block. The color changes to red after approximately 5 seconds.
b. Check that 2C, 2D, 2E, and SEC in the menu block turns orange and that the color changes to red within approximately 30 seconds.
c. Check that the word "ALL" appears on an orange background on both Unit 1 and Unit 2 secondary isolation blocks. The color changes to red after approximately 30 seconds.

Diagnostic Display:

a. Check that the tag numbers for the valves listed in Table 16.4.1 and 16.4.3 turn orange.
b. Check that the word "PART" appears on a red background on the group number 2 block.
c. Check that the word "ALL" appears on a red background on the N2 block after approximately 10 seconds.
d. Check that the word "ALL" appears on an orange background on the SEC block. The color changes to red after approximately 30 seconds.

APPROVAL: [Signature] 3-6/
16.5. GROUP 2D ISOLATION - H₂-O₂ SYSTEM

STEP 1

ACTION:

a. Call up the PCIS Group 2D Diagnostic display and call the reference test data.

b. Close the valves listed in the following table.

<table>
<thead>
<tr>
<th>SIGNAL DESCRIPTION</th>
<th>INPUT</th>
<th>OUTPUT</th>
<th>APPROVAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Q2P33-AOV F002</td>
<td>0661</td>
<td>0660</td>
<td>Closed (G)</td>
</tr>
<tr>
<td>Q2P33-AOV F003</td>
<td>0663</td>
<td>0662</td>
<td>Closed (G)</td>
</tr>
<tr>
<td>Q2P33-AOV F004</td>
<td>0665</td>
<td>0664</td>
<td>Closed (G)</td>
</tr>
<tr>
<td>Q2P33-AOV F005</td>
<td>0673</td>
<td>0672</td>
<td>Closed (G)</td>
</tr>
<tr>
<td>Q2P33-AOV F006</td>
<td>0667</td>
<td>0666</td>
<td>Closed (G)</td>
</tr>
<tr>
<td>Q2P33-AOV F007</td>
<td>0671</td>
<td>0670</td>
<td>Closed (G)</td>
</tr>
</tbody>
</table>

OUTPUT:

Diagnostic Display:

a. Check that the symbols for the valves listed in Table 16.5.1 are green.

b. Check that the valve numbers listed in Table 16.5.1 are white.
STEP 2

ACTION:

Set the relays as shown in the following table.

**TABLE 16.5.2**

<table>
<thead>
<tr>
<th>SIGNAL DESCRIPTION</th>
<th>GIT SIGNAL ADDRESS</th>
<th>INPUT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Q2A71B-K6A</td>
<td>1031</td>
<td>0</td>
</tr>
<tr>
<td>Q2A71B-K5C</td>
<td>1030</td>
<td>0</td>
</tr>
<tr>
<td>Q2A71B-K6C</td>
<td>1032</td>
<td>0</td>
</tr>
<tr>
<td>Q2A71B-K6B</td>
<td>1044</td>
<td>0</td>
</tr>
<tr>
<td>Q2A71B-K5D</td>
<td>1043</td>
<td>0</td>
</tr>
<tr>
<td>Q2A71B-K6D</td>
<td>1045</td>
<td>0</td>
</tr>
<tr>
<td>Q2A71B-K5A</td>
<td>1027</td>
<td>1</td>
</tr>
<tr>
<td>Q2A71B-K5B</td>
<td>1042</td>
<td>1</td>
</tr>
</tbody>
</table>

OUTPUT:

Primary Display:

a. Check that the word "PART" appears on an orange background on the group number 2 block and on the Unit 2 secondary isolation block.
b. Check that 2A, 2B, 2C, 2D, 2E and SEC in the menu block turn orange.
c. Check that the orange background on the group number 2 block turns red after approximately 5 seconds.
d. Check that 2D in the menu block remains orange and that 2A, 2B, 2C, 2E and SEC turn red within approximately 30 seconds.
e. Check that the background of the Unit 2 secondary isolation block turns red after approximately 30 seconds.

Diagnostic Display:

a. Check that the numbers for the valves listed in Table 16.5.1 turn orange.
b. Check that the word "PART" appears on an red background on the group number 2 block.
c. Check that the word "PART" appears on a green background on the H2/02 block.
d. Check that the word "PART" appears on an orange background on the SEC block and that this background turns red after approximately 30 seconds.

APPROVAL: [Signature]

421
STEP 3

ACTION:

De-energize the K5A relay (address 1027).

OUTPUT:

Primary Display:

a. Check that 2A, 2B, 2C, 2D, 2E and SEC in the menu block turn green.
b. Check that the "PART" disappears from the group number 2 block and the Unit 2 secondary isolation block, leaving green backgrounds.

Diagnostic Display:

a. Check that the numbers for the valves listed in Table 16.5.1 turn white.
b. Check that the word "PART" disappears from the group number 2, H2/O2, and SEC blocks, leaving green backgrounds.

APPROVAL: [Signature]
STEP 4

ACTION:

a. Open the F002 valve by setting 0660 to 1.

b. Energize the K5A relay (address 1027).

OUTPUT:

Primary Display:

a. Check that the word "PART" appears on a red background on the group number 2 block after approximately 5 seconds and on the Unit 2 secondary isolation block after approximately 30 seconds.

b. Check that 2D in the menu block turns red after approximately 5 seconds and that 2A, 2B, 2C, 2E and SEC turn red within approximately 30 seconds.

Diagnostic Display:

a. Check that the word "PART" appears on a red background on the group number 2 block.

b. Check that the word "PART" appears on a red background on the H2/02 block.

c. Check that the word "PART" appears on an orange background on the SEC block and that this background turns red after approximately 30 seconds.

ACTION:

a. Close the F002 valve by setting 0660 to 0.

b. De-energize the K5A and K5B relays (addresses 1027 and 1042).

APPROVAL: 8-3-84
STEP 5

ACTION:

Energize the K6A and K6B relays (GIT signal addresses 1031 and 1044, respectively).

OUTPUT:

Primary Display:

a. Check that the word "PART" appears on an orange background on the group number 2 block.
b. Check that 2A, 2B, 2C, 2D and 2E in the menu block turn orange.
c. Check that the orange background on the group number 2 block turns red after approximately 5 seconds.
d. Check that 2D in the menu block remains orange and that 2A, 2B, 2C and 2E turn red within approximately 26 seconds.

Diagnostic Display:

a. Check that the numbers for the valves listed in Table 16.5.1 turn orange.
b. Check that the word "PART" appears on a red background on the group number 2 block.
c. Check that the word "PART" appears on a green background on the H2/O2 block.

APPROVAL: 

[Signature]

424
STEP 6

ACTION:

De-energize the K6A relay (address 1031).

OUTPUT:

Primary Display:

a. Check that 2A, 2B, 2C, 2D, 2E and SEC in the menu block turn green.
b. Check that the word "PART" disappears from the group number 2 block, leaving a green background.

Diagnostic Display:

a. Check that the numbers for the valves listed in Table 16.5.1 turn white.
b. Check that the word "PART" disappears from the group number 2 and H2/O2 blocks, leaving green backgrounds.

APPROVAL: 425
STEP 7

ACTION:

a. Open the F002 valve by setting 0660 to 1.

b. Energize the K6A relay (address 1031).

OUTPUT:

Primary Display:

a. Check that the word "PART" appears on a red background on the group number 2 block after approximately 5 seconds.

b. Check that 2D in the menu block turns red after approximately 5 seconds and that 2A, 2B, 2C and 2E turn red within approximately 26 seconds.

Diagnostic Display:

a. Check that the word "PART" appears on a red background on the group number 2 block.

b. Check that the word "PART" appears on a red background on the H2/O2 block.

ACTION:

a. Close the F002 valve by setting 0660 to 0.

b. De-energize the K6A and K6B relays (addresses 1031 and 1044).

APPROVAL: 8-3-87
STEP 8

ACTION:

Close the valves listed in the following table.

<table>
<thead>
<tr>
<th>SIGNAL DESCRIPTION</th>
<th>INPUT</th>
<th>OUTPUT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Q2P33-AOV F010</td>
<td>0326</td>
<td>0325</td>
</tr>
<tr>
<td>Q2P33-AOV F011</td>
<td>0330</td>
<td>0327</td>
</tr>
<tr>
<td>Q2P33-AOV F012</td>
<td>0332</td>
<td>0331</td>
</tr>
<tr>
<td>Q2P33-AOV F013</td>
<td>0343</td>
<td>0342</td>
</tr>
<tr>
<td>Q2P33-AOV F014</td>
<td>0334</td>
<td>0333</td>
</tr>
<tr>
<td>Q2P33-AOV F015</td>
<td>0336</td>
<td>0335</td>
</tr>
</tbody>
</table>

OUTPUT:

Diagnostic Display:

a. Check that the symbols for the valves listed in Table 16.5.3 are green.

b. Check that the valve numbers listed in Table 16.5.3 are white.

APPROVAL: [Signature]
STEP 9

ACTION:

Energize the K5C and K5D relays (GIT signal addresses 1030 and 1043, respectively).

OUTPUT:

Primary Display:

a. Check that the word "PART" appears on an orange background on the group number 2 block and the Unit 2 secondary isolation status block.
b. Check that 2A, 2B, 2C, 2D, 2E and SEC in the menu block turn orange.
c. Check that the orange background on the group number 2 block turns red after approximately 5 seconds.
d. Check that the orange background of the Unit 2 secondary isolation block turns red after approximately 30 seconds.
e. Check that 2D in the menu block remains orange and that 2A, 2B, 2C, 2E and SEC turn red within approximately 30 seconds.

Diagnostic Display:

a. Check that the numbers for the valves listed in Table 16.5.3 turn orange.
b. Check that the word "PART" appears on a red background on the group number 2 block.
c. Check that the word "PART" appears on a green background on the H2/O2 block.
d. Check that the word "PART" appears on an orange background on the SEC block and that this background turns red after approximately 30 seconds.

APPROVAL: 8/3/84
STEP 10

ACTION:
De-energize the K5C relay (address 1030).

OUTPUT:

Primary Display:

a. Check that 2A, 2B, 2C, 2D, 2E and SEC in the menu block turn green.
b. Check that the word "PART" disappears from the group number 2 block
   and the Unit 2 secondary isolation status block, leaving green
   backgrounds.

Diagnostic Display:

a. Check that the numbers for the valves listed in Table 16.5.3 turn
   white.
b. Check that the word "PART" disappears from the group number 2,
   H2/02, and SEC blocks, leaving green backgrounds.

APPROVAL: 8-3-87
STEP 11

ACTION:

a. Open the F010 valve by setting 0325 to 1.

b. Energize the K5C relay (address 1030).

OUTPUT:

Primary Display:

a. Check that the word "PART" appears on a red background on the group number 2 block after approximately 5 seconds and on the Unit 2 secondary isolation block after approximately 30 seconds.

b. Check that 2D in the menu block turns red after approximately 5 seconds and that 2A, 2B, 2C, 2E and SEC turn red within approximately 30 seconds.

Diagnostic Display:

a. Check that the word "PART" appears on a red background on the group number 2 block.

b. Check that the word "PART" appears on a red background on the H2/O2 block.

c. Check that the word "PART" appears on an orange background on the SEC block and that this background turns red after approximately 30 seconds.

ACTION:

a. Close the F010 valve by setting 0325 to 0.

b. De-energize the K5C and K5D relays (addresses 1030 and 1043).

APPROVAL: [Signature] 03-84
STEP 12

ACTION:

Energize the K6C and K6D relays (GIT signal address 1032 and 1045, respectively).

OUTPUT:

Primary Display:

a. Check that the word "PART" appears on an orange background on the group number 2 block.
b. Check that 2A, 2B, 2C, 2D and 2E in the menu block turn orange.
c. Check that the orange background on the group number 2 block turns red after approximately 5 seconds.
d. Check that 2D in the menu block remains orange and that 2A, 2B, 2C and 2E turn red within approximately 26 seconds.

Diagnostic Display:

a. Check that the numbers for the valves listed in Table 16.5.3 turn orange.
b. Check that the word "PART" appears on a red background on the group number 2 block.
c. Check that the word "PART" appears on a green background on the H2/O2 block.

APPROVAL: \[\text{Signature}\] 8-3-87
STEP 13

ACTION:

De-energize the K6C relay (address 1032).

OUTPUT:

Primary Display:

a. Check that 2A, 2B, 2C, 2D and 2E in the menu block turn green.
b. Check that the word "PART" disappears from the group number 2 block, leaving a green background.

Diagnostic Display:

a. Check that the numbers for the valves listed in Table 16.5.3 turn white.
b. Check that the word "PART" disappears from the group number 2 and H2/O2 blocks, leaving green backgrounds.

APPROVAL:
STEP 14

ACTION:

a. Open the F010 valve by setting 0325 to 1.

b. Energize the K6C relay (address 1032).

OUTPUT:

Primary Display:

a. Check that the word "PART" appears on a red background on the group number 2 block after approximately 5 seconds.

b. Check that 2D in the menu block turns red after approximately 5 seconds and that 2A, 2B, 2C and 2E turn red within approximately 26 seconds.

Diagnostic Display:

a. Check that the word "PART" appears on a red background on the group number 2 block.

b. Check that the word "PART" appears on a red background on the H2/O2 block.

ACTION:

a. Close the F010 valve by setting 0325 to 0.

b. De-energize the K6C and K6D relays (addresses 1032 and 1045).

APPROVAL: [Signature] 8-3-84
STEP 15

ACTION:

a. Disable buffer transfer.
b. Energize the relays listed in the following table.
c. Enable buffer transfer.

<table>
<thead>
<tr>
<th>SIGNAL DESCRIPTION</th>
<th>GIT SIGNAL ADDRESS</th>
<th>INPUT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Q2A71B-K5A</td>
<td>1027</td>
<td>1</td>
</tr>
<tr>
<td>Q2A71B-K6A</td>
<td>1031</td>
<td>1</td>
</tr>
<tr>
<td>Q2A71B-K5C</td>
<td>1030</td>
<td>1</td>
</tr>
<tr>
<td>Q2A71B-K6C</td>
<td>1032</td>
<td>1</td>
</tr>
<tr>
<td>Q2A71B-K5B</td>
<td>1042</td>
<td>1</td>
</tr>
<tr>
<td>Q2A71B-K6B</td>
<td>1044</td>
<td>1</td>
</tr>
<tr>
<td>Q2A71B-K5D</td>
<td>1043</td>
<td>1</td>
</tr>
<tr>
<td>Q2A71B-K6D</td>
<td>1045</td>
<td>1</td>
</tr>
</tbody>
</table>

OUTPUT:

Primary Display:

a. Check that the word "PART" appears on an orange background on the group number 2 block and on the Unit 2 secondary isolation block.
b. Check that 2A, 2B, 2C, 2D, 2E and SEC in the menu block turn orange.
c. Check that the orange background on the group number 2 block turns red after approximately 5 seconds.
d. Check that 2D in the menu block remains orange and that 2A, 2B, 2C, 2E and SEC turn red within approximately 30 seconds.
e. Check that the background of the Unit 2 secondary isolation block turns red after approximately 30 seconds.

Diagnostic Display:

a. Check that the numbers for the valves listed in Tables 16.5.1 and 16.5.3 turn orange.
b. Check that the word "PART" appears on a red background on the group number 2 block.
c. Check that the word "ALL" appears on a green background on the H2/02 block.
d. Check that the word "PART" appears on an orange background on the SEC block and that this background turns red after approximately 30 seconds.

APPROVAL: 8-3-84
STEP 16

ACTION:

De-Energize the relays listed in Table 16.5.4.

OUTPUT:

Primary Display:

a. Check that 2A, 2B, 2C, 2D, 2E and SEC in the menu block turn green.
b. Check that the word "PART" disappears from the group number 2 block and the Unit 2 secondary isolation block, leaving green backgrounds.

Diagnostic Display:

a. Check that the numbers for the valves listed in Tables 16.5.1 and 16.5.3 turn white.
b. Check that the words "PART", "ALL" and "PART" disappear from the group number 2, H2/02, and SEC blocks, respectively, leaving green backgrounds.

APPROVAL: 6.3-81
STEP 17

ACTION:

a. Open the F010 valve by setting 0325 to 1.
b. Disable buffer transfer.
c. Energize the relays listed in Table 16.5.4.
d. Enable buffer transfer.

OUTPUT:

Primary Display:

a. Check that the word "PART" appears on a red background on the group number 2 block after approximately 5 seconds and on the Unit 2 secondary isolation block after approximately 30 seconds.
b. Check that 2D in the menu block turns red after approximately 5 seconds and that 2A, 2B, 2C, 2E and SEC turn red within approximately 30 seconds.

Diagnostic Display:

a. Check that the word "PART" appears on a red background on the group number 2 block.
b. Check that the word "ALL" appears on a red background on the H2/O2 block.
c. Check that the word "PART" appears on an orange background on the SEC block and that this background turns red after approximately 30 seconds.

ACTION:

a. Close the F010 valve by setting 0325 to 0.
b. De-energize the relays listed in Table 16.5.4.

APPROVAL: A. D. 8-3-81
STEP 18

ACTION:

a. Disable buffer transfer.
b. Energize the relays listed in the following table.
c. Enable buffer transfer.

<table>
<thead>
<tr>
<th>SIGNAL DESCRIPTION</th>
<th>GIT SIGNAL ADDRESS</th>
<th>INPUT</th>
</tr>
</thead>
<tbody>
<tr>
<td>QC51A-Z2A</td>
<td>1011</td>
<td>1</td>
</tr>
<tr>
<td>QC51A-Z2C</td>
<td>1013</td>
<td>1</td>
</tr>
<tr>
<td>QC51A-Z2B</td>
<td>1012</td>
<td>1</td>
</tr>
<tr>
<td>QC51A-Z2D</td>
<td>1014</td>
<td>1</td>
</tr>
<tr>
<td>Q2C51A-Z2A</td>
<td>1015</td>
<td>1</td>
</tr>
<tr>
<td>Q2C51A-Z2C</td>
<td>1017</td>
<td>1</td>
</tr>
<tr>
<td>Q2C51A-Z2B</td>
<td>1016</td>
<td>1</td>
</tr>
<tr>
<td>Q2C51A-Z2D</td>
<td>1020</td>
<td>1</td>
</tr>
</tbody>
</table>

TABLE 16.5.5

OUTPUT:

Primary Display:

a. Check that the word "PART" appears on an orange background on the group number 2 block. The color changes to red after approximately 5 seconds.
b. Check that 2D in the menu block turns and remains orange.
c. Check that 2C, 2E and SEC turn orange and that the color changes to red within approximately 30 seconds.
d. Check that the word "ALL" appears on an orange background on both Unit 1 and Unit 2 secondary isolation blocks. The color changes to red after approximately 30 seconds.

Diagnostic Display:

a. Check that the tag numbers for the valves listed in Tables 16.5.1 and 16.5.3 turn orange.
b. Check that the word "PART" appears on a red background on the group number 2 block.
c. Check that the word "ALL" appears on a green background on the H2/02 block.
d. Check that the word "ALL" appears on an orange background on the SEC block. The color changes to red after approximately 30 seconds.

APPROVAL: 3-84
STEP 19

ACTION:

De-energize the relays listed in Table 16.5.5.

OUTPUT:

Primary Display:

a. Check that 2C, 2D, 2E and SEC in the menu block turn green.
b. Check that the word "PART" disappears from the group number 2 block, leaving a green background.
c. Check that the word "ALL" disappears from the secondary isolation blocks, leaving green backgrounds.

Diagnostic Display:

a. Check that the numbers for the valves listed in Tables 16.5.1 and 16.5.3 turn white.
b. Check that the words "PART", "ALL" and "ALL" disappear from the group number 2, H2/02 and SEC blocks, respectively, leaving green backgrounds.

APPROVAL: [Signature]

438
STEP 20

ACTION:

a. Open the F010 valve by setting 0325 to 1.
b. Disable buffer transfer.
c. Energize the relays listed in Table 16.5.5.
d. Enable buffer transfer.

OUTPUT:

Primary Display:

a. Check that the word "PART" appears on an orange background on the group number 2 block. The color changes to red after approximately 5 seconds.
b. Check that 2C, 2D, 2E and SEC turn orange and that the color changes to red within approximately 30 seconds.
c. Check that the word "ALL" appears on an orange background on both Unit 1 and Unit 2 secondary isolation blocks. The color changes to red after approximately 30 seconds.

Diagnostic Display:

a. Check that the tag numbers for the valves listed in 16.5.1 and 16.5.3 turn orange.
b. Check that the word "PART" appears on a red background on the group number 2 block.
c. Check that the word "ALL" appears on a red background on the H2/02 block.
d. Check that the word "ALL" appears on an orange background on the SEC block. The color changes to red after approximately 30 seconds.

APPROVAL: 7XZ2
16.6. GROUP 2E ISOLATION - MISC

STEP 1

ACTION:

a. Call up the PCIS Group 2E Diagnostic display and call the reference test data.

b. Close the valves listed in the following table.

<table>
<thead>
<tr>
<th>TABLE 16.6.1</th>
</tr>
</thead>
<tbody>
<tr>
<td>SIGNAL DESCRIPTION</td>
</tr>
<tr>
<td>Q2B21-SV F111</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td>Q2D11-AOV F050</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td>Q2D11-AOV F051</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td>Q2E41-SV F122</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td>Q2P70-AOV F002</td>
</tr>
<tr>
<td></td>
</tr>
</tbody>
</table>

OUTPUT:

Diagnostic Display:

a. Check that the symbols for the valves listed in Table 16.6.1 are green.

b. Check that the valve numbers listed in Table 16.6.1 are white.

APPROVAL: [Signature]
STEP 2

ACTION:

Set the relays as shown in the following table.

<table>
<thead>
<tr>
<th>SIGNAL DESCRIPTION</th>
<th>GIT SIGNAL ADDRESS</th>
<th>INPUT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Q2A71B-K6A</td>
<td>1031</td>
<td>0</td>
</tr>
<tr>
<td>Q2A71B-K5C</td>
<td>1030</td>
<td>0</td>
</tr>
<tr>
<td>Q2A71B-K6C</td>
<td>1032</td>
<td>0</td>
</tr>
<tr>
<td>Q2A71B-K6B</td>
<td>1044</td>
<td>0</td>
</tr>
<tr>
<td>Q2A71B-K5D</td>
<td>1043</td>
<td>0</td>
</tr>
<tr>
<td>Q2A71B-K6D</td>
<td>1045</td>
<td>0</td>
</tr>
<tr>
<td>Q2A71B-K5A</td>
<td>1027</td>
<td>1</td>
</tr>
<tr>
<td>Q2A71B-K5B</td>
<td>1042</td>
<td>1</td>
</tr>
</tbody>
</table>

OUTPUT:

Primary Display:

a. Check that the word "PART" appears on an orange background on the group number 2 block and on the Unit 2 secondary isolation block.
b. Check that 2A, 2B, 2C, 2D, 2E and SEC in the menu block turn orange.
c. Check that the orange background on the group number 2 block turns red after approximately 5 seconds.
d. Check that 2E in the menu block remains orange and that 2A, 2B, 2C, 2D and SEC turn red after approximately 30 seconds.
e. Check that the background of the Unit 2 secondary isolation status block turns red after approximately 30 seconds.

Diagnostic Display:

a. Check that the numbers for the valves listed in Table 16.6.1 turn orange.
b. Check that the word "PART" appears on a red background on the group number 2 block.
c. Check that the word "PART" appears on a green background on the MISC block after approximately 5 seconds.
d. Check that the word "PART" appears on an orange background on the SEC block and that this background turns red after approximately 30 seconds.

APPROVAL: 6-3-64
**STEP 3**

**ACTION:**

De-energize the K5A relay (address 1027).

**OUTPUT:**

**Primary Display:**

a. Check that 2A, 2B, 2C, 2D, 2E and SEC in the menu block turn green.

b. Check that the word "PART" disappears from the group number 2 block and the Unit 2 secondary isolation block, leaving green backgrounds.

**Diagnostic Display:**

a. Check that the numbers for the valves listed in Table 16.6.1 turn white.

b. Check that the word "PART" disappears from the group number 2, MISC, and SEC blocks, leaving green backgrounds.

**APPROVAL:**

8-3-87
STEP 4

ACTION:

a. Open the B21-SV F111 valve by setting 0103 to 1.

b. Energize the K5A relay (address 1027).

OUTPUT:

Primary Display:

a. Check that the word "PART" appears on a red background on the group number 2 block after approximately 5 seconds and on the Unit 2 secondary isolation block after approximately 30 seconds.

b. Check that 2E in the menu block turns red after approximately 5 seconds and that 2A, 2B, 2C, 2D and SEC turn red within approximately 30 seconds.

Diagnostic Display:

a. Check that the word "PART" appears on a red background on the group number 2 block.

b. Check that the word "PART" appears on a red background on the MISC block.

c. Check that the word "PART" appears on an orange background on the SEC block and that this background turns red after approximately 30 seconds.

ACTION:

a. Close the B21-SV F111 valve by setting 0103 to 0.

b. De-energize the K5A and K5B relays (addresses 1027 and 1042).

APPROVAL: 84
STEP 5

ACTION:

Energize the K6A and K6B relays (GIT signal addresses 1031 and 1044, respectively).

OUTPUT:

Primary Display:

a. Check that the word "PART" appears on an orange background on the group number 2 block.
b. Check that 2A, 2B, 2C, 2D and 2E in the menu block turn orange.
c. Check that the orange background on the group number 2 block turns red after approximately 5 seconds.
d. Check that 2E in the menu block remains orange and that 2A, 2B, 2C and 2D turn red within approximately 26 seconds.

Diagnostic Display:

a. Check that the numbers for the valves listed in Table 16.6.1 turn orange.
b. Check that the word "PART" appears on a red background on the group number 2 block.
c. Check that the word "PART" appears on a green background on the MISC block.

APPROVAL: [Signature] 8-3-84
STEP 6

ACTION:

De-energize the K6A relay (address 1031).

OUTPUT:

Primary Display:

a. Check that 2A, 2B, 2C, 2D, 2E and SEC in the menu block turn green.

b. Check that the word "PART" disappears from the group number 2 block, leaving a green background.

Diagnostic Display:

a. Check that the numbers for the valves listed in Table 16.6.1 turn white.

b. Check that the word "PART" disappears from the group number 2 and MISC blocks, leaving green backgrounds.

APPROVAL: [Signature]

445
STEP 7

ACTION:

a. Open the B21-SV F111 valve by setting 0103 to 1.

b. Energize the K6A relay (address 1031).

OUTPUT:

Primary Display:

a. Check that the word "PART" appears on a red background on the group number 2 block after approximately 5 seconds.

b. Check that 2E in the menu block turns red after approximately 5 seconds and that 2A, 2B, 2C and 2D turn red within approximately 26 seconds.

Diagnostic Display:

a. Check that the word "PART" appears on a red background on the group number 2 block.

b. Check that the word "PART" appears on a red background on the MISC block.

ACTION:

a. Close the B21-SV F111 valve by setting 0103 to 0.

b. De-energize the K6A and K6B relays (addresses 1031 and 1044).

APPROVAL: [Signature] 8-3-84
STEP 8

ACTION:

Close the valves listed in the following table.

Table 16.6.3

<table>
<thead>
<tr>
<th>SIGNAL DESCRIPTION</th>
<th>INPUT</th>
<th>OUTPUT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Q2B21-SV F112</td>
<td>0277</td>
<td>0276</td>
</tr>
<tr>
<td></td>
<td>1 0</td>
<td>Closed (G)</td>
</tr>
<tr>
<td>Q2D11-AOV F052</td>
<td>0303</td>
<td>0302</td>
</tr>
<tr>
<td></td>
<td>1 0</td>
<td>Closed (G)</td>
</tr>
<tr>
<td>Q2D11-AOV F053</td>
<td>0305</td>
<td>0304</td>
</tr>
<tr>
<td></td>
<td>1 0</td>
<td>Closed (G)</td>
</tr>
<tr>
<td>Q2E41-SV F121</td>
<td>0317</td>
<td>0316</td>
</tr>
<tr>
<td></td>
<td>1 0</td>
<td>Closed (G)</td>
</tr>
<tr>
<td>Q2P70-AOV F003</td>
<td>0705</td>
<td>0704</td>
</tr>
<tr>
<td></td>
<td>1 0</td>
<td>Closed (G)</td>
</tr>
</tbody>
</table>

OUTPUT:

Diagnostic Display:

a. Check that the symbols for the valves listed in Table 16.6.3 are green.
b. Check that the valve numbers listed in Table 16.6.3 are white.

APPROVAL:  

447
STEP 9

ACTION:

Energize the K5C and K5D relays (GIT signal addresses 1030 and 1043, respectively).

OUTPUT:

Primary Display:

a. Check that the word "PART" appears on an orange background on the group number 2 block and the Unit 2 secondary isolation block.
b. Check that 2A, 2B, 2C, 2D, 2E and SEC in the menu block turn orange.
c. Check that the orange background on the group number 2 block turns red after approximately 5 seconds.
d. Check that 2E in the menu block remains orange and that 2A, 2B, 2C, 2D and SEC turn red within approximately 30 seconds.
e. Check that the orange background of the Unit 2 secondary isolation block turns red after approximately 30 seconds.

Diagnostic Display:

a. Check that the numbers for the valves listed in Table 16.6.3 turn orange.
b. Check that the word "PART" appears on a red background on the group number 2 block.
c. Check that the word "PART" appears on a green background on the MISC block.
d. Check that the word "PART" appears on an orange background on the SEC block and that this background turns red after approximately 30 seconds.

APPROVAL: 8-3-54
STEP 10

ACTION:
De-energize the K5C relay (address 1030).

OUTPUT:

Primary Display:

a. Check that 2A, 2B, 2C, 2D, 2E and SEC in the menu block turn green.
b. Check that the word "PART" disappears from the group number 2 block and the Unit 2 secondary isolation block, leaving green backgrounds.

Diagnostic Display:

a. Check that the numbers for the valves listed in Table 16.6.3 turn white.
b. Check that the word "PART" disappears from the group number 2, MISC, and SEC blocks, leaving green backgrounds.

APPROVAL: 8-3-84
STEP 11

ACTION:

a. Open the B21-SV F112 valve by setting 0276 to 1.

b. Energize the K5C relay (address 1030).

OUTPUT:

Primary Display:

a. Check that the word "PART" appears on a red background on the group number 2 block after approximately 5 seconds and on the Unit 2 secondary isolation block after approximately 30 seconds.

b. Check that 2E in the menu block turns red after approximately 5 seconds and that 2A, 2B, 2C, 2D and SEC turn red within approximately 30 seconds.

Diagnostic Display:

a. Check that the word "PART" appears on a red background on the group number 2 block.

b. Check that the word "PART" appears on a red background on the MISC block.

c. Check that the word "PART" appears on an orange background on the SEC block and that this background turns red after approximately 30 seconds.

ACTION:

a. Close the B21-SV F112 valve by setting 0276 to 0.

b. De-energize the K5C and K5D relays (addresses 1030 and 1043).

APPROVAL: 8-2-84
STEP 12

ACTION:

Energize the K6C and K6D relays (GIT signal address 1032 and 1045, respectively).

OUTPUT:

Primary Display:

a. Check that the word "PART" appears on an orange background on the group number 2 block.

b. Check that 2A, 2B, 2C, 2D and 2E in the menu block turn orange.

c. Check that the orange background on the group number 2 block turns red after approximately 5 seconds.

d. Check that 2E in the menu block remains orange and that 2A, 2B, 2C and 2D turn red within approximately 26 seconds.

Diagnostic Display:

a. Check that the numbers for the valves listed in Table 16.6.3 turn orange.

b. Check that the word "PART" appears on a red background on the group number 2 block.

c. Check that the word "PART" appears on a green background on the MISC block.

APPROVAL: 03-97
STEP 13

ACTION:

De-energize the K6C relay (address 1032).

OUTPUT:

Primary Display:

- a. Check that 2A, 2B, 2C, 2D and 2E in the menu block turn green.
- b. Check that the word "PART" disappears from the group number 2 block, leaving a green background.

Diagnostic Display:

- a. Check that the numbers for the valves listed in Table 16.6.3 turn white.
- b. Check that the word "PART" disappears from the group number 2 and MISC blocks, leaving green backgrounds.

APPROVAL: 

- 3.8.1
STEP 14

ACTION:

a. Open The B21-SV F112 valve by setting 0276 to 1.

b. Energize the K6C relay (address 1032).

OUTPUT:

Primary Display:

a. Check that the word "PART" appears on a red background on the group number 2 block after approximately 5 seconds.

b. Check that 2E in the menu block turns red after approximately 5 seconds and that 2A, 2B, 2C and 2D turn red within approximately 26 seconds.

Diagnostic Display:

a. Check that the word "PART" appears on a red background on the group number 2 block.

b. Check that the word "PART" appears on an red background on the MISC block.

ACTION:

a. Close the B21-SV F112 valve by setting 0276 to 0.

b. De-energize the K6C and K6D relays (addresses 1032 and 1045).

APPROVAL: 3-01
STEP 15

ACTION:

a. Disable buffer transfer.
b. Energize the relays listed in the following table.
c. Enable buffer transfer.

<table>
<thead>
<tr>
<th>SIGNAL DESCRIPTION</th>
<th>GIT SIGNAL ADDRESS</th>
<th>INPUT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Q2A71B-K5A</td>
<td>1027</td>
<td>1</td>
</tr>
<tr>
<td>Q2A71B-K6A</td>
<td>1031</td>
<td>1</td>
</tr>
<tr>
<td>Q2A71B-K5C</td>
<td>1030</td>
<td>1</td>
</tr>
<tr>
<td>Q2A71B-K6C</td>
<td>1032</td>
<td>1</td>
</tr>
<tr>
<td>Q2A71B-K5B</td>
<td>1042</td>
<td>1</td>
</tr>
<tr>
<td>Q2A71B-K6B</td>
<td>1044</td>
<td>1</td>
</tr>
<tr>
<td>Q2A71B-K5D</td>
<td>1043</td>
<td>1</td>
</tr>
<tr>
<td>Q2A71B-K6D</td>
<td>1045</td>
<td>1</td>
</tr>
</tbody>
</table>

OUTPUT:

Primary Display:

a. Check that the word "PART" appears on an orange background on the group number 2 block and on the Unit 2 secondary isolation block.
b. Check that 2A, 2B, 2C, 2D, 2E and SEC in the menu block turn orange.
c. Check that the orange background on the group number 2 block turns red after approximately 5 seconds.
d. Check that 2E in the menu block turns and remains orange and that 2A, 2B, 2C, 2D and SEC turn red within approximately 30 seconds.
e. Check that the background of the Unit 2 secondary isolation block turns red after approximately 30 seconds.

Diagnostic Display:

a. Check that the numbers for the valves listed in Tables 16.6.1 and 16.6.3 turn orange.
b. Check that the word "PART" appears on a red background on the group number 2 block.
c. Check that the word "ALL" appears on a green background on the MISC block.
d. Check that the word "PART" appears on an orange background on the SEC block and that this background turns red after approximately 30 seconds.

APPROVAL: 3-84
STEP 16

ACTION:

De-Energize the relays listed in Table 16.6.4.

OUTPUT:

Primary Display:

a. Check that 2A, 2B, 2C, 2D, 2E and SEC in the menu block turn green.
b. Check that the word "PART" disappears from the group number 2 block and the Unit 2 secondary isolation block, leaving green backgrounds.

Diagnostic Display:

a. Check that the numbers for the valves listed in Tables 16.6.1 and 16.6.3 turn white.
b. Check that the words "PART", "ALL", and "PART" disappear from the group number 2, MISC, and SEC blocks, respectively, leaving green backgrounds.

APPROVAL: ...
STEP 17

ACTION:

a. Open the B21-SV F112 valve by setting 0276 to 1.
b. Disable buffer transfer.
c. Energize the relays listed in Table 16.6.4.
d. Enable buffer transfer.

OUTPUT:

Primary Display:

a. Check that the word "PART" appears on a red background on the group number 2 block after approximately 5 seconds and on the Unit 2 secondary isolation block after approximately 30 seconds.
b. Check that 2E in the menu block turns red after approximately 5 seconds and that 2A, 2B, 2C, 2D and SEC turn red within approximately 30 seconds.

Diagnostic Display:

a. Check that the word "PART" appears on a red background on the group number 2 block.
b. Check that the word "ALL" appears on a red background on the MISC block.
c. Check that the word "PART" appears on an orange background on the SEC block and that this background turns red after approximately 30 seconds.

ACTION:

a. Close the B21-SV F112 valve by setting 0276 to 0.
b. De-energize the relays listed in Table 16.6.4.

APPROVAL: 8-3-84
STEP 18

ACTION:

a. Disable buffer transfer.
b. Energize the relays listed in the following table.
c. Enable buffer transfer.

<table>
<thead>
<tr>
<th>SIGNAL DESCRIPTION</th>
<th>GIT SIGNAL ADDRESS</th>
<th>INPUT</th>
</tr>
</thead>
<tbody>
<tr>
<td>QC51A-Z2A</td>
<td>1011</td>
<td>1</td>
</tr>
<tr>
<td>QC51A-Z2C</td>
<td>1013</td>
<td>1</td>
</tr>
<tr>
<td>QC51A-Z2B</td>
<td>1012</td>
<td>1</td>
</tr>
<tr>
<td>QC51A-Z2D</td>
<td>1014</td>
<td>1</td>
</tr>
<tr>
<td>Q2C51A-Z2A</td>
<td>1015</td>
<td>1</td>
</tr>
<tr>
<td>Q2C51A-Z2C</td>
<td>1017</td>
<td>1</td>
</tr>
<tr>
<td>Q2C51A-Z2B</td>
<td>1016</td>
<td>1</td>
</tr>
<tr>
<td>Q2C51A-Z2D</td>
<td>1020</td>
<td>1</td>
</tr>
</tbody>
</table>

OUTPUT:

Primary Display:

a. Check that the word "PART" appears on an orange background on the group number 2 block. The color changes to red after approximately 5 seconds.
b. Check that 2E in the menu block turns and remains orange.
c. Check that 2C, 2D and SEC turn orange and that the color changes to red within approximately 30 seconds.
d. Check that the word "ALL" appears on an orange background on both Unit 1 and Unit 2 secondary isolation blocks. The color changes to red after approximately 30 seconds.

Diagnostic Display:

a. Check that the numbers for the valves listed in Tables 16.6.1 and 16.6.3 turn orange.
b. Check that the word "PART" appears on a red background on the group number 2 block.
c. Check that the word "ALL" appears on a green background on the MISC block.
d. Check that the word "ALL" appears on an orange background on the SEC block. The color changes to red after approximately 30 seconds.

APPROVAL: [Signature] 8-3-84

457
STEP 19

ACTION:

De-energize the relays listed in Table 16.6.5.

OUTPUT:

Primary Display:

a. Check that 2C, 2D, 2E and SEC in the menu block turn green.
b. Check that the word "PART" disappears from the group number 2 block leaving a green background.
c. Check that the word "ALL" disappears from the secondary isolation blocks, leaving green backgrounds.

Diagnostic Display:

a. Check that the numbers for the valves listed in Tables 16.6.1 and 16.6.3 turn white.
b. Check that the words "PART", "ALL" and "ALL" disappear from the group number 2, MISC and SEC blocks, respectively, leaving green backgrounds.

APPROVAL: [Signature] 6-3-87
STEP 20

ACTION:

a. Open the B21-SV F112 valve by setting 0276 to 1.
b. Disable buffer transfer.
c. Energize the relays listed in Table 16.6.5.
d. Enable buffer transfer.

OUTPUT:

Primary Display:

a. Check that the word "PART" appears on an orange background on the
group number 2 block. The color changes to red after approximately
5 seconds.
b. Check that 2C, 2D, 2E and SEC in the menu block turn orange and that
the color changes to red within approximately 30 seconds.
c. Check that the word "ALL" appears on an orange background on both
Unit 1 and Unit 2 secondary isolation blocks. The color changes to
red after approximately 30 seconds.

Diagnostic Display:

a. Check that the tag numbers for the valves listed in Table 16.6.1 and
16.6.3 turn orange.
b. Check that the word "PART" appears on a red background on the group
number 2 block.
c. Check that the word "ALL" appears on a red background on the MISC
block.
d. Check that the word "ALL" appears on an orange background on the SEC
block. The color changes to red after approximately 30 seconds.

APPROVAL: 8-3-94
STEP 1

ACTION:

a. Call up the PCIS Group 1, 3, 4, 5 Diagnostic display and call the reference test data.

b. Close the outbound HPCI steam line valves as shown in the following table.

<table>
<thead>
<tr>
<th>SIGNAL DESCRIPTION</th>
<th>INPUT</th>
<th>OUTPUT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Q2E41-MOV F003</td>
<td>0457</td>
<td>0456</td>
</tr>
<tr>
<td></td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>Q2E41-MOV F002</td>
<td>0401</td>
<td>0400</td>
</tr>
<tr>
<td></td>
<td>1</td>
<td>0</td>
</tr>
</tbody>
</table>

OUTPUT:

Diagnostic Display

a. Check that the symbols for the valves in Table 16.7.1 are green.

b. Check that the valve numbers listed in Table 16.7.1 are white.
STEP 2:

ACTION:

Energize the Q2E41A-K34 relay (GIT Signal address 1053), i.e. set bit value to 1.

PRIMARY DISPLAY:

a. Check that the word "PART" appears on an orange background on the Group Number 3 block.

b. Check that the number 3 in the menu block turns orange.

c. Check that the orange background on the Group Number 3 block changes to green after approximately 50 seconds.

d. Check that the number 3 in the menu block remains orange.

DIAGNOSTIC DISPLAY:

a. Check that the number for the F003 valve turns orange and remains orange.

b. Check that the Group Number 3 block matches that of the primary display.

APPROVAL: 8/2/87
STEP 3.

ACTION:

De-energize the K34 relay (address 1053), i.e., set bit value to 0.

OUTPUT:

Primary Display:

a. Check that the number 3 in the menu block turns green.
b. Check that the word "PART" disappears from the group number block, leaving a green background.

Diagnostic Display:

a. Check that the numbers for the F003 valve turn white.
b. Check that the word "PART" disappears from the group number 3 block, leaving a green background.

APPROVAL: [Signature]
STEP 4:

ACTION:

a. Open the F003 valve by setting 0457 to 0 and 0456 to 1.
b. Energize the K34 relay (address 1053).

OUTPUT:

Primary Display:

a. Check that the word "PART" appears on an red background on the group number 3 block after approximately 50 seconds.
b. Check that the number 3 in the menu block turns red after approximately 50 seconds.

Diagnostic Display:

a. Check that the Group Number 3 block matches that of the primary display.

ACTION:

a. Close the valve opened at the beginning of this step.
b. De-energize the K34 relay (address 1053).

APPROVAL: 8-2-54
STEP 5:

ACTION:

a. Energize the Q2E41A-K44 relay (GIT signal address 1055).

OUTPUT:

Primary Display:

a. Check that the word "PART" appears on an orange background on the group number 3 block.

b. Check that the number 3 in the menu block turns orange.

c. Check that the orange background on the Group Number 3 block changes to green after approximately 50 seconds.

d. Check that the number 3 in the menu block remains orange.

Diagnostic Display:

a. Check that the number for the F002 valve turns and remains orange.

b. Check that the Group Number 3 block matches that of the primary display.

APPROVAL: \[\text{Signature}\]
STEP 6:

ACTION:

De-energize the K44 relay (address 1055).

OUTPUT:

Primary Display

a. Check that the number 3 in the menu block turns green.
b. Check that the word "PART" disappears from the group number block, leaving a green background.

Diagnostic Display:

a. Check that the numbers for the F002 valve turns white.
b. Check that the word "PART" disappears from the group number 3 block, leaving a green background.

APPROVAL: 8-7-89
STEP 7:

ACTION:

a. Open the P002 valve by setting 0401 to 0 and 0400 to 1.
b. Energize the K44 relay (address 1055).

OUTPUT:

Primary Display:

a. Check that the word "PART" appears on an red background on the group number 3 block after approximately 50 seconds.
b. Check that the number 3 in the menu block turns red after approximately 50 seconds.

Diagnostic Display:

a. Check that the group number 3 block matches that of the Primary display.

ACTION:

a. Close the valve opened at the beginning of this step.
b. De-energize the K44 relay (address 1055).

APPROVAL: [Signature] 6-2-84
STEP 8:

ACTION:

Energize both the K34 and K44 relays (addresses 1053 and 1055).

OUTPUT:

Primary Display:

a. Check that the word "ALL" appears on an orange background on the group number 3 block.

b. Check that the number 3 in the menu block turns orange.

c. Check that the orange background on the Group Number 3 block changes to green after approximately 50 seconds.

d. Check that the number 3 in the menu block remains orange.

Diagnostic Display:

a. Check that the numbers for the F003 and F002 valves turn and remain orange.

b. Check that the Group Number 3 block matches that of the primary display.

APPROVAL: 8-2-84
STEP 9:

ACTION:

De-energize the K34 and K44 relays (addresses 1053 and 1055).

OUTPUT:

Primary Display:

a. Check that the number 3 in the menu block turns green.
b. Check that the word "ALL" disappears from the group number block, leaving a green background.

Diagnostic Display:

a. Check that the numbers for the F002 and F003 valves turn white.
b. Check that the word "ALL" disappears from the group number 3 block, leaving a green background.

APPROVAL: [Signature]
STEP 10:

ACTION:

a. Open the F003 (set 0457 to 0 and 0456 to 1) or the F002 valve (set 0401 to 0 and 0400 to 1).

b. Energize the K34 and K44 relays (addresses 1053 and 1055).

OUTPUT:

Primary Display:

a. Check that the word "ALL" appears on a red background on the group number 3 block after approximately 50 seconds.

b. Check that the number 3 in the menu block turns red after approximately 50 seconds.

Diagnostic Display:

a. Check that the group number 3 block matches that of the Primary display.

ACTION:

a. Close the valve opened at the beginning of this step.


APPROVAL: E 8-2-87
16.8 GROUP 4 ISOLATION

STEP 1:

ACTION:

Close the outboard HPCI steam line valves as shown in the following table.

**TABLE 16.8.1**

<table>
<thead>
<tr>
<th>SIGNAL DESCRIPTION</th>
<th>INPUT</th>
<th>OUTPUT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Q2E51-MOV F008</td>
<td>0415</td>
<td>0414</td>
</tr>
<tr>
<td></td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>Q2E51-MOV F007</td>
<td>0441</td>
<td>0440</td>
</tr>
<tr>
<td></td>
<td>1</td>
<td>0</td>
</tr>
</tbody>
</table>

OUTPUT:

Diagnostic Display:

a. Check that the symbols for the valves listed in Table 16.8.1 are green.

b. Check that the valve numbers listed in Table 16.8.1 are white.

APPROVAL: [Signature] 8-2-67
STEP 2:

ACTION:

Energize the Q2E51A-K16 relay (GIT signal address 1054), i.e. set bit value to 1.

OUTPUT:

Primary Display:

a. Check that the word "PART" appears on an orange background on the Group Number 4 block.

b. Check that the number 4 in the menu block turns orange.

c. Check that the orange background on the group number 4 block changes to green after approximately 20 seconds.

d. Check that the number 4 in the menu block remains orange.

Diagnostic Display:

a. Check that the number for the F008 valve turns and remains orange.

b. Check that the Group Number 4 block matches that of the primary display.

APPROVAL: 


471
STEP 3:

ACTION:

De-energize the K16 relay (address 1054), i.e., set bit value to 0.

OUTPUT:

Primary Display:

a. Check that the number 4 in the menu block turns green.
b. Check that the word "PART" disappears from the group number 4 block, leaving a green background.

Diagnostic Display:

a. Check that the number for the F008 valve turns white.
b. Check that the word "PART" disappears from the group number 4 block, leaving a green background.
STEP 4:

ACTION:

a. Open the F008 Valve (set 0415 to 0 and 0414 to 1).
b. Energize the K16 relay (address 1054).

OUTPUT:

Primary Display:

a. Check that the word "PART" appears on an red back ground on the Group Number 4 block after approximately 20 seconds.
b. Check that the number 4 in the menu block turns red after approximately 20 seconds.

Diagnostic Display:

a. Check that the Group Number 4 block matches that of the Primary Display.

ACTION:

a. Close the valve opened at the beginning of this step.
b. De-energize the K16 relay (address 1054).

APPROVAL: X 473
STEP 5:

ACTION:

Energize the Q2E51A-K33 relay (GIT signal address 1057.)

OUTPUT:

Primary Display:

a. Check that the word "PART" appears on an orange background on the Group Number 4 block.
b. Check that the number 4 in the menu block turns orange.
c. Check that the orange background on the group number 4 block changes to green after approximately 20 seconds.
d. Check that the number 4 in the menu block remains orange.

Diagnostic Display:

a. Check that the number for the F007 valve turns and remains orange.
b. Check that the Group Number 4 block matches that of the primary display.

APPROVAL: 2-2-8-4
STEP 6:

ACTION:

De-energize the K33 relay (address 1057).

OUTPUT:

Primary Display:

a. Check that the number 4 in the menu block turns green.
b. Check that the word "PART" disappears from the group number 4 block, leaving a green background.

Diagnostic Display:

a. Check that the number for the F008 valve turns white.
b. Check that the word "PART" disappears from the group number 4 block, leaving a green background.

APPROVAL: [Signature]
STEP 7:

ACTION:

a. Open the F007 valve (set 0441 to 0 and 0440 to 1).
b. Energize the K33 relay (address 1057).

OUTPUT:

Primary Display:

a. Check that the word "PART" appears on an red background on the Group Number 4 block after approximately 20 seconds.
b. Check that the number 4 in the menu block turns red after approximately 20 seconds.

Diagnostic Display:

a. Check that the Group Number 4 block matches that of the Primary Display.

ACTION:

a. Close the valve opened at the beginning of this step.
b. De-energize the K33 relay (address 1057).

APPROVAL: 

[Signature]
STEP 8:

ACTION:

Energize both the K16 and K33 relays (addresses 1054 and 1057).

OUTPUT:

Primary Display:

a. Check that the word "ALL" appears on an orange background on the Group Number 4 block.

b. Check that the number 4 in the menu block turns orange.

c. Check that the orange background on the group number 4 block changes to green after approximately 20 seconds.

d. Check that the number 4 in the menu block remains orange.

Diagnostic Display:

a. Check that the numbers for the F007 and F008 valves turn and remain orange.

b. Check that the Group Number 4 block matches that of the primary display.

APPROVAL: [Signature] 8-2-87
STEP 9:

ACTION:

De-energize the K16 and K33 relays (addresses 1054 and 1057).

OUTPUT:

Primary Display:

a. Check that the number 4 in the menu block turns green.
b. Check that the word "ALL" disappears from the group number 4 block, leaving a green background.

Diagnostic Display:

a. Check that the numbers for the F007 and F008 valves turn white.
b. Check that the word "ALL" disappears from the group number 4 block, leaving a green background.

APPROVAL: 

478
STEP 10:

ACTION:

a. Open the F008 (set 0415 to 0 and 0414 to 1) or the F007 valve (set 0441 to 0 and 0440 to 1).

b. Energize the K16 and K33 relays (addresses 1054 and 1057).

OUTPUT:

Primary Display:

a. Check that the word "ALL" appears on an RED back ground on the Group Number 4 block after approximately 20 seconds.

b. Check that the number 4 in the menu block turns red after approximately 20 seconds.

Diagnostic Display:

a. Check that the Group Number 4 block matches that of the Primary display.

ACTION:

a. Close the valve opened at the beginning of this step.

b. De-energize the K16 and K33 relays (addresses 1054 and 1057).

APPROVAL: [Signature]
16.9 GROUP 5 ISOLATION

STEP 1:

ACTION:

Close the outbound HPCI steam line valves as shown in the following table.

<table>
<thead>
<tr>
<th>SIGNAL DESCRIPTION</th>
<th>INPUT</th>
<th>OUTPUT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Q2G31-MOV F001</td>
<td>0403</td>
<td>0402</td>
</tr>
<tr>
<td></td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>Q2G31-MOV F004</td>
<td>0501</td>
<td>0500</td>
</tr>
<tr>
<td></td>
<td>1</td>
<td>0</td>
</tr>
</tbody>
</table>

OUTPUT:

Diagnostic Display:

a. Check that the symbols for the valves listed in Table 16.9.1 are green.

b. Check that the valve numbers listed in Table 16.9.1 are white.

APPROVAL: [Signature]

480
STEP 2:

ACTION:

Energize the Q2A71B-K26 relay (GIT Signal address 1056), i.e. set bit value to 1.

OUTPUT:

Primary Display:

a. Check that the word "PART" appears on an orange background on the Group Number 5 block.

b. Check that the number 5 in the menu block turns orange.

c. Check that the orange background on the Group Number 5 block changes to green after approximately 30 seconds.

d. Check that the number 5 in the menu block remains orange.

Diagnostic Display:

a. Check that the number for the F001 valve turns and remains orange.

b. Check that the Group Number 5 block matches that of the primary display.

APPROVAL: [Signature] 8-2-84
STEP 3:

ACTION:

De-energize the K26 relay (address 1056), i.e., set bit value to 0.

OUTPUT:

Primary Display:

a. Check that the number 5 in the menu block turns green.
b. Check that the word "PART" disappears from the group number 5 block, leaving a green background.

Diagnostic Display:

a. Check that the number for the F001 valve turns white.
b. Check that the word "PART" disappears from the group number 5 block, leaving a green background.

APPROVAL: 8-2-91
STEP 4:

ACTION:

a. Open the F001 valve (set 0403 to 0 and 0402 to 1).
b. Energize the K26 relay (address 1056).

OUTPUT:

Primary Display:

a. Check that the word "PART" appears on an red background on the group number 5 block after approximately 30 seconds.
b. Check that the number 5 in the menu block turns red after approximately 30 seconds.

Diagnostic Display:

a. Check that the Group Number 5 block matches that of the Primary display.

ACTION:

a. Close the valve opened at the beginning of this step.
b. De-energize the K26 relay (address 1056).

APPROVAL: 8-2-84
STEP 5:

ACTION:

Energize the Q2A71B-K27 relay (address 1060).

OUTPUT:

Primary Display:

a. Check that the word "PART" appears on an orange background on the group number 5 block.

b. Check that the number 5 in the menu block turns orange.

c. Check that the orange background on the group number 5 block changes to green after approximately 30 seconds.

d. Check that the number 5 in the menu block remains orange.

Diagnostic Display:

a. Check that the number for the F004 valve turns and remains orange.

b. Check that the group number 5 block matches that of the primary display.

APPROVAL: [Signature] 8-2-84
STEP 6:

ACTION:

De-energize the K27 relay (address 1060).

OUTPUT:

Primary Display:

a. Check that the number 5 in the menu block turns green.
b. Check that the word "PART" disappears from the group number 5 block, leaving a green background.

Diagnostic Display:

a. Check that the number for the F004 valve turns white.
b. Check that the word "PART" disappears from the group number 5 block, leaving a green background.

APPROVAL: 8-2-84
STEP 7:

ACTION:

a. Open the F004 valve (set 0501 to 0 and 0500 to 1).
b. Energize the K27 relay (address 1060).

OUTPUT:

Primary Display:

a. Check that the word "PART" appears on an RED back ground on the group number 5 block after approximately 30 seconds.
b. Check that the number 5 in the menu block turns red after 30 seconds.

Diagnostic Display:

a. Check that the group number 5 block matches that of the Primary display.

ACTION:

a. Close the valve opened at the beginning of this step.
b. De-energize the K27 relay (address 1060).

APPROVAL: [Signature] 6/2/04
STEP 8:

ACTION:

Energize both the K26 and K27 relays (addresses 1056 and 1060).

OUTPUT:

Primary Display:

a. Check that the word "ALL" appears on an orange background on the group number 5 block.

b. Check that the number 5 in the menu block turns orange.

c. Check that the orange background on the group number 5 block changes to green after approximately 30 seconds.

d. Check that the number 5 in the menu block remains orange.

Diagnostic Display:

a. Check that the numbers for the F001 and F004 valves turn and remain orange.

b. Check that the group number 5 block matches that of the primary display.

APPROVAL: [Signature] 8-2-54
STEP 9:

ACTION:

De-energize the K26 and K27 relays (addresses 1056 and 1060).

OUTPUT:

Primary Display:

a. Check that the number 5 in the menu block turns green.
b. Check that the word "ALL" disappears from the group number 5 block, leaving a green background.

Diagnostic Display:

a. Check that the numbers for the F001 and F004 valves turn white.
b. Check that the word "ALL" disappears from the group number 5 block, leaving a green background.

APPROVAL: [Signature] 2-87
STEP 10:

ACTION:

a. Open the F001 (set 0403 to 0 and 0402 to 1) or the F004 valve (set 0501 to 0 and 0500 to 1).

b. Energize the K26 and K27 relays (addresses 1056 and 1060).

OUTPUT:

Primary Display:

a. Check that the word "ALL" appears on an red back ground on the group number 5 block after approximately 30 seconds.

b. Check that the number 5 in the menu block turns red after approximately 30 seconds.

Diagnostic Display:

a. Check that the group number 5 block matches that of the Primary display.

ACTION:

a. Close the valve opened at the beginning of this step.

b. De-energize the K26 and K27 relays (addresses 1056 and 1060).

APPROVAL: D 8-2-84
STEP 1:

ACTION:

a. Call up the Secondary Isolation Diagnostic display.

b. Call the reference input data.

c. Set the input to the values specified in Table 16.10.1.

OUTPUT:

Diagnostic Display:

a. Verify the Secondary Isolation Diagnostic Display for appropriate response as specified in Table 16.10.1.

APPROVAL: [Signature] 89
### TABLE 16.10.1

<table>
<thead>
<tr>
<th>SIGNAL GIT DESCRIPTION</th>
<th>ADDRESS</th>
<th>INPUT</th>
<th>OUTPUT</th>
<th>APPROVAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>QT41-FOV F003A</td>
<td>0604</td>
<td>0</td>
<td>Close (G)</td>
<td></td>
</tr>
<tr>
<td>QT41-FOV F011A</td>
<td>0600</td>
<td>0</td>
<td>Close (G)</td>
<td></td>
</tr>
<tr>
<td>QT41-FOV F023A</td>
<td>0605</td>
<td>0</td>
<td>Close (G)</td>
<td></td>
</tr>
<tr>
<td>QT41-FOV F032A</td>
<td>0603</td>
<td>1</td>
<td>Open (R)</td>
<td></td>
</tr>
<tr>
<td>QT41-FOV F040A</td>
<td>0606</td>
<td>1</td>
<td>Open (R)</td>
<td></td>
</tr>
<tr>
<td>QT41-FOV F043A</td>
<td>0601</td>
<td>0</td>
<td>Close (G)</td>
<td></td>
</tr>
<tr>
<td>QT41-FOV F044A</td>
<td>0602</td>
<td>0</td>
<td>Close (G)</td>
<td></td>
</tr>
<tr>
<td>QT46-FOV F001A</td>
<td>0616</td>
<td>0</td>
<td>Open (R)</td>
<td></td>
</tr>
<tr>
<td>QT46-FOV F002A</td>
<td>0620</td>
<td>0</td>
<td>Open (R)</td>
<td></td>
</tr>
<tr>
<td>QT46-FOV F003A</td>
<td>0607</td>
<td>0</td>
<td>Close (G)</td>
<td></td>
</tr>
<tr>
<td>QT46-FOV F023A</td>
<td>0611</td>
<td>0</td>
<td>Close (G)</td>
<td></td>
</tr>
<tr>
<td>QT46-FOV F002A</td>
<td>0632</td>
<td>0</td>
<td>Open (R)</td>
<td></td>
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<td>Open (R)</td>
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</table>

*QT46-F003A QT46-F004A are not part of logic for SEE, ISOLATION.*

*VARIANCE #5 202*
STEP 2:

ACTION:

a. Initiate relay QC51A-Z2A, i.e., set GIT Address #1011 to 1 (one).

OUTPUT:

Primary Display:

a. The Unit 1 and Unit 2 blocks read "PART" on an orange background for approximately 30 seconds. The background then turns green.

b. The word "SEC" in the keypad mimic turns orange.

Diagnostic Display:

a. The color of the valves and fan in Table 16.10.1 are as listed in that table.

b. The tag numbers of the valves and fan in Table 16.10.1 that are part of the secondary containment isolation logic, turn orange.

c. The upper left "A" block background turns orange.

d. The Unit 1 and Unit 2 blocks match those on the Primary Display.

APPROVAL:
STEP 3:

ACTION:

a. Reset relay QC51A-Z2A (GIT address #101).

OUTPUT:

Primary Display:

a. The word "PART" disappears, leaving a green blank.
b. The word "SEC" reverts to green.

Diagnostic Display:

a. The tag numbers reverts to white.
b. The upper left "A" block reverts to a green background.
c. The word "PART" disappears, leaving a green blank.

APPROVAL: [Signature]
STEP 4:

ACTION:

a. Initiate relay QC51A-Z2B, i.e., set GIT Address #1012 to 1 (one).

OUTPUT:

Primary Display:

a. The Unit 1 and Unit 2 blocks read "PART" on an orange background for approximately 30 seconds. The background then turns green.

b. The word "SEC" in the keypad mimic turns orange.

Diagnostic Display:

a. The color of the valves and fan in Table 16.10.1 are as listed in that table.

b. The tag numbers of the valves and fan in Table 16.10.1 that are part of the secondary containment isolation logic, turn orange.

c. The lower left "B" block background turns orange.

d. The Unit 1 and Unit 2 blocks match those on the Primary Display.

APPROVAL: [Signature]
STEP 5:

ACTION:

a. Reset relay QC51A-Z2B (GIT address #1012).

OUTPUT:

Primary Display:

a. The word "PART" disappears, leaving a green blank.
b. The word "SEC" reverts to green.

Diagnostic Display:

a. The tag numbers reverts to white.
b. The lower left "B" block reverts to a green background.
c. The word "PART" disappears, leaving a green blank.

APPROVAL: E-2-6-8
STEP 6:

ACTION:

a. Initiate relay Q2C51A-Z2A, i.e., set GIT Address #1015 to 1 (one).

OUTPUT:

Primary Display:

a. The Unit 1 and Unit 2 blocks read "PART" on an orange background for approximately 30 seconds. The background then turns green.

b. The word "SEC" in the keypad mimic turns orange.

c. The group number 2 block shows "PART" on an orange background. The color changes to red after approximately 5 seconds.

d. The words "2C", "2D", and "2E" turn orange. The color changes to red after approximately 5 seconds.

Diagnostic Display:

a. The color of the valves and fan in Table 16.10.1 are as listed in that table.

b. The tag numbers of the valves and fan in Table 16.10.1 that are part of the secondary containment isolation logic, turn orange.

c. The upper right "A" block background turns orange.

d. The Unit 1 and Unit 2 blocks match those on the Primary Display.

APPROVAL: [Signature]

496
STEP 7:  
ACTION:  
a. Reset relay Q2C51A-Z2A (GIT address #1015).  
OUTPUT:  
Primary Display:  
a. The word "PART" disappears, leaving a green blank.  
b. The words "2C", "2D", "2E" and "SEC" revert to green.  
Diagnostic Display:  
a. The tag numbers reverts to white.  
b. The lower left "B" block reverts to a green background.  
c. The word "PART" disappears, leaving a green blank.  

APPROVAL:  

\[\text{Signature} \quad 8.2.84\]
STEP 8:

ACTION:

a. Initiate relay QA71B-K5A (GIT Address #1170).
b. Initiate relay QA71B-K5B (GIT Address #1174).

OUTPUT:

Primary Display:

a. The Unit 1 and Unit 2 blocks read "PART" on an orange background for approximately 30 seconds. The background then turns green.
b. The word "SEC" in the keypad mimic turns orange.

Diagnostic Display:

a. The color of the valves and fan in Table 16.10.1 are as listed in that table.
b. The tag numbers of the valves and fan in Table 16.10.1 that are part of the secondary containment isolation logic, turn orange.
c. The HNP-1 box turns orange.
d. The Unit 1 and Unit 2 blocks match those on the Primary Display.

APPROVAL: [Signature]
STEP 9:

ACTION:

a. Reset relay QA71B-K5A (GIT address #1170)
b. Reset relay QA71B-K5B (GIT Address #1174)

OUTPUT:

Primary Display:

a. The word "PART" disappears, leaving a green blank.
b. The word "SEC" reverts to green.

Diagnostic Display:

a. The tag numbers reverts to white.
b. The HNP-1 box reverts to green.
c. The word "PART" disappears, leaving a green blank.

APPROVAL: ☑ ☑ ☑
STEP 10:

ACTION:

a. Initiate relay QA71B-K5A (GIT Address #1170).

b. Initiate relay QC71A-K307B (GIT Address #1173).

OUTPUT:

Primary Display:

a. The Unit 1 and Unit 2 blocks read "PART" on an orange background for approximately 30 seconds. The background then turns green.

b. The word "SEC" in the keypad mimic turns orange.

Diagnostic Display:

a. The color of the valves and fan in Table 16.10.1 are as listed in that table.

b. The tag numbers of the valves and fan in Table 16.10.1 that are part of the secondary containment isolation logic, turn orange.

c. The HNP-1 box turns orange.

d. The Unit 1 and Unit 2 blocks match those on the Primary Display.

APPROVAL: [Signature]
STEP 11:

ACTION:

a. Reset relay QA71B-K5A (GIT address #1170).

b. Reset relay QC71A-K307B (GIT Address #1173).

OUTPUT:

Primary Display:

a. The word "PART" disappears, leaving a green blank.

b. The word "SEC" reverts to green.

Diagnostic Display:

a. The tag numbers reverts to white.

b. The HNP-1 box reverts to green.

c. The word "PART" disappears, leaving a green blank.

APPROVAL:  \[\underline{\text{Signature}}\]
STEP 12:

ACTION:

a. Initiate relay QA71B-K5B (GIT Address #1174).
b. Initiate relay QC71A-K307A (GIT Address #1172).

OUTPUT:

Primary Display:

a. The Unit 1 and Unit 2 blocks read "PART" on an orange background for approximately 30 seconds. The background then turns green.
b. The word "SEC" in the keypad mimic turns orange.

Diagnostic Display:

a. The color of the valves and fan in Table 16.10.1 are as listed in that table.
b. The tag numbers of the valves and fan in Table 16.10.1 that are part of the secondary containment isolation logic, turn orange.
c. The HNP-1 box turns orange.
d. The Unit 1 and Unit 2 blocks match those on the Primary Display.

APPROVAL: [Signature]
STEP 13:

ACTION:

a. Reset relay QA71B-K5B (GIT address #1174).

b. Reset relay QC71A-K307A (GIT Address #1172).

OUTPUT:

Primary Display:

a. The word "PART" disappears, leaving a green blank.

b. The word "SEC" reverts to green.

Diagnostic Display:

a. The tag numbers reverts to white.

b. The HNP-1 box reverts to green.

c. The word "PART" disappears, leaving a green blank.

APPROVAL: 8-2-84
STEP 14:

ACTION:

a. Initiate relay QC71B-K307A (GIT Address 1172).
b. Initiate relay QC71A-K307B (GIT Address 1173).

OUTPUT:

Primary Display:

a. The Unit 1 and Unit 2 blocks read "PART" on an orange background for approximately 30 seconds. The background then turns green.
b. The word "SEC" in the keypad mimic turns orange.

Diagnostic Display:

a. The color of the valves and fan in Table 16.10.1 are as listed in that table.
b. The tag numbers of the valves and fan in Table 16.10.1 that are part of the secondary containment isolation logic, turn orange.
c. The HNP-1 box turns orange.
d. The Unit 1 and Unit 2 blocks match those on the Primary Display.

APPROVAL: [Signature]
STEP 15:

ACTION:

a. Reset relay QC71A-K307A (GIT address #1172).

b. Reset relay QC71A-K307B (GIT Address #1173).

OUTPUT:

Primary Display:

a. The word "PART" disappears, leaving a green blank.

b. The word "SEC" reverts to green.

Diagnostic Display:

a. The tag numbers reverts to white.

b. The HNP-1 box reverts to green.

c. The word "PART" disappears, leaving a green blank.

APPROVAL: 8-28
STEP 16:

ACTION:
   a. Call the reference input data.
   b. Set the input to the values specified in Table 16.10.2.

OUTPUT:
   a. Verify the Secondary Diagnostic Display for appropriate response.

APPROVAL: [Signature] 8-2-87
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<th>SIGNAL G3T DESCRIPTION</th>
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<td>Close (G)</td>
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</tr>
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</table>

* QT46-F003B & QT46-F004B are not part of logic for SEC. ISOLATION.
* VARIANCE #85
STEP 17:

ACTION:

a. Initiate relay QC51A-Z2C, i.e., set GIT Address #1013 to 1 (one).

OUTPUT:

Primary Display:

a. The Unit 1 and Unit 2 blocks read "PART" on an orange background for approximately 30 seconds. The background then turns green.

b. The word "SEC" in the keypad mimic turns orange.

Diagnostic Display:

a. The color of the valves and fan in Table 16.10.2 are as listed in that table.

b. The tag numbers of the valves and fan in Table 16.10.2 that are part of the secondary containment isolation logic, turn orange.

c. The lower left "C" block background turns orange.

d. The Unit 1 and Unit 2 blocks match those on the Primary Display.

APPROVAL: /D 8-2-97/
STEP 18:

ACTION:

a. Reset relay QC51A-KZ2C (GIT address #1013).

OUTPUT:

Primary Display:

a. The word "PART" disappears, leaving a green blank.
b. The word "SEC" reverts to green.

Diagnostic Display:

a. The tag numbers revert to white.
b. The lower left "C" block reverts to a green background.
c. The word "PART" disappears, leaving a green blank.

APPROVAL: 8-2-84
STEP 19:

ACTION:

a. Initiate relay QC51A-Z2D, i.e., set GIT Address #1014 to 1 (one).

OUTPUT:

Primary Display:

a. The Unit 1 and Unit 2 blocks read "PART" on an orange background for approximately 30 seconds. The background then turns green.

b. The word "SEC" in the keypad mimic turns orange.

Diagnostic Display:

a. The color of the valves and fan in Table 16.10.2 are as listed in that table.

b. The tag numbers of the valves and fan in Table 16.10.2 that are part of the secondary containment isolation logic, turn orange.

c. The upper left "D" block background turns orange.

d. The Unit 1 and Unit 2 blocks match those on the Primary Display.

APPROVAL: 8-2-84
STEP 20:

ACTION:

a. Reset relay QC51A-Z2D (GIT address #1014).

OUTPUT:

Primary Display:

a. The word "PART" disappears, leaving a green blank.
b. The word "SEC" reverts to green.

Diagnostic Display:

a. The tag numbers reverts to white.
b. The upper left "D" block reverts to a green background.
c. The word "PART" disappears, leaving a green blank.

APPROVAL: [Signature] 6-2-84
STEP 21:

ACTION:

a. Initiate relay Q2C51A-Z2C, i.e., set GIT Address #1017 to 1 (one).

OUTPUT:

Primary Display:

a. The Unit 1 and Unit 2 blocks read "PART" on an orange background for approximately 30 seconds. The background then turns green.

b. The word "SEC" in the keypad mimic turns orange.

c. The group number 2 block shows "PART" on an orange background. The color changes to red after approximately 5 seconds.

d. The words "2C", "2D", and "2E" turn orange. The color changes to red after approximately 5 seconds.

Diagnostic Display:

a. The color of the valves and fan in Table 16.10.2 are as listed in that table.

b. The tag numbers of the valves and fan in Table 16.10.2 that are part of the secondary containment isolation logic, turn orange.

c. The lower right "C" block background turns orange.

d. The Unit 1 and Unit 2 blocks match those on the Primary Display.

APPROVAL: 8-2-89
STEP 22:

ACTION:

a. Reset relay Q2C51A-Z2C (GIT address #1017).

OUTPUT:

Primary Display:

a. The word "PART" disappears, leaving a green blank.

b. The words "2C", "2D", "2E" and "SEC" revert to green.

Diagnostic Display:

a. The tag numbers reverts to white.

b. The lower right "C" block reverts to a green background.

c. The word "PART" disappears, leaving a green blank.

APPROVAL: 🅿️ 8-2-84
STEP 23

ACTION:

a. Initiate relay QA71B-K5C (GIT Address #1171).

b. Initiate relay QA71B-K5D (GIT Address #1175).

OUTPUT:

Primary Display:

a. The Unit 1 and Unit 2 blocks read "PART" on an orange background for approximately 30 seconds. The background then turns green.

b. The word "SEC" in the keypad mimic turns orange.

Diagnostic Display:

a. The color of the valves and fan in Table 16.10.2 are as listed in that table.

b. The tag numbers of the valves and fan in Table 16.10.2 that are part of the secondary containment isolation logic, turn orange.

c. The HNP-1 box turns orange.

d. The Unit 1 and Unit 2 blocks match those on the Primary Display.

APPROVAL: [Signature]
STEP 24:

ACTION:
   a. Reset relay QA71B-K5C (GIT address #1171).
   b. Reset relay QA71B-K5D (GIT address #1175).

OUTPUT:

Primary Display:
   a. The word "PART" disappears, leaving a green blank.
   b. The word "SEC" reverts to green.

Diagnostic Display:
   a. The tag numbers reverts to white.
   b. The HNP-1 box reverts to green.
   c. The word "PART" disappears, leaving a green blank.

APPROVAL: [Signature] 6-2-67
STEP 25:

ACTION:

a. Initiate relay QA71B-K5C (GIT Address #1171).
b. Initiate relay QC71A-K307D (GIT Address #1177).

OUTPUT:

Primary Display:

a. The Unit 1 and Unit 2 blocks read "PART" on an orange background for approximately 30 seconds. The background then turns green.
b. The word "SEC" in the keypad mimic turns orange.

Diagnostic Display:

a. The color of the valves and fan in Table 16.10.2 are as listed in that table.
b. The tag numbers of the valves and fan in Table 16.10.2 that are part of the secondary containment isolation logic, turn orange.
c. The HNP-1 box turns orange.
d. The Unit 1 and Unit 2 blocks match those on the Primary Display.

APPROVAL: 

[Signature]
STEP 26

ACTION:

a. Reset relay QA71B-K5C (GIT address #1171).

b. Reset relay QC71A-K307D (GIT address #1177).

OUTPUT:

Primary Display:

a. The word "PART" disappears, leaving a green blank.

b. The word "SEC" reverts to green.

Diagnostic Display:

a. The tag numbers reverts to white.

b. The HNP-1 box reverts to green.

c. The word "PART" disappears, leaving a green blank.

APPROVAL: 8-2-88/
STEP 27:

ACTION:

a. Initiate relay QA71B-K5D (GIT Address #1175).
b. Initiate relay QC71A-K307C (GIT Address #1176).

OUTPUT:

Primary Display:

a. The Unit 1 and Unit 2 blocks read "PART" on an orange background for approximately 30 seconds. The background then turns green.
b. The word "SEC" in the keypad mimic turns orange.

Diagnostic Display:

a. The color of the valves and fan in Table 16.10.2 are as listed in that table.
b. The tag numbers of the valves and fan in Table 16.10.2 that are part of the secondary containment isolation logic, turn orange.
c. The HNP-1 box turns orange.
d. The Unit 1 and Unit 2 blocks match those on the Primary Display.

APPROVAL: [Signature]
STEP 28:

ACTION:

a. Reset relay QA71B-K5D (GIT address #1175).
b. Reset relay QC71A-K307C (GIT address #1176).

OUTPUT:

Primary Display:

a. The word "PART" disappears, leaving a green blank.
b. The word "SEC" reverts to green.

Diagnostic Display:

a. The tag numbers reverts to white.
b. The HNP-1 box reverts to green.
c. The word "PART" disappears, leaving a green blank.

APPROVAL: [Signature] 8-2-87
STEP 29:

ACTION:

a. Initiate relay QC71A-K307C (GIT Address #1176).

b. Initiate relay QC71A-K307D (GIT Address #1177).

OUTPUT:

Primary Display:

a. The Unit 1 and Unit 2 blocks read "PART" on an orange background for approximately 30 seconds. The background then turns green.

b. The word "SEC" in the keypad mimic turns orange.

Diagnostic Display:

a. The color of the valves and fan in Table 16.10.2 are as listed in that table.

b. The tag numbers of the valves and fan in Table 16.10.2 that are part of the secondary containment isolation logic, turn orange.

c. The HNP-1 box turns orange.

d. The Unit 1 and Unit 2 blocks match those on the Primary Display.

APPROVAL: [Signature]
STEP 30:

ACTION:

a. Reset relay QC71A-K307C (GIT address #1176).
b. Reset relay QC71A-K307D (GIT address #1177).

OUTPUT:

Primary Display:

a. The word "PART" disappears, leaving a green blank.
b. The word "SEC" reverts to green.

Diagnostic Display:

a. The tag numbers reverts to white.
b. The HNP-1 box reverts to green.
c. The word "PART" disappears, leaving a green blank.

APPROVAL: [Signature]
STEP 31:

ACTION:

a. Call the reference input data.

OUTPUT:

b. Change address set the input to values specified in Table 16.16.3.

a. Verify the Secondary Diagnostic display for appropriate response.

APPROVAL: F. E. J. 83
### Table 16.10.3.

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<thead>
<tr>
<th>SIGNAL DESCRIPTION</th>
<th>GIT ADDRESS</th>
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<th>OUTPUT</th>
<th>APPROVAL</th>
</tr>
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STEP 32:

ACTION:

a. Initiate relay Q2C51A-Z2B (GIT Address #1016).

OUTPUT:

Primary Display:

a. The Unit 2 block reads "PART" on an orange background for approximately 33 seconds. The background then turns green.

b. The word "SEC" in the keypad mimic turns orange.

c. The group number 2 block shows "PART" on an orange background. The color changes to red after approximately 5 seconds.

d. The words "2C", "2D", and "2E" turn orange. The color changes to red after approximately 5 seconds.

Diagnostic Display:

a. The color of the valves and fan in Table 16.10.3 are as listed in that table.

b. The tag numbers of the valves and fan in Table 16.10.3 that are part of the secondary containment isolation logic, turn orange.

c. The lower right "B" block background turns orange.

d. The Unit 1 and Unit 2 blocks match those on the Primary Display.

APPROVAL: \[\text{Signature}\]
STEP 33:

ACTION:

a. Reset relay Q2C51A-Z2B (GIT address #1016).

OUTPUT:

Primary Display:

a. The word "PART" disappears, leaving a green blank.
b. The words "2C", "2D", "2E" and "SEC" revert to green.

Diagnostic Display:

a. The tag numbers reverts to white.
b. The lower right "2" block reverts to green background.
c. The word "PART" disappears, leaving a green blank.

APPROVAL: 8-2-84
STEP 34:

ACTION:

a. Initiate relay Q2A71B-K5A (GIT Address #1027).
b. Initiate relay Q2A71B-K5B (GIT Address #1042).

OUTPUT:

Primary Display:

a. The Unit 2 block read "PART" on an orange background for approximately 33 seconds. The background then turns green.
b. The word "SEC" in the keypad mimic turns orange.
c. The word "PART" appears on an orange background on the group number 2 block. The color of the background changes to red after approximately 5 seconds.
d. The words "2A", "2B", "2C", "2D" and "2E" turn red within 30 seconds.

Diagnostic Display:

a. The color of the valves and fan in Table 16.10.3 are as listed in that table.
b. The tag numbers of the valves and fan in Table 16.10.3 that are part of the secondary containment isolation logic, turn orange.
c. The HNP-2 box turns orange.
d. The Unit 1 and Unit 2 blocks match those on the Primary Display.

APPROVAL: [Signature]
STEP 35:

ACTION:

a. Reset relay Q2A71B-K5A (GIT address #1027).

b. Reset relay Q2A71B-K5B (GIT address #1042).

OUTPUT:

Primary Display:

a. The word "PART" disappears, leaving a green blank.

b. The words "2A", "2B", "2C", "2D", "2E" and "SEC" revert to green.

Diagnostic Display:

a. The tag numbers reverts to white.

b. The HNP-2 box reverts to green.

c. The word "PART" disappears, leaving a green blank.

APPROVAL: [Signature]
STEP 36:

ACTION:

a. Initiate relay Q2A71B-K5A (GIT Address #1027).
b. Initiate relay Q2C71A-K307B (GIT Address #1165).

OUTPUT:

Primary Display:

a. The Unit 2 block read "PART" on an orange background for approximately 33 seconds. The background then turns green.
b. The word "SEC" in the keypad mimic turns orange.

Diagnostic Display:

a. The color of the valves and fan in Table 16.10.3 are as listed in that table.
b. The tag numbers of the valves and fan in Table 16.10.3 that are part of the secondary containment isolation logic, turn orange.
c. The HNP-2 box turns orange.
d. The Unit 1 and Unit 2 blocks match those on the Primary Display.

APPROVAL: 8-2-87
STEP 37:

ACTION:

a. Reset relay Q2A71B-K5A (GIT address #1027).
b. Reset relay Q2C71A-K307B (GIT address #1165).

OUTPUT:

Primary Display:

a. The word "PART" disappears, leaving a green blank.
b. The word "SEC" reverts to green.

Diagnostic Display:

a. The tag numbers reverts to white.
b. The HNP-2 box reverts to green.
c. The word "PART" disappears, leaving a green blank.

APPROVAL: [Signature] E-J-84
STEP 38:

ACTION:

a. Initiate relay Q2C71A-K307A (GIT Address #1164).

b. Initiate relay Q2A71B-K5B (GIT Address #1042).

OUTPUT:

Primary Display:

a. The Unit 2 block read "PART" on an orange background for approximately 33 seconds. The background then turns green.

b. The word "SEC" in the keypad mimic turns orange.

Diagnostic Display:

a. The color of the valves and fan in Table 16.10.3 are as listed in that table.

b. The tag numbers of the valves and fan in Table 16.10.3 that are part of the secondary containment isolation logic, turn orange.

c. The HNP-2 box turns orange.

d. The Unit 1 and Unit 2 blocks match those on the Primary Display.

APPROVAL: [Signature] 8-2-89
STEP 39:

ACTION:

a. Reset relay Q2C71A-K307A (GIT address #1164).
b. Reset relay Q2A71B-K5B (GIT address #1042).

OUTPUT:

Primary Display:

a. The word "PART" disappears, leaving a green blank.
b. The word "SEC" reverts to green.

Diagnostic Display:

a. The tag numbers reverts to white.
b. The HNP-2 box reverts to green.
c. The word "PART" disappears, leaving a green blank.

APPROVAL: 6Li 8.2 84
STEP 40:

ACTION:

a. Initiate relay Q2C71A-K307A (GIT Address #1164).

b. Initiate relay Q2C71A-K307B (GIT Address #1165).

OUTPUT:

Primary Display:

a. The Unit 2 block read "PART" on an orange background for approximately 33 seconds. The background then turns green.

b. The word "SEC" in the keypad mimic turns orange.

Diagnostic Display:

a. The color of the valves and fan in Table 16.10.3 are as listed in that table.

b. The tag numbers of the valves and fan in Table 16.10.3 that are part of the secondary containment isolation logic, turn orange.

c. The HNP-2 box turns orange.

d. The Unit 1 and Unit 2 blocks match those on the Primary Display.

APPROVAL: [Signature]

532
STEP 41:

ACTION:

a. Reset relay Q2C71A-K307A (GIT address #1164)

b. Reset relay Q2C71A-K307B (GIT address #1165)

OUTPUT:

Primary Display:

a. The word "PART" disappears, leaving a green blank.

b. The word "SEC" reverts to green.

Diagnostic Display:

a. The tag numbers reverts to white.

b. The HNP-2 box reverts to green.

c. The word "PART" disappears, leaving a green blank.

APPROVAL: \[\text{Signature}\]

533
STEP 42:

ACTION:

a. Call the reference input data.

b. Set the input to the values specified in Table 16.10.4.

OUTPUT:

a. Verify the Secondary Diagnostic display for appropriate response.

APPROVAL: [Signature] 8-2-84
<table>
<thead>
<tr>
<th>SIGNAL DESCRIPTION</th>
<th>GIT ADDRESS</th>
<th>INPUT</th>
<th>OUTPUT</th>
<th>APPROVAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Q2T46-AOV F001B</td>
<td>0740</td>
<td>1</td>
<td>OPEN (R)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>0741</td>
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<td>Q2T41-AOV F011B</td>
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<td>CLOSE (G)</td>
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<tr>
<td>Q2T41-AOV F044B</td>
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<td>CLOSE (G)</td>
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<tr>
<td>Q2T46-DO01B</td>
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<td>1</td>
<td>AUTO (R)</td>
<td></td>
</tr>
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<td>0736</td>
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<tr>
<td></td>
<td>0743</td>
<td>0</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
STEP 43:

ACTION:

a. Initiate relay Q2C51A-Z2D (GIT Address #1020).

OUTPUT:

Primary Display:

a. The Unit 2 block reads "PART" on an orange background for approximately 33 seconds. The background then turns green.

b. The word "SEC" in the keypad mimic turns orange.

c. The group number 2 block shows "PART" on an orange background. The color changes to red after approximately 5 seconds.

d. The words "2C", "2D", and "2E" turn orange. The color changes to red after approximately 5 seconds.

Diagnostic Display:

a. The color of the valves and fan in Table 16.10.4 are as listed in that table.

b. The tag numbers of the valves and fan in Table 16.10.4 that are part of the secondary containment isolation logic, turn orange.

c. The upper right "D" block background turns orange.

d. The Unit 1 and Unit 2 blocks match those on the Primary Display.

APPROVAL: [Signature]
STEP 44:

ACTION:

a. Reset relay Q2C51A-Z2D (GIT address #1020).

OUTPUT:

Primary Display:

a. The word "PART" disappears, leaving a green blank.

b. The words "2C", "2D", "2E" and "SEC" revert to green.

Diagnostic Display:

a. The tag numbers revert to white.

b. The upper right "D" block reverts to green background.

c. The word "PART" disappears, leaving a green blank.

APPROVAL: 

[Signature] 8-2-84
STEP 45:

ACTION:

a. Initiate relay Q2A71B-K5C (GIT Address #1030).
b. Initiate relay Q2A71B-K5D (GIT Address #1043).

OUTPUT:

Primary Display:

a. The Unit 2 block read "PART" on an orange background for approximately 33 seconds. The background then turns green.
b. The word "SEC" in the keypad mimic turns orange.
c. The word "PART" appears on an orange background on the group number 2 block. The color of the background changes to red after approximately 5 seconds.
d. The words "2A", "2B", "2C", "2D" and "2E" turn red within 30 seconds, and the valves and fan in Table 16.6.4 that are part of the secondary containment isolation logic, turn orange.

Diagnostic Display:

a. The color of the valves and fan in Table 16.10.4 are as listed in that table.
b. The tag numbers of the valves and fan in Table 16.10.4 that are part of the secondary containment isolation logic, turn orange.
c. The HNP-2 box turns orange.
d. The Unit 1 and Unit 2 blocks match those on the Primary Display.

APPROVAL: \[\text{Signature}\]
STEP 46:

ACTION:

a. Reset relay Q2A71B-K5C (GIT address #1030).
b. Reset relay Q2A71B-K5D (GIT address #1043).

OUTPUT:

Primary Display:

a. The word "PART" disappears, leaving a green blank.
b. The words "2A", "2B", "2C", "2D", "2E" and "SEC" revert to green.

Diagnostic Display:

a. The tag numbers reverts to white.
b. The HNP-2 box reverts to green background.
c. The word "PART" disappears, leaving a green blank.

APPROVAL:  

\[ X \]
STEP 47:

ACTION:

a. Initiate relay Q2A71B-K5C (GIT Address #1030).

b. Initiate relay Q2C71A-K307D (GIT Address #1167).

OUTPUT:

Primary Display:

a. The Unit 2 block read "PART" on an orange background for approximately 33 seconds. The background then turns green.

b. The word "SEC" in the keypad mimic turns orange.

Diagnostic Display:

a. The color of the valves and fan in Table 16.10.4 are as listed in that table.

b. The tag numbers of the valves and fan in Table 16.10.4 that are part of the secondary containment isolation logic, turn orange.

c. The HNP-2 box turns orange.

d. The Unit 1 and Unit 2 blocks match those on the Primary Display.

APPROVAL: [Signature] 6.2.84
STEP 48:

ACTION:

a. Reset relay Q2A71B-K5C (GIT address #1030).

b. Reset relay Q2C71A-K307D (GIT address #1167).

OUTPUT:

Primary Display:

a. The word "PART" disappears, leaving a green blank.

b. The word "SEC" reverts to green.

Diagnostic Display:

a. The tag numbers reverts to white.

b. The HNP-2 box reverts to green background.

c. The word "PART" disappears, leaving a green blank.

APPROVAL: [Signature]
STEP 49:

**ACTION:**

a. Initiate relay Q2C71A-K307C (GIT Address #1166).

b. Initiate relay Q2A71B-K5D (GIT Address #1043).

**OUTPUT:**

**Primary Display:**

a. The Unit 2 block read "PART" on an orange background for approximately 33 seconds. The background then turns green.

b. The word "SEC" in the keypad mimic turns orange.

**Diagnostic Display:**

a. The color of the valves and fan in Table 16.10.4 are as listed in that table.

b. The tag numbers of the valves and fan in Table 16.10.4 that are part of the secondary containment isolation logic, turn orange.

c. The HNP-2 box turns orange.

d. The Unit 1 and Unit 2 blocks match those on the Primary Display.

**APPROVAL:**
STEP 50:

ACTION:

a. Reset relay Q2C71A-K307C (GIT address #1166).

b. Reset relay Q2A71B-K5D (GIT address #1043).

OUTPUT:

Primary Display:

a. The word "PART" disappears, leaving a green blank.

b. The word "SEC" reverts to green.

Diagnostic Display:

a. The tag numbers reverts to white.

b. The HNP-2 box reverts to green background.

c. The word "PART" disappears, leaving a green blank.

APPROVAL: [Signature]
STEP 51:

ACTION:

a. Initiate relay Q2C71A-K307C (GIT Address #1166).
b. Initiate relay Q2C71A-K307D (GIT Address #1167).

OUTPUT:

Primary Display:

a. The Unit 2 block read "PART" on an orange background for approximately 33 seconds. The background then turns green.
b. The word "SEC" in the keypad mimic turns orange.

Diagnostic Display:

a. The color of the valves and fan in Table 16.10.4 are as listed in that table.
b. The tag numbers of the valves and fan in Table 16.10.4 that are part of the secondary containment isolation logic, turn orange.
c. The HNP-2 box turns orange.
d. The Unit 1 and Unit 2 blocks match those on the Primary Display.

APPROVAL: [Signature]
STEP 52:

ACTION:

a. Reset relay Q2C71A-K307C (GIT address #1166) to zero.
b. Reset relay Q2C71A-K307D (GIT address #1167) to zero.

OUTPUT:

Primary Display:

a. The word "PART" disappears, leaving a green blank.
b. The word "SEC" reverts to green.

Diagnostic Display:

a. The tag numbers reverts to white.
b. The HNF-2 box reverts to green background.
c. The word "PART" disappears, leaving a green blank.

APPROVAL: [Signature]
STEP 53:

ACTION:

a. Disable buffer transfer.

b. Initiate relay QC51A-Z2A, (GIT Address #1011).

c. Initiate relay QC51A-Z2C (GIT Address #1013).

d. Enable buffer transfer.

OUTPUT:

Primary Display:

a. The Unit 2 block read "PART" and the Unit 1 block reads "ALL" on an orange background for approximately 30 seconds. The background then turns red.

b. The word "SEC" in the keypad mimic turns orange. The color changes to red after approximately 30 seconds.

Diagnostic Display:

a. The tag numbers of all the valves and fans on the secondary isolation diagnostic display turn orange, except for valves Q2T41-AOV F011A, F011B, F044A, F044B, Q2T46-AOV F001A, F001B, QT46-F003A, F003B, F004A, and F004B.

b. The upper left "A" block and "C" block turns orange.

c. The Unit 1 and Unit 2 blocks match those on the Primary Display.

APPROVAL: 8-2-84
STEP 54:

ACTION:
   a. Reset relay QC51A-Z2A (GIT address #1011).
   b. Reset relay QC51A-Z2C (GIT address #1013).

OUTPUT:

   Primary Display:
   a. The words "PART" and "ALL" disappear, leaving green blanks.
   b. The word "SEC" reverts to green.

   Diagnostic Display:
   a. The tag numbers reverts to white.
   b. The upper left "A" block and "C" block reverts to a green background.
   c. The word "PART" and "ALL" disappear, leaving green blanks.

APPROVAL: 547
STEP 55:

ACTION:

a. Disable buffer transfer.

b. Initiate relay QC51A-Z2B, (GIT Address #1012).

c. Initiate relay QC51A-Z2D (GIT Address #1014).

d. Enable buffer transfer

OUTPUT:

Primary Display:

a. The Unit 1 block reads "ALL" and Unit 2 block reads "PART" on an orange background for approximately 30 seconds. The background then turns red.

b. The word "SEC" in the keypad mimic turns orange. The color changes to red after approximately 30 seconds.

Diagnostic Display:

a. The tag numbers of all the valves and fans on the secondary isolation diagnostic display turn orange, except for valves Q2T41-AOV F011A, F011B, F044A, F044B, Q2T46-AOV F001A, F001B, QT46-F003A, F003B, F004A, and F004B.

b. The lower left "B" block and "D" block turns orange.

c. The Unit 1 and Unit 2 blocks match those on the Primary Display.
STEP 56:

ACTION:

a. Reset relay QC51A-Z2B (GIT address #1012).
b. Reset relay QC51A-Z2D (GIT address #1014).

OUTPUT:

Primary Display:

a. The words "ALL" and "PART" disappear, leaving green blanks.
b. The word "SEC" reverts to green.

Diagnostic Display:

a. The tag numbers reverts to white.
b. The lower left "B" block and "D" block reverts to a green background.
c. The word "PART" and "ALL" disappear, leaving green blanks.

APPROVAL: [Signature]
STEP 57:

ACTION:

a. Disable buffer transfer.
b. Initiate relay Q2C51A-Z2A, (GIT Address #1015).
c. Initiate relay Q2C51A-Z2C (GIT Address #1017).
d. Enable buffer transfer.

OUTPUT:

Primary Display:

a. The Unit 1 block reads "ALL" and Unit 2 block reads "PART" on an orange background for approximately 30 seconds. The background then turns red.
b. The word "SEC" in the keypad mimic turns orange. The color changes to red after approximately 30 seconds.
c. The group number 2 block shows "PART" on an orange background. The color changes to red after approximately 5 seconds.
d. The words "2C", "2D", and "2E" turn orange. The color changes to red after approximately 5 seconds.

Diagnostic Display:

a. The tag numbers of all the valves and fans on the secondary isolation diagnostic display turn orange, except for valves Q2T41-AOV F011A, F011B, F044A, F044B, Q2T46-AOV F001A, F001B, QT46-F003A, F003B, F004A, and F004B.
b. The upper right "A" block and lower right "C" block turns orange.
c. The Unit 1 and Unit 2 blocks match those on the Primary Display.
STEP 58:

ACTION:

a. Reset relay Q2C51A-Z2A (GIT address #1015).
b. Reset relay Q2C51A-Z2C (GIT address #1017).

OUTPUT:

Primary Display:

a. The words "PART" and "ALL" disappear, leaving green blanks.
b. The words "2C", "2D", "2E" and "SEC" revert to green.

Diagnostic Display:

a. The tag numbers revert to white.
b. The upper right "A" block and "C" block revert to a green background.
c. The words "PART" and "ALL" disappear, leaving green blanks.

APPROVAL: [Signature]
STEP 59:

ACTION:

a. Disable buffer transfer.


c. Initiate relay Q2C51A-Z2D (GIT Address #1020).

d. Enable buffer transfer.

OUTPUT:

Primary Display:

a. The Unit 2 block reads "PART" on an orange background for approximately 33 seconds. The background then turns red.

b. The word "SEC" in the keypad mimic turns orange. The color changes to red after approximately 33 seconds.

c. The group number 2 block shows "PART" on an orange background. The color changes to red after approximately 5 seconds.

d. The words "2C", "2D", and "2E" turn orange. The color changes to red after approximately 5 seconds.

Diagnostic Display:

a. The tag numbers of the valves and fan in Table 16.10.3 and 16.10.4 that are part of the secondary containment isolation logic, turn orange.

b. The lower right "B" block and upper right "D" block turns orange.

c. The Unit 1 and Unit 2 blocks match those on the Primary Display.

APPROVAL: [Signature] - 8-2-84
STEP 60:

ACTION:

a. Disable buffer transfer.

b. Initiate relay Q2C51A-Z2A, (GIT Address #1015).

c. Initiate relay Q2C51A-Z2C (GIT Address #1017).

d. Enable buffer transfer.

OUTPUT:

Primary Display:

a. The Unit 1 block reads "ALL" on an orange background for approximately 33 seconds. The background then turns red.

b. The Unit 2 block reads "ALL" on a red background.

Diagnostic Display:

a. The tag numbers of the valves and fan in Table 16.10.1, 16.10.2, 16.10.3 and 16.10.4 that are part of the secondary containment isolation logic, turn orange.

b. The upper right "A" block and "D" block and the lower right "C" block and "B" block are orange.

c. The Unit 1 and Unit 2 blocks match those on the Primary Display.

APPROVAL: /s/ A. E. 2-84
STEP 61:

ACTION:

a. Reset relay Q2C51A-Z2A (GIT address #1015) and Q2C51A-Z2B (GIT address #1016), Q2C51A-Z2C (GIT address #1017), and Q2C51A-Z2D (GIT address #1020) to zero.

OUTPUT:

Primary Display:

a. The word "ALL" disappears, leaving a green blank.

b. The word "SEC" reverts to green.

Diagnostic Display:

a. The tag numbers reverts to white.

b. The upper left "A" block and "D" block and the lower right "C" block and "B" block revert to a green background.

c. The word "ALL" disappears, leaving a green blank.

APPROVAL: [Signature] 8-2-84
STEP 62:

a. Call the reference input data.
STEP 63:

ACTION:

a. Disable buffer transfer.

b. Initiate relays QC71A-K307A, (GIT Address #1172), QC71A-K307B (GIT Address #1173), QC71A-K307C (GIT Address #1176), and QC71A-K307D (GIT Address #1177).

c. Enable buffer transfer.

OUTPUT:

Primary Display:

a. The Unit 1 block reads "ALL" on an orange background for approximately 33 seconds. The background then turns red.

b. The Unit 2 block reads "PART" on an orange background for 30 seconds. The background then turns red.

c. The word "SEC" in the keypad mimic turns orange. The color changes to red after approximately 30 seconds.

Diagnostic Display:

a. The tag numbers of all the valves and fans on the secondary isolation diagnostic display turn orange, except for valves Q2T41-AOV F011A, F011B, F044A, F044B, Q2T46-AOV F001A, F001B, QT46-F003A, F003B, F004A, and F004B.

b. The HNP-1 box turns orange.

c. The Unit 1 and Unit 2 blocks match those on the Primary Display.

APPROVAL: [Signature] 2-2-84
STEP 64:

ACTION:


OUTPUT:

Primary Display:

a. The words "ALL" and "PART" in the Unit 1 and Unit 2 blocks disappear, leaving green blanks.

b. The word "SEC" in the keypad mimic reverts to green.

Diagnostic Display:

a. The tag numbers revert to white.

b. The HNP-1 box reverts to green.

c. The words "ALL" and "PART" disappear, leaving green blanks.

APPROVAL: [Signature]

557
STEP 65:

ACTION:

a. Disable buffer transfer.

b. Initiate relays QA71B-K5A (GIT Address #1170), QA71B-K5B (GIT Address #1174), QA71B-K5C (GIT Address #1171), and QA71B-K5D (GIT Address #1175).

c. Enable buffer transfer.

OUTPUT:

Primary Display:

a. The Unit 1 block reads "ALL" on an orange background for approximately 33 seconds. The background then turns red.

b. The Unit 2 block reads "PART" on an orange background for 30 seconds. The background then turns red.

c. The word "SEC" turns orange. The color changes to red after approximately 30 seconds.

Diagnostic Display:

a. The tag numbers of all the valves and fans on the secondary isolation diagnostic display turn orange, except for valves Q2T41-AOV F011A, F011B, F044A, F044B, Q2T46-AOV F001A, F001B, QT46-F003A, F003B, F004A, and F004B.

b. The HNP-1 box turns orange.

c. The Unit 1 and Unit 2 blocks match those on the Primary Display.

APPROVAL: [Signature] 8-2-04
STEP 66:

ACTION:

a. Reset relays QA71B-K5A, (GIT Address #1170), QA71B-K5B (GIT Address #1174), QA71B-K5C (GIT Address #1171), and QA71B-K5D (GIT Address #1175).

OUTPUT:

Primary Display:

a. The words "ALL" and "PART" in the Unit 1 and Unit 2 blocks disappear, leaving green blanks.

b. The word "SEC" in the keypad mimic reverts to green.

Diagnostic Display:

a. The tag numbers reverts to white.

b. The HNP-1 box reverts to green.

c. The word "ALL" and "PART" disappear, leaving green blanks.

APPROVAL: 8-2-85
STEP 67:

ACTION:

a. Disable buffer transfer.

b. Initiate relays Q2C71A-K307A, (GIT Address #1164), Q2C71A-K307B (GIT Address #1165), Q2C71A-K307C (GIT Address #1166), and Q2C71A-K307D (GIT Address #1167).

c. Enable buffer transfer.

OUTPUT:

Primary Display:

a. The Unit 2 block reads "PART" on an orange background for approximately 33 seconds. The background then turns red.

b. The word "SEC" in the keypad mimic turns orange. The color changes to red after approximately 33 seconds.

Diagnostic Display:

a. The tag numbers of the valves and fan in Table 16.10.3 and 16.10.4 that are part of the secondary containment isolation logic, turn orange.

b. The HNP-2 box turns orange.

c. The Unit 1 and Unit 2 blocks match those on the Primary Display.

APPROVAL: [Signature]

8-2-84
STEP 68:

ACTION:

a. Reset relays Q2C71A-K307A, (GIT Address #1164), Q2C71A-K307B (GIT Address #1165), Q2C71A-K307C (GIT Address #1166), and Q2C71A-K307D (GIT Address #1167).

OUTPUT:

Primary Display:

a. The word "PART" in the Unit 2 block disappears, leaving a green blank.

b. The word "SEC" in the keypad mimic reverts to green.

Diagnostic Display:

a. The tag numbers revert to green.

b. The HNP-2 box reverts to green.

c. The word "PART" disappears, leaving a green blank.

APPROVAL: 8-2-87
STEP 69:

ACTION:

a. Disable buffer transfer.

b. Initiate relays Q2A71B-K5A, (GIT Address #1027), Q2A71B-K5B (GIT Address #1042), Q2A71B-K5C (GIT Address #1030), and Q2A71B-K5D (GIT Address #1043).

c. Enable buffer transfer.

OUTPUT:

Primary Display:

a. The Unit 2 block reads "PART" on an orange background for approximately 33 seconds. The background then turns red.

b. The word "SEC" in the keypad mimic turns orange. The color changes to red after approximately 33 seconds.

c. The word "PART" appears on an orange background in the group number 2 block for approximately 5 seconds. The background then turns red.

d. The words "2A", "2B", "2C", "2D" and "2E" in the keypad mimic turn red within approximately 20 seconds.

Diagnostic Display:

a. The tag numbers of the valves and fan in Table 16.10.3 and 16.10.4 that are part of the secondary containment isolation logic, turn orange.

b. The HNP-2 box turns orange.

c. The Unit 1 and Unit 2 blocks match those on the Primary Display.

APPROVAL: 

8-2 84

562
STEP 70:

ACTION:

a. Call the reference test input.

OUTPUT:

Primary Display:

a. The word "PART" in the Unit 2 block disappears, leaving a green blank.

b. The words "2A", "2B", "2C", "2D", "2E" and "SEC" in the keypad mimic revert to green.

Diagnostic Display:

a. The tag numbers reverts to white.

b. The HNP-2 box reverts to green.

c. The word "PART" disappears, leaving a green blank.

APPROVAL: 8-2-84
17. RATE CALCULATION TESTS

Follow the procedure steps given below for each of the analog parameters.
17.1. REACTOR WATER LEVEL RATE CALCULATIONS

STEP 1
Restore the reference data at both ERF and SPDS.

STEP 2
Call up the 6 minute Core Trend display.

STEP 3
A Command "Function Select" (14)
B Select Ramp for the function.
C Enter 20 for the ramp slope.

STEP 4
Command "Signal Change Enable" (10)
Log Out all of the instrument in Table 17.1 except Q2B21-LT N027.

STEP 5
A Enter the data from Table 17.1 to indicate the signals to be ramped.
B Command "Global Change Start" (12)
C Wait approximately 10 seconds for rate to stabilize.
D Check the appropriate rate for the value 95.0 on the 6-minutes Core Trends display.

STEP 6
A Command "Global Change Stop" (13) to stop ramp.
B Command "Signal Change Disable" (11)

STEP 7
Enter the data from Table 17.1 to indicate the signals to be disabled.

STEP 10
Record approval: [Signature]

TABLE 17.1

<table>
<thead>
<tr>
<th>Sensor Tag Number</th>
<th>Scale</th>
<th>Channel Number</th>
<th>Default Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Q2B21-LIS N685A</td>
<td>-317/-17</td>
<td>123</td>
<td>4095</td>
</tr>
<tr>
<td>Q2B21-LIS N685B</td>
<td>-317/-17</td>
<td>18</td>
<td>4095-</td>
</tr>
<tr>
<td>Q2B21-LT N038A</td>
<td>-317/+60</td>
<td>66</td>
<td>3865</td>
</tr>
<tr>
<td>Q2B21-LT N038B</td>
<td>-317/+60</td>
<td>109</td>
<td>3865</td>
</tr>
<tr>
<td>Q2B21-LIS N691A</td>
<td>-150/+60</td>
<td>4</td>
<td>3629-</td>
</tr>
<tr>
<td>Q2B21-LIS N691B</td>
<td>-150/+60</td>
<td>43</td>
<td>3629</td>
</tr>
<tr>
<td>Q2B21-LIS N691C</td>
<td>-150/+60</td>
<td>64</td>
<td>3682-</td>
</tr>
<tr>
<td>Q2B21-LIS N691D</td>
<td>-150/+60</td>
<td>111</td>
<td>3682</td>
</tr>
<tr>
<td>Q2B21-LT N027</td>
<td>-17/+383</td>
<td>84</td>
<td>571</td>
</tr>
</tbody>
</table>

[Signature]
REACTOR PRESSURE RATE CALCULATIONS

STEP 1  Restore the reference data at the SPDS.

STEP 2  A  Command "Function Select" (14)
          B  Select Ramp for the function.
          C  Enter 20 for the ramp slope.

STEP 3  Command "Signal Change Enable" (10)

STEP 4  Enter the data from Table 17.2 to indicate the
        signals to be ramped.

STEP 5  A  Command "Global Change Start" (12)
          B  Wait approximately 10 seconds for rate to stabilize.
          C  Check the appropriate rate for the value 440 on the 6-
              minute Core Trends display.

STEP 6  Command "Global Change Stop" (13) to stop ramp.

STEP 7  Command "Signal Change Disable" (11)

STEP 8  Enter the data from Table 17.2 to indicate the
        signals to be disabled.

STEP 9  Record approval:  

TABLE 17.2

<table>
<thead>
<tr>
<th>Sensor</th>
<th>Scale</th>
<th>Channel Number</th>
<th>Default Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>REACTOR PRESSURE (SPDS ANALOG)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Q2B21-PIS N690A</td>
<td>0/1500</td>
<td>80</td>
<td>2740</td>
</tr>
<tr>
<td>Q2B21-PIS N690D</td>
<td>0/1500</td>
<td>127</td>
<td>2740</td>
</tr>
</tbody>
</table>
17.3 APRM RATE CALCULATIONS

STEP 1
Restore the reference data at the SPDS.

STEP 2
A Command "Function Select" (14)
B Select Ramp for the function.
C Enter 20 for the ramp slope.

STEP 3
Command "Signal Change Enable" (10)

STEP 4
Enter data from Table 17.3 to indicate signals to be ramped.

STEP 5
A Command "Global Change Start" (12)
B Wait approximately 10 seconds for rate to stabilize.
C Check the appropriate rate for the value 37 on the 6-minute Core Trends display.

STEP 6
Command "Global Change Stop" (13) to stop ramp.

STEP 7
Command "Signal Change Disable" (11)

STEP 8
Enter the data from Table 17.3 to indicate the signals to be disabled.

STEP 9
Record approval:

TABLE 17.3

<table>
<thead>
<tr>
<th>Sensor Tag Number</th>
<th>Scale</th>
<th>Channel Number</th>
<th>Default Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>0/125 APRM A</td>
<td>30</td>
<td>3276</td>
<td></td>
</tr>
<tr>
<td>0/125 APRM B</td>
<td>49</td>
<td>3276</td>
<td></td>
</tr>
<tr>
<td>0/125 APRM C</td>
<td>64</td>
<td>3276</td>
<td></td>
</tr>
<tr>
<td>0/125 APRM D</td>
<td>111</td>
<td>3276</td>
<td></td>
</tr>
<tr>
<td>0/125 APRM E</td>
<td>82</td>
<td>3276</td>
<td></td>
</tr>
<tr>
<td>0/125 APRM F</td>
<td>125</td>
<td>3276</td>
<td></td>
</tr>
</tbody>
</table>

Note: The tag number 567 is not listed in the table.
17.4 SRM RATE CALCULATIONS

STEP 1  Restore the reference data at both the SPDS and the ERF.

STEP 2  Call up the 6-minute Neutron Trends display.

STEP 3  A  Command "Function Select" (14)
          B  Select Ramp for the function.
          C  Enter 20 for the ramp slope.

STEP 4  Command "Signal Change Enable" (10)

STEP 5  Enter the data from Table 17.4 to indicate the signals to be ramped.

STEP 6  A  Command "Global Change Start" (12)
          B  Wait approximately 10 seconds for period to stabilize.
          C  Check the appropriate period for the value 13 on the 6-minute Neutron Trends display.

STEP 7  Command "Global Change Stop" (13) to stop ramp.

STEP 8  Enter the data from Table 17.4 to indicate the signals to be disabled.

STEP 9  Command "Signal Change Disable" (11)

STEP 10 Record approval: \( \frac{17}{14} \) 87

TABLE 17.4

<table>
<thead>
<tr>
<th>Sensor Tag Number</th>
<th>Scale</th>
<th>Channel Number</th>
<th>Default Value</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>SOURCE RANGE MONITORS (ERF ANALOG)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Q2C51-RIS K600A</td>
<td>(10^{-1}/10^6)</td>
<td>0</td>
<td>3718</td>
</tr>
<tr>
<td>Q2C51-RIS K600B</td>
<td>(10^{-1}/10^6)</td>
<td>17</td>
<td>3718</td>
</tr>
<tr>
<td>Q2C51-RIS K600C</td>
<td>(10^{-1}/10^6)</td>
<td>47</td>
<td>3718</td>
</tr>
<tr>
<td>Q2C51-RIS K600D</td>
<td>(10^{-1}/10^6)</td>
<td>62</td>
<td>3718</td>
</tr>
</tbody>
</table>

568
DRYWELL PRESSURE RATE CALCULATIONS

STEP 1  
Restore the reference data at the ERF.

STEP 2  
Call up the 6-minute Drywell Trends display.

STEP 3  
A  Command "Function Select" (14)
B  Select Ramp for the function.
C  Enter 20 for the ramp slope.

STEP 4  
Command "Signal Change Enable" (10)

STEP 5  
Enter the data from Table 17.5 to indicate the signals to be ramped.

STEP 6  
A  Command "Global Change Start" (12)
B  Wait approximately 30 seconds for rate to stabilize.
C  Check the appropriate rate for the value 2.93 on the 6-minute Drywell Trends display.

STEP 7  
Command "Global Change Stop" (13) to stop ramp.

STEP 8  
Command "Signal Change Disable" (11)

STEP 9  
Enter the data from Table 17.5 to indicate the signals to be disabled.

STEP 10  
Record approval: [signature]

TABLE 17.5

<table>
<thead>
<tr>
<th>Sensor Tag Number</th>
<th>Scale</th>
<th>Channel Number</th>
<th>Default Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Q2T48-PT N020A</td>
<td>-5/+5</td>
<td>88</td>
<td>2162</td>
</tr>
<tr>
<td>Q2T48-PT N020B</td>
<td>-5/+5</td>
<td>119</td>
<td>2162</td>
</tr>
<tr>
<td>Q2T48-PT N023A</td>
<td>-10/+90</td>
<td>96</td>
<td>421</td>
</tr>
<tr>
<td>Q2T48-PT N023B</td>
<td>-10/+90</td>
<td>79</td>
<td>421</td>
</tr>
<tr>
<td>Q2T48-PT N003A</td>
<td>0/250</td>
<td>87</td>
<td>0</td>
</tr>
<tr>
<td>Q2T48-PT N003B</td>
<td>0/250</td>
<td>120</td>
<td>0</td>
</tr>
</tbody>
</table>
DRYWELL TEMPERATURE RATE CALCULATIONS

STEP 1  Restore the reference data at the SPDS.

STEP 2  
A  Command "Function Select" (14)
B  Select Ramp for the function.
C  Enter 20 for the ramp slope.

STEP 3  Command "Signal Change Enable" (10)

STEP 4  Enter the data from Table 17.6 to indicate the signals to be ramped.

STEP 5  
A  Command "Global Change Start" (12)
B  Wait approximately 30 seconds for rate to stabilize.
C  Check the appropriate rate for the value 117 on the 6-minute drywell trends display.

STEP 6  Command "Global Change Stop" (13) to stop ramp.

STEP 7  Command "Signal Change Disable" (11)

STEP 8  Enter the data from Table 17.6 to indicate the signals to be disabled.

STEP 9  Record approval: 

TABLE 17.6

<table>
<thead>
<tr>
<th>Sensor Tag Number</th>
<th>Scale</th>
<th>Channel Number</th>
<th>Default Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Q2T47-TE N001A</td>
<td>0/400</td>
<td>71</td>
<td>1199</td>
</tr>
<tr>
<td>Q2T47-TE N001B</td>
<td>0/400</td>
<td>0</td>
<td>1214</td>
</tr>
<tr>
<td>Q2T47-TE N001L</td>
<td>0/400</td>
<td>47</td>
<td>1165</td>
</tr>
<tr>
<td>Q2T47-TE N002</td>
<td>0/400</td>
<td>118</td>
<td>1260</td>
</tr>
<tr>
<td>Q2T47-TE N004</td>
<td>0/400</td>
<td>56</td>
<td>1117</td>
</tr>
<tr>
<td>Q2T47-TE N006</td>
<td>0/400</td>
<td>38</td>
<td>0</td>
</tr>
<tr>
<td>Q2T47-TE N008</td>
<td>0/400</td>
<td>9</td>
<td>1151</td>
</tr>
<tr>
<td>Q2T47-TE N009</td>
<td>0/400</td>
<td>65</td>
<td>1362</td>
</tr>
<tr>
<td>Q2T47-TE N001J</td>
<td>0/400</td>
<td>17</td>
<td>1151</td>
</tr>
<tr>
<td>Q2T47-TE N001K</td>
<td>0/400</td>
<td>104</td>
<td>1418</td>
</tr>
<tr>
<td>Q2T47-TE N001M</td>
<td>0/400</td>
<td>62</td>
<td>1165</td>
</tr>
<tr>
<td>Q2T47-TE N003</td>
<td>0/400</td>
<td>110</td>
<td>1273</td>
</tr>
<tr>
<td>Q2T47-TE N005</td>
<td>0/400</td>
<td>81</td>
<td>1199</td>
</tr>
<tr>
<td>Q2T47-TE N007</td>
<td>0/400</td>
<td>126</td>
<td>1178</td>
</tr>
<tr>
<td>Q2T47-TE N010</td>
<td>0/400</td>
<td>89</td>
<td>1260</td>
</tr>
</tbody>
</table>
TORUS WATER LEVEL RATE CALCULATIONS

STEP 1  Restore the reference data at the SPDS.

STEP 2  Call up the 6-minute Torus Trends display.

STEP 3  
A  Command "Function Select" (14)
B  Select Ramp for the function.
C  Enter 20 for the ramp slope.

STEP 4  Command "Signal Change Enable" (10)

STEP 5  Enter the data from Table 17.7 to indicate the signals to be ramped.

STEP 6  
A  Command "Global Change Start" (12)
B  Wait approximately 30 seconds for rate to stabilize.
C  Check the appropriate rate for the value 8.8 on the 6-minute Torus Trends display.

STEP 7  Command "Global Change Stop" (13) to stop ramp.

STEP 8  Command "Signal Change Disable" (11)

STEP 9  Enter the data from Table 17.7 to indicate the signals to be disabled.

STEP 10 Record approval:  

TABLE 17.7

<table>
<thead>
<tr>
<th>Sensor Tag Number</th>
<th>Scale</th>
<th>Channel Number</th>
<th>Default Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>TORUS WATER LEVEL (SPDS ANALOG)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Q2T48-LT N021A</td>
<td>133/163</td>
<td>95</td>
<td>1876</td>
</tr>
<tr>
<td>Q2T48-LT N021B</td>
<td>133/163</td>
<td>112</td>
<td>1876</td>
</tr>
<tr>
<td>Q2T48-LT N010A</td>
<td>0/300</td>
<td>72</td>
<td>2001</td>
</tr>
<tr>
<td>Q2T48-LT N010B</td>
<td>0/300</td>
<td>103</td>
<td>2001</td>
</tr>
</tbody>
</table>
17.8 TORUS PRESSURE RATE CALCULATIONS

STEP 1  Restore the reference data at the SPDS.

STEP 2  A  Command "Function Select" (14)
        B  Select Ramp for the function.
        C  Enter 20 for the ramp slope.

STEP 3  Command "Signal Change Enable" (10)

STEP 4  Enter the data from Table 17.8 to indicate the signals to be ramped.

STEP 5  A  Command "Global Change Start" (12)
        B  Wait approximately 30 seconds for rate to stabilize.
        C  Check the appropriate rate for the value 29.3 on the 6-minute Torus Trends display.

STEP 6  Command "Global Change Stop" (13) to stop ramp.

STEP 7  Command "Signal Change Disable" (11)

STEP 8  Enter the data from Table 17.8 to indicate the signals to be disabled.

STEP 9  Record approval:  

TABLE 17.8

<table>
<thead>
<tr>
<th>Sensor Tag Number</th>
<th>Channel Scale</th>
<th>Channel Number</th>
<th>Default Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Q2T48-PT N008A</td>
<td>-10/+90</td>
<td>16</td>
<td>420</td>
</tr>
<tr>
<td>Q2T48-PT N008B</td>
<td>-10/+90</td>
<td>63</td>
<td>420</td>
</tr>
</tbody>
</table>
17.9 TORUS WATER TEMPERATURE RATE CALCULATIONS

STEP 1
Restore the reference data at the SPDS.

STEP 2
A Command "Function Select" (14)
B Select Ramp for the function.
C Enter 20 for the ramp slope.

STEP 3
Command "Signal Change Enable" (10)

STEP 4
A Log out the NO08A, B, C, D TE's as shown in Table 17.9
B Enter the data from Table 17.9 to indicate the signals to be ramped.

STEP 5
A Command "Global Change Start" (12)
B Wait approximately 30 seconds for rate to stabilize.
C Check the appropriate rate for the value 144.9 on the 6-minute Torus Trends display.

STEP 6
Command "Global Change Stop" (13) to stop ramp.

STEP 7
Command "Signal Change Disable" (11)

STEP 8
Enter the data from Table 17.9 to indicate the signals to be disabled.

STEP 9
Record approval: 

---

TABLE 17.9

<table>
<thead>
<tr>
<th>Sensor Tag Number</th>
<th>Scale</th>
<th>Channel Number</th>
<th>Default Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Q2T48-TE N301A</td>
<td>50/250</td>
<td>2</td>
<td>748</td>
</tr>
<tr>
<td>Q2T48-TE N302A</td>
<td>50/250</td>
<td>83</td>
<td>748</td>
</tr>
<tr>
<td>Q2T48-TE N303A</td>
<td>50/250</td>
<td>20</td>
<td>748</td>
</tr>
<tr>
<td>Q2T48-TE N304A</td>
<td>50/250</td>
<td>105</td>
<td>748</td>
</tr>
<tr>
<td>Q2T48-TE N305A</td>
<td>50/250</td>
<td>99</td>
<td>748</td>
</tr>
<tr>
<td>Q2T48-TE N306A</td>
<td>50/250</td>
<td>70</td>
<td>748</td>
</tr>
<tr>
<td>Q2T48-TE N307A</td>
<td>50/250</td>
<td>113</td>
<td>748</td>
</tr>
<tr>
<td>Q2T48-TE N308A</td>
<td>50/250</td>
<td>91</td>
<td>748</td>
</tr>
<tr>
<td>Q2T48-TE N309A</td>
<td>50/250</td>
<td>13</td>
<td>748</td>
</tr>
<tr>
<td>Q2T48-TE N310A</td>
<td>50/250</td>
<td>33</td>
<td>748</td>
</tr>
<tr>
<td>Q2T48-TE N311A</td>
<td>50/250</td>
<td>46</td>
<td>748</td>
</tr>
<tr>
<td>Q2T48-TE NO09A</td>
<td>0/400</td>
<td>54</td>
<td>886 Logged out</td>
</tr>
<tr>
<td>Q2T48-TE NO09B</td>
<td>0/400</td>
<td>54</td>
<td>886</td>
</tr>
<tr>
<td>Q2T48-TE NO09C</td>
<td>0/400</td>
<td>45</td>
<td>886</td>
</tr>
<tr>
<td>Q2T48-TE NO09D</td>
<td>0/400</td>
<td>34</td>
<td>886</td>
</tr>
</tbody>
</table>

---
STEP 1  Restore the reference data at the SPDS.

STEP 2  Call the 6-minute H₂/O₂ Trends display.

STEP 3  
A  Command "Function Select" (14)
B  Select Ramp for the function.
C  Enter 20 for the ramp slope.

STEP 4  Command "Signal Change Enable" (10)

STEP 5  Enter the data from Table 17.10 to indicate the signals to be ramped.

STEP 6  
A  Command "Global Change Start" (12)
B  Wait approximately 30 seconds for rate to stabilize.
C  Check the appropriate rate for the value 2.93 on the 6-minute H₂/O₂ Trends display.

STEP 7  Command "Global Change Stop" (13) to stop ramp.

STEP 8  Command "Signal Change Disable" (11)

STEP 9  Enter the data from Table 17.10 to indicate the signals to be disabled.

STEP 10  Record approval:

TABLE 17.10

<table>
<thead>
<tr>
<th>Sensor Tag Number</th>
<th>Channel Number</th>
<th>Default Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Q2P33-P601A</td>
<td>6</td>
<td>15</td>
</tr>
<tr>
<td>Q2P33-P601B</td>
<td>41</td>
<td>27</td>
</tr>
</tbody>
</table>
**DRYWELL/TORUS O\(_2\) RATE CALCULATIONS**

**STEP 1**  
Restore the reference data at both the ERF and SPDS.

**STEP 2**  
A. Command "Function Select" (14)  
B. Select Ramp for the function.  
C. Enter 20 for the ramp slope.

**STEP 3**  
Command "Signal Change Enable" (10)

**STEP 4**  
Enter the data from Table 17.11 to indicate the signals to be ramped.

**STEP 5**  
A. Command "Global Change Start" (12)  
B. Wait approximately 30 seconds for rate to stabilize.  
C. Check the appropriate rate for the value 2.93 on the 6-minute H\(_2\)/O\(_2\) trends display.

**STEP 6**  
Command "Global Change Stop" (13) to stop ramp.

**STEP 7**  
Command "Signal Change Disable" (11)

**STEP 8**  
Enter the data from Table 17.11 to indicate the signals to be disabled.

**STEP 9**  
Record approval:  

---

**TABLE 17.11**

<table>
<thead>
<tr>
<th>Sensor Tag Number</th>
<th>Channel Number</th>
<th>Default Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Q2P33-P601A</td>
<td>0/10</td>
<td>68</td>
</tr>
<tr>
<td>Q2P33-P601B</td>
<td>0/10</td>
<td>107</td>
</tr>
</tbody>
</table>
17.12 MAIN STACK RADIATION RATE CALCULATIONS

STEP 1 Restore the reference data at the SPDS.

STEP 2 Call up the 6-minute Effluent Trends display.

STEP 2 A Command "Function Select" (14)
B Select Ramp for the function.
C Enter 20 for the ramp slope.

STEP 3 Command "Signal Change Enable" (10)

STEP 4 Enter the data from Table 17.12 to indicate the signals to be ramped.

STEP 5 A Command "Global Change Start" (12)
B Wait approximately 30 seconds for rate to stabilize.
C Check the appropriate rate for the value 4E-06 on the 6-minute Effluent Trends display.

STEP 6 Command "Global Change Stop" (13) to stop ramp.

STEP 7 Command "Signal Change Disable" (11)

STEP 8 Enter the data from Table 17.12 to indicate the signals to be disabled.

STEP 9 Record approval: _______________________

TABLE 17.12

<table>
<thead>
<tr>
<th>Sensor Tag Number</th>
<th>Scale</th>
<th>Channel Number</th>
<th>Default Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>MAIN STACK RADIATION (WIDE RANGE) (SPDS ANALOG)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>QD11-P007</td>
<td>10^-5/5x10^-3</td>
<td>92</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>MAIN STACK RADIATION (NORMAL RANGE) (ERF ANALOG)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>QD11-RIS K600A</td>
<td>10^-1/10^+6</td>
<td>78</td>
<td>304</td>
</tr>
<tr>
<td>QD11-RIS K600B</td>
<td>10^-1/10^+6</td>
<td>97</td>
<td>241</td>
</tr>
</tbody>
</table>
17.13 REACTOR BUILDING VENT RADIATION (HNP-2) RATE CALCULATIONS

STEP 1 Restore the reference data at both the SPDS and ERF.

STEP 2
A Command "Function Select" (14)
B Select Ramp for the function.
C Enter 20 for the ramp slope.

STEP 3 Command "Signal Change Enable" (10)

STEP 4 Enter the data from Table 17.13 to indicate the signals to be ramped.

STEP 5
A Command "Global Change Start" (12)
B Wait approximately 30 seconds for rate to stabilize.
C Check the appropriate rate for the value 7E-08 on the 6-minute Effluent Trends display.

STEP 6 Command "Global Change Stop" (13) to stop ramp.

STEP 7 Command "Signal Change Disable" (11)

STEP 8 Enter the data from Table 17.13 to indicate the signals to be disabled.

STEP 9 Record approval: 

---

TABLE 17.13

<table>
<thead>
<tr>
<th>Sensor</th>
<th>Tag Number</th>
<th>Scale</th>
<th>Channel Number</th>
<th>Default Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>REACTOR BUILDING VENT RADIATION (WIDE RANGE) (SPDS ANALOG)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Q2D11-P601</td>
<td></td>
<td>$10^{-5}/5\times10^{-3}$</td>
<td>7</td>
<td>0</td>
</tr>
<tr>
<td>REACTOR BUILDING VENT RADIATION (NORMAL RANGE) (ERF ANALOG)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Q2D11-RIS K636A</td>
<td></td>
<td>$10^{1}/10^{6}$ cpm</td>
<td>93</td>
<td>476</td>
</tr>
<tr>
<td>Q2D11-RIS K636B</td>
<td></td>
<td>$10^{1}/10^{6}$ cpm</td>
<td>114</td>
<td>705</td>
</tr>
</tbody>
</table>
17.14 REACTOR BUILDING VENT RADIATION (HNP 1) RATE CALCULATIONS

STEP 1
Restore the reference data at both the SPDS and ERF.

STEP 2
A Command "Function Select" (14)
B Select Ramp for the function.
C Enter 20 for the ramp slope.

STEP 3
Command "Signal Change Enable" (10)

STEP 4
Enter the data from Table 17.14 to indicate the signals to be ramped.

STEP 5
A Command "Global Change Start" (12)
B Wait approximately 30 seconds for rate to stabilize.
C Check the appropriate rate for the value 7E-08 on the 6-minute Effluent Trends display.

STEP 6
Command "Global Change Stop" (13) to stop ramp.

STEP 7
Command "Signal Change Disable" (11)

STEP 8
Enter the data from Table 17.14 to indicate the signals to be disabled.

STEP 9
Record approval: ____________

TABLE 17.14

<table>
<thead>
<tr>
<th>Sensor Tag Number</th>
<th>Scale</th>
<th>Channel Number</th>
<th>Default Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>QD11-P601</td>
<td>$10^{-5}/5\times10^{-3}$</td>
<td>32</td>
<td>0</td>
</tr>
</tbody>
</table>

REACTOR BUILDING VENT RADIATION (WIDE RANGE) (SPDS ANALOG)

<table>
<thead>
<tr>
<th>Sensor Tag Number</th>
<th>Scale</th>
<th>Channel Number</th>
<th>Default Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>QD11-RIS K619A</td>
<td>$10^{+1}/10^{+6}$ cpm</td>
<td>29</td>
<td>476</td>
</tr>
<tr>
<td>QD11-RIS K619B</td>
<td>$10^{+1}/10^{+6}$ cpm</td>
<td>50</td>
<td>705</td>
</tr>
</tbody>
</table>
17.15. **VESSEL/FLANGE TEMPERATURE RATE CALCULATIONS**

**STEP 1**  
Restore the reference data at both the SPDS and ERF.

**STEP 2**  
Call up the Vessel/Flange Temperature Miscellaneous display.

**STEP 3**  
A Command "Function Select" (14)  
B Select Ramp for the function.  
C Enter 20 for the ramp slope

**STEP 4**  
Command "Signal Change Enable" (10)

**STEP 5**  
Enter the data from Table 17.15 to indicate the signals to be ramped.

**STEP 6**  
A Command "Global Change Start" (12)  
B Wait approximately 30 seconds for rate to stabilize.  
C Check the appropriate rate for the value 176 on the Vessel/Flange Temperature Miscellaneous display.

**STEP 7**  
Command "Global Change Stop" (13) to stop ramp.

**STEP 8**  
Command "Signal Change Disable" (11).

**STEP 9**  
Enter the data from Table 17.15 to indicate the signals to be disabled.

**STEP 10**  
Record approval:

---

**TABLE 17.15**

<table>
<thead>
<tr>
<th>Sensor Tag Number</th>
<th>Scale</th>
<th>Channel Number</th>
<th>Default Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>VESSEL/FLANGE TEMPERATURE (ERF ANALOG)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Q2B21-TE N050A</td>
<td>0/600</td>
<td>117</td>
<td>0</td>
</tr>
</tbody>
</table>

---
18. **LOG IN/LOG OUT FUNCTION TEST**

Follow the procedures below to test the log in/log out function. Record approval.
REACTOR WATER LEVEL

a. Call up the reference input data.

b. Call up the Log in/Log out display for reactor water level.

c. Call up the RPV Water Level Diagnostic display.

d. Turn off recirculation pump A by setting ERF Digital signals #1500 to 0, 1501 to 1, 1502 to 0 and 1503 to 1.

e. Log out all of the instruments.

f. Check on the Log in/Log out display and on the diagnostic display that the instruments are logged out. The background of the instrument number is red and the average level box is a yellow blank.

g. Input the values specified in Table 18.1.

h. Log in one instrument.

i. Check that the instrument number background changes to black on the Log in/Log out display and on the diagnostic display.

j. Check that the output on the diagnostic display agrees with Table 18.1.

k. Log out the instrument.

l. Repeat steps h through k until all instruments have been checked.

### TABLE 18.1

<table>
<thead>
<tr>
<th>INSTRUMENT #</th>
<th>INPUT</th>
<th>OUTPUT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Channel #</td>
<td>Value</td>
<td>Sensor (in)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>N685A</td>
<td>SPDS-123</td>
<td>2000</td>
</tr>
<tr>
<td>N685B</td>
<td>SPDS-18</td>
<td>2000</td>
</tr>
<tr>
<td>N038A</td>
<td>SPDS-66</td>
<td>2000</td>
</tr>
<tr>
<td>N038B</td>
<td>SPDS-109</td>
<td>2000</td>
</tr>
<tr>
<td>N691A</td>
<td>SPDS-4</td>
<td>2000</td>
</tr>
<tr>
<td>N691B</td>
<td>SPDS-43</td>
<td>2000</td>
</tr>
<tr>
<td>N691C</td>
<td>SPDS-64</td>
<td>2000</td>
</tr>
<tr>
<td>N691D</td>
<td>SPDS-111</td>
<td>2000</td>
</tr>
<tr>
<td>N027</td>
<td>SPDS-84</td>
<td>2000</td>
</tr>
</tbody>
</table>

APPROVAL: 8-2-84
18.2 REACTOR PRESSURE

a. Call the reference input data.

b. Call up the Log in/Log out display for reactor pressure.

c. Call up the RPV Pressure Diagnostic display.

d. Log out all of the instruments.

e. Check on the Log in/Log out display and on the diagnostic display that all the instruments are logged out. The background of the instrument number is red and the average pressure box is a yellow blank.

f. Input the values specified in Table 18.2.

g. Log in sensor N690A.

h. Check that the background of that instrument changes to black on the Log in/Log out and diagnostic display.

i. Check that the output on the RPV diagnostic display agrees with Table 18.2.

j. Log out this instrument.

k. Repeat steps g through j with sensor N690D.

TABLE 18.2

<table>
<thead>
<tr>
<th>INSTRUMENT</th>
<th>INPUT</th>
<th>OUTPUT</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Channel</td>
<td>Value</td>
</tr>
<tr>
<td>N690A</td>
<td>SPDS-80</td>
<td>3000</td>
</tr>
<tr>
<td>N690D</td>
<td>SPDS-127</td>
<td>3000</td>
</tr>
</tbody>
</table>

APPROVAL: [Signature]
18.3 AVERAGE POWER RANGE MONITOR

a. Call the reference input data.

b. Call up the Log in/Log out display for average power range monitor.

c. Call up the APRM Diagnostic display.

d. Log out all of the sensors.

e. Check on the Log in/Log out display and on the APRM diagnostic display that the instruments are logged out. The background of the instrument number is red and the average level box is a yellow blank.

f. Input the values specified in Table 18.3.

g. Log in sensor A.

h. Check that the background of that instrument changes to black on the Log in/Log out and diagnostic display.

i. Check that the output on the diagnostic display agrees with Table 18.3.

j. Log out this instrument.

k. Repeat steps g through j with the remaining instruments, B through F, until all instruments are checked.

<table>
<thead>
<tr>
<th>INSTRUMENT #</th>
<th>INPUT</th>
<th>OUTPUT</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Channel #</td>
<td>Value</td>
</tr>
<tr>
<td>2C51-RIS K605</td>
<td></td>
<td></td>
</tr>
<tr>
<td>A</td>
<td>ERF- 30</td>
<td>1500</td>
</tr>
<tr>
<td>B</td>
<td>ERF-111</td>
<td>1500</td>
</tr>
<tr>
<td>C</td>
<td>ERF- 49</td>
<td>1500</td>
</tr>
<tr>
<td>D</td>
<td>ERF- 82</td>
<td>1500</td>
</tr>
<tr>
<td>E</td>
<td>ERF- 64</td>
<td>1500</td>
</tr>
<tr>
<td>F</td>
<td>ERF-125</td>
<td>1500</td>
</tr>
<tr>
<td>2B31-SQRT K608A</td>
<td>ERF- 10</td>
<td>2640</td>
</tr>
<tr>
<td>2B31-SQRT K606A</td>
<td>ERF- 37</td>
<td>2640</td>
</tr>
</tbody>
</table>

APPROVAL: 583
SOURCE RANGE MONITOR (SRM)

a. Call the reference input data.
b. Call up the Log in/Log out display for the source range monitors.
c. Call up the SRM Diagnostic display.
d. Log out all of the sensors.
e. Check that all the sensors are logged out. The background of the instrument number is red and the average SRM box is a yellow blank.
f. Input the values specified in Table 18.4.
g. Log in sensor K600A.
h. Check that the background of that instrument changes to black on the Log in/Log out and diagnostic display.
i. Check that the output on the diagnostic display agrees with Table 18.4.
j. Log out this sensor.
k. Repeat steps g through j until all the instruments have been checked.

TABLE 18.4

<table>
<thead>
<tr>
<th>INSTRUMENT #</th>
<th>INPUT</th>
<th>OUTPUT</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Channel #</td>
<td>Value</td>
</tr>
<tr>
<td>K600A</td>
<td>ERF- 0</td>
<td>3000</td>
</tr>
<tr>
<td>K600B</td>
<td>ERF-17</td>
<td>3000</td>
</tr>
<tr>
<td>K600C</td>
<td>ERF-47</td>
<td>3000</td>
</tr>
<tr>
<td>K600D</td>
<td>ERF-62</td>
<td>3000</td>
</tr>
</tbody>
</table>

APPROVAL: 584
18.5  DRYWELL PRESSURE

a. Call the reference input data.
b. Call up the Log in/Log out display for the drywell pressure.
c. Call up the Drywell Pressure Diagnostic display.
d. Log out all of the instruments.
e. Check that all the instruments are logged out on both the Log in/Log out display and the diagnostic display. The background of the instrument number is red and the average pressure display is a yellow blank.
f. Input the values specified in Table 18.5.
g. Log in the two narrow range instruments.
h. Check that the instrument number background changes to black on the Log in/Log out display and on the diagnostic display.
i. Check that the output on the diagnostic display agrees with Table 18.5.
j. Log out these instruments.
k. Repeat steps g through j with the remaining sensor groups shown in Table 18.5.

<table>
<thead>
<tr>
<th>INSTRUMENT #</th>
<th>INPUT</th>
<th>OUTPUT</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Channel #</td>
<td>Value</td>
</tr>
<tr>
<td>NO20A (narrow)</td>
<td>SPDS- 88</td>
<td>2500</td>
</tr>
<tr>
<td>NO20A (narrow)</td>
<td>SPDS-119</td>
<td>2500</td>
</tr>
<tr>
<td>NO23A (mid)</td>
<td>SPDS- 96</td>
<td>2500</td>
</tr>
<tr>
<td>NO23B (mid)</td>
<td>SPDS- 79</td>
<td>2500</td>
</tr>
<tr>
<td>NO03A (wide)</td>
<td>SPDS- 87</td>
<td>2500</td>
</tr>
<tr>
<td>NO03B (wide)</td>
<td>SPDS-120</td>
<td>2500</td>
</tr>
</tbody>
</table>

TABLE 18.5

APPROVAL: [Signature] 8-2-84

585
DRYWELL TEMPERATURE

a. Call the reference input data.

b. Call up the Log in/Log out display for drywell temperature.

c. Call up the Drywell Temperature Diagnostic display.

d. Log out all of the instruments.

e. On the diagnostic and Log in/Log out display, check that the instruments are logged out. The background of the instrument number is red and the average temperature box is a yellow blank.

f. Input the values listed in Table 18.6a.

g. Log in the first instrument combination shown in Table 18.6b.

h. Check that the instrument number backgrounds change to black on both displays.

i. Check that the value for the average drywell temperature agrees with the value shown in Table 18.6b.

j. Log out the instruments.

k. Repeat steps g through j with each combination, until all have been tested.

APPROVAL: 8-2-84
<table>
<thead>
<tr>
<th>INSTRUMENT #</th>
<th>INPUT</th>
<th>SENSOR OUTPUT (°F)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Channel #</td>
<td>Value</td>
</tr>
<tr>
<td><strong>GROUP A</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>N001B - B</td>
<td>SPDS- 0</td>
<td>1000</td>
</tr>
<tr>
<td>N001J - T</td>
<td>SPDS- 17</td>
<td>1000</td>
</tr>
<tr>
<td>N001L - C</td>
<td>SPDS- 47</td>
<td>1000</td>
</tr>
<tr>
<td>N001M - K</td>
<td>SPDS- 62</td>
<td>1000</td>
</tr>
<tr>
<td>N004 - E</td>
<td>SPDS- 56</td>
<td>1000</td>
</tr>
<tr>
<td>N005 - N1</td>
<td>SPDS- 81</td>
<td>1000</td>
</tr>
<tr>
<td>N007 - N</td>
<td>SPDS-126</td>
<td>1000</td>
</tr>
<tr>
<td>N008 - E</td>
<td>SPDS- 9</td>
<td>1000</td>
</tr>
<tr>
<td><strong>GROUP B</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>N009 M</td>
<td>SPDS- 65</td>
<td>1500</td>
</tr>
<tr>
<td>N003 L</td>
<td>SPDS-110</td>
<td>1500</td>
</tr>
<tr>
<td><strong>GROUP C</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>N002 D</td>
<td>SPDS-118</td>
<td>2000</td>
</tr>
<tr>
<td>N010 C</td>
<td>SPDS- 89</td>
<td>2000</td>
</tr>
<tr>
<td>N001A A</td>
<td>SPDS- 71</td>
<td>2000</td>
</tr>
<tr>
<td>N001K J</td>
<td>SPDS-104</td>
<td>2000</td>
</tr>
<tr>
<td>N006 (*)</td>
<td>SPDS- 38</td>
<td>2000</td>
</tr>
</tbody>
</table>

(*) N006 has no influence on the average.

<table>
<thead>
<tr>
<th>INSTRUMENT COMBINATION</th>
<th>AVERAGE T (°F)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Group A + N009 N</td>
<td>110 (Y)</td>
</tr>
<tr>
<td>Group A + N003 L</td>
<td>110 (Y)</td>
</tr>
<tr>
<td>Group A + N002 D</td>
<td>116 (Y)</td>
</tr>
<tr>
<td>Group A + N010 C</td>
<td>116 (Y)</td>
</tr>
<tr>
<td>Group A + N001A A</td>
<td>116 (Y)</td>
</tr>
<tr>
<td>Group A + N001K J</td>
<td>116 (Y)</td>
</tr>
<tr>
<td>Group B + N001B E</td>
<td>110 (Y)</td>
</tr>
<tr>
<td>Group B + N001J T</td>
<td>110 (Y)</td>
</tr>
<tr>
<td>Group B + N001L C</td>
<td>110 (Y)</td>
</tr>
<tr>
<td>Group B + N001M J</td>
<td>110 (Y)</td>
</tr>
<tr>
<td>Group B + N004 E</td>
<td>110 (Y)</td>
</tr>
<tr>
<td>Group B + N005 E</td>
<td>110 (Y)</td>
</tr>
<tr>
<td>Group B + N007 E</td>
<td>110 (Y)</td>
</tr>
<tr>
<td>Group B + N008 E</td>
<td>110 (Y)</td>
</tr>
<tr>
<td>Group B + N002 D</td>
<td>166 (R)</td>
</tr>
<tr>
<td>Group B + N010 C</td>
<td>166 (R)</td>
</tr>
<tr>
<td>Group B + N001A A</td>
<td>166 (R)</td>
</tr>
<tr>
<td>Group B + N001K J</td>
<td>166 (R)</td>
</tr>
</tbody>
</table>
18.7 DRYWELL/TORUS H₂ and O₂ CONCENTRATIONS

PART I - DRYWELL/TORUS H₂

a. Call the reference input data.
b. Call up the Log in/Log out display for drywell H₂ and O₂ concentrations.
c. Call up the diagnostic display for H₂ and O₂ and the primary display.
d. Log out all sensors.
e. Check on the Log in/Log out display and on the diagnostic display that the sensors are logged out. The background of the instrument number should be red. The average H₂ and O₂ concentration boxes should be yellow blanks.
f. Input the values listed in Table 18.7a.
g. Log in one of the H₂ instruments.
h. Check that the instrument number background changes to black on the Log in/Log out display.
i. Check that the output agrees with Table 18.7a.
j. Log out the instrument.
k. Repeat steps g through j for the second H₂ instrument.

TABLE 18.7a

<table>
<thead>
<tr>
<th>INSTRUMENT #</th>
<th>INPUT</th>
<th>OUTPUT</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Channel #</td>
<td>Value</td>
</tr>
<tr>
<td>P601A</td>
<td>SPDS-6</td>
<td>1000</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>P601B</td>
<td>SPDS-41</td>
<td>1000</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

APPROVAL: [Signature] C-2-87

588
PART II - DRYWELL/TORUS $O_2$

a. Repeat steps a through k, as stated in Part I, for $O_2$ concentrations, using input data from Table 18.7b.

<table>
<thead>
<tr>
<th>INSTRUMENT #</th>
<th>INPUT #</th>
<th>Value</th>
<th>Sensor</th>
<th>Average $O_2$</th>
</tr>
</thead>
<tbody>
<tr>
<td>P601A</td>
<td>SPDS-68</td>
<td>1500</td>
<td>3.7</td>
<td>3.7 (R) - Torus</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Blank (Y) - Drywell</td>
</tr>
<tr>
<td>P601B</td>
<td>SPDS-107</td>
<td>1500</td>
<td>3.7</td>
<td>3.7 (R) - Drywell</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Blank (Y) - Torus</td>
</tr>
</tbody>
</table>
18.8 TORUS WATER LEVEL

a. Call the reference input data.

b. Call up the Log in/Log out display for the torus water level

c. Call up the Torus Water Diagnostic display.

d. Log out all of the instruments.

e. Check that all the instruments are logged out on both the LOG IN/LOG OUT display and the diagnostic display. The background of the instrument number is red and the average pressure display is a yellow blank.

f. Input the values specified in Table 18.8.

g. Log in an instrument or one of the specified combinations of instruments.

h. Check that the instrument number background changes to black on the Log in/Log out display and on the diagnostic display.

i. Check that the output agrees with Table 18.8.

j. Log out the instruments.

k. Repeat steps g through j until all specified instrument combinations are checked.

TABLE 18.8

<table>
<thead>
<tr>
<th>INSTRUMENT COMBINATION</th>
<th>INPUT</th>
<th>OUTPUT</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Channel #</td>
<td>Value</td>
</tr>
<tr>
<td>NO21A</td>
<td>SPDS- 95</td>
<td>3000</td>
</tr>
<tr>
<td>NO21B</td>
<td>SPDS-112</td>
<td>3100</td>
</tr>
<tr>
<td>NO21A</td>
<td>SPDS- 95</td>
<td>3000</td>
</tr>
<tr>
<td>NO21B</td>
<td>SPDS-112</td>
<td>3100</td>
</tr>
<tr>
<td>NO10A</td>
<td>SPDS- 72</td>
<td>3000</td>
</tr>
<tr>
<td>NO10B</td>
<td>SPDS-103</td>
<td>3000</td>
</tr>
</tbody>
</table>
18.9 TORUS PRESSURE

a. Call the reference input data.

b. Call up the Log in/Log out display for the torus pressure.

c. Call up the Torus Pressure Diagnostic display.

d. Log out all of the instruments.

e. Check that all the instruments are logged out on both the Log in/Log out display and the diagnostic display. The background of the instrument number is red and the average pressure display is a yellow blank.

f. Input the values specified in Table 18.9.

g. Log in NO08A.

h. Check that the background of that instrument number changes to black on the Log in/Log out and diagnostic display.

i. Check that the output on the diagnostic display agrees with Table 18.9.

j. Log out this instrument.

k. Repeat steps g through j with the instrument NO08B.

<table>
<thead>
<tr>
<th>Instrument #</th>
<th>INPUT</th>
<th>OUTPUT</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Channel #</td>
<td>Value</td>
</tr>
<tr>
<td>NO08A</td>
<td>SPDS-16</td>
<td>200</td>
</tr>
<tr>
<td>NO08B</td>
<td>SPDS-63</td>
<td>200</td>
</tr>
</tbody>
</table>

TABLE 18.9

APPROVAL:  

591
18.10 TORUS WATER TEMPERATURE

a. Call the reference input data.

b. Call up the Log in/Log out display for the torus water temperature.

c. Call up the Torus Water Temperature Diagnostic display.

d. Log out all of the instruments.

e. Check on both displays that the instruments are logged out. The background of the instrument number is red, and the average water temperature display box is a yellow blank.

f. Input the values listed in Table 18.10a and check that the sensor outputs agree with Table 18.10a.

g. Log in an instrument combination from Table 18.10b.

h. Check that the instrument number backgrounds change to black on both displays.

i. Check that the value for the average drywell temperature agrees with the value shown in Table 18.10b.

j. Log out the instruments combination.

k. Repeat steps g through j with each specified combination, until all have been tested.

APPROVAL: 8-2-84
### TABLE 18.10a

<table>
<thead>
<tr>
<th>INSTRUMENT #</th>
<th>INPUT Channel #</th>
<th>VALUE</th>
<th>SENSOR OUTPUT (°F)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>GROUP A</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>N301A</td>
<td>SPDS-2</td>
<td>2000</td>
<td>148</td>
</tr>
<tr>
<td>N302A</td>
<td>SPDS-83</td>
<td>2000</td>
<td>148</td>
</tr>
<tr>
<td>N303A</td>
<td>SPDS-20</td>
<td>2000</td>
<td>148</td>
</tr>
<tr>
<td>N311A</td>
<td>SPDS-46</td>
<td>2000</td>
<td>148</td>
</tr>
<tr>
<td>NO0931</td>
<td>SPDS-59</td>
<td>1515</td>
<td>148</td>
</tr>
<tr>
<td><strong>GROUP B</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>N304</td>
<td>SPDS-105</td>
<td>2200</td>
<td>157</td>
</tr>
<tr>
<td>N305A</td>
<td>SPDS-99</td>
<td>2200</td>
<td>157</td>
</tr>
<tr>
<td>N306A</td>
<td>SPDS-70</td>
<td>2200</td>
<td>157</td>
</tr>
<tr>
<td>N307A</td>
<td>SPDS-113</td>
<td>2200</td>
<td>157</td>
</tr>
<tr>
<td>NO09A</td>
<td>SPDS-54</td>
<td>1611</td>
<td>157</td>
</tr>
<tr>
<td><strong>GROUP C</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>N308A</td>
<td>SPDS-91</td>
<td>2000</td>
<td>148</td>
</tr>
<tr>
<td>N309A</td>
<td>SPDS-13</td>
<td>2000</td>
<td>148</td>
</tr>
<tr>
<td>N310A</td>
<td>SPDS-33</td>
<td>2000</td>
<td>148</td>
</tr>
<tr>
<td>NO09D</td>
<td>SPDS-34</td>
<td>1515</td>
<td>148</td>
</tr>
</tbody>
</table>

### TABLE 18.10b

<table>
<thead>
<tr>
<th>INSTRUMENT COMBINATIONS</th>
<th>AVERAGE TEMP (°F)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Groups A &amp; C + N304A</td>
<td>151 (R)</td>
</tr>
<tr>
<td>Groups A &amp; C + N305A</td>
<td>151 (R)</td>
</tr>
<tr>
<td>Groups A &amp; C + N306A</td>
<td>151 (R)</td>
</tr>
<tr>
<td>Groups A &amp; C + N307A</td>
<td>151 (R)</td>
</tr>
<tr>
<td>Groups A &amp; C + NO09A</td>
<td>151 (R)</td>
</tr>
<tr>
<td>Groups A &amp; B + N308A</td>
<td>151 (R)</td>
</tr>
<tr>
<td>Groups A &amp; B + N309A</td>
<td>151 (R)</td>
</tr>
<tr>
<td>Groups A &amp; B + N310A</td>
<td>151 (R)</td>
</tr>
<tr>
<td>Groups A &amp; B + NO09D</td>
<td>151 (R)</td>
</tr>
<tr>
<td>Groups B &amp; C + N301A</td>
<td>151 (R)</td>
</tr>
<tr>
<td>Groups B &amp; C + N302A</td>
<td>151 (R)</td>
</tr>
<tr>
<td>Groups B &amp; C + N303A</td>
<td>151 (R)</td>
</tr>
<tr>
<td>Groups B &amp; C + N311A</td>
<td>151 (R)</td>
</tr>
<tr>
<td>Groups B &amp; C + NO09B</td>
<td>151 (R)</td>
</tr>
<tr>
<td>Groups B &amp; C + NO09C</td>
<td>151 (R)</td>
</tr>
</tbody>
</table>
18.11 MAIN STACK RADIATION

a. Call the reference input data.

b. Call up the Log in/Log out display for the main stack radiation.

c. Call up the Stack Effluent Diagnostic display.

d. Log out all of the instruments.

e. Check that all the instruments are logged out on both the Log in/Log out display and the diagnostic display. The background of the instrument number is red and the average pressure display is a yellow blank.

f. Input the values specified in Table 18.11.

g. Set ERF Digital signal # 1005 to one.

h. Log in sensor P007.

i. Check that the instrument number background changes to black on the Log in/Log out display and on the diagnostic display.

j. Check that the output agrees with Table 18.11.

k. Log out the instrument.

l. Reset ERF Digital signal #1005 to zero.

m. Repeat steps g through k for instruments K600A and K600B.

TABLE 18.11

<table>
<thead>
<tr>
<th>INSTRUMENT #</th>
<th>INPUT</th>
<th>OUTPUT</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Channel #</td>
<td>Value</td>
</tr>
<tr>
<td>P007</td>
<td>SPDS-92</td>
<td>2000</td>
</tr>
<tr>
<td>K600A</td>
<td>ERF-78</td>
<td>2000</td>
</tr>
<tr>
<td>K600B</td>
<td>ERF-97</td>
<td>2000</td>
</tr>
</tbody>
</table>

APPROVAL: 8-2-84
18.12 REACTOR BUILDING VENTS RADIATION

a. Call the reference input data.
b. Call up the Log in/Log out display for the reactor building vent radiation.
c. Call up the Reactor Building Vents Effluent Diagnostic display.
d. Log out all of the instruments.
e. Check that all the instruments are logged out on both the Log in/Log out display and the diagnostic display. The background of the instrument number is red and the average pressure display is a yellow blank.
f. Input the values specified in Table 18.12.
g. Log in an instrument.
h. Check that the instrument number background changes to black on the Log in/Log out display and on the diagnostic display.
i. Check that the output agrees with Table 18.12.
j. Log out the instrument.
k. Repeat steps g through j until all instruments are checked.

NOTE: The ranges must be set to wide when testing instruments P601 (Unit 1) and P601 (Unit 2). For this, set both ERF Digital signals #1007 and #1000 to one.

TABLE 18.12

<table>
<thead>
<tr>
<th>INSTRUMENT #</th>
<th>INPUT</th>
<th>OUTPUT</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Channel #</td>
<td>Value</td>
</tr>
<tr>
<td>K619A</td>
<td>ERF- 29</td>
<td>2000</td>
</tr>
<tr>
<td>K619B</td>
<td>ERF- 50</td>
<td>2000</td>
</tr>
<tr>
<td>K636A</td>
<td>ERF- 93</td>
<td>2000</td>
</tr>
<tr>
<td>K636B</td>
<td>ERF-114</td>
<td>2000</td>
</tr>
<tr>
<td>P601 (U1)</td>
<td>SPDS- 32</td>
<td>2000</td>
</tr>
<tr>
<td>P601 (U2)</td>
<td>SPDS- 7</td>
<td>2000</td>
</tr>
</tbody>
</table>

APPROVAL: 5% E-2-81
19. REACTOR WATER LEVEL TIME CONSTANT TEST

STEP 1 Enter the actual time constant (0.000667)

STEP 2 TEST FOR A STEP CHANGE IN DRYWELL TEMPERATURE

a. Call up the reference input data.
b. Call up the Primary display.
c. The average reactor water level should be 38.6 inches and the average drywell temperature should be 119°F.
d. Input the values listed in Table 19.1.

<table>
<thead>
<tr>
<th>DESCRIPTION</th>
<th>ANALOG CHANNEL #</th>
<th>INPUT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Drywell Temp.</td>
<td>SPDS 0</td>
<td>3071</td>
</tr>
<tr>
<td></td>
<td>SPDS 17</td>
<td>3071</td>
</tr>
<tr>
<td></td>
<td>SPDS 47</td>
<td>3071</td>
</tr>
<tr>
<td></td>
<td>SPDS 62</td>
<td>3071</td>
</tr>
<tr>
<td></td>
<td>SPDS 56</td>
<td>3071</td>
</tr>
<tr>
<td></td>
<td>SPDS 81</td>
<td>3071</td>
</tr>
<tr>
<td></td>
<td>SPDS 126</td>
<td>3071</td>
</tr>
<tr>
<td></td>
<td>SPDS 9</td>
<td>3071</td>
</tr>
<tr>
<td></td>
<td>SPDS 65</td>
<td>3071</td>
</tr>
<tr>
<td></td>
<td>SPDS 110</td>
<td>3071</td>
</tr>
<tr>
<td></td>
<td>SPDS 118</td>
<td>3071</td>
</tr>
<tr>
<td></td>
<td>SPDS 89</td>
<td>3071</td>
</tr>
<tr>
<td></td>
<td>SPDS 71</td>
<td>3071</td>
</tr>
<tr>
<td></td>
<td>SPDS 104</td>
<td>3071</td>
</tr>
</tbody>
</table>

f. Check the average reactor water level approximately 1, 5, 10 and 15 minutes after inputting this data. Compare these values with those listed in Table 19.2.

<table>
<thead>
<tr>
<th>TIME (MIN)</th>
<th>AVG. REACTOR WATER LEVEL (INCHES)</th>
<th>APPROVAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>37.8</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>35.1</td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>32.1</td>
<td></td>
</tr>
<tr>
<td>15</td>
<td>30.3</td>
<td></td>
</tr>
</tbody>
</table>

TABLE 19.2
REACTOR WATER LEVEL FOR A STEP CHANGE IN DRYWELL TEMPERATURE

597
STEP 3 | TEST FOR A STEP CHANGE IN REACTOR PRESSURE

a. Call up the reference input data.

b. Input the values listed in Table 19.3.

<table>
<thead>
<tr>
<th>DESCRIPTION</th>
<th>ANALOG CHANNEL #</th>
<th>INPUT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reactor Pressure</td>
<td>SPDS 80</td>
<td>211</td>
</tr>
<tr>
<td></td>
<td>SPDS 127</td>
<td>211</td>
</tr>
</tbody>
</table>

Table 19.3
STEP CHANGE OF REACTOR PRESSURE FROM 1004 PSIG TO 77 PSIG

c. Check the average reactor water level approximately 1, 5, 10 and 15 minutes after inputting this data. Compare these values with those listed in Table 4.

<table>
<thead>
<tr>
<th>TIME (MIN)</th>
<th>AVG. REACTOR WATER LEVEL (INCHES)</th>
<th>APPRAVAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>4.2</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>5.9</td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>7.6</td>
<td></td>
</tr>
<tr>
<td>15</td>
<td>9.0</td>
<td></td>
</tr>
</tbody>
</table>

Table 19.4
REACTOR WATER LEVEL FOR A STEP CHANGE IN REACTOR PRESSURE

STEP 4 | Return the time constant to its original value (1.0).
20. KEY OVERRIDE TESTS

STEP 1

a. Call up the reference data.
b. Actuate Q2E11A-K58A by setting ERF GIT address 1160 to 1.
c. Verify that the key symbols for valves Q2E11-MOV F024A and Q2E11-MOV F028A turn orange on the PCIS Group 2A Diagnostic Display.
d. Record approval: 8-2-89

STEP 2

a. Call up the reference data.
b. Actuate Q2E11A-K59A by setting ERF GIT address 1162 to 1.
c. Verify that the key symbols for valves Q2E11-MOV F016A, Q2E11-MOV F021A and Q2E11-MOV F027A turn orange on the PCIS Group 2A Diagnostic Display.
d. Record approval: 8-2-89

STEP 3

a. Call up the reference data.
b. Actuate Q2P33D-SOR1 by setting ERF GIT address 1156 to 1.
c. Verify that the key symbols for valves Q2B21-SV F111, Q2D11-AOV F050, Q2D11-AOV F051 and Q2E41-SV F122 turn orange on the PCIS Group 2E Diagnostic Display.
d. Record approval: 8-2-89
STEP 4

a. Call up the reference data.

b. Actuate Q2E11A-K58B by setting ERF GIT address 1161 to 1.

c. Verify that the key symbols for valves Q2E11-MOV F024B and Q2E11-MOV F028B turn orange on the PCIS Group 2A Diagnostic Display.

d. Record approval: 

STEP 5

a. Call up the reference data.

b. Actuate Q2E11A-K59B by setting ERF GIT address 1163 to 1.

C. Verify that the key symbols for valves Q2E11-MOV F016B, Q2E11-MOV F021B and Q2E11-MOV F027B turn orange on the PCIS Group 2A Diagnostic Display.

d. Record approval: 

STEP 6

a. Call up reference data.

b. Actuate Q2P33D-SOR2 by setting GIT address 1157 to 1.

c. Verify that the key symbols for valves Q2B21-SV F112, Q2D11-AOV F051, Q2D11-AOV F052, Q2D11-AOV F053 and Q2E41-SV F121 turn orange on the PCIS Group 2E Diagnostic Display.

d. Record approval: 

599
STEP 7
a. Call up the reference data.
b. Actuate Q2T48A-S5AA by setting ERF GIT address 0167 to 0.
c. Verify that the key symbol for valve Q2T48-AOV F334A turns orange on the PCIS Group 2C Diagnostic Display.
d. Record approval: 

STEP 8
a. Call up the reference data.
b. Actuate Q2T48A-S5AB by setting ERF GIT address 0166 to 0.
c. Verify that the key symbol for valve Q2T48-AOV F334A turns orange on the PCIS Group 2C Diagnostic Display.
d. Record approval: 

STEP 9
a. Call up the reference data.
b. Actuate Q2T48A-S6AA by setting ERF GIT address 0163 to 0.
c. Verify that the key symbol for valve Q2T48-AOV F335A turns orange on the PCIS Group 2C Diagnostic Display.
d. Record approval: 

600
STEP 10

a. Call up the reference data.

b. Actuate Q2T48A-S6AB by setting ERF GIT address 0162 to 0.

c. Verify that the key symbol for valve Q2T48-A0V F335A turns orange on the PCIS Group 2C Diagnostic Display.

d. Record approval: [Signature]

STEP 11

a. Call up the reference data.

b. Actuate Q2T48A-S7AA by setting ERF GIT address 0165 to 0.

c. Verify that the key symbols for valve Q2T48-A0V F332A turn orange on the PCIS Group 2C Diagnostic Display.

d. Record approval: [Signature]

STEP 12

a. Call up the reference data.

b. Actuate Q2T48A-S7AB by setting ERF GIT address 0164 to 0.

c. Verify that the key symbols for valve Q2T48-A0V F332A turn orange on the PCIS Group 2C Diagnostic Display.

d. Record approval: [Signature]
STEP 13

a. Call up the reference data.

b. Actuate Q2T48A-S8AA by setting ERF GIT address 0161 to 0.

c. Verify that the key symbols for valve Q2T48-AOV F333A turn orange on the PCIS Group 2C Diagnostic Display.

d. Record approval:

STEP 14

a. Call up the reference data.

b. Actuate Q2T48A-S8AB by setting ERF GIT address 0160 to 0.

c. Verify that the key symbols for valve Q2T48-AOV F333A turn orange on the PCIS Group 2C Diagnostic Display.

d. Record approval:

STEP 15

a. Call up the reference data.

b. Actuate Q2T48A-S5BA by setting ERF GIT address 0377 to 0.

c. Verify that the key symbols for valve Q2T48-AOV F334B turn orange on the PCIS Group 2C Diagnostic Display.

d. Record approval:

602
STEP 16

a. Call up the reference data.

b. Actuate Q2T48A-S5BB by setting ERF GIT address 0376 to 0.

c. Verify that the key symbols for valve Q2T48-A0V F334B turn orange on the PCIS Group 2C Diagnostic Display.

d. Record approval: [Signature]

STEP 17

a. Call up the reference data.

b. Actuate Q2T48A-S6BA by setting ERF GIT address 0373 to 0.

c. Verify that the key symbols for valve Q2T48-A0V F335B turn orange on the PCIS Group 2C Diagnostic Display.

d. Record approval: [Signature]

STEP 18

a. Call up the reference data.

b. Actuate Q2T48A-S6BB by setting ERF GIT address 0372 to 0.

c. Verify that the key symbols for valve Q2T48-A0V F335B turn orange on the PCIS Group 2C Diagnostic Display.

d. Record approval: [Signature]
STEP 19

a. Call up the reference data.

b. Actuate Q2T48A-S7BA by setting ERF GIT address 0375 to 0.

c. Verify that the key symbols for valve Q2T48-AOV F332B turn orange on the PCIS Group 2C Diagnostic Display.

d. Record approval: 

STEP 20

a. Call up the reference data.

b. Actuate Q2T48A-S7BB by setting ERF GIT address 0374 to 0.

c. Verify that the key symbols for valve Q2T48-AOV F332B turn orange on the PCIS Group 2C Diagnostic Display.

d. Record approval: 

STEP 21

a. Call up the reference data.

b. Actuate Q2T48A-S8BA by setting ERF GIT address 0371 to 0.

c. Verify that the key symbols for valve Q2T48-AOV F333B turn orange on the PCIS Group 2C Diagnostic Display.

d. Record approval: 

604
STEP 22

a. Call up the reference data.

b. Actuate Q2T48A-S8BB by setting ERF GIT address 0370 to 0.

c. Verify that the key symbols for valve Q2T48-AOV F333B turn orange on the PCIS Group 2C Diagnostic Display.

d. Record approval: [Signature]

STEP 23

a. Call up the reference input data.

b. Actuate Q2P33B-S17 by setting ERF GIT address 1114 to 0 and 1115 to 1.

c. Verify that the status boxes on the PCIS Group 2D diagnostic display and the Drywell/Torus H2/02 Diagnostic display show the word "OVERRIDE."

d. Record approval: [Signature]

STEP 24

a. Call up the reference input data.

b. Actuate Q2P33B-S16 by setting ERF GIT address 1112 to 0 and 1113 to 1.

c. Verify that the status boxes on the PCIS Group 2D diagnostic display and the Drywell/Torus H2/02 Diagnostic display show the word "OVERRIDE."

d. Record approval: [Signature]
## 21. SAFETY RELIEF VALUES (SRV) TESTS

**STEP 1:**

a. Call up the reference input data.

b. Call up the Primary display.

c. With the input given in Table 21.1 compare the response for each SRV with that of the primary display.

### TABLE 21.1

<table>
<thead>
<tr>
<th>VALVE #</th>
<th>PRESSURE SW #</th>
<th>GIT ADDRESS</th>
<th>INPUT</th>
<th>OUTPUT</th>
<th>APPROVAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>2B21-AOV F013A</td>
<td>Q2B21-PS N301A</td>
<td>0502</td>
<td>1</td>
<td>A (R)</td>
<td>G 2-8f</td>
</tr>
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425x332
STEP 2:

a. Set the reactor pressure just below the lowest SRV setpoint by entering the first block of data from Table 21.2.

b. Check that the reactor pressure box reads 1090 in red.

c. Check that the SRV box in the middle of the torus mimic is green.

d. Set the reactor pressure just above the lowest SRV setpoint by entering the second block of data from Table 21.2.

e. Check that the SRV box in the middle of the torus mimic turns orange.

f. Record approval: [Signature]

TABLE 21.2

<table>
<thead>
<tr>
<th>SENSOR</th>
<th>TAG NUMBER</th>
<th>SPDS ANALOG</th>
<th>CHANNEL NUMBER</th>
<th>VALUE</th>
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<td>Q2B21-PIS N609D</td>
<td></td>
<td>127</td>
<td>2975</td>
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| Q2B21-PIS N690A | 80 | 2976 |
| Q2B21-PIS N690D | 127| 2976 |
22. AUTOMATIC DEPRESSURIZATION SYSTEM (ADS) TESTS

STEP 1
A. Call up reference data.
B. Call up the Primary display.
C. Arm the ADS by actuating Q2B21C-K752A (set GIT address 1070 to 1)
D. Check that the ADS box turns orange.

Approval: 

STEP 2
A. Initiate the system by actuating Q2B21C-K6A and Q2B21C-K7A. (Set GIT addresses 1072 and 1074 to 1.)
B. Check that the ADS box turns red only when both relays are actuated.

Approval: 

STEP 3
A. Open all the ADS valves listed in Table 22.1 (see end of section) by setting the appropriate GIT addresses to 1.
B. Check that the ADS box reverts to green only after the last ADS valve is open.

Approval: 

STEP 4
A. Close all the valves listed in Table 22.1 and check that upon closing the first ADS valve the ADS box turns red.

Approval: 

STEP 5
A. Deactuate Q2B21C-K6A and Q2B21C-K7A and check that the ADS box turns orange.

Approval: 

608
STEP 6

A. Initiate the system by actuating Q2B21C-K6B and Q2B21C-K7B. (Set GIT addresses 1073 and 1075 to 1.)

B. Check that the ADS box turns red only when both relays are actuated.

Approval: \[\text{signature}\]

STEP 7

A. Open all the ADS valves listed in Table 22.1 by setting the appropriate GIT addresses to 1.

B. Check that the ADS box reverts to green only after the last ADS valve is open.

Approval: \[\text{signature}\]

STEP 8

A. Close all the valves listed in Table 22.1 and check that upon closing the first ADS valve the ADS box turns red.

Approval: \[\text{signature}\]

STEP 9

A. Deactuate Q2B21C-K6B and Q2B21C-K7B and check that the ADS box turns orange.

Approval: \[\text{signature}\]

STEP 10

A. Verify that initiating Q2B21C-K6A and Q2B21C-K7B (GIT addresses 1072 and 1075 to 1) does not result in any change in the Primary display.

Approval: \[\text{signature}\]

STEP 11


Approval: \[\text{signature}\]
STEP 12
A. Verify that initiating Q2B2K-K6B and Q2B21C-K7A (GIT addresses 1073 and 1074 to 1) does not result in any change in the Primary display.

STEP 13
Deactuate Q2B21C-K6B and Q2B21C-K7A.

STEP 14
A. Call up reference data.
B. Arm the ADS by energizing Q2B21C-K752B (set GIT Address 1071 to 1)
C. Check that the ADS box turns orange.

Approval:

STEP 15
A. Initiate the system by actuating Q2B21C-K6A and Q2B21C-K7A. (Set GIT Address 1072 and 1074 to 1.)
B. Check that the ADS box turns red only when both relays are actuated.

Approval:

STEP 16
A. Open all the ADS valves listed in Table 22.1 by setting the appropriate GIT addresses to 1.
B. Check that the ADS box reverts to green only after the last ADS valve is open.

Approval:

STEP 17
A. Close all the valves listed in Table 22.1 and check that upon closing the first ADS valve the ADS box turns red.

Approval:
STEP 18
Deactuate Q2B21C-K6A and Q2B21C-K7A and check that the ADS box turns orange.

Approval:  

STEP 19
A. Initiate the system by actuating Q2B21C-K6B and Q2B21C-K7B. (Set GIT Address 1073 and 1075 to 1.)
B. Check that the ADS box turns red only when both relays are actuated.

Approval:  

STEP 20
A. Open all the ADS valves listed in Table 22.1 by setting the appropriate GIT addresses to 1.
B. Check that the ADS box reverts to green only after the last ADS valve is open.

Approval:  

STEP 21
A. Close all the valves listed in Table 22.1 and check that upon closing the first ADS valve the ADS box turns red.

Approval:  

STEP 22
Deactuate Q2B21C-K6B and Q2B21C-K7B and check that the ADS box turns orange.

Approval:  

611
STEP 23
A. Call up reference data.
B. Call up the Primary display.
C. Arm the ADS by energizing Q2B21C-K752A, K752B (set GIT Address 1070 and 1071 to 1)
D. Check that the ADS box turns orange.

Approval:

STEP 24
A. Initiate the system by actuating Q2B21C-K6A and Q2B21C-K7A. (Set GIT Address 1072 and 1074 to 1.)
B. Check that the ADS box turns red only when both relays are actuated.

Approval:

STEP 25
A. Open all the ADS valves listed in Table 22.1 by setting the appropriate GIT addresses to 1.
B. Check that the ADS box reverts to green only after the last ADS valve is open.

Approval:

STEP 26
A. Close all the valves listed in Table 22.1 and check that upon closing the first ADS valve the ADS box turns red.

Approval:

STEP 27
Deactuate Q2B21C-K6A and Q2B21C-K7A and check that the ADS box turns orange.

Approval:
STEP 28

A. Initiate the system by actuating Q2B21C-K6B and Q2B21C-K7B. (Set GIT Address 1073 and 1075 to 1.)

B. Check that the ADS box turns red only when both relays are actuated.

Approval: [Signature]

STEP 29

A. Open all the ADS valves listed in Table 22.1 by setting the appropriate GIT addresses to 1.

B. Check that the ADS box reverts to green only after the last ADS valve is open.

Approval: [Signature]

STEP 30

A. Close all the valves listed in Table 22.1 and check that upon closing the first ADS valve the ADS box turns red.

Approval: [Signature]

STEP 31

Deactuate Q2B21C-K6B and Q2B21C-K7B and check that the ADS box turns orange.

Approval: [Signature]
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<tr>
<th>SIGNAL TAG #</th>
<th>PRESSURE SW. #</th>
<th>ADDRESS</th>
<th>GIT</th>
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<td>Q2B21-PS N301A</td>
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<td>0502</td>
</tr>
<tr>
<td>Q2B21-AOV F013C</td>
<td>Q2B21-PS N301C</td>
<td></td>
<td>0504</td>
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<td>Q2B21-AOV F013M</td>
<td>Q2B21-PS N301M</td>
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<td>0514</td>
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</table>
23. **LOW LOW SET LOGIC (LLSL) TESTS**

A. Call up the reference input data.

B. Call up the Primary Display.

C. Enter the input from Table 23.1.1.

D. Verify that the LLSL box does not change until all three relays in a given group are set to 1.

E. Check that the LLSL box contains the appropriate output and record approval if correct.

F. Repeat steps A through D for Tables 23.1.2 through 23.1.14.
## TABLE 23.1.1

<table>
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<tr>
<th>CHANNEL</th>
<th>VALVE SET</th>
<th>RELAY #’S</th>
<th>GIT ADDRESS</th>
<th>INPUT</th>
<th>LLSL BOX OUTPUT</th>
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**APPROVAL:**

[Signature]

616
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<th>RELAY #’S</th>
<th>GIT ADDRESS</th>
<th>INPUT</th>
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APPROVAL: [Signature]

619
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APPROVAL: [Signature]
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<th>RELAY #’S</th>
<th>GIT ADDRESS</th>
<th>INPUT</th>
<th>LLC BOX OUTPUT</th>
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<td></td>
</tr>
</tbody>
</table>
24. SCRAM DEMAND/ALL RODS IN STATUS

24.1. INPUTS:

The input data for this series of tests are given in Table 24.1. The procedure steps are in the next section.

<table>
<thead>
<tr>
<th>SIGNAL DESCRIPTION</th>
<th>ENTRY TYPE</th>
<th>GIT NUMBER</th>
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<tbody>
<tr>
<td>Q2C11A-K4A</td>
<td>ERF Digital</td>
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<td>ERF Digital</td>
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<td>ERF Digital</td>
<td>1034</td>
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<td>Q2C71A-K14H</td>
<td>ERF Digital</td>
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</tr>
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</table>
24.2 SCRAM DEMAND TEST PROCEDURE

a. Load a blank tape and ready the ERF tape drive.

b. Call the reference input data.

c. Call up the Primary display.

d. For each test in Table 24.1, set the inputs to the specified values.

e. Check the Primary display against the output in Table 24.1 for appropriate response.

f. Record approval if test is successful.

g. Repeat steps b, c, d and e until all tests are completed or until a test fails.

h. Stop data history.
<table>
<thead>
<tr>
<th>TEST NO.</th>
<th>1021</th>
<th>1034</th>
<th>1022</th>
<th>1035</th>
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<td>&quot;SCRAM&quot; in orange, Turns red after 10 sec. Data History starts</td>
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<td>&quot;SCRAM&quot; in orange, &quot;ALL RODS IN&quot; in green</td>
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<tr>
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<tr>
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<td>&quot;SCRAM&quot; in red after 10 sec.</td>
</tr>
</tbody>
</table>

**TABLE 24.2**
25. TEST OF REACTOR MODE SWITCH INFLUENCE ON REACTOR WATER LEVEL AND POWER CALCULATIONS

STEP 1:

a. Call up the reference input data.

b. Call up the Primary display.

c. Enter the value 4000 for SPDS Analog signals #4, 43, 64 and 111.

d. Check that the reactor water level indicators are red and that the power indicators are green.

e. Record approval: 22-ri
STEP 2

a. Change the reactor mode switch to "Shutdown" by setting ERF digital signals #1001 to 1 and #1004 to 0.

b. Check that the reactor water level indicators become green and that the power indicators turn red.

c. Record approval: 634
STEP 3

a. Change the reactor mode switch back to "Run" by resetting ERF digital signals #1001 to 0 and #1004 to 1.

b. Check that the reactor water level indicators become red and that the power indicators turn green.

c. Record approval: [Signature]
STEP 4

a. Change the reactor mode switch to "Refuel" by setting ERF digital signals #1002 to 1 and #1004 to 0.

b. Check that the reactor water level indicators become green and that the power indicators turn red.

c. Record approval: [Signature]
STEP 5

a. Change the reactor mode switch back to "Run" by resetting ERF digital signals #1002 to 0 and #1004 to 1

b. Check that the reactor water level indicators become red and that the power indicators turn green.

c. Record approval: \[ \Huge \mathbb{Y} \]
STEP 6

a. Change the reactor mode switch to "Start/Hot Standby" by setting ERF digital signals #1003 to 1 and #1004 to 0.

b. Check that the power indicators turn red.

c. Record approval: 42-24
This series of tests will demonstrate the effects on the displays of various component failures. The tests will simulate failures of the SPDS A/D converter, ERF A/D Converter, Cutler-Hammer, SPDS computer, ERF computer, and the fiber optic link between SPDS and ERF by forcing an SPDS Analog error, an ERF Analog error, an ERF Digital error, or a combination of these.
STEP 1

a. Call the reference input data.
b. Call up the Primary display.
c. Enter command 7 to force an SPDS analog error.
d. Check that the following parameter boxes turn yellow blank:
   - Reactor Water level
   - Reactor pressure
   - Drywell pressure
   - Drywell temperature
   - H₂/O₂ Concentrations
   - Torus Water level
   - Torus pressure
   - Torus Water temperature
   - SRV box

e. Record approval: [Signature]
STEP 2

a. Set the radiation ranges to wide by setting the following ERF digital signals to 1:
   
   - QD11-KZ12C 1005
   - QD11-KZ12D 1006
   - QD11-KNO20A 1007
   - QD11-KNO20B 1010
   - Q2D11-KZ12A 1000

b. Check that the Main Stack radiation and the Unit 1 and Unit 2 vent radiation boxes turn yellow blank.

c. Record approval: [Signature]
STEP 3

a. Reset imposed error conditions by entering command 9.

b. Call up the reference input data.

c. Check that the Primary display returns to normal, (i.e., all boxes are green).

d. Record approval: \[ \text{Signature} \]
STEP 4:

a. Call up the Primary display.

b. Force ERF analog error by entering command 6.

c. Check that the following parameter boxes turn yellow blank:

- Power
- SRM
- Main Stack radiation
- Unit 1 reactor building vent radiation
- Unit 2 reactor building vent radiation

d. Record approval:  


STEP 5:

a. Reset imposed error condition by entering command 9.

b. Call up the reference input data.

c. Check that the Primary display returns to normal, (i.e., all boxes are green).

d. Record approval:  

   [Signature]

   8.4
STEP 6:

a. Set ERF digital signals #1002 to 1 and #1004 to 0.

b. Check that the power indicators turn red.

c. Record approval: \[\text{Signature} \quad 2-2-\text{C} \]
STEP 7:


b. Check that the following parameter boxes turn yellow blank:
   - SRM
   - \( \text{H}_2/\text{O}_2 \) Concentrations

c. Check that the power indicators turn green.

d. Check that the SRV's, SRV box, ADS box, LLSL box and the PCIS and Secondary Isolation blocks turn yellow.

e. Record approval: [Signature]
STEP 8:

a. Check that the valve symbols, fan symbols and tag numbers are yellow on the following diagnostic displays:

- Drywell/Torus $\text{H}_2/\text{O}_2$ Concentration diagnostic
- PCIS Diagnostic Group 1, 3, 4, 5
- PCIS Diagnostic Group 2A
- PCIS Diagnostic Group 2B
- PCIS Diagnostic Group 2C
- PCIS Diagnostic Group 2D
- PCIS Diagnostic Group 2E
- Secondary isolation diagnostic

b. Record approval: $\text{Checkmark}$
STEP 9:

a. Check that the valve, pump, and relay STATUS columns are yellow on the following miscellaneous displays:

- Valve Status (B31-C41)
- Valve Status (E11)
- Valve Status (E21-E41)
- Valve Status (E51-T48)
- Pump Status
- Relay Status (CR, ADS, ...)
- Relay Status (PCIS)
- Relay Status (SEC ISO, SRM)
APPENDIX A

VARIANCE REPORT

VARIANCE

Name ___________________________________________ Date __________________________

Type of Failure: System  Test Document  Documentation

Test Being Performed:

______________________________________________________________________________

______________________________________________________________________________

______________________________________________________________________________

______________________________________________________________________________

Describe Failure:

______________________________________________________________________________

______________________________________________________________________________

______________________________________________________________________________

______________________________________________________________________________

Vendor's Response:

______________________________________________________________________________

______________________________________________________________________________

______________________________________________________________________________

______________________________________________________________________________

Name _________________________________ Date __________________________

** Resolution of Variance: **

______________________________________________________________________________

______________________________________________________________________________

______________________________________________________________________________

Vendor: Name _________________________________ Date __________________________

V&V Engineer: Name _____________________________ Date __________________________
MEMORANDUM

TO: SAM HART, GEORGIA POWER COMPANY
FROM: Lotfi Belblidia

SUBJECT: CHANGE TO UNIT 2 SPDS/ERF FUNCTIONAL SPECIFICATIONS, REVISION 4, DOCUMENT #112-A3026-5100-U2

Following is a list of all the changes that were implemented in the software and are deviations from the existing functional specifications of the Unit 2 SPDS/ERF:

Page 7: Add the value of the heat transfer time constant (25 minutes).

Page 8: (1) The system status indicator for H₂ and O₂ concentrations is no longer shown on the primary display. Lack of space on this display contributed to the removal of this indicator. This information is available on the H₂/O₂ diagnostic display.

(2) Add SRM In/Out status indicator to paragraph (j).

(3) Paragraph (k) on Average Power should read: "0% to 125% of rated power, display precision 0.1%, when based on APRMs. E-format with two significant figures, when based SRMs. Note, that at this point no conversion from SRM count rate to % power exists."

Page 10: Change the second half of the first paragraph to read:

"The time spanned by the timer will correspond to the longest valve actuation time among all demanded subgroups to determine if the demand is met, or to the longest valve actuation time of the failed subgroup to determine if the demand is not met. No attempt will be made to monitor the actuation time of each valve individually. When the demand is met by the end of the specified time, the box containing either the word PART or the word ALL will revert to a green background. If the demand is not met by the end of the specified time, the color of the background will change to red. A subgroup of valves is defined in Section 3.14 and consists of the valves that are demanded by a certain relay or combination of relays."
Page 11: Change the section entitled "Real Time Update Frequency" to read:

"The primary display will be updated at least once every second. This time may increase depending on the system load. However, data will be sampled, converted and stored once per second."

Pages 14, 15: Change CRT-1, CRT-2 and CRT-3 to CRT-0, CRT-1 and CRT-2, respectively.

Page 15: Add the following sentence to the first paragraph on the page:

"Note however, that the numeric keys, the comma key and the period key will also cause displays to be paged.

Page 16:

(1) Add LOG IN/LOG OUT to the list of pageable displays and refer to section 6 for more detail.

(2) Add MAINTENANCE to the list of pageable displays.

(3) Give the number of displays for the LOG IN/LOG OUT display level (12 displays) and the MAINTENANCE display level (6 displays).

Page 22: Remove the keypad mimic from the Drywell Trends display.

Page 27: Change the scale for the saturation temperature on the RPV PRESS & SAT TEMP trend display. The correct scale is given in Attachment A.

Page 31:

(1) The second paragraph should read:

"Also shown for each trended parameter is the rate of change of that parameter per minute, except that the reactor period in seconds is presented instead of the rate of change of the SRMs and the logarithms of the main stack and reactor building vent radiations are used instead of the parameters themselves.

(2) Change the display precision of the SRM period from 0.1 sec to 1 sec.

(3) Change the display precision of the Main Stack Radiation and RB Vent Radiation to decade/min (E format with 1 significant figure).

(4) Change the color of the time trend plots from white to cyan."
Page 32: (1) The last two sentences of Section 2 should be replaced by the following:

"Note that if a parameter is out of range, it will be pegged to the lower limit of the display range."

(2) Add another paragraph to Section 2 which should read:

"The update frequency for the Trend displays will be once per second for the 6-minute trends and once every 10 seconds for the 60-minute trends. The faster update rate of the 6-minute trend display may increase depending on the system load. However, the data will be sampled, converted and stored every second.

(3) Delete the last two complete sentences on this page. Replace them with:

"The diagnostic displays will be updated every 10 seconds."

Page 36: The main steam line flows are no longer shown on the Primary Coolant Systems diagnostic display.

Page 45: The label of one of the torus water temperature sensor is changed from N304A to N304B.

Page 52: (1) Add the Unit 1 and Unit 2 Secondary isolation status blocks.

(2) Delete the Unit 1 differential pressure indicators since they are not available in Unit 2.

(3) Delete the Unit 1 SBGT flow indicator since it is not available in Unit 2.

Page 54: Change label from "Narrow Range (cpm)" to "Normal Range (cpm)."

Page 56: Change the top paragraph to read:

"Time trends will be included on the diagnostic display to present 60-minute histories of the signals that form a particular parameter. Only one sensor trend will be displayed at a time. Means of selecting which sensor trend to display will be provided. Once a sensor is selected, its trend plot will be updated every 10 seconds until a different sensor is selected."
Page 57: Replace the last sentence of the section of Diagnostic displays by the following:

"The same color coding as in the Log In/Log Out displays will be used to distinguish between logged in sensors and logged out sensors."

Page 59: Correct typo: should read "REAC BLDG" instead of "REAR BLDG".

Page 60: (1) Replace "Reactor Bldg Filter A Discharge" by "Reactor Bldg Filter Discharge".

(2) Delete "Reactor Bldg Filter B Discharge" by "SGTS Filter Train A to Main Stack".

(3) Replace "SGTS Filter Train to Main Stack" by "SGTS Filter Train B to Main Stack".

Page 62: Change the status of valves 2C41-SQB F004A and F004B from Closed/Open to Ready/Not Ready.

Page 63: Change the status of valves 2E11-AOV F050A and F050B from Closed/Open to <150° / >150°.

Page 65: (1) Change the MPL # of valve 2P70-AOV F004 to 2P70-SV F004, and its name to "Drywell Pneumatic System Containment Inlet Inboard Isolation Valve".

(2) Change the MPL # of valve 2P70-AOV F005 to 2P70-SV F005, and its name to "Drywell Pneumatic System Containment Inlet Outboard Isolation Valve".

(3) Add valve 2P70-SV F066 ("Drywell Pneumatic System Containment Inlet Inboard Isolation Valve").

(4) Add valve 2P70-SV F067 ("Drywell Pneumatic System Containment Inlet Outboard Isolation Valve").

Page 66: Correct typo: the status column on the pump status display should be labelled "STATUS" and not "POWER".

Page 67: Change the status of the Reactor Mode Switch signal so that the name of the state (e.g., "Run") is shown instead of ENER/DE-ENER.
Page 72: Add value of heat transfer time constant (25 minutes).

Page 73:

1. Change the valves status display format to read:

   - RED: Open or <150°
   - GREEN: Closed or >150°
   - ORANGE: Ready (valid only for valves 2C41-SQB F004A, B)
   - BLANK: Not Ready (valid only for valves 2C41-SQB F004A,B)

2. Change the miscellaneous relays status to read:

   "The relay status will obey the following logic: the conditions listed in parentheses after the relay name correspond to a positive signal. For any relay, when the condition in parentheses prevails, the status column will display it on an orange background. When the inverse condition exists, the status column will show that condition on a black background. The exception is the reactor mode switch for which the status column will show the prevailing mode in red."

Page 75: Change the length of the trace from 30 minutes to 6 minutes.

Page 76: Change the last paragraph of the Emergency Displays section to read:

"Note that the same rule for pegging unavailable parameters applies here, i.e., to the lower end of the display scale."

Page 96:

1. Change unit of main stack and R/B vent radiation rates from % change/min to decade/Min.
2. Change footnote (*) to read: "Fit is to logarithm base 10 of the parameter".
3. Add Vessel/Flange temperature using 30 points for the rate calculations and the unit °F/min.

Page 129: The test on reactor mode switch should be deleted from the APRM logic tree. The correct logic tree is given in Attachment B.

Page 217: The averaging formula for the torus water temperature should be changed so that the case where one group is empty is handled correctly. The correct equation for the average torus temperature is given in Attachment C.
Modify the main stack radiation logic tree such that a test on the log in/log out status of the sensor is performed. For this, replace the sum $g_i + h_i$ everywhere by $b_i + g_i + h_i$, with $i = 1, 2$ or 3.

Modify the R/B vent radiation logic tree such that a test on the log in/log out status of the sensors is performed. For this, replace the sum $g_i + h_i$ everywhere by $b_i + g_i + h_i$, with $i = 1, 2$ or 3.

(1) Change second sentence to: "There are four conditions that can lead to a Group Two isolation:......" 

(2) Add just below that the following:

"Furthermore, a high radiation trip leading to a secondary containment isolation also causes the valves in subgroups 2C (N2), 2D (H$_2$/O$_2$), and 2E (Misc) to close."

(3) Add high radiation trip channel C including the following relays:

<table>
<thead>
<tr>
<th>Trip Channel</th>
<th>Relay</th>
<th>GIT Address</th>
</tr>
</thead>
<tbody>
<tr>
<td>C</td>
<td>&quot;or&quot; Q2C51A-Z2A</td>
<td>1015</td>
</tr>
<tr>
<td></td>
<td>&quot;or&quot; Q2C51A-Z2B</td>
<td>1016</td>
</tr>
<tr>
<td></td>
<td>&quot;or&quot; Q2C51A-Z2C</td>
<td>1017</td>
</tr>
<tr>
<td></td>
<td>&quot;or&quot; Q2C51A-Z2D</td>
<td>1020</td>
</tr>
</tbody>
</table>

Change the two paragraphs on this page to read:

"If all the subgroup 2 isolation displays show an "ALL" isolation, the primary display should also show a group 2 "ALL" Isolation. Any other isolation of the subgroups will result in a "PART" isolation on the primary display. When Group 2 isolation demand is initiated, the word "ALL" or "PART" will appear on an orange background in the block next to the group number. The subgroup numbers (2A, 2B, 2C, 2D or 2E) in the menu mimic will change also to orange. A timer that reflects valve stroke time will be started. A decision will be made as to whether a group or subgroup isolation demand is met or not only after the timer has run out"."
Delete valves Q2E41-SV F121, F122.

Change the trip conditions to read:

"If the (A1 and B1) or C channels are activated, the following valves will close...."

and

"If the (A2 and B2) or C trip channels are actuated, the following valves will close...."

Change "HPCI Steam Line Flow High" to "HPCI Steam Line Differential Pressure High."

(1) Add the following condition to the list of signals that can cause a secondary isolation:

"HNP-2 Drywell Pressure High"

(2) Correct relay tag #QA71B-K57 to QA71B-K5A.

(3) Correct GIT address of relay QA71B-K5C. It should be 1171 instead of 1175.

(4) Add the following relays:

<table>
<thead>
<tr>
<th>Relay</th>
<th>Tag</th>
</tr>
</thead>
<tbody>
<tr>
<td>Q2A71B-K5A</td>
<td>1027</td>
</tr>
<tr>
<td>Q2A71B-K5B</td>
<td>1042</td>
</tr>
<tr>
<td>Q2A71B-K5C</td>
<td>1030</td>
</tr>
<tr>
<td>Q2A71B-K5D</td>
<td>1043</td>
</tr>
</tbody>
</table>

Change the last two sentences of the second paragraph from the bottom to read:

"Similarly, the background of the HNP-2 box will turn orange if an HNP-2 Reactor Water Level Low Low or an HNP-2 Drywell Pressure High signals have initiated the secondary isolation."

The third paragraph should read:

"....This function can be enabled from any of the two SPDS keyboards. If a magnetic tape is not mounted, the status light is never lit. The operator should then wait for a "clean" tape to be loaded and then press the START HIST function key again...."
Page 296:  
(1) Replace ERASE HIST by CANCEL HIST everywhere on that page.

(2) Delete last paragraph.

Pages 312 & 313: Delete these two pages.

Page 314:  
(1) Replace FREEZ/UNFRZ by FREEZE CRT2 everywhere on that page.

(2) Change "...if left unattended for 5 minutes." to "...if left unattended for 20 seconds."
SPDS/ERF Software Configuration Listing.

Date 01-AUG-84 Time 16:23:01

<table>
<thead>
<tr>
<th>Directory: REV4: DH</th>
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<tbody>
<tr>
<td>DH_MAIN_U1.PR</td>
<td>PRG</td>
<td>29-JUL-84</td>
<td>9:24:42</td>
</tr>
<tr>
<td>DH_MAIN_U2.PR</td>
<td>PRG</td>
<td>29-JUL-84</td>
<td>9:25:30</td>
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<td>29-JUL-84</td>
<td>17:20:06</td>
</tr>
<tr>
<td>DP_MAIN_U1.OL</td>
<td>UDF</td>
<td>29-JUL-84</td>
<td>17:20:06</td>
</tr>
<tr>
<td>DP_MAIN_U2.PR</td>
<td>PRG</td>
<td>29-JUL-84</td>
<td>16:53:20</td>
</tr>
<tr>
<td>DP_MAIN_U2.OL</td>
<td>UDF</td>
<td>29-JUL-84</td>
<td>16:53:20</td>
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<table>
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<tr>
<th>Directory: REV4: DAC: SIM</th>
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</thead>
<tbody>
<tr>
<td>DAC_MAIN.PR</td>
<td>PRG</td>
<td>9-JAN-84</td>
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<tbody>
<tr>
<td>DAC_MAIN_ERF.PR</td>
<td>PRG</td>
<td>20-JUN-84</td>
<td>7:48:04</td>
</tr>
<tr>
<td>DAC_MAIN_ERF_TEST.PR</td>
<td>PRG</td>
<td>11-JUL-84</td>
<td>15:53:50</td>
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</table>

<table>
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<tr>
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<tbody>
<tr>
<td>DAC_TEST_MAIN.PR</td>
<td>PRG</td>
<td>11-JUL-84</td>
<td>14:13:24</td>
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</table>

<table>
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<tr>
<th>Directory: REV4: DAC: PB</th>
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<td>PB_MAIN.PR</td>
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<td>15:51:08</td>
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<table>
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</thead>
<tbody>
<tr>
<td>EL_MAIN.PR</td>
<td>PRG</td>
<td>16-JAN-84</td>
<td>15:09:38</td>
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</tbody>
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<table>
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<tr>
<th>Directory: REV4: CN</th>
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<th></th>
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</thead>
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<td>PRG</td>
<td>29-JUL-84</td>
<td>17:04:22</td>
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<tr>
<td>CN_MAIN_U1.OL</td>
<td>UDF</td>
<td>29-JUL-84</td>
<td>17:04:22</td>
</tr>
<tr>
<td>CN_MAIN_U2.PR</td>
<td>PRG</td>
<td>29-JUL-84</td>
<td>17:05:36</td>
</tr>
<tr>
<td>CN_MAIN_U2.OL</td>
<td>UDF</td>
<td>29-JUL-84</td>
<td>17:05:38</td>
</tr>
</tbody>
</table>

Type "PRINT_CONFIG" to get a current version of this listing.
To get a recent version of this list type:
DIR : REV4
REV4_CONFIG
VARIANCE 114-A3026-5100-U2-1

Name G. C. Stokes    Date 8/1/84

Type of Failure: [ ] System    [ ] Test Document

Test Being Performed:

APRM Test (Item #3 on Primary & Diagnostic Output)

Describe Failure:

Item #3 in Test Procedures calls for an output of Blank (Y) and
the system displayed 100% (G). This indicates a problem with how
the software tests each sensor for more than 12% deviation from
average.

Vendor’s Response:

Request for correction accepted.

Name Bradley C. Stetson    Date 3-Aug-84

Resolution of Variance:

Revised module cm-APRM of the conversion
process. The correction required the addition of
an absolute value. Only the APRM test(s)
need to be repeated as a result of this test change.

Vendor: Name Bradley C. Stetson    Date 3-Aug-84

V&V Engineer: Name Wally    Date 3-8-84

Retested: Name David Valentine    Date 8-3-84
SPDS/ERF
FUNCTIONAL TEST VARIANCE REPORT

VARIANCE 114A3026-50012-2

Name G. C. Stokes
Date 8/1/84

Type of Failure: System Test Document

Test Being Performed:
Keyboard Response Test

Describe Failure:
We could not freeze any display which has extra keyboard command features (e.g. escape to menu and hit space bar to move to next item). We should be able to halt updating any display which is coupled to the hard copy unit.

Vendor's Response:
REQUEST FOR CHANGE ACCEPTED. DISPLAY COUPLED TO HARD COPY WILL NOT UPDATE IF 'FREEZE' IN EFFECT. ANY KEY COMMAND THAT ADDRESSES THE DISPLAY WILL OVERRIDE AND TURN OFF THE 'FREEZE'.

Name Casey C. Lang
Date 8/3/84

Resolution of Variance:
REVISI'D DP- module so that any display on hard copy monitor will be frozen. DP-OFCOM also modified so that it turns off the freeze condition if someone attempts to use the keyboard features of the display (like login/our command).

Vendor: Name Casey C. Lang
Date 8/3/84

V&V Engineer: Name
Date 8/3/84

Re-tested: Name
Date 8-8-84
SPDS/ERF
FUNCTIONAL TEST VARIANCE REPORT

VARIANCE 114-A3026-5100-U2-3

Name G. C. Stokes Date 8/2/84

Type of Failure: System Test Document

Test Being Performed:
Log In/Log Out Function Tests

Describe Failure:
The Reactor Building Vent Radiation Log In/Log Out Normal
Range Bldg. Vent Radiation sensor values are displayed in
μCi, this should be converted to CPM then displayed.

Vendor's Response:
REQUEST FOR CORRECTION ACCEPTED.

Name Casey C. Lang Date 8/3/84

Resolution of Variance:
Revised DP-LG-RAD-TEXT and DP-LG-17
to correctly display the radiation values.
Only the "Reactor Building Vent Radiation"
Log In/Log Out display is affected by this change.

Vendor: Name Beth C. Smith Date 3-2-84

V&V Engineer: Name A. Wesley Date 8-3-84

Retested: Name Ronald W. McRury Date 8-3-84
FUNCTIONAL TEST VARIANCE REPORT

VARIANCE 114-A3026-5100-12-4

Name G. C. Stokes

Date 8/2/84

Type of Failure: System

Test Document

Test Being Performed:

Log in/Log Out Function Tests

Describe Failure:

The Main Stack Radiation Log In/Log Out Display sensor values are in the wrong column. Also, narrow range stack radiation A&B should be displayed in cps not $\mu$Ci/cc.

Vendor's Response:

REQUEST FOR CORRECTION ACCEPTED.

Resolution of Variance:

Revised DP-LG-RAD-TEST and DP-LG-16 to correctly display the radiation sensor values. Only the "Main Stack Radiation" Log In/Log Out display is affected by this change.

Vendor: Name Bruce G. Atletta

Date 8-Aug-84

V & V Engineer: Name J. V. Blevins

Date 8/3/84

Ratetested: Name Bruce G. Atletta

Date 8-3-84
SPDS/ERF
FUNCTIONAL TEST VARIANCE REPORT

VARIANCE 14-A3026-5100-U2-5

Name  G. C. Stokes  Date  8/2/84

Type of Failure:  System  Test Document

Test Being Performed:
This Variance covers the entire procedure.

Describe Failure:
Changes any typographical error which doesn't change the intent of the Test Procedure. (see the attached sheet)

Vendor's Response:
Request for changes accepted.

Name  L. B. Berthold  Date  8/3/84

* * * * * * * * * * * * * * * * * * * * * * * * * * * * * * *
Resolution of Variance:
Corrected typos and added variance number next to the typographical error

Vendor:  Name  N/A  Date

V&V Engineer: Name  J. Weichler  Date  8/3/84

Retested: Name  (Handwritten)  Date  8/3/84
Attachment to Variance Report #5

<table>
<thead>
<tr>
<th>ITEM #</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Page 100</td>
</tr>
<tr>
<td>2.</td>
<td>Page 189</td>
</tr>
<tr>
<td>3.</td>
<td>Page 295</td>
</tr>
<tr>
<td>4.</td>
<td>Page 316</td>
</tr>
<tr>
<td>5.</td>
<td>Page 325</td>
</tr>
<tr>
<td>6.</td>
<td>Page 326</td>
</tr>
<tr>
<td>7.</td>
<td>Page 363</td>
</tr>
<tr>
<td>8.</td>
<td>Page 374</td>
</tr>
<tr>
<td>9.</td>
<td>Page 399</td>
</tr>
<tr>
<td>10.</td>
<td>Page 522</td>
</tr>
<tr>
<td>11.</td>
<td>Page 593</td>
</tr>
<tr>
<td>12.</td>
<td>Page 491</td>
</tr>
<tr>
<td>13.</td>
<td>Page 507</td>
</tr>
<tr>
<td>14.</td>
<td>Page 230</td>
</tr>
<tr>
<td>15.</td>
<td>Page 233</td>
</tr>
<tr>
<td>16.</td>
<td>Page 598</td>
</tr>
</tbody>
</table>
SPDS/ERF
FUNCTIONAL TEST VARIANCE REPORT

VARIANCE 114-A0326-5100-U2-6

Name  Brian Edmark  Date  8/3/84

Type of Failure:  System  Test Document

Test Being Performed:
Rate Calculation Tests #17.12, 17.13, 17.14, and 17.15

Describe Failure:
The rate boxes on the Effluent Trend display showed 0. The Vessel/Flange temperature rate was unstable.

Vendor's Response:

1) The 0 is due to displaying to no decimal places of precision as per the spec. This is easily changed.
2) Vessel/Flange is a quiescent not a linear conversion so the rate is not constant. No software changes.

Name  Buckley Christiansen  Date  3-Aug-84

Resolution of Variance:
Modification required for DP-TR-06-FLX. Must retest the EFFLUENT TREND display.
Provide new test and retest both ratios.

Vendor: Name  Buckley Christiansen  Date  7-Aug-84

V&V Engineer: Name  Johnny Wang  Date  10-Aug-84

Retested: Brian J. Edmark  Date  3-10-84
STEP 1  
Restore the reference data at the SPDS.

STEP 2  
Call up the 6-minute Effluent Trends display.

STEP 2  
A  Command "Function Select" (14)  
B  Select Ramp for the function.  
C  Enter 20 for the ramp slope.

STEP 3  
Command "Signal Change Enable" (10)

STEP 4  
Enter the data from Table 17.12 to indicate the signals to be ramped.

STEP 5  
A  Command "Global Change Start" (12)  
B  Wait approximately 30 seconds for rate to stabilize.  
C  Check the appropriate rate for the value 2.E 00 on the 6-minute Effluent Trends display.

STEP 6  
Command "Global Change Stop" (13) to stop ramp.

STEP 7  
Command "Signal Change Disable" (11)

STEP 8  
Enter the data from Table 17.12 to indicate the signals to be disabled.

STEP 9  
Record approval:  

TABLE 17.12

<table>
<thead>
<tr>
<th>Sensor Tag Number</th>
<th>Scale</th>
<th>Channel Number</th>
<th>Default Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>QD11-P007</td>
<td>10^-5/5x10^-3</td>
<td>92</td>
<td>0</td>
</tr>
<tr>
<td>MAIN STACK RADIATION (WIDE RANGE) (SPDS ANALOG)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>QD11-RIS K600A</td>
<td>10^-1/10^+6</td>
<td>78</td>
<td>304</td>
</tr>
<tr>
<td>QD11-RIS K600B</td>
<td>10^-1/10^+6</td>
<td>97</td>
<td>241</td>
</tr>
<tr>
<td>MAIN STACK RADIATION (NORMAL RANGE) (ERF ANALOG)</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>


STEP 1  
Restore the reference data at both the SPDS and ERF.

STEP 2  
A  Command "Function Select" (14)
B  Select Ramp for the function.
C  Enter 20 for the ramp slope.

STEP 3  
Command "Signal Change Enable" (10)

STEP 4  
Enter the data from Table 17.13 to indicate the signals to be ramped.

STEP 5  
A  Command "Global Change Start" (12)
B  Wait approximately 30 seconds for rate to stabilize.
C  Check the appropriate rate for the value 1.E 00 on the 6-minute Effluent Trends display.

STEP 6  
Command "Global Change Stop" (13) to stop ramp.

STEP 7  
Command "Signal Change Disable" (11)

STEP 8  
Enter the data from Table 17.13 to indicate the signals to be disabled.

STEP 9  
Record approval:  

---

**TABLE 17.13**

<table>
<thead>
<tr>
<th>Sensor Tag Number</th>
<th>Scale</th>
<th>Channel Number</th>
<th>Default Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Q2D11-P601</td>
<td>$10^{-5}/5\times10^{-3}$</td>
<td>7</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Q2D11-RIS K636A</td>
<td>$10^{1}/10^{6}$ cpm</td>
<td>93</td>
<td>476</td>
</tr>
<tr>
<td>Q2D11-RIS K636B</td>
<td>$10^{1}/10^{6}$ cpm</td>
<td>114</td>
<td>705</td>
</tr>
</tbody>
</table>

---

Variance #6 refest
REACTOR BUILDING VENT RADIATION (HNP 1) RATE CALCULATIONS

STEP 1  Restore the reference data at both the SPDS and ERF.

STEP 2  
A  Command "Function Select" (14)
B  Select Ramp for the function.
C  Enter 20 for the ramp slope.

STEP 3  Command "Signal Change Enable" (10)

STEP 4  Enter the data from Table 17.14 to indicate the signals to be ramped.

STEP 5  
A  Command "Global Change Start" (12)
B  Wait approximately 30 seconds for rate to stabilize.
C  Check the appropriate rate for the value 1.E 00 on the 6-minute Effluent Trends display.

STEP 6  Command "Global Change Stop" (13) to stop ramp.

STEP 7  Command "Signal Change Disable" (11)

STEP 8  Enter the data from Table 17.14 to indicate the signals to be disabled.

STEP 9  Record approval:  

TABLE 17.14

<table>
<thead>
<tr>
<th>Sensor Tag Number</th>
<th>Scale</th>
<th>Channel Number</th>
<th>Default Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>QD11-P601</td>
<td>$10^{-5}/5 \times 10^{-3}$</td>
<td>32</td>
<td>0</td>
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REACTOR BUILDING VENT RADIATION (WIDE RANGE) (SPDS ANALOG)

<table>
<thead>
<tr>
<th>Sensor Tag Number</th>
<th>Scale</th>
<th>Channel Number</th>
<th>Default Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>QD11-RIS K619A</td>
<td>$10^{+1}/10^{+6}$ cpm</td>
<td>29</td>
<td>476</td>
</tr>
<tr>
<td>QD11-RIS K619B</td>
<td>$10^{+1}/10^{+6}$ cpm</td>
<td>50</td>
<td>705</td>
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</table>

REACTOR BUILDING VENT RADIATION (NORMAL RANGE) (ERF ANALOG)
17.15. **VESSEL/FLANGE TEMPERATURE RATE CALCULATIONS**

**STEP 1**  
Restore the reference data at the ERF.

**STEP 2**  
Call up the Vessel/Flange Temperature Miscellaneous display.

**STEP 3 A** Command "Function Select" (14)  
**B** Select Ramp for the function.  
**C** Enter 20 for the ramp slope

**STEP 4**  
Command "Signal Change Enable" (10)

**STEP 5**  
Enter the data from Table 17.15 to indicate the signals to be ramped.

**STEP 6 A** Command "Global Change Start" (12)  
**B** After the temperature reaches 200°F, record the temperature and rate at 6 different times on Table 17.16. No data is to be recorded after five minutes after the start of the ramp.  
**C** After completion of the data recording, figure 17.1 is to be used to determine the predicted rate of increase of the vessel flange temperature. All differences between displayed rates and predicted rates are to be less than 0.5 °F/min.

**STEP 7**  
Command "Global Change Stop" (13) to stop ramp.

**STEP 8**  
Command "Signal Change Disable" (11).

**STEP 9**  
Enter the data from Table 17.15 to indicate the signals to be disabled.

**STEP 10**  
Record approval: BJE 8-16-84

**TABLE 17.15**

<table>
<thead>
<tr>
<th>Sensor Tag Number</th>
<th>Scale</th>
<th>Channel Number</th>
<th>Default Value</th>
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<tbody>
<tr>
<td>QB21-TE NO50A</td>
<td>0/600</td>
<td>117</td>
<td>0</td>
</tr>
<tr>
<td>TIME</td>
<td>TEMPERATURE</td>
<td>DISPLAYED RATE</td>
<td>PREDICTED RATE</td>
</tr>
<tr>
<td>--------</td>
<td>-------------</td>
<td>----------------</td>
<td>----------------</td>
</tr>
<tr>
<td>1749.10</td>
<td>224.3</td>
<td>192.5</td>
<td>192.5</td>
</tr>
<tr>
<td>1750.30</td>
<td>284.3</td>
<td>182.2</td>
<td>182.5</td>
</tr>
<tr>
<td>1750.30</td>
<td>341.5</td>
<td>173.4</td>
<td>173.5</td>
</tr>
<tr>
<td>1750.50</td>
<td>396.5</td>
<td>166.2</td>
<td>166</td>
</tr>
<tr>
<td>1751.10</td>
<td>449.6</td>
<td>160.5</td>
<td>160.5</td>
</tr>
<tr>
<td>1751.30</td>
<td>501.4</td>
<td>156.2</td>
<td>156.5</td>
</tr>
</tbody>
</table>
RATE OF CHANGE OF TEMPERATURE, DEG/MIN

TEMPERATURE, DEG F
MAIN STACK RADIATION RATE CALCULATIONS

STEP 1  Restore the reference data at the SPDS.

STEP 2  Call up the 6-minute Effluent Trends display.

STEP 2  A  Command "Function Select" (14)
B  Select Ramp for the function.
C  Enter 20 for the ramp slope.

STEP 3  Command "Signal Change Enable" (10)

STEP 4  Enter the data from Table 17.12 to indicate the signals to be ramped.

STEP 5  A  Command "Global Change Start" (12)
B  Wait approximately 30 seconds for rate to stabilize.
C  Check the appropriate rate for the value 2.E 00 on the 6-minute Effluent Trends display.

STEP 6  Command "Global Change Stop" (13) to stop ramp.

STEP 7  Command "Signal Change Disable" (11)

STEP 8  Enter the data from Table 17.12 to indicate the signals to be disabled.

STEP 9  Record approval:  

TABLE 17.12

<table>
<thead>
<tr>
<th>Sensor Tag Number</th>
<th>Scale</th>
<th>Channel Number</th>
<th>Default Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>QD11-P007</td>
<td>$10^{-5}/5 \times 10^{-3}$</td>
<td>92</td>
<td>0</td>
</tr>
</tbody>
</table>

MAIN STACK RADIATION (WIDE RANGE) (SPDS ANALOG)

MAIN STACK RADIATION (NORMAL RANGE) (ERF ANALOG)

<table>
<thead>
<tr>
<th>Sensor Tag Number</th>
<th>Scale</th>
<th>Channel Number</th>
<th>Default Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>QD11-RIS K600A</td>
<td>$10^{-1}/10^{+6}$</td>
<td>78</td>
<td>304</td>
</tr>
<tr>
<td>QD11-RIS K600B</td>
<td>$10^{-1}/10^{+6}$</td>
<td>97</td>
<td>241</td>
</tr>
</tbody>
</table>
17.13 REACTOR BUILDING VENT RADIATION (HNP-2) RATE CALCULATIONS

STEP 1  Restore the reference data at both the SPDS and ERF.

STEP 2  
A  Command "Function Select" (14)
B  Select Ramp for the function.
C  Enter 20 for the ramp slope.

STEP 3  Command "Signal Change Enable" (10)

STEP 4  Enter the data from Table 17.13 to indicate the signals to be ramped.

STEP 5  
A  Command "Global Change Start" (12)
B  Wait approximately 30 seconds for rate to stabilize.
C  Check the appropriate rate for the value 1.E 00 on the 6-minute Effluent Trends display.

STEP 6  Command "Global Change Stop" (13) to stop ramp.

STEP 7  Command "Signal Change Disable" (11)

STEP 8  Enter the data from Table 17.13 to indicate the signals to be disabled.

STEP 9  Record approval: 

TABLE 17.13

<table>
<thead>
<tr>
<th>Sensor</th>
<th>Tag Number</th>
<th>Scale</th>
<th>Channel Number</th>
<th>Default Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>REACTOR BUILDING VENT RADIATION (WIDE RANGE) (SPDS ANALOG)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Q2D11-P601</td>
<td>$10^{-5}/5\times10^{-3}$</td>
<td>7</td>
<td>0</td>
</tr>
<tr>
<td>REACTOR BUILDING VENT RADIATION (NORMAL RANGE) (ERF ANALOG)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Q2D11-RIS K636A</td>
<td>$10^{+1}/10^{+6}_{cpm}$</td>
<td>93</td>
<td>476</td>
</tr>
<tr>
<td></td>
<td>Q2D11-RIS K636B</td>
<td>$10^{+1}/10^{+6}_{cpm}$</td>
<td>114</td>
<td>705</td>
</tr>
</tbody>
</table>
17.14 REACTOR BUILDING VENT RADIATION (HNP 1) RATE CALCULATIONS

STEP 1  Restore the reference data at both the SPDS and ERF.

STEP 2  
A Command "Function Select" (14)
B Select Ramp for the function.
C Enter 20 for the ramp slope.

STEP 3  Command "Signal Change Enable" (10)

STEP 4  Enter the data from Table 17.14 to indicate the signals to be ramped.

STEP 5  
A Command "Global Change Start" (12)
B Wait approximately 30 seconds for rate to stabilize.
C Check the appropriate rate for the value 1.E 00 on the 6-minute Effluent Trends display.

STEP 6  Command "Global Change Stop" (13) to stop ramp.

STEP 7  Command "Signal Change Disable" (11)

STEP 8  Enter the data from Table 17.14 to indicate the signals to be disabled.

STEP 9  Record approval: \( E \times 10^{-3} \)

---

**TABLE 17.14**

<table>
<thead>
<tr>
<th>Sensor Tag Number</th>
<th>Scale</th>
<th>Channel Number</th>
<th>Default Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>QD11-P601</td>
<td>( 10^{-5} / 5 \times 10^{-3} )</td>
<td>32</td>
<td>0</td>
</tr>
</tbody>
</table>

**REACTOR BUILDING VENT RADIATION (WIDE RANGE) (SPDS ANALOG)**

**REACTOR BUILDING VENT RADIATION (NORMAL RANGE) (ERF ANALOG)**

| QD11-RIS K619A    | \( 10^{+1} / 10^{+6} \) cpm | 29             | 476            |
| QD11-RIS K619B    | \( 10^{+1} / 10^{+6} \) cpm | 50             | 705            |
17.15. VESSEL/FLANGE TEMPERATURE RATE CALCULATIONS

STEP 1  Restore the reference data at the ERF.

STEP 2  Call up the Vessel/Flange Temperature Miscellaneous display.

STEP 3  A  Command "Function Select" (14)
         B  Select Ramp for the function.
         C  Enter 20 for the ramp slope

STEP 4  Command "Signal Change Enable" (10)

STEP 5  Enter the data from Table 17.15 to indicate the signals to be ramped.

STEP 6  A  Command "Global Change Start" (12)
         B  After the temperature reaches 200°F, record the temperature and rate at 6 different times on Table 17.16. No data is to be recorded after five minutes after the start of the ramp.
         C  After completion of the data recording, figure 17.1 is to be used to determine the predicted rate of increase of the vessel flange temperature. All differences between displayed rates and predicted rates are to be less than 0.5 °F/min.

STEP 7  Command "Global Change Stop" (13) to stop ramp.

STEP 8  Command "Signal Change Disable" (11).

STEP 9  Enter the data from Table 17.15 to indicate the signals to be disabled.

STEP 10 Record approval: $E^{10}$

TABLE 17.15

<table>
<thead>
<tr>
<th>Sensor Tag Number</th>
<th>Scale</th>
<th>Channel Number</th>
<th>Default Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>QB21-TE N050A</td>
<td>0/600</td>
<td>117</td>
<td>0</td>
</tr>
<tr>
<td>TIME</td>
<td>TEMPERATURE</td>
<td>DISPLAYED RATE</td>
<td>PREDICTED RATE</td>
</tr>
<tr>
<td>---------</td>
<td>-------------</td>
<td>----------------</td>
<td>----------------</td>
</tr>
<tr>
<td>18:01:30</td>
<td>230.4</td>
<td>191.4</td>
<td>190</td>
</tr>
<tr>
<td>18:01:50</td>
<td>290.2</td>
<td>181.2</td>
<td>180</td>
</tr>
<tr>
<td>18:02:10</td>
<td>347.1</td>
<td>172.6</td>
<td>172</td>
</tr>
<tr>
<td>18:02:30</td>
<td>411.8</td>
<td>165.5</td>
<td>160</td>
</tr>
<tr>
<td>18:02:50</td>
<td>454.8</td>
<td>160.0</td>
<td>155</td>
</tr>
<tr>
<td>18:03:10</td>
<td>506.5</td>
<td>155.7</td>
<td>155</td>
</tr>
</tbody>
</table>
SPDS/ERF
FUNCTIONAL TEST VARIANCE REPORT

VARIANCE  #114-A3026-5100-U2-7

Name  Brian Edmark  Date  8/3/84

Type of Failure:  System  Test Document

Test Being Performed:
Rate Calculations Section Test #17.1 and Test #17.9

Describe Failure:
Test procedure as written provided a different rate than predicted for both of tests described above.

Vendor's Response:
The request for the change is accepted.

Name  Left: A. Belbrizik  Date  8/3/84

Resolution of Variance:
Change in the procedure to test the rate calculation, based only on the instrument indicated in the tables. This change facilitates the testing and does not change the intent of the procedures.

Vendor: Name  Left: A. Belbrizik  Date  8/3/84

V&V Engineer: Name  Long  Date  9/10/84

Print Name  David T. Schery  Date  8/3/84
FUNCTIONAL TEST PROCEDURES
FOR
GEORGIA POWER COMPANY
SIMULATOR SPDS
FUNCTIONAL TEST PROCEDURES

FOR

GEORGIA POWER COMPANY

SIMULATOR SPDS
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9. Torus Water Level  
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11. Source Range Monitor  
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   54  
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   74  
   81  
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   116  
   130  
   135  
   142  
   149  
   154  
   158
1. INTRODUCTION

The tests described in the following sections are intended to verify the correct functioning of the Simulator Safety Parameter Display System by duplicating the input provided by the interface between the simulator computer and the data storage within the Safety Parameter Display System.

The following sections have been arranged to exercise each of the input variables such that each of the displayed parameters is verified in a sequential manner. The order of the tests is important to the proper execution of the tests because many parameters provide input to the data reduction for other parameters. In these instances the correct operation of the parameters that are input to a calculation are verified prior to testing the results of that calculation to avoid repetition of tests.

The tests that are presented in the following sections have been selected to test the following properties of each of the parameters:

1. Range
2. Averaging and correction for calibration conditions
3. Out of range (high, low and difference)
4. Set points
5. Logic

In addition, the tests are arranged to verify the correct operation of the primary display, followed by verification of the reproduction of the information on the trend and parameter vs. parameter displays. This results in the duplication of tests; however, the separation was desired for simplicity of the testing procedure.

During the execution of the tests the following procedures are to be followed:

1. At the beginning of a section of tests the date of last linking of each of the programs that constitute the SSPDS software is to be recorded at the bottom of the table that lists the input for that series of tests. If this date is different from the date of linking that was recorded on any of the other tests, the tests are invalid and must be repeated for software that does not change throughout the tests. The programs whose dates to be recorded are:
   a. DP_MAIN. PR
   b. CN_MAIN. PR
   c. EL_MAIN. PR
   d. DAC_TEST_MAIN. PR

2. Each test consists of a basic set of input followed by a series of changes to the input which are to be made sequentially. If restoring the basic set of input parameters is required before changing any of the parameters to be tested, the instructions for that test will so indicate, otherwise the changes are to be serial.
The initial step in each series of tests is to enter a "standard" set of data into the computer memory which will serve as the reference for the perturbations to the data which will exercise the logic of the software. All of the signals that are received from the simulator computer are tabulated in Table 1.1 along with the numerical values to be used to form the standard set of data.

3. Loading of the initialization file and changes to this file are to proceed as follows:

a. Enter name of initialization file.
b. Enter choice (1 = analog, 2 = digital, 3 = real, 4 = save).

Option 4 permits to save all the changes to the initialization file.

If the data is analog,

a. Enter integer offset in data (1-256)
b. Enter value of data (0-4095)

If the data is digital,

a. Enter byte offset into data (1-512)
b. Choose byte value (0 = false, 1 = true)

If the data is real,

a. Enter real offset into data (1-128)
b. Enter real data value

4. When the input has been set for a test, the output of the SSPDS is to be examined in the area indicated on the sample displays that are included in the description of the tests to verify the presence of the output that is indicated in the test instructions. If the correct output is found, the block at the right of the Table of Input and Output for that test is to be initialed by the person responsible for inputing the data and observation of the output. An incorrect output should be followed by verification of the correctness of the input which, if correct, will terminate the test and require retesting all of the parameters.

When the tests are complete the signed and dated test summary tables are to be bound into a volume which is to be turned over to Georgia Power Company to demonstrate the completion of the testing sequence.
### TABLE 1.1

**SSPDS INPUT DATA**

<table>
<thead>
<tr>
<th>SENSOR TAG/DESCRIPTION</th>
<th>SCALE</th>
<th>ENTRY TYPE</th>
<th>OFFSET</th>
<th>VALUE RANGE</th>
<th>DEFAULT VALUE</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>REACTOR WATER LEVEL</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Q2B21-LIS-N685A</td>
<td>-317/-17</td>
<td>Analog 2</td>
<td></td>
<td>0-4095</td>
<td>4095</td>
</tr>
<tr>
<td>Q2B21-LIS-N685B</td>
<td>-317/-17</td>
<td>Analog 3</td>
<td></td>
<td>0-4095</td>
<td>4095</td>
</tr>
<tr>
<td>Q2B21-LIS-N691B</td>
<td>-150/+60</td>
<td>Analog 6</td>
<td></td>
<td>0-4095</td>
<td>3715</td>
</tr>
<tr>
<td>Q2B21-LIS-N691A</td>
<td>-150/+60</td>
<td>Analog 7</td>
<td></td>
<td>0-4095</td>
<td>3715</td>
</tr>
<tr>
<td>Q2B21-LIS-N691C</td>
<td>-150/+60</td>
<td>Analog 9</td>
<td></td>
<td>0-4095</td>
<td>3715</td>
</tr>
<tr>
<td>Q2B21-LIS-N691D</td>
<td>-150/+60</td>
<td>Analog 12</td>
<td></td>
<td>0-4095</td>
<td>3715</td>
</tr>
<tr>
<td>Q2B21-LT-N027</td>
<td>-17/383</td>
<td>Analog 14</td>
<td></td>
<td>0-4095</td>
<td>589</td>
</tr>
<tr>
<td><strong>SOURCE RANGE MONITOR</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2C51-RIS-K600A</td>
<td>(10^{-1}/10^6)</td>
<td>Analog 15</td>
<td></td>
<td>0-4095</td>
<td>4095</td>
</tr>
<tr>
<td>2C51-RIS-K600B</td>
<td>(10^{-1}/10^6)</td>
<td>Analog 18</td>
<td></td>
<td>0-4095</td>
<td>4095</td>
</tr>
<tr>
<td>2C51-RIS-K600C</td>
<td>(10^{-1}/10^6)</td>
<td>Analog 19</td>
<td></td>
<td>0-4095</td>
<td>4095</td>
</tr>
<tr>
<td>2C51-RIS-K600D</td>
<td>(10^{-1}/10^6)</td>
<td>Analog 22</td>
<td></td>
<td>0-4095</td>
<td>4095</td>
</tr>
<tr>
<td><strong>TORUS WATER LEVEL</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Q2T48-LT N021A</td>
<td>133-163</td>
<td>Analog 24</td>
<td></td>
<td>0-4095</td>
<td>2320</td>
</tr>
<tr>
<td>Q2T48-LT N021B</td>
<td>133-163</td>
<td>Analog 25</td>
<td></td>
<td>0-4095</td>
<td>2320</td>
</tr>
<tr>
<td>Q2T48-LT N010A</td>
<td>0-300</td>
<td>Analog 28</td>
<td></td>
<td>0-4095</td>
<td>2047</td>
</tr>
<tr>
<td>Q2T48-LT N010B</td>
<td>0-300</td>
<td>Analog 29</td>
<td></td>
<td>0-4095</td>
<td>2047</td>
</tr>
<tr>
<td><strong>TORUS PRESSURE</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Q2T48-PT N008B</td>
<td>-10/ 90</td>
<td>Analog 30</td>
<td></td>
<td>0-4095</td>
<td>410</td>
</tr>
<tr>
<td>Q2T48-PT N008A</td>
<td>-10/ 90</td>
<td>Analog 34</td>
<td></td>
<td>0-4095</td>
<td>410</td>
</tr>
<tr>
<td><strong>DRYWELL PRESSURE</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Q2T48-PT N020B</td>
<td>-10/ 10*</td>
<td>Analog 26</td>
<td></td>
<td>0-4095</td>
<td>2047</td>
</tr>
<tr>
<td>Q2T48-PT N020A</td>
<td>-10/ 10*</td>
<td>Analog 35</td>
<td></td>
<td>0-4095</td>
<td>2047</td>
</tr>
<tr>
<td>Q2T48-PT N023A</td>
<td>-10/ 90</td>
<td>Analog 37</td>
<td></td>
<td>0-4095</td>
<td>409</td>
</tr>
<tr>
<td>Q2T48-PT N023B</td>
<td>-10/ 90</td>
<td>Analog 39</td>
<td></td>
<td>0-4095</td>
<td>409</td>
</tr>
<tr>
<td>Q2T48-PT N003A</td>
<td>-10/ 90**</td>
<td>Analog 41</td>
<td></td>
<td>0-4095</td>
<td>409</td>
</tr>
<tr>
<td>Q2T48-PT N003B</td>
<td>-10/ 90**</td>
<td>Analog 43</td>
<td></td>
<td>0-4095</td>
<td>409</td>
</tr>
</tbody>
</table>

* Converted to -5 to +5 range

** Converted to 0 to 250 range
### Table 1.1

#### SSPDS Input Data

<table>
<thead>
<tr>
<th>Sensor Tag/Description</th>
<th>Scale</th>
<th>Entry Type</th>
<th>Offset</th>
<th>Value Range</th>
<th>Default Value</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Reactor Pressure</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Q2B21-PIS N690A</td>
<td>0/1500</td>
<td>Analog</td>
<td>10</td>
<td>0-4095</td>
<td>2730</td>
</tr>
<tr>
<td>Q2B21-PIS N690D</td>
<td>0/1500</td>
<td>Analog</td>
<td>45</td>
<td>0-4095</td>
<td>2730</td>
</tr>
<tr>
<td><strong>Drywell/Torus H₂ and O₂ Concentration</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Q2P33-HR-P601A</td>
<td>0-5</td>
<td>Analog</td>
<td>47</td>
<td>0-4095</td>
<td>0</td>
</tr>
<tr>
<td>Q2P33-HR P601B</td>
<td>0-5</td>
<td>Analog</td>
<td>49</td>
<td>0-4095</td>
<td>0</td>
</tr>
<tr>
<td>Q2P33-OR P601A</td>
<td>0-10</td>
<td>Analog</td>
<td>48</td>
<td>0-4095</td>
<td>41</td>
</tr>
<tr>
<td>Q2P33-OR P601B</td>
<td>0-10</td>
<td>Analog</td>
<td>50</td>
<td>0-4095</td>
<td>41</td>
</tr>
</tbody>
</table>

* Converted to 0 - 10 range
** Converted to 0 - 30 range

| **Drywell Temperature** |       |            |        |             |               |
| Drywell Temp            | 0-400 | Real       | 34     | 0-400.00    | 124.89        |

| **Torus Water Temperature** |       |            |        |             |               |
| Torus Temp               | 0-400 | Real       | 35     | 0-400.00    | 80            |

| **Main Stack Radiation** |       |            |        |             |               |
| Off-Gas Post. "A"        | 1E-1/1E6* | Analog     | 56     | 0-4095      | 2034          |
| Off-Gas Post. "B"        | 1E-1/1E6* | Analog     | 57     | 0-4095      | 2034          |
| SBGT "A"                 | .01/1E2** | Analog     | 51     | 0-4095      | 0             |
| SBGT "B"                 | .01/1E2** | Analog     | 53     | 0-4095      | 0             |

* - Units are CPS
** - Units are mRem/hr

| **R/B Vent Radiation**   |       |            |        |             |               |
| Pot. Cont. Vent "A"      | .01/1E2* | Analog     | 60     | 0-4095      | 3071          |
| Pot. Cont. Vent "B"      | .01/1E2  | Analog     | 61     | 0-4095      | 3071          |
| Pot. Cont. Vent "C"      | .01/1E2  | Analog     | 64     | 0-4095      | 3071          |
| Pot. Cont. Vent "D"      | .01/1E2  | Analog     | 65     | 0-4095      | 3071          |

* Units are mRem/hr
### TABLE 1.1

**SSPDS INPUT DATA**

<table>
<thead>
<tr>
<th>SENSOR TAG/D</th>
<th>ENTRY</th>
<th>SCALE</th>
<th>TYPE</th>
<th>OFFSET</th>
<th>VALUE RANGE</th>
<th>DEFAULT VALUE</th>
</tr>
</thead>
<tbody>
<tr>
<td>MSRV &quot;A&quot;</td>
<td>Real</td>
<td>36</td>
<td></td>
<td>0 or 1.00*</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>MSRV &quot;B&quot;</td>
<td>Real</td>
<td>37</td>
<td></td>
<td>0 or 1.00*</td>
<td>0</td>
<td></td>
</tr>
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<td>MSRV &quot;C&quot;</td>
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<td>38</td>
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<td>0 or 1.00*</td>
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<tr>
<td>MSRV &quot;D&quot;</td>
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<td>39</td>
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<td>0 or 1.00*</td>
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<td></td>
</tr>
<tr>
<td>MSRV &quot;E&quot;</td>
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<tr>
<td>MSRV &quot;F&quot;</td>
<td>Real</td>
<td>41</td>
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<td>0 or 1.00*</td>
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</tr>
<tr>
<td>MSRV &quot;G&quot;</td>
<td>Real</td>
<td>42</td>
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<td>0 or 1.00*</td>
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<td>MSRV &quot;H&quot;</td>
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<td>0 or 1.00*</td>
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<tr>
<td>MSRV &quot;I&quot;</td>
<td>Real</td>
<td>44</td>
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<td>0 or 1.00*</td>
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<td></td>
</tr>
<tr>
<td>MSRV &quot;L&quot;</td>
<td>Real</td>
<td>45</td>
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<td>0 or 1.00*</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>MSRV &quot;M&quot;</td>
<td>Real</td>
<td>46</td>
<td></td>
<td>0 or 1.00*</td>
<td>0</td>
<td></td>
</tr>
</tbody>
</table>

* 0 = CLOSE
1.00 = OPEN
### TABLE 1.1
SSPDS INPUT DATA

<table>
<thead>
<tr>
<th>SENSOR TAG/DESCRIPTION</th>
<th>SCALE</th>
<th>ENTRY</th>
<th>TYPE</th>
<th>OFFSET</th>
<th>VALUE RANGE</th>
<th>DEFAULT VALUE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Control Rods In</td>
<td>Digital</td>
<td>188</td>
<td>0 or 1*</td>
<td>0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>SRM &quot;A&quot; In</td>
<td>Digital</td>
<td>191</td>
<td>0 or 1*</td>
<td>0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>SRM &quot;A&quot; Out</td>
<td>Digital</td>
<td>192</td>
<td>0 or 1*</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>SRM &quot;B&quot; In</td>
<td>Digital</td>
<td>194</td>
<td>0 or 1*</td>
<td>0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>SRM &quot;B&quot; Out</td>
<td>Digital</td>
<td>195</td>
<td>0 or 1*</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>SRM &quot;C&quot; In</td>
<td>Digital</td>
<td>199</td>
<td>0 or 1*</td>
<td>0</td>
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<td></td>
</tr>
<tr>
<td>SRM &quot;C&quot; Out</td>
<td>Digital</td>
<td>200</td>
<td>0 or 1*</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>SRM &quot;D&quot; In</td>
<td>Digital</td>
<td>202</td>
<td>0 or 1*</td>
<td>0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>SRM &quot;D&quot; Out</td>
<td>Digital</td>
<td>203</td>
<td>0 or 1*</td>
<td>1</td>
<td></td>
<td></td>
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<td>Shutdown</td>
<td>Digital</td>
<td>207</td>
<td>0 or 1*</td>
<td>0</td>
<td></td>
<td></td>
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<td>Refuel</td>
<td>Digital</td>
<td>208</td>
<td>0 or 1*</td>
<td>0</td>
<td></td>
<td></td>
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<tr>
<td>Hot Standby</td>
<td>Digital</td>
<td>209</td>
<td>0 or 1*</td>
<td>0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Run</td>
<td>Digital</td>
<td>210</td>
<td>0 or 1*</td>
<td>1</td>
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<td></td>
</tr>
<tr>
<td>H₂ &quot;A&quot; High</td>
<td>Digital</td>
<td>213</td>
<td>0 or 1*</td>
<td>0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>O₂ &quot;A&quot; High</td>
<td>Digital</td>
<td>214</td>
<td>0 or 1*</td>
<td>0</td>
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<td></td>
</tr>
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<td>H₂ &quot;B&quot; High</td>
<td>Digital</td>
<td>220</td>
<td>0 or 1*</td>
<td>0</td>
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<td></td>
</tr>
<tr>
<td>O₂ &quot;B&quot; High</td>
<td>Digital</td>
<td>221</td>
<td>0 or 1*</td>
<td>0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>&quot;A&quot; Analyze</td>
<td>Digital</td>
<td>226</td>
<td>0 or 1*</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>&quot;B&quot; Analyze</td>
<td>Digital</td>
<td>217</td>
<td>0 or 1*</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>&quot;A&quot; Off</td>
<td>Digital</td>
<td>225</td>
<td>0 or 1*</td>
<td>0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>&quot;B&quot; Off</td>
<td>Digital</td>
<td>216</td>
<td>0 or 1*</td>
<td>0</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

* 1 = True
* 0 = False
<table>
<thead>
<tr>
<th>SENSOR TAG/DESCRIPTION</th>
<th>SCALE</th>
<th>ENTRY TYPE</th>
<th>OFFSET</th>
<th>VALUE RANGE</th>
<th>DEFAULT VALUE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Digital Signals (Continued)</td>
<td></td>
<td></td>
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<td>F002 Closed Digital</td>
<td>229</td>
<td>0 or 1*</td>
<td>0</td>
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<td>F002 Open Digital</td>
<td>230</td>
<td>0 or 1*</td>
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<tr>
<td>F010 Closed Digital</td>
<td>231</td>
<td>0 or 1*</td>
<td>0</td>
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<td>F010 Open Digital</td>
<td>232</td>
<td>0 or 1*</td>
<td>1</td>
<td></td>
<td></td>
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<tr>
<td>F003 Closed Digital</td>
<td>233</td>
<td>0 or 1*</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>F003 Open Digital</td>
<td>234</td>
<td>0 or 1*</td>
<td>0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>F011 Closed Digital</td>
<td>235</td>
<td>0 or 1*</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>F011 Open Digital</td>
<td>236</td>
<td>0 or 1*</td>
<td>0</td>
<td></td>
<td></td>
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<tr>
<td>F004 Closed Digital</td>
<td>239</td>
<td>0 or 1*</td>
<td>0</td>
<td></td>
<td></td>
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<td></td>
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<tr>
<td>F012 Closed Digital</td>
<td>241</td>
<td>0 or 1*</td>
<td>0</td>
<td></td>
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</tr>
<tr>
<td>F012 Open Digital</td>
<td>242</td>
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<td>1</td>
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<td>F005 Closed Digital</td>
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<td>0 or 1*</td>
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<td></td>
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<td>246</td>
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<td>1</td>
<td></td>
<td></td>
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<tr>
<td>F013 Closed Digital</td>
<td>247</td>
<td>0 or 1*</td>
<td>0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>F013 Open Digital</td>
<td>248</td>
<td>0 or 1*</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>F006 Closed Digital</td>
<td>251</td>
<td>0 or 1*</td>
<td>1</td>
<td></td>
<td></td>
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<td>F006 Open Digital</td>
<td>252</td>
<td>0 or 1*</td>
<td>0</td>
<td></td>
<td></td>
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<tr>
<td>F014 Closed Digital</td>
<td>253</td>
<td>0 or 1*</td>
<td>1</td>
<td></td>
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</tr>
<tr>
<td>F014 Open Digital</td>
<td>254</td>
<td>0 or 1*</td>
<td>0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>F007 Closed Digital</td>
<td>257</td>
<td>0 or 1*</td>
<td>0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>F007 Open Digital</td>
<td>258</td>
<td>0 or 1*</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>F015 Closed Digital</td>
<td>259</td>
<td>0 or 1*</td>
<td>0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>F015 Open Digital</td>
<td>260</td>
<td>0 or 1*</td>
<td>1</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

"1" = TRUE
"0" = FALSE
### TABLE 1.1
**SSPDS INPUT DATA**

<table>
<thead>
<tr>
<th>SENSOR TAG/DESCRIPTION</th>
<th>SCALE</th>
<th>ENTRY VALUE</th>
<th>DEFAULT VALUE</th>
</tr>
</thead>
<tbody>
<tr>
<td>PCIS Override</td>
<td>Digital 264</td>
<td>0 or 1*</td>
<td>0</td>
</tr>
<tr>
<td>Recirc Pump &quot;A&quot;</td>
<td>Real 67</td>
<td>**</td>
<td>1</td>
</tr>
<tr>
<td>Recirc Pump &quot;B&quot;</td>
<td>Real 68</td>
<td>**</td>
<td>1</td>
</tr>
</tbody>
</table>

* "0" = FALSE, "1" = TRUE

** A zero value = pump off

A non-zero value = pump on
2. KEYBOARD RESPONSE TEST

A. INPUTS

Special Function Keys
Alphanumeric Pad
Numerical/cursor Pads
Keyboard Mode Control (See Figure 2.1 for Keyboard Layout)

B. OUTPUTS: (See Attached Figures)

Menus (3)
Primary Display (1)
Trend Displays, 60 min (5)
Emergency Displays (9)

C. PROCEDURE NOTES:

1. Begin testing by depressing the CRT-1 Function Key, then select appropriate menu. Check display against associated figure.

2. You may now (w/o recalling menu) call each sub-display until that test procedure is complete. Check display against associated figure.

3. Depress all remaining keys on the alphanumeric, cursor, and numeric pads and check for no response.

4. After completing the above procedure on CRT-1, repeat for CRT-2, then CRT-3.

5. This entire process will be carried out for the primary, trend, and emergency functions.

6. The status light of each function key should be lit whenever a function key is depressed.
D. TEST PROCEDURES:

1. Call Primary Menu  
   Call Primary Display  
   (Figure 2.2)  
   (Figure 2.3)  
   Depress all remaining keys on alphanumeric, cursor and numeric pads, and 
   check for no response.

2. Repeat procedure #1 for CRT-2.

3. Repeat procedure #1 for CRT-3.

4. Call Trend Menu (Figure 2.4)
   From Cursor Pad, call Core Trend  
   call Neutron Trend  
   call Drywell Trend  
   call Torus Trend  
   call Effluent Trend  
   (Figure 2.5)  
   (Figure 2.6)  
   (Figure 2.7)  
   (Figure 2.8)  
   (Figure 2.9)  
   Depress all remaining keys on alphanumeric, cursor and numeric pads, and 
   check for no response.

5. Repeat procedure #4 for CRT-2.

6. Repeat procedure #4 for CRT-3.

7. Call Emergency Menu (Figure 2.10)
   From Cursor Pad, call RPV Saturation Limit  
   call Torus temperature Limit  
   call RPV Level VS. RPV Pressure  
   call Containment Pressure Limit  
   call Torus Load Limit  
   call Pressure Suppression Limit  
   call Torus Level Limit  
   call RPV Level Vs. Time  
   call Core Uncovery Time  
   (Figure 2.11)  
   (Figure 2.12)  
   (Figure 2.13)  
   (Figure 2.14)  
   (Figure 2.15)  
   (Figure 2.16)  
   (Figure 2.17)  
   (Figure 2.18)  
   (Figure 2.19)  
   Depress all remaining keys on the alphanumeric, cursor and numeric pads, 
   and check for no response.

8. Repeat procedure #7 for CRT-2.

9. Repeat procedure #7 for CRT-3.

10. Call Maintenance Menu (Figure 2.20)
    From Cursor Pad, call Set Date and Time Display (Figure 2.21). Follow 
    instructions on the screen to change date, time and unit number. Verify 
    that change appears on other displays.
From Numeric pad, call Grid Pattern  
   (Figure 2.22)  
call Dot Pattern  
   (Figure 2.23)  
call Color Squares  
   (Figure 2.24)  

Depress all remaining keys on the alphanumeric, cursor and numeric pads, and check for no response.

11. Depress CONTROL key and START HIST function key. The associated status light should light and tape transport should become operational if the mounted tape is blank and tape transport is on line.

12. Depress CONTROL and ERASE HIST keys. The associated status light should light and tape should rewind and stop. After tape stops, both status lights associated with the START HIST and STOP HIST function keys should go off.

13. Depress CONTROL and START HIST. The associated status light should light and tape transport should become operational.

14. Depress CONTROL and STOP HIST. The associated status light should light and tape should rewind and stop. After tape stops, both START HIST and STOP HIST light should go off.

15. Depress CONTROL AND START HIST. Nothing should happen because, unlike the ERASE HIST function, STOP HIST does not erase the tape header.

16. Depress CONTROL key and FRZ/UNFRZ Key. The associated status light should light and the clock on the CRT-3 display should stop running.

17. Depress the RECORD lever on the hardcopy unit to obtain a copy of the frozen display.

18. Depress CONTROL and FRZ/UNFRZ again. The associated status light should go off and the clock on the CRT-3 display should resume running.

19. Check keyboard mode control switches - changing position of TTY Mode or line switches should have no effect on display. Check power on/off switch for proper function.

20. Repeat steps 1 through 17 above using the second keyboard.
KEYBOARD CONTROL MODE

STATUS LIGHTS

KEYBOARD MODE CONTROL

CURSOR PAD

NUMERIC PAD

FREEZE/UNFREEZE
CANCEL HISTORY
STOP HISTORY
START HISTORY
MAINTENANCE

EMERGENCY
TREND
PRIMARY
CR-3
CR-2
CR-1

SPECIAL FUNCTIONS

KEYBOARD LAYOUT

ALPHANUMERICS
HNP-2

NEUTRON TRENDS

CPT
10/25/83 10:16:22

FIGURE 2.6
DRYWELL TRENDS

Figure 2.7
TORUS TRENDS

HNP-2

10/25/83 10:14:12

CDT

FIGURE 2.8
<table>
<thead>
<tr>
<th>RPU SATURATION LIMIT</th>
<th>TORUS TEMP LIMIT</th>
<th>RPU LEVEL US RPU PRESS</th>
</tr>
</thead>
<tbody>
<tr>
<td>CONTAIN PRESSURE LIMIT</td>
<td>TORUS LOAD LIMIT</td>
<td>PRESSURE SUPPRESS LIMIT</td>
</tr>
<tr>
<td>TORUS LEVEL LIMIT</td>
<td>RPU LEVEL VS TIME</td>
<td>CORE UNCOVERY TIME</td>
</tr>
</tbody>
</table>

FIGURE 2.10
TORUS HEAT CAPACITY TEMPERATURE LIMIT

DRYWELL TEMP (DEGREES F)

TORUS WATER TEMPERATURE (DEG. F)

RPU PRESSURE (PSIG)

FIGURE 2.12
TORUS LOAD LIMIT

Torus Water Level (FT)

RPU Pressure (PSIG)

FIGURE 2.15
FIGURE 2.17
FIGURE 2.18

RPV LEVEL VS. TIME

RPV WATER LEVEL (INCHES)

TIME (MIN)
<table>
<thead>
<tr>
<th>COLOR SQUARES</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>DOT PATTERN</td>
<td></td>
<td></td>
</tr>
<tr>
<td>GRID PATTERN</td>
<td></td>
<td></td>
</tr>
<tr>
<td>SET DATE AND TIME</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
DATE: NOVEMBER 07, 1983
TIME: 15:30:06 CENTRAL DAYLIGHT TIME
UNIT: HNP 2

USE THE FOLLOWING KEYS TO SET THE DATE, TIME, AND UNIT.

CHANGE THE HIGHLIGHTED ITEM TO THE NEXT VALUE.
MOVE TO THE NEXT ITEM.
SETS THE DATE, TIME AND UNIT. THEN RETURNS.

RETURN WITH NO CHANGES.

RETURN
3. REACTOR PRESSURE

1. INPUTS

Two analog signals are used by the SSPDS. The input data for the SSPDS is given in Table 3.1.

This series of tests is independent of all other tests.

<table>
<thead>
<tr>
<th>Signal Description</th>
<th>Entry Type</th>
<th>Offset</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reactor Pressure # A</td>
<td>Analog</td>
<td>10</td>
</tr>
<tr>
<td>Reactor Pressure # B</td>
<td>Analog</td>
<td>45</td>
</tr>
</tbody>
</table>
2. **PRIMARY DISPLAY**

a. Call up the Primary display.

b. Call the reference test input data.

c. For each test in TABLE 3.2 set the input to the specified values.

d. Check the reactor pressure and reactor water level boxes (see Figure 3.1) for appropriate response.

e. Record approval if test is successful.

f. Repeat steps c, d, and e until all tests are completed or until a test fails.
TABLE 3.2

REACTOR PRESSURE

<table>
<thead>
<tr>
<th>TEST NO.</th>
<th>INPUT 10</th>
<th>INPUT 45</th>
<th>OUTPUT (PSIG)</th>
<th>COLOR</th>
<th>APPROVAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>G</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>4095</td>
<td>4095</td>
<td>1500</td>
<td>R</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>2730</td>
<td>2730</td>
<td>1000</td>
<td>G</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>2595</td>
<td>2731</td>
<td>975</td>
<td>G</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>2595</td>
<td>2732</td>
<td>1001</td>
<td>Y</td>
<td></td>
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<tr>
<td>6</td>
<td>2730</td>
<td>4019</td>
<td>1472</td>
<td>R</td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>2730</td>
<td>4020</td>
<td>1000</td>
<td>Y</td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>4019</td>
<td>2730</td>
<td>1472</td>
<td>R</td>
<td></td>
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<tr>
<td>9</td>
<td>4020</td>
<td>2730</td>
<td>1000</td>
<td>Y</td>
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<tr>
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<td>71</td>
<td>2833</td>
<td>1038</td>
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<td>1000</td>
<td>Y</td>
<td></td>
</tr>
<tr>
<td>13</td>
<td>2834</td>
<td>70</td>
<td>1038</td>
<td>R</td>
<td></td>
</tr>
<tr>
<td>14</td>
<td>4020</td>
<td>70</td>
<td>Blank</td>
<td>Y</td>
<td></td>
</tr>
<tr>
<td>15</td>
<td>70</td>
<td>70</td>
<td>26</td>
<td>G</td>
<td></td>
</tr>
<tr>
<td>16</td>
<td>70</td>
<td>4020</td>
<td>Blank</td>
<td>Y</td>
<td></td>
</tr>
<tr>
<td>17</td>
<td>4020</td>
<td>4020</td>
<td>1473</td>
<td>R</td>
<td></td>
</tr>
</tbody>
</table>
3. CORE TRENDS DISPLAY - REACTOR PRESSURE

a. Call up the Core Trends display.

b. For each test in Table 3.3 set the inputs to the specified values.

c. Check the Core Pressure box (see Figure 3.2) for appropriate response.

d. Record approval if test is successful.

e. Repeat steps b, c, and d until all test are completed or until a test fails.

---

**TABLE 3.3**

CORE TRENDS TESTS - REACTOR PRESSURE

<table>
<thead>
<tr>
<th>TEST NO</th>
<th>INPUT 10</th>
<th>OUTPUT (PSIG)</th>
<th>COLOR</th>
<th>APPROVAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2730</td>
<td>1000</td>
<td>G</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>4095</td>
<td>1500</td>
<td>R</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>2592</td>
<td>1000</td>
<td>Y</td>
<td></td>
</tr>
</tbody>
</table>


FIGURE 3.2
4. RPV SATURATION LIMIT - REACTOR PRESSURE

a. Call up RPV saturation limit display.

b. For each test in Table 3.4, set the inputs to the specified values.

c. Check the core pressure box (see Figure 3.3) for appropriate response.

d. Record approval if test is successful.

e. Repeat steps b, c, and d until all tests are completed or until a test fails.

<table>
<thead>
<tr>
<th>TEST NO</th>
<th>INPUT</th>
<th>OUTPUT (PSIG)</th>
<th>COLOR</th>
<th>APPROVAL</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>10</td>
<td>45</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>2730</td>
<td>2730</td>
<td>1000</td>
<td>G</td>
</tr>
<tr>
<td>2</td>
<td>4095</td>
<td>4095</td>
<td>1500</td>
<td>R</td>
</tr>
<tr>
<td>3</td>
<td>2592</td>
<td>2730</td>
<td>1000</td>
<td>Y</td>
</tr>
</tbody>
</table>
Figure 3.3

Drywell Temperature Near Cold Legs (Deg. F) vs. RPU Pressure (PSIG)

HNP-2

10/25/83 10:21:56 CDT
5. **TORUS HEAT CAPACITY LIMIT - REACTOR PRESSURE**

   a. Call up Torus Heat Capacity Level Limit Display.

   b. For each test in Table 3.5, set the input to the specified values.

   c. Check the core pressure box (see Figure 3.4) for appropriate response.

   d. Record approval if test is successful.

   e. Repeat steps b, c, and d until all tests are completed or until a test fails.

---

**TABLE 3.5**

**TORUS HEAT CAPACITY LIMIT TESTS - REACTOR PRESSURE**

<table>
<thead>
<tr>
<th>TEST NO</th>
<th>INPUT 10 (PSIG)</th>
<th>INPUT 45 (PSIG)</th>
<th>OUTPUT 1000 (PSIG)</th>
<th>COLOR</th>
<th>APPROVAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2730</td>
<td>2730</td>
<td>1000</td>
<td>G</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>4095</td>
<td>4095</td>
<td>1500</td>
<td>R</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>2592</td>
<td>2730</td>
<td>1000</td>
<td>Y</td>
<td></td>
</tr>
</tbody>
</table>
6. **RPV LEVEL VS. PRESSURE - REACTOR PRESSURE**

   a. Call up the RPV Level vs. Pressure display,

   b. For each test in Table 3.6, set the inputs to the specified values.

   c. Check the core pressure boxes (see Figure 3.5) for the appropriate responses.

   d. Record approval if test is successful.

   e. Repeat steps b, c, and d until all test are completed or until a test fails.

---

**TABLE 3.6**

**RPV LEVEL VS PRESSURE TESTS - REACTOR PRESSURE**

<table>
<thead>
<tr>
<th>TEST NO</th>
<th>INPUT 10</th>
<th>INPUT 45</th>
<th>OUTPUT (PSIG)</th>
<th>COLOR</th>
<th>APPROVAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2730</td>
<td>2730</td>
<td>1000</td>
<td>G</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>4095</td>
<td>4095</td>
<td>1500</td>
<td>R</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>2592</td>
<td>2730</td>
<td>1000</td>
<td>Y</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>366</td>
<td>366</td>
<td>366</td>
<td>G</td>
<td></td>
</tr>
</tbody>
</table>
RPV LEVEL VS. RPV PRESSURE

RPV WATER LEVEL (INCHES)

RPV PRESSURE (PSIG)

FIGURE 3.5
4. DRYWELL PRESSURE

1. INPUTS

The input data for the SSPDS is given in Table 4.1

This series of tests is independent of all other tests.

<table>
<thead>
<tr>
<th>Signal Description</th>
<th>Entry Type</th>
<th>Offset</th>
</tr>
</thead>
<tbody>
<tr>
<td>Drywell Pressure Narrow Range</td>
<td>Analog</td>
<td>26</td>
</tr>
<tr>
<td>Drywell Pressure Narrow Range</td>
<td>Analog</td>
<td>35</td>
</tr>
<tr>
<td>Drywell Pressure Mid-Range</td>
<td>Analog</td>
<td>37</td>
</tr>
<tr>
<td>Drywell Pressure Mid-Range</td>
<td>Analog</td>
<td>39</td>
</tr>
<tr>
<td>Drywell Pressure Wide Range</td>
<td>Analog</td>
<td>41</td>
</tr>
<tr>
<td>Drywell Pressure Wide Range</td>
<td>Analog</td>
<td>43</td>
</tr>
</tbody>
</table>
2. PRIMARY DISPLAY

a. Call up the Primary display.

b. Call the reference test input data.

c. For each test in Table 4.2 set the inputs to the specified values.

d. Check the drywell pressure box (see Figure 4.1) for appropriate response.

d. Record approval if test is successful.

f. Repeat steps c, d, and e until all tests are completed or until a test fails.
<table>
<thead>
<tr>
<th>TEST NO</th>
<th>INPUT</th>
<th>OUTPUT</th>
<th>COLOR</th>
<th>APPROVAL</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>26</td>
<td>35</td>
<td>37</td>
<td>39</td>
</tr>
<tr>
<td>1</td>
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<td>0</td>
</tr>
<tr>
<td>2</td>
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<td>2068</td>
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<td>0</td>
</tr>
<tr>
<td>3</td>
<td>2403</td>
<td>2068</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>4</td>
<td>2027</td>
<td>2403</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>5</td>
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<td>0</td>
</tr>
<tr>
<td>6</td>
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<td>2150</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>7</td>
<td>2047</td>
<td>1059</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>8</td>
<td>2047</td>
<td>1060</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>9</td>
<td>3035</td>
<td>2047</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>10</td>
<td>2047</td>
<td>3035</td>
<td>532</td>
<td>0</td>
</tr>
<tr>
<td>11</td>
<td>2402</td>
<td>0</td>
<td>604</td>
<td>0</td>
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<tr>
<td>12</td>
<td>2402</td>
<td>0</td>
<td>604</td>
<td>532</td>
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<tr>
<td>13</td>
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<td>2047</td>
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<td>15</td>
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<td>0</td>
<td>276</td>
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</tr>
<tr>
<td>16</td>
<td>0</td>
<td>0</td>
<td>71</td>
<td>275</td>
</tr>
<tr>
<td>17</td>
<td>0</td>
<td>0</td>
<td>70</td>
<td>275</td>
</tr>
<tr>
<td>18</td>
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<td>0</td>
<td>276</td>
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<tr>
<td>19</td>
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<td>4020</td>
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<td>4020</td>
</tr>
<tr>
<td>20</td>
<td>4020</td>
<td>4020</td>
<td>276</td>
<td>0</td>
</tr>
<tr>
<td>21</td>
<td>0</td>
<td>0</td>
<td>276</td>
<td>0</td>
</tr>
<tr>
<td>22</td>
<td>0</td>
<td>0</td>
<td>276</td>
<td>0</td>
</tr>
<tr>
<td>23</td>
<td>0</td>
<td>0</td>
<td>276</td>
<td>646</td>
</tr>
<tr>
<td>24</td>
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<td>586</td>
</tr>
<tr>
<td>26</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>27</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>28</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>
3. **DRYWELL TRENDS DISPLAY - DRYWELL PRESSURE**

   a. Call up the Drywell Trends display.

   b. For each test in Table 4.3 set the inputs to the specified values.

   c. Check the Drywell Pressure box (See Figure 4.2) for appropriate responses.

   d. Record approval if the test is successful.

   e. Repeat steps b, c, and d until all tests are completed or until a test fails.

---

**TABLE 4.3**

**DRYWELL TRENDS DISPLAY - DRYWELL PRESSURE**

<table>
<thead>
<tr>
<th>TEST NO.</th>
<th>INPUT</th>
<th>OUTPUT (PSIG)</th>
<th>COLOR</th>
<th>APPROVAL</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>26</td>
<td>35</td>
<td>37</td>
<td>39</td>
</tr>
<tr>
<td>1</td>
<td>2027</td>
<td>2068</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>2</td>
<td>0</td>
<td>0</td>
<td>533</td>
<td>533</td>
</tr>
<tr>
<td>3</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>
DRYWELL TRENDS

FIGURE 4.2
5. TORUS PRESSURE

1. INPUTS

The input data for the SSPDS is given in Table 5.1

This series of tests is independent of all other tests.

<table>
<thead>
<tr>
<th>Signal Description</th>
<th>Entry Type</th>
<th>Offset</th>
</tr>
</thead>
<tbody>
<tr>
<td>Torus Pressure</td>
<td>Analog</td>
<td>32</td>
</tr>
<tr>
<td>Mid-Range</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Torus Pressure</td>
<td>Analog</td>
<td>34</td>
</tr>
<tr>
<td>Mid-Range</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
2. PRIMARY DISPLAY
   a. Call up the Primary Display.
   b. Call the reference test input data.
   c. For each test in Table 5.2 set the inputs to the specified values.
   d. Check the torus pressure box (see Figure 5.1) for appropriate responses.
   e. Record approval if test is successful.
   f. Repeat steps c, d, and e until all test are completed or until a test fails.
### TABLE 5.2
PRIMARY DISPLAY TESTS - TORUS PRESSURE

<table>
<thead>
<tr>
<th>TEST NO.</th>
<th>INPUT 32</th>
<th>INPUT 34</th>
<th>OUTPUT (PSIG)</th>
<th>COLOR</th>
<th>APPROVAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>410</td>
<td>410</td>
<td>0.0</td>
<td>G</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>83</td>
<td>83</td>
<td>-8.0</td>
<td>G</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>4010</td>
<td>4010</td>
<td>+87.9</td>
<td>R</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>370</td>
<td>450</td>
<td>0.0</td>
<td>G</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>4020</td>
<td>410</td>
<td>0.0</td>
<td>Y</td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>410</td>
<td>4020</td>
<td>0.0</td>
<td>Y</td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>4020</td>
<td>4020</td>
<td>Blank</td>
<td>R</td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>4019</td>
<td>4019</td>
<td>88.1</td>
<td>R</td>
<td></td>
</tr>
<tr>
<td>9</td>
<td>70</td>
<td>410</td>
<td>0.0</td>
<td>Y</td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>410</td>
<td>70</td>
<td>0.0</td>
<td>Y</td>
<td></td>
</tr>
<tr>
<td>11</td>
<td>70</td>
<td>70</td>
<td>Blank</td>
<td>Y</td>
<td></td>
</tr>
<tr>
<td>12</td>
<td>71</td>
<td>71</td>
<td>-8.3</td>
<td>G</td>
<td></td>
</tr>
<tr>
<td>13</td>
<td>470</td>
<td>410</td>
<td>0.7</td>
<td>G</td>
<td></td>
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</tr>
<tr>
<td>15</td>
<td>471</td>
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<td>1.5</td>
<td>R</td>
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</tr>
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<td>16</td>
<td>470</td>
<td>470</td>
<td>1.5</td>
<td>R</td>
<td></td>
</tr>
<tr>
<td>17</td>
<td>329</td>
<td>410</td>
<td>-1.0</td>
<td>G</td>
<td></td>
</tr>
<tr>
<td>18</td>
<td>410</td>
<td>328</td>
<td>0.0</td>
<td>Y</td>
<td></td>
</tr>
<tr>
<td>19</td>
<td>410</td>
<td>492</td>
<td>2.0</td>
<td>R</td>
<td></td>
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<tr>
<td>20</td>
<td>70</td>
<td>4020</td>
<td>Blank</td>
<td>Y</td>
<td></td>
</tr>
</tbody>
</table>
3. TORUS TREND DISPLAY

a. Call up the Torus Trends display.

b. For each test in Table 5.3 set the inputs for the specified values.

c. Check the torus pressure level box (see Figure 5.2) for the appropriate response.

d. Record approval if test is successful.

e. Repeat steps b, c, and d until all tests are completed or until a test fails.

<table>
<thead>
<tr>
<th>TEST NO</th>
<th>INPUT</th>
<th>OUTPUT (PSIG)</th>
<th>COLOR</th>
<th>APPROVAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>83 83</td>
<td>-8.0</td>
<td>G</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>4010 4010</td>
<td>+87.9</td>
<td>R</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>70 410</td>
<td>0.0</td>
<td>Y</td>
<td></td>
</tr>
</tbody>
</table>

TABLE 5.3
TORUS TRENDS TESTS - TORUS PRESSURE

Missing p. 59 needs Torus Trend display figure.
4. PRIMARY CONTAINMENT PRESSURE LIMIT DISPLAY

a. Call up the Primary Containment Pressure Limit display.

b. For each test in Table 5.4, set the inputs to the specified values.

c. Check the torus pressure level box (see figure 5.3) for appropriate response.

d. Record approval if test is successful.

e. Repeat steps b, c, and d until a test fails.

<table>
<thead>
<tr>
<th>TEST NO</th>
<th>INPUT</th>
<th>OUTPUT (PSIG)</th>
<th>COLOR</th>
<th>APPROVAL</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>32</td>
<td>34</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>83</td>
<td>83</td>
<td>-8.0</td>
<td>G</td>
</tr>
<tr>
<td>2</td>
<td>4010</td>
<td>4010</td>
<td>+87.9</td>
<td>R</td>
</tr>
<tr>
<td>3</td>
<td>70</td>
<td>410</td>
<td>0.0</td>
<td>Y</td>
</tr>
</tbody>
</table>
5. PRESSURE SUPPRESSION LIMIT DISPLAY

a. Call up the Pressure Suppression Limit display.

b. For each test in Table 5.5, set the inputs to the specified values.

c. Check the torus pressure level box (see figure 5.4) for appropriate response.

d. Record approval if test is successful.

e. Repeat steps b, c and d until all tests are completed or until test fails.

---

**TABLE 5.5**

PRESSURE SUPPRESSION LIMIT DISPLAY - TORUS PRESSURE

<table>
<thead>
<tr>
<th>TEST NO</th>
<th>INPUT</th>
<th>OUTPUT (PSIG)</th>
<th>COLOR</th>
<th>APPROVAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>83</td>
<td>-8.0</td>
<td>G</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>4010</td>
<td>+87.9</td>
<td>R</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>70</td>
<td>0.0</td>
<td>Y</td>
<td></td>
</tr>
</tbody>
</table>
1. **INPUT**

There are 15 temperature signals required by the SSPDS. These signals are constructed from a simulated drywell temperature by using spread constants. Although the use of the spread constants results in identical individual temperature values fed to the SPDS conversion process and shown on the simulator control panels, the average drywell temperature, as calculated by the SPDS, is different from the simulated drywell temperature.

The test for this parameter consists in setting the simulated drywell to certain values, and checking that both averages of the drywell temperature ($\bar{T}$ and $T_{DU}$) are calculated properly. The input data is described in Table 6.1.

This series of tests is independent of all other tests.

---

**TABLE 6.1**

<table>
<thead>
<tr>
<th>SIGNAL DESCRIPTION</th>
<th>ENTRY TYPE</th>
<th>OFFSET</th>
</tr>
</thead>
<tbody>
<tr>
<td>Drywell Temperature</td>
<td>Real</td>
<td>34</td>
</tr>
</tbody>
</table>
2. PRIMARY DISPLAY

a. Call up the Primary Display.

b. Call the reference test input data.

c. For each test in Table 6.2 set the input to the specified values.

d. Check the drywell temperature (T) box (see Figure 6.1) for appropriate response.

e. Record approval if test is successful.

f. Repeat steps c, d, and e until all tests are completed or until a test fails.
### TABLE 6.2

**PRIMARY DISPLAY TESTS - DRYWELL TEMPERATURE**

<table>
<thead>
<tr>
<th>TEST NO.</th>
<th>INPUT 34</th>
<th>OUTPUT (°F)</th>
<th>COLOR</th>
<th>APPROVAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>70</td>
<td>70</td>
<td>G</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>129.29</td>
<td>135</td>
<td>G</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>129.30</td>
<td>135</td>
<td>R</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>35.54</td>
<td>35</td>
<td>G</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>35.53</td>
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<td></td>
</tr>
<tr>
<td>6</td>
<td>33.49</td>
<td>33</td>
<td>Y</td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>33.48</td>
<td>33</td>
<td>Y</td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>31.78</td>
<td>32</td>
<td>Y</td>
<td></td>
</tr>
<tr>
<td>9</td>
<td>31.77</td>
<td>Blank</td>
<td>Y</td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>284.11</td>
<td>311</td>
<td>R</td>
<td></td>
</tr>
<tr>
<td>11</td>
<td>284.12</td>
<td>288</td>
<td>R</td>
<td></td>
</tr>
<tr>
<td>12</td>
<td>354.06</td>
<td>325</td>
<td>R</td>
<td></td>
</tr>
<tr>
<td>13</td>
<td>354.07</td>
<td>Blank</td>
<td>Y</td>
<td></td>
</tr>
</tbody>
</table>
3. **DRYWELL TRENDS DISPLAY**

   a. Call up the Drywell Trends display.

   b. For each test in Table 6.3 set the inputs to the specified values.

   c. Check the Drywell Temperature (T) box (See Figure 6.2) for appropriate responses.

   d. Record approval if test is successful.

   e. Repeat steps b, c, and d until all tests are completed or until a test fails.

**TABLE 6.3**

**DRYWELL TRENDS DISPLAY TESTS**

<table>
<thead>
<tr>
<th>TEST NO.</th>
<th>INPUT 34</th>
<th>OUTPUT °F</th>
<th>COLOR</th>
<th>APPROVAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>70</td>
<td>70</td>
<td>G</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>129.30</td>
<td>135</td>
<td>R</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>35.53</td>
<td>35</td>
<td>Y</td>
<td></td>
</tr>
</tbody>
</table>
4. **RPV SATURATION LIMIT**

a. Call up RPV saturation limit display.

b. For each test in Table 6.4, set the inputs to the specified values.

c. Check the drywell temperature ($T_{DM}$) box (see Figure 6.3) for appropriate response.

d. Record approval if test is successful.

e. Repeat steps b, c and d until all tests are completed or until a test fails.

<table>
<thead>
<tr>
<th>TEST NO.</th>
<th>INPUT 34</th>
<th>OUTPUT (°F)</th>
<th>APPROVAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
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<td>129.30</td>
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<td>4</td>
<td>35.54</td>
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<td>35.53</td>
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</tr>
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<td>6</td>
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<td>32</td>
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</tr>
<tr>
<td>7</td>
<td>33.48</td>
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<td>31.78</td>
<td>32</td>
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<td>9</td>
<td>31.77</td>
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<td>284.11</td>
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<td>11</td>
<td>284.12</td>
<td>288</td>
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<td>12</td>
<td>354.06</td>
<td>325</td>
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</tr>
<tr>
<td>13</td>
<td>354.07</td>
<td>Blank</td>
<td></td>
</tr>
</tbody>
</table>
Figure 6.3
5. **TORUS HEAT CAPACITY LIMIT**

   a. Call up Torus Heat Capacity Limit Display.

   b. For each test in Table 6.5, set the input to the specified values.

   c. Check the drywall temperature \( T \) box (see Figure 6.4 for appropriate response).

   d. Record approval if test is successful.

   e. Repeat steps b, c, and d until all tests are completed or until a test fails.

   

   **TABLE 6.5**

   **HCTL DISPLAY TESTS**

<table>
<thead>
<tr>
<th>TEST NO.</th>
<th>INPUT 34</th>
<th>OUTPUT (°F)</th>
<th>COLOR</th>
<th>APPROVAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>70</td>
<td>70</td>
<td>G</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>129.30</td>
<td>135</td>
<td>R</td>
<td></td>
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<tr>
<td>3</td>
<td>35.53</td>
<td>35</td>
<td>Y</td>
<td></td>
</tr>
</tbody>
</table>
TORUS HEAT CAPACITY TEMPERATURE LIMIT

DRYWELL TEMP (DEGREES F)

TORUS WATER TEMPERATURE (DEG. F)

RPU PRESSURE (PSIG)

FIGURE 6.4
7. TORUS WATER TEMPERATURE

1. INPUT

All torus water temperature signals used in the SSPDS are derived from a single average value. Thus, tests for this parameter will consist only in varying this average value. The input data is described in Table 7.1.

This series of tests is independent of all other tests.

<table>
<thead>
<tr>
<th>Signal Description</th>
<th>Entry Type</th>
<th>Offset</th>
</tr>
</thead>
<tbody>
<tr>
<td>Torus Water Temperature</td>
<td>Real</td>
<td>35</td>
</tr>
</tbody>
</table>

TABLE 7.1
2. PRIMARY DISPLAY

a. Call up the Primary Display.

b. Call reference test input data.

c. For each test in Table 7.2, set the torus water temperature to the specified value.

d. Check the torus water temperature box (see marked-up copy of the Primary display in figure 7.1) for appropriate response.

e. Record approval if test is successful.

f. Repeat steps c, d and e until all tests are completed or until a test failure occurs.

TABLE 7.2

PRIMARY DISPLAY TESTS

<table>
<thead>
<tr>
<th>TEST NO.</th>
<th>INPUT °F</th>
<th>OUTPUT °F</th>
<th>COLOR</th>
<th>APPROVAL</th>
</tr>
</thead>
<tbody>
<tr>
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<td></td>
</tr>
<tr>
<td>3</td>
<td>53.29</td>
<td>53</td>
<td>Y</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>95.00</td>
<td>95</td>
<td>G</td>
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<td>95.01</td>
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<td>246.34</td>
<td>Y</td>
<td></td>
</tr>
</tbody>
</table>
3. **TORUS TRENDS**

   a. Call up the Torus Trends display.

   b. For each test in Table 7.3, set the torus water temperature to the specified value.

   c. Check the torus water temperature box (see figure 7.2 for mark up on copy of display) for appropriate response.

   d. Record approval if test is successful.

   e. Repeat steps b, c and d until all tests are done or until a test fails.

### Table 7.3

**TORUS TRENDS DISPLAY TESTS**

<table>
<thead>
<tr>
<th>TEST NO.</th>
<th>INPUT (35)</th>
<th>OUTPUT (°F)</th>
<th>COLOR</th>
<th>APPROVAL</th>
</tr>
</thead>
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<td>80</td>
<td>G</td>
<td></td>
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<tr>
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<td>53.28</td>
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<tr>
<td>3</td>
<td>-246.33</td>
<td>246</td>
<td>R</td>
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</table>
TORUS TRENDS

LEVEL

PRESSURE

TEMP

FIGURE 7.2
4. **TORUS HEAT CAPACITY TEMPERATURE LIMIT (HCTL)**

   a. Call up the HCTL display.

   b. For each test in Table 7.4, set the torus water temperature to the specified value.

   c. Check the torus water temperature box (see figure 7.3 for mark up on copy of display) for appropriate response.

   d. Record approval if test is successful.

   e. Repeat steps b, c and d until all tests are done or until a test fails.

   

<table>
<thead>
<tr>
<th>TEST NO.</th>
<th>INPUT 35</th>
<th>OUTPUT (°F)</th>
<th>COLOR</th>
<th>APPROVAL</th>
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<tbody>
<tr>
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<td>G</td>
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<td>53.28</td>
<td>Blank</td>
<td>Y</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>246.33</td>
<td>246</td>
<td>R</td>
<td></td>
</tr>
</tbody>
</table>
TEMPERATURE LIMIT

TORUS HEAT CAPACITY TEMPERATURE LIMIT

DRYWELL TEMP
<DEGREES F>

HWP 3

FIGURE 7.3
I. **INPUTS**

Four analog signals are used by the SSPDS, as well as digital signals which indicate:

a. the analyzer range,

b. whether the system is analyzing or off,

c. the isolation valves status.

The input data is listed in Table 8.1.

This series of tests is independent of all other tests.
<table>
<thead>
<tr>
<th>Signal Description</th>
<th>Entry Type</th>
<th>Offset</th>
</tr>
</thead>
<tbody>
<tr>
<td>Drywell/Torus H$_2$ Concentration</td>
<td>Analog</td>
<td>47</td>
</tr>
<tr>
<td>Drywell/Torus H$_2$ Concentration</td>
<td>Analog</td>
<td>49</td>
</tr>
<tr>
<td>Drywell/Torus O$_2$ Concentration</td>
<td>Analog</td>
<td>48</td>
</tr>
<tr>
<td>Drywell/Torus O$_2$ Concentration</td>
<td>Analog</td>
<td>50</td>
</tr>
<tr>
<td>H$_2$ Analyzer &quot;A&quot; High</td>
<td>Digital</td>
<td>213</td>
</tr>
<tr>
<td>H$_2$ Analyzer &quot;B&quot; High</td>
<td>Digital</td>
<td>220</td>
</tr>
<tr>
<td>O$_2$ Analyzer &quot;A&quot; High</td>
<td>Digital</td>
<td>214</td>
</tr>
<tr>
<td>O$_2$ Analyzer &quot;B&quot; High</td>
<td>Digital</td>
<td>221</td>
</tr>
<tr>
<td>System &quot;A&quot; Analyzing</td>
<td>Digital</td>
<td>226</td>
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<tr>
<td>System &quot;B&quot; Analyzing</td>
<td>Digital</td>
<td>217</td>
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<td>Signal Description</td>
<td>Entry Type</td>
<td>Offset</td>
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<tr>
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</table>
2. **PRIMARY DISPLAY**

   a. Call up the Primary display.

   b. Call the reference test input data.

   c. For each test in Table 8.2 set the inputs to the specified values.

   d. Check the hydrogen and oxygen concentration boxes, (see figure 8.1) for appropriate response in Table 8.3.

   e. Record approval if test is successful.

   f. Repeat steps c, d and e until all tests are completed or until a test fails.
<table>
<thead>
<tr>
<th>236</th>
<th>241</th>
<th>242</th>
<th>247</th>
<th>248</th>
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3. **DRYWELL TRENDS DISPLAY**

a. Call up the Drywell Trends display.

b. For each test in Table 8.5 set the inputs to the specified values.

c. Check the hydrogen and oxygen concentration boxes (see figure 8.2) for appropriate response in Table 8.5.

d. Record approval if test is successful.

e. Repeat steps b, c and d until all tests are completed or until a test fails.
S DISPLAY TESTS: INPUT DATA

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### TABLE 8.6 DRYWELL TRENDS DISPLAY TESTS: HYDROGEN OUTPUT

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### TABLE 8.7 DRYWELL TRENDS DISPLAY TESTS: OXYGEN OUTPUT

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9. TORUS WATER LEVEL

1. INPUTS

The input data for these tests is described in Table 9.1.

This series of tests is independent of all other tests.

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2. PRIMARY DISPLAY

a. Call up the Primary display.

b. Call the reference test input data.

c. For each test in Table 9.2 set the inputs to the specified values.

d. Check the torus water level box (see figure 9.1) for appropriate response.

e. Record approval if test is successful.

f. Repeat steps c, d and e until all tests are completed or until a test fails.
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</table>
3. **TORUS TRENDS DISPLAY**

   a. Call up the Torus Trends display.

   b. For each test in Table 9.3, set the inputs to the specified values.

   c. Check the torus water level box (see figure 9.2) for appropriate response.

   d. Record approval if test is successful.

   e. Repeat steps b, c and d until all tests are completed or until a test fails.

---

**TABLE 9.3**

**TORUS TRENDS DISPLAY TESTS**

<table>
<thead>
<tr>
<th>TEST NO.</th>
<th>INPUT</th>
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<th>COLOR</th>
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</table>
4. PRIMARY CONTAINMENT PRESSURE LIMIT DISPLAY

a. Call up the Primary Containment Pressure Limit display.

b. For each test in Table 9.4, set the inputs to the specified values.

c. Check the torus water level box (see figure 9.3) for appropriate response.

d. Record approval if test is successful.

e. Repeat steps b, c and d until all tests are completed or until a test fails.

TABLE 9.4

PRIMARY CONTAINMENT PRESSURE LIMIT DISPLAY TESTS

<table>
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<td>2116</td>
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</table>
5. **TORUS LOAD LIMIT DISPLAY**

a. Call up the Torus Load Limit display.

b. For each test in Table 9.5, set the inputs to the specified values.

c. Check the torus water level box (see figure 9.4) for appropriate response.

d. Record approval if test is successful.

e. Repeat steps b, c and d until all tests are completed or until a test fails.

---

**TABLE 9.5**

TORUS LOAD LIMIT DISPLAY TESTS

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<td>2116</td>
<td>12.9</td>
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</table>
6. PRESSURE SUPPRESSION LIMIT DISPLAY

a. Call up the Pressure Suppression Limit display.

b. For each test in Table 9.6, set the inputs to the specified values.

c. Check the torus water level box (see figure 9.5) for appropriate response.

d. Record approval if test is successful.

e. Repeat steps b, c and d until all tests are completed or until a test fails.

---

TABLE 9.6
PRESSURE SUPPRESSION LIMIT DISPLAY TESTS

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7. **TORUS HEAT CAPACITY LEVEL LIMIT DISPLAY**

a. Call up the Torus Heat Capacity Level Limit display.

b. For each test in Table 9.7, set the inputs to the specified values.

c. Check the torus water level box (see figure 9.6) for appropriate response.

d. Record approval if test is successful.

e. Repeat steps b, c and d until all tests are completed or until a test fails.

---

**TABLE 9.7**

**TORUS HEAT CAPACITY LEVEL LIMIT DISPLAY TESTS**

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</table>
10. **Reactor Water Level**

1. **Inputs**

   Table 10.1 describes the input to be used during these tests. **Note** that reactor pressure and drywell temperature have to be tested before reactor water level.

   **Table 10.1**

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</table>
2. PRIMARY DISPLAY

a. Call up the Primary display

b. Call the reference test input data.

c. For each test in Table 10.2 set the inputs to the specified values.

d. Check the reactor water level box (see figure 10.1) for appropriate response.

e. Record approval if test is successful.

f. Repeat steps c, d and e until all tests are completed or until a test fails.
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<td>0</td>
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<td>0</td>
<td>G</td>
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</tr>
</tbody>
</table>

**NOTE:** Time constant set to 1.0.
3. CORE TRENDS

a. Call up the Core Trends display
b. For each test in Table 10.3 set the inputs to the specified values.
c. Check the reactor water level box (see Figure 10.2) for appropriate response.
d. Record approval if test is successful.
e. Repeat steps b, c and d until all tests are completed or until a test fails.
<table>
<thead>
<tr>
<th>TEST NO.</th>
<th>2</th>
<th>3</th>
<th>6</th>
<th>7</th>
<th>9</th>
<th>12</th>
<th>14</th>
<th>10</th>
<th>45</th>
<th>34</th>
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<td>1</td>
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<td>589</td>
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</tr>
<tr>
<td>OUTPUT</td>
<td>COLOR</td>
<td>APPROVAL</td>
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</tr>
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<td></td>
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<td></td>
</tr>
<tr>
<td>3.4</td>
<td>R</td>
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</tr>
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<td></td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>12.0</td>
<td>Y</td>
<td>(Hot leg may boil)</td>
<td></td>
<td></td>
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<td></td>
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<td></td>
<td></td>
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<td></td>
<td></td>
</tr>
</tbody>
</table>
Figure 10.2

HNP-2

CORE TRENDS

TIME (MIN)

LEVEL

PSIG

PRESSURE

CDT

10/25/83 10:11:30
4. **RPV LEVEL VS. TIME**

   a. Call up the RPV Level vs. Time display

   b. For each test in Table 10.4 set the inputs to the specified values.

   c. Check the reactor water level box (see Figure 10.3) for appropriate response.

   d. Record approval if test is successful.

   e. Repeat steps b, c and d until all tests are completed or until a test fails.
<table>
<thead>
<tr>
<th>TEST NO.</th>
<th>INPUT</th>
<th>OUTPUT</th>
<th>COLOR</th>
<th>APPROVAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>4095</td>
<td>2730</td>
<td>124.29</td>
<td>1</td>
</tr>
<tr>
<td>2</td>
<td>0</td>
<td>240</td>
<td>245.3</td>
<td>1</td>
</tr>
<tr>
<td>3</td>
<td>0</td>
<td>240</td>
<td>245.4</td>
<td>1</td>
</tr>
</tbody>
</table>

(12.0 Y)

(Hot leg may boil)
5. **RPV Level vs. RPV Pressure**

a. Call up the RPV Level vs. RPV Pressure display.

b. For each test in Table 10.5 set the inputs to the specified values.

c. Check the reactor water level box (see Figure 10.4) for appropriate response.

d. Record approval if test is successful.

e. Repeat steps b, c and d until all tests are completed or until a test fails.
<table>
<thead>
<tr>
<th>TEST NO.</th>
<th>2</th>
<th>3</th>
<th>6</th>
<th>7</th>
<th>9</th>
<th>12</th>
<th>14</th>
<th>10</th>
<th>45</th>
<th>34</th>
<th>67</th>
<th>68</th>
<th>OUTPUT</th>
<th>COLOR</th>
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<td>124.29</td>
<td>1</td>
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<td>40.1</td>
<td>G</td>
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</tr>
<tr>
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<td>240</td>
<td>245.3</td>
<td>1</td>
<td>1</td>
<td>3.4</td>
<td>R</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>0</td>
<td>0</td>
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<td>3715</td>
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<td>245.4</td>
<td>1</td>
<td>1</td>
<td>12.0 (Hot leg may boil)</td>
<td>Y</td>
<td></td>
</tr>
</tbody>
</table>
FIGURE 10.4
11. SOURCE RANGE MONITOR

1. INPUTS

Four analog signals and nine digital signals are used by the SSPDS. The input data for the SSPDS is given in Table 11.1.

This test series is independent of all other tests.

<table>
<thead>
<tr>
<th>DESCRIPTION</th>
<th>ENTRY TYPE</th>
<th>OFFSET</th>
</tr>
</thead>
<tbody>
<tr>
<td>SRM &quot;A&quot; Retract</td>
<td>Digital</td>
<td>190</td>
</tr>
<tr>
<td>SRM &quot;A&quot; In</td>
<td>Digital</td>
<td>191</td>
</tr>
<tr>
<td>SRM &quot;A&quot; Out</td>
<td>Digital</td>
<td>192</td>
</tr>
<tr>
<td>SRM &quot;B&quot; Retract</td>
<td>Digital</td>
<td>193</td>
</tr>
<tr>
<td>SRM &quot;B&quot; In</td>
<td>Digital</td>
<td>194</td>
</tr>
<tr>
<td>SRM &quot;B&quot; Out</td>
<td>Digital</td>
<td>195</td>
</tr>
<tr>
<td>SRM &quot;C&quot; Retract</td>
<td>Digital</td>
<td>198</td>
</tr>
<tr>
<td>SRM &quot;C&quot; In</td>
<td>Digital</td>
<td>199</td>
</tr>
<tr>
<td>SRM &quot;C&quot; Out</td>
<td>Digital</td>
<td>200</td>
</tr>
<tr>
<td>SRM &quot;D&quot; Retract</td>
<td>Digital</td>
<td>201</td>
</tr>
<tr>
<td>SRM &quot;D&quot; In</td>
<td>Digital</td>
<td>202</td>
</tr>
<tr>
<td>SRM &quot;D&quot; Out</td>
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<td>203</td>
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<td>Analog</td>
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</tr>
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<td>2C51-RIS-K600C</td>
<td>Analog</td>
<td>19</td>
</tr>
<tr>
<td>2C51-RIS-K600D</td>
<td>Analog</td>
<td>22</td>
</tr>
</tbody>
</table>
2. **PRIMARY DISPLAY**

   a. Call up the Primary display.

   b. Call the reference test input data.

   c. For each test in TABLE 11.2 set the input to the specified values.

   d. Check the source range monitor box (see Figure 11.1) for appropriate response.

   e. Record approval if test is successful.

   f. Repeat steps c, d, and e until all tests are completed or until a test fails.
<table>
<thead>
<tr>
<th>TEST NO.</th>
<th>15</th>
<th>18</th>
<th>19</th>
<th>22</th>
<th>190</th>
<th>191</th>
<th>192</th>
<th>193</th>
<th>194</th>
<th>195</th>
<th>198</th>
<th>199</th>
<th>200</th>
<th>201</th>
<th>202</th>
<th>203</th>
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</table>
## OUTPUT

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<th>TEST NO</th>
<th>COLOR</th>
<th>VALUE</th>
<th>STATUS BLOCK</th>
<th>APPROVAL</th>
</tr>
</thead>
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<tr>
<td>1</td>
<td>Green</td>
<td>1.0E+6</td>
<td>Out</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Green</td>
<td>1.0E+6</td>
<td>In</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Yellow</td>
<td>Blank</td>
<td>Blank</td>
<td>Blank</td>
</tr>
<tr>
<td>4</td>
<td>Yellow</td>
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<td>Blank</td>
<td>Blank</td>
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<td>In</td>
<td></td>
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<td>Green</td>
<td>3.2E+2</td>
<td>In</td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>Green</td>
<td>1.0E+1</td>
<td>In</td>
<td></td>
</tr>
</tbody>
</table>
12. MAIN STACK RADIATION

1. INPUTS

Four analog signals are used by the SSPDS. The input data for the SSPDS is given in Table 12.1.

This series of tests is independent of all other tests.

**TABLE 12.1**

<table>
<thead>
<tr>
<th>SIGNAL DESCRIPTION</th>
<th>TYPE</th>
<th>OFFSET</th>
</tr>
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<tbody>
<tr>
<td>Off Gas A</td>
<td>Analog</td>
<td>56</td>
</tr>
<tr>
<td>Off Gas B</td>
<td>Analog</td>
<td>57</td>
</tr>
<tr>
<td>SBGT A</td>
<td>Analog</td>
<td>51</td>
</tr>
<tr>
<td>SBGT B</td>
<td>Analog</td>
<td>53</td>
</tr>
</tbody>
</table>
2. PRIMARY DISPLAY

a. Call up the Primary display.

b. Call the reference test input data.

c. For each test in TABLE 12.2 set the input to the specified values.

d. Check the main stack radiation box (see Figure 12.1) for appropriate response.

e. Record approval if test is successful.

f. Repeat steps c, d, and e until all tests are completed or until a test fails.
<table>
<thead>
<tr>
<th>TEST NO.</th>
<th>INPUT</th>
<th>OUTPUT</th>
<th>COLOR</th>
<th>APPROVAL</th>
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</thead>
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<td>51</td>
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</tr>
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<td>8</td>
<td>1444</td>
<td>2034</td>
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<td>0</td>
</tr>
</tbody>
</table>
2. **EFFLUENT TRENDS DISPLAY**

   a. Call up the Effluent Trends display.

   b. For each test in Table 12.3 set the input to the specified values.

   c. Check the main stack radiation box (see Figure 12.2) for appropriate response.

   d. Record approval if test is successful.

   e. Repeat steps b, c and d until all tests are completed or until a test fails.
FIGURE 12.2
<table>
<thead>
<tr>
<th>TEST NO.</th>
<th>56</th>
<th>57</th>
<th>51</th>
<th>53</th>
<th>OUTPUT</th>
<th>COLOR</th>
<th>APPROVAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2034</td>
<td>2034</td>
<td>0</td>
<td>0</td>
<td>2.5E-6</td>
<td>Green</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>2034</td>
<td>2733</td>
<td>0</td>
<td>0</td>
<td>2.1E-5</td>
<td>Green</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>2034</td>
<td>2734</td>
<td>0</td>
<td>0</td>
<td>2.1E-5</td>
<td>Yellow</td>
<td></td>
</tr>
</tbody>
</table>
13. REACTOR BUILDING RADIATION

1. INPUTS

Four analog signals are used by the SSPDS. The input data for the SSPDS is given in Table 13.1.

This series of tests is independent of all other tests.

<table>
<thead>
<tr>
<th>Signal Description</th>
<th>Entry Type</th>
<th>Offset</th>
</tr>
</thead>
<tbody>
<tr>
<td>R/B Vent A</td>
<td>Analog</td>
<td>60</td>
</tr>
<tr>
<td>R/B Vent B</td>
<td>Analog</td>
<td>61</td>
</tr>
<tr>
<td>R/B Vent C</td>
<td>Analog</td>
<td>64</td>
</tr>
<tr>
<td>R/B Vent D</td>
<td>Analog</td>
<td>65</td>
</tr>
</tbody>
</table>
2. PRIMARY DISPLAY
   a. Call up the Primary display.
   b. Call the reference test input data.
   c. For each test in TABLE 13.2 set the input to the specified values.
   d. Check the reactor building radiation box (see Figure 13.1) for appropriate response.
   e. Record approval if test is successful.
   f. Repeat steps c, d, and e until all tests are completed or until a test fails.
<table>
<thead>
<tr>
<th>TEST NO.</th>
<th>INPUT</th>
<th>OUTPUT</th>
<th>COLOR</th>
<th>APPROVAL</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>60</td>
<td>61</td>
<td>64</td>
<td>65</td>
</tr>
<tr>
<td>1</td>
<td>3071</td>
<td>3071</td>
<td>3071</td>
<td>3071</td>
</tr>
<tr>
<td>2</td>
<td>3071</td>
<td>2197</td>
<td>3071</td>
<td>3071</td>
</tr>
<tr>
<td>3</td>
<td>3071</td>
<td>2196</td>
<td>3071</td>
<td>3071</td>
</tr>
<tr>
<td>4</td>
<td>3071</td>
<td>563</td>
<td>3071</td>
<td>3071</td>
</tr>
<tr>
<td>5</td>
<td>3071</td>
<td>562</td>
<td>3071</td>
<td>3071</td>
</tr>
<tr>
<td>6</td>
<td>562</td>
<td>562</td>
<td>3071</td>
<td>3071</td>
</tr>
<tr>
<td>7</td>
<td>562</td>
<td>3071</td>
<td>3071</td>
<td>3071</td>
</tr>
<tr>
<td>8</td>
<td>563</td>
<td>3071</td>
<td>3071</td>
<td>3071</td>
</tr>
</tbody>
</table>
2. **EFFLUENT TRENDS DISPLAY**

   a. Call up the Effluent Trends Display

   b. For each test in Table 13.3 set the input to the specified values.

   c. Check the reactor building vent radiation box (see Figure 13.2) for appropriate response.

   d. Record approval if test is successful.

   e. Repeat steps b, c and d until all tests are completed or until a test fails.
Figure 13.2
**TABLE 13.3**

**EFFLUENT TRENDS DISPLAY – R/B VENT RADIATION**

<table>
<thead>
<tr>
<th>TEST NO.</th>
<th>INPUT</th>
<th>OUTPUT</th>
<th>COLOR</th>
<th>APPROVAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>3071</td>
<td>3071</td>
<td>3071</td>
<td>3071</td>
</tr>
<tr>
<td>2</td>
<td>3071</td>
<td>2198</td>
<td>3071</td>
<td>3071</td>
</tr>
<tr>
<td>3</td>
<td>3071</td>
<td>2197</td>
<td>3071</td>
<td>3071</td>
</tr>
</tbody>
</table>
14. SAFETY RELIEF VALVE STATUS

1. INPUTS

Eleven digital signals are used by the SSPDS. The input data for the SSPDS is given in Table 14.1.

This series of tests is independent of all other tests.
<table>
<thead>
<tr>
<th>Signal Description</th>
<th>Entry Type</th>
<th>Offset</th>
</tr>
</thead>
<tbody>
<tr>
<td>Main Steam SRV &quot;A&quot;</td>
<td>Real</td>
<td>36</td>
</tr>
<tr>
<td>Main Steam SRV &quot;B&quot;</td>
<td>Real</td>
<td>37</td>
</tr>
<tr>
<td>Main Steam SRV &quot;C&quot;</td>
<td>Real</td>
<td>38</td>
</tr>
<tr>
<td>Main Steam SRV &quot;D&quot;</td>
<td>Real</td>
<td>39</td>
</tr>
<tr>
<td>Main Steam SRV &quot;E&quot;</td>
<td>Real</td>
<td>40</td>
</tr>
<tr>
<td>Main Steam SRV &quot;F&quot;</td>
<td>Real</td>
<td>41</td>
</tr>
<tr>
<td>Main Steam SRV &quot;G&quot;</td>
<td>Real</td>
<td>42</td>
</tr>
<tr>
<td>Main Steam SRV &quot;H&quot;</td>
<td>Real</td>
<td>43</td>
</tr>
<tr>
<td>Main Steam SRV &quot;K&quot;</td>
<td>Real</td>
<td>44</td>
</tr>
<tr>
<td>Main Steam SRV &quot;L&quot;</td>
<td>Real</td>
<td>45</td>
</tr>
<tr>
<td>Main Steam SRV &quot;M&quot;</td>
<td>Real</td>
<td>46</td>
</tr>
</tbody>
</table>
2. PRIMARY DISPLAY

a. Call up the Primary display.

b. Call the reference test input data.

c. For each test in Table 14.2 set the input to the specified values.

d. Check the safety relief valve boxes (see Figure 14.1) for appropriate response.

e. Record approval if test is successful.

f. Repeat steps c, d, and e until all tests are completed or until a test fails.
<table>
<thead>
<tr>
<th>TEST NO.</th>
<th>INPUT*</th>
<th>OUTPUT**</th>
<th>APPROVAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Standard</td>
<td>All Green</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>36</td>
<td>A</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>37</td>
<td>B</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>38</td>
<td>C</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>39</td>
<td>D</td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>40</td>
<td>E</td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>41</td>
<td>F</td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>42</td>
<td>G</td>
<td></td>
</tr>
<tr>
<td>9</td>
<td>43</td>
<td>F</td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>44</td>
<td>K</td>
<td></td>
</tr>
<tr>
<td>11</td>
<td>45</td>
<td>L</td>
<td></td>
</tr>
<tr>
<td>12</td>
<td>46</td>
<td>M</td>
<td></td>
</tr>
</tbody>
</table>

* All SRV inputs are to be 0 except the indicated input (offset) is to be 1

** All SRV indicators are to be green except the indicated block is to be red
15. **SPECIAL DIGITAL FUNCTIONS**

1. **INPUTS**

Two special functions (Reactor mode switch and a control rod status indicator) are represented in the SSPDS. A total of five digital signals are available to define these functions. The input data for the SSPDS is given in Table 15.1.

The test of reactor water level must be completed prior to execution of this series of tests.

**TABLE 15.1**

<table>
<thead>
<tr>
<th>DESCRIPTION</th>
<th>ENTRY TYPE</th>
<th>OFFSET</th>
</tr>
</thead>
<tbody>
<tr>
<td>Control Rods In</td>
<td>Digital</td>
<td>188</td>
</tr>
<tr>
<td>Shutdown</td>
<td>Digital</td>
<td>207</td>
</tr>
<tr>
<td>Refuel</td>
<td>Digital</td>
<td>208</td>
</tr>
<tr>
<td>Hot Standby</td>
<td>Digital</td>
<td>209</td>
</tr>
<tr>
<td>Run</td>
<td>Digital</td>
<td>210</td>
</tr>
</tbody>
</table>
2. **PRIMARY DISPLAY**

   a. Call up the Primary display.

   b. Call the reference test input data.

   c. For each test in TABLE 15.2 set the input to the specified values.

   d. Check the all rods in indicator and water level box (See Figure 15.1) for appropriate response.

   e. Record approval if test is successful.

   f. Repeat steps c, d, and e until all tests are completed or until a test fails.
<table>
<thead>
<tr>
<th>TEST NO</th>
<th>INPUT</th>
<th>OUTPUT</th>
<th>APPROVAL</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>207</td>
<td>208</td>
<td>209</td>
</tr>
<tr>
<td>1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>0</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>3</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>4</td>
<td>1</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>5</td>
<td>0</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>6</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>
1. **INPUT**

Delta $T_{HC}$ is a derived quantity that is used only on the Torus Heat Capacity Level Limit display. Delta $T_{HC}$ depends on the torus water temperature.

This procedure requires that the torus water temperature and torus water level procedure be completed prior to execution of this procedure.
2. **TORUS HEAT CAPACITY LEVEL DISPLAY**

a. Call up Torus Heat Capacity Level display.

b. Call the reference test input data.

c. For each test in Table 16.1 set the input to the specified values.

d. Check the \( \Delta T_{HC} \) box (see Figure 16.1) for appropriate response.

e. Record approval if test is successful.
<table>
<thead>
<tr>
<th>TEST NO.</th>
<th>INPUT 35</th>
<th>OUTPUT</th>
<th>APPROVAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>80</td>
<td>73.8</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>130</td>
<td>23.8</td>
<td></td>
</tr>
</tbody>
</table>
TORUS HEAT CAPACITY LEVEL LIMIT