STAT (3)

JAN 07 1997 ENGINEERING DATA TRANSMITTAL

Page 1 of 1

1. EDT 161641

2. To: (Receiving Organization) WRAP 1		3. From: (Originating Organization) WRAP 1		4. Related EDT No.: N/A	
5. Proj./Prog./Dept./Div.: W026/Solid Waste Construction		6. Design Authority/ Design Agent/Cog. Engr.: TL Watson		7. Purchase Order No.: N/A	
8. Originator Remarks: For release				9. Equip./Component No.: N/A	
				10. System/Bldg./Facility: N/A	
11. Receiver Remarks: 11A. Design Baseline Document? ☐ Yes ☒ No				12. Major Assm. Dwg. No.: N/A	
				13. Permit/Permit Application No.: N/A	
				14. Required Response Date: N/A	

15. DATA TRANSMITTED					(F)	(G)	(H)	(I)
(A) Item No.	(B) Document/Drawing No.	(C) Sheet No.	(D) Rev. No.	(E) Title or Description of Data Transmitted	Approval Designator	Reason for Transmittal	Originator Disposition	Receiver Disposition
1	HNF-SD-W026-ATP-019		0	Motor Control Centers Test Plan	Q	2	1	
2	HNF-SD-W026-ATR-019		0	Motor Control Centers Test Report	Q	2	1	

16. KEY					
Approval Designator (F)		Reason for Transmittal (G)		Disposition (H) & (I)	
E, S, Q, D or N/A (see WHC-CM-3-5, Sec.12.7)		1. Approval 2. Release 3. Information	4. Review 5. Post-Review 6. Dist. (Receipt Acknow. Required)	1. Approved 2. Approved w/comment 3. Disapproved w/comment	4. Reviewed no/comment 5. Reviewed w/comment 6. Receipt acknowledged

17. SIGNATURE/DISTRIBUTION (See Approval Designator for required signatures)											
(G) Reason	(H) Disp.	(J) Name	(K) Signature	(L) Date	(M) MSIN	(G) Reason	(H) Disp.	(J) Name	(K) Signature	(L) Date	(M) MSIN
1	1	Proj. Manager: Delaney	<i>[Signature]</i>	12/29/96	T4-52						
1	1	Design Authority: TL Watson	<i>[Signature]</i>	12/29/96	T4-52						
1	1	Proj. Engr.: JB Payne	<i>[Signature]</i>	12/29/96	T4-52						
1	1	Cog. Engr.: BF Pierce	<i>[Signature]</i>	12/29/96	T4-52						
1	1	Cog. Mgr.: RJ Bottenus	<i>[Signature]</i>	12/29/96	T4-52						
1	1	QA: JR McGee	<i>[Signature]</i>	12/19/96	T4-02						
		Safety									
		Env.									

18. JB Payne <i>[Signature]</i> 12/14/96 Signature of EDT Originator Date		19. RJ Bottenus <i>[Signature]</i> 12/30/96 Authorized Representative Date for Receiving Organization		20. RJ Bottenus <i>[Signature]</i> 12/30/96 Design Authority/ Cognizant Manager Date		21. DOE APPROVAL (if required) Ctrl. No. ☐ Approved ☐ Approved w/comments ☐ Disapproved w/comments	
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W-026, Acceptance Test Report Motor Control Centers (Submittal # 515.1)

TL Watson
Westinghouse Hanford, Richland, WA 99352
U.S. Department of Energy Contract DE-AC06-87RL10930

EDT/ECN: *EDT-161641* UC:
Org Code: 04E00 Charge Code: P1JF18
B&R Code: 39EW3130020 Total Pages: 125

Key Words: Test, MCC, Test Director, WRAP 1

Abstract: A generic test procedure for Westinghouse Motor Control Centers is included. Checksheets indicate satisfactory operation of MCC components.

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[Signature]
Release Approval

1/7/97
Date

Approved for Public Release

WESCO

3210 SOUTH 900 WEST

SALT LAKE CITY, UTAH 84130

PURCHASE ORDER NUMBER: D/S 6438-538240

OUR JOB NUMBER: SEEG241

ENGINEERING SERVICE REPORT

PREPARED BY: LYLE MCFARLAND

OCTOBER 25, 1995

WESTINGHOUSE ELECTRIC CORPORATION
ENGINEERING SERVICES DIVISION
405 SOUTHWEST 41ST STREET
RENTON, WASHINGTON 98055
(206) 656-4380

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ATR
515.1

PURPOSE

Westinghouse Energy Services provided start up testing at the WRAP Facility Hanford. This report covers services provided October 9, 1995 to October 18, 1995.

PERSON(S) CONTACTED

Mr. Richard Schneehagen of Plateau Electric
Mr. Jim Lawson of Plateau Electric
Mr. Floyd Snyder of ICF Kaiser Hanford

APPARATUS IDENTIFICATION

The following equipment underwent testing:

Main 480 volt switchgear including 11 power circuit breakers

Automatic power factor correction capacitor system

Motor control centers MCC-05-101, MCC-09-101, MCC-11-101

Note: Per request of Jim Lawson; MCC-07-101, MCC-09-102, MCC-11-102 and MCC-11-103 will be tested at a later date.

Per Richard Schneehagen, the transformers and panel boards do not require testing.

TIME IN SERVICE AND APPLICATION

Equipment is part of a new installation and provides 480 volt power distribution at the WRAP Hanford Facility.

AS FOUND

The equipment appeared in acceptable condition with the following exceptions:

Main 480 Volt Switchgear

No exceptions noted.

Power Factor Correction System

No exceptions noted.

MCC-05-101

Starters PF-05-101A, PF-05-101B, PF-05-102A and PF-05-102B vary from Revision 3 drawings.

MCC-09-101

Starters CV-09-103A, CV-09-103B, CV-09-104A, CV-09-104B and CV-09-106 vary from Revision 3 drawings. The existing starters are reversing while the Revision 3 drawings indicate non-reversing starters.

MCC-11-101

Starters EF-11-402 varies from Revision 3 drawings; however, EF-11-402 will probably become a spare starter.

ACTION TAKEN

Westinghouse performed the following:

Main 480 Volt Switchgear

Inspect switchgear for condition of paint, panels, filters, doors, lamps, relay covers, heaters, and control/potential transformers.

Inspect cleanliness of cells.

Inspect switchgear frame for alignment, level, anchorage and grounding.

Inspect control devices and metering instruments.

Inspect control wiring termination.

Check cell racking mechanisms.

Check cell interlock for proper operation.

Check key interlock operation and remove spare keys (spare key included with this report).

Check main bus insulation resistance phase to phase and phase to ground.

Circuit Breakers-Main 480 Volt Switchgear

Check breaker rating against single line drawing.

Check for smooth operation by closing and tripping breaker.

Check connections for tightness.

Inspect breaker for cracked or broken springs or retainers. Inspect primary and secondary disconnects for broken parts.

Check main and arcing contacts against manufacturers tolerance for wipe, closing sequence, open gap and alignment.

Inspect control devices for broken parts or wear.

Inspect control wiring and check connections for tightness.

Enter breaker protective settings provided by Westinghouse Hanford.

Check insulation resistance phase to phase, phase to ground and across open contacts.

Check contact resistance with a low resistance ohmmeter.

Test breaker with auxiliary power module and trip unit test feature.

Power Factor Correction System

Created and revised the acceptance test procedure for the power factor correction system.

Tested per acceptance test procedure (ATP) W026ATP039 (attached).

Motor control centers MCC-05-101, MCC-09-101, MCC-11-101

Created and revised the acceptance test procedure for the motor control centers.

Tested per acceptance test procedure W026ATP032 (attached).

Note: Motor control center ATP W026ATP032 remains open until testing of the remaining MCC starters is completed. Do **NOT** submit ATP032 until completed.

TEST DATA

Results of the testing performed per an ATP appear in the contents of the attached ATP.

Test results for equipment not covered by an ATP appear on the attached Westinghouse Test Data Sheets.

REMARKS

Westinghouse will complete the motor control centers upon receipt of the following:

A change notice to the purchase order for an additional mobilization. The change notice covers the additional time and mileage required to travel to and from the WRAP Facility.

Notification from Plateau Electric that the remaining motor control centers are ready for testing.

Westinghouse quotes the following for the additional mobilization:

All pricing quoted per the terms and conditions set forth in Selling Policy 49-000.

Price covers the additional time and mileage required for one trip to from the WRAP Facility.

Price for one additional mobilizations..... \$934.00

PROJECT TITLE: WRAP

Contract KEH5366

PROCEDURE APPROVAL

10/16/95
Date

10/16/95
Date

10/16/95
Date

ICF KH [APPROVAL] [CONCURRENCE]

10-16-95
Date

W026ATR032

Rev 0

Page 2

EXECUTION AND TEST APPROVAL

EXECUTED BY

10-17-95
Director/Organization Date Test Operator/Organization Date

Recorder/Organization Date

WITNESSES

Witness/Organization Date Witness/Organization Date

A-E APPROVAL

Kaiser Engineers Hanford Company

Without exceptions _____ With exceptions resolved _____ With exceptions outstanding _____

Design Engineer Date

Project Manager Date

TEST APPROVAL AND ACCEPTANCE

[Operating Contractor]

Without exceptions _____ With exceptions resolved _____ With exceptions outstanding _____

[Title or Department] Date [Title or Department] Date

[Title or Department] Date [Title or Department] Date

W026ATP032

Rev 0

Page 3

TABLE OF CONTENTS

Section	Page
TITLE/PROCEDURE APPROVAL	1
EXECUTION AND TEST APPROVAL	2
TABLE OF CONTENTS	3
1 PURPOSE	4
2 REFERENCES	4
3 RESPONSIBILITIES	5
4 CHANGE CONTROL	7
5 EXECUTION	7
6 EXCEPTIONS	8
7 PREREQUISITES, EQUIPMENT/INSTRUMENTS, AND ABBREVIATIONS	9
8 MOTOR CONTROL CENTER STARTER TEST	10
9 TEST DATA SHEETS	

NOTE: At completion of test, enter pages added during performance of test.

3. RESPONSIBILITIES

3.1. GENERAL

Each company or organization participating in this ATP will designate personnel to assume the responsibilities and duties as defined herein for their respective roles. The designees shall become familiar with this ATP and the systems involved to the extent that they can perform their assigned duties.

3.2. TEST DIRECTOR

- 3.2.1. Coordinates testing with ICF KH and directs acceptance testing.
- 3.2.2. Acts as liaison between the participants in acceptance testing.
- 3.2.3. Distributes the approved testing schedule before start of testing.
- 3.2.4. Schedules and conducts a pretest kickoff meeting with test participants before start of testing when necessary.
- 3.2.5. Notifies the persons performing and witnessing the test 2 days before the start of testing.
- 3.2.6. Schedules a dry run when necessary.
- 3.2.7. Notifies concerned parties when a change is made in the testing schedule.
- 3.2.8. Takes necessary action to clear exceptions to the test.
- 3.2.9. Confirms that field testing and inspection of the system or portion of the system to be tested has been completed.
- 3.2.10. Stops any test which, in his/her judgment, may cause damage to the system until the problem has been resolved.
- 3.2.11. After verifying there is no adverse impact, may alter the sequence in which systems or subsystems are tested.
- 3.2.12. Ensures that required environmental conditions are maintained.
- 3.2.13. If a test is to be suspended for a period of time, ensures that the system is left in a safe mode.
- 3.2.14. Before restarting suspended test, reverifies the test prerequisites.
- 3.2.15. Initiates ECNs to document required changes to the ATP.
- 3.2.16. Reviews recorded data, discrepancies, and exceptions.
- 3.2.17. Obtains information or changes necessary to clear or resolve objections during the performance of the test.
- 3.2.18. Signs Execution and Test Approval page when test has been performed.

W026ATP032

Rev 0

Page 4

1. PURPOSE

This Acceptance Test Procedure (ATP) has been prepared to demonstrate the Motor Control Center Starters function as required by project criteria.

2. REFERENCES

2.1. DRAWINGS

H-2-131821	SHEET 1,2,3,5
H-2-131823	SHEET 1

2.2. SPECIFICATIONS

Specification Section 16480, Motor Control Centers
Specification Section 16050, Basic Electrical Materials and Methods

2.3. ENGINEERING CHANGE NOTICES (ECN)

Prior to final test approval, enter ECNs* written against this ATP.

2.4. OTHER: NOT USED

*Engineering Change Notices or other agreed upon method for controlling revisions to the ATP.

W026ATP032

Rev 0

Page 6

3.2.19. Signs Exception form when exception has been resolved.

3.2.20. Obtains required signatures on the ATP Master prior to reproduction and distribution.

3.3. WITNESSES [Provided by Participating Organizations. One witness shall be a ICF KH Title III acceptance inspector.]

3.3.1. Witness the tests.

3.3.2. Review results of testing.

3.3.3. Assist the Test Director when requested.

3.3.4. Sign Execution and Test Approval page when test has been performed.

3.3.5. Sign Exception form when exception has been resolved.

3.4. RECORDER

3.4.1. Prepares a Field copy from the ATP Master.

3.4.2. Records names of designated personnel on Field copy of ATP prior to start of testing.

3.4.3. Records test instrument identification numbers and calibration expiration dates.

3.4.4. Initials and dates each test step on the Field copy as it is completed, next to the step number, or on a Data Sheet when provided. Records Test Data. On Data Sheets where there is not room for both the initial and date, date may be entered at bottom of column.

3.4.5. Records objections and exceptions on an Exception form. Transfers information in ink or type to an Exception form master. Uses additional Exception forms as needed.

3.4.6. Signs Execution and Test Approval page when test has been performed.

3.4.7. After test is finished, assigns alpha numeric page numbers to added Data Sheets and Exception forms. Records page numbers in the Table of Contents.

3.4.8. Transfers changes and the final test results with Recorder's signature and dates for each step to the Master in ink or type. Submits the completed Master to the Test Director for approval signature routing. Transmits the Field copy to ICF KH when test has been accepted and exceptions closed-out.

3.4.9. Signs Exception form when exception has been resolved, and transmits to Test Director.

3.5. TEST OPERATOR

3.5.1. Performs test under direction of the Test Director.

3.5.2. Provides labor, equipment, and test instruments required for performing tests which have not been designated as being provided by others.

W026ATP032

Rev 0

Page 7

- 3.5.3. Requests in writing from ICF KH those services, materials, or equipment that have been designated as being supplied by others.
- 3.5.4. Confirms that equipment required for performing test will be available at the start of testing.
- 3.5.5. Signs the Execution and Test Approval page.

4. CHANGE CONTROL

Required changes to this ATP must be processed on ECNs in accordance with company procedures. If a need for change is discovered in the course of running the test, the test shall be stopped until the ECN is approved. However, this does not prevent the running of another portion of the test unaffected by the change.

5. EXECUTION

5.1. OCCUPATIONAL SAFETY AND HEALTH

Individuals shall carry out their assigned work in a safe manner to protect themselves and others from undue hazards and to prevent damage to property and environment. Facility line managers shall assure the safety of activities within their areas to prevent injury, property damage, or interruption of operation. Performance of test activities shall always include safety and health aspects.

5.2. PERFORMANCE

- 5.2.1. Use ICF KH concurred copy of this ATP.
 - 5.2.2. Conduct test meeting responsibility requirements of Section 3 of this ATP.
 - 5.2.3. Perform test in accordance with steps in Section(s) 8 (9, etc) of the ATP.
 - 5.2.4. When test has been completed, obtain signatures of test executioners and witnesses.
 - 5.2.5. Submit the test report to ICF KH for approval.
- NOTE 1: At this point, the "procedure" becomes a "report."
- NOTE 2: There may be exceptions outstanding.
- 5.2.6. Clear exceptions and submit to ICF KH for approval.

NOTE: Ideally, the cleared exceptions would be submitted with the report. Coordinate with ICF KH as to allowable delay between test completion and submittals.

6. EXCEPTIONS

6.1. GENERAL

Exceptions to the required test results are sequentially numbered and recorded on individual Exception forms. This enables case-by-case resolution and approval of each exception.

Errors/exceptions in the ATP itself shall NOT be processed as test exceptions (see Section 4).

6.2. RECORDING

6.2.1. Number each exception sequentially as it occurs and record it on Exception Form KEH 428, or an approved substitute. Copies will be supplied during the Preconstruction Conference (see Section 01200).

6.2.2. Enter name and organization of objecting party for each exception.

6.2.3. Enter planned action to resolve each exception when such determination is made.

6.3. RETEST/RESOLUTION

Record the action taken to resolve each exception. Action taken may not be the same as planned action.

6.3.1. When action taken results in an acceptable retest, sign and date Retest Execution and Acceptance section of the Exception form.

6.3.2. When action taken does not involve an acceptable retest, strike out the Retest Execution and Acceptance section of the Exception form.

6.4. APPROVAL AND ACCEPTANCE

ICF KH provides final approval and acceptance of exceptions by checking one of the following on Exception form:

6.4.1. Retest Approved and Accepted: Applicable when Retest Execution and Acceptance section is completed.

6.4.2. Exception Accepted-As-Is: Requires detailed explanation.

6.4.3. Other: Requires detailed explanation.

ICF KH signs and dates the Exception form and obtains their customer approval, as required.

6.5. DISTRIBUTION

A copy of the approved Exception form is distributed to each participant. The signed original is attached to the ATP Master.

W026ATP032

Rev 0

Page 9

7. PREREQUISITES, EQUIPMENT/INSTRUMENTS, AND ABBREVIATIONS

7.1. PREREQUISITES

The following conditions shall exist at the start of the testing for that portion of the system being tested.

- 7.1.1. Systems have been inspected for compliance with construction documents.
- 7.1.2. Reference documents (including this ATP) have been verified for correct revision number and outstanding ECNs.
- 7.1.3. Test instruments have a valid calibration stamp attached. Test instrument identification numbers and calibration expiration dates have been recorded in paragraph 7.2.

7.2. EQUIPMENT/INSTRUMENTS

Supplied by Test Operator unless otherwise noted.

- 7.2.1. Isolation transformer 120v
- 7.2.2. Shorting jumpers: approximately 24"

7.3. ABBREVIATIONS

- 7.3.1. Abbreviations:
 - ECN Engineering Change Notice
 - MCC Motor Control Center
 - MCP Motor Circuit Protector

W026ATP032

Rev 0

Page 10

8. MOTOR CONTROL CENTER STARTER TEST

These tests will verify the operation of each motor starter.

8.1. PREPARATION

8.1.1 Verify that all prerequisites of Subsection 7.1 have been met.

8.1.2 Notify personnel affected by test, that test is in progress; remain clear of starter and effected devices.

8.2. STARTER TESTS

These tests will verify the function of each starter in the motor control centers.

Record the following steps for items shown on Data Sheet 8.2.2.

8.2.1. Visual and mechanical checks.

8.2.1.1. Verify MCP operates smoothly.

8.2.1.2. Verify heaters are installed.

8.2.1.3. Verify no loose wires or connections are present.

8.2.2. Electrical checks.

8.2.2.1. Energize control circuit, and verify contactors and indicating lamps operate per the schematic.

END OF SYSTEM 8 TEST

W026ATP032

Rev 0

Page 11

DATA SHEET 8.2

STEP	PERFORM/VERIFY	STARTER <u>CV-05-105</u>	
8.2.1	Visual Mechanical Checks	OK	DATE
8.2.1.1	Verify MCP operates smoothly	LM	10/18/95
8.2.1.2	Verify heaters are installed	LM	10/18/95
8.2.1.3	Verify no loose wire or connections exist	LM	10/18/95
8.2.2	Electrical Checks	N/A	
8.2.2.1	Energize control circuits	LM	10/18/95
8.2.2.2	Verify contactors and indicating lamps operate per schematic	LM	10/18/95

MCC-05-101

W026ATP032

Rev 0

Page 11

DATA SHEET 8.2			
STEP	PERFORM/VERIFY	STARTER <u>EF-11-101</u>	
8.2.1	Visual Mechanical Checks	OK	DATE
8.2.1.1	Verify MCP operates smoothly	<i>LM</i>	<i>10/18/95</i>
8.2.1.2	Verify heaters are installed	<i>LM</i>	<i>10/18/95</i>
8.2.1.3	Verify no loose wire or connections exist	<i>LM</i>	<i>10/18/95</i>
8.2.2	Electrical Checks	N/A	
8.2.2.1	Energize control circuits	<i>LM</i>	<i>10/18/95</i>
8.2.2.2	Verify contactors and indicating lamps operate per schematic	<i>LM</i>	<i>10/18/95</i>

W026ATP032

Rev 0

Page 11

DATA SHEET 8.2

STEP	PERFORM/VERIFY	STARTER CV-05-10; A	
8.2.1	Visual Mechanical Checks	OK	DATE
8.2.1.1	Verify MCP operates smoothly	LM	10/18/95
8.2.1.2	Verify heaters are installed	LM	10/18/95
8.2.1.3	Verify no loose wire or connections exist	LM	10/18/95
8.2.2	Electrical Checks	N/A	
8.2.2.1	Energize control circuits	LM	10/18/95
8.2.2.2	Verify contactors and indicating lamps operate per schematic	LM	10/18/95

W026ATP032

Rev 0

Page 11

DATA SHEET 8.2

STEP	PERFORM/VERIFY	STARTER <u>CV-05-101B</u>	
		OK	DATE
8.2.1	Visual Mechanical Checks		
8.2.1.1	Verify MCP operates smoothly	LM	10/18/95
8.2.1.2	Verify heaters are installed	LM	10/18/95
8.2.1.3	Verify no loose wire or connections exist	LM	10/18/95
8.2.2	Electrical Checks	N/A	
8.2.2.1	Energize control circuits	LM	10/18/95
8.2.2.2	Verify contactors and indicating lamps operate per schematic	LM	10/18/95

W026ATP032

Rev 0

Page 11

DATA SHEET 8.2

STEP	PERFORM/VERIFY	STARTER	CV-05-102
8.2.1	Visual Mechanical Checks	OK	DATE
8.2.1.1	Verify MCP operates smoothly	LM	10/18/95
8.2.1.2	Verify heaters are installed	LM	10/18/95
8.2.1.3	Verify no loose wire or connections exist	LM	10/18/95
8.2.2	Electrical Checks	N/A	
8.2.2.1	Energize control circuits	LM	10/18/95
8.2.2.2	Verify contactors and indicating lamps operate per schematic	LM	10/18/95

W026ATP032

Rev 0

Page 11

DATA SHEET 8.2

STEP	PERFORM/VERIFY	STARTER <u>CU-05-103A</u>	
8.2.1	Visual Mechanical Checks	OK	DATE
8.2.1.1	Verify MCP operates smoothly	<i>Lm</i>	10/18/95
8.2.1.2	Verify heaters are installed	<i>Lm</i>	10/18/95
8.2.1.3	Verify no loose wire or connections exist	<i>Lm</i>	10/18/95
8.2.2	Electrical Checks	N/A	
8.2.2.1	Energize control circuits	<i>Lm</i>	10/18/95
8.2.2.2	Verify contactors and indicating lamps operate per schematic	<i>Lm</i>	10/18/95

W026ATP032

Rev 0

Page 11

DATA SHEET 8.2

STEP	PERFORM/VERIFY	STARTER <u>CV-05-103B</u>	
		OK	DATE
8.2.1	Visual Mechanical Checks		
8.2.1.1	Verify MCP operates smoothly	<i>L.M.</i>	10/18/95
8.2.1.2	Verify heaters are installed	<i>L.M.</i>	10/18/95
8.2.1.3	Verify no loose wire or connections exist	<i>L.M.</i>	10/18/95
8.2.2	Electrical Checks	N/A	
8.2.2.1	Energize control circuits	<i>L.M.</i>	10/18/95
8.2.2.2	Verify contactors and indicating lamps operate per schematic	<i>L.M.</i>	10/18/95

W026ATP032

Rev 0

Page 11

DATA SHEET 8.2

STEP	PERFORM/VERIFY	STARTER <u>PF-05-101A</u>	
8.2.1	Visual Mechanical Checks	OK	DATE
8.2.1.1	Verify MCP operates smoothly	<i>LM</i>	<i>2-13-96</i>
8.2.1.2	Verify heaters are installed	<i>LM</i>	<i>2-13-96</i>
8.2.1.3	Verify no loose wire or connections exist	<i>LM</i>	<i>2-13-96</i>
8.2.2	Electrical Checks	N/A	
8.2.2.1	Energize control circuits	<i>LM</i>	<i>2-13-96</i>
8.2.2.2	Verify contactors and indicating lamps operate per schematic	<i>LM</i>	<i>2-13-96</i>

W026ATP032

Rev 0

Page 11

DATA SHEET 8.2

STEP	PERFORM/VERIFY	STARTER <u>DF-05-101B</u>	
		OK	DATE
8.2.1	Visual Mechanical Checks		
8.2.1.1	Verify MCP operates smoothly	<i>LM</i>	<i>2-13-96</i>
8.2.1.2	Verify heaters are installed	<i>LM</i>	<i>2-13-96</i>
8.2.1.3	Verify no loose wire or connections exist	<i>LM</i>	<i>2-13-96</i>
8.2.2	Electrical Checks	N/A	
8.2.2.1	Energize control circuits	<i>LM</i>	<i>2-13-96</i>
8.2.2.2	Verify contactors and indicating lamps operate per schematic	<i>LM</i>	<i>2-13-96</i>

DATA SHEET 8.2

STEP	PERFORM/VERIFY	STARTER <u>PF-05-102A</u>	
		OK	DATE
8.2.1	Visual Mechanical Checks		
8.2.1.1	Verify MCP operates smoothly	LM	2-13-96
8.2.1.2	Verify heaters are installed	LM	2-13-96
8.2.1.3	Verify no loose wire or connections exist	LM	2-13-96
8.2.2	Electrical Checks	N/A	2-13-96
8.2.2.1	Energize control circuits	LM	2-13-96
8.2.2.2	Verify contactors and indicating lamps operate per schematic	LM	2-13-96

DATA SHEET 8.2			
STEP	PERFORM/VERIFY	STARTER <u>PF-05-102B</u>	
8.2.1	Visual Mechanical Checks	OK	DATE
8.2.1.1	Verify MCP operates smoothly	<i>LJR</i>	<i>2-13-96</i>
8.2.1.2	Verify heaters are installed	<i>LJR</i>	<i>2-13-96</i>
8.2.1.3	Verify no loose wire or connections exist	<i>LJR</i>	<i>2-13-96</i>
8.2.2	Electrical Checks	N/A	
8.2.2.1	Energize control circuits	<i>LJR</i>	<i>2-13-96</i>
8.2.2.2	Verify contactors and indicating lamps operate per schematic	<i>LJR</i>	<i>2-13-95</i>

W026ATP032

Rev 0

Page 11

DATA SHEET 8.2			
STEP	PERFORM/VERIFY	STARTER <u>CV-09-105A</u>	
8.2.1	Visual Mechanical Checks	OK	DATE
8.2.1.1	Verify MCP operates smoothly	<i>LM</i>	10/18/95
8.2.1.2	Verify heaters are installed	<i>LM</i>	10/18/95
8.2.1.3	Verify no loose wire or connections exist	<i>LM</i>	10/18/95
8.2.2	Electrical Checks	N/A	
8.2.2.1	Energize control circuits	<i>LM</i>	10/18/95
8.2.2.2	Verify contactors and indicating lamps operate per schematic	<i>LM</i>	10/18/95

MCC 09-101

W026ATP032

Rev 0

Page 11

DATA SHEET 8.2			
STEP	PERFORM/VERIFY	STARTER <u>CV-09-105B</u>	
8.2.1	Visual Mechanical Checks	OK	DATE
8.2.1.1	Verify MCP operates smoothly	<i>Lm</i>	10/18/95
8.2.1.2	Verify heaters are installed	<i>Lm</i>	10/18/95
8.2.1.3	Verify no loose wire or connections exist	<i>Lm</i>	10/18/95
8.2.2	Electrical Checks	N/A	
8.2.2.1	Energize control circuits	<i>Lm</i>	10/18/95
8.2.2.2	Verify contactors and indicating lamps operate per schematic	<i>Lm</i>	10/18/95

W026ATP032

Rev 0

Page 11

DATA SHEET 8.2

STEP	PERFORM/VERIFY	STARTER <u>CV-09-106</u>	
		OK	DATE
8.2.1	Visual Mechanical Checks		
8.2.1.1	Verify MCP operates smoothly	LM	10/18/95
8.2.1.2	Verify heaters are installed	LM	10/18/95
8.2.1.3	Verify no loose wire or connections exist	LM	10/18/95
8.2.2	Electrical Checks	N/A	
8.2.2.1	Energize control circuits	LM	10/18/95
8.2.2.2	Verify contactors and indicating lamps operate per schematic	LM	10/18/95

DATA SHEET 8.2			
STEP	PERFORM/VERIFY	STARTER <u>CV-09-101 F</u>	
8.2.1	Visual Mechanical Checks	OK	DATE
8.2.1.1	Verify MCP operates smoothly	<i>LJM</i>	<i>10/19/95</i>
8.2.1.2	Verify heaters are installed	<i>LJM</i>	<i>10/18/95</i>
8.2.1.3	Verify no loose wire or connections exist	<i>LJM</i>	<i>10/18/95</i>
8.2.2	Electrical Checks	N/A	
8.2.2.1	Energize control circuits	<i>LJM</i>	<i>10/18/95</i>
8.2.2.2	Verify contactors and indicating lamps operate per schematic	<i>LJM</i>	<i>10/18/95</i>

W026ATP032

Rev 0

Page 11

DATA SHEET 8.2			
STEP	PERFORM/VERIFY	STARTER <u>CV-09-101B</u>	
8.2.1	Visual Mechanical Checks	OK	DATE
8.2.1.1	Verify MCP operates smoothly	<i>L/M</i>	10/18/95
8.2.1.2	Verify heaters are installed	<i>L/M</i>	10/18/95
8.2.1.3	Verify no loose wire or connections exist	<i>L/M</i>	10/18/95
8.2.2	Electrical Checks	N/A	
8.2.2.1	Energize control circuits	<i>L/M</i>	10/18/95
8.2.2.2	Verify contactors and indicating lamps operate per schematic	<i>L/M</i>	10/18/95

W026ATP032

Rev 0

Page 11

DATA SHEET 8.2

STEP	PERFORM/VERIFY	STARTER <u>LV-CO-101A</u>	
		OK	DATE
8.2.1	Visual Mechanical Checks		
8.2.1.1	Verify MCP operates smoothly	LM	10/18/95
8.2.1.2	Verify heaters are installed	LM	10/18/95
8.2.1.3	Verify no loose wire or connections exist	LM	10/18/95
8.2.2	Electrical Checks	N/A	
8.2.2.1	Energize control circuits	LM	10/18/95
8.2.2.2	Verify contactors and indicating lamps operate per schematic	LM	10/18/95

W026ATP032

Rev 0

Page 11

DATA SHEET 8.2			
STEP	PERFORM/VERIFY	STARTER <u>CV-09-101C</u>	
8.2.1	Visual Mechanical Checks	OK	DATE
8.2.1.1	Verify MCP operates smoothly	<i>LJM</i>	10/18/95
8.2.1.2	Verify heaters are installed	<i>LJM</i>	10/18/95
8.2.1.3	Verify no loose wire or connections exist	<i>LJM</i>	10/18/95
8.2.2	Electrical Checks	N/A	
8.2.2.1	Energize control circuits	<i>LJM</i>	10/18/95
8.2.2.2	Verify contactors and indicating lamps operate per schematic	<i>LJM</i>	10/18/95

W026ATP032

Rev 0

Page 11

DATA SHEET 8.2

STEP	PERFORM/VERIFY	STARTER <u>CV-09-101 D</u>	
		OK	DATE
8.2.1	Visual Mechanical Checks		
8.2.1.1	Verify MCP operates smoothly	LM	10/18/95
8.2.1.2	Verify heaters are installed	LM	10/18/95
8.2.1.3	Verify no loose wire or connections exist	LM	10/18/95
8.2.2	Electrical Checks	N/A	
8.2.2.1	Energize control circuits	LM	10/18/95
8.2.2.2	Verify contactors and indicating lamps operate per schematic	LM	10/18/95

W026ATP032

Rev 0

Page 11

DATA SHEET 8.2

STEP	PERFORM/VERIFY	STARTER <u>CV-03-101E</u>	
8.2.1	Visual Mechanical Checks	OK	DATE
8.2.1.1	Verify MCP operates smoothly	LM	10/18/95
8.2.1.2	Verify heaters are installed	LM	10/18/95
8.2.1.3	Verify no loose wire or connections exist	LM	10/18/95
8.2.2	Electrical Checks	N/A	
8.2.2.1	Energize control circuits	LM	10/18/95
8.2.2.2	Verify contactors and indicating lamps operate per schematic	LM	10/18/95

W026ATP032

Rev 0

Page 11

DATA SHEET 8.2

STEP	PERFORM/VERIFY	STARTER <u>CV-03-103A</u>	
		OK	DATE
8.2.1	Visual Mechanical Checks		
8.2.1.1	Verify MCP operates smoothly	LM	10/18/95
8.2.1.2	Verify heaters are installed	LM	10/18/95
8.2.1.3	Verify no loose wire or connections exist	LM	10/18/95
8.2.2	Electrical Checks	N/A	
8.2.2.1	Energize control circuits	LM	10/18/95
8.2.2.2	Verify contactors and indicating lamps operate per schematic	LM	10/18/95

W026ATP032

Rev 0

Page 11

DATA SHEET 8.2

STEP	PERFORM/VERIFY	STARTER <u>CV-09-103B</u>	
		OK	DATE
8.2.1	Visual Mechanical Checks		
8.2.1.1	Verify MCP operates smoothly	<i>Lm</i>	10/12/95
8.2.1.2	Verify heaters are installed	<i>Lm</i>	10/18/95
8.2.1.3	Verify no loose wire or connections exist	<i>Lm</i>	10/18/95
8.2.2	Electrical Checks	N/A	
8.2.2.1	Energize control circuits	<i>Lm</i>	10/18/95
8.2.2.2	Verify contactors and indicating lamps operate per schematic	<i>Lm</i>	10/18/95

DATA SHEET 8.2

STEP	PERFORM/VERIFY	STARTER <u>CV-07-104A</u>	
8.2.1	Visual Mechanical Checks	OK	DATE
8.2.1.1	Verify MCP operates smoothly	<i>LM</i>	<i>10/18/95</i>
8.2.1.2	Verify heaters are installed	<i>LM</i>	<i>10/18/95</i>
8.2.1.3	Verify no loose wire or connections exist	<i>LM</i>	<i>10/18/95</i>
8.2.2	Electrical Checks	N/A	
8.2.2.1	Energize control circuits	<i>LM</i>	<i>10/18/95</i>
8.2.2.2	Verify contactors and indicating lamps operate per schematic	<i>LM</i>	<i>10/18/95</i>

W026ATP032

Rev 0

Page 11

DATA SHEET 8.2

STEP	PERFORM/VERIFY	STARTER <u>CV-02-104 B</u>	
		OK	DATE
8.2.1	Visual Mechanical Checks		
8.2.1.1	Verify MCP operates smoothly	<i>LM</i>	10/18/95
8.2.1.2	Verify heaters are installed	<i>LM</i>	10/18/95
8.2.1.3	Verify no loose wire or connections exist	<i>LM</i>	10/18/95
8.2.2	Electrical Checks	N/A	
8.2.2.1	Energize control circuits	<i>LM</i>	10/18/95
8.2.2.2	Verify contactors and indicating lamps operate per schematic	<i>LM</i>	10/18/95

W026ATP032

Rev 0

Page 11

DATA SHEET 8.2

STEP	PERFORM/VERIFY	STARTER P-11-101A	
8.2.1	Visual Mechanical Checks	OK	DATE
8.2.1.1	Verify MCP operates smoothly	LM	10/18/95
8.2.1.2	Verify heaters are installed	LM	10/18/95
8.2.1.3	Verify no loose wire or connections exist	LM	10/18/95
8.2.2	Electrical Checks	N/A	
8.2.2.1	Energize control circuits	LM	10/18/95
8.2.2.2	Verify contactors and indicating lamps operate per schematic	LM	10/18/95

MCC-11-101

DATA SHEET 8.2

STEP	PERFORM/VERIFY	STARTER <u>P11-102A</u>	
		OK	DATE
8.2.1	Visual Mechanical Checks		
8.2.1.1	Verify MCP operates smoothly	<i>Lm</i>	10/18/95
8.2.1.2	Verify heaters are installed	<i>Lm</i>	10/18/95
8.2.1.3	Verify no loose wire or connections exist	<i>Lm</i>	10/18/95
8.2.2	Electrical Checks	N/A	
8.2.2.1	Energize control circuits	<i>Lm</i>	10/18/95
8.2.2.2	Verify contactors and indicating lamps operate per schematic	<i>Lm</i>	10/18/95

DATA SHEET 8.2

STEP	PERFORM/VERIFY	STARTER <u>P-11-10/B</u>	
8.2.1	Visual Mechanical Checks	OK	DATE
8.2.1.1	Verify MCP operates smoothly	<i>LM</i>	10/18/95
8.2.1.2	Verify heaters are installed	<i>LM</i>	10/18/95
8.2.1.3	Verify no loose wire or connections exist	<i>LM</i>	10/18/95
8.2.2	Electrical Checks	N/A	
8.2.2.1	Energize control circuits	<i>LM</i>	10/18/95
8.2.2.2	Verify contactors and indicating lamps operate per schematic	<i>LM</i>	10/18/95

DATA SHEET 8.2

STEP	PERFORM/VERIFY	STARTER <u>P-11-10Z B</u>	
		OK	DATE
8.2.1	Visual Mechanical Checks		
8.2.1.1	Verify MCP operates smoothly	LM	10/18/95
8.2.1.2	Verify heaters are installed	LM	10/18/95
8.2.1.3	Verify no loose wire or connections exist	LM	10/18/95
8.2.2	Electrical Checks	N/A	
8.2.2.1	Energize control circuits	LM	10/18/95
8.2.2.2	Verify contactors and indicating lamps operate per schematic	LM	10/18/95

DATA SHEET 8.2

07-101

STEP	PERFORM/VERIFY	STARTER <u>CU-07-101</u>	
8.2.1	Visual Mechanical Checks	OK	DATE
8.2.1.1	Verify MCP operates smoothly	LM	2-13-96
8.2.1.2	Verify heaters are installed	LM	2-13-96
8.2.1.3	Verify no loose wire or connections exist	LM	2-13-96
8.2.2	Electrical Checks	N/A	
8.2.2.1	Energize control circuits	LM	2-13-96
8.2.2.2	Verify contactors and indicating lamps operate per schematic	LM	2-13-96

DATA SHEET 8.2

27-101

STEP	PERFORM/VERIFY	STARTER	<u>24-07-103</u>
8.2.1	Visual Mechanical Checks	OK	DATE
8.2.1.1	Verify MCP operates smoothly	LM	2-13-96
8.2.1.2	Verify heaters are installed	LM	2-13-96
8.2.1.3	Verify no loose wire or connections exist	LM	2-13-96
8.2.2	Electrical Checks	N/A	
8.2.2.1	Energize control circuits	LM	2-13-96
8.2.2.2	Verify contactors and indicating lamps operate per schematic	LM	2-13-96

DATA SHEET 8.2

02-101

STEP	PERFORM/VERIFY	STARTER	DATE
8.2.1	Visual Mechanical Checks	OK	
8.2.1.1	Verify MCP operates smoothly	LM	2-13-96
8.2.1.2	Verify heaters are installed	LM	2-13-96
8.2.1.3	Verify no loose wire or connections exist	LM	2-13-96
8.2.2	Electrical Checks	N/A	
8.2.2.1	Energize control circuits	LM	2-13-96
8.2.2.2	Verify contactors and indicating lamps operate per schematic	LM	2-13-96

DATA SHEET 8.2			
STEP	PERFORM/VERIFY	STARTER <i>07-101</i> <i>107xx-07-30Z</i>	
		OK	DATE
8.2.1	Visual Mechanical Checks		
8.2.1.1	Verify MCP operates smoothly	<i>LM</i>	<i>2-13-96</i>
8.2.1.2	Verify heaters are installed	<i>LM</i>	<i>2-13-96</i>
8.2.1.3	Verify no loose wire or connections exist	<i>LM</i>	<i>2-13-96</i>
8.2.2	Electrical Checks	N/A	<i>ET</i>
8.2.2.1	Energize control circuits	<i>LM</i>	<i>2-13-96</i>
8.2.2.2	Verify contactors and indicating lamps operate per schematic	<i>LM</i>	<i>2-13-96</i>

DATA SHEET 8.2

07-101

STEP	PERFORM/VERIFY	STARTER <u>DH07-302/M1</u>	
		OK	DATE
8.2.1	Visual Mechanical Checks		
8.2.1.1	Verify MCP operates smoothly	LM	2-13-96
8.2.1.2	Verify heaters are installed	LM	2-13-96
8.2.1.3	Verify no loose wire or connections exist	LM	2-13-96
8.2.2	Electrical Checks	N/A	
8.2.2.1	Energize control circuits	LM	2-13-96
8.2.2.2	Verify contactors and indicating lamps operate per schematic	LM	2-13-96

DATA SHEET 8.2

STEP	PERFORM/VERIFY	STARTER ⁰⁷⁻¹⁰¹ <u>04-07-92/mz</u>	
		OK	DATE
8.2.1	Visual Mechanical Checks		
8.2.1.1	Verify MCP operates smoothly	<i>LM</i>	<i>2-13-96</i>
8.2.1.2	Verify heaters are installed	<i>LM</i>	<i>2-13-96</i>
8.2.1.3	Verify no loose wire or connections exist	<i>LM</i>	<i>2-13-96</i>
8.2.2	Electrical Checks	N/A	
8.2.2.1	Energize control circuits	<i>LM</i>	<i>2-13-96</i>
8.2.2.2	Verify contactors and indicating lamps operate per schematic	<i>LM</i>	<i>2-13-96</i>

DATA SHEET 8.2

STEP	PERFORM/VERIFY	STARTER ⁰⁷⁻¹⁰¹ <u>04-07-303</u>	
		OK	DATE
8.2.1	Visual Mechanical Checks		
8.2.1.1	Verify MCP operates smoothly	<i>LTM</i>	<i>2-13-96</i>
8.2.1.2	Verify heaters are installed	<i>LTM</i>	<i>2-13-96</i>
8.2.1.3	Verify no loose wire or connections exist	<i>LTM</i>	<i>2-13-96</i>
8.2.2	Electrical Checks	N/A	
8.2.2.1	Energize control circuits	<i>LTM</i>	<i>2-13-96</i>
8.2.2.2	Verify contactors and indicating lamps operate per schematic	<i>LTM</i>	<i>2-13-96</i>

09-102

DATA SHEET 8.2

STEP	PERFORM/VERIFY	STARTER <u>CV-09-2018</u>	
		OK	DATE
8.2.1	Visual Mechanical Checks		
8.2.1.1	Verify MCP operates smoothly	LM	2-13-96
8.2.1.2	Verify heaters are installed	LM	2-15-96
8.2.1.3	Verify no loose wire or connections exist	LM	2-13-96
8.2.2	Electrical Checks	N/A	
8.2.2.1	Energize control circuits	LM	2-13-96
8.2.2.2	Verify contactors and indicating lamps operate per schematic	LM	2-13-96

09-102

DATA SHEET 8.2

STEP	PERFORM/VERIFY	STARTER <u>CV-55-271A</u>	
8.2.1	Visual Mechanical Checks	OK	DATE
8.2.1.1	Verify MCP operates smoothly	<i>LM</i>	<i>2-13-96</i>
8.2.1.2	Verify heaters are installed	<i>LM</i>	<i>2-13-96</i>
8.2.1.3	Verify no loose wire or connections exist	<i>LM</i>	<i>2-13-96</i>
8.2.2	Electrical Checks	N/A	
8.2.2.1	Energize control circuits	<i>LM</i>	<i>2-13-96</i>
8.2.2.2	Verify contactors and indicating lamps operate per schematic	<i>LM</i>	<i>2-13-96</i>

09-102

DATA SHEET 8.2

STEP	PERFORM/VERIFY	STARTER <u>CV-09-204</u>	
		OK	DATE
8.2.1	Visual Mechanical Checks		
8.2.1.1	Verify MCP operates smoothly	LM	2-13-96
8.2.1.2	Verify heaters are installed	LM	2-13-96
8.2.1.3	Verify no loose wire or connections exist	LM	2-13-96
8.2.2	Electrical Checks	N/A	
8.2.2.1	Energize control circuits	LM	2-13-96
8.2.2.2	Verify contactors and indicating lamps operate per schematic	LM	2-13-96

09-102

DATA SHEET 8.2

STEP	PERFORM/VERIFY	STARTER	CV-09-203 DATE
8.2.1	Visual Mechanical Checks	OK	
8.2.1.1	Verify MCP operates smoothly	LM	2-13-96
8.2.1.2	Verify heaters are installed	LM	2-13-96
8.2.1.3	Verify no loose wire or connections exist	LM	2-13-96
8.2.2	Electrical Checks	N/A	
8.2.2.1	Energize control circuits	LM	2-13-96
8.2.2.2	Verify contactors and indicating lamps operate per schematic	LM	2-13-96

W026ATP032

Rev 0

Page 11

DATA SHEET 8.2

09-102

STEP	PERFORM/VERIFY	STARTER <u>67-03-201A</u>	
8.2.1	Visual Mechanical Checks	OK	DATE
8.2.1.1	Verify MCP operates smoothly	LM	2-13-96
8.2.1.2	Verify heaters are installed	LM	2-13-96
8.2.1.3	Verify no loose wire or connections exist	LM	2-13-96
8.2.2	Electrical Checks	N/A	
8.2.2.1	Energize control circuits	LM	2-13-96
8.2.2.2	Verify contactors and indicating lamps operate per schematic	LM	2-13-96

09-102

DATA SHEET 8.2

STEP	PERFORM/VERIFY	STARTER	<u>LT-07-2018</u>
8.2.1	Visual Mechanical Checks	OK	DATE
8.2.1.1	Verify MCP operates smoothly	LM	2-13-96
8.2.1.2	Verify heaters are installed	LM	2-13-96
8.2.1.3	Verify no loose wire or connections exist	LM	2-13-96
8.2.2	Electrical Checks	N/A	
8.2.2.1	Energize control circuits	LM	2-13-96
8.2.2.2	Verify contactors and indicating lamps operate per schematic	LM	2-13-96

W026ATP032

Rev 0

Page 11

DATA SHEET 8.2			
STEP		PERFORM/VERIFY	
		STARTER <u>LT-09-20/C</u>	
8.2.1	Visual Mechanical Checks	OK	DATE
8.2.1.1	Verify MCP operates smoothly	<i>LM</i>	<i>2-13-96</i>
8.2.1.2	Verify heaters are installed	<i>LM</i>	<i>2-13-96</i>
8.2.1.3	Verify no loose wire or connections exist	<i>LM</i>	<i>2-13-96</i>
8.2.2	Electrical Checks	N/A	
8.2.2.1	Energize control circuits	<i>LM</i>	<i>2-13-96</i>
8.2.2.2	Verify contactors and indicating lamps operate per schematic	<i>LM</i>	<i>2-13-96</i>

DATA SHEET 8.2

09-102

STEP	PERFORM/VERIFY	STARTER <u>LT-09-201D</u>	
8.2.1	Visual Mechanical Checks	OK	DATE
8.2.1.1	Verify MCP operates smoothly	<i>LM</i>	2-13-96
8.2.1.2	Verify heaters are installed	<i>LM</i>	2-13-96
8.2.1.3	Verify no loose wire or connections exist	<i>LM</i>	2-13-96
8.2.2	Electrical Checks	N/A	2-13-96
8.2.2.1	Energize control circuits	<i>LM</i>	2-13-96
8.2.2.2	Verify contactors and indicating lamps operate per schematic	<i>LM</i>	2-13-96

W026ATP032

Rev 0

Page 11

DATA SHEET 8.2

09-102

STEP	PERFORM/VERIFY	STARTER <u>SPARE 3J</u>	
8.2.1	Visual Mechanical Checks	OK	DATE
8.2.1.1	Verify MCP operates smoothly	<i>LM</i>	2-13-96
8.2.1.2	Verify heaters are installed	①	
8.2.1.3	Verify no loose wire or connections exist	<i>LM</i>	2-13-96
8.2.2	Electrical Checks	N/A	
8.2.2.1	Energize control circuits	<i>LM</i>	2-13-96
8.2.2.2	Verify contactors and indicating lamps operate per schematic	<i>LM</i>	2-13-96

① SPARE STARTER

W026ATP032

Rev 0

Page 11

DATA SHEET 8.2

09-10

STEP	PERFORM/VERIFY	STARTER <u>09-09-2016</u>	
8.2.1	Visual Mechanical Checks	OK	DATE
8.2.1.1	Verify MCP operates smoothly	<i>Lm</i>	2-13-96
8.2.1.2	Verify heaters are installed	<i>Lm</i>	2-13-96
8.2.1.3	Verify no loose wire or connections exist	<i>Lm</i>	2-13-96
8.2.2	Electrical Checks	N/A	
8.2.2.1	Energize control circuits	<i>Lm</i>	2-13-96
8.2.2.2	Verify contactors and indicating lamps operate per schematic	<i>Lm</i>	2-13-96

W026ATP032

Rev 0

Page 11

09-102

DATA SHEET 8.2			
STEP	PERFORM/VERIFY	STARTER <u>SPARE SC</u>	
8.2.1	Visual Mechanical Checks	OK	DATE
8.2.1.1	Verify MCP operates smoothly	<i>LM</i>	<i>2-13-96</i>
8.2.1.2	Verify heaters are installed	①	<i>5</i>
8.2.1.3	Verify no loose wire or connections exist	<i>LM</i>	<i>2-13-96</i>
8.2.2	Electrical Checks	N/A	
8.2.2.1	Energize control circuits	<i>LM</i>	<i>2-13-96</i>
8.2.2.2	Verify contactors and indicating lamps operate per schematic	<i>LM</i>	<i>2-13-96</i>

① SPARE STARTER

W026ATP032

Rev 0

Page 11

DATA SHEET 8.2			
		09-102	
STEP	PERFORM/VERIFY	STARTER <u>LT-09-201F</u>	
8.2.1	Visual Mechanical Checks	OK	DATE
8.2.1.1	Verify MCP operates smoothly	<i>LTM</i>	2-13-96
8.2.1.2	Verify heaters are installed	<i>LTM</i>	2-13-96
8.2.1.3	Verify no loose wire or connections exist	<i>LTM</i>	2-13-96
8.2.2	Electrical Checks	N/A	
8.2.2.1	Energize control circuits	<i>LTM</i>	2-13-96
8.2.2.2	Verify contactors and indicating lamps operate per schematic	<i>J.M.</i>	2-13-96

W026ATP032

Rev 0

Page 11

DATA SHEET 8.2

09:02

STEP	PERFORM/VERIFY	STARTER <u>LT-09-202A</u>	
		OK	DATE
8.2.1	Visual Mechanical Checks		
8.2.1.1	Verify MCP operates smoothly	LM	2-13-96
8.2.1.2	Verify heaters are installed	LM	2-13-96
8.2.1.3	Verify no loose wire or connections exist	LM	2-13-96
8.2.2	Electrical Checks	N/A	
8.2.2.1	Energize control circuits	LM	2-13-96
8.2.2.2	Verify contactors and indicating lamps operate per schematic	LM	2-13-96

W026ATP032

Rev 0

Page 11

DATA SHEET 8.2			
STEP		PERFORM/VERIFY	
		STARTER <u>SPARE SC</u>	
8.2.1	Visual Mechanical Checks	OK	DATE
8.2.1.1	Verify MCP operates smoothly	LM	2-13-96
8.2.1.2	Verify heaters are installed	①	
8.2.1.3	Verify no loose wire or connections exist	LM	2-13-96
8.2.2	Electrical Checks	N/A	
8.2.2.1	Energize control circuits	LM	2-13-96
8.2.2.2	Verify contactors and indicating lamps operate per schematic	LM	2-13-96

① SPARE STARTER

W026ATP032

Rev 0

Page 11

DATA SHEET 8.2			
STEP		PERFORM/VERIFY	
		STARTER	DATE
8.2.1	Visual Mechanical Checks	OK	
8.2.1.1	Verify MCP operates smoothly	LTM	2-13-96
8.2.1.2	Verify heaters are installed	①	
8.2.1.3	Verify no loose wire or connections exist	LTM	2-13-96
8.2.2	Electrical Checks	N/A	
8.2.2.1	Energize control circuits	LTM	2-13-96
8.2.2.2	Verify contactors and indicating lamps operate per schematic	LTM	2-13-96

① SPARE STARTER

W026ATP032

Rev 0

Page 11

DATA SHEET 8.2			
STEP		PERFORM/VERIFY	
		STARTER <u>SPARE 8J</u>	
8.2.1	Visual Mechanical Checks	OK	DATE
8.2.1.1	Verify MCP operates smoothly	<i>LM</i>	<i>2-13-96</i>
8.2.1.2	Verify heaters are installed	<i>(i)</i>	
8.2.1.3	Verify no loose wire or connections exist	<i>LM</i>	<i>2-13-96</i>
8.2.2	Electrical Checks	N/A	
8.2.2.1	Energize control circuits	<i>LM</i>	<i>2-13-96</i>
8.2.2.2	Verify contactors and indicating lamps operate per schematic	<i>LM</i>	<i>2-13-96</i>

① SPARE STARTER

DATA SHEET 8.2		09-102	
STEP	PERFORM/VERIFY	STARTER <u>LT-09-2028</u>	
8.2.1	Visual Mechanical Checks	OK	DATE
8.2.1.1	Verify MCF operates smoothly	<i>LM</i>	<i>2-13-96</i>
8.2.1.2	Verify heaters are installed	<i>LM</i>	<i>2-13-96</i>
8.2.1.3	Verify no loose wire or connections exist	<i>LM</i>	<i>2-13-96</i>
8.2.2	Electrical Checks	N/A	
8.2.2.1	Energize control circuits	<i>LM</i>	<i>2-13-96</i>
8.2.2.2	Verify contactors and indicating lamps operate per schematic	<i>LM</i>	<i>2-13-96</i>

DATA SHEET 8.2			
STEP		PERFORM/VERIFY	
		STARTER	DATE
8.2.1	Visual Mechanical Checks	OK	
8.2.1.1	Verify MCP operates smoothly	LM	2-13-96
8.2.1.2	Verify heaters are installed	LM	2-13-96
8.2.1.3	Verify no loose wire or connections exist	LM	2-13-96
8.2.2	Electrical Checks	N/A	
8.2.2.1	Energize control circuits	LM	2-13-96
8.2.2.2	Verify contactors and indicating lamps operate per schematic	LM	2-13-96

W026ATP032

Rev 0

Page 11

09-102

DATA SHEET 8.2

STEP	PERFORM/VERIFY	STARTER <u>T-09-2020</u>	
		OK	DATE
8.2.1	Visual Mechanical Checks		
8.2.1.1	Verify MCP operates smoothly	<i>LM</i>	<i>2-13-96</i>
8.2.1.2	Verify heaters are installed	<i>LM</i>	<i>2-13-96</i>
8.2.1.3	Verify no loose wire or connections exist	<i>LM</i>	<i>2-13-96</i>
8.2.2	Electrical Checks	N/A	
8.2.2.1	Energize control circuits	<i>LM</i>	<i>2-13-96</i>
8.2.2.2	Verify contactors and indicating lamps operate per schematic	<i>LM</i>	<i>2-13-96</i>

W026ATP032

Rev 0

Page 11

DATA SHEET 8.2			
STEP	PERFORM/VERIFY	STARTER <i>09-102</i> <i>LT-08-202E</i>	
		OK	DATE
8.2.1	Visual Mechanical Checks		
8.2.1.1	Verify MCP operates smoothly	<i>LM</i>	<i>2-13-96</i>
8.2.1.2	Verify heaters are installed	<i>LM</i>	<i>2-13-96</i>
8.2.1.3	Verify no loose wire or connections exist	<i>LM</i>	<i>2-13-96</i>
8.2.2	Electrical Checks	N/A	
8.2.2.1	Energize control circuits	<i>LM</i>	<i>2-13-96</i>
8.2.2.2	Verify contactors and indicating lamps operate per schematic	<i>LM</i>	<i>2-13-96</i>

W026ATP032

Rev 0

Page 11

DATA SHEET 8.2

09-102

STEP	PERFORM/VERIFY	STARTER	DATE
8.2.1	Visual Mechanical Checks	OK	DATE
8.2.1.1	Verify MCP operates smoothly	LM	2-13-96
8.2.1.2	Verify heaters are installed	LM	2-13-96
8.2.1.3	Verify no loose wire or connections exist	LM	2-13-96
8.2.2	Electrical Checks	N/A	
8.2.2.1	Energize control circuits	LM	2-13-96
8.2.2.2	Verify contactors and indicating lamps operate per schematic	LM	2-13-96

W026ATP032

Rev 0

Page 11

DATA SHEET 8.2

09-172

STEP	PERFORM/VERIFY	STARTER	<u>LT-09-203B</u>
8.2.1	Visual Mechanical Checks	OK	DATE
8.2.1.1	Verify MCP operates smoothly	LM	2-13-96
8.2.1.2	Verify heaters are installed	LM	2-13-96
8.2.1.3	Verify no loose wire or connections exist	LM	2-13-96
8.2.2	Electrical Checks	N/A	
8.2.2.1	Energize control circuits	LM	2-13-96
8.2.2.2	Verify contactors and indicating lamps operate per schematic	LM	2-13-96

W026ATP032

Rev 0

Page 11

DATA SHEET 8.2

11-102

STEP	PERFORM/VERIFY	STARTER <u>EF-11-202A</u>	
8.2.1	Visual Mechanical Checks	OK	DATE
8.2.1.1	Verify MCP operates smoothly	LM	2-13-96
8.2.1.2	Verify heaters are installed	LM	2-13-96
8.2.1.3	Verify no loose wire or connections exist	LM	2-13-96
8.2.2	Electrical Checks	N/A	
8.2.2.1	Energize control circuits	LM	2-13-96
8.2.2.2	Verify contactors and indicating lamps operate per schematic	LM	2-13-96

W026ATP032

Rev 0

Page 11

DATA SHEET 8.2			
STEP	PERFORM/VERIFY	STARTER ¹¹⁻¹⁰² <u>P-11-201</u>	
8.2.1	Visual Mechanical Checks	OK	DATE
8.2.1.1	Verify MCP operates smoothly	<i>LM</i>	<i>2-13-96</i>
8.2.1.2	Verify heaters are installed	<i>LM</i>	<i>2-13-96</i>
8.2.1.3	Verify no loose wire or connections exist	<i>LM</i>	<i>2-13-96</i>
8.2.2	Electrical Checks	N/A	
8.2.2.1	Energize control circuits	<i>LM</i>	<i>2-13-96</i>
8.2.2.2	Verify contactors and indicating lamps operate per schematic	<i>LM</i>	<i>2-13-96</i>

W026ATP032

Rev 0

Page 11

DATA SHEET 8.2

11-102

STEP	PERFORM/VERIFY	STARTER	<u>EF-11-201A</u>
8.2.1	Visual Mechanical Checks	OK	DATE
8.2.1.1	Verify MCP operates smoothly	LM	2-13-96
8.2.1.2	Verify heaters are installed	LM	2-13-96
8.2.1.3	Verify no loose wire or connections exist	LM	2-13-96
8.2.2	Electrical Checks	N/A	
8.2.2.1	Energize control circuits	LM	2-13-96
8.2.2.2	Verify contactors and indicating lamps operate per schematic	LM	2-13-96

W026ATP032

Rev 0

Page 11

DATA SHEET 8.2

DATA SHEET 8.2			
STEP	PERFORM/VERIFY	STARTER <i>11-12</i> <u>SE-11-201A</u>	
8.2.1	Visual Mechanical Checks	OK	DATE
8.2.1.1	Verify MCP operates smoothly	<i>Lm</i>	<i>2-13-96</i>
8.2.1.2	Verify heaters are installed	<i>Lm</i>	<i>2-13-96</i>
8.2.1.3	Verify no loose wire or connections exist	<i>Lm</i>	<i>2-13-96</i>
8.2.2	Electrical Checks	N/A	
8.2.2.1	Energize control circuits	<i>Lm</i>	<i>2-13-96</i>
8.2.2.2	Verify contactors and indicating lamps operate per schematic	<i>Lm</i>	<i>2-13-96</i>

W026ATP032

Rev 0

Page 11

DATA SHEET 8.2

STEP	PERFORM/VERIFY	11-102 STARTER SF-11-101	
		OK	DATE
8.2.1	Visual Mechanical Checks		
8.2.1.1	Verify MCP operates smoothly	LM	2-13-96
8.2.1.2	Verify heaters are installed	LM	2-13-96
8.2.1.3	Verify no loose wire or connections exist	LM	2-13-96
8.2.2	Electrical Checks	N/A	
8.2.2.1	Energize control circuits	LM	2-13-96
8.2.2.2	Verify contactors and indicating lamps operate per schematic	LM	2-13-96

W026ATP032

Rev 0

Page 11

DATA SHEET 8.2			
STEP	PERFORM/VERIFY	STARTER ¹¹⁻¹⁰² RF-11-101	
8.2.1	Visual Mechanical Checks	OK	DATE
8.2.1.1	Verify MCP operates smoothly	LM	2-13-96
8.2.1.2	Verify heaters are installed	LM	2-13-96
8.2.1.3	Verify no loose wire or connections exist	LM	2-13-96
8.2.2	Electrical Checks	N/A	2-13-96
8.2.2.1	Energize control circuits	LM	2-13-96
8.2.2.2	Verify contactors and indicating lamps operate per schematic	LM	2-13-96

W026ATP032

Rev 0

Page 11

DATA SHEET 8.2

DATA SHEET 8.2			
STEP	PERFORM/VERIFY	STARTER <i>EF-11-301</i>	
		OK	DATE
8.2.1	Visual Mechanical Checks		
8.2.1.1	Verify MCP operates smoothly	<i>LM</i>	<i>2-13-96</i>
8.2.1.2	Verify heaters are installed	<i>LM</i>	<i>2-13-96</i>
8.2.1.3	Verify no loose wire or connections exist	<i>LM</i>	<i>2-15-96</i>
8.2.2	Electrical Checks	N/A	
8.2.2.1	Energize control circuits	<i>LM</i>	<i>2-13-96</i>
8.2.2.2	Verify contactors and indicating lamps operate per schematic	<i>LM</i>	<i>2-13-96</i>

W026ATP032

Rev 0

Page 11

DATA SHEET 8.2			
STEP	PERFORM/VERIFY	STARTER ¹¹⁻¹⁰² EF-11-401	
8.2.1	Visual Mechanical Checks	OK	DATE
8.2.1.1	Verify MCP operates smoothly	<i>LM</i>	<i>2-13-96</i>
8.2.1.2	Verify heaters are installed	<i>LM</i>	<i>2-13-96</i>
8.2.1.3	Verify no loose wire or connections exist	<i>LM</i>	<i>2-13-96</i>
8.2.2	Electrical Checks	N/A	
8.2.2.1	Energize control circuits	<i>LM</i>	<i>2-13-96</i>
8.2.2.2	Verify contactors and indicating lamps operate per schematic	<i>LM</i>	<i>2-13-96</i>

W026ATP032

Rev 0

Page 11

11-105

DATA SHEET 8.2

STEP	PERFORM/VERIFY	STARTER <u>SF-H-201E</u>	
8.2.1	Visual Mechanical Checks	OK	DATE
8.2.1.1	Verify MCP operates smoothly	<i>LM</i>	2-13-96
8.2.1.2	Verify heaters are installed	<i>LM</i>	2-13-96
8.2.1.3	Verify no loose wire or connections exist	<i>LM</i>	2-13-96
8.2.2	Electrical Checks	N/A	
8.2.2.1	Energize control circuits	<i>LM</i>	2-13-96
8.2.2.2	Verify contactors and indicating lamps operate per schematic	<i>LM</i>	2-13-96

W026ATP032

Rev 0

Page 11

11-105

DATA SHEET 8.2

STEP	PERFORM/VERIFY	STARTER <u>SF-11-301</u>	
8.2.1	Visual Mechanical Checks	OK	DATE
8.2.1.1	Verify MCP operates smoothly	<i>LM</i>	2-13-96
8.2.1.2	Verify heaters are installed	<i>LM</i>	2-13-96
8.2.1.3	Verify no loose wire or connections exist	<i>LM</i>	2-13-96
8.2.2	Electrical Checks	N/A	
8.2.2.1	Energize control circuits	<i>LM</i>	2-13-96
8.2.2.2	Verify contactors and indicating lamps operate per schematic	<i>LM</i>	2-13-96

W026ATP032

Rev 0

Page 11

DATA SHEET 8.2

STEP		PERFORM/VERIFY		STARTER <u>SF-11-401</u>	
				11-103	
8.2.1	Visual Mechanical Checks	OK		DATE	
8.2.1.1	Verify MCP operates smoothly	LTM		2-13-96	
8.2.1.2	Verify heaters are installed	LTM		2-13-96	
8.2.1.3	Verify no loose wire or connections exist	LTM		2-13-96	
8.2.2	Electrical Checks	N/A			
8.2.2.1	Energize control circuits	LTM		2-13-96	
8.2.2.2	Verify contactors and indicating lamps operate per schematic	LTM		2-13-96	

W026ATP032

Rev 0

Page 11

DATA SHEET 8.2

11-103

STARTER RF-11-401

STEP	PERFORM/VERIFY	OK	DATE
8.2.1	Visual Mechanical Checks		
8.2.1.1	Verify MCP operates smoothly	LJM	2-13-96
8.2.1.2	Verify heaters are installed	LJM	2-13-96
8.2.1.3	Verify no loose wire or connections exist	LJM	2-13-96
8.2.2	Electrical Checks	N/A	
8.2.2.1	Energize control circuits	LJM	2-13-96
8.2.2.2	Verify contactors and indicating lamps operate per schematic	LJM	2-13-96

W026ATP032

Rev 0

Page 11

DATA SHEET 8.2

STEP		PERFORM/VERIFY		STARTER ¹¹⁻¹⁰³ <u>SF-11-501A</u>	
8.2.1	Visual Mechanical Checks	OK		DATE	
8.2.1.1	Verify MCP operates smoothly	<i>LJM</i>		<i>2-13-96</i>	
8.2.1.2	Verify heaters are installed	<i>LJM</i>		<i>2-13-96</i>	
8.2.1.3	Verify no loose wire or connections exist	<i>LJM</i>		<i>2-13-96</i>	
8.2.2	Electrical Checks	N/A			
8.2.2.1	Energize control circuits	<i>LJM</i>		<i>2-13-96</i>	
8.2.2.2	Verify contactors and indicating lamps operate per schematic	<i>LJM</i>		<i>2-13-96</i>	

W026ATP032

Rev 0

Page 11

DATA SHEET 8.2			
STEP	PERFORM/VERIFY	STARTER <i>11-103</i> <i>SF-11-501 B</i>	
		OK	DATE
8.2.1	Visual Mechanical Checks		
8.2.1.1	Verify MCP operates smoothly	<i>Lm</i>	<i>2-13-96</i>
8.2.1.2	Verify heaters are installed	<i>Lm</i>	<i>2-13-96</i>
8.2.1.3	Verify no loose wire or connections exist	<i>Lm</i>	<i>2-13-96</i>
8.2.2	Electrical Checks	N/A	
8.2.2.1	Energize control circuits	<i>Lm</i>	<i>2-13-96</i>
8.2.2.2	Verify contactors and indicating lamps operate per schematic	<i>Lm</i>	<i>2-13-96</i>

W026ATP032

Rev 0

Page 11

DATA SHEET 8.2

STEP	PERFORM/VERIFY	STARTER	DATE
8.2.1	Visual Mechanical Checks	OK	DATE
8.2.1.1	Verify MCP operates smoothly	LM	2-13-96
8.2.1.2	Verify heaters are installed	LM	2-13-96
8.2.1.3	Verify no loose wire or connections exist	LM	2-13-96
8.2.2	Electrical Checks	N/A	
8.2.2.1	Energize control circuits	LM	2-13-96
8.2.2.2	Verify contactors and indicating lamps operate per schematic	LM	2-13-96

W026ATP032

Rev 0

Page 11

DATA SHEET 8.2

DATA SHEET 8.2			
STEP	PERFORM/VERIFY	STARTER ¹¹⁻¹⁰³ <u>EF-11-202 B</u>	
		OK	DATE
8.2.1	Visual Mechanical Checks		
8.2.1.1	Verify MCP operates smoothly	<i>LM</i>	<i>2-13-96</i>
8.2.1.2	Verify heaters are installed	<i>LM</i>	<i>2-13-96</i>
8.2.1.3	Verify no loose wire or connections exist	<i>LM</i>	<i>2-13-96</i>
8.2.2	Electrical Checks	N/A	
8.2.2.1	Energize control circuits	<i>LM</i>	<i>2-13-96</i>
8.2.2.2	Verify contactors and indicating lamps operate per schematic	<i>LM</i>	<i>2-13-96</i>

ACCEPTANCE TEST PROCEDURE W026ATP039

REV 0

DATE 10/12/95

PAGE 1

TEST TITLE Power Factor Regulator Controller Test

LOCATION: 200 WEST

PROJECT NUMBER: W-026

PROJECT TITLE: WRAP

Prepared By
Westinghouse Energy Services

For United States Department of Energy

Contract KEH5366

PROCEDURE APPROVAL

Originator10/16/95
Date
Checker10-16-95
Date
Project Manager10/16/95
Date

ICF KH [APPROVAL] [CONCURRENCE]

Project Manager10-16-95
Date

W026ATP039
Rev 0
Page 2

EXECUTION AND TEST APPROVAL

EXECUTED BY

[Signature] 10-12-95 *L M Zamboni* 10-12-95
Director/Organization Date Test Operator/Organization Date
L M Zamboni 10-12-95
Recorder/Organization Date

WITNESSES

David Smith 11/14/95 *[Signature]* 10/12/95
Witness/Organization Date Witness/Organization Date

A-E APPROVAL

Kaiser Engineers Hanford Company

Without exceptions _____ With exceptions resolved _____ With exceptions outstanding _____

Design Engineer Date

Project Manager Date

TEST APPROVAL AND ACCEPTANCE

[Operating Contractor]

Without exceptions _____ With exceptions resolved _____ With exceptions outstanding _____

[Title or Department] Date [Title or Department] Date

[Title or Department] Date [Title or Department] Date

W026ATP039

Rev 0

Page 3

TABLE OF CONTENTS

Section	Page
TITLE/PROCEDURE APPROVAL	1
EXECUTION AND TEST APPROVAL	2
TABLE OF CONTENTS	3
1 PURPOSE	4
2 REFERENCES	4
3 RESPONSIBILITIES	4
4 CHANGE CONTROL	6
5 EXECUTION	7
6 EXCEPTIONS	8
7 PREREQUISITES, EQUIPMENT/INSTRUMENTS, AND ABBREVIATIONS	8
8 POWER FACTOR REGULATOR CONTROL TESTS	9

NOTE: At completion of test, enter pages added during performance of test.

W026ATP039

Rev 0

Page 4

1. PURPOSE

This Acceptance Test Procedure (ATP) has been prepared to demonstrate the Motor Control Center Starters function as required by project criteria.

2. REFERENCES

2.1. DRAWINGS

D 4977 1100-608 SHEET 1 REV A

2.2. SPECIFICATIONS

Specification Section 16410, Automatic Power Factor Correction Capacitor
Specification Section 16050, Basic Electrical Materials and Methods

2.3. ENGINEERING CHANGE NOTICES (ECN)

Prior to final test approval, enter ECNs* written against this ATP.

2.4. OTHER: NOT USED

3. RESPONSIBILITIES

3.1. GENERAL

Each company or organization participating in this ATP will designate personnel to assume the responsibilities and duties as defined herein for their respective roles. The designees shall become familiar with this ATP and the systems involved to the extent that they can perform their assigned duties.

3.2. TEST DIRECTOR

3.2.1. Coordinates testing with ICF KH and directs acceptance testing.

3.2.2. Acts as liaison between the participants in acceptance testing.

3.2.3. Distributes the approved testing schedule before start of testing.

3.2.4. Schedules and conducts a pretest kickoff meeting with test participants before start of testing when necessary.

3.2.5. Notifies the persons performing and witnessing the test 2 days before the start of testing.

*Engineering Change Notices or other agreed upon method for controlling revisions to the ATP.

W026ATP039

Rev 0

Page 5

- 3.2.6. Schedules a dry run when necessary.
- 3.2.7. Notifies concerned parties when a change is made in the testing schedule.
- 3.2.8. Takes necessary action to clear exceptions to the test.
- 3.2.9. Confirms that field testing and inspection of the system or portion of the system to be tested has been completed.
- 3.2.10. Stops any test which, in his/her judgment, may cause damage to the system until the problem has been resolved.
- 3.2.11. After verifying there is no adverse impact, may alter the sequence in which systems or subsystems are tested.
- 3.2.12. Ensures that required environmental conditions are maintained.
- 3.2.13. If a test is to be suspended for a period of time, ensures that the system is left in a safe mode.
- 3.2.14. Before restarting suspended test, reverifies the test prerequisites.
- 3.2.15. Initiates ECNs to document required changes to the ATP.
- 3.2.16. Reviews recorded data, discrepancies, and exceptions.
- 3.2.17. Obtains information or changes necessary to clear or resolve objections during the performance of the test.
- 3.2.18. Signs Execution and Test Approval page when test has been performed.
- 3.2.19. Signs Exception form when exception has been resolved.
- 3.2.20. Obtains required signatures on the ATP Master prior to reproduction and distribution.

3.3. WITNESSES [Provided by Participating Organizations. One witness shall be a ICF KH Title III acceptance inspector.]

- 3.3.1. Witness the tests.
- 3.3.2. Review results of testing.
- 3.3.3. Assist the Test Director when requested.
- 3.3.4. Sign Execution and Test Approval page when test has been performed.
- 3.3.5. Sign Exception form when exception has been resolved.

3.4. RECORDER

- 3.4.1. Prepares a Field copy from the ATP Master.
- 3.4.2. Records names of designated personnel on Field copy of ATP prior to start of testing.

W026ATP039

Rev 0

Page 6

- 3.4.3. Records test instrument identification numbers and calibration expiration dates.
 - 3.4.4. Initials and dates each test step on the Field copy as it is completed, next to the step number, or on a Data Sheet when provided. Records Test Data. On Data Sheets where there is not room for both the initial and date, date may be entered at bottom of column.
 - 3.4.5. Records objections and exceptions on an Exception form. Transfers information in ink or type to an Exception form master. Uses additional Exception forms as needed.
 - 3.4.6. Signs Execution and Test Approval page when test has been performed.
 - 3.4.7. After test is finished, assigns alpha numeric page numbers to added Data Sheets and Exception forms. Records page numbers in the Table of Contents.
 - 3.4.8. Transfers changes and the final test results with Recorder's signature and dates for each step to the Master in ink or type. Submits the completed Master to the Test Director for approval signature routing. Transmits the Field copy to ICF KH when test has been accepted and exceptions closed-out.
 - 3.4.9. Signs Exception form when exception has been resolved, and transmits to Test Director.
- 3.5. TEST OPERATOR
- 3.5.1. Performs test under direction of the Test Director.
 - 3.5.2. Provides labor, equipment, and test instruments required for performing tests which have not been designated as being provided by others.
 - 3.5.3. Requests in writing from ICF KH those services, materials, or equipment that have been designated as being supplied by others.
 - 3.5.4. Confirms that equipment required for performing test will be available at the start of testing.
 - 3.5.5. Signs the Execution and Test Approval page.

4. CHANGE CONTROL

Required changes to this ATP must be processed on ECNs in accordance with company procedures. If a need for change is discovered in the course of running the test, the test shall be stopped until the ECN is approved. However, this does not prevent the running of another portion of the test unaffected by the change.

W026ATP039

Rev 0

Page 7

5. EXECUTION

5.1. OCCUPATIONAL SAFETY AND HEALTH

Individuals shall carry out their assigned work in a safe manner to protect themselves and others from undue hazards and to prevent damage to property and environment. Facility line managers shall assure the safety of activities within their areas to prevent injury, property damage, or interruption of operation. Performance of test activities shall always include safety and health aspects.

5.2. PERFORMANCE

5.2.1. Use ICF KH concurred copy of this ATP.

5.2.2. Conduct test meeting responsibility requirements of Section 3 of this ATP.

5.2.3. Perform test in accordance with steps in Section(s) 3 (9, etc.) of the ATP.

5.2.4. When test has been completed, obtain signatures of test executioners and witnesses.

5.2.5. Submit the test report to ICF KH for approval.

NOTE 1: At this point, the "procedure" becomes a "report."

NOTE 2: There may be exceptions outstanding.

5.2.6. Clear exceptions and submit to ICF KH for approval.

NOTE: Ideally, the cleared exceptions would be submitted with the report. Coordinate with ICF KH as to allowable delay between test completion and submittals.

6. EXCEPTIONS

6.1. GENERAL

Exceptions to the required test results are sequentially numbered and recorded on individual Exception forms. This enables case-by-case resolution and approval of each exception.

Errors/exceptions in the ATP itself shall NOT be processed as test exceptions (see Section 4).

6.2. RECORDING

6.2.1. Number each exception sequentially as it occurs and record it on Exception Form KEH 428, or an approved substitute. Copies will be supplied during the Preconstruction Conference (see Section 01200).

6.2.2. Enter name and organization of objecting party for each exception.

6.2.3. Enter planned action to resolve each exception when such determination is made.

W026ATP039

Rev 0

Page 8

6.3. RETEST/RESOLUTION

Record the action taken to resolve each exception. Action taken may not be the same as planned action.

- 6.3.1. When action taken results in an acceptable retest, sign and date Retest Execution and Acceptance section of the Exception form.
- 6.3.2. When action taken does not involve an acceptable retest, strike out the Retest Execution and Acceptance section of the Exception form.

6.4. APPROVAL AND ACCEPTANCE

ICF KH provides final approval and acceptance of exceptions by checking one of the following on Exception form:

- 6.4.1. Retest Approved and Accepted: Applicable when Retest Execution and Acceptance section is completed.
- 6.4.2. Exception Accepted-As-Is: Requires detailed explanation.
- 6.4.3. Other: Requires detailed explanation.

ICF KH signs and dates the Exception form and obtains their customer approval, as required.

6.5. DISTRIBUTION

A copy of the approved Exception form is distributed to each participant. The signed original is attached to the ATP Master.

7. PREREQUISITES, EQUIPMENT/INSTRUMENTS, AND ABBREVIATIONS

7.1. PREREQUISITES

The following conditions shall exist at the start of the testing for that portion of the system being tested.

- 7.1.1. Systems have been inspected for compliance with construction documents.
- 7.1.2. Reference documents (including this ATP) have been verified for correct revision number and outstanding ECNs.
- 7.1.3. Test instruments have a valid calibration stamp attached. Test instrument identification numbers and calibration expiration dates have been recorded in paragraph 7.2.

7.2. EQUIPMENT/INSTRUMENTS

Supplied by Test Operator unless otherwise noted. [Delete items not required. Add any additional necessary items.]

W026ATP039

Rev 0

Page 9

- 7.2.1. Electronic Phase Shifter: Multiamp model EPS-1000 or similar
- Instrument No. _____ Calibration Expiration Date _____
- 7.2.2. Relay Test Set: Multiamp model SR-90 or similar
- Instrument No. _____ Calibration Expiration Date _____

7.3. ABBREVIATIONS

7.3.1. Abbreviations:

ECN Engineering Change Notice

W026ATP039

Rev 0

Page 10

8. POWER FACTOR REGULATOR CONTROLLER TEST

These tests will verify the operation the Power Factor Regulator Controller.

8.1. PREPARATION

- 8.1.1. Verify that all prerequisites of Subsection 7.1 have been met.
- 8.1.2. Notify personnel affected by test, that test is in progress; remain clear of effected devices.
- 8.1.3. Verify Power Factor Correction System is isolated from ALL power sources.

8.2. REGULATOR TESTS

These tests will verify the operation the Power Factor Regulator Controller.

Record the following steps for items shown on Data Sheet 8.2.2.

- 8.2.1. Visual and mechanical checks.
 - 8.2.1.1. Verify power factor correction system complies with specifications and drawings.
 - 8.2.1.2. Verify no loose wires or connections are present.
- 8.2.2. Electrical checks.
 - 8.2.2.1. Remove control power transformer primary and secondary fuses.
 - 8.2.2.2. Install shorting jumper at X1 and X2 of CT terminal block.
 - 8.2.2.3. Remove wires at Relay terminals CT1, CT2, L2, L3 and A.
 - 8.2.2.4. Connect relay test set, electronic phase shifter and control power to power factor control relay per manufacturers instruction.
 - 8.2.2.5. Simulate system power factor of 30 KVAR lagging with respect to the set point power factor.
 - 8.2.2.6. Verify first contactor energizes at 10 seconds.
 - 8.2.2.7. Verify remaining capacitors energize at 10 second intervals.

END OF SYSTEM 8 TEST

W026ATP039

Rev 0

Page 11

DATA SHEET 8-2

STEP	PERFORM/VERIFY	OK	DATE
8.2.1	Visual Mechanical Checks		
8.2.1.1	Power factor correction system complies with specifications and drawings.	<i>LM</i>	10/12/95
8.2.1.2	No loose wire or connections exist	<i>LM</i>	10/12/95
8.2.2	Electrical Checks	N/A	
8.2.2.1	Remove control power transformer fuses.	<i>LM</i>	10/12/95
8.2.2.2	Install shorting jumper at X1 and X2 of CT terminal block.	<i>LM</i>	10/12/95
8.2.2.3	Remove wires from relay terminals CT1, CT2, L2, L3 and A.	<i>LM</i>	10/12/95
8.2.2.4	Connect relay test set, phase shifter and control power relay manufacturers instruction	<i>LM</i>	10/12/95
8.2.2.5	Simulate system power factor 30 KVAR lagging with respect to set point (0.98 power factor).	<i>LM</i>	10/12/95
8.2.2.5	Verify first contactor is ENERGIZED after 10 seconds.	<i>LM</i>	10/12/95
8.2.2.6	Verify second contactor is ENERGIZED after an additional 10 seconds.	<i>LM</i>	10/12/95
8.2.2.7	Verify third contactor is ENERGIZED after an additional 10 seconds.	<i>LM</i>	10/12/95
8.2.2.8	Verify fourth contactor is ENERGIZED after an additional 10 seconds	<i>LM</i>	10/12/95

W026ATP039

Rev 0

Page 12

W026-SD-ATR-019 (CONTINUED)			
8.2.2.9	Verify fifth contactor is ENERGIZED after an additional 10 seconds.	Lm	10/12/95
8.2.2.10	Verify sixth contactor is ENERGIZED after an additional 10 seconds.	Lm	10/12/95

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TEST DATA SHEET

LOW VOLTAGE SWITCHGEAR

CUSTOMER: PLATEAU ELECTRIC JOB NUMBER: SEEG241

LOCATION: WRAP 1 HANFORD SUBSTATION: MAIN 480 VOLT SWGR

MANUFACTURER: WESTINGHOUSE/CUTLER-HAMMER

TYPE: DS II LOW VOLTAGE SWITCHGEAR

GENERAL ORDER: HUSE21782

SHOP ORDER: 82Y1068

VOLTAGE: 480, 3 PHASE, 3 WIRE, 60 HERTZ

AMPERAGE: MAIN BUS 2000A, SECTION BUS 2000A,

SHORT CIRCUIT: 42,000 A

MECHANICAL CHECKS	AS FOUND	COMMENTS
Inspect switchgear for condition of paint, panels, filters, doors, lamps, relay covers, heaters and control/potential transformers	OK	
Inspect cleanliness of cells	OK	
Inspect switchgear frame for alignment, level, anchorage and grounding	OK	
Inspect control devices and metering instruments	OK	
Inspect control wiring termination	OK	
Check cell racking mechanisms	OK	
Check cell interlock for proper operation	OK	
Key interlock works properly/key number	OK	# 17153

MAIN BUS INSULATION RESISTANCE (MEGOHMS)						
PHASE TO PHASE	A-B	2000+	B-C	2000+	C-A	2000+
PHASE TO GROUND	A-G	2000+	B-G	2000+	C-G	2000+

ENGINEER: L K MCFARLAND

DATE: 10/10/95

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TEST DATA SHEET

BUSS #2

CIRCUIT BREAKER - LOW VOLTAGE AIR FRAME

FORM SSW

CUSTOMER	<u>PLATEAU ELECT.</u>	JOB NUMBER	<u>SEEG 241</u>
LOCATION	<u>WRAP 1 HANFORD</u>	TEST NUMBER	<u>2</u>
SUBSTATION	<u>480V SWGR</u>	FEEDER	<u>MAIN M2B</u>
BREAKER ID	<u>M2B</u>	MANUFACTURER	<u>WESTINGHOUSE/C-H</u>
TYPE	<u>DS-420</u>	SERIAL NUMBER	<u>33UD22240-001 1/2</u>
FRAME SIZE	<u>2000A</u>	RATED VOLTAGE	<u>635 VAC MAX</u>

Visual - Mechanical Checks	As Found	Comments
Check breaker against single line drawing, if supplied, for correct rating.	OK	
Check breaker for smooth operation by closing and tripping several times.	OK	
Check connections for tightness.	OK	
Clean and inspect breaker for cracked or broken springs or retainers. If drawout type, inspect primary and secondary finger clusters for overheating and broken parts.	OK	
Remove arc chutes. Blow out and inspect for signs of overheating and broken parts.	OK	
Check main and arcing contacts against manufacturer's tolerance for wear, wipe, closing sequence, open gap and alignment.	OK	
Inspect control devices if applicable such as X-Y relays, auxiliary contacts, etc., for cracked parts and wear.	OK	
Inspect control wiring and check connections for tightness.	OK	
Electrical Checks		
Electrically operate breaker to check for proper operation in closing and tripping including auxiliary devices (ground fault, undervoltage, remove trip, etc. when applicable).	N/A	
Check breaker with spring charging mechanism for proper operation and limit switch cutoff.	N/A	
Test breaker with solid state trip unit with a solid state tester or by primary current injection.	SOLID STATE TEST OK	

ELECTRICAL CHECKS

CONTACT RESISTANCE (OR MILLIVOLT DROP)		
TEST CURRENT	10 ADC	UNITS (check one) ☒ micro ohms ☐ millivolts
PHASE A	21	PHASE B 19 PHASE C 20
INSULATION RESISTANCE AT 1000 VDC (megohms)		
BREAKER CLOSED PHASE TO GROUND	PHASE TO PHASE	BREAKER OPEN ACROSS CONTACTS
A 2000+	A-B 2000+	A 2000+
B 2000+	B-C 2000+	B 2000+
C 2000+	C-A 2000+	C 2000+

TRIP ATTACHMENT	STYLE/TYPE	CURVE	COIL SIZE	AMP
	DKITRIP 510	LSG	SENSOR 2000	AMP
() STATIC	LONG TIME DELAY	SHORT TIME DELAY	INSTANTANEOUS	GROUND
() SERIES	0.8x A 4 S	2x A 0.2 S	— Amps	D 0.2
(x) DIGITAL				Seconds

COMMENTS:

TEST BY: L. McFARLAND

DATE: 10/10/95

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TEST DATA SHEET

BUSS #1

CIRCUIT BREAKER - LOW VOLTAGE AIR FRAME

FORM SSW1

CUSTOMER	<u>PLATEAU ELECT.</u>	JOB NUMBER	<u>SEEG 241</u>
LOCATION	<u>WRAP 1 HANFORD</u>	TEST NUMBER	<u>1</u>
SUBSTATION	<u>480V SWGR</u>	FEEDER	<u>MAIN M4B</u>
BREAKER ID	<u>M4B</u>	MANUFACTURER	<u>WESTINGHOUSE/C-H</u>
TYPE	<u>DS-420</u>	SERIAL NUMBER	<u>3300 22240-001 2/2</u>
FRAME SIZE	<u>2000A</u>	RATED VOLTAGE	<u>635 VAC MAX</u>

Visual - Mechanical Checks	As Found	Comments
Check breaker against single line drawing, if supplied, for correct rating.	OK	
Check breaker for smooth operation by closing and tripping several times.	OK	
Check connections for tightness.	OK	
Clean and inspect breaker for cracked or broken springs or retainers. If drawout type, inspect primary and secondary finger clusters for overheating and broken parts.	OK	
Remove arc chutes. Blow out and inspect for signs of overheating and broken parts.	OK	
Check main and arcing contacts against manufacturer's tolerance for wear, wipe, closing sequence, open gap and alignment.	OK	
Inspect control devices if applicable such as X-Y relays, auxiliary contacts, etc., for cracked parts and wear.	OK	
Inspect control wiring and check connections for tightness.	OK	
Electrical Checks		
Electrically operate breaker to check for proper operation in closing and tripping including auxiliary devices (ground fault, undervoltage, remove trip, etc. when applicable).	N/A	MAN. BKR
Check breaker with spring charging mechanism for proper operation and limit switch cutoff.	N/A	MAN. BKR
Test breaker with solid state trip unit with a solid state tester or by primary current injection.	SOLID STATE TEST OK	

ELECTRICAL CHECKS

CONTACT RESISTANCE (OR MILLIVOLT DROP)			
TEST CURRENT	10 ADC	UNITS	(check one) ☒ micro ohms ☐ millivolts
PHASE A	19	PHASE B	18
		PHASE C	19
INSULATION RESISTANCE AT 1000 VDC (megohms)			
BREAKER CLOSED PHASE TO GROUND	PHASE TO PHASE		BREAKER OPEN ACROSS CONTACTS
A	2000+	A-B	2000+
B	2000+	B-C	2000+
C	2000+	C-A	2000+

TRIP ATTACHMENT	STYLE/TYPE	CURVE	COIL SIZE SENSOR	AMP
	DIGITRIP 510	LSG	2000	AMP
			RATING PLUG	2006 AMP
() STATIC () SERIES ☒ DIGITAL	LONG TIME DELAY 0.8 x ^A 4 ^S	SHORT TIME DELAY 2 x ^A 0.2 ^S	INSTANTANEOUS _____ Amps	GROUND D 0.2 Seconds

COMMENTS:

TEST BY: L. McFARLAND

DATE: 10/10/95

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TEST DATA SHEET

CIRCUIT BREAKER - LOW VOLTAGE AIR FRAME

FORM SSW1

CUSTOMER	<u>PLATEAU ELECT.</u>	JOB NUMBER	<u>SEEG 241</u>
LOCATION	<u>WRAP 1 HANFORD</u>	TEST NUMBER	<u>3</u>
SUBSTATION	<u>480V SWGR</u>	FEEDER	<u>TIE</u>
BREAKER ID	<u>TIE 3B</u>	MANUFACTURER	<u>WESTINGHOUSE/C-H</u>
TYPE	<u>DS 420</u>	SERIAL NUMBER	<u>33UD22241-001 1/1</u>
FRAME SIZE	<u>2000A</u>	RATED VOLTAGE	<u>635 VAC MAX</u>

Visual - Mechanical Checks	As Found	Comments
Check breaker against single line drawing, if supplied, for correct rating.	OK	
Check breaker for smooth operation by closing and tripping several times.	OK	
Check connections for tightness.	OK	
Clean and inspect breaker for cracked or broken springs or retainers. If drawout type, inspect primary and secondary finger clusters for overheating and broken parts.	OK	
Remove arc chutes. Blow out and inspect for signs of overheating and broken parts.	OK	
Check main and arcing contacts against manufacturer's tolerance for wear, wipe, closing sequence, open gap and alignment.	OK	
Inspect control devices if applicable such as X-Y relays, auxiliary contacts, etc., for cracked parts and wear.	OK	
Inspect control wiring and check connections for tightness.	OK	
Electrical Checks		
Electrically operate breaker to check for proper operation in closing and tripping including auxiliary devices (ground fault, undervoltage, remove trip, etc. when applicable).	N/A	
Check breaker with spring charging mechanism for proper operation and limit switch cutoff.	N/A	
Test breaker with solid state trip unit with a solid state tester or by primary current injection.	N/A NO TRIP UNIT	

ELECTRICAL CHECKS

CONTACT RESISTANCE (OR MILLIVOLT DROP)		
TEST CURRENT	10 ADC	UNITS (check one) ☒ micro ohms ☐ millivolts
PHASE A	18	PHASE B 18 PHASE C 19
INSULATION RESISTANCE AT 1000 VDC (megohms)		
BREAKER CLOSED PHASE TO GROUND	PHASE TO PHASE	BREAKER OPEN ACROSS CONTACTS
A 2000+	A-B 2000+	A 2000+
B 2000+	B-C 2000+	B 2000+
C 2000+	C-A 2000+	C 2000+

TRIP ATTACHMENT	STYLE/TYPE	CURVE	COIL SIZE SENSOR RATING PLUG	AMP AMP AMP
N/A () STATIC () SERIES () DIGITAL	NONE	N/A	INSTANTANEOUS Amps	GROUND Seconds

COMMENTS: NO PROTECTIVE FUNCTION PER SPEC.

TEST BY: L. MCFARLAND

DATE: 10/10/95

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TEST DATA SHEET

MCC-05-101

CIRCUIT BREAKER - LOW VOLTAGE AIR FRAME

FORM SSW1

CUSTOMER	<u>PLATEAU ELECT.</u>	JOB NUMBER	<u>SEEG 241</u>
LOCATION	<u>WRAP 1 HANFORD</u>	TEST NUMBER	<u>4</u>
SUBSTATION	<u>480V SWGR</u>	FEEDER	<u>MCC-05-101</u>
BREAKER ID	<u>FIA</u>	MANUFACTURER	<u>WESTINGHOUSE /C-H</u>
TYPE	<u>DS-206H</u>	SERIAL NUMBER	<u>33UD22236-001 2/3</u>
FRAME SIZE	<u>800 A</u>	RATED VOLTAGE	<u>635 VAC MAX</u>

Visual - Mechanical Checks	As Found	Comments
Check breaker against single line drawing, if supplied, for correct rating.	OK	
Check breaker for smooth operation by closing and tripping several times.	OK	
Check connections for tightness.	OK	
Clean and inspect breaker for cracked or broken springs or retainers. If drawout type, inspect primary and secondary finger clusters for overheating and broken parts.	OK	
Remove arc chutes. Blow out and inspect for signs of overheating and broken parts.	OK	
Check main and arcing contacts against manufacturer's tolerance for wear, wipe, closing sequence, open gap and alignment.	OK	
Inspect control devices if applicable such as X-Y relays, auxiliary contacts, etc., for cracked parts and wear.	OK	
Inspect control wiring and check connections for tightness.	OK	
Electrical Checks		
Electrically operate breaker to check for proper operation in closing and tripping including auxiliary devices (ground fault, undervoltage, remove trip, etc. when applicable).	N/A	MAN. BKR
Check breaker with spring charging mechanism for proper operation and limit switch cutoff.	N/A	MAN. BKR
Test breaker with solid state trip unit with a solid state tester or by primary current injection.	SOLID STATE TEST OK	

ELECTRICAL CHECKS

CONTACT RESISTANCE (OR MILLIVOLT DROP)		
TEST CURRENT <i>10 ADC</i>	UNITS	(check one) ☒ micro ohms ☐ millivolts
PHASE A <i>34</i>	PHASE B <i>31</i>	PHASE C <i>31</i>
INSULATION RESISTANCE AT 1000 VDC (megohms)		
BREAKER CLOSED PHASE TO GROUND	PHASE TO PHASE	BREAKER OPEN ACROSS CONTACTS
A <i>2000+</i>	A-B <i>2000+</i>	A <i>2000+</i>
B <i>2000+</i>	B-C <i>2000+</i>	B <i>2000+</i>
C <i>2000+</i>	C-A <i>2000+</i>	C <i>2000+</i>

TRIP ATTACHMENT	STYLE/TYPE	CURVE	COIL SIZE SENSOR	AMP AMP AMP
	<i>DIGITRIP 510</i>	<i>L34</i>	<i>800</i>	
			RATING PLUG	<i>600</i>
() STATIC	LONG TIME DELAY	SHORT TIME DELAY	INSTANTANEOUS	GROUND
() SERIES	<i>0.5x^A 2^S</i>	<i>2x^A 0.1^S</i>	<i>—</i> Amps	<i>A 0.1</i>
(x) DIGITAL				Seconds

COMMENTS:

TEST BY: *L Mc FARLAND*DATE: *10/10/95*

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TEST DATA SHEET

MCC-07-101

CIRCUIT BREAKER - LOW VOLTAGE AIR FRAME

FORM SSW1

CUSTOMER	<u>PLATEAU ELECT</u>	JOB NUMBER	<u>SEEG241</u>
LOCATION	<u>WRAP 1 HANFORD</u>	TEST NUMBER	<u>5</u>
SUBSTATION	<u>480V SWGR</u>	FEEDER	<u>MCC-07-101</u>
BREAKER ID	<u>FIB</u>	MANUFACTURER	<u>WESTINGHOUSE/C-H</u>
TYPE	<u>DS 206 H</u>	SERIAL NUMBER	<u>33UD 22237-001 1/1</u>
FRAME SIZE	<u>800A</u>	RATED VOLTAGE	<u>635 VAC MAX</u>

Visual - Mechanical Checks	As Found	Comments
Check breaker against single line drawing, if supplied, for correct rating.	OK	
Check breaker for smooth operation by closing and tripping several times.	OK	
Check connections for tightness.	OK	
Clean and inspect breaker for cracked or broken springs or retainers. If drawout type, inspect primary and secondary finger clusters for overheating and broken parts.	OK	
Remove arc chutes. Blow out and inspect for signs of overheating and broken parts.	OK	
Check main and arcing contacts against manufacturer's tolerance for wear, wipe, closing sequence, open gap and alignment.	OK	
Inspect control devices if applicable such as X-Y relays, auxiliary contacts, etc., for cracked parts and wear.	OK	
Inspect control wiring and check connections for tightness.	OK	
Electrical Checks		
Electrically operate breaker to check for proper operation in closing and tripping including auxiliary devices (ground fault, undervoltage, remove trip, etc. when applicable).	SHUNT TRIP ONLY	
Check breaker with spring charging mechanism for proper operation and limit switch cutoff.	N/A	
Test breaker with solid state trip unit with a solid state tester or by primary current injection.	SOLID STATE TEST OK	

ELECTRICAL CHECKS

CONTACT RESISTANCE (OR MILLIVOLT DROP)		
TEST CURRENT	10 ADC	UNITS (check one) ☒ micro ohms ☐ millivolts
PHASE A	31	PHASE B 27 PHASE C 32
INSULATION RESISTANCE AT 1000 VDC (megohms)		
BREAKER CLOSED PHASE TO GROUND	PHASE TO PHASE	BREAKER OPEN ACROSS CONTACTS
A 2000+	A-B 2000+	A 2000+
B 2000+	B-C 2000+	B 2000+
C 2000+	C-A 2000+	C 2000+

TRIP ATTACHMENT	STYLE/TYPE	CURVE	COIL SIZE 800 AMP SENSOR 800 AMP RATING PLUG 800 AMP
() STATIC () SERIES (x) DIGITAL	DIGITRIP 510	LSG	
	LONG TIME DELAY 0.6x ^A 2 ^S	SHORT TIME DELAY 4.0x ^A 0.1 ^S	INSTANTANEOUS Amps GROUND 0.1 Seconds

REVISED 5-8-96 BY BEN PIERCE

COMMENTS: SETTINGS PER B PIERCE

TEST BY: L. McFARLAND

DATE: 10/10/9

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TEST DATA SHEET

CIRCUIT BREAKER - LOW VOLTAGE AIR FRAME

FORM SSW1

CUSTOMER	<u>PLATEAU ELECT</u>	JOB NUMBER	<u>SEEG 241</u>
LOCATION	<u>WRAP 1 HANFORD</u>	TEST NUMBER	<u>6</u>
SUBSTATION	<u>480V SWGR</u>	FEEDER	<u>PFC-13-101</u>
BREAKER ID	<u>FIC</u>	MANUFACTURER	<u>WESTINGHOUSE / C-H</u>
TYPE	<u>DS-206H</u>	SERIAL NUMBER	<u>3300 22236 001 3/3</u>
FRAME SIZE	<u>800A</u>	RATED VOLTAGE	<u>635 VAC MAX</u>

Visual - Mechanical Checks	As Found	Comments
Check breaker against single line drawing, if supplied, for correct rating.	OK	
Check breaker for smooth operation by closing and tripping several times.	OK	
Check connections for tightness.	OK	
Clean and inspect breaker for cracked or broken springs or retainers. If drawout type, inspect primary and secondary finger clusters for overheating and broken parts.	OK	
Remove arc chutes. Blow out and inspect for signs of overheating and broken parts.	OK	
Check main and arcing contacts against manufacturer's tolerance for wear, wipe, closing sequence, open gap and alignment.	OK	
Inspect control devices if applicable such as X-Y relays, auxiliary contacts, etc., for cracked parts and wear.	OK	
Inspect control wiring and check connections for tightness.	OK	
Electrical Checks		
Electrically operate breaker to check for proper operation in closing and tripping including auxiliary devices (ground fault, undervoltage, remove trip, etc. when applicable).	N/A	MAN. BKR.
Check breaker with spring charging mechanism for proper operation and limit switch cutoff.	N/A	MAN. BKR.
Test breaker with solid state trip unit with a solid state tester or by primary current injection.	SOLID STATE TEST	

ELECTRICAL CHECKS

CONTACT RESISTANCE (OR MILLIVOLT DROP)		
TEST CURRENT <u>10 ADC</u>	UNITS	(check one) ☒ micro ohms ☐ millivolts
PHASE A <u>27</u>	PHASE B <u>32</u>	PHASE C <u>31</u>
INSULATION RESISTANCE AT 1000 VDC (megohms)		
BREAKER CLOSED PHASE TO GROUND	PHASE TO PHASE	BREAKER OPEN ACROSS CONTACTS
A <u>2000+</u>	A-B <u>2000+</u>	A <u>2000+</u>
B <u>2000+</u>	B-C <u>2000+</u>	B <u>2000+</u>
C <u>2000+</u>	C-A <u>2000+</u>	C <u>2000+</u>

TRIP ATTACHMENT	STYLE/TYPE	CURVE	COIL SIZE SENSOR	AMP
	<u>DIGITRIP 510</u>	<u>LSG</u>	<u>800</u>	AMP
			RATING PLUG	AMP
() STATIC	LONG TIME DELAY	SHORT TIME DELAY	INSTANTANEOUS	GROUND
() SERIES	<u>0.7x A 2 S</u>	<u>2x A 0.1 S</u>	<u>—</u> Amps	<u>A 0.1</u>
(x) DIGITAL				Seconds

COMMENTS:

TEST BY: L. McFARLAND

DATE: 10/10/95

Westinghouse

Engineering Service

Seattle, Wa.

(206) 656-4380

TEST DATA SHEET

CIRCUIT BREAKER - LOW VOLTAGE AIR FRAME

FORM SSW1

CUSTOMER	<u>PLATEAU ELECTRIC</u>	JOB NUMBER	<u>SEEG 241</u>
LOCATION	<u>WRAP 1</u>	TEST NUMBER	<u>7</u>
SUBSTATION	<u>480V SWGR</u>	FEEDER	<u>MCC-11-101</u>
BREAKER ID	<u>FID</u>	MANUFACTURER	<u>WESTINGHOUSE/C-H</u>
TYPE	<u>DS 416</u>	SERIAL NUMBER	<u>33UD 22238-001 2/3</u>
FRAME SIZE	<u>1600A</u>	RATED VOLTAGE	<u>635 VAC MAX</u>

Visual - Mechanical Checks	As Found	Comments
Check breaker against single line drawing, if supplied, for correct rating.	OK	
Check breaker for smooth operation by closing and tripping several times.	OK	
Check connections for tightness.	OK	
Clean and inspect breaker for cracked or broken springs or retainers. If drawout type, inspect primary and secondary finger clusters for overheating and broken parts.	OK	
Remove arc chutes. Blow out and inspect for signs of overheating and broken parts.	OK	
Check main and arcing contacts against manufacturer's tolerance for wear, wipe, closing sequence, open gap and alignment.	OK	
Inspect control devices if applicable such as X-Y relays, auxiliary contacts, etc., for cracked parts and wear.	OK	
Inspect control wiring and check connections for tightness.	OK	
Electrical Checks		
Electrically operate breaker to check for proper operation in closing and tripping including auxiliary devices (ground fault, undervoltage, remove trip, etc. when applicable).	N/A	MAN. BKR
Check breaker with spring charging mechanism for proper operation and limit switch cutoff.	N/A	MAN. BKR
Test breaker with solid state trip unit with a solid state tester or by primary current injection.	SOLID STATE TEST OK	

ELECTRICAL CHECKS

CONTACT RESISTANCE (OR MILLIVOLT DROP)		
TEST CURRENT	10 ADC	UNITS (check one) ☒ micro ohms ☐ millivolts
PHASE A	29	PHASE B 30 PHASE C 28
INSULATION RESISTANCE AT 1000 VDC (megohms)		
BREAKER CLOSED PHASE TO GROUND	PHASE TO PHASE	BREAKER OPEN ACROSS CONTACTS
A 2000+	A-B 2000+	A 2000+
B 2000+	B-C 2000+	B 2000+
C 2000+	C-A 2000+	C 2000+

TRIP ATTACHMENT	STYLE/TYPE	CURVE	COIL SIZE SENSOR 1600 AMP RATING PLUG 1200 AMP
() STATIC () SERIES ☒ DIGITAL	DIGITRIP 510	LSG	
	LONG TIME DELAY A S	SHORT TIME DELAY A S	INSTANTANEOUS Amps
	0.7x 2	2x 0.1	GROUND A 0.1 Seconds

COMMENTS:

TEST BY: L MCFARLAND

DATE: 10/10/95

Westinghouse

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TEST DATA SHEET

CIRCUIT BREAKER - LOW VOLTAGE AIR FRAME

FORM SSW1

CUSTOMER	<u>PLATEAU ELECT.</u>	JOB NUMBER	<u>SEEG 241</u>
LOCATION	<u>WRAP 1 HANFORD</u>	TEST NUMBER	<u>8</u>
SUBSTATION	<u>480V SWGR</u>	FEEDER	<u>MCC-09-102</u>
BREAKER ID	<u>F2C</u>	MANUFACTURER	<u>WESTINGHOUSE/C-H</u>
TYPE	<u>DS-206 H</u>	SERIAL NUMBER	<u>33UD22239-001 1/1</u>
FRAME SIZE	<u>800 AMP</u>	RATED VOLTAGE	<u>635 VAC MAX</u>

Visual - Mechanical Checks	As Found	Comments
Check breaker against single line drawing, if supplied, for correct rating.	OK	
Check breaker for smooth operation by closing and tripping several times.	OK	
Check connections for tightness.	OK	
Clean and inspect breaker for cracked or broken springs or retainers. If drawout type, inspect primary and secondary finger clusters for overheating and broken parts.	OK	
Remove arc chutes. Blow out and inspect for signs of overheating and broken parts.	OK	
Check main and arcing contacts against manufacturer's tolerance for wear, wipe, closing sequence, open gap and alignment.	OK	
Inspect control devices if applicable such as X-Y relays, auxiliary contacts, etc., for cracked parts and wear.	OK	
Inspect control wiring and check connections for tightness.	OK	
Electrical Checks		
Electrically operate breaker to check for proper operation in closing and tripping including auxiliary devices (ground fault, undervoltage, remove trip, etc. when applicable).	N/A	MAN BKR
Check breaker with spring charging mechanism for proper operation and limit switch cutoff.	N/A	MAN BKR
Test breaker with solid state trip unit with a solid state tester or by primary current injection.	SOLID STATE TEST OK	

ELECTRICAL CHECKS

CONTACT RESISTANCE (OR MILLIVOLT DROP)		
TEST CURRENT	10 ADC	UNITS (check one) ☒ micro ohms ☐ millivolts
PHASE A	38	PHASE B 33 PHASE C 32
INSULATION RESISTANCE AT 1000 VDC (megohms)		
BREAKER CLOSED PHASE TO GROUND	PHASE TO PHASE	BREAKER OPEN ACROSS CONTACTS
A 2000+	A-B 2000+	A 2000+
B 2000+	B-C 2000+	B 2000+
C 2000+	C-A 2000+	C 2000+

TRIP ATTACHMENT	STYLE/TYPE	CURVE	COIL SIZE SENSOR	AMP
	DIGITRIP 510	LSG	800	AMP
			RATING PLUG 400	AMP
() STATIC () SERIES ☒ DIGITAL	LONG TIME DELAY A S	SHORT TIME DELAY A S	INSTANTANEOUS Amps	GROUND Seconds
	0.5x 2	2 0.1	—	A 0.1

COMMENTS:

TEST BY: L. McFARLAND

DATE: 10/10/95

Westinghouse
Engineering Service
Seattle, Wa.
(206) 656-4380

TEST DATA SHEET

CIRCUIT BREAKER - LOW VOLTAGE AIR FRAME

FORM SSW1

CUSTOMER	<u>PLATEAU ELECT</u>	JOB NUMBER	<u>SEEG 241</u>
LOCATION	<u>WRAP 1 HANFORD</u>	TEST NUMBER	<u>9</u>
SUBSTATION	<u>480V SWGR</u>	FEEDER	<u>MCL-09-101</u>
BREAKER ID	<u>F2D</u>	MANUFACTURER	<u>WESTINGHOUSE/C-H</u>
TYPE	<u>DS-206H</u>	SERIAL NUMBER	<u>33UDZZZ36-001 1/3</u>
FRAME SIZE	<u>800A</u>	RATED VOLTAGE	<u>635 VAC MAX</u>

Visual - Mechanical Checks	As Found	Comments
Check breaker against single line drawing, if supplied, for correct rating.	OK	
Check breaker for smooth operation by closing and tripping several times.	OK	
Check connections for tightness.	OK	
Clean and inspect breaker for cracked or broken springs or retainers. If drawout type, inspect primary and secondary finger clusters for overheating and broken parts.	OK	
Remove arc chutes. Blow out and inspect for signs of overheating and broken parts.	OK	
Check main and arcing contacts against manufacturer's tolerance for wear, wipe, closing sequence, open gap and alignment.	OK	
Inspect control devices if applicable such as X-Y relays, auxiliary contacts, etc., for cracked parts and wear.	OK	
Inspect control wiring and check connections for tightness.	OK	
Electrical Checks		
Electrically operate breaker to check for proper operation in closing and tripping including auxiliary devices (ground fault, undervoltage, remove trip, etc. when applicable).	N/A	
Check breaker with spring charging mechanism for proper operation and limit switch cutoff.	N/A	
Test breaker with solid state trip unit with a solid state tester or by primary current injection.	SOLID STATE TEST OK	

ELECTRICAL CHECKS

CONTACT RESISTANCE (OR MILLIVOLT DROP)		
TEST CURRENT	10 ADC	UNITS (check one) ☒ micro ohms ☐ millivolts
PHASE A	39	PHASE B 39 PHASE C 32
INSULATION RESISTANCE AT 1000 VDC (megohms)		
BREAKER CLOSED PHASE TO GROUND	PHASE TO PHASE	BREAKER OPEN ACROSS CONTACTS
A 2000+	A-B 2000+	A 2000+
B 2000+	B-C 2000+	B 2000+
C 2000+	C-A 2000+	C 2000+

TRIP ATTACHMENT	STYLE/TYPE	CURVE	COIL SIZE SENSOR 800 RATING PLUG 600	AMP AMP AMP
() STATIC () SERIES (X) DIGITAL	DIGITRIP 510	LSG	INSTANTANEOUS Amps	GROUND A 0.1 Seconds
	LONG TIME DELAY A S	SHORT TIME DELAY A S		
	0.5x 2	2x 0.1		

COMMENTS:

TEST BY: L. McFARLAND

DATE: 10/10/95

Westinghouse
Engineering Service
Seattle, Wa.
(206) 656-4380

TEST DATA SHEET

CIRCUIT BREAKER - LOW VOLTAGE AIR FRAME

FORM SSW1

CUSTOMER	<u>PLATEAU ELECT.</u>	JOB NUMBER	<u>SEEG 241</u>
LOCATION	<u>WRAP 1 HANFORD</u>	TEST NUMBER	<u>10</u>
SUBSTATION	<u>480V SWGR</u>	FEEDER	<u>MCC-11-102</u>
BREAKER ID	<u>F4C</u>	MANUFACTURER	<u>WESTINGHOUSE / C-H</u>
TYPE	<u>DS-416</u>	SERIAL NUMBER	<u>33UD22238-001-1/3</u>
FRAME SIZE	<u>1600</u>	RATED VOLTAGE	<u>635 VAC MAX</u>

Visual - Mechanical Checks	As Found	Comments
Check breaker against single line drawing, if supplied, for correct rating.	OK	
Check breaker for smooth operation by closing and tripping several times.	OK	
Check connections for tightness.	OK	
Clean and inspect breaker for cracked or broken springs or retainers. If drawout type, inspect primary and secondary finger clusters for overheating and broken parts.	OK	
Remove arc chutes. Blow out and inspect for signs of overheating and broken parts.	OK	
Check main and arcing contacts against manufacturer's tolerance for wear, wipe, closing sequence, open gap and alignment.	OK	
Inspect control devices if applicable such as X-Y relays, auxiliary contacts, etc., for cracked parts and wear.	OK	
Inspect control wiring and check connections for tightness.	OK	
Electrical Checks		
Electrically operate breaker to check for proper operation in closing and tripping including auxiliary devices (ground fault, undervoltage, remove trip, etc. when applicable).	N/A	MAN. BKR.
Check breaker with spring charging mechanism for proper operation and limit switch cutoff.	N/A	MAN. BKR.
Test breaker with solid state trip unit with a solid state tester or by primary current injection.	SOLID STATE TEST OK	

ELECTRICAL CHECKS

CONTACT RESISTANCE (OR MILLIVOLT DROP)		
TEST CURRENT	10 Adc	UNITS (check one) ☒ micro ohms ☐ millivolts
PHASE A	30	PHASE B 33 PHASE C 38
INSULATION RESISTANCE AT 1000 VDC (megohms)		
BREAKER CLOSED PHASE TO GROUND	PHASE TO PHASE	BREAKER OPEN ACROSS CONTACTS
A 2000+	A-B 2000+	A 2000+
B 2000+	B-C 2000+	B 2000+
C 2000+	C-A 2000+	C 2000+

TRIP ATTACHMENT	STYLE/TYPE	CURVE	COIL SIZE SENSOR 1600 AMP RATING PLUG 1200 AMP
() STATIC () SERIES ☒ DIGITAL	DKITRIP 510	LSG	
	LONG TIME DELAY A S	SHORT TIME DELAY A S	INSTANTANEOUS Amps
	0.7x 2	2x 0.1	GROUND A 0.1 Seconds

COMMENTS:

TEST BY: L. McFARLAND

DATE: 10/10/95

Westinghouse
Engineering Service
Seattle, Wa.
(206) 656-4380

TEST DATA SHEET

CIRCUIT BREAKER - LOW VOLTAGE AIR FRAME

FORM SSW1

CUSTOMER	<u>PLATEAU ELECT</u>	JOB NUMBER	<u>SEEG 241</u>
LOCATION	<u>WRAP 1 HANFORD</u>	TEST NUMBER	<u>11</u>
SUBSTATION	<u>480V SWGR</u>	FEEDER	<u>MCC-11-103</u>
BREAKER ID	<u>F4D</u>	MANUFACTURER	<u>WESTINGHOUSE / C-H</u>
TYPE	<u>DS-416</u>	SERIAL NUMBER	<u>22238-001-3/3</u>
FRAME SIZE	<u>1600A</u>	RATED VOLTAGE	<u>635 VAC MAX</u>

Visual - Mechanical Checks	As Found	Comments
Check breaker against single line drawing, if supplied, for correct rating.	OK	
Check breaker for smooth operation by closing and tripping several times.	OK	
Check connections for tightness.	OK	
Clean and inspect breaker for cracked or broken springs or retainers. If drawout type, inspect primary and secondary finger clusters for overheating and broken parts.	OK	
Remove arc chutes. Blow out and inspect for signs of overheating and broken parts.	OK	
Check main and arcing contacts against manufacturer's tolerance for wear, wipe, closing sequence, open gap and alignment.	OK	
Inspect control devices if applicable such as X-Y relays, auxiliary contacts, etc., for cracked parts and wear.	OK	
Inspect control wiring and check connections for tightness.	OK	
Electrical Checks		
Electrically operate breaker to check for proper operation in closing and tripping including auxiliary devices (ground fault, undervoltage, remove trip, etc. when applicable).	N/A	MAN. BKR.
Check breaker with spring charging mechanism for proper operation and limit switch cutoff.	N/A	MAN. BKR.
Test breaker with solid state trip unit with a solid state tester or by primary current injection.	SOLID STATE TEST OK	

ELECTRICAL CHECKS

CONTACT RESISTANCE (OR MILLIVOLT DROP)		
TEST CURRENT	10 ADE	UNITS (check one) ☒ micro ohms ☐ millivolts
PHASE A	27	PHASE B 27 PHASE C 34
INSULATION RESISTANCE AT 1000 VDC (megohms)		
BREAKER CLOSED PHASE TO GROUND	PHASE TO PHASE	BREAKER OPEN ACROSS CONTACTS
A 2000+	A-B 2000+	A 2000+
B 2000+	B-C 2000+	B 2000+
C 2000+	C-A 2000+	C 2000+

TRIP ATTACHMENT	STYLE/TYPE	CURVE	COIL SIZE SENSOR RATING PLUG	AMP AMP AMP
() STATIC () SERIES (x) DIGITAL	DIGITRIP 510	LSG	1600 1200	
	LONG TIME DELAY 0.5 A 2 S	SHORT TIME DELAY 2x A 0.1 S	INSTANTANEOUS _____ Amps	GROUND A 0.1 Seconds

COMMENTS:

TEST BY: L. McFARLAND

DATE: 10/11/93

WRAP-1 SWITCHGEAR SETTINGS

B. F. Pierce *B F Pierce*
Westinghouse Hanford Company
New Facility Startup
September 28, 1995
373-6291

Breaker		LONG TIME PICKUP	LONG TIME DELAY	SHORT TIME PICKUP	SHORT TERM DELAY	GROUND FAULT PICKUP	GROUND FAULT DELAY
MAIN M2B, M4B	2000AT	.8	4	2	.2	D	.2
F1A	MCC-05-101 600AT	.5	2	2	.1	A	.1
* F1B	MCC-07-101 600AT ⁵	.6 .6	2	2.5 4.0	.1	A	.1
F1C	PFC-13-101 600AT	.7	2	2	.1	A	.1
F1D	MCC-11-101 1200AT	.7	2	2	.1	A	.1
F2C	MCC-09-102 400AT	.5	2	2	.1	A	.1
F2D	MCC-09-101 600AT	.5	2	2	.1	A	.1
F4C	MCC-11-102 1200AT	.7	2	2	.1	A	.1
F4D	MCC-11-103 1200AT	.5	2	2	.1	A	.1

* REVISED 5-7-96 BY BEN PIERCE