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DOE/SF/10499-T118
(STMP0-587)

COLLECTOR POWER SYSTEMS

PREOPERATIONAL TEST

PROCEDURE 820

REVISION: 0

UNITED STATES DEPARTMENT OF ENERGY/
SOUTHERN CALIFORNIA EDISON COMPANY

10 MWe SOLAR PILOT PLANT

DAGGETT, CALIFORNIA

PROJECT: C-21700

STEARNS-ROGER ENGINEERING CORPORATION

DENVER, COLORADO

AUTHOR: *R. E. Taylor*
R. E. Taylor

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APPROVED BY: *R. E. Taylor*

COLLECTOR POWER SYSTEM

SYSTEM (820)

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1.0 OBJECTIVES

- 1.1 Demonstrate proper voltage and phase rotation at all distribution panels.
- 1.2 Demonstrate proper voltage at each heliostat power plug.
- 1.3 Demonstrate acceptable transformer oil tests before and after energizing.
- 1.4 Demonstrate acceptable transformer temperatures after energizing.
- 1.5 Measure satisfactory voltages at heliostats during field stow operation.

2.0 ACCEPTANCE CRITERIA

	<u>Verification Paragraph</u>	<u>Objective</u>
2.1 Voltages at each power center distribution panel are 120 volts, phase-to-neutral, and phase rotation is CBA.	8.16	1.1
2.2 Voltage at each heliostat power plug are 120 volts, phase-to-neutral.	8.17	1.2
2.3 Transformer oil tests (performed in accordance with ASTM standard D877 using 1 inch plates separated by 0.1 inch) are greater than 30K volts before transformer energization and show no significant deviation from transformer to transformer. The same oil tests, performed after energizing, show no significant drop in voltage on an individual transformer basis.	8.49	1.3
2.4 Transformer temperatures, after energization, do not exceed a 65°C rise above a 40°C ambient, and there are no significant differences in transformer temperatures.	8.15	1.4
2.5 Voltages supplied to individual heliostats during a field stow operation and at a field standby status are greater than or equal to 108 volts, and less than or equal to 125 volts.	8.30 8.37 8.44	1.5

3.0 REFERENCES

3.1 Pilot Plant Description, December, 1980

3.2 Logic Digrams

N/A

3.3 Circuit Schedule

40E7002133107, Revision 7

3.4 Single Line Diagrams

One Line Diagram 4160 Volt Feeders, Collector Subsystem, Dwg.
40E7005133106, Rev. 1 (E2-2A)

Main One Line Diagram Dwg. 40E7005133351, Rev. D. (SCE)

One Line Diagram 4160 Volt System, Dwg. 40E700133353 Rev. C (SCE)

Panel Schedule Collector System, Dwg. 40E500132700 (E2-7A) Rev. 1
and 40E5005132712 (E2-8A) Rev. 1

3.5 Piping and Instrumentation Diagrams

N/A

3.6 Electrical Elementary Diagrams

a) N/A

3.7 Instrument Index

N/A

3.8 Material Requisition and/or Specification

a) Technical Specification, DOE No. 40E500-3S for Heliostat
Interface Load Interrupter Switchgear.

b) Technical Specification, DOE No. 40E500-6S for Heliostat Power
Centers.

3.9 Vendor Tests

Heliostat Power Center tests for transformers and distribution
panels.

3.10 Standards

Oil Dielectric testing, ASTM D877.

3.0 REFERENCES

3.11 Schedules

Detailed Startup Test Schedule, March 19, 1981.

3.12 Miscellaneous

Revisions stipulated by S.C.E. described in Stearns-Roger letter C-21700-978, dated April 21, 1981.

4.0 PREREQUISITES

4.1 Turnover of the system to SCE is complete and in accordance with Section 5.4 of the SCE Startup Manual.

_____/_____
INITIAL DATE

4.2 Referenced Material has been reviewed and later revisions (if any) will not affect this test.

_____/_____
INITIAL DATE

4.3 The Master Tracing System has been reviewed and outstanding items (if any) will not affect his test. A summary list of outstanding items is attached on Appendix 10A.

_____/_____
INITIAL DATE

4.4 The Abnormal Equipment and Circuitry Log has been reviewed, is current, and is satisfactory for this test. A Summary list is attached on Appendix 10B.

_____/_____
INITIAL DATE

4.5 The system has been walked through and verified complete to the extent required for this test.

_____/_____
INITIAL DATE

4.6 Prerequisite component tests and calibration have been completed for components listed on Appendix 10C and 10D.

_____/_____
INITIAL DATE

4.7 All test equipment in section 6.0, is available, calibrated and in working order.

_____/_____
INITIAL DATE

4.8 A pretest meeting has been held to familiarize test and operations personnel with the requirements of this test.

_____/_____
INITIAL DATE

4.0 PREREQUISITES (Contd.)

4.9 Nameplates have been checked and are in compliance with design and specifications.

_____/_____
INITIAL DATE

5.0 LIMITS AND PRECAUTIONS

- 5.1 Section 5.3 of the SCE Startup and Test Program Manual, "Clearance Procedures".
- 5.2 Normal practices when working around or operating electrical systems.
- 5.3 Roping off and posting equipment to be energized.
- 5.4 Warning construction that equipment is to be considered energized.

6.0 TEST EQUIPMENT

6 - Recording voltmeters, A.C. 0-150, 0-300 volts, chart speed minimum 12" per hour, accuracy $\pm 1.25\%$.

3 - Set walkie talkies

3 - Phase rotation indicator

1 - Phasing sticks

1 - Voltmeter, A.C. 0-150, 0-300 volts, 2% accuracy

7.0 INITIAL CONDITIONS

7.1 Environmental Conditions

No Rain

7.2 Temporary Installations

N/A

7.3 Support Systems/Plant Operating Status

7.3.1 Clearance taken on Heliostat Feeder No. 1 circuit breaker 152-A01-7.

7.3.2 Clearance taken on Heliostat Heliostat Feeder No. 2 circuit Breaker 152-A01-9.

7.3.3 Clearance taken on Well Water Feeder circuit breaker 152-A01-10.

7.3.4 Solar Unit 4160 Volt Switchgear bus A01 energized from Solar Unit Auxiliary Transformer.

7.3.5 Water Well feeder cable installation from Coolwater Generating Station complete, tested, energized up to circuit breaker 152-A01-10 and to the 4160 Volt Interface Load Interrupter Switchgear.

7.3.6 Clearance taken on load break switch no. 1.

7.3.7 Clearance taken on load break switch no. 2.

NOTE: "Clearance taken" in S.C.E. terminology is to tag a circuit breaker or switch, to prevent operation. After clearance is taken, the switch or circuit breaker will not be operated until the clearance is removed. "Clearance taken" is not a clearance to perform work on disconnected equipment.

8.0 PROCEDURE AND DATA COLLECTION

NOTE: All data collected shall be permanently and legibly recorded, entered in the applicable appendix and submitted to Design Engineering for review.

NOTE: Initial energizing of the collector power system (those steps up to and including step 8.17) may be done in a piecemeal fashion, i.e., energizing one power center at a time, by isolating any transformers not to be energized by removing three high voltage winding fuses from each such transformer. Sections of the buried 4160 volt power cable may be isolated by unplugging all three phases of the 4160 volt power circuit load-break connectors at appropriate power centers. The above operations and corresponding restorations are to be performed when the collector field power system is not energized, in accordance with SCE clearance procedures.

8.1 Verify that all prerequisites have been met.

_____/_____
INITIAL DATE

8.2 Verify that all initial conditions are established.

_____/_____
INITIAL DATE

NOTE: Operations 8.3 to 8.8 inclusive do not need to be performed sequentially.

8.3 Close or check closed all terminators at all heliostat transformers (No. 1 to No. 14 inclusive). Check all transformer fuses in place and transformers on correct tap.

_____/_____
INITIAL DATE

8.4 Open or check open switch to Heliostat Feeder No. 1 at transformer No. 3.

_____/_____
INITIAL DATE

8.5 Close or check closed switch to Heliostat Feeder No. 2 at transformer No. 3.

_____/_____
INITIAL DATE

8.6 Unplug and tag all heliostats.

_____/_____
INITIAL DATE

8.0 PROCEDURE AND DATA COLLECTION (Contd)

8.7 Close all low voltage circuit breakers in junction boxes at heliostats.

_____/_____
INITIAL DATE

8.8 Close all low voltage circuit breakers in the heliostat power center distribution panels.

_____/_____
INITIAL DATE

8.9 Advise SCE shift foreman all men are clear of the Collector power system and all listed operations up to this point have been performed, and the system is ready to be energized.

_____/_____
INITIAL DATE

8.10 Remove clearance and check open and rack in circuit breaker 152-A01-7 (Heliostat Feeder No. 1).

_____/_____
INITIAL DATE

8.11 Remove clearance and check open and rack in circuit breaker 152-A01-9 (Heliostat Feeder No. 2).

_____/_____
INITIAL DATE

8.12 Remove clearance and check open and rack in circuit breaker 152-A01-10 (Well Water Line).

_____/_____
INITIAL DATE

8.13 Close open and close circuit breaker 152-A01-7 (Heliostat No. 1 Feeder). Observe meters for any abnormal indications such as maintained high amperage.

_____/_____
INITIAL DATE

8.14 Close open and close circuit breaker 152-A01-9 (Heliostat No. 2 Feeder). Observe meters as in step 8.13 above.

_____/_____
INITIAL DATE

8.0 PROCEDURE AND DATA COLLECTION (Contd)

8.15 Immediately after energizing:

Check all transformers for abnormal indication, especially noise, record temperatures in Appendix 10I. Repeat every hour for at least 24 hours. If any transformer has excessive temperature, or develops any abnormal indication, take out of service immediately and notify manufacturer. (Reference paragraph 2.4 herein).

_____/_____
INITIAL DATE

8.16 Check phase rotation and voltage on all 3 phases at each distribution panel. Record results in Appendix 10J. Branch circuits with tripped breakers shall be turned back to construction. (Reference paragraph 2.1 herein).

_____/_____
INITIAL DATE

NOTE: If voltage level is too high or low compared to the voltage criteria listed in Section 2.1, calculate proper transformer tap and perform the following:

Open circuit breaker 152-A01-7 and/or 152-A01-9 as required to de-energize the transformer(s) requiring a tap change. Check power off the transformer(s) and change taps. Close circuit breaker 152-A01-7 and/or 152-A01-9. Transformer voltage should not exceed 110% of tap rating, with maximum auxiliary system voltage.

_____/_____
INITIAL DATE

8.17 Check voltage at each heliostat plug and record in Appendix 10K (Reference paragraph 2.2 herein).

_____/_____
INITIAL DATE

NOTE: Individual heliostats may be plugged in following step 8.17.

8.18 Check open and rack out circuit breaker 152-A01-10 (Well Water Line)

_____/_____
INITIAL DATE

8.19 Phase out across circuit breaker 152-A01-10 (Well Water Line).

_____/_____
INITIAL DATE

8.20 Check open and rack in circuit breaker 152-A01-10 (Well Water Line)

_____/_____
INITIAL DATE

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8.0 PROCEDURE AND DATA COLLECTION (Contd)

8.21 Phase out and across load break switch No. 1

_____/_____
INITIAL DATE

8.22 Phase out and across load break Switch No. 2.

_____/_____
INITIAL DATE

8.23 Open Circuit Breakers 152-A01-7 and 152-A01-9. (Heliostat Feeders No. 1 and No. 2).

_____/_____
INITIAL DATE

8.24 Close Heliostat Feeder No. 1 Switch at Transformer No. 3.

_____/_____
INITIAL DATE

8.25 Close circuit breaker 152-A01-7 (Heliostat Feeder No. 1).

_____/_____
INITIAL DATE

8.26 Check open and rack out circuit breaker 152-A01-9 (Heliostat Feeder No. 2).

_____/_____
INITIAL DATE

8.27 Phase out across circuit breaker 152-A01-9 (Heliostat Feeder No. 2).

_____/_____
INITIAL DATE

8.28 Check open and rack in circuit breaker 152-A01-9 (Heliostat Feeder No. 2).

_____/_____
INITIAL DATE

8.29 Open circuit breaker 152-A01-7 (Heliostat Feeder No. 1).

_____/_____
INITIAL DATE

8.30 Open Heliostat Feeder No. 1 switch at transformer No. 3.

_____/_____
INITIAL DATE

8.0 PROCEDURE AND DATA COLLECTION (Contd)

The following is a program for checking voltage regulation of the system with heliostats plugged in and operating. These tests must be made during a stow operation. A stow operation shall consist of all heliostats simultaneously receiving offset commands from stow to heliostats facing north and vertical and then back to stow. Since the stow operation occurs during a short time interval, recording voltmeters must be used. It is unnecessary to check voltage at every heliostat. Identical circuits on the east-half and west half of the collector field do not have to be checked nor do circuits that are short in length. The equipment list includes 6 recording voltmeters. 4160 Volt bus voltage shall be recorded. Thus five points in the collector field can be recorded during a stow operation. It is suggested that six stow operations be performed with the system in the normal supply configuration to give voltage at 30 heliostats. Then by examination of results, it can be determined if additional tests are desirable. Appendix 10L lists the 30 heliostats for which voltage regulation data shall be recorded.

Actual maximum and minimum voltages at individual heliostats are also dependent on voltage regulation at the SCE 4160 volt switchgear bus A01. Therefore, measurements performed in this test procedure shall be modified in accordance with either calculated or measured voltage regulation figures for the 4160 volt switchgear A01 available from SCE.

8.31 Connect recording voltmeters at the 4160 volt switchgear bus A01 and at five of the heliostats listed in Appendix 10L.

_____/_____
INITIAL DATE

8.32 Close circuit breaker 152-A01-7 (Heliostat Feeder No. 1).

_____/_____
INITIAL DATE

8.33 Close circuit breaker 152-A01-9 (Heliostat Feeder No. 2).

_____/_____
INITIAL DATE

8.34 Record voltages during a stow operation in Appendix 10L.

_____/_____
INITIAL DATE

8.35 Repeat step 8.34 above until all 30 heliostat measurements are taken.

_____/_____
INITIAL DATE

8.36 Open circuit breaker 152-A01-7 (Heliostat Feeder No. 1).

_____/_____
INITIAL DATE

8.0 PROCEDURE AND DATA COLLECTION (Contd)

8.37 Open circuit breaker 152-A01-9 (Heliostat Feeder No. 2).

_____/_____
INITIAL DATE

NOTE: The following tests check voltage regulation with the system abnormal.

8.38 Close heliostat feeder no. 1 switch at transformer no. 3.

_____/_____
INITIAL DATE

8.39 Connect recording voltmeters at the 4160 volt switchgear bus A01 and at five of the heliostats listed in Appendix 10M.

_____/_____
INITIAL DATE

8.40 Close circuit breaker 152-A01-7 (Heliostat Feeder No. 1).

_____/_____
INITIAL DATE

8.41 Record voltages during a field stow operation in Appendix 10M.

_____/_____
INITIAL DATE

8.42 Repeat Step 8.41 above until all 10 heliostat measurements are taken.

_____/_____
INITIAL DATE

8.43 Open circuit breaker 152-A01-7 (Heliostat feeder No. 1).

_____/_____
INITIAL DATE

8.44 Connect recording voltmeters at the Coolwater Generating Station 4160 volt switchgear bus and at five of the locations listed in Appendix 10N.

_____/_____
INITIAL DATE

8.45 Open circuit breaker 52-F3 (Well-water line at Coolwater Generating Station).

_____/_____
INITIAL DATE

8.0 PROCEDURE AND DATA COLLECTION (Contd)

8.46 Close load break switch No. 1.

_____/_____
INITIAL DATE

8.47 Close circuit breaker 52-F3 (Well-water line at Coolwater Generating Station).

_____/_____
INITIAL DATE

8.48 Record voltages during a stow operation of one "ring" of heliostats at a time (total of five "rings" of heliostats) in Appendix 10N.

_____/_____
INITIAL DATE

8.49 Repeat step 8.48 until all 10 heliostat measurements are taken.

_____/_____
INITIAL DATE

8.50 Open load break switch No. 1.

_____/_____
INITIAL DATE

8.51 Open Heliostat Feeder No. 1 switch at transformer No. 3.

_____/_____
INITIAL DATE

8.52 Remove all test Equipment.

_____/_____
INITIAL DATE

8.53 Make a high potential test on transformer oil after 24 hours of operation, at the end of five days and after one month, and record in Appendix 10P.

_____/_____
INITIAL DATE

9.0 SYSTEM RESTORATION

- 9.1 System is left normal after completion of "Procedure and Data Collection" Section 8.0.
- 9.2 Inform the SCE Watch Engineer that the test is completed and the system may be lined up and placed in service in accordance with station operating procedures.

10.0 ATTACHMENTS

Appendix 10A	Master Tracking System
Appendix 10B	Abnormal Equipment and Circuits
Appendix 10C	Electrical Prerequisite Tests
Appendix 10D	Instrumentation and Control Prerequisite Tests and Calibrations (N/A)
Appendix 10E	Mechanical Prerequisite Tests (N/A)
Appendix 10F	Initial Status of Breakers for Test Procedure Step 8.1
Appendix 10G	Initial Status of Switches for Test Procedure Step 8.1
Appendix 10H	Initial Status - Valve Lineup for Test Procedure Steps (N/A)
Appendix 10I	Transformer Temperature Log
Appendix 10J	Distribution Panel Phase Rotation & Voltage Check
Appendix 10K	Heliostat Voltage Check - Condition Normal
Appendix 10L	Heliostat Voltage Drop Test Normal Condition - Stow Operation
Appendix 10M	Heliostat Voltage Drop Test all Heliostats supplied from No. 1 Feeder
Appendix 10N	Heliostat Voltage Drop Test Heliostats supplied from Well Water Line
Appendix 10P	Transformer Oil Test Log

APPENDIX 10A

MASTER TRACKING SYSTEM

ITEM NO.	DESCRIPTION	SECTION AFFECTED	INITIAL/DATE

APPENDIX 1C3

ABNORMAL EQUIPMENT AND CIRCUITS

ITEM NO.	DESCRIPTION	SECTION AFFECTED	INITIAL/DATE

APPENDIX 10C

ELECTRICAL PREREQUISITE TESTS

Component		Generic Test Procedure No.	Test Complete Initial/Date
Number	Description		
6	Current Transformers at Trans- formers 2 and 6.		
2	Watt Transducers at Transformers 2 and 6		
17 Sect.	Power Cables, 4160 Volt		
14	Transformers, 4160-480 volt		
1	Load break switchgear, 4160 volt		
14	120/208 volt distribution panels		
4	Watt transducers at Heliostat Junction Boxes		
-	120/208 Volt distribution circuits		
1	4160 Volt Switchgear Bus A01 (Procedure No. 805)		
4	4160 Volt Switchgear Breakers 152-A01-2,7,9,10 (Procedure No. 805)		

APPENDIX 10G

INITIAL STATUS OF SWITCHES FOR TEST PROCEDURE STEP 8.1

SWITCH		STATUS	INITIAL/DATE
NUMBER	DESCRIPTION		
	Heliostat Feeder No. 1 at transformer No. 3	Open	
	Heliostat Feeder No. 2 at transformer No. 3	Closed	
	Load break switch No. 1	Open	
	Load break switch No. 2	Open	

APPENDIX 10L

By: _____
Date: _____

HELIOSTAT VOLTAGE DROP TEST SECT. 8.34
CONDITION SYSTEM NORMAL
STOW OPERATION

Helio. #	Ckt #	Trans. #	Volt	Bus Volts	Helio. #	Ckt #	Trans. #	Volt	Bus Volts
0101	P1311C	11			1602	P1310J	10		
0118	P1314C	14			1649	P1303Y	3		
0301	P1311F	11			1738	P1306V	6		
0618	P1314E	14			1919	P1311AK	11		
0619	P1313J	13			1926	P1314AF	14		
1036	P1302AH	2			2043	P1307C	7		
1069	P1301AL	1			2072	P1304AM	4		
1236	P1302AV	2			2181	P1305F	5		
1269	P1301AP	1			2352	P1306AH	6		
1302	P1312AG	12			2519	P1307P	7		
1367	P1303C	3			2902	P1310AP	10		
1402	P1312AM	12			2915	P1309AL	9		
1437	PI 303H	3			2926	P1310AJ	10		
1513	P1309F	9			2927	P1307AF	7		
1547	P1313Z	13			2940	P1308AH	8		

APPENDIX 10N

By: _____

Date: _____

HELIOSTAT VOLTAGE DROP TEST SECT. 8.44 & 8.48
HELIOSTATS SUPPLIED FROM WELL WATER LINE
STOW BY RING OPERATION

Helio. #	Ckt. #	Trans. #	Ring #	Volt	Bus Volt
0117	P1313C	13	1		
0619	P1313J	13	1		
1235	P1301AV	1	2		
1601	P1309J	9	2		
1737	P1305V	5	3		
1919	P1311AK	11	3		
2071	P1303AM	3	4		
2181	P1305F	5	4		
2901	P1309AP	9	5		
2927	P1307AF	7	5		

A3-202-EP-RGR-417
17 July 1981

Department of Energy
San Francisco Operations Office
1333 Broadway
Oakland, CA 94612

Attention: Mr. David J. Tenca, Contracting Officer

Subject: CONTRACT DE-AC03-79SF10499
SOLAR FACILITIES DESIGN INTEGRATION
PARTIAL SUBMITTAL OF SUBSYSTEM STAND ALONE (PREOPERATIONAL)
TEST PROCEDURES (RADL ITEM 2-45)

Reference: MDAC Letter A3-130-EP-DSB-138, dated 3 March 1981,
"Revised Delivery Date for Subsystem Stand Alone Test Procedures
(RADL Item 2-45)"

Dear Mr. Tenca:

One (1) copy each of six of the Preoperational Test Procedures that comprise a portion of the subject RADL item is being submitted in accordance with the requirements of the Phase II Reports and Deliverables List of the subject contract, as modified by the contents of the reference letter. The reference letter proposed to fulfill the reporting requirements for the subject RADL item by submitting informal drafts to the Test Working Group (TWG) for review and comments, with subsequent formal transmittal of the finalized versions (Revision 0) of these procedures which reflect the review comments and represent the actual test procedures to be implemented. DOE concurrence was received from STMPO on this approach on 3 March 1981.

This letter transmits the following preoperational test procedures:

- | | | |
|-------|--|------------|
| • 210 | Thermal Storage System Oil Filling | Revision 1 |
| • 305 | Subsystem Distributed Process Controllers (SDPC) | Revision 0 |
| • 820 | Collector Power Systems | Revision 0 |
| • 871 | Heat Tracing System | Revision 0 |
| • 905 | Nitrogen System | Revision 0 |
| • 910 | Water Supply Systems | Revision 0 |

A copy of this letter also transmits the master copy of each of the procedures to Southern California Edison (L. H. Chillcott) at the Solar One site for control and implementation. Any revisions to these procedures which are originated by the SFDI will be coordinated informally with SCE and subsequently transmitted by letter in the same manner as the subject documents.

A3-202-EP-RGR-417

17 July 1981

Additional submittals will be made as other preoperational test procedures become available in Revision 0 versions, and you will be notified when all of the preoperational test procedures that comprise RADL item 2-45 have been submitted.

Technical questions regarding these procedures should be directed to R. G. Riedesel at (714) 896-3357. For contractual questions, please call the undersigned at (714) 896-1340.

Very truly yours,



D. S. Butler
Contractor Administrator
Solar Facilities Design Integration

Enclosure: (as noted)

Cy: L. H. Chillcott, SCE-Daggett (1)
J. M. Slawinski, DOE/STMPO (1)

(w/o enclosure)

R. N. Schweinberg, DOE/STMPO
J. C. Corcoran, DOE/STMPO
D. W. Christian, DOE/Daggett
F. Kovach, T&B-Daggett
R. M. Weeks, MMC-Daggett
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STMPO-557 1
LTLH 5

Department of Energy
San Francisco Operations Office
1357 Broadway
Oakland, California 94612

Reply To: DOE Solar One Project Office
P.O. Box 366
Daggett, CA 92327

AUG 16 1984

Mr. Robert L. Gervais
Solar One Project Office
McDonnell Douglas Astronautics Corp.
P.O. Box 366
Daggett, CA 92327

Subject: Clearance of Control Contract DE-AC03-79SF10499
Solar One Reports for DOE/TIC Inclusion.

Dear Bob:

Enclosed are copies of covers and title pages of eight reports prepared by McDonnell Douglas Astronautics Corporation for the Solar One Project under the above referenced contract. In preparation for delivery of these documents to DOE/TIC, I have prepared a SAN form 70 "Request for Patent Clearance" and a DOE form RA-426 "Recommendations for Announcement and Distribution of Documents" for each document.

Please have the appropriate MDAC personnel complete and sign these forms. As agreed, SAN form 70 should be forwarded to SAN/OPC by your office with copies of the completed SAN form 70 and the transmittal letter being sent to me. The completed DOE form RA-426 should be sent directly back to me.

The documents covered by this letter are:

<u>Primary Document No.</u>	<u>Secondary No.</u>	<u>Brief Title</u>
DOE/SF/10499-T117	STMPO 581	Test Procedure 210, Rev. 1
DOE/SF/10499-T118	STMPO 587	Test Procedure 820, Rev. 0
DOE/SF/10499-T119	STMPO 588	Test Procedure 871, Rev. 0
DOE/SF/10499-T120	STMPO 589	Test Procedure 905, Rev. 0
DOE/SF/10499-T121	STMPO 590	Test Procedure 910, Rev. 0
DOE/SF/10499-T138	STMPO 593	Test Procedure 1010, Rev. 0
DOE/SF/10499-T139	STMPO 594	Test Procedure 1030, Rev. 0, Sec. 1-9
DOE/SF/10499-T140	STMPO 595	Test Procedure 1030, Rev. 0, Sec. 10

If you should have any questions or concerns please do not hesitate to contact me by telephone at, (619) 254-2672.

Sincerely,



S.D. Elliott, Jr., Director
DOE Solar One Project Office

SDE/aks
Project File: CCC005.RNO(SA3)

Encl: Eight Document Covers W/forms 70 and RA-426

cc: Roger Gaither, SAN/OPC
W.D. Matheny, DOE/TIC
Mike Lopez, DOE/SAN (FGS)
Mary Soderstrum, B&McD



DEPARTMENT OF ENERGY
SAN FRANCISCO OPERATIONS OFFICE

CONTRACTOR REQUEST FOR PATENT CLEARANCE
FOR RELEASE OF UNCLASSIFIED DOCUMENT

TO: Roger S. Gaither, Asst. Chief for Prosecution
Office of Patent Counsel/Livermore Office
P.O. Box 808, L-376
Livermore, California 94550

FROM: McDonnell Douglas Corporation
3855 Lakewood Blvd.
Long Beach, CA 90846

Prime Contract No. DE-AC03-79SF10499
Subcontract No. (N/A)
Report No. (STMP0 587) DOE/SF/10499-T118
Date of Report July, 1981
Name & Phone No. of DOE Technical Representative S.D. Elliott, Jr. (519) 254-2672

- Document Title: Collector Power Systems Preoperational Test Procedure 820, Revision 0
- Type of Document: Technical Report, Conference Paper, Journal Article, Abstract or Summary, Copy of Oral Presentation, Other (please specify): _____
(Routine)
- In order to meet a publication schedule or submission deadline, patent clearance by _____ would be desired.

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 - Contractor Invention Docket No. _____
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- Remarks:

Reviewing/Submitting Official: Name (Print/Type) _____
Title _____
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4. Title Collector Power Systems Preoperational Test Procedure 820, Revision 0		
5. Type of Document ("x" one) <input checked="" type="checkbox"/> a. Scientific and technical report <input type="checkbox"/> b. Conference paper: Title of conference _____ Date of conference _____ Exact location of conference _____ Sponsoring organization _____ <input type="checkbox"/> c. Other (specify planning, educational, impact, market, social, economic, thesis, translations, journal article manuscript, etc.) _____		
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Organization _____
P.O. Box 366, Daggett, CA 92327 (619) 254-2672
Signature _____ Date _____

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1. DOE Report No. (STMPO 587) DOE/SF/10499-T118	2. Contract No. DE-AC03-79SF10499	3. Subject Category No. UC-62, 62c, 62d
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4. Title
Collector Power Systems Preoperational Test Procedure 820, Revision 0

5. Type of Document ("x" one)

a. Scientific and technical report

b. Conference paper: Title of conference _____

_____ Date of conference _____

Exact location of conference _____ Sponsoring organization _____

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H009-M-804

SAN FORM 70 10/8



DEPARTMENT OF ENERGY
SAN FRANCISCO OPERATIONS OFFICE

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Reviewing/Submitting Official: Name (Print/Type) Donald L. Royer
Title Asst. Chief Patent Counsel, MDC (MS 122-23)
Signature [Signature] Date 26 Sep 84

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