SAN FORM 70 10/80

H009-M-802

DEPARTMENT OF ENERGY
SAN FRANCISCO OPERATIONS OFFICE

CONTRACTOR REQUEST FOR PATENT CLEARANCE
FOR RELEASE OF UNCLASSIFIED DOCUMENT

Prime Contract No.	DE-AC03-79SF10499
Subcontract No.	(N/A)
Report No. (STMPO 589)	DOE/SF/10499-T120
Date of Report	July 1981
Name & Phone No. of DOE Technical Representative	S.D. Elliott, Jr. (619) 254-2672

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

1. Document Title: Nitrogen Preoperational Test Procedure 905, Revision 0

2. Type of Document: ☒ Technical Report, ☐ Conference Paper, ☐ Journal Article, ☐ Abstract or Summary, ☐ Copy of Oral Presentation, ☐ Other (please specify): _____

3. In order to meet a publication schedule or submission deadline, patent clearance by (Routine) would be desired.

SENDER IS TO CHECK BOX #4 OR #5 BELOW.

XX 4. I have reviewed (or have had reviewed by technically knowledgeable personnel) this document for possible inventive subject matter (Subject Inventions) and that no inventions or discoveries (Subject Inventions) are deemed to be disclosed in this document except as stated below:

a. Attention should be directed to pages _____ of this document.

b. This document describes matter relating to an invention:

i. Contractor Invention Docket No. _____.
ii. A disclosure of the invention was submitted to DOE on _____ (date)
iii. A disclosure of the invention will be submitted shortly _____ (approximate date)
iv. A waiver of DOE's patent rights to the contractor:
☐ has been granted, ☐ has been applied for; or ☐ will be applied for _____ (date)

☐ 5. This document is being submitted, but no review has been made of this document for possible inventive subject matter.

6. Remarks: Provide copy of clearance to: Solar One Project Office
P.O. Box 366, Daggett, CA 92327

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

TO: INITIATOR OF REQUEST

FROM: ASSISTANT CHIEF FOR PROSECUTION
Office of Patent Counsel/Livermore Office

☐ No patent objection to above-identified release.

☐ Please defer release until advised by this office.

H009-M-802

DOE Form RA-426
(10/80)

U.S. DEPARTMENT OF ENERGY

OMB NO. 038-R0190

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(STMPO 589) DOE/SF/10499-T120	DE-AC03-79SF10499	UC 62, 62c, 62d

4. Title
Nitrogen Preoperational Test Procedure 905, 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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S.D. Elliott, Jr., Director, DOE Solar One Project Office

Organization

P.O. Box 366, Daggett, CA 92327 (619) 254-2672

Signature	Date

DOE/SF/10499-T120
(STMPO-589)

NITROGEN

PREOPERATIONAL TEST

PROCEDURE 905

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: J. A. Kockmann
J. A. Kockmann

REVIEWED BY: D. L. Williams
D. L. Williams

APPROVED BY: L. F. Burns

SYSTEM (905)

TABLE OF CONTENTS

1.0 OBJECTIVES

(906) - GN_2 Supply System

1.1 Demonstrate that the GN_2 system is capable of supplying nitrogen at the specified pressure.

(266) - TSS GN_2 System

1.2 Demonstrate that the nitrogen pressure supplied to the TSU pressure control valve PCV-4006 and the US pressure control valve PCV-4023 are as designed.

1.3 Demonstrate all DAS functions related to the TSS GN_2 system.

(776) - Turbine Generator

1.4 Demonstrate nitrogen pressure supplied to the feedwater heaters and condenser are as designed.

2.0 ACCEPTANCE CRITERIA

		VERIFICATION PARAGRAPH	OBJECTIVE
2.1	Liquid Nitrogen Pump can be started manually from local control hand switch P&ID 40P700513352	8.1.2 8.1.3	1.1
2.2	Liquid Nitrogen Pump Starts at TBD line pressure and stops at TBD line pressure P&ID 40P7005133152.	8.1.4 8.1.5	1.1
2.3	High pressure system provides gaseous nitrogen at a minimum pressure of 400 PSIG P&ID 40P7005133152. P&ID 40P2005131767	8.2.1	1.1
2.4	Low pressure system provides gaseous nitrogen at a pressure of 135 psig. P&ID 40P3005132196	8.3.1 8.3.2	1.1
2.5	The nitrogen supply pressure to PVC-4006 and PVC-4023 is TBD PSIG P&ID 40P3005132196	8.4.1	1.2
2.6	Pressure Transmitter PTX-4052 performs as designed. P&ID 40P3005132196	8.4.1 8.4.2	1.3
2.7	The nitrogen supply pressure to the condenser is 5 psig and feedwater heaters is 5 psig. P&ID 40P9005133306	8.5.1 8.5.2	1.4

3.0 REFERENCES

3.1 Pilot Plant System Description

3.2 Logic Diagrams

N/A

3.3 Line Schedules

40P7002133104

a) Nitrogen (N) pg. 1 of 1

3.4 Single Line Diagrams

40E7005133192, Revision 0, One-Line Diagram 480 Volt MCC-B, Sheet 1 of 1.

3.5 Piping and Instrumentation Diagrams

a) 40P7005133152, Revision 2, Plant Support Subsystem (PSS), Miscellaneous Subsystems, Sheet 1 of 1.

b) 40P2005131767, Revision 1, Receiver Subsystem (RS), Main STeam Manifold, GN_2 and Drain System, Sheet 1 of 1.

c) 40P3005132196, Revision 1, Thermal Storage Subsystem (TSS), Thermal Storage Unit and Ullage Maintenance Unit, Sheet 1 of 1.

d) 40P9005133306, Rev. 2, Steam

3.6 Electrical Elementary Diagrams

TBD

3.7 Instrument Index

Mel and Measurements List

3.8 Material Requisition and/or Specification

a) Specification, DOE No. 40M700-34S for Nitrogen Supply System.

3.9 Vendor Data

Not Available

3.10 Standards

N/A

3.11 Startup Schedules

a) Solar One Const/Startup Milestones and Test Schedules, Rev. B, December 11, 1980.

4.0 PREREQUISITES

4.1 Turnover of the system to SCE is complete and in accordance with Section 5.4 of the SCE Start-up 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 Tracking System has been reviewed and outstanding items (if any) will not affect this 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 to conduct this test.

_____/_____
INITIAL DATE

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

_____/_____
INITIAL DATE

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

_____/_____
INITIAL DATE

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

_____/_____
INITIAL DATE

4.9 Verify Safety Valve name plate compliance with design.

_____/_____
INITIAL DATE

5.0 LIMITS AND PRECAUTIONS

5.1 The following equipment should be operated for only a short period of time or not operated at all during the time the Nitrogen Supply System is removed from service.

a)	Ullage Maintenance Unit	SA-311
b)	Thermal Storage Unit	V-303
c)	Receiver Flash Tank	V-201
d)	Receiver Subsystem	
e)	Condenser	E-901
f)	Auxiliary Boiler	B-901
g)	High Pressure Point Heater	E-902
h)	High Pressure Point Heater	E-903
i)	Low Pressure Point Heater	E-904
j)	Deaerator	DA-901
k)	Steam Turbine Generator	TG-901

5.2 Area containing automatically starting pumps posted with "CAUTION" signs or identified in a conspicuous manner.

5.3 Observe vendor operating and maintenance instructions.

5.4 The maximum allowable pressures are as follows:

Description	Indicated At	Drawing	Pressure PSIG
a) LN_2 Storage Tank	N_2 Rental Eq.	40P7005133152	TBD
b) Low Pressure Nitrogen evaporator	N_2 Rental Eq.	40P7005133152	TBD
c) Low Pressure N_2 Supply Header	N_2 Rental Eq.	40P7005133152	135
d) High Pressure Nitrogen Evaporator	N_2 Rental Eq.	40P7005133152	TBD
e) High Pressure Nigrogen Supply Header	N_2 Rental Eq.	40P7005133152	400
f) Ullage Maintenance Unit Discharge Pressure	PI-4005	40P30051332196	TBD
g) Ullage Maintenance Unit	PI-4017	40P3005132196	TBD
h) Downstream of PCV-605	PI-670	40P9005133306	TBD
i) Downstram of PCV-605	PI-681	40P9005133306	TBD

6.0 TEST EQUIPMENT

NOTE: Test equipment equivalent to that specified may be used. Equipment serial number will be recorded prior to start of test and calibration shall be verified for expected test time period.

6.1 Indicating Instruments

6.1.1 Pressure Indicator - (Required for Section 8.5.2)

Make:	Marshalltown
Model:	24
Range:	0 to 15 PSIG
Accuracy:	± 1%
Number Required:	One

6.2 Sensor and Transducers

None required

6.3 Recording Equipment

None required.

6.4 Other

None

7.0 INITIAL CONDITIONS

7.1 Environmental Conditions

7.1.1 This test will be performed at ambient condtions.

7.2 Temporary Installations

7.2.1 Install Pressure Indicator in sensing line of PCV-660.

_____/_____
INITIAL DATE

7.3 Support Systems/Plant Operating Status

7.3.1 All vessels are empty and vented.

_____/_____
INITIAL DATE

7.3.2 Liquid Nitrogen Storage Tank is filled.

_____/_____
INITIAL DATE

7.3.3 SDPC System display & Alarm Function operational to support Section 8.3.2 and 8.4.2 as applicable.

_____/_____
INITIAL DATE

7.4 Component Lineup

7.4.1 Initial circuit breaker positioning for step 8.1.1 as noted in Appendix 10F completed.

_____/_____
INITIAL DATE

7.4.2 Initial control switch positioning for step 8.1.1 as noted in Appendix 10G completed.

_____/_____
INITIAL DATE

7.4.3 Initial valve lineup for step 8.1.1 as noted in Appendix 10H completed.

_____/_____
INITIAL DATE

7.5 Other Initial Conditions

7.5.1 Establish communications between control room and local test stations as required.

_____/_____
INITIAL DATE

8.0 PROCEDURE AND DATA COLLECTION

8.1 High Pressure Liquid Nitrogen Supply System

8.1.1 Verify that initial conditions have been established.

_____/_____
INITIAL DATE

8.1.2 Turn Liquid Nitrogen Pump hand switch to "Manual". Pump starts.

_____/_____
INITIAL DATE

8.1.3 Turn Liquid Nitrogen Pump Hand Switch to OFF. Pump Stops.

_____/_____
INITIAL DATE

8.1.4 Place Liquid Nitrogen Pump hand switch, in "Auto" position and record the following:

	Design	Actual
Pumps Stops At	TBD PSIG	_____PSIG

Read Pressure at Local Gage on Pump Discharge Line.

_____/_____
INITIAL DATE

8.1.5 Bleed the pressure off and record when the pump starts.

	Design	Actual
Pumps Starts At	TBD PSIG	_____PSIG

Read Pressure at Local Gage on Pump Discharge Line.

_____/_____
INITIAL DATE

8.2 High Pressure Gaseous Nitrogen Supply System

8.0 PROCEDURE AND DATA COLLECTION (Continued)

8.2.1 With the Liquid Nitrogen Pump Hand Switch in the automatic position, observe and record the gaseous nitrogen pressure.

Measuring Instrument	Design	Actual
High Pressure Gaseous Pressure Indicator on N_2 Rental Equipment at High Press. Discharge	400 PSIG	_____ PSIG

_____/_____
INITIAL DATE

8.3 Low Pressure Gaseous Nitrogen Supply System

8.3.1 Observe and record the pressure indicated.

Measuring Instrument	Design	Actual
Pressure Indicator PI-4003 (On Ullage Maintenance Unit)	135 PSIG	_____PSIG

_____/_____
INITIAL DATE

8.3.2 Close the gate valve inlet to 1 1/2"-N-3-BBD. As valve UNIS-8 is slowly opened, observe and record the pressure when the low pressure alarm PAL-4001 is accuated.

Measuring Instrument	Design	Actual
Pressure Indicator PI-4003	120 PSIG	_____ PSIG

_____/_____
INITIAL DATE

8.4 Nitrogen Supply Ullage Maintenance Unit

8.4.1 Open the gate valve inlet to 1 1/2"-N-3-BBD. Observe and record the pressure on pressure indicator PI-4003 and PI-4005.

Measuring Instrument	Design	Actual
Pressure Indicator PI-4003	135 PSIG	_____ PSIG
Pressure Indicator PI-4005	25 PSIG	_____ PSIG

_____/_____
INITIAL DATE

8.4.2 Observe the pressure transmitter reading to the DAS from pressure transmitter PTX-4052.

Measuring Instrument	Design	Actual
Pressure Transmitter PTX-4052	TBD PSIG	_____ PSIG

_____/_____
INITIAL DATE

8.5 EPGS Nitrogen System

8.5.1 Open Gate Block Valve on MSS-595-1-N upstream of PCV-605 observe and record the pressure on pressure indicator PI-670.

Measuring Instrument	Design	Actual
Pressure Indicator PI-670	5 PSIG	_____ PSIG

_____/_____
INITIAL DATE

8.5.2 Verify closed Gate Block Valve between PCV-660 and Condenser. Open the gate block valve on MSS-595-1-N downstream of PCV-605 and Gate Block Valve on MSS-596-3/4"-N upstream of PCV-660. Observe and record the pressure on the temporary pressure indicator located in the sensing line of PCV-660.

Measuring Instrument	Date of Last Calibration	Design	Actual
Pressure Indicator (Temporary)	_____	TBD PSIG	_____

_____/_____
INITIAL DATE

9.0 SYSTEM RESTORATION

9.1 Reposition all normally closed valves in EPGS Area (9 Valves Total). P&ID 40P9005133306.

_____/_____
INITIAL DATE

9.2 Remove the temporary indicator (if installed) in the sensing line for pressure control valve PCV-660.

_____/_____
INITIAL DATE

9.3 Bleed off nitrogen pressure throughout the system.

_____/_____
INITIAL DATE

9.4 Inform SCE station shift operating foreman that the test is completed and the system may be lined up and placed in service in accordance with station operating procedures.

_____/_____
INITIAL DATE

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 Test and Calibrations

Appendix 10E Mechanical Prerequisite Tests

Appendix 10F Initial Status of Breakers for Test Procedure Step 8.1.1

Appendix 10G Initial Status of Switches for Test Procedure Step 8.1.1

Appendix 10H Initial Status - Valve Lineup for Test Procedure Step 8.1.1

APPENDIX 10A

MASTER TRACKING SYSTEM

ITEM NO.	DESCRIPTION	SECTION AFFECTED	INITIAL/DATE

APPENDIX 10B

ABNORMAL EQUIPMENT AND CIRCUITS

ITEM NO.	DESCRIPTION	SECTION AFFECTED	INITIAL/DATE
	N/A		

APPENDIX 10C

ELECTRICAL PREREQUISITE TESTS

Component		Generic Test Procedure No.	Test Complete Initial/Date
Number	Description		
	N/A		

APPENDIX 10D

INSTRUMENTATION & CONTROLS
PREREQUISITE TESTS AND CALIBRATIONS

Component				Generic Test Procedure No.	Test Complete Initial/Date
Number	Description	Set Point	Field Setting		
PCV-4004	Pressure Control Valve	TBD		Set	
PCV-605	Pressure Control Valve	5 PSIG		Set	
PCV-660	Pressure Control Valve	TBD		Set	
PI-670	Pressure Indicator	N/A		Calibrate	
PS-4001	Pressure Switch	120 PSIG		Set	
PI-4003	Pressure Indicator	N/A		Calibrate	
PI-4005	Pressure Indicator	N/A		Calibrate	
PCV-4023	Press Control Vlv	TBD		Set	
PTX-4052	Pressure Transmittor			Calibrate	
*	Pressure Safety Valve Storage Tk	TBD		Set	
*	Pressure Safety Valve Truck Fill	TBD		Set	
*	Pressure Safety Valve Low Press. Evaporator	TBD		Set	
*	Safety Valve Low Pressure Supply Header	TBD		Set	
*	Pressure Indicator Low Pressure Supply Header	N/A		Calibrate	
*	Pressure Indicator High Pressure Header	N/A		Calibrate	
*	Pressure Safety Valve, High Pressure Header	TBD		Set	
PI-2011	Press Indicator	N/A		Calibrate	

*N_2 Rental Equipment-No Instr. Number Assigned.

APPENDIX 10D

INSTRUMENTATION & CONTROLS
PREREQUISITE TESTS AND CALIBRATIONS

Component				Generic Test Procedure No.	Test Complete Initial/Date
Number	Description	Set Point	Field Setting		
*	Pressure Control Valve 1st Stage Low Pressure Evaporator	TBD		Set	
*	Pressure Control Valve- Low Press. Supply Header	135 PSIG		Set	
*	LN_2 Storage Tank Level Indicator	N/A		Calibrate	
*	LN_2 Storage Tank Pressure Control PC	TBD		Set	
*	Pressure Switch High Pressure Pump Control	TBD		Set	
*	Pressure Safety Valve-High Pressure Evaporator	TBD		Set	
*	Pressure Indicator High Pressure Evaporator	N/A		Calibrate	
*	Pressure Control Valve - High Pressure Header	400 PSIG		Set	
NOTE:	*See Page 18.				

APPENDIX 1CE

MECHANICAL PREREQUISITE TESTS

Component		Generic Test Procedure No.	Test Complete Initial/Date
Number	Description		
1	Verify nitrogen system piping is clean enough to perform this test.		

APPENDIX 10F

INITIAL STATUS OF BREAKERS FOR TEST PROCEDURE STEP 8.1.1

BREAKERS		POSITION	STATUS	INITIAL/DATE
NUMBER	DESCRIPTION			
TBC	Nitrogen Supply Unit	Closed		

APPENDIX 10G

INITIAL STATUS OF SWITCHES FOR TEST PROCEDURE STEP 8.1.1

SWITCH		STATUS	INITIAL/DATE
NUMBER	DESCRIPTION		
TBD	Nitrogen Pump Hand Switch	Off	
HS-2019	Main Steam Purge Hand Switch	Off	

INITIAL STATUS - VALVE LINEUP LIST FOR TEST PROCEDURE STEP 8.1.1

VALVE TAG NO.	INFO ONLY DRAWING NUMBER **	INFO ONLY COORD	DESCRIPTION	POSITION	INITIAL	DATE
*	7005133152	6-L	1½"-N-1-KBA Gate Block Valve	O		
*	7005133152	6-J	1½"-N-2-BBD Gate Block Valve	O		
*	7005133152	6-J	1½"-N-3-BBD Gate Block Valve	O		
*	2005131	767 A-7	1"-N-201-QEX Gate Block Valve	C		
*	2005131767	B-15	1"-N-202-KBA Gate Block Valve	C		
* (unis-1)	3005132196	B-12	1"-UG-2-BBA Globe Valve	C		
* (unis-4)	3005132196	E-14	1/2-N-4-BBD Gate Block Valve	C		
* (unis-6)	3005132196	B-15	1"-N-3-BBD Globe Valve	C		
* (unis-2)	3005132196	B-17	1"-N-3-BBD Globe Valve	O		
*	7005133306	3-B	MSS-595-1"-N Gate Block Valve Upstream of PCV-605	C		
*	7005133306	3-B	MSS-595-1"-N Gate Block Valve Downstream of PCV-605	C		
*	7005133306	3-D	MSS-521-1"-N Gate Block Valve	C		
*	7005133306	2-C	MSS-534-3/4"-N Gate Block Valve	C		
*	7005133306	3-B	MSS-596-1"-N Gate Block Valve	C		

O = Open C - Closed T - Throttled LO - Locked Open LC - Locked Closed

* - No existing Valve Tage Number.

**Drawing Numbers Start with "40P"

80 M2 NEW 10 70
S.C.E. CO

ELECTRICAL CIRCUIT TEST RECORD AND EQUIPMENT DATA SHEET

EQUIPMENT IDENTIFICATION

STATION NAME		UNIT NO.	S.C.E. J.O. NO.
CONTRACTOR			CONTRACTOR J.O. NO.
FILE NO.	SCHEDULE NO.	CIRCUIT NO.	DRAWING NO.

EQUIPMENT: High Pressure Liquid Nitrogen Supply System Pump

EQUIPMENT NAME PLATE DATA

NAME OF MANUFACTURER		SERIAL NO.	FRAME
TYPE	CODE	DUTY	MODEL

S.F.	H.P.	R.P.M.	AMPS	VOLTS

START-UP AND TEST DATA

TYPE MEGGER _____ MOTOR INSULATION WITH LEADS _____ MEGAOHMS

MOTOR RESISTANCE (OHMS): ☐ WITH, ☐ WITHOUT LEADS: ____ A-B. ____ B-C. ____ C-A

GROUND STRAP CONNECTED: ☐ YES ☐ NO | MOTOR COUPLED: ☐ YES ☐ NO | LUBRICATION: ☐ FACTORY, ☐ FIELD | LUBE TAG: ☐ YES, ☐ NO

VIBRATION: _____ MILS | ROTATION VIEWED FROM COUPLING END: ☐ CCW, ☐ CW

INRUSH AMPS _____ | NO LOAD AMPS _____ | TYPE OF CONTROL: ☐ LOCAL, ☐ BOARD

OPERATING TIME IN SECONDS: CLOSE _____ OPEN _____

POWER CABLE SIZE _____ | FUSE SIZE _____ | O/L SIZE _____

COMMENTS _____

REV. NO.	DATE REVISION	S.C.E. APPROVED	CONTRACTOR OK	DATE ASSIGNED	START DATE	DATE COMPLETED	REMARKS

SIGNED: S.C.E. START-UP ENGINEER _____ SHEET _____ OF _____

DISTRIBUTION
SERVICE ENGR. TO RETAIN ORIGINAL & SEND 1 COPY TO S.C.E. START-UP ENGR.

TBD LIST - SYSTEM 905

PROCED NO.	PARA. NO.	DESCRIPTION	DUE DATE	SOURCE DATA RESPONSIBILITY
905	2.2	Start Pressure - Liquid Nitrogen Pump	5/21/81	SCE
905	2.2	Stop Presure - Liquid Nitrogen Pump	5/21/81	SCE
905	8.1.3	Liquid Nitrogen Pump Shut Off Pressure	5/21/81	SCE
905	8.1.4	Liquid Nitrogen Pump Start Up Pressure	5/21/81	SCE
905	8.1.3	Hand Switch No. - Liquid Nitrogen Pump	5/21/81	SCE
905	8.5.2	PCV-660 Set Pressure	5/21/81	SCE
905	Appn.10D	PCV-660 LSet Pressure	5/21/81	SCE
905	Appn.10D	LN2 Storage tank Set Pressure Safety Valve Set Pressure	5/21/81	SCE
905	Appn.10D	LN2 Truck Fill Line - Pressure Safety Valve Set Pressure	5/21/81	SCE
905	Appn.10D	GN2 Low Pressure Evaporator Pressure Safety Valve Set Pressure	5/21/81	SCE
905	Appn.10D	GN2 Low Pressure Header Pressure Safety Valve	5/21/81	SCE
905	Appn.10D	GN2 1st Stage Evaporator - PCV - Set Pressure	5/21/81	SCE
905	Appn.10D	LN2 Storage Tank - PC - Set Pressure	5/21/81	SCE
905	Appn.10D	GN2 High Pressure Evaporator - PSV Set Pressure	5/21/81	SCE
905	Appn.10D	LN2 High Pressure Pump Switch Set Pressure	5/21/81	SCE
905	Appn.10D	GN2 High Pressure Supply Header PSV-Set Pressure	5/21/81	SCE

2.5
3.6
5.4
8.1.4
8.1.5
8.4.2
8.5.2
Appn 10D, pp 18-19
10F, pp 21 & 22

TBD's

MCDONNELL DOUGLAS ASTRONAUTICS COMPANY

5301 Bolsa Avenue, Huntington Beach, CA 92647 (714) 896-3311

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.

MCDONNELL DOUGLAS CORPORATION

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. Slaminski, 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
C. W. Lopez, SCE-Daggett
A. Maitino, T&B-Daggett
D. L. Williams, Stearns-Roger
H. D. Eden, Aerospace/STMPO
R. O. Rogers, Aerospace/STMPO
R. W. Wiese, ETEC/STMPO
K. L. Adler, ETEC/STMPO
D. N. Tanner, Sandia-Livermore
W. S. Rorke, Sandia-Livermore
J. N. Reeves, SCE
N. J. DeHaven, SCE
C. P. Winarski, SCE
W. R. Lang, Stearns-Roger
J. M. Friefeld, Rocketdyne
L. L. Vant-Hull, Univ. of Houston
T. E. Olson, SFDI Field Office

STMPC 559

C to #5

Department of Energy
San Francisco Operations Office
1333 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:

Primary Document No.	Secondary No.	Brief Title
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

Prime Contract No. DE-AC03-79SF10499
Subcontract No. (N/A)
Report No. (STMPO 589) DOE/SF/10499-T120
Date of Report July 1981
Name & Phone No. of DOE Technical Representative S.D. Elliott, Jr. (619) 254-2672

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

1. Document Title: Nitrogen Preoperational Test Procedure 905, Revision 0

2. Type of Document: ☒ Technical Report, ☐ Conference Paper, ☐ Journal Article, ☐ Abstract or Summary, ☐ Copy of Oral Presentation, ☐ Other (please specify): _____

3. In order to meet a publication schedule or submission deadline, patent clearance by (Routine) would be desired.

SENDER IS TO CHECK BOX #4 OR #5 BELOW.

☐ 4. I have reviewed (or have had reviewed by technically knowledgeable personnel) this document for possible inventive subject matter (Subject Inventions) and that no inventions or discoveries (Subject Inventions) are deemed to be disclosed in this document except as stated below:

a. Attention should be directed to pages _____ of this document.

b. This document describes matter relating to an invention:

i. Contractor Invention Docket No. _____.
ii. A disclosure of the invention was submitted to DOE on _____ (date)
iii. A disclosure of the invention will be submitted shortly _____ (approximate date)
iv. A waiver of DOE's patent rights to the contractor:
☐ has been granted, ☐ has been applied for; or ☐ will be applied for _____ (date)

☐ 5. This document is being submitted, but no review has been made of this document for possible inventive subject matter.

6. Remarks: Provide copy of clearance to: Solar One Project Office
P.O. Box 366, Daggett, CA 92327

Reviewing/Submitting Official: Name (Print/Type) _____
Title _____
Signature _____ Date _____

TO: INITIATOR OF REQUEST

FROM: ASSISTANT CHIEF FOR PROSECUTION
Office of Patent Counsel/Livermore Office

☐ No patent objection to above-identified release.

☐ Please defer release until advised by this office.

Signed _____ Date Mailed _____

DOE Form RA-426
(10/80)

U.S. DEPARTMENT OF ENERGY

OMB NO. 038-R0190

DOE AND MAJOR CONTRACTOR RECOMMENDATIONS FOR ANNOUNCEMENT AND DISTRIBUTION OF DOCUMENTS

See Instructions on Reverse Side

1. DOE Report No. (STMPO 589)	2. Contract No.	3. Subject Category No.
DOE/SF/10499-T120	DE-AC03-79SF10499	UC 62, 62c, 62d

4. Title

Nitrogen Preoperational Test Procedure 905, 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 _____

☐ c. Other (specify planning, educational, impact, market, social, economic, thesis, translations, journal article manuscript, etc.)

6. Copies Transmitted ("x" one or more)

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☐ b. Copies being transmitted for special distribution per attached complete address list.

☒ c. Two completely legible, reproducible copies being transmitted to DOE–TIC. (Classified documents, see instructions)

☐ d. Twenty-seven copies being transmitted to DOE–TIC for TIC processing and NTIS sales.

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Make available only ☐ b. To U.S. Government agencies and their contractors. ☐ c. within DOE and to DOE contractors.

☐ d. within DOE. ☐ e. to those listed in item 13 below.

☒ f. Other (Specify) Archive/Issue on request

8. Recommended Announcement ("x" one)

☒ a. Normal procedure may be followed. ☐ b. Recommend the following announcement limitations:

9. Reason for Restrictions Recommended in 7 or 8 above.

☐ a. Preliminary information. ☐ b. Prepared primarily for internal use. ☐ c. Other (Explain)

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("x" one ☐ a. DOE patent clearance has been granted by responsible DOE patent group.

☐ b. Document has been sent to responsible DOE patent group for clearance.

11. National Security Information (For classified document only; "x" one)

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14. Submitted by (Name and Position) (Please print or type)

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

Organization

P.O. Box 366, Daggett, CA 92327 (619) 254-2672

Signature	Date