AUTOMATED ELECTROLYTIC OXYGEN GENERATOR (MODEL 6L16E) LOG SHEET

NAVSEA S9515-A1-MMO-010; 020; and 030

SHIP:	KILOAMP HRS @ 0000:	HEX HRS @ 0000:	DATE:

AEOG SERIAL NO:

	MIN	NOR	MAX	HOURLY READINGS 00	01	02	03	04	05	06	07	08	09	10	11
SYSTEM AMPS (OUTPUT MULTIMETER)	350	VARIABLE	1050												
SYSTEM VOLTS (OUTPUT MULTIMETER)	36	VARIABLE	55												
(+)/(-) VOLTS TO GND (OUTPUT MULTIMETER)	SEE TABLE ON PAGE 4 FOR LIMITS			/	/	/	/	/	/	/	/	/	/	/	/
VOLTS TO GND SUM															
H_2 IN O_2 (%) (GA-287)	0.1	0.4-0.9 NOTE(1)	1.0 NOTE(1,8)												
O_2 IN H_2 (%) (GA-382)	0.1	0.2-0.6	1.0												
H_2 IN AUX 1 (%)(GA-384)	0	0	NOTE (2)												
H_2 IN AUX 2 (%)(GA-385)	0	0	NOTE (2)												
H_2 CELLS (%)(GA-386)	0	0	NOTE (2)												
O_2 STRM (PSIG) (PT-282)	8	10	12												
H_2 STRM (PSIG) (PT-377)	8	10	12												
O_2 VALVE POSITION (VOLTS) (ECV-275)		7-9 NOTE (3)													
O_2 SYSTEM PRESSURE (PSIG) (PT-279)	2400 NOTE (4)	3000	3100												
O_2 DISPOSAL PRESSURE (PSIG) (PI-276)	0	O_2 BANK PRESSURE	3000												
H_2 D/P (INCHES W.C.) (PT-D-374)	(-) .5	0	(+) .5												
H_2 VALVE POSITION (VOLTS) (ECV-D-372)		7-10													
H_2 DISPOSAL PRESSURE (PSIG) (PI-373)	DO NOT RECORD CHECK IF SAME AS SEA PRESSURE			☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
DW PRESSURE (PSIG) (PT-598)	2500 NOTE (4)	3100	3200												

TIME	WATCH NOTES (SEE NOTE a.)	TIME	WATCH NOTES (SEE NOTE a.)

LPO SIGNATURE:	DCA SIGNATURE:	ENGINEER SIGNATURE:

AEOG SERIAL NO:				HOURLY READINGS											
	MIN	NOR	MAX	12	13	14	15	16	17	18	19	20	21	22	23
SYSTEM AMPS (OUTPUT MULTIMETER)	350	VARIABLE	1050												
SYSTEM VOLTS (OUTPUT MULTIMETER)	36	VARIABLE	55												
(+)/(-) VOLTS TO GND (OUTPUT MULTIMETER)	SEE TABLE ON PAGE 4 FOR LIMITS			/	/	/	/	/	/	/	/	/	/	/	/
VOLTS TO GND SUM															
H_2 IN O_2 (%) (GA-287)	0.1	0.4-0.9 NOTE (1)	1.0 NOTE(1,8)												
O_2 IN H_2 (%) (GA-382)	0.1	0.2-0.6	1.0												
H_2 IN AUX 1 (%) (GA-384)	0	0	NOTE (2)												
H_2 IN AUX 2(%) (GA-385)	0	0	NOTE (2)												
H_2 CELLS(%) (GA-386)	0	0	NOTE (2)												
O_2 STRM (PSIG) (PT-282)	8	10	12												
H_2 STRM (PSIG) (PT-377)	8	10	12												
O_2 VALVE POSITION (VOLTS) (ECV-275)		7-9 NOTE (3)													
O_2 SYSTEM PRESSURE (PSIG) (PT-279)	2400 NOTE (4)	3000	3100												
O_2 DISPOSAL PRESSURE (PSIG) (PI-276)	0	O_2 BANK PRESSURE	3000												
H_2 D/P (INCHES W.C. (PT-D-374)	(-) .5	0	(+) .5												
H_2 VALVE POSITION (VOLTS) (ECV-D-372)		7-10													
H_2 DISPOSAL PRESSURE (PSIG) (PI-373)	DO NOT RECORD CHECK IF SAME AS SEA PRESSURE			☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
DW PRESSURE (PSIG) (PT-598)	2500 NOTE (4)	3100	3200												

TIME	WATCH NOTES (SEE NOTE a.)	TIME	WATCH NOTES (SEE NOTE a.)

AUTOMATED ELECTROLYTIC OXYGEN GENERATOR (MODEL 6L16E) LOG SHEET

SHIP:	AEOG SERIAL NO:	DATE:

CELL TEMPERATURE MIN: 155°F (SEE NOTE 5) NOR: 170°F MAX: 180°F (SEE NOTE 7)

CELL NO	00	02	04	06	08	10	12	14	16	18	20	22
101												
102												
103												
104												
105												
106												
107												
108												
109												
110												
111												
112												
113												
114												
115												
116												

CELL TO CELL VOLTAGE

CELL NO	00	02	04	06	08	10	12	14	16	18	20	22
101												
102												
103												
104												
105												
106												
107												
108												
109												
110												
111												
112												
113												
114												
115												
116												

AUTOMATED ELECTROLYTIC OXYGEN GENERATOR (MODEL 6L16E) LOG SHEET

AEOG SERIAL NUMBER:	HOURLY READINGS												
	NOR	00	02	04	06	08	10	12	14	16	18	20	22
O_2 SET POINT (ECV SET)	3000												
FI-290 (SCFH OXYGEN)	5.0												
FI-285 (SCFH OXYGEN)	1.0												
FI-380 (SCFH HYDROGEN)	1.0												
CELL 101 CELL TO GND VOLTS	-24.0												
CELL 116 CELL TO GND VOLTS	+24.0												
CELL TO GND VOLTS CROSS OVER POINT	108/109	/	/	/	/	/	/	/	/	/	/	/	/

OUTPUT MULTIMETER VOLTS TO GROUND LIMITS

RECTIFIER OUTPUT RANGE	VOLTS TO GROUND SUM AS MEASURED WITH THE OUTPUT MULTIMETER (DISREGARDING POLARITY) (SEE NOTE d.)		
VOLTS	NOR	MAX	START MAX (NOTE 6)
32-38	0-4	7	11
39-43	0-4	8	13
44-48	0-5	9	14
49-54	0-5	10	16

	KILOAMP HOURS	HEX HOURS
BROUGHT FORWARD		
THIS DATE		
TOTAL		

CELL TO CELL VOLTAGE (LIMITS)

RECTIFIER OUTPUT CURRENT (AMPS)	CELL TO CELL VOLTAGE (VOLTS) (SEE NOTE b.)		
AMPS	MIN	NOR	MAX
1050	2.5	2.8-3.2	3.35
950	2.5	2.8-3.2	3.30
850	2.4	2.7-3.1	3.25
750	2.3	2.7-3.0	3.20
650	2.2	2.7-3.0	3.15
550	2.1	2.6-2.9	3.10
450	2.1	2.6-2.9	3.05
350	2.1	2.6-2.9	3.00

WATCH STANDER INITIALS / TIME				DAILY MAINTENANCE ITEMS
00-06	06-12	12-18	18-24	**NOTE:** Maintenance items 3 through 5 only require entering the time into the watch block when the maintenance item is performed.)
				1. Drain Moisture Traps TR-201 and TR-301 **NOTE:** Accomplish at the end of each watch; refer to Chapter 2, Electrolysis Startup Table, of Tech Manual S9515-A1-MMO-010 for the two draining procedure steps.
				2. Zero Check Gas Analyzer Detector Heads GA-287 & GA-382 **NOTE:** Accomplish at the end of each watch by depressing the(GA ZERO) pushbutton on the Controller Keypad.
				3. Performed Controller LED Check and Power Supply Output Multimeter/Lamp Check **NOTE** : Accomplish Daily; For Controller: All LEDs lit with the exception of (PROC STALL). Power Supply: Refer to Chapter 2 of NAVSEA S9515-A1-MMO-010 for which lamps should be lit. If Multimeter reading is less than 188.8, Perform MIP 5154/905 R-13.
				4. Inspect Oxygen (DR-202) and Hydrogen (DR-302) Drier Molecular Sieve Cartridge Indicators **NOTE:** Accomplish daily; if drier cartridge indicator changes from Blue to Pink, change out the cartridge using MIP 5154/905 MRC U-3
				5. Drain the Oxygen Moisture Separator Flask **NOTE:** Accomplish Daily; Refer to MIP 5154/905 R-15D

OPERATIONAL CRITICAL NOTES

(1)	1.0% is maximum steady state (average) value covering a 24-hour operational period. If 3 to 4 hourly readings exceed 1.0% during a 24-hour time frame, note circumstance (i.e. reducing amps.) and contact PMT representative. If A&I N3394 is installed, the NORMAL H_2 in O_2 limit is 0.6 - 1.1% and the MAX H_2 in O_2 limit is 1.2%.
(2)	Should not exceed compartment background (Determined from CAMS).
(3)	Varies with back pressure and when the system pressure set point changes.
(4)	At startup, pressure will be slightly above 1800 PSI. It will then gradually increase to normal operating pressure during first 90 minutes of operation.
(5)	May be lower at startup until equilibrium temperature is reached.
(6)	This is maximum total volts to ground during the first three hours of electrolysis. If after three hours the total volts to ground does not decrease below the normal max, the generator should be shut down, purged, and checked for grounds.
(7)	If A&I N3394 is installed, the NORMAL CELL TEMP is lowered to 165° F, the MAX CELL TEMP is lowered to 170°F and the HIGH CELL TEMPERATURE SHUTDOWN is lowered to 180° F. A&I N3394 installs (Electrolytic Oxygen Generator Polyphenylene Sulfide Cells).
(8)	If A&I N3394 is installed and the MAX LIMIT of H_2 in O_2 is observed, replace the KOH in ALL CELLS.

GENERAL OPERATIONAL NOTES

a.	The watchstander shall record all readings outside of the MIN/MAX limits in red and immediately report them to the Officer of the Deck. Remarks shall be recorded on the front side of log sheet 1 or 2 of 6. If more space is required, use continuation sheet on back (Page 6). If more space is needed, use a 8 1/2"x 11" white sheet of paper and properly identify such attachments.
b.	It is extremely important to check cross cell voltages at startup to ensure that no one cell voltage is higher than 10% of the average of all other cell voltages. During startup, the maximum cross cell voltage may be higher than normal due to low cell temperatures. The maximum should not at any time exceed 3.35 volts (3.2 volts for a new cell with less than 36 operating hours) and should decrease to normal when the generator reaches normal operating temperatures (cell temps at 170°F). Refer to MIP 5154/905, MRCs U-1 and U-2, when any cell cross-cell voltage indicates > 3.35 volts. After a caustic change, the minimum voltage may be 0.3 volts lower than normal for no longer than 24 hours of operation. Corrective action for voltages outside the stated limits should be taken in accordance with Chapter 6 of NAVSEA S9515-A1-MMO-030. (Verify Meter Circuit prior to replacing cells if necessary).
c.	At startup, a complete set of readings must be taken each time Amps is increased until MAX desired Amps is obtained.
d.	If volts to ground sum (disregarding polarity) recorded is within the normal operating range for a given rectifier output voltage, normal generator operation is permitted. If the sum is above the normal operating range but less than the maximum limit, operation may be continued but readings shall be taken every 15 minutes to insure the sum of the voltages remains below the maximum limit. The cell area should be cleaned and checked for grounds the next available maintenance period. If the sum of the voltages is greater than the maximum value, immediately interrupt electrolysis, purge the generator, and check for ground location referencing Chapter 4 of NAVSEA S9515-A1-MMO-010.
e.	Refer to Chapter 2 of NAVSEA S9515-A1-MMO-010 for the restart rate of increasing Amps.
f.	If Kilo Amp-Hour meter is disabled and a spare is unavailable, calculate the Kilo Amp-Hours. ((Amps) x (Hrs of operation)/ 1000, e.g. 1050 Amps for 2 hrs.= 2.1 KAH or 850 amps for 2 hrs. = 1.7 kAmp Hr.)

SHIP:	AEOG SERIAL NO:	DATE:

WATCH NOTES (CONTINUATION SHEET)

TIME	WATCH NOTES (SEE NOTE a.)	TIME	WATCH NOTES (SEE NOTE a.)