

APPENDIX A. GROUND LAUNCH SEQUENCER DESCRIPTION DOCUMENTATION (GLSDD)

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GROUND LAUNCH SEQUENCER DESCRIPTION DOCUMENT (GLSDD)

A. INTRODUCTION

1. PURPOSE

The purpose of this document is to present the GLS Description Document, and the Definition Guide which defines the document's format. The GLS Description Document formulates the GLS Functional Requirements. These Requirements are the basis for development of the GLS Software Specification (KLO-82-0072) which defines the Implementation Techniques utilized to satisfy those requirements.

2. SCOPE

This document contains requirement details for the monitoring and sequencing activities of all Shuttle Integrated test, Checkout and Launch Countdown functions that require time critical sequencing of nominal and contingency functions.

3. FORMAT REQUIREMENT

The GLS Description Document (GLSDD) is used as an input file to a software utility which automatically generates most of the GLS software from the GLSDD. This utility assists in the development and maintenance of the GLS Software Set and requires the fixed format as it exists today. The Labels and Fields in the GLSDD are not only requirements but also directives to the Automatic Generation utility. Any changes to the GLSDD field definition may impact the Automatic Generation Utility.

B. APPLICABLE DOCUMENTS

1. SOURCE REQUIREMENTS

- (A) Shuttle Launch Commit Criteria and Background (NSTS-16007)
- (B) Operations Maintenance Requirement and Specification File II Volume I (NSTS-08171)

2. REFERENCE DOCUMENTATION

- (A) Level C Functional Subsystems Software Requirements (STS 83-0026)
- (B) OFT LDB Software Interface Requirements (SS-P-0002-150)
- (C) LO2/LH2/MPS/SSME/Software Application Set Requirements Document (KLO-82-0014)
- (D) DPS Software Application Set Requirements Document (KLO-82-0059)

C. GROUND LAUNCH SEQUENCER (GLS) FUNCTIONAL DESCRIPTION

1. OVERVIEW

The GLS is a "Kennedy Delivered" fully Automated software set capable of performing Launch site common and unique functions. The software requires no operator action after initialization, except for unscheduled holds, failure dispositioning and contingency operations. All events of the GLS are scheduled by Countdown Time. Countdown activities will be suspended automatically for any requirement (i.e., LCC, OMRS) violations as defined in the GLSDD. Violations which occur after T-0/31 will result in a GLS "Breakout" and Safing will be automatically invoked.

2. GLS MAINLINE

This function provides the display and control of activities in the Terminal Countdown sequence. It manages the predetermined hold points (milestones) that reflect the status of all the GLS parameters. It also contains all holds and resume functions for the ground and on-board countdown clock.

3. BREAKOUT SAFING

In GLS Safing, the primary function is to stop the Redundant Set Launch Sequence (RSLS) and perform immediate critical tasks not handled by the ascent software. A mainline event complete indicator is maintained to track the progression of the Ground Launch Sequencer toward T-0. This indicator is then utilized by GLS Safing to determine the functions that must be performed. In addition to the GLS Mainline event complete indicator, the RSLS Abort Indication which is downlisted by the Vehicle will be used to determine any functions that must be performed if an SSME start sequence has been initiated.

The GLS event complete indication is documented in the Nomenclature Field of the GLSDD as a comment.

" \$ GLS EVENT COMPLETE=XXX \$ " or " \$ GLS EVENT COMPLETE is less than XXX " where XXX is the integer value indicated.

There are currently no Safing Requirements Prior to T-9 minutes and counting.

then activated. Subsequent failure of the measurement to meet these limits results in the measurement's Control Logic Sequence being executed.

- (B) APL - Issue Analog Command. Issue analog command to the system under test. The value applied to the analog command will be specified in the single or low field.
- (C) ----- - Comment. A blank Function Field indicates the rest of the line is comment only. The comment is preceded and ended with a dollar sign (\$).

If the comment begins with a "\$/////" then the function indicated is not performed by GLS and is provided for information only. The function is either performed by Cockpit Switch or the Redundant Set Launch Sequencer (indicated by (R/S)).

- (D) CMD - Command. Issue command to GSE or the vehicle or pseudo command to CCMS CDBFR.
- (E) CMLT - Command Multiple. Single LDB transaction that sends multiple commands (through consecutive channels).
- (F) CMON - Continuous Monitor. This is a unique function which identifies the continuous monitoring of the RSS okay to Launch indicators which are used by RSS to request a Hold. This function is similar to the CVFY function but is implemented differently in the GLS software.
- (G) COM - Communications Interrupts. An interrupt is sent via the FD specified, to the console indicated in the "single or low" field.
- (H) CRSY - Change Responsible System (Console). The Function Designator's FEP responsible console for CCMS processing is changed as indicated.
- (I) CVFY - Continuous Verify. This function continues to verify a parameter (see Item 7) at the measurement sample rate in parallel to the test sequence. Parameter limits (see Item 8)

are established at initialization. If the test condition fails, the ELSE (see Item 9) option is taken.

NOTE: All CVFY monitoring sets a Commit Criteria Monitoring (CCM) flag for the Function Designator in the FEP which prevents the responsible Firing Room console from modifying GOAL Notification parameters for the specific FD. GLS will maintain control of the GOAL parameters until the end of the run and then return control back to the RSYS.

In most cases CVFY's which occur after T-9/00 will establish limits when the sequence is encountered.

The CVFYs in the Standalone Function, P006, are unique in that they do not set the CCM Flag as described above. The CCM Feature is only available at the GLS Backup Console. P006 processing will be handled by the GLS Mainline Console and therefore, requires a responsible console transfer to that console so that FEP interrupts can be managed and received. Because of this RSYS Transfer, all other systems will be unable to manipulate any of the P006 parameters.

- (J) END - End of sequence or sequence routine.
- (K) ICL - Inhibit Control Logic. Reactive Control Logic (execution) for the indicated measurement is inhibited.
- (L) IGL - Inhibit GOAL Notification. Termination of the continuous verify/monitor function. Related to unique CMONs involving Clock Control rather than LCC monitoring.
- (M) ISSU - Issue Numerical Command. A numeric value issued via the LDB.
- (N) LABL - Label. Used to mark significant comments such as milestones, concurrent and contingency operations. (Directives used in Software Generation).
- (O) MMSG - Milestone Message. The text contained in the nomenclature field is the next milestone to occur and the time at which it scheduled.

- (P) MSG - Message. The text contained in the nomenclature field is the current function being performed in the sequence.
 - (Q) OMSG - Operator Message. The text contained in the nomenclature field is to alert the GLS console operator of exceptions or required actions.
 - (R) SUM - Summation. Sum all FDs for that sequence number and store the value in Sum x. Sum x is then verified to be between the Low and High limits specified.
 - (S) VFY - Verify. One time test to determine if the measurement is within proper limits. Test failure always results in an ELSE action (see Item 9).
5. DISC - Discipline. The RSYS that this function is related to.
 6. NOMENCLATURE - A 34 Character Test Description from the CCMS Data Bank.
 7. FUNCTION DESIGNATOR - A Function Designator from the CCMS Data Bank.
 8. VALUE:
 - (A) SINGL/LO - Single value or low value of a low/high range. No relational symbols are used. Format of LOW or SINGLE VALUE:
 - State: ON/OFF, OPEN/CLOSE, WET/DRY, TRUE/FALSE
 - Analog: Decimal Number
 - Digital
 - Pattern: Xhhhh - Hexadecimal
 - Ttttt - Octal
 - dddd - Decimal
 - Bzzz - Binary

NOTE: When greater than or equal to, or less than or equal to notation is desired, use the following:

VALUE		
LOW	HIGH	
QUAN	NOHI	<i>For greater than or equal to QUAN.</i>
NOLO	QUAN	<i>For LESS than or equal to QUAN.</i>

- (B) HIGH - High value for analog low/high range. No relational symbol is used. Same format as (A) above.
- (C) An "FD" notation next to a LO or HIGH value parameter indicates a comparative measurement with the FD appearing on the following line.
- (D) UNITS - CCMS Data Bank Engineering units. One to seven characters.
9. ELSE - Action to take on test failure of a VFY or CVFY function:
- ELSE - Options are:
- (A) Voting Logic
- (1) OR - Denotes an alternative test follows. Any successful alternate test is sufficient. The alternate(s) follow in successive steps. An OR in one step indicates the next step is an alternate. The action to be taken upon test failure is listed at the end of the last step.
- (2) AND - Denotes an additional test follows. All tests must be successful. The additional test follows in successive steps. The step penalty is listed at the end of the last step.

- (3) X of Y - A group of Y CVFY or VFY sequence items are tested. The sequence will continue if at least X items are successful, otherwise the last ELSE option in the group of Y will be executed.
- (B) INHB Mxxx (Inhibit a milestone.) - Line items remain in effect until the time of the milestone is reached. Upon test failure, this option allows the sequence to continue, but places a constraint against the milestone identified by the Mxxx. When the Mxxx or any previously inhibited milestone is reached normal sequencing will stop and will enter the HOLD state. A parameter in the duration field identifies a nonstandard time at which a line is no longer valid.

MILESTONE/LABELS

<u>LABEL</u>	<u>FUNCTION</u>	<u>APPROX.</u>	<u>CDT</u>
M009	Go for T-9 Sequence	T-9 Min.	
*M0AA	Orbiter Access Arm (Crew Access Arm) Retract Milestone	T-7 Min.	30 Sec.
MAPU	Orbiter APU Start Milestone	T-5 Min.	
MPS4	Purge Sequence 4 Milestone.	T-4 Min.	
*MLOX	ET LO2 Pressurizing Milestone	T-2 Min.	55 Sec.
*MLH2	ET LH2 Pressurizing Milestone.	T-1 Min.	57 Sec.
MSEQ	LPS Go for Auto Sequence Start (Redundant Set Launch Sequencer, RSLs) Milestone.	T-31 Sec.	

<u>LABEL</u>	<u>FUNCTION</u>	<u>APPROX.</u>	<u>CDT</u>
**MENG	LPS Go for Main Engine Start Milestone	T-10 Sec.	
**MSRB	SRB Ignition Milestone	T-0 Sec.	

* Hold at these milestones only for items with "ELSE" equal to that specific milestone.

** After T-0/31 CDT, inhibits against these milestones results in an automatic breakout.

- (C) EXIT - Upon test failure, the normal sequence is immediately suspended. Breakout occurs and the safing routine is performed. A parameter in the duration field identifies the time at which the line item is no longer valid.
 - (D) CPER - Upon test failure, a routine identified by the label is performed in parallel with the normal sequence. An added "TIL" or milestone statement identifies the time at which the line item is no longer valid.
 - (E) GOTO - Upon test failure, branch to the step identified by the label.
 - (F) SKIP STEP - Upon test failure, the next step will not be performed.
 - (G) SKIP SEQ - Upon test failure, the next sequence group will not be performed.
 - (H) LCC-1 - Launch Commit Criteria valid prior to T-9 Minutes. Failure of an LCC-1 item places a constraint against continuing past T-9 minutes. These measurements are FEP Interrupt monitored.
- LCC-2 - Launch Commit Criteria valid until APU start. Failure of an LCC-2 item places a constraint against continuing past T-5 minutes. These measurements are FEP Interrupt monitored.

LCC-3 - Launch Commit Criteria valid until last hold point at T-31 Sec. Failure of an LCC-3 item places a constraint against continuing past T-31 Sec. These measurements are FEP interrupt monitored.

LCC-4 - Launch Commit Criteria valid until T-10 Seconds. Failure of an LCC-4 item places a constraint against continuing past T-31 seconds. A failure of an LCC-4 after T-31 seconds causes a breakout immediately. These measurements are FEP interrupt monitored.

NOTE: LCC-X items in the GLSDD may not all be derived from the Launch Commit Criteria and Background Document (JSC-16007).

- (I) HOLD - Upon test failure, holds the CDC.
 - (J) DISPLAY - Upon test failure, display to the CRT the FD indicated.
 - (K) WAIT/PROCEED - Upon test failure, delays processing and waits for an operator input to continue.
10. DURATION - Specifies additional effectivity constraints to the "ELSE" action.
 11. *LCC REF. - Reference number of the LCC which addresses this requirement
 12. *OMRSD - OMRSD Requirement Number.
- * These fields are reference only, and not intended for close-loop tracking of requirement implementation.

E. (GLS) OPERATIONAL NOTES:

1. "Breakout" is defined as an automatic GLS software response to a condition which will not allow the terminal count to progress any closer to T-0 and must, therefore be recycled to a point of no closer than T-20 minutes from Launch. At breakout the GLS mainline program will be automatically suspended and a safing sequence will take its place.
2. "Cutoff" is defined as a manually (PFPK) initiated command to the GLS software which will cause a GLS breakout.
3. "Hold" as applied to the GLS is defined as that condition in which the countdown clock and progressive mainline sequencing stops, while the capability is retained to continue the countdown towards T-0 via a manual resume input from the Integration console PFPK.
4. After T-31 seconds, all measurement failures annotated with "ELSE" action against MENG, MSRB, or LCC-4 will cause the sequencer to go immediately into a breakout sequence.
5. At breakout, a remote communication (COM) interrupt will be sent to each subsystem console and will indicate that breakout has occurred. Other remote communication (COM) interrupts will be sent to indicate to the systems that the CCM Flags have changed back to the systems. A final remote communication (COM) interrupt is sent to indicate GLS Safing is complete.
6. Those milestones defined in Section 4.9.B without a single or double asterisk are referred to as the GLS "Lookahead" milestones. Any voting logic failure that occurs prior to that failure's ending effectivity (defined in the failure's ELSE and Duration Fields) will result in a "Hold" at the first available Lookahead milestone that has not yet been reached by the GLS Mainline. This capability allows for the earliest possible recognition and subsequent resolution of a test failure.

F. GLS CONTINGENCY AND CONCURRENTLY PERFORMED PROGRAMS

G001	RSLS HOLD/ABORT INDICATION ROUTINE
G002	SSME 1 LH2 PRE-VALVE PRESSURE RELIEF
G003	SSME 2 LH2 PRE-VALVE PRESSURE RELIEF
G004	SSME 3 LH2 PRE-VALVE PRESSURE RELIEF
G006	REPLACE FAILED ET LH2 PRESSURE TRANSDUCER 1
G007	REPLACE FAILED ET LH2 PRESSURE TRANSDUCER 2
G008	REPLACE FAILED ET LH2 PRESSURE TRANSDUCER 3
G009	RIGHT BI-POD HTR CHK
G010	LEFT BI-POD HTR CHK
G012	PASS FSM OR BFS GPC ERROR DECODE
G013	TERMINATE ET LO2 REPLENISH
G014	LOSS OF TACAN CHECK
G015	BACKUP CONSOLE CRASH
G016	RUDDER PEDAL TRACKING CHECK
G017	LEFT RHC TRACKING CHECK
G018	RIGHT RHC TRACKING CHECK
G019	SRB HPU SHUTDOWN
G020	H2 BURN SYSTEM PIC CAP VOLTAGE CVFY
P001	AERO-SURFACE PROFILE EVALUATION
P002	MPS GIMBLE PROFILE EVALUATION
P003	SRB GIMBLE PROFILE EVALUATION
P004	ET GO2 VENT ARM RETRACT
P005	OAA RECONFIGURE FOR EXTEND AND HYD ACCUMULATOR RECHARGE

P006	STANDALONE CVFY (EDO/SLAB/SHAB)
S012	MPS/SSME SAFING
S013	VENT DOOR MANAGEMENT

G. FIRING ROOM CONSOLE DISCIPLINES

FIELD ENTRY

APU	ORBITER AUX POWER UNIT
ARMS	ORBITER ACCESS ARM
BELE	SRB ELECTRICAL
BHYD	SRB HYDRAULICS
BINS	SRB INSTRUMENTATION
BPYR	SRB PYROS
BRS	SRB RANGE SAFETY
COMM	COMMUNICATION
DPS	FLT DATA PROCESSING SOFTWARE
ECLS	ENVIRONMENTAL CONTROL AND LIFE SUPPORT
EPDC	ELECTRICAL POWER DISTRIBUTION AND CONTROL
FCL	FLIGHT CONTROLS
FCP	FUEL CELL POWER
GNS	GUIDANCE AND NAVIGATION SYSTEMS
GOX	GOX ARM SYSTEMS
HYD	ORBITER HYDRAULICS
HYFU	HYPERGOLICS FUEL
HYOX	HYPERGOLICS OXIDIZER
INST	ORBITER INSTRUMENTATION
INTG	INTEGRATION
LH2	LIQUID HYDROGEN
LO2	LIQUID OXYGEN
MECH	ORBITER MECHANISMS

MPS	ORBITER MAIN PROPULSION SYSTEM
NAVA	NAVIGATION AIDS
PLINTG	PAYLOADS INTEGRATION
PVD	ORBITER PURGE, VENT AND DRAIN SYSTEMS
SLAB	SPACELAB
SHAB	SPACEHAB
SSME	SPACE SHUTTLE MAIN ENGINES
TINS	ET INSTRUMENTATION
TRS	ET RANGE SAFETY
WATR	SOUND SUPPRESSION WATER SYSTEMS

This is presented as a listing for reference only of the Ground Launch Sequencer.
The intent here is to provide only a list of the contents of the GLS Description Document.
This material is not to be used for test support in any manner.

DATE	02-23-99	GROUND LAUNCH SEQUENCE DESCRIPTION DOCUMENT - LCD STS 96	KLO-82-0071 APP. A
SEQ	CDT/STEP	NOMENCLATURE	FUNCTION : DESIGNATOR : SINGLE : OR LO : HIGH : UNIT : VALUE : ELSE : DUR. : LCC : OMRSD : REF

- SEQ GLS SEQUENCE NUMBERS
- CDT/STP EARLIEST TIME A STEP MAY EXECUTE/BRANCH LABEL/UNIQUE NEGATIVE STEP NUMBER
- SITE IDENTIFIES UNIQUE SITE REQUIREMENT FOR A GIVEN GLS SEQUENCE, BLANK FIELD INDICATES COMMON TO ALL SITES
- FUNC FUNCTION PERFORMED AT GIVEN GLS SEQUENCE.
 - ACL --- ACTIVATE CONTROL LOGIC
 - APL --- ISSUE ANALOG COMMAND
 - CMD --- COMMAND
 - CMLT --- COMMAND MULTIPLES
 - CMON --- UNIQUE CONTINUOUS MONITOR FUNCTION
 - COM --- REMOTE COMM VARIABLE SENT FROM ML CONSOLE
 - IGL --- INHIBIT GOAL NOTIFICATION
 - CVFY --- CONTINUOUS FEP MONITORING
 - ICL --- INHIBIT CONTROL LOGIC
 - ISSU --- COMMAND ISSUANCE
 - LABL --- STATEMENT LABEL
 - MMSG --- NEXT MILESTONE MESSAGE
 - MSG --- CURRENT FUNCTION MILESTONE MESSAGE
 - SUM --- A FOUR CHANNEL SUMMATION OF FCL PSID
 - VFY --- ONE TIME BUFFER READ
- DISC THE SYSTEM TO WHICH THE FD BELONGS.
- ELSE GLS MILESTONE INHIBITED - ACTION TO TAKE UPON TEST FAILURE
 - M009 (T-9/00) LCC-1 (T-9/00)
 - MOAA (T-7/30)
 - MAPU (T-5/00) LCC-2 (T-5/00)
 - MPS4 (T-4/00)

MLO2 (T-2/55)
 MLH2 (T-1/57)
 MSEQ (T-0/31) LCC-3 (T-0/31)
 MENG (T-0/10) LCC-4 (T-0/10)
 MSRB (T-0/00)

DUR ADDITIONAL EFFECTIVITY CONSTRAINT OR SPECIAL PROCESSING INSTRUCTIONS TO ELSE ACTION

LCC-REF REF NUMBER IN LCC BOOK FOR VIOLATION

OMRSD OMRSD NUMBER FOR VIOLATION

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CONTENTS

T-2H TO T-9 MINUTES..... SEQ 001 - SEQ 060

T-9 TO T-5 MINUTES..... SEQ 100 - SEQ 135

T-5 TO LIFTOFF..... SEQ 136 - SEQ 299

POST LIFTOFF SAFING..... SEQ 300 - SEQ 311

CUTOFF/ABORT SAFING..... SEQ 500 - SEQ 601

CONTINGENT PROGRAMS..... SEQ 700 - SEQ 718

CONCURRENT PROGRAMS..... SEQ 800 - SEQ 867

GLS OPERATIONS APPENDICES..... NONE

\$ GROUND LAUNCH SEQUENCER OPERATIONS BEGIN WITH GLS INITIALIZATION,
INITIALIZATION TIME IS PER THE CONTROLLING OMI. THIS IS GENERALLY
T-2 HOURS. \$

\$ FUEL CELL STATUS CHECK \$

001-00	CVFY FCP	PRSD O2 TK 1	HTR CONTROL PRESS	V45P1110A1	791	993	PSIA	LCC-3	PRSD-01
001-01	CVFY FCP	PRSD O2 TK 1	PRESSURE	V45P1100A1	779	981	PSIA	LCC-3	PRSD-01
001-02	CVFY FCP	PRSD O2 TK 2	HTR CONTROL PRESS	V45P1210A1	791	993	PSIA	LCC-3	PRSD-01
001-03	CVFY FCP	PRSD O2 TK 2	PRESSURE	V45P1200A1	779	981	PSIA	LCC-3	PRSD-01
001-04	CVFY FCP	PRSD O2 TK 1	HTR CUR SNSR 1A-TRIP	V45X1185E1	OFF			LCC-3	PRSD-04
001-05	CVFY FCP	PRSD O2 TK 1	HTR CUR SNSR 1B-TRIP	V45X1187E1	OFF			LCC-3	PRSD-04
001-06	CVFY FCP	PRSD O2 TK 1	HTR CUR SNSR 2A-TRIP	V45X1186E1	OFF			LCC-3	PRSD-04
001-07	CVFY FCP	PRSD O2 TK 1	HTR CUR SNSR 2B-TRIP	V45X1188E1	OFF			LCC-3	PRSD-04
001-08	CVFY FCP	PRSD O2 TK 2	HTR CUR SNSR 1A-TRIP	V45X1285E1	OFF			LCC-3	PRSD-04
001-09	CVFY FCP	PRSD O2 TK 2	HTR CUR SNSR 1B-TRIP	V45X1287E1	OFF			LCC-3	PRSD-04
001-10	CVFY FCP	PRSD O2 TK 2	HTR CUR SNSR 2A-TRIP	V45X1286E1	OFF			LCC-3	PRSD-04
001-11	CVFY FCP	PRSD O2 TK 2	HTR CUR SNSR 2B-TRIP	V45X1288E1	OFF			LCC-3	PRSD-04
001-12	CVFY FCP	PRSD H2 TK 1	HTR CONTROL PRESS	V45P2110A1	196	298	PSIA	LCC-3	PRSD-06
001-13	CVFY FCP	PRSD H2 TK1	PRESSURE	V45P2100A1	192	294	PSIA	LCC-3	PRSD-06
001-14	CVFY FCP	PRSD H2 TK 2	HTR CONTROL PRESS	V45P2210A1	196	298	PSIA	LCC-3	PRSD-06
001-15	CVFY FCP	PRSD H2 TK 2	PRESSURE	V45P2200A1	192	294	PSIA	LCC-3	PRSD-06

\$ PERFORM THE FOLLOWING 8 STEPS IF PRSD TANK SET 3 \$
\$ IS INSTALLED (NPRSDTSET3) = ON \$

001-16	CVFY FCP	PRSD O2 TK 3	HTR CONT PRESS (MBK)	V45P1310A1	820	993	PSIA	LCC-3	PRSD-01
001-17	CVFY FCP	PRSD O2 TK 3	PRESS (MID BODY KIT)	V45P1300A1	808	981	PSIA	LCC-3	PRSD-01
001-18	CVFY FCP	PRSD O2 TK 3	HTR CUR SNSR 1A-TRIP	V45X1385E1	OFF			LCC-3	PRSD-04
001-19	CVFY FCP	PRSD O2 TK 3	HTR CUR SNSR 1B-TRIP	V45X1387E1	OFF			LCC-3	PRSD-04
001-20	CVFY FCP	PRSD O2 TK 3	HTR CUR SNSR 2A-TRIP	V45X1386E1	OFF			LCC-3	PRSD-04
001-21	CVFY FCP	PRSD O2 TK 3	HTR CUR SNSR 2B-TRIP	V45X1388E1	OFF			LCC-3	PRSD-04
001-22	CVFY FCP	PRSD H2 TK 3	HTR CONT PRESS (MBK)	V45P2310A1	213	298	PSIA	LCC-3	PRSD-06
001-23	CVFY FCP	PRSD H2 TK 3	PRESS (MID BODY KIT)	V45P2300A1	209	294	PSIA	LCC-3	PRSD-06

\$ PERFORM THE FOLLOWING 8 STEPS IF PRSD TANK SET 4 \$
\$ IS INSTALLED (NPRSDTSET4) = ON \$

001-24	CVFY FCP	PRSD O2 TK 4(&5)	HTR CONT PRESS	V45P1410A1	820	993	PSIA	LCC-3	PRSD-01
001-25	CVFY FCP	PRSD O2 TK 4	PRESS (MID BODY KIT)	V45P1400A1	808	981	PSIA	LCC-3	PRSD-01
001-26	CVFY FCP	PRSD O2 TK 4	HTR CUR SNSR 1A-TRIP	V45X1485E1	OFF			LCC-3	PRSD-04
001-27	CVFY FCP	PRSD O2 TK 4/5	HTR CUR SNSR 1B/1A	V45X1487E1	OFF			LCC-3	PRSD-04
001-28	CVFY FCP	PRSD O2 TK 4	HTR CUR SNSR 2A-TRIP	V45X1486E1	OFF			LCC-3	PRSD-04
001-29	CVFY FCP	PRSD O2 TK 4/5	HTR CUR SNSR 2B/2A	V45X1488E1	OFF			LCC-3	PRSD-04
001-30	CVFY FCP	PRSD H2 TK 4(&5)	HTR CONT PRESS	V45P2410A1	213	298	PSIA	LCC-3	PRSD-06
001-31	CVFY FCP	PRSD H2 TK 4	PRESS (MID BODY KIT)	V45P2400A1	209	294	PSIA	LCC-3	PRSD-06

\$ PERFORM THE FOLLOWING 2 STEPS IF PRSD TANK SET 5 \$
\$ IS INSTALLED (NPRSDTSET5) = ON \$

001-32	CVFY FCP	PRSD O2 TK 5	PRESS(MID BODY KIT)	V45P1500A1	808	981	PSIA	LCC-3	PRSD-01
001-33	CVFY FCP	PRSD H2 TK 5	PRESS(MID BODY KIT)	V45P2500A1	209	294	PSIA	LCC-3	PRSD-06
001-34	CVFY FCP	PRSD FCP 1 O2	REAC VLV-OPEN	V45X1150E1	ON			LCC-3	PRSD-03
001-35	CVFY FCP	PRSD FCP 1 H2	REAC VLV-OPEN	V45X2150E1	ON			LCC-3	PRSD-03

001-36	CVFY FCP	PRSD FCP 2 O2 REAC VLV-OPEN	V45X1155E1	ON			LCC-3	PRSD-03
001-37	CVFY FCP	PRSD FCP 2 H2 REAC VLV-OPEN	V45X2155E1	ON			LCC-3	PRSD-03
001-38	CVFY FCP	PRSD FCP 3 O2 REAC VLV-OPEN	V45X1160E1	ON			LCC-3	PRSD-03
001-39	CVFY FCP	PRSD FCP 3 H2 REAC VLV-OPEN	V45X2160E1	ON			LCC-3	PRSD-03
001-40	CVFY FCP	PRSD H2 MANF 1 ISLN VLV-OPEN	V45X2141E1	ON			LCC-3	PRSD-02
001-41	CVFY FCP	PRSD H2 MANF 2 ISLN VLV-OPEN	V45X2146E1	ON			LCC-3	PRSD-02
001-42	CVFY FCP	PRSD O2 MANF 1 ISLN VLV-OPEN	V45X1141E1	ON			LCC-3	PRSD-02
001-43	CVFY FCP	PRSD O2 MANF 2 ISLN VLV-OPEN	V45X1146E1	ON			LCC-3	PRSD-02
001-44	CVFY FCP	FUEL CELL NO 1 STACK INLET TEMP	V45T0113A1	176	191	DEGF	LCC-3	FCP-02
001-45	CVFY FCP	FUEL CELL 1 COOLANT PRESSURE	V45P0147A1	55	75	PSIA	LCC-3	FCP-02
001-46	CVFY FCP	FUEL CELL NO 2 STACK INLET TEMP	V45T0213A1	176	191	DEGF	LCC-3	FCP-02
001-47	CVFY FCP	FUEL CELL 2 COOLANT PRESSURE	V45P0247A1	55	75	PSIA	LCC-3	FCP-02
001-48	CVFY FCP	FUEL CELL NO 3 STACK INLET TEMP	V45T0313A1	176	191	DEGF	LCC-3	FCP-02
001-49	CVFY FCP	FUEL CELL 3 COOLANT PRESSURE	V45P0347A1	55	75	PSIA	LCC-3	FCP-02
001-50	CVFY FCP	FUEL CELL NO 1 COOLANT PUMP STATUS	V45X0143E1	ON			LCC-4	FCP-04
001-51	CVFY FCP	FUEL CELL NO 2 COOLANT PUMP STATUS	V45X0243E1	ON			LCC-4	FCP-04
001-52	CVFY FCP	FUEL CELL NO 3 COOLANT PUMP STATUS	V45X0343E1	ON			LCC-4	FCP-04
001-53	CVFY FCP	FCP NO 1 H2 PUMP MTR CONDITION	V45V0114A1	0.28	1.00	V	LCC-4	FCP-04
001-54	CVFY FCP	FCP NO 2 H2 PUMP MTR CONDITION	V45V0214A1	0.28	1.00	V	LCC-4	FCP-04
001-55	CVFY FCP	FCP NO 3 H2 PUMP MTR CONDITION	V45V0314A1	0.28	1.00	V	LCC-4	FCP-04
001-56	CVFY FCP	FCP NO 1 SUBSTACK 1 DELTA VOLTAGE	V45V0102A1	NOLO	150	MV	LCC-3	FCP-03
001-57	CVFY FCP	FCP NO 1 SUBSTACK 2 DELTA VOLTAGE	V45V0103A1	NOLO	150	MV	LCC-3	FCP-03
001-58	CVFY FCP	FCP NO 1 SUBSTACK 3 DELTA VOLTAGE	V45V0104A1	NOLO	150	MV	LCC-3	FCP-03
001-59	CVFY FCP	FCP NO 2 SUBSTACK 1 DELTA VOLTAGE	V45V0202A1	NOLO	150	MV	LCC-3	FCP-03
001-60	CVFY FCP	FCP NO 2 SUBSTACK 2 DELTA VOLTAGE	V45V0203A1	NOLO	150	MV	LCC-3	FCP-03
001-61	CVFY FCP	FCP NO 2 SUBSTACK 3 DELTA VOLTAGE	V45V0204A1	NOLO	150	MV	LCC-3	FCP-03
001-62	CVFY FCP	FCP NO 3 SUBSTACK 1 DELTA VOLTAGE	V45V0302A1	NOLO	150	MV	LCC-3	FCP-03
001-63	CVFY FCP	FCP NO 3 SUBSTACK 2 DELTA VOLTAGE	V45V0303A1	NOLO	150	MV	LCC-3	FCP-03
001-64	CVFY FCP	FCP NO 3 SUBSTACK 3 DELTA VOLTAGE	V45V0304A1	NOLO	150	MV	LCC-3	FCP-03
001-65	CVFY FCP	FUEL CELL NO 1 H2O CONDITION	V45X0410E1	OFF			LCC-3	FCP-05
001-66	CVFY FCP	FUEL CELL NO 2 H2O CONDITION	V45X0420E1	OFF			LCC-3	FCP-05
001-67	CVFY FCP	FUEL CELL NO 3 H2O CONDITION	V45X0430E1	OFF			LCC-3	FCP-05
001-68	CVFY FCP	FUEL CELL H2O CONDUCTIVITY	V45X0462E1	OFF			LCC-3	FCP-05
\$ PERFORM THE NEXT 6 STEPS IF THE VEH IS NOT \$								
\$ OV102 (NORBTAILNO) DOES NOT EQUAL 102 AND \$								
\$ TANK SET 5 IS INSTALLED (NPRSDTSET5) = ON \$								
001-69	CVFY FCP	PRSD O2 TK 5 HTR CONT PRESS	V45P1510A1	820	993	PSIA	LCC-3	PRSD-01
001-70	CVFY FCP	PRSD O2 TK 5 HTR CUR SNSR 1A TRIP	V45X1585E1	OFF			LCC-3	PRSD-04
001-71	CVFY FCP	PRSD O2 TK 5 HTR CUR SNSR 1B TRIP	V45X1587E1	OFF			LCC-3	PRSD-04
001-72	CVFY FCP	PRSD O2 TK 5 HTR CUR SNSR 2A TRIP	V45X1586E1	OFF			LCC-3	PRSD-04
001-73	CVFY FCP	PRSD O2 TK 5 HTR CUR SNSR 2B TRIP	V45X1588E1	OFF			LCC-3	PRSD-04
001-74	CVFY FCP	PRSD H2 TK 5 HTR CONT PRESS	V45P2510A1	213	298	PSIA	LCC-3	PRSD-06
\$ PERF NEXT STEP IF FLIGHT IS AN EDO MISSION (NPRSEDO16) = ON \$								
001-75	CMD FCP	INITIATE MONITORING OF EDO CVFY	<u>P006</u>	ON				
\$ SRB APU STATUS CHECK \$								
002-00	CVFY BHYD	RH EVENT APU A ISLN VALVE CLOSED	B46X2853X1	ON			1 OF 2	BTVC-05
002-01	CVFY BHYD	RH EVENT APU A ISLN VALVE OPEN	B46X2851X1	OFF			LCC-3	BTVC-05
002-02	CVFY BHYD	LH EVENT APU A ISLN VALVE CLOSED	B46X1853X1	ON			1 OF 2	BTVC-05

002-03	CVFY BHYD LH EVENT APU A ISLN VALVE OPEN	B46X1851X1	OFF	LCC-3	BTVC-05
002-04	CVFY BHYD RH EVENT APU B ISLN VALVE CLOSED	B46X2854X1	ON	1 OF 2	BTVC-05
002-05	CVFY BHYD RH EVENT APU B ISLN VALVE OPEN	B46X2852X1	OFF	LCC-3	BTVC-05
002-06	CVFY BHYD LH EVENT APU B ISLN VALVE CLOSED	B46X1854X1	ON	1 OF 2	BTVC-05
002-07	CVFY BHYD LH EVENT APU B ISLN VALVE OPEN	B46X1852X1	OFF	LCC-3	BTVC-05
002-08	CVFY BHYD LH EV APU SEC SP CON VLV CLD,SYS A	B46X1861X1	ON	LCC-3	BTVC-06
002-09	CVFY BHYD LH EV APU SEC SP CON VLV CLD,SYS B	B46X1863X1	ON	LCC-3	BTVC-06
002-10	CVFY BHYD RH EV APU SEC SP CON VLV CLD,SYS A	B46X2861X1	ON	LCC-3	BTVC-06
002-11	CVFY BHYD RH EV APU SEC SP CON VLV CLD,SYS B	B46X2863X1	ON	LCC-3	BTVC-06

\$ G/N STATUS CHECK \$

003-00	CVFY GNS IMU 1 KT70/HAINS GOOD	WD1B0	V71X2021B1	ON	LCC-3	GNC-56
003-01	CVFY GNS IMU 2 KT70/HAINS GOOD	WD1B0	V71X3021B1	ON	LCC-3	GNC-56
003-02	CVFY GNS IMU 3 KT70/HAINS GOOD	WD1B0	V71X4021B1	ON	LCC-3	GNC-56
003-03	CVFY GNS IMU 1 REDUNDANT RATE FAIL		V95X0033X1	OFF	LCC-3	GNC-61
003-04	CVFY GNS IMU 1 INNER RESOLVER NULL FAIL		V95X0034X1	OFF	LCC-3	GNC-61
003-05	CVFY GNS IMU 1 VELOCITY LIMIT FAIL		V95X0035X1	OFF	LCC-3	GNC-61
003-06	CVFY GNS IMU 1 RESOLVER LIMIT FAIL		V95X0037X1	OFF	LCC-3	GNC-61
003-07	CVFY GNS IMU 1 PLATFORM TEMP SAFE		V71X2405X1	ON	LCC-3	GNC-59
003-08	CVFY GNS IMU 1 CAPRI TEMP SAFE		V71X2407X1	ON	LCC-3	GNC-59
003-09	CVFY GNS IMU 2 REDUNDANT RATE FAIL		V95X1033X1	OFF	LCC-3	GNC-61
003-10	CVFY GNS IMU 2 INNER RESOLVER NULL FAIL		V95X1034X1	OFF	LCC-3	GNC-61
003-11	CVFY GNS IMU 2 VELOCITY LIMIT FAIL		V95X1035X1	OFF	LCC-3	GNC-61
003-12	CVFY GNS IMU 2 RESOLVER LIMIT FAIL		V95X1037X1	OFF	LCC-3	GNC-61
003-13	CVFY GNS IMU 2 PLATFORM TEMP SAFE		V71X3405X1	ON	LCC-3	GNC-59
003-14	CVFY GNS IMU 2 CAPRI TEMP SAFE		V71X3407X1	ON	LCC-3	GNC-59
003-15	CVFY GNS IMU 3 REDUNDANT RATE FAIL		V95X2033X1	OFF	LCC-3	GNC-61
003-16	CVFY GNS IMU 3 INNER RESOLVER NULL FAIL		V95X2034X1	OFF	LCC-3	GNC-61
003-17	CVFY GNS IMU 3 VELOCITY LIMIT FAIL		V95X2035X1	OFF	LCC-3	GNC-61
003-18	CVFY GNS IMU 3 RESOLVER LIMIT FAIL		V95X2037X1	OFF	LCC-3	GNC-61
003-19	CVFY GNS IMU 3 PLATFORM TEMP SAFE		V71X4405X1	ON	LCC-3	GNC-59
003-20	CVFY GNS IMU 3 CAPRI TEMP SAFE		V71X4407X1	ON	LCC-3	GNC-59
003-21	CVFY GNS IMU 1 WORD 13 ECHO FAIL		V95X0030X1	OFF	LCC-3	GNC-61
003-22	CVFY GNS IMU 2 WORD 13 ECHO FAIL		V95X1030X1	OFF	LCC-3	GNC-61
003-23	CVFY GNS IMU 3 WORD 13 ECHO FAIL		V95X2030X1	OFF	LCC-3	GNC-61
003-24	CVFY GNS IMU 1 PLATFORM TEMP READY		V71X2404X1	ON	LCC-3	GNC-58
003-25	CVFY GNS IMU 1 CAPRI TEMP READY		V71X2406X1	ON	LCC-3	GNC-58
003-26	CVFY GNS IMU 2 PLATFORM TEMP READY		V71X3404X1	ON	LCC-3	GNC-58
003-27	CVFY GNS IMU 2 CAPRI TEMP READY		V71X3406X1	ON	LCC-3	GNC-58
003-28	CVFY GNS IMU 3 PLATFORM TEMP READY		V71X4404X1	ON	LCC-3	GNC-58
003-29	CVFY GNS IMU 3 CAPRI TEMP READY		V71X4406X1	ON	LCC-3	GNC-58
003-30	CVFY GNS IMU 1 WORD 14 ECHO FAIL		V95X0031X1	OFF	LCC-3	GNC-61
003-31	CVFY GNS IMU 2 WORD 14 ECHO FAIL		V95X1031X1	OFF	LCC-3	GNC-61
003-32	CVFY GNS IMU 3 WORD 14 ECHO FAIL		V95X2031X1	OFF	LCC-3	GNC-61
003-33	CVFY GNS IMU 1 ACC/CAPRI SF FAIL		V95X0081X1	OFF	LCC-3	GNC-61
003-34	CVFY GNS IMU 2 ACC/CAPRI SF FAIL		V95X1081X1	OFF	LCC-3	GNC-61
003-35	CVFY GNS IMU 3 ACC/CAPRI SF FAIL		V95X2081X1	OFF	LCC-3	GNC-61
003-36	CVFY GNS IMU-1 TRANS WD1 FAIL		V71X2030B1	OFF	LCC-3	GNC-66
003-37	CVFY GNS IMU-2 TRANS WD1 FAIL		V71X3030B1	OFF	LCC-3	GNC-66
003-38	CVFY GNS IMU-3 TRANS WD1 FAIL		V71X4030B1	OFF	LCC-3	GNC-66
003-39	CVFY GNS IMU-1 TRANS WD2 FAIL		V71X2031B1	OFF	LCC-3	GNC-66

003-40	CVFY GNS	IMU-2 TRANS WD2 FAIL	V71X3031B1	OFF			LCC-3	GNC-66
003-41	CVFY GNS	IMU-3 TRANS WD2 FAIL	V71X4031B1	OFF			LCC-3	GNC-66
003-42	CVFY GNS	PCA IMU NO 1 RPC NO A ON	V76X4250E1	ON			5 OF 6	GNC-57
003-43	CVFY GNS	PCA IMU NO 1 RPC NO B ON	V76X4251E1	ON			5 OF 6	GNC-57
003-44	CVFY GNS	PCA IMU NO 2 RPC NO B ON	V76X4253E1	ON			5 OF 6	GNC-57
003-45	CVFY GNS	PCA IMU NO 2 RPC NO C ON	V76X4254E1	ON			5 OF 6	GNC-57
003-46	CVFY GNS	PCA IMU NO 3 RPC NO C ON	V76X4256E1	ON			5 OF 6	GNC-57
003-47	CVFY GNS	PCA IMU NO 3 RPC NO A ON	V76X4257E1	ON			LCC-3	GNC-57
\$ EACH OF THE FOLLOWING 3 STEPS \$								
\$ APPLICABLE FOR HAINS IMU ONLY \$								
003-48	CVFY GNS	IMU 1 PRESSURE/COMMUNICATION GOOD	V71X2401X1	ON			LCC-3	GNC-67
003-49	CVFY GNS	IMU 2 PRESSURE/COMMUNICATION GOOD	V71X3401X1	ON			LCC-3	GNC-67
003-50	CVFY GNS	IMU 3 PRESSURE/COMMUNICATION GOOD	V71X4401X1	ON			LCC-3	GNC-67
\$ ORB RGA CHECKS \$								
003-51	CVFY GNS	RGA 1 ROLL SRMD IND	V79X1860X1	ON			LCC-3	GNC-11
003-52	CVFY GNS	RGA 1 PITCH SMRD IND	V79X1861X1	ON			LCC-3	GNC-11
003-53	CVFY GNS	RGA 1 YAW SMRD IND	V79X1862X1	ON			LCC-3	GNC-11
003-54	CVFY GNS	RGA 2 ROLL SMRD IND	V79X1865X1	ON			LCC-3	GNC-11
003-55	CVFY GNS	RGA 2 PITCH SMRD IND	V79X1866X1	ON			LCC-3	GNC-11
003-56	CVFY GNS	RGA 2 YAW SMRD IND	V79X1867X1	ON			LCC-3	GNC-11
003-57	CVFY GNS	RGA 3 ROLL SMRD IND	V79X1870X1	ON			LCC-3	GNC-11
003-58	CVFY GNS	RGA 3 PITCH SMRD IND	V79X1871X1	ON			LCC-3	GNC-11
003-59	CVFY GNS	RGA 3 YAW SMRD IND	V79X1872X1	ON			LCC-3	GNC-11
003-60	CVFY GNS	RGA 4 ROLL SMRD IND	V79X1875X1	ON			LCC-3	GNC-11
003-61	CVFY GNS	RGA 4 PITCH SMRD IND	V79X1876X1	ON			LCC-3	GNC-11
003-62	CVFY GNS	RGA 4 YAW SMRD IND	V79X1877X1	ON			LCC-3	GNC-11
\$ SRB RATE GYRO CHECKS \$								
003-63	CVFY GNS	SRGA 1 PITCH SMRD	B79X1845X1	ON			LCC-3	GNC-15
003-64	CVFY GNS	SRGA 3 PITCH SMRD	B79X1846X1	ON			LCC-3	GNC-15
003-65	CVFY GNS	SRGA 1 YAW SMRD	B79X1848X1	ON			LCC-3	GNC-15
003-66	CVFY GNS	SRGA 3 YAW SMRD	B79X1849X1	ON			LCC-3	GNC-15
003-67	CVFY GNS	SRGA 2 PITCH SMRD	B79X2845X1	ON			LCC-3	GNC-15
003-68	CVFY GNS	SRGA 4 PITCH SMRD	B79X2846X1	ON			LCC-3	GNC-15
003-69	CVFY GNS	SRGA 2 YAW SMRD	B79X2848X1	ON			LCC-3	GNC-15
003-70	CVFY GNS	SRGA 4 YAW SMRD	B79X2849X1	ON			LCC-3	GNC-15
\$ ORBITER BRAKE POWER \$								
004-00	CVFY FCL	BRAKE/SKID SUB BUS C/A RPC PWR A	V76X5800E1	ON			LCC-2	GNC-80
004-01	CVFY FCL	BRAKE/SKID SUB BUS B/C RPC PWR B	V76X5805E1	ON			LCC-2	GNC-80
004-02	CVFY FCL	BRAKE/SKID SUB BUS B/C RPC PWR C	V76X5806E1	ON			LCC-2	GNC-80
004-03	CVFY FCL	BRAKE/SKID SUB BUS C/A RPC PWR C	V76X5811E1	ON			LCC-2	GNC-80
\$ ORBITER NOSEWHEEL STEERING \$								
004-04	CVFY FCL	N/W STEERING FAILED	V51X0645E1	OFF			LCC-3	GNC-83
\$ ORBITER BRAKE PRESSURE \$								
004-05	CVFY FCL	LDG GR LH OUTBD BRAKE PRESS NO 2A	V51P0722A1	NOLO	156	PSIA	LCC-3	GNC-79
004-06	CVFY FCL	LDG GR LH OUTBD BRAKE PRESS NO 4A	V51P0724A1	NOLO	156	PSIA	LCC-3	GNC-79

004-07	CVFY FCL	LDG GR LH INBD BRAKE PRESS NO 3A	V51P0726A1 NOLO	156	PSIA	LCC-3	GNC-79
004-08	CVFY FCL	LDG GR LH INBD BRAKE PRESS NO 1A	V51P0728A1 NOLO	156	PSIA	LCC-3	GNC-79
004-09	CVFY FCL	LDG GR RH OUTBD BRAKE PRESS NO 2A	V51P0742A1 NOLO	156	PSIA	LCC-3	GNC-79
004-10	CVFY FCL	LDG GR RH OUTBD BRAKE PRESS NO 4A	V51P0744A1 NOLO	156	PSIA	LCC-3	GNC-79
004-11	CVFY FCL	LDG GR RH INBD BRAKE PRESS NO 3A	V51P0746A1 NOLO	156	PSIA	LCC-3	GNC-79
004-12	CVFY FCL	LDG GR RH INBD BRAKE PRESS NO 1A	V51P0748A1 NOLO	156	PSIA	LCC-3	GNC-79
\$ ASA POWER VERIFICATION \$							
004-13	CVFY FCL	PCA FLT CONT ASA 1 RPC A ON	V76X4201E1 ON			LCC-3	GNC-32
004-14	CVFY FCL	PCA FLT CONT ASA 1 RPC B ON	V76X4202E1 ON			LCC-3	GNC-32
004-15	CVFY FCL	PCA FLT CONT ASA 1 RPC 3 ON	V76X4203E1 ON			LCC-3	GNC-32
004-16	CVFY FCL	PCA FLT CONT ASA 2 RPC B ON	V76X4204E1 ON			LCC-3	GNC-32
004-17	CVFY FCL	PCA FLT CONT ASA 2 RPC C ON	V76X4205E1 ON			LCC-3	GNC-32
004-18	CVFY FCL	PCA FLT CONT ASA 2 RPC 3 ON	V76X4206E1 ON			LCC-3	GNC-32
004-19	CVFY FCL	PCA FLT CONT ASA 3 RPC C ON	V76X4207E1 ON			LCC-3	GNC-32
004-20	CVFY FCL	PCA FLT CONT ASA 3 RPC A ON	V76X4208E1 ON			LCC-3	GNC-32
004-21	CVFY FCL	PCA FLT CONT ASA 3 RPC 3 ON	V76X4209E1 ON			LCC-3	GNC-32
004-22	CVFY FCL	PCA FLT CONT ASA 4 RPC C ON	V76X4210E1 ON			LCC-3	GNC-32
004-23	CVFY FCL	PCA FLT CONT ASA 4 RPC A ON	V76X4211E1 ON			LCC-3	GNC-32
\$ ATVC POWER VERIFICATION \$							
004-24	CVFY FCL	PCA FLT CONT ATVC 1 RPC A ON	V76X4285E1 ON			LCC-3	GNC-39
004-25	CVFY FCL	PCA FLT CONT ATVC 1 RPC B ON	V76X4286E1 ON			LCC-3	GNC-39
004-26	CVFY FCL	PCA FLT CONT ATVC 2 RPC B ON	V76X4287E1 ON			LCC-3	GNC-39
004-27	CVFY FCL	PCA FLT CONT ATVC 2 RPC C ON	V76X4288E1 ON			LCC-3	GNC-39
004-28	CVFY FCL	PCA FLT CONT ATVC 3 RPC A ON	V76X4289E1 ON			LCC-3	GNC-39
004-29	CVFY FCL	PCA FLT CONT ATVC 3 RPC C ON	V76X4290E1 ON			LCC-3	GNC-39
004-30	CVFY FCL	PCA FLT CONT ATVC 4 RPC C ON	V76X4291E1 ON			LCC-3	GNC-39
004-31	CVFY FCL	PCA FLT CONT ATVC 4 RPC A ON	V76X4292E1 ON			LCC-3	GNC-39
\$ LANDING GEAR DOORS CLOSED \$							
005-00	CVFY MECH	LMG/DOOR UPLOCKED	V51X0115E1 ON			LCC-3	AFM-10
005-01	CVFY MECH	RMG/DOOR UPLOCKED	V51X0215E1 ON			LCC-3	AFM-10
005-02	CVFY MECH	NLG/DOOR UPLOCKED	V51X0315E1 ON			LCC-3	AFM-10
\$ LANDING GEAR DEPLOYMENT CHECK \$							
005-03	CVFY MECH	LMG STR ACTR SHUTTLE V GR DN RDY	V58X1725E1 ON			LCC-3	AFM-11
005-04	CVFY MECH	RMG STR ACTR SHUTTLE V GR DN RDY	V58X1775E1 ON			LCC-3	AFM-11
005-05	CVFY MECH	NLG STR ACTR SHUTTLE V GR DN RDY	V58X1825E1 ON			LCC-3	AFM-11
\$ MCA STATUS CHECK \$							
005-06	CVFY MECH	FWD MCA 1 OPERATIONAL STATUS 1	V76X2111E1 ON			LCC-3	AFM-16
005-07	CVFY MECH	FWD MCA 1 OPERATIONAL STATUS 2	V76X2112E1 ON			LCC-3	AFM-16
005-08	CVFY MECH	FWD MCA 1 OPERATIONAL STATUS 3	V76X2113E1 ON			LCC-3	AFM-16
005-09	CVFY MECH	FWD MCA 1 OPERATIONAL STATUS 4	V76X2114E1 ON			LCC-3	AFM-16
005-10	CVFY MECH	FWD MCA 2 OPERATIONAL STATUS 1	V76X2121E1 ON			LCC-3	AFM-16
005-11	CVFY MECH	FWD MCA 2 OPERATIONAL STATUS 2	V76X2122E1 ON			LCC-3	AFM-16
005-12	CVFY MECH	FWD MCA 2 OPERATIONAL STATUS 3	V76X2123E1 ON			LCC-3	AFM-16
005-13	CVFY MECH	FWD MCA 2 OPERATIONAL STATUS 4	V76X2124E1 ON			LCC-3	AFM-16
005-14	CVFY MECH	FWD MCA 3 OPERATIONAL STATUS 1	V76X2131E1 ON			LCC-3	AFM-16
005-15	CVFY MECH	FWD MCA 3 OPERATIONAL STATUS 2	V76X2132E1 ON			LCC-3	AFM-16

005-16	CVFY	MECH	FWD	MCA	3	OPERATIONAL	STATUS	3	V76X2133E1	ON	LCC-3	AFM-16
005-17	CVFY	MECH	FWD	MCA	3	OPERATIONAL	STATUS	4	V76X2134E1	ON	LCC-3	AFM-16
005-18	CVFY	MECH	MID	MCA	1	OPERATIONAL	STATUS	1	V76X2211E1	ON	LCC-3	AFM-17
005-19	CVFY	MECH	MID	MCA	1	OPERATIONAL	STATUS	2	V76X2212E1	ON	LCC-3	AFM-17
005-20	CVFY	MECH	MID	MCA	1	OPERATIONAL	STATUS	3	V76X2213E1	ON	LCC-3	AFM-17
005-21	CVFY	MECH	MID	MCA	1	OPERATIONAL	STATUS	4	V76X2214E1	ON	LCC-3	AFM-17
005-22	CVFY	MECH	MID	MCA	1	OPERATIONAL	STATUS	5	V76X2215E1	ON	LCC-3	AFM-17
005-23	CVFY	MECH	MID	MCA	1	OPERATIONAL	STATUS	6	V76X2216E1	ON	LCC-3	AFM-17
005-24	CVFY	MECH	MID	MCA	1	OPERATIONAL	STATUS	7	V76X2217E1	ON	LCC-3	AFM-17
005-25	CVFY	MECH	MID	MCA	1	OPERATIONAL	STATUS	8	V76X2218E1	ON	LCC-3	AFM-17
005-26	CVFY	MECH	MID	MCA	2	OPERATIONAL	STATUS	1	V76X2221E1	ON	LCC-3	AFM-17
005-27	CVFY	MECH	MID	MCA	2	OPERATIONAL	STATUS	2	V76X2222E1	ON	LCC-3	AFM-17
005-28	CVFY	MECH	MID	MCA	2	OPERATIONAL	STATUS	3	V76X2223E1	ON	LCC-3	AFM-17
005-29	CVFY	MECH	MID	MCA	2	OPERATIONAL	STATUS	4	V76X2224E1	ON	LCC-3	AFM-17
005-30	CVFY	MECH	MID	MCA	2	OPERATIONAL	STATUS	5	V76X2225E1	ON	LCC-3	AFM-17
005-31	CVFY	MECH	MID	MCA	2	OPERATIONAL	STATUS	6	V76X2226E1	ON	LCC-3	AFM-17
005-32	CVFY	MECH	MID	MCA	2	OPERATIONAL	STATUS	7	V76X2227E1	ON	LCC-3	AFM-17
005-33	CVFY	MECH	MID	MCA	2	OPERATIONAL	STATUS	8	V76X2228E1	ON	LCC-3	AFM-17
005-34	CVFY	MECH	MID	MCA	3	OPERATIONAL	STATUS	1	V76X2231E1	ON	LCC-3	AFM-17
005-35	CVFY	MECH	MID	MCA	3	OPERATIONAL	STATUS	2	V76X2232E1	ON	LCC-3	AFM-17
005-36	CVFY	MECH	MID	MCA	3	OPERATIONAL	STATUS	3	V76X2233E1	ON	LCC-3	AFM-17
005-37	CVFY	MECH	MID	MCA	3	OPERATIONAL	STATUS	4	V76X2234E1	ON	LCC-3	AFM-17
005-38	CVFY	MECH	MID	MCA	3	OPERATIONAL	STATUS	5	V76X2235E1	ON	LCC-3	AFM-17
005-39	CVFY	MECH	MID	MCA	3	OPERATIONAL	STATUS	6	V76X2236E1	ON	LCC-3	AFM-17
005-40	CVFY	MECH	MID	MCA	3	OPERATIONAL	STATUS	7	V76X2237E1	ON	LCC-3	AFM-17
005-41	CVFY	MECH	MID	MCA	3	OPERATIONAL	STATUS	8	V76X2238E1	ON	LCC-3	AFM-17
005-42	CVFY	MECH	MID	MCA	4	OPERATIONAL	STATUS	1	V76X2241E1	ON	LCC-3	AFM-17
005-43	CVFY	MECH	MID	MCA	4	OPERATIONAL	STATUS	2	V76X2242E1	ON	LCC-3	AFM-17
005-44	CVFY	MECH	MID	MCA	4	OPERATIONAL	STATUS	3	V76X2243E1	ON	LCC-3	AFM-17
005-45	CVFY	MECH	MID	MCA	4	OPERATIONAL	STATUS	4	V76X2244E1	ON	LCC-3	AFM-17
005-46	CVFY	MECH	MID	MCA	4	OPERATIONAL	STATUS	5	V76X2245E1	ON	LCC-3	AFM-17
005-47	CVFY	MECH	MID	MCA	4	OPERATIONAL	STATUS	6	V76X2246E1	ON	LCC-3	AFM-17
005-48	CVFY	MECH	MID	MCA	4	OPERATIONAL	STATUS	7	V76X2247E1	ON	LCC-3	AFM-17
005-49	CVFY	MECH	MID	MCA	4	OPERATIONAL	STATUS	8	V76X2248E1	ON	LCC-3	AFM-17
005-50	CVFY	MECH	AFT	MCA	1	OPERATIONAL	STATUS	1	V76X2251E1	ON	LCC-3	AFM-18
005-51	CVFY	MECH	AFT	MCA	1	OPERATIONAL	STATUS	2	V76X2252E1	ON	LCC-3	AFM-18
005-52	CVFY	MECH	AFT	MCA	1	OPERATIONAL	STATUS	3	V76X2253E1	ON	LCC-3	AFM-18
005-53	CVFY	MECH	AFT	MCA	1	OPERATIONAL	STATUS	4	V76X2254E1	ON	LCC-3	AFM-18
005-54	CVFY	MECH	AFT	MCA	2	OPERATIONAL	STATUS	1	V76X2261E1	ON	LCC-3	AFM-18
005-55	CVFY	MECH	AFT	MCA	2	OPERATIONAL	STATUS	2	V76X2262E1	ON	LCC-3	AFM-18
005-56	CVFY	MECH	AFT	MCA	2	OPERATIONAL	STATUS	3	V76X2263E1	ON	LCC-3	AFM-18
005-57	CVFY	MECH	AFT	MCA	2	OPERATIONAL	STATUS	4	V76X2264E1	ON	LCC-3	AFM-18
005-58	CVFY	MECH	AFT	MCA	3	OPERATIONAL	STATUS	1	V76X2271E1	ON	LCC-3	AFM-18
005-59	CVFY	MECH	AFT	MCA	3	OPERATIONAL	STATUS	2	V76X2272E1	ON	LCC-3	AFM-18
005-60	CVFY	MECH	AFT	MCA	3	OPERATIONAL	STATUS	3	V76X2273E1	ON	LCC-3	AFM-18
005-61	CVFY	MECH	AFT	MCA	3	OPERATIONAL	STATUS	4	V76X2274E1	ON	LCC-3	AFM-18

\$ KSC SS WATER SYSTEM STATUS CHECK \$

006-00	CVFY	WATR	SS	PNEU	PRESS	PT1	STATUS		GWDPPPT01A	1200	1700	PSIG	1 OF 2	GSE-14
006-01	CVFY	WATR	SS	PNEU	PRESS	PT2	STATUS		GWDPPPT02A	1200	1700	PSIG	LCC-3	GSE-14
006-02	CVFY	WATR	SS	TANK	WATER	LEVEL	STATUS		GWDQPT83A	258.2	NOHI	FT	1 OF 2	GSE-15

006-03	CVFY WATR SS TANK WATER LEVEL STATUS	GWDQPT84A	258.2	NOHI	FT	LCC-1	GSE-15
006-04	CVFY WATR SS SOL PWR BUS ON IND	GWDXP29E	ON			1 OF 2	GSE-17
006-05	CVFY WATR SS SOL PWR BUS ON IND	GWDXP53E	ON			LCC-3	GSE-17
	\$ LOSS OF TACAN CHECK \$						
007-00	CVFY NAVA TACAN NO 1 POWER STATUS	V74X0071X1	ON			CPER G014	LCC-3 CT-01
007-01	CVFY NAVA TAC 1 RNG BLT-IN TST STATUS WD2B04	V74X1558B1	OFF			CPER G014	LCC-3 CT-01
007-02	CVFY NAVA TAC 1 RNG SUPR PULS PRESENT WD2B07	V74X1560B1	ON			CPER G014	LCC-3 CT-01
007-03	CVFY NAVA TACAN NO 2 POWER STATUS	V74X0081X1	ON			CPER G014	LCC-3 CT-01
007-04	CVFY NAVA TAC 2 RNG BLT-IN TST STATUS WD2B04	V74X1658B1	OFF			CPER G014	LCC-3 CT-01
007-05	CVFY NAVA TAC 2 RNG SUPR PULS PRESENT WD2B07	V74X1660B1	ON			CPER G014	LCC-3 CT-01
007-06	CVFY NAVA TACAN NO 3 POWER STATUS	V74X0091X1	ON			CPER G014	LCC-3 CT-01
007-07	CVFY NAVA TAC 3 RNG BLT-IN TST STATUS WD2B04	V74X1758B1	OFF			CPER G014	LCC-3 CT-01
007-08	CVFY NAVA TAC 3 RNG SUPR PULS PRESENT WD2B07	V74X1760B1	ON			CPER G014	LCC-3 CT-01
	\$ PVD STATUS CHECKS \$						
008-00	CVFY PVD ORB FWD I/F PRESS IND	GECP5F07A	33	86	INH20	1 OF 2	GSE-02
008-01	CVFY PVD ORB FWD DUCT PRESS IND	GECP8F03A	39	90	INH20	LCC-3	GSE-02
008-02	CVFY PVD ORB PLB I/F PRESS IND	GECP5P07A	28	86	INH20	1 OF 2	GSE-03
008-03	CVFY PVD ORB PLB DUCT PRESS IND	GECP8P03A	30	90	INH20	LCC-3	GSE-03
008-04	CVFY PVD ORB AFT I/F PRESS IND	GECP5A07A	44	86	INH20	1 OF 2	GSE-01
008-05	CVFY PVD ORB AFT DUCT PRESS IND	GECP8A03A	66	98	INH20	LCC-3	GSE-01
	\$ HYDRAULICS STATUS CHECKS \$						
009-00	CVFY HYD HYD SYS 1 RSVR FLUID VOLUME	V58Q0102A1	46	NOHI	PCT	LCC-3	HYD-01
009-01	CVFY HYD HYD SYS 2 RSVR FLUID VOLUME	V58Q0202A1	46	NOHI	PCT	LCC-3	HYD-01
009-02	CVFY HYD HYD SYS 3 RSVR FLUID VOLUME	V58Q0302A1	46	NOHI	PCT	LCC-3	HYD-01
	\$ HYD LDG GEAR EXT ISO VL CHECK \$						
009-03	CVFY HYD HYD SYS 1 LDG/NWS ISLN VLV CL IND	V58X0199E1	ON			LCC-3	HYD-08
	\$ APU GEARBOX GN2 SUPPLY CK \$						
009-04	CVFY APU APU 1 GN2 BOTTLE PRESS	V46P0152A1	115	NOHI	PSIA	LCC-3	APU-13
009-05	CVFY APU APU 2 GN2 BOTTLE PRESS	V46P0252A1	115	NOHI	PSIA	LCC-3	APU-13
009-06	CVFY APU APU 3 GN2 BOTTLE PRESS	V46P0352A1	115	NOHI	PSIA	LCC-3	APU-13
	\$ DPS STATUS CHECK \$						
010-00	CVFY DPS FF1 INPUT PROM SEG 1,2 BYPASS(MFE)	V91X2242XX	OFF			LCC-3	DPS-03
010-01	CVFY DPS FF2 INPUT PROM SEG 1,2 BYPASS(MFE)	V91X2243XX	OFF			LCC-3	DPS-03
010-02	CVFY DPS FF3 INPUT PROM SEG 1,2 BYPASS(MFE)	V91X2244XX	OFF			LCC-3	DPS-03
010-03	CVFY DPS FF4 INPUT PROM SEG 1,2 BYPASS(MFE)	V91X2245XX	OFF			LCC-3	DPS-03
010-04	CVFY DPS FF1 INPUT PROM SEG 2,6 BYPASS	V91X2246XX	OFF			LCC-3	DPS-03
010-05	CVFY DPS FF2 INPUT PROM SEG 2,6 BYPASS	V91X2247XX	OFF			LCC-3	DPS-03
010-06	CVFY DPS FF3 INPUT PROM SEG 2,6 BYPASS	V91X2248XX	OFF			LCC-3	DPS-03
010-07	CVFY DPS FF4 INPUT PROM SEG 2,6 BYPASS	V91X2249XX	OFF			LCC-3	DPS-03
010-08	CVFY DPS FF1 TACAN/RA BYPASS	V91X2253XX	OFF			LCC-3	DPS-17
010-09	CVFY DPS FF2 TACAN/RA BYPASS	V91X2254XX	OFF			LCC-3	DPS-17
010-10	CVFY DPS FF3 TACAN/RA BYPASS	V91X2255XX	OFF			LCC-3	DPS-17
010-11	CVFY DPS FF1 ADTA BYPASS	V91X2261XX	OFF			LCC-3	DPS-15
010-12	CVFY DPS FF2 ADTA BYPASS	V91X2262XX	OFF			LCC-3	DPS-15
010-13	CVFY DPS FF3 ADTA BYPASS	V91X2263XX	OFF			LCC-3	DPS-15

010-14	CVFY DPS	FF4 ADTA BYPASS	V91X2264XX	OFF	LCC-3	DPS-15
010-15	CVFY DPS	FF1 MTU BYPASS	V91X2277XX	OFF	LCC-3	DPS-16
010-16	CVFY DPS	FF2 MTU BYPASS	V91X2278XX	OFF	LCC-3	DPS-16
010-17	CVFY DPS	FF3 MTU BYPASS	V91X2279XX	OFF	LCC-3	DPS-16
010-18	CVFY DPS	FA1 INPUT PROM SEG 1,2 BYPASS(MFE)	V91X2802XX	OFF	LCC-3	DPS-03
010-19	CVFY DPS	FA2 INPUT PROM SEG 1,2 BYPASS(MFE)	V91X2803XX	OFF	LCC-3	DPS-03
010-20	CVFY DPS	FA3 INPUT PROM SEG 1,2 BYPASS(MFE)	V91X2804XX	OFF	LCC-3	DPS-03
010-21	CVFY DPS	FA4 INPUT PROM SEG 1,2 BYPASS(MFE)	V91X2805XX	OFF	LCC-3	DPS-03
010-22	CVFY DPS	FA1 INPUT PROM SEG3-10 BYPASS(HFE)	V91X2806XX	OFF	LCC-3	DPS-03
010-23	CVFY DPS	FA2 INPUT PROM SEG3-10 BYPASS(HFE)	V91X2807XX	OFF	LCC-3	DPS-03
010-24	CVFY DPS	FA3 INPUT PROM SEG3-10 BYPASS(HFE)	V91X2808XX	OFF	LCC-3	DPS-03
010-25	CVFY DPS	FA4 INPUT PROM SEG3-10 BYPASS(HFE)	V91X2809XX	OFF	LCC-3	DPS-03
010-26	CVFY DPS	FF1 NSP DISCRETES BYPASS	V91X2900XX	OFF	LCC-3	DPS-14
010-27	CVFY DPS	FF3 NSP DISCRETES BYPASS	V91X2901XX	OFF	LCC-3	DPS-14
010-28	CVFY DPS	FF1 NSP DATA BYPASS	V91X2902XX	OFF	1 OF 2	DPS-14
010-29	CVFY DPS	FF3 NSP DATA BYPASS	V91X2903XX	OFF	LCC-3	DPS-14
010-30	CVFY DPS	FF1 MDM RETURN WORD BYPASS(HFE)	V91X2904XX	OFF	LCC-3	DPS-03
010-31	CVFY DPS	FF2 MDM RETURN WORD BYPASS(HFE)	V91X2905XX	OFF	LCC-3	DPS-03
010-32	CVFY DPS	FF3 MDM RETURN WORD BYPASS(HFE)	V91X2906XX	OFF	LCC-3	DPS-03
010-33	CVFY DPS	FF4 MDM RETURN WORD BYPASS(HFE)	V91X2907XX	OFF	LCC-3	DPS-03
010-34	CVFY DPS	FA2 HYDR SYS 3 PRESS C BYPASS	V91X2917XX	OFF	LCC-3	DPS-03
010-35	CVFY DPS	FA3 OMS CHAMBER PRESS LEFT BYPASS	V91X2918XX	OFF	LCC-3	DPS-03
010-36	CVFY DPS	FA4 OMS CHAMBER PRESS RIGHT BYPASS	V91X2919XX	OFF	LCC-3	DPS-03
010-37	CVFY DPS	FA1 MDM RETURN WORD BYPASS(HFE)	V91X2920XX	OFF	LCC-3	DPS-03
010-38	CVFY DPS	FA2 MDM RETURN WORD BYPASS(HFE)	V91X2921XX	OFF	LCC-3	DPS-03
010-39	CVFY DPS	FA3 MDM RETURN WORD BYPASS(HFE)	V91X2922XX	OFF	LCC-3	DPS-03
010-40	CVFY DPS	FA4 MDM RETURN WORD BYPASS(HFE)	V91X2923XX	OFF	LCC-3	DPS-03
010-41	CVFY DPS	GPC 1 TIME SOURCE GPC/MTU	V91X1716XX	ON	LCC-3	DPS-10
010-42	CVFY DPS	GPC 2 TIME SOURCE GPC/MTU	V91X1717XX	ON	LCC-3	DPS-10
010-43	CVFY DPS	GPC 3 TIME SOURCE GPC/MTU	V91X1718XX	ON	LCC-3	DPS-10
010-44	CVFY DPS	GPC 4 TIME SOURCE GPC/MTU	V91X1719XX	ON	LCC-3	DPS-10

\$ FOR THE FOLLOWING FOUR STEPS, ANY FAULT \$
\$ FROM SOURCE 1 WILL RESULT IN A HOLD \$

010-45	CVFY DPS	GPC 1 TMP SOURCE	V91Q1710CX	B001	LCC-3	DPS-10
010-46	CVFY DPS	GPC 2 TMP SOURCE	V91Q1711CX	B001	LCC-3	DPS-10
010-47	CVFY DPS	GPC 3 TMP SOURCE	V91Q1712CX	B001	LCC-3	DPS-10
010-48	CVFY DPS	GPC 4 TMP SOURCE	V91Q1713CX	B001	LCC-3	DPS-10
010-49	CVFY DPS	GPC 1 MM1 READY DI06	V92X7368XX	ON	3 OF 4	DPS-07
010-50	CVFY DPS	GPC 2 MM1 READY DI06	V92X7428XX	ON	3 OF 4	DPS-07
010-51	CVFY DPS	GPC 3 MM1 READY DI06	V92X7488XX	ON	3 OF 4	DPS-07
010-52	CVFY DPS	GPC 4 MM1 READY DI06	V92X7548XX	ON	LCC-3	DPS-07
010-53	CVFY DPS	GPC 1 MM2 READY DI07	V92X7369XX	ON	3 OF 4	DPS-07
010-54	CVFY DPS	GPC 2 MM2 READY DI07	V92X7429XX	ON	3 OF 4	DPS-07
010-55	CVFY DPS	GPC 3 MM2 READY DI07	V92X7489XX	ON	3 OF 4	DPS-07
010-56	CVFY DPS	GPC 4 MM2 READY DI07	V92X7549XX	ON	LCC-3	DPS-07
010-57	CVFY DPS	GPC 1 BFS ENGAGE 1 DI35	V92X7381XX	OFF	11 OF 12	DPS-11
010-58	CVFY DPS	GPC 1 BFS ENGAGE 2 DI36	V92X7382XX	OFF	11 OF 12	DPS-11
010-59	CVFY DPS	GPC 1 BFS ENGAGE 3 DI37	V92X7383XX	OFF	11 OF 12	DPS-11
010-60	CVFY DPS	GPC 2 BFS ENGAGE 1 DI35	V92X7441XX	OFF	11 OF 12	DPS-11
010-61	CVFY DPS	GPC 2 BFS ENGAGE 2 DI36	V92X7442XX	OFF	11 OF 12	DPS-11

010-62	CVFY DPS	GPC 2 BFS ENGAGE 3 DI37	V92X7443XX	OFF		11 OF 12	DPS-11
010-63	CVFY DPS	GPC 3 BFS ENGAGE 1 DI35	V92X7501XX	OFF		11 OF 12	DPS-11
010-64	CVFY DPS	GPC 3 BFS ENGAGE 2 DI36	V92X7502XX	OFF		11 OF 12	DPS-11
010-65	CVFY DPS	GPC 3 BFS ENGAGE 3 DI37	V92X7503XX	OFF		11 OF 12	DPS-11
010-66	CVFY DPS	GPC 4 BFS ENGAGE 1 DI35	V92X7561XX	OFF		11 OF 12	DPS-11
010-67	CVFY DPS	GPC 4 BFS ENGAGE 2 DI36	V92X7562XX	OFF		11 OF 12	DPS-11
010-68	CVFY DPS	GPC 4 BFS ENGAGE 3 DI37	V92X7563XX	OFF		LCC-3	DPS-11

§ SRB ORDNANCE SYSTEMS STATUS CHECK §

011-00	CVFY BPYR LH VOLTAGE FWD THR PIN PIC CAP A	B55V1605C1	NOLO	1.5	V	LCC-3	BSEP-01
011-01	CVFY BPYR LH VOLTAGE FWD THR PIN PIC CAP B	B55V1606C1	NOLO	1.5	V	LCC-3	BSEP-01
011-02	CVFY BPYR RH VOLTAGE FWD THR PIN PIC CAP A	B55V2605C1	NOLO	1.5	V	LCC-3	BSEP-01
011-03	CVFY BPYR RH VOLTAGE FWD THR PIN PIC CAP B	B55V2606C1	NOLO	1.5	V	LCC-3	BSEP-01
011-04	CVFY BPYR RH VOLTAGE AFT UPR BRC PIC CAP A	B55V2607C1	NOLO	1.5	V	LCC-3	BSEP-01
011-05	CVFY BPYR RH VOLTAGE AFT UPR BRC PIC CAP B	B55V2608C1	NOLO	1.5	V	LCC-3	BSEP-01
011-06	CVFY BPYR RH VOLTAGE AFT MID BRC PIC CAP A	B55V2609C1	NOLO	1.5	V	LCC-3	BSEP-01
011-07	CVFY BPYR RH VOLTAGE AFT MID BRC PIC CAP B	B55V2610C1	NOLO	1.5	V	LCC-3	BSEP-01
011-08	CVFY BPYR RH VOLTAGE AFT LWR BRC PIC CAP A	B55V2611C1	NOLO	1.5	V	LCC-3	BSEP-01
011-09	CVFY BPYR RH VOLTAGE AFT LWR BRC PIC CAP B	B55V2612C1	NOLO	1.5	V	LCC-3	BSEP-01
011-10	CVFY BPYR LH VOLTAGE AFT UPR BRC PIC CAP A	B55V1607C1	NOLO	1.5	V	LCC-3	BSEP-01
011-11	CVFY BPYR LH VOLTAGE AFT UPR BRC PIC CAP B	B55V1608C1	NOLO	1.5	V	LCC-3	BSEP-01
011-12	CVFY BPYR LH VOLTAGE AFT MID BRC PIC CAP A	B55V1609C1	NOLO	1.5	V	LCC-3	BSEP-01
011-13	CVFY BPYR LH VOLTAGE AFT MID BRC PIC CAP B	B55V1610C1	NOLO	1.5	V	LCC-3	BSEP-01
011-14	CVFY BPYR LH VOLTAGE AFT LWR BRC PIC CAP A	B55V1611C1	NOLO	1.5	V	LCC-3	BSEP-01
011-15	CVFY BPYR LH VOLTAGE AFT LWR BRC PIC CAP B	B55V1612C1	NOLO	1.5	V	LCC-3	BSEP-01
011-16	CVFY BPYR LH VOLTAGE FWD SEPN MOT PIC CAP A	B55V1613C1	NOLO	1.5	V	LCC-3	BSEP-01
011-17	CVFY BPYR LH VOLTAGE FWD SEPN MOT PIC CAP B	B55V1614C1	NOLO	1.5	V	LCC-3	BSEP-01
011-18	CVFY BPYR RH VOLTAGE FWD SEPN MOT PIC CAP A	B55V2613C1	NOLO	1.5	V	LCC-3	BSEP-01
011-19	CVFY BPYR RH VOLTAGE FWD SEPN MOT PIC CAP B	B55V2614C1	NOLO	1.5	V	LCC-3	BSEP-01
011-20	CVFY BPYR LH VOLTAGE AFT SEPN MOT PIC CAP A	B55V1615C1	NOLO	1.5	V	LCC-3	BSEP-01
011-21	CVFY BPYR LH VOLTAGE AFT SEPN MOT PIC CAP B	B55V1616C1	NOLO	1.5	V	LCC-3	BSEP-01
011-22	CVFY BPYR RH VOLTAGE AFT SEPN MOT PIC CAP A	B55V2615C1	NOLO	1.5	V	LCC-3	BSEP-01
011-23	CVFY BPYR RH VOLTAGE AFT SEPN MOT PIC CAP B	B55V2616C1	NOLO	1.5	V	LCC-3	BSEP-01
011-24	CVFY BPYR LH VOLTAGE MN CHUTE DISC PIC CAP	B55V1620C1	NOLO	1.5	V	LCC-3	BREC-01
011-25	CVFY BPYR RH VOLTAGE MN CHUTE DISC PIC CAP	B55V2620C1	NOLO	1.5	V	LCC-3	BREC-01
011-26	CVFY BPYR LH VOLTAGE NOZ EXT SEV PIC CAP	B55V1619C1	NOLO	1.5	V	LCC-3	BREC-02
011-27	CVFY BPYR RH VOLTAGE NOZ EXT SEV PIC CAP	B55V2619C1	NOLO	1.5	V	LCC-3	BREC-02
011-28	CVFY BPYR LH VOLTAGE NOSE CAP RLSE PIC CAP	B55V1617C1	NOLO	1.5	V	LCC-3	BREC-02
011-29	CVFY BPYR RH VOLTAGE NOSE CAP RLSE PIC CAP	B55V2617C1	NOLO	1.5	V	LCC-3	BREC-02
011-30	CVFY BPYR LH VOLTAGE FRUSTUM RLSE PIC CAP	B55V1618C1	NOLO	1.5	V	LCC-3	BREC-02
011-31	CVFY BPYR RH VOLTAGE FRUSTUM RLSE PIC CAP	B55V2618C1	NOLO	1.5	V	LCC-3	BREC-02

§ EPDC STATUS CHECK §

012-00	CVFY EPDC AC BUS 1 PHASE A VOLT	V76V1500A1	115	120	VAC	LCC-3	EPDC-03
012-01	CVFY EPDC AC BUS 1 PHASE B VOLT	V76V1501A1	115	120	VAC	LCC-3	EPDC-03
012-02	CVFY EPDC AC BUS 1 PHASE C VOLT	V76V1502A1	115	120	VAC	LCC-3	EPDC-03
012-03	CVFY EPDC AC BUS 2 PHASE A VOLT	V76V1600A1	115	120	VAC	LCC-3	EPDC-03
012-04	CVFY EPDC AC BUS 2 PHASE B VOLT	V76V1601A1	115	120	VAC	LCC-3	EPDC-03
012-05	CVFY EPDC AC BUS 2 PHASE C VOLT	V76V1602A1	115	120	VAC	LCC-3	EPDC-03
012-06	CVFY EPDC AC BUS 3 PHASE A VOLT	V76V1700A1	115	120	VAC	LCC-3	EPDC-03
012-07	CVFY EPDC AC BUS 3 PHASE B VOLT	V76V1701A1	115	120	VAC	LCC-3	EPDC-03

012-08	CVFY EPDC AC BUS 3 PHASE C VOLT	V76V1702A1	115	120	VAC	LCC-3	EPDC-03
012-09	CVFY EPDC AC BUS 1 PHASE A CURRENT	V76C1540A1	0.16	9.6	AMP	LCC-3	EPDC-04
012-10	CVFY EPDC AC BUS 1 PHASE B CURRENT	V76C1541A1	0.16	9.6	AMP	LCC-3	EPDC-04
012-11	CVFY EPDC AC BUS 1 PHASE C CURRENT	V76C1542A1	0.16	9.6	AMP	LCC-3	EPDC-04
012-12	CVFY EPDC AC BUS 2 PHASE A CURRENT	V76C1640A1	0.16	9.6	AMP	LCC-3	EPDC-04
012-13	CVFY EPDC AC BUS 2 PHASE B CURRENT	V76C1641A1	0.16	9.6	AMP	LCC-3	EPDC-04
012-14	CVFY EPDC AC BUS 2 PHASE C CURRENT	V76C1642A1	0.16	9.6	AMP	LCC-3	EPDC-04
012-15	CVFY EPDC AC BUS 3 PHASE A CURRENT	V76C1740A1	0.16	9.6	AMP	LCC-3	EPDC-04
012-16	CVFY EPDC AC BUS 3 PHASE B CURRENT	V76C1741A1	0.16	9.6	AMP	LCC-3	EPDC-04
012-17	CVFY EPDC AC BUS 3 PHASE C CURRENT	V76C1742A1	0.16	9.6	AMP	LCC-3	EPDC-04
012-18	CVFY EPDC MAIN BUS A VOLTAGE	V76V0100A1	28.3	32.0	V	LCC-3	EPDC-01
012-19	CVFY FCP FUEL CELL NO 1 VOLTAGE	V45V0100A1	28.3	32.0	V	LCC-3	EPDC-01
012-20	CVFY EPDC MAIN BUS B VOLTAGE	V76V0200A1	28.3	32.0	V	LCC-3	EPDC-01
012-21	CVFY FCP FUEL CELL NO 2 VOLTAGE	V45V0200A1	28.3	32.0	V	LCC-3	EPDC-01
012-22	CVFY EPDC MAIN BUS C VOLTAGE	V76V0300A1	28.3	32.0	V	LCC-3	EPDC-01
012-23	CVFY FCP FUEL CELL NO 3 VOLTAGE	V45V0300A1	28.3	32.0	V	LCC-3	EPDC-01
012-24	CVFY EPDC L SRB BUS A BU PWR ON	V76X6775E1	OFF			LCC-3	EPDC-05
012-25	CVFY EPDC R SRB BUS A BU PWR ON	V76X6776E1	OFF			LCC-3	EPDC-05
012-26	CVFY EPDC L SRB BUS B BU PWR ON	V76X6777E1	OFF			LCC-3	EPDC-05
012-27	CVFY EPDC R SRB BUS B BU PWR ON	V76X6778E1	OFF			LCC-3	EPDC-05
012-28	CVFY EPDC MAIN BUS A CONT BUS AB2/CA2 RPC ON	V76X0125E1	ON			LCC-4	EPDC-02
012-29	CVFY EPDC MAIN BUS B CONT BUS AB2/BC2 RPC ON	V76X0225E1	ON			LCC-4	EPDC-02
012-30	CVFY EPDC MAIN BUS C CONT BUS BC2/CA2 RPC ON	V76X0325E1	ON			LCC-4	EPDC-02
012-31	CVFY EPDC MAIN BUS A CONT BUS AB3/CA3 RPC ON	V76X0126E1	ON			LCC-4	EPDC-02
012-32	CVFY EPDC MAIN BUS B CONT BUS AB3/BC3 RPC ON	V76X0226E1	ON			LCC-4	EPDC-02
012-33	CVFY EPDC MAIN BUS C CONT BUS BC3/CA3 RPC ON	V76X0326E1	ON			LCC-4	EPDC-02
012-34	CVFY EPDC MAIN BUS B CONT BUS AB1/BC1 RPC ON	V76X0224E1	ON			LCC-4	EPDC-02
012-35	CVFY EPDC MAIN BUS C CONT BUS BC1/CA1 RPC ON	V76X0324E1	ON			LCC-4	EPDC-02
012-36	CVFY EPDC MAIN BUS A CONT BUS AB1/CA1 RPC ON	V76X0124E1	ON			LCC-4	EPDC-02
012-37	CVFY EPDC MAIN BUS B ESS 1BC RPC ON	V76X0236E1	ON			5 OF 6	EPDC-06
012-38	CVFY EPDC MAIN BUS C ESS 1BC RPC ON	V76X0335E1	ON			5 OF 6	EPDC-06
012-39	CVFY EPDC MAIN BUS C ESS 2CA RPC ON	V76X0336E1	ON			5 OF 6	EPDC-06
012-40	CVFY EPDC MAIN BUS A ESS 2CA RPC ON	V76X0136E1	ON			5 OF 6	EPDC-06
012-41	CVFY EPDC MAIN BUS A ESS 3AB RPC ON	V76X0135E1	ON			5 OF 6	EPDC-06
012-42	CVFY EPDC MAIN BUS B ESS 3AB RPC ON	V76X0235E1	ON			LCC-3	EPDC-06
012-43	CVFY EPDC MEC 1 CORE B RPC B ON	V76X4395E1	ON			LCC-3	EPDC-08
012-44	CVFY EPDC MEC 1 CORE B RPC C ON	V76X4396E1	ON			LCC-3	EPDC-08
012-45	CVFY EPDC MEC 2 CORE B RPC A ON	V76X4397E1	ON			LCC-3	EPDC-08
012-46	CVFY EPDC MEC 2 CORE B RPC C ON	V76X4398E1	ON			LCC-3	EPDC-08
012-47	CVFY EPDC AVN FEXT AV BAY 3A PYRO CAP VOLT	V76V4700A1	NOLO	1.5	V	LCC-3	EPDC-11
012-48	CVFY EPDC AVN FEXT AV BAY 2 PYRO CAP VOLT	V76V4716A1	NOLO	1.5	V	LCC-3	EPDC-11
012-49	CVFY EPDC AVN FEXT AV BAY 1 PYRO CAP VOLT	V76V4736A1	NOLO	1.5	V	LCC-3	EPDC-11
012-50	CVFY EPDC NLG PYRO EXTEND ACTR-CAP VOLT-1	V76V4820A1	NOLO	1.5	V	LCC-3	EPDC-12
012-51	CVFY EPDC NLG PYRO EXTEND ACTR-CAP VOLT-2	V76V4821A1	NOLO	1.5	V	LCC-3	EPDC-12
012-52	CVFY EPDC NLG EMER EXT PYRO A CAP VOLT	V76V4830A1	NOLO	1.5	V	LCC-3	EPDC-12
012-53	CVFY EPDC NLG EMER EXT PYRO B CAP VOLT	V76V4832A1	NOLO	1.5	V	LCC-3	EPDC-12
012-54	CVFY EPDC LMG EMER EXT PYRO A CAP VOLT	V76V4900A1	NOLO	1.5	V	LCC-3	EPDC-12
012-55	CVFY EPDC LMG EMER EXT PYRO B CAP VOLT	V76V4902A1	NOLO	1.5	V	LCC-3	EPDC-12
012-56	CVFY EPDC RMG EMER EXT PYRO A CAP VOLT	V76V4950A1	NOLO	1.5	V	LCC-3	EPDC-12
012-57	CVFY EPDC RMG EMER EXT PYRO B CAP VOLT	V76V4952A1	NOLO	1.5	V	LCC-3	EPDC-12

\$ APPLICABLE ONLY ON MISSIONS REQUIRING \$
 \$ PAYLOAD ORBITER POWER - NEXT 4 STEPS \$

\$ ORBITER PAYLOAD POWER SUPPLY \$

012-58	CVFY EPDC	PAYLOAD AUX RPC A ON	V76X2868E1 ON			LCC-3	PAY-02
012-59	CVFY EPDC	PAYLOAD AUX RPC B ON	V76X2869E1 ON			LCC-3	PAY-02
012-60	CVFY EPDC	PAYLOAD AFT MAIN B PWR-ON	V76X2810E1 ON			LCC-3	PAY-03
012-61	CVFY EPDC	PAYLOAD AFT MAIN C PWR-ON	V76X2821E1 ON			LCC-3	PAY-03

\$ ET SEP DISCRETE CHECK \$

012-62	CVFY EPDC	ET SEPARATION A	V76X9111X1 OFF			1 OF 2	EPDC-13
012-63	CVFY EPDC	ET SEPARATION C	V76X9113X1 OFF			AND	EPDC-13
012-64	CVFY EPDC	ET SEPARATION B	V76X9112X1 OFF			1 OF 2	EPDC-13
012-65	CVFY EPDC	ET SEPARATION D	V76X9114X1 OFF			LCC-4	EPDC-13

\$ ORB DRAG CHUTE PYRO VOLT CHECK \$

012-70	CVFY EPDC	DRAG CHUTE DEPLOY 1 CAP VOLTS	V76V0940A1 NOLO	1.5	VDC	LCC-3	EPDC-14
012-71	CVFY EPDC	DRAG CHUTE DEPLOY 2 CAP VOLTS	V76V0946A1 NOLO	1.5	VDC	LCC-3	EPDC-14

\$ COMM STATUS CHECK \$

013-00	CVFY COMM	NSP FRAME SYNC LOCK 1	V74X5176E1 ON			1 OF 2	CT-04
013-01	CVFY COMM	NSP FRAME SYNC LOCK 2	V74X5177E1 ON			LCC-3	CT-04
013-02	CVFY COMM	GCIL ACTIVE	V74X5052E1 ON			LCC-3	CT-03

\$ INSTRUMENTATION STATUS CHECK \$

014-00	CVFY INST	PCM UNIT POWER STATUS GOOD PCM-BSR	V75X2121D1 ON			LCC-3	INS-01
014-01	CVFY INST	MTU GOOD PCM-BSR	V75X2122D1 ON			LCC-3	INS-01
014-02	CVFY INST	FETCH PROM PARITY GOOD PCM-BSR	V75X2123D1 ON			LCC-3	INS-01
014-03	CVFY INST	128 KBPS TLM DOWNLINK GOOD PCM-BSR	V75X2124D1 ON			LCC-3	INS-01
014-04	CVFY INST	128 KBPS TLM PARITY GOOD PCM-BSR	V75X2126D1 ON			LCC-3	INS-01
014-05	CVFY INST	128 KBPS TLM COUNTERS GOOD PCM-BSR	V75X2127D1 ON			LCC-3	INS-01
014-06	CVFY INST	INPUT DATA VALID PCM-BSR	V75X2130D1 ON			LCC-3	INS-01
014-07	CVFY INST	OI RAM PARITY GOOD PCM-BSR	V75X2131D1 ON			LCC-3	INS-01
014-08	CVFY INST	PDI RAM PARITY GOOD PCM-BSR	V75X2132D1 ON			LCC-3	INS-01
014-09	CVFY INST	TOGGLE BUFFER PARITY GOOD PCM-BSR	V75X2133D1 ON			LCC-3	INS-01
014-10	CVFY INST	NO RESPONSE COMPUTER BUS PCM-BSR	V75X2134D1 ON			LCC-3	INS-01
014-11	CVFY INST	MTU-PCM VOTED OSC NO 1 AMPTD FAIL	V75X3542D1 OFF			LCC-3	INS-03
014-12	CVFY INST	MTU-PCM VOTED OSC NO 2 AMPTD FAIL	V75X3543D1 OFF			LCC-3	INS-03
014-13	CVFY INST	MTU-PCM VOTED OSC FREQ DIFF FAIL	V75X3544D1 OFF			LCC-3	INS-03
014-14	CVFY INST	MTU-PCM VOTED OSC NO 1 TEMP FAIL	V75X3545D1 OFF			LCC-3	INS-03
014-15	CVFY INST	MTU-PCM VOTED OSC NO 2 TEMP FAIL	V75X3546D1 OFF			LCC-3	INS-03
014-16	CVFY INST	MTU-PCM VOTED PS 1 VOLT AMPTD FAIL	V75X3547D1 OFF			1 OF 2	INS-03
014-17	CVFY INST	MTU-PCM VOTED PS 2 VOLT AMPTD FAIL	V75X3548D1 OFF			LCC-3	INS-03
014-18	CVFY INST	MTU-PCM VOTED CMD CHANNEL A FAIL	V75X3549D1 OFF			2 OF 3	INS-03
014-19	CVFY INST	MTU-PCM VOTED CMD CHANNEL B FAIL	V75X3550D1 OFF			2 OF 3	INS-03
014-20	CVFY INST	MTU-PCM VOTED CMD CHANNEL C FAIL	V75X3551D1 OFF			LCC-3	INS-03
014-21	CVFY INST	MTU-PCM VOTED ANY IRIG B CHAN FAIL	V75X3552D1 OFF			LCC-3	INS-03
014-22	CVFY INST	MTU-PCM VOTED FREQ DIVIDER 1 FAIL	V75X3553D1 OFF			LCC-3	INS-03
014-23	CVFY INST	MTU-PCM VOTED FREQ DIVIDER 2 FAIL	V75X3554D1 OFF			LCC-3	INS-03
014-24	CVFY INST	MTU-PCM VOTED FREQ DIVIDER 3 FAIL	V75X3555D1 OFF			LCC-3	INS-03

014-48	CVFY INST PCM DYNAMIC WRAPAROUND MDM OF01A	D75V4020A1	X55/AA			LCC-3	INS-05
014-49	CVFY INST PCM DYNAMIC WRAPAROUND MDM OF01B	D75V4020B1	X55/AA			LCC-3	INS-05
014-50	CVFY INST PCM DYNAMIC WRAPAROUND MDM OF02A	D75V4021A1	X55/AA			LCC-3	INS-05
014-51	CVFY INST PCM DYNAMIC WRAPAROUND MDM OF02B	D75V4021B1	X55/AA			LCC-3	INS-05
014-52	CVFY INST PCM DYNAMIC WRAPAROUND MDM OF03A	D75V4022A1	X55/AA			LCC-3	INS-05
014-53	CVFY INST PCM DYNAMIC WRAPAROUND MDM OF03B	D75V4022B1	X55/AA			LCC-3	INS-05
014-54	CVFY INST PCM DYNAMIC WRAPAROUND MDM OF04A	D75V4023A1	X55/AA			LCC-3	INS-05
014-55	CVFY INST PCM DYNAMIC WRAPAROUND MDM OF04B	D75V4023B1	X55/AA			LCC-3	INS-05
014-56	CVFY INST PCM DYNAMIC WRAPAROUND MDM OA01A	D75V4024A1	X55/AA			LCC-3	INS-05
014-57	CVFY INST PCM DYNAMIC WRAPAROUND MDM OA01B	D75V4024B1	X55/AA			LCC-3	INS-05
014-58	CVFY INST PCM DYNAMIC WRAPAROUND MDM OA02A	D75V4025A1	X55/AA			LCC-3	INS-05
014-59	CVFY INST PCM DYNAMIC WRAPAROUND MDM OA02B	D75V4025B1	X55/AA			LCC-3	INS-05
014-60	CVFY INST PCM DYNAMIC WRAPAROUND MDM OA03A	D75V4026A1	X55/AA			LCC-3	INS-05
014-61	CVFY INST PCM DYNAMIC WRAPAROUND MDM OA03B	D75V4026B1	X55/AA			LCC-3	INS-05
014-62	CVFY INST C/W MASTER ALARM TLM OUTPUT	V73X1567E1	OFF			LCC-3	INS-06

\$ ENVIRONMENTAL CONTROL STATUS CHECK \$

015-00	CVFY ECLS O2 PARTIAL PRESSURE-A	V61P2511A1	2.8	3.4	PSIA	2 OF 3	ECL-06
015-01	CVFY ECLS O2 PARTIAL PRESSURE-B	V61P2513A1	2.8	3.4	PSIA	2 OF 3	ECL-06
015-02	CVFY ECLS O2 PARTIAL PRESSURE-C	V61P2515A1	2.8	3.4	PSIA	LCC-1	ECL-06
015-03	CVFY ECLS CABIN FAN DELTA PRESS	V61P2556A1	4.2	6.8	INH2O	LCC-3	ECL-07
015-04	CVFY ECLS H2O LOOP 1 PUMP OUTLET PRESS	V61P2600A1	55	73	PSIA	1 OF 3	ECL-09
015-05	CVFY ECLS H2O LOOP 1 INTERCHANGER FLOW	V61R2742A1	649	NOHI	LBM/HR	1 OF 3	ECL-09
015-06	CVFY ECLS H2O LOOP 1 PUMP DELTA PRESS	V61P2605A1	33	46	PSID	OR	ECL-09
015-07	CVFY ECLS H2O LOOP 2 PUMP OUTLET PRESS	V61P2700A1	55	73	PSIA	1 OF 3	ECL-09
015-08	CVFY ECLS H2O LOOP 2 INTERCHANGER FLOW	V61R2722A1	649	NOHI	LBM/HR	1 OF 3	ECL-09
015-09	CVFY ECLS H2O LOOP 2 PUMP DELTA PRESS	V61P2705A1	33	46	PSID	LCC-4	ECL-09
015-10	CVFY ECLS LOOP 1 AVNS BAY 1 HX OUTLET TEMP	V61T2615A1	NOLO	108	DEGF	LCC-3	ECL-10
015-11	CVFY ECLS LOOP 2 AVNS BAY 1 HX OUTLET TEMP	V61T2616A1	NOLO	108	DEGF	LCC-3	ECL-10
015-12	CVFY ECLS AVNS BAY 1 OUTLET AIR TEMP	V61T2645A1	NOLO	130	DEGF	LCC-3	ECL-10
015-13	CVFY ECLS AVIONICS BAY 1 DELTA PRESS	V61P2642A1	2.60	4.30	INH2O	LCC-3	ECL-10
015-14	CVFY ECLS LOOP 1 AVNS BAY 1 H2O OUTLET TEMP	V61T2624A1	NOLO	120	DEGF	LCC-3	ECL-10
015-15	CVFY ECLS LOOP 2 AVNS BAY 1 H2O OUTLET TEMP	V61T2625A1	NOLO	120	DEGF	LCC-3	ECL-10
015-16	CVFY ECLS LOOP 1 AVNS BAY 2 HX OUTLET TEMP	V61T2618A1	NOLO	108	DEGF	LCC-3	ECL-10
015-17	CVFY ECLS LOOP 2 AVNS BAY 2 HX OUTLET TEMP	V61T2619A1	NOLO	108	DEGF	LCC-3	ECL-10
015-18	CVFY ECLS AVNS BAY 2 OUTLET AIR TEMP	V61T2650A1	NOLO	130	DEGF	LCC-3	ECL-10
015-19	CVFY ECLS AVIONICS BAY 2 DELTA PRESS	V61P2647A1	2.60	4.30	INH2O	LCC-3	ECL-10
015-20	CVFY ECLS LOOP 1 AVNS BAY 2 H2O OUTLET TEMP	V61T2627A1	NOLO	120	DEGF	LCC-3	ECL-10
015-21	CVFY ECLS LOOP 2 AVNS BAY 2 H2O OUTLET TEMP	V61T2628A1	NOLO	120	DEGF	LCC-3	ECL-10
015-22	CVFY ECLS LOOP 1 AVNS BAY 3 HX OUT TEMP	V61T2621A1	NOLO	108	DEGF	LCC-3	ECL-10
015-23	CVFY ECLS LOOP 2 AVNS BAY 3 HX OUT TEMP	V61T2622A1	NOLO	108	DEGF	LCC-3	ECL-10
015-24	CVFY ECLS AVNS BAY 3 OUTLET AIR TEMP	V61T2661A1	NOLO	130	DEGF	LCC-3	ECL-10
015-25	CVFY ECLS AVIONICS BAY 3 DELTA PRESS	V61P2658A1	2.60	4.30	INH2O	LCC-3	ECL-10
015-26	CVFY ECLS LOOP 1 AVNS BAY 3A H2O OUTLET TEMP	V61T2630A1	NOLO	120	DEGF	LCC-3	ECL-10
015-27	CVFY ECLS LOOP 2 AVNS BAY 3A H2O OUTLET TEMP	V61T2631A1	NOLO	120	DEGF	LCC-3	ECL-10
015-28	CVFY ECLS IMU DELTA PRESS	V61P2869A1	3.7	4.95	INH2O	LCC-2	ECL-11
015-29	CVFY ECLS SMOKE DET-RTN AIR TO CAB HX	V62X0596E1	OFF			LCC-4	ECL-31
015-30	CVFY ECLS SMOKE DETECTOR-LEFT FLIGHT DECK	V62X0606E1	OFF			LCC-4	ECL-31
015-31	CVFY ECLS SMOKE DETECTOR-RIGHT FLIGHT DECK	V62X0607E1	OFF			LCC-4	ECL-31
015-32	CVFY ECLS SMOKE DETECTOR-A AV BAY-2	V62X0610E1	OFF			LCC-4	ECL-33
015-33	CVFY ECLS SMOKE DETECTOR-B AV BAY-2	V62X0611E1	OFF			LCC-4	ECL-33

015-34	CVFY ECLS FIRE BOTTLE AV BAY 1 FULL/EMPTY	V62X0612E1	OFF				LCC-3	ECL-34
015-35	CVFY ECLS SMOKE DETECTOR-A AV BAY-1	V62X0620E1	OFF				LCC-4	ECL-33
015-36	CVFY ECLS SMOKE DETECTOR-B AV BAY-1	V62X0621E1	OFF				LCC-4	ECL-33
015-37	CVFY ECLS FIRE BOTTLE AV BAY 2 FULL/EMPTY	V62X0622E1	OFF				LCC-3	ECL-34
015-38	CVFY ECLS SMOKE DETECTOR-A AV BAY 3	V62X0630E1	OFF				LCC-4	ECL-33
015-39	CVFY ECLS SMOKE DETECTOR-B AV BAY 3	V62X0631E1	OFF				LCC-4	ECL-33
015-40	CVFY ECLS FIRE BOTTLE AV BAY 3 FULL/EMPTY	V62X0632E1	OFF				LCC-3	ECL-34
015-47	CVFY ECLS FCL 1 INTERCHANGER FLOWRATE	V63R1100A1	2150	NOHI	LBM/HR	2 OF 3		ECL-40
015-48	CVFY ECLS FCL 1 PAYLOAD HX FLOWRATE	V63R1103A1	1090	NOHI	LBM/HR	2 OF 3		ECL-40
015-49	CVFY ECLS FCL 1 COLDPLATE NETWORK FLOWRATE	V63R1105A1	265	NOHI	LBM/HR	LCC-4		ECL-40
015-50	CVFY ECLS FCL 1 PUMP INLET PRESS	V63P1108A1	92	117	PSIA	LCC-4		ECL-41
015-51	CVFY ECLS FCL 1 ACCUMULATOR QUANTITY	V63Q11130A1	23	39	PCT	LCC-4		ECL-41
015-52	CVFY ECLS NH3 SYS A TANK TEMP	V63T1180A1	-50	170	DEGF	LCC-1		ECL-42
015-53	CVFY ECLS NH3 SYS B TANK TEMP	V63T1188A1	-50	170	DEGF	LCC-1		ECL-42
015-54	CVFY ECLS NH3 SYS A TANK PRESS	V63P1196A1	5	505	PSIA	LCC-1		ECL-42
015-55	CVFY ECLS NH3 SYS B TANK PRESS	V63P1197A1	5	505	PSIA	LCC-1		ECL-42
015-56	CVFY ECLS FCL 1 EVAP OUT TEMP	V63T1207A1	33	50	DEGF	LCC-3		ECL-43
015-57	CVFY ECLS FCL 2 EVAP OUT TEMP	V63T1407A1	33	50	DEGF	LCC-3		ECL-43
015-58	CVFY ECLS FCL 2 INTERCHANGER FLOWRATE	V63R1300A1	2150	NOHI	LBM/HR	2 OF 3		ECL-40
015-59	CVFY ECLS FCL 2 PAYLOAD HX FLOWRATE	V63R1303A1	1090	NOHI	LBM/HR	2 OF 3		ECL-40
015-60	CVFY ECLS FCL 2 COLDPLATE NETWORK FLOWRATE	V63R1305A1	265	NOHI	LBM/HR	LCC-4		ECL-40
015-61	CVFY ECLS FCL 2 PUMP INLET PRESS	V63P1308A1	77	100	PSIA	LCC-4		ECL-41
015-62	CVFY ECLS FCL 2 ACCUMULATOR QUANTITY	V63Q1330A1	23	39	PCT	LCC-4		ECL-41
015-63	CVFY ECLS FCL 1 INTERCHANGER FLOWRATE	V63R1100A1	2150	NOHI	LBM/HR	1 OF 2		ECL-40
015-64	CVFY ECLS FCL 2 INTERCHANGER FLOWRATE	V63R1300A1	2150	NOHI	LBM/HR	LCC-4		ECL-40

\$ SSME LEAK CHECK MONITORING \$

016-00	CVFY SSME ME-1 OPOV LOX SUPPLY LINE TEMP #1	E41T1151A1	-40	NOHI	DEGF	LCC-3		SSME-01
016-01	CVFY SSME ME-1 OPOV LOX SUPPLY LINE TEMP #2	E41T1152A1	-40	NOHI	DEGF	LCC-3		SSME-01
016-02	CVFY SSME ME-2 OPOV LOX SUPPLY LINE TEMP #1	E41T2151A1	-40	NOHI	DEGF	LCC-3		SSME-01
016-03	CVFY SSME ME-2 OPOV LOX SUPPLY LINE TEMP #2	E41T2152A1	-40	NOHI	DEGF	LCC-3		SSME-01
016-04	CVFY SSME ME-3 OPOV LOX SUPPLY LINE TEMP #1	E41T3151A1	-40	NOHI	DEGF	LCC-3		SSME-01
016-05	CVFY SSME ME-3 OPOV LOX SUPPLY LINE TEMP #2	E41T3152A1	-40	NOHI	DEGF	LCC-3		SSME-01
016-06	CVFY SSME ME-1 MFV DOWNSTREAM TEMP #1	E41T1153A1	-170	NOHI	DEGF	LCC-3	T-75	SSME-02
016-07	CVFY SSME ME-1 MFV DOWNSTREAM TEMP #2	E41T1154A1	-170	NOHI	DEGF	LCC-3	T-75	SSME-02
016-08	CVFY SSME ME-2 MFV DOWNSTREAM TEMP #1	E41T2153A1	-170	NOHI	DEGF	LCC-3	T-75	SSME-02
016-09	CVFY SSME ME-2 MFV DOWNSTREAM TEMP #2	E41T2154A1	-170	NOHI	DEGF	LCC-3	T-75	SSME-02
016-10	CVFY SSME ME-3 MFV DOWNSTREAM TEMP #1	E41T3153A1	-170	NOHI	DEGF	LCC-3	T-75	SSME-02
016-11	CVFY SSME ME-3 MFV DOWNSTREAM TEMP #2	E41T3154A1	-170	NOHI	DEGF	LCC-3	T-75	SSME-02
016-12	CVFY SSME ME-1 AFV DOWNSTREAM TEMP #1	E41T1155A1	-160	NOHI	DEGF	LCC-3		SSME-04
016-13	CVFY SSME ME-1 AFV DOWNSTREAM TEMP #2	E41T1156A1	-160	NOHI	DEGF	LCC-3		SSME-04
016-14	CVFY SSME ME-2 AFV DOWNSTREAM TEMP #1	E41T2155A1	-160	NOHI	DEGF	LCC-3		SSME-04
016-15	CVFY SSME ME-2 AFV DOWNSTREAM TEMP #2	E41T2156A1	-160	NOHI	DEGF	LCC-3		SSME-04
016-16	CVFY SSME ME-3 AFV DOWNSTREAM TEMP #1	E41T3155A1	-110	NOHI	DEGF	LCC-3		SSME-04
016-17	CVFY SSME ME-3 AFV DOWNSTREAM TEMP #2	E41T3156A1	-110	NOHI	DEGF	LCC-3		SSME-04

\$ MPS LO2/LH2 VALVE DISCRETES STATUS \$

017-01	CVFY MPS MPS LH2 INBD F/D VLV CL PWR (LV35)	V41X1405E1	ON				LCC-3	MPS-04
017-02	CVFY MPS MPS LH2 INBD F/D VLV OP PWR (LV34)	V41X1406E1	OFF				LCC-3	MPS-04
017-03	CVFY MPS MPS LH2 17IN DISC VLV(PD2)OP IND A	V41X1429X1	ON			1 OF 2		MPS-14
017-04	CVFY MPS MPS LH2 17IN DISC VLV(PD2)OP IND B	V41X1445X1	ON				LCC-3	MPS-14

017-05	CVFY MPS	MPS LH2	17IN(PD2)LATCH LCKED	IND A	V41X1991X1	ON	1 OF 2	MPS-14
017-06	CVFY MPS	MPS LH2	17IN(PD2)LATCH LCKED	IND B	V41X1992X1	OFF	LCC-3	MPS-14
017-07	CVFY MPS	MPS LH2	17IN DISC VLV(PD2)CL	IND A	V41X1430X1	OFF	1 OF 2	MPS-16
017-08	CVFY MPS	MPS LH2	17IN DISC VLV(PD2)CL	IND B	V41X1434X1	OFF	LCC-3	MPS-16
017-09	CVFY MPS	MPS LH2	17IN(PD2)LTCH UNLCKD	IND A	V41X1993X1	OFF	LCC-3	MPS-16
017-10	CVFY MPS	MPS LH2	17IN(PD2)LTCH UNLCKD	IND B	V41X1994X1	OFF	LCC-3	MPS-16
017-11	CVFY MPS	MPS LH2	17IN DISC VLV OP PWR(LV48)		V41X1382E1	ON	2 OF 3	MPS-17
017-12	CVFY MPS	PCA-MPS	LH2 FEED D/V OP RPC B	ON	V76X4186E1	ON	2 OF 3	MPS-17
017-13	CVFY MPS	PCA-MPS	LH2 FEED D/V OP RPC C	ON	V76X4187E1	ON	LCC-3	MPS-17
017-14	CVFY MPS	MPS LH2	17IN DISC VLV CL PWR(LV49)		V41X1381E1	OFF	2 OF 3	MPS-17
017-15	CVFY MPS	PCA-MPS	LH2 FEED D/V CL RPC B	ON	V76X4189E1	OFF	2 OF 3	MPS-17
017-16	CVFY MPS	PCA-MPS	LH2 FEED D/V CL RPC C	ON	V76X4190E1	OFF	LCC-3	MPS-17
017-17	CVFY MPS	MPS LH2	17IN DISC LOCK PWR(LV67)		V41X1383E1	ON	2 OF 3	MPS-17
017-18	CVFY MPS	MPS-LH2	FD DISC LOCK VLV RPC B	ON	V76X4430E1	ON	2 OF 3	MPS-17
017-19	CVFY MPS	MPS-LH2	FD DISC LOCK VLV RPC C	ON	V76X4431E1	ON	LCC-3	MPS-17
017-20	CVFY MPS	MPS LH2	17IN DISC UNLOCK PWR(LV68)		V41X1384E1	OFF	2 OF 3	MPS-17
017-21	CVFY MPS	MPS-LH2	FD DISC UNLOCK V RPC B	ON	V76X4432E1	OFF	2 OF 3	MPS-17
017-22	CVFY MPS	MPS-LH2	FD DISC UNLOCK V RPC C	ON	V76X4433E1	OFF	LCC-3	MPS-17
017-23	CVFY MPS	MPS LH2	4IN DISC VLV CL PWR (LV51)		V41X1439E1	OFF	1 OF 2	MPS-32
017-24	CVFY MPS	MPS LH2	4IN DISC VLV OP PWR (LV50)		V41X1440E1	ON	LCC-3	MPS-32
017-25	CVFY MPS	MPS LO2	17IN DISC VLV(PD1)OP	IND A	V41X1529X1	ON	1 OF 2	MPS-13
017-26	CVFY MPS	MPS LO2	17IN DISC VLV(PD1)OP	IND B	V41X1545X1	ON	LCC-3	MPS-13
017-27	CVFY MPS	MPS LO2	17IN(PD1)LATCH LCKED	IND A	V41X1891X1	ON	1 OF 2	MPS-13
017-28	CVFY MPS	MPS LO2	17IN(PD1)LATCH LCKED	IND B	V41X1892X1	ON	LCC-3	MPS-13
017-29	CVFY MPS	MPS LO2	17IN DISC VLV(PD1)CL	IND A	V41X1530X1	OFF	1 OF 2	MPS-15
017-30	CVFY MPS	MPS LO2	17IN DISC VLV(PD1)CL	IND B	V41X1534X1	OFF	LCC-3	MPS-15
017-31	CVFY MPS	MPS LO2	17IN(PD1)LTCH UNLCKD	IND A	V41X1893X1	OFF	LCC-3	MPS-15
017-32	CVFY MPS	MPS LO2	17IN(PD1)LTCH UNLCKD	IND B	V41X1894X1	OFF	LCC-3	MPS-15
017-33	CVFY MPS	MPS LO2	17IN DISC VLV OP PWR(LV46)		V41X1807E1	ON	2 OF 3	MPS-18
017-34	CVFY MPS	PCA-MPS	LOX FEED D/V OP RPC B	ON	V76X4196E1	ON	2 OF 3	MPS-18
017-35	CVFY MPS	PCA-MPS	LOX FEED D/V OP RPC C	ON	V76X4197E1	ON	LCC-3	MPS-18
017-36	CVFY MPS	MPS LO2	17IN DISC VLV CL PWR(LV47)		V41X1806E1	OFF	2 OF 3	MPS-18
017-37	CVFY MPS	PCA-MPS	LOX FEED D/V CL RPC B	ON	V76X4199E1	OFF	2 OF 3	MPS-18
017-38	CVFY MPS	PCA-MPS	LOX FEED D/V CL RPC C	ON	V76X4200E1	OFF	LCC-3	MPS-18
017-39	CVFY MPS	MPS LO2	17IN DISC LOCK PWR(LV65)		V41X1808E1	ON	2 OF 3	MPS-18
017-40	CVFY MPS	MPS-LO2	FD DISC LOCK VLV RPC B	ON	V76X4420E1	ON	2 OF 3	MPS-18
017-41	CVFY MPS	MPS-LO2	FD DISC LOCK VLV RPC C	ON	V76X4421E1	ON	LCC-3	MPS-18
017-42	CVFY MPS	MPS LO2	17IN DISC UNLOCK PWR(LV66)		V41X1809E1	OFF	2 OF 3	MPS-18
017-43	CVFY MPS	MPS-LO2	FD DISC UNLOCK V RPC B	ON	V76X4422E1	OFF	2 OF 3	MPS-18
017-44	CVFY MPS	MPS-LO2	FD DISC UNLOCK V RPC C	ON	V76X4423E1	OFF	LCC-3	MPS-18
017-45	CVFY MPS	MPS LO2	FDDL RLF SOV (PV7) OP	IND	V41X1541E1	OFF	2 OF 3	MPS-19
017-46	CVFY MPS	MPS LO2	FDDL RLF SOV (PV7) CL	IND	V41X1542E1	ON	2 OF 3	MPS-19
017-47	CVFY MPS	MPS LO2	FDDL RLF SOV (PV7) CL	PWR	V41X1549E1	ON	LCC-3	MPS-19
017-48	CVFY MPS	MPS LH2	FDDL RLF SOV (PV8)OP	IND	V41X1441E1	OFF	2 OF 3	MPS-19
017-49	CVFY MPS	MPS LH2	FDDL RLF SOV (PV8)CL	IND	V41X1442E1	ON	2 OF 3	MPS-19
017-50	CVFY MPS	MPS LH2	FDDL RLF SOV (PV8)CL	PWR	V41X1449E1	ON	LCC-3	MPS-19
017-51	CVFY MPS	MPS LH2	RTL S OTBD DV (PV18) OP	PWR	V41X1911E1	OFF	2 OF 3	MPS-20
017-52	CVFY MPS	MPS LH2	RTL S OTBD DV (PV18) OP	IND	V41X1917E1	OFF	2 OF 3	MPS-20
017-53	CVFY MPS	MPS LH2	RTL S OTBD DV (PV18) CL	IND	V41X1919X1	ON	LCC-3	MPS-20
017-54	CVFY MPS	MPS LH2	RTL S INBD DV (PV17) OP	PWR	V41X1921E1	OFF	2 OF 3	MPS-20
017-55	CVFY MPS	MPS LH2	RTL S INBD DV (PV17) OP	IND	V41X1927E1	OFF	2 OF 3	MPS-20

017-56	CVFY MPS	MPS LH2 RTLS INBD DV (PV17) CL IND	V41X1929X1 ON	LCC-3	MPS-20
\$ PROPELLANT SENSOR CHECK \$					
017-57	CVFY MPS	MPS LO2 LEFT ECO SENSOR 1	V41X1555X1 WET	LCC-3	MPS-21
017-58	CVFY MPS	MPS LO2 LEFT ECO SENSOR 2	V41X1556X1 WET	LCC-3	MPS-21
017-59	CVFY MPS	MPS LO2 RIGHT ECO SENSOR 2	V41X1557X1 WET	LCC-3	MPS-21
017-60	CVFY MPS	MPS LO2 RIGHT ECO SENSOR 1	V41X1558X1 WET	LCC-3	MPS-21
017-61	CVFY MPS	ET-LH2 LOW LEVEL LIQ SENSOR NO 1	T41X1730X1 WET	LCC-3	MPS-22
017-62	CVFY MPS	ET-LH2 LOW LEVEL LIQ SENSOR NO 2	T41X1731X1 WET	LCC-3	MPS-22
017-63	CVFY MPS	ET-LH2 LOW LEVEL LIQ SENSOR NO 3	T41X1732X1 WET	LCC-3	MPS-22
017-64	CVFY MPS	ET-LH2 LOW LEVEL LIQ SENSOR NO 4	T41X1733X1 WET	LCC-3	MPS-22
017-65	CVFY MPS	MPS PT SENSOR ELEC RPC B ON	V76X3050E1 ON	1 OF 2	MPS-23
017-66	CVFY MPS	MPS PT SENSOR ELEC RPC C ON	V76X3055E1 ON	LCC-3	MPS-23
\$ MPS LH2 PREVALVE POWER STATUS \$					
017-67	CVFY MPS	MPS E1 LH2 PREVLV OP PWR (LV18)	V41X1103E1 OFF	2 OF 3	MPS-27
017-68	CVFY MPS	PCA-MPS LH2 PREVLV 1 OP RPC A ON	V76X4110E1 OFF	2 OF 3	MPS-27
017-69	CVFY MPS	PCA-MPS LH2 PREVLV 1 OP RPC B ON	V76X4111E1 OFF	LCC-3	MPS-27
017-70	CVFY MPS	MPS E1 LH2 PREVLV CL PWR (LV19)	V41X1102E1 ON	2 OF 3	MPS-27
017-71	CVFY MPS	PCA-MPS LH2 PREVLV 1 CL RPC A ON	V76X4113E1 ON	2 OF 3	MPS-27
017-72	CVFY MPS	PCA-MPS LH2 PREVLV 1 CL RPC B ON	V76X4114E1 ON	LCC-3	MPS-27
017-73	CVFY MPS	MPS E2 LH2 PREVLV OP PWR (LV20)	V41X1203E1 OFF	2 OF 3	MPS-29
017-74	CVFY MPS	PCA-MPS LH2 PREVLV 2 OP RPC B ON	V76X4116E1 OFF	2 OF 3	MPS-29
017-75	CVFY MPS	PCA-MPS LH2 PREVLV 2 OP RPC C ON	V76X4117E1 OFF	LCC-3	MPS-29
017-76	CVFY MPS	MPS E2 LH2 PREVLV CL PWR (LV21)	V41X1202E1 ON	2 OF 3	MPS-29
017-77	CVFY MPS	PCA-MPS LH2 PREVLV 2 CL RPC B ON	V76X4119E1 ON	2 OF 3	MPS-29
017-78	CVFY MPS	PCA-MPS LH2 PREVLV 2 CL RPC C ON	V76X4120E1 ON	LCC-3	MPS-29
017-79	CVFY MPS	MPS E3 LH2 PREVLV OP PWR (LV22)	V41X1303E1 OFF	2 OF 3	MPS-31
017-80	CVFY MPS	PCA-MPS LH2 PREVLV 3 OP RPC C ON	V76X4122E1 OFF	2 OF 3	MPS-31
017-81	CVFY MPS	PCA-MPS LH2 PREVLV 3 OP RPC A ON	V76X4123E1 OFF	LCC-3	MPS-31
017-82	CVFY MPS	MPS E3 LH2 PREVLV CL PWR (LV23)	V41X1302E1 ON	2 OF 3	MPS-31
017-83	CVFY MPS	PCA-MPS LH2 PREVLV 3 CL RPC C ON	V76X4125E1 ON	2 OF 3	MPS-31
017-84	CVFY MPS	PCA-MPS LH2 PREVLV 3 CL RPC A ON	V76X4126E1 ON	LCC-3	MPS-31
\$ MPS LH2 PREVLV POSITION MONITORING \$					
017-85	CVFY MPS	MPS E1 LH2 PREVLV (PV4) OP IND A	V41X1104X1 OFF	LCC-3	MPS-26
017-86	CVFY MPS	MPS E1 LH2 PREVLV (PV4) OP IND B	V41X1106X1 OFF	LCC-3	MPS-26
017-87	CVFY MPS	MPS E2 LH2 PREVLV (PV5) OP IND A	V41X1204X1 OFF	LCC-3	MPS-28
017-88	CVFY MPS	MPS E2 LH2 PREVLV (PV5) OP IND B	V41X1206X1 OFF	LCC-3	MPS-28
017-89	CVFY MPS	MPS E3 LH2 PREVLV (PV6) OP IND A	V41X1304X1 OFF	LCC-3	MPS-30
017-90	CVFY MPS	MPS E3 LH2 PREVLV (PV6) OP IND B	V41X1306X1 OFF	LCC-3	MPS-30
\$ MPS LO2 PREVALVE POWER STATUS \$					
018-00	CVFY MPS	MPS E1 LO2 PREVLV (PV1) OP IND	V41X1134X1 ON	LCC-3	MPS-35
018-01	CVFY MPS	MPS E1 LO2 PREVLV OP PWR 1 (LV12)	V41X1133E1 ON	LCC-3	MPS-35
018-02	CVFY MPS	MPS E1 LO2 PREVLV OP PWR 2 (LV83)	V41X1145E1 ON	LCC-3	MPS-35
018-03	CVFY MPS	MPS E1 LO2 PREVLV CL PWR 1 (LV13)	V41X1132E1 OFF	LCC-3	MPS-35
018-04	CVFY MPS	MPS E1 LO2 PREVLV CL PWR 2 (LV80)	V41X1144E1 OFF	LCC-3	MPS-35
018-05	CVFY MPS	MPS E2 LO2 PREVLV (PV2) OP IND	V41X1234X1 ON	LCC-3	MPS-36
018-06	CVFY MPS	MPS E2 LO2 PREVLV OP PWR 1 (LV14)	V41X1233E1 ON	LCC-3	MPS-36
018-07	CVFY MPS	MPS E2 LO2 PREVLV OP PWR 2 (LV84)	V41X1245E1 ON	LCC-3	MPS-36

018-08	CVFY MPS	MPS E2 LO2 PREVLV CL PWR 1 (LV15)	V41X1232E1 OFF	LCC-3	MPS-36
018-09	CVFY MPS	MPS E2 LO2 PREVLV CL PWR 2 (LV81)	V41X1244E1 OFF	LCC-3	MPS-36
018-10	CVFY MPS	MPS E3 LO2 PREVLV (PV3) OP IND	V41X1334X1 ON	LCC-3	MPS-37
018-11	CVFY MPS	MPS E3 LO2 PREVLV OP PWR 1 (LV16)	V41X1333E1 ON	LCC-3	MPS-37
018-12	CVFY MPS	MPS E3 LO2 PREVLV OP PWR 2 (LV85)	V41X1345E1 ON	LCC-3	MPS-37
018-13	CVFY MPS	MPS E3 LO2 PREVLV CL PWR 1 (LV17)	V41X1332E1 OFF	LCC-3	MPS-37
018-14	CVFY MPS	MPS E3 LO2 PREVLV CL PWR 2 (LV82)	V41X1344E1 OFF	LCC-3	MPS-37

\$ MPS HELIUM SYS STATUS \$

018-15	CVFY MPS	MPS PNEU HE ISO VLV 1 (LV7) OP PWR	V41X1645E1 ON	1 OF 2	MPS-38
018-16	CVFY MPS	MPS PNEU HE ISO VLV 2 (LV8) OP PWR	V41X1646E1 ON	LCC-3	MPS-38
018-17	CVFY MPS	MPS E1 HE ISO VLV A (LV1) OP PWR	V41X1158E1 ON	LCC-3	MPS-38
018-18	CVFY MPS	MPS E1 HE ISO VLV B (LV2) OP PWR	V41X1159E1 ON	LCC-3	MPS-38
018-19	CVFY MPS	MPS E2 HE ISO VLV A (LV3) OP PWR	V41X1258E1 ON	LCC-3	MPS-38
018-20	CVFY MPS	MPS E2 HE ISO VLV B (LV4) OP PWR	V41X1259E1 ON	LCC-3	MPS-38
018-21	CVFY MPS	MPS E3 HE ISO VLV A (LV5) OP PWR	V41X1358E1 ON	LCC-3	MPS-38
018-22	CVFY MPS	MPS E3 HE ISO VLV B (LV6) OP PWR	V41X1359E1 ON	LCC-3	MPS-38
018-23	CVFY MPS	MPS REG HE KOVER VLV (LV10) OP PWR	V41X1614E1 OFF	LCC-3	MPS-39
018-24	CVFY MPS	MPS E1 HE INTCN OUT (LV60) OP PWR	V41X1170E1 OFF	LCC-3	MPS-40
018-25	CVFY MPS	MPS E2 HE INTCN OUT (LV62) OP PWR	V41X1270E1 OFF	LCC-3	MPS-40
018-26	CVFY MPS	MPS E3 HE INTCN OUT (LV64) OP PWR	V41X1370E1 OFF	LCC-3	MPS-40
018-27	CVFY MPS	MPS E1 HE INTCN IN (LV59) OP PWR	V41X1164E1 OFF	LCC-3	MPS-40
018-28	CVFY MPS	MPS E2 HE INTCN IN (LV61) OP PWR	V41X1264E1 OFF	LCC-3	MPS-40
018-29	CVFY MPS	MPS E3 HE INTCN IN (LV63) OP PWR	V41X1364E1 OFF	LCC-3	MPS-40
018-30	CVFY MPS	MPS HE SPLY BLWDWN 1 (LV26) OP PWR	V41X1632E1 OFF	LCC-3	MPS-41
018-31	CVFY MPS	MPS HE SPLY BLWDWN 2 (LV27) OP PWR	V41X1634E1 OFF	LCC-3	MPS-41

\$ MPS REPRESS SYSTEM STATUS \$

018-32	CVFY MPS	MPS LO2 MANF REPRSS 1(LV40) OP PWR	V41X1538E1 OFF	1 OF 2	MPS-42
018-33	CVFY MPS	MPS LO2 MANF REPRSS 2(LV41) OP PWR	V41X1539E1 OFF	LCC-3	MPS-42
018-34	CVFY MPS	MPS LH2 RTLS REPRSS 1(LV74) OP PWR	V41X1901E1 OFF	LCC-3	MPS-42
018-35	CVFY MPS	MPS LH2 RTLS REPRSS 2(LV75) OP PWR	V41X1902E1 OFF	LCC-3	MPS-42
018-36	CVFY MPS	MPS LH2 MANF REPRSS 1(LV42) OP PWR	V41X1436E1 OFF	LCC-3	MPS-42
018-37	CVFY MPS	MPS LH2 MANF REPRSS 2(LV43) OP PWR	V41X1438E1 OFF	LCC-3	MPS-42

\$ MPS LO2 OVBD BLD VLV POSITION MONITORING \$

018-38	CVFY MPS	MPS LO2 OVBD B/V (PV19) CL IND A	V41X1580X1 OFF	LCC-3	MPS-47
018-39	CVFY MPS	MPS LO2 OVBD B/V (PV19) CL IND B	V41X1581X1 OFF	LCC-3	MPS-47

\$ PERF NEXT STEP IF NPAYLOADID = 5 AND SHAB \$
\$ MODULE PWR'D DURING LCC TIME PERIOD. \$

018-40	CMD	SHAB INITIATE MONITORING OF SHAB FD'S	<u>P006</u>	ON
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*****INTG SET CDT INTERRUPT TO INITIATE TERMINATE LOX REPLENISH*****
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022-19	CVFY BRS RH EV RSS FIRE CMD FROM DCDR B	B55X2880X1 OFF	LCC-4	BRSS-14
	CMON BRS RSS OK TO LAUNCH IND NO.1	GRSX2100E ON	1 OF 2	
	CMON BRS RSS OK TO LAUNCH IND NO.2	GRSX2102E ON	RSS HOLD	MENG
023-00 -22:00	\$ PASS-BFS DATA TRANSFER \$			
024-00	VFY INTG OPERATIONS CONSOLE #12 GO MODE	SC12GO ON	GTO ST010	
	COM INTG START ONE-SHOT DATA TRANSFER	N020INTGR DPS		V72CA0.060
ST010	VFY INTG INTEGRATION CONSOLE GO MODE	SINTGGO ON	GTO ST020	
	COM INTG START ONE-SHOT DATA TRANSFER	N020INTGR INTG		V72CA0.060
ST020	VFY INTG MASTER CONSOLE GO MODE	SMSTRGO ON	GTO ST030	
	COM INTG START ONE-SHOT DATA TRANSFER	N020INTGR SW		V72CA0.060
ST030	VFY INTG BACKUP TYPE II CONSOLE GO MODE	SBKUPGO ON	GTO ST040	
	COM INTG START ONE-SHOT DATA TRANSFER	N020INTGR BKUP		V72CA0.060
ST040	LABL INTG			
025-00 -21:00	VFY INTG ONE-SHOT DATA ACKNOWLEDGE	N03IS016E OFF	WAIT	
	MMSG INTG ONE SHOT DATA XFER COMPLETE			
	MSG INTG GO FOR OPS 101 TRANSITION			
026-00 -20:00	\$ T-20 MINUTE BUILT IN HOLD \$			
026-01	CMD INTG COUNTDOWN CLOCK HOLD			S00E00.960
	CMD INTG SET 10 MIN HOLD TIMER	TIMER 10	MIN	
	VFY INTG HOLD TIMER EXPIRED	TIMER	MIN	WAIT
026-02	VFY INTG ONE-SHOT DATA ACKNOWLEDGE	N03IS016E OFF	WAIT	
026-03	VFY GNS ALIGN COMPLETE	V95X0010X1 ON	WAIT	V71AD0.050
027-00 -20:00	CVFY INTG INTEGRATION CONSOLE GO MODE	SINTGGO ON	HOLD AT T-9 MIN	
027-01	CMD INTG COUNTDOWN CLOCK COUNT			S00FM0.020
028-00 -19:59	\$ GPC G9 TO G1 TRANSITION \$			
029-00	VFY INTG OPERATIONS CONSOLE #12 GO MODE	SC12GO ON	GTO ST060	
	COM INTG START OPS TRANSITION	N022INTGR DPS		
ST060	VFY INTG INTEGRATION CONSOLE GO MODE	SINTGGO ON	GTO ST070	
	COM INTG START OPS TRANSITION	N022INTGR INTG		
ST070	VFY INTG MASTER CONSOLE GO MODE	SMSTRGO ON	GTO ST080	
	COM INTG START OPS TRANSITION	N022INTGR SW		
ST080	VFY INTG BACKUP TYPE II CONSOLE GO MODE	SBKUPGO ON	GTO ST090	
	COM INTG START OPS TRANSITION	N022INTGR BKUP		
ST090	LABL INTG			
	MMSG INTG OPS 101 TRANSITION STARTED			
	MSG INTG GO FOR GPC DUMP AND COMPARE			
030-00 -19:00				

031-00		VFY	INTG	OPS 101 TRANSITION ACKNOWLEDGE	N03IS017E	OFF				INHB	M009	
				\$ COMMAND LS JTOY OF LIFTOFF \$								
032-00	ST100	VFY	INTG	CURRENT LDB GPC MEMORY CONFIG	NGPCLMCNFG	1				GTO	ST100	
032-01		CMD	INTG	JTOY OF LIFTOFF	CMD-LS				JTOY			S00FM0.020
032-02		CMD	INTG	RSLs RESUME COUNT	CMD-LS	ON						S00FM0.020
033-00		CMD	INTG	GPC DUMP COMP ACKNOWLEDGE	N03IS018E	OFF						
		VFY	INTG	OPERATIONS CONSOLE #12 GO MODE	SC12GO	ON				GTO	ST110	
		CMD	INTG	START GPC DUMP AND COMPARE	N024INTGR	DPS						
	ST110	VFY	INTG	INTEGRATION CONSOLE GO MODE	SINTGGO	ON				GTO	ST120	
		CMD	INTG	START GPC DUMP AND COMPARE	N024INTGR	INTG						
	ST120	VFY	INTG	MASTER CONSOLE GO MODE	SMSTRGO	ON				GTO	ST130	
		CMD	INTG	START GPC DUMP AND COMPARE	N024INTGR	SW						
	ST130	VFY	INTG	BACKUP TYPE II CONSOLE GO MODE	SBKUPGO	ON				GTO	ST140	
		CMD	INTG	START GPC DUMP AND COMPARE	N024INTGR	BKUP						
	ST140	VFY	INTG	GPC DUMP COMP ACKNOWLEDGE	N03IS018E	ON						
		MMSG	INTG	GPC DUMP AND COMPARE STARTED								
		MSG	INTG	GO FOR T-9 GLS SEQUENCE								
034-00		VFY	INTG	BACKUP TYPE II CONSOLE GO MODE	SBKUPGO	ON				GTO	ST150	
		CMD	INTG	PERFORM MIP 1	MIP1	ON						
		CMD	INTG	PERFORM MIP 2	MIP2	ON						
				GTO ST170								
	ST150	VFY	INTG	INTEGRATION CONSOLE GO MODE	SINTGGO	ON				GTO	ST160	
		CMD	INTG	PERFORM MIP 1	MIP1							
		CMD	INTG	PERFORM MIP 2	MIP2							
				GTO ST170								
	ST160	VFY	INTG	MASTER CONSOLE GO MODE	SMSTRGO	ON				GTO	ST170	
		CMD	INTG	PERFORM MIP 1	MIP1							
		CMD	INTG	PERFORM MIP 2	MIP2							
				\$ SRB HPU FUEL PRESS MONITOR \$								
035-00	ST170	CVFY	BHYD	LH PRESS N2H4/GN2 BOTTLE OUT SYS A	B46P1305C1	325	425	PSIA		INHB	MENG	BTVC-01
035-01		CVFY	BHYD	LH PRESS N2H4/GN2 BOTTLE OUT SYS B	B46P1306C1	325	425	PSIA		INHB	MENG	BTVC-01
035-02		CVFY	BHYD	RH PRESS N2H4/GN2 BOTTLE OUT SYS A	B46P2305C1	325	425	PSIA		INHB	MENG	BTVC-01
035-03		CVFY	BHYD	RH PRESS N2H4/GN2 BOTTLE OUT SYS B	B46P2306C1	325	425	PSIA		INHB	MENG	BTVC-01
037-00	-19:00											
				\$ SSME PURGE SEQ 3 MONITOR \$								
038-00		CVFY	SSME	ME-1 OPERATING MODE	DW3	E41J1513B1	B011			INHB	MPS4	SSME-07
038-01		CVFY	SSME	ME-2 OPERATING MODE	DW3	E41J2513B1	B011			INHB	MPS4	SSME-07
038-02		CVFY	SSME	ME-3 OPERATING MODE	DW3	E41J3513B1	B011			INHB	MPS4	SSME-07
				\$ MPS LH2 RECIRCULATION PERFORMANCE \$								
038-20		CVFY	MPS	ME-1 LPFT DISCH PRESS (AVG)		E41P1018B1	22.6	NOHI	PSIA	INHB	MSEQ	T-75 MPS-33
038-21		CVFY	MPS	ME-2 LPFT DISCH PRESS (AVG)		E41P2018B1	22.6	NOHI	PSIA	INHB	MSEQ	T-75 MPS-33
038-22		CVFY	MPS	ME-3 LPFT DISCH PRESS (AVG)		E41P3018B1	22.6	NOHI	PSIA	INHB	MSEQ	T-75 MPS-33
038-23		CVFY	MPS	MPS GH2 PRESS FCV 1 (LV56) CL PWR	V41X1661E1	OFF				INHB	MLH2	MPS-44

038-24	CVFY MPS	MPS GH2 PRESS FCV 2 (LV57) CL PWR	V41X1662E1	OFF			INHB MLH2	MPS-44
038-25	CVFY MPS	MPS GH2 PRESS FCV 3 (LV58) CL PWR	V41X1663E1	OFF			INHB MLH2	MPS-44
		\$ SSME HE REG OUT PRESS STATUS \$						
038-26	CVFY MPS	MPS E1 REG A HE OUTLET PRESS	V41P1154A1	730	788	PSIA	INHB MPS4	S00FB0.082
038-27	CVFY MPS	MPS E1 REG B HE OUTLET PRESS	V41P1153A1	730	788	PSIA	INHB MPS4	S00FB0.082
038-28	CVFY MPS	MPS E2 REG A HE OUTLET PRESS	V41P1254A1	730	788	PSIA	INHB MPS4	S00FB0.082
038-29	CVFY MPS	MPS E2 REG B HE OUTLET PRESS	V41P1253A1	730	788	PSIA	INHB MPS4	S00FB0.082
038-30	CVFY MPS	MPS E3 REG A HE OUTLET PRESS	V41P1354A1	730	788	PSIA	INHB MPS4	S00FB0.082
038-31	CVFY MPS	MPS E3 REG B HE OUTLET PRESS	V41P1353A1	730	788	PSIA	INHB MPS4	S00FB0.082
		\$ MPS PNEUMATIC HE REG STATUS \$						
038-32	CVFY MPS	MPS PNEU VLVS REG HE OUTLET PRESS	V41P1605A1	732	796	PSIA	INHB MAPU	S00FB0.083
038-33	CVFY MPS	MPS PNEU ACCUMULATOR PRESSURE	V41P1650A1	732	796	PSIA	INHB MAPU	S00FB0.083
		\$ MPS LH2 MANIFOLD PROPELLANT QUALITY \$						
038-34	CVFY MPS	MPS LH2 17IN FEED MANF DISC TEMP	V41T1428A1	NOLO	-419	DEGF	INHB MSEQ	MPS-11
		\$ DPS STATUS MONITOR \$						
039-00	CVFY DPS	DPS TO GLS HOLD REQUEST	N039INTGR	OFF			CPER G012 MENG	
039-01	CVFY DPS	TRKG PASS STAT-TRKG FC STNG 1	V98X2752X1	ON			INHB MENG	BFS-06 S00FK0.030
039-02	CVFY DPS	TRKG PASS STAT-TRKG FC STNG 2	V98X2753X1	ON			INHB MENG	BFS-06 S00FK0.030
039-03	CVFY DPS	TRKG PASS STAT-TRKG FC STNG 3	V98X2754X1	ON			INHB MENG	BFS-06 S00FK0.030
039-04	CVFY DPS	TRKG PASS STAT-TRKG FC STNG 4	V98X2755X1	ON			INHB MENG	BFS-06 S00FK0.030
039-05	CVFY DPS	I/O TERMINATE B	V98X0594X1	ON			INHB MENG	BFS-01
039-06	CVFY DPS	BFS ENGAGE 1	V98X0604X1	OFF			INHB MENG	BFS-02
039-07	CVFY DPS	BFS ENGAGE 2	V98X0605X1	OFF			INHB MENG	BFS-02
039-08	CVFY DPS	BFS ENGAGE 3	V98X0606X1	OFF			INHB MENG	BFS-02
039-09	CVFY DPS	LH DDU PWR SPLY A GOOD	V73X3001X1	ON			INHB MSEQ	DPS-24
039-10	CVFY DPS	LH DDU PWR SPLY B GOOD	V73X3002X1	ON			INHB MSEQ	DPS-24
039-11	CVFY DPS	LH DDU PWR SPLY C GOOD	V73X3003X1	ON			INHB MSEQ	DPS-24
039-12	CVFY DPS	RH DDU PWR SPLY A GOOD	V73X3011X1	ON			INHB MSEQ	DPS-24
039-13	CVFY DPS	RH DDU PWR SPLY B GOOD	V73X3012X1	ON			INHB MSEQ	DPS-24
039-14	CVFY DPS	RH DDU PWR SPLY C GOOD	V73X3013X1	ON			INHB MSEQ	DPS-24
039-15	CVFY DPS	LH DDU GOOD	V73X3050X1	ON			INHB MSEQ	DPS-23
039-16	CVFY DPS	RH DDU GOOD	V73X3051X1	ON			INHB MSEQ	DPS-23
039-17	CVFY DPS	FF1 IMU BYPASS(MFE)	V91X2273XX	OFF			INHB MSEQ	DPS-13
039-18	CVFY DPS	FF2 IMU BYPASS(MFE)	V91X2274XX	OFF			INHB MSEQ	DPS-13
039-19	CVFY DPS	FF3 IMU BYPASS(MFE)	V91X2275XX	OFF			INHB MSEQ	DPS-13
039-20	CVFY DPS	GPC FEP AREA 2 STATUS	SGPCAREA2	ON			INHB MENG	BFS-08
039-21	CVFY DPS	MTU ACCUMULATOR SOURCE	V98J0615C1	B001	B011		INHB MSEQ	BFS-03
039-22	CVFY DPS	PAYLOAD 1B PF1	V98X0961X1	OFF			INHB MSEQ	BFS-09
039-23	CVFY DPS	PAYLOAD 1B PF2	V98X0965X1	OFF			INHB MSEQ	BFS-09
		\$ FOR THE NEXT STEP, ANY CHANGE IN VALUE WILL \$						
		\$ RESULT IN A HOLD. \$						
039-25	CVFY DPS	GPC ERROR COUNT	V98J2299C1	B000			INHB MENG	BFS-05
039-26	CVFY DPS	LL1/P1-P2 SRB PROM BYPASS(SRB)	V91X2831XX	OFF			INHB MSRB	BEI-04
039-27	CVFY DPS	LL2/P1-P2 SRB PROM BYPASS(SRB)	V91X2833XX	OFF			INHB MSRB	BEI-04
039-28	CVFY DPS	LR1/P1-P2 SRB PROM BYPASS(SRB)	V91X2835XX	OFF			INHB MSRB	BEI-04
039-29	CVFY DPS	LR2/P1-P2 SRB PROM BYPASS(SRB)	V91X2837XX	OFF			INHB MSRB	BEI-04

\$ AFT MDM POWER SEPARATION CHECK \$
 \$ MDM TYPE DETERMINES WHICH SET OF LIMITS TO BE USED \$
 \$ FOR THE NEXT 4 STEPS. FIRST SET OF LIMITS = STND \$
 \$ MDM, SECOND SET = EMDM. MDM TYPE IS KNOWN BY \$
 \$ EVALUATING BITS 0 AND 2 OF PSEUDO FD N72IB001D. \$

039-30	CVFY DPS	RT AFT MDM PS SEP1 SW SEN VOLTS	B75V2632C1	2.02	3.80	V	INHB MSEQ	BEI-06
				-0.05	0.72	V		
039-31	CVFY DPS	RT AFT MDM PS SEP2 SW SEN VOLTS	B75V2633C1	2.02	3.80	V	INHB MSEQ	BEI-06
				-0.05	0.72	V		
039-32	CVFY DPS	LF AFT MDM PS SEP1 SW SEN VOLTS	B75V1632C1	2.02	3.80	V	INHB MSEQ	BEI-06
				-0.05	0.72	V		
039-33	CVFY DPS	LF AFT MDM PS SEP2 SW SEN VOLTS	B75V1633C1	2.02	3.80	V	INHB MSEQ	BEI-06
				-0.05	0.72	V		

\$ FOR THE NEXT 9 STEPS, MORE THAN TWO NON-ZERO \$
 \$ OCCURRENCES WILL RESULT IN A HOLD. \$

039-40	CVFY DPS	GPC 1 SFT ERR CNT 0-128K	V92Q4375BX	X0000	X0002		INHB MSEQ	DPS-26
039-41	CVFY DPS	GPC 1 SFT ERR CNT 128-256K	V92Q4376BX	X0000	X0002		INHB MSEQ	DPS-26
039-42	CVFY DPS	GPC 2 SFT ERR CNT 0-128K	V92Q4377BX	X0000	X0002		INHB MSEQ	DPS-26
039-43	CVFY DPS	GPC 2 SFT ERR CNT 128-256K	V92Q4378BX	X0000	X0002		INHB MSEQ	DPS-26
039-44	CVFY DPS	GPC 3 SFT ERR CNT 0-128K	V92Q4379BX	X0000	X0002		INHB MSEQ	DPS-26
039-45	CVFY DPS	GPC 3 SFT ERR CNT 128-256K	V92Q4380BX	X0000	X0002		INHB MSEQ	DPS-26
039-46	CVFY DPS	GPC 4 SFT ERR CNT 0-128K	V92Q4381BX	X0000	X0002		INHB MSEQ	DPS-26
039-47	CVFY DPS	GPC 4 SFT ERR CNT 128-256K	V92Q4382BX	X0000	X0002		INHB MSEQ	DPS-26
039-48	CVFY DPS	GPC SOFT ERROR COUNT 0-128K	V98Q2577B1	X0000	X0002		INHB MSEQ	BFS-14

\$ IMU RGA AA FAILURE MONITOR \$

040-03	CVFY GNS	RGA 1 DES CMD/FAIL	V93X4516X1	OFF			INHB MSEQ	GNC-12
040-04	CVFY GNS	RGA 2 DES CMD/FAIL	V93X4518X1	OFF			INHB MSEQ	GNC-12
040-05	CVFY GNS	RGA 3 DES CMD/FAIL	V93X4520X1	OFF			INHB MSEQ	GNC-12
040-06	CVFY GNS	RGA 4 DES CMD/FAIL	V93X4522X1	OFF			INHB MSEQ	GNC-12
040-07	CVFY GNS	AA 1 DES CMD/FAIL	V93X4435X1	OFF			INHB MSEQ	GNC-13
040-08	CVFY GNS	AA 2 DES CMD/FAIL	V93X4436X1	OFF			INHB MSEQ	GNC-13
040-09	CVFY GNS	AA 3 DES CMD/FAIL	V93X4437X1	OFF			INHB MSEQ	GNC-13
040-10	CVFY GNS	AA 4 DES CMD/FAIL	V93X4438X1	OFF			INHB MSEQ	GNC-13
040-11	CVFY GNS	STRING 1 SRGA FAIL	V90X6748X1	OFF			INHB MSEQ	GNC-14
040-12	CVFY GNS	STRING 2 SRGA FAIL	V90X6749X1	OFF			INHB MSEQ	GNC-14
040-13	CVFY GNS	STRING 3 SRGA FAIL	V90X6750X1	OFF			INHB MSEQ	GNC-14
040-14	CVFY GNS	STRING 4 SRGA FAIL	V90X6751X1	OFF			INHB MSEQ	GNC-14
040-15	CVFY GNS	PCA FLT CONT RGA 1 RPC A ON	V76X4293E1	ON			INHB MSEQ	GNC-08
040-16	CVFY GNS	PCA FLT CONT RGA 4 RPC A ON	V76X4295E1	ON			INHB MSEQ	GNC-08
040-17	CVFY GNS	PCA FLT CONT RGA 4 RPC C ON	V76X4296E1	ON			INHB MSEQ	GNC-08
040-18	CVFY GNS	PCA FLT CONT ACCEL 3 RPC A ON	V76X4297E1	ON			INHB MSEQ	GNC-09
040-19	CVFY GNS	PCA FLT CONT ACCEL 3 RPC C ON	V76X4298E1	ON			INHB MSEQ	GNC-09
040-20	CVFY GNS	PCA FLT CONT ACCEL 4 RPC C ON	V76X4299E1	ON			INHB MSEQ	GNC-09
040-21	CVFY GNS	PCA FLT CONT ACCEL 4 RPC B ON	V76X4300E1	ON			INHB MSEQ	GNC-09
040-22	CVFY GNS	ACCEL ASSY 1 PWR ON CMD A	V79S2004E1	ON			INHB MSEQ	GNC-09
040-23	CVFY GNS	ACCEL ASSY 2 PWR ON CMD B	V79S2007E1	ON			INHB MSEQ	GNC-09
040-24	CVFY GNS	PCA L SRB BUS C RPC A ON	V76X4399E1	ON			INHB MSEQ	GNC-10
040-25	CVFY GNS	PCA R SRB BUS C RPC A ON	V76X4390E1	ON			INHB MSEQ	GNC-10

040-26	CVFY GNS	PCA L SRB BUS C RPC C ON	V76X4393E1	ON			1 OF 2	GNC-10
040-27	CVFY GNS	PCA R SRB BUS C RPC C ON	V76X4394E1	ON			INHB MSEQ	GNC-10
040-28	CVFY GNS	IMU-1 ALIGNMENT CORRECTION LIMITED	V95X0777X1	OFF			INHB MPS4	GNC-63
040-29	CVFY GNS	IMU-2 ALIGNMENT CORRECTION LIMITED	V95X0778X1	OFF			INHB MPS4	GNC-63
040-30	CVFY GNS	IMU-3 ALIGNMENT CORRECTION LIMITED	V95X0779X1	OFF			INHB MPS4	GNC-63

\$ CONTROLLERS STATUS CHECK \$

041-00	CVFY FCL	LH RHC ROLL CMD-A	V72K1155C1	-6.8	6.8	DEG	CPER G017	MSEQ	GNC-01
041-01	CVFY FCL	LH RHC ROLL CMD-B	V72K1170C1	-6.8	6.8	DEG	CPER G017	MSEQ	GNC-01
041-02	CVFY FCL	LH RHC ROLL CMD-C	V72K1185C1	-6.8	6.8	DEG	CPER G017	MSEQ	GNC-01
041-03	CVFY FCL	LH RHC PITCH CMD-A	V72K1156C1	-5.1	5.1	DEG	CPER G017	MSEQ	GNC-01
041-04	CVFY FCL	LH RHC PITCH CMD-B	V72K1171C1	-5.1	5.1	DEG	CPER G017	MSEQ	GNC-01
041-05	CVFY FCL	LH RHC PITCH CMD-C	V72K1186C1	-5.1	5.1	DEG	CPER G017	MSEQ	GNC-01
041-06	CVFY FCL	LH RHC YAW CMD-A	V72K1157C1	-2.8	2.8	DEG	CPER G017	MSEQ	GNC-01
041-07	CVFY FCL	LH RHC YAW CMD-B	V72K1172C1	-2.8	2.8	DEG	CPER G017	MSEQ	GNC-01
041-08	CVFY FCL	LH RHC YAW CMD-C	V72K1187C1	-2.8	2.8	DEG	CPER G017	MSEQ	GNC-01
041-09	CVFY FCL	RH RHC ROLL CMD-A	V72K1205C1	-6.8	6.8	DEG	CPER G018	MSEQ	GNC-01
041-10	CVFY FCL	RH RHC ROLL CMD-B	V72K1220C1	-6.8	6.8	DEG	CPER G018	MSEQ	GNC-01
041-11	CVFY FCL	RH RHC ROLL CMD-C	V72K1235C1	-6.8	6.8	DEG	CPER G018	MSEQ	GNC-01
041-12	CVFY FCL	RH RHC PITCH CMD-A	V72K1206C1	-5.1	5.1	DEG	CPER G018	MSEQ	GNC-01
041-13	CVFY FCL	RH RHC PITCH CMD-B	V72K1221C1	-5.1	5.1	DEG	CPER G018	MSEQ	GNC-01
041-14	CVFY FCL	RH RHC PITCH CMD-C	V72K1236C1	-5.1	5.1	DEG	CPER G018	MSEQ	GNC-01
041-15	CVFY FCL	RH RHC YAW CMD-A	V72K1207C1	-2.8	2.8	DEG	CPER G018	MSEQ	GNC-01
041-16	CVFY FCL	RH RHC YAW CMD-B	V72K1222C1	-2.8	2.8	DEG	CPER G018	MSEQ	GNC-01
041-17	CVFY FCL	RH RHC YAW CMD-C	V72K1237C1	-2.8	2.8	DEG	CPER G018	MSEQ	GNC-01

042-00	CVFY FCL	FWD THC POS X OUTPUT-A	V72K1315X1	OFF			INHB MSEQ	GNC-02
042-01	CVFY FCL	FWD THC POS X OUTPUT-B	V72K1335X1	OFF			INHB MSEQ	GNC-02
042-02	CVFY FCL	FWD THC POS X OUTPUT-C	V72K1355X1	OFF			INHB MSEQ	GNC-02
042-03	CVFY FCL	FWD THC NEG X OUTPUT-A	V72K1316X1	OFF			INHB MSEQ	GNC-02
042-04	CVFY FCL	FWD THC NEG X OUTPUT-B	V72K1336X1	OFF			INHB MSEQ	GNC-02
042-05	CVFY FCL	FWD THC NEG X OUTPUT-C	V72K1356X1	OFF			INHB MSEQ	GNC-02
042-06	CVFY FCL	FWD THC POS Y OUTPUT-A	V72K1320X1	OFF			2 OF 3	GNC-02
042-07	CVFY FCL	FWD THC POS Y OUTPUT-B	V72K1340X1	OFF			2 OF 3	GNC-02
042-08	CVFY FCL	FWD THC POS Y OUTPUT-C	V72K1360X1	OFF			INHB MSEQ	GNC-02
042-09	CVFY FCL	FWD THC NEG Y OUTPUT-A	V72K1321X1	OFF			2 OF 3	GNC-02
042-10	CVFY FCL	FWD THC NEG Y OUTPUT-B	V72K1341X1	OFF			2 OF 3	GNC-02
042-11	CVFY FCL	FWD THC NEG Y OUTPUT-C	V72K1361X1	OFF			INHB MSEQ	GNC-02
042-12	CVFY FCL	FWD THC POS Z OUTPUT-A	V72K1325X1	OFF			INHB MSEQ	GNC-02
042-13	CVFY FCL	FWD THC POS Z OUTPUT-B	V72K1345X1	OFF			INHB MSEQ	GNC-02
042-14	CVFY FCL	FWD THC POS Z OUTPUT-C	V72K1365X1	OFF			INHB MSEQ	GNC-02
042-15	CVFY FCL	FWD THC NEG Z OUTPUT-A	V72K1326X1	OFF			INHB MSEQ	GNC-02
042-16	CVFY FCL	FWD THC NEG Z OUTPUT-B	V72K1346X1	OFF			INHB MSEQ	GNC-02
042-17	CVFY FCL	FWD THC NEG Z OUTPUT-C	V72K1366X1	OFF			INHB MSEQ	GNC-02

\$ RUDDER PEDAL OUTPUT CHECKS \$

042-18	CVFY FCL	LEFT RUDDER PEDAL CMD-A	V72K1530C1	3.6	-3.6	DEG	CPER G016	MSEQ	GNC-03
042-19	CVFY FCL	LEFT RUDDER PEDAL CMD-B	V72K1531C1	3.6	-3.6	DEG	CPER G016	MSEQ	GNC-03
042-20	CVFY FCL	LEFT RUDDER PEDAL CMD-C	V72K1532C1	3.6	-3.6	DEG	CPER G016	MSEQ	GNC-03
042-21	CVFY FCL	RIGHT RUDDER PEDAL CMD-A	V72K1540C1	3.6	-3.6	DEG	CPER G016	MSEQ	GNC-03
042-22	CVFY FCL	RIGHT RUDDER PEDAL CMD-B	V72K1541C1	3.6	-3.6	DEG	CPER G016	MSEQ	GNC-03

042-23	CVFY FCL	RIGHT RUDDER PEDAL CMD-C	V72K1542C1	3.6	-3.6	DEG	CPER	G016	MSEQ	GNC-03
043-00	CVFY FCL	FLIGHT CONTROL CHANNEL FAILURE	V72X4550X1	OFF			INHB	MENG		GNC-38
		\$ PYRO SYS STATUS MONITOR \$								
044-00	CVFY BPYR	LH EVENT IGN S&A DEVICE ARMED	B55X1842X1	OFF			INHB	MAPU		SRM-01
044-01	CVFY BPYR	RH EVENT IGN S&A DEVICE ARMED	B55X2842X1	OFF			INHB	MAPU		SRM-01
044-02	CVFY BPYR	LH EVENT IGN S&A DEVICE SAFED	B55X1843X1	ON			INHB	MAPU		SRM-01
044-03	CVFY BPYR	RH EVENT IGN S&A DEVICE SAFED	B55X2843X1	ON			INHB	MAPU		SRM-01
044-04	CVFY BPYR	LH VOLTAGE IGN PIC CAP A	B55V1603C1	NOLO	1.5	V	INHB	MSEQ		BEI-08
044-05	CVFY BPYR	RH VOLTAGE IGN PIC CAP A	B55V2603C1	NOLO	1.5	V	INHB	MSEQ		BEI-08
044-06	CVFY BPYR	LH VOLTAGE IGN PIC CAP B	B55V1604C1	NOLO	1.5	V	INHB	MSEQ		BEI-08
044-07	CVFY BPYR	RH VOLTAGE IGN PIC CAP B	B55V2604C1	NOLO	1.5	V	INHB	MSEQ		BEI-08
044-08	CVFY BELE	LH VOLTAGE OPERATIONAL BUS A	B76V1600H	24.8	32.0	V		1 OF 2		BEI-01
044-09	CVFY BELE	LH VOLTAGE OPERATIONAL BUS A	B76V1600C1	25.5	31.3	V	INHB	MSRB		BEI-01
044-10	CVFY BELE	RH VOLTAGE OPERATIONAL BUS A	B76V2600H	24.8	32.0	V		1 OF 2		BEI-01
044-11	CVFY BELE	RH VOLTAGE OPERATIONAL BUS A	B76V2600C1	25.5	31.3	V	INHB	MSRB		BEI-01
044-12	CVFY BELE	LH VOLTAGE OPERATIONAL BUS B	B76V1601H	24.8	32.0	V		1 OF 2		BEI-01
044-13	CVFY BELE	LH VOLTAGE OPERATIONAL BUS B	B76V1601C1	25.5	31.3	V	INHB	MSRB		BEI-01
044-14	CVFY BELE	RH VOLTAGE OPERATIONAL BUS B	B76V2601H	24.8	32.0	V		1 OF 2		BEI-01
044-15	CVFY BELE	RH VOLTAGE OPERATIONAL BUS B	B76V2601C1	25.5	31.3	V	INHB	MSRB		BEI-01
044-16	CVFY BPYR	LH VOLTAGE RSS BATTERY NO 1	B55V1625C1	27.15	28.8	V	INHB	MSEQ	BRSS-07	S00FH0.031
044-17	CVFY BELE	LH VOLTAGE RECOVERY BATTERY	B76V1602C1	26.1	31.9	V	INHB	MSEQ	BRSS-08	S00FH0.031
044-18	CVFY BPYR	RH VOLTAGE RSS BATTERY NO 1	B55V2625C1	27.15	28.8	V	INHB	MSEQ	BRSS-07	S00FH0.031
044-19	CVFY BELE	RH VOLTAGE RECOVERY BATTERY	B76V2602C1	26.1	31.9	V	INHB	MSEQ	BRSS-08	S00FH0.031
044-20	CVFY BRS	LH CURRENT RSS BATTERY NO 1	B55C1051C1	0.42	0.57	AMP	INHB	MAPU	BRSS-11	
044-21	CVFY BRS	RH CURRENT RSS BATTERY NO 1	B55C2051C1	0.42	0.57	AMP	INHB	MAPU	BRSS-11	
044-24	CVFY BRS	LH EVENT RSS S&A DEVICE ARMED	B55X1870X1	OFF			INHB	MAPU	BRSS-01	S00FH0.031
044-25	CVFY BRS	RH EVENT RSS S&A DEVICE ARMED	B55X2870X1	OFF			INHB	MAPU	BRSS-01	S00FH0.031
044-27	CVFY BRS	LH EVENT RSS S&A DEVICE SAFED	B55X1869X1	ON			INHB	MAPU	BRSS-01	S00FH0.031
044-28	CVFY BRS	RH EVENT RSS S&A DEVICE SAFED	B55X2869X1	ON			INHB	MAPU	BRSS-01	S00FH0.031
045-00	CVFY EPDC	SYS A CPA DC VOLTS	GMSV1313A	26	NOHI	V		1 OF 2		GSE-04
045-01	CVFY EPDC	SYS A CPA DC RED VOLTS	GMSV3313A	26	NOHI	V	INHB	MAPU		GSE-04
045-02	CVFY EPDC	SYS B CPA DC VOLTS	GMSV2313A	26	NOHI	V		1 OF 2		GSE-04
045-03	CVFY EPDC	SYS B CPA DC RED VOLTS	GMSV4313A	26	NOHI	V	INHB	MAPU		GSE-04
		\$ H2 BURN SYS PIC RACK VOLTAGE \$								
045-04	CVFY EPDC	H2-BURN SYS A CPA DC VOLTS	GMSV5313A	26	NOHI	V		1 OF 2		GSE-08
045-05	CVFY EPDC	SYS A H2-BURN CPA DC RED VOLTS	GMSV7313A	26	NOHI	V	INHB	MAPU		GSE-08
045-06	CVFY EPDC	H2-BURN SYS B CPA DC VOLTS	GMSV6313A	26	NOHI	V		1 OF 2		GSE-08
045-07	CVFY EPDC	SYS B H2-BURN CPA DC RED VOLTS	GMSV8313A	26	NOHI	V	INHB	MAPU		GSE-08
045-08	CVFY EPDC	SYS A TSM FIRE 1 SW A ON IND	GMSX1003E	OFF			INHB	MENG		GSE-25
045-09	CVFY EPDC	SYS B TSM FIRE 1 SW A ON IND	GMSX2003E	OFF			INHB	MENG		GSE-25
045-10	CVFY EPDC	SYS A TSM FIRE 1 SW B ON IND	GMSX1004E	OFF			INHB	MENG		GSE-25
045-11	CVFY EPDC	SYS B TSM FIRE 1 SW B ON IND	GMSX2004E	OFF			INHB	MENG		GSE-25
045-12	CVFY EPDC	SYS A HDP FIRE 1 SW A ON IND	GMSX1007E	OFF			INHB	MENG		GSE-25
045-13	CVFY EPDC	SYS B HDP FIRE 1 SW A ON IND	GMSX2007E	OFF			INHB	MENG		GSE-25
045-14	CVFY EPDC	SYS A HDP FIRE 1 SW B ON IND	GMSX1008E	OFF			INHB	MENG		GSE-25
045-15	CVFY EPDC	SYS B HDP FIRE 1 SW B ON IND	GMSX2008E	OFF			INHB	MENG		GSE-25

045-16	CVFY EPDC SYS A ETVAS LNYRD PIC F1 SW A ON	GMSX5606E	OFF			INHB MENG	GSE-25
045-17	CVFY EPDC SYS B ETVAS LNYRD PIC F1 SW A ON	GMSX6606E	OFF			INHB MENG	GSE-25
045-18	CVFY EPDC SYS A ETVAS LNYRD PIC F1 SW B ON	GMSX5607E	OFF			INHB MENG	GSE-25
045-19	CVFY EPDC SYS B ETVAS LNYRD PIC F1 SW B ON	GMSX6607E	OFF			INHB MENG	GSE-25

\$ SRB CHAMBER PRESS TRANSDUCER MONITOR \$

046-00	CVFY BINS LH PRESS A SRM CHAMBER	B47P1300C1	-7.0	33.0	PSIA	INHB MSEQ	SRM-04
046-01	CVFY BINS LH PRESS B SRM CHAMBER	B47P1301C1	-7.0	33.0	PSIA	INHB MSEQ	SRM-04
046-02	CVFY BINS LH PRESS C SRM CHAMBER	B47P1302C1	-7.0	33.0	PSIA	INHB MSEQ	SRM-04
046-03	CVFY BINS RH PRESS A SRM CHAMBER	B47P2300C1	-7.0	33.0	PSIA	INHB MSEQ	SRM-04
046-04	CVFY BINS RH PRESS B SRM CHAMBER	B47P2301C1	-7.0	33.0	PSIA	INHB MSEQ	SRM-04
046-05	CVFY BINS RH PRESS C SRM CHAMBER	B47P2302C1	-7.0	33.0	PSIA	INHB MSEQ	SRM-04

\$ APU START CONSTRAINTS \$

047-00	CVFY HYD HYD SYS 1 RSVR FLUID PRESS	V58P0131A1	43	120	PSIA	INHB MAPU	HYD-07
047-01	CVFY HYD HYD SYS 1 BOOTSTRAP ACCUM GN2 P	V58P0167A1	1906	3233	PSIA	INHB MAPU	HYD-07
047-02	CVFY HYD HYD SYS 2 RSVR FLUID PRESS	V58P0231A1	43	120	PSIA	INHB MAPU	HYD-07
047-03	CVFY HYD HYD SYS 2 BOOTSTRAP ACCUM GN2 P	V58P0267A1	1906	3233	PSIA	INHB MAPU	HYD-07
047-04	CVFY HYD HYD SYS 3 RSVR FLUID PRESS	V58P0331A1	43	120	PSIA	INHB MAPU	HYD-07
047-05	CVFY HYD HYD SYS 3 BOOTSTRAP ACCUM GN2 P	V58P0367A1	1906	3233	PSIA	INHB MAPU	HYD-07
047-06	CVFY HYD HYD SYS 1 CIRC PUMP PRESS	V58P0137A1	330	NOHI	PSIA	INHB MAPU	HYD-03
047-07	CVFY HYD HYD SYS 2 CIRC PUMP PRESS	V58P0237A1	330	NOHI	PSIA	INHB MAPU	HYD-03
047-08	CVFY HYD HYD SYS 3 CIRC PUMP PRESS	V58P0337A1	330	NOHI	PSIA	INHB MAPU	HYD-03

\$ VEHICLE HOLD FLAG MONITOR \$

048-00	CVFY INTG RS COUNTDOWN HOLD FLAG	V90X8667X1	OFF			INHB MSRB CPER	G001
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\$ SYSTEM VALIDITY FLAGS \$

049-00	CVFY INTG OPERATIONS CONSOLE #3 GO MODE	SC3GO	ON			INHB MENG	LPS-06
049-01	CVFY INTG OPERATIONS CONSOLE #4 GO MODE	SC4GO	ON			INHB MENG	LPS-07
049-02	CVFY INTG BACKUP TYPE II CONSOLE GO MODE	SBKUPGO	ON			CPER G015 MSRB	LPS-03
049-03	CVFY INTG LDB FEP ACTIVE DATA VALID	SLDBADATAV	ON			INHB MENG	LPS-17
049-04	CVFY INTG GSE FEP #1 ACTIVE DATA VALID	SGS1ADATAV	ON			INHB MSRB	LPS-20
049-05	CVFY INTG GSE FEP #2 ACTIVE DATA VALID	SGS2ADATAV	ON			INHB MSRB	LPS-21
049-06	CVFY INTG GSE FEP #3 ACTIVE DATA VALID	SGS3ADATAV	ON			INHB MSRB	LPS-25
049-07	CVFY INTG 128 OI FEP ACTIVE DATA VALID	SOIADATAV	ON			INHB MENG	LPS-19
049-08	CVFY INTG GPC FEP AREA 1 STATUS	SGPCAREAL	ON			INHB MSRB	LPS-18

\$ PERF NEXT STEP IF NPAYLOADID = 3 AND SLAB \$

\$ MODULE PWR'D DURING LCC TIME PERIOD \$

050-00	CMD SLAB INITIATE MONITORING OF SLAB FD'S	P006	ON				
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051-00 -12:00

052-00	CMD INTG RF SWITCH	PCMS					
	CMD INTG SWITCH ALT SOURCE RF/HIGH RATE	GPCA					
	CMD INTG SWITCH ALT SOURCE RF/HIGH RATE	OIA					
	CMD INTG SWITCH ALT SOURCE RF	ME1					
	CMD INTG SWITCH ALT SOURCE RF	ME2					
	CMD INTG SWITCH ALT SOURCE RF	ME3					

053-00 -09:30

\$ SRB HPU STATUS CHECK \$

054-00	VFY	BHYD	LH	LEVEL	HYDR	FLUID	RSVR	SYS	A	B58Q1350C1	65	85	PCT	INHB	M009	BTVC-03
054-01	VFY	BHYD	LH	LEVEL	HYDR	FLUID	RSVR	SYS	B	B58Q1351C1	65	85	PCT	INHB	M009	BTVC-03
054-02	VFY	BHYD	RH	LEVEL	HYDR	FLUID	RSVR	SYS	A	B58Q2350C1	65	85	PCT	INHB	M009	BTVC-03
054-03	VFY	BHYD	RH	LEVEL	HYDR	FLUID	RSVR	SYS	B	B58Q2351C1	65	85	PCT	INHB	M009	BTVC-03

\$ SS WATER AND FX CONTROL STATUS \$

055-00	VFY	WATR	SS	FR	ENABLE	IND				GWDXP12E	ON				INHB	M009
055-01	VFY	MPS	LNCH	SP	TRAN	FX	FR	ENABLE	IND	GWDXP13E	ON				INHB	M009

\$ OAA ACCUM LEVEL CHECK \$

057-00	VFY	ARMS	OAA	ACCUM	LEVEL	SW	NO	1-NORMAL		GSAX7651E	ON			2 OF 4		GSE-11
057-01	VFY	ARMS	OAA	ACCUM	LEVEL	SW	NO	2-NORMAL		GSAX7671E	ON			2 OF 4		GSE-11
057-02	VFY	ARMS	OAA	ACCUM	LEVEL	SW	NO	3-NORMAL		GSAX7691E	ON			2 OF 4		GSE-11
057-03	VFY	ARMS	OAA	ACCUM	LEVEL	SW	NO	4-NORMAL		GSAX7711E	ON			OR		GSE-11
057-04	VFY	ARMS	OAA	ACCUM	LEVEL	SW	NO	1-NORMAL		GSAX7656E	ON			2 OF 4		GSE-11
057-05	VFY	ARMS	OAA	ACCUM	LEVEL	SW	NO	2-NORMAL		GSAX7676E	ON			2 OF 4		GSE-11
057-06	VFY	ARMS	OAA	ACCUM	LEVEL	SW	NO	3-NORMAL		GSAX7696E	ON			2 OF 4		GSE-11
057-07	VFY	ARMS	OAA	ACCUM	LEVEL	SW	NO	4-NORMAL		GSAX7716E	ON			INHB	M009	GSE-11

\$ OAA ACCUM PRESSURIZATION CHECK \$

057-08	VFY	ARMS	OAA	3000	PSI	GN2	PRESS	SW-NORMAL		GSAX7731E	ON			1 OF 4		GSE-10
057-09	VFY	ARMS	OAA	2700	PSI	GN2	PRESS	TRANSDUCER		GSAP7801A	2000	2800	PSIG	1 OF 4		GSE-10
057-10	VFY	ARMS	OAA	3000	PSI	GN2	PRESS	SW-NORMAL		GSAX7736E	ON			1 OF 4		GSE-10
057-11	VFY	ARMS	OAA	2700	PSI	GN2	PRESS	TRANSDUCER		GSAP7806A	2000	2800	PSIG	INHB	M009	GSE-10
057-12	VFY	ARMS	OAA	750	PSI	GN2	PRESS	SW-NORMAL		GSAX7751E	ON			1 OF 4		
057-13	VFY	ARMS	OAA	750	PSI	GN2	PRESS	TRANSDUCER		GSAP7811A	250	875	PSIG	1 OF 4		
057-14	VFY	ARMS	OAA	750	PSI	GN2	PRESS	SW-NORMAL		GSAX7756E	ON			1 OF 4		
057-15	VFY	ARMS	OAA	750	PSI	GN2	PRESS	TRANSDUCER		GSAP7816A	250	875	PSIG	INHB	M009	

058-00	VFY	SSME	SEL	MPS	ME-1	SHUTDOWN	CMD			V90X7551X1	OFF				INHB	M009	SSME-36
058-01	VFY	SSME	SEL	MPS	ME-2	SHUTDOWN	CMD			V90X7552X1	OFF				INHB	M009	SSME-36
058-02	VFY	SSME	SEL	MPS	ME-3	SHUTDOWN	CMD			V90X7553X1	OFF				INHB	M009	SSME-36
058-10	VFY	INTG	SSME	SOP	BYPASS	INDICATOR				V90X0114X1	OFF				INHB	M009	

059-00 -9:01

060-00 MSG INTG GO FOR T-9 GLS SEQUENCE

060-01 -9:00 LABEL INTG

060-02 CMD INTG COUNTDOWN CLOCK HOLD

CMD INTG SET 10 MIN HOLD TIMER TIMER 10 MIN

VFY INTG HOLD TIMER EXPIRED TIMER MIN WAIT

\$ CONTINUE INTO T-9 MIN MILESTONE. \$
\$ IF MILESTONE FAILS DO NOT RESUME COUNT \$

\$ GLS EVENT COMPLETE = 540 \$

100-00 -09:00

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*****
101-00  LABEL INTG T-9 MILESTONE M009 S00E00.960
*****
101-01  VFY INTG GLS-GO FOR OAA RETRACT MOAA ON INHB M009
101-02  VFY INTG GLS-GO FOR APU START MAPU ON INHB M009
101-03  VFY INTG GLS-GO FOR PURGE SEQ. 4 MPS4 ON INHB M009
101-04  VFY INTG GLS-GO FOR ET LO2 PRE-PRESS MLOX ON INHB M009
101-05  VFY INTG GLS-GO FOR ET LH2 REPLN TERM MLH2 ON INHB M009
101-06  VFY INTG GLS-GO FOR AUTO SEQ START MSEQ ON INHB M009
101-07  VFY INTG GLS-GO FOR SSME IGNITION MENG ON INHB M009
101-08  VFY INTG GLS-GO FOR SRB IGNITION MSRB ON INHB M009
101-09  VFY INTG LPS COUNTDOWN HOLD V90X8768X1 OFF INHB M009
101-10  VFY INTG RSS MANUAL HOLD ON INHB M009
101-11  VFY INTG NTD MANUAL HOLD ON INHB M009
101-12  VFY INTG GLS MANUAL HOLD ON INHB M009
101-13  VFY INTG GO FOR T-9 GLS START M009 ON HOLD
101-14  CMD INTG COUNTDOWN CLOCK COUNT S00FM0.020
101-15  MMSG INTG -07:30 GO FOR OAA RETRACT
101-16  MSG INTG BEGIN TERM COUNT SEQUENCE
```

\$ AN INTEGRATION CONSOLE FAILURE AFTER THIS \$
\$ POINT WILL RESULT IN A BREAKOUT. \$

\$ GLS EVENT COMPLETE = 530 \$

104-00 -08:50

\$ CONTROL LOGIC MANAGEMENT \$

\$ THE CONTROL LOGIC MANAGEMENT SECTION SETS NO FEP LIMITS.
IT HAS BYPASS (SYSTEM AND ELEMENT) CAPABILITY ONLY \$

```
105-00  ICL HYD HYDR SYS 1 SUPPLY PRESS B V58P0115A1
105-01  ICL HYD HYDR SYS 1 SUPPLY PRESS C V58P0116C1
105-02  ICL HYD HYDR SYS 2 SUPPLY PRESS B V58P0215A1
105-03  ICL HYD HYDR SYS 2 SUPPLY PRESS C V58P0216C1
105-04  ICL HYD HYDR SYS 3 SUPPLY PRESS B V58P0315A1
105-05  ICL HYD HYDR SYS 3 SUPPLY PRESS C V58P0316C1
105-06  ICL HYD HYD SYS 1 RSVR FLUID PRESS V58P0131A1
105-07  ICL HYD HYD SYS 2 RSVR FLUID PRESS V58P0231A1
105-08  ICL HYD HYD SYS 3 RSVR FLUID PRESS V58P0331A1

106-00  ICL MPS MPS E1 HE SUPPLY BOTTLE PRESS V41P1150C1
106-01  ICL MPS MPS PNEU VLVS HE SUP BOTTLE PRESS V41P1600A1
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107-00	ICL	FCP	PRSD	O2	TK	1	HTR	A1-ON	V45X1106E1
107-01	ICL	FCP	PRSD	O2	TK	1	HTR	ASSY 1 TEMP	V45T1107A1
107-02	ICL	FCP	PRSD	O2	TK	1	HTR	B1-ON	V45X1108E1
107-03	ICL	FCP	PRSD	O2	TK	1	HTR	ASSY 2 TEMP	V45T1109A1
107-04	ICL	FCP	PRSD	O2	TK	1	HTR	A2-ON	V45X1111E1
107-05	ICL	FCP	PRSD	O2	TK	1	HTR	B2-ON	V45X1113E1
107-06	ICL	FCP	PRSD	O2	TK	2	HTR	A1-ON	V45X1206E1
107-07	ICL	FCP	PRSD	O2	TK	2	HTR	ASSY 1 TEMP	V45T1207A1
107-08	ICL	FCP	PRSD	O2	TK	2	HTR	B1-ON	V45X1208E1
107-09	ICL	FCP	PRSD	O2	TK	2	HTR	ASSY 2 TEMP	V45T1209A1
107-10	ICL	FCP	PRSD	O2	TK	2	HTR	A2-ON	V45X1211E1
107-11	ICL	FCP	PRSD	O2	TK	2	HTR	B2-ON	V45X1213E1
107-12	ICL	FCP	PRSD	H2	TK	1	HTR	ASSY TEMP	V45T2107A1
107-13	ICL	FCP	PRSD	H2	TK	1	HTR	A-ON	V45X2106E1
107-14	ICL	FCP	PRSD	H2	TK	1	HTR	B-ON	V45X2108E1
107-15	ICL	FCP	PRSD	H2	TK	2	HTR	ASSY TEMP	V45T2207A1
107-16	ICL	FCP	PRSD	H2	TK	2	HEATER	A-ON	V45X2206E1
107-17	ICL	FCP	PRSD	H2	TK	2	HEATER	B-ON	V45X2208E1
107-18	ICL	FCP	PRSD	O2	TK	3	HTR	ASSY 1 TEMP(MBK)	V45T1307A1
107-19	ICL	FCP	PRSD	O2	TK	3	HTR	ASSY 2 TEMP(MBK)	V45T1309A1
107-20	ICL	FCP	PRSD	O2	TK	3	HTR	A1-ON (MBK)	V45X1306E1
107-21	ICL	FCP	PRSD	O2	TK	3	HTR	B1-ON (MBK)	V45X1308E1
107-22	ICL	FCP	PRSD	O2	TK	3	HTR	A2-ON (MBK)	V45X1311E1
107-23	ICL	FCP	PRSD	O2	TK	3	HTR	B2-ON (MBK)	V45X1313E1
107-24	ICL	FCP	PRSD	H2	TK	3	HTR	ASSY TEMP(MBK)	V45T2307A1
107-25	ICL	FCP	PRSD	H2	TK	3	HTR	A-ON (MBK)	V45X2306E1
107-26	ICL	FCP	PRSD	H2	TK	3	HTR	B-ON (MBK)	V45X2308E1
107-27	ICL	FCP	PRSD	O2	TK	4	HTR	ASSY 1 TEMP(MBK)	V45T1407A1
107-28	ICL	FCP	PRSD	O2	TK	4	HTR	ASSY 2 TEMP(MBK)	V45T1409A1
107-29	ICL	FCP	PRSD	O2	TK	4	HTR	A1-ON (MBK)	V45X1406E1
107-30	ICL	FCP	PRSD	O2	TK	4	HTR	A2-ON (MBK)	V45X1411E1
107-31	ICL	FCP	PRSD	H2	TK	4	HTR	ASSY TEMP(MBK)	V45T2407A1
107-32	ICL	FCP	PRSD	H2	TK	4(&5)	HTR	A-ON	V45X2456E1
107-33	ICL	FCP	PRSD	H2	TK	4(&5)	HTR	B-ON	V45X2458E1
107-34	ICL	FCP	PRSD	O2	TK	5	HTR	ASSY 1 TEMP(MBK)	V45T1507A1
107-35	ICL	FCP	PRSD	O2	TK	5	HTR	ASSY 2 TEMP(MBK)	V45T1509A1
107-36	ICL	FCP	PRSD	O2	TK	4/5	HTR	B1/A1-ON	V45X1408E1
107-37	ICL	FCP	PRSD	O2	TK	4/5	HTR	B2/A2-ON	V45X1413E1
107-38	ICL	FCP	PRSD	H2	TK	5	HTR	ASSY TEMP(MBK)	V45T2507A1
107-39	ICL	FCP	PRSD	O2	TK	5	HTR	A1-ON	V45X1506E1
107-40	ICL	FCP	PRSD	O2	TK	5	HTR	B1-ON	V45X1508E1
107-41	ICL	FCP	PRSD	O2	TK	5	HTR	A2-ON	V45X1511E1
107-42	ICL	FCP	PRSD	O2	TK	5	HTR	B2-ON	V45X1513E1
107-43	ICL	FCP	PRSD	H2	TK	5	HTR	A-ON	V45X2506E1
107-44	ICL	FCP	PRSD	H2	TK	5	HTR	B-ON	V45X2508E1
108-00	ICL	HYFU	OMS-L	POD	HE	TANK	PRESS	2	V43P4122C1
108-01	ICL	HYFU	OMS-L	POD	HE	TANK	PRESS	1	V43P4121C1
108-02	ICL	HYFU	OMS-R	POD	HE	TANK	PRESS	2	V43P5122C1
108-03	ICL	HYFU	OMS-R	POD	HE	TANK	PRESS	1	V43P5121C1
108-04	ICL	HYFU	RCS	L	AFT	HE	FU	TANK PRESS-2	V42P2114C1

108-05	ICL	HYFU	RCS	L	AFT	HE	FU	TANK	PRESS-1	V42P2113C1
108-06	ICL	HYFU	RCS	R	AFT	HE	FU	TANK	PRESS-2	V42P3114C1
108-07	ICL	HYFU	RCS	R	AFT	HE	FU	TANK	PRESS-1	V42P3113C1
108-08	ICL	HYFU	RCS	FWD	HE	FU	TANK	PRESS-2	V42P1114C1	
108-09	ICL	HYFU	RCS	FWD	HE	FU	TANK	PRESS-1	V42P1113C1	
108-10	ICL	HYFU	RCS	L	AFT	HE	FU	TANK	TEMP-1	V42T2104C1
108-11	ICL	HYFU	OMS-L	POD	HE	TANK	TEMP-UPPER			V43T4111C1
108-12	ICL	HYFU	RCS	R	AFT	HE	FU	TANK	TEMP-1	V42T3104C1
108-13	ICL	HYFU	OMS-R	POD	HE	TANK	TEMP-UPPER			V43T5111C1
108-14	ICL	HYFU	RCS	FWD	HE	FU	TANK	TEMP-1		V42T1104C1
108-15	ICL	HYFU	RCS	FWD	FU	TANK	ULLAGE	PRESS		V42P1116C1
108-16	ICL	HYFU	RCS	L	AFT	FU	TANK	ULLAGE	PRESS	V42P2116C1
108-17	ICL	HYFU	RCS	R	AFT	FU	TANK	ULLAGE	PRESS	V42P3116C1
109-00	ICL	HYOX	RCS	L	AFT	HE	OX	TANK	PRESS-2	V42P2112C1
109-01	ICL	HYOX	RCS	L	AFT	HE	OX	TANK	PRESS-1	V42P2110C1
109-02	ICL	HYOX	RCS	R	AFT	HE	OX	TANK	PRESS-2	V42P3112C1
109-03	ICL	HYOX	RCS	R	AFT	HE	OX	TANK	PRESS-1	V42P3110C1
109-04	ICL	HYOX	RCS	FWD	HE	OX	TANK	PRESS-2		V42P1112C1
109-05	ICL	HYOX	RCS	FWD	HE	OX	TANK	PRESS-1		V42P1110C1
109-06	ICL	HYOX	RCS	L	AFT	HE	OX	TANK	TEMP-1	V42T2100C1
109-07	ICL	HYOX	RCS	R	AFT	HE	OX	TANK	TEMP-1	V42T3100C1
109-08	ICL	HYOX	RCS	FWD	HE	OX	TANK	TEMP-1		V42T1100C1
109-09	ICL	HYOX	RCS	FWD	OX	TANK	ULLAGE	PRESS		V42P1115C1
109-10	ICL	HYOX	RCS	L	AFT	OX	TANK	ULLAGE	PRESS	V42P2115C1
109-11	ICL	HYOX	RCS	R	AFT	OX	TANK	ULLAGE	PRESS	V42P3115C1
110-00	ACL	BHYD	LH	RATE	APU	A	TURBINE	SPEED	SNSR 2	B46R1408C1
110-01	ACL	BHYD	LH	RATE	APU	B	TURBINE	SPEED	SNSR 2	B46R1409C1
110-02	ACL	BHYD	RH	RATE	APU	A	TURBINE	SPEED	SNSR 2	B46R2408C1
110-03	ACL	BHYD	RH	RATE	APU	B	TURBINE	SPEED	SNSR 2	B46R2409C1
110-04	ACL	BHYD	LH	POSITION	TVC	ROCK	ACTUATOR			B58H1150C1
110-05	ACL	BHYD	LH	POSITION	TVC	TILT	ACTUATOR			B58H1151C1
110-06	ACL	BHYD	RH	POSITION	TVC	ROCK	ACTUATOR			B58H2150C1
110-07	ACL	BHYD	RH	POSITION	TVC	TILT	ACTUATOR			B58H2151C1
111-00	ACL	PVD	L	FWD	VENTS	1&2	CLOSED	1		V59X3005X1
111-01	ACL	PVD	L	FWD	VENTS	1&2	CLOSED	2		V59X3015X1
111-02	ACL	PVD	L	AFT	VENTS	8&9	CLOSED	1		V59X3805X1
111-03	ACL	PVD	L	AFT	VENTS	8&9	CLOSED	2		V59X3815X1
111-04	ACL	PVD	R	FWD	VENTS	1&2	CLOSED	1		V59X4005X1
111-05	ACL	PVD	R	FWD	VENTS	1&2	CLOSED	2		V59X4015X1
111-06	ACL	PVD	R	AFT	VENTS	8&9	CLOSED	1		V59X4805X1
111-07	ACL	PVD	R	AFT	VENTS	8&9	CLOSED	2		V59X4815X1
112-00	ACL	BRS	RSS	OK	TO	LAUNCH	IND	NO.1		GRSX2100E
112-01	ACL	BRS	RSS	OK	TO	LAUNCH	IND	NO.2		GRSX2102E

\$ FWD MDM POWER SEPARATION CHECK \$
 \$ MDM TYPE DETERMINES WHICH SET OF LIMITS TO BE USED \$
 \$ FOR THE NEXT 4 STEPS. FIRST SET OF LIMITS = STND \$


```

-----:
:           :          GROUND LAUNCH SEQUENCE DESCRIPTION DOCUMENT - LCD STS 96          : KLO-82-0071 APP. A :
:-----:
:   :   :S:   :   :          :          :          VALUE          :   :   :   :   :   :   :
: SEQ : CDT/ :I:FUNC:DISC:          NOMENCLATURE          : FUNCTION :-----: ELSE :DUR.: LCC : OMRSD :
:   :   :STEP:T:   :   :          : DESIGNATOR:SINGLE:   :   :   :   :   :   :
:   :   :E:   :   :          :   :OR LO : HIGH : UNIT :   :   :   :   :   :
:   :   : :   :   :          :   :   :   :   :   :   :   :   :   :
:-----:
:-----:

```

114-00 -07:30

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*****
115-00      LABL INTG OAA MILESTONE                      MOAA                      S00E00.960
*****

```

\$ NOTICE: THIS MILESTONE DOES NOT HOLD FOR
DOWNSTREAM HOLD INDICATIONS \$

```

115-01      VFY INTG RSS MANUAL HOLD                      ON                      INHB MOAA
115-02      VFY INTG NTD MANUAL HOLD                      ON                      INHB MOAA
115-03      VFY INTG GLS MANUAL HOLD                      ON                      INHB MOAA
115-04      VFY INTG LPS COUNTDOWN HOLD                  V90X8768X1 OFF          INHB MOAA
115-05      VFY INTG GLS-GO FOR OAA RETRACT              MOAA                    ON                      HOLD
115-06      MMSG INTG -05:00 GO FOR APU START
115-07      MSG INTG START OAA RETRACT

```

```

116-00      CMD ARMS INHB PRI LOCK VLV                  GSAK7137E ON
116-01      CMD ARMS INHB SEC LOCK VLV                  GSAK7157E ON
116-02      CMD ARMS OAA LOCK PRI EXTEND LOCK V          GSAK7130E OFF
116-03      CMD ARMS OAA LOCK SEC EXTEND LOCK V          GSAK7150E OFF
116-04      CMD ARMS OAA LOCK PRI EXTEND LOCK V          GSAK7135E OFF
116-05      CMD ARMS OAA LOCK SEC EXTEND LOCK V          GSAK7155E OFF

```

\$ GLS EVENT COMPLETE = 449 \$

\$ UNLOCK OAA \$

```

117-00      CMD ARMS OAA UNLOCK PRI EXTEND LOCK V          GSAK7120E ON
117-01      CMD ARMS OAA UNLOCK SEC EXTEND LOCK V          GSAK7140E ON
117-02      CMD ARMS OAA UNLOCK PRI EXTEND LOCK V          GSAK7125E ON
117-03      CMD ARMS OAA UNLOCK SEC EXTEND LOCK V          GSAK7145E ON

```

\$ VFY OAA UNLATCH \$

```

118-00      VFY ARMS OAA HINGESIDE LATCHED SWITCH        GSAX7111E OFF          1 OF 4
118-01      VFY ARMS OAA HINGESIDE LATCHED SWITCH        GSAX7116E OFF          1 OF 4
118-02      VFY ARMS OAA HINGESIDE UNLATCHED SWITCH        GSAX7112E ON           1 OF 4
118-03      VFY ARMS OAA HINGESIDE UNLATCHED SWITCH        GSAX7117E ON           GTO ST180
118-04      VFY ARMS OAA OUTSIDE LATCHED SWITCH          GSAX7113E OFF          1 OF 4
118-05      VFY ARMS OAA OUTSIDE LATCHED SWITCH          GSAX7118E OFF          1 OF 4

```

118-06 VFY ARMS OAA OUTSIDE UNLATCHED SWITCH GSAX7114E ON 1 OF 4
118-07 VFY ARMS OAA OUTSIDE UNLATCHED SWITCH GSAX7119E ON GTO ST180
GTO ST190

\$ UNLATCH OAA \$

118-08 ST180 CMD ARMS OAA LCHBACK SPLY V-UNLATCH GSAK7510E ON
118-09 CMD ARMS OAA LCHBACK SPLY V-UNLATCH GSAK7515E ON

\$ DELAY 1 SECOND \$

118-10 CMD ARMS OAA LCHBACK SPLY V-UNLATCH GSAK7510E OFF
118-11 CMD ARMS OAA LCHBACK SPLY V-UNLATCH GSAK7515E OFF

\$ DELAY 1 SECOND \$

\$ FOR THE NEXT TWO VOTING LOGIC GROUPS, ANY FAILURE \$
\$ WILL RESULT IN A HOLD AT T-5 MINUTES \$

\$ VFY OAA UNLATCH \$

118-12 VFY ARMS OAA HINGESIDE LATCHED SWITCH GSAX7111E OFF 1 OF 4
118-13 VFY ARMS OAA HINGESIDE LATCHED SWITCH GSAX7116E OFF 1 OF 4
118-14 VFY ARMS OAA HINGESIDE UNLATCHED SWITCH GSAX7112E ON 1 OF 4
118-15 VFY ARMS OAA HINGESIDE UNLATCHED SWITCH GSAX7117E ON GTO ST200
118-16 VFY ARMS OAA OUTSIDE LATCHED SWITCH GSAX7113E OFF 1 OF 4
118-17 VFY ARMS OAA OUTSIDE LATCHED SWITCH GSAX7118E OFF 1 OF 4
118-18 VFY ARMS OAA OUTSIDE UNLATCHED SWITCH GSAX7114E ON 1 OF 4
118-19 VFY ARMS OAA OUTSIDE UNLATCHED SWITCH GSAX7119E ON GTO ST200

\$ GLS EVENT COMPLETE = 447 \$

ST190

\$ CONTINUE \$

119-00 -07:26

\$ IN THE NEXT TWO GROUPS OF VOTING LOGIC, \$
\$ IF ANY FAIL, A HOLD AT T-5 MIN WILL OCCUR \$

\$ VFY OAA UNLOCK \$

121-00 VFY ARMS OAA ARM EXTEND TOP UNLOCKED SWITCH GSAX7551E ON 1 OF 4
121-01 VFY ARMS OAA ARM EXTEND TOP UNLOCKED SWITCH GSAX7556E ON 1 OF 4
121-02 VFY ARMS OAA ARM EXTEND TOP LOCKED SWITCH GSAX7541E OFF 1 OF 4
121-03 VFY ARMS OAA ARM EXTEND TOP LOCKED SWITCH GSAX7546E OFF GTO ST200
121-04 VFY ARMS OAA ARM EXTEND BOTTOM UNLOCKED SW GSAX7571E ON 1 OF 4
121-05 VFY ARMS OAA ARM EXTEND BOTTOM UNLOCKED SW GSAX7576E ON 1 OF 4
121-06 VFY ARMS OAA ARM EXTEND BOTTOM LOCKED SW GSAX7561E OFF 1 OF 4
121-07 VFY ARMS OAA ARM EXTEND BOTTOM LOCKED SW GSAX7566E OFF GTO ST200

\$ CLOSE INHIBIT VALVE \$

123-00 CMD ARMS OAA CLOSE GN2 INHIBIT V GSAK7100E ON

123-01 CMD ARMS OAA CLOSE GN2 INHIBIT V GSAK7105E ON

\$ GLS EVENT COMPLETE = 444 \$

ST200 \$ CONTINUE \$

124-00 -07:24

\$ PERFORM FOLLOWING SEQUENCE ONLY IF \$
\$ OAA IS VERIFIED UNLATCHED AND UNLOCKED \$

\$ BEGIN OAA RETRACT \$

125-00 CMD ARMS OAA OPEN PRI RETRACT SUPPLY V GSAK7210E ON
125-01 CMD ARMS OAA OPEN SEC RETRACT SUPPLY V GSAK7250E ON
125-02 CMD ARMS OAA OPEN PRI RETRACT SUPPLY V GSAK7215E ON
125-03 CMD ARMS OAA OPEN SEC RETRACT SUPPLY V GSAK7255E ON
125-04 CMD ARMS OAA OPEN PRI RETRACT RETURN V GSAK7230E ON
125-05 CMD ARMS OAA OPEN SEC RETRACT RETURN V GSAK7270E ON
125-06 CMD ARMS OAA OPEN PRI RETRACT RETURN V GSAK7235E ON
125-07 CMD ARMS OAA OPEN SEC RETRACT RETURN V GSAK7275E ON

\$ GLS EVENT COMPLETE = 443 \$

\$ OAA RETRACT BYPASS BRANCH POINT \$
\$ CONFIGURE OAA FOR EXTEND WHEN RETRACTED \$

126-00 CVFY ARMS OAA PRI FULLY RTR SW-RETRACTED GSAK7621E OFF 3 OF 4
126-01 CVFY ARMS OAA SEC FULLY RTR SW-RETRACTED GSAK7622E OFF 3 OF 4
126-02 CVFY ARMS OAA PRI FULLY RTR SW-RETRACTED GSAK7626E OFF 3 OF 4
126-03 CVFY ARMS OAA SEC FULLY RTR SW-RETRACTED GSAK7627E OFF CPER [P005](#)

127-00 CVFY EPDC FUEL CELL 1 TO ESS BUS 1BC-ON V76S0163E1 ON INHB MSEQ EPDC-07
127-01 CVFY EPDC FUEL CELL 2 TO ESS BUS 2CA-ON V76S0263E1 ON INHB MSEQ EPDC-07
127-02 CVFY EPDC FUEL CELL 3 TO ESS BUS 3AB-ON V76S0363E1 ON INHB MSEQ EPDC-07

128-00 -06:00

\$ APU STATUS CHECK \$

\$ APU FUEL PUMP SEAL CHECK \$

128-01 CVFY APU APU 1 FUEL PUMP DRAIN LINE PRESS 1 V46P0190A1 NOLO 25 PSIA 1 OF 2 APU-16
128-02 CVFY APU APU 1 FUEL PUMP DRAIN LINE PRESS 2 V46P0191A1 NOLO 25 PSIA INHB MSEQ APU-16
128-03 CVFY APU APU 2 FUEL PUMP DRAIN LINE PRESS 1 V46P0290A1 NOLO 25 PSIA 1 OF 2 APU-16
128-04 CVFY APU APU 2 FUEL PUMP DRAIN LINE PRESS 2 V46P0291A1 NOLO 25 PSIA INHB MSEQ APU-16
128-05 CVFY APU APU 3 FUEL PUMP DRAIN LINE PRESS 1 V46P0390A1 NOLO 25 PSIA 1 OF 2 APU-16
128-06 CVFY APU APU 3 FUEL PUMP DRAIN LINE PRESS 2 V46P0391A1 NOLO 25 PSIA INHB MSEQ APU-16

129-00 -05:25

\$ APU PRE-START STATUS \$

129-03 VFY HYD PCA HYDRAULIC PUMP 1 RPC A ON V76X4020E1 ON INHB MAPU HYD-09
129-04 VFY HYD PCA HYDRAULIC PUMP 1 RPC B ON V76X4021E1 ON INHB MAPU HYD-09
129-05 VFY HYD PCA HYDRAULIC PUMP 2 RPC B ON V76X4024E1 ON INHB MAPU HYD-09

129-06	VFY	HYD	PCA HYDRAULIC PUMP 2 RPC C ON	V76X4025E1	ON				INHB	MAPU		HYD-09
129-07	VFY	HYD	PCA HYDRAULIC PUMP 3 RPC C ON	V76X4027E1	ON				INHB	MAPU		HYD-09
129-08	VFY	HYD	PCA HYDRAULIC PUMP 3 RPC A ON	V76X4028E1	ON				INHB	MAPU		HYD-09
§ APU FUEL TANK ISO VALVE CHECK §												
129-09	CVFY	APU	APU 1 FUEL ISLN VLV A OPEN/PWR ON	V46X0115E1	ON				INHB	MSEQ		APU-23
129-10	CVFY	APU	APU 1 FUEL ISLN VLV B OPEN/PWR ON	V46X0134E1	ON				INHB	MSEQ		APU-23
129-11	CVFY	APU	APU 2 FUEL ISLN VLV A OPEN/PWR ON	V46X0215E1	ON				INHB	MSEQ		APU-23
129-12	CVFY	APU	APU 2 FUEL ISLN VLV B OPEN/PWR ON	V46X0234E1	ON				INHB	MSEQ		APU-23
129-13	CVFY	APU	APU 3 FUEL ISLN VLV A OPEN/PWR ON	V46X0315E1	ON				INHB	MSEQ		APU-23
129-14	CVFY	APU	APU 3 FUEL ISLN VLV B OPEN/PWR ON	V46X0334E1	ON				INHB	MSEQ		APU-23
§ APU PERFORMANCE GUARDS §												
130-00	CVFY	APU	APU 1 GEARBOX LUBE OIL OUT TEMP	V46T0154A1	NOLO	275		DEGF	INHB	MSEQ		APU-08
130-01	CVFY	APU	APU 1 GEARBOX LUBE OIL RETURN TEMP	V46T0150A1	NOLO	260		DEGF	INHB	MSEQ		APU-08
130-02	CVFY	APU	APU 2 GEARBOX LUBE OIL OUT TEMP	V46T0254A1	NOLO	275		DEGF	INHB	MSEQ		APU-08
130-03	CVFY	APU	APU 2 GEARBOX LUBE OIL RETURN TEMP	V46T0250A1	NOLO	260		DEGF	INHB	MSEQ		APU-08
130-04	CVFY	APU	APU 3 GEARBOX LUBE OIL OUT TEMP	V46T0354A1	NOLO	275		DEGF	INHB	MSEQ		APU-08
130-05	CVFY	APU	APU 3 GEARBOX LUBE OIL RETURN TEMP	V46T0350A1	NOLO	260		DEGF	INHB	MSEQ		APU-08
§ PCA APU CNTLR RPC PWR ON CHECK §												
130-06	CVFY	APU	PCA APU CONTROLLER 1 RPC A ON	V76X4001E1	ON				INHB	MSEQ		APU-24
130-07	CVFY	APU	PCA APU CONTROLLER 1 RPC B ON	V76X4002E1	ON				INHB	MSEQ		APU-24
130-08	CVFY	APU	PCA APU CONTROLLER 2 RPC B ON	V76X4004E1	ON				INHB	MSEQ		APU-24
130-09	CVFY	APU	PCA APU CONTROLLER 2 RPC C ON	V76X4005E1	ON				INHB	MSEQ		APU-24
130-10	CVFY	APU	PCA APU CONTROLLER 3 RPC A ON	V76X4007E1	ON				INHB	MSEQ		APU-24
130-11	CVFY	APU	PCA APU CONTROLLER 3 RPC C ON	V76X4008E1	ON				INHB	MSEQ		APU-24
§ ENGINE HE SUPPLY TEMP CHECK §												
131-00	VFY	MPS	MPS E1 AFT FUSELAGE HE SUPPLY TEMP	V41T1151A1	-5	65		DEGF	2 OF 3			MPS-02
131-01	VFY	MPS	MPS E2 AFT FUSELAGE HE SUPPLY TEMP	V41T1251A1	-5	65		DEGF	2 OF 3			MPS-02
131-02	VFY	MPS	MPS E3 AFT FUSELAGE HE SUPPLY TEMP	V41T1351A1	-5	65		DEGF	INHB	MAPU		MPS-02
131-03	VFY	MPS	MPS E1 MID FUSELAGE HE SUPPLY TEMP	V41T1152A1	45	135		DEGF	2 OF 3			MPS-02
131-04	VFY	MPS	MPS E2 MID FUSELAGE HE SUPPLY TEMP	V41T1252A1	45	135		DEGF	2 OF 3			MPS-02
131-05	VFY	MPS	MPS E3 MID FUSELAGE HE SUPPLY TEMP	V41T1352A1	45	135		DEGF	INHB	MAPU		MPS-02
§ MPS HELIUM SYSTEM MONITOR §												
132-08	CVFY	MPS	MPS E1 HE SUPPLY BOTTLE PRESS	V41P1150C1	4100	4550	PSIA	INHB	MENG	T-13		S00FF0.070
132-09	CVFY	MPS	MPS E2 HE SUPPLY BOTTLE PRESS	V41P1250C1	4100	4550	PSIA	INHB	MENG	T-13		S00FF0.070
132-10	CVFY	MPS	MPS E3 HE SUPPLY BOTTLE PRESS	V41P1350C1	4100	4550	PSIA	INHB	MENG	T-13		S00FF0.070
132-11	CVFY	MPS	MPS PNEU VLVS HE SUP BOTTLE PRESS	V41P1600A1	4100	4550	PSIA	INHB	MENG	T-13		S00FF0.070
§ MPS VLV POSITION QUALIFICATION §												
132-12	VFY	MPS	MPS LH2 OTBD F/D VLV (PV11) CL IND	V41X1389X1	OFF				INHB	MAPU		MPS-34
132-13	VFY	MPS	MPS LO2 OTBD F/D VLV (PV9) CL IND	V41X1514X1	OFF				INHB	MAPU		MPS-34
132-14	VFY	MPS	MPS LH2 TOPPING VLV (PV13) CL IND	V41X1456X1	OFF				INHB	MAPU		MPS-34
132-15	VFY	MPS	MPS LO2 POGO RECRC 1 (PV20) OP IND	V41X1811X1	OFF				INHB	MAPU		MPS-34
132-16	VFY	MPS	MPS LO2 POGO RECRC 2 (PV21) OP IND	V41X1821X1	OFF				INHB	MAPU		MPS-34
§ RECORDER STATUS §												
134-00	VFY	INST	RCDR OPS 2 BITE	V75X2629E1	ON				3 OF 3			INS-02

134-01	VFY	INST	RCDR OPS 2	HEAD TEMPERATURE	V75T2617A1	NOLO	120	DEGF	3 OF 3	INS-02
134-02	VFY	INST	RCDR OPS 2	TAPE MOTION	V75X2623E1	ON			INHB MAPU	INS-02

\$ GLS EVENT COMPLETE = 300 \$

135-06 -05:05

135-07	VFY	MPS	MPS E1	LO2 INLET TEMP	V41T1131C1	NOLO	-287.7	DEGF	2 OF 3	MPS-24
135-08	VFY	MPS	MPS E2	LO2 INLET TEMP	V41T1231C1	NOLO	-287.7	DEGF	2 OF 3	MPS-24
135-09	VFY	MPS	MPS E3	LO2 INLET TEMP	V41T1331C1	NOLO	-287.7	DEGF	INHB MAPU	MPS-24

\$ OAA RETRACTION VERIFICATION \$

135-10	VFY	ARMS	OAA PRI	FULLY RTR SW-RETRACTED	GSAX7621E	ON			2 OF 3	GSE-12
135-11	VFY	ARMS	OAA SEC	FULLY RTR SW-RETRACTED	GSAX7622E	ON			2 OF 3	GSE-12
135-12	VFY	ARMS	OAA	POSITION INDICATION	GSAH7831A	NOLO	2	DEG	OR	GSE-12
135-13	VFY	ARMS	OAA PRI	FULLY RTR SW-RETRACTED	GSAX7626E	ON			2 OF 3	GSE-12
135-14	VFY	ARMS	OAA SEC	FULLY RTR SW-RETRACTED	GSAX7627E	ON			2 OF 3	GSE-12
135-15	VFY	ARMS	OAA	POSITION INDICATOR	GSAH7836A	NOLO	2	DEG	INHB MAPU	GSE-12

136-00 -05:00

137-00	VFY	LO2	LOX	FLIGHT MASS	N03IS008E	ON			INHB MAPU	ET-10	S00FM0.043
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 LABEL INTG APU START MILESTONE MAPU

S00E00.960

138-01	VFY	INTG	GLS-GO	FOR PURGE SEQ. 4	MPS4	ON			INHB MAPU
138-02	VFY	INTG	GLS-GO	FOR ET LO2 PRE-PRESS	MLOX	ON			INHB MAPU
138-03	VFY	INTG	GLS-GO	FOR ET LH2 REPLN TERM	MLH2	ON			INHB MAPU
138-04	VFY	INTG	LPS	COUNTDOWN HOLD	V90X8768X1	OFF			INHB MAPU
138-05	VFY	INTG	GLS-GO	FOR AUTO SEQ START	MSEQ	ON			INHB MAPU
138-06	VFY	INTG	GLS-GO	FOR SSME IGNITION	MENG	ON			INHB MAPU
138-07	VFY	INTG	GLS-GO	FOR SRB IGNITION	MSRB	ON			INHB MAPU
138-08	VFY	INTG	RSS	MANUAL HOLD		ON			INHB MAPU
138-09	VFY	INTG	NTD	MANUAL HOLD		ON			INHB MAPU
138-10	VFY	INTG	GLS	MANUAL HOLD		ON			INHB MAPU

138-11	VFY	INTG	GLS-GO	FOR APU START	MAPU	ON			HOLD
138-12	MMSG	INTG	-04:00	GO FOR PURGE SEQ 4					
138-13	OMSG	INTG	***	GLS GO FOR APU START ***					
138-14	MSG	INTG	APU	START					
138-15	CMD	INTG	APU	HOLD AVAILABLE TIMER ACTIV.	GCDKTM2E	ON			

\$///////////////// CREW CMD APU 1/2/3 START ///////////////////\$

\$ GLS EVENT COMPLETE = 299 \$

\$ ARM SRB SAFE AND ARM DEVICES \$

139-00	CMD	BPYR	LH	IGNITION S&A DEVICE,SAFE	CMD 1	B55K3001XL	OFF			S00FM0.210
139-01	CMD	BPYR	LH	IGNITION S&A DEVICE,SAFE	CMD 2	B55K3002XL	OFF			S00FM0.210
139-02	CMD	BPYR	RH	IGNITION S&A DEVICE,SAFE	CMD 1	B55K4001XL	OFF			S00FM0.210

139-03 CMD BPYR RH IGNITION S&A DEVICE,SAFE CMD 2 B55K4002XL OFF S00FM0.210

\$ GLS EVENT COMPLETE = 298 \$

140-00 CMD BRS LH RSS S&A DEVICE ARM CMD B55K3044XL ON S00FM0.210

140-01 CMD BRS RH RSS S&A DEVICE ARM CMD B55K4044XL ON S00FM0.210

140-03 CMD BPYR LH IGNITION S&A DEVICE, ARM CMD B55K3000XL ON S00FM0.210

140-04 CMD BPYR RH IGNITION S&A DEVICE, ARM CMD B55K4000XL ON S00FM0.210

\$ GLS EVENT COMPLETE = 297 \$

\$ MPS PNEUMATIC HE REG STATUS \$

140-20 CVFY MPS MPS PNEU VLVS REG HE OUTLET PRESS V41P1605A1 716 796 PSIA INHB MSEQ MPS-46

140-21 CVFY MPS MPS PNEU ACCUMULATOR PRESSURE V41P1650A1 716 796 PSIA INHB MSEQ MPS-46

141-00 -04:55

142-00 CMD BRS LH RSS S&A DEVICE ARM CMD B55K3044XL OFF S00FM0.210

142-01 CMD BRS RH RSS S&A DEVICE ARM CMD B55K4044XL OFF S00FM0.210

142-03 CMD BPYR LH IGNITION S&A DEVICE, ARM CMD B55K3000XL OFF S00FM0.210

142-04 CMD BPYR RH IGNITION S&A DEVICE, ARM CMD B55K4000XL OFF S00FM0.210

\$ RSS S/A ARM CHECK \$

142-05 CVFY BRS LH EVENT RSS S&A DEVICE ARMED B55X1870X1 ON INHB MENG BRSS-16 S00FM0.210

142-06 CVFY BRS RH EVENT RSS S&A DEVICE ARMED B55X2870X1 ON INHB MENG BRSS-16 S00FM0.210

142-08 VFY BRS LH EVENT RSS S&A DEVICE SAFED B55X1869X1 OFF INHB MPS4 BRSS-17 S00FM0.210

142-09 VFY BRS RH EVENT RSS S&A DEVICE SAFED B55X2869X1 OFF INHB MPS4 BRSS-17 S00FM0.210

142-11 CVFY BRS LH CURRENT RSS BATTERY NO 1 B55C1051C1 0.42 0.57 AMP INHB MSEQ BRSS-11

142-12 CVFY BRS RH CURRENT RSS BATTERY NO 1 B55C2051C1 0.42 0.57 AMP INHB MSEQ BRSS-11

\$ APU GEARBOX BEARING CHECKS \$

143-00 CVFY APU APU 1 GEARBOX BEARING TEMP NO1 V46T0161A1 NOLO 285 DEGF INHB MSEQ APU-12

143-01 CVFY APU APU 1 GEARBOX BEARING TEMP NO2 V46T0162A1 NOLO 285 DEGF INHB MSEQ APU-12

143-02 CVFY APU APU 2 GEARBOX BEARING TEMP NO1 V46T0261A1 NOLO 285 DEGF INHB MSEQ APU-12

143-03 CVFY APU APU 2 GEARBOX BEARING TEMP NO2 V46T0262A1 NOLO 285 DEGF INHB MSEQ APU-12

143-04 CVFY APU APU 3 GEARBOX BEARING TEMP NO1 V46T0361A1 NOLO 285 DEGF INHB MSEQ APU-12

143-05 CVFY APU APU 3 GEARBOX BEARING TEMP NO2 V46T0362A1 NOLO 285 DEGF INHB MSEQ APU-12

\$ GLS EVENT COMPLETE = 294 \$

144-00 -04:50

\$ IGN S/A ARM CHECK \$

145-00 CVFY BPYR LH EVENT IGN S&A DEVICE ARMED B55X1842X1 ON INHB MSRB SRM-02 S00FM0.210

145-01 CVFY BPYR RH EVENT IGN S&A DEVICE ARMED B55X2842X1 ON INHB MSRB SRM-02 S00FM0.210

145-02 CVFY BPYR LH EVENT IGN S&A DEVICE SAFED B55X1843X1 OFF INHB MSRB SRM-02 S00FM0.210

145-03 CVFY BPYR RH EVENT IGN S&A DEVICE SAFED B55X2843X1 OFF INHB MSRB SRM-02 S00FM0.210

\$ GLS EVENT COMPLETE = 270 \$

146-00 -04:30

				\$ TURN OFF MAIN FUEL VALVE HEATERS \$								
147-00	CMD	SSME	MPENG	MFV1	HEATER	PWR	ON	CMD	GGNK1020E	OFF		S00FM0.040
147-01	CMD	SSME	MPENG	MFV1	HEATER	PWR	ON	CMD (R)	GGNK1110E	OFF		S00FM0.040
147-02	CMD	SSME	MPENG	MFV1	HEATER	PWR	OFF	CMD	GGNK1021E	ON		S00FM0.040
147-03	CMD	SSME	MPENG	MFV1	HEATER	PWR	OFF	CMD(R)	GGNK1141E	ON		S00FM0.040
147-04	CMD	SSME	MPENG	MFV2	HEATER	PWR	ON	CMD	GGNK1040E	OFF		S00FM0.040
147-05	CMD	SSME	MPENG	MFV2	HEATER	PWR	ON	CMD(R)	GGNK1150E	OFF		S00FM0.040
147-06	CMD	SSME	MPENG	MFV2	HEATER	PWR	OFF	CMD	GGNK1041E	ON		S00FM0.040
147-07	CMD	SSME	MPENG	MFV2	HEATER	PWR	OFF	CMD(R)	GGNK1151E	ON		S00FM0.040
147-08	CMD	SSME	MPENG	MFV3	HEATER	PWR	ON	CMD	GGNK1060E	OFF		S00FM0.040
147-09	CMD	SSME	MPENG	MFV3	HEATER	PWR	ON	CMD(R)	GGNK1170E	OFF		S00FM0.040
147-10	CMD	SSME	MPENG	MFV3	HEATER	PWR	OFF	CMD	GGNK1061E	ON		S00FM0.040
147-11	CMD	SSME	MPENG	MFV3	HEATER	PWR	OFF	CMD(R)	GGNK1161E	ON		S00FM0.040
147-12	CMD	SSME	ID700	PS	6811	OUTPUT	ON	CMD	G76K0702E	OFF		S00FM0.040
147-13	CMD	SSME	ID700	PS	6811	OUTPUT	OFF	CMD	G76K0703E	ON		S00FM0.040
147-14	CMD	SSME	ID800	PS	6812	OUTPUT	ON	CMD	G76K0802E	OFF		S00FM0.040
147-15	CMD	SSME	ID800	PS	6812	OUTPUT	OFF	CMD	G76K0803E	ON		S00FM0.040

147-21	CVFY	MPS	MPS	LO2	INBD	F/D	VLV	CL	PWR	(LV31)	V41X1505E1	ON		INHB	MSEQ	MPS-07
147-22	CVFY	MPS	MPS	LO2	INBD	F/D	VLV	OP	PWR	(LV30)	V41X1506E1	OFF		INHB	MSEQ	MPS-07

\$ GLS EVENT COMPLETE = 245 \$

148-00 -04:05

				\$ HYD PUMP DEPRESS OFF \$											
149-00	VFY	HYD	PCA	HYDRAULIC	PUMP	1	RPC	A	ON	V76X4020E1	OFF		INHB	MPS4	HYD-09
149-01	VFY	HYD	PCA	HYDRAULIC	PUMP	1	RPC	B	ON	V76X4021E1	OFF		INHB	MPS4	HYD-09
149-02	VFY	HYD	PCA	HYDRAULIC	PUMP	2	RPC	B	ON	V76X4024E1	OFF		INHB	MPS4	HYD-09
149-03	VFY	HYD	PCA	HYDRAULIC	PUMP	2	RPC	C	ON	V76X4025E1	OFF		INHB	MPS4	HYD-09
149-04	VFY	HYD	PCA	HYDRAULIC	PUMP	3	RPC	C	ON	V76X4027E1	OFF		INHB	MPS4	HYD-09
149-05	VFY	HYD	PCA	HYDRAULIC	PUMP	3	RPC	A	ON	V76X4028E1	OFF		INHB	MPS4	HYD-09

				\$ ORB HYD SUPPLY PRESS CHECK \$												
149-06	VFY	HYD	HYDR	SYS	1	SUPPLY	PRESS	B	V58P0115A1	2850	3400	PSIA	1	OF	2	HYD-02
149-07	VFY	HYD	HYDR	SYS	1	SUPPLY	PRESS	C	V58P0116C1	2800	3400	PSIA	INHB	MPS4		HYD-02
149-08	VFY	HYD	HYDR	SYS	2	SUPPLY	PRESS	B	V58P0215A1	2850	3400	PSIA	1	OF	2	HYD-02
149-09	VFY	HYD	HYDR	SYS	2	SUPPLY	PRESS	C	V58P0216C1	2800	3400	PSIA	INHB	MPS4		HYD-02
149-10	VFY	HYD	HYDR	SYS	3	SUPPLY	PRESS	B	V58P0315A1	2850	3400	PSIA	1	OF	2	HYD-02
149-11	VFY	HYD	HYDR	SYS	3	SUPPLY	PRESS	C	V58P0316C1	2800	3400	PSIA	INHB	MPS4		HYD-02

				\$ HYD CIRC PUMP LEAKAGE CHECK \$												
151-00	CVFY	HYD	HYD	SYS	1	CIRC	PUMP	PRESS	V58P0137A1	NOLO	140	PSIA	INHB	MSEQ		HYD-03
151-01	CVFY	HYD	HYD	SYS	2	CIRC	PUMP	PRESS	V58P0237A1	NOLO	140	PSIA	INHB	MSEQ		HYD-03
151-02	CVFY	HYD	HYD	SYS	3	CIRC	PUMP	PRESS	V58P0337A1	NOLO	140	PSIA	INHB	MSEQ		HYD-03

				\$ APU LUBE SYS CK-POST START \$												
152-00	CVFY	APU	APU-1	GEARBOX	GN2	PRESS	V46P0151A1	4.7	30.0	PSIA	INHB	MSEQ			APU-11	
152-01	CVFY	APU	APU-1	GEARBOX	LUBE	OIL	OUT	PRESS	V46P0153A1	NOLO	110	PSIA	INHB	MSEQ		APU-11
152-02	CVFY	APU	APU-2	GEARBOX	GN2	PRESS	V46P0251A1	4.7	30.0	PSIA	INHB	MSEQ			APU-11	

152-03	CVFY	APU	APU-2	GEARBOX	LUBE OIL	OUT PRESS	V46P0253A1	NOLO	110	PSIA	INHB	MSEQ	APU-11	
152-04	CVFY	APU	APU-3	GEARBOX	GN2	PRESS	V46P0351A1	4.7	30.0	PSIA	INHB	MSEQ	APU-11	
152-05	CVFY	APU	APU-3	GEARBOX	LUBE OIL	OUT PRESS	V46P0353A1	NOLO	110	PSIA	INHB	MSEQ	APU-11	
\$ APU TURBINE SPEED POST-START \$														
152-06	CVFY	APU	APU 1	TURBINE	SPEED		V46R0135A1	95	111	PCT	INHB	MENG	APU-06	
152-07	CVFY	APU	APU 2	TURBINE	SPEED		V46R0235A1	95	111	PCT	INHB	MENG	APU-06	
152-08	CVFY	APU	APU 3	TURBINE	SPEED		V46R0335A1	95	111	PCT	INHB	MENG	APU-06	
\$ GLS EVENT COMPLETE = 240 \$														
153-00	-04:00													
\$///// T-240 SEC, COMMAND IMU'S TO INERTIAL (R/S) /////\$														
153-01	VFY	LO2	LO2	DRAINBACK	INITIATED		N03IS500E	ON			INHB	MPS4	MPS-07	

154-00	LABL	INTG	PURGE	SEQ 4	MILESTONE		MPS4						S00FM0.960	

154-01	VFY	INTG	GLS-GO	FOR ET	LO2	PRE-PRESS	MLOX	ON			INHB	MPS4		
154-02	VFY	INTG	GLS-GO	FOR ET	LH2	REPLN TERM	MLH2	ON			INHB	MPS4		
154-03	VFY	INTG	GLS-GO	FOR AUTO	SEQ	START	MSEQ	ON			INHB	MPS4		
154-04	VFY	INTG	GLS-GO	FOR SSME	IGNITION		MENG	ON			INHB	MPS4		
154-05	VFY	INTG	GLS-GO	FOR SRB	IGNITION		MSRB	ON			INHB	MPS4		
154-06	VFY	INTG	LPS	COUNTDOWN	HOLD		V90X8768X1	OFF			INHB	MPS4		
154-07	VFY	INTG	RSS	MANUAL	HOLD			ON			INHB	MPS4		
154-08	VFY	INTG	NTD	MANUAL	HOLD			ON			INHB	MPS4		
154-09	VFY	INTG	GLS	MANUAL	HOLD			ON			INHB	MPS4		
154-10	VFY	INTG	GLS-GO	FOR PURGE	SEQ 4		MPS4	ON			HOLD			
154-11	MMSG	INTG	-02:55	GO FOR ET	LO2	PRE-PRESS								
154-12	MSG	INTG	GO FOR	PURGE	SEQ. 4									
\$ GLS EVENT COMPLETE = 239 \$														
\$ PURGE SEQ 4 \$														
155-00	ISSU	SSME	ME-1	PURGE	SEQUENCE 4	CMD	E41K1216BL	ON					S00FM0.250	
155-01	ISSU	SSME	ME-2	PURGE	SEQUENCE 4	CMD	E41K2216BL	ON					S00FM0.250	
155-02	ISSU	SSME	ME-3	PURGE	SEQUENCE 4	CMD	E41K3216BL	ON					S00FM0.250	
\$ GLS EVENT COMPLETE = 238 \$														
\$ IMU REDUNDANCY MNMT FAILURE MONITOR \$														
155-03	CVFY	GNS	IMU 1	FAIL			V90X2601X1	OFF			INHB	MSEQ	GNC-60	
155-04	CVFY	GNS	IMU 2	FAIL			V90X2701X1	OFF			INHB	MSEQ	GNC-60	
155-05	CVFY	GNS	IMU 3	FAIL			V90X2801X1	OFF			INHB	MSEQ	GNC-60	
156-00	-03:55													
\$ CHECK SSME FOR PURGE SEQUENCE NO.4 \$														
157-00	CVFY	SSME	ME-1	OPERATING	MODE	DW3	E41J1513B1	B100			INHB	MSEQ	MLH2 SSME-07	S00FM0.250

157-01	CVFY	SSME	ME-2	OPERATING MODE	DW3	E41J2513B1	B100			INHB	MSEQ	MLH2	SSME-07	S00FM0.250
157-02	CVFY	SSME	ME-3	OPERATING MODE	DW3	E41J3513B1	B100			INHB	MSEQ	MLH2	SSME-07	S00FM0.250
157-03	CVFY	SSME	ME-1	PHASE IN EFFECT	DW3	E41J1512B1	B010			INHB	MSEQ		SSME-07	S00FM0.250
157-04	CVFY	SSME	ME-2	PHASE IN EFFECT	DW3	E41J2512B1	B010			INHB	MSEQ		SSME-07	S00FM0.250
157-05	CVFY	SSME	ME-3	PHASE IN EFFECT	DW3	E41J3512B1	B010			INHB	MSEQ		SSME-07	S00FM0.250
				\$ HYD SYS CHECKS \$										
158-00	CVFY	HYD	HYD	SYS 1 RSVR FLUID PRESS		V58P0131A1	60	120	PSIA	INHB	MSEQ		HYD-07	
158-01	CVFY	HYD	HYD	SYS 1 BOOTSTRAP ACCUM GN2 P		V58P0167A1	2706	NOHI	PSIA	INHB	MSEQ		HYD-07	
158-02	CVFY	HYD	HYD	SYS 2 RSVR FLUID PRESS		V58P0231A1	60	120	PSIA	INHB	MSEQ		HYD-07	
158-03	CVFY	HYD	HYD	SYS 2 BOOTSTRAP ACCUM GN2 P		V58P0267A1	2706	NOHI	PSIA	INHB	MSEQ		HYD-07	
158-04	CVFY	HYD	HYD	SYS 3 RSVR FLUID PRESS		V58P0331A1	60	120	PSIA	INHB	MSEQ		HYD-07	
158-05	CVFY	HYD	HYD	SYS 3 BOOTSTRAP ACCUM GN2 P		V58P0367A1	2706	NOHI	PSIA	INHB	MSEQ		HYD-07	
				\$ GLS EVENT COMPLETE = 234 \$										
				\$ START AERO-SURFACE PROFILE \$										
159-00	CMD	FCL		INITIATE AERO-SURFACE DRIVE CHECK		<u>P001</u>		ON						S00FM0.270
159-01	CMD	FCL		AERO-SURFACE PROFILE EVAL		<u>P001</u>		ON						S00FM0.270
				\$ GLS EVENT COMPLETE = 225 \$										
160-00 -03:30														
				\$ START MPS GIMBAL PROFILE \$										
161-03	CMD	FCL		INITIATE MPS GIMBAL CHECK		<u>P002</u>		ON						S00FM0.300
161-04	CMD	FCL		MPS GIMBAL PROFILE EVAL		<u>P002</u>		ON						S00FM0.300
				\$ BFS IMU DATA INITIALIZATION \$										
161-05	VFY	DPS		QSM50 TRANSFER COMPLETE BFS		V98X0451X1		ON		INHB	MSEQ		BFS-11	
				\$ GLS EVENT COMPLETE = 209 \$										
164-00 -03:20														
				\$ ORB AEROSURFACE ACTUATOR HEALTH MONITOR \$										
166-00	CVFY	FCL		RUDDER DELTA PRESS 1		V57P0160A1	-850	850	PSID	INHB	MSEQ		GNC-27	
166-01	CVFY	FCL		RUDDER DELTA PRESS 2		V57P0161A1	-850	850	PSID	INHB	MSEQ		GNC-27	
166-02	CVFY	FCL		RUDDER DELTA PRESS 3		V57P0162A1	-850	850	PSID	INHB	MSEQ		GNC-27	
166-03	CVFY	FCL		RUDDER DELTA PRESS 4		V57P0163A1	-850	850	PSID	INHB	MSEQ		GNC-27	
166-04	CVFY	FCL		SPEED BRAKE DELTA PRESS 1		V57P0260A1	-850	850	PSID	INHB	MSEQ		GNC-27	
166-05	CVFY	FCL		SPEED BRAKE DELTA PRESS 2		V57P0261A1	-850	850	PSID	INHB	MSEQ		GNC-27	
166-06	CVFY	FCL		SPEED BRAKE DELTA PRESS 3		V57P0262A1	-850	850	PSID	INHB	MSEQ		GNC-27	
166-07	CVFY	FCL		SPEED BRAKE DELTA PRESS 4		V57P0263A1	-850	850	PSID	INHB	MSEQ		GNC-27	
166-08	CVFY	FCL	R	INBD ELEVON SEC DELTA PRESS 1		V58P0912A1	-850	850	PSID	INHB	MSEQ		GNC-24	
166-09	CVFY	FCL	R	INBD ELEVON SEC DELTA PRESS 2		V58P0913A1	-850	850	PSID	INHB	MSEQ		GNC-24	
166-10	CVFY	FCL	R	INBD ELEVON SEC DELTA PRESS 3		V58P0914A1	-850	850	PSID	INHB	MSEQ		GNC-24	
166-11	CVFY	FCL	R	INBD ELEVON SEC DELTA PRESS 4		V58P0915A1	-850	850	PSID	INHB	MSEQ		GNC-24	
166-12	CVFY	FCL	R	OUTBD ELEVON SEC DELTA PRESS 1		V58P0962A1	-850	850	PSID	INHB	MSEQ		GNC-24	
166-13	CVFY	FCL	R	OUTBD ELEVON SEC DELTA PRESS 2		V58P0963A1	-850	850	PSID	INHB	MSEQ		GNC-24	
166-14	CVFY	FCL	R	OUTBD ELEVON SEC DELTA PRESS 3		V58P0964A1	-850	850	PSID	INHB	MSEQ		GNC-24	

166-15	CVFY FCL	R OUTBD ELEVON SEC DELTA PRESS 4	V58P0965A1	-850	850	PSID	INHB MSEQ	GNC-24	
166-16	CVFY FCL	L INBD ELEVON SEC DELTA PRESS 1	V58P0812A1	-850	850	PSID	INHB MSEQ	GNC-24	
166-17	CVFY FCL	L INBD ELEVON SEC DELTA PRESS 2	V58P0813A1	-850	850	PSID	INHB MSEQ	GNC-24	
166-18	CVFY FCL	L INBD ELEVON SEC DELTA PRESS 3	V58P0814A1	-850	850	PSID	INHB MSEQ	GNC-24	
166-19	CVFY FCL	L INBD ELEVON SEC DELTA PRESS 4	V58P0815A1	-850	850	PSID	INHB MSEQ	GNC-24	
166-20	CVFY FCL	L OUTBD ELEVON SEC DELTA PRESS 1	V58P0862A1	-850	850	PSID	INHB MSEQ	GNC-24	
166-21	CVFY FCL	L OUTBD ELEVON SEC DELTA PRESS 2	V58P0863A1	-850	850	PSID	INHB MSEQ	GNC-24	
166-22	CVFY FCL	L OUTBD ELEVON SEC DELTA PRESS 3	V58P0864A1	-850	850	PSID	INHB MSEQ	GNC-24	
166-23	CVFY FCL	L OUTBD ELEVON SEC DELTA PRESS 4	V58P0865A1	-850	850	PSID	INHB MSEQ	GNC-24	
166-24	CVFY FCL	R INBD ELEVON PRI DELTA PRESS 1	V58P0916C1	-230	230	PSID	INHB MSEQ	GNC-23	
166-25	CVFY FCL	R INBD ELEVON PRI DELTA PRESS 2	V58P0917C1	-230	230	PSID	INHB MSEQ	GNC-23	
166-26	CVFY FCL	R INBD ELEVON PRI DELTA PRESS 3	V58P0918C1	-230	230	PSID	INHB MSEQ	GNC-23	
166-27	CVFY FCL	R INBD ELEVON PRI DELTA PRESS 4	V58P0919C1	-230	230	PSID	INHB MSEQ	GNC-23	
166-28	CVFY FCL	R OUTBD ELEVON PRI DELTA PRESS 1	V58P0966C1	-230	230	PSID	INHB MSEQ	GNC-23	
166-29	CVFY FCL	R OUTBD ELEVON PRI DELTA PRESS 2	V58P0967C1	-230	230	PSID	INHB MSEQ	GNC-23	
166-30	CVFY FCL	R OUTBD ELEVON PRI DELTA PRESS 3	V58P0968C1	-230	230	PSID	INHB MSEQ	GNC-23	
166-31	CVFY FCL	R OUTBD ELEVON PRI DELTA PRESS 4	V58P0969C1	-230	230	PSID	INHB MSEQ	GNC-23	
166-32	CVFY FCL	L INBD ELEVON PRI DELTA PRESS 1	V58P0816C1	-230	230	PSID	INHB MSEQ	GNC-23	
166-33	CVFY FCL	L INBD ELEVON PRI DELTA PRESS 2	V58P0817C1	-230	230	PSID	INHB MSEQ	GNC-23	
166-34	CVFY FCL	L INBD ELEVON PRI DELTA PRESS 3	V58P0818C1	-230	230	PSID	INHB MSEQ	GNC-23	
166-35	CVFY FCL	L INBD ELEVON PRI DELTA PRESS 4	V58P0819C1	-230	230	PSID	INHB MSEQ	GNC-23	
166-36	CVFY FCL	L OUTBD ELEVON PRI DELTA PRESS 1	V58P0866C1	-230	230	PSID	INHB MSEQ	GNC-23	
166-37	CVFY FCL	L OUTBD ELEVON PRI DELTA PRESS 2	V58P0867C1	-230	230	PSID	INHB MSEQ	GNC-23	
166-38	CVFY FCL	L OUTBD ELEVON PRI DELTA PRESS 3	V58P0868C1	-230	230	PSID	INHB MSEQ	GNC-23	
166-39	CVFY FCL	L OUTBD ELEVON PRI DELTA PRESS 4	V58P0869C1	-230	230	PSID	INHB MSEQ	GNC-23	
167-00	CVFY FCL	BODY FLAP ENABLE 1 OUTPUT	V79X3201E1	OFF			INHB MSEQ	GNC-29	S00FM0.290
167-01	CVFY FCL	BODY FLAP UP 1 OUTPUT	V79X3202E1	OFF			INHB MSEQ	GNC-29	S00FM0.290
167-02	CVFY FCL	BODY FLAP DOWN 1 OUTPUT	V79X3203E1	OFF			INHB MSEQ	GNC-29	S00FM0.290
167-03	CVFY FCL	BODY FLAP ENABLE 2 OUTPUT	V79X3204E1	OFF			INHB MSEQ	GNC-29	S00FM0.290
167-04	CVFY FCL	BODY FLAP UP 2 OUTPUT	V79X3205E1	OFF			INHB MSEQ	GNC-29	S00FM0.290
167-05	CVFY FCL	BODY FLAP DOWN 2 OUTPUT	V79X3206E1	OFF			INHB MSEQ	GNC-29	S00FM0.290
167-06	CVFY FCL	BODY FLAP ENABLE 3 OUTPUT	V79X3207E1	OFF			INHB MSEQ	GNC-29	S00FM0.290
167-07	CVFY FCL	BODY FLAP UP 3 OUTPUT	V79X3208E1	OFF			INHB MSEQ	GNC-29	S00FM0.290
167-08	CVFY FCL	BODY FLAP DOWN 3 OUTPUT	V79X3209E1	OFF			INHB MSEQ	GNC-29	S00FM0.290
168-00	VFY FCL	RUDDER DELTA PRESS	SUM7	-440	370	PSID	INHB MSEQ	GNC-27	
	SUM	RUDDER DELTA PRESS 1 SUM7	V57P0160A1						
	SUM	RUDDER DELTA PRESS 2 SUM7	V57P0161A1						
	SUM	RUDDER DELTA PRESS 3 SUM7	V57P0162A1						
	SUM	RUDDER DELTA PRESS 4 SUM7	V57P0163A1						
169-00	VFY FCL	SPEED BRAKE DELTA PRESS	SUM8	-440	370	PSID	INHB MSEQ	GNC-27	
	SUM	SPEED BRAKE DELTA PRESS 1 SUM8	V57P0260A1						
	SUM	SPEED BRAKE DELTA PRESS 2 SUM8	V57P0261A1						
	SUM	SPEED BRAKE DELTA PRESS 3 SUM8	V57P0262A1						
	SUM	SPEED BRAKE DELTA PRESS 4 SUM8	V57P0263A1						
170-00	VFY FCL	R INBD ELEV SEC DELTA P	SUM9	-440	370	PSID	INHB MSEQ	GNC-24	
	SUM	R INBD ELEV SEC DELTA P 1 SUM9	V58P0912A1						
	SUM	R INBD ELEV SEC DELTA P 2 SUM9	V58P0913A1						

178-02	CVFY FCL	L INBD ELEVON ACTR CHAN 3 POSN	V58H0804A1	-0.52	1.18	DEG	INHB MSEQ	GNC-22	
178-03	CVFY FCL	L INBD ELEVON ACTR CHAN 4 POSN	V58H0805A1	-0.52	1.18	DEG	INHB MSEQ	GNC-22	
178-04	CVFY FCL	L OUTBD ELEVON ACTR CHAN 1 POSN	V58H0852A1	-0.36	1.34	DEG	INHB MSEQ	GNC-22	
178-05	CVFY FCL	L OUTBD ELEVON ACTR CHAN 2 POSN	V58H0853A1	-0.36	1.34	DEG	INHB MSEQ	GNC-22	
178-06	CVFY FCL	L OUTBD ELEVON ACTR CHAN 3 POSN	V58H0854A1	-0.36	1.34	DEG	INHB MSEQ	GNC-22	
178-07	CVFY FCL	L OUTBD ELEVON ACTR CHAN 4 POSN	V58H0855A1	-0.36	1.34	DEG	INHB MSEQ	GNC-22	
178-08	CVFY FCL	R INBD ELEVON ACTR CHAN 1 POSN	V58H0902A1	-0.52	1.18	DEG	INHB MSEQ	GNC-22	
178-09	CVFY FCL	R INBD ELEVON ACTR CHAN 2 POSN	V58H0903A1	-0.52	1.18	DEG	INHB MSEQ	GNC-22	
178-10	CVFY FCL	R INBD ELEVON ACTR CHAN 3 POSN	V58H0904A1	-0.52	1.18	DEG	INHB MSEQ	GNC-22	
178-11	CVFY FCL	R INBD ELEVON ACTR CHAN 4 POSN	V58H0905A1	-0.52	1.18	DEG	INHB MSEQ	GNC-22	
178-12	CVFY FCL	R OUTBD ELEVON ACTR CHAN 1 POSN	V58H0952A1	-0.36	1.34	DEG	INHB MSEQ	GNC-22	
178-13	CVFY FCL	R OUTBD ELEVON ACTR CHAN 2 POSN	V58H0953A1	-0.36	1.34	DEG	INHB MSEQ	GNC-22	
178-14	CVFY FCL	R OUTBD ELEVON ACTR CHAN 3 POSN	V58H0954A1	-0.36	1.34	DEG	INHB MSEQ	GNC-22	
178-15	CVFY FCL	R OUTBD ELEVON ACTR CHAN 4 POSN	V58H0955A1	-0.36	1.34	DEG	INHB MSEQ	GNC-22	
178-16	CVFY FCL	RUDDER ACTR CHAN 1 POSN	V57H0150A1	-0.95	0.95	DEG	INHB MSEQ	GNC-26	
178-17	CVFY FCL	RUDDER ACTR CHAN 2 POSN	V57H0151A1	-0.95	0.95	DEG	INHB MSEQ	GNC-26	
178-18	CVFY FCL	RUDDER ACTR CHAN 3 POSN	V57H0152A1	-0.95	0.95	DEG	INHB MSEQ	GNC-26	
178-19	CVFY FCL	RUDDER ACTR CHAN 4 POSN	V57H0153A1	-0.95	0.95	DEG	INHB MSEQ	GNC-26	
178-20	VFY FCL	SPEED BRAKE ACTR CHAN 1 POSN	V57H0250A1	2.45	7.55	DEG	INHB MSEQ	GNC-26	
178-21	VFY FCL	SPEED BRAKE ACTR CHAN 2 POSN	V57H0251A1	2.45	7.55	DEG	INHB MSEQ	GNC-26	
178-22	VFY FCL	SPEED BRAKE ACTR CHAN 3 POSN	V57H0252A1	2.45	7.55	DEG	INHB MSEQ	GNC-26	
178-23	VFY FCL	SPEED BRAKE ACTR CHAN 4 POSN	V57H0253A1	2.45	7.55	DEG	INHB MSEQ	GNC-26	
178-24	VFY FCL	SELECTED BODY FLAP FDBK	V90H6410C1	-1.41	1.41	DEG	INHB MSEQ		S00FM0.280
178-25	CVFY FCL	BODY FLAP POSN FDBK-1	V57H0065C1	-1.85	1.85	DEG	INHB MSEQ	GNC-30	S00FM0.280
178-26	CVFY FCL	BODY FLAP POSN FDBK-2	V57H0066C1	-1.85	1.85	DEG	INHB MSEQ	GNC-30	S00FM0.280
178-27	CVFY FCL	BODY FLAP POSN FDBK-3	V57H0067C1	-1.85	1.85	DEG	INHB MSEQ	GNC-30	S00FM0.280
178-28	CVFY FCL	BODY FLAP POSN FDBK-4	V57H0068C1	-1.85	1.85	DEG	INHB MSEQ	GNC-30	S00FM0.280
		\$ MPS GIMBAL ACTUATOR DELTA PRESSURE CHECK \$							
179-00	CVFY FCL	MPS ENG 1 PITCH SEC DELTA PRESS A	V58P1181A1	-1050	1050	PSID	INHB MSEQ	GNC-41	
179-01	CVFY FCL	MPS ENG 1 PITCH SEC DELTA PRESS B	V58P1182A1	-1050	1050	PSID	INHB MSEQ	GNC-41	
179-02	CVFY FCL	MPS ENG 1 PITCH SEC DELTA PRESS C	V58P1183A1	-1050	1050	PSID	INHB MSEQ	GNC-41	
179-03	CVFY FCL	MPS ENG 1 PITCH SEC DELTA PRESS D	V58P1184A1	-1050	1050	PSID	INHB MSEQ	GNC-41	
179-04	CVFY FCL	MPS ENG 1 YAW SEC DELTA PRESS A	V58P1186A1	-1050	1050	PSID	INHB MSEQ	GNC-41	
179-05	CVFY FCL	MPS ENG 1 YAW SEC DELTA PRESS B	V58P1187A1	-1050	1050	PSID	INHB MSEQ	GNC-41	
179-06	CVFY FCL	MPS ENG 1 YAW SEC DELTA PRESS C	V58P1188A1	-1050	1050	PSID	INHB MSEQ	GNC-41	
179-07	CVFY FCL	MPS ENG 1 YAW SEC DELTA PRESS D	V58P1189A1	-1050	1050	PSID	INHB MSEQ	GNC-41	
179-08	CVFY FCL	MPS ENG 2 PITCH SEC DELTA PRESS A	V58P1281A1	-1050	1050	PSID	INHB MSEQ	GNC-41	
179-09	CVFY FCL	MPS ENG 2 PITCH SEC DELTA PRESS B	V58P1282A1	-1050	1050	PSID	INHB MSEQ	GNC-41	
179-10	CVFY FCL	MPS ENG 2 PITCH SEC DELTA PRESS C	V58P1283A1	-1050	1050	PSID	INHB MSEQ	GNC-41	
179-11	CVFY FCL	MPS ENG 2 PITCH SEC DELTA PRESS D	V58P1284A1	-1050	1050	PSID	INHB MSEQ	GNC-41	
179-12	CVFY FCL	MPS ENG 2 YAW SEC DELTA PRESS A	V58P1286A1	-1050	1050	PSID	INHB MSEQ	GNC-41	
179-13	CVFY FCL	MPS ENG 2 YAW SEC DELTA PRESS B	V58P1287A1	-1050	1050	PSID	INHB MSEQ	GNC-41	
179-14	CVFY FCL	MPS ENG 2 YAW SEC DELTA PRESS C	V58P1288A1	-1050	1050	PSID	INHB MSEQ	GNC-41	
179-15	CVFY FCL	MPS ENG 2 YAW SEC DELTA PRESS D	V58P1289A1	-1050	1050	PSID	INHB MSEQ	GNC-41	
179-16	CVFY FCL	MPS ENG 3 PITCH SEC DELTA PRESS A	V58P1381A1	-1050	1050	PSID	INHB MSEQ	GNC-41	
179-17	CVFY FCL	MPS ENG 3 PITCH SEC DELTA PRESS B	V58P1382A1	-1050	1050	PSID	INHB MSEQ	GNC-41	
179-18	CVFY FCL	MPS ENG 3 PITCH SEC DELTA PRESS C	V58P1383A1	-1050	1050	PSID	INHB MSEQ	GNC-41	
179-19	CVFY FCL	MPS ENG 3 PITCH SEC DELTA PRESS D	V58P1384A1	-1050	1050	PSID	INHB MSEQ	GNC-41	

179-20	CVFY FCL	MPS ENG 3 YAW SEC DELTA PRESS A	V58P1386A1	-1050	1050	PSID	INHB MSEQ	GNC-41
179-21	CVFY FCL	MPS ENG 3 YAW SEC DELTA PRESS B	V58P1387A1	-1050	1050	PSID	INHB MSEQ	GNC-41
179-22	CVFY FCL	MPS ENG 3 YAW SEC DELTA PRESS C	V58P1388A1	-1050	1050	PSID	INHB MSEQ	GNC-41
179-23	CVFY FCL	MPS ENG 3 YAW SEC DELTA PRESS D	V58P1389A1	-1050	1050	PSID	INHB MSEQ	GNC-41
180-00	VFY FCL	ENG 1 PITCH SEC DELTA PRESS	SUM1	-440	370	PSID	INHB MSEQ	GNC-41
	SUM	ENG 1 PITCH SEC DELTA PRESS A SUM1	V58P1181A1					
	SUM	ENG 1 PITCH SEC DELTA PRESS B SUM1	V58P1182A1					
	SUM	ENG 1 PITCH SEC DELTA PRESS C SUM1	V58P1183A1					
	SUM	ENG 1 PITCH SEC DELTA PRESS D SUM1	V58P1184A1					
181-00	VFY FCL	ENG 1 YAW SEC DELTA PRESS	SUM2	-440	370	PSID	INHB MSEQ	GNC-41
	SUM	ENG 1 YAW SEC DELTA PRESS A SUM2	V58P1186A1					
	SUM	ENG 1 YAW SEC DELTA PRESS B SUM2	V58P1187A1					
	SUM	ENG 1 YAW SEC DELTA PRESS C SUM2	V58P1188A1					
	SUM	ENG 1 YAW SEC DELTA PRESS D SUM2	V58P1189A1					
182-00	VFY FCL	ENG 2 PITCH SEC DELTA PRESS	SUM3	-440	370	PSID	INHB MSEQ	GNC-41
	SUM	ENG 2 PITCH SEC DELTA PRESS A SUM3	V58P1281A1					
	SUM	ENG 2 PITCH SEC DELTA PRESS B SUM3	V58P1282A1					
	SUM	ENG 2 PITCH SEC DELTA PRESS C SUM3	V58P1283A1					
	SUM	ENG 2 PITCH SEC DELTA PRESS D SUM3	V58P1284A1					
183-00	VFY FCL	ENG 2 YAW SEC DELTA PRESS	SUM4	-440	370	PSID	INHB MSEQ	GNC-41
	SUM	ENG 2 YAW SEC DELTA PRESS A SUM4	V58P1286A1					
	SUM	ENG 2 YAW SEC DELTA PRESS B SUM4	V58P1287A1					
	SUM	ENG 2 YAW SEC DELTA PRESS C SUM4	V58P1288A1					
	SUM	ENG 2 YAW SEC DELTA PRESS D SUM4	V58P1289A1					
184-00	VFY FCL	ENG 3 PITCH SEC DELTA PRESS	SUM5	-440	370	PSID	INHB MSEQ	GNC-41
	SUM	ENG 3 PITCH SEC DELTA PRESS A SUM5	V58P1381A1					
	SUM	ENG 3 PITCH SEC DELTA PRESS B SUM5	V58P1382A1					
	SUM	ENG 3 PITCH SEC DELTA PRESS C SUM5	V58P1383A1					
	SUM	ENG 3 PITCH SEC DELTA PRESS D SUM5	V58P1384A1					
185-00	VFY FCL	ENG 3 YAW SEC DELTA PRESS	SUM6	-440	370	PSID	INHB MSEQ	GNC-41
	SUM	ENG 3 YAW SEC DELTA PRESS A SUM6	V58P1386A1					
	SUM	ENG 3 YAW SEC DELTA PRESS B SUM6	V58P1387A1					
	SUM	ENG 3 YAW SEC DELTA PRESS C SUM6	V58P1388A1					
	SUM	ENG 3 YAW SEC DELTA PRESS D SUM6	V58P1389A1					

\$ GLS EVENT COMPLETE = 175 \$

186-00 -02:55

 LABL INTG ET LOX PREPRESS MILESTONE MLOX

S00E00.960

\$ NOTICE: THIS MILESTONE DOES NOT HOLD FOR
 DOWNSTREAM HOLD INDICATIONS \$

187-01 VFY INTG RSS MANUAL HOLD ON INHB MLOX

187-02	VFY	INTG	NTD	MANUAL	HOLD					ON			INHB	MLOX
187-03	VFY	INTG	GLS	MANUAL	HOLD					ON			INHB	MLOX
187-04	VFY	INTG	LPS	COUNTDOWN	HOLD		V90X8768X1	OFF					INHB	MLOX
187-05	VFY	INTG	GLS-GO	FOR	ET	LOX	PRE-PRESSURIZI	MLOX		ON			HOLD	

\$ GLS EVENT COMPLETE = 174 \$

187-06	COM	LO2	GO	FOR	ET	LOX	PRE-PRESSURIZATION	N005INTGR	LO2
187-07	MMSG	INTG	-01:57	GO	FOR	ET	LH2	REPLN	TERM
187-08	MSG		ET	LOX	PRESS	'G	START		

\$ GLS EVENT COMPLETE = 173 \$

\$ TERM ENG GN2 PURGE SUPPLY \$

188-00	CMD	SSME	MPENG	GN2	PRG	CNT	VLV	CLD	CMD	GGNK1030E	ON			S00FM0.350
188-01	CMD	SSME	MPENG	GN2	PRG	CNT	VLV	CLD	CMD(R)	GGNK1130E	ON			S00FM0.350
188-02	CMD	SSME	MPENG	GN2	PRG	CNT	VLV	CLD	CMD OVR	GGNK1037E	OFF			S00FM0.350
188-03	CMD	SSME	MPENG	GN2	PRG	CNT	CLD	CMD	OVR(R)	GGNK1137E	OFF			S00FM0.350
188-04	CMD	SSME	MPENG	GN2	PRG	S/O	VLV	CLD	CMD	GGNK1070E	ON			S00FM0.350
188-05	CMD	SSME	MPENG	GN2	PRG	S/O	VLV	CLD	CMD(R)	GGNK1160E	ON			S00FM0.350
188-06	CMD	SSME	MPENG	GN2	PRG	S/O	VLV	CLD	CMD OVR	GGNK1077E	OFF			S00FM0.350
188-07	CMD	SSME	MPENG	GN2	PRG	S/O	VLV	CLD	CMDOVR(R)	GGNK1167E	OFF			S00FM0.350
188-08	CMD	SSME	MPENG	GN2	PRG	VNT	OPN	CMD		GGNK1050E	ON			S00FM0.350
188-09	CMD	SSME	MPENG	GN2	PRG	VNT	OPN	CMD (R)		GGNK1140E	ON			S00FM0.350
188-10	CMD	SSME	MPENG	GN2	PRG	VNT	OPN	CMD OVR		GGNK1057E	OFF			S00FM0.350
188-11	CMD	SSME	MPENG	GN2	PRG	VNT	OPN	CMD OVR (R)		GGNK1147E	OFF			S00FM0.350

\$ GLS EVENT COMPLETE = 172 \$

\$ MPS HELIUM SYSTEM MONITOR \$

189-00	CVFY	MPS	MPS	E1	HE	SUPPLY	BOTTLE	PRESS	V41P1150C1	4100	4500	PSIA	INHB	MENG	T-13	MPS-01	
189-01	CVFY	MPS	MPS	E2	HE	SUPPLY	BOTTLE	PRESS	V41P1250C1	4100	4500	PSIA	INHB	MENG	T-13	MPS-01	
189-02	CVFY	MPS	MPS	E3	HE	SUPPLY	BOTTLE	PRESS	V41P1350C1	4100	4500	PSIA	INHB	MENG	T-13	MPS-01	
189-03	CVFY	MPS	MPS	PNEU	VLVS	HE	SUP	BOTTLE	PRESS	V41P1600A1	4100	4500	PSIA	INHB	MENG	T-13	MPS-01

\$ SSME HE REG OUT PRESS STATUS \$

189-04	CVFY	MPS	MPS	E1	REG	A	HE	OUTLET	PRESS	V41P1154A1	730	788	PSIA	INHB	MENG	MPS-03
189-05	CVFY	MPS	MPS	E1	REG	B	HE	OUTLET	PRESS	V41P1153A1	730	788	PSIA	INHB	MENG	MPS-03
189-06	CVFY	MPS	MPS	E2	REG	A	HE	OUTLET	PRESS	V41P1254A1	730	788	PSIA	INHB	MENG	MPS-03
189-07	CVFY	MPS	MPS	E2	REG	B	HE	OUTLET	PRESS	V41P1253A1	730	788	PSIA	INHB	MENG	MPS-03
189-08	CVFY	MPS	MPS	E3	REG	A	HE	OUTLET	PRESS	V41P1354A1	730	788	PSIA	INHB	MENG	MPS-03
189-09	CVFY	MPS	MPS	E3	REG	B	HE	OUTLET	PRESS	V41P1353A1	730	788	PSIA	INHB	MENG	MPS-03

190-00 -02:50

\$ GLS EVENT COMPLETE = 170 \$

191-00	CMD	GOX	START	GOX	VENT	ARM	RETRACT	P004
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\$ GLS EVENT COMPLETE = 155 \$

192-00 -02:35

193-00 VFY LO2 \$ LOX PRESSURIZING STATUS \$
ET LOX PRESSURIZATION IN PROGRESS N03IS009E ON INHB MSEQ

194-00 CMD FCP PRSD O2 GAS SUPPLY VLV-CLOSE V45K1196NL ON
194-01 CMD FCP LV015 GO2 T-0 PRESS VLV CL N45IV002E ON
194-02 CMD FCP PRSD H2 GAS SUPPLY VLV-CLOSE V45K2196NL ON
194-03 CMD FCP LV045 GH2 T-0 PRESS VLV CL N45IV013E ON

\$ GLS EVENT COMPLETE = 154 \$

195-00 -02:30

199-00 CVFY FCP PRSD O2 GAS SPLY VLV-CLOSED V45X1195E1 ON INHB MSEQ PRSD-05
199-01 CVFY FCP PRSD H2 GAS SPLY VLV-CLOSED V45X2195E1 ON INHB MSEQ PRSD-05

\$ GLS EVENT COMPLETE = 148 \$

200-00 -02:28

203-00 CMD FCP PRSD O2 GAS SUPPLY VLV-CLOSE V45K1196NL OFF
203-01 CMD FCP PRSD H2 GAS SUPPLY VLV-CLOSE V45K2196NL OFF
203-02 CMD FCP T-0 POD ACT VLV CLOSE ENABLE CMD GFHK3546E ON
203-03 CMD FCP T-0 POD ACT VLV CLOSE CMD GFHK3541E ON
203-04 CMD FCP A100432 GH2 T-0 POD ACT VLV OP N45IV101E OFF
203-05 CMD FCP T-0 POD ACT VLV CLOSE ENABLE GFOK1546E ON
203-06 CMD FCP T-0 POD ACT VLV CLOSE CMD GFOK1541E ON
203-07 CMD FCP A100431 GO2 T-0 POD ACT VLV OP N45IV100E OFF

\$ GLS EVENT COMPLETE = 140 \$

204-00 -02:20

205-00 CMD FCP T-0 SHUTOFF VLV CLOSE CMD GFHK3550E ON
205-01 CMD FCP PRIMARY GH2 T-0 VENT VLV OPEN GFHK3110E ON
205-02 CMD FCP GH2 VENT ISOL VLV CLOSE GFHK3520E OFF
205-03 CMD FCP 6000 PSI GH2 SUPPLY VLV CLOSE CMD GFHK3040E ON
205-04 CMD FCP 6000 PSI GO2 SUPPLY VLV CLOSE GFOK1070E ON
205-05 CMD FCP T-0 SHUTOFF VLV CLOSE CMD GFOK1550E ON
205-06 CMD FCP PRIMARY GO2 T-0 VENT VALVE OPEN GFOK1110E ON
205-07 CMD FCP GO2 VENT ISOL VLV CLOSE GFOK1520E OFF
205-08 CMD FCP T-0 POD ACT VLV CLOSE CMD GFHK3541E OFF
205-09 CMD FCP T-0 POD ACT VLV CLOSE ENABLE CMD GFHK3546E OFF
205-10 CMD FCP T-0 POD ACT VLV CLOSE CMD GFOK1541E OFF
205-11 CMD FCP T-0 POD ACT VLV CLOSE ENABLE GFOK1546E OFF

\$ GLS EVENT COMPLETE = 139 \$

206-00 -02:13

\$ LOX PROPELLANT ULLAGE PRESS MONITOR \$

207-00	CVFY LO2	ET-LO2 ULLAGE PRESSURE NO.1	T41P1750C1	19.3	22.5	PSIG	2 OF 3	ET-06
207-01	CVFY LO2	ET-LO2 ULLAGE PRESSURE NO.2	T41P1751C1	19.3	22.5	PSIG	2 OF 3	ET-06
207-02	CVFY LO2	ET-LO2 ULLAGE PRESSURE NO.3	T41P1752C1	19.3	22.5	PSIG	INHB MENG	ET-06

\$ CLOSE GH2 VENT ISO VALVE \$

208-00	CMD FCP	PRIMARY GH2 T-0 VENT VLV OPEN	GFHK3110E	OFF				
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\$ GLS EVENT COMPLETE = 117 \$

215-03 CMD EPDC LEFT BIPOD HTR PWR ON CMD G56K0145E OFF S00FP0.030

\$ GLS EVENT COMPLETE = 75 \$

216-00 -01:15

\$ GLS EVENT COMPLETE = 74 \$

\$ LH2 PROPELLANT ULLAGE PRESS MONITOR \$

\$ THE LIMITS WILL BE CHANGED FOR ET-05 WHEN ALL THREE \$

\$ SSME'S ARE BLK II (NMEABLK2 = ON). THREE BLK II SSME \$

\$ LIMITS ARE MIN = 46.1 MAX = 48.0 \$

217-00	CVFY LH2	ET-LH2 ULLAGE PRESS NO 1	T41P1700C1	40.9	44.1	PSIA	CPER	G006	MENG	ET-05
217-01	CVFY LH2	ET-LH2 ULLAGE PRESS NO 2	T41P1701C1	40.9	44.1	PSIA	CPER	G007	MENG	ET-05
217-02	CVFY LH2	ET-LH2 ULLAGE PRESS NO 3	T41P1702C1	40.9	44.1	PSIA	CPER	G008	MENG	ET-05
217-03	CVFY MPS	MPS GH2 PRESS FCV 1 (LV56) CL PWR	V41X1661E1	ON			INHB	MSEQ		MPS-45
217-04	CVFY MPS	MPS GH2 PRESS FCV 2 (LV57) CL PWR	V41X1662E1	ON			INHB	MSEQ		MPS-45
217-05	CVFY MPS	MPS GH2 PRESS FCV 3 (LV58) CL PWR	V41X1663E1	ON			INHB	MSEQ		MPS-45

\$ MPS ENG LOX INLET TEMPS \$

217-06	CVFY MPS	MPS E1 LO2 INLET TEMP	V41T1131C1	-289.2	NOHI	DEGF	2 OF 3			MPS-25
217-07	CVFY MPS	MPS E2 LO2 INLET TEMP	V41T1231C1	-289.2	NOHI	DEGF	2 OF 3			MPS-25
217-08	CVFY MPS	MPS E3 LO2 INLET TEMP	V41T1331C1	-289.2	NOHI	DEGF	INHB	MSEQ		MPS-25

\$ MPS LH2 TERM REPLENISH MONITOR \$

218-00	CVFY MPS	MPS LH2 TOPPING VLV (PV13) CL IND	V41X1456X1	ON			INHB	MSEQ		MPS-10
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\$ FUEL SYS PURGE FUNCTIONAL CHECK \$

222-00	VFY SSME	ME-1 MFV DOWNSTREAM TEMP #1	E41T1153A1	-110	NOHI	DEGF	INHB	MSEQ		SSME-02
222-01	VFY SSME	ME-1 MFV DOWNSTREAM TEMP #2	E41T1154A1	-110	NOHI	DEGF	INHB	MSEQ		SSME-02
222-02	VFY SSME	ME-2 MFV DOWNSTREAM TEMP #1	E41T2153A1	-110	NOHI	DEGF	INHB	MSEQ		SSME-02
222-03	VFY SSME	ME-2 MFV DOWNSTREAM TEMP #2	E41T2154A1	-110	NOHI	DEGF	INHB	MSEQ		SSME-02
222-04	VFY SSME	ME-3 MFV DOWNSTREAM TEMP #1	E41T3153A1	-110	NOHI	DEGF	INHB	MSEQ		SSME-02
222-05	VFY SSME	ME-3 MFV DOWNSTREAM TEMP #2	E41T3154A1	-110	NOHI	DEGF	INHB	MSEQ		SSME-02

\$ ARM SOUND SUP POWER BUS \$

223-00	CMD	WATR	SS FR CMD BUS PWR ON CMD	GWDKPT08E	ON					
223-01	CMD	WATR	SS FR CMD BUS PWR ON CMD	GWDKPT10E	ON					

\$ GLS EVENT COMPLETE = 60 \$

224-00 -55.00

\$ GLS EVENT COMPLETE = 55 \$

\$ ARM H2 BURN PICS \$

225-00	CMD	EPDC	H2 SYS A ARM	GMSK5012E	ON					
225-01	CMD	EPDC	H2-SYS B ARM	GMSK6012E	ON					

\$ GLS EVENT COMPLETE = 54 \$

\$ FWD MDM LOCKOUT COMMANDS-GPC VERIFIES MDM LOCKED, \$

\$ IF ERRORS RECEIVED ON LOCK CMD, SET PENDING HOLD \$

\$ AND SKIP FWD LOCK PSEUDO FD CONFIGURATION. \$

227-00	CMD	INTG	LOCK	SRB	MDM	LL1/LR1	CRITICAL	LL1/LR1	ON				S00FN0.040	
227-01	VFY	INTG	SRB	MDM	LOCK	ACKNOWLEDGED		ERROR3	X0000	INHB	MSEQ	SKP	BEI-03	S00FN0.040
227-02	CMD	DPS	LEFT	SRB	LL1-0	UNLOCK	IND	N70IB001E	OFF					
227-03	CMD	DPS	LEFT	SRB	LL1-4	UNLOCK	IND	N70IB002E	OFF					
227-04	CMD	DPS	RIGHT	SRB	LR1-0	UNLOCK	IND	N70IB005E	OFF					
227-05	CMD	DPS	RIGHT	SRB	LR1-4	UNLOCK	IND	N70IB006E	OFF					

\$ GLS EVENT COMPLETE = 50 \$

228-00 -50.00

\$ INHIBIT VCH01 VCH02 VCH03 CONTROL LOGIC \$

228-01	ICL	FCP	FUEL	CELL	1	COOLANT	PRESSURE	V45P0147A1				PRSD-03	S00FN0.840
228-02	ICL	FCP	FUEL	CELL	2	COOLANT	PRESSURE	V45P0247A1				PRSD-03	S00FN0.840
228-03	ICL	FCP	FUEL	CELL	3	COOLANT	PRESSURE	V45P0347A1				PRSD-03	S00FN0.840

\$ GROUND POWER REMOVAL \$

228-04	CMD	EPDC	GSE	PWR	MN	BUS	A	OFF	CMD	V76K0192W	ON		S00FN0.840
228-05	CMD	EPDC	GSE	PWR	MN	BUS	B	OFF	CMD	V76K0292W	ON		S00FN0.840
228-06	CMD	EPDC	GSE	PWR	MN	BUS	C	OFF	CMD	V76K0392W	ON		S00FN0.840

\$ VERIFY H2 BURN PIC VOLTS \$

229-00	CVFY	EPDC	H2-BURN	SYS	A	ENG	#1	CAP	VOLTS	GMSV5311A	35.7	NOHI	V	CPER	G020	MENG	GSE-09
229-01	CVFY	EPDC	H2-BURN	SYS	B	ENG	#1	CAP	VOLTS	GMSV6311A	35.7	NOHI	V	CPER	G020	MENG	GSE-09
229-02	CVFY	EPDC	H2-BURN	SYS	A	ENG	2	CAP	VOLTS	GMSV5309A	35.7	NOHI	V	CPER	G020	MENG	GSE-09
229-03	CVFY	EPDC	H2-BURN	SYS	B	ENG	2	CAP	VOLTS	GMSV6309A	35.7	NOHI	V	CPER	G020	MENG	GSE-09
229-04	CVFY	EPDC	H2-BURN	SYS	A	ENG	3	CAP	VOLTS	GMSV5310A	35.7	NOHI	V	CPER	G020	MENG	GSE-09
229-05	CVFY	EPDC	H2-BURN	SYS	B	ENG	3	CAP	VOLTS	GMSV6310A	35.7	NOHI	V	CPER	G020	MENG	GSE-09

\$ VERIFY ETVAS LANYARD PIC VOLTS \$

229-06	CVFY	EPDC	SYS	A	ETVAS	LANYARD	PIC	CAP	VOLTS	GMSV5603A	35.7	NOHI	V	1 OF 2		GSE-20
229-07	CVFY	EPDC	SYS	A	ETVAS	LANYARD	PIC	CAP	VOLTS	GMSV7603A	35.7	NOHI	V	INHB	MSRB	GSE-20
229-08	CVFY	EPDC	SYS	B	ETVAS	LANYARD	PIC	CAP	VOLTS	GMSV6603A	35.7	NOHI	V	1 OF 2		GSE-20
229-09	CVFY	EPDC	SYS	B	ETVAS	LANYARD	PIC	CAP	VOLTS	GMSV8603A	35.7	NOHI	V	INHB	MSRB	GSE-20

231-00	VFY	WATR	SS	FR	CMD	BUS	ON	IND		GWDXP24E	ON		1 OF 2		GSE-16
231-01	VFY	WATR	SS	FR	CMD	BUS	ON	IND		GWDXP26E	ON		INHB	MSEQ	GSE-16

232-00	VFY	BPYR	LH	EVENT	IGN	A	F2	TEST	PWR	ON	CMD	B55X1916XL	OFF	INHB	MSEQ	BEI-10
232-01	VFY	BPYR	RH	EVENT	IGN	A	F2	TEST	PWR	ON	CMD	B55X2916XL	OFF	INHB	MSEQ	BEI-10
232-02	VFY	BPYR	LH	EVENT	IGN	B	F2	TEST	PWR	ON	CMD	B55X1917XL	OFF	INHB	MSEQ	BEI-10
232-03	VFY	BPYR	RH	EVENT	IGN	B	F2	TEST	PWR	ON	CMD	B55X2917XL	OFF	INHB	MSEQ	BEI-10
232-04	VFY	BPYR	LH	EVENT	SEP	A	F2	TEST	PWR	ON	CMD	B55X1914XL	OFF	INHB	MSEQ	BSEP-05
232-05	VFY	BPYR	RH	EVENT	SEP	A	F2	TEST	PWR	ON	CMD	B55X2914XL	OFF	INHB	MSEQ	BSEP-05
232-06	VFY	BPYR	LH	EVENT	SEP	B	F2	TEST	PWR	ON	CMD	B55X1915XL	OFF	INHB	MSEQ	BSEP-05
232-07	VFY	BPYR	RH	EVENT	SEP	B	F2	TEST	PWR	ON	CMD	B55X2915XL	OFF	INHB	MSEQ	BSEP-05
232-08	VFY	BPYR	LH	EVENT	RECOVERY	SYSTEM	RESET	CMD		B52X1907XL	OFF		INHB	MSEQ	BREC-05	
232-09	VFY	BPYR	RH	EVENT	RECOVERY	SYSTEM	RESET	CMD		B52X2907XL	OFF		INHB	MSEQ	BREC-05	

\$ GLS EVENT COMPLETE = 48 \$

\$ CLOSE LOX MPS OUTBOARD FILL VALVE \$

234-00	CMD	MPS	MPS LO2 OTBD F/D VLV (PV9) CL CMD	V41K1515XL ON			S00FP0.050
234-01	CMD	MPS	MPS LO2 OTBD F/D VLV (PV9) OP CMD	V41K1518XL OFF			S00FP0.050
234-02	CMD	MPS	MPS LO2 OTBD F/D VLV (PV9) OP CMD	V41K1518NL OFF			S00FP0.050

\$ CLOSE MPS LH2 OUTBOARD FILL VALVE \$
 \$ IF TSM DRAIN BACK IS NOT COMPLETE, SET PENDING \$
 \$ HOLD FOR T-31S AND SKIP PV11 CLOSURE \$

234-03	VFY	LH2	LH2 TSM DRAIN BACK COMPLETE	NLHK0109X ON		INHB MSEQ SKP MPS-05	
234-04	CMD	MPS	MPS LH2 OTBD F/D VLV (PV11) CL CMD	V41K1393XL ON			S00FP0.050
234-05	CMD	MPS	MPS LH2 OTBD F/D VLV (PV11) OP CMD	V41K1391XL OFF			S00FP0.050
234-06	CMD	MPS	MPS LH2 OTBD F/D VLV (PV11) OP CMD	V41K1391NL OFF			S00FP0.050

\$ TURN OFF SRB JOINT HEATERS \$

234-07	APL	BELE	LH PRI 851.5 TEMP SET POINT	B06K7015A 0	DEGF		S00FN0.825
234-08	APL	BELE	LH PRI 1171.5 TEMP SET POINT	B06K7025A 0	DEGF		S00FN0.825
234-09	APL	BELE	LH PRI 1491.5 TEMP SET POINT	B06K7035A 0	DEGF		S00FN0.825
234-10	APL	BELE	RH PRI 851.5 TEMP SET POINT	B06K8015A 0	DEGF		S00FN0.825
234-11	APL	BELE	RH PRI 1171.5 TEMP SET POINT	B06K8025A 0	DEGF		S00FN0.825
234-12	APL	BELE	RH PRI 1491.5 TEMP SET POINT	B06K8035A 0	DEGF		S00FN0.825
234-13	APL	BELE	LH SEC 851.5 TEMP SET POINT	B06K7115A 0	DEGF		S00FN0.825
234-14	APL	BELE	LH SEC 1171.5 TEMP SET POINT	B06K7125A 0	DEGF		S00FN0.825
234-15	APL	BELE	LH SEC 1491.5 TEMP SET POINT	B06K7135A 0	DEGF		S00FN0.825
234-16	APL	BELE	RH SEC 851.5 TEMP SET POINT	B06K8115A 0	DEGF		S00FN0.825
234-17	APL	BELE	RH SEC 1171.5 TEMP SET POINT	B06K8125A 0	DEGF		S00FN0.825
234-18	APL	BELE	RH SEC 1491.5 TEMP SET POINT	B06K8135A 0	DEGF		S00FN0.825
234-19	CMD	BELE	PRI AC POWER ON CMD	G06K0040E OFF			S00FN0.825
234-20	CMD	BELE	SEC AC POWER ON CMD	G06K0140E OFF			S00FN0.825

\$ GLS EVENT COMPLETE = 40 \$

235-00 -40.00

235-01	CMD	EPDC	GSE PWR MN BUS A OFF CMD	V76K0192W OFF			S00FP0.060
235-02	CMD	EPDC	GSE PWR MN BUS B OFF CMD	V76K0292W OFF			S00FP0.060
235-03	CMD	EPDC	GSE PWR MN BUS C OFF CMD	V76K0392W OFF			S00FP0.060
235-04	CMD	EPDC	ORB GND PWR MN BUS A ON PRI	G76K0180E OFF			
235-05	CMD	EPDC	ORB GND PWR MN BUS A ON SEC	G76K0181E OFF			
235-06	CMD	EPDC	ORB GND PWR MN BUS B ON PRI	G76K0280E OFF			
235-07	CMD	EPDC	ORB GND PWR MN BUS B ON SEC	G76K0281E OFF			
235-08	CMD	EPDC	ORB GND PWR MN BUS C ON PRI	G76K0380E OFF			
235-09	CMD	EPDC	ORB GND PWR MN BUS C ON SEC	G76K0381E OFF			

\$ VFY ON ORBITER POWER \$

235-10	VFY	EPDC	GSE MN BUS A PWR ON IND	V76X0190W OFF	INHB MSEQ	EPDC-10	S00FP0.060
235-11	VFY	EPDC	MAIN BUS A RED ON IND	V76X0195W OFF	INHB MSEQ	EPDC-10	S00FP0.060
235-12	VFY	EPDC	GSE MN BUS B PWR ON IND	V76X0290W OFF	INHB MSEQ	EPDC-10	S00FP0.060
235-13	VFY	EPDC	MAIN BUS B RED ON IND	V76X0295W OFF	INHB MSEQ	EPDC-10	S00FP0.060
235-14	VFY	EPDC	GSE MN BUS C PWR ON IND	V76X0390W OFF	INHB MSEQ	EPDC-10	S00FP0.060
235-15	VFY	EPDC	MAIN BUS C RED ON IND	V76X0395W OFF	INHB MSEQ	EPDC-10	S00FP0.060

\$ VFY ET/NOSE CONE PURGE TERM \$

236-01	VFY	LO2	A106437	PRI	NC	HT	GN2	OUT	PG	PRESS	GLOP4195A	NOLO	1800	PSIG	INHB	MSEQ	ET-02
236-02	VFY	LO2	A106438	SEC	NC	HT	GN2	OUT	PG	PRESS	GLOP4695A	NOLO	1800	PSIG	INHB	MSEQ	ET-02
			\$ VFY ET/INTERTANK PURGE TERM \$														
236-03	VFY	LH2	A78160	ET/IT	GN2	PRI	PRG	O/PUT	PRS	GLHP5734A	NOLO	1800	PSIG	INHB	MSEQ	ET-08	
236-04	VFY	LH2	A78161	ET/IT	GN2	SC	PG	OUT	PRSS	GLHP5735A	NOLO	1800	PSIG	INHB	MSEQ	ET-08	
			\$ ENGINE READY CHECK \$														
237-00	CVFY	SSME	ME-1	OPERATING	MODE		DW3			E41J1513B1	B110			INHB	MSEQ	SSME-07	
237-01	CVFY	SSME	ME-2	OPERATING	MODE		DW3			E41J2513B1	B110			INHB	MSEQ	SSME-07	
237-02	CVFY	SSME	ME-3	OPERATING	MODE		DW3			E41J3513B1	B110			INHB	MSEQ	SSME-07	
			\$ GLS EVENT COMPLETE = 39 \$														
			\$ VERIFY ET HEATERS OFF \$														
238-00	VFY	EPDC	RIGHT	BI-POD	HEATER	CURRENT	#1			G56C0175A	NOLO	0.05	AMP	CPER	G009	S00FP0.030	
238-01	VFY	EPDC	RIGHT	BIPOD	HEATER	CURRENT	#2			G56C0185A	NOLO	0.05	AMP	CPER	G009	S00FP0.030	
238-02	VFY	EPDC	LEFT	BI-POD	HEATER	CURRENT	#1			G56C0155A	NOLO	0.05	AMP	CPER	G010	S00FP0.030	
238-03	VFY	EPDC	LEFT	BIPOD	HEATER	CURRENT	#2			G56C0165A	NOLO	0.05	AMP	CPER	G010	S00FP0.030	
			\$ GLS EVENT COMPLETE = 38 \$														
			\$ PROPELLANTS PREPRESS CHECK \$														
239-00	VFY	LH2	LH2	PRE	PRESS	CYCLE	FAIL			N03IS082E	OFF			INHB	MSEQ	ET-04	
			\$ INHIBIT HPU TURBINE SPEED CONTROL LOGIC \$														
240-00	ICL	BHYD	LH	RATE	APU	A	TURBINE	SPEED	SNSR	2	B46R1408C1						
240-01	ICL	BHYD	LH	RATE	APU	B	TURBINE	SPEED	SNSR	2	B46R1409C1						
240-02	ICL	BHYD	RH	RATE	APU	A	TURBINE	SPEED	SNSR	2	B46R2408C1						
240-03	ICL	BHYD	RH	RATE	APU	B	TURBINE	SPEED	SNSR	2	B46R2409C1						
			\$ GLS EVENT COMPLETE = 36 \$														
			\$ * * * VERIFICATION OF GOX ARM RETRACT * * * \$														
242-00	VFY	GOX	6308A103	RETRACT	SWITCH	NO.1				GSAX8221E	ON			2	OF	3	GSE-13
242-01	VFY	GOX	6308A102	RETRACT	SWITCH	NO.2				GSAX8222E	ON			2	OF	3	GSE-13
242-02	VFY	GOX	A133566	ARM	POSITION	INDICATION				GSAH8191A	NOLO	2	DEG	OR			GSE-13
242-03	VFY	GOX	6308A103	RETRACT	SWITCH	NO. 1				GSAX8226E	ON			2	OF	3	GSE-13
242-04	VFY	GOX	6308A102	RETRACT	SWITCH	NO. 2				GSAX8227E	ON			2	OF	3	GSE-13
242-05	VFY	GOX	A133566	ARM	POSITION	INDICATION				GSAH8196A	NOLO	2	DEG	INHB	MSEQ	GSE-13	
			\$ SRB HYD/FUEL SYSTEM STATUS CHECK \$														
243-00	CVFY	BHYD	LH	LEVEL	HYDR	FLUID	RSVR	SYS	A	B58Q1350C1	50	NOHI	PCT	INHB	MENG	BTVC-04	
243-01	CVFY	BHYD	LH	LEVEL	HYDR	FLUID	RSVR	SYS	B	B58Q1351C1	50	NOHI	PCT	INHB	MENG	BTVC-04	
243-02	CVFY	BHYD	RH	LEVEL	HYDR	FLUID	RSVR	SYS	A	B58Q2350C1	50	NOHI	PCT	INHB	MENG	BTVC-04	
243-03	CVFY	BHYD	RH	LEVEL	HYDR	FLUID	RSVR	SYS	B	B58Q2351C1	50	NOHI	PCT	INHB	MENG	BTVC-04	
243-04	CVFY	BHYD	LH	PRESS	N2H4/GN2	BOTTLE	OUT	SYS	A	B46P1305C1	300	NOHI	PSIA	INHB	MENG	BTVC-02	
243-05	CVFY	BHYD	LH	PRESS	N2H4/GN2	BOTTLE	OUT	SYS	B	B46P1306C1	300	NOHI	PSIA	INHB	MENG	BTVC-02	
243-06	CVFY	BHYD	RH	PRESS	N2H4/GN2	BOTTLE	OUT	SYS	A	B46P2305C1	300	NOHI	PSIA	INHB	MENG	BTVC-02	
243-07	CVFY	BHYD	RH	PRESS	N2H4/GN2	BOTTLE	OUT	SYS	B	B46P2306C1	300	NOHI	PSIA	INHB	MENG	BTVC-02	

		\$ VERIFY OTBD F/D VLVS CLOSED \$			
244-00	VFY	MPS	MPS LO2 OTBD F/D VLV (PV9) CL IND	V41X1514X1 ON	INHB MSEQ MPS-08
244-01	VFY	MPS	MPS LH2 OTBD F/D VLV (PV11) CL IND	V41X1389X1 ON	INHB MSEQ MPS-05

\$ GLS EVENT COMPLETE = 31 \$

246-00 -31.00

247-00	*****	*****	*****	*****	*****
	LABL	INTG	GO FOR AUTO SEQ START	MSEQ	S00E00.960
	*****	*****	*****	*****	*****
247-01	VFY	INTG	GLS-GO FOR SSME IGNITION	MENG ON	INHB MSEQ
247-02	VFY	INTG	GLS-GO FOR SRB IGNITION	MSRB ON	INHB MSEQ
247-03	VFY	INTG	RSS MANUAL HOLD	ON	INHB MSEQ
247-04	VFY	INTG	NTD MANUAL HOLD	ON	INHB MSEQ
247-05	VFY	INTG	GLS MANUAL HOLD	ON	INHB MSEQ
247-06	VFY	INTG	LPS COUNTDOWN HOLD	V90X8768X1 OFF	INHB MSEQ
247-07	VFY	INTG	GLS-GO FOR AUTO SEQ START	MSEQ ON	HOLD
247-08	CMD	INTG	RS AUTO SEQUENCE START	CMD-LS ON	S00FR0.010

247-09	MMSG	INTG	GO FOR SSME START		
247-10	MSG	INTG	HPU START		

\$ GLS EVENT COMPLETE = 30 \$

247-11	CMD	INTG	SPARE CDT TIMER ACTIVATION	GCDKTM4E ON	
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\$ * * * * * HOLD NO LONGER AVAILABLE * * * * * \$
 \$ ANY INHIBIT WHICH OCCURS AFTER T-31SEC WILL RESULT \$
 \$ IN GLS ISSUING AN RSLs CMD HOLD/CUTOFF. \$
 \$ * * * * * \$

\$ THE HPU PRESTART SEQUENCE MUST BE COMPLETED \$
 \$ AT LEAST 1 SECOND PRIOR TO THE START SEQUENCE \$

\$ LH APU A PRESTART GROUP \$

249-00	CMD	BHYD	LH HYD PUMP A BYPASS VLV OPEN	CMD B58K3020XL ON	S00FR0.070
249-01	CMLT	BHYD	LH APU-A GG HTR 1 ON	CMD B46K3022XL OFF	S00FF0.170
	CMLT	BHYD	LH APU-A GG HTR 2 ON	CMD B46K3023XL OFF	

\$ LH APU B PRESTART GROUP \$

250-00	CMD	BHYD	LH HYD PUMP B BYPASS VLV OPEN	CMD B58K3021XL ON	S00FR0.070
250-01	CMLT	BHYD	LH APU-B GG HTR 1 ON	CMD B46K3024XL OFF	S00FF0.170
	CMLT	BHYD	LH APU-B GG HTR 2 ON	CMD B46K3025XL OFF	

\$ RH APU A PRESTART GROUP \$

251-00	CMD	BHYD	RH HYD PUMP A BYPASS VLV OPEN	CMD B58K4020XL ON	S00FR0.070
251-01	CMLT	BHYD	RH APU-A GG HTR 1 ON	CMD B46K4022XL OFF	S00FF0.170

CMLT BHYD RH APU-A GG HTR 2 ON CMD B46K4023XL OFF
 \$ RH APU B PRESTART GROUP \$
 252-00 CMD BHYD RH HYD PUMP B BYPASS VLV OPEN CMD B58K4021XL ON S00FR0.070
 252-01 CMLT BHYD RH APU-B GG HTR 1 ON CMD B46K4024XL OFF S00FF0.170
 CMLT BHYD RH APU-B GG HTR 2 ON CMD B46K4025XL OFF
 \$ GLS EVENT COMPLETE = 29 \$
 253-00 -28.00
 \$///// T-28 SEC, DRIVE SPEEDBRAKE TO LAUNCH POSITION (R/S) /////\$
 \$///// GIMBAL ENGINES TO START POSITION (R/S) /////\$
 \$///// T-27.92 SEC, VENT DOORS 4/7 CMD OPEN (R/S) /////\$
 \$ GLS EVENT COMPLETE = 28 \$
 \$ START SRB HPU \$
 254-00 CMLT BHYD LH HPU SYSTEM A-2 START CMD B58K3017XL ON S00FR0.070
 CMLT BHYD LH HPU SYSTEM A-1 START CMD B58K3016XL ON S00FR0.070
 254-01 CMLT BHYD LH HPU SYSTEM B-2 START CMD B58K3019XL ON S00FR0.070
 CMLT BHYD LH HPU SYSTEM B-1 START CMD B58K3018XL ON S00FR0.070
 254-02 CMLT BHYD RH HPU SYSTEM A-2 START CMD B58K4017XL ON S00FR0.070
 CMLT BHYD RH HPU SYSTEM A-1 START CMD B58K4016XL ON S00FR0.070
 254-03 CMLT BHYD RH HPU SYSTEM B-2 START CMD B58K4019XL ON S00FR0.070
 CMLT BHYD RH HPU SYSTEM B-1 START CMD B58K4018XL ON S00FR0.070
 \$ GLS EVENT COMPLETE = 27 \$
 255-00 CMD WATR SS PRELIFTOFF VLVS VENT CMD GWDKPT36E ON
 255-01 CMD WATR SS PRELIFTOFF VLVS VENT CMD GWDKPT22E ON
 \$ GLS EVENT COMPLETE = 26 \$
 256-00 -26.00
 \$ ACTIVATE HPU TURBINE SPEED CONTROL LOGIC \$
 \$ CONTROL LOGIC EXECUTION CAUSES HPU SHUTDOWN \$
 257-00 ACL BHYD LH RATE APU A TURBINE SPEED SNSR 2 B46R1408C1 10.0 85.0 KRPM BTVC-07 S00FR0.070
 257-01 ACL BHYD LH RATE APU B TURBINE SPEED SNSR 2 B46R1409C1 10.0 85.0 KRPM BTVC-07 S00FR0.070
 257-02 ACL BHYD RH RATE APU A TURBINE SPEED SNSR 2 B46R2408C1 10.0 85.0 KRPM BTVC-07 S00FR0.070
 257-03 ACL BHYD RH RATE APU B TURBINE SPEED SNSR 2 B46R2409C1 10.0 85.0 KRPM BTVC-07 S00FR0.070
 \$ MPS LH2 HI POINT BLEED VALVE CLOSURE \$
 257-04 CMD MPS MPS LH2 HI PT BL VLV(PV22)OP CMD A V41K1465NL OFF
 257-05 CMD MPS MPS LH2 HI PT BL VLV(PV22)OP CMD B V41K1466NL OFF
 \$ GLS EVENT COMPLETE = 23 \$
 \$///// T-25.44 SEC, VENT DOOR 3 CMD OPEN (R/S) /////\$
 258-00 -23.00
 \$///// T-22.88 SEC, VENT DOOR 6 CMD OPEN (R/S) /////\$

\$ SRB HYD PRESS TO SYSTEM \$
 259-00 CMD BHYD LH HYD PUMP A BYPASS VLV OPEN CMD B58K3020XL OFF S00FR0.070
 259-01 CMD BHYD LH HYD PUMP B BYPASS VLV OPEN CMD B58K3021XL OFF S00FR0.070
 259-02 CMD BHYD RH HYD PUMP A BYPASS VLV OPEN CMD B58K4020XL OFF S00FR0.070
 259-03 CMD BHYD RH HYD PUMP B BYPASS VLV OPEN CMD B58K4021XL OFF S00FR0.070

\$ GLS EVENT COMPLETE = 22 \$

260-00 CVFY INTG LAUNCH SEQUENCE ABORT FLAG V90X8382X1 OFF EXIT CPER G001

\$ GLS EVENT COMPLETE = 21 \$

261-00 -21.00

\$ START GIMBAL PROFILE \$
 262-00 CMD BHYD SRB FCS/HYD VERIF FLAG P003 ON S00FS0.030
 262-01 CMD BHYD SRB GIMBAL PROFILE EVAL P003 ON BTVC-10 S00FS0.030

\$ ACTIVATE NOZZLE LIMIT CONTROL LOGIC \$
 \$ CONTROL LOGIC EXECUTION CAUSES HPU SHUTDOWN \$

263-00 ACL BHYD LH POSITION TVC ROCK ACTUATOR B58H1150C1 +1.88 -1.88 IN
 263-01 ACL BHYD LH POSITION TVC TILT ACTUATOR B58H1151C1 +1.88 -1.88 IN
 263-02 ACL BHYD RH POSITION TVC ROCK ACTUATOR B58H2150C1 +1.88 -1.88 IN
 263-03 ACL BHYD RH POSITION TVC TILT ACTUATOR B58H2151C1 +1.88 -1.88 IN

264-00 CVFY BHYD LH RATE APU A TURBINE SPEED SNSR 2 B46R1408C1 66.2 NOHI KRPM EXIT BTVC-08
 264-01 CVFY BHYD LH RATE APU B TURBINE SPEED SNSR 2 B46R1409C1 66.2 NOHI KRPM EXIT BTVC-08
 264-02 CVFY BHYD RH RATE APU A TURBINE SPEED SNSR 2 B46R2408C1 66.2 NOHI KRPM EXIT BTVC-08
 264-03 CVFY BHYD RH RATE APU B TURBINE SPEED SNSR 2 B46R2409C1 66.2 NOHI KRPM EXIT BTVC-08

\$///// T-20.32 SEC, VENT DOORS 5 CMD OPEN (R/S) /////
 \$///// T-18 SEC, ARM SRB IGN, HOLD-DOWN AND T-0 UMBILICAL /////
 \$///// RELEASE PIC'S /////
 \$///// T-17.76 SEC, VENT DOOR 1/2 CMD OPEN (R/S) /////
 \$/////

\$ GLS EVENT COMPLETE = 16 \$

266-00 -16.00

267-00 CMD WATR SS PRELIFTOFF VLVS OP CMD GWDKPT29E ON
 267-01 CMD WATR SS PRELIFTOFF VLVS OP CMD GWDKPT31E ON
 267-02 CMD WATR SS PRELIFTOFF VLVS OP CMD GWDKPT30E ON S00FT0.120
 267-03 CMD WATR SS PRELIFTOFF VLVS OP CMD GWDKPT32E ON S00FT0.120

\$ SOUND SUPPRESSION WATER ON \$

269-00 CMD WATR SS POSTLIFTOFF PN VENT CMD GWDKPT38E ON
 269-01 CMD WATR SS POSTLIFTOFF VLVS VENT CMD GWDKPT24E ON

\$ GLS EVENT COMPLETE = 15 \$

270-00 CVFY BHYD LH RATE APU A TURBINE SPEED SNSR 2 B46R1408C1 66.2 77.8 KRPM EXIT BTVC-08
 270-01 CVFY BHYD LH RATE APU B TURBINE SPEED SNSR 2 B46R1409C1 66.2 77.8 KRPM EXIT BTVC-08

270-02	CVFY BHYD RH RATE APU A TURBINE SPEED SNSR 2	B46R2408C1	66.2	77.8	KRPM	EXIT		BTVC-08
270-03	CVFY BHYD RH RATE APU B TURBINE SPEED SNSR 2	B46R2409C1	66.2	77.8	KRPM	EXIT		BTVC-08

\$ VERIF SRB MOTORS IN NULL POSITION \$

271-00	CVFY BHYD LH POSITION TVC ROCK ACTUATOR	B58H1150C1	+5	-.5	IN	EXIT	MENG	BTVC-14
271-01	CVFY BHYD LH POSITION TVC TILT ACTUATOR	B58H1151C1	+5	-.5	IN	EXIT	MENG	BTVC-14
271-02	CVFY BHYD RH POSITION TVC ROCK ACTUATOR	B58H2150C1	+5	-.5	IN	EXIT	MENG	BTVC-14
271-03	CVFY BHYD RH POSITION TVC TILT ACTUATOR	B58H2151C1	+5	-.5	IN	EXIT	MENG	BTVC-14

\$ SRB HYD PRESS VERIF \$

272-00	CVFY BHYD LH PRESS HYDR FLUID SUPPLY 1	B58P1303C1	2800	3486	PSIA	EXIT	MENG	BTVC-09	S00FR0.070
272-01	CVFY BHYD LH PRESS HYDR FLUID SUPPLY 2	B58P1304C1	2800	3486	PSIA	EXIT	MENG	BTVC-09	S00FR0.070
272-02	CVFY BHYD RH PRESS HYDR FLUID SUPPLY 1	B58P2303C1	2800	3486	PSIA	EXIT	MENG	BTVC-09	S00FR0.070
272-03	CVFY BHYD RH PRESS HYDR FLUID SUPPLY 2	B58P2304C1	2800	3486	PSIA	EXIT	MENG	BTVC-09	S00FR0.070

\$ INHIBIT NOZZLE LIMIT CONTROL LOGIC \$

273-00	ICL BHYD LH POSITION TVC ROCK ACTUATOR	B58H1150C1						
273-01	ICL BHYD LH POSITION TVC TILT ACTUATOR	B58H1151C1						
273-02	ICL BHYD RH POSITION TVC ROCK ACTUATOR	B58H2150C1						
273-03	ICL BHYD RH POSITION TVC TILT ACTUATOR	B58H2151C1						

\$///// T-15 SEC, SRB IGNITION PIC VOLTAGES MONITORED (R/S) /////\$

\$///// MONITOR FOR FLT CRIT MDM BYP WORD (R/S) /////\$

\$///// VENT DOORS 8/9 CMD OPEN. (R/S) /////\$

\$ GLS EVENT COMPLETE = 14 \$

\$ ORDNANCE ARMED VERIFICATION \$

274-00	CVFY EPDC SYS A RH SRB HDP M1 PIC CAP VOLTS	GMSV1301A	35.7	NOHI	V	1 OF 2	GSE-07	S00FS0.080
274-01	CVFY EPDC SYS A RH HDP M1 PIC CAP VOLTS RED	GMSV3301A	35.7	NOHI	V	EXIT	MSRB GSE-07	S00FS0.080
274-02	CVFY EPDC SYS A RH SRB HDP M2 PIC CAP VOLTS	GMSV1302A	35.7	NOHI	V	1 OF 2	GSE-07	S00FS0.080
274-03	CVFY EPDC SYS A RH HDP M2 PIC CAP VOLTS RED	GMSV3302A	35.7	NOHI	V	EXIT	MSRB GSE-07	S00FS0.080
274-04	CVFY EPDC SYS A RH SRB HDP M3 PIC CAP VOLTS	GMSV1303A	35.7	NOHI	V	1 OF 2	GSE-07	S00FS0.080
274-05	CVFY EPDC SYS A RH HDP M3 PIC CAP VOLTS RED	GMSV3303A	35.7	NOHI	V	EXIT	MSRB GSE-07	S00FS0.080
274-06	CVFY EPDC SYS A RH SRB HDP M4 PIC CAP VOLTS	GMSV1304A	35.7	NOHI	V	1 OF 2	GSE-07	S00FS0.080
274-07	CVFY EPDC SYS A RH HDP M4 PIC CAP VOLTS RED	GMSV3304A	35.7	NOHI	V	EXIT	MSRB GSE-07	S00FS0.080
274-08	CVFY EPDC SYS A LH SRB HDP M5 PIC CAP VOLTS	GMSV1305A	35.7	NOHI	V	1 OF 2	GSE-07	S00FS0.080
274-09	CVFY EPDC SYS A LH HDP M5 PIC CAP VOLTS RED	GMSV3305A	35.7	NOHI	V	EXIT	MSRB GSE-07	S00FS0.080
274-10	CVFY EPDC SYS A LH SRB HDP M6 PIC CAP VOLTS	GMSV1306A	35.7	NOHI	V	1 OF 2	GSE-07	S00FS0.080
274-11	CVFY EPDC SYS A LH HDP M6 PIC CAP VOLTS RED	GMSV3306A	35.7	NOHI	V	EXIT	MSRB GSE-07	S00FS0.080
274-12	CVFY EPDC SYS A LH SRB HDP M7 PIC CAP VOLTS	GMSV1307A	35.7	NOHI	V	1 OF 2	GSE-07	S00FS0.080
274-13	CVFY EPDC SYS A LH HDP M7 PIC CAP VOLTS RED	GMSV3307A	35.7	NOHI	V	EXIT	MSRB GSE-07	S00FS0.080
274-14	CVFY EPDC SYS A LH SRB HDP M8 PIC CAP VOLTS	GMSV1308A	35.7	NOHI	V	1 OF 2	GSE-07	S00FS0.080
274-15	CVFY EPDC SYS A LH HDP M8 PIC CAP VOLTS RED	GMSV3308A	35.7	NOHI	V	EXIT	MSRB GSE-07	S00FS0.080
274-16	CVFY EPDC SYS B RH SRB HDP M1 PIC CAP VOLTS	GMSV2301A	35.7	NOHI	V	1 OF 2	GSE-07	S00FS0.080
274-17	CVFY EPDC SYS B RH HDP M1 PIC CAP VOLTS RED	GMSV4301A	35.7	NOHI	V	EXIT	MSRB GSE-07	S00FS0.080
274-18	CVFY EPDC SYS B RH SRB HDP M2 PIC CAP VOLTS	GMSV2302A	35.7	NOHI	V	1 OF 2	GSE-07	S00FS0.080
274-19	CVFY EPDC SYS B RH HDP M2 PIC CAP VOLTS RED	GMSV4302A	35.7	NOHI	V	EXIT	MSRB GSE-07	S00FS0.080
274-20	CVFY EPDC SYS B RH SRB HDP M3 PIC CAP VOLTS	GMSV2303A	35.7	NOHI	V	1 OF 2	GSE-07	S00FS0.080
274-21	CVFY EPDC SYS B RH HDP M3 PIC CAP VOLTS RED	GMSV4303A	35.7	NOHI	V	EXIT	MSRB GSE-07	S00FS0.080
274-22	CVFY EPDC SYS B RH SRB HDP M4 PIC CAP VOLTS	GMSV2304A	35.7	NOHI	V	1 OF 2	GSE-07	S00FS0.080
274-23	CVFY EPDC SYS B RH HDP M4 PIC CAP VOLTS RED	GMSV4304A	35.7	NOHI	V	EXIT	MSRB GSE-07	S00FS0.080
274-24	CVFY EPDC SYS B LH SRB HDP M5 PIC CAP VOLTS	GMSV2305A	35.7	NOHI	V	1 OF 2	GSE-07	S00FS0.080

274-25	CVFY	EPDC	SYS B LH HDP M5 PIC CAP VOLTS RED	GMSV4305A	35.7	NOHI	V	EXIT	MSRB GSE-07	S00FS0.080
274-26	CVFY	EPDC	SYS B LH SRB HDP M6 PIC CAP VOLTS	GMSV2306A	35.7	NOHI	V	1 OF 2	GSE-07	S00FS0.080
274-27	CVFY	EPDC	SYS B LH HDP M6 PIC CAP VOLTS RED	GMSV4306A	35.7	NOHI	V	EXIT	MSRB GSE-07	S00FS0.080
274-28	CVFY	EPDC	SYS B LH SRB HDP M7 PIC CAP VOLTS	GMSV2307A	35.7	NOHI	V	1 OF 2	GSE-07	S00FS0.080
274-29	CVFY	EPDC	SYS B LH HDP M7 PIC CAP VOLTS RED	GMSV4307A	35.7	NOHI	V	EXIT	MSRB GSE-07	S00FS0.080
274-30	CVFY	EPDC	SYS B LH SRB HDP M8 PIC CAP VOLTS	GMSV2308A	35.7	NOHI	V	1 OF 2	GSE-07	S00FS0.080
274-31	CVFY	EPDC	SYS B LH HDP M8 PIC CAP VOLTS RED	GMSV4308A	35.7	NOHI	V	EXIT	MSRB GSE-07	S00FS0.080
274-32	CVFY	EPDC	SYS A ETVAS PIC CAP VOLTS	GMSV1311A	35.7	NOHI	V	1 OF 2	GSE-06	S00FS0.080
274-33	CVFY	EPDC	SYS A ETVAS PIC CAP RED VOLTS	GMSV3311A	35.7	NOHI	V	EXIT	MSRB GSE-06	S00FS0.080
274-34	CVFY	EPDC	SYS B ETVAS PIC CAP VOLTS	GMSV2311A	35.7	NOHI	V	1 OF 2	GSE-06	S00FS0.080
274-35	CVFY	EPDC	SYS B ETVAS PIC CAP RED VOLTS	GMSV4311A	35.7	NOHI	V	EXIT	MSRB GSE-06	S00FS0.080
274-36	CVFY	EPDC	SYS A LH2 TSM PIC CAP VOLTS	GMSV1309A	35.7	NOHI	V	1 OF 2	GSE-05	S00FS0.080
274-37	CVFY	EPDC	SYS A LH2 TSM PIC CAP RED VOLTS	GMSV3309A	35.7	NOHI	V	EXIT	MSRB GSE-05	S00FS0.080
274-38	CVFY	EPDC	SYS A LO2 TSM PIC CAP VOLTS	GMSV1310A	35.7	NOHI	V	1 OF 2	GSE-05	S00FS0.080
274-39	CVFY	EPDC	SYS A LO2 TSM PIC CAP RED VOLTS	GMSV3310A	35.7	NOHI	V	EXIT	MSRB GSE-05	S00FS0.080
274-40	CVFY	EPDC	SYS B LH2 TSM PIC CAP VOLTS	GMSV2309A	35.7	NOHI	V	1 OF 2	GSE-05	S00FS0.080
274-41	CVFY	EPDC	SYS B LH2 TSM PIC CAP RED VOLTS	GMSV4309A	35.7	NOHI	V	EXIT	MSRB GSE-05	S00FS0.080
274-42	CVFY	EPDC	SYS B LO2 TSM PIC CAP VOLTS	GMSV2310A	35.7	NOHI	V	1 OF 2	GSE-05	S00FS0.080
274-43	CVFY	EPDC	SYS B LO2 TSM PIC CAP RED VOLTS	GMSV4310A	35.7	NOHI	V	EXIT	MSRB GSE-05	S00FS0.080
274-44	CVFY	BPYR	LH VOLTAGE IGN PIC CAP A	B55V1603C1	35.7	40.5	V	EXIT	MSRB BEI-09	
274-45	CVFY	BPYR	LH VOLTAGE IGN PIC CAP B	B55V1604C1	35.7	40.5	V	EXIT	MSRB BEI-09	
274-46	CVFY	BPYR	RH VOLTAGE IGN PIC CAP A	B55V2603C1	35.7	40.5	V	EXIT	MSRB BEI-09	
274-47	CVFY	BPYR	RH VOLTAGE IGN PIC CAP B	B55V2604C1	35.7	40.5	V	EXIT	MSRB BEI-09	

\$ INHIBIT HPU TURBINE SPEED CONTROL LOGIC \$

275-00	ICL	BHYD	LH RATE APU A TURBINE SPEED SNSR 2	B46R1408C1						
275-01	ICL	BHYD	LH RATE APU B TURBINE SPEED SNSR 2	B46R1409C1						
275-02	ICL	BHYD	RH RATE APU A TURBINE SPEED SNSR 2	B46R2408C1						
275-03	ICL	BHYD	RH RATE APU B TURBINE SPEED SNSR 2	B46R2409C1						

\$ SECONDARY ROCK/TILT DELTA PRESS \$

276-00	VFY	BHYD	LH DELTA PRESS SECONDARY A ROCK	B58P1311A1	-990	+990	PSID	EXIT	BTVC-13	
276-01	VFY	BHYD	LH DELTA PRESS SECONDARY B ROCK	B58P1312A1	-990	+990	PSID	EXIT	BTVC-13	
276-02	VFY	BHYD	LH DELTA PRESS SECONDARY C ROCK	B58P1313A1	-990	+990	PSID	EXIT	BTVC-13	
276-03	VFY	BHYD	LH DELTA PRESS SECONDARY D ROCK	B58P1314A1	-990	+990	PSID	EXIT	BTVC-13	
276-04	VFY	BHYD	LH DELTA PRESS SECONDARY A TILT	B58P1315A1	-990	+990	PSID	EXIT	BTVC-13	
276-05	VFY	BHYD	LH DELTA PRESS SECONDARY B TILT	B58P1316A1	-990	+990	PSID	EXIT	BTVC-13	
276-06	VFY	BHYD	LH DELTA PRESS SECONDARY C TILT	B58P1317A1	-990	+990	PSID	EXIT	BTVC-13	
276-07	VFY	BHYD	LH DELTA PRESS SECONDARY D TILT	B58P1318A1	-990	+990	PSID	EXIT	BTVC-13	
276-08	VFY	BHYD	RH DELTA PRESS SECONDARY A ROCK	B58P2311A1	-990	+990	PSID	EXIT	BTVC-13	
276-09	VFY	BHYD	RH DELTA PRESS SECONDARY B ROCK	B58P2312A1	-990	+990	PSID	EXIT	BTVC-13	
276-10	VFY	BHYD	RH DELTA PRESS SECONDARY C ROCK	B58P2313A1	-990	+990	PSID	EXIT	BTVC-13	
276-11	VFY	BHYD	RH DELTA PRESS SECONDARY D ROCK	B58P2314A1	-990	+990	PSID	EXIT	BTVC-13	
276-12	VFY	BHYD	RH DELTA PRESS SECONDARY A TILT	B58P2315A1	-990	+990	PSID	EXIT	BTVC-13	
276-13	VFY	BHYD	RH DELTA PRESS SECONDARY B TILT	B58P2316A1	-990	+990	PSID	EXIT	BTVC-13	
276-14	VFY	BHYD	RH DELTA PRESS SECONDARY C TILT	B58P2317A1	-990	+990	PSID	EXIT	BTVC-13	
276-15	VFY	BHYD	RH DELTA PRESS SECONDARY D TILT	B58P2318A1	-990	+990	PSID	EXIT	BTVC-13	

\$ GLS EVENT COMPLETE = 13 \$

\$///// T-12.5 SEC, OPEN POGO RECIRCULATION VALVES. (R/S) /////\$

\$ AFT MDM LOCKOUT COMMANDS-GPC VERIFIES MDM LOCKED, \$

\$ GLS WILL ISSUE CUTOFF IF ERRORS RECEIVED ON LOCK COMMANDS \$

277-00 CMD INTG LOCK SRB MDM LL2/LR2 CRITICAL LL2/LR2 ON S00FS0.090
277-01 VFY INTG SRB MDM LOCK ACKNOWLEDGED ERROR3 X0000 EXIT BEI-05 S00FS0.090

\$ VERIFY LH2 HI-POINT BLEED VALVE \$

277-02 VFY MPS LH2 HI PT BL VLV (PV22) CL IND V41X1469E1 ON 1 OF 2 MPS-12
277-03 VFY MPS A131135 HI POINT BLEED TEMP GLHT4119A -409.5 NOHI DEGF EXIT MPS-12

\$ SPEEDBRAKE IN LAUNCH POSITION \$

278-01 VFY FCL SPEED BRAKE ACTR CHAN 1 POSN V57H0250A1 NOLO 3 DEG EXIT GNC-26 S00FM0.280
278-02 VFY FCL SPEED BRAKE ACTR CHAN 2 POSN V57H0251A1 NOLO 3 DEG EXIT GNC-26 S00FM0.280
278-03 VFY FCL SPEED BRAKE ACTR CHAN 3 POSN V57H0252A1 NOLO 3 DEG EXIT GNC-26 S00FM0.280
278-04 VFY FCL SPEED BRAKE ACTR CHAN 4 POSN V57H0253A1 NOLO 3 DEG EXIT GNC-26 S00FM0.280

\$ TERMINATE HE FILL \$

278-05 CMD MPS MPHE FSYS S/O CLS CMD OVR GHEK1008E OFF S00FT0.040
278-06 CMD MPS MPHE FSYS S/O VLV CLD CMD OVR (R) GHEK1108E OFF S00FT0.040
278-07 CMD MPS MP HE FILL SYS S/O VLV CLS CMD GHEK1000E ON S00FT0.040
278-08 CMD MPS MPHE FILL SYS S/O CLD CMD(R) GHEK1100E ON S00FT0.040
278-09 CMD MPS MPHE FSYS CNT VLV OPN CMD OVR GHEK1047E ON S00FT0.040
278-10 CMD MPS MPHE FSYS CNT VLV OPN CMD OVR (R) GHEK1167E ON S00FT0.040
278-11 CMD MPS MPHE FILL SYS CNT VLV OPN CMD GHEK1040E OFF S00FT0.040
278-12 CMD MPS MPHE FILL SYS CNT VLV OPN CMD(R) GHEK1160E OFF S00FT0.040
278-13 CMD MPS MPHE F/OUT VNT OPN CMD GHEK1010E ON S00FT0.040
278-14 CMD MPS MPHE F/OUT VNT OPN CMD (R) GHEK1120E ON S00FT0.040
278-15 CMD MPS MPHE F/OUT VNT OPN CMD OVR GHEK1017E OFF S00FT0.040
278-16 CMD MPS MPHE F/OUT VNT OPN CMD OVR (R) GHEK1127E OFF S00FT0.040

\$ GLS EVENT COMPLETE = 12 \$

\$ MPS FIRE DETECTORS OFF \$

279-01 CMD MPS EXPOSED PRI FIRE DET OFF CMD GLHK7490E ON
279-02 CMD MPS EXPOSED SEC FIRE DET OFF CMD GLHK7500E ON

\$ GLS EVENT COMPLETE = 10 \$

\$/\$\$\$ T-11 SEC, REQUEST NAV INIT AND 100% THROTTLE CMD (R/S) \$\$\$/\$

280-00 -10.00

\$ VERIF OF SS PRE L/O FLOW \$

282-00 VFY WATR SS PRELIFTOFF VLV-LS V27 OP IND GWDXP70E ON 2 OF 3 GSE-19
282-01 VFY WATR SS PRELIFTOFF VLV-LS V26 OP IND GWDXP72E ON 2 OF 3 GSE-19
282-02 VFY WATR SS PRELIFTOFF VLV-LS V25 OP IND GWDXP74E ON EXIT GSE-19

\$ VERIF OF SS POST LO VENT \$

283-00 VFY WATR SS POSTLFTF VENT VLV SV8 OP IND GWDXP55E ON 2 OF 3 GSE-18
283-01 VFY WATR SS POSTLIFTOFF VENT VLV SV9 OP IND GWDXP56E ON 2 OF 3 GSE-18
283-02 VFY WATR SS PSTLFTF VENT VLV SV10 OP IND GWDXP57E ON EXIT GSE-18

284-00 LABEL INTG GO FOR SSME START MENG

292-00	VFY	ECLS	GCU 1	SUPL	VLV	OPEN	IND	GFRK1217E	ON	GTO ST280
292-01	CMD	ECLS	GCU 1	SELECT				N03IS044E	ON	
										\$ GLS EVENT COMPLETE = 6 \$
										\$ GCU PUMP TURN OFF AND VLV SAFING \$
										\$ PERFORM NEXT 10 STEPS IF S70-0508 GCU \$
										\$ SUPPORTING (N61IV064E) = OFF \$
293-00	ST280	CMD	ECLS	GCU 1	PUMP 1	STOP	CMD	GFRK1030E	ON	S00FS0.020
293-01		CMD	ECLS	GCU 1	PUMP 2	STOP	CMD	GFRK1040E	ON	S00FS0.020
293-02		CMD	ECLS	GCU 1	PUMP 3	STOP	CMD	GFRK1050E	ON	S00FS0.020
294-00		CMD	ECLS	GCU 2	PUMP 1	STOP	CMD	GFRK2030E	ON	S00FS0.020
294-01		CMD	ECLS	GCU 2	PUMP 2	STOP	CMD	GFRK2040E	ON	S00FS0.020
294-02		CMD	ECLS	GCU 2	PUMP 3	STOP	CMD	GFRK2050E	ON	S00FS0.020
295-00		CMD	ECLS	GCU 1	SUPPLY	COOLANT	CMD	GFRK1140E	OFF	
295-01		CMD	ECLS	GCU 2	SUPPLY	COOLANT	CMD	GFRK2140E	OFF	
295-02		CMD	ECLS	GCU 1	BYP	COOLANT	CMD	GFRK1150E	ON	
295-03		CMD	ECLS	GCU 2	BYP	COOLANT	CMD	GFRK2150E	ON	
										\$ PERFORM NEXT 4 STEPS IF S70-1203 GCU \$
										\$ IS SUPPORTING (N61IV064E) = ON \$
295-04		CMD	ECLS	PRI	LOOP	AUTO	RUN	CMD	GFRK2450E	OFF
295-05		CMD	ECLS	GCU 1	PUMP 1	START	CMD	GFRK1000E	OFF	
295-06		CMD	ECLS	GCU 1	PUMP 2	START	CMD	GFRK1010E	OFF	
295-07		CMD	ECLS	GCU 1	PUMP 3	START	CMD	GFRK1020E	OFF	
										\$ MID CMD DECODER TERM MUST BE SEPARATED \$
										\$ FROM LA1/LF1 TERM BY MINIMUM 100MS. \$
295-20		CMD	DPS	MID	DCDR	LM1	PWR	SUPPLY 1	ON	CMD V72K7971W OFF V72CA0.070
295-21		CMD	DPS	MID	DCDR	LM1	PWR	SUPPLY 2	ON	CMD V72K7970W OFF V72CA0.070
										\$/////\$ THE FOLLOWING PERFORMED BY THE RSLs - ////\$
										\$/////\$ T-7.0 SEC, MONITOR LH2 PREVALVES, VD POSITIONS, ////\$
										\$/////\$ ENGINE READY AND LPS GO FOR SSME START.(R/S)////\$
										\$/////\$ T-6.6 SEC, ORBITER MAIN ENGINE START(3,2,1). MONITOR ////\$
										\$/////\$ SSME CHAMBER PRESS WHICH MUST BE > 90% ////\$
										\$/////\$ WITHIN 4.6 SEC. ////\$
										\$/////\$ AFTER ME'S > 90% THRUST, COMMAND ENGINES TO LAUNCH ////\$
										\$/////\$ POSITION AND PERFORM TVC ACTUATOR CHECKS. ////\$
										\$ GLS EVENT COMPLETE = 2 \$
296-00	-02.00									\$ PERFORM NEXT 2 STEPS IF S70-0508 GCU \$
										\$ SUPPORTING (N61IV064E) = OFF \$
297-00		CMD	ECLS	GCU 1	BYP	COOLANT	CMD	GFRK1150E	OFF	
297-01		CMD	ECLS	GCU 2	BYP	COOLANT	CMD	GFRK2150E	OFF	

```

$/////          *** SRB IGNITION ***          //$$
$///// T-0.0 SEC, REQUEST SRB IGNITION/TERM LDB POLLING //$$
$/////          6.6 SEC AFTER FIRST ENGINE START. //$$
$/////          REQUEST T-0 UMBILICAL RELEASE, FOLLOWED //$$
$/////          BY MEC 1 AND 2 MASTER RESET. (R/S) //$$

```

```

298-00 ST290   VFY INTG SYS A HDP T-0 BUS ON IND           GMSX1107E ON           2 OF 2
298-01         VFY INTG SYS B HDP T-0 BUS ON IND           GMSX2107E ON           GTO ST290
298-02         MSG          $ SHUTTLE LIFTOFF $

```



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$ STS LIFTOFF SIGNAL TO FIRING ROOM CONSOLES $
299-00   COM LO2 STS LIFTOFF COMM INTERRUPT           N014INTGR LO2
299-01   COM LH2 STS LIFTOFF COMM INTERRUPT           N014INTGR LH2
299-02   CMD INTG STS LIFTOFF FLAG                     N03IS125E ON

```

```

$*****$
$          $
$ POST LIFTOFF SAFING $
$          $
$*****$

```

```

$ LATCH ORBITER ACCESS ARM $
300-00   CMD ARMS OAA LCHBACK SPLY V-LATCH ENABLE       GSAK7501E ON
300-01   CMD ARMS OAA LCHBACK SPLY V-LATCH ENABLE       GSAK7506E ON
300-02   CMD ARMS OAA LCHBACK SPLY V-LATCH               GSAK7500E ON
300-03   CMD ARMS OAA LCHBACK SPLY V-LATCH               GSAK7505E ON

```

```

$ DELAY 1 SECOND $

```

```

301-00   CMD ARMS OAA LCHBACK SPLY V-LATCH               GSAK7500E OFF
301-01   CMD ARMS OAA LCHBACK SPLY V-LATCH               GSAK7505E OFF
301-02   CMD ARMS OAA LCHBACK SPLY V-LATCH ENABLE       GSAK7501E OFF
301-03   CMD ARMS OAA LCHBACK SPLY V-LATCH ENABLE       GSAK7506E OFF

```

```

$ RESET H2 BURN $

```

```

302-00   CMD EPDC H2 SYS A ARM                           GMSK5012E OFF
302-01   CMD EPDC H2-SYS B ARM                           GMSK6012E OFF
302-02   CMD EPDC H2 SYS A FIRE 1                       GMSK5013E OFF
302-03   CMD EPDC H2-SYS B FIRE 1                       GMSK6013E OFF

```

302-04 CMD EPDC H2 SYS A FIRE 2 GMSK5014E OFF
302-05 CMD EPDC H2-SYS B FIRE 2 GMSK6014E OFF

\$ GCU REFRIG UNIT SHUTDOWN \$
\$ PERFORM NEXT 2 STEPS IF S70-0508 GCU \$
\$ SUPPORTING (N61IV064E) = OFF \$

303-00 CMD ECLS GCU 1 REFRIG UNIT STOP CMD GFRK1070E ON
304-00 CMD ECLS GCU 2 REFRIG UNIT STOP CMD GFRK2070E ON

\$ PERFORM NEXT 3 STEPS IF S70-1203 GCU \$
\$ IS SUPPORTING (N61IV064E) = ON \$

304-01 CMD ECLS GCU 1 REFRIG UNIT START CMD GFRK1060E OFF
304-02 CMD ECLS GCU 2 REFRIG UNIT START CMD GFRK2060E OFF
304-03 CMD ECLS GCU 3 REFRIG UNIT START CMD GFRK6060E OFF

\$ SS SECURING \$

305-00 CMD WATR SS PRELIFTOFF VLVS VENT CMD GWDKPT36E OFF
305-01 CMD WATR SS PRELIFTOFF VLVS VENT CMD GWDKPT22E OFF

305-02 CMD WATR SS PRELIFTOFF VLVS OP CMD GWDKPT29E OFF
305-03 CMD WATR SS PRELIFTOFF VLVS OP CMD GWDKPT31E OFF
305-04 CMD WATR SS PRELIFTOFF VLVS OP CMD GWDKPT30E OFF
305-05 CMD WATR SS PRELIFTOFF VLVS OP CMD GWDKPT32E OFF

305-06 CMD WATR SS POSTLIFTOFF PN VENT CMD GWDKPT38E OFF
305-07 CMD WATR SS POSTLIFTOFF VLVS VENT CMD GWDKPT24E OFF

\$*****\$
\$ \$
\$ A TOTAL 43 SEC DELAY IS REQUIRED PRIOR TO \$
\$ SS CONTROL TRANSFER (SEQ.308-00). \$
\$ 25 SECONDS OF THE TOTAL 43 IS USED IN A \$
\$ DELAY REQUIREMENT NEEDED PRIOR TO THE ECL \$
\$ PUMP STOP CMD REMOVALS (SEQ.306-00). THE \$
\$ REMAINING 18 SECONDS EXISTS PRIOR TO \$
\$ SEQ. 308-00. \$
\$ \$
\$*****\$

\$ DELAY 25 SECONDS \$

\$ PERFORM NEXT 8 STEPS IF S70-0508 GCU \$
\$ SUPPORTING (N61IV064E) = OFF \$

306-00 CMD ECLS GCU 1 PUMP 1 STOP CMD GFRK1030E OFF
306-01 CMD ECLS GCU 1 PUMP 2 STOP CMD GFRK1040E OFF
306-02 CMD ECLS GCU 1 PUMP 3 STOP CMD GFRK1050E OFF
306-03 CMD ECLS GCU 1 REFRIG UNIT STOP CMD GFRK1070E OFF

307-00 CMD ECLS GCU 2 PUMP 1 STOP CMD GFRK2030E OFF
307-01 CMD ECLS GCU 2 PUMP 2 STOP CMD GFRK2040E OFF
307-02 CMD ECLS GCU 2 PUMP 3 STOP CMD GFRK2050E OFF
307-03 CMD ECLS GCU 2 REFRIG UNIT STOP CMD GFRK2070E OFF

\$ DELAY 18 SECONDS \$

\$ SS TRANSFER TO CCS \$

308-00	CMD	WATR	SS	FR	CMD	BUS	PWR	ON	CMD	GWDKPT08E	OFF
308-01	CMD	WATR	SS	FR	CMD	BUS	PWR	ON	CMD	GWDKPT10E	OFF
308-02	CMD	WATR	SS	CCC	ENABLE/FR	DISABLE	CMD			GWDKPT34E	ON
308-03	CMD	WATR	SS	CCC	ENABLE/FR	DISABLE	CMD			GWDKPT35E	ON

\$ DELAY 1 SECOND \$

308-04	CMD	WATR	SS	CCC	ENABLE/FR	DISABLE	CMD			GWDKPT34E	OFF
308-05	CMD	WATR	SS	CCC	ENABLE/FR	DISABLE	CMD			GWDKPT35E	OFF

\$ FX TRANSFER TO CCS \$

308-06	CMD	MPS	FX	FR/CCC	CTR	FR-OFF	CCC-ON	CMD		GWDKPT11E	ON
308-07	CMD	MPS	FX	FR/CCC	CTR	FR-OFF	CCC-ON	CMD		GWDKPT15E	ON
308-08	CMD	MPS	FX	FR/CCC	CTR	FR-OFF	CCC-ON	CMD		GWDKPT12E	ON
308-09	CMD	MPS	FX	FR/CCC	CTR	FR-OFF	CCC-ON	CMD		GWDKPT14E	ON

\$ DELAY 1 SECOND \$

308-10	CMD	MPS	FX	FR/CCC	CTR	FR-OFF	CCC-ON	CMD		GWDKPT11E	OFF
308-11	CMD	MPS	FX	FR/CCC	CTR	FR-OFF	CCC-ON	CMD		GWDKPT15E	OFF
308-12	CMD	MPS	FX	FR/CCC	CTR	FR-OFF	CCC-ON	CMD		GWDKPT12E	OFF
308-13	CMD	MPS	FX	FR/CCC	CTR	FR-OFF	CCC-ON	CMD		GWDKPT14E	OFF

\$ COMMIT CRITERIA MONITOR FLAGS RETURNED TO SYSTEMS \$

309-00	COM	INTG	SYSTEMS	IN	FD	CONTROL				N012INTGR	BHYD
	COM	INTG	SYSTEMS	IN	FD	CONTROL				N012INTGR	HYD
	COM	INTG	SYSTEMS	IN	FD	CONTROL				N012INTGR	APU
	COM	INTG	SYSTEMS	IN	FD	CONTROL				N012INTGR	HYFUEL
	COM	INTG	SYSTEMS	IN	FD	CONTROL				N012INTGR	HYOXID
	COM	INTG	SYSTEMS	IN	FD	CONTROL				N012INTGR	ARMS
	COM	INTG	SYSTEMS	IN	FD	CONTROL				N012INTGR	MECH
	COM	INTG	SYSTEMS	IN	FD	CONTROL				N012INTGR	LO2
	COM	INTG	SYSTEMS	IN	FD	CONTROL				N012INTGR	LH2
	COM	INTG	SYSTEMS	IN	FD	CONTROL				N012INTGR	MPS
	COM	INTG	SYSTEMS	IN	FD	CONTROL				N012INTGR	SSME
	COM	INTG	SYSTEMS	IN	FD	CONTROL				N012INTGR	GOXARM
	COM	INTG	SYSTEMS	IN	FD	CONTROL				N012INTGR	BRS
	COM	INTG	SYSTEMS	IN	FD	CONTROL				N012INTGR	ECLSS
	COM	INTG	SYSTEMS	IN	FD	CONTROL				N012INTGR	FCP
	COM	INTG	SYSTEMS	IN	FD	CONTROL				N012INTGR	PLBD
	COM	INTG	SYSTEMS	IN	FD	CONTROL				N012INTGR	CARGO
	COM	INTG	SYSTEMS	IN	FD	CONTROL				N012INTGR	ECS
	COM	INTG	SYSTEMS	IN	FD	CONTROL				N012INTGR	WATER
	COM	INTG	SYSTEMS	IN	FD	CONTROL				N012INTGR	NAVAID
	COM	INTG	SYSTEMS	IN	FD	CONTROL				N012INTGR	COMM
	COM	INTG	SYSTEMS	IN	FD	CONTROL				N012INTGR	PLINTG
	COM	INTG	SYSTEMS	IN	FD	CONTROL				N012INTGR	INSTR

GROUND LAUNCH SEQUENCE DESCRIPTION DOCUMENT - LCD STS 96											KLO-82-0071 APP. A					
SEQ	CDT/STEP	S:I	FUNC	DISC	NOMENCLATURE	FUNCTION	DESIGNATOR	SINGLE	OR LO	HIGH	UNIT	ELSE	DUR.	LCC	REF	OMRSD

```

* * * * *
*
*
*          BREAKOUT
*    PRIMARY SAFING
*          AND
*    NORMAL SAFING
*
* * * * *

```

```

500-00      CMD  INTG LAUNCH SEQUENCE HOLD          CMD-LS  ON          S00E00.940
500-01      CMD  INTG RECYCLE                      CMD-LS  ON          S00E00.940

```

\$ BREAKOUT NOTIFICATION TO ALL FR CONSOLES \$

\$ NOTE: THE FOLLOWING TWO COMMUNICATIONS INTERRUPTS ARE ISSUED TO ALL CONSOLES IN PARALLEL WITH THE GLS INITIATION OF ITS SAFING ROUTINE. THEY INDICATE THAT BREAKOUT HAS OCCURRED AND THAT SYSTEMS ARE NOW IN CONTROL OF THE FEP PROCESSING OF MEASUREMENTS NOT APPEARING IN SAFING.

NOTICE: NO SYSTEM SAFING IS TO BE DONE UNTIL THE GLS SAFING COMPLETE FLAG IS ISSUED. \$

\$ PERFORM THE NEXT 4 STEPS IF GLS ISSUED THE LPS GO FOR ME START \$
\$ GLS EVENT COMPLETE LESS THAN 9 \$
\$ VERIFY VEHICLE HOLDING. GLS SAFING WILL NOT PROCEED UNTIL AN \$
\$ ONBOARD RECYCLE OR ABORT IS CONFIRMED. MANUAL CAPABILITY TO \$
\$ FORCE SAFING START THROUGH EITHER AN RSLs ABORT OR RSLs \$
\$ RECYCLE PATH WILL BE AVAILABLE. \$

```

501-01 ST300  VFY  INTG COUNTDOWN TIME          V90W8380C1 -530  NOHI  SEC  GTO NEXT  SEQ          S00E00.940
501-02      VFY  INTG LAUNCH SEQUENCE ABORT FLAG  V90X8382X1 OFF  GTO NEXT  SEQ
501-03      CMD  INTG LAUNCH SEQUENCE HOLD          CMD-LS  ON
501-04      CMD  INTG RECYCLE                      CMD-LS  ON
                    GTO ST300

```

502-00 CMD INTG GLS BREAKOUT N011INTGR ON
 502-01 CMD INTG SYSTEMS IN FD CONTROL N012INTGR ON

\$ PERFORM PRIMARY SAFING IF IGNITION S/A'S ARE ARMED - ELSE GO TO NORMAL SAFING \$

\$ ***** \$
 \$ ***** PRIMARY SAFING ***** \$
 \$ ***** \$

\$ ACTIVATE SSME HEAT SHIELD WATER SPRAY \$

502-02 VFY INTG LAUNCH SEQUENCE ABORT FLAG V90X8382X1 ON GTO ST301 S00E00.137
 502-03 CMD MPS MLP ORBR HS V336-337 ARM CMD GWDKLU27E ON S00E00.137
 502-04 CMD MPS MLP ORBR HS V336-337 OP CMD GWDKLU28E ON S00E00.137
 502-05 CMD MPS MLP ORBR HS V336-337 CL CMD GWDKLU29E OFF S00E00.137
 502-06 CMD MPS MLP ORBR HS V336-337 CL CMD GWDKLU71E OFF S00E00.137

\$ PERFORM NEXT 6 STEPS IF CMD DECODERS ARE OFF \$
 \$ GLS EVENT COMPLETE LESS THAN 9 \$

\$ POWER UP CMD DECODERS \$

503-00 ST301 CMD DPS MDM LAL PF BUS 1 ON V72K7965W ON S00E00.980
 503-01 CMD DPS MDM LAL PF BUS 2 ON V72K7966W ON S00E00.980
 503-02 CMD DPS MDM LF1 PF BUS 1 ON V72K7968W ON S00E00.980
 503-03 CMD DPS MDM LF1 PF BUS 2 ON V72K7969W ON S00E00.980

\$ PERFORM NEXT TWO STEPS IF FLIGHT IS \$

\$ AN EDO MISSION (NPRSDEDO16) = ON \$

503-04 CMD DPS MID DCDR LM1 PWR SUPPLY 1 ON CMD V72K7971W ON
 503-05 CMD DPS MID DCDR LM1 PWR SUPPLY 2 ON CMD V72K7970W ON

\$ PERFORM NEXT 4 STEPS IF SRB FWD MDMS ARE LOCKED \$

\$ GLS EVENT COMPLETE LESS THAN 55 \$

\$ UNLOCK SRB FWD MDMS \$

504-00 CMD INTG MDM LOCK VERIF TEST DISC,LL01=0DOL B75K3065XL ON S00E00.930
 504-01 CMD INTG MDM LOCK VERIF TEST DISC,LL01=4DOL B75K3066XL ON S00E00.930
 504-02 CMD INTG MDM LOCK VERIF TEST DISC,LR01=0DOL B75K4065XL ON S00E00.930
 504-03 CMD INTG MDM LOCK VERIF TEST DISC,LR01=4DOL B75K4066XL ON S00E00.930

\$ SAFE SRB IGNITION S/A'S \$

\$ GLS EVENT COMPLETE LESS THAN 300 \$

505-00 CMD BPYR LH IGNITION S&A DEVICE, ARM CMD B55K3000XL OFF S00E00.750
 505-01 CMD BPYR RH IGNITION S&A DEVICE, ARM CMD B55K4000XL OFF S00E00.750
 505-02 CMD BPYR LH IGNITION S&A DEVICE,SAFE CMD 1 B55K3001XL ON S00E00.750
 505-03 CMD BPYR LH IGNITION S&A DEVICE,SAFE CMD 2 B55K3002XL ON S00E00.750
 505-04 CMD BPYR RH IGNITION S&A DEVICE,SAFE CMD 1 B55K4001XL ON S00E00.750
 505-05 CMD BPYR RH IGNITION S&A DEVICE,SAFE CMD 2 B55K4002XL ON S00E00.750

\$ POWER DOWN GSE PIC RACKS \$
\$ GLS EVENT COMPLETE LESS THAN 21 \$

506-00	CMD	EPDC	SYS A PIC RACK DC PWR OFF	GMSK1108E	ON	
506-01	CMD	EPDC	SYS A PIC RACK RED DC PWR OFF CMD	GMSK1208E	ON	
506-02	CMD	EPDC	SYS B PIC RACK DC PWR OFF	GMSK2108E	ON	
506-03	CMD	EPDC	SYS B PIC RACK RED DC PWR OFF CMD	GMSK2208E	ON	
506-04	CMD	EPDC	H2-BURN SYS A PIC RACK DC PWR OFF	GMSK5108E	ON	S00E00.B70
506-05	CMD	EPDC	H2-BRN SYS A PIC RED DC PWR OF CMD	GMSK5208E	ON	
506-06	CMD	EPDC	H2-BURN SYS B PIC RACK DC PWR OFF	GMSK6108E	ON	S00E00.B70
506-07	CMD	EPDC	H2-BRN SYS B PIC RED DC PWR OF CMD	GMSK6208E	ON	
506-08	CMD	EPDC	SYS A CPA DC PWR OFF	GMSK1103E	ON	
506-09	CMD	EPDC	SYS B CPA DC PWR OFF	GMSK2103E	ON	
506-10	CMD	EPDC	H2-BURN SYS A CPA DC PWR OFF	GMSK5103E	ON	S00E00.B70
506-11	CMD	EPDC	H2-BURN SYS B CPA DC PWR OFF	GMSK6103E	ON	S00E00.B70

\$ DELAY 2 SECONDS \$

506-12	CMD	EPDC	SYS A PIC RACK DC PWR OFF	GMSK1108E	OFF	
506-13	CMD	EPDC	SYS A PIC RACK RED DC PWR OFF CMD	GMSK1208E	OFF	
506-14	CMD	EPDC	SYS B PIC RACK DC PWR OFF	GMSK2108E	OFF	
506-15	CMD	EPDC	SYS B PIC RACK RED DC PWR OFF CMD	GMSK2208E	OFF	
506-16	CMD	EPDC	H2-BURN SYS A PIC RACK DC PWR OFF	GMSK5108E	OFF	S00E00.B70
506-17	CMD	EPDC	H2-BRN SYS A PIC RED DC PWR OF CMD	GMSK5208E	OFF	
506-18	CMD	EPDC	H2-BURN SYS B PIC RACK DC PWR OFF	GMSK6108E	OFF	S00E00.B70
506-19	CMD	EPDC	H2-BRN SYS B PIC RED DC PWR OF CMD	GMSK6208E	OFF	
506-20	CMD	EPDC	SYS A CPA DC PWR OFF	GMSK1103E	OFF	
506-21	CMD	EPDC	SYS B CPA DC PWR OFF	GMSK2103E	OFF	
506-22	CMD	EPDC	H2-BURN SYS A CPA DC PWR OFF	GMSK5103E	OFF	S00E00.B70
506-23	CMD	EPDC	H2-BURN SYS B CPA DC PWR OFF	GMSK6103E	OFF	S00E00.B70

\$ PERFORM NEXT 4 STEPS IF LOX PREPRESS HAS BEEN INITIATED \$
\$ GLS EVENT COMPLETE LESS THAN 175 \$
\$ TERMINATE LOX PREPRESS \$

507-00	CMD	LO2	A75082 ET HE PRI PREPRESS VLV OPEN	GLOK2001E	OFF	S00E00.460
507-01	CMD	LO2	A75080 ET HE PREPRESS SOV PRI	GLOK2031E	ON	S00E00.460
507-02	CMD	LO2	A75086 ET HE SEC PREPRESS VLV OPEN	GLOK3001E	OFF	S00E00.460
507-03	CMD	LO2	A75080 ET HE PREPRESS SOV CL SEC	GLOK3071E	ON	S00E00.460

\$ PERFORM NEXT 4 STEPS IF LH2 PREPRESS HAS BEEN INITIATED \$
\$ GLS EVENT COMPLETE LESS THAN 117 \$
\$ TERMINATE LH2 PREPRESS \$

508-00	CMD	LH2	A75616 ET PRESS PRI CTL VLV OP CMD	GLHK4521E	OFF	
508-01	CMD	LH2	A75617 ET PRESS SEC CTL VLV OP CMD	GLHK4531E	OFF	
508-02	CMD	LH2	A75610 ET PRESS SOV CLSD CMD PRI	GLHK4541E	ON	
508-03	CMD	LH2	A75610 ET PRESS SOV CLOSE CMD SEC	GLHK4591E	ON	

\$ ***** \$

\$ ***** NORMAL SAFING ***** \$
 \$ ***** \$
 \$ GO TO EVENT AT TIME OF BREAKOUT \$

\$ IF GLS EVENT COMPLETE IS GREATER THAN 445, GO TO ST426 \$
 \$ GLS EVENT COMPLETE LESS THAN 7 \$
 \$ GCU COOLING RECONFIGURE \$
 \$ PERFORM NEXT 14 STEPS IF S70-0508 GCU \$
 \$ SUPPORTING (N61IV064E) = OFF \$

510-00	CMD	ECLS	GCU 1 PUMP 1 STOP	CMD	GFRK1030E	OFF		S00E00.870
510-01	CMD	ECLS	GCU 1 PUMP 2 STOP	CMD	GFRK1040E	OFF		S00E00.870
510-02	CMD	ECLS	GCU 1 PUMP 3 STOP	CMD	GFRK1050E	OFF		S00E00.870
510-03	CMD	ECLS	GCU 2 PUMP 1 STOP	CMD	GFRK2030E	OFF		S00E00.870
510-04	CMD	ECLS	GCU 2 PUMP 2 STOP	CMD	GFRK2040E	OFF		S00E00.870
510-05	CMD	ECLS	GCU 2 PUMP 3 STOP	CMD	GFRK2050E	OFF		S00E00.870
510-06	CMD	ECLS	GCU 1 BYP COOLANT	CMD	GFRK1150E	OFF		S00E00.870
510-07	CMD	ECLS	GCU 2 BYP COOLANT	CMD	GFRK2150E	OFF		S00E00.870
510-08	VFY	ECLS	GCU 1 SELECT		N03IS044E	ON	GTO ST310	S00E00.870
			\$ GCU 1 START UP \$					
510-09	CMD	ECLS	GCU 1 SUPPLY COOLANT	CMD	GFRK1140E	ON		S00E00.870
510-10	CMD	INTG	GCU 1 SELECT					S00E00.870
510-11	CMD	INTG					SKIP SEQ	S00E00.870
			\$ GCU 2 START UP \$					
510-12 ST310	CMD	ECLS	GCU 2 SUPPLY COOLANT	CMD	GFRK2140E	ON		S00E00.870
510-13	CMD	INTG	GCU 2 SELECT					S00E00.870
			\$ PERFORM NEXT 5 STEPS IF S70-1203 GCU \$					
			\$ IS SUPPORTING (N61IV064E) = ON \$					
510-14	VFY	ECLS	HRS LPS MAN CNTL MODE SEL		GFRK1400ER	ON	GTO ST311	
510-15	CMD	ECLS	GCU 1 PUMP 3 START	CMD	GFRK1020E	OFF		
510-16	CMD	ECLS	GCU 1 PUMP 1 START	CMD	GFRK1000E	ON		
510-17	CMD	ECLS	GCU 1 PUMP 2 START	CMD	GFRK1010E	ON		
			GTO ST311.1					
510-18 ST311	CMD	ECLS	PRI LOOP AUTO RUN	CMD	GFRK2450E	ON		
			\$ GLS EVENT COMPLETE LESS THAN 9 \$					
			\$ INHIBIT RSS \$					
511-00 ST311.1	CMD	BRS	LHSRB RSS A INHIBIT/RESET	CMD	B55K3519E	OFF		S00E00.760
511-01	CMD	BRS	RHSRB RSS A INHIBIT/RESET	CMD	B55K4519E	OFF		S00E00.760
511-02	CMD	BRS	LHSRB RSS B INHIBIT/RESET	CMD	B55K3520E	OFF		S00E00.760
511-03	CMD	BRS	RHSRB RSS B INHIBIT/RESET	CMD	B55K4520E	OFF		S00E00.760
			\$ TERM LH2 RECIRC AND CLOSE VLVS \$					
512-00	CMD	MPS	IT111 LH2 PUMP 1 PRI BUS	CMD	GLHK0173E	OFF		
512-01	CMD	MPS	IT112 LH2 PUMP 2 PRI BUS	CMD	GLHK0174E	OFF		

512-02	CMD	MPS	IT113 LH2 PUMP 3 PRI BUS CMD	GLHK0175E	OFF	
512-03	CMD	MPS	IT211 LH2 PUMP 1 BU BUS CMD	GLHK0276E	OFF	
512-04	CMD	MPS	IT212 LH2 PUMP 2 BU BUS CMD	GLHK0277E	OFF	
512-05	CMD	MPS	IT213 LH2 PUMP 3 BU BUS CMD	GLHK0278E	OFF	
512-08	CMD	MPS	MPS LH2 REC VLVS(PV14,15,16)OP CMD	V41K1111NL	OFF	
512-09	CMD	EPDC	IT110 BUS ON CMD	GASK0154E	OFF	
512-10	CMD	EPDC	IT210 BUS ON CMD	GASK0255E	OFF	

\$ GLS EVENT COMPLETE LESS THAN 10 \$

\$ SAFE H2 BURN SYSTEM \$

513-00	CMD	EPDC	H2 SYS A FIRE 1	GMSK5013E	OFF	S00E00.B70
513-01	CMD	EPDC	H2-SYS B FIRE 1	GMSK6013E	OFF	S00E00.B70
513-02	CMD	EPDC	H2 SYS A FIRE 2	GMSK5014E	OFF	S00E00.B70
513-03	CMD	EPDC	H2-SYS B FIRE 2	GMSK6014E	OFF	S00E00.B70

\$ -10.00 \$

\$ GLS EVENT COMPLETE LESS THAN 12 \$

\$ OPEN LO2 OVERBOARD BLEED VALVES S00E00.B85, B90 \$

513-04	CMD	MPS	MPS LO2 OVBD B/V (PV19) CL CMD A	V41K1584XL	OFF	S00E00.B90
513-05	CMD	MPS	MPS LO2 OVBD B/V (PV19) CL CMD B	V41K1585XL	OFF	S00E00.B90
513-06	CMD	MPS	MPS LO2 OVBD B/V (PV19) CL CMD C	V41K1586XL	OFF	S00E00.B90

\$ GLS EVENT COMPLETE LESS THAN 14 \$

\$ UNLOCK SRB AFT MDM'S \$

514-00	CMD	INTG	MDM LOCK VERIF TEST DISC,LL02=0DOL	B75K3067XL	ON	S00E00.950
514-01	CMD	INTG	MDM LOCK VERIF TEST DISC,LL02=4DOL	B75K3068XL	ON	S00E00.950
514-02	CMD	INTG	MDM LOCK VERIF TEST DISC,LR02=0DOL	B75K4067XL	ON	S00E00.950
514-03	CMD	INTG	MDM LOCK VERIF TEST DISC,LR02=4DOL	B75K4068XL	ON	S00E00.950

\$ -28.00 \$

\$ GLS EVENT COMPLETE LESS THAN 29 \$

\$ SRB APU TURBINE SPEED LIMIT CHANGE \$

515-00	ACL	BHYD	LH RATE APU A TURBINE SPEED SNSR 2	B46R1408C1	NOLO	85.0	KRPM	S00E00.720
515-01	ACL	BHYD	LH RATE APU B TURBINE SPEED SNSR 2	B46R1409C1	NOLO	85.0	KRPM	S00E00.720
515-02	ACL	BHYD	RH RATE APU A TURBINE SPEED SNSR 2	B46R2408C1	NOLO	85.0	KRPM	S00E00.720
515-03	ACL	BHYD	RH RATE APU B TURBINE SPEED SNSR 2	B46R2409C1	NOLO	85.0	KRPM	S00E00.720

\$ SHUTDOWN SRB HPU \$

515-04	CMD	BHYD	LH HPU SYSTEM A-1 START CMD	B58K3016XL	OFF	S00E00.721
515-05	CMD	BHYD	RH HPU SYSTEM A-1 START CMD	B58K4016XL	OFF	S00E00.721
515-06	CMD	BHYD	LH HPU SYSTEM B-1 START CMD	B58K3018XL	OFF	S00E00.721
515-07	CMD	BHYD	RH HPU SYSTEM B-1 START CMD	B58K4018XL	OFF	S00E00.721
515-08	CMD	BHYD	LH HYD PUMP A BYPASS VLV OPEN CMD	B58K3020XL	OFF	S00E00.721
515-09	CMD	BHYD	RH HYD PUMP A BYPASS VLV OPEN CMD	B58K4020XL	OFF	S00E00.721
515-10	CMD	BHYD	LH HYD PUMP B BYPASS VLV OPEN CMD	B58K3021XL	OFF	S00E00.721

515-11	CMD	BHYD	RH	HYD	PUMP	B	BYPASS	VLV	OPEN	CMD	B58K4021XL	OFF					S00E00.721
515-12	CMD	BHYD	SRB	HPU	SHUTDOWN	FLAG					N03IS600E	ON					
515-13	CVFY	BHYD	LH	RATE	APU	A	TURBINE	SPEED	SNSR	2	B46R1408C1	40.0	NOHI	KRPM	CPER	G019	S00E00.721
515-14	CVFY	BHYD	LH	RATE	APU	B	TURBINE	SPEED	SNSR	2	B46R1409C1	40.0	NOHI	KRPM	CPER	G019	S00E00.721
515-15	CVFY	BHYD	RH	RATE	APU	A	TURBINE	SPEED	SNSR	2	B46R2408C1	40.0	NOHI	KRPM	CPER	G019	S00E00.721
515-16	CVFY	BHYD	RH	RATE	APU	B	TURBINE	SPEED	SNSR	2	B46R2409C1	40.0	NOHI	KRPM	CPER	G019	S00E00.721

516-00	VFY	INTG	LAUNCH	SEQUENCE	ABORT	FLAG					V90X8382X1	OFF					GTO ST312
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\$ CLOSE LO2 POGO RECIRC VALVES \$

516-01	CMD	MPS	MPS	LO2	POGO	RECRC	1(PV20)	CL	CMD	A	V41K1815XL	ON					S00E00.B85
516-02	CMD	MPS	MPS	LO2	POGO	RECRC	1(PV20)	CL	CMD	B	V41K1816XL	ON					S00E00.B85
516-03	CMD	MPS	MPS	LO2	POGO	RECRC	2(PV21)	CL	CMD	A	V41K1825XL	ON					S00E00.B85
516-04	CMD	MPS	MPS	LO2	POGO	RECRC	2(PV21)	CL	CMD	B	V41K1826XL	ON					S00E00.B85

\$ -31.00 \$

517-00	ST312	CMD	INTG	VENT	DOOR	SAFING	ENABLED				S013	ON					
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\$ -49.00 \$

\$ GLS EVENT COMPLETE LESS THAN 56 \$

\$ DISARM H2 BURN SYS \$

519-00	CMD	EPDC	H2	SYS	A	ARM					GMSK5012E	OFF					S00E00.B70
519-01	CMD	EPDC	H2	SYS	B	ARM					GMSK6012E	OFF					S00E00.B70

520-00	VFY	INTG	LAUNCH	SEQUENCE	ABORT	FLAG					V90X8382X1	OFF					GTO ST340
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\$ GLS EVENT COMPLETE LESS THAN 174 \$

\$ ACTIVATE ENGINE GN2 PURGE GSE \$

521-00	CMD	SSME	MPENG	GN2	PRG	VNT	OPN	CMD			GGNK1050E	OFF					S00E00.160
521-01	CMD	SSME	MPENG	GN2	PRG	VNT	OPN	CMD	(R)		GGNK1140E	OFF					S00E00.160
521-02	CMD	SSME	MPENG	GN2	PRG	VNT	OPN	CMD	OVR		GGNK1057E	ON					S00E00.160
521-03	CMD	SSME	MPENG	GN2	PRG	VNT	OPN	CMD	OVR	(R)	GGNK1147E	ON					S00E00.160
521-04	CMD	SSME	MPENG	GN2	PRG	S/O	VLV	CLD	CMD		GGNK1070E	OFF					S00E00.160
521-05	CMD	SSME	MPENG	GN2	PRG	S/O	VLV	CLD	CMD	(R)	GGNK1160E	OFF					S00E00.160
521-06	CMD	SSME	MPENG	GN2	PRG	S/O	VLV	CLD	CMD	OVR	GGNK1077E	ON					S00E00.160
521-07	CMD	SSME	MPENG	GN2	PRG	S/O	VLV	CLD	CMD	OVR	(R)	GGNK1167E	ON				S00E00.160
521-08	CMD	SSME	MPENG	GN2	PRG	CNT	VLV	CLD	CMD		GGNK1030E	OFF					S00E00.160
521-09	CMD	SSME	MPENG	GN2	PRG	CNT	VLV	CLD	CMD	(R)	GGNK1130E	OFF					S00E00.160
521-10	CMD	SSME	MPENG	GN2	PRG	CNT	VLV	CLD	CMD	OVR	GGNK1037E	ON					S00E00.160
521-11	CMD	SSME	MPENG	GN2	PRG	CNT	CLD	CMD	OVR	(R)	GGNK1137E	ON					S00E00.160

\$ -02:55 \$

\$ GLS EVENT COMPLETE LESS THAN 240 \$

\$ INITIATE PURGE SEQUENCE 3 \$

522-00	VFY	SSME	ME-1	PHASE	IN	EFFECT					DW3	E41J1512B1	B010				GTO ST320	S00E00.150
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522-01		VFY	SSME	ME-1 OPERATING MODE	DW3	E41J1513B1 B011		GTO ST315	S00E00.150
				GTO ST320					
522-02	ST315	ISSU	SSME	ME-1 RESUME CMD		E41K1202BL ON			S00E00.150
522-03		ISSU	SSME	ME-1 NO-OP CMD		E41K1201BL ON			S00E00.150
522-04		ISSU	SSME	ME-1 RESUME CMD		E41K1202BL ON			S00E00.150
522-05		ISSU	SSME	ME-1 PURGE SEQUENCE 3 CMD		E41K1215BL ON			S00E00.150
522-06	ST320	VFY	SSME	ME-2 PHASE IN EFFECT	DW3	E41J2512B1 B010		GTO ST325	S00E00.150
522-07		VFY	SSME	ME-2 OPERATING MODE	DW3	E41J2513B1 B011		GTO ST321	S00E00.150
				GTO ST325					
522-08	ST321	ISSU	SSME	ME-2 RESUME CMD		E41K2202BL ON			S00E00.150
522-09		ISSU	SSME	ME-2 NO-OP CMD		E41K2201BL ON			S00E00.150
522-10		ISSU	SSME	ME-2 RESUME CMD		E41K2202BL ON			S00E00.150
522-11		ISSU	SSME	ME-2 PURGE SEQUENCE 3 CMD		E41K2215BL ON			S00E00.150
522-12	ST325	VFY	SSME	ME-3 PHASE IN EFFECT	DW3	E41J3512B1 B010		GTO ST330	S00E00.150
522-13		VFY	SSME	ME-3 OPERATING MODE	DW3	E41J3513B1 B011		GTO ST326	S00E00.150
				GTO ST330					
522-14	ST326	ISSU	SSME	ME-3 RESUME CMD		E41K3202BL ON			S00E00.150
522-15		ISSU	SSME	ME-3 NO-OP CMD		E41K3201BL ON			S00E00.150
522-16		ISSU	SSME	ME-3 RESUME CMD		E41K3202BL ON			S00E00.150
522-17		ISSU	SSME	ME-3 PURGE SEQUENCE 3 CMD		E41K3215BL ON			S00E00.150
522-18	ST330			\$ CONTINUE \$					

\$ -04:00 \$

\$ GLS EVENT COMPLETE LESS THAN 271 \$

\$ MAIN FUEL VALVE HTRS ON \$

523-00		CMD	SSME	ID700 PS 6811 OUTPUT ON CMD		G76K0702E ON			S00E00.305
523-01		CMD	SSME	ID700 PS 6811 OUTPUT OFF CMD		G76K0703E OFF			S00E00.305
523-02		CMD	SSME	ID800 PS 6812 OUTPUT ON CMD		G76K0802E ON			S00E00.305
523-03		CMD	SSME	ID800 PS 6812 OUTPUT OFF CMD		G76K0803E OFF			S00E00.305
523-04		CMD	SSME	MPENG MFV1 HEATER PWR ON CMD		GGNK1020E ON			S00E00.305
523-05		CMD	SSME	MPENG MFV1 HEATER PWR OFF CMD		GGNK1021E OFF			S00E00.305
523-06		CMD	SSME	MPENG MFV1 HEATER PWR OFF CMD(R)		GGNK1141E OFF			S00E00.305
523-07		CMD	SSME	MPENG MFV2 HEATER PWR ON CMD		GGNK1040E ON			S00E00.305
523-08		CMD	SSME	MPENG MFV2 HEATER PWR OFF CMD		GGNK1041E OFF			S00E00.305
523-09		CMD	SSME	MPENG MFV2 HEATER PWR OFF CMD(R)		GGNK1151E OFF			S00E00.305
523-10		CMD	SSME	MPENG MFV3 HEATER PWR ON CMD		GGNK1060E ON			S00E00.305
523-11		CMD	SSME	MPENG MFV3 HEATER PWR OFF CMD		GGNK1061E OFF			S00E00.305
523-12		CMD	SSME	MPENG MFV3 HEATER PWR OFF CMD(R)		GGNK1161E OFF			S00E00.305

\$ -04:30 \$

\$ GLS EVENT COMPLETE LESS THAN 300 \$

\$ RSS SAFING \$

524-00	ST340	CMD	BRs	LH RSS S&A DEVICE ARM CMD		B55K3044XL OFF			S00E00.751
524-01		CMD	BRs	RH RSS S&A DEVICE ARM CMD		B55K4044XL OFF			S00E00.751

\$ GCU 1 AND 2 START \$

\$ PERFORM NEXT 4 STEPS IF S70-0508 GCU \$

\$ SUPPORTING (N61LV064E) = OFF \$

525-00		CMD	ECLS	GCU 1 PUMP 1 START CMD		GFRK1000E ON			S00E00.870
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525-01	CMD	ECLS	GCU 1 PUMP 2 START CMD	GFRK1010E	ON				S00E00.870
525-02	CMD	ECLS	GCU 2 PUMP 1 START CMD	GFRK2000E	ON				S00E00.870
525-03	CMD	ECLS	GCU 2 PUMP 2 START CMD	GFRK2010E	ON				S00E00.870

\$ DELAY 2 SECONDS \$

526-02	CMD	BPYR	LH IGNITION S&A DEVICE,SAFE CMD 1	B55K3001XL	OFF				S00E00.750
526-03	CMD	BPYR	LH IGNITION S&A DEVICE,SAFE CMD 2	B55K3002XL	OFF				S00E00.750
526-04	CMD	BPYR	RH IGNITION S&A DEVICE,SAFE CMD 1	B55K4001XL	OFF				S00E00.750
526-05	CMD	BPYR	RH IGNITION S&A DEVICE,SAFE CMD 2	B55K4002XL	OFF				S00E00.750

\$ GCU PUMP START CMDS OFF \$
 \$ PERFORM NEXT 4 STEPS IF S70-0508 GCU \$
 \$ SUPPORTING (N61IV064E) = OFF \$

527-00	CMD	ECLS	GCU 1 PUMP 1 START CMD	GFRK1000E	OFF				
527-01	CMD	ECLS	GCU 1 PUMP 2 START CMD	GFRK1010E	OFF				
527-02	CMD	ECLS	GCU 2 PUMP 1 START CMD	GFRK2000E	OFF				
527-03	CMD	ECLS	GCU 2 PUMP 2 START CMD	GFRK2010E	OFF				

528-00	VFY	BPYR	LH VOLTAGE IGN PIC CAP A	B55V1603C1	NOLO	1.5	VDC	DISPLAY	S00E00.800
528-01	VFY	BPYR	LH VOLTAGE IGN PIC CAP B	B55V1604C1	NOLO	1.5	VDC	DISPLAY	S00E00.800
528-02	VFY	BPYR	RH VOLTAGE IGN PIC CAP A	B55V2603C1	NOLO	1.5	VDC	DISPLAY	S00E00.800
528-03	VFY	BPYR	RH VOLTAGE IGN PIC CAP B	B55V2604C1	NOLO	1.5	VDC	DISPLAY	S00E00.800
528-04	VFY	BPYR	LH VOLTAGE FWD THR PIN PIC CAP A	B55V1605C1	NOLO	1.5	VDC	DISPLAY	
528-05	VFY	BPYR	LH VOLTAGE FWD THR PIN PIC CAP B	B55V1606C1	NOLO	1.5	VDC	DISPLAY	
528-06	VFY	BPYR	RH VOLTAGE FWD THR PIN PIC CAP A	B55V2605C1	NOLO	1.5	VDC	DISPLAY	
528-07	VFY	BPYR	RH VOLTAGE FWD THR PIN PIC CAP B	B55V2606C1	NOLO	1.5	VDC	DISPLAY	
528-08	VFY	BPYR	RH VOLTAGE AFT UPR BRC PIC CAP A	B55V2607C1	NOLO	1.5	VDC	DISPLAY	
528-09	VFY	BPYR	RH VOLTAGE AFT UPR BRC PIC CAP B	B55V2608C1	NOLO	1.5	VDC	DISPLAY	
528-10	VFY	BPYR	RH VOLTAGE AFT MID BRC PIC CAP A	B55V2609C1	NOLO	1.5	VDC	DISPLAY	
528-11	VFY	BPYR	RH VOLTAGE AFT MID BRC PIC CAP B	B55V2610C1	NOLO	1.5	VDC	DISPLAY	
528-12	VFY	BPYR	RH VOLTAGE AFT LWR BRC PIC CAP A	B55V2611C1	NOLO	1.5	VDC	DISPLAY	
528-13	VFY	BPYR	RH VOLTAGE AFT LWR BRC PIC CAP B	B55V2612C1	NOLO	1.5	VDC	DISPLAY	
528-14	VFY	BPYR	LH VOLTAGE AFT UPR BRC PIC CAP A	B55V1607C1	NOLO	1.5	VDC	DISPLAY	
528-15	VFY	BPYR	LH VOLTAGE AFT UPR BRC PIC CAP B	B55V1608C1	NOLO	1.5	VDC	DISPLAY	
528-16	VFY	BPYR	LH VOLTAGE AFT MID BRC PIC CAP A	B55V1609C1	NOLO	1.5	VDC	DISPLAY	
528-17	VFY	BPYR	LH VOLTAGE AFT MID BRC PIC CAP B	B55V1610C1	NOLO	1.5	VDC	DISPLAY	
528-18	VFY	BPYR	LH VOLTAGE AFT LWR BRC PIC CAP A	B55V1611C1	NOLO	1.5	VDC	DISPLAY	
528-19	VFY	BPYR	LH VOLTAGE AFT LWR BRC PIC CAP B	B55V1612C1	NOLO	1.5	VDC	DISPLAY	
528-20	VFY	BPYR	LH VOLTAGE FWD SEPN MOT PIC CAP A	B55V1613C1	NOLO	1.5	VDC	DISPLAY	
528-21	VFY	BPYR	LH VOLTAGE FWD SEPN MOT PIC CAP B	B55V1614C1	NOLO	1.5	VDC	DISPLAY	
528-22	VFY	BPYR	RH VOLTAGE FWD SEPN MOT PIC CAP A	B55V2613C1	NOLO	1.5	VDC	DISPLAY	
528-23	VFY	BPYR	RH VOLTAGE FWD SEPN MOT PIC CAP B	B55V2614C1	NOLO	1.5	VDC	DISPLAY	
528-24	VFY	BPYR	LH VOLTAGE AFT SEPN MOT PIC CAP A	B55V1615C1	NOLO	1.5	VDC	DISPLAY	
528-25	VFY	BPYR	LH VOLTAGE AFT SEPN MOT PIC CAP B	B55V1616C1	NOLO	1.5	VDC	DISPLAY	
528-26	VFY	BPYR	RH VOLTAGE AFT SEPN MOT PIC CAP A	B55V2615C1	NOLO	1.5	VDC	DISPLAY	
528-27	VFY	BPYR	RH VOLTAGE AFT SEPN MOT PIC CAP B	B55V2616C1	NOLO	1.5	VDC	DISPLAY	

\$ -05:00 \$

\$ GLS EVENT COMPLETE LESS THAN 446 \$

\$ IS OAA FULLY EXTENDED \$

529-00	VFY	ARMS	OAA	PRI	FULLY	EXTEND	SW-NOT	EXTEND	GSAX7591E	ON				1	OF	5
529-01	VFY	ARMS	OAA	SEC	FULLY	EXTEND	SW-NOT	EXTEND	GSAX7611E	ON				1	OF	5
529-02	VFY	ARMS	OAA	PRI	FULLY	EXTEND	SW-EXTENDED		GSAX7581E	OFF				1	OF	5
529-03	VFY	ARMS	OAA	SEC	FULLY	EXTEND	SW-EXTENDED		GSAX7601E	OFF				1	OF	5
529-04	VFY	ARMS	OAA	POSITION	INDICATION				GSAH7831A	NOLO	69	DEG	OR			
529-05	VFY	ARMS	OAA	PRI	FULLY	EXTEND	SW-NOT	EXTEND	GSAX7596E	ON				1	OF	5
529-06	VFY	ARMS	OAA	SEC	FULLY	EXTEND	SW-NOT	EXTEND	GSAX7616E	ON				1	OF	5
529-07	VFY	ARMS	OAA	PRI	FULLY	EXTEND	SW-EXTENDED		GSAX7586E	OFF				1	OF	5
529-08	VFY	ARMS	OAA	SEC	FULLY	EXTEND	SW-EXTENDED		GSAX7606E	OFF				1	OF	5
529-09	VFY	ARMS	OAA	POSITION	INDICATOR				GSAH7836A	NOLO	69	DEG	GTO S350			

\$ EMERGENCY EXTEND ORBITER ACCESS ARM \$

530-00	CMD	ARMS	OAA	OPEN	PRI	RETRACT	SUPPLY	V	GSAX7210E	OFF						S00E00.B80
530-01	CMD	ARMS	OAA	OPEN	PRI	RETRACT	SUPPLY	V	GSAX7215E	OFF						S00E00.B80
530-02	CMD	ARMS	OAA	OPEN	PRI	RETRACT	RETURN	V	GSAX7230E	OFF						S00E00.B80
530-03	CMD	ARMS	OAA	OPEN	PRI	RETRACT	RETURN	V	GSAX7235E	OFF						S00E00.B80
530-04	CMD	ARMS	OAA	OPEN	SEC	RETRACT	SUPPLY	V	GSAX7250E	OFF						S00E00.B80
530-05	CMD	ARMS	OAA	OPEN	SEC	RETRACT	SUPPLY	V	GSAX7255E	OFF						S00E00.B80
530-06	CMD	ARMS	OAA	OPEN	SEC	RETRACT	RETURN	V	GSAX7270E	OFF						S00E00.B80
530-07	CMD	ARMS	OAA	OPEN	SEC	RETRACT	RETURN	V	GSAX7275E	OFF						S00E00.B80
530-08	CMD	ARMS	A101409	EMERGENCY	EXT	INHIBIT			GSAX7320E	OFF						S00E00.B80
530-09	CMD	ARMS	A101409	EMERGENCY	EXT	INHIBIT			GSAX7325E	OFF						S00E00.B80
530-10	CMD	ARMS	A101410	EMERGENCY	EXT	INHIBIT			GSAX7330E	OFF						S00E00.B80
530-11	CMD	ARMS	A101410	EMERGENCY	EXT	INHIBIT			GSAX7335E	OFF						S00E00.B80
530-12	CMD	ARMS	OAA	RESET	PRI	EXTEND	PILOT	V	GSAX7160E	OFF						S00E00.B80
530-13	CMD	ARMS	OAA	RESET	PRI	EXTEND	PILOT	V	GSAX7165E	OFF						S00E00.B80
530-14	CMD	ARMS	OAA	RESET	SEC	EXTEND	PILOT	V	GSAX7180E	OFF						S00E00.B80
530-15	CMD	ARMS	OAA	RESET	SEC	EXTEND	PILOT	V	GSAX7185E	OFF						S00E00.B80
530-16	CMD	ARMS	OAA	CLOSE	PRI	RETRACT	SUPPLY	V	GSAX7200E	ON						S00E00.B80
530-17	CMD	ARMS	OAA	CLOSE	PRI	RETRACT	SUPPLY	V	GSAX7205E	ON						S00E00.B80
530-18	CMD	ARMS	OAA	CLOSE	PRI	RETRACT	RETURN	V	GSAX7220E	ON						S00E00.B80
530-19	CMD	ARMS	OAA	CLOSE	PRI	RETRACT	RETURN	V	GSAX7225E	ON						S00E00.B80
530-20	CMD	ARMS	OAA	CLOSE	SEC	RETRACT	SUPPLY	V	GSAX7240E	ON						S00E00.B80
530-21	CMD	ARMS	OAA	CLOSE	SEC	RETRACT	SUPPLY	V	GSAX7245E	ON						S00E00.B80
530-22	CMD	ARMS	OAA	CLOSE	SEC	RETRACT	RETURN	V	GSAX7260E	ON						S00E00.B80
530-23	CMD	ARMS	OAA	CLOSE	SEC	RETRACT	RETURN	V	GSAX7265E	ON						S00E00.B80
530-24	CMD	ARMS	OAA	LCHBACK	SPLY	V-UNLATCH			GSAX7510E	ON						S00E00.B80
530-25	CMD	ARMS	OAA	LCHBACK	SPLY	V-UNLATCH			GSAX7515E	ON						S00E00.B80
530-26	CMD	ARMS	OAA	CLOSE	GN2	INHIBIT	V		GSAX7100E	ON						S00E00.B80
530-27	CMD	ARMS	OAA	CLOSE	GN2	INHIBIT	V		GSAX7105E	ON						S00E00.B80
530-28	CMD	ARMS	OAA	LOCK	PRI	EXTEND	LOCK	V	GSAX7130E	OFF						S00E00.B80
530-29	CMD	ARMS	OAA	LOCK	PRI	EXTEND	LOCK	V	GSAX7135E	OFF						S00E00.B80

530-30	CMD	ARMS	OAA	LOCK	SEC	EXTEND	LOCK	V	GSAK7150E	OFF	S00E00.B80
530-31	CMD	ARMS	OAA	LOCK	SEC	EXTEND	LOCK	V	GSAK7155E	OFF	S00E00.B80
530-32	CMD	ARMS	OAA	UNLOCK	PRI	EXTEND	LOCK	V	GSAK7120E	ON	S00E00.B80
530-33	CMD	ARMS	OAA	UNLOCK	PRI	EXTEND	LOCK	V	GSAK7125E	ON	S00E00.B80
530-34	CMD	ARMS	OAA	UNLOCK	SEC	EXTEND	LOCK	V	GSAK7140E	ON	S00E00.B80
530-35	CMD	ARMS	OAA	UNLOCK	SEC	EXTEND	LOCK	V	GSAK7145E	ON	S00E00.B80
530-36	CMD	ARMS	OAA	OPEN	PRI	EXTEND	PILOT	V	GSAK7170E	ON	S00E00.B80
530-37	CMD	ARMS	OAA	OPEN	PRI	EXTEND	PILOT	V	GSAK7175E	ON	S00E00.B80
530-38	CMD	ARMS	OAA	OPEN	SEC	EXTEND	PILOT	V	GSAK7190E	ON	S00E00.B80
530-39	CMD	ARMS	OAA	OPEN	SEC	EXTEND	PILOT	V	GSAK7195E	ON	S00E00.B80
530-40	CMD	ARMS	OAA	OPEN	ACCUM	CHARGING	V		GSAK7080E	ON	S00E00.B80
530-41	CMD	ARMS	OAA	OPEN	ACCUM	CHARGING	V		GSAK7085E	ON	S00E00.B80
530-42	CMD	ARMS	OAA	LCHBACK	SPLY	V-UNLATCH			GSAK7510E	OFF	S00E00.B80
530-43	CMD	ARMS	OAA	LCHBACK	SPLY	V-UNLATCH			GSAK7515E	OFF	S00E00.B80

531-00 ST350 CMD ARMS WHITERM/CREW CABIN 02 CMD GGOR1101E OFF

532-00 VFY INTG LAUNCH SEQUENCE ABORT FLAG V90X8382X1 ON GTO ST387

533-00 VFY MPS MPS LH2 4IN DISC VLV (PD3) CL IND V41X1420E1 OFF GTO ST351

533-01 CMD MPS PD3 CTL OVERRIDE NLHK0040X ON

533-02 CMD MPS GCH60 SHUTOFF NLHK0062X ON

533-03 CMD MPS MPS LH2 4IN DISC VLV (PD3) CL CMD V41K1422XL ON

533-04 CMD MPS MPS LH2 4IN DISC VLV (PD3) OP CMD V41K1421XL OFF

533-05 ST351 CMD MPS PV13 CTL OVERRIDE NLHK0038X ON

533-06 CMD MPS GCH58 SHUTOFF NLHK0060X ON

\$ THE FOLLOWING SEQ ENSURES THAT ANY UNSTARTED MAIN \$

\$ ENG WILL BE CONFIGURED TO POST-SHUTDOWN STANDBY \$

534-00	ISSU	SSME	ME-1	SHUTDOWN	ENABLE	CMD	E41K1212BL	ON
534-01	ISSU	SSME	ME-1	SHUTDOWN	CMD		E41K1204BL	ON
534-02	ISSU	SSME	ME-2	SHUTDOWN	ENABLE	CMD	E41K2212BL	ON
534-03	ISSU	SSME	ME-2	SHUTDOWN	CMD		E41K2204BL	ON
534-04	ISSU	SSME	ME-3	SHUTDOWN	ENABLE	CMD	E41K3212BL	ON
534-05	ISSU	SSME	ME-3	SHUTDOWN	CMD		E41K3204BL	ON

\$ NOTE: ME PHASE IN EFFECT VALUES AND CORRESPONDING STATUS FOR DISPLAY AS FOLLOWS:

B010 = START PREP

B011 = START

B100 = MAINSTAGE

B101 = SHUTDOWN

B110 = POST-SHUTDOWN

ME STATUS WILL BE DISPLAYED AND SAFING WILL NOT PROCEED

UNTIL ALL ME'S CAN BE VERIFIED TO BE IN POST-SHUTDOWN/
 STANDBY. MANUAL SELECTION TO FORCE MPS/SSME SAFING OPERATIONS
 TO CONTINUE WILL PICKUP WITH PREVALVE POSN
 VERIFICATION/CLOSURES FOR OFFENDING ENG(S).
 IF MPS IS SYS BYP AND SSME IS ACTIVE, PERFORM ENGINE STATUS ONLY.
 IF MPS IS ACTIVE AND SSME IS SYS BYP, GO TO ST387. \$

\$ VERIFY SSME POST SHUTDOWN STANDBY STATUS \$
 \$ MAIN ENGINE ONE SAFING \$

535-00	ST360	VFY	SSME	ME-1	PHASE IN EFFECT	DW3	E41J1512B1	B110			GTO	ST370	S00E00.070
535-01		VFY	SSME	ME-1	OPERATING MODE	DW3	E41J1513B1	B001			GTO	ST370	S00E00.070
535-02		VFY	SSME	ME-1	MCC PRESSURE (AVG)		E41P1023B1	NOLO	50	PSIA	GTO	ST370	S00E00.070
535-03		VFY	MPS	MPS	E1 LO2 PREVLV (PV1)	CL IND	V41X1135E1	OFF			GTO	ST361	S00E00.B90
535-04		CMD	MPS	MPS	E1 LO2 PREVLV (PV1)	CL CMD A	V41K1139XL	ON					S00E00.B90
535-05		CMD	MPS	MPS	E1 LO2 PREVLV (PV1)	CL CMD B	V41K1140XL	ON					S00E00.B90
535-06		CMD	MPS	MPS	E1 LO2 PREVLV (PV1)	CL CMD C	V41K1141XL	ON					S00E00.B90
535-07		CMD	MPS	MPS	E1 LO2 PREVLV (PV1)	CL CMD D	V41K1142XL	ON					S00E00.B90
535-08		CMD	MPS	MPS	E1 LO2 PREVLV (PV1)	OP CMD A	V41K1136XL	OFF					S00E00.B90
535-09		CMD	MPS	MPS	E1 LO2 PREVLV (PV1)	OP CMD B	V41K1137XL	OFF					S00E00.B90
535-10		CMD	MPS	MPS	E1 LO2 PREVLV (PV1)	OP CMD C	V41K1138XL	OFF					S00E00.B90
535-11		CMD	MPS	MPS	E1 LO2 PREVLV (PV1)	OP CMD D	V41K1143XL	OFF					S00E00.B90
535-12	ST361	VFY	MPS	MPS	E1 LH2 PREVLV (PV4)	CL IND	V41X1105E1	OFF			GTO	ST362	S00E00.205
535-13		CMD	MPS	MPS	E1 LH2 PREVLV (PV4)	CL CMD A	V41K1122XL	ON					S00E00.205
535-14		CMD	MPS	MPS	E1 LH2 PREVLV (PV4)	CL CMD B	V41K1123XL	ON					S00E00.205
535-15		CMD	MPS	MPS	E1 LH2 PREVLV (PV4)	CL CMD C	V41K1124XL	ON					S00E00.205
535-16		CMD	MPS	MPS	E1 LH2 PREVLV (PV4)	OP CMD A	V41K1119XL	OFF					S00E00.205
535-17		CMD	MPS	MPS	E1 LH2 PREVLV (PV4)	OP CMD B	V41K1120XL	OFF					S00E00.205
535-18		CMD	MPS	MPS	E1 LH2 PREVLV (PV4)	OP CMD C	V41K1121XL	OFF					S00E00.205
535-19	ST362	CVFY	MPS	MPS	E1 LH2 INLET PRESS		V41P1100C1	NOLO	90	PSIA	CPER	G002	S00E00.205
535-20		CMD	SSME	ME-1	POST-SHUTDOWN VERIFIED			ON					
\$ MAIN ENGINE TWO SAFING \$													
536-00	ST370	VFY	SSME	ME-2	POST-SHUTDOWN VERIFIED			OFF			GTO	ST380	
536-01		VFY	SSME	ME-2	PHASE IN EFFECT	DW3	E41J2512B1	B110			GTO	ST380	S00E00.070
536-02		VFY	SSME	ME-2	OPERATING MODE	DW3	E41J2513B1	B001			GTO	ST380	S00E00.070
536-03		VFY	SSME	ME-2	MCC PRESSURE (AVG)		E41P2023B1	NOLO	50	PSIA	GTO	ST380	S00E00.070
536-04		VFY	MPS	MPS	E2 LO2 PREVLV (PV2)	CL IND	V41X1235E1	OFF			GTO	ST371	S00E00.B90
536-05		CMD	MPS	MPS	E2 LO2 PREVLV (PV2)	CL CMD A	V41K1239XL	ON					S00E00.B90
536-06		CMD	MPS	MPS	E2 LO2 PREVLV (PV2)	CL CMD B	V41K1240XL	ON					S00E00.B90
536-07		CMD	MPS	MPS	E2 LO2 PREVLV (PV2)	CL CMD C	V41K1241XL	ON					S00E00.B90
536-08		CMD	MPS	MPS	E2 LO2 PREVLV (PV2)	CL CMD D	V41K1242XL	ON					S00E00.B90
536-09		CMD	MPS	MPS	E2 LO2 PREVLV (PV2)	OP CMD A	V41K1236XL	OFF					S00E00.B90
536-10		CMD	MPS	MPS	E2 LO2 PREVLV (PV2)	OP CMD B	V41K1237XL	OFF					S00E00.B90
536-11		CMD	MPS	MPS	E2 LO2 PREVLV (PV2)	OP CMD C	V41K1238XL	OFF					S00E00.B90
536-12		CMD	MPS	MPS	E2 LO2 PREVLV (PV2)	OP CMD D	V41K1243XL	OFF					S00E00.B90

536-13	ST371	VFY	MPS	MPS	E2	LH2	PREVLV (PV5)	CL	IND	V41X1205E1	OFF			GTO	ST372		S00E00.205	
536-14		CMD	MPS	MPS	E2	LH2	PREVLV (PV5)	CL	CMD A	V41K1222XL	ON						S00E00.205	
536-15		CMD	MPS	MPS	E2	LH2	PREVLV (PV5)	CL	CMD B	V41K1223XL	ON						S00E00.205	
536-16		CMD	MPS	MPS	E2	LH2	PREVLV (PV5)	CL	CMD C	V41K1224XL	ON						S00E00.205	
536-17		CMD	MPS	MPS	E2	LH2	PREVLV (PV5)	OP	CMD A	V41K1219XL	OFF						S00E00.205	
536-18		CMD	MPS	MPS	E2	LH2	PREVLV (PV5)	OP	CMD B	V41K1220XL	OFF						S00E00.205	
536-19		CMD	MPS	MPS	E2	LH2	PREVLV (PV5)	OP	CMD C	V41K1221XL	OFF						S00E00.205	
536-20	ST372	CVFY	MPS	MPS	E2	LH2	INLET PRESS			V41P1200C1	NOLO	90	PSIA	CPER	G003		S00E00.205	
536-21		CMD	SSME	ME-2	POST-SHUTDOWN	VERIFIED					ON							
\$ MAIN ENGINE THREE SAFING \$																		
537-00	ST380	VFY	SSME	ME-3	POST-SHUTDOWN	VERIFIED					OFF			GTO	ST385			
537-01		VFY	SSME	ME-3	PHASE IN EFFECT		DW3			E41J3512B1	B110			GTO	ST385		S00E00.070	
537-02		VFY	SSME	ME-3	OPERATING MODE		DW3			E41J3513B1	B001			GTO	ST385		S00E00.070	
537-03		VFY	SSME	ME-3	MCC PRESSURE (AVG)					E41P3023B1	NOLO	50	PSIA	GTO	ST385		S00E00.070	
537-04		VFY	MPS	MPS	E3	LO2	PREVLV (PV3)	CL	IND	V41X1335E1	OFF			GTO	ST381		S00E00.B90	
537-05		CMD	MPS	MPS	E3	LO2	PREVLV (PV3)	CL	CMD A	V41K1339XL	ON						S00E00.B90	
537-06		CMD	MPS	MPS	E3	LO2	PREVLV (PV3)	CL	CMD B	V41K1340XL	ON						S00E00.B90	
537-07		CMD	MPS	MPS	E3	LO2	PREVLV (PV3)	CL	CMD C	V41K1341XL	ON						S00E00.B90	
537-08		CMD	MPS	MPS	E3	LO2	PREVLV (PV3)	CL	CMD D	V41K1342XL	ON						S00E00.B90	
537-09		CMD	MPS	MPS	E3	LO2	PREVLV (PV3)	OP	CMD A	V41K1336XL	OFF						S00E00.B90	
537-10		CMD	MPS	MPS	E3	LO2	PREVLV (PV3)	OP	CMD B	V41K1337XL	OFF						S00E00.B90	
537-11		CMD	MPS	MPS	E3	LO2	PREVLV (PV3)	OP	CMD C	V41K1338XL	OFF						S00E00.B90	
537-12		CMD	MPS	MPS	E3	LO2	PREVLV (PV3)	OP	CMD D	V41K1343XL	OFF						S00E00.B90	
537-13	ST381	VFY	MPS	MPS	E3	LH2	PREVLV (PV6)	CL	IND	V41X1305E1	OFF			GTO	ST382		S00E00.205	
537-14		CMD	MPS	MPS	E3	LH2	PREVLV (PV6)	CL	CMD A	V41K1322XL	ON						S00E00.205	
537-15		CMD	MPS	MPS	E3	LH2	PREVLV (PV6)	CL	CMD B	V41K1323XL	ON						S00E00.205	
537-16		CMD	MPS	MPS	E3	LH2	PREVLV (PV6)	CL	CMD C	V41K1324XL	ON						S00E00.205	
537-17		CMD	MPS	MPS	E3	LH2	PREVLV (PV6)	OP	CMD A	V41K1319XL	OFF						S00E00.205	
537-18		CMD	MPS	MPS	E3	LH2	PREVLV (PV6)	OP	CMD B	V41K1320XL	OFF						S00E00.205	
537-19		CMD	MPS	MPS	E3	LH2	PREVLV (PV6)	OP	CMD C	V41K1321XL	OFF						S00E00.205	
537-20	ST382	CVFY	MPS	MPS	E3	LH2	INLET PRESS			V41P1300C1	NOLO	90	PSIA	CPER	G004		S00E00.205	
537-21		CMD	SSME	ME-3	POST SHUTDOWN	VERIFIED					ON							
538-00	ST385	VFY	INTG	ME-1	POST SHUTDOWN	VERIFIED					ON			GTO	ST360			
538-01		VFY	INTG	ME-2	POST SHUTDOWN	VERIFIED					ON			GTO	ST370			
538-02		VFY	INTG	ME-3	POST SHUTDOWN	VERIFIED					ON			GTO	ST380			

\$ NOTE: FAILURE OF THE ABOVE 3 VFY'S WILL CAUSE SAFING TO REPEAT THE ENGINE STATUS VERIFICATIONS UNTIL ALL ARE SATISFIED OR MPS/SSME ENGINEER CAN VERIFY ENGINE SHUTDOWN VIA ALTERNATE 60KBS DATA/OTV. NOT UNTIL THEN WILL OPERATER INPUT BE MADE TO CONTINUE INTO MPS/SSME SAFING. \$

			\$ ACTIVATE ENGINE GN2 PURGE GSE \$					
542-00	CMD	SSME	MPENG	GN2	PRG VNT OPN CMD	GGNK1050E	OFF	S00E00.160
542-01	CMD	SSME	MPENG	GN2	PRG VNT OPN CMD (R)	GGNK1140E	OFF	S00E00.160
542-02	CMD	SSME	MPENG	GN2	PRG VNT OPN CMD OVR	GGNK1057E	ON	S00E00.160
542-03	CMD	SSME	MPENG	GN2	PRG VNT OPN CMD OVR (R)	GGNK1147E	ON	S00E00.160
542-04	CMD	SSME	MPENG	GN2	PRG S/O VLV CLD CMD	GGNK1070E	OFF	S00E00.160
542-05	CMD	SSME	MPENG	GN2	PRG S/O VLV CLD CMD(R)	GGNK1160E	OFF	S00E00.160
542-06	CMD	SSME	MPENG	GN2	PRG S/O VLV CLD CMD OVR	GGNK1077E	ON	S00E00.160
542-07	CMD	SSME	MPENG	GN2	PRG S/O VLV CLD CMDOVR(R)	GGNK1167E	ON	S00E00.160
542-08	CMD	SSME	MPENG	GN2	PRG CNT VLV CLD CMD	GGNK1030E	OFF	S00E00.160
542-09	CMD	SSME	MPENG	GN2	PRG CNT VLV CLD CMD(R)	GGNK1130E	OFF	S00E00.160
542-10	CMD	SSME	MPENG	GN2	PRG CNT VLV CLD CMD OVR	GGNK1037E	ON	S00E00.160
542-11	CMD	SSME	MPENG	GN2	PRG CNT CLD CMD OVR(R)	GGNK1137E	ON	S00E00.160
			\$ VFY OVBD OPEN ELSE CLOSE POGO VLVS \$					
543-00	VFY	MPS	MPS	LO2	OVBD B/V (PV19) OP IND	V41X1587E1	ON	GTO ST386
			\$ OVBD BLD VLV OPEN \$					
			\$ VFY LO2 PREVLVS CLOSED WITHIN 2.0 SEC. MAX ELSE CLOSE POGO VLVS \$					
543-03	VFY	MPS	MPS	E1	LO2 PREVLV (PV1) CL IND	V41X1135E1	ON	3 OF 3
543-04	VFY	MPS	MPS	E2	LO2 PREVLV (PV2) CL IND	V41X1235E1	ON	3 OF 3
543-05	VFY	MPS	MPS	E3	LO2 PREVLV (PV3) CL IND	V41X1335E1	ON	GTO ST386
			\$ LO2 PREVALVES CLOSED \$					
			GTO ST387					
			\$ LOX OVBD FAILED TO OPEN OR \$					
			\$ LO2 PREVALVES FAILED TO CLOSE \$					
544-00	ST386	CMD	MPS	MPS	LO2 POGO RECRC 1(PV20)CL CMD A	V41K1815XL	ON	S00E00.B90
544-01		CMD	MPS	MPS	LO2 POGO RECRC 1(PV20)CL CMD B	V41K1816XL	ON	S00E00.B90
544-02		CMD	MPS	MPS	LO2 POGO RECRC 2(PV21)CL CMD A	V41K1825XL	ON	S00E00.B90
544-03		CMD	MPS	MPS	LO2 POGO RECRC 2(PV21)CL CMD B	V41K1826XL	ON	S00E00.B90
544-04		OMSG	INTG	LO2	OVBD FAILED TO OPEN			S00E00.B90
544-05		OMSG	INTG	LO2	ACCUMULATOR RECIRC VLVS CMD			S00E00.B90
			\$ S013 LO2/LH2 GO FOR SAFING/VENT DOOR MANAGEMENT/APU SHUTDOWN \$					
545-00	ST387	LABL	INTG			S013		
545-01		CMD	LO2	GLS	SAFING COMPLETE	N013INTGR	ON	
545-02		CMD	LH2	GLS	SAFING COMPLETE	N013INTGR	ON	
545-03		CMD	MPS	EXPOSED	PRI FIRE DET OFF CMD	GLHK7490E	OFF	S00E00.B60
545-04		CMD	MPS	EXPOSED	SEC FIRE DET OFF CMD	GLHK7500E	OFF	S00E00.B60
546-00		VFY	INTG	LAUNCH	SEQUENCE ABORT FLAG	V90X8382X1	OFF	GTO ST388
			\$ MAIN ENGINE PRE-START STATUS CHECKS VERIFY PURGE SEQUENCE 3 \$					
547-00		VFY	SSME	ME-1	OPERATING MODE	DW3	E41J1513B1 B011	DISPLAY GTO ST390
547-01		VFY	SSME	ME-2	OPERATING MODE	DW3	E41J2513B1 B011	DISPLAY GTO ST390
547-02		VFY	SSME	ME-3	OPERATING MODE	DW3	E41J3513B1 B011	DISPLAY GTO ST390
			\$ GLS EVENT COMPLETE LESS THAN 300 \$					
548-00	ST388	OMSG	APU	***	GLS GO FOR APU SHUTDOWN ***			

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548-01 ST390      LABL INTG
                  $ DELAY 5 SECONDS $

                  $ REMOVAL OF GCU#1 AND GCU#2 COOLANT COMMAND $
                  $ PERFORM NEXT 2 STEPS IF S70-0508 GCU $
                  $ SUPPORTING (N61IV064E) = OFF $

549-00      CMD  ECLS  GCU 1 SUPPLY COOLANT CMD      GFRK1140E  OFF
549-01      CMD  ECLS  GCU 2 SUPPLY COOLANT CMD      GFRK2140E  OFF

550-00      VFY  MPS  FD35 PRI ALARM ON IND          GLHX7343E  OFF      DISPLAY
550-01      VFY  MPS  FD35 SEC ALARM ON IND          GLHX9343E  OFF      DISPLAY
550-02      VFY  MPS  FD36 PRI ALARM ON IND          GLHX7453E  OFF      DISPLAY
550-03      VFY  MPS  FD36 SEC ALARM ON IND          GLHX9453E  OFF      DISPLAY
550-04      VFY  MPS  FD37 PRI ALARM ON IND          GLHX7463E  OFF      DISPLAY
550-05      VFY  MPS  FD37 SEC ALARM ON IND          GLHX9463E  OFF      DISPLAY
550-06      VFY  MPS  FD38 PRI ALARM ON IND          GLHX7473E  OFF      DISPLAY
550-07      VFY  MPS  FD38 SEC ALARM ON IND          GLHX9473E  OFF      DISPLAY
550-08      VFY  MPS  FD39 PRI ALARM ON IND          GLHX7483E  OFF      DISPLAY
550-09      VFY  MPS  FD39 SEC ALARM ON IND          GLHX9483E  OFF      DISPLAY

551-00      VFY  INTG  T-31 FLG SET - START VENT DOOR OPS      ON      GTO ST420

552-00 ST400    VFY  PVD  L AFT VENTS 8&9 OPEN 1          V59X3855X1  ON      3 OF 4
552-01      VFY  PVD  L AFT VENTS 8&9 OPEN 2          V59X3865X1  ON      DELAY 1 SEC
552-02      VFY  PVD  R AFT VENTS 8&9 OPEN 1          V59X4855X1  ON      GTO ST400
552-03      VFY  PVD  R AFT VENTS 8&9 OPEN 2          V59X4865X1  ON      MAX OF 16 RETRIES
                                          CONTINUE

                  $ CLEANUP OF RSLs MINUS TIME VENT DOOR CMDS $

554-00      CMD  PVD  L PB VENT 3 OPEN CMD 1A          V59K3250XL  OFF      S00E00.050
554-01      CMD  PVD  L PB VENT 3 OPEN CMD 1B          V59K3251XL  OFF      S00E00.050
554-02      CMD  PVD  L PB VENT 3 OPEN CMD 2A          V59K3260XL  OFF      S00E00.050
554-03      CMD  PVD  L PB VENT 3 OPEN CMD 2B          V59K3261XL  OFF      S00E00.050
554-04      CMD  PVD  R PB VENT 3 OPEN CMD 1A          V59K4250XL  OFF      S00E00.050
554-05      CMD  PVD  R PB VENT 3 OPEN CMD 1B          V59K4251XL  OFF      S00E00.050
554-06      CMD  PVD  R PB VENT 3 OPEN CMD 2A          V59K4260XL  OFF      S00E00.050
554-07      CMD  PVD  R PB VENT 3 OPEN CMD 2B          V59K4261XL  OFF      S00E00.050

555-00      CMD  PVD  L PB VENT 6 OPEN CMD 1A          V59K3550XL  OFF      S00E00.050
555-01      CMD  PVD  L PB VENT 6 OPEN CMD 1B          V59K3551XL  OFF      S00E00.050
555-02      CMD  PVD  L PB VENT 6 OPEN CMD 2A          V59K3560XL  OFF      S00E00.050
555-03      CMD  PVD  L PB VENT 6 OPEN CMD 2B          V59K3561XL  OFF      S00E00.050
555-04      CMD  PVD  R PB VENT 6 OPEN CMD 1A          V59K4550XL  OFF      S00E00.050
555-05      CMD  PVD  R PB VENT 6 OPEN CMD 1B          V59K4551XL  OFF      S00E00.050
555-06      CMD  PVD  R PB VENT 6 OPEN CMD 2A          V59K4560XL  OFF      S00E00.050
555-07      CMD  PVD  R PB VENT 6 OPEN CMD 2B          V59K4561XL  OFF      S00E00.050

556-00      CMD  PVD  L PB VENT 5 OPEN CMD 1A          V59K3450XL  OFF      S00E00.050
556-01      CMD  PVD  L PB VENT 5 OPEN CMD 1B          V59K3451XL  OFF      S00E00.050
556-02      CMD  PVD  L PB VENT 5 OPEN CMD 2A          V59K3460XL  OFF      S00E00.050

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556-03	CMD	PVD	L PB VENT 5 OPEN	CMD 2B	V59K3461XL	OFF	S00E00.050
556-04	CMD	PVD	R PB VENT 5 OPEN	CMD 1A	V59K4450XL	OFF	S00E00.050
556-05	CMD	PVD	R PB VENT 5 OPEN	CMD 1B	V59K4451XL	OFF	S00E00.050
556-06	CMD	PVD	R PB VENT 5 OPEN	CMD 2A	V59K4460XL	OFF	S00E00.050
556-07	CMD	PVD	R PB VENT 5 OPEN	CMD 2B	V59K4461XL	OFF	S00E00.050
557-00	CMD	PVD	L FWD VENTS 1&2 OPEN	CMD 1A	V59K3050XL	OFF	S00E00.050
557-01	CMD	PVD	L FWD VENTS 1&2 OPEN	CMD 1B	V59K3051XL	OFF	S00E00.050
557-02	CMD	PVD	L FWD VENTS 1&2 OPEN	CMD 2A	V59K3060XL	OFF	S00E00.050
557-03	CMD	PVD	L FWD VENTS 1&2 OPEN	CMD 2B	V59K3061XL	OFF	S00E00.050
557-04	CMD	PVD	R FWD VENTS 1&2 OPEN	CMD 1A	V59K4050XL	OFF	S00E00.050
557-05	CMD	PVD	R FWD VENTS 1&2 OPEN	CMD 1B	V59K4051XL	OFF	S00E00.050
557-06	CMD	PVD	R FWD VENTS 1&2 OPEN	CMD 2A	V59K4060XL	OFF	S00E00.050
557-07	CMD	PVD	R FWD VENTS 1&2 OPEN	CMD 2B	V59K4061XL	OFF	S00E00.050
558-00	CMD	PVD	L AFT VENTS 8&9 OPEN	CMD 1A	V59K3850XL	OFF	S00E00.050
558-01	CMD	PVD	L AFT VENTS 8&9 OPEN	CMD 1B	V59K3851XL	OFF	S00E00.050
558-02	CMD	PVD	L AFT VENTS 8&9 OPEN	CMD 2A	V59K3860XL	OFF	S00E00.050
558-03	CMD	PVD	L AFT VENTS 8&9 OPEN	CMD 2B	V59K3861XL	OFF	S00E00.050
558-04	CMD	PVD	R AFT VENTS 8&9 OPEN	CMD 1A	V59K4850XL	OFF	S00E00.050
558-05	CMD	PVD	R AFT VENTS 8&9 OPEN	CMD 1B	V59K4851XL	OFF	S00E00.050
558-06	CMD	PVD	R AFT VENTS 8&9 OPEN	CMD 2A	V59K4860XL	OFF	S00E00.050
558-07	CMD	PVD	R AFT VENTS 8&9 OPEN	CMD 2B	V59K4861XL	OFF	S00E00.050
\$ POST IGN VENT 3 \$							
561-04	CMD	PVD	L PB VENT 3 CLOSE	CMD 1A	V59K3200XL	ON	S00E00.050
561-05	CMD	PVD	L PB VENT 3 CLOSE	CMD 1B	V59K3201XL	ON	S00E00.050
561-06	CMD	PVD	L PB VENT 3 CLOSE	CMD 2A	V59K3210XL	ON	S00E00.050
561-07	CMD	PVD	L PB VENT 3 CLOSE	CMD 2B	V59K3211XL	ON	S00E00.050
561-08	CMD	PVD	R PB VENT 3 CLOSE	CMD 1A	V59K4200XL	ON	S00E00.050
561-09	CMD	PVD	R PB VENT 3 CLOSE	CMD 1B	V59K4201XL	ON	S00E00.050
561-10	CMD	PVD	R PB VENT 3 CLOSE	CMD 2A	V59K4210XL	ON	S00E00.050
561-11	CMD	PVD	R PB VENT 3 CLOSE	CMD 2B	V59K4211XL	ON	S00E00.050
\$ DELAY 2 SECONDS \$							
\$ POST IGN VENT 6 \$							
562-04	CMD	PVD	L PB VENT 6 CLOSE	CMD 1A	V59K3500XL	ON	S00E00.050
562-05	CMD	PVD	L PB VENT 6 CLOSE	CMD 1B	V59K3501XL	ON	S00E00.050
562-06	CMD	PVD	L PB VENT 6 CLOSE	CMD 2A	V59K3510XL	ON	S00E00.050
562-07	CMD	PVD	L PB VENT 6 CLOSE	CMD 2B	V59K3511XL	ON	S00E00.050
562-08	CMD	PVD	R PB VENT 6 CLOSE	CMD 1A	V59K4500XL	ON	S00E00.050
562-09	CMD	PVD	R PB VENT 6 CLOSE	CMD 1B	V59K4501XL	ON	S00E00.050
562-10	CMD	PVD	R PB VENT 6 CLOSE	CMD 2A	V59K4510XL	ON	S00E00.050
562-11	CMD	PVD	R PB VENT 6 CLOSE	CMD 2B	V59K4511XL	ON	S00E00.050
\$ DELAY 2 SECONDS \$							
\$ POST IGN VENT 5 \$							

563-00	CMD	PVD	L PB VENT 5 CLOSE	CMD 1A	V59K3400XL ON	S00E00.050
563-01	CMD	PVD	L PB VENT 5 CLOSE	CMD 1B	V59K3401XL ON	S00E00.050
563-02	CMD	PVD	L PB VENT 5 CLOSE	CMD 2A	V59K3410XL ON	S00E00.050
563-03	CMD	PVD	L PB VENT 5 CLOSE	CMD 2B	V59K3411XL ON	S00E00.050
563-04	CMD	PVD	R PB VENT 5 CLOSE	CMD 1A	V59K4400XL ON	S00E00.050
563-05	CMD	PVD	R PB VENT 5 CLOSE	CMD 1B	V59K4401XL ON	S00E00.050
563-06	CMD	PVD	R PB VENT 5 CLOSE	CMD 2A	V59K4410XL ON	S00E00.050
563-07	CMD	PVD	R PB VENT 5 CLOSE	CMD 2B	V59K4411XL ON	S00E00.050

\$ DELAY 2 SECONDS \$

\$ POST IGN VENTS 1/2 \$

564-00	CMD	PVD	L FWD VENTS 1&2 PURGE	CMD 1A	V59K3100XL ON	S00E00.050
564-01	CMD	PVD	L FWD VENTS 1&2 PURGE	CMD 1B	V59K3101XL ON	S00E00.050
564-02	CMD	PVD	L FWD VENTS 1&2 PURGE	CMD 2A	V59K3110XL ON	S00E00.050
564-03	CMD	PVD	L FWD VENTS 1&2 PURGE	CMD 2B	V59K3111XL ON	S00E00.050
564-04	CMD	PVD	R FWD VENTS 1&2 PURGE	CMD 1A	V59K4100XL ON	S00E00.050
564-05	CMD	PVD	R FWD VENTS 1&2 PURGE	CMD 1B	V59K4101XL ON	S00E00.050
564-06	CMD	PVD	R FWD VENTS 1&2 PURGE	CMD 2A	V59K4110XL ON	S00E00.050
564-07	CMD	PVD	R FWD VENTS 1&2 PURGE	CMD 2B	V59K4111XL ON	S00E00.050

\$ DELAY 2 SECONDS \$

\$ POST IGN VENTS 8/9 \$

565-00	CMD	PVD	L AFT VENTS 8&9 PURGE	CMD 1A	V59K3900XL ON	S00E00.050
565-01	CMD	PVD	L AFT VENTS 8&9 PURGE	CMD 1B	V59K3901XL ON	S00E00.050
565-02	CMD	PVD	L AFT VENTS 8&9 PURGE	CMD 2A	V59K3910XL ON	S00E00.050
565-03	CMD	PVD	L AFT VENTS 8&9 PURGE	CMD 2B	V59K3911XL ON	S00E00.050
565-04	CMD	PVD	R AFT VENTS 8&9 PURGE	CMD 1A	V59K4900XL ON	S00E00.050
565-05	CMD	PVD	R AFT VENTS 8&9 PURGE	CMD 1B	V59K4901XL ON	S00E00.050
565-06	CMD	PVD	R AFT VENTS 8&9 PURGE	CMD 2A	V59K4910XL ON	S00E00.050
565-07	CMD	PVD	R AFT VENTS 8&9 PURGE	CMD 2B	V59K4911XL ON	S00E00.050

\$ DELAY 10 SECONDS \$

\$ S014 SAFING CLEAN-UP \$

566-00	ST420	LABL	INTG	S014
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\$ GLS EVENT COMPLETE LESS THAN 9 \$

567-00	CMD	EPDC	FWD LCA 1 FIRE 1 INHIBIT	CMD	V76K6301NL ON	S00E00.790
567-01	CMD	EPDC	FWD LCA 1 FIRE 2 INHIBIT	CMD	V76K6302NL ON	S00E00.790
567-02	CMD	EPDC	FWD LCA 2 FIRE 1 INHIBIT	CMD	V76K6303NL ON	S00E00.790
567-03	CMD	EPDC	FWD LCA 2 FIRE 2 INHIBIT	CMD	V76K6304NL ON	S00E00.790
567-04	CMD	EPDC	FWD LCA 3 FIRE 1 INHIBIT	CMD	V76K6305NL ON	S00E00.790
567-05	CMD	EPDC	FWD LCA 3 FIRE 2 INHIBIT	CMD	V76K6306NL ON	S00E00.790

\$ GLS EVENT COMPLETE LESS THAN 14 \$

\$ RE-ESTABLISH MPS HE SUPPLY (2000 G) \$

568-00	CMD	MPS	MPHE F/OUT VNT OPN	CMD	GHEK1010E	OFF
568-01	CMD	MPS	MPHE F/OUT VNT OPN	CMD (R)	GHEK1120E	OFF

568-02	CMD	MPS	MP HE FILL SYS S/O VLV CLS CMD	GHEK1000E	OFF
568-03	CMD	MPS	MPHE FILL S/O VLV CLD CMD(R)	GHEK1100E	OFF
568-04	CMD	MPS	MPHE FILL C/O CNT VLV OPN CMD OVR	GHEK1097E	OFF
568-05	CMD	MPS	MPHE FILL C/O CNT VLV OPN CMD OVR	GHEK1197E	OFF
568-06	CMD	MPS	MPHE FILL C/O CNT VLV OPN CMD	GHEK1090E	ON
568-07	CMD	MPS	MPHE FILL C/O CNT VLV OPN CMD (R)	GHEK1190E	ON

569-00	VFY	INTG	T-31 FLG - START VENT DOOR OPS	ON	GTO ST423
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\$ VENT 3 CLOSE CMD OFF \$

571-00	CMD	PVD	L PB VENT 3 CLOSE CMD 1A	V59K3200XL	OFF	S00E00.050
571-01	CMD	PVD	L PB VENT 3 CLOSE CMD 1B	V59K3201XL	OFF	S00E00.050
571-02	CMD	PVD	L PB VENT 3 CLOSE CMD 2A	V59K3210XL	OFF	S00E00.050
571-03	CMD	PVD	L PB VENT 3 CLOSE CMD 2B	V59K3211XL	OFF	S00E00.050
571-04	CMD	PVD	R PB VENT 3 CLOSE CMD 1A	V59K4200XL	OFF	S00E00.050
571-05	CMD	PVD	R PB VENT 3 CLOSE CMD 1B	V59K4201XL	OFF	S00E00.050
571-06	CMD	PVD	R PB VENT 3 CLOSE CMD 2A	V59K4210XL	OFF	S00E00.050
571-07	CMD	PVD	R PB VENT 3 CLOSE CMD 2B	V59K4211XL	OFF	S00E00.050

\$ VENT 6 CLOSE CMD OFF \$

572-00	CMD	PVD	L PB VENT 6 CLOSE CMD 1A	V59K3500XL	OFF	S00E00.050
572-01	CMD	PVD	L PB VENT 6 CLOSE CMD 1B	V59K3501XL	OFF	S00E00.050
572-02	CMD	PVD	L PB VENT 6 CLOSE CMD 2A	V59K3510XL	OFF	S00E00.050
572-03	CMD	PVD	L PB VENT 6 CLOSE CMD 2B	V59K3511XL	OFF	S00E00.050
572-04	CMD	PVD	R PB VENT 6 CLOSE CMD 1A	V59K4500XL	OFF	S00E00.050
572-05	CMD	PVD	R PB VENT 6 CLOSE CMD 1B	V59K4501XL	OFF	S00E00.050
572-06	CMD	PVD	R PB VENT 6 CLOSE CMD 2A	V59K4510XL	OFF	S00E00.050
572-07	CMD	PVD	R PB VENT 6 CLOSE CMD 2B	V59K4511XL	OFF	S00E00.050

\$ VENT 5 CLOSE CMD OFF \$

573-00	CMD	PVD	L PB VENT 5 CLOSE CMD 1A	V59K3400XL	OFF	S00E00.050
573-01	CMD	PVD	L PB VENT 5 CLOSE CMD 1B	V59K3401XL	OFF	S00E00.050
573-02	CMD	PVD	L PB VENT 5 CLOSE CMD 2A	V59K3410XL	OFF	S00E00.050
573-03	CMD	PVD	L PB VENT 5 CLOSE CMD 2B	V59K3411XL	OFF	S00E00.050
573-04	CMD	PVD	R PB VENT 5 CLOSE CMD 1A	V59K4400XL	OFF	S00E00.050
573-05	CMD	PVD	R PB VENT 5 CLOSE CMD 1B	V59K4401XL	OFF	S00E00.050
573-06	CMD	PVD	R PB VENT 5 CLOSE CMD 2A	V59K4410XL	OFF	S00E00.050
573-07	CMD	PVD	R PB VENT 5 CLOSE CMD 2B	V59K4411XL	OFF	S00E00.050

\$ VENTS 1/2 PURGE CMD OFF \$

574-00	CMD	PVD	L FWD VENTS 1&2 PURGE CMD 1A	V59K3100XL	OFF	S00E00.050
574-01	CMD	PVD	L FWD VENTS 1&2 PURGE CMD 1B	V59K3101XL	OFF	S00E00.050
574-02	CMD	PVD	L FWD VENTS 1&2 PURGE CMD 2A	V59K3110XL	OFF	S00E00.050
574-03	CMD	PVD	L FWD VENTS 1&2 PURGE CMD 2B	V59K3111XL	OFF	S00E00.050
574-04	CMD	PVD	R FWD VENTS 1&2 PURGE CMD 1A	V59K4100XL	OFF	S00E00.050
574-05	CMD	PVD	R FWD VENTS 1&2 PURGE CMD 1B	V59K4101XL	OFF	S00E00.050
574-06	CMD	PVD	R FWD VENTS 1&2 PURGE CMD 2A	V59K4110XL	OFF	S00E00.050
574-07	CMD	PVD	R FWD VENTS 1&2 PURGE CMD 2B	V59K4111XL	OFF	S00E00.050

\$ VENTS 8/9 PURGE CMD OFF \$

575-00	CMD	PVD	L AFT VENTS 8&9 PURGE CMD 1A	V59K3900XL	OFF		S00E00.050
575-01	CMD	PVD	L AFT VENTS 8&9 PURGE CMD 1B	V59K3901XL	OFF		S00E00.050
575-02	CMD	PVD	L AFT VENTS 8&9 PURGE CMD 2A	V59K3910XL	OFF		S00E00.050
575-03	CMD	PVD	L AFT VENTS 8&9 PURGE CMD 2B	V59K3911XL	OFF		S00E00.050
575-04	CMD	PVD	R AFT VENTS 8&9 PURGE CMD 1A	V59K4900XL	OFF		S00E00.050
575-05	CMD	PVD	R AFT VENTS 8&9 PURGE CMD 1B	V59K4901XL	OFF		S00E00.050
575-06	CMD	PVD	R AFT VENTS 8&9 PURGE CMD 2A	V59K4910XL	OFF		S00E00.050
575-07	CMD	PVD	R AFT VENTS 8&9 PURGE CMD 2B	V59K4911XL	OFF		S00E00.050

\$ SS WATER SYSTEM SECURING \$

\$ PRE L/O VLVS VENT CMD \$

576-00	ST423	CMD	WATR SS PRELIFTTOFF VLVS VENT CMD	GWDKPT36E	OFF		S00E00.B50
576-01		CMD	WATR SS PRELIFTTOFF VLVS VENT CMD	GWDKPT22E	OFF		S00E00.B50

\$ PRE L/O VLVS OPEN CMD \$

576-02		CMD	WATR SS PRELIFTTOFF VLVS OP CMD	GWDKPT29E	OFF		
576-03		CMD	WATR SS PRELIFTTOFF VLVS OP CMD	GWDKPT31E	OFF		
576-04		CMD	WATR SS PRELIFTTOFF VLVS OP CMD	GWDKPT30E	OFF		S00E00.B50
576-05		CMD	WATR SS PRELIFTTOFF VLVS OP CMD	GWDKPT32E	OFF		S00E00.B50

\$ POST L/O VLVS VENT CMD \$

576-06		CMD	WATR SS POSTLIFTTOFF PN VENT CMD	GWDKPT38E	OFF		
576-07		CMD	WATR SS POSTLIFTTOFF VLVS VENT CMD	GWDKPT24E	OFF		
576-08		CMD	WATR SS FR CMD BUS PWR ON CMD	GWDKPT08E	OFF		
576-09		CMD	WATR SS FR CMD BUS PWR ON CMD	GWDKPT10E	OFF		
576-10		VFY	WATR SS PRELFTF VENT VLV SV5 OP IND	GWDXPT37E	ON	1 OF 3	S00E00.B50
576-11		VFY	WATR SS PRELFTF VENT VLV SV6 OP IND	GWDXPT38E	ON	1 OF 3	S00E00.B50
576-12		VFY	WATR SS PRELFTF VENT VLV SV7 OP IND	GWDXPT39E	ON	GTO ST426	S00E00.B50
576-13		CMD	WATR SS CCC ENABLE/FR DISABLE CMD	GWDKPT34E	ON		
576-14		CMD	WATR SS CCC ENABLE/FR DISABLE CMD	GWDKPT35E	ON		

\$ DELAY 1 SECOND \$

576-15		CMD	WATR SS CCC ENABLE/FR DISABLE CMD	GWDKPT34E	OFF		
576-16		CMD	WATR SS CCC ENABLE/FR DISABLE CMD	GWDKPT35E	OFF		

\$ COMMAND ACTIVE PCMMU TO GSE POWER CONTROL \$

\$ FOR THE NEXT STEP, IF DATA VALID CAN NOT BE \$
\$ CONFIRMED, THE COMMAND PCMMU TO GSE CONTROL \$
\$ WILL BE SKIPPED. NOTIFY TEST TEAM. \$

576-19	ST426	VFY	INTG 128 OI FEP ACTIVE DATA VALID	SOIADATAV	ON	GTO ST430	
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\$ COMMAND PCMMU 1 TO GSE PWR CNTL \$

576-20		VFY	INST PCA-PCM NO 1 RPC A ON	V76X4265E1	ON	1 OF 2	
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576-21	VFY	INST	PCA-PCM NO 1	RPC C ON	V76X4267E1	ON			AND	
576-22	VFY	INST	PCA-PCM NO 2	RPC A ON	V76X4272E1	OFF			2 OF 2	
576-23	VFY	INST	PCA-PCM NO 2	RPC B ON	V76X4274E1	OFF			GTO ST427	
576-24	CMD	INST	PCM MASTER 2	PWR ON B	V75K2110NL	OFF				
576-25	CMD	INST	PCM MASTER 2	PWR ON A	V75K2109NL	OFF				
576-26	CMD	INST	PCM MASTER 1	PWR ON C	V75K2108NL	ON				
576-27	CMD	INST	PCM MASTER 1	PWR ON A	V75K2107NL	ON				
576-28	CMD	INST	ORB INST - OI	PCM CONTROL-GROUND	N75IV013E	ON				
				GTO ST429						
			\$ COMMAND PCMMU 2 TO GSE PWR CNTL \$							
576-29	ST427	VFY	INST	PCA-PCM NO 2	RPC A ON	V76X4272E1	ON		1 OF 2	
576-30		VFY	INST	PCA-PCM NO 2	RPC B ON	V76X4274E1	ON		AND	
576-31		VFY	INST	PCA-PCM NO 1	RPC A ON	V76X4265E1	OFF		2 OF 2	
576-32		VFY	INST	PCA-PCM NO 1	RPC C ON	V76X4267E1	OFF		GTO ST428	
576-33		CMD	INST	PCM MASTER 1	PWR ON C	V75K2108NL	OFF			
576-34		CMD	INST	PCM MASTER 1	PWR ON A	V75K2107NL	OFF			
576-35		CMD	INST	PCM MASTER 2	PWR ON B	V75K2110NL	ON			
576-36		CMD	INST	PCM MASTER 2	PWR ON A	V75K2109NL	ON			
576-37		CMD	INST	ORB INST - OI	PCM CONTROL-GROUND	N75IV013E	ON			
				GTO ST429						
576-38	ST428	MSG	INST	UNABLE TO CONFIRM	ACTIVE PCMMU - NOTIFY	C9				
	ST429			\$ DELAY 2 SEC \$						
576-39		VFY	INTG	128 OI FEP	ACTIVE DATA VALID	SOIADATAV	ON		DISPLAY	
				\$ SAFING VERIFICATION \$						
				\$ GLS EVENT COMPLETE LESS THAN 445 \$						
577-00	ST430	VFY	DPS	HRS MDM LA1	PF BUS 1 ON	V72K7965WR	ON		DISPLAY	
577-01		VFY	DPS	HRS MDM LA1	PF BUS 2 ON	V72K7966WR	ON		DISPLAY	
577-02		VFY	DPS	HRS MDM LF1	PF BUS 1 ON	V72K7968WR	ON		DISPLAY	
577-03		VFY	DPS	HRS MDM LF1	PF BUS 2 ON	V72K7969WR	ON		DISPLAY	
578-02		VFY	BPYR	LH EVENT	IGN S&A DEVICE	SAFED	B55X1843X1	ON	DISPLAY	S00E00.750
578-03		VFY	BPYR	RH EVENT	IGN S&A DEVICE	SAFED	B55X2843X1	ON	DISPLAY	S00E00.750
578-04		VFY	BPYR	LH EVENT	IGN S&A DEVICE	ARMED	B55X1842X1	OFF	DISPLAY	S00E00.750
578-05		VFY	BPYR	RH EVENT	IGN S&A DEVICE	ARMED	B55X2842X1	OFF	DISPLAY	S00E00.750
578-06		VFY	BPYR	LH VOLTAGE	IGN PIC CAP	A	B55V1603C1	NOLO 1.5 V	DISPLAY	S00E00.800
578-07		VFY	BPYR	RH VOLTAGE	IGN PIC CAP	A	B55V2603C1	NOLO 1.5 V	DISPLAY	S00E00.800
578-08		VFY	BPYR	LH VOLTAGE	IGN PIC CAP	B	B55V1604C1	NOLO 1.5 V	DISPLAY	S00E00.800
578-09		VFY	BPYR	RH VOLTAGE	IGN PIC CAP	B	B55V2604C1	NOLO 1.5 V	DISPLAY	S00E00.800
				\$ ORDNANCE NOT ARMED VERIFICATION \$						
579-00		VFY	EPDC	SYS A RH SRB	HDP M1 PIC CAP	VOLTS	GMSV1301A	NOLO 1.5 V	DISPLAY	S00E00.830
579-01		VFY	EPDC	SYS A RH SRB	HDP M2 PIC CAP	VOLTS	GMSV1302A	NOLO 1.5 V	DISPLAY	S00E00.830
579-02		VFY	EPDC	SYS A RH SRB	HDP M3 PIC CAP	VOLTS	GMSV1303A	NOLO 1.5 V	DISPLAY	S00E00.830
579-03		VFY	EPDC	SYS A RH SRB	HDP M4 PIC CAP	VOLTS	GMSV1304A	NOLO 1.5 V	DISPLAY	S00E00.830
579-04		VFY	EPDC	SYS A LH SRB	HDP M5 PIC CAP	VOLTS	GMSV1305A	NOLO 1.5 V	DISPLAY	S00E00.830

579-05	VFY	EPDC	SYS	A	LH	SRB	HDP	M6	PIC	CAP	VOLTS	GMSV1306A	NOLO	1.5	V	DISPLAY	S00E00.830
579-06	VFY	EPDC	SYS	A	LH	SRB	HDP	M7	PIC	CAP	VOLTS	GMSV1307A	NOLO	1.5	V	DISPLAY	S00E00.830
579-07	VFY	EPDC	SYS	A	LH	SRB	HDP	M8	PIC	CAP	VOLTS	GMSV1308A	NOLO	1.5	V	DISPLAY	S00E00.830
579-08	VFY	EPDC	SYS	B	RH	SRB	HDP	M1	PIC	CAP	VOLTS	GMSV2301A	NOLO	1.5	V	DISPLAY	S00E00.830
579-09	VFY	EPDC	SYS	B	RH	SRB	HDP	M2	PIC	CAP	VOLTS	GMSV2302A	NOLO	1.5	V	DISPLAY	S00E00.830
579-10	VFY	EPDC	SYS	B	RH	SRB	HDP	M3	PIC	CAP	VOLTS	GMSV2303A	NOLO	1.5	V	DISPLAY	S00E00.830
579-11	VFY	EPDC	SYS	B	RH	SRB	HDP	M4	PIC	CAP	VOLTS	GMSV2304A	NOLO	1.5	V	DISPLAY	S00E00.830
579-12	VFY	EPDC	SYS	B	LH	SRB	HDP	M5	PIC	CAP	VOLTS	GMSV2305A	NOLO	1.5	V	DISPLAY	S00E00.830
579-13	VFY	EPDC	SYS	B	LH	SRB	HDP	M6	PIC	CAP	VOLTS	GMSV2306A	NOLO	1.5	V	DISPLAY	S00E00.830
579-14	VFY	EPDC	SYS	B	LH	SRB	HDP	M7	PIC	CAP	VOLTS	GMSV2307A	NOLO	1.5	V	DISPLAY	S00E00.830
579-15	VFY	EPDC	SYS	B	LH	SRB	HDP	M8	PIC	CAP	VOLTS	GMSV2308A	NOLO	1.5	V	DISPLAY	S00E00.830
579-16	VFY	EPDC	SYS	A	ETVAS	PIC	CAP	VOLTS				GMSV1311A	NOLO	1.5	V	DISPLAY	S00E00.810
579-17	VFY	EPDC	SYS	B	ETVAS	PIC	CAP	VOLTS				GMSV2311A	NOLO	1.5	V	DISPLAY	S00E00.810
579-18	VFY	EPDC	SYS	A	LH2	TSM	PIC	CAP	VOLTS			GMSV1309A	NOLO	1.5	V	DISPLAY	S00E00.820
579-19	VFY	EPDC	SYS	A	LO2	TSM	PIC	CAP	VOLTS			GMSV1310A	NOLO	1.5	V	DISPLAY	S00E00.820
579-20	VFY	EPDC	SYS	B	LH2	TSM	PIC	CAP	VOLTS			GMSV2309A	NOLO	1.5	V	DISPLAY	S00E00.820
579-21	VFY	EPDC	SYS	B	LO2	TSM	PIC	CAP	VOLTS			GMSV2310A	NOLO	1.5	V	DISPLAY	S00E00.820
579-22	VFY	EPDC	SYS	A	RH	HDP	M1	PIC	CAP	VOLTS	RED	GMSV3301A	NOLO	1.5	V	DISPLAY	S00E00.830
579-23	VFY	EPDC	SYS	A	RH	HDP	M2	PIC	CAP	VOLTS	RED	GMSV3302A	NOLO	1.5	V	DISPLAY	S00E00.830
579-24	VFY	EPDC	SYS	A	RH	HDP	M3	PIC	CAP	VOLTS	RED	GMSV3303A	NOLO	1.5	V	DISPLAY	S00E00.830
579-25	VFY	EPDC	SYS	A	RH	HDP	M4	PIC	CAP	VOLTS	RED	GMSV3304A	NOLO	1.5	V	DISPLAY	S00E00.830
579-26	VFY	EPDC	SYS	A	LH	HDP	M5	PIC	CAP	VOLTS	RED	GMSV3305A	NOLO	1.5	V	DISPLAY	S00E00.830
579-27	VFY	EPDC	SYS	A	LH	HDP	M6	PIC	CAP	VOLTS	RED	GMSV3306A	NOLO	1.5	V	DISPLAY	S00E00.830
579-28	VFY	EPDC	SYS	A	LH	HDP	M7	PIC	CAP	VOLTS	RED	GMSV3307A	NOLO	1.5	V	DISPLAY	S00E00.830
579-29	VFY	EPDC	SYS	A	LH	HDP	M8	PIC	CAP	VOLTS	RED	GMSV3308A	NOLO	1.5	V	DISPLAY	S00E00.830
579-30	VFY	EPDC	SYS	B	RH	HDP	M1	PIC	CAP	VOLTS	RED	GMSV4301A	NOLO	1.5	V	DISPLAY	S00E00.830
579-31	VFY	EPDC	SYS	B	RH	HDP	M2	PIC	CAP	VOLTS	RED	GMSV4302A	NOLO	1.5	V	DISPLAY	S00E00.830
579-32	VFY	EPDC	SYS	B	RH	HDP	M3	PIC	CAP	VOLTS	RED	GMSV4303A	NOLO	1.5	V	DISPLAY	S00E00.830
579-33	VFY	EPDC	SYS	B	RH	HDP	M4	PIC	CAP	VOLTS	RED	GMSV4304A	NOLO	1.5	V	DISPLAY	S00E00.830
579-34	VFY	EPDC	SYS	B	LH	HDP	M5	PIC	CAP	VOLTS	RED	GMSV4305A	NOLO	1.5	V	DISPLAY	S00E00.830
579-35	VFY	EPDC	SYS	B	LH	HDP	M6	PIC	CAP	VOLTS	RED	GMSV4306A	NOLO	1.5	V	DISPLAY	S00E00.830
579-36	VFY	EPDC	SYS	B	LH	HDP	M7	PIC	CAP	VOLTS	RED	GMSV4307A	NOLO	1.5	V	DISPLAY	S00E00.830
579-37	VFY	EPDC	SYS	B	LH	HDP	M8	PIC	CAP	VOLTS	RED	GMSV4308A	NOLO	1.5	V	DISPLAY	S00E00.830
579-38	VFY	EPDC	SYS	A	ETVAS	PIC	CAP	RED	VOLTS			GMSV3311A	NOLO	1.5	V	DISPLAY	S00E00.810
579-39	VFY	EPDC	SYS	B	ETVAS	PIC	CAP	RED	VOLTS			GMSV4311A	NOLO	1.5	V	DISPLAY	S00E00.810
579-40	VFY	EPDC	SYS	A	LH2	TSM	PIC	CAP	RED	VOLTS		GMSV3309A	NOLO	1.5	V	DISPLAY	S00E00.820
579-41	VFY	EPDC	SYS	A	LO2	TSM	PIC	CAP	RED	VOLTS		GMSV3310A	NOLO	1.5	V	DISPLAY	S00E00.820
579-42	VFY	EPDC	SYS	B	LH2	TSM	PIC	CAP	RED	VOLTS		GMSV4309A	NOLO	1.5	V	DISPLAY	S00E00.820
579-43	VFY	EPDC	SYS	B	LO2	TSM	PIC	CAP	RED	VOLTS		GMSV4310A	NOLO	1.5	V	DISPLAY	S00E00.820

580-00	VFY	BHYD	LH	EVENT	APU	A	ISLN	VALVE	OPEN			B46X1851X1	OFF			DISPLAY	
580-01	VFY	BHYD	LH	EVENT	APU	A	ISLN	VALVE	CLOSED			B46X1853X1	ON			DISPLAY	
580-02	VFY	BHYD	LH	EV	APU	SEC	SP	CON	VLV	CLD	,SYS	A	B46X1861X1	ON		DISPLAY	
580-03	VFY	BHYD	LH	EV	APU	PRI	SP	CON	VLV	OP	,SYS	A	B46X1862X1	ON		DISPLAY	

580-04	VFY	BHYD	LH	EVENT	APU	B	ISLN	VALVE	OPEN			B46X1852X1	OFF			DISPLAY	
580-05	VFY	BHYD	LH	EVENT	APU	B	ISLN	VALVE	CLOSED			B46X1854X1	ON			DISPLAY	
580-06	VFY	BHYD	LH	EV	APU	SEC	SP	CON	VLV	CLD	,SYS	B	B46X1863X1	ON		DISPLAY	
580-07	VFY	BHYD	LH	EV	APU	PRI	SP	CON	VLV	OP	,SYS	B	B46X1864X1	ON		DISPLAY	

580-08	VFY	BHYD	RH	EVENT	APU	A	ISLN	VALVE	OPEN	B46X2851X1	OFF	DISPLAY			
580-09	VFY	BHYD	RH	EVENT	APU	A	ISLN	VALVE	CLOSED	B46X2853X1	ON	DISPLAY			
580-10	VFY	BHYD	RH	EV	APU	SEC	SP	CON	VLV	CLD,SYS	A	DISPLAY			
580-11	VFY	BHYD	RH	EV	APU	PRI	SP	CON	VLV	OP,SYS	A	DISPLAY			
580-12	VFY	BHYD	RH	EVENT	APU	B	ISLN	VALVE	OPEN	B46X2852X1	OFF	DISPLAY			
580-13	VFY	BHYD	RH	EVENT	APU	B	ISLN	VALVE	CLOSED	B46X2854X1	ON	DISPLAY			
580-14	VFY	BHYD	RH	EV	APU	SEC	SP	CON	VLV	CLD,SYS	B	DISPLAY			
580-15	VFY	BHYD	RH	EV	APU	PRI	SP	CON	VLV	OP,SYS	B	DISPLAY			
581-02	VFY	BRS	LH	EVENT	RSS	A	INHIBIT			B55X1881X1	ON	DISPLAY	S00E00.760		
581-03	VFY	BRS	LH	EVENT	RSS	B	INHIBIT			B55X1882X1	ON	DISPLAY	S00E00.760		
581-04	VFY	BRS	RH	EVENT	RSS	A	INHIBIT			B55X2881X1	ON	DISPLAY	S00E00.760		
581-05	VFY	BRS	RH	EVENT	RSS	B	INHIBIT			B55X2882X1	ON	DISPLAY	S00E00.760		
582-00	VFY	INTG	LAUNCH	SEQUENCE	ABORT	FLAG				V90X8382X1	ON	GTO	ST465		
§ MPS POST RSLs ABORT VERIFICATIONS §															
583-00	VFY	MPS	MPS	LH2	4IN	DISC	VLV	(PD3)	CL	IND	V41X1420E1	ON	DISPLAY		
583-01	VFY	MPS	MPS	E1	LO2	PREVLV	(PV1)	CL	IND	V41X1135E1	ON	DISPLAY			
583-02	VFY	MPS	MPS	E1	LH2	PREVLV	(PV4)	CL	IND	V41X1105E1	ON	DISPLAY			
583-03	VFY	MPS	MPS	E2	LO2	PREVLV	(PV2)	CL	IND	V41X1235E1	ON	DISPLAY			
583-04	VFY	MPS	MPS	E2	LH2	PREVLV	(PV5)	CL	IND	V41X1205E1	ON	DISPLAY			
583-05	VFY	MPS	MPS	E3	LO2	PREVLV	(PV3)	CL	IND	V41X1335E1	ON	DISPLAY			
583-06	VFY	MPS	MPS	E3	LH2	PREVLV	(PV6)	CL	IND	V41X1305E1	ON	DISPLAY			
583-07	VFY	MPS	MPS	LO2	OVBD	B/V	(PV19)	OP	IND	V41X1587E1	ON	1 OF 1			
583-08	VFY	MPS	MPS	LO2	POGO	RECRC	1	(PV20)	CL	IND	V41X1818E1	ON	OR		
583-09	VFY	MPS	MPS	LO2	POGO	RECRC	2	(PV21)	CL	IND	V41X1828E1	ON	2 OF 2		
§ VERIFY SSME OXIDIZER DOME PURGE §															
§ VERIFY SSME HPOTP INT SEAL PURGE §															
584-00	ST465	VFY	SSME	MPENG	GN2	PRG	VNT	CLD	IND	GGNX1053E	ON	DISPLAY	S00E00.160		
584-01		VFY	SSME	MPENG	GN2	PRG	VNT	CLD	IND	(R)	GGNX1143E	ON	DISPLAY	S00E00.160	
584-02		VFY	SSME	MPENG	GN2	PRG	CNT	VLV	OPN	IND	GGNX1033E	ON	1 OF 2	S00E00.160	
584-03		VFY	SSME	MPENG	GN2	PRG	CNT	VLV	OPN	IND(R)	GGNX1133E	ON	DISPLAY	S00E00.160	
584-04		VFY	SSME	MPENG	GN2	PRG	S/O	VLV	OPN	IND	GGNX1073E	ON	DISPLAY	S00E00.160	
584-05		VFY	SSME	MPENG	GN2	PRG	S/O	VLV	OPN	IND(R)	GGNX1163E	ON	DISPLAY	S00E00.160	
584-06		VFY	SSME	MPENG	GN2	PRG	OUT	PRESS		GGNP1034A	573	690	PSIG	1 OF 2	S00E00.160
584-07		VFY	SSME	MPENG	GN2	PRG	OUT	PRESS	(R)	GGNP1139A	573	690	DISPLAY	S00E00.160	
586-00		VFY	PVD	L	PB	VENT	3	CLOSED	1	V59X3205X1	ON	DISPLAY			
586-01		VFY	PVD	L	PB	VENT	3	CLOSED	2	V59X3215X1	ON	DISPLAY			
586-02		VFY	PVD	R	PB	VENT	3	CLOSED	1	V59X4205X1	ON	DISPLAY			

586-03	VFY PVD R PB VENT 3 CLOSED 2	V59X4215X1 ON	DISPLAY
587-00	VFY PVD L PB VENT 6 CLOSED 1	V59X3505X1 ON	DISPLAY
587-01	VFY PVD L PB VENT 6 CLOSED 2	V59X3515X1 ON	DISPLAY
587-02	VFY PVD R PB VENT 6 CLOSED 1	V59X4505X1 ON	DISPLAY
587-03	VFY PVD R PB VENT 6 CLOSED 2	V59X4515X1 ON	DISPLAY
588-00	VFY PVD L PB VENT 5 CLOSED 1	V59X3405X1 ON	DISPLAY
588-01	VFY PVD L PB VENT 5 CLOSED 2	V59X3415X1 ON	DISPLAY
588-02	VFY PVD R PB VENT 5 CLOSED 1	V59X4405X1 ON	DISPLAY
588-03	VFY PVD R PB VENT 5 CLOSED 2	V59X4415X1 ON	DISPLAY
589-00	VFY PVD L FWD VENTS 1&2 PURGE IND 1	V59X3105X1 ON	DISPLAY
589-01	VFY PVD L FWD VENTS 1&2 PURGE IND 2	V59X3115X1 ON	DISPLAY
589-02	VFY PVD R FWD VENTS 1&2 PURGE IND 1	V59X4105X1 ON	DISPLAY
589-03	VFY PVD R FWD VENTS 1&2 PURGE IND 2	V59X4115X1 ON	DISPLAY
590-00	VFY PVD L AFT VENTS 8&9 PURGE IND 1	V59X3905X1 ON	DISPLAY
590-01	VFY PVD L AFT VENTS 8&9 PURGE IND 2	V59X3915X1 ON	DISPLAY
590-02	VFY PVD R AFT VENTS 8&9 PURGE IND 1	V59X4905X1 ON	DISPLAY
590-03	VFY PVD R AFT VENTS 8&9 PURGE IND 2	V59X4915X1 ON	DISPLAY
	\$ OAA RECONFIGURATION \$		
	\$ OAA ALREADY RECONFIG. CHECK \$		
591-00	VFY ARMS HRS OAA OPEN PRI EXTEND PILOT V	GSAK7170ER ON	2 OF 2
591-01	VFY ARMS HRS OAA OPEN SEC EXTEND PILOT V	GSAK7190ER ON	OR
591-02	VFY ARMS HRS OAA OPEN PRI EXTEND PILOT V	GSAK7175ER ON	2 OF 2
591-03	VFY ARMS HRS OAA OPEN SEC EXTEND PILOT V	GSAK7195ER ON	GTO S490
592-00 ST470	CMD INTG \$ DELAY 1 SECOND \$		S00E00.B80
	\$ VERIFY THE FOLLOWING WITHIN 30 SECONDS \$		
	\$ ELSE GOTO ST490 \$		
592-01	VFY ARMS OAA PRI FULLY EXTEND SW-EXTENDED	GSAX7581E ON	1 OF 2
592-02	VFY ARMS OAA PRI FULLY EXTEND SW-EXTENDED	GSAX7586E ON	AND
592-03	VFY ARMS OAA SEC FULLY EXTEND SW-EXTENDED	GSAX7601E ON	1 OF 2
592-04	VFY ARMS OAA SEC FULLY EXTEND SW-EXTENDED	GSAX7606E ON	GTO ST470
			S00E00.B80
592-05	CMD ARMS OAA UNLOCK PRI EXTEND LOCK V	GSAK7120E OFF	
592-06	CMD ARMS OAA UNLOCK PRI EXTEND LOCK V	GSAK7125E OFF	
592-07	CMD ARMS OAA UNLOCK SEC EXTEND LOCK V	GSAK7140E OFF	
592-08	CMD ARMS OAA UNLOCK SEC EXTEND LOCK V	GSAK7145E OFF	

592-09	CMD	ARMS	INH	PRI	LOCK	VLV	GSAK7137E	OFF		
592-10	CMD	ARMS	INH	SEC	LOCK	VLV	GSAK7157E	OFF		
592-11	CMD	ARMS	OAA	LOCK	PRI	EXTEND	LOCK	V	GSAK7130E	ON
592-12	CMD	ARMS	OAA	LOCK	PRI	EXTEND	LOCK	V	GSAK7135E	ON
592-13	CMD	ARMS	OAA	LOCK	SEC	EXTEND	LOCK	V	GSAK7150E	ON
592-14	CMD	ARMS	OAA	LOCK	SEC	EXTEND	LOCK	V	GSAK7155E	ON

592-15	CMD	ARMS	OAA	OPEN	PRI	EXTEND	PILOT	V	GSAK7170E	OFF
592-16	CMD	ARMS	OAA	OPEN	PRI	EXTEND	PILOT	V	GSAK7175E	OFF
592-17	CMD	ARMS	OAA	OPEN	SEC	EXTEND	PILOT	V	GSAK7190E	OFF
592-18	CMD	ARMS	OAA	OPEN	SEC	EXTEND	PILOT	V	GSAK7195E	OFF

592-19	CMD	ARMS	OAA	RESET	PRI	EXTEND	PILOT	V	GSAK7160E	ON
592-20	CMD	ARMS	OAA	RESET	PRI	EXTEND	PILOT	V	GSAK7165E	ON
592-21	CMD	ARMS	OAA	RESET	SEC	EXTEND	PILOT	V	GSAK7180E	ON
592-22	CMD	ARMS	OAA	RESET	SEC	EXTEND	PILOT	V	GSAK7185E	ON

§ DELAY 1 SECOND §

592-23	CMD	ARMS	OAA	LOCK	PRI	EXTEND	LOCK	V	GSAK7130E	OFF
592-24	CMD	ARMS	OAA	LOCK	PRI	EXTEND	LOCK	V	GSAK7135E	OFF
592-25	CMD	ARMS	OAA	LOCK	SEC	EXTEND	LOCK	V	GSAK7150E	OFF
592-26	CMD	ARMS	OAA	LOCK	SEC	EXTEND	LOCK	V	GSAK7155E	OFF

592-27	CMD	ARMS	OAA	RESET	PRI	EXTEND	PILOT	V	GSAK7160E	OFF
592-28	CMD	ARMS	OAA	RESET	PRI	EXTEND	PILOT	V	GSAK7165E	OFF
592-29	CMD	ARMS	OAA	RESET	SEC	EXTEND	PILOT	V	GSAK7180E	OFF
592-30	CMD	ARMS	OAA	RESET	SEC	EXTEND	PILOT	V	GSAK7185E	OFF
592-31	CMD	ARMS	OAA	CLOSE	PRI	RETRACT	SUPPLY	V	GSAK7200E	OFF
592-32	CMD	ARMS	OAA	CLOSE	PRI	RETRACT	SUPPLY	V	GSAK7205E	OFF
592-33	CMD	ARMS	OAA	CLOSE	PRI	RETRACT	RETURN	V	GSAK7220E	OFF
592-34	CMD	ARMS	OAA	CLOSE	PRI	RETRACT	RETURN	V	GSAK7225E	OFF
592-35	CMD	ARMS	OAA	CLOSE	SEC	RETRACT	SUPPLY	V	GSAK7240E	OFF
592-36	CMD	ARMS	OAA	CLOSE	SEC	RETRACT	SUPPLY	V	GSAK7245E	OFF
592-37	CMD	ARMS	OAA	CLOSE	SEC	RETRACT	RETURN	V	GSAK7260E	OFF
592-38	CMD	ARMS	OAA	CLOSE	SEC	RETRACT	RETURN	V	GSAK7265E	OFF

§ DELAY 1 MIN 00 SECONDS §

§ VERIFY WITHIN 1 MIN 00 SEC ELSE DISPLAY AND CONTINUE §

592-39	ST480	VFY	ARMS	OAA	ACCUM	LEVEL	SW	NO	1-NORMAL	GSAX7651E	ON	4 OF 4
592-40		VFY	ARMS	OAA	ACCUM	LEVEL	SW	NO	2-NORMAL	GSAX7671E	ON	4 OF 4
592-41		VFY	ARMS	OAA	ACCUM	LEVEL	SW	NO	3-NORMAL	GSAX7691E	ON	4 OF 4
592-42		VFY	ARMS	OAA	ACCUM	LEVEL	SW	NO	4-NORMAL	GSAX7711E	ON	OR
592-43		VFY	ARMS	OAA	ACCUM	LEVEL	SW	NO	1-NORMAL	GSAX7656E	ON	4 OF 4
592-44		VFY	ARMS	OAA	ACCUM	LEVEL	SW	NO	2-NORMAL	GSAX7676E	ON	4 OF 4
592-45		VFY	ARMS	OAA	ACCUM	LEVEL	SW	NO	3-NORMAL	GSAX7696E	ON	4 OF 4
592-46		VFY	ARMS	OAA	ACCUM	LEVEL	SW	NO	4-NORMAL	GSAX7716E	ON	GTO ST480

592-47 CMD ARMS OAA OPEN ACCUM CHARGING V GSAK7080E OFF
 592-48 CMD ARMS OAA OPEN ACCUM CHARGING V GSAK7085E OFF
 592-49 CMD ARMS OAA CLOSE GN2 INHIBIT V GSAK7100E OFF
 592-50 CMD ARMS OAA CLOSE GN2 INHIBIT V GSAK7105E OFF

593-00 ST490 CMD INTG \$ NOTIFY FIRING ROOM THAT GLS SAFING IS COMPLETE \$
 GLS SAFING COMPLETE N013INTGR ON

593-01 CMD INTG \$ PERF NEXT STEP UPON TERM SELECTION \$
 CAMERA SEQUENCER START GCDKPCSSE OFF
 * * * * *
 * POST G901 RECYCLE OPERATIONS *
 * * * * *

594-00 ST500 VFY INTG CURRENT LDB GPC MEMORY CONFIG NGPCLMCNFG 9 GTO ST500 S00E00.751

\$ GLS EVENT COMPLETE LESS THAT 300 \$
 \$ SAFE SRB RSS S/A'S \$
 595-00 CMD BRS LH RSS S&A DEVICE ARM CMD B55K3044XL OFF S00E00.751
 595-01 CMD BRS RH RSS S&A DEVICE ARM CMD B55K4044XL OFF S00E00.751

\$ DELAY 1 SECOND \$

\$ NOTE: RANGE SAFETY S/A SAFE CMD'S ARE MEC CRITICAL AND
 REQUIRE THAT MEC CRITICAL CMD CAPABILITY BE ENABLED.
 THIS WILL BE ACCOMPLISHED VIA DEU EQUIVALENT. WHEN
 S/A SAFING IS COMPLETE, MEC CRITICAL CMD'S WILL BE
 DISABLED VIA DEU. S/A SAFE CMD'S WILL BE TURNED OFF
 VIA MEC MASTER RESET. \$

\$ ENABLE MEC CRITICAL CMD'S \$
 \$ RETRY NEXT 3 SEQ NO MORE THAN ONCE \$
 596-00 ST510 CMD BRS SPEC 100 PRO DEU 1 S00E00.751

\$ DELAY 2 SECONDS \$

596-01 VFY DPS DEU 1 DISPLAY ID V92U5086CX 1000 GTO ST510
 \$ PRINT MSG IF FAILED AFTER RETRY AND GTO ST530 \$

596-02 CMD BRS ITEM 25 EXECUTE DEU 1 S00E00.751

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$ DELAY 2 SECONDS $

$ VERIFY MEC CRITICAL CMD'S ARE ENABLED $
596-03      VFY  BRS  MEC INH/ENA IND          V91X1491XX ON          GTO ST510          S00E00.751
$ PRINT MSG IF FAILED AFTER RETRY AND GTO ST530 $

$ ISSUE S/A SAFE CMD'S $
597-00      ISSU BRS MEC 1 L RSS SAFE 1 CMD          V76K7508BL ON          S00E00.751
597-01      ISSU BRS MEC 1 R RSS SAFE 2 CMD          V76K7509BL ON          S00E00.751

$ DELAY 1 SECOND $

597-02      ISSU BRS MEC 2 L RSS SAFE 2 CMD          V76K7609BL ON          S00E00.751
597-03      ISSU BRS MEC 2 R RSS SAFE 1 CMD          V76K7608BL ON          S00E00.751

$ DELAY 1 SECOND $

$ DISABLE MEC CRITICAL CMD'S $
$ RETRY NEXT SEQ NO MORE THAN ONCE $
598-00 ST520  CMD  BRS  ITEM 26 EXECUTE          DEU 1          S00E00.751

$ DELAY 2 SECONDS $

$ VERIFY MEC CRITICAL CMD'S ARE DISABLED $
599-00      VFY  BRS  MEC INH/ENA IND          V91X1491XX OFF        GTO ST520          S00E00.751
$ PRINT MSG IF FAILED AFTER RETRY $

600-00      CMD  BRS  RESUME          DEU 1          S00E00.751
600-01      CMD  BRS  MEC MASTER RESET        MEC 1          S00E00.751
600-02      CMD  BRS  MEC MASTER RESET        MEC 2          S00E00.751

601-00 ST530  VFY  BRS  LH EVENT RSS S&A DEVICE ARMED    B55X1870X1 OFF        DISPLAY          S00E00.751
601-01      VFY  BRS  RH EVENT RSS S&A DEVICE ARMED    B55X2870X1 OFF        DISPLAY          S00E00.751
601-02      VFY  BRS  LH EVENT RSS S&A DEVICE SAFED    B55X1869X1 ON         DISPLAY          S00E00.751
601-03      VFY  BRS  RH EVENT RSS S&A DEVICE SAFED    B55X2869X1 ON         DISPLAY          S00E00.751

$ POST G901 RECYCLE OPERATIONS COMPLETE $

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GROUND LAUNCH SEQUENCE DESCRIPTION DOCUMENT - LCD STS 96											KLO-82-0071 APP. A	
SEQ	CDT/	S:	I:	FUNC:	DISC:	NOMENCLATURE	FUNCTION	VALUE	ELSE	DUR.	LCC	OMRSD
	STEP	T:	E:				DESIGNATOR:	SINGLE:			REF	
							OR LO	HIGH	UNIT			

 * CONTINGENT PERFORMS *

\$ G001 R/S HOLD INDICATION LOOK-UP \$
 \$ UPON DETECTION OF A REDUNDANT SET LAUNCH SEQUENCE HOLD, \$
 \$ THIS FUNCTION CAN BE REQUESTED BY THE OPERATOR TO DECODE \$
 \$ ANY HOLD CONDITIONS DETECTED BY THE ONBOARD SEQUENCER. \$
 \$ \$
 \$ WITHIN SOME OF THE STEPS THE FA1-FA4 INPUT PROM SEG 3,10 \$
 \$ OR EIU CHANNEL BYPASSES APPEAR. THESE INDICATIONS ARE \$
 \$ USED AS DATA VALIDITY PARAMETERS BY THE RSLs IN \$
 \$ DETERMINING WHETHER A COMMFAULT CONDITION EXISTS. THEY \$
 \$ ARE ONLY VERIFIED IF THE ASSOCIATED RSLs HOLD FLAG IS ON.\$
 \$ \$
 \$ THIS SEQUENCE DOES NOT HAVE A MAINLINE BYPASS OR SYSTEM \$
 \$ BYPASS CAPABILITY. THE ENTRIES IN THE SEQ AND DISC \$
 \$ FIELDS ARE THEREFORE INFORMATION ONLY. \$

700-00 LABL INTG

G001

\$ THE FLT CRITICAL MDM HOLD FLAG WILL BE SET UPON RSLs DETECTION \$
 \$ OF ANY OF THE FOLLOWING MDM RETURN WORD BYPASSES \$

700-01	VFY	INTG	FLIGHT	CRITICAL	MDM	HOLD/ABORT	V90X8767X1	OFF				DISPLAY
700-02	VFY	INTG	FF1	MDM	RETURN	WORD BYPASS(HFE)	V91X2904XX	OFF				DISPLAY
700-03	VFY	INTG	FF2	MDM	RETURN	WORD BYPASS(HFE)	V91X2905XX	OFF				DISPLAY
700-04	VFY	INTG	FF3	MDM	RETURN	WORD BYPASS(HFE)	V91X2906XX	OFF				DISPLAY
700-05	VFY	INTG	FF4	MDM	RETURN	WORD BYPASS(HFE)	V91X2907XX	OFF				DISPLAY
700-06	VFY	INTG	FA1	MDM	RETURN	WORD BYPASS(HFE)	V91X2920XX	OFF				DISPLAY
700-07	VFY	INTG	FA2	MDM	RETURN	WORD BYPASS(HFE)	V91X2921XX	OFF				DISPLAY
700-08	VFY	INTG	FA3	MDM	RETURN	WORD BYPASS(HFE)	V91X2922XX	OFF				DISPLAY
700-09	VFY	INTG	FA4	MDM	RETURN	WORD BYPASS(HFE)	V91X2923XX	OFF				DISPLAY

\$ TWO SUCCESSIVE RSLs PASSES WHEREIN EITHER ONE OR MORE OF THE IGN \$
 \$ PIC VOLTAGES ARE LOW OR A COMMFAULT EXISTS WILL RESULT IN ONE OR \$
 \$ MORE OF THE FOLLOWING FLAGS BEING SET. FOR EACH OF THE FOLLOWING \$
 \$ PAIRS, THE IGN PIC HOLD FLAG MUST BE ON BEFORE ANY MESSAGE WILL \$
 \$ BE DISPLAYED. IF THE CORRESPONDING INPUT PROM BYPASS FLAG IS ON \$
 \$ AS WELL, THE COMMFAULT WILL BE IDENTIFIED AS THE CAUSE OF THE HOLD.\$

700-10	VFY	INTG LH IGN PIC CAP A HOLD	V90X8383X1 OFF	DISPLAY
700-11	VFY	INTG FA1 INPUT PROM SEG 3,10 BYPASS	V91X2806XX OFF	DISPLAY
700-12	VFY	INTG LH IGN PIC CAP B HOLD	V90X8384X1 OFF	DISPLAY
700-13	VFY	INTG FA2 INPUT PROM SEG 3,10 BYPASS	V91X2807XX OFF	DISPLAY
700-14	VFY	INTG RH IGN PIC CAP A HOLD	V90X8385X1 OFF	DISPLAY
700-15	VFY	INTG FA1 INPUT PROM SEG 3,10 BYPASS	V91X2806XX OFF	DISPLAY
700-16	VFY	INTG RH IGN PIC CAP B HOLD	V90X8386X1 OFF	DISPLAY
700-17	VFY	INTG FA2 INPUT PROM SEG 3,10 BYPASS	V91X2807XX OFF	DISPLAY

\$ FAILURE TO VFY THE MPS LO2 OVBD BLEED CLOSURE WILL RESULT IN THE FOLLOWING \$
 \$ FLAG BEING SET. ONE OF THE TWO CLOSED INDICATIONS (V41X1580X1,1581) MUST \$
 \$ EXIST AND NOT BE COMMFAULTED (FA3,FA2) OR BYPASSED BY LPS (V99X8835X1,8837)\$

700-18	VFY	INTG MPS LO2 OVBD B/V CLOSE HOLD	V90X8399X1 OFF	DISPLAY
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\$ TWO MPS ENG LH2 PREVALVE SENSORS EXIST FOR EACH ENGINE. IF EITHER \$
 \$ SENSOR INDICATES OPEN AND IS NOT COMMFAULTED, THE RSLs PROCEEDS. \$
 \$ IF THIS VALID INDICATION IS NOT OBTAINED, THEN THE MPS LH2 PREVLV \$
 \$ OPEN HOLD FLAG OF THE ASSOCIATED ENGINE IS SET. FOR EACH OF THE \$
 \$ FOLLOWING TRIPLETS, THE LH2 PREVLV HOLD FLAG MUST BE ON BEFORE ANY\$
 \$ MESSAGE WILL BE DISPLAYED. IF BOTH OF THE CORRESPONDING INPUT \$
 \$ PROM BYPASS FLAGS ARE ON AS WELL, THE COMMFAULT WILL BE IDENTIFIED\$
 \$ AS THE CAUSE OF THE HOLD. \$

700-19	VFY	INTG MPS E-1 LH2 PREVLV OPEN HOLD	V90X8396X1 OFF	DISPLAY
700-20	VFY	INTG FA1 INPUT PROM SEG 3,10 BYPASS	V91X2806XX OFF	1 OF 2
700-21	VFY	INTG FA3 INPUT PROM SEG 3,10 BYPASS	V91X2808XX OFF	DISPLAY
700-22	VFY	INTG MPS E-2 LH2 PREVLV OPEN HOLD	V90X8397X1 OFF	DISPLAY
700-23	VFY	INTG FA2 INPUT PROM SEG 3,10 BYPASS	V91X2807XX OFF	1 OF 2
700-24	VFY	INTG FA4 INPUT PROM SEG 3,10 BYPASS	V91X2809XX OFF	DISPLAY
700-25	VFY	INTG MPS E-3 LH2 PREVLV OPEN HOLD	V90X8398X1 OFF	DISPLAY
700-26	VFY	INTG FA3 INPUT PROM SEG 3,10 BYPASS	V91X2808XX OFF	1 OF 2
700-27	VFY	INTG FA4 INPUT PROM SEG 3,10 BYPASS	V91X2809XX OFF	DISPLAY

\$ THE FOLLOWING FLAG WILL BE SET IF EITHER FA3 OR FA4 \$
 \$ INDICATES A COMMFAULT \$

700-28	VFY	INTG MPS VALVE POS COMM FAULT HOLD	V90X8769X1 OFF	DISPLAY
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\$ THE FOLLOWING FLAG WILL BE SET IF THE LO2 ACCUM RECIRC VLV \$
 \$ POSITIONS (V41X1811X1,1821) DO NOT INDICATE OPEN AND THE LPS \$
 \$ BYPASS FLAG (V99X8833X1) HAD NOT BEEN PREVIOUSLY SET. \$

700-29 VFY INTG MPS LOX ACC RECIRC VLV HOLD V90X8392X1 OFF DISPLAY
 \$ THE PAD DATA PATH FAIL HOLD FLAG WILL BE SET IF THE SSME SOP \$
 \$ FLAGS INVALID DATA FROM EITHER THE PRIM OR SEC EIU CHANNEL. \$

700-30 VFY INTG ME-1 PAD DATA PATH FAIL HOLD V90X8670X1 OFF DISPLAY
 700-31 VFY INTG EIU1/P1 DATA BYPASS(HFE INPUT) V91X2927XX OFF DISPLAY
 700-32 VFY INTG EIU1/P4 DATA BYPASS(HFE INPUT) V91X2813XX OFF DISPLAY
 \$ THE FOLLOWING FLAG WILL BE SET IF THE CONTROLLER INDICATES \$
 \$ A ME-1 ELECTRONIC LOCKUP, HYDRAULIC LOCKUP, MAJOR COMPONENT \$
 \$ FAIL, OR ENGINE LIMIT EXCEEDED. IT WILL ALSO BE SET IF THE \$
 \$ ENGINE CONTROLLER HAS DECLARED A FAILURE IN ONE OR MORE OF \$
 \$ THE THREE COMMAND CHANNELS. \$

700-33 VFY INTG ME-1 CONTROL FAIL HOLD V90X8679X1 OFF DISPLAY

700-34 VFY INTG ME-1 OPERATING MODE DW3 E41J1513B1 B011 2 OF 2
 700-35 VFY INTG ME-1 PHASE IN EFFECT DW3 E41J1512B1 B100 GTO ST01
 MSG ME-1 CONTROLLER ELECTRONIC LOCKUP

700-36 ST01 VFY INTG ME-1 OPERATING MODE DW3 E41J1513B1 B100 2 OF 2
 700-37 VFY INTG ME-1 PHASE IN EFFECT DW3 E41J1512B1 B100 GTO ST02
 MSG ME-1 CONTROLLER HYDRAULIC LOCKUP
 \$ FOR THE ME SELF TEST: \$
 \$ B01 = ENGINE OKAY \$
 \$ B10 = MAJOR COMPONENT FAIL \$
 \$ B11 = LIMIT EXCEEDED \$
 \$ OTHER = ME NOT OKAY, SET W/OUT HOLD \$
 \$ CONDITION \$

700-38 ST02 VFY INTG ME-1 SELF TEST STATUS DW3 E41J1514B1 B001 DISPLAY
 \$ FOR THE ME-1 CONTROLLER CHANNEL FAIL, DOWNLISTED INDICATIONS RESET \$
 \$ WITHIN 1 FRAME. THE CCME S/W WILL INTERRUPT OFF THE FAIL STATUS \$
 \$ AND RECORD THE RESULTS IN THE FOLLOWING PSEUDO. BITS ARE ENCODED \$
 \$ AS FOLLOWS: BIT 001 = CHANNEL 1, 010 = CHANNEL 2, 100 = CHANNEL 3.\$
 \$ ALL COMBINATIONS OF CHANNEL FAILS WILL BE RECORDED. MASK = E000. \$

700-39 VFY INTG ME-1 INTERRUPT PSEUDO NME1INTRPT B000 DISPLAY
 \$ THE PAD DATA PATH FAIL HOLD FLAG WILL BE SET IF THE SSME SOP \$
 \$ FLAGS INVALID DATA FROM EITHER THE PRIM OR SEC EIU CHANNEL. \$

700-40 VFY INTG ME-2 PAD DATA PATH FAIL HOLD V90X8671X1 OFF DISPLAY
 700-41 VFY INTG EIU2/P1 DATA BYPASS(HFE INPUT) V91X2930XX OFF DISPLAY
 700-42 VFY INTG EIU2/P4 DATA BYPASS(HFE INPUT) V91X2817XX OFF DISPLAY
 \$ THE FOLLOWING FLAG WILL BE SET IF THE CONTROLLER INDICATES \$
 \$ A ME-2 ELECTRONIC LOCKUP, HYDRAULIC LOCKUP, MAJOR COMPONENT \$

\$ FAIL, OR ENGINE LIMIT EXCEEDED. IT WILL ALSO BE SET IF THE \$
 \$ ENGINE CONTROLLER HAS DECLARED A FAILURE IN ONE OR MORE OF \$
 \$ THE THREE COMMAND CHANNELS. \$

700-43	VFY	INTG	ME-2 CONTROL FAIL HOLD		V90X8680X1 OFF	DISPLAY
700-44	VFY	INTG	ME-2 OPERATING MODE	DW3	E41J2513B1 B011	2 OF 2
700-45	VFY	INTG	ME-2 PHASE IN EFFECT	DW3	E41J2512B1 B100	GTO ST11
	MSG		ME-2 CONTROLLER ELECTRONIC LOCKUP			
700-46 ST11	VFY	INTG	ME-2 OPERATING MODE	DW3	E41J2513B1 B100	2 OF 2
700-47	VFY	INTG	ME-2 PHASE IN EFFECT	DW3	E41J2512B1 B100	GTO ST12
	MSG		ME-2 CONTROLLER HYDRAULIC LOCKUP			
			\$ FOR THE ME SELF TEST:		\$	
			\$ B01 = ENGINE OKAY		\$	
			\$ B10 = MAJOR COMPONENT FAIL		\$	
			\$ B11 = LIMIT EXCEEDED		\$	
			\$ OTHER = ME NOT OKAY, SET W/OUT HOLD		\$	
			\$ CONDITION		\$	
700-48 ST12	VFY	INTG	ME-2 SELF TEST STATUS	DW3	E41J2514B1 B001	DISPLAY
			\$ FOR THE ME-2 CONTROLLER CHANNEL FAIL, DOWNLISTED INDICATIONS RESET \$			
			\$ WITHIN 1 FRAME. THE CCME S/W WILL INTERRUPT OFF THE FAIL STATUS \$			
			\$ AND RECORD THE RESULTS IN THE FOLLOWING PSEUDO. BITS ARE ENCODED \$			
			\$ AS FOLLOWS: BIT 001 = CHANNEL 1, 010 = CHANNEL 2, 100 = CHANNEL 3.\$			
			\$ ALL COMBINATIONS OF CHANNEL FAILS WILL BE RECORDED. MASK = E000. \$			
700-49	VFY	INTG	ME-2 INTERRUPT PSEUDO		NME2INTRPT B000	DISPLAY
			\$ THE PAD DATA PATH FAIL HOLD FLAG WILL BE SET IF THE SSME SOP \$			
			\$ FLAGS INVALID DATA FROM EITHER THE PRIM OR SEC EIU CHANNEL. \$			
700-50	VFY	INTG	ME-3 PAD DATA PATH FAIL HOLD		V90X8672X1 OFF	DISPLAY
700-51	VFY	INTG	EIU3/P1 DATA BYPASS(HFE INPUT)		V91X2933XX OFF	DISPLAY
700-52	VFY	INTG	EIU3/P4 DATA BYPASS(HFE INPUT)		V91X2821XX OFF	DISPLAY
			\$ THE FOLLOWING FLAG WILL BE SET IF THE CONTROLLER INDICATES \$			
			\$ A ME-3 ELECTRONIC LOCKUP, HYDRAULIC LOCKUP, MAJOR COMPONENT \$			
			\$ FAIL, OR ENGINE LIMIT EXCEEDED. IT WILL ALSO BE SET IF THE \$			
			\$ ENGINE CONTROLLER HAS DECLARED A FAILURE IN ONE OR MORE OF \$			
			\$ THE THREE COMMAND CHANNELS. \$			
700-53	VFY	INTG	ME-3 CONTROL FAIL HOLD		V90X8681X1 OFF	DISPLAY
700-54	VFY	INTG	ME-3 OPERATING MODE	DW3	E41J3513B1 B011	2 OF 2
700-55	VFY	INTG	ME-3 PHASE IN EFFECT	DW3	E41J3512B1 B100	GTO ST21
	MSG		ME-3 CONTROLLER ELECTRONIC LOCKUP			
700-56 ST21	VFY	INTG	ME-3 OPERATING MODE	DW3	E41J3513B1 B100	2 OF 2

\$ FOLLOWING CONDITIONS: \$
 \$ 1. ANY ENGINE FAILS TO ACHIEVE THE REQUIRED PERCENT \$
 \$ CHAMBER PRESSURE WITHIN THE REQUIRED TIME AFTER START \$
 \$ 2. ANY ENGINE TRANSITIONS INTO AUTO SHUTDOWN \$
 \$ 3. LOSS OF DATA PATH OR COMMAND PATH TO ANY ENGINE \$
 \$ 4. HYDRAULIC OR ELECTRONIC LOCKUP OF ANY ENGINE \$
 \$ 5. THE LPS COUNTDOWN HOLD FLAG IS RECEIVED PRIOR TO \$
 \$ ISSUANCE OF SRB IGNITION COMMANDS. \$

700-68 ST35 VFY INTG LAUNCH SEQUENCE ABORT FLAG V90X8382X1 OFF DISPLAY

\$ THE RSLs WILL CHECK FOR ANY COMMFAULT INDICATIONS RELATIVE \$
 \$ TO THE ACTUATOR PORT CHECKS THAT FOLLOW IN THE NEXT SEVERAL \$
 \$ STEPS. UPON A DETECTION OF A COMMFAULT THE APPROPRIATE \$
 \$ ACTUATOR PORT CHECKS ARE BYPASSED. IF A COMMFAULT INDICATION \$
 \$ IS PRESENT FOR TWO SUCCESSIVE CYCLES, THE ME ACTUATOR PORT \$
 \$ FAIL ABORT FLAG IS SET AND THE OFFENDING SSME IS COMMANDED \$
 \$ TO SHUT DOWN. \$

700-69 VFY INTG MPS ACT PORT COMM FAULT ABORT V90X8772X1 OFF DISPLAY

700-70 VFY INTG FA1 INPUT PROM SEG3-10 BYPASS(HFE) V91X2806XX OFF DISPLAY
 700-71 VFY INTG FA2 INPUT PROM SEG3-10 BYPASS(HFE) V91X2807XX OFF DISPLAY
 700-72 VFY INTG FA3 INPUT PROM SEG3-10 BYPASS(HFE) V91X2808XX OFF DISPLAY
 700-73 VFY INTG FA4 INPUT PROM SEG3-10 BYPASS(HFE) V91X2809XX OFF DISPLAY

\$ ME-1 ACTUATOR PORT CHECKS \$

700-74 VFY INTG ME-1 ACT PORT FAIL ABORT V90X8776X1 OFF DISPLAY
 700-75 VFY INTG MPS ENG 1 P ACTR A FAIL V79X1170X1 OFF DISPLAY
 700-76 VFY INTG MPS ENG 1 Y ACTR A FAIL V79X1171X1 OFF DISPLAY
 700-77 VFY INTG MPS ENG 1 P ACTR B FAIL V79X1173X1 OFF DISPLAY
 700-78 VFY INTG MPS ENG 1 Y ACTR B FAIL V79X1174X1 OFF DISPLAY
 700-79 VFY INTG MPS ENG 1 P ACTR C FAIL V79X1176X1 OFF DISPLAY
 700-80 VFY INTG MPS ENG 1 Y ACTR C FAIL V79X1177X1 OFF DISPLAY
 700-81 VFY INTG MPS ENG 1 P ACTR D FAIL V79X1178X1 OFF DISPLAY
 700-82 VFY INTG MPS ENG 1 Y ACTR D FAIL V79X1179X1 OFF DISPLAY

\$ ME-2 ACTUATOR PORT CHECKS \$

700-83 VFY INTG ME-2 ACT PORT FAIL ABORT V90X8777X1 OFF DISPLAY
 700-84 VFY INTG MPS ENG 2 P ACTR A FAIL V79X1270X1 OFF DISPLAY
 700-85 VFY INTG MPS ENG 2 Y ACTR A FAIL V79X1271X1 OFF DISPLAY
 700-86 VFY INTG MPS ENG 2 P ACTR B FAIL V79X1273X1 OFF DISPLAY
 700-87 VFY INTG MPS ENG 2 Y ACTR B FAIL V79X1274X1 OFF DISPLAY
 700-88 VFY INTG MPS ENG 2 P ACTR C FAIL V79X1276X1 OFF DISPLAY
 700-89 VFY INTG MPS ENG 2 Y ACTR C FAIL V79X1277X1 OFF DISPLAY
 700-90 VFY INTG MPS ENG 2 P ACTR D FAIL V79X1278X1 OFF DISPLAY
 700-91 VFY INTG MPS ENG 2 Y ACTR D FAIL V79X1279X1 OFF DISPLAY

\$ ME-3 ACTUATOR PORT CHECKS \$

700-92 VFY INTG ME-3 ACT PORT FAIL ABORT V90X8778X1 OFF DISPLAY
 700-93 VFY INTG MPS ENG 3 P ACTR A FAIL V79X1370X1 OFF DISPLAY

700-94	VFY	INTG	MPS	ENG 3	Y	ACTR	A	FAIL	V79X1371X1	OFF	DISPLAY
700-95	VFY	INTG	MPS	ENG 3	P	ACTR	B	FAIL	V79X1373X1	OFF	DISPLAY
700-96	VFY	INTG	MPS	ENG 3	Y	ACTR	B	FAIL	V79X1374X1	OFF	DISPLAY
700-97	VFY	INTG	MPS	ENG 3	P	ACTR	C	FAIL	V79X1376X1	OFF	DISPLAY
700-98	VFY	INTG	MPS	ENG 3	Y	ACTR	C	FAIL	V79X1377X1	OFF	DISPLAY
700-99	VFY	INTG	MPS	ENG 3	P	ACTR	D	FAIL	V79X1378X1	OFF	DISPLAY
700-100	VFY	INTG	MPS	ENG 3	Y	ACTR	D	FAIL	V79X1379X1	OFF	DISPLAY

\$ THE FOLLOWING FLAG WILL BE SET IF ALL 3 ENGINES ARE NOT \$
 \$ DETECTED IN SHUTDOWN OR POST SHUTDOWN 9.8 SEC AFTER \$
 \$ SHUTDOWN HAS BEEN COMMANDED. \$

700-101	VFY	INTG	ENGINE	SHUTDOWN	VERIFICATION	HOLD	V90X8389X1	OFF	DISPLAY
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\$ IF THE OPERATING PHASE FOR ANY ENGINE INDICATES \$
 \$ AUTO SHUTDOWN, THE FOLLOWING FLAG WILL BE SET \$

700-102	VFY	INTG	UNCOMMANDED	ENGINE	SHUTDOWN	ABORT	V90X8771X1	OFF	DISPLAY
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\$ IF EACH OF THE ENGINES HAVE NOT ACHIEVED A CHAMBER PRESSURE \$
 \$ GREATER THAN 90% WITHIN 4.6 SEC OF COMMANDED START, THE LOW \$
 \$ CHAMBER PRESSURE ABORT FLAG FOR THAT ENGINE WILL BE SET. \$

700-103	VFY	INTG	ME-1	LOW	CHAMBER	PRESSURE	ABORT	V90X8773X1	OFF	DISPLAY
700-104	VFY	INTG	ME-2	LOW	CHAMBER	PRESSURE	ABORT	V90X8774X1	OFF	DISPLAY
700-105	VFY	INTG	ME-3	LOW	CHAMBER	PRESSURE	ABORT	V90X8775X1	OFF	DISPLAY

700-106 END G001

\$ IN THE EVENT OF A POST-ABORT ENGINE LH2 INLET PRESSURE GREATER
 THAN 90 PSIA GLS WILL REMOVE THE ENGINE LH2 PREVALVE CLOSE
 COMMANDS IN AN ATTEMPT TO DECREASE PRESSURE (REF. G002,3,4).
 A CONTINUED OVER PRESSURE CONDITION WILL REQUIRE LH2 PREVALVE
 OPENING AT THE DISCRETION OF THE RESPONSIBLE MPS ENGINEER. \$

\$ G002 ENG 1 LH2 INLET PRESSURE RELIEF \$

701-00	LABL	INTG						G002					
701-01	CMD	MPS	MPS	E1	LH2	PREVLV	(PV4)	CL	CMD	A	V41K1122XL	OFF	S00E00.205
701-02	CMD	MPS	MPS	E1	LH2	PREVLV	(PV4)	CL	CMD	B	V41K1123XL	OFF	S00E00.205
701-03	CMD	MPS	MPS	E1	LH2	PREVLV	(PV4)	CL	CMD	C	V41K1124XL	OFF	S00E00.205
701-04	OMSG	INTG	E-1	LH2	INLET	OVERPRESS	-	G002	EXECUTED				
701-05	END	G002											

\$ G003 ENG 2 LH2 INLET PRESSURE RELIEF \$

702-00	LABL	INTG						G003					
702-01	CMD	MPS	MPS	E2	LH2	PREVLV	(PV5)	CL	CMD	A	V41K1222XL	OFF	S00E00.205

702-02 CMD MPS MPS E2 LH2 PREVLV (PV5) CL CMD B V41K1223XL OFF S00E00.205
702-03 CMD MPS MPS E2 LH2 PREVLV (PV5) CL CMD C V41K1224XL OFF S00E00.205

702-04 OMSG INTG E-2 LH2 INLET OVERPRESS - G003 EXECUTED
702-05 END G003

703-00 \$ G004 ENG 3 LH2 INLET PRESSURE RELIEF \$
LABL INTG G004
703-01 CMD MPS MPS E3 LH2 PREVLV (PV6) CL CMD A V41K1322XL OFF S00E00.205
703-02 CMD MPS MPS E3 LH2 PREVLV (PV6) CL CMD B V41K1323XL OFF S00E00.205
703-03 CMD MPS MPS E3 LH2 PREVLV (PV6) CL CMD C V41K1324XL OFF S00E00.205
703-04 OMSG INTG E-3 LH2 INLET OVERPRESS - G004 EXECUTED
703-05 END G004

704-00 \$ G006 REPLACE FAILED ET LH2 PRESS NO. 1 \$
\$ IF PREVIOUS XDUCER SWAPOUT HAS OCCURRED, LOG VIOLATION OF T41P1700C1 \$
LABL INTG G006
704-01 VFY LH2 REPLACE LH2 ULLAGE PRESS NO1 XDCR N41K1700XL OFF GTO ST12
704-02 VFY LH2 REPLACE LH2 ULLAGE PRESS NO2 XDCR N41K1701XL OFF GTO ST12
704-03 VFY LH2 REPLACE LH2 ULLAGE PRESS NO3 XDCR N41K1702XL OFF GTO ST12
704-04 CMD LH2 REPLACE LH2 ULL PRESS XDCR 1 CMD V41K1700XL ON
704-05 CMD LH2 REPLACE LH2 ULLAGE PRESS NO1 XDCR N41K1700XL ON

\$ DELAY .5 SECONDS \$

\$ WHEN ALL THREE SSME'S ARE BLOCK II \$
\$ (NMEABLK2 = ON) ET-LH2 ULLAGE \$
\$ PRESSURE LIMITS WILL CHANGE TO \$
\$ MIN = 46.1 AND MAX = 48.0 PER LCC ET-05 \$

\$ 3 OF 3 ULLAGE PRESS XDCRS REQD \$

704-06 CVFY LH2 ET-LH2 ULLAGE PRESS NO 1 T41P1700C1 40.9 44.1 PSIA INHB MENG ET-05
704-07 CVFY LH2 ET-LH2 ULLAGE PRESS NO 2 T41P1701C1 40.9 44.1 PSIA INHB MENG ET-05
704-08 CVFY LH2 ET-LH2 ULLAGE PRESS NO 3 T41P1702C1 40.9 44.1 PSIA INHB MENG ET-05
704-09 ST12 END G006

705-00 \$ G007 REPLACE FAILED ET LH2 PRESS NO.2 \$
\$ IF PREVIOUS XDUCER SWAPOUT HAS OCCURRED, LOG VIOLATION OF T41P1701C1 \$
LABL INTG G007

705-01 VFY LH2 REPLACE LH2 ULLAGE PRESS NO1 XDCR N41K1700XL OFF GTO ST12
705-02 VFY LH2 REPLACE LH2 ULLAGE PRESS NO2 XDCR N41K1701XL OFF GTO ST12
705-03 VFY LH2 REPLACE LH2 ULLAGE PRESS NO3 XDCR N41K1702XL OFF GTO ST12
705-04 CMD LH2 REPLACE LH2 ULL PRESS XDCR 2 CMD V41K1701XL ON
705-05 CMD LH2 REPLACE LH2 ULLAGE PRESS NO2 XDCR N41K1701XL ON

\$ DELAY .5 SECONDS \$

\$ WHEN ALL THREE SSME'S ARE BLOCK II \$
\$ (NMEABLK2 = ON) ET-LH2 ULLAGE \$
\$ PRESSURE LIMITS WILL CHANGE TO \$
\$ MIN = 46.1 AND MAX = 48.0 PER LCC ET-05 \$

\$ 3 OF 3 ULLAGE PRESS XDCRS REQD \$

705-06 CVFY LH2 ET-LH2 ULLAGE PRESS NO 1 T41P1700C1 40.9 44.1 PSIA INHB MENG ET-05
705-07 CVFY LH2 ET-LH2 ULLAGE PRESS NO 2 T41P1701C1 40.9 44.1 PSIA INHB MENG ET-05
705-08 CVFY LH2 ET-LH2 ULLAGE PRESS NO 3 T41P1702C1 40.9 44.1 PSIA INHB MENG ET-05

705-09 ST12 END G007

\$ G008 REPLACE FAILED ET LH2 PRESS NO.3 \$
\$ IF PREVIOUS XDUCER SWAPOUT HAS OCCURRED, LOG VIOLATION OF T41P1702C1 \$

706-00 LABL INTG G008
706-01 VFY LH2 REPLACE LH2 ULLAGE PRESS NO1 XDCR N41K1700XL OFF GTO ST12
706-02 VFY LH2 REPLACE LH2 ULLAGE PRESS NO2 XDCR N41K1701XL OFF GTO ST12
706-03 VFY LH2 REPLACE LH2 ULLAGE PRESS NO3 XDCR N41K1702XL OFF GTO ST12
706-04 CMD LH2 REPLACE LH2 ULL PRESS XDCR 3 CMD V41K1702XL ON
706-05 CMD LH2 REPLACE LH2 ULLAGE PRESS NO3 XDCR N41K1702XL ON

\$ DELAY .5 SECONDS \$

\$ WHEN ALL THREE SSME'S ARE BLOCK II \$
\$ (NMEABLK2 = ON) ET-LH2 ULLAGE \$
\$ PRESSURE LIMITS WILL CHANGE TO \$
\$ MIN = 46.1 AND MAX = 48.0 PER LCC ET-05 \$

\$ 3 OF 3 ULLAGE PRESS XDCRS REQD \$

706-06 CVFY LH2 ET-LH2 ULLAGE PRESS NO 1 T41P1700C1 40.9 44.1 PSIA INHB MENG ET-05
706-07 CVFY LH2 ET-LH2 ULLAGE PRESS NO 2 T41P1701C1 40.9 44.1 PSIA INHB MENG ET-05
706-08 CVFY LH2 ET-LH2 ULLAGE PRESS NO 3 T41P1702C1 40.9 44.1 PSIA INHB MENG ET-05

706-09 ST12 END G008

\$ G009 RIGHT ET BIPOD HEATER INST VALIDITY VFY \$
\$ THE FOLLOWING INSTRUMENTATION VALIDITY LOGIC WILL BE \$

\$ EXECUTED IF EITHER RIGHT BIPOD HEATER CURRENT #1 OR #2 \$
 \$ IS GREATER THAN 0.05 AMP. THIS MAY PREVENT A HOLD \$
 \$ CONDITION FOR A SINGLE INSTRUMENTATION FAILURE. \$

707-00 LABL INTG G009

707-01 VFY EPDC RIGHT BI-POD HEATER CURRENT #1 G56C0175A NOLO 0.05 AMP GTO ST1
 707-02 VFY EPDC RIGHT BIPOD HEATER CURRENT #2 G56C0185A NOLO 0.05 AMP GTO ST2
 707-03 GTO ST99

707-04 ST1 VFY EPDC RIGHT BIPOD HEATER CURRENT #2 G56C0185A NOLO 0.05 AMP INHB MSEQ GTO ST99
 707-05 VFY EPDC HRS BIPOD HTRS ALT PWR ENBL CMD #2 G56K0045ER ON GTO ST11
 707-06 VFY EPDC BIPOD HTR AC#1 ON IND G56X0065E OFF INHB MSEQ
 707-07 GTO ST99

707-08 ST11 VFY EPDC R. BIPOD HTR AC#2 ON IND G56X0125E OFF INHB MSEQ
 707-09 GTO ST99

707-10 ST2 VFY EPDC HRS BIPOD HTRS ALT PWR ENBL CMD #1 G56K0035ER ON GTO ST22
 707-11 VFY EPDC L. BIPOD HTR AC#1 ON IND G56X0115E OFF INHB MSEQ
 707-12 GTO ST99

707-13 ST22 VFY EPDC BIPOD HTRS AC#2 ON IND G56X0085E OFF INHB MSEQ

707-14 ST99 END G009

\$ G010 LEFT ET BIPOD HEATER INST VALIDITY VFY \$
 \$ THE FOLLOWING INSTRUMENTATION VALIDITY LOGIC WILL BE \$
 \$ EXECUTED IF EITHER LEFT BIPOD HEATER CURRENT #1 OR #2 \$
 \$ IS GREATER THAN 0.05 AMP. THIS MAY PREVENT A HOLD \$
 \$ CONDITION FOR A SINGLE INSTRUMENTATION FAILURE. \$

708-00 LABL INTG G010

708-01 VFY EPDC LEFT BI-POD HEATER CURRENT #1 G56C0155A NOLO 0.05 AMP GTO ST3
 708-02 VFY EPDC LEFT BIPOD HEATER CURRENT #2 G56C0165A NOLO 0.05 AMP GTO ST4
 708-03 GTO ST99

708-04 ST3 VFY EPDC LEFT BIPOD HEATER CURRENT #2 G56C0165A NOLO 0.05 AMP INHB MSEQ GTO ST99
 708-05 VFY EPDC HRS BIPOD HTRS ALT PWR ENBL CMD #2 G56K0045ER ON GTO ST33
 708-06 VFY EPDC R. BIPOD HTR AC#2 ON IND G56X0125E OFF INHB MSEQ
 708-07 GTO ST99

708-08 ST33 VFY EPDC BIPOD HTR AC#1 ON IND G56X0065E OFF INHB MSEQ
 708-09 GTO ST99

708-10 ST4	VFY	EPDC	HRS BIPOD HTRS ALT PWR ENBL CMD #1	G56K0035ER	ON				GTO ST44
708-11	VFY	EPDC	BIPOD HTRS AC#2 ON IND	G56X0085E	OFF				INHB MSEQ
708-12			GTO ST99						
708-13 ST44	VFY	EPDC	L. BIPOD HTR AC#1 ON IND	G56X0115E	OFF				INHB MSEQ
708-14 ST99	END	G010							
710-00	LABL	INTG	\$ G012 PASS FSM OR BFS GPC ERR \$						
				G012					
			\$ DPS ERROR DECODE \$						
			\$ THE LOW FIELD IDENTIFIES THE DECODE VALUE						
			IN DECIMAL, THE HIGH FIELD IN HEX.						
710-01	VFY	INTG	DPS LCC VIOLATION	N03IS168D				DISPLAY	
			\$ MCDS/MEDS BITE ERROR (PASS)	N03IS168D	2	X0002		INHB MSEQ \$	DPS-01,1A
			\$ GPC BITE (PASS) ERROR	N03IS168D	7	X0007		INHB MENG \$	DPS-05
			\$ LAST GPC ERRORCOUNT	N03IS168D	12	X000C		INHB MENG \$	DPS-09
			\$ MDM OUTPUT FAULT SUM	N03IS168D	23	X0017		INHB MENG \$	DPS-20
			\$ SUMWORD ICC FAULT SUM	N03IS168D	24	X0018		INHB MENG \$	DPS-21
			\$ PASS I/O ERROR LOG	N03IS168D	25	X0019		INHB MSEQ \$	DPS-22
			\$ ME SHUTDOWN SW CONTACT DISAGREE	N03IS168D	300	X012C		INHB MSEQ \$	SSME-36
			\$ GPC BITE (BFS) ERROR	N03IS168D	505	X01F9		INHB MENG \$	BFS-04
			\$ MCDS/MEDS BITE ERROR (BFS)	N03IS168D	511	X01FF		INHB MSEQ \$	BFS-10,10A
			\$ BFS I/O ERROR LOG	N03IS168D	513	X0201		INHB MSEQ \$	BFS-12
			\$ BFS I/O ERROR PCM (FSM)	N03IS168D	516	X0204		INHB MAPU \$	BFS-15
710-02	END	G012							
			\$ G013 TERMINATE LOX REPLENISH \$						
711-00	LABL	INTG		G013					
711-01	VFY	LO2	LOX FLIGHT MASS	N03IS008E	ON			INHB MPS4	S00FM0.043
711-02	VFY	INTG	MPS E1 LO2 INLET TEMP	V41T1131C1	NOLO	-287.7	DEGF	2 OF 3	MPS-24
711-03	VFY	INTG	MPS E2 LO2 INLET TEMP	V41T1231C1	NOLO	-287.7	DEGF	2 OF 3	MPS-24
711-04	VFY	INTG	MPS E3 LO2 INLET TEMP	V41T1331C1	NOLO	-287.7	DEGF	INHB MPS4	MPS-24
711-05	VFY	INTG	GLS-GO FOR T-9 GLS START	M009	ON			GTO ST10	
711-06	VFY	INTG	GLS-GO FOR OAA RETRACT	MOAA	ON			GTO ST10	
711-07	VFY	INTG	GLS-GO FOR APU START	MAPU	ON			GTO ST10	
711-08	VFY	INTG	GLS-GO FOR PURGE SEQ.4	MPS4	ON			GTO ST10	
711-09	VFY	INTG	GLS-GO ET LO2 PRE-PRESSURIZATION	MLOX	ON			GTO ST10	
711-10	VFY	INTG	GLS-GO FOR ET LH2 REPLN TERM	MLH2	ON			GTO ST10	
711-11	VFY	INTG	GLS-GO FOR AUTO SEQ START	MSEQ	ON			GTO ST10	
711-12	VFY	INTG	GLS-GO FOR SSME IGNITION	MENG	ON			GTO ST10	
711-13	VFY	INTG	GLS-GO FOR SRB IGNITION	MSRB	ON			GTO ST10	
711-14	VFY	INTG	GLS-NO LCC-1 FAILURES	LCC-1	ON			GTO ST10	
711-15	VFY	INTG	GLS-NO LCC-2 FAILURES	LCC-2	ON			GTO ST10	
711-16	VFY	INTG	GLS-NO LCC-3 FAILURES	LCC-3	ON			GTO ST10	
711-17	VFY	INTG	GLS-NO LCC-4 FAILURES	LCC-4	ON			GTO ST10	
711-18	VFY	INTG	MANUAL HOLD		ON			GTO ST10	
711-19	CMD	INTG	TERM LOX REPL SENT	N03IS510E	ON				

711-20 CMD LO2 GO FOR TERMINATE LOX REPLENISH N007INTGR ON S00FM0.043

\$\$ PROPELLANT S/W ISSUES LO2 I/B FILL VLV OP CMD OFF <V41K1503NL> \$\$
\$\$ PROPELLANT S/W ISSUES LO2 I/B FILL VLV CL CMD ON <V41K1512XL> \$\$
\$\$ PROPELLANT S/W ISSUES LO2 I/B FILL VLV OP CMD A OFF <V41K1501XL> \$\$
\$\$ PROPELLANT S/W ISSUES LO2 I/B FILL VLV OP CMD B OFF <V41K1502XL> \$\$

\$ DELAY 10 SECONDS \$

711-21 VFY LO2 LOX REPL TERMINATION IN PROGRESS N03IS010E ON INHB MPS4
711-23 END G013

711-24 ST10 MSG INTG SKIPPED LOX REPLENISH TERM
711-25 END G013

712-00 LABL INTG \$ G014 LOSS OF TACAN CHECK \$ G014
\$ IN THE FOLLOWING SEQUENCE, A MULTI-TIERED RELATIONSHIP \$
\$ EXISTS FOR THE MSMTS ASSOCIATED WITH THE TACAN CHECK. \$
\$ 1. TWO OF THREE TACANS ARE REQUIRED TO BE OPERATIONAL \$
\$ FOR LAUNCH. \$
\$ 2. A GIVEN TACAN IS CONSIDERED GOOD IF ALL THREE MSMTS \$
\$ ASSOCIATED WITH THAT TACAN ARE GOOD. \$

\$ TACAN 1 STATUS CHECK \$
\$ PERFORM NEXT 3 STEPS IF THE FEP FLAGS AN EXCEPTION \$
\$ ON ANY OF THE FOLLOWING TACAN 1 STATUSES \$
712-01 VFY NAVA TACAN NO 1 POWER STATUS V74X0071X1 ON 3 OF 3 CT-01
712-02 VFY NAVA TAC 1 RNG BLT-IN TST STATUS WD2B04 V74X1558B1 OFF 3 OF 3 CT-01
712-03 VFY NAVA TAC 1 RNG SUPR PULS PRESENT WD2B07 V74X1560B1 ON 3 OF 3 CT-01

\$ TACAN 2 STATUS CHECK \$
\$ PERFORM NEXT 3 STEPS IF THE FEP FLAGS AN EXCEPTION \$
\$ ON ANY OF THE FOLLOWING TACAN 2 STATUSES \$
712-05 VFY NAVA TACAN NO 2 POWER STATUS V74X0081X1 ON 3 OF 3 CT-01
712-06 VFY NAVA TAC 2 RNG BLT-IN TST STATUS WD2B04 V74X1658B1 OFF 3 OF 3 CT-01
712-07 VFY NAVA TAC 2 RNG SUPR PULS PRESENT WD2B07 V74X1660B1 ON 3 OF 3 CT-01

\$ TACAN 3 STATUS CHECK \$
\$ PERFORM NEXT 3 STEPS IF THE FEP FLAGS AN EXCEPTION \$
\$ ON ANY OF THE FOLLOWING TACAN 3 STATUSES \$
712-09 VFY NAVA TACAN NO 3 POWER STATUS V74X0091X1 ON 3 OF 3 CT-01
712-10 VFY NAVA TAC 3 RNG BLT-IN TST STATUS WD2B04 V74X1758B1 OFF 3 OF 3 CT-01
712-11 VFY NAVA TAC 3 RNG SUPR PULS PRESENT WD2B07 V74X1760B1 ON 3 OF 3 CT-01

\$ PERFORM NEXT 3 STEPS IF THE FEP FLAGS AN EXCEPTION \$
\$ OF ANY OF THE ABOVE MSMTS. 2 OF 3 TACANS MUST BE \$
\$ OPERATIONAL TO CONTINUE. \$
712-13 VFY NAVA TACAN 1 STATUS - GOOD ON 2 OF 3
712-14 VFY NAVA TACAN 2 STATUS - GOOD ON 2 OF 3
712-15 VFY NAVA TACAN 3 STATUS - GOOD ON LCC-3 CT-01

712-16 END G014

\$ G015 BACKUP CONSOLE CRASH \$
\$ THIS CPER DESCRIBES HOW A BACKUP CONSOLE FAILURE WILL BE
HANDLED. IF THE BACKUP CONSOLE IS CONFIGURED AS MAINLINE,
A HOLD RESULTS PRIOR TO T-9M AND CUTOFF AFTER. IF THE
CONSOLE IS CONFIGURED AS THE GLS BACKUP CONSOLE, A HOLD
WILL BE INITIATED PRIOR TO T-5M AND CUTOFF AFTER T-5M. \$

713-00 LABL INTG G015
713-01 VFY INTG GLS MAINLINE CONSOLE N03IS270D 2 GTO ST11

\$ MAINLINE RUNNING IN BACKUP CONSOLE \$
713-02 VFY INTG \$ MAINLINE HAS NOT PROGRESSED PAST M009 \$ GTO ST10
713-03 VFY INTG BACKUP TYPE II CONSOLE GO MODE SBKUPGO ON HOLD T-9
GTO ST13

\$ MAINLINE IS PAST M009 \$
713-04 ST10 VFY INTG BACKUP TYPE II CONSOLE GO MODE SBKUPGO ON EXIT
GTO ST13

\$ BACKUP IS NOT MAINLINE CONSOLE \$
713-05 ST11 VFY INTG CCM CONSOLE N03IS175D 3 GTO ST13

\$ INTERRUPT PROCESSORS RUNNING IN BACKUP \$
713-06 VFY INTG \$ MAINLINE HAS NOT PROGRESSED PAST MAPU \$ GTO ST12
713-07 VFY INTG BACKUP TYPE II CONSOLE GO MODE SBKUPGO ON INHB MSRB
GTO ST13

\$ MAINLINE PAST MAPU \$
713-08 ST12 VFY INTG BACKUP TYPE II CONSOLE GO MODE SBKUPGO ON EXIT
713-09 ST13 END G015

714-00 LABL INTG \$ G016 RUDDER PEDAL TRACKING CHECK \$
G016

\$ IN THE FOLLOWING SEQUENCES THE VALUE OF THE FIRST MEASUREMENT \$
\$ IS VERIFIED TO BE WITHIN THE SPECIFIED BAND, WHERE (N) IS THE \$
\$ VALUE OF THE SECOND MEASUREMENT. \$

\$ DELAY 2 SECONDS \$

714-01 VFY FCL LEFT RUDDER PEDAL CMD-A V72K1530C1 N+3.6 N-3.6 DEG INHB MSEQ GNC-03
V72K1531C1
714-02 VFY FCL LEFT RUDDER PEDAL CMD-B V72K1531C1 N+3.6 N-3.6 DEG INHB MSEQ GNC-03
V72K1532C1
714-03 VFY FCL LEFT RUDDER PEDAL CMD-C V72K1532C1 N+3.6 N-3.6 DEG INHB MSEQ GNC-03

\$ IN THE FOLLOWING SEQUENCE, MULTIPLE RELATIONSHIPS EXIST FOR THE \$
 \$ H2 BURN PIC VOLTS VERIFICATION. \$
 \$ 1. FOR EACH ENGINE, EITHER SYS A OR SYS B MUST BE GOOD TO CONT.\$
 \$ 2. FAILURE OF ALL SYS A FDS OR ALL SYS B FDS WILL RESULT IN A \$
 \$ HOLD/CUTOFF CONDITION. \$

\$ PERFORM THE FOLLOWING 2 STEPS IF THE FEP FLAGS AN \$
 \$ EXCEPTION ON EITHER OF THE H2 BURN ENG 1 CAP VOLTS \$

718-01	CVFY EPDC	H2-BURN SYS A ENG #1 CAP VOLTS	GMSV5311A	35.7	NOHI	V	1 OF 2	GSE-09
718-02	CVFY EPDC	H2 BURN SYS B ENG #1 CAP VOLTS	GMSV6311A	35.7	NOHI	V	INHB MENG	GSE-09

\$ PERFORM THE FOLLOWING 2 STEPS IF THE FEP FLAGS AN \$
 \$ EXCEPTION ON EITHER OF THE H2 BURN ENG 2 CAP VOLTS \$

718-03	CVFY EPDC	H2-BURN SYS A ENG 2 CAP VOLTS	GMSV5309A	35.7	NOHI	V	1 OF 2	GSE-09
718-04	CVFY EPDC	H2-BURN SYS B ENG 2 CAP VOLTS	GMSV6309A	35.7	NOHI	V	INHB MENG	GSE-09

\$ PERFORM THE FOLLOWING 2 STEPS IF THE FEP FLAGS AN \$
 \$ EXCEPTION ON EITHER OF THE H2 BURN ENG 3 CAP VOLTS \$

718-05	CVFY EPDC	H2-BURN SYS A ENG 3 CAP VOLTS	GMSV5310A	35.7	NOHI	V	1 OF 2	GSE-09
718-06	CVFY EPDC	H2 BURN SYS B ENG 3 CAP VOLTS	GMSV6310A	35.7	NOHI	V	INHB MENG	GSE-09

\$ PERFORM THE FOLLOWING 3 STEPS IF THE FEP FLAGS AN \$
 \$ EXCEPTION ON ANY OF THE H2 BURN ENG SYS A CAP VOLTS \$

718-07	CVFY EPDC	H2-BURN SYS A ENG #1 CAP VOLTS	GMSV5311A	35.7	NOHI	V	1 OF 3	GSE-09
718-08	CVFY EPDC	H2-BURN SYS A ENG 2 CAP VOLTS	GMSV5309A	35.7	NOHI	V	1 OF 3	GSE-09
718-09	CVFY EPDC	H2-BURN SYS A ENG 3 CAP VOLTS	GMSV5310A	35.7	NOHI	V	INHB MENG	GSE-09

\$ PERFORM THE FOLLOWING 3 STEPS IF THE FEP FLAGS AN \$
 \$ EXCEPTION ON ANY OF THE H2 BURN ENG SYS B CAP VOLTS \$

718-10	CVFY EPDC	H2-BURN SYS B ENG #1 CAP VOLTS	GMSV6311A	35.7	NOHI	V	1 OF 3	GSE-09
718-11	CVFY EPDC	H2-BURN SYS B ENG 2 CAP VOLTS	GMSV6309A	35.7	NOHI	V	1 OF 3	GSE-09
718-12	CVFY EPDC	H2-BURN SYS B ENG 3 CAP VOLTS	GMSV6310A	35.7	NOHI	V	INHB MENG	GSE-09

718-13 END G020

800-21	IGL	FCL	L	OUTBD	ELEVON	SEC	DELTA	PRESS	1	V58P0862A1	GNC-24	
800-22	IGL	FCL	L	OUTBD	ELEVON	SEC	DELTA	PRESS	2	V58P0863A1	GNC-24	
800-23	IGL	FCL	L	OUTBD	ELEVON	SEC	DELTA	PRESS	3	V58P0864A1	GNC-24	
800-24	IGL	FCL	L	OUTBD	ELEVON	SEC	DELTA	PRESS	4	V58P0865A1	GNC-24	
800-25	IGL	FCL	R	INBD	ELEVON	PRI	DELTA	PRESS	1	V58P0916C1	GNC-23	
800-26	IGL	FCL	R	INBD	ELEVON	PRI	DELTA	PRESS	2	V58P0917C1	GNC-23	
800-27	IGL	FCL	R	INBD	ELEVON	PRI	DELTA	PRESS	3	V58P0918C1	GNC-23	
800-28	IGL	FCL	R	INBD	ELEVON	PRI	DELTA	PRESS	4	V58P0919C1	GNC-23	
800-29	IGL	FCL	R	OUTBD	ELEVON	PRI	DELTA	PRESS	1	V58P0966C1	GNC-23	
800-30	IGL	FCL	R	OUTBD	ELEVON	PRI	DELTA	PRESS	2	V58P0967C1	GNC-23	
800-31	IGL	FCL	R	OUTBD	ELEVON	PRI	DELTA	PRESS	3	V58P0968C1	GNC-23	
800-32	IGL	FCL	R	OUTBD	ELEVON	PRI	DELTA	PRESS	4	V58P0969C1	GNC-23	
800-33	IGL	FCL	L	INBD	ELEVON	PRI	DELTA	PRESS	1	V58P0816C1	GNC-23	
800-34	IGL	FCL	L	INBD	ELEVON	PRI	DELTA	PRESS	2	V58P0817C1	GNC-23	
800-35	IGL	FCL	L	INBD	ELEVON	PRI	DELTA	PRESS	3	V58P0818C1	GNC-23	
800-36	IGL	FCL	L	INBD	ELEVON	PRI	DELTA	PRESS	4	V58P0819C1	GNC-23	
800-37	IGL	FCL	L	OUTBD	ELEVON	PRI	DELTA	PRESS	1	V58P0866C1	GNC-23	
800-38	IGL	FCL	L	OUTBD	ELEVON	PRI	DELTA	PRESS	2	V58P0867C1	GNC-23	
800-39	IGL	FCL	L	OUTBD	ELEVON	PRI	DELTA	PRESS	3	V58P0868C1	GNC-23	
800-40	IGL	FCL	L	OUTBD	ELEVON	PRI	DELTA	PRESS	4	V58P0869C1	GNC-23	
800-41	IGL	FCL		BODY	FLAP	ENABLE	1	OUTPUT		V79X3201E1	GNC-29	S00FM0.290
800-42	IGL	FCL		BODY	FLAP	UP	1	OUTPUT		V79X3202E1	GNC-29	S00FM0.290
800-43	IGL	FCL		BODY	FLAP	DOWN	1	OUTPUT		V79X3203E1	GNC-29	S00FM0.290
800-44	IGL	FCL		BODY	FLAP	ENABLE	2	OUTPUT		V79X3204E1	GNC-29	S00FM0.290
800-45	IGL	FCL		BODY	FLAP	UP	2	OUTPUT		V79X3205E1	GNC-29	S00FM0.290
800-46	IGL	FCL		BODY	FLAP	DOWN	2	OUTPUT		V79X3206E1	GNC-29	S00FM0.290
800-47	IGL	FCL		BODY	FLAP	ENABLE	3	OUTPUT		V79X3207E1	GNC-29	S00FM0.290
800-48	IGL	FCL		BODY	FLAP	UP	3	OUTPUT		V79X3208E1	GNC-29	S00FM0.290
800-49	IGL	FCL		BODY	FLAP	DOWN	3	OUTPUT		V79X3209E1	GNC-29	S00FM0.290
800-50	IGL	HYD		HYDR	SYS	1	SUPPLY	PRESS	B	V58P0115A1	HYD-02	
800-51	IGL	HYD		HYDR	SYS	1	SUPPLY	PRESS	C	V58P0116C1	HYD-02	
800-52	IGL	HYD		HYDR	SYS	2	SUPPLY	PRESS	B	V58P0215A1	HYD-02	
800-53	IGL	HYD		HYDR	SYS	2	SUPPLY	PRESS	C	V58P0216C1	HYD-02	
800-54	IGL	HYD		HYDR	SYS	3	SUPPLY	PRESS	B	V58P0315A1	HYD-02	
800-55	IGL	HYD		HYDR	SYS	3	SUPPLY	PRESS	C	V58P0316C1	HYD-02	
800-56	IGL	FCL	L	INBD	ELEVON	ACTR	CHAN	1	POSN	V58H0802A1	GNC-22	
800-57	IGL	FCL	L	INBD	ELEVON	ACTR	CHAN	2	POSN	V58H0803A1	GNC-22	
800-58	IGL	FCL	L	INBD	ELEVON	ACTR	CHAN	3	POSN	V58H0804A1	GNC-22	
800-59	IGL	FCL	L	INBD	ELEVON	ACTR	CHAN	4	POSN	V58H0805A1	GNC-22	
800-60	IGL	FCL	L	OUTBD	ELEVON	ACTR	CHAN	1	POSN	V58H0852A1	GNC-22	
800-61	IGL	FCL	L	OUTBD	ELEVON	ACTR	CHAN	2	POSN	V58H0853A1	GNC-22	
800-62	IGL	FCL	L	OUTBD	ELEVON	ACTR	CHAN	3	POSN	V58H0854A1	GNC-22	
800-63	IGL	FCL	L	OUTBD	ELEVON	ACTR	CHAN	4	POSN	V58H0855A1	GNC-22	
800-64	IGL	FCL	R	INBD	ELEVON	ACTR	CHAN	1	POSN	V58H0902A1	GNC-22	
800-65	IGL	FCL	R	INBD	ELEVON	ACTR	CHAN	2	POSN	V58H0903A1	GNC-22	
800-66	IGL	FCL	R	INBD	ELEVON	ACTR	CHAN	3	POSN	V58H0904A1	GNC-22	
800-67	IGL	FCL	R	INBD	ELEVON	ACTR	CHAN	4	POSN	V58H0905A1	GNC-22	
800-68	IGL	FCL	R	OUTBD	ELEVON	ACTR	CHAN	1	POSN	V58H0952A1	GNC-22	
800-69	IGL	FCL	R	OUTBD	ELEVON	ACTR	CHAN	2	POSN	V58H0953A1	GNC-22	
800-70	IGL	FCL	R	OUTBD	ELEVON	ACTR	CHAN	3	POSN	V58H0954A1	GNC-22	
800-71	IGL	FCL	R	OUTBD	ELEVON	ACTR	CHAN	4	POSN	V58H0955A1	GNC-22	

800-72	IGL	FCL	RUDDER ACTR CHAN 1 POSN	V57H0150A1					GNC-26
800-73	IGL	FCL	RUDDER ACTR CHAN 2 POSN	V57H0151A1					GNC-26
800-74	IGL	FCL	RUDDER ACTR CHAN 3 POSN	V57H0152A1					GNC-26
800-75	IGL	FCL	RUDDER ACTR CHAN 4 POSN	V57H0153A1					GNC-26
800-76	IGL	FCL	BODY FLAP POSN FDBK-1	V57H0065C1					GNC-30 S00FM0.280
800-77	IGL	FCL	BODY FLAP POSN FDBK-2	V57H0066C1					GNC-30 S00FM0.280
800-78	IGL	FCL	BODY FLAP POSN FDBK-3	V57H0067C1					GNC-30 S00FM0.280
800-79	IGL	FCL	BODY FLAP POSN FDBK-4	V57H0068C1					GNC-30 S00FM0.280

\$ INITIATE AEROSURFACE PROFILE \$

801-00	CMD	FCL	INITIATE AERO-SURFACE DRIVE CHEC	CMD-LS	ON					S00FM0.270
801-01	COM	INTG	GLS TO C11 PROFILE DATA COMM	ND80INTGR	GNC	GMT				

\$ READ SPEEDBRAKE ACTUATOR AND BODYFLAP POSITION FEEDBACK CHANNELS 1 THRU 4 \$
 \$ FOR USE AS NULL (N) VALUE DURING AEROSURFACE PROFILE EVALUATION \$

\$ AERO-SURFACE MOVEMENT FROM INITIAL POSITION - 4 SECONDS INTO PROFILE \$

802-00	VFY	FCL	L INBD ELEVON ACTR CHAN 1 POSN	V58H0802A1	9.2	12.2	DEG	INHB MSEQ	GNC-25
802-01	VFY	FCL	L INBD ELEVON ACTR CHAN 2 POSN	V58H0803A1	9.2	12.2	DEG	INHB MSEQ	GNC-25
802-02	VFY	FCL	L INBD ELEVON ACTR CHAN 3 POSN	V58H0804A1	9.2	12.2	DEG	INHB MSEQ	GNC-25
802-03	VFY	FCL	L INBD ELEVON ACTR CHAN 4 POSN	V58H0805A1	9.2	12.2	DEG	INHB MSEQ	GNC-25
802-04	VFY	FCL	L OUTBD ELEVON ACTR CHAN 1 POSN	V58H0852A1	9.2	12.2	DEG	INHB MSEQ	GNC-25
802-05	VFY	FCL	L OUTBD ELEVON ACTR CHAN 2 POSN	V58H0853A1	9.2	12.2	DEG	INHB MSEQ	GNC-25
802-06	VFY	FCL	L OUTBD ELEVON ACTR CHAN 3 POSN	V58H0854A1	9.2	12.2	DEG	INHB MSEQ	GNC-25
802-07	VFY	FCL	L OUTBD ELEVON ACTR CHAN 4 POSN	V58H0855A1	9.2	12.2	DEG	INHB MSEQ	GNC-25
802-08	VFY	FCL	R INBD ELEVON ACTR CHAN 1 POSN	V58H0902A1	9.2	12.2	DEG	INHB MSEQ	GNC-25
802-09	VFY	FCL	R INBD ELEVON ACTR CHAN 2 POSN	V58H0903A1	9.2	12.2	DEG	INHB MSEQ	GNC-25
802-10	VFY	FCL	R INBD ELEVON ACTR CHAN 3 POSN	V58H0904A1	9.2	12.2	DEG	INHB MSEQ	GNC-25
802-11	VFY	FCL	R INBD ELEVON ACTR CHAN 4 POSN	V58H0905A1	9.2	12.2	DEG	INHB MSEQ	GNC-25
802-12	VFY	FCL	R OUTBD ELEVON ACTR CHAN 1 POSN	V58H0952A1	9.2	12.2	DEG	INHB MSEQ	GNC-25
802-13	VFY	FCL	R OUTBD ELEVON ACTR CHAN 2 POSN	V58H0953A1	9.2	12.2	DEG	INHB MSEQ	GNC-25
802-14	VFY	FCL	R OUTBD ELEVON ACTR CHAN 3 POSN	V58H0954A1	9.2	12.2	DEG	INHB MSEQ	GNC-25
802-15	VFY	FCL	R OUTBD ELEVON ACTR CHAN 4 POSN	V58H0955A1	9.2	12.2	DEG	INHB MSEQ	GNC-25
802-16	VFY	FCL	RUDDER ACTR CHAN 1 POSN	V57H0150A1	12.5	15.5	DEG	INHB MSEQ	GNC-28
802-17	VFY	FCL	RUDDER ACTR CHAN 2 POSN	V57H0151A1	12.5	15.5	DEG	INHB MSEQ	GNC-28
802-18	VFY	FCL	RUDDER ACTR CHAN 3 POSN	V57H0152A1	12.5	15.5	DEG	INHB MSEQ	GNC-28
802-19	VFY	FCL	RUDDER ACTR CHAN 4 POSN	V57H0153A1	12.5	15.5	DEG	INHB MSEQ	GNC-28
802-20	VFY	FCL	SPEED BRAKE ACTR CHAN 1 POSN	V57H0250A1	N+1	N+3	DEG	INHB MSEQ	GNC-28
802-21	VFY	FCL	SPEED BRAKE ACTR CHAN 2 POSN	V57H0251A1	N+1	N+3	DEG	INHB MSEQ	GNC-28
802-22	VFY	FCL	SPEED BRAKE ACTR CHAN 3 POSN	V57H0252A1	N+1	N+3	DEG	INHB MSEQ	GNC-28
802-23	VFY	FCL	SPEED BRAKE ACTR CHAN 4 POSN	V57H0253A1	N+1	N+3	DEG	INHB MSEQ	GNC-28
802-24	VFY	FCL	BODY FLAP POSN FDBK-1	V57H0065C1	N+1.5	N+4.5	DEG	INHB MSEQ	GNC-31
802-25	VFY	FCL	BODY FLAP POSN FDBK-2	V57H0066C1	N+1.5	N+4.5	DEG	INHB MSEQ	GNC-31
802-26	VFY	FCL	BODY FLAP POSN FDBK-3	V57H0067C1	N+1.5	N+4.5	DEG	INHB MSEQ	GNC-31
802-27	VFY	FCL	BODY FLAP POSN FDBK-4	V57H0068C1	N+1.5	N+4.5	DEG	INHB MSEQ	GNC-31

\$ AERO-SURFACE MOVEMENT - FROM INITIAL POSITION - 14 SEC INTO PROFILE \$

803-00	VFY	FCL	L INBD ELEVON ACTR CHAN 1 POSN	V58H0802A1	-11.3	-8.3	DEG	INHB MSEQ	GNC-25
803-01	VFY	FCL	L INBD ELEVON ACTR CHAN 2 POSN	V58H0803A1	-11.3	-8.3	DEG	INHB MSEQ	GNC-25
803-02	VFY	FCL	L INBD ELEVON ACTR CHAN 3 POSN	V58H0804A1	-11.3	-8.3	DEG	INHB MSEQ	GNC-25

803-03	VFY	FCL	L	INBD	ELEVON	ACTR	CHAN	4	POSN	V58H0805A1	-11.3	-8.3	DEG	INHB	MSEQ	GNC-25
803-04	VFY	FCL	L	OUTBD	ELEVON	ACTR	CHAN	1	POSN	V58H0852A1	-11.3	-8.3	DEG	INHB	MSEQ	GNC-25
803-05	VFY	FCL	L	OUTBD	ELEVON	ACTR	CHAN	2	POSN	V58H0853A1	-11.3	-8.3	DEG	INHB	MSEQ	GNC-25
803-06	VFY	FCL	L	OUTBD	ELEVON	ACTR	CHAN	3	POSN	V58H0854A1	-11.3	-8.3	DEG	INHB	MSEQ	GNC-25
803-07	VFY	FCL	L	OUTBD	ELEVON	ACTR	CHAN	4	POSN	V58H0855A1	-11.3	-8.3	DEG	INHB	MSEQ	GNC-25
803-08	VFY	FCL	R	INBD	ELEVON	ACTR	CHAN	1	POSN	V58H0902A1	-11.3	-8.3	DEG	INHB	MSEQ	GNC-25
803-09	VFY	FCL	R	INBD	ELEVON	ACTR	CHAN	2	POSN	V58H0903A1	-11.3	-8.3	DEG	INHB	MSEQ	GNC-25
803-10	VFY	FCL	R	INBD	ELEVON	ACTR	CHAN	3	POSN	V58H0904A1	-11.3	-8.3	DEG	INHB	MSEQ	GNC-25
803-11	VFY	FCL	R	INBD	ELEVON	ACTR	CHAN	4	POSN	V58H0905A1	-11.3	-8.3	DEG	INHB	MSEQ	GNC-25
803-12	VFY	FCL	R	OUTBD	ELEVON	ACTR	CHAN	1	POSN	V58H0952A1	-11.3	-8.3	DEG	INHB	MSEQ	GNC-25
803-13	VFY	FCL	R	OUTBD	ELEVON	ACTR	CHAN	2	POSN	V58H0953A1	-11.3	-8.3	DEG	INHB	MSEQ	GNC-25
803-14	VFY	FCL	R	OUTBD	ELEVON	ACTR	CHAN	3	POSN	V58H0954A1	-11.3	-8.3	DEG	INHB	MSEQ	GNC-25
803-15	VFY	FCL	R	OUTBD	ELEVON	ACTR	CHAN	4	POSN	V58H0955A1	-11.3	-8.3	DEG	INHB	MSEQ	GNC-25
803-16	VFY	FCL		RUDDER	ACTR	CHAN	1	POSN	V57H0150A1	-15.5	-12.5	DEG	INHB	MSEQ	GNC-28	
803-17	VFY	FCL		RUDDER	ACTR	CHAN	2	POSN	V57H0151A1	-15.5	-12.5	DEG	INHB	MSEQ	GNC-28	
803-18	VFY	FCL		RUDDER	ACTR	CHAN	3	POSN	V57H0152A1	-15.5	-12.5	DEG	INHB	MSEQ	GNC-28	
803-19	VFY	FCL		RUDDER	ACTR	CHAN	4	POSN	V57H0153A1	-15.5	-12.5	DEG	INHB	MSEQ	GNC-28	
803-20	VFY	FCL		SPEED	BRAKE	ACTR	CHAN	1	POSN	V57H0250A1	N-3	N-1	DEG	INHB	MSEQ	GNC-28
803-21	VFY	FCL		SPEED	BRAKE	ACTR	CHAN	2	POSN	V57H0251A1	N-3	N-1	DEG	INHB	MSEQ	GNC-28
803-22	VFY	FCL		SPEED	BRAKE	ACTR	CHAN	3	POSN	V57H0252A1	N-3	N-1	DEG	INHB	MSEQ	GNC-28
803-23	VFY	FCL		SPEED	BRAKE	ACTR	CHAN	4	POSN	V57H0253A1	N-3	N-1	DEG	INHB	MSEQ	GNC-28
803-24	VFY	FCL		BODY	FLAP	POSN	FDBK-1			V57H0065C1	N-4.5	N-1.5	DEG	INHB	MSEQ	GNC-31
803-25	VFY	FCL		BODY	FLAP	POSN	FDBK-2			V57H0066C1	N-4.5	N-1.5	DEG	INHB	MSEQ	GNC-31
803-26	VFY	FCL		BODY	FLAP	POSN	FDBK-3			V57H0067C1	N-4.5	N-1.5	DEG	INHB	MSEQ	GNC-31
803-27	VFY	FCL		BODY	FLAP	POSN	FDBK-4			V57H0068C1	N-4.5	N-1.5	DEG	INHB	MSEQ	GNC-31

\$ AERO-SURFACE NULL CHECK AT 19 SECONDS INTO PROFILE \$

804-00	VFY	FCL	L	INBD	ELEVON	ACTR	CHAN	1	POSN	V58H0802A1	-0.52	1.18	DEG	INHB	MSEQ	GNC-22
804-01	VFY	FCL	L	INBD	ELEVON	ACTR	CHAN	2	POSN	V58H0803A1	-0.52	1.18	DEG	INHB	MSEQ	GNC-22
804-02	VFY	FCL	L	INBD	ELEVON	ACTR	CHAN	3	POSN	V58H0804A1	-0.52	1.18	DEG	INHB	MSEQ	GNC-22
804-03	VFY	FCL	L	INBD	ELEVON	ACTR	CHAN	4	POSN	V58H0805A1	-0.52	1.18	DEG	INHB	MSEQ	GNC-22
804-04	VFY	FCL	L	OUTBD	ELEVON	ACTR	CHAN	1	POSN	V58H0852A1	-0.36	1.34	DEG	INHB	MSEQ	GNC-22
804-05	VFY	FCL	L	OUTBD	ELEVON	ACTR	CHAN	2	POSN	V58H0853A1	-0.36	1.34	DEG	INHB	MSEQ	GNC-22
804-06	VFY	FCL	L	OUTBD	ELEVON	ACTR	CHAN	3	POSN	V58H0854A1	-0.36	1.34	DEG	INHB	MSEQ	GNC-22
804-07	VFY	FCL	L	OUTBD	ELEVON	ACTR	CHAN	4	POSN	V58H0855A1	-0.36	1.34	DEG	INHB	MSEQ	GNC-22
804-08	VFY	FCL	R	INBD	ELEVON	ACTR	CHAN	1	POSN	V58H0902A1	-0.52	1.18	DEG	INHB	MSEQ	GNC-22
804-09	VFY	FCL	R	INBD	ELEVON	ACTR	CHAN	2	POSN	V58H0903A1	-0.52	1.18	DEG	INHB	MSEQ	GNC-22
804-10	VFY	FCL	R	INBD	ELEVON	ACTR	CHAN	3	POSN	V58H0904A1	-0.52	1.18	DEG	INHB	MSEQ	GNC-22
804-11	VFY	FCL	R	INBD	ELEVON	ACTR	CHAN	4	POSN	V58H0905A1	-0.52	1.18	DEG	INHB	MSEQ	GNC-22
804-12	VFY	FCL	R	OUTBD	ELEVON	ACTR	CHAN	1	POSN	V58H0952A1	-0.36	1.34	DEG	INHB	MSEQ	GNC-22
804-13	VFY	FCL	R	OUTBD	ELEVON	ACTR	CHAN	2	POSN	V58H0953A1	-0.36	1.34	DEG	INHB	MSEQ	GNC-22
804-14	VFY	FCL	R	OUTBD	ELEVON	ACTR	CHAN	3	POSN	V58H0954A1	-0.36	1.34	DEG	INHB	MSEQ	GNC-22
804-15	VFY	FCL	R	OUTBD	ELEVON	ACTR	CHAN	4	POSN	V58H0955A1	-0.36	1.34	DEG	INHB	MSEQ	GNC-22
804-16	VFY	FCL		RUDDER	ACTR	CHAN	1	POSN	V57H0150A1	-0.95	0.95	DEG	INHB	MSEQ	GNC-26	
804-17	VFY	FCL		RUDDER	ACTR	CHAN	2	POSN	V57H0151A1	-0.95	0.95	DEG	INHB	MSEQ	GNC-26	
804-18	VFY	FCL		RUDDER	ACTR	CHAN	3	POSN	V57H0152A1	-0.95	0.95	DEG	INHB	MSEQ	GNC-26	
804-19	VFY	FCL		RUDDER	ACTR	CHAN	4	POSN	V57H0153A1	-0.95	0.95	DEG	INHB	MSEQ	GNC-26	
804-20	VFY	FCL		SPEED	BRAKE	ACTR	CHAN	1	POSN	V57H0250A1	2.45	7.55	DEG	INHB	MSEQ	GNC-26
804-21	VFY	FCL		SPEED	BRAKE	ACTR	CHAN	2	POSN	V57H0251A1	2.45	7.55	DEG	INHB	MSEQ	GNC-26
804-22	VFY	FCL		SPEED	BRAKE	ACTR	CHAN	3	POSN	V57H0252A1	2.45	7.55	DEG	INHB	MSEQ	GNC-26

804-23	VFY FCL	SPEED BRAKE ACTR CHAN 4 POSN	V57H0253A1	2.45	7.55	DEG	INHB MSEQ	GNC-26
804-24	VFY FCL	BODY FLAP POSN FDBK-1	V57H0065C1	-1.85	1.85	DEG	INHB MSEQ	GNC-30
804-25	VFY FCL	BODY FLAP POSN FDBK-2	V57H0066C1	-1.85	1.85	DEG	INHB MSEQ	GNC-30
804-26	VFY FCL	BODY FLAP POSN FDBK-3	V57H0067C1	-1.85	1.85	DEG	INHB MSEQ	GNC-30
804-27	VFY FCL	BODY FLAP POSN FDBK-4	V57H0068C1	-1.85	1.85	DEG	INHB MSEQ	GNC-30

\$ PERFORM THE FOLLOWING CVFY ACTIVATIONS FOR \$
 \$ A CONTINGENCY CALL ONLY. \$

\$ ONLY ACTIVATE THE FOLLOWING CVFY'S IF MAINLINE HAD \$
 \$ PROGRESSED AT LEAST TO THE T-3:20 TIME CHECK. \$

804-28	VFY INTG	COUNTDOWN TIME	CDT	-03:20	NOHI	CDT	GTO ST01	
804-29	CVFY FCL	RUDDER DELTA PRESS 1	V57P0160A1	-850	850	PSID	INHB MSEQ	GNC-27
804-30	CVFY FCL	RUDDER DELTA PRESS 2	V57P0161A1	-850	850	PSID	INHB MSEQ	GNC-27
804-31	CVFY FCL	RUDDER DELTA PRESS 3	V57P0162A1	-850	850	PSID	INHB MSEQ	GNC-27
804-32	CVFY FCL	RUDDER DELTA PRESS 4	V57P0163A1	-850	850	PSID	INHB MSEQ	GNC-27
804-33	CVFY FCL	SPEED BRAKE DELTA PRESS 1	V57P0260A1	-850	850	PSID	INHB MSEQ	GNC-27
804-34	CVFY FCL	SPEED BRAKE DELTA PRESS 2	V57P0261A1	-850	850	PSID	INHB MSEQ	GNC-27
804-35	CVFY FCL	SPEED BRAKE DELTA PRESS 3	V57P0262A1	-850	850	PSID	INHB MSEQ	GNC-27
804-36	CVFY FCL	SPEED BRAKE DELTA PRESS 4	V57P0263A1	-850	850	PSID	INHB MSEQ	GNC-27
804-37	CVFY FCL	R INBD ELEVON SEC DELTA PRESS 1	V58P0912A1	-850	850	PSID	INHB MSEQ	GNC-24
804-38	CVFY FCL	R INBD ELEVON SEC DELTA PRESS 2	V58P0913A1	-850	850	PSID	INHB MSEQ	GNC-24
804-39	CVFY FCL	R INBD ELEVON SEC DELTA PRESS 3	V58P0914A1	-850	850	PSID	INHB MSEQ	GNC-24
804-40	CVFY FCL	R INBD ELEVON SEC DELTA PRESS 4	V58P0915A1	-850	850	PSID	INHB MSEQ	GNC-24
804-41	CVFY FCL	R OUTBD ELEVON SEC DELTA PRESS 1	V58P0962A1	-850	850	PSID	INHB MSEQ	GNC-24
804-42	CVFY FCL	R OUTBD ELEVON SEC DELTA PRESS 2	V58P0963A1	-850	850	PSID	INHB MSEQ	GNC-24
804-43	CVFY FCL	R OUTBD ELEVON SEC DELTA PRESS 3	V58P0964A1	-850	850	PSID	INHB MSEQ	GNC-24
804-44	CVFY FCL	R OUTBD ELEVON SEC DELTA PRESS 4	V58P0965A1	-850	850	PSID	INHB MSEQ	GNC-24
804-45	CVFY FCL	L INBD ELEVON SEC DELTA PRESS 1	V58P0812A1	-850	850	PSID	INHB MSEQ	GNC-24
804-46	CVFY FCL	L INBD ELEVON SEC DELTA PRESS 2	V58P0813A1	-850	850	PSID	INHB MSEQ	GNC-24
804-47	CVFY FCL	L INBD ELEVON SEC DELTA PRESS 3	V58P0814A1	-850	850	PSID	INHB MSEQ	GNC-24
804-48	CVFY FCL	L INBD ELEVON SEC DELTA PRESS 4	V58P0815A1	-850	850	PSID	INHB MSEQ	GNC-24
804-49	CVFY FCL	L OUTBD ELEVON SEC DELTA PRESS 1	V58P0862A1	-850	850	PSID	INHB MSEQ	GNC-24
804-50	CVFY FCL	L OUTBD ELEVON SEC DELTA PRESS 2	V58P0863A1	-850	850	PSID	INHB MSEQ	GNC-24
804-51	CVFY FCL	L OUTBD ELEVON SEC DELTA PRESS 3	V58P0864A1	-850	850	PSID	INHB MSEQ	GNC-24
804-52	CVFY FCL	L OUTBD ELEVON SEC DELTA PRESS 4	V58P0865A1	-850	850	PSID	INHB MSEQ	GNC-24
804-53	CVFY FCL	R INBD ELEVON PRI DELTA PRESS 1	V58P0916C1	-230	230	PSID	INHB MSEQ	GNC-23
804-54	CVFY FCL	R INBD ELEVON PRI DELTA PRESS 2	V58P0917C1	-230	230	PSID	INHB MSEQ	GNC-23
804-55	CVFY FCL	R INBD ELEVON PRI DELTA PRESS 3	V58P0918C1	-230	230	PSID	INHB MSEQ	GNC-23
804-56	CVFY FCL	R INBD ELEVON PRI DELTA PRESS 4	V58P0919C1	-230	230	PSID	INHB MSEQ	GNC-23
804-57	CVFY FCL	R OUTBD ELEVON PRI DELTA PRESS 1	V58P0966C1	-230	230	PSID	INHB MSEQ	GNC-23
804-58	CVFY FCL	R OUTBD ELEVON PRI DELTA PRESS 2	V58P0967C1	-230	230	PSID	INHB MSEQ	GNC-23
804-59	CVFY FCL	R OUTBD ELEVON PRI DELTA PRESS 3	V58P0968C1	-230	230	PSID	INHB MSEQ	GNC-23
804-60	CVFY FCL	R OUTBD ELEVON PRI DELTA PRESS 4	V58P0969C1	-230	230	PSID	INHB MSEQ	GNC-23
804-61	CVFY FCL	L INBD ELEVON PRI DELTA PRESS 1	V58P0816C1	-230	230	PSID	INHB MSEQ	GNC-23
804-62	CVFY FCL	L INBD ELEVON PRI DELTA PRESS 2	V58P0817C1	-230	230	PSID	INHB MSEQ	GNC-23
804-63	CVFY FCL	L INBD ELEVON PRI DELTA PRESS 3	V58P0818C1	-230	230	PSID	INHB MSEQ	GNC-23
804-64	CVFY FCL	L INBD ELEVON PRI DELTA PRESS 4	V58P0819C1	-230	230	PSID	INHB MSEQ	GNC-23
804-65	CVFY FCL	L OUTBD ELEVON PRI DELTA PRESS 1	V58P0866C1	-230	230	PSID	INHB MSEQ	GNC-23
804-66	CVFY FCL	L OUTBD ELEVON PRI DELTA PRESS 2	V58P0867C1	-230	230	PSID	INHB MSEQ	GNC-23
804-67	CVFY FCL	L OUTBD ELEVON PRI DELTA PRESS 3	V58P0868C1	-230	230	PSID	INHB MSEQ	GNC-23

804-68	CVFY FCL	L OUTBD ELEVON PRI DELTA PRESS 4	V58P0869C1	-230	230	PSID	INHB MSEQ	GNC-23	
804-69	CVFY FCL	BODY FLAP ENABLE 1 OUTPUT	V79X3201E1	OFF			INHB MSEQ	GNC-29	S00FM0.290
804-70	CVFY FCL	BODY FLAP UP 1 OUTPUT	V79X3202E1	OFF			INHB MSEQ	GNC-29	S00FM0.290
804-71	CVFY FCL	BODY FLAP DOWN 1 OUTPUT	V79X3203E1	OFF			INHB MSEQ	GNC-29	S00FM0.290
804-72	CVFY FCL	BODY FLAP ENABLE 2 OUTPUT	V79X3204E1	OFF			INHB MSEQ	GNC-29	S00FM0.290
804-73	CVFY FCL	BODY FLAP UP 2 OUTPUT	V79X3205E1	OFF			INHB MSEQ	GNC-29	S00FM0.290
804-74	CVFY FCL	BODY FLAP DOWN 2 OUTPUT	V79X3206E1	OFF			INHB MSEQ	GNC-29	S00FM0.290
804-75	CVFY FCL	BODY FLAP ENABLE 3 OUTPUT	V79X3207E1	OFF			INHB MSEQ	GNC-29	S00FM0.290
804-76	CVFY FCL	BODY FLAP UP 3 OUTPUT	V79X3208E1	OFF			INHB MSEQ	GNC-29	S00FM0.290
804-77	CVFY FCL	BODY FLAP DOWN 3 OUTPUT	V79X3209E1	OFF			INHB MSEQ	GNC-29	S00FM0.290

\$ ONLY ACTIVATE THE FOLLOWING CVFY'S IF MAINLINE HAD \$
 \$ PROGRESSED AT LEAST TO THE T-3:03 TIME CHECK. \$

804-78	VFY INTG	COUNTDOWN TIME	CDT	-03:03	NOHI	CDT	GTO ST01		
804-79	CVFY HYD	HYDR SYS 1 SUPPLY PRESS B	V58P0115A1	2850	3400	PSIA	1 OF 2	HYD-02	
804-80	CVFY HYD	HYDR SYS 1 SUPPLY PRESS C	V58P0116C1	2800	3400	PSIA	INHB MENG	HYD-02	
804-81	CVFY HYD	HYDR SYS 2 SUPPLY PRESS B	V58P0215A1	2850	3400	PSIA	1 OF 2	HYD-02	
804-82	CVFY HYD	HYDR SYS 2 SUPPLY PRESS C	V58P0216C1	2800	3400	PSIA	INHB MENG	HYD-02	
804-83	CVFY HYD	HYDR SYS 3 SUPPLY PRESS B	V58P0315A1	2850	3400	PSIA	1 OF 2	HYD-02	
804-84	CVFY HYD	HYDR SYS 3 SUPPLY PRESS C	V58P0316C1	2800	3400	PSIA	INHB MENG	HYD-02	
804-85	CVFY FCL	L INBD ELEVON ACTR CHAN 1 POSN	V58H0802A1	-0.52	1.18	DEG	INHB MSEQ	GNC-22	
804-86	CVFY FCL	L INBD ELEVON ACTR CHAN 2 POSN	V58H0803A1	-0.52	1.18	DEG	INHB MSEQ	GNC-22	
804-87	CVFY FCL	L INBD ELEVON ACTR CHAN 3 POSN	V58H0804A1	-0.52	1.18	DEG	INHB MSEQ	GNC-22	
804-88	CVFY FCL	L INBD ELEVON ACTR CHAN 4 POSN	V58H0805A1	-0.52	1.18	DEG	INHB MSEQ	GNC-22	
804-89	CVFY FCL	L OUTBD ELEVON ACTR CHAN 1 POSN	V58H0852A1	-0.36	1.34	DEG	INHB MSEQ	GNC-22	
804-90	CVFY FCL	L OUTBD ELEVON ACTR CHAN 2 POSN	V58H0853A1	-0.36	1.34	DEG	INHB MSEQ	GNC-22	
804-91	CVFY FCL	L OUTBD ELEVON ACTR CHAN 3 POSN	V58H0854A1	-0.36	1.34	DEG	INHB MSEQ	GNC-22	
804-92	CVFY FCL	L OUTBD ELEVON ACTR CHAN 4 POSN	V58H0855A1	-0.36	1.34	DEG	INHB MSEQ	GNC-22	
804-93	CVFY FCL	R INBD ELEVON ACTR CHAN 1 POSN	V58H0902A1	-0.52	1.18	DEG	INHB MSEQ	GNC-22	
804-94	CVFY FCL	R INBD ELEVON ACTR CHAN 2 POSN	V58H0903A1	-0.52	1.18	DEG	INHB MSEQ	GNC-22	
804-95	CVFY FCL	R INBD ELEVON ACTR CHAN 3 POSN	V58H0904A1	-0.52	1.18	DEG	INHB MSEQ	GNC-22	
804-96	CVFY FCL	R INBD ELEVON ACTR CHAN 4 POSN	V58H0905A1	-0.52	1.18	DEG	INHB MSEQ	GNC-22	
804-97	CVFY FCL	R OUTBD ELEVON ACTR CHAN 1 POSN	V58H0952A1	-0.36	1.34	DEG	INHB MSEQ	GNC-22	
804-98	CVFY FCL	R OUTBD ELEVON ACTR CHAN 2 POSN	V58H0953A1	-0.36	1.34	DEG	INHB MSEQ	GNC-22	
804-99	CVFY FCL	R OUTBD ELEVON ACTR CHAN 3 POSN	V58H0954A1	-0.36	1.34	DEG	INHB MSEQ	GNC-22	
804-100	CVFY FCL	R OUTBD ELEVON ACTR CHAN 4 POSN	V58H0955A1	-0.36	1.34	DEG	INHB MSEQ	GNC-22	
804-101	CVFY FCL	RUDDER ACTR CHAN 1 POSN	V57H0150A1	-0.95	0.95	DEG	INHB MSEQ	GNC-26	
804-102	CVFY FCL	RUDDER ACTR CHAN 2 POSN	V57H0151A1	-0.95	0.95	DEG	INHB MSEQ	GNC-26	
804-103	CVFY FCL	RUDDER ACTR CHAN 3 POSN	V57H0152A1	-0.95	0.95	DEG	INHB MSEQ	GNC-26	
804-104	CVFY FCL	RUDDER ACTR CHAN 4 POSN	V57H0153A1	-0.95	0.95	DEG	INHB MSEQ	GNC-26	
804-105	CVFY FCL	BODY FLAP POSN FDBK-1	V57H0065C1	-1.85	1.85	DEG	INHB MSEQ	GNC-30	S00FM0.280
804-106	CVFY FCL	BODY FLAP POSN FDBK-2	V57H0066C1	-1.85	1.85	DEG	INHB MSEQ	GNC-30	S00FM0.280
804-107	CVFY FCL	BODY FLAP POSN FDBK-3	V57H0067C1	-1.85	1.85	DEG	INHB MSEQ	GNC-30	S00FM0.280
804-108	CVFY FCL	BODY FLAP POSN FDBK-4	V57H0068C1	-1.85	1.85	DEG	INHB MSEQ	GNC-30	S00FM0.280

804-109 ST01 END P001

\$ P002 MPS GIMBAL PROFILE EVALUATION \$
 LABL FCL P002

805-00

\$ START MPS GIMBAL PROFILE - THIS FUNCTION IS PERFORMED \$

\$ AUTOMATICALLY BY THE GLS SEQUENCER. THE CAPABILITY \$
 \$ ALSO EXISTS TO INITIATE THE MPS PROFILE AND PERFORM \$
 \$ THE EVALUATION PER MANUAL OPERATOR REQUEST. THE \$
 \$ MANUAL OPTION WOULD BE SELECTED IF A SECONDARY DELTA \$
 \$ PRESSURE ANOMALY OR CHANNEL FAIL OCCURS. \$

\$ PERFORM THE FOLLOWING INH GOAL NOTIFICATION \$
 \$ STEPS FOR A CONTINGENCY CALL ONLY. \$

805-01	IGL	FCL	MPS	ENG	1	P	ACTR	POSN	V58H1100A1	GNC-40	S00FM0.310
805-02	IGL	FCL	MPS	ENG	1	Y	ACTR	POSN	V58H1150A1	GNC-40	S00FM0.310
805-03	IGL	FCL	MPS	ENG	2	P	ACTR	POSN	V58H1200A1	GNC-40	S00FM0.310
805-04	IGL	FCL	MPS	ENG	2	Y	ACTR	POSN	V58H1250A1	GNC-40	S00FM0.310
805-05	IGL	FCL	MPS	ENG	3	P	ACTR	POSN	V58H1300A1	GNC-40	S00FM0.310
805-06	IGL	FCL	MPS	ENG	3	Y	ACTR	POSN	V58H1350A1	GNC-40	S00FM0.310
805-07	IGL	FCL	MPS	ENG	1	PITCH	SEC	DELTA PRESS A	V58P1181A1	GNC-41	
805-08	IGL	FCL	MPS	ENG	1	PITCH	SEC	DELTA PRESS B	V58P1182A1	GNC-41	
805-09	IGL	FCL	MPS	ENG	1	PITCH	SEC	DELTA PRESS C	V58P1183A1	GNC-41	
805-10	IGL	FCL	MPS	ENG	1	PITCH	SEC	DELTA PRESS D	V58P1184A1	GNC-41	
805-11	IGL	FCL	MPS	ENG	1	YAW	SEC	DELTA PRESS A	V58P1186A1	GNC-41	
805-12	IGL	FCL	MPS	ENG	1	YAW	SEC	DELTA PRESS B	V58P1187A1	GNC-41	
805-13	IGL	FCL	MPS	ENG	1	YAW	SEC	DELTA PRESS C	V58P1188A1	GNC-41	
805-14	IGL	FCL	MPS	ENG	1	YAW	SEC	DELTA PRESS D	V58P1189A1	GNC-41	
805-15	IGL	FCL	MPS	ENG	2	PITCH	SEC	DELTA PRESS A	V58P1281A1	GNC-41	
805-16	IGL	FCL	MPS	ENG	2	PITCH	SEC	DELTA PRESS B	V58P1282A1	GNC-41	
805-17	IGL	FCL	MPS	ENG	2	PITCH	SEC	DELTA PRESS C	V58P1283A1	GNC-41	
805-18	IGL	FCL	MPS	ENG	2	PITCH	SEC	DELTA PRESS D	V58P1284A1	GNC-41	
805-19	IGL	FCL	MPS	ENG	2	YAW	SEC	DELTA PRESS A	V58P1286A1	GNC-41	
805-20	IGL	FCL	MPS	ENG	2	YAW	SEC	DELTA PRESS B	V58P1287A1	GNC-41	
805-21	IGL	FCL	MPS	ENG	2	YAW	SEC	DELTA PRESS C	V58P1288A1	GNC-41	
805-22	IGL	FCL	MPS	ENG	2	YAW	SEC	DELTA PRESS D	V58P1289A1	GNC-41	
805-23	IGL	FCL	MPS	ENG	3	PITCH	SEC	DELTA PRESS A	V58P1381A1	GNC-41	
805-24	IGL	FCL	MPS	ENG	3	PITCH	SEC	DELTA PRESS B	V58P1382A1	GNC-41	
805-25	IGL	FCL	MPS	ENG	3	PITCH	SEC	DELTA PRESS C	V58P1383A1	GNC-41	
805-26	IGL	FCL	MPS	ENG	3	PITCH	SEC	DELTA PRESS D	V58P1384A1	GNC-41	
805-27	IGL	FCL	MPS	ENG	3	YAW	SEC	DELTA PRESS A	V58P1386A1	GNC-41	
805-28	IGL	FCL	MPS	ENG	3	YAW	SEC	DELTA PRESS B	V58P1387A1	GNC-41	
805-29	IGL	FCL	MPS	ENG	3	YAW	SEC	DELTA PRESS C	V58P1388A1	GNC-41	
805-30	IGL	FCL	MPS	ENG	3	YAW	SEC	DELTA PRESS D	V58P1389A1	GNC-41	
805-31	IGL	HYD	HYDR	SYS	1	SUPPLY	PRESS	B	V58P0115A1	HYD-02	
805-32	IGL	HYD	HYDR	SYS	1	SUPPLY	PRESS	C	V58P0116C1	HYD-02	
805-33	IGL	HYD	HYDR	SYS	2	SUPPLY	PRESS	B	V58P0215A1	HYD-02	
805-34	IGL	HYD	HYDR	SYS	2	SUPPLY	PRESS	C	V58P0216C1	HYD-02	
805-35	IGL	HYD	HYDR	SYS	3	SUPPLY	PRESS	B	V58P0315A1	HYD-02	
805-36	IGL	HYD	HYDR	SYS	3	SUPPLY	PRESS	C	V58P0316C1	HYD-02	

\$ START MPS GIMBAL PROFILE \$

806-00	CMD	FCL	INITIATE	MPS	GIMBAL	CHECK	CMD-LS	ON			S00FM0.300	
806-01	COM	INTG	GLS	TO	C11	PROFILE	DATA	COMM	ND80INTGR	GNC	GMT	

\$ 7 SECONDS AFTER THE INITIATING CMD-LS - AVG 25 SAMPLES OF NEXT 6 MEAS. \$

807-00	VFY	FCL	MPS	ENG	1	P	ACTR	POSN	V58H1100A1	4.5	7.5	DEG	INH B	MSEQ	GNC-42	S00FM0.300
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807-01	VFY	FCL	MPS	ENG	1	Y	ACTR	POSN	V58H1150A1	7.5	4.5	DEG	INHB	MSEQ	GNC-42	S00FM0.300
807-02	VFY	FCL	MPS	ENG	2	P	ACTR	POSN	V58H1200A1	7.5	4.5	DEG	INHB	MSEQ	GNC-42	S00FM0.300
807-03	VFY	FCL	MPS	ENG	2	Y	ACTR	POSN	V58H1250A1	7.5	4.5	DEG	INHB	MSEQ	GNC-42	S00FM0.300
807-04	VFY	FCL	MPS	ENG	3	P	ACTR	POSN	V58H1300A1	4.5	7.5	DEG	INHB	MSEQ	GNC-42	S00FM0.300
807-05	VFY	FCL	MPS	ENG	3	Y	ACTR	POSN	V58H1350A1	7.5	4.5	DEG	INHB	MSEQ	GNC-42	S00FM0.300

\$ 17 SECONDS AFTER THE INITIATING CMD-LS - AVG 25 SAMPLES OF NEXT 6 MEAS. \$

808-00	VFY	FCL	MPS	ENG	1	P	ACTR	POSN	V58H1100A1	-7.5	-4.5	DEG	INHB	MSEQ	GNC-42	S00FM0.300
808-01	VFY	FCL	MPS	ENG	1	Y	ACTR	POSN	V58H1150A1	-4.5	-7.5	DEG	INHB	MSEQ	GNC-42	S00FM0.300
808-02	VFY	FCL	MPS	ENG	2	P	ACTR	POSN	V58H1200A1	-4.5	-7.5	DEG	INHB	MSEQ	GNC-42	S00FM0.300
808-03	VFY	FCL	MPS	ENG	2	Y	ACTR	POSN	V58H1250A1	-4.5	-7.5	DEG	INHB	MSEQ	GNC-42	S00FM0.300
808-04	VFY	FCL	MPS	ENG	3	P	ACTR	POSN	V58H1300A1	-7.5	-4.5	DEG	INHB	MSEQ	GNC-42	S00FM0.300
808-05	VFY	FCL	MPS	ENG	3	Y	ACTR	POSN	V58H1350A1	-4.5	-7.5	DEG	INHB	MSEQ	GNC-42	S00FM0.300

\$ PERFORM THE FOLLOWING CVFY ACTIVATIONS FOR \$
\$ A CONTINGENCY CALL ONLY. \$

\$ ONLY ACTIVATE THE FOLLOWING CVFY'S IF MAINLINE HAD \$
\$ PROGRESSED AT LEAST TO THE T-3:03 TIME CHECK. \$

808-06	VFY	INTG	COUNTDOWN	TIME	CDT	-03:03	NOHI	CDT	GTO	ST01							
808-07	CVFY	FCL	MPS	ENG	1	P	ACTR	POSN	V58H1100A1	-1.12	.48	DEG	INHB	MSEQ	GNC-40	S00FM0.310	
808-08	CVFY	FCL	MPS	ENG	1	Y	ACTR	POSN	V58H1150A1	.77	-0.43	DEG	INHB	MSEQ	GNC-40	S00FM0.310	
808-09	CVFY	FCL	MPS	ENG	2	P	ACTR	POSN	V58H1200A1	1.12	-0.48	DEG	INHB	MSEQ	GNC-40	S00FM0.310	
808-10	CVFY	FCL	MPS	ENG	2	Y	ACTR	POSN	V58H1250A1	.81	-0.39	DEG	INHB	MSEQ	GNC-40	S00FM0.310	
808-11	CVFY	FCL	MPS	ENG	3	P	ACTR	POSN	V58H1300A1	-1.12	.48	DEG	INHB	MSEQ	GNC-40	S00FM0.310	
808-12	CVFY	FCL	MPS	ENG	3	Y	ACTR	POSN	V58H1350A1	.81	-0.39	DEG	INHB	MSEQ	GNC-40	S00FM0.310	
808-13	CVFY	FCL	MPS	ENG	1	PITCH	SEC	DELTA	PRESS	A	V58P1181A1	-1050	1050	PSID	INHB	MSEQ	GNC-41
808-14	CVFY	FCL	MPS	ENG	1	PITCH	SEC	DELTA	PRESS	B	V58P1182A1	-1050	1050	PSID	INHB	MSEQ	GNC-41
808-15	CVFY	FCL	MPS	ENG	1	PITCH	SEC	DELTA	PRESS	C	V58P1183A1	-1050	1050	PSID	INHB	MSEQ	GNC-41
808-16	CVFY	FCL	MPS	ENG	1	PITCH	SEC	DELTA	PRESS	D	V58P1184A1	-1050	1050	PSID	INHB	MSEQ	GNC-41
808-17	CVFY	FCL	MPS	ENG	1	YAW	SEC	DELTA	PRESS	A	V58P1186A1	-1050	1050	PSID	INHB	MSEQ	GNC-41
808-18	CVFY	FCL	MPS	ENG	1	YAW	SEC	DELTA	PRESS	B	V58P1187A1	-1050	1050	PSID	INHB	MSEQ	GNC-41
808-19	CVFY	FCL	MPS	ENG	1	YAW	SEC	DELTA	PRESS	C	V58P1188A1	-1050	1050	PSID	INHB	MSEQ	GNC-41
808-20	CVFY	FCL	MPS	ENG	1	YAW	SEC	DELTA	PRESS	D	V58P1189A1	-1050	1050	PSID	INHB	MSEQ	GNC-41
808-21	CVFY	FCL	MPS	ENG	2	PITCH	SEC	DELTA	PRESS	A	V58P1281A1	-1050	1050	PSID	INHB	MSEQ	GNC-41
808-22	CVFY	FCL	MPS	ENG	2	PITCH	SEC	DELTA	PRESS	B	V58P1282A1	-1050	1050	PSID	INHB	MSEQ	GNC-41
808-23	CVFY	FCL	MPS	ENG	2	PITCH	SEC	DELTA	PRESS	C	V58P1283A1	-1050	1050	PSID	INHB	MSEQ	GNC-41
808-24	CVFY	FCL	MPS	ENG	2	PITCH	SEC	DELTA	PRESS	D	V58P1284A1	-1050	1050	PSID	INHB	MSEQ	GNC-41
808-25	CVFY	FCL	MPS	ENG	2	YAW	SEC	DELTA	PRESS	A	V58P1286A1	-1050	1050	PSID	INHB	MSEQ	GNC-41
808-26	CVFY	FCL	MPS	ENG	2	YAW	SEC	DELTA	PRESS	B	V58P1287A1	-1050	1050	PSID	INHB	MSEQ	GNC-41
808-27	CVFY	FCL	MPS	ENG	2	YAW	SEC	DELTA	PRESS	C	V58P1288A1	-1050	1050	PSID	INHB	MSEQ	GNC-41
808-28	CVFY	FCL	MPS	ENG	2	YAW	SEC	DELTA	PRESS	D	V58P1289A1	-1050	1050	PSID	INHB	MSEQ	GNC-41
808-29	CVFY	FCL	MPS	ENG	3	PITCH	SEC	DELTA	PRESS	A	V58P1381A1	-1050	1050	PSID	INHB	MSEQ	GNC-41
808-30	CVFY	FCL	MPS	ENG	3	PITCH	SEC	DELTA	PRESS	B	V58P1382A1	-1050	1050	PSID	INHB	MSEQ	GNC-41
808-31	CVFY	FCL	MPS	ENG	3	PITCH	SEC	DELTA	PRESS	C	V58P1383A1	-1050	1050	PSID	INHB	MSEQ	GNC-41
808-32	CVFY	FCL	MPS	ENG	3	PITCH	SEC	DELTA	PRESS	D	V58P1384A1	-1050	1050	PSID	INHB	MSEQ	GNC-41
808-33	CVFY	FCL	MPS	ENG	3	YAW	SEC	DELTA	PRESS	A	V58P1386A1	-1050	1050	PSID	INHB	MSEQ	GNC-41
808-34	CVFY	FCL	MPS	ENG	3	YAW	SEC	DELTA	PRESS	B	V58P1387A1	-1050	1050	PSID	INHB	MSEQ	GNC-41
808-35	CVFY	FCL	MPS	ENG	3	YAW	SEC	DELTA	PRESS	C	V58P1388A1	-1050	1050	PSID	INHB	MSEQ	GNC-41
808-36	CVFY	FCL	MPS	ENG	3	YAW	SEC	DELTA	PRESS	D	V58P1389A1	-1050	1050	PSID	INHB	MSEQ	GNC-41
808-37	CVFY	HYD	HYDR	SYS	1	SUPPLY	PRESS	B	V58P0115A1	2850	3400	PSIA	1	OF	2	HYD-02	

	SUM	RH DELTA PRESS SEC B ROCK SUM15	B58P2312A1					
	SUM	RH DELTA PRESS SEC C ROCK SUM15	B58P2313A1					
	SUM	RH DELTA PRESS SEC D ROCK SUM15	B58P2314A1					
817-00	VFY	BHYD RH DELTA PRESS SECONDARY TILT	SUM16	-530	+460	PSID	EXIT	BTVC-13
	SUM	RH DELTA PRESS SEC A TILT SUM16	B58P2315A1					
	SUM	RH DELTA PRESS SEC B TILT SUM16	B58P2316A1					
	SUM	RH DELTA PRESS SEC C TILT SUM16	B58P2317A1					
	SUM	RH DELTA PRESS SEC D TILT SUM16	B58P2318A1					
	END	POO3						
		\$ P004 GOX VENT ARM RETRACT	\$					
818-00	LABL	GOX	P004					
819-00	CMD	GOX HTR CTL NO.2-LOAD CONNECT	GSAK9210E	OFF				S00FM0.360
819-01	CMD	GOX HTR CTL NO.2-LOAD CONNECT	GSAK9215E	OFF				S00FM0.360
819-02	CMD	GOX HTR CTL NO.1-LOAD CONNECT	GSAK9160E	OFF				S00FM0.360
819-03	CMD	GOX HTR CTL NO.1-LOAD CONNECT	GSAK9165E	OFF				S00FM0.360
819-04	CMD	GOX HTR CTL NO.2-AC ON	GSAK9200E	OFF				S00FM0.360
819-05	CMD	GOX HTR CTL NO.2-AC ON	GSAK9205E	OFF				S00FM0.360
819-06	CMD	GOX HTR CTL NO.1-AC ON	GSAK9150E	OFF				S00FM0.360
819-07	CMD	GOX HTR CTL NO.1-AC ON	GSAK9155E	OFF				S00FM0.360
819-08	CMD	GOX A135918 INLET VLV PRI CTL-OPEN	GSAK9050E	ON				S00FM0.360
819-09	CMD	GOX A135918 INLET VLV PRI CTL-OPEN	GSAK9055E	ON				S00FM0.360
		\$ VERIFY WITHIN 2 SECS \$						
819-10	VFY	GOX A135918 INLET VLV PRI CTL-OPEN	GSAX9051E	ON		1 OF 2		S00FM0.360
819-11	VFY	GOX A135918 INLET VLV PRI CTL-OPEN	GSAX9056E	ON		GTO S108		S00FM0.360
		GTO S110						
819-12 S108	CMD	GOX A135920 IN VLV CTL SEL-SEC SEL	GSAK9060E	ON				S00FM0.360
819-13	CMD	GOX A135920 IN VLV CTL SEL-SEC SEL	GSAK9065E	ON				S00FM0.360
819-14	CMD	GOX A135916 IN VLV SEC CTL-OPEN	GSAK9040E	ON				S00FM0.360
819-15	CMD	GOX A135916 IN VLV SEC CTL-OPEN	GSAK9045E	ON				S00FM0.360
		\$ VERIFY WITHIN 2 SECS \$						
820-00	VFY	GOX A135920 IN VLV CTL SEL-SEC SEL	GSAX9061E	ON		1 OF 2		S00FM0.360
820-01	VFY	GOX A135920 INLET VLV CTL SEL-SEC SEL	GSAX9066E	ON		AND		S00FM0.360
820-02	VFY	GOX A135916 IN VLV SEC CTL-OPEN	GSAX9041E	ON		1 OF 2		S00FM0.360
820-03	VFY	GOX A135916 INLET VLV SEC CTL-OPEN	GSAX9046E	ON		GTO S109		S00FM0.360
		GTO S110						
821-00 S109	CMD	GOX A135900 PRI REG FLOW VLV-OPEN	GSAK9020E	ON				S00FM0.360
821-01	CMD	GOX A135900 PRI REG FLOW VLV-OPEN	GSAK9025E	ON				S00FM0.360
821-02	CMD	GOX A135903 SEC REG FLOW VLV-OPEN	GSAK9030E	ON				S00FM0.360
821-03	CMD	GOX A135903 SEC REG FLOW VLV-OPEN	GSAK9035E	ON				S00FM0.360
		\$ HEATED PURGE OFF \$						
821-04 S110		DELAY 20 SEC						

\$ PRIMARY LOOP - HOOD UP \$

822-00	VFY	GOX	HOOD SECONDARY MODE SELECTED	NSAK0002X	OFF			GTO S123	S00FM0.370
822-01	CMD	GOX	A133524 PRI HOOD UP VLV-OPEN	GSAK8310E	ON				S00FM0.370
822-02	CMD	GOX	A133524 PRI HOOD UP VLV-OPEN	GSAK8315E	ON				S00FM0.370

\$ VERIFY WITHIN 5 SECONDS \$

823-00	VFY	GOX	6308A202 HOOD DOWN SWITCH NO.1	GSAX8331E	OFF			1 OF 4	S00FM0.370
823-01	VFY	GOX	6308A203 HOOD DOWN SWITCH NO.2	GSAX8332E	OFF			1 OF 4	S00FM0.370
823-02	VFY	GOX	6308A206 HOOD DOWN SWITCH NO.3	GSAX8333E	OFF			1 OF 4	S00FM0.370
823-03	VFY	GOX	A133716 HOOD POSITION INDICATION	GSAH8531A	5	NOHI	DEG	OR	S00FM0.370
823-04	VFY	GOX	6308A202 HOOD DOWN SWITCH NO.1	GSAX8336E	OFF			1 OF 4	S00FM0.370
823-05	VFY	GOX	6308A203 HOOD DOWN SWITCH NO.2	GSAX8337E	OFF			1 OF 4	S00FM0.370
823-06	VFY	GOX	6308A206 HOOD DOWN SWITCH NO.3	GSAX8338E	OFF			1 OF 4	S00FM0.370
823-07	VFY	GOX	A133716 HOOD POSITION INDICATION	GSAH8536A	5	NOHI	DEG	GTO S120	S00FM0.370

\$ REPEAT FOR NO MORE THAN 30 SECS ELSE GO TO S120 \$

824-00	S115	VFY	GOX	6308A200 HOOD UP SWITCH NO.1	GSAX8321E	ON			2 OF 4	S00FM0.370
824-01		VFY	GOX	6308A201 HOOD UP SWITCH NO.2	GSAX8322E	ON			2 OF 4	S00FM0.370
824-02		VFY	GOX	6308A205 HOOD UP SWITCH NO.3	GSAX8323E	ON			2 OF 4	S00FM0.370
824-03		VFY	GOX	A133716 HOOD POSITION INDICATION	GSAH8531A	45	NOHI	DEG	OR	S00FM0.370
824-04		VFY	GOX	6308A200 HOOD UP SWITCH NO.1	GSAX8326E	ON			2 OF 4	S00FM0.370
824-05		VFY	GOX	6308A201 HOOD UP SWITCH NO.2	GSAX8327E	ON			2 OF 4	S00FM0.370
824-06		VFY	GOX	6308A205 HOOD UP SWITCH NO.3	GSAX8328E	ON			2 OF 4	S00FM0.370
824-07		VFY	GOX	A133716 HOOD POSITION INDICATION	GSAH8536A	45	NOHI	DEG	GTO S115	S00FM0.370

825-00		CMD	GOX	A133524 PRI HOOD UP VLV-OPEN	GSAK8310E	OFF				S00FM0.370
825-01		CMD	GOX	A133524 PRI HOOD UP VLV-OPEN	GSAK8315E	OFF				S00FM0.370

\$ SECONDARY LOOP - HOOD UP \$

825-02	S120	MSG		PRIMARY SYSTEM FAILED GO TO SECONDARY						
825-03	S123	CMD	GOX	A133524 PRI HOOD UP VLV-OPEN	GSAK8310E	OFF				S00FM0.370
825-04		CMD	GOX	A133524 PRI HOOD UP VLV-OPEN	GSAK8315E	OFF				S00FM0.370
825-05		CMD	GOX	HOOD SECONDARY MODE SELECTED	NSAK0002X	ON				S00FM0.370
825-06		CMD	GOX	A133573 SEC HOOD UP VLV-OPEN	GSAK8280E	ON				S00FM0.370
825-07		CMD	GOX	A133573 SEC HOOD UP VLV-OPEN	GSAK8285E	ON				S00FM0.370

\$ REPEAT FOR NO MORE THAN 30 SECS ELSE GO TO S126 INHB MSEQ \$

825-08	S125	VFY	GOX	6308A200 HOOD UP SWITCH NO.1	GSAX8321E	ON			2 OF 4	S00FM0.370
825-09		VFY	GOX	6308A201 HOOD UP SWITCH NO.2	GSAX8322E	ON			2 OF 4	S00FM0.370
825-10		VFY	GOX	6308A205 HOOD UP SWITCH NO.3	GSAX8323E	ON			2 OF 4	S00FM0.370
825-11		VFY	GOX	A133716 HOOD POSITION INDICATION	GSAH8531A	45	NOHI	DEG	OR	S00FM0.370
825-12		VFY	GOX	6308A200 HOOD UP SWITCH NO.1	GSAX8326E	ON			2 OF 4	S00FM0.370
825-13		VFY	GOX	6308A201 HOOD UP SWITCH NO.2	GSAX8327E	ON			2 OF 4	S00FM0.370
825-14		VFY	GOX	6308A205 HOOD UP SWITCH NO.3	GSAX8328E	ON			2 OF 4	S00FM0.370
825-15		VFY	GOX	A133716 HOOD POSITION INDICATION	GSAH8536A	45	NOHI	DEG	GTO S125	S00FM0.370

GTO S128 INHB MSEQ

825-16	S126	CMD	GOX	A133573	SEC HOOD UP VLV-OPEN	GSAK8280E	OFF		S00FM0.370
825-17		CMD	GOX	A133573	SEC HOOD UP VLV-OPEN	GSAK8285E	OFF		S00FM0.370
825-18		MSG	GOX	SECONDARY SYSTEM FAILED TO RAISE HOOD GTO S201					
826-00	S128	CMD	GOX	A133573	SEC HOOD UP VLV-OPEN	GSAK8280E	OFF		S00FM0.370
826-01		CMD	GOX	A133573	SEC HOOD UP VLV-OPEN	GSAK8285E	OFF		S00FM0.370
826-02	S130	CMD	GOX	A133680	EXTEND LOCK VALVE-CLOSE	GSAK8090E	ON		S00FM0.370
826-03		CMD	GOX	A133680	EXTEND LOCK VALVE-CLOSE	GSAK8095E	ON		S00FM0.370
826-04		CMD	GOX	A133501	PRIMARY RETRACT VLV-RESET	GSAK8170E	OFF		S00FM0.370
826-05		CMD	GOX	A133501	PRIMARY RETRACT VLV-RESET	GSAK8175E	OFF		S00FM0.370
826-06		CMD	GOX	A133501	PRI RTR V-RETRACT ARMED	GSAK8162E	ON		
826-07		CMD	GOX	A133501	PRI RTR V-RETRACT ARMED	GSAK8167E	ON		
826-08		CMD	GOX	A133501	PRI RTR V-RTR EXECUTE	GSAK8160E	ON		S00FM0.370
826-09		CMD	GOX	A133501	PRI RTR V-RTR EXECUTE	GSAK8165E	ON		S00FM0.370
\$ VERIFY WITHIN 3 SECS \$									
826-08		VFY	GOX	A133508	PRI RETRACT VLV-RETRACT	GSAX8162E	ON	1 OF 2	S00FM0.370
826-09		VFY	GOX	A133508	PRI RETRACT VLV-RETRACT	GSAX8167E	ON	AND	S00FM0.370
826-10		VFY	GOX	A133509	PRI RETRACT VLV-RETRACT	GSAX8163E	ON	1 OF 2	S00FM0.370
826-11		VFY	GOX	A133509	PRI RETRACT VLV-RETRACT	GSAX8168E	ON	GTO S150	S00FM0.370
\$ VERIFY WITHIN 9 SECS \$									
826-12		VFY	GOX	6308A109	ARM FULLY EXTENDED	GSAX8231E	OFF	1 OF 2	S00FM0.370
826-13		VFY	GOX	6308A109	ARM FULLY EXTENDED	GSAX8236E	OFF	GTO S150	S00FM0.370
\$ VERIFY WITHIN 50 SECS \$									
826-14		VFY	GOX	6308A103	RETRACT SWITCH NO.1	GSAX8221E	ON	2 OF 3	S00FM0.370
826-15		VFY	GOX	6308A102	RETRACT SWITCH NO.2	GSAX8222E	ON	2 OF 3	S00FM0.370
826-16		VFY	GOX	A133566	ARM POSITION INDICATION	GSAH8191A	NOLO 2	DEG OR	S00FM0.370
826-17		VFY	GOX	6308A103	RETRACT SWITCH NO. 1	GSAX8226E	ON	2 OF 3	S00FM0.370
826-18		VFY	GOX	6308A102	RETRACT SWITCH NO. 2	GSAX8227E	ON	2 OF 3	S00FM0.370
826-19		VFY	GOX	A133566	ARM POSITION INDICATION	GSAH8196A	NOLO 2	DEG GTO S150	S00FM0.370
GTO S200									
827-00	S150	CMD	GOX	A133501	PRI RTR V-RTR EXECUTE	GSAK8160E	OFF		S00FM0.370
827-01		CMD	GOX	A133501	PRI RTR V-RTR EXECUTE	GSAK8165E	OFF		S00FM0.370
827-02		CMD	GOX	A133501	PRI RTR V-RETRACT ARMED	GSAK8162E	OFF		
827-03		CMD	GOX	A133501	PRI RTR V-RETRACT ARMED	GSAK8167E	OFF		
827-04		CMD	GOX	A133501	PRIMARY RETRACT VLV-RESET	GSAK8170E	ON		S00FM0.370
827-05		CMD	GOX	A133501	PRIMARY RETRACT VLV-RESET	GSAK8175E	ON		S00FM0.370
\$ DELAY 2 SECONDS \$									
827-06		CMD	GOX	A133501	PRIMARY RETRACT VLV-RESET	GSAK8170E	OFF		S00FM0.370
827-07		CMD	GOX	A133501	PRIMARY RETRACT VLV-RESET	GSAK8175E	OFF		S00FM0.370
827-08		CMD	GOX	A133507	SEC RTR V-RETRACT ARMED	GSAK8182E	ON		
827-09		CMD	GOX	A133507	SEC RTR V-RETRACT ARMED	GSAK8187E	ON		
827-10		CMD	GOX	A133507	SEC RTR V-RTR EXECUTE	GSAK8180E	ON		S00FM0.370

827-11 CMD GOX A133507 SEC RTR V-RTR EXECUTE GSAK8185E ON

\$ LATCH GOX ARM \$

827-12 S200 CMD GOX A133415 LATCHBACK VALVE-LATCH GSAK8140E ON

827-13 CMD GOX A133415 LATCHBACK VALVE-LATCH GSAK8145E ON

827-14 S201 END P004

\$ P005 OAA CONFIGURE FOR EXTEND AND HYDRAULIC ACCUMULATOR RECHARGE \$

850-00 LABL INTG P005

\$ OAA CONFIGURE FOR EXTEND \$

851-00 CMD ARMS OAA OPEN PRI RETRACT SUPPLY V GSAK7210E OFF

851-01 CMD ARMS OAA OPEN PRI RETRACT SUPPLY V GSAK7215E OFF

851-02 CMD ARMS OAA OPEN PRI RETRACT RETURN V GSAK7230E OFF

851-03 CMD ARMS OAA OPEN PRI RETRACT RETURN V GSAK7235E OFF

851-04 CMD ARMS OAA OPEN SEC RETRACT SUPPLY V GSAK7250E OFF

851-05 CMD ARMS OAA OPEN SEC RETRACT SUPPLY V GSAK7255E OFF

851-06 CMD ARMS OAA OPEN SEC RETRACT RETURN V GSAK7270E OFF

851-07 CMD ARMS OAA OPEN SEC RETRACT RETURN V GSAK7275E OFF

852-00 CMD ARMS OAA CLOSE PRI RETRACT SUPPLY V GSAK7200E ON

852-01 CMD ARMS OAA CLOSE PRI RETRACT SUPPLY V GSAK7205E ON

852-02 CMD ARMS OAA CLOSE SEC RETRACT SUPPLY V GSAK7240E ON

852-03 CMD ARMS OAA CLOSE SEC RETRACT SUPPLY V GSAK7245E ON

852-04 CMD ARMS OAA CLOSE PRI RETRACT RETURN V GSAK7220E ON

852-05 CMD ARMS OAA CLOSE PRI RETRACT RETURN V GSAK7225E ON

852-06 CMD ARMS OAA CLOSE SEC RETRACT RETURN V GSAK7260E ON

852-07 CMD ARMS OAA CLOSE SEC RETRACT RETURN V GSAK7265E ON

\$ DELAY 1.0S \$

855-00 CMD ARMS OAA CLOSE PRI RETRACT SUPPLY V GSAK7200E OFF

855-01 CMD ARMS OAA CLOSE PRI RETRACT SUPPLY V GSAK7205E OFF

855-02 CMD ARMS OAA CLOSE SEC RETRACT SUPPLY V GSAK7240E OFF

855-03 CMD ARMS OAA CLOSE SEC RETRACT SUPPLY V GSAK7245E OFF

855-04 CMD ARMS OAA CLOSE PRI RETRACT RETURN V GSAK7220E OFF

855-05 CMD ARMS OAA CLOSE PRI RETRACT RETURN V GSAK7225E OFF

855-06 CMD ARMS OAA CLOSE SEC RETRACT RETURN V GSAK7260E OFF

855-07 CMD ARMS OAA CLOSE SEC RETRACT RETURN V GSAK7265E OFF

\$ OAA PWR REMOVAL FROM EXTEND LOCK \$

856-00 CMD ARMS OAA UNLOCK PRI EXTEND LOCK V GSAK7120E OFF

856-01 CMD ARMS OAA UNLOCK PRI EXTEND LOCK V GSAK7125E OFF

856-02 CMD ARMS OAA UNLOCK SEC EXTEND LOCK V GSAK7140E OFF

856-03 CMD ARMS OAA UNLOCK SEC EXTEND LOCK V GSAK7145E OFF

\$ OAA POSITION MONITOR \$

857-00 CVFY ARMS OAA PRI FULLY RTR SW-RETRACTED GSAX7621E ON 2 OF 3 GSE-12

857-01 CVFY ARMS OAA SEC FULLY RTR SW-RETRACTED GSAX7622E ON 2 OF 3 GSE-12

857-02 CVFY ARMS OAA POSITION INDICATION GSAH7831A NOLO 2 DEG OR GSE-12

857-03 CVFY ARMS OAA PRI FULLY RTR SW-RETRACTED GSAX7626E ON 2 OF 3 GSE-12

857-04	CVFY ARMS	OAA SEC FULLY RTR SW-RETRACTED	GSAX7627E	ON				2 OF 3	GSE-12
857-05	CVFY ARMS	OAA POSITION INDICATOR	GSAH7836A	NOLO	2	DEG		INHB MENG	GSE-12
		\$ RETRY NEXT 2 SEQ NO MORE THAN ONCE \$							
858-00 ST20	CMD ARMS	OAA OPEN ACCUM CHARGING V	GSAK7080E	ON					
858-01	CMD ARMS	OAA OPEN ACCUM CHARGING V	GSAK7085E	ON					
		\$ DELAY 1.0S \$							
859-00	VFY ARMS	OAA ACCUM CHARGE V SW-VALVE OPEN	GSAX7081E	ON				1 OF 4	
859-01	VFY ARMS	OAA ACCUM CHARGE V SW-VALVE OPEN	GSAX7086E	ON				1 OF 4	
859-02	VFY ARMS	OAA ACCUM CHARGE V SW-VALVE CLOSED	GSAX7082E	OFF				1 OF 4	
859-03	VFY ARMS	OAA ACCUM CHARGE V SW-VALVE CLOSED	GSAX7087E	OFF				GTO ST20	
		\$ PRINT MSG IF FAILED AFTER RETRY \$							
859-04	MSG	OAA ACCUM CHARGE ON-FAILED							
		\$ DELAY 1 MIN 00 SECONDS \$							
		\$ VERIFY WITHIN 1 MIN 00 SECONDS \$							
860-00 ST30	VFY ARMS	OAA ACCUM LEVEL SW NO 1-NORMAL	GSAX7651E	ON				4 OF 4	
860-01	VFY ARMS	OAA ACCUM LEVEL SW NO 2-NORMAL	GSAX7671E	ON				4 OF 4	
860-02	VFY ARMS	OAA ACCUM LEVEL SW NO 3-NORMAL	GSAX7691E	ON				4 OF 4	
860-03	VFY ARMS	OAA ACCUM LEVEL SW NO 4-NORMAL	GSAX7711E	ON				OR	
860-04	VFY ARMS	OAA ACCUM LEVEL SW NO 1-NORMAL	GSAX7656E	ON				4 OF 4	
860-05	VFY ARMS	OAA ACCUM LEVEL SW NO 2-NORMAL	GSAX7676E	ON				4 OF 4	
860-06	VFY ARMS	OAA ACCUM LEVEL SW NO 3-NORMAL	GSAX7696E	ON				4 OF 4	
860-07	VFY ARMS	OAA ACCUM LEVEL SW NO 4-NORMAL	GSAX7716E	ON				GTO ST30	
		\$ PRINT MSG IF FAILED AFTER TIME EXPIRED \$							
860-08	MSG	OAA ACCUM LVL SW FAILED-VFYD 1 MIN							
860-09	VFY ARMS	OAA 3000 PSI GN2 PRESS SW-NORMAL	GSAX7731E	ON				1 OF 4	GSE-10
860-10	VFY ARMS	OAA 2700 PSI GN2 PRESS TRANSDUCER	GSAP7801A	2000	NOHI	PSIG		1 OF 4	GSE-10
860-11	VFY ARMS	OAA 3000 PSI GN2 PRESS SW-NORMAL	GSAX7736E	ON				1 OF 4	GSE-10
860-12	VFY ARMS	OAA 2700 PSI GN2 PRESS TRANSDUCER	GSAP7806A	2000	NOHI	PSIG		INHB MSEQ	GSE-10
	MSG	OAA ACCUM GN2 PRESS FAILED-VFY							
860-13	VFY ARMS	OAA ACCUM LEVEL SW NO 1-NORMAL	GSAX7651E	ON				2 OF 4	GSE-11
860-14	VFY ARMS	OAA ACCUM LEVEL SW NO 2-NORMAL	GSAX7671E	ON				2 OF 4	GSE-11
860-15	VFY ARMS	OAA ACCUM LEVEL SW NO 3-NORMAL	GSAX7691E	ON				2 OF 4	GSE-11
860-16	VFY ARMS	OAA ACCUM LEVEL SW NO 4-NORMAL	GSAX7711E	ON				OR	GSE-11
860-17	VFY ARMS	OAA ACCUM LEVEL SW NO 1-NORMAL	GSAX7656E	ON				2 OF 4	GSE-11
860-18	VFY ARMS	OAA ACCUM LEVEL SW NO 2-NORMAL	GSAX7676E	ON				2 OF 4	GSE-11
860-19	VFY ARMS	OAA ACCUM LEVEL SW NO 3-NORMAL	GSAX7696E	ON				2 OF 4	GSE-11
860-20	VFY ARMS	OAA ACCUM LEVEL SW NO 4-NORMAL	GSAX7716E	ON				INHB MSEQ	GSE-11
	MSG	OAA ACCUM LEVEL SW FAILED-VFY							

860-21	CMD	ARMS	A101409	EMERGENCY EXT INHIBIT	GSAK7320E	ON	
860-22	CMD	ARMS	A101409	EMERGENCY EXT INHIBIT	GSAK7325E	ON	
860-23	CMD	ARMS	A101410	EMERGENCY EXT INHIBIT	GSAK7330E	ON	
860-24	CMD	ARMS	A101410	EMERGENCY EXT INHIBIT	GSAK7335E	ON	
				\$ EXTEND PREVENTION IN THE EVENT THE EXT \$			
				\$ PILOT VLV FAILS TO THE EXT POSITION \$			
860-25	CMD	ARMS	OAA	RESET PRI EXTEND PILOT V	GSAK7160E	ON	
860-26	CMD	ARMS	OAA	RESET PRI EXTEND PILOT V	GSAK7165E	ON	
860-27	CMD	ARMS	OAA	RESET SEC EXTEND PILOT V	GSAK7180E	ON	
860-28	CMD	ARMS	OAA	RESET SEC EXTEND PILOT V	GSAK7185E	ON	
				\$ HYD ACCUM RECHARGE SECURING \$			
				\$ RETRY NEXT 2 SEQUENCES NO MORE THAN ONCE \$			
861-00	ST40	CMD	ARMS	OAA OPEN ACCUM CHARGING V	GSAK7080E	OFF	
861-01		CMD	ARMS	OAA OPEN ACCUM CHARGING V	GSAK7085E	OFF	
				\$ DELAY 1.0S \$			
862-00		VFY	ARMS	OAA ACCUM CHARGE V SW-VALVE OPEN	GSAX7081E	OFF	1 OF 4
862-01		VFY	ARMS	OAA ACCUM CHARGE V SW-VALVE OPEN	GSAX7086E	OFF	1 OF 4
862-02		VFY	ARMS	OAA ACCUM CHARGE V SW-VALVE CLOSED	GSAX7082E	ON	1 OF 4
862-03		VFY	ARMS	OAA ACCUM CHARGE V SW-VALVE CLOSED	GSAX7087E	ON	GTO ST40
				\$ PRINT MSG IF FAILED AFTER RETRY \$			
862-04		MSG		OAA ACCUM CHARGE OFF-FAILED			
				\$ RETRY SEQ NO MORE THAN ONCE \$			
863-00	ST50	CMD	ARMS	OAA CLOSE GN2 INHIBIT V	GSAK7100E	OFF	
863-01		CMD	ARMS	OAA CLOSE GN2 INHIBIT V	GSAK7105E	OFF	
				\$ DELAY 1.0 SECONDS \$			
863-02		VFY	ARMS	OAA GN2 INHIBIT V SW-VALVE OPEN	GSAX7101E	ON	1 OF 4
863-03		VFY	ARMS	OAA GN2 INHIBIT V SW-VALVE OPEN	GSAX7106E	ON	1 OF 4
863-04		VFY	ARMS	OAA GN2 INHIBIT V SW-VALVE CLOSED	GSAX7102E	OFF	1 OF 4
863-05		VFY	ARMS	OAA GN2 INHIBIT V SW-VALVE CLOSED	GSAX7107E	OFF	GTO ST50
				\$ PRINT MSG IF FAILED AFTER RETRY \$			
863-06		MSG		OAA GN2 VLVS CLOSE-FAILED			
				\$ TURN OFF 02 MONITOR PUMP \$			
863-07		CMD	ARMS	WHITERM/CREW CABIN 02 CMD	GGOR1101E	ON	
864-00		END	P005				
				\$ P006 STANDALONE CVFY FUNCTION \$			
865-00		LABL	INTG		P006		
				\$ PERFORM THE FOLLOWING 16 STEPS IF THE CURRENT \$			
				\$ FLIGHT IS AN EDO MISSION (NPRSDEDO16) = ON \$			

865-07	-00107	CVFY FCP	PRSD O2 TK 6	HTR CONT PRESS	D45V311011	820	993	PSIA	LCC-3	PRSD-01
865-08	-00108	CVFY FCP	PRSD O2 TK 6	PRESS	D45V310011	808	981	PSIA	LCC-3	PRSD-01
865-09	-00109	CVFY FCP	PRSD H2 TK 6	HTR CONT PRESS	D45V411011	213	298	PSIA	LCC-3	PRSD-06
865-10	-00110	CVFY FCP	PRSD H2 TK 6	PRESS	D45V410011	209	294	PSIA	LCC-3	PRSD-06
865-11	-00111	CVFY FCP	PRSD O2 TK 7	HTR CONT PRESS	D45V321011	820	993	PSIA	LCC-3	PRSD-01
865-12	-00112	CVFY FCP	PRSD O2 TK 7	PRESS	D45V320011	808	981	PSIA	LCC-3	PRSD-01
865-13	-00113	CVFY FCP	PRSD H2 TK 7	HTR CONT PRESS	D45V421011	213	298	PSIA	LCC-3	PRSD-06
865-14	-00114	CVFY FCP	PRSD H2 TK 7	PRESS	D45V420011	209	294	PSIA	LCC-3	PRSD-06
865-15	-00115	CVFY FCP	PRSD O2 TK 8	HTR CONT PRESS	D45V331011	820	993	PSIA	LCC-3	PRSD-01
865-16	-00116	CVFY FCP	PRSD O2 TK 8	PRESS	D45V330011	808	981	PSIA	LCC-3	PRSD-01
865-17	-00117	CVFY FCP	PRSD H2 TK 8	HTR CONT PRESS	D45V431011	213	298	PSIA	LCC-3	PRSD-06
865-18	-00118	CVFY FCP	PRSD H2 TK 8	PRESS	D45V430011	209	294	PSIA	LCC-3	PRSD-06
865-19	-00119	CVFY FCP	PRSD O2 TK 9	HTR CONT PRESS	D45V341011	820	993	PSIA	LCC-3	PRSD-01
865-20	-00120	CVFY FCP	PRSD O2 TK 9	PRESS	D45V340011	808	981	PSIA	LCC-3	PRSD-01
865-21	-00121	CVFY FCP	PRSD H2 TK 9	HTR CONT PRESS	D45V441011	213	298	PSIA	LCC-3	PRSD-06
865-22	-00122	CVFY FCP	PRSD H2 TK 9	PRESS	D45V440011	209	294	PSIA	LCC-3	PRSD-06

\$ THE NEXT SEQUENCE APPLICABLE FOR SPACELAB MODULE FLIGHTS WHEN \$
 \$ THE MODULE IS POWERED UP DURING THE LCC TIME PERIOD. ACTIVATE \$
 \$ CVFY AFTER BFS BCE 10 ENABLE, V98X2621X1 = ON. THE TIME DELAY \$
 \$ EXISTS TO ALLOW FOR POLLING INITIATION ON SPACELAB FDS. \$

866-00 ST01 CVFY SLAB PROC HALT STAT 1-BCE 10 ENABLEDBFS V98X2621X1 ON GTO ST01

\$ DELAY 2 SECONDS \$

866-01	-00201	CVFY SLAB	MAIN BUS VOLTAGE	BFS	D01L1201VV	26.6	32.0	VOLTS	MSEQ	SL-01
866-02	-00202	CVFY SLAB	AUX BUSES A OR B UNDERVOLTAGE	BFS	D01L1004YV	OFF			MSEQ	SL-02
866-03	-00203	CVFY SLAB	SS AC BUS VOLTAGE-PHASE A	BFS	D01L1301VV	110.0	124.0	VAC	MSEQ	SL-04
866-04	-00204	CVFY SLAB	SS AC BUS VOLTAGE-PHASE B	BFS	D01L1302VV	110.0	124.0	VAC	MSEQ	SL-04
866-05	-00205	CVFY SLAB	SS AC BUS VOLTAGE-PHASE C	BFS	D01L1303VV	110.0	124.0	VAC	MSEQ	SL-04
866-06	-00206	CVFY SLAB	ALL SS DC/AC RELAYS STATUS ON	BFS	D01L1214YV	ON			MSEQ	SL-05
866-07	-00207	CVFY SLAB	RAAB 28V BUS 1 SEC VOLT OK	BFS	D05L1101YV	ON			MSEQ	SL-06
866-08	-00208	CVFY SLAB	RAAB 28V BUS 2 SEC VOLT OK	BFS	D05L1102YV	ON			MSEQ	SL-06
866-09	-00209	CVFY SLAB	H2O PUMP OUTLET PRESS	BFS	D04L1102VV	84.7	100.1	PSI	1 OF 2	SL-11
866-10	-00210	CVFY SLAB	FLOW-WATER LOOP	BFS	D04L1302VV	379	NOHI	LB/HR	MSEQ	SL-11
866-12	-00212	CVFY SLAB	SMOKE SENSOR 1 ALARM (RIGHT B)	BFS	D02L1011YV	OFF			MENG	SL-15
866-13	-00213	CVFY SLAB	SMOKE SENSOR 2 ALARM (RIGHT A)	BFS	D02L1012YV	OFF			MENG	SL-15
866-14	-00214	CVFY SLAB	SMOKE SENSOR 3 ALARM (SUBFL B)	BFS	D02L1013YV	OFF			MENG	SL-15
866-15	-00215	CVFY SLAB	SMOKE SENSOR 4 ALARM (SUBFL A)	BFS	D02L1014YV	OFF			MENG	SL-15
866-16	-00216	CVFY SLAB	SMOKE SENSOR 5 ALARM (LEFT B)	BFS	D02L1015YV	OFF			MENG	SL-15
866-17	-00217	CVFY SLAB	SMOKE SENSOR 6 ALARM (LEFT A)	BFS	D02L1016YV	OFF			MENG	SL-15

\$ THE LIMITS FOR THE FOLLOWING STEPS ARE DETERMINED \$
 \$ BY THE SPEED OF THE SPACELAB AVIONICS FAN. FIRST \$
 \$ SET OF LIMITS = LOW SPEED, SECOND SET = HIGH. \$

866-18 -00218 CVFY SLAB SS INVERTER INPUT CURRENT BFS D01L1101VV 5.0 25.0 AMPS MSEQ SL-03

866-19	-00219				5.0	45.0	AMPS	MSEQ		SL-03
866-20	-00220	CVFY SLAB EXP INVERTER INPUT CURRENT	BFS	D01L1121VV	5.0	25.0	AMPS	MSEQ		SL-03
866-21	-00221				5.0	45.0	AMPS	MSEQ		SL-03
866-22	-00222	CVFY SLAB AVIONICS FAN DELTA PRESS	BFS	D02L1515VV	0.044	0.071	PSID	MSEQ		SL-10
866-23	-00223				0.17	0.28	PSID	MSEQ		SL-10

\$ THE NEXT SEQUENCE APPLICABLE FOR SPACEHAB FLIGHTS IN WHICH \$
 \$ THE MODULE SUBSYSTEMS ARE POWERED UP DURING THE LCC TIME \$
 \$ PERIOD. \$

\$ STEPS 86701-17 ARE PROCESSED BY THE PLD FEP \$
 867-00 CVFY SHAB PLD FEP PROCESSOR DATA VALID SPLDADATAV ON DSPLY MSG

867-01	-00301	CVFY SHAB ARS FAN DELTA PRESSURE 1		D47P2001A1	1.3	5.2	INH20	1 OF 2		SH-01
867-02	-00302	CVFY SHAB ARS FAN DELTA PRESSURE 2		D47P2002A1	1.3	5.2	INH20	OR		SH-01
867-03	-00303	CVFY SHAB CABIN FAN DELTA PRESSURE 1		D47P2006A1	0.5	5.2	INH20	1 OF 2		SH-01
867-04	-00304	CVFY SHAB CABIN FAN DELTA PRESSURE 2		D47P2007A1	0.5	5.2	INH20	LCC-3		SH-01
867-05	-00305	CVFY SHAB EMERGENCY BUS VOLTAGE		D47P3001A1	24.0	NOHI	VOLTS	LCC-3		SH-02
867-06	-00306	CVFY SHAB INVERTER DC BUS VOLTAGE		D47P3013A1	24.0	NOHI	VOLTS	1 OF 2		SH-06
867-07	-00307	CVFY SHAB EXPERIMENT DC BUS VOLTAGE		D47P3008A1	24.0	NOHI	VOLTS	LCC-3		SH-06
867-08	-00308	CVFY SHAB HALON BOTTLE 1 DISCHARGE		D47P1020E1	ON			LCC-3		SH-07
867-09	-00309	CVFY SHAB HALON BOTTLE 2 DISCHARGE		D47P1021E1	ON			LCC-3		SH-07
867-10	-00310	CVFY SHAB HALON BOTTLE 3 DISCHARGE		D47P1022E1	ON			LCC-3		SH-07
867-11	-00311	CVFY SHAB HALON BOTTLE 4 DISCHARGE		D47P1023E1	ON			LCC-3		SH-07
867-12	-00312	CVFY SHAB HALON BOTTLE 5 DISCHARGE		D47P1024E1	ON			LCC-3		SH-07
867-13	-00313	CVFY SHAB HALON BOTTLE 6 DISCHARGE		D47P1025E1	ON			LCC-3		SH-07
867-14	-00314	CVFY SHAB HALON BOTTLE 7 DISCHARGE		D47P1026E1	ON			LCC-3		SH-07
867-15	-00315	CVFY SHAB HALON BOTTLE 8 DISCHARGE		D47P1027E1	ON			LCC-3		SH-07
867-16	-00316	CVFY SHAB HALON BOTTLE 9 DISCHARGE		D47P1028E1	ON			LCC-3		SH-07
867-17	-00317	CVFY SHAB HALON BOTTLE 10 DISCHARGE		D47P1029E1	ON			LCC-3		SH-07

\$ THE FOLLOWING ARE PROCESSED BY THE OI FEP \$

867-18	-00318	CVFY SHAB MASTER FRAME LOCK 4		V75X6413D1	ON			LCC-3		SH-04
867-19	-00319	CVFY SHAB MASTER FRAME LOCK 2		V75X6405D1	ON			LCC-3		SH-04
867-20	-00320	CVFY SHAB MASTER FRAME LOCK 3		V75X6409D1	ON			1 OF 2		SH-04
867-21	-00321	CVFY SHAB MASTER FRAME LOCK 1		V75X6401D1	ON			LCC-3		SH-04

\$ ACTIVATE STEPS 86723-24 CVFY FD'S AFTER BFS BCE 10 ENABLE, \$
 \$ V98X2621X1 = ON. THE TIME DELAY EXISTS TO ALLOW FOR POLLING \$
 \$ INITIATION ON THESE FDS. \$

867-22 ST02 CVFY SHAB PROC HALT STAT 1-BCE 10 ENABLEDBFS V98X2621X1 ON GTO ST02
 \$ DELAY 2 SECONDS \$

867-23	-00323	CVFY SHAB SMOKE SEN A ALARM	BFS	D47P2017YV	OFF			MSEQ		SH-03
867-24	-00324	CVFY SHAB SMOKE SEN B ALARM	BFS	D47P2019YV	OFF			MSEQ		SH-03

868-00 END P006